MAD NOV 2016

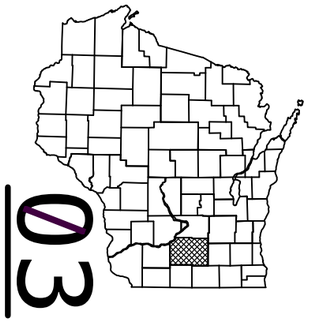
PROJECT ID: 1111-02-78
WITH: N/A

COUNTY: DANE

ORDER OF SHEETS

| | | |
|---|---|---|
| Section No. 1 | Title | |
| Section No. 2 | Typical Sections and Details | (Includes Erosion Control Plans) |
| 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 = 496



DESIGN DESIGNATION

| | | |
|---|---|---|
| A.A.D.T. (2017) | = | 39,400 |
| A.A.D.T. (2037) | = | 54,100 |
| D.H.V. (9.5%) | = | 5,140 |
| D.D. | = | 58/42 |
| T. | = | 14.9% |
| DESIGN SPEED | = | 70 MPH (POSTED SPEED 65 MPH) |
| ESALS | = | 7,800,000 TO 13,000,000 |

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

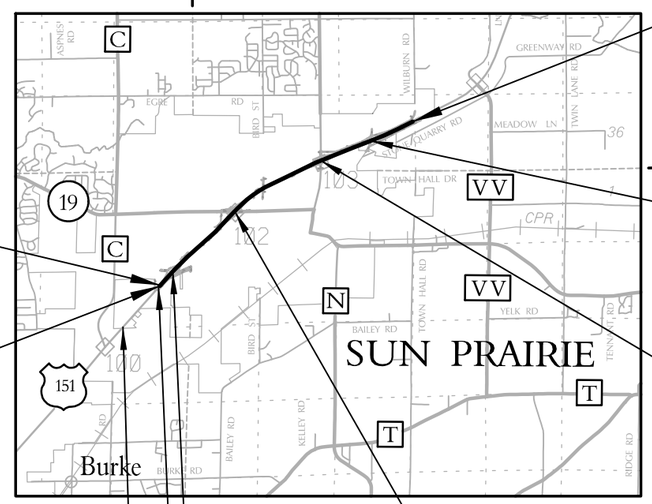
PLAN OF PROPOSED IMPROVEMENT

# C SUN PRAIRIE
MAIN STREET TO CTH VV

## USH 151
## DANE COUNTY

STATE PROJECT NUMBER
**1111-02-78**

| STATE PROJECT | FEDERAL PROJECT | |
|---|---|---|
| | PROJECT | CONTRACT |
| 1111-02-78 | WISC 2016411 | 1 |
| | | |
| | | |
| | | |




**BEGIN PROJECT**
**STA. 539+07.00**
Y = 519,099.57
X = 856,450.53

**BEGIN CONSTRUCTION**
**STA. 537+99.63**

**END PROJECT/END CONSTRUCTION**
**STA. 745+08.00**

**STRUCTURE B-13-275, B-13-276**

**STRUCTURE B-13-272, B-13-273**

**STRUCTURE B-13-268, B-13-269**

**SIGN STRUCTURE S-13-216**

**SIGN STRUCTURE S-13-215**

**STRUCTURE B-13-270, B-13-271**

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 3.902 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), DANE COUNTY ZONE, NAD 83 (2011).

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 2012 (NAVD 88).


ORIGINAL PLANS PREPARED BY:

STRAND ASSOCIATES®
910 WEST WINGRA DRIVE
MADISON, WISCONSIN 53715
(608) 251-4843


WISCONSIN
BRIAN M. ANDREAS
E-28413
Madison, WI
PROFESSIONAL ENGINEER
7/27/2016

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---|---|
| Surveyor | WISDOT/STRAND ASSOCIATES, INC. |
| Designer | STRAND ASSOCIATES, INC. |
| Project Manager | DAVID LAYTON, P.E. |
| Regional Examiner | |
| Regional Supervisor | BRENDA SCHOENFELD, P.E. |
| C.O. Examiner | |

APPROVED FOR THE DEPARTMENT
DATE: 7/27/2016 (Signature)

E

## GENERAL NOTES

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.

RADIUS DIMENSIONS FOR THE CURB AND GUTTER ARE TO THE FLANGE LINE UNLESS OTHERWISE NOTED.

THE LOCATIONS OF EXISTING UTILITY FACILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. 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.

ADJUST THE LOCATIONS OF CONTRACT ITEMS UNDER THIS CONTRACT TO AVOID CONFLICTS WITH THE EXISTING UTILITY FACILITIES, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT SPECIAL PROVISIONS.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT PAVEMENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.

ALL REFERENCES TO HMA PAVEMENT 3 HT 58-28 S SHALL BE EQUIVALENT TO HMA PAVEMENT 3 HT 58-28 S 3.0% Va REGRESSION SPECIAL; ALL REFERENCES TO HMA PAVEMENT 4 HT 58-28 S SHALL BE EQUIVALENT TO HMA PAVEMENT 4 HT 58-28 S 3.0% Va REGRESSION SPECIAL.

## DESIGNER NOTES

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR STRUCTURES B-13-268, B-13-269, B-13-270, B-13-271 PROVIDED BY CORRE, INC.

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR FREEWAY TRAFFIC MANAGEMENT SYSTEM (FTMS) COMPONENTS PROVIDED BY WISDOT SOUTHWEST REGION.

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR REMAINING ITEMS PROVIDED BY STRAND ASSOCIATES, INC.

## SECTION 2 ORDER OF SHEETS


GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
FTMS
PERMANENT SIGNING/PAVEMENT MARKING
ADVANCED WARNING SIGNING
TRAFFIC SIGNALS
CONSTRUCTION STAGING DETAILS
CONSTRUCTION STAGING TYPICALS
CONSTRUCTION STAGING SHEETS
DETOURS
ALIGNMENT DETAILS
BENCHMARK/CONTROL POINT DATA


## UTILITIES

ALLIANT ENERGY - ELECTRICITY
ATTENTION: JASON HOGAN
SUITE 1000
4902 N BILTMORE LANE
MADISON, WI 53718
(608) 458-4871
E-MAIL: jasonhogan@alliantenergy.com

ATC MANAGEMENT, INC. - ELECTRICITY
ATTENTION: MIKE OLSEN
801 O'KEEFE RD.
P.O. BOX 6113
DE PERE, WI 54115-6113
(920) 338-6582
E-MAIL: molsen@atcllc.com

CHARTER COMMUNICATIONS - COMMUNICATION LINE
ATTENTION: BRANDON STORM
2701 DANIELS ST.
MADISON, WI 53718
(608) 274-3822
E-MAIL: brandon.storm@charter.com

FRONTIER COMMUNICATIONS OF WI LLC - COMMUNICATION LINE
ATTENTION: ROBERT CHURCH
2222 WEST WISCONSIN STREET
PORTAGE, WI 53901
(608) 742-1817
E-MAIL: robert.church@ftr.com

SUN PRAIRIE UTILITIES - ELECTRICITY
ATTENTION: RICK WICKLUND
125 W. MAIN ST.
SUN PRAIRIE, WI 53590
(608) 837-5500
E-MAIL: rwicklund@sunprairieutilities.com

SUN PRAIRIE UTILITIES - STREET LIGHTING
ATTENTION: RICK WICKLUND
125 W. MAIN ST.
SUN PRAIRIE, WI 53590
(608) 837-5500
E-MAIL: rwicklund@sunprairieutilities.com

SUN PRAIRIE UTILITIES - WATER
ATTENTION: RICK WICKLUND
125 W. MAIN ST.
SUN PRAIRIE, WI 53590
(608) 837-5500
E-MAIL: rwicklund@sunprairieutilities.com

WISCONSIN DEPARTMENT OF TRANSPORTATION - COMMUNICATION LINE
ATTENTION: KYLE HEMP
2101 WRIGHT STREET
MADISON, WI 53704
(608) 2465367
E-MAIL: kyle.hemp@dot.wi.gov

WINDSTREAM KDL - COMMUNICATION LINE
ATTENTION: JIM KOSTUCH
13935 BISHOPS DRIVE
BROOKFIELD, WI 53005
(262) 792-7938
E-MAIL: james.kostuch@windstream.com

WE ENERGIES - GAS/PETROLEUM
ATTENTION: LATROY BRUMFIELD
ROOM A299
333 WEST EVERETT ST.
MILWAUKEE, WI 53203
(414) 221-5617
E-MAIL: LaTroy.Brumfield@we-energies.com
CONSTRUCTION FIELD CONTACT:
JOHN ANDERSON (920) 262-6884

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

### WISDOT CONTACT

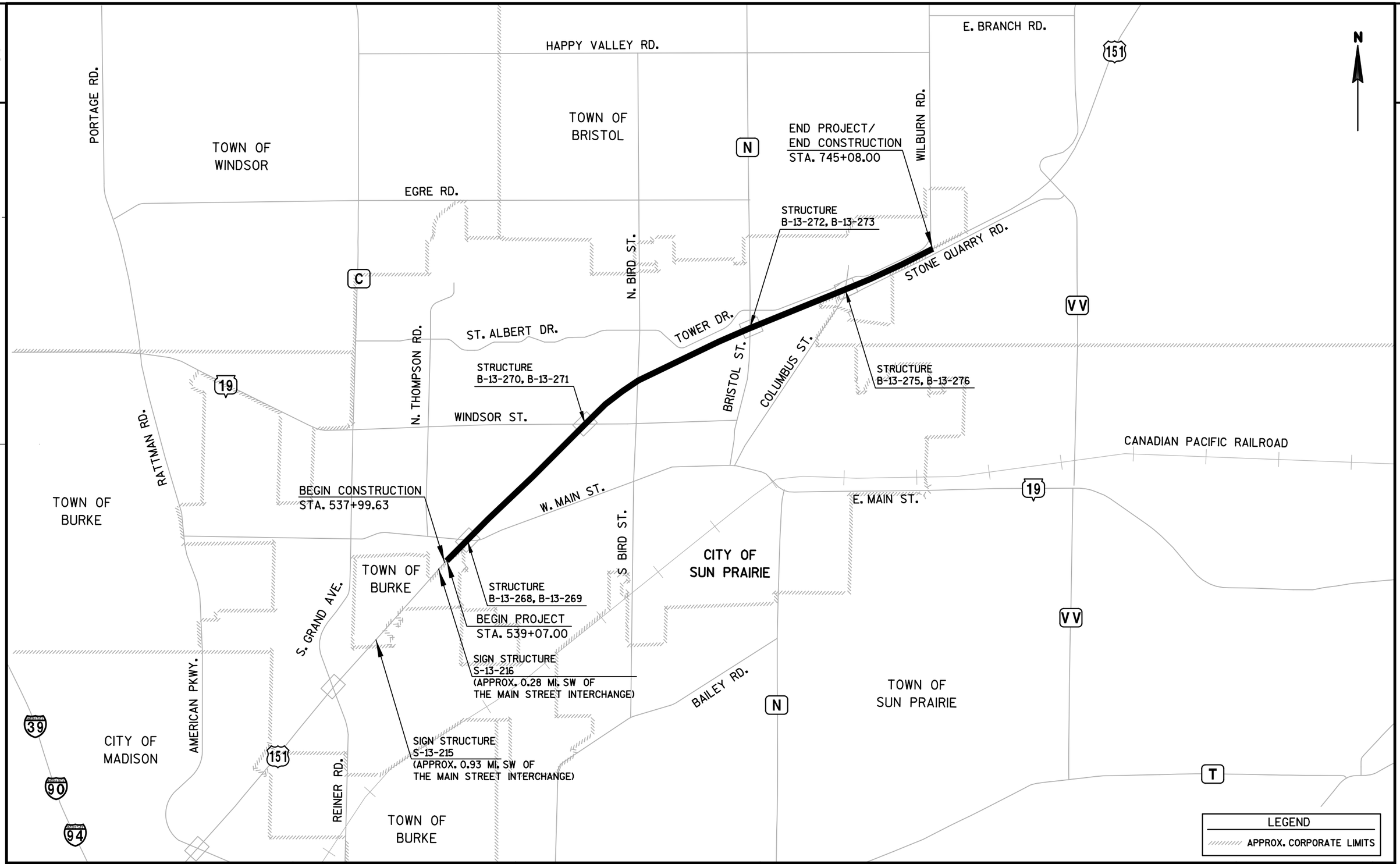
DAVID LAYTON, P.E.
WISDOT SW REGION-MADISON OFFICE
2101 WRIGHT STREET
MADISON, WI 53704
(608) 246-3821
E-MAIL: David.Layton@dot.wi.gov

### DESIGN CONTACT

KEN SWANSON, P.E.
STRAND ASSOCIATES, INC.
910 WEST WINGRA DRIVE
MADISON, WI 53715
(608) 251-4843
E-MAIL: ken.swanson@strand.com

### DNR LIAISON

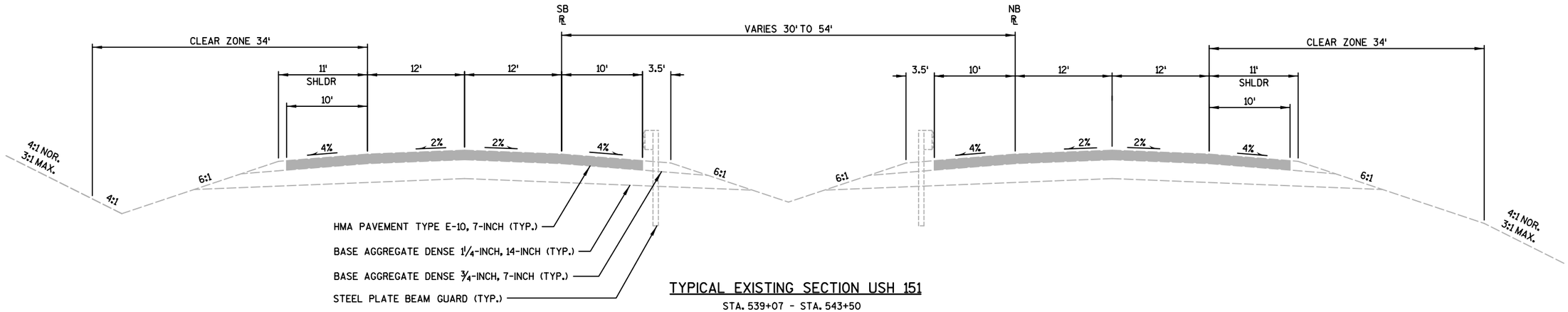
ERIC HEGGELUND
SOUTH CENTRAL REGION
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
(608) 275-3301
E-MAIL: eric.heggelund@wisconsin.gov




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PROJECT OVERVIEW | SHEET | E |
|---|---|---|---|---|---|

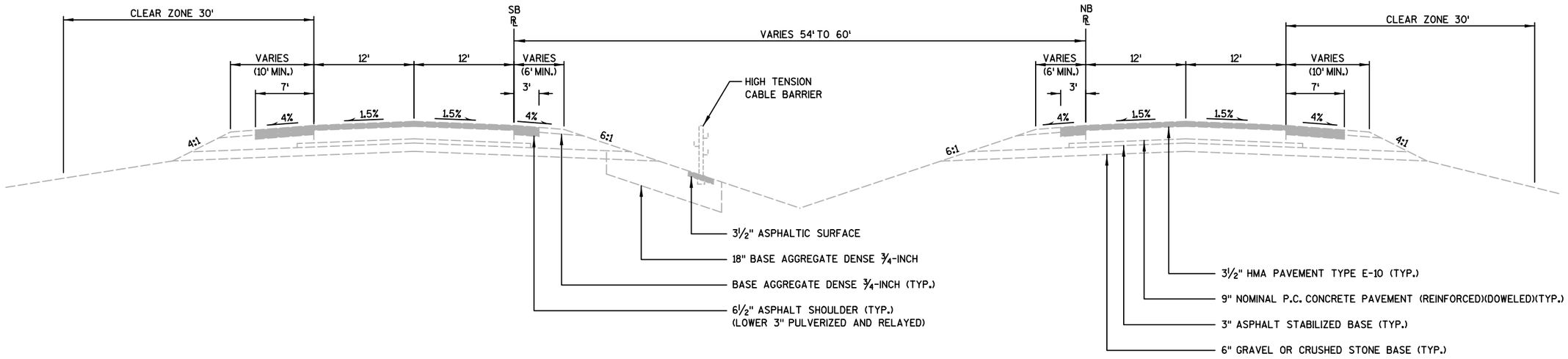


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\020201_po.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42




TYPICAL EXISTING SECTION USH 151

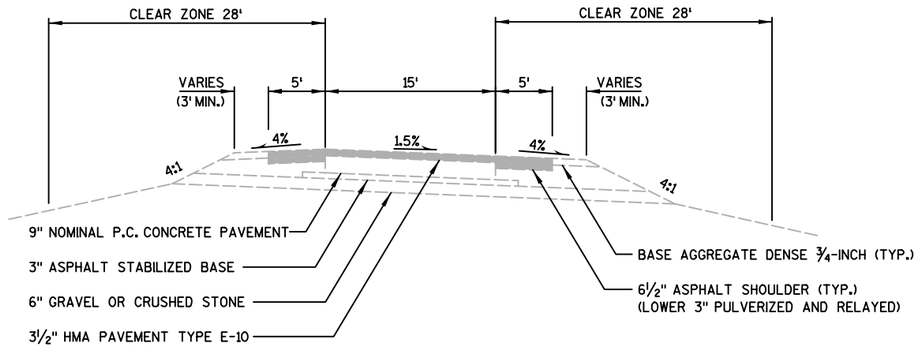
STA. 539+07 - STA. 543+50




TYPICAL EXISTING SECTION USH 151

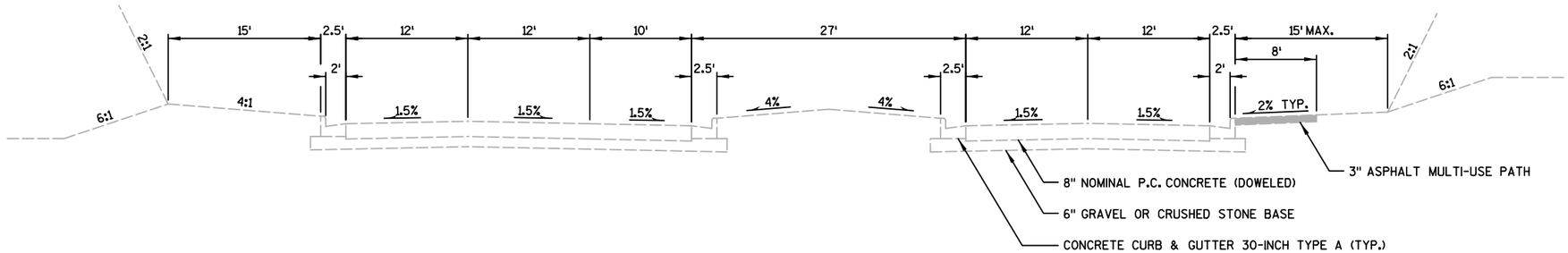
STA. 543+50 - STA. 745+08

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TYPICAL EXISTING SECTIONS | SHEET 4 | E |
|---|---|---|---|---|---|

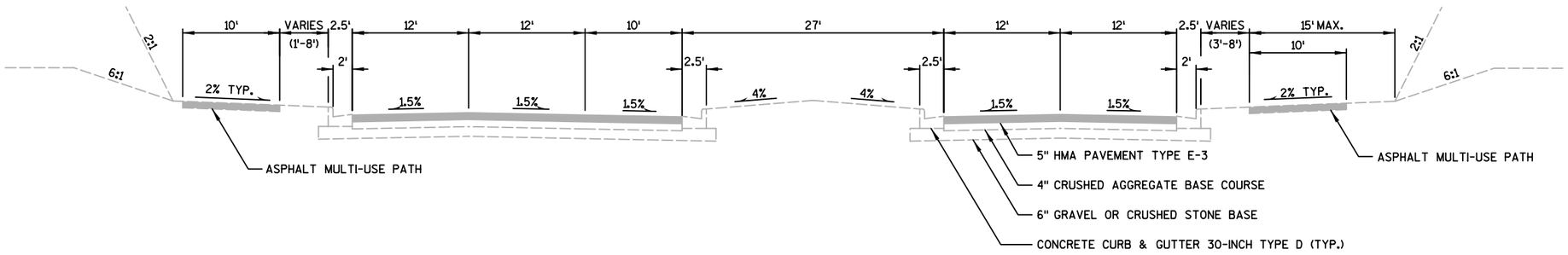



## TYPICAL EXISTING SECTION - RAMPS

MAIN ST. - NB ENTRANCE RAMP & SB EXIT RAMP ONLY
STH 19 - ALL RAMPS
CTH N - ALL RAMPS

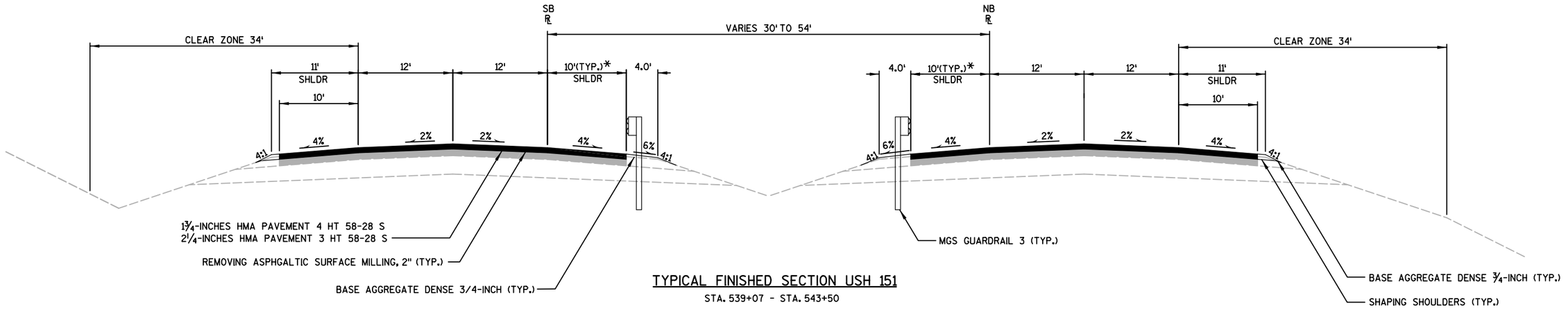



## TYPICAL EXISTING SECTION - STH 19




## TYPICAL EXISTING SECTION - CTH N

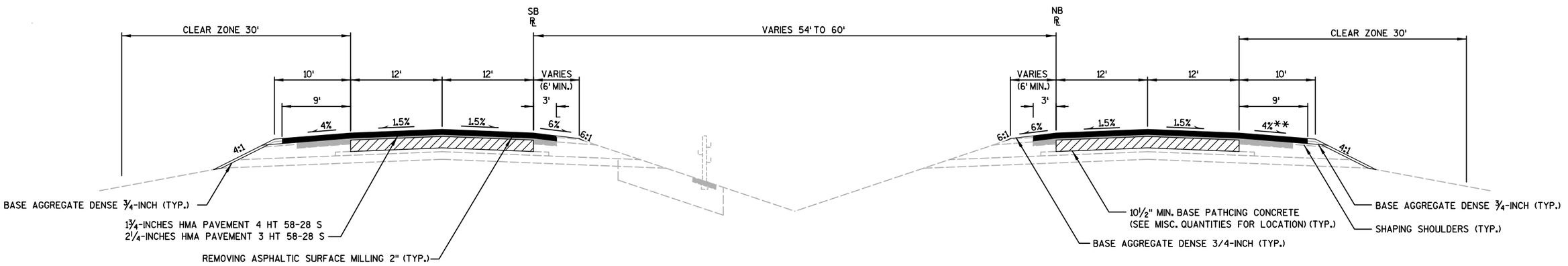
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TYPICAL EXISTING SECTIONS | SHEET 5 | E |
|---|---|---|---|---|---|




TYPICAL FINISHED SECTION USH 151

STA. 539+07 - STA. 543+50

* PAVED SHOULDER VARIES FROM
10' TO 6' STA. 544+90 TO STA. 546+90

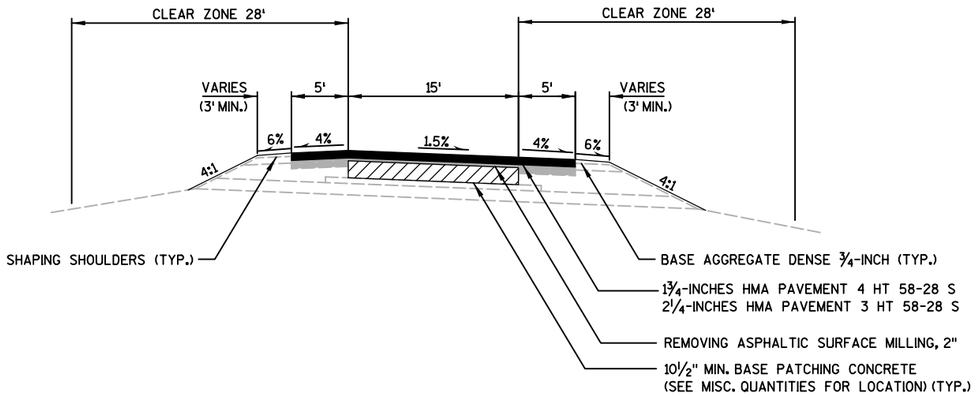



TYPICAL FINISHED SECTION USH 151

STA. 543+50 - STA. 745+08

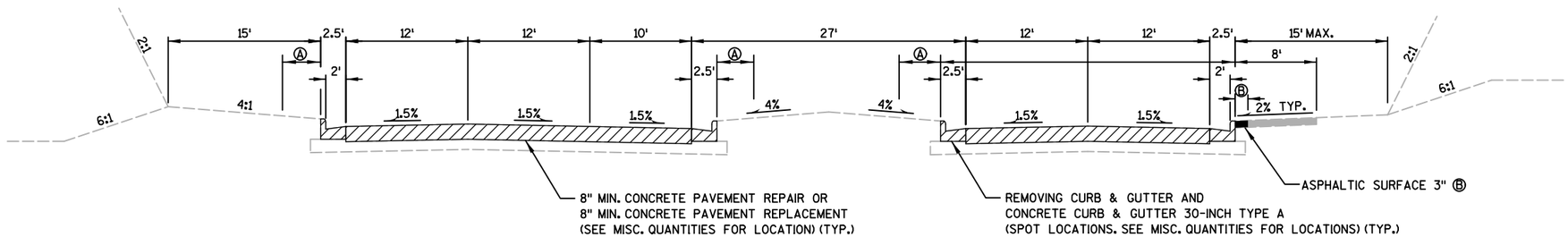
** SHOULDER CROSS SLOPE VARIES
4% TO 6% STA. 632+75.5 TO STA. 633+13
6% TO 4% STA. 634+00 TO STA. 634+37.5

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TYPICAL FINISHED SECTIONS | SHEET 6 | E |
|---|---|---|---|---|---|




## TYPICAL FINISHED SECTION - RAMPS

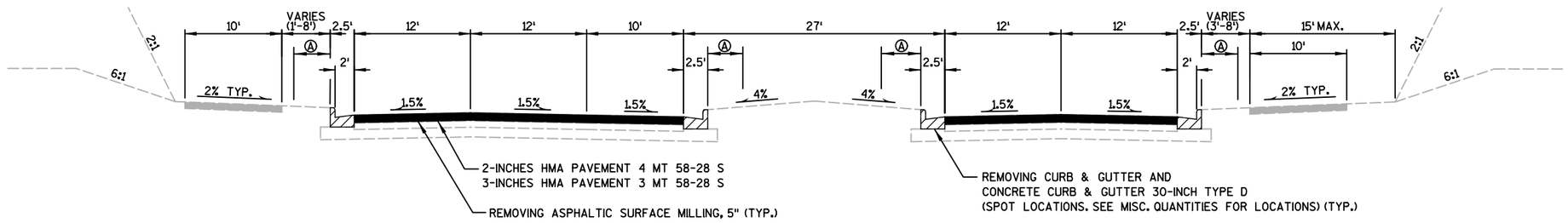
MAIN ST. - NB ENTRANCE RAMP & SB EXIT RAMP ONLY
STH 19 - ALL RAMPS
CTH N - ALL RAMPS




Ⓐ TYP. 3' ADJACENT TO CURB AND GUTTER REMOVAL AREAS. TOPSOIL, SEEDING MIXTURE NO 10, SEEDING TEMPORARY, FERTILIZER TYPE B, AND MULCHING (SEE MISC. QUANTITIES FOR LOCATION) (TYP.)

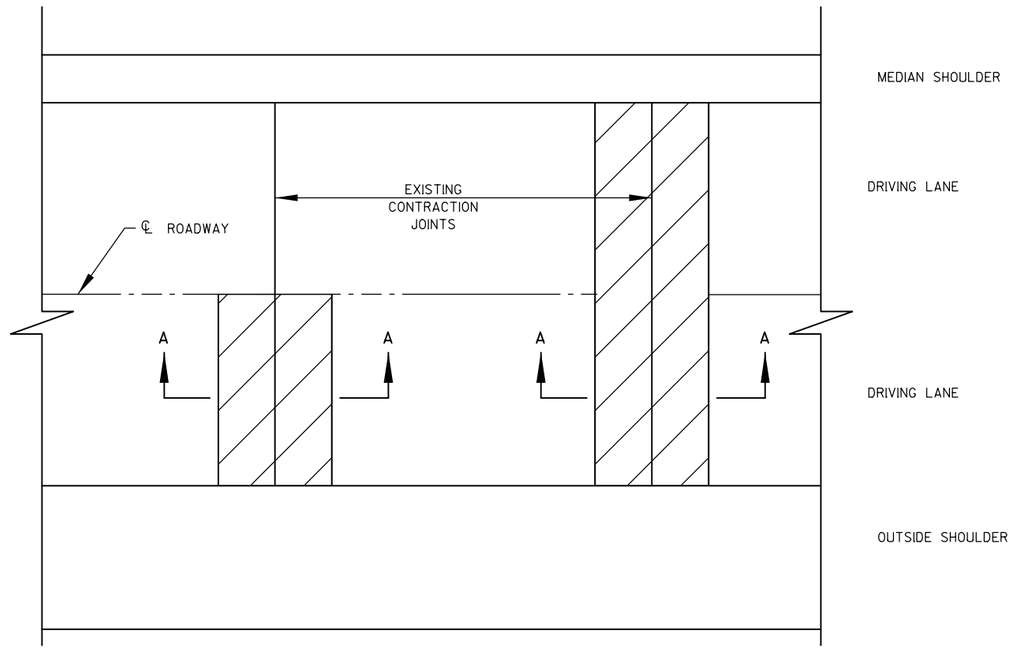
Ⓑ TYP. 2' ADJACENT TO CURB AND GUTTER REMOVAL AREAS. SAWING ASPHALT, REMOVING ASPHALTIC SURFACE, BASE AGGREGATE DENSE 3/4-INCH, AND ASPHALTIC SURFACE.

## TYPICAL FINISHED SECTION - STH 19

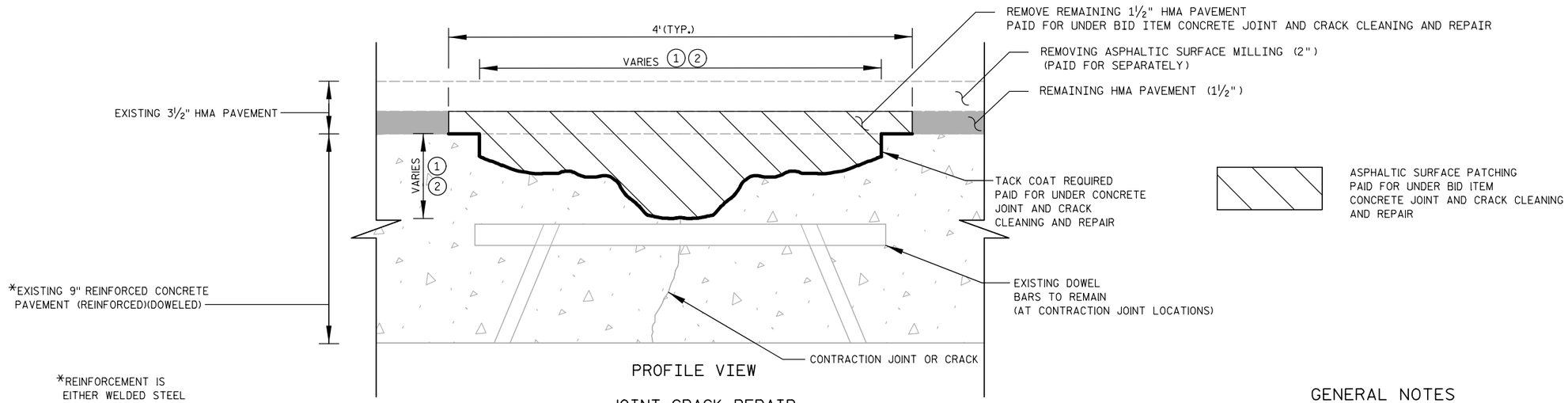



## TYPICAL FINISHED SECTION - CTH N

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TYPICAL FINISHED SECTIONS | SHEET 7 | E |
|---|---|---|---|---|---|




PLAN VIEW
JOINT REPAIR




PROFILE VIEW

JOINT/CRACK REPAIR
(SECTION A-A)

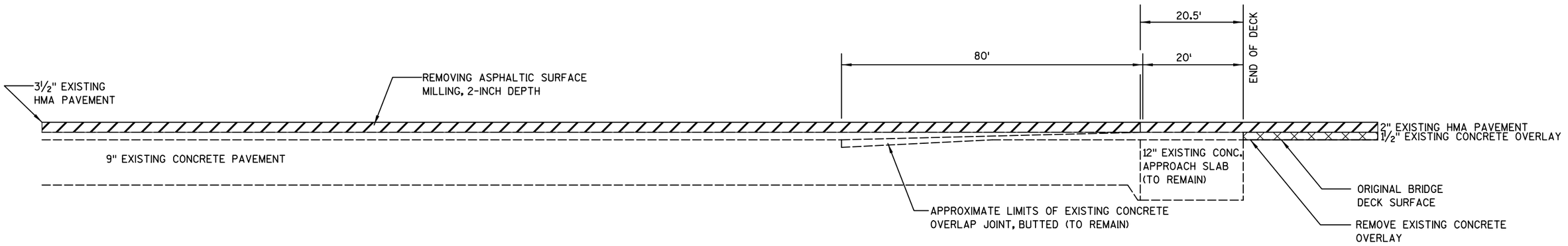
*REINFORCEMENT IS
EITHER WELDED STEEL
WIRE FABRIC OR EXPANDED
METAL MESH.

## GENERAL NOTES

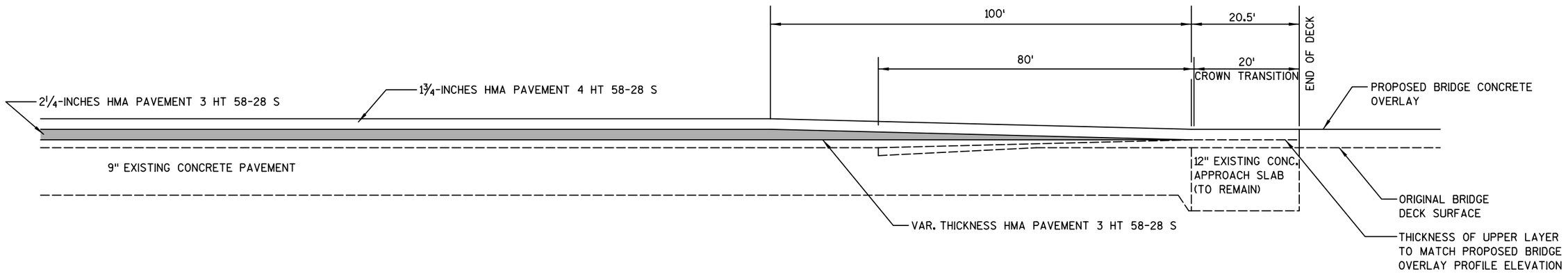
1. REMOVE ALL UNSOUND AND DETERIORATED CONCRETE MATERIAL, TO A MAXIMUM OF ½ THE PAVEMENT DEPTH OR TOP OF DOWEL BARS.
2. BLOW OUT REPAIR AREA WITH 80 PSI MINIMUM COMPRESSED AIR.

# CONCRETE JOINT AND CRACK CLEANING AND REPAIR

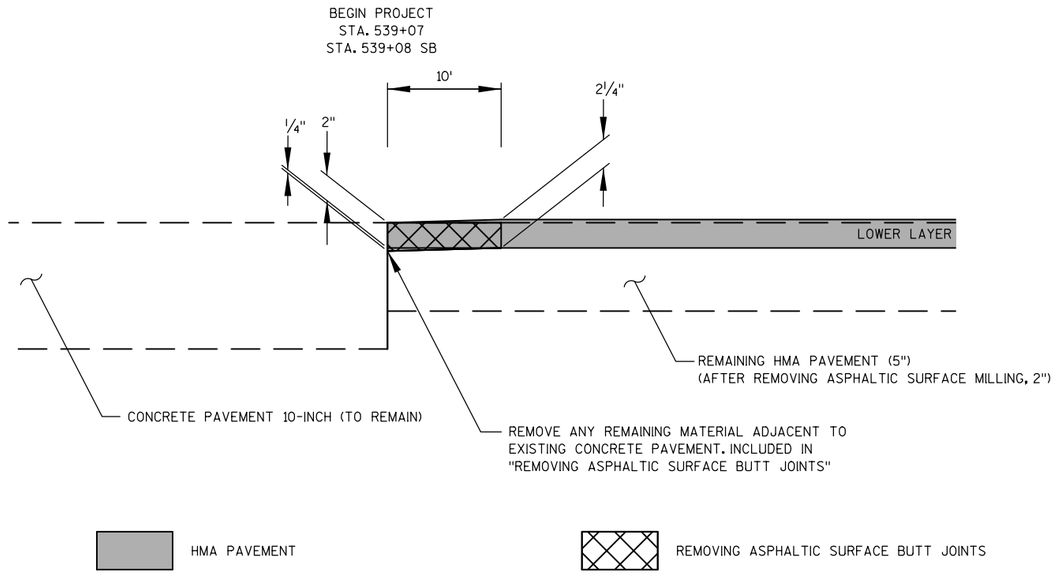
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CONSTRUCTION DETAILS | SHEET 8 | E |
|---|---|---|---|---|---|



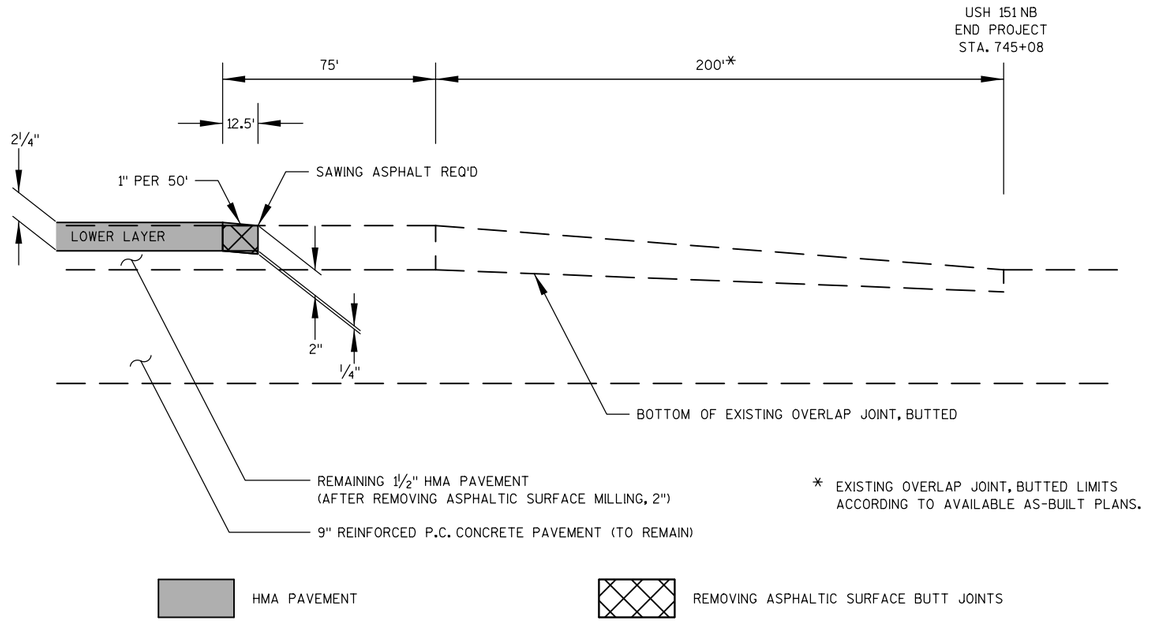

**PAVEMENT REMOVALS AT STRUCTURE ENTRANCE/EXIT**



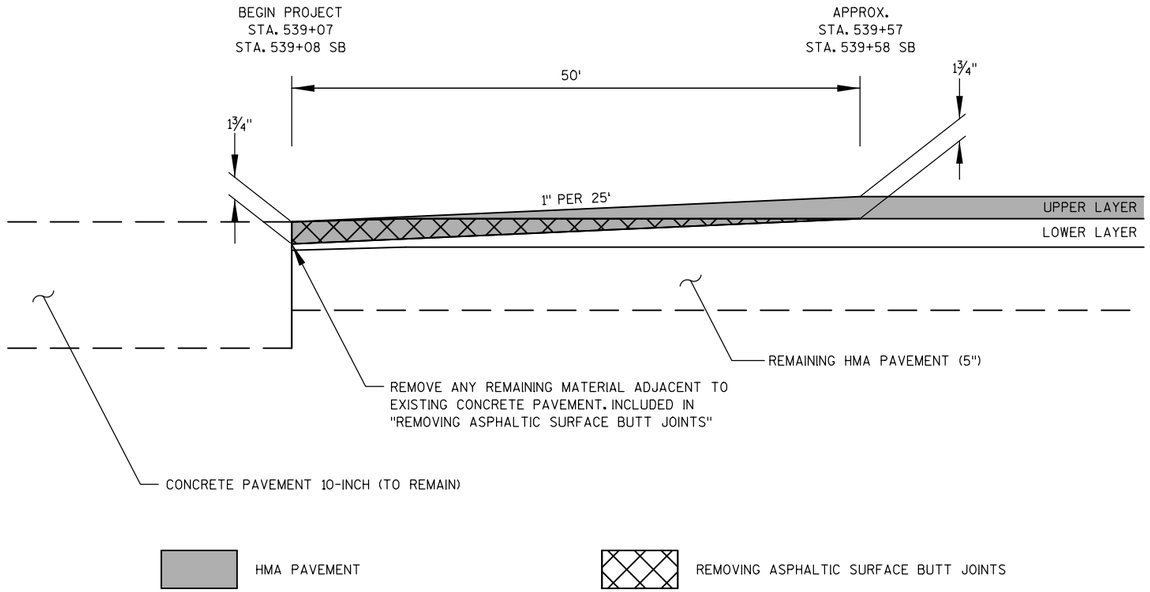

**PAVEMENT END TAPER AT STRUCTURE ENTRANCE/EXIT (2 LAYERS)**



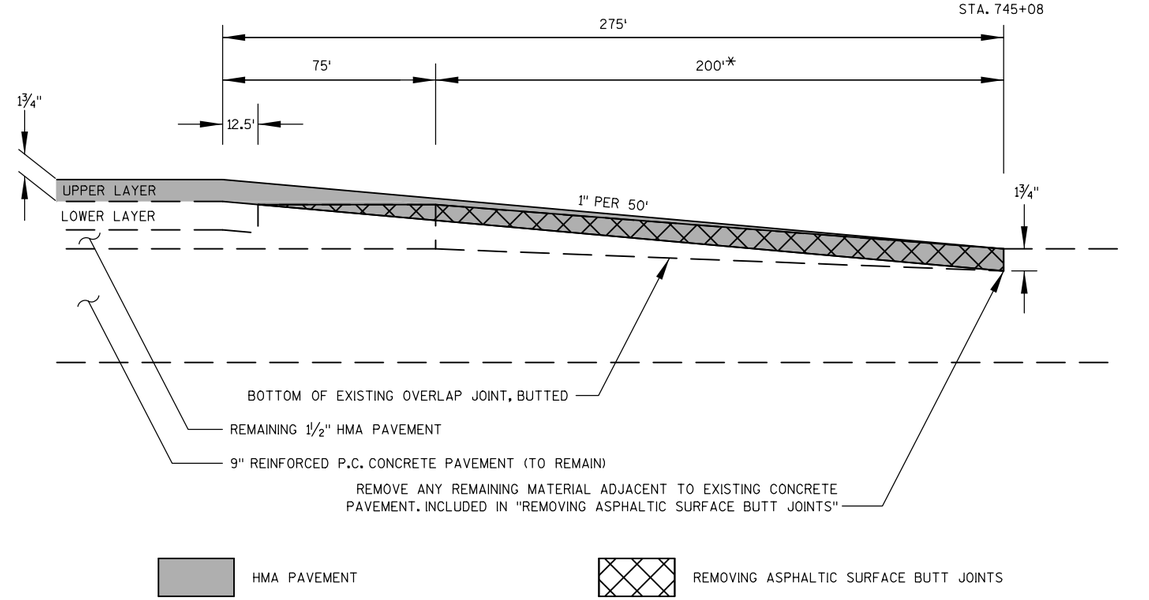

## LOWER PAVEMENT LAYER




## LOWER PAVEMENT LAYER



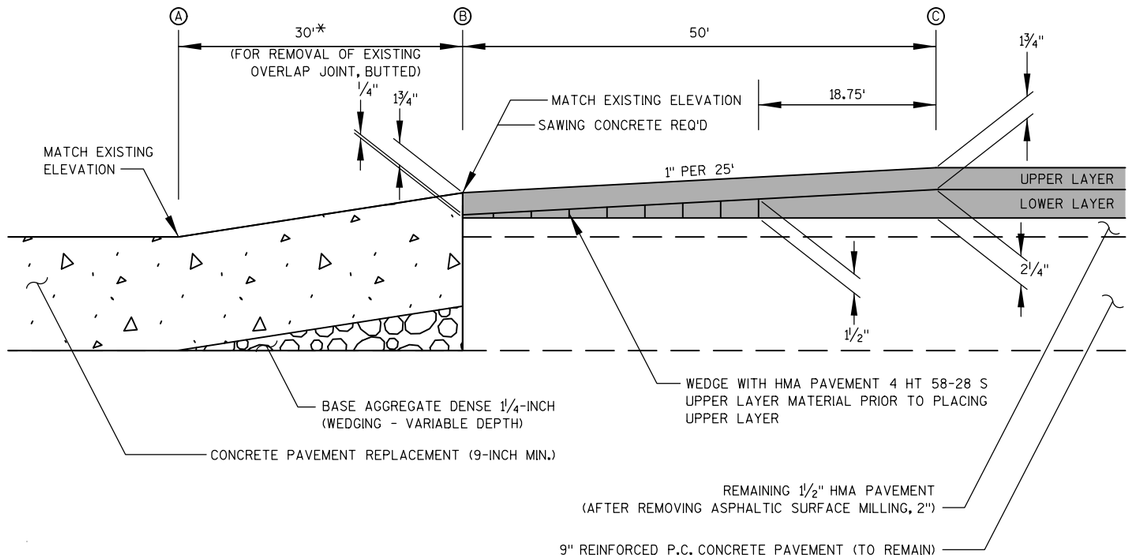

## UPPER PAVEMENT LAYER
## DETAIL FOR BEGIN PROJECT - USH 151 NORTHBOUND/SOUTHBOUND




## UPPER PAVEMENT LAYER
## DETAIL FOR END PROJECT - USH 151 NORTHBOUND

2

* EXISTING OVERLAP JOINT, BUTTED LIMITS
ACCORDING TO AVAILABLE AS-BUILT PLANS

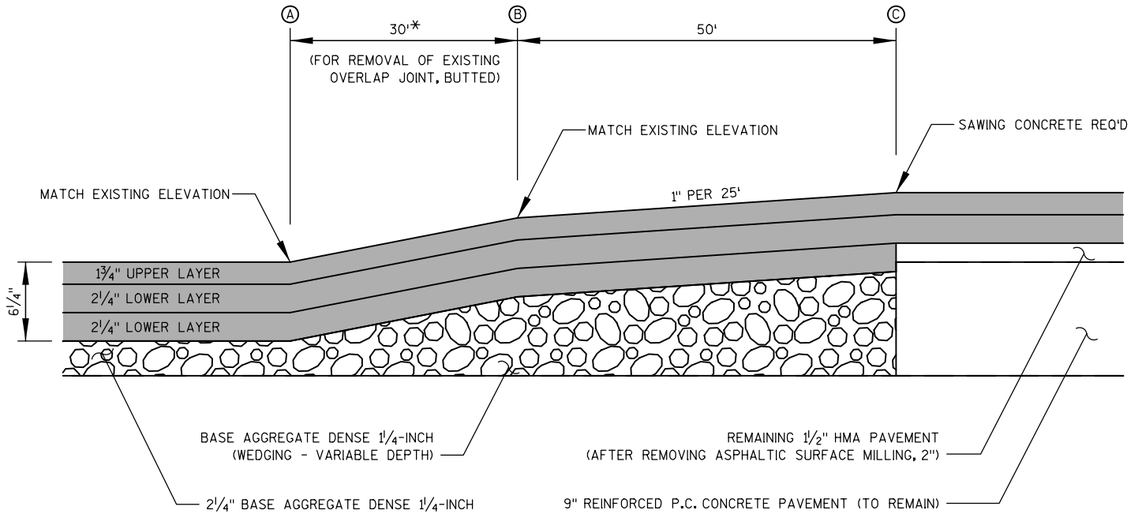



HMA PAVEMENT

| RAMP | LOCATION | | |
|---|---|---|---|
| | A | B | C |
| WA | 21+27 WA | 20+97 WA | 20+47 WA |
| WB | 10+94 WB | 11+24 WB | 11+74 WB |
| WC | 10+91 WC | 11+21 WC | 11+71 WC |
| WD | 17+37 WD | 17+07 WD | 16+57 WD |

## RAMP OVERLAP JOINT, BUTTED DETAIL - USH 151 ENTRANCE / EXIT RAMPS AT STH 19

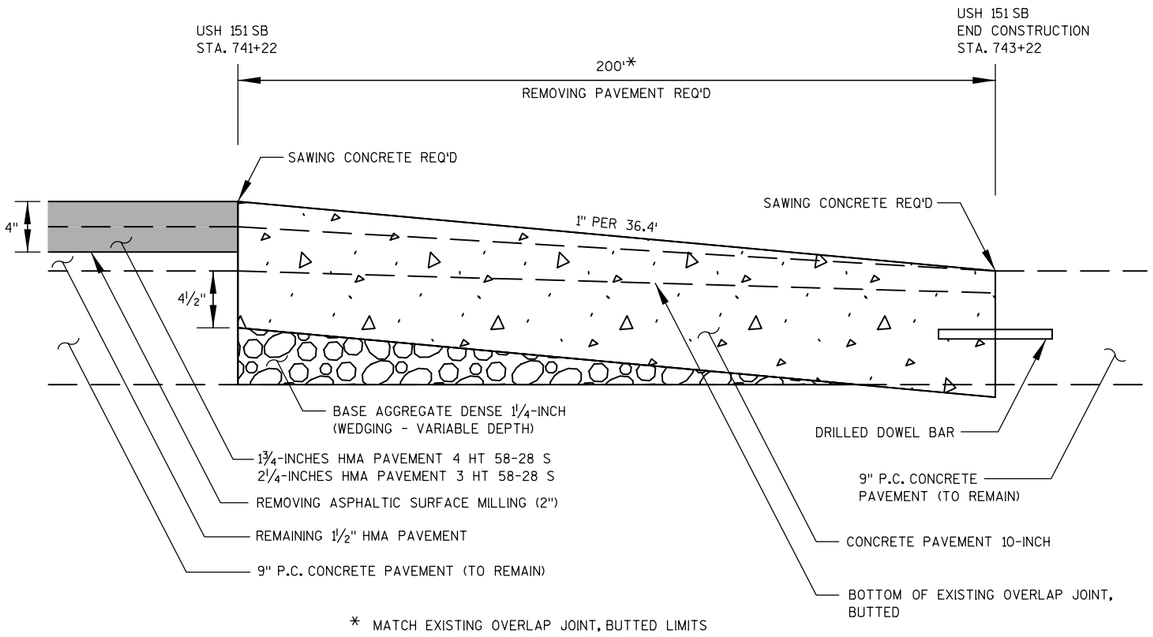
* EXISTING OVERLAP JOINT, BUTTED LIMITS
ACCORDING TO AVAILABLE AS-BUILT PLANS




HMA PAVEMENT

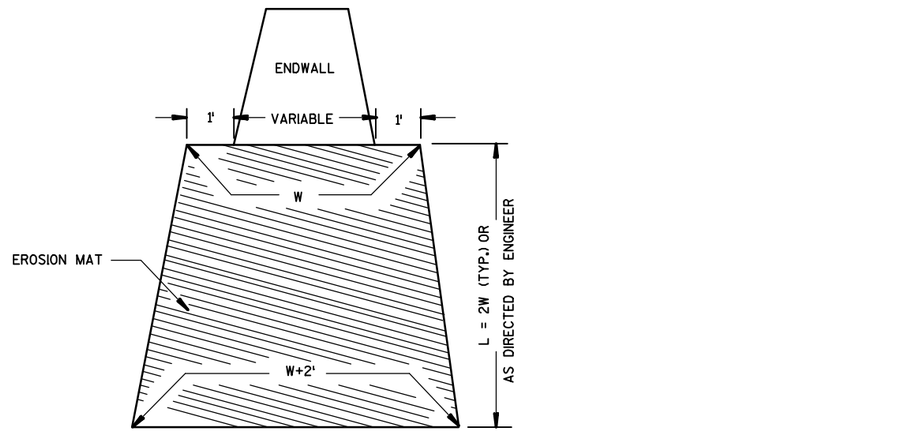
| RAMP | LOCATION | | |
|---|---|---|---|
| | A | B | C |
| BA | 20+79 BA | 20+49 BA | 19+99 BA |
| BB | 11+11 BB | 11+41 BB | 11+91 BB |
| BC | 11+06 BC | 11+36 BC | 11+86 BC |
| BD | 19+31 BD | 19+01 BD | 18+51 BD |

## PAVEMENT TRANSITION DETAIL - USH 151 ENTRANCE / EXIT RAMPS AT CTH N

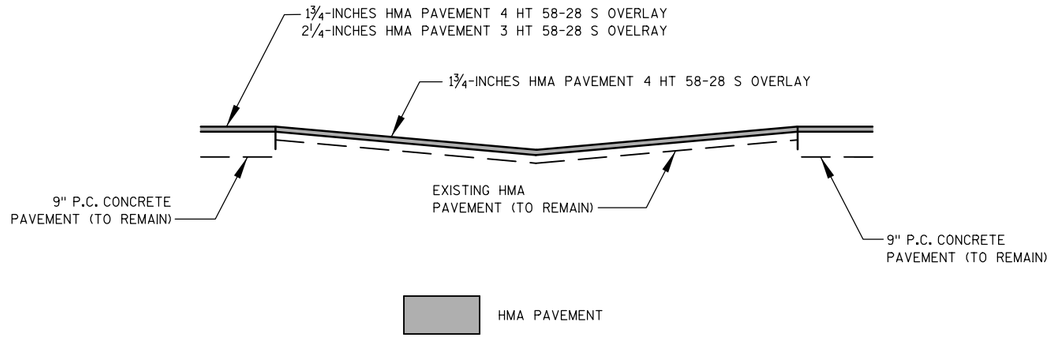



* MATCH EXISTING OVERLAP JOINT, BUTTED LIMITS

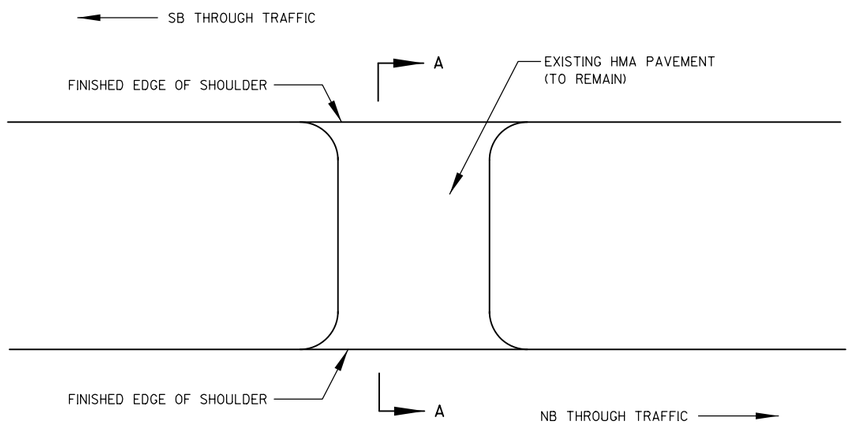
## DETAIL FOR END PROJECT - USH 151 SOUTHBOUND




## EROSION MAT TREATMENT AT CULVERTS



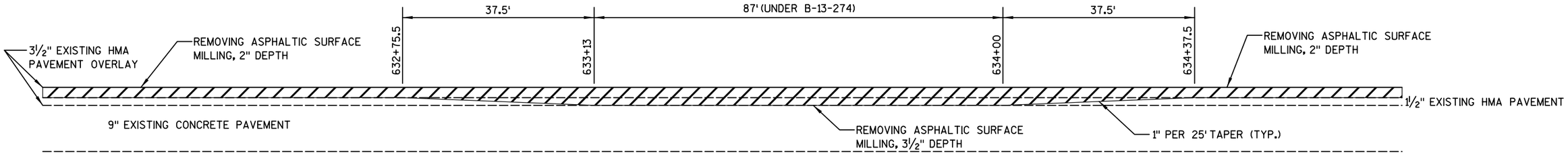

SECTION A - A
STA. 649+05 & 701+20



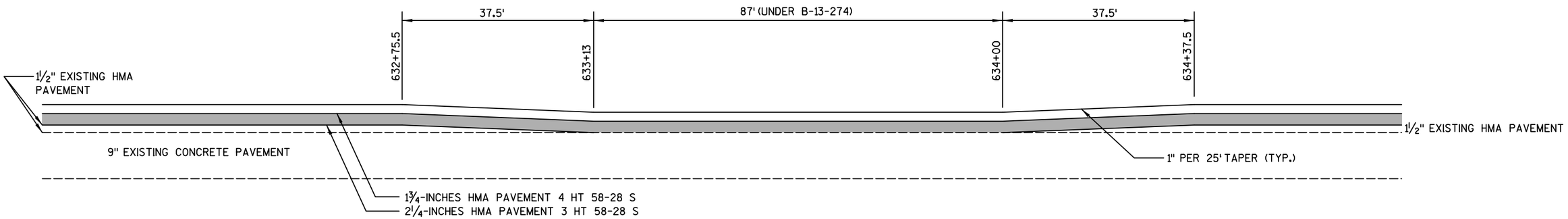

PLAN VIEW

## PAVING DETAIL FOR MAINTENANCE CROSSOVER

2

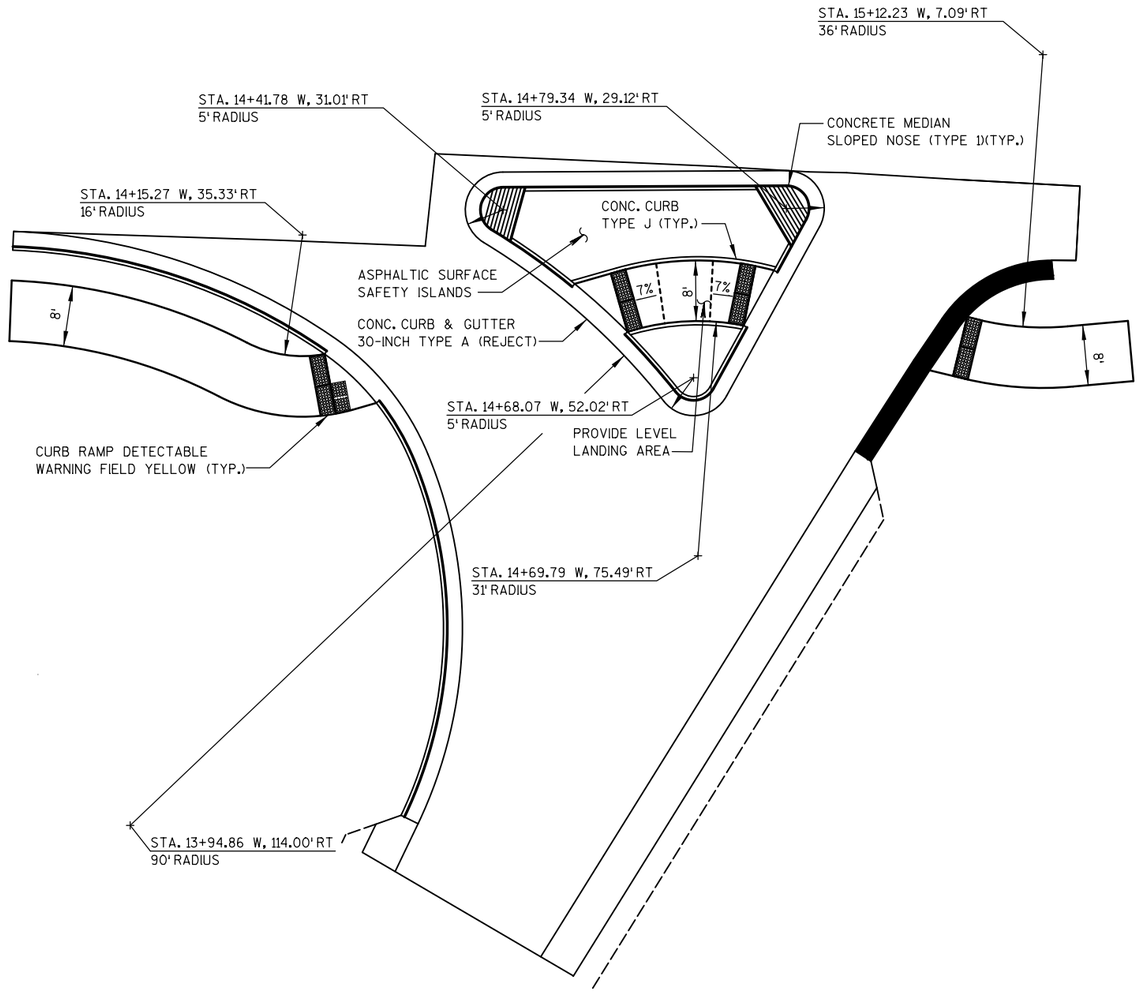



NB PAVEMENT REMOVALS AT BIRD STREET (B-13-274)

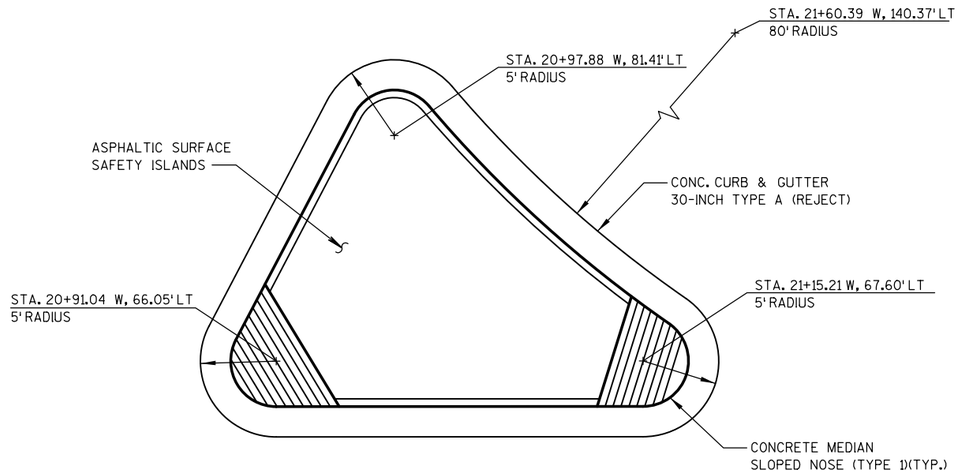



NB PAVEMENT TAPERS AT BIRD STREET (B-13-274)

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CONSTRUCTION DETAIL: NB PAVEMENT AT BIRD ST. | SHEET 13 | E |
|---|---|---|---|---|---|




ISLAND LAYOUT DETAIL
STH 19 SB ENTRANCE RAMP

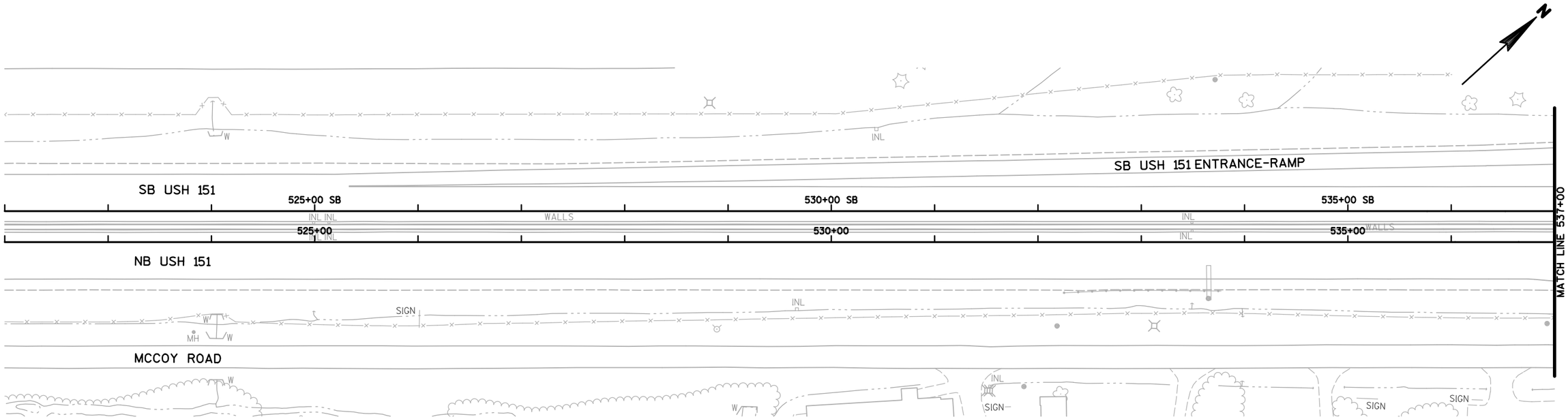


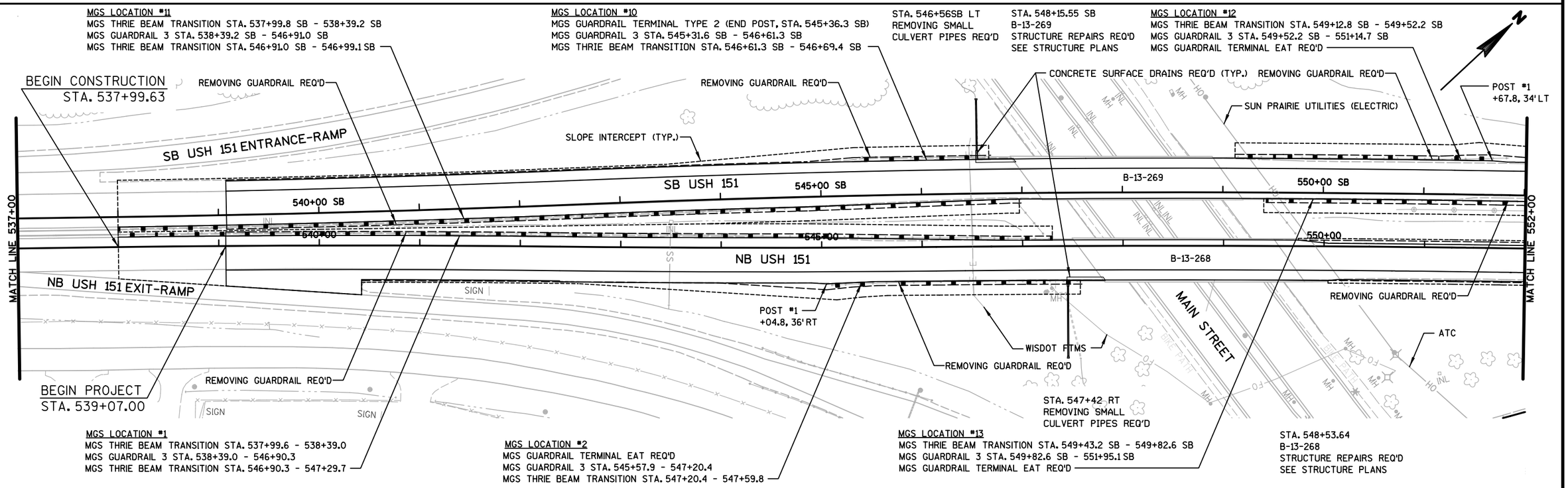

ISLAND LAYOUT DETAIL
STH 19 NB ENTRANCE RAMP

2

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CONSTRUCTION DETAILS | SHEET 14 | E |
|---|---|---|---|---|---|

2




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET | E |
|---|---|---|---|---|---|



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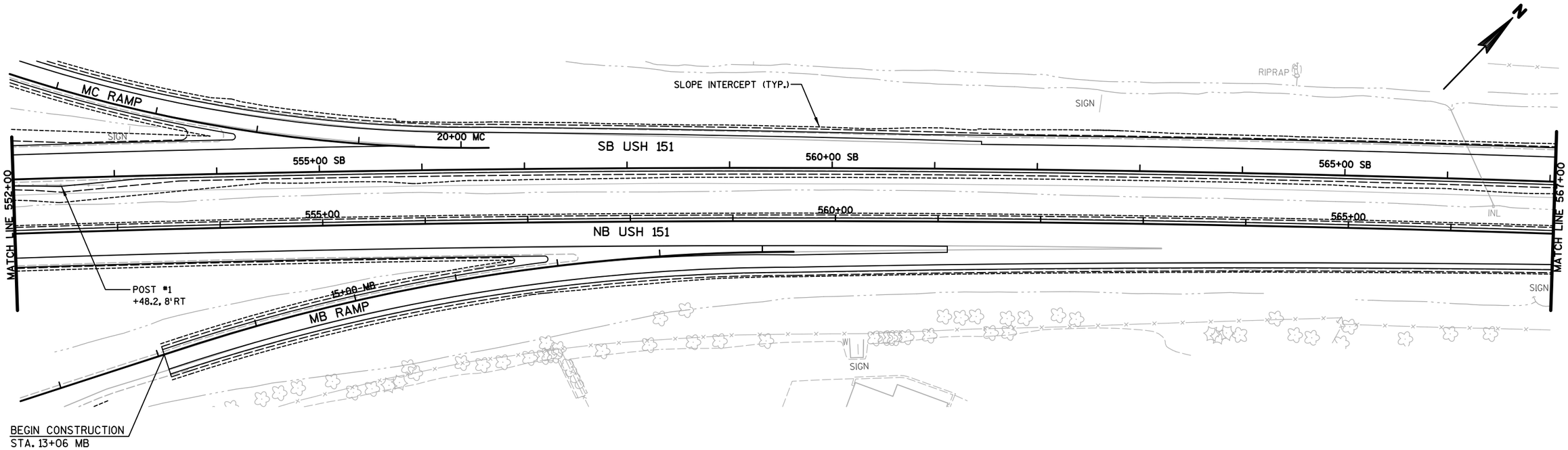


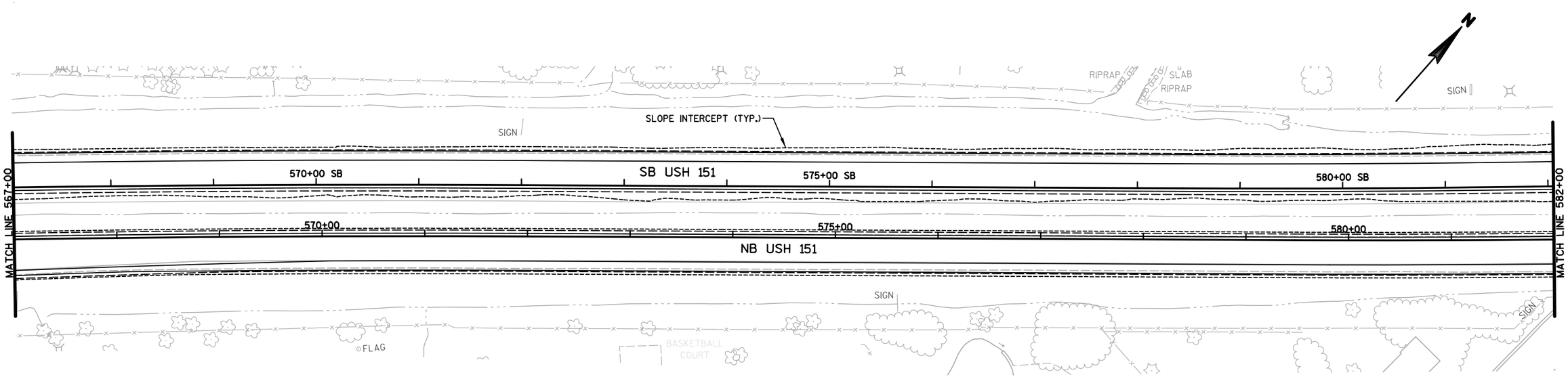


| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET 16 | E |
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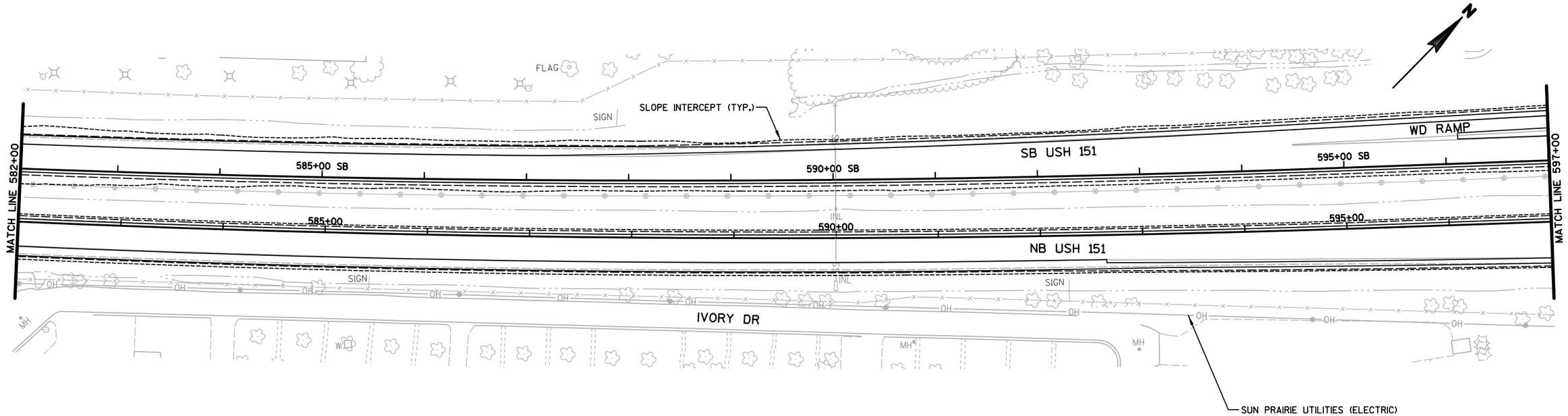
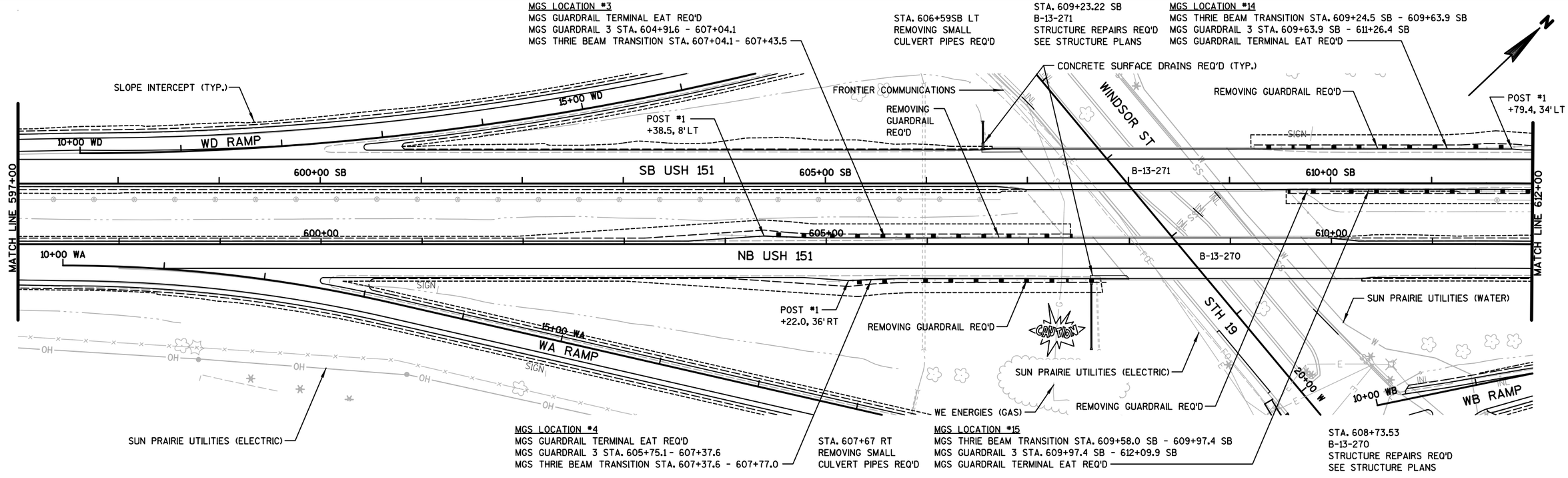



MGS LOCATION #3
MGS GUARDRAIL TERMINAL EAT REQ'D
MGS GUARDRAIL 3 STA. 604+91.6 - 607+04.1
MGS THRIE BEAM TRANSITION STA. 607+04.1 - 607+43.5

STA. 606+59SB LT
REMOVING SMALL
CULVERT PIPES REQ'D

STA. 609+23.22 SB
B-13-271
STRUCTURE REPAIRS REQ'D
SEE STRUCTURE PLANS

MGS LOCATION #14
MGS THRIE BEAM TRANSITION STA. 609+24.5 SB - 609+63.9 SB
MGS GUARDRAIL 3 STA. 609+63.9 SB - 611+26.4 SB
MGS GUARDRAIL TERMINAL EAT REQ'D



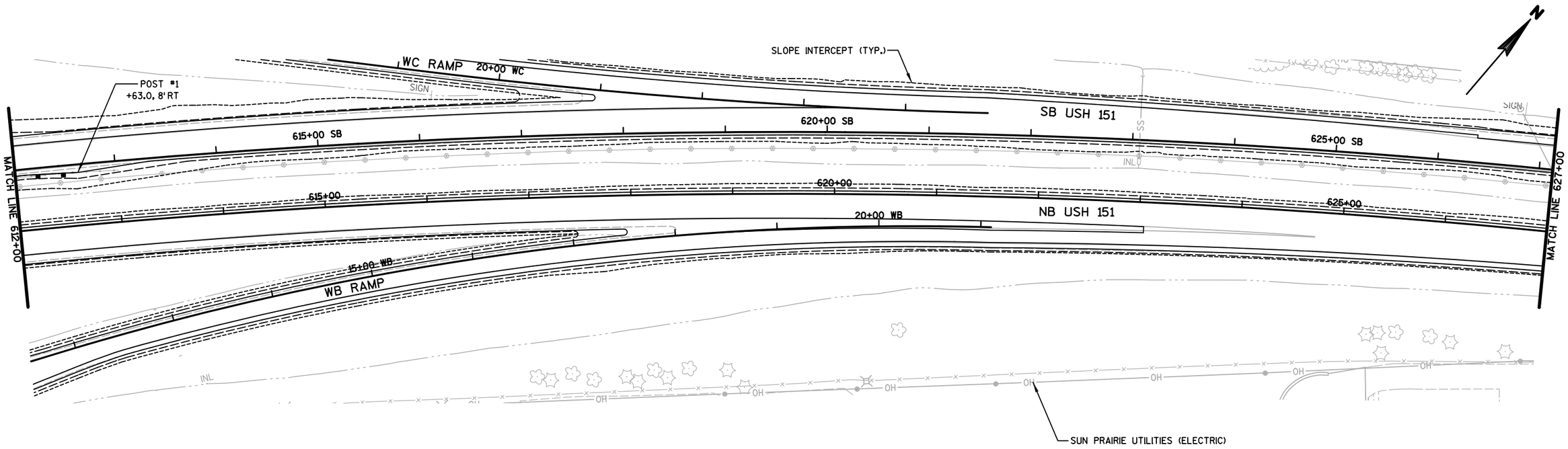

MGS LOCATION #4
MGS GUARDRAIL TERMINAL EAT REQ'D
MGS GUARDRAIL 3 STA. 605+75.1 - 607+37.6
MGS THRIE BEAM TRANSITION STA. 607+37.6 - 607+77.0

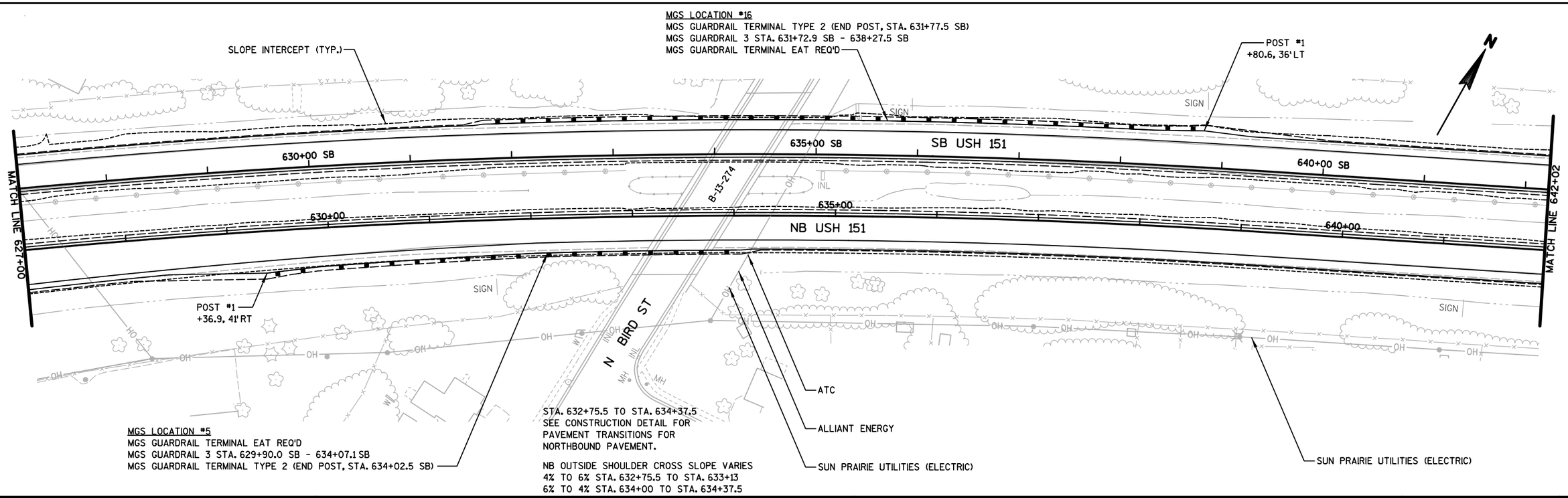
STA. 607+67 RT
REMOVING SMALL
CULVERT PIPES REQ'D

MGS LOCATION #15
MGS THRIE BEAM TRANSITION STA. 609+58.0 SB - 609+97.4 SB
MGS GUARDRAIL 3 STA. 609+97.4 SB - 612+09.9 SB
MGS GUARDRAIL TERMINAL EAT REQ'D

STA. 608+73.53
B-13-270
STRUCTURE REPAIRS REQ'D
SEE STRUCTURE PLANS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET 17 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET | E |
|---|---|---|---|---|---|



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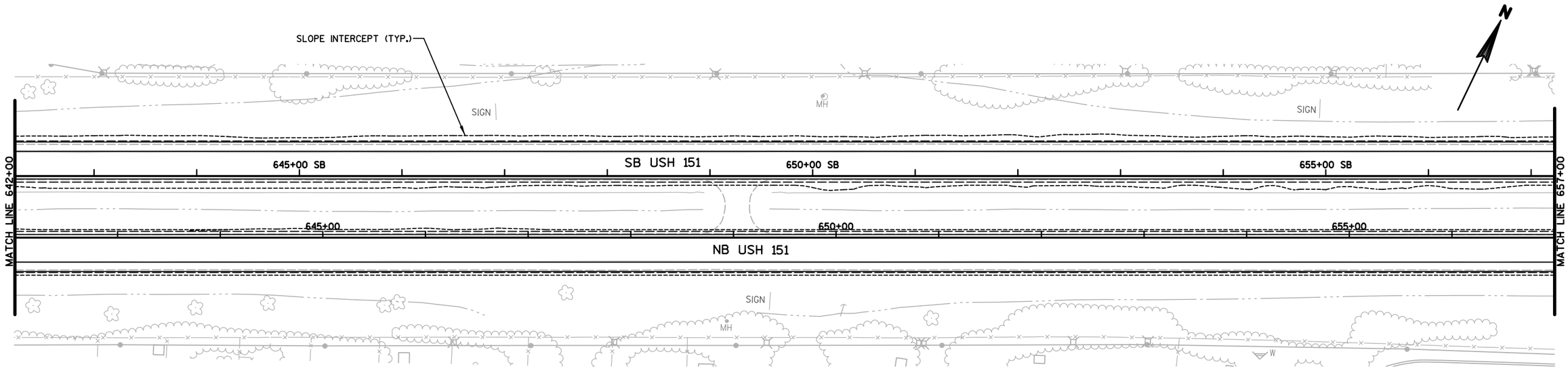
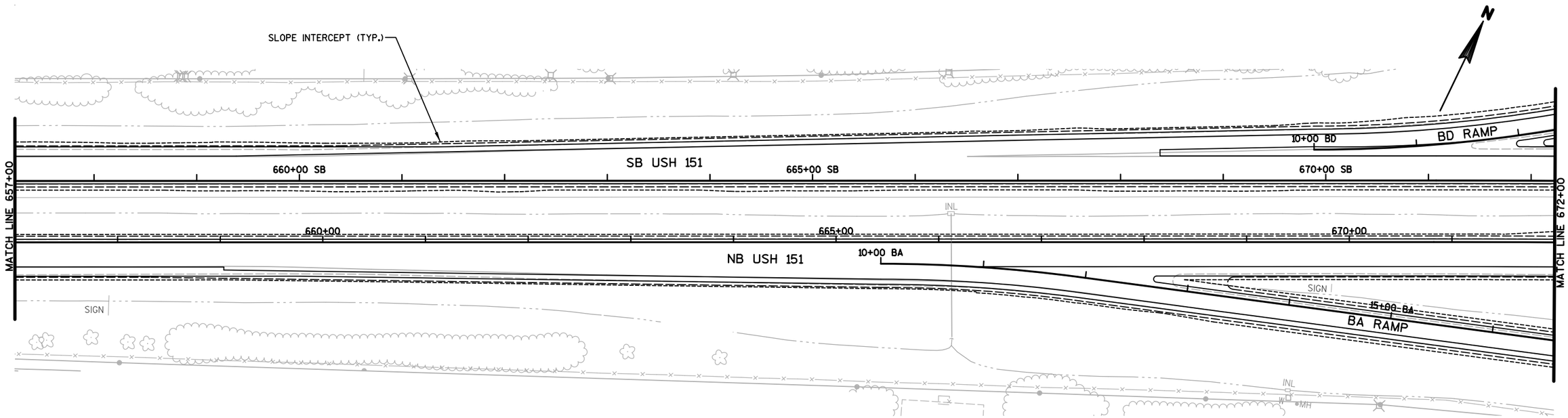
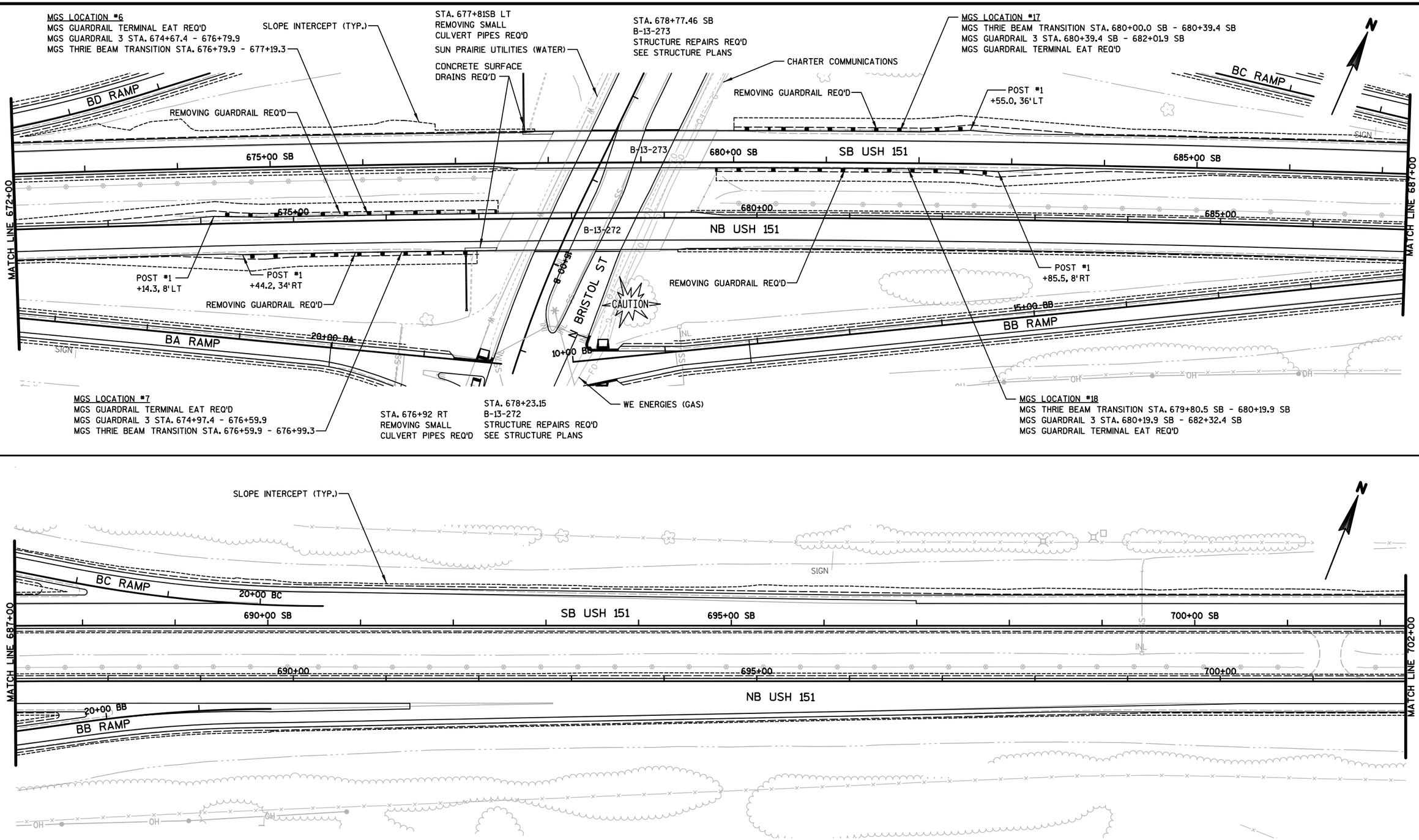



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET 19 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET 20 | E |
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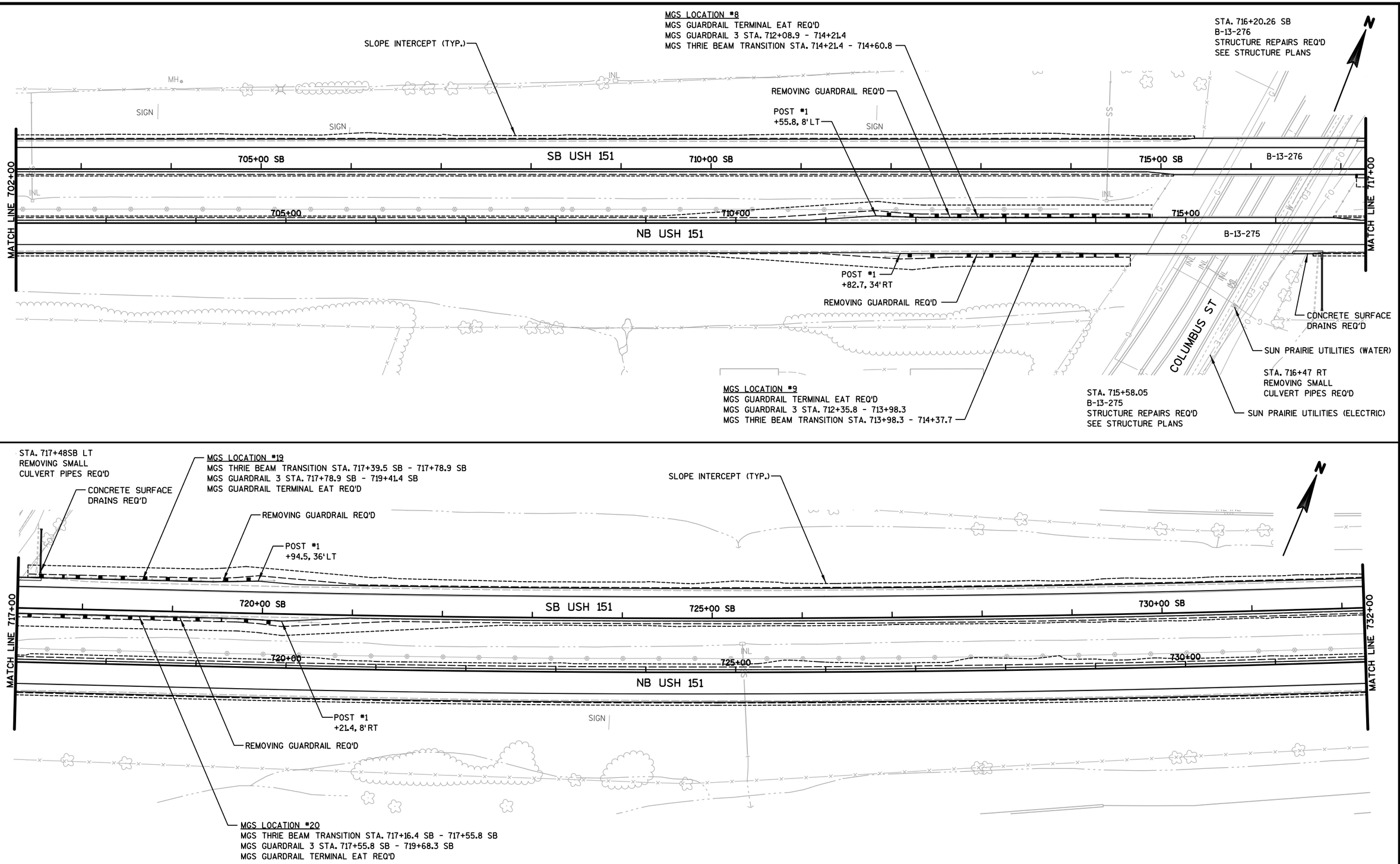


| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET | E |
|---|---|---|---|---|---|



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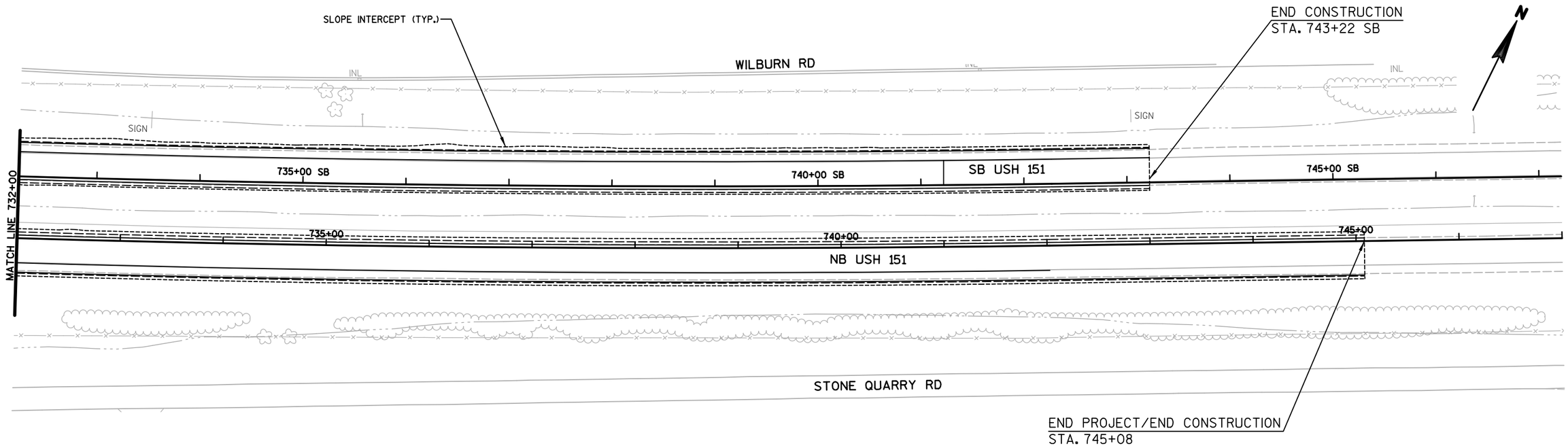


| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS | SHEET | E |
|---|---|---|---|---|---|



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NOTE:

1. CONCRETE REPAIR WORK LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS ARE TO BE DETERMINED BY THE FIELD ENGINEER.

2. CONCRETE CURB AND GUTTER REMOVAL AS SHOWN IS FROM JOINT TO JOINT UNLESS OTHERWISE DIRECTED BY THE FIELD ENGINEER.

| PT | NORTHING | EASTING | STATION | OFFSET |
|---|---|---|---|---|
| 1 | 860,959.29 | 523,872.07 | 13+76.07 | 116.08' RT |
| 2 | 860,984.68 | 523,909.22 | 14+00.79 | 78.16' RT |
| 3 | 860,961.57 | 523,899.68 | 13+77.60 | 88.41' RT |

SUN PRAIRIE UTILITIES (ELECTRIC)
ALLIANT ENERGY
ATC

LOIS DRIVE

BEGIN CONSTRUCTION
STA. 13+23.43 W

STH 19 / WINDSOR STREET

SEE CONSTRUCTION DETAILS FOR ISLAND LAYOUT

SUN PRAIRIE UTILITIES (WATER)

FRONTIER COMMUNICATIONS

SUN PRAIRIE UTILITIES (STREET LIGHTING)

WE ENERGIES

USH 151 SB

USH 151 NB

BIKE PATH

MATCH LINE STA. 18+00 W

EXTEND CULVERT PIPE
REINF. CONC. CLASS III
30-INCH, 16 L.F.
1- APRON ENDWALLS
FOR CULVERT PIPE
SALVAGED 30-INCH REQ'D
1- CONC. COLLARS
FOR PIPE REQ'D

LEGEND

- CONCRETE PAVEMENT REPAIR OR CONCRETE PAVEMENT REPLACEMENT (SEE MISC. QUANTITIES FOR LOCATIONS)
- CONCRETE PAVEMENT PARTIAL DEPTH REPAIR (SEE MISC. QUANTITIES FOR REPAIR TYPE OR AS DIRECTED BY ENGINEER.)
- REMOVING CURB & GUTTER
  CONCRETE CURB & GUTTER 30-INCH TYPE A (SEE MISC. QUANTITIES FOR LOCATIONS)
- CS-5 CONCRETE SIDEWALK 5-INCH

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS - STH 19 / WINDSOR STREET PAVEMENT REHAB | SHEET | E |
|---|---|---|---|---|---|

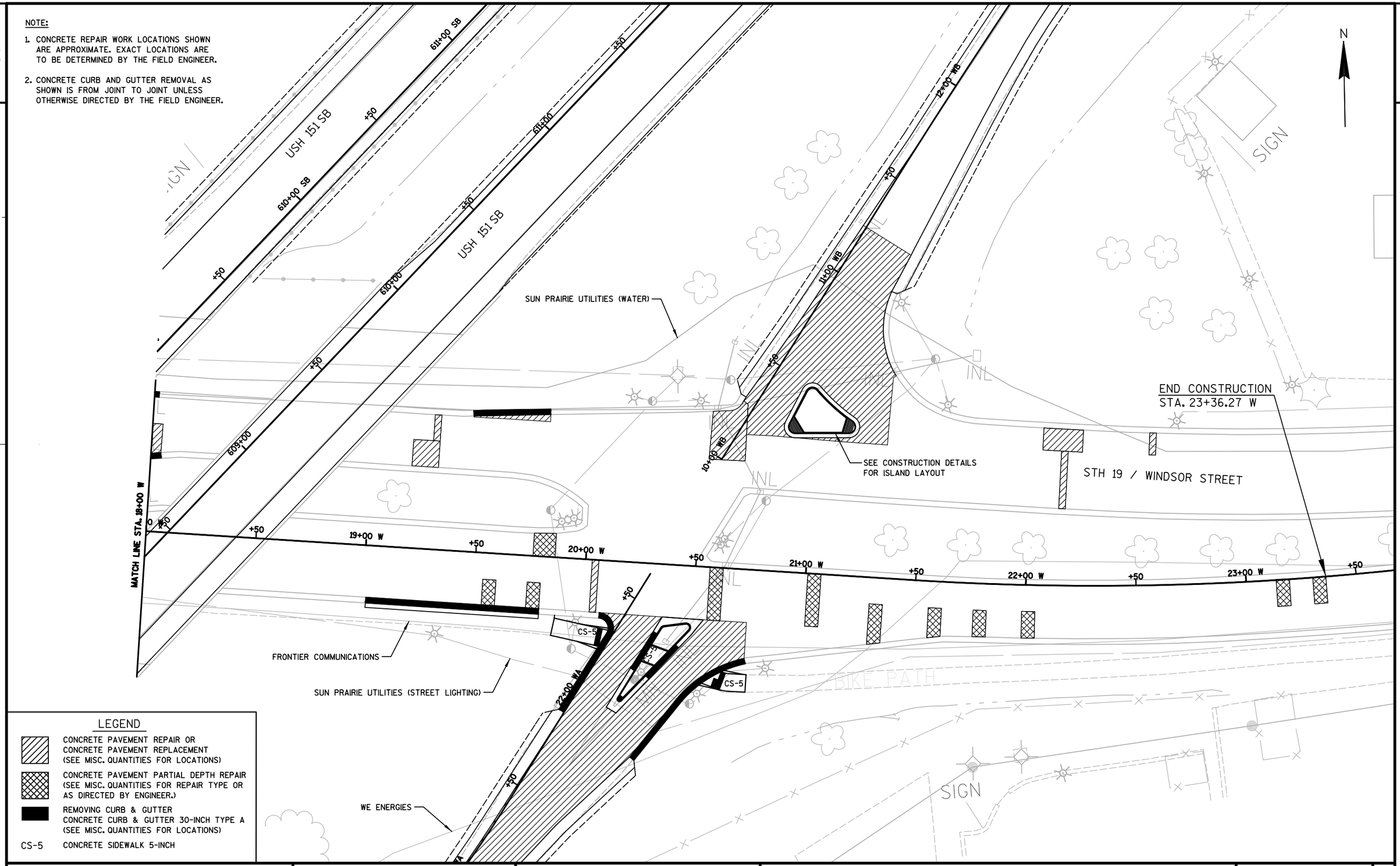


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\021209_pd.dgn PLOT DATE : 7/29/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

NOTE:

1. CONCRETE REPAIR WORK LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS ARE TO BE DETERMINED BY THE FIELD ENGINEER.

2. CONCRETE CURB AND GUTTER REMOVAL AS SHOWN IS FROM JOINT TO JOINT UNLESS OTHERWISE DIRECTED BY THE FIELD ENGINEER.




LEGEND

- CONCRETE PAVEMENT REPAIR OR CONCRETE PAVEMENT REPLACEMENT (SEE MISC. QUANTITIES FOR LOCATIONS)
- CONCRETE PAVEMENT PARTIAL DEPTH REPAIR (SEE MISC. QUANTITIES FOR REPAIR TYPE OR AS DIRECTED BY ENGINEER.)
- REMOVING CURB & GUTTER
  CONCRETE CURB & GUTTER 30-INCH TYPE A (SEE MISC. QUANTITIES FOR LOCATIONS)
- CS-5 CONCRETE SIDEWALK 5-INCH

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS - STH 19 / WINDSOR STREET PAVEMENT REHAB | SHEET 24 | E |
|---|---|---|---|---|---|

NOTE:

1. CONCRETE CURB AND GUTTER REMOVAL AS SHOWN IS FROM JOINT TO JOINT UNLESS OTHERWISE DIRECTED BY THE FIELD ENGINEER.

FRONTIER COMMUNICATIONS

CHARTER COMMUNICATIONS

WE ENERGIES (GAS)

CONCRETE CURB & GUTTER
HES 30-INCH TYPE D REQ'D

ADJUSTING INLET COVERS REQ'D

CTH N / NORTH BRISTOL STREET

USH 151 SB

USH 151 NB

BEGIN CONSTRUCTION
STA. 100+00.00 B

SUN PRAIRIE UTILITIES (WATER)

MATCH LINE STA. 14+00 B

CS-5

CAUTION

SIGN

SLAB

LEGEND

HMA PAVEMENT 6¼"
(SEE PAVEMENT TRANSITION DETAIL)

REMOVING ASPHALTIC SURFACE MILLING, 5"
HMA PAVEMENT, 5" (SEE CTH N FINISHED TYPICAL)

REMOVING CURB & GUTTER
CONCRETE CURB & GUTTER 30-INCH TYPE A OR D
(SEE MISC. QUANTITIES FOR LOCATIONS)

CS-5 CONCRETE SIDEWALK 5-INCH

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS - CTH N / N. BRISTOL STREET PAVEMENT REHAB | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\021211_pd.dgn PLOT DATE : 7/29/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

NOTE:

1. CONCRETE CURB AND GUTTER REMOVAL AS SHOWN IS FROM JOINT TO JOINT UNLESS OTHERWISE DIRECTED BY THE FIELD ENGINEER.

N

CHARTER COMMUNICATIONS

WE ENERGIES (GAS)

FRONTIER COMMUNICATIONS

CAUTION

ADJUSTING INLET COVERS REQ'D

CS-5

USH 151 NB

EAST KLUBERTANZ DRIVE

SIGN

FLAG

MATCH LINE STA. 14+00 B

ADJUSTING INLET COVERS REQ'D

15+00 B

16+00 B

17+00 B

18+00 B

19+00 B

+50

CTH N / NORTH BRISTOL STREET

SUN PRAIRIE UTILITIES (WATER)

ADJUSTING INLET COVERS REQ'D

CONCRETE CURB & GUTTER HES 30-INCH TYPE D REQ'D

END CONSTRUCTION
STA. 18+00.00 B

WEST KLUBERTANZ DRIVE

RIPRAP

## LEGEND

- HMA PAVEMENT 6¼" (SEE PAVEMENT TRANSITION DETAIL)
- REMOVING ASPHALTIC SURFACE MILLING, 5" HMA PAVEMENT, 5" (SEE CTH N FINISHED TYPICAL)
- REMOVING CURB & GUTTER CONCRETE CURB & GUTTER 30-INCH TYPE A OR D (SEE MISC. QUANTITIES FOR LOCATIONS)

CS-5 CONCRETE SIDEWALK 5-INCH

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PLAN DETAILS - CTH N / N. BRISTOL STREET PAVEMENT REHAB | SHEET 26 E |
|---|---|---|---|---|

LEGEND

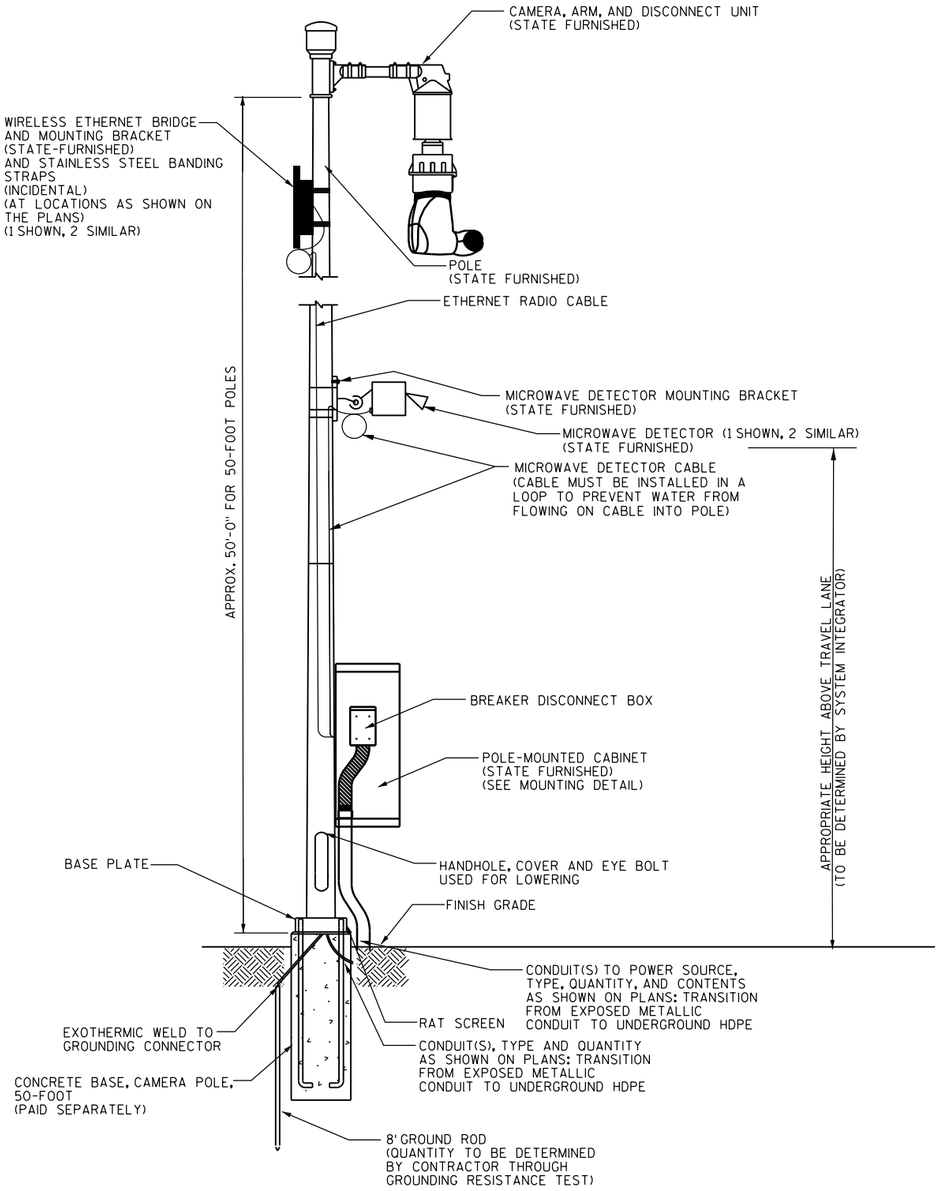
| | EXISTING | PROPOSED |
|---|---|---|
| FTMS CONVENTIONAL SYMBOLS | | |
| CCTV CAMERA AND POLE | | |
| POLE MOUNTED CABINET | | |
| METER BREAKER PEDESTAL | | |
| 24X42-INCH STEEL PULL BOX | | |
| FTMS (ITS) CONDUIT | | |
| BREAKER DISCONNECT BOX | | |
| MICROWAVE VEHICLE DETECTOR | | |
| DETECTION ZONE | | |
| 15W SOLAR POWER SYSTEM | | |
| ETHERNET BRIDGE | | |

FTMS STANDARD ABBREVIATIONS

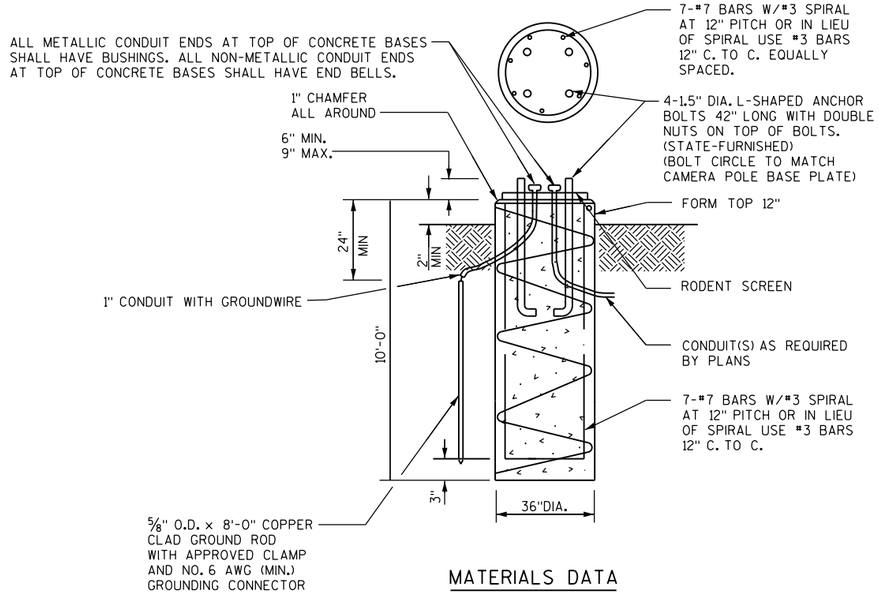
| | |
|---|---|
| CB | CONTROLLER CABINET |
| CCTV | CLOSED CIRCUIT TELEVISION SITE |
| PB | PULL BOX |
| EX | EXISTING |
| SDS | SYSTEM DETECTOR STATION |
| RP | REPEATER POLE |
| MB | METER BREAKER |

FTMS GENERAL NOTES

1. THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.
2. BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.
3. BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.
4. NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
5. AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED, AND EROSION MAT, AND SHALL BE INCLUDED IN THE COST OF INSTALLING FTMS ITEMS. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION SHALL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS.
6. THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
7. DUE TO RAMP, LANE, SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.
8. THE CONTRACTOR IS FULLY RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.
9. THE CONTRACTOR SHALL CONTACT THE WISDOT STATEWIDE TRAFFIC OPERATIONS CENTER AT (414) 227-2166 FIVE (5) WORKING DAYS PRIOR TO ENTERING ANY EXISTING WISDOT FTMS OR ITS CABINET.
10. ALL LOOP DETECTORS ARE STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.
11. HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.
12. VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.




## CAMERA POLE WITH CAMERA LOWERING HARDWARE

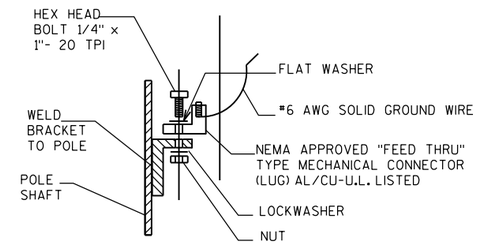



## MATERIALS DATA

| | |
|---|---|
| CONCRETE | f'c=3,500 psi |
| HIGH STRENGTH BAR STEEL REINFORCEMENT | fy = 60,000 psi |

## CONCRETE BASE, 50' CAMERA POLE

NOT TO SCALE



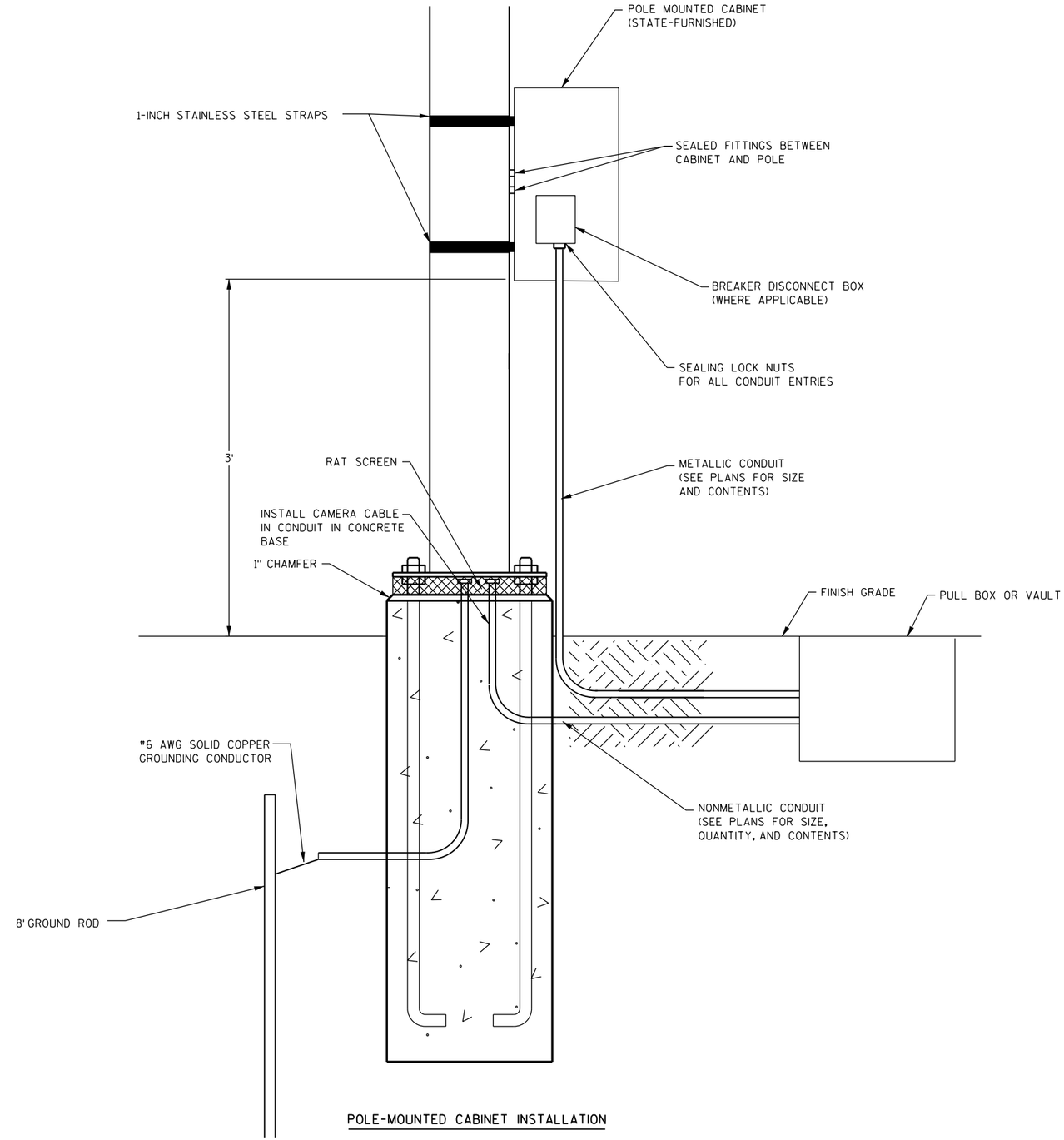

## FIELD INSTALLED GROUNDING LUG

## NOTES

1) ALL HARDWARE AND FASTENERS SHALL BE STAINLESS STEEL
2) POLE DRAWINGS SHOWN FOR BIDDING INFORMATION PURPOSES ONLY. POLES WILL BE STATE FURNISHED. BASE TO BE CONTRACTOR DESIGNED.
3) CONTRACTOR SHALL CONFIRM BOLT PATTERN OF CAMERA POLE PRIOR TO CONSTRUCTION OF CONCRETE BASE.
4) CONTRACTOR SHALL INSTALL GROUNDING LUG AS SHOWN

## CAMERA POLES & FOUNDATIONS

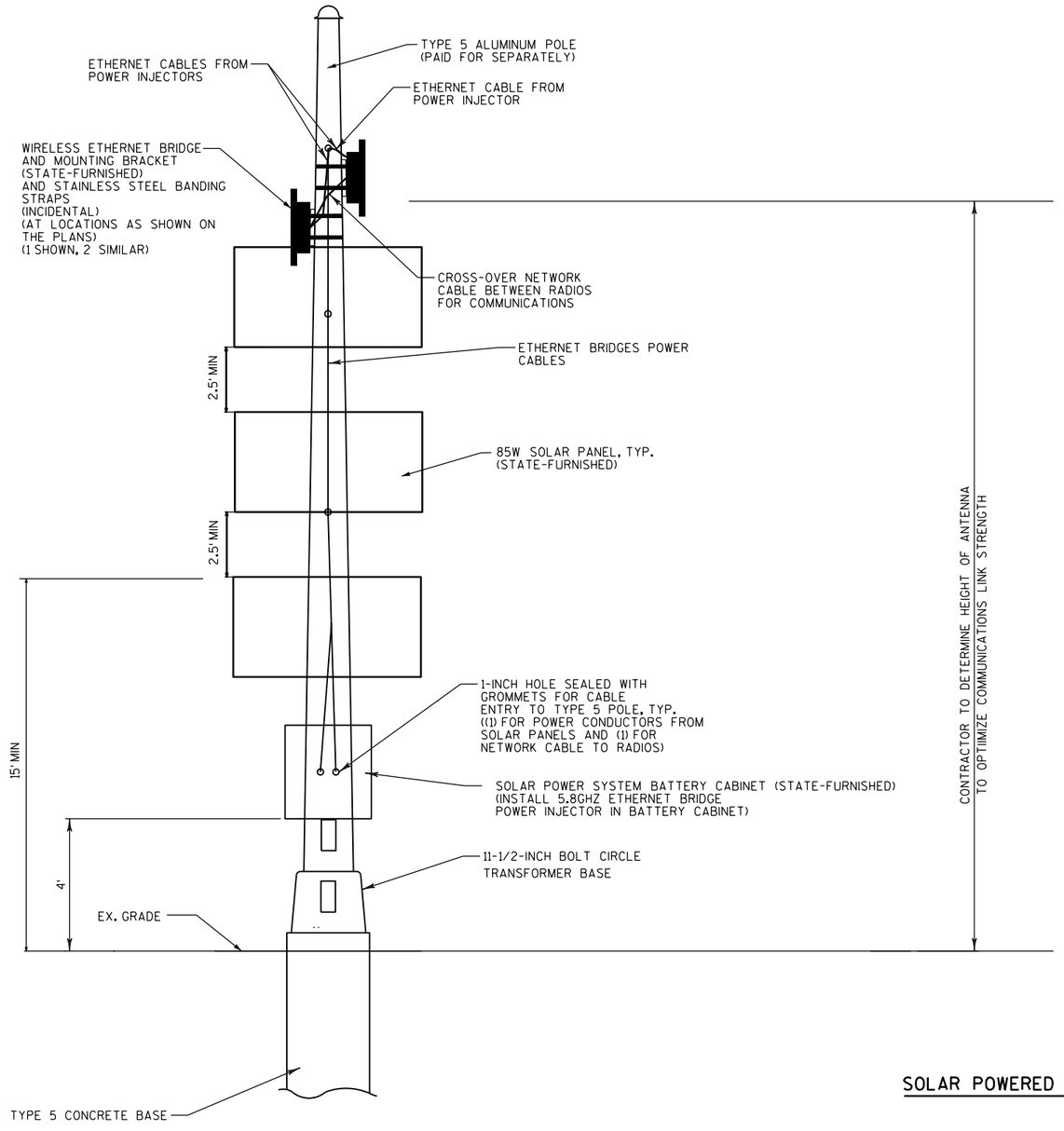
2




POLE-MOUNTED CABINET INSTALLATION

CLOGATE20.DGN

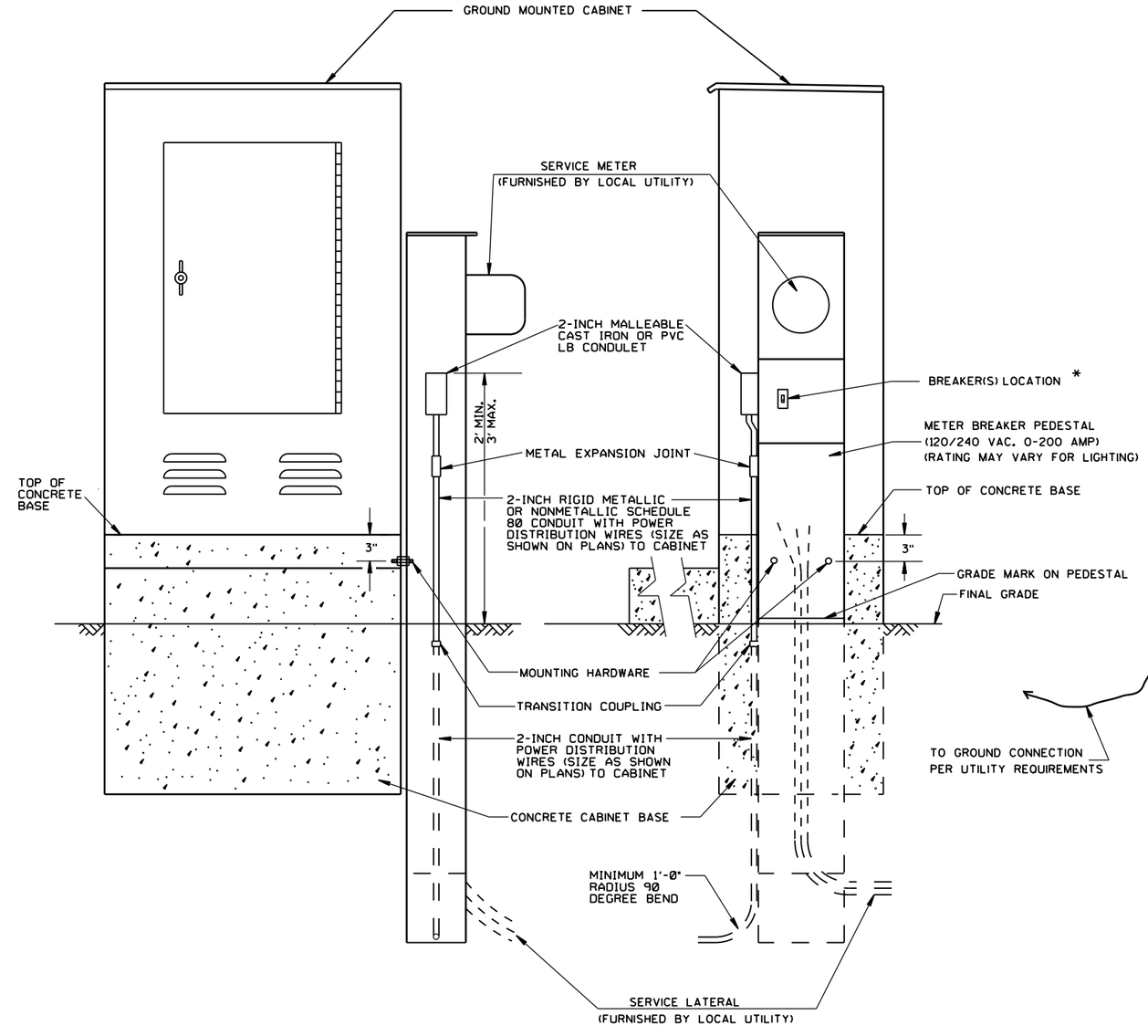
2




**NOTES:**

1. ALL WIRES ENTERING CONDUIT, CONDULETS, AND SERVICE CAPS SHALL HAVE AN ESTABLISHED DRIP LOOP TO PREVENT WATER FROM ENTERING CONDUIT.
2. ANY LB OPENINGS THAT ARE NOT ATTACHED TO CONDUIT SHALL BE WEATHERPROOFED USING A SILICONE SEAL.
3. SOLAR PANELS MUST FACE DUE SOUTH.
4. COORDINATE SOLAR PANEL LOCATIONS WITH VEHICLE DETECTORS, GIVING PRIORITY TO VEHICLE DETECTORS.
5. CONTRACTOR TO DETERMINE MOUNTING HEIGHT OF MICROWAVE DETECTOR ABOVE ROADWAY BEING DETECTED. NOMINAL HEIGHT IS APPROXIMATELY 18-FEET ABOVE ROADWAY.

## SOLAR POWERED ETHERNET BRIDGE REPEATER STATION




TYPICAL CABINET SERVICE INSTALLATION
FOR SHARED FTMS FACILITIES

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE) CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

2

2

N

USH 151

USH 151

W MAIN ST

W MAIN ST

EX-CCTV-13-0033 / SDS-13-0155
ON EXISTING CAMERA POLE
(1) 5.8 GHZ ETHERNET BRIDGE (S-F)
(1) MICROWAVE DETECTOR (S-F)
(1) SEQUENCE PLAQUE IDENTIFICATION
(LINK PROPOSED 5.8 GHZ ETHERNET
BRIDGE TO PROPOSED 5.8 GHZ
BRIDGE ON CCTV-13-0128 AT
US 151 AND WIS 19)

| PROJECT NO: 1111-02-78 | HWY: US 151 | COUNTY: DANE | FTMS PLAN | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : \\mlww400\ingrproj\63099\11110278_US151_SunPrairie\cds\11110278_fm05.dgn PLOT DATE : 7/22/2016 PLOT BY : pkutz PLOT NAME : PLOT SCALE : 40:1

2

2

EXISTING TRAFFIC SIGNAL CABINET
CONNECT PROPOSED FTMS POWER WIRES TO EXISTING TRAFFIC SIGNAL CABINET POWER.
(CONTAC KYLE HEMP OF WISDOT SW-REGION AT 608-246-5367 TO COORDINATE CONNECTION.

(1) 2-INCH NONMETALLIC CONDUIT WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES

PB1901

(1) 2-INCH NONMETALLIC CONDUIT WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES

(1) 2-INCH METALLIC CONDUIT WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES

CCTV-13-0128 / SDS-13-0156
(1) 50-FOOT CAMERA POLE BASE
(1) 50-FOOT CAMERA POLE (S-F)
(1) CCTV CAMERA (S-F)
(1) MICROWAVE DETECTOR (S-F)
(1) POLE-MOUNTED CABINET (S-F)
(1) SEQUENCE PLAQUE IDENTIFICATION
(1) BREAKER DISCONNECT BOX
(1) ETHERNET SWITCH (S-F)
(2) 5.8 GHZ ETHERNET BRIDGES (S-F)
(LINK (1) PROPOSED 5.8 GHZ ETHERNET BRIDGE TO PROPOSED 5.8 GHZ ETHERNET BRIDGE AT EX-CCTV-13-0033 AT US 151 AND MAIN STREET.
LINK (1) PROPOSED 5.8 GHZ ETHERNET BRIDGE TO REPEATER SITE AT US 151 AND N. BIRD STREET.)

PB1902

CAMERA ORIENTATION

(2) 2-INCH NONMETALLIC CONDUITS FOR FUTURE USE

STH 19/WINDSOR ST

STH 19/WINDSOR ST

USH 151

USH 151

+50 606+00 SB +50 607+00 SB +50 608+00 SB +50 609+00 SB +50 610+00 SB +50 611+00 SB +50

+50 606+00 +50 607+00 +50 608+00 +50 609+00 +50 610+00 +50 611+00 +50

| PROJECT NO: 1111-02-78 | HWY: US 151 | COUNTY: DANE | FTMS PLAN | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : \\mlww400\ingrproj\63099\11110278_US151_SunPrairie\cds\11110278_fm10.dgn PLOT DATE : 7/22/2016 PLOT BY : pkutz PLOT NAME : PLOT SCALE : 40:1

2

2

N. BIRD ST.

USH 151

USH 151

CAUTION

RP15101
(1) TYPE 5 CONCRETE BASE
(1) 11-1/2-INCH TRANSFORMER BASE
(1) TYPE 5 ALUMINUM POLE
(1) SEQUENCE PLAQUE IDENTIFIER
(1) 15W SOLAR POWER SYSTEM (S-F)
(2) 5.8 GHZ ETHERNET BRIDGES (S-F)
(LINK (1) PROPOSED 5.8 GHZ ETHERNET BRIDGE TO PROPOSED 5.8 GHZ ETHERNET BRIDGE AT CCTV-13-0128 AT US 151 AND WIS 19.
LINK (1) PROPOSED 5.8 GHZ ETHERNET BRIDGE TO PROPOSED 5.8 GHZ ETHERNET BRIDGE AT CCTV-13-0129 AT US 151 AND CR N.
CONNECT PROPOSED 5.8 GHZ ETHERNET BRIDGES IN A REPEATER CONFIGURATION WITH A CROSS-OVER CABLE)

632+00 SB
633+00 SB
634+00 SB
635+00 SB
636+00 SB
637+00 SB

| PROJECT NO: 1111-02-78 | HWY: US 151 | COUNTY: DANE | FTMS PLAN | SHEET 34 | E |
|---|---|---|---|---|---|

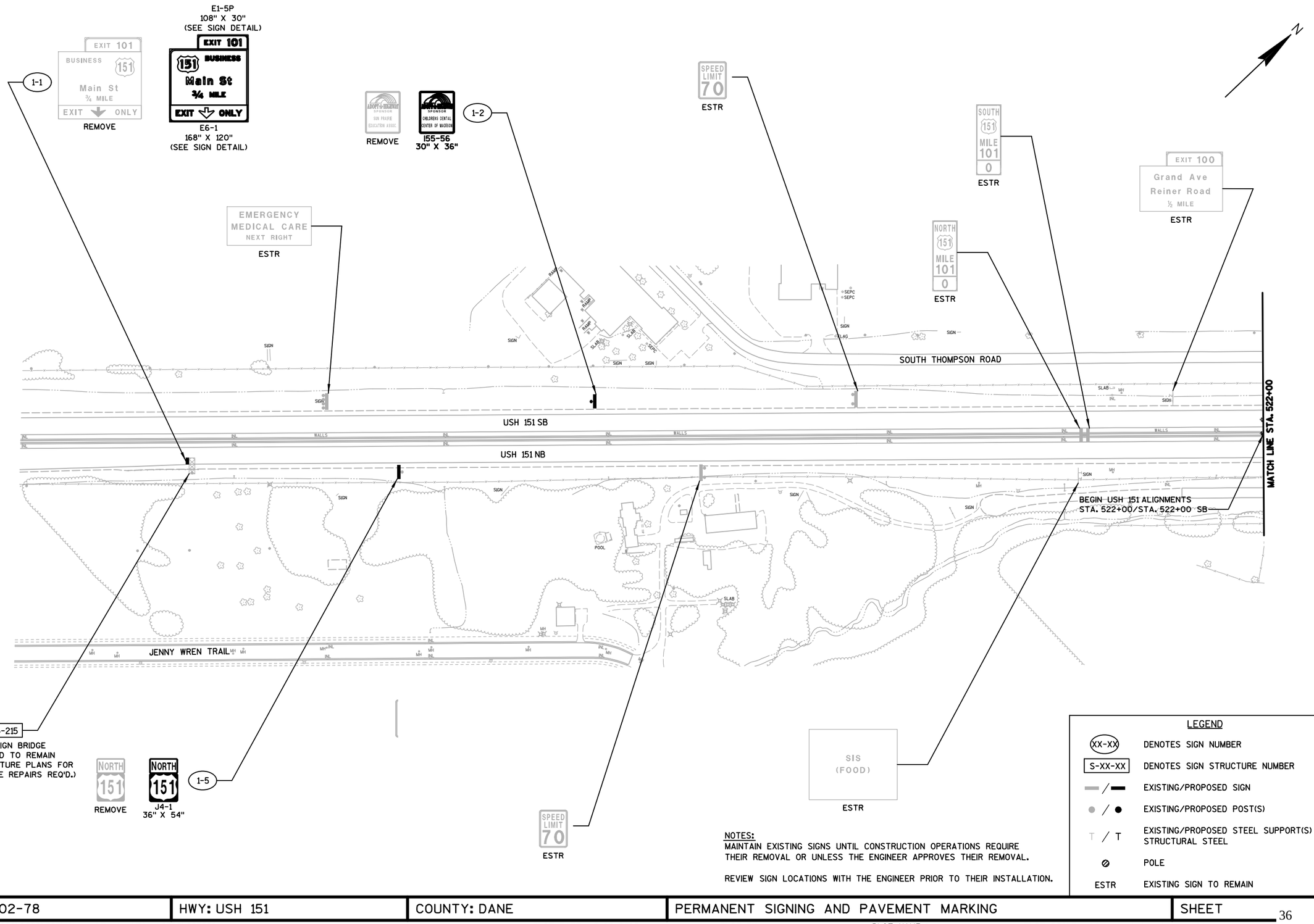
FILE NAME : \\mlww400\ingrproj\63099\11110278_US151_SunPrairie\cds\11110278_fm15.dgn PLOT DATE : 7/22/2016 PLOT BY : pkutz PLOT NAME : PLOT SCALE : 40:1

2

675+00 SB
676+00 SB
677+00 SB
678+00 SB
679+00 SB
680+00 SB
681+00 SB
*50
CR N
USH 151
N
CCTV-13-0129 / SDS-13-0157
(1) 50-FOOT CAMERA POLE BASE
(1) 50-FOOT CAMERA POLE (S-F)
(1) SEQUENCE PLAQUE IDENTIFIER
(1) CCTV CAMERA (S-F)
(1) MICROWAVE DETECTOR (S-F)
(1) POLE-MOUNTED CABINET (S-F)
(1) BREAKER DISCONNECT BOX
(1) ETHERNET SWITCH (S-F)
(1) 5.8 GHZ ETHERNET BRIDGES (S-F)
(LINK (1) PROPOSED 5.8 GHZ ETHERNET
BRIDGE TO PROPOSED 5.8 GHZ ETHERNET
BRIDGE TO REPEATER SITE AT US 151
AND N. BIRD STREET.)
CAMERA ORIENTATION
(2) 2-INCH NONMETALLIC CONDUITS FOR FUTURE USE
PBN03
(1) 2-INCH METALLIC CONDUIT WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES
PBN02
(1) 2-INCH NONMETALLIC CONDUIT WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES
(1) 2-INCH NONMETALLIC CONDUIT, SPECIAL WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES
PBN01
MBN01
(1) 2-INCH NONMETALLIC CONDUIT WITH (3) NO. 6 AWG TRAFFIC SIGNAL WIRES

| PROJECT NO: 1111-02-78 | HWY: US 151 | COUNTY: DANE | FTMS PLAN | SHEET 35 | E |
|---|---|---|---|---|---|

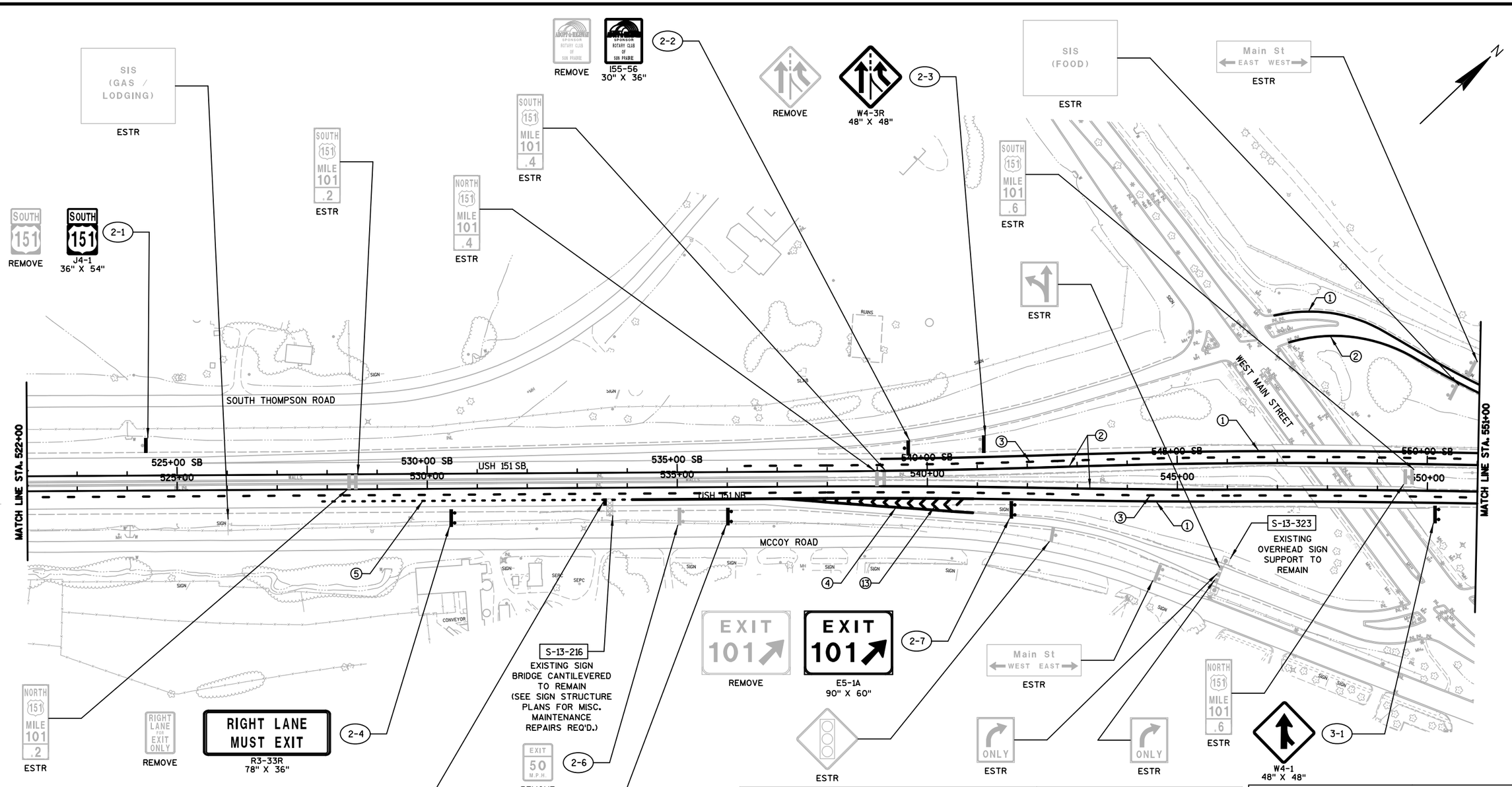
2




NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 36 | E |
|---|---|---|---|---|---|




NOTES:
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REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

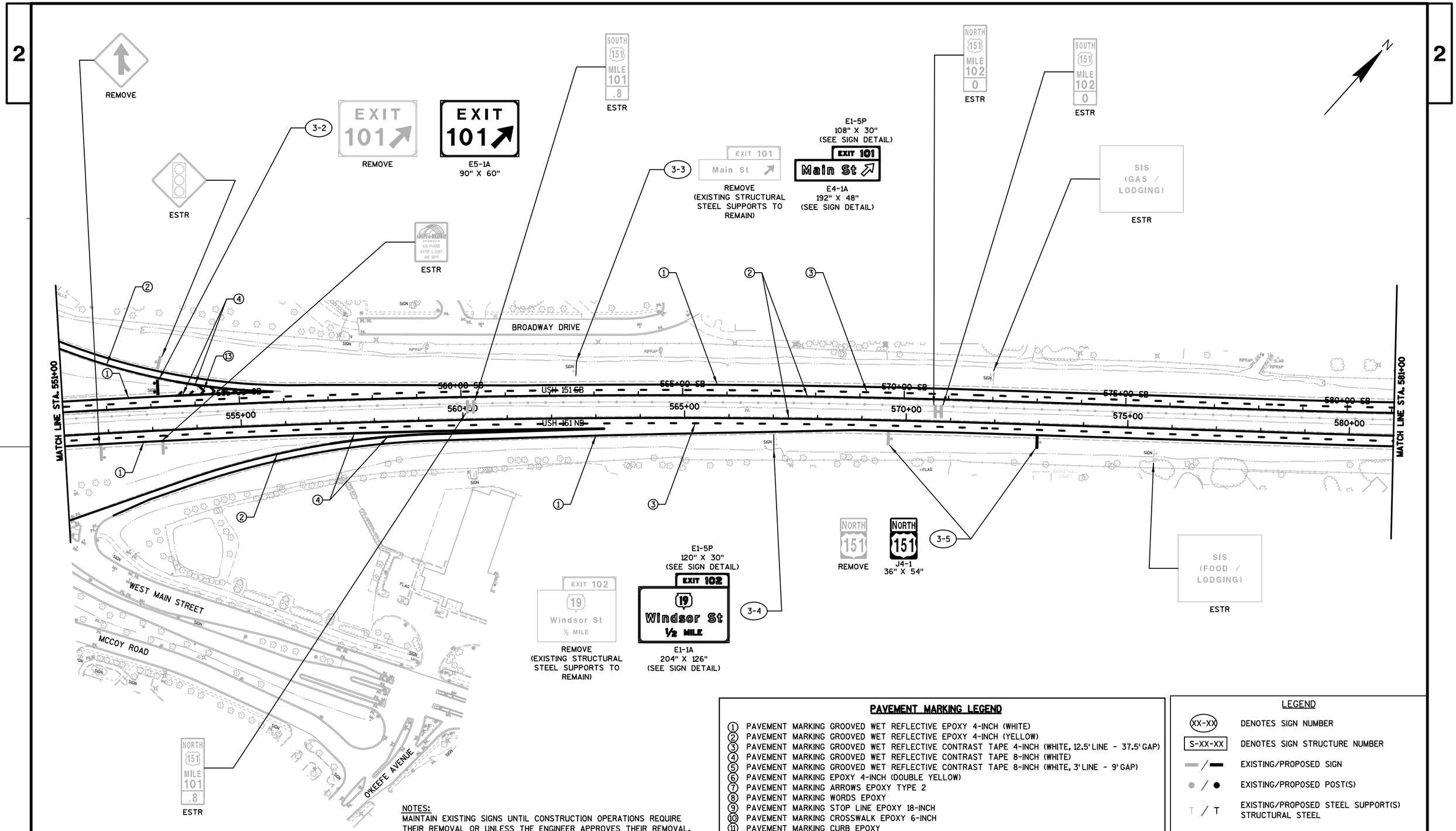
## PAVEMENT MARKING LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE, 12.5' LINE - 37.5' GAP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE, 3' LINE - 9' GAP)
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

## LEGEND

| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 37 | E |
|---|---|---|---|---|---|




NOTES:
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REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

## PAVEMENT MARKING LEGEND

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11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

## LEGEND

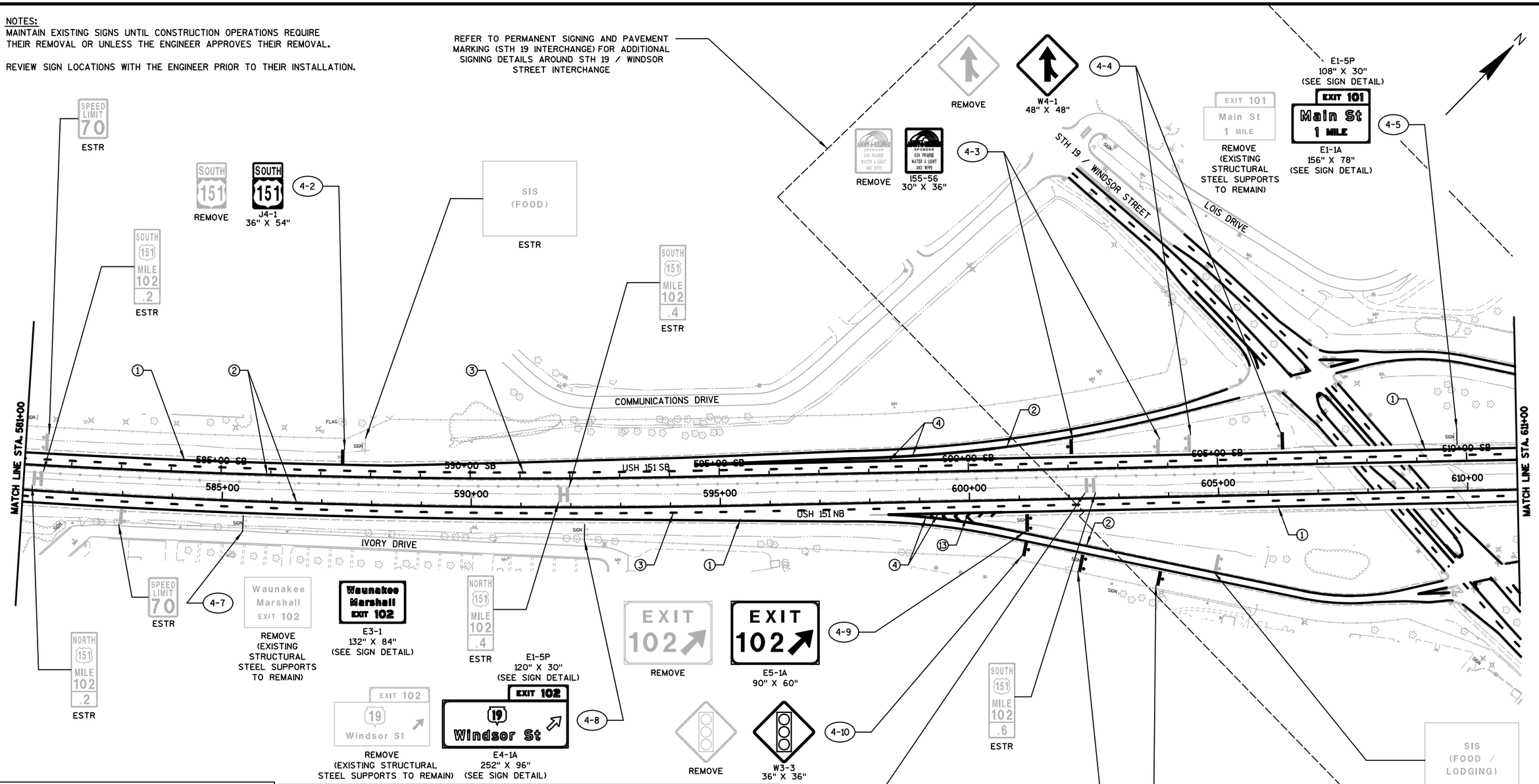
| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 38 | E |
|---|---|---|---|---|---|

NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

REFER TO PERMANENT SIGNING AND PAVEMENT MARKING (STH 19 INTERCHANGE) FOR ADDITIONAL SIGNING DETAILS AROUND STH 19 / WINDSOR STREET INTERCHANGE




LEGEND

| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

**PAVEMENT MARKING LEGEND**

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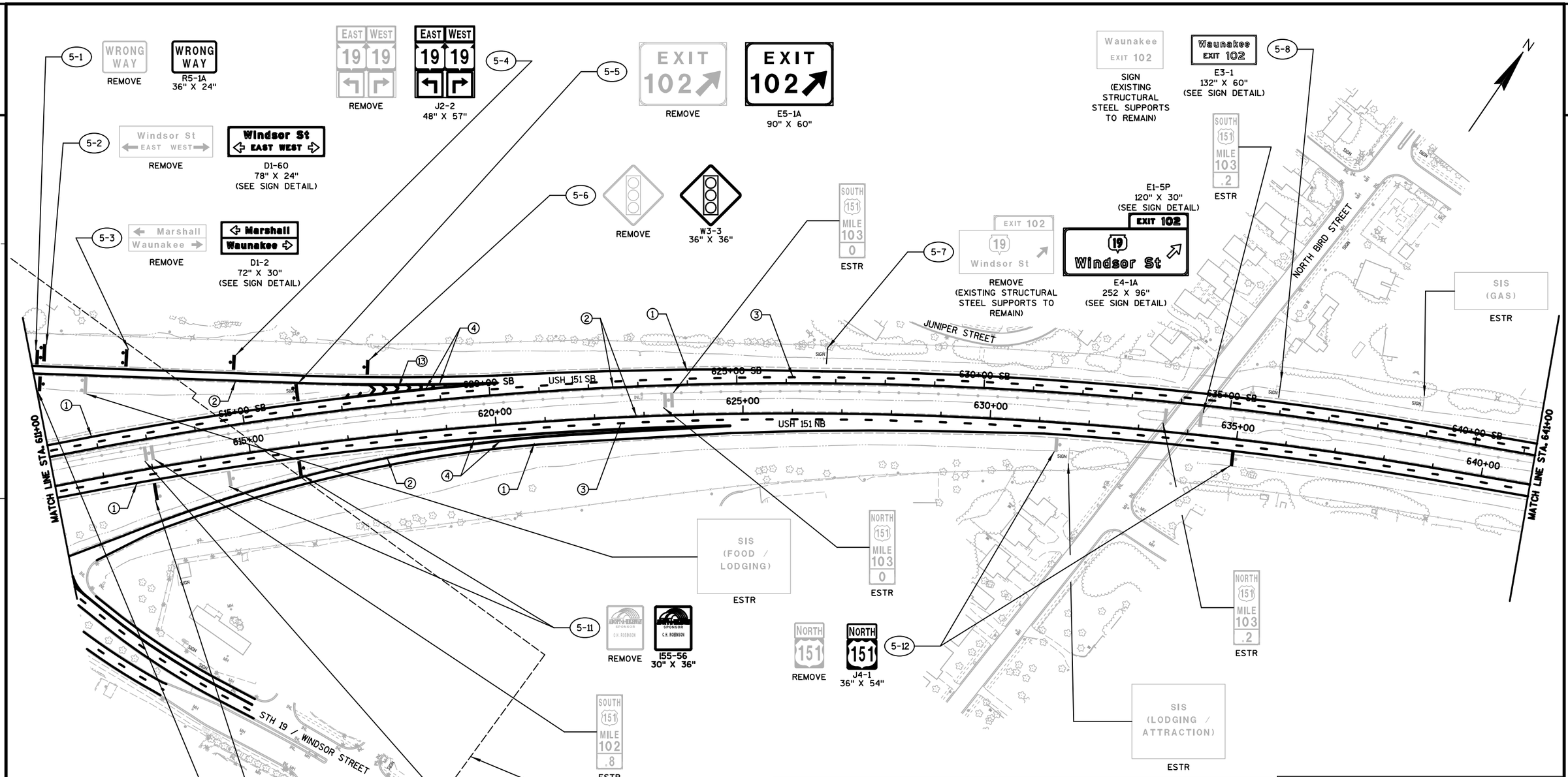
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\023204_ps.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42




NOTES:
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REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

## PAVEMENT MARKING LEGEND

(1) PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
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(7) PAVEMENT MARKING ARROWS EPOXY TYPE 2
(8) PAVEMENT MARKING WORDS EPOXY
(9) PAVEMENT MARKING STOP LINE EPOXY 18-INCH
(10) PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
(11) PAVEMENT MARKING CURB EPOXY
(12) PAVEMENT MARKING ISLAND NOSE EPOXY
(13) PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
(14) PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

## LEGEND

| | |
|---|---|
| (XX-XX) | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 40 | E |
|---|---|---|---|---|---|

NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

SIS (FOOD / LODGING)
ESTR

REMOVE

R3-4B
36" X 48"

6-1

E1-5P
120" X 30"
(SEE SIGN DETAIL)

REMOVE
(EXISTING STRUCTURAL STEEL SUPPORTS TO REMAIN)

E1-1A
204" X 126"
(SEE SIGN DETAIL)

6-3

SOUTH 151 MILE 103 .4
ESTR

SPEED LIMIT 70
ESTR

SOUTH 151 MILE 103 .6
ESTR

6-4

REMOVE

J4-1
36" X 54"

SOUTH 151 MILE 103 .8
ESTR

MATCH LINE STA. 641+00

645+00 SB | 650+00 SB | 655+00 SB | USH 151 SB | 660+00 SB | 665+00 SB | 670+00 SB

645+00 | 650+00 | 655+00 | 660+00 | 665+00 | 670+00

USH 151 NB

MATCH LINE STA. 671+00

NORTH 151 MILE 103 .4
ESTR

REMOVE

R3-4B
36" X 48"

SPEED LIMIT 70
ESTR

6-7

SIS (GAS / FOOD)
ESTR

NORTH 151 MILE 103 .6
ESTR

NORTH 151 MILE 103 .8
ESTR

REMOVE

W3-1
36" X 36"

6-10

EXIT 103
REMOVE

EXIT 103
E5-1A
90" X 60"

6-9

6-5

E1-5P
120" X 30"
(SEE SIGN DETAIL)

REMOVE
(EXISTING STRUCTURAL STEEL SUPPORTS TO REMAIN)

E1-1A
192" X 120"
(SEE SIGN DETAIL)

REMOVE
(EXISTING STRUCTURAL STEEL SUPPORTS TO REMAIN)

E1-5P
120" X 30"
(SEE SIGN DETAIL)

E4-1A
228" X 90"
(SEE SIGN DETAIL)

6-8

**PAVEMENT MARKING LEGEND**

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2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
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12. PAVEMENT MARKING ISLAND NOSE EPOXY
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14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

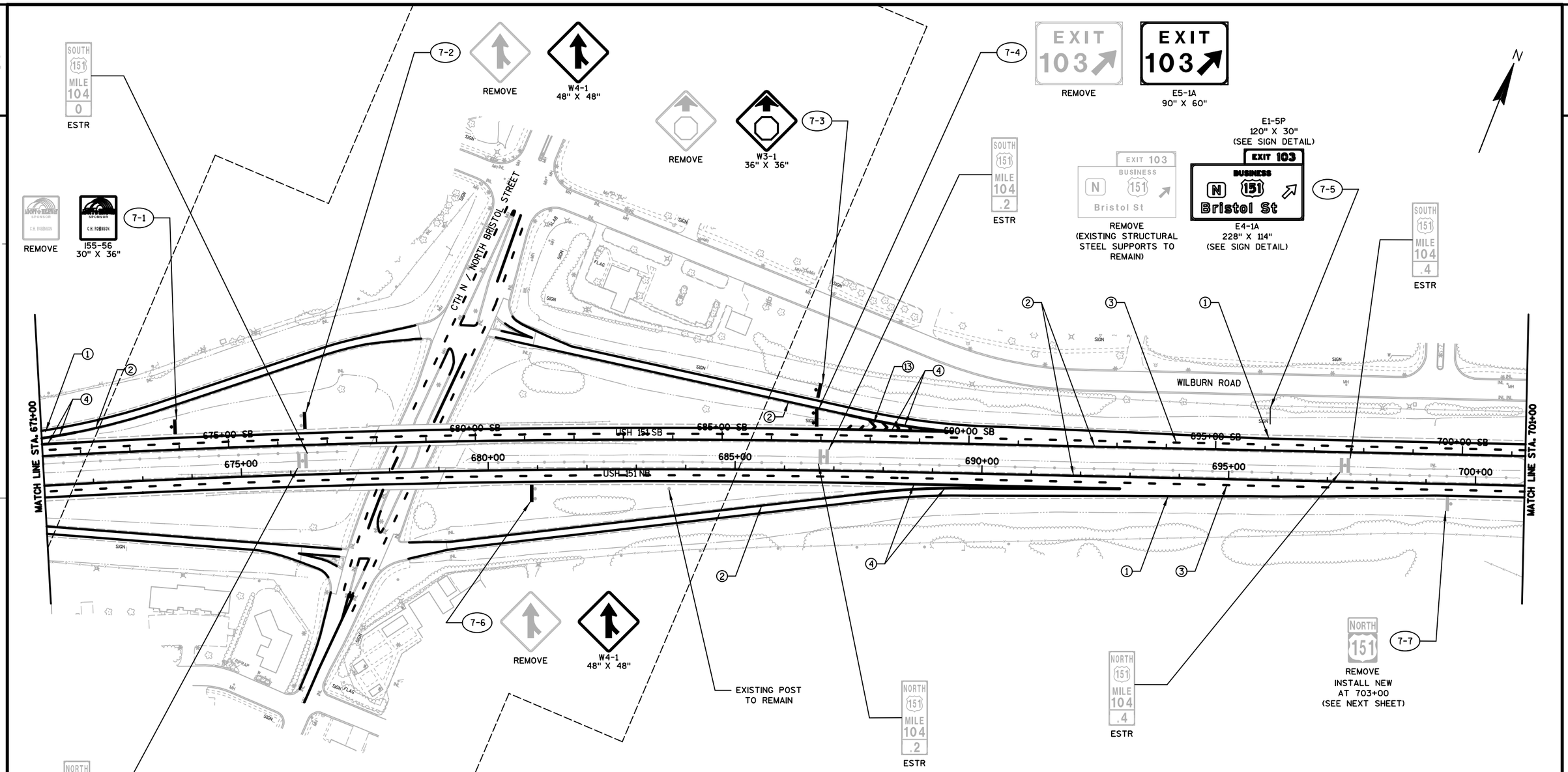
**LEGEND**

| | |
|---|---|
| (XX-XX) | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET E |
|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\023206_ps.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42




REFER TO PERMANENT SIGNING AND PAVEMENT MARKING (CTH N INTERCHANGE) FOR ADDITIONAL SIGNING DETAILS AROUND CTH N / NORTH BRISTOL STREET INTERCHANGE

NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

## PAVEMENT MARKING LEGEND

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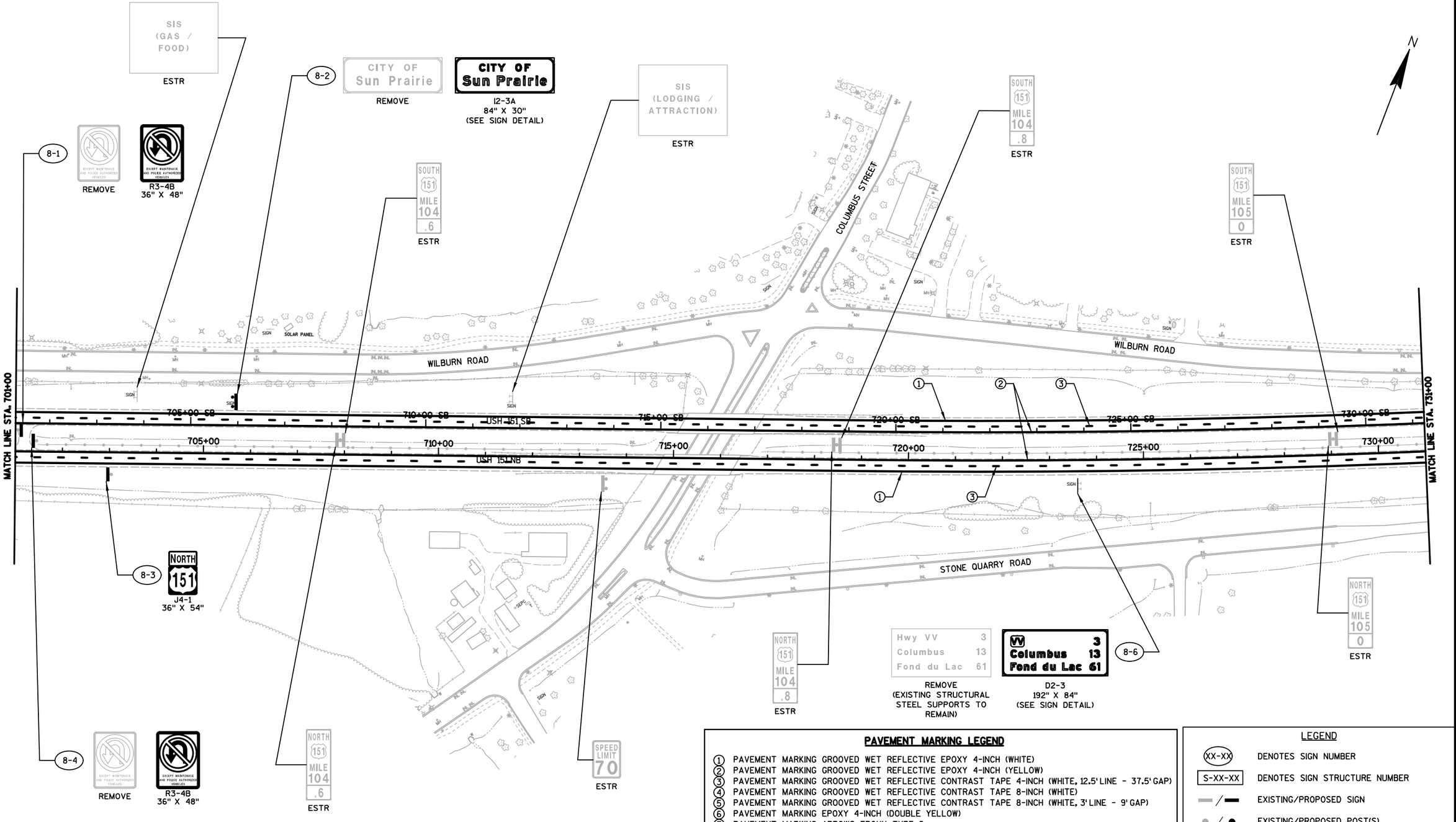
2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE, 12.5' LINE - 37.5' GAP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE, 3' LINE - 9' GAP)
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

## LEGEND

| | |
|---|---|
| (XX-XX) | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 42 | E |
|---|---|---|---|---|---|




NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

## PAVEMENT MARKING LEGEND

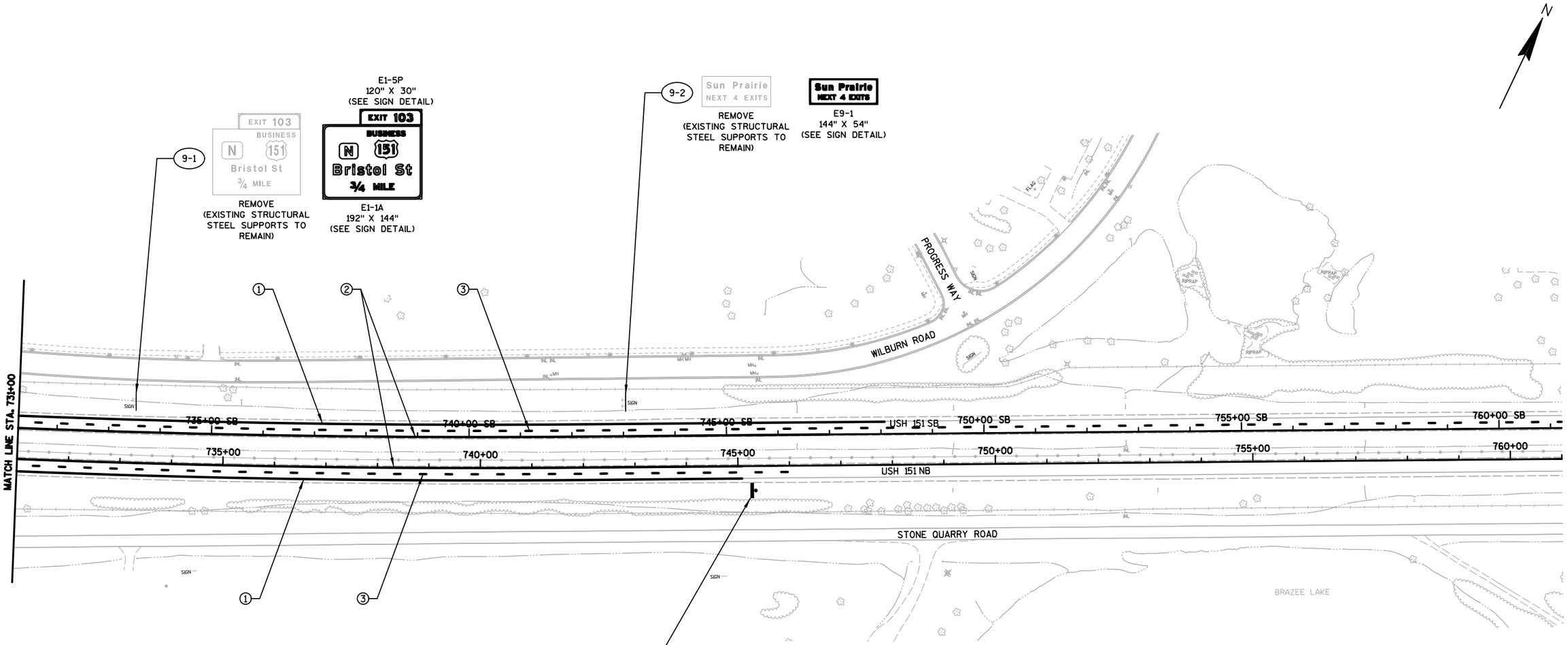
1. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE, 12.5' LINE - 37.5' GAP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE, 3' LINE - 9' GAP)
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

## LEGEND

| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 43 | E |
|---|---|---|---|---|---|

2




NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

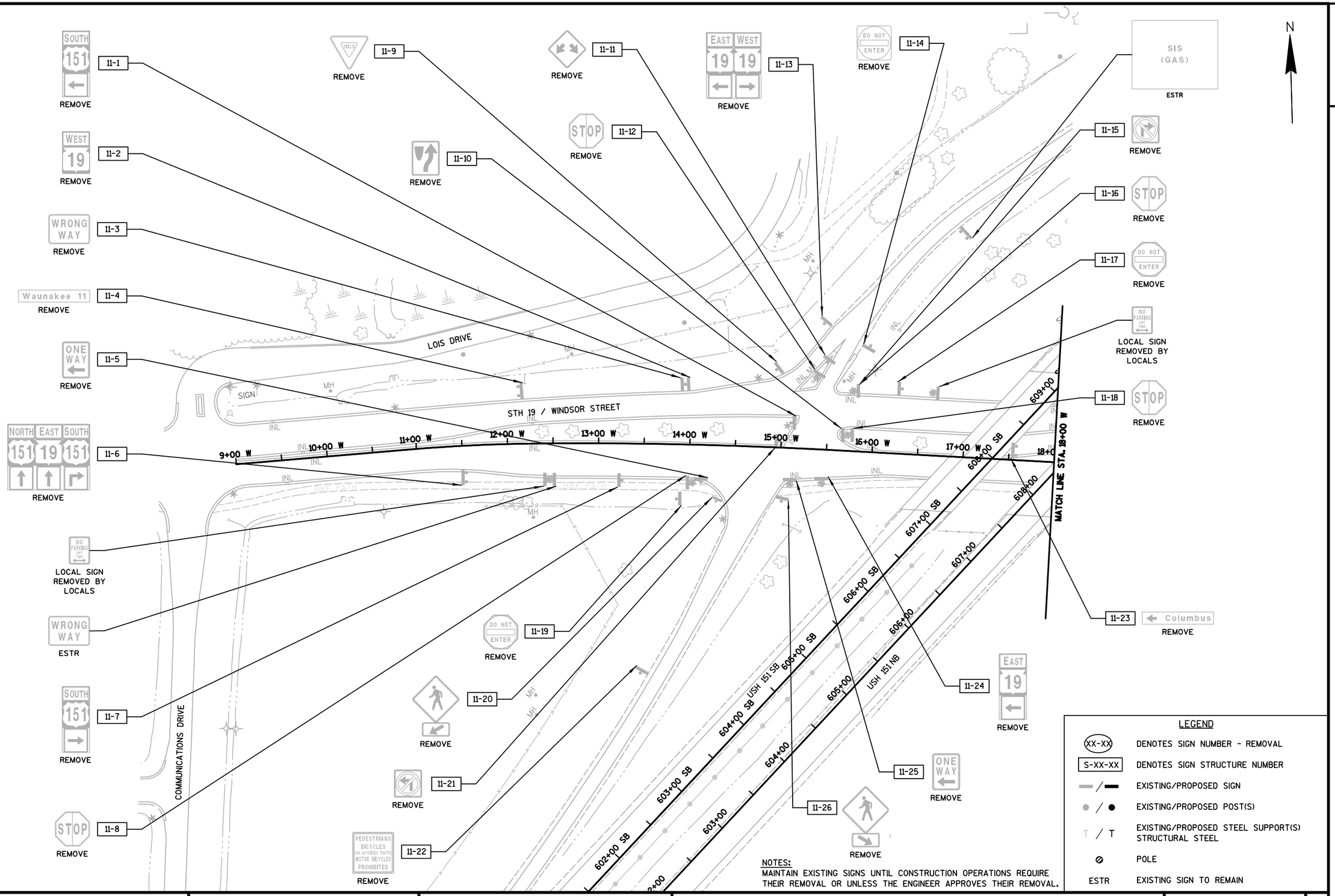
**PAVEMENT MARKING LEGEND**

1. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE, 12.5'LINE - 37.5'GAP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE, 3'LINE - 9'GAP)
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

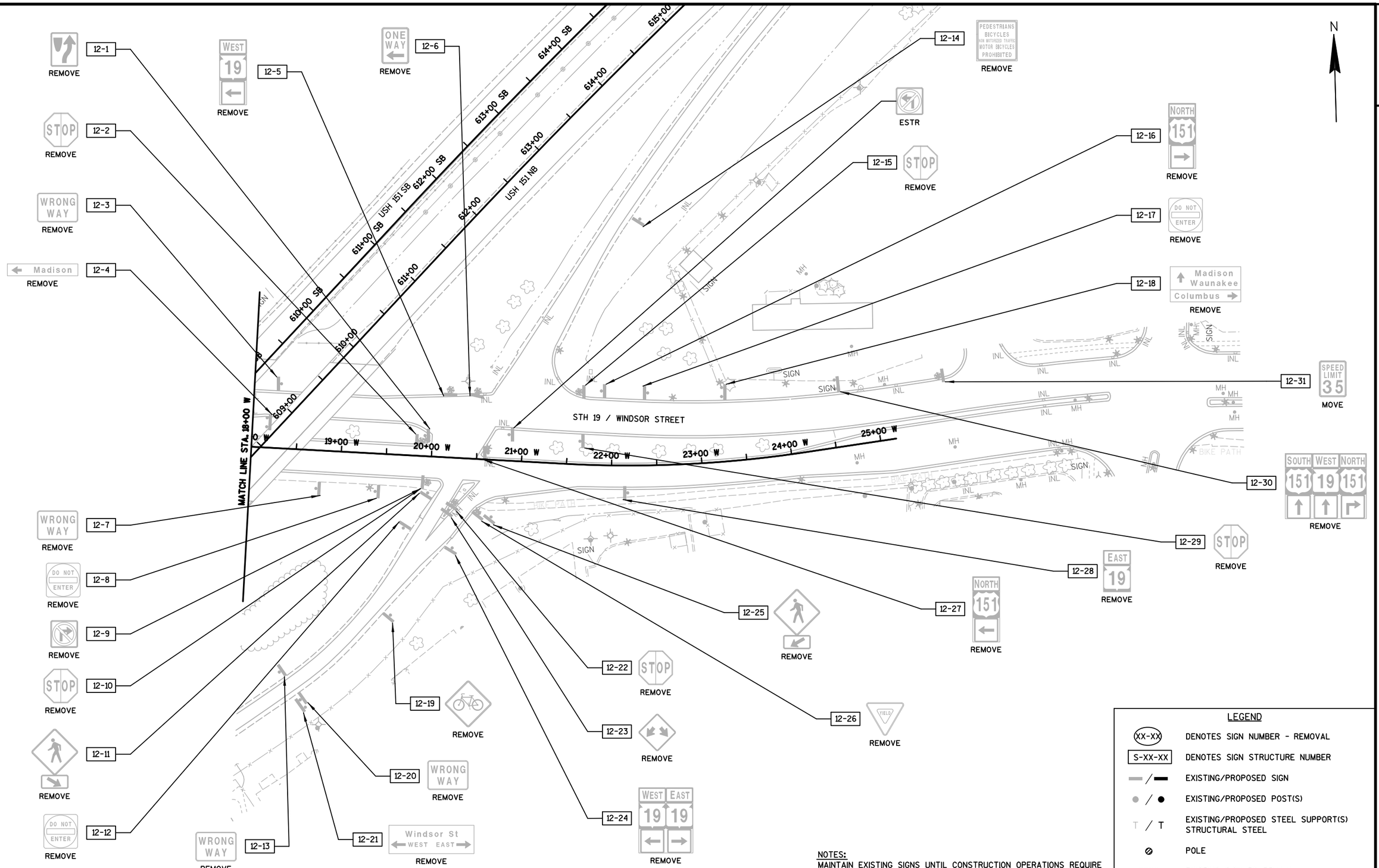
LEGEND

| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING AND PAVEMENT MARKING | SHEET 44 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGN REMOVALS (STH 19 INTERCHANGE) | SHEET 45 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGN REMOVALS (STH 19 INTERCHANGE) | SHEET 46 | E |
|---|---|---|---|---|---|

2

N

11-1 — SOUTH 151 ← — J3-1, 24" X 57"

11-2 — WEST 19 — J4-1, 24" X 36"

11-3 — WRONG WAY — R5-1A, 36" X 24"

11-27 — DO NOT ENTER — R5-1, 30" X 30"

11-28 — JCT 151 — J1-1, 24" X 39"

11-6 — NORTH 151 SOUTH; KEEP LEFT | KEEP RIGHT — D1-72, 120" X 60"
(SEE SIGN DETAIL)
NOTE: 8' MIN. MOUNTING HEIGHT ABOVE PATH;
2' MIN. CLEARANCE BETWEEN EDGE OF
PATH AND OUTSIDE EDGE OF SIGN POST

11-21 — R3-2, 24" X 24"

11-9 — YIELD — R1-2, 36" X 31"

11-10 — R4-7, 24" X 30"

11-11 — W12-1D, 24" X 24", BOX OUT REQ'D

11-12A — R6-3, 30" X 24", DIVIDED HIGHWAY

11-12 — STOP — R1-1F, 36" X 36"

11-13 — EAST 19 | WEST 19 — J3-2, 48" X 57"

11-14 — DO NOT ENTER — R5-1, 30" X 30"

11-17 — DO NOT ENTER — R5-1, 30" X 30"

11-15 — R3-1, 24" X 24"

11-16 — STOP — R1-1F, 36" X 36"

11-18 — STOP — R1-1F, 36" X 36"

11-29 — NORTH 151 Columbus; SOUTH 151 Madison — D1-71, 72" X 60"
(SEE SIGN DETAIL)

11-32 — YIELD — R1-2, 36" X 31"

11-33 — STOP — R1-1, 18" X 18"
(4' MOUNTING HEIGHT)

11-22 — PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED — R5-57, 36" X 36"

11-25 — ONE WAY ← — R6-2L, 24" X 30"

11-31 — NORTH 151 Columbus — D1-70, 72" X 30"
(SEE SIGN DETAIL)

11-36 — STOP — R1-1, 18" X 18"
(4' MOUNTING HEIGHT)

11-35 — DO NOT ENTER — R5-1, 30" X 30"

11-34 — STOP — R1-1F, 36" X 36"

LOIS DRIVE

STH 19 / WINDSOR STREET

9+00 W | 10+00 W | 11+00 W | 12+00 W | 13+00 W | 14+00 W | 15+00 W | 16+00 W | 17+00 W | 18+00 W

USH 151 SB: 602+00 SB | 603+00 SB | 604+00 SB | 605+00 SB | 606+00 SB | 607+00 SB | 608+00 | 609+00

USH 151 NB: 602+00 | 603+00 | 604+00 | 605+00 | 606+00 | 607+00

MATCH LINE STA. 18+00 W

COMMUNICATIONS DRIVE

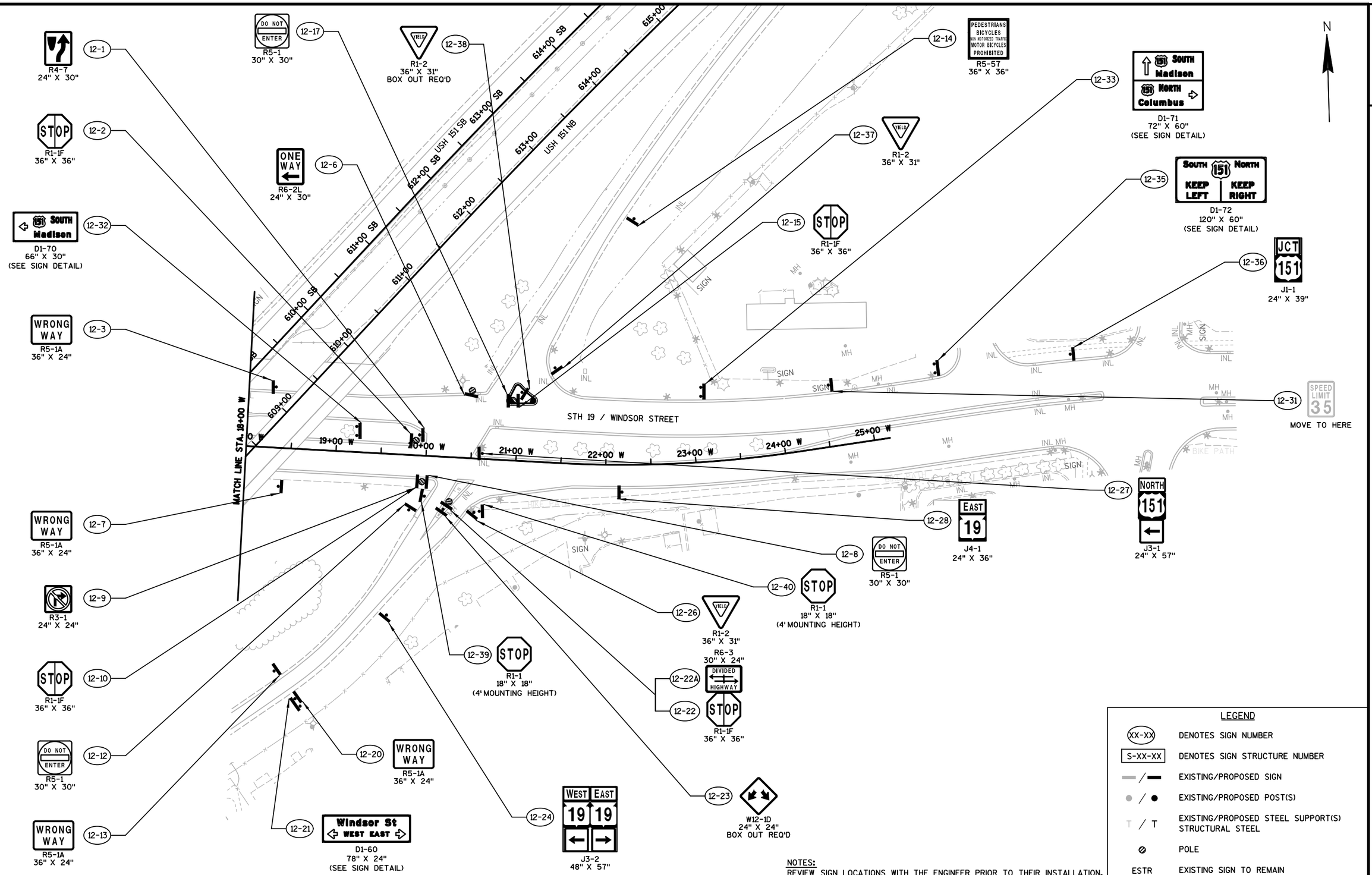
MH | SIGN | INL | BIKE PATH

LEGEND

| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

NOTES:
REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING (STH 19 INTERCHANGE) | SHEET 47 | E |
|---|---|---|---|---|---|

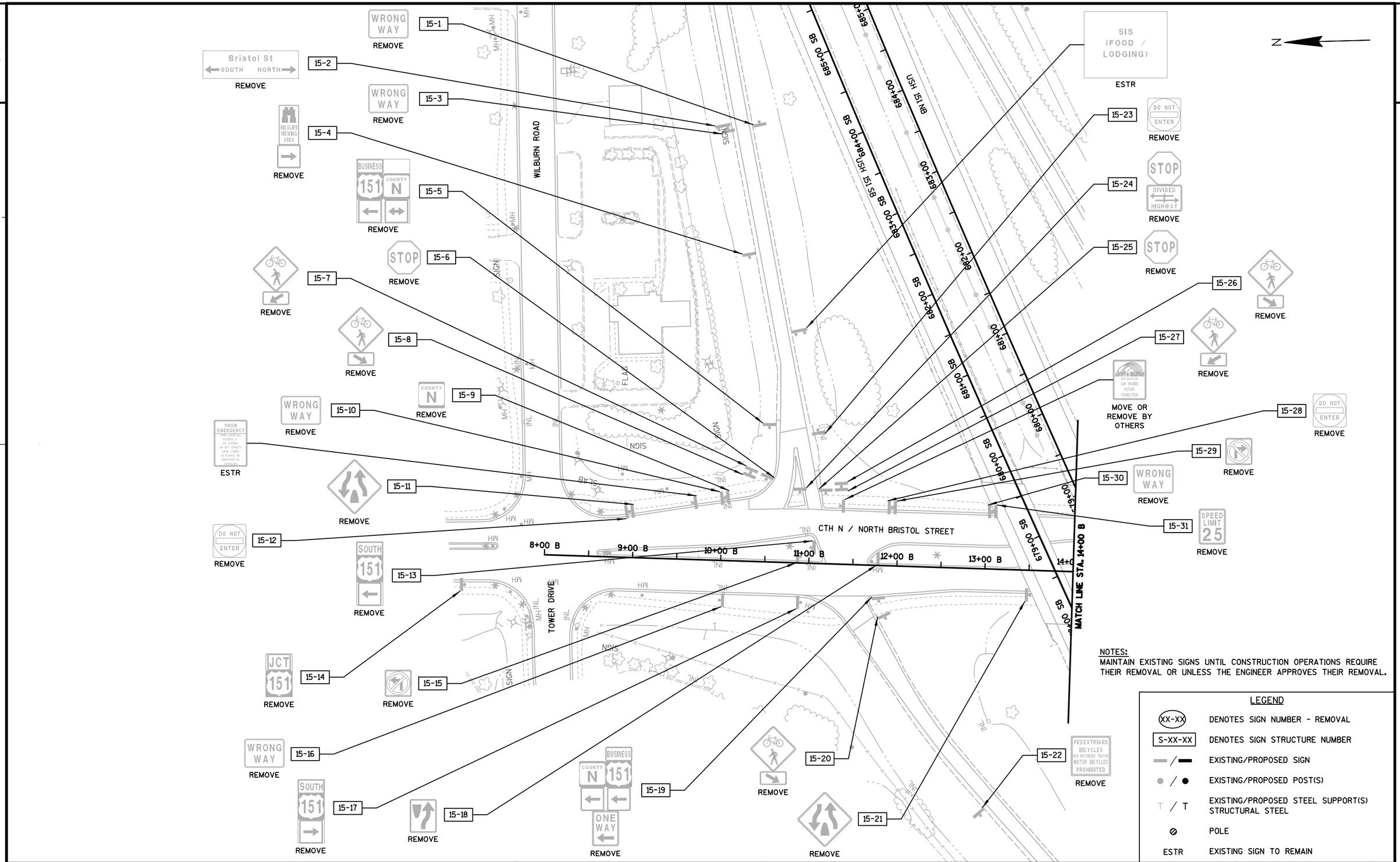



LEGEND

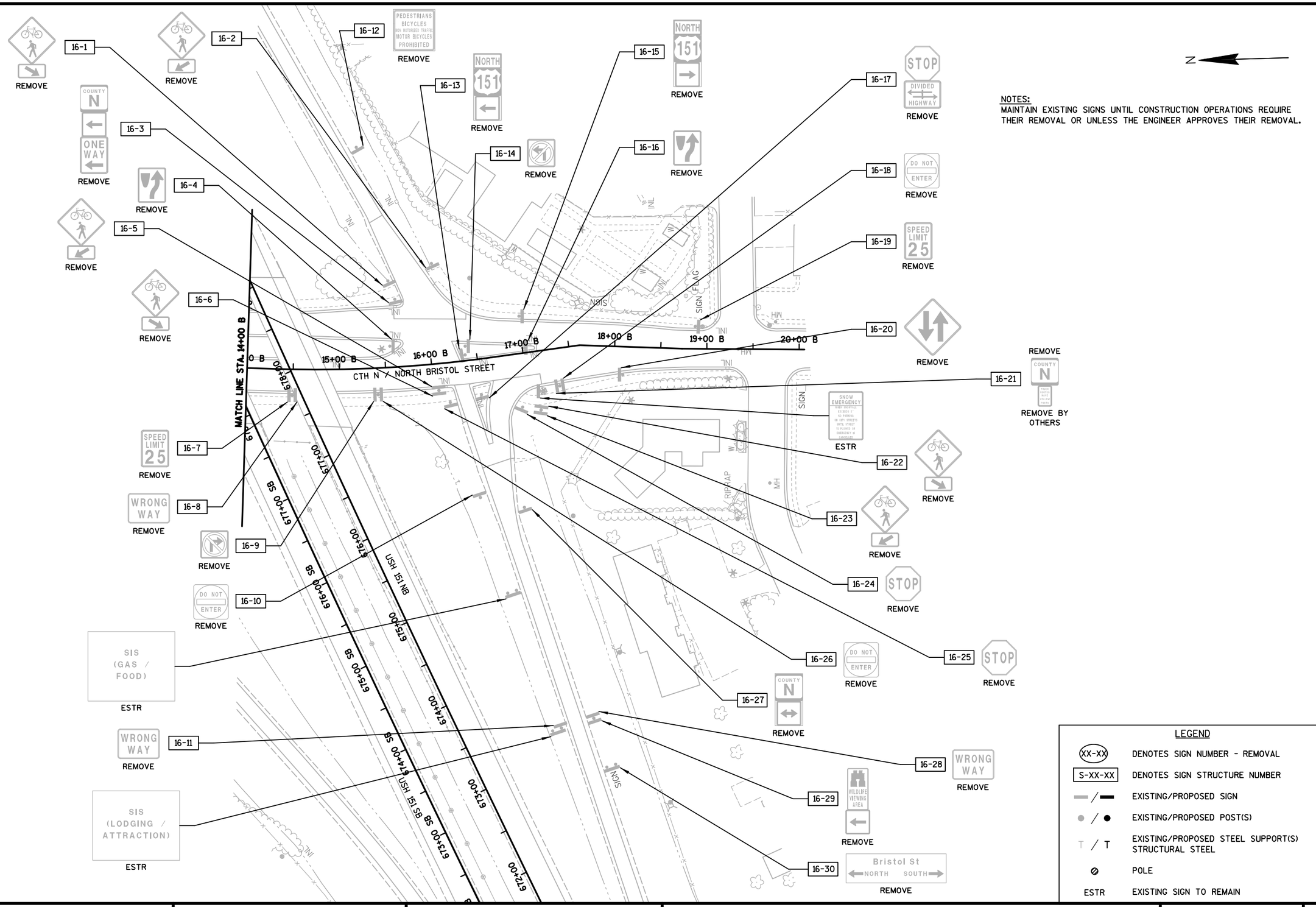
| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ─ / ━ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

NOTES:
REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING (STH 19 INTERCHANGE) | SHEET 48 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGN REMOVALS (CTH N INTERCHANGE) | SHEET 49 | E |
|---|---|---|---|---|---|

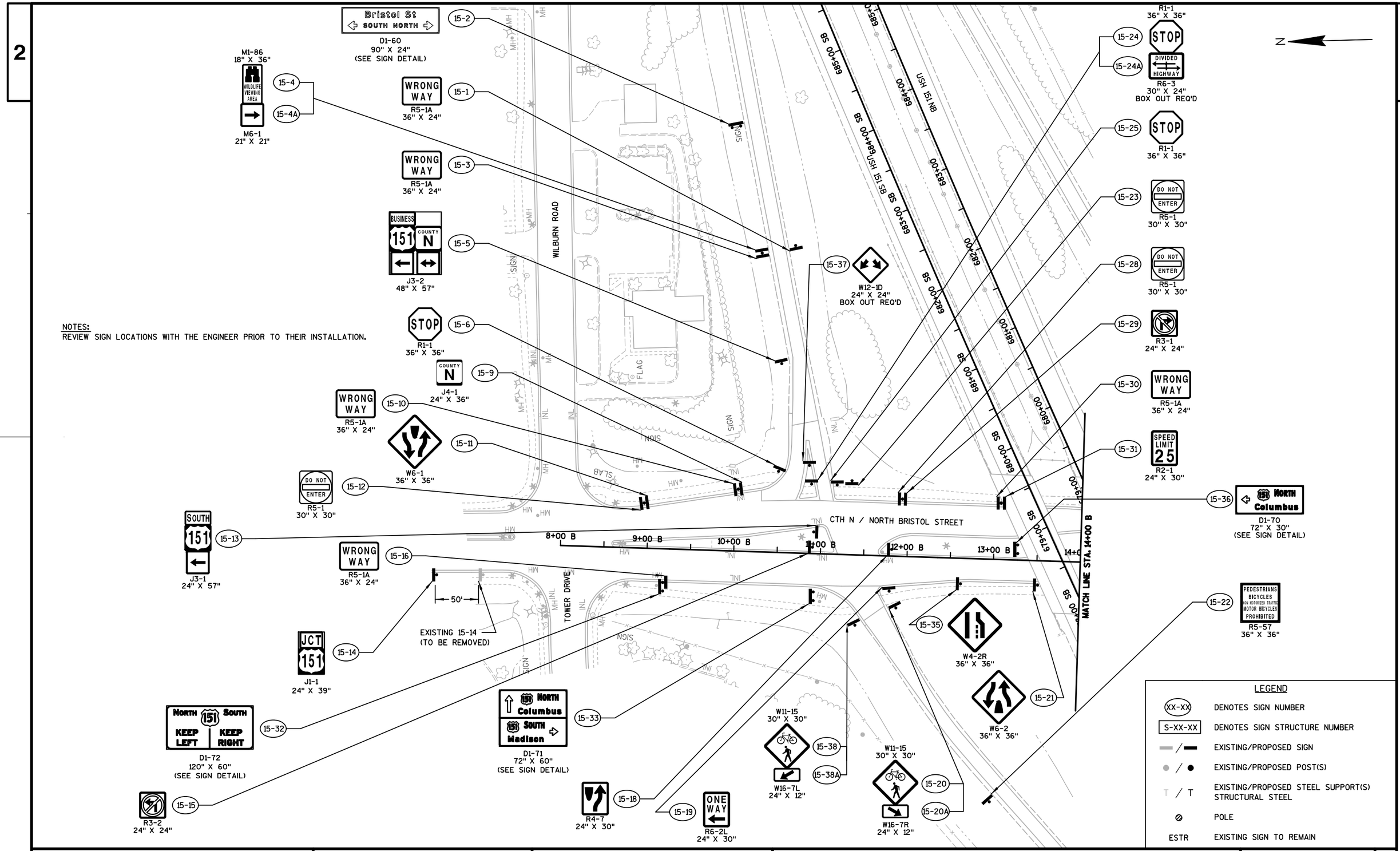



NOTES:
MAINTAIN EXISTING SIGNS UNTIL CONSTRUCTION OPERATIONS REQUIRE THEIR REMOVAL OR UNLESS THE ENGINEER APPROVES THEIR REMOVAL.

LEGEND

| | |
|---|---|
| XX-XX | DENOTES SIGN NUMBER - REMOVAL |
| S-XX-XX | DENOTES SIGN STRUCTURE NUMBER |
| ▬ / ▬ | EXISTING/PROPOSED SIGN |
| ● / ● | EXISTING/PROPOSED POST(S) |
| T / T | EXISTING/PROPOSED STEEL SUPPORT(S) STRUCTURAL STEEL |
| ⊘ | POLE |
| ESTR | EXISTING SIGN TO REMAIN |

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGN REMOVALS (CTH N INTERCHANGE) | SHEET 50 | E |
|---|---|---|---|---|---|

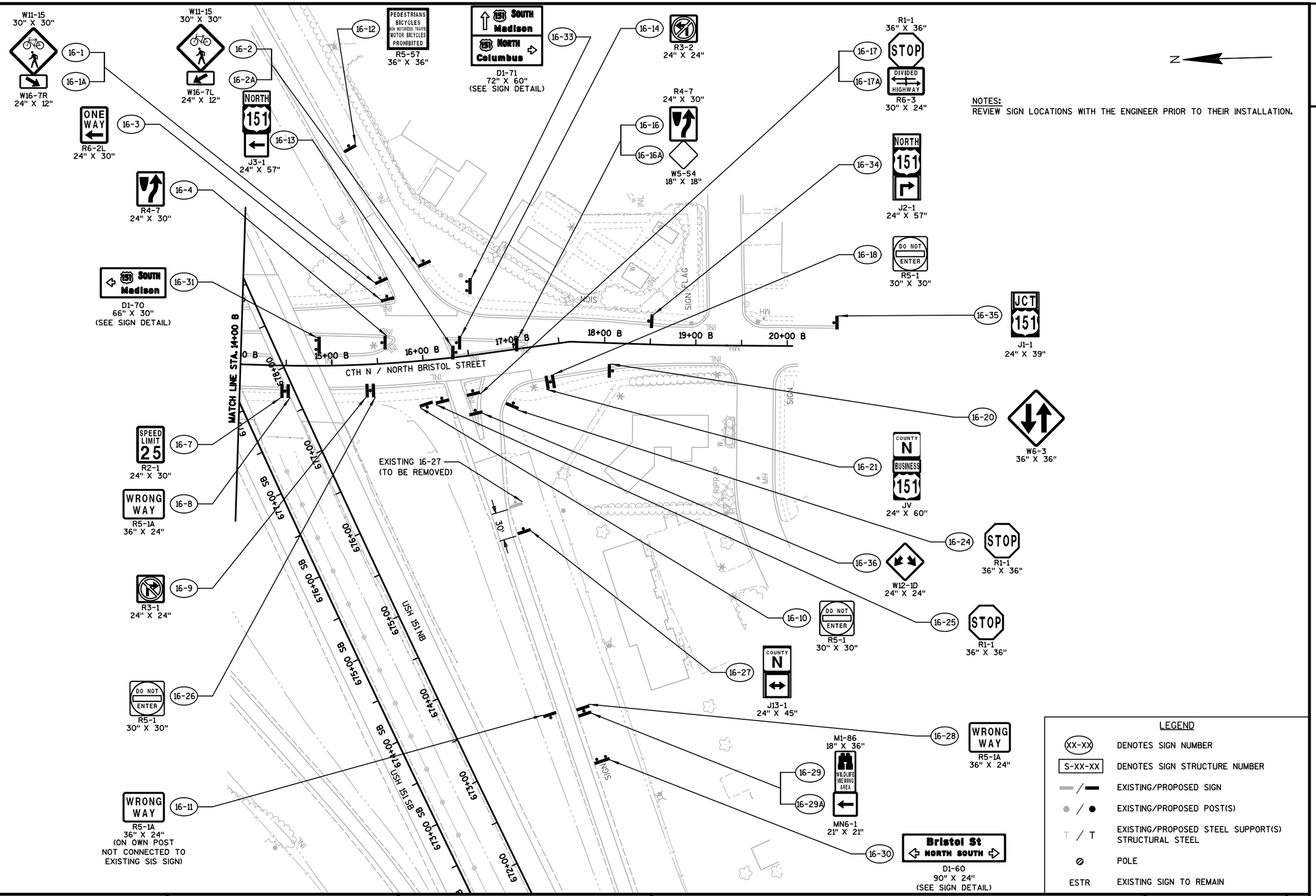



NOTES:
REVIEW SIGN LOCATIONS WITH THE ENGINEER PRIOR TO THEIR INSTALLATION.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING (CTH N INTERCHANGE) | SHEET | E |
|---|---|---|---|---|---|

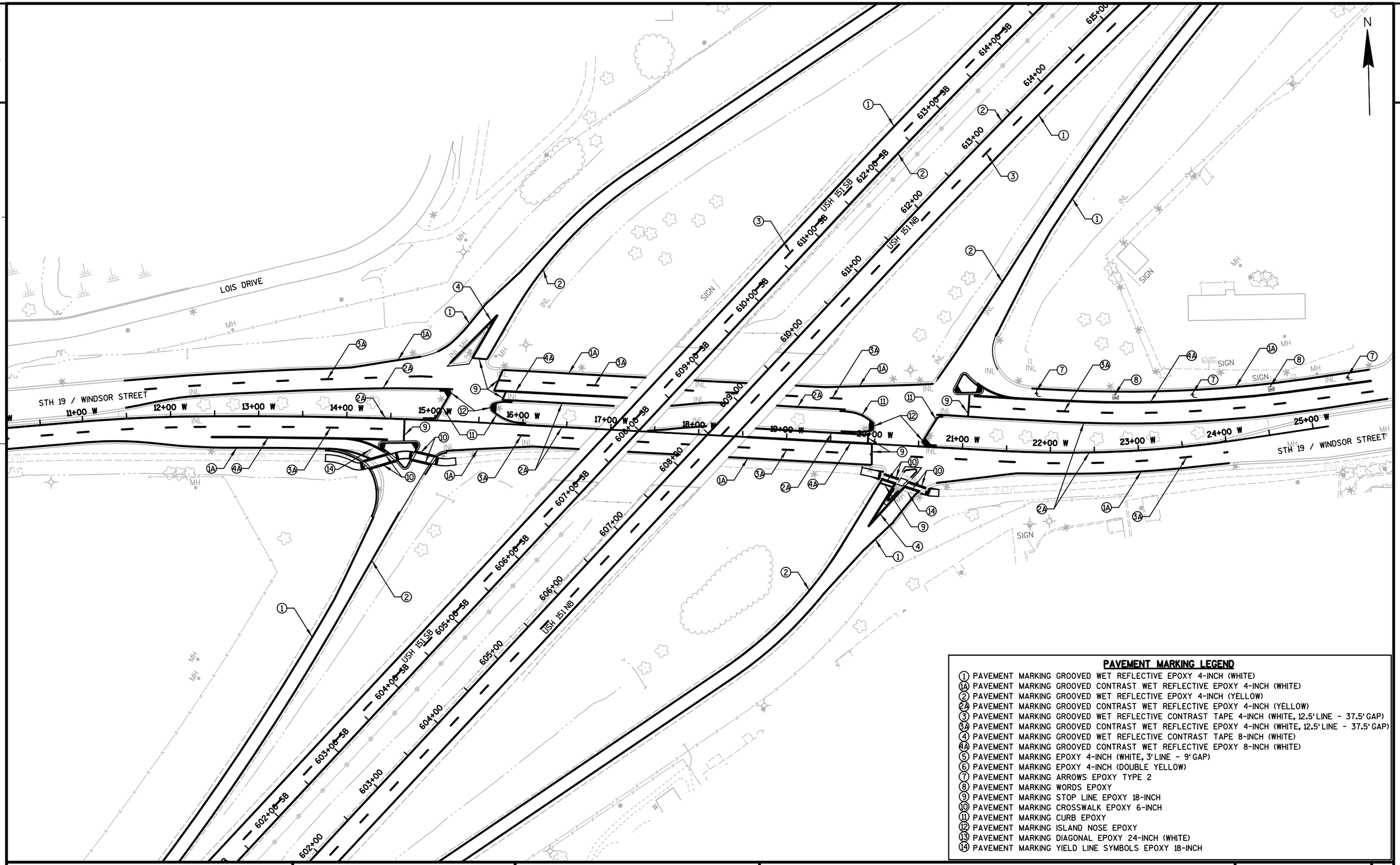


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\023216_ps.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PERMANENT SIGNING (CTH N INTERCHANGE) | SHEET 52 | E |
|---|---|---|---|---|---|

2




## PAVEMENT MARKING LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
1A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 4-INCH (WHITE)
2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
2A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE, 12.5' LINE - 37.5' GAP)
3A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 4-INCH (WHITE, 12.5' LINE - 37.5' GAP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
4A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 8-INCH (WHITE)
5. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3' LINE - 9' GAP)
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PAVEMENT MARKING (STH 19 INTERCHANGE) | SHEET 53 | E |
|---|---|---|---|---|---|

## PAVEMENT MARKING LEGEND

1. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
1A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 4-INCH (WHITE)
2. PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (YELLOW)
2A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 4-INCH (YELLOW)
3. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE, 12.5'LINE - 37.5'GAP)
3A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 4-INCH (WHITE, 12.5'LINE - 37.5'GAP)
4. PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
4A. PAVEMENT MARKING GROOVED CONTRAST WET REFLECTIVE EPOXY 8-INCH (WHITE)
5. PAVEMENT MARKING EPOXY 4-INCH (WHITE, 3'LINE - 9'GAP)
6. PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
7. PAVEMENT MARKING ARROWS EPOXY TYPE 2
8. PAVEMENT MARKING WORDS EPOXY
9. PAVEMENT MARKING STOP LINE EPOXY 18-INCH
10. PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
11. PAVEMENT MARKING CURB EPOXY
12. PAVEMENT MARKING ISLAND NOSE EPOXY
13. PAVEMENT MARKING DIAGONAL EPOXY 24-INCH (WHITE)
14. PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 18-INCH

WILBURN ROAD
TOWER DRIVE
CTH N / NORTH BRISTOL STREET
USH 151 NB
USH 151 SB
8+00 B
9+00 B
10+00 B
11+00 B
12+00 B
13+00 B
14+00 B
15+00 B
16+00 B
17+00 B
18+00 B
19+00 B
20+00 B

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | PAVEMENT MARKING (CTH N INTERCHANGE) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\023229_ps.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

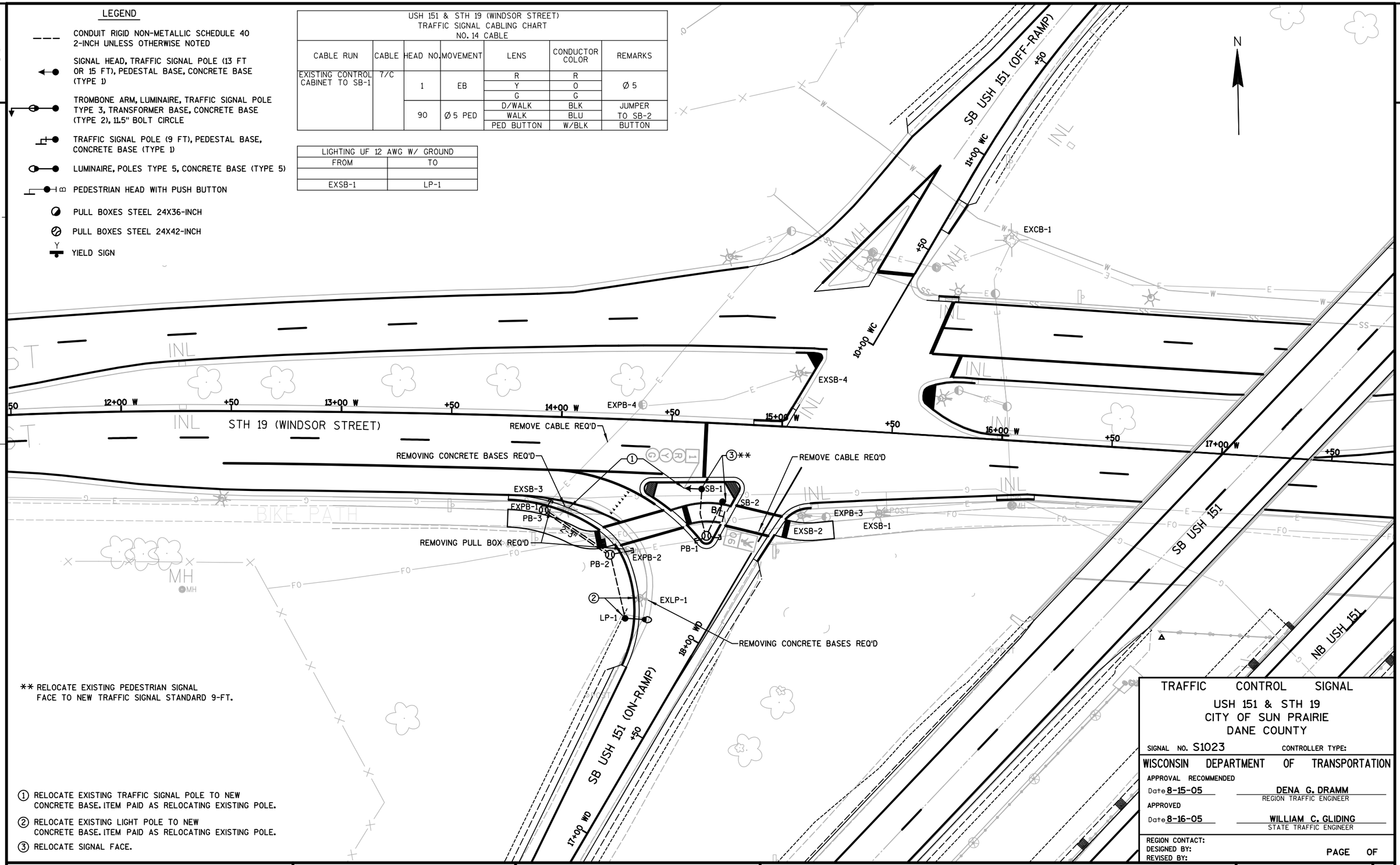
LEGEND

- CONDUIT RIGID NON-METALLIC SCHEDULE 40 2-INCH UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL POLE (13 FT OR 15 FT), PEDESTAL BASE, CONCRETE BASE (TYPE 1)
- TROMBONE ARM, LUMINAIRE, TRAFFIC SIGNAL POLE TYPE 3, TRANSFORMER BASE, CONCRETE BASE (TYPE 2), 11.5" BOLT CIRCLE
- TRAFFIC SIGNAL POLE (9 FT), PEDESTAL BASE, CONCRETE BASE (TYPE 1)
- LUMINAIRE, POLES TYPE 5, CONCRETE BASE (TYPE 5)
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PULL BOXES STEEL 24X36-INCH
- PULL BOXES STEEL 24X42-INCH
- YIELD SIGN

USH 151 & STH 19 (WINDSOR STREET)
TRAFFIC SIGNAL CABLING CHART
NO. 14 CABLE

| CABLE RUN | CABLE | HEAD NO. | MOVEMENT | LENS | CONDUCTOR COLOR | REMARKS |
|---|---|---|---|---|---|---|
| EXISTING CONTROL CABINET TO SB-1 | 7/C | 1 | EB | R | R | Ø 5 |
| | | | | Y | O | |
| | | | | G | G | |
| | | 90 | Ø 5 PED | D/WALK | BLK | JUMPER |
| | | | | WALK | BLU | TO SB-2 |
| | | | | PED BUTTON | W/BLK | BUTTON |

| LIGHTING UF 12 AWG W/ GROUND | |
|---|---|
| FROM | TO |
| | |
| EXSB-1 | LP-1 |




** RELOCATE EXISTING PEDESTRIAN SIGNAL FACE TO NEW TRAFFIC SIGNAL STANDARD 9-FT.

① RELOCATE EXISTING TRAFFIC SIGNAL POLE TO NEW CONCRETE BASE. ITEM PAID AS RELOCATING EXISTING POLE.

② RELOCATE EXISTING LIGHT POLE TO NEW CONCRETE BASE. ITEM PAID AS RELOCATING EXISTING POLE.

③ RELOCATE SIGNAL FACE.

TRAFFIC CONTROL SIGNAL

USH 151 & STH 19
CITY OF SUN PRAIRIE
DANE COUNTY

SIGNAL NO. S1023 CONTROLLER TYPE:

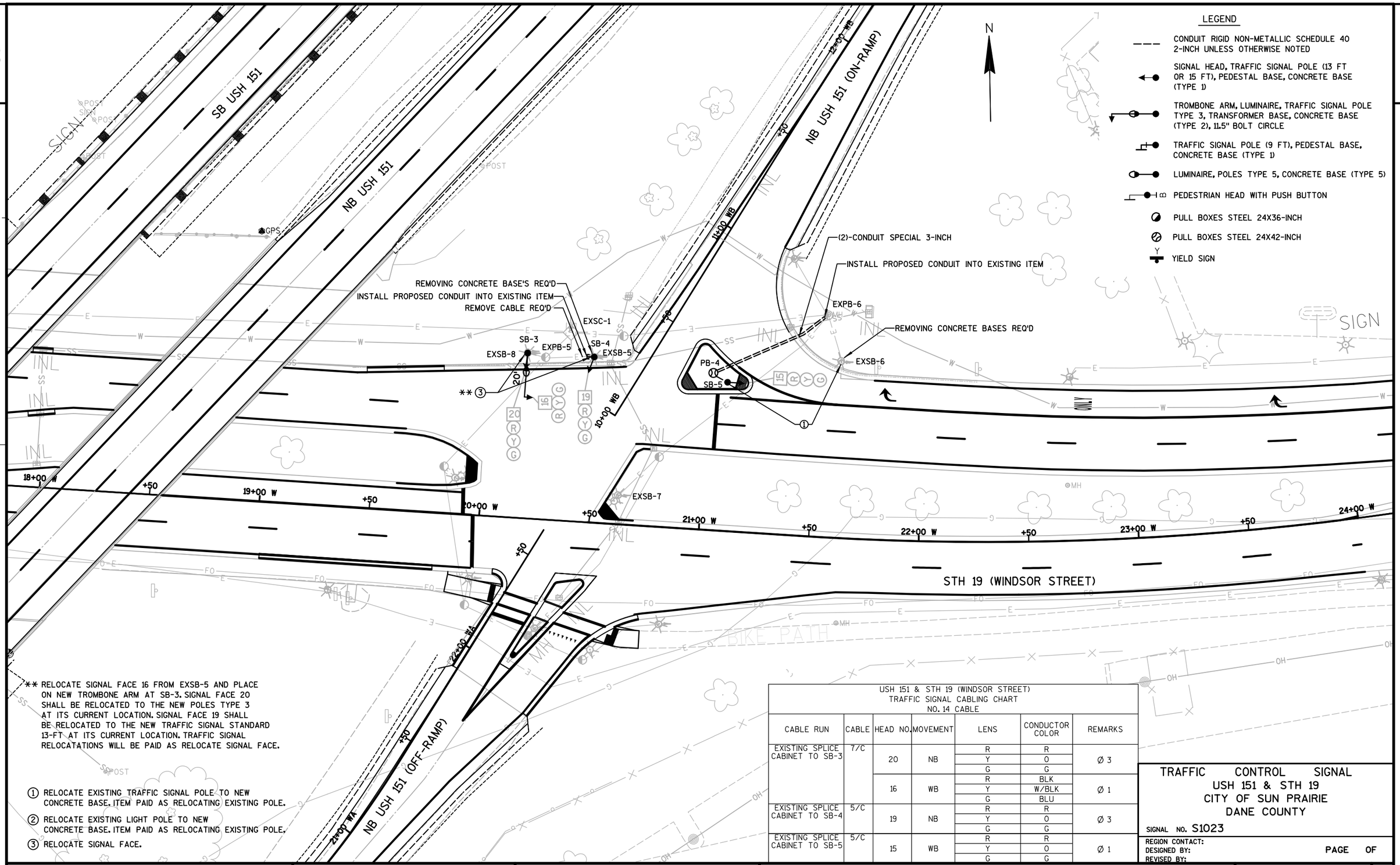
WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 8-15-05 DENA G. DRAMM, REGION TRAFFIC ENGINEER

APPROVED
Date 8-16-05 WILLIAM C. GLIDING, STATE TRAFFIC ENGINEER

REGION CONTACT:
DESIGNED BY:
REVISED BY:
PAGE OF

PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TRAFFIC SIGNALS | SHEET 55 | E




LEGEND

- CONDUIT RIGID NON-METALLIC SCHEDULE 40 2-INCH UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL POLE (13 FT OR 15 FT), PEDESTAL BASE, CONCRETE BASE (TYPE 1)
- TROMBONE ARM, LUMINAIRE, TRAFFIC SIGNAL POLE TYPE 3, TRANSFORMER BASE, CONCRETE BASE (TYPE 2), 11.5" BOLT CIRCLE
- TRAFFIC SIGNAL POLE (9 FT), PEDESTAL BASE, CONCRETE BASE (TYPE 1)
- LUMINAIRE, POLES TYPE 5, CONCRETE BASE (TYPE 5)
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PULL BOXES STEEL 24X36-INCH
- PULL BOXES STEEL 24X42-INCH
- YIELD SIGN

** RELOCATE SIGNAL FACE 16 FROM EXSB-5 AND PLACE ON NEW TROMBONE ARM AT SB-3. SIGNAL FACE 20 SHALL BE RELOCATED TO THE NEW POLES TYPE 3 AT ITS CURRENT LOCATION. SIGNAL FACE 19 SHALL BE RELOCATED TO THE NEW TRAFFIC SIGNAL STANDARD 13-FT AT ITS CURRENT LOCATION. TRAFFIC SIGNAL RELOCATATIONS WILL BE PAID AS RELOCATE SIGNAL FACE.

1. RELOCATE EXISTING TRAFFIC SIGNAL POLE TO NEW CONCRETE BASE. ITEM PAID AS RELOCATING EXISTING POLE.
2. RELOCATE EXISTING LIGHT POLE TO NEW CONCRETE BASE. ITEM PAID AS RELOCATING EXISTING POLE.
3. RELOCATE SIGNAL FACE.

USH 151 & STH 19 (WINDSOR STREET)
TRAFFIC SIGNAL CABLING CHART
NO. 14 CABLE

| CABLE RUN | CABLE | HEAD NO. | MOVEMENT | LENS | CONDUCTOR COLOR | REMARKS |
|---|---|---|---|---|---|---|
| EXISTING SPLICE CABINET TO SB-3 | 7/C | 20 | NB | R | R | Ø 3 |
| | | | | Y | O | |
| | | | | G | G | |
| | | 16 | WB | R | BLK | Ø 1 |
| | | | | Y | W/BLK | |
| | | | | G | BLU | |
| EXISTING SPLICE CABINET TO SB-4 | 5/C | 19 | NB | R | R | Ø 3 |
| | | | | Y | O | |
| | | | | G | G | |
| EXISTING SPLICE CABINET TO SB-5 | 5/C | 15 | WB | R | R | Ø 1 |
| | | | | Y | O | |
| | | | | G | G | |

TRAFFIC CONTROL SIGNAL
USH 151 & STH 19
CITY OF SUN PRAIRIE
DANE COUNTY

SIGNAL NO. S1023

REGION CONTACT:
DESIGNED BY:
REVISED BY:

PAGE OF

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TRAFFIC SIGNALS | SHEET | E |
|---|---|---|---|---|---|



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## PAVEMENT MARKING LEGEND

| | |
|---|---|
| RT-4W | TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE) |
| RT-4Y | TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (YELLOW) |
| RT-8W | TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH (WHITE) |
| 4W | TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE) |
| 4Y | TEMPORARY PAVEMENT MARKING PAINT 4-INCH (YELLOW) |
| 8W | TEMPORARY PAVEMENT MARKING PAINT 8-INCH (WHITE) |
| RT-6W | TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 6-INCH (WHITE) |
| RMPM | REMOVING PAVEMENT MARKINGS OR REMOVING PAVEMENT MARKINGS WATER BLASTING (SEE MISC. QUANTITIES FOR LOCATIONS) |

## GENERAL NOTES: TRAFFIC CONTROL

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 DESIRABLE MINIMUM OF 200 FEET (500 FEET DESIRABLE) 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 AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

IF LANE CLOSURES OR SHOULDER CLOSURES ARE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

THE LANE CLOSURE SERIES SHALL BE INSTALLED AS A COMPLETE UNIT WHICH INCLUDES ALL ADVANCE WARNING SIGNING, DRUMS, AND ARROW BOARDS. PAVEMENT MARKING NOT APPROPRIATE TO THE TRAVEL PATH SHALL BE REMOVED.

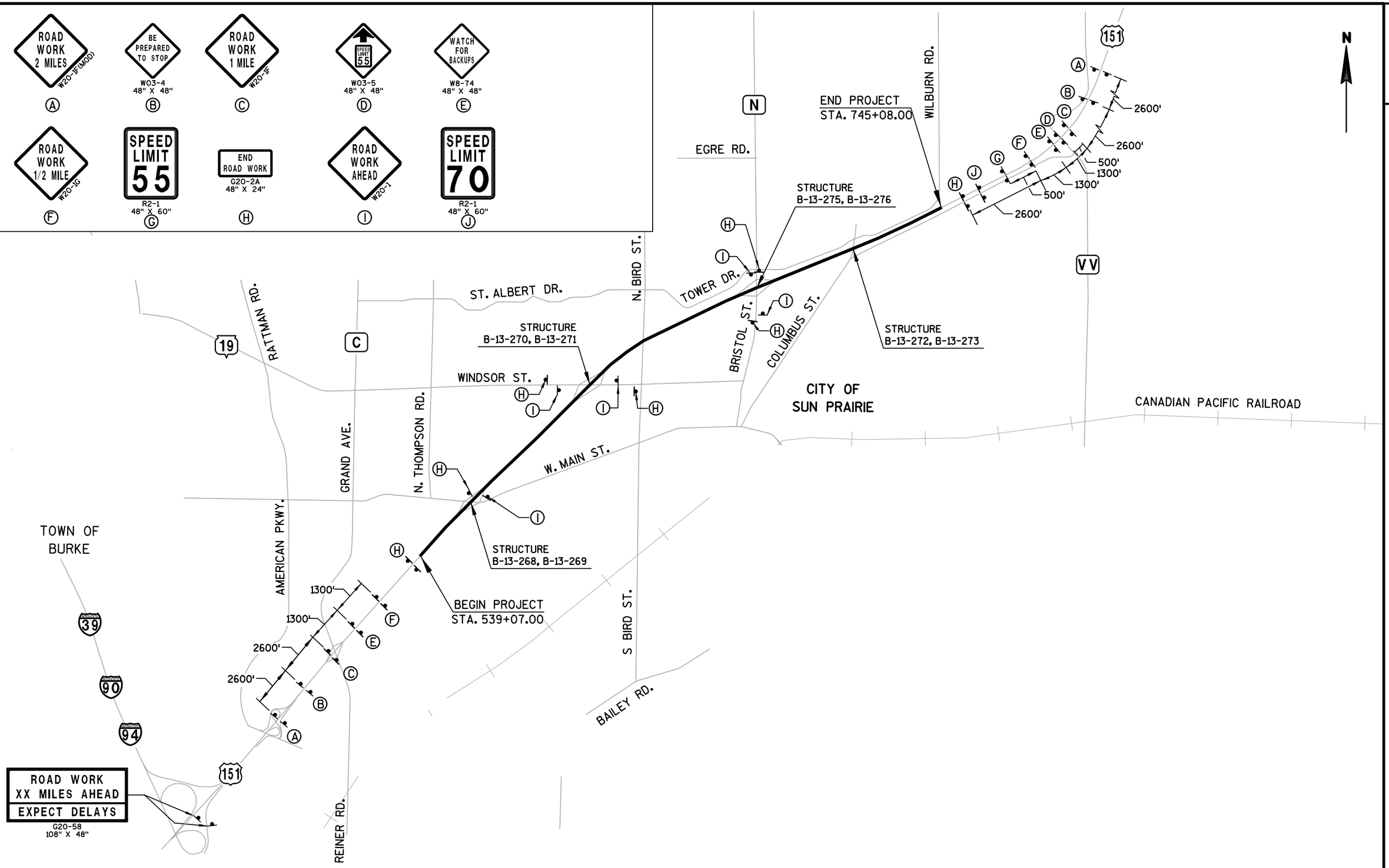
ALL TRAFFIC CONTROL SIGNING SHALL CONFORM TO: PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE WISCONSIN SUPPLEMENT TO THE MUTCD, AND OTHER CONTRACT DOCUMENTS.

THE TURNING OF TRAFFIC CONTROL DEVICES WHEN NOT IN USE TO OBSCURE THE MESSAGE WILL NOT BE ALLOWED.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

2

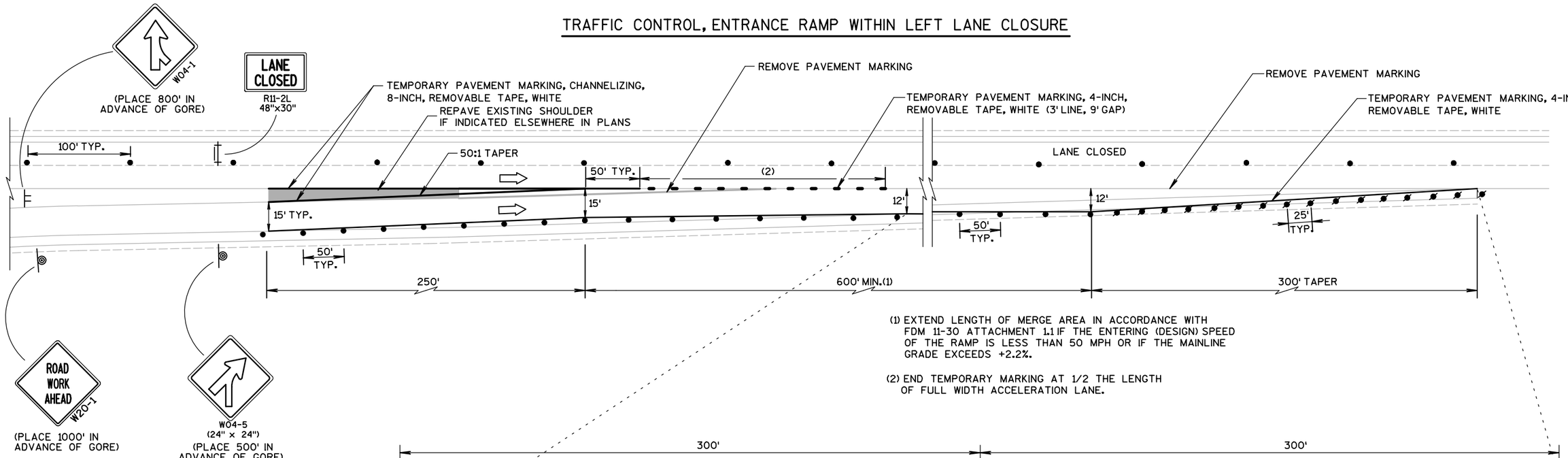



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ADVANCED WARNING SIGNING | SHEET | E |
|---|---|---|---|---|---|



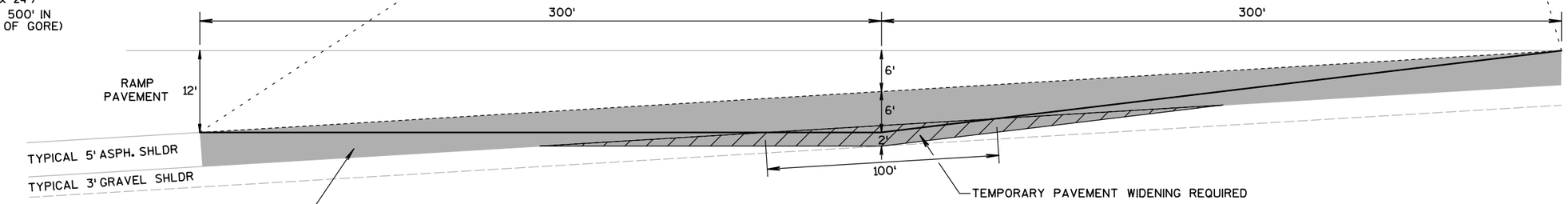
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\025002_tc.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

# TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LEFT LANE CLOSURE




(1) EXTEND LENGTH OF MERGE AREA IN ACCORDANCE WITH FDM 11-30 ATTACHMENT 1.1 IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS +2.2%.

(2) END TEMPORARY MARKING AT 1/2 THE LENGTH OF FULL WIDTH ACCELERATION LANE.




## TYPICAL TAPERED ENTRANCE RAMP TEMPORARY PAVEMENT DETAIL

(EXISTING RAMP DIMENSIONS MAY VARY. ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

## 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"x48" 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 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

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 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

## LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

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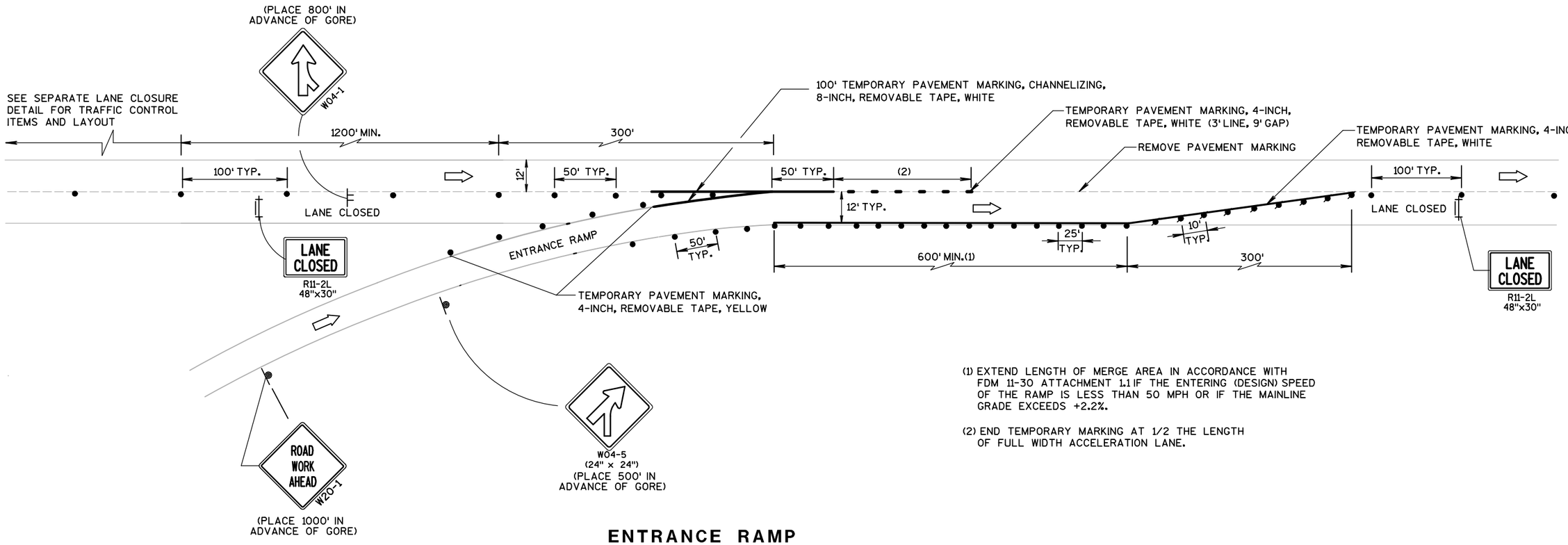
|---|---|---|---|---|---|

# TRAFFIC CONTROL, ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE




(1) EXTEND LENGTH OF MERGE AREA IN ACCORDANCE WITH FDM 11-30 ATTACHMENT 1.1 IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS +2.2%.

(2) END TEMPORARY MARKING AT 1/2 THE LENGTH OF FULL WIDTH ACCELERATION LANE.

## ENTRANCE RAMP

## 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"x48" 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 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE 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.

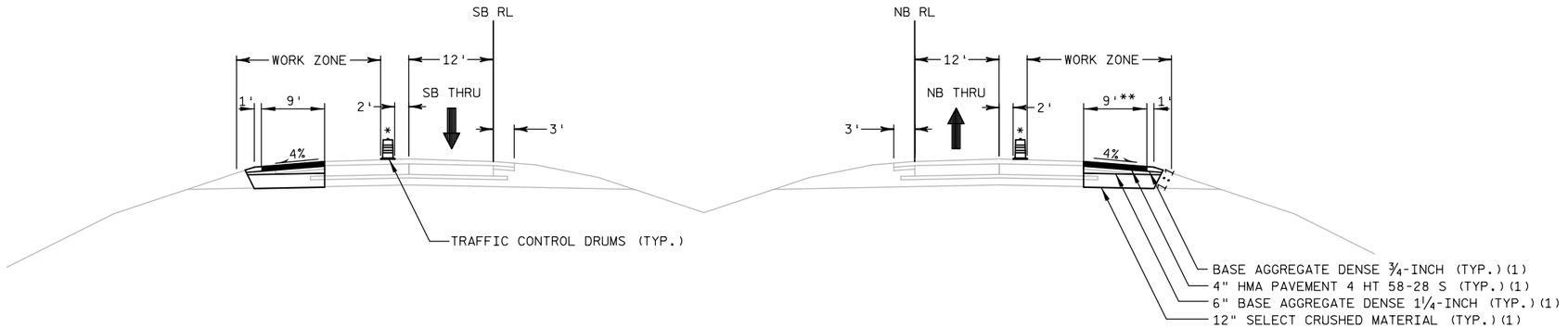
REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

### LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | TRAFFIC CONTROL DETAIL: TEMPORARY PARALLEL RAMP | SHEET 60 | E |
|---|---|---|---|---|---|




## STAGE 1 - MAINLINE (DESIGNATED WORKING HOURS)

*MOVE TRAFFIC CONTROL DRUMS TO OUTSIDE SHOULDER WHEN LANE IS NOT CLOSED

(1) SHOULDER REPLACEMENT LIMITS AT STRUCTURES AND SOUTHBOUND END PROJECT

STA. 549+14SB - STA. 554+85SB
STA. 601+08SB - STA. 614+95SB
STA. 672+15SB - STA. 685+66SB
STA. 709+65SB - STA. 723+04SB
STA. 736+92SB - STA. 748+07SB

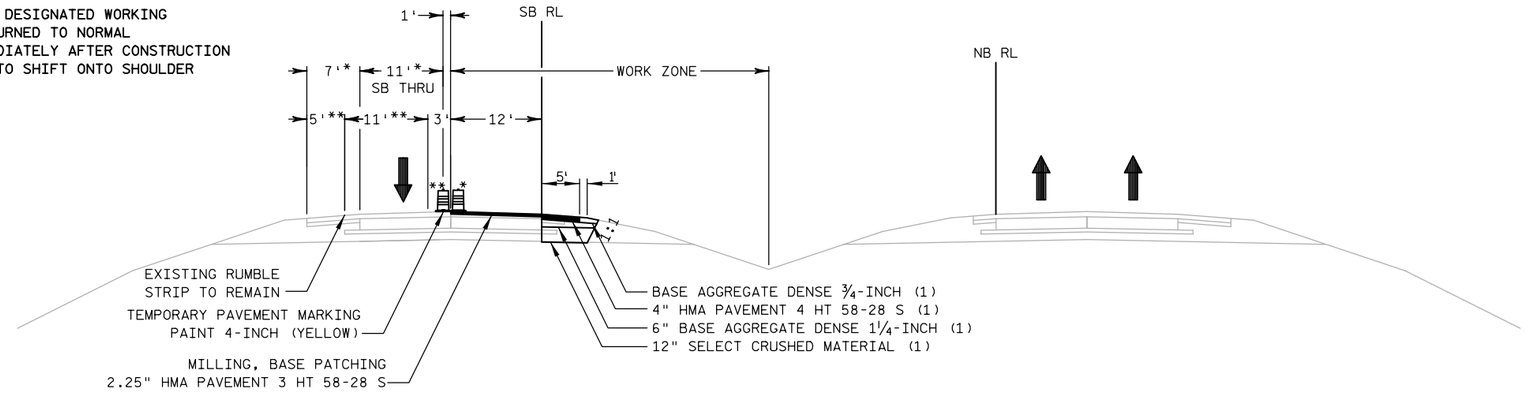
(1) SHOULDER REPLACEMENT LIMITS AT STRUCTURES

STA. 550+04 - STA. 556+11
STA. 564+00 - STA. 569+60**
STA. 601+41 - STA. 616+39
STA. 625+50 - STA. 630+00**
STA. 671+08 - STA. 685+07
STA. 693+98 - STA. 699+98**
STA. 708+43 - STA. 722+43

** 5' WIDTH TYP. (VARIES TO 7' WIDTH)

* NORMAL DRUM AND LANE LOCATION DURING NON-WORKING HOURS AND DESIGNATED WORKING HOURS IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED.

** TEMPORARY DRUM AND LANE LOCATION DURING DESIGNATED WORKING HOURS ONLY. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.




## STAGE 2A - MAINLINE

(1) SHOULDER REPLACEMENT LIMITS AT STRUCTURES AND SOUTHBOUND END PROJECT

STA. 549+43SB - STA. 555+48SB
STA. 600+68SB - STA. 615+40SB
STA. 671+79SB - STA. 685+77SB
STA. 709+25SB - STA. 723+20SB
STA. 738+02SB - STA. 746+97SB




## STAGE 2A - STRUCTURES



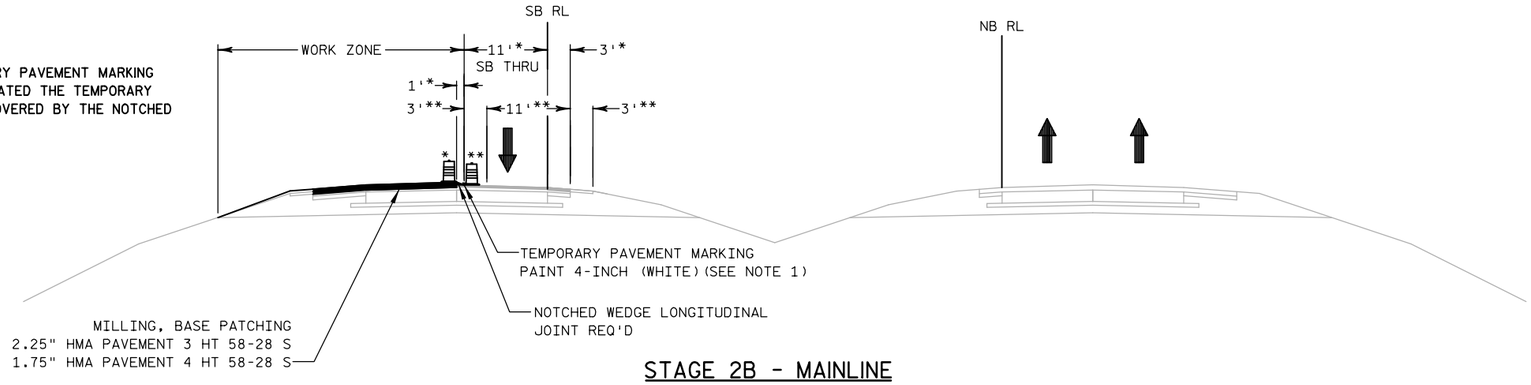

## STAGE 2A - STRUCTURE B-13-269

* NORMAL DRUM AND LANE LOCATION DURING NON-WORKING HOURS AND DESIGNATED WORKING HOURS IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED.

** TEMPORARY DRUM AND LANE LOCATION DURING DESIGNATED WORKING HOURS ONLY. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.

NOTE 1:

AT THE COMPLETION OF STAGE 2B, PLACE TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE, 4'LINE - 46'GAP). IT IS ANTICIPATED THE TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE) WILL BE COVERED BY THE NOTCHED WEDGE LONGITUDINAL JOINT.




STAGE 2B - MAINLINE




STAGE 2B - STRUCTURES



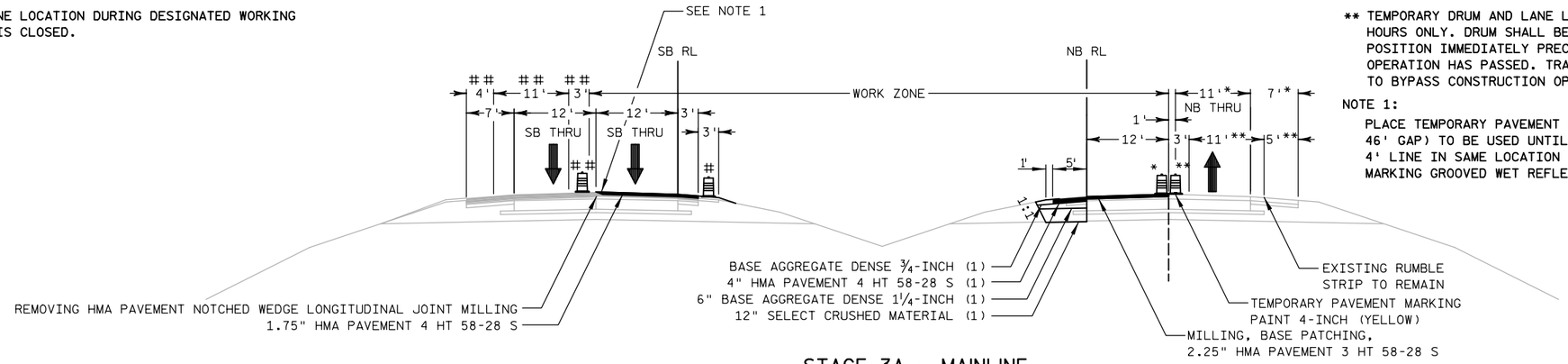

STAGE 2B - STRUCTURE B-13-269

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CONSTRUCTION STAGING TYPICALS | SHEET 63 | E |
|---|---|---|---|---|---|

2

# NORMAL DRUM LOCATION DURING NON-WORKING HOURS WHEN LANE CLOSURE IS NOT IN PLACE.

## TEMPORARY DRUM AND LANE LOCATION DURING DESIGNATED WORKING HOURS ONLY WHEN LANE IS CLOSED.




STAGE 3A - MAINLINE

* NORMAL DRUM AND LANE LOCATION DURING NON-WORKING HOURS AND DESIGNATED WORKING HOURS IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED.

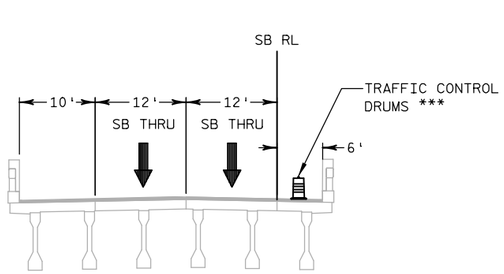
** TEMPORARY DRUM AND LANE LOCATION DURING DESIGNATED WORKING HOURS ONLY. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.

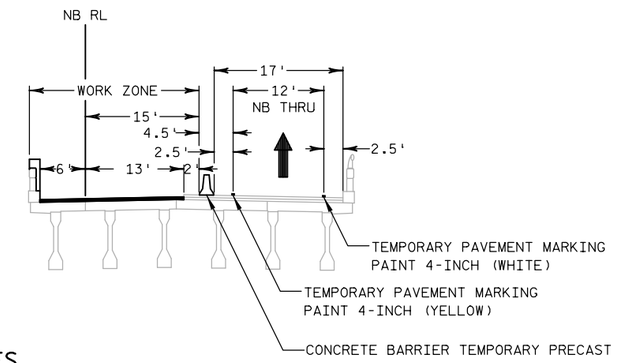
NOTE 1:

PLACE TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE, 4' LINE - 46' GAP) TO BE USED UNTIL GROOVING PAVEMENT IS ALLOWED. LOCATE 4' LINE IN SAME LOCATION AS FUTURE GROOVE LOCATION FOR PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH.

(1)SHOULDER REPLACEMENT LIMITS AT STRUCTURES

STA. 549+75 - STA. 553+74
STA. 603+42 - STA. 614+09
STA. 673+41 - STA. 682+97
STA. 710+77 - STA. 720+37




STAGE 3A - STRUCTURES

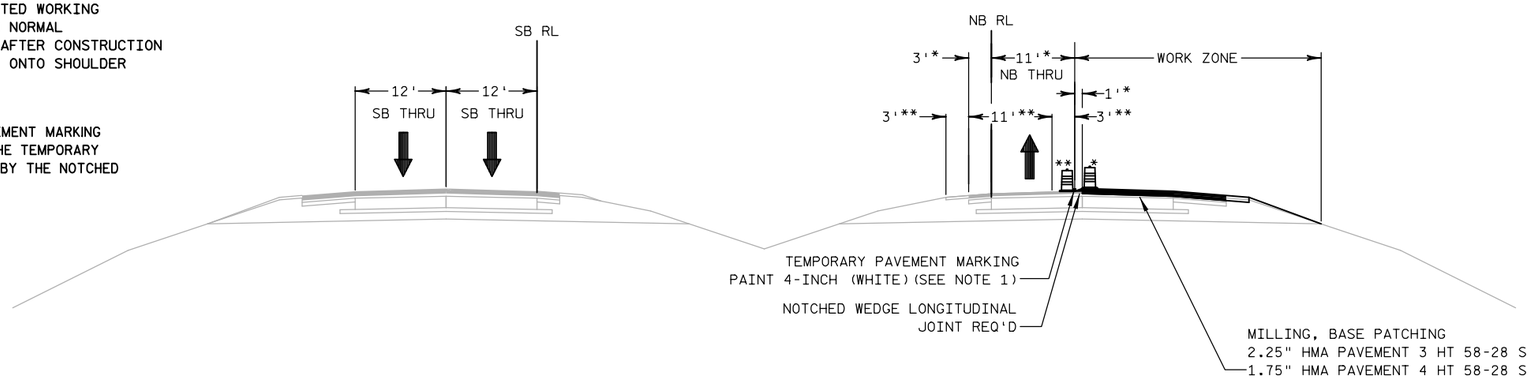
*** DRUM LOCATION ON STRUCTURE TO MATCH THE LOCATION OF DRUM ON SB USH 151 DURING WORKING AND NON-WORKING HOURS.

* NORMAL DRUM AND LANE LOCATION DURING NON-WORKING HOURS AND DESIGNATED WORKING HOURS IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED.

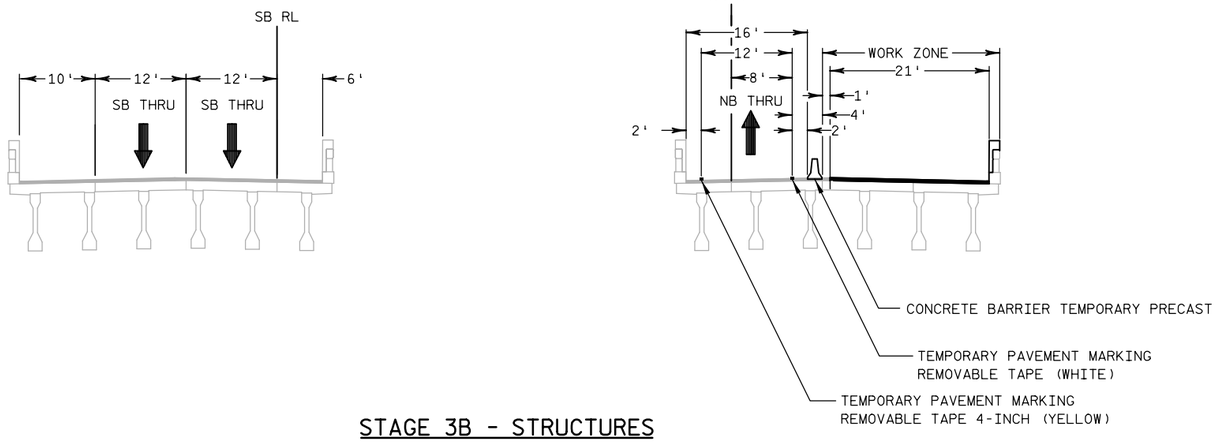
** TEMPORARY DRUM AND LANE LOCATION DURING DESIGNATED WORKING HOURS ONLY. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.

NOTE 1:

AT THE COMPLETION OF STAGE 3B, PLACE TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE, 4'LINE - 46'GAP). IT IS ANTICIPATED THE TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE) WILL BE COVERED BY THE NOTCHED WEDGE LONGITUDINAL JOINT.




STAGE 3B - MAINLINE



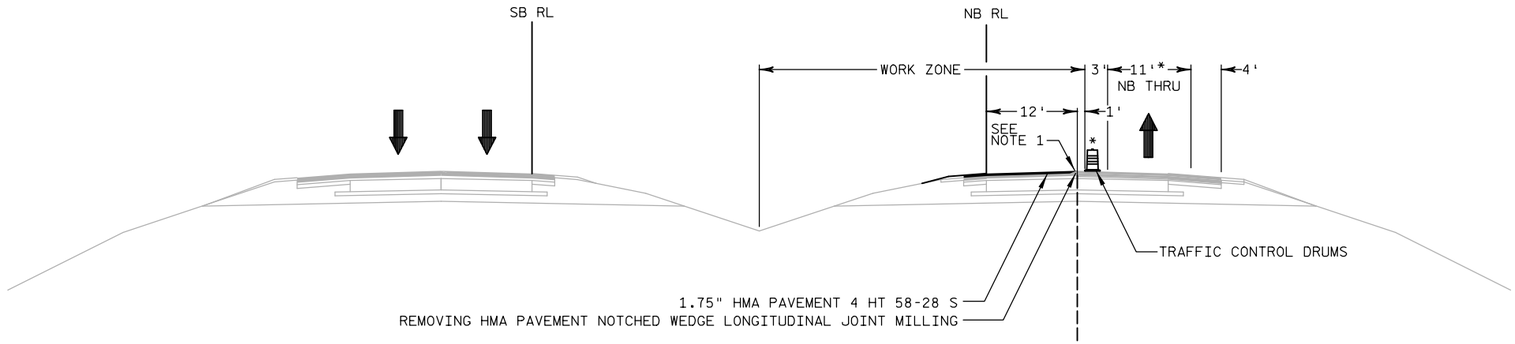

STAGE 3B - STRUCTURES

2

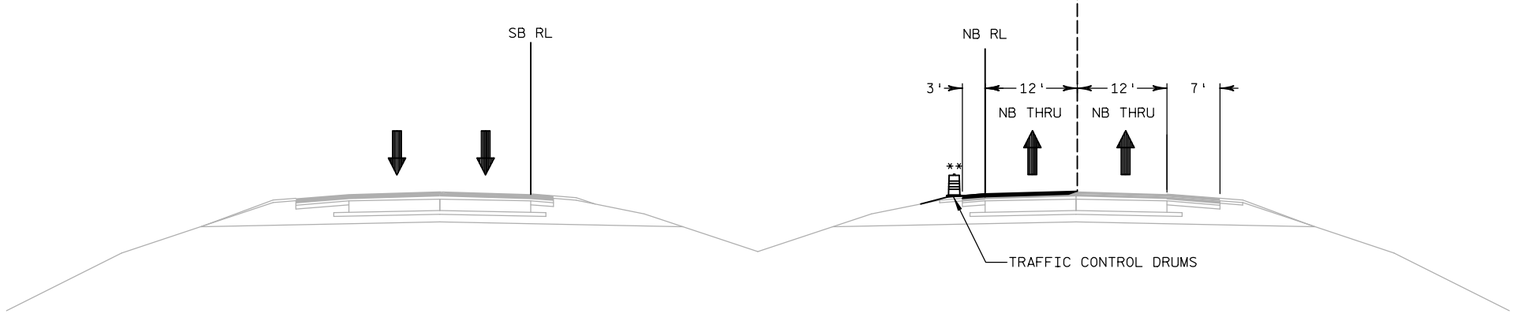
* TEMPORARY DRUM AND LANE LOCATION DURING DESIGNATED WORKING HOURS ONLY WHEN LANE IS CLOSED.

** NORMAL DRUM LOCATION DURING NON-WORKING HOURS WHEN LANE CLOSURE IS NOT IN PLACE.

NOTE 1:
PLACE TEMPORARY PAVEMENT MARKING PAINT 4-INCH (WHITE, 4' LINE - 46' GAP) TO BE USED UNTIL GROOVING PAVEMENT IS ALLOWED. LOCATE 4' LINE IN SAME LOCATION AS FUTURE GROOVE LOCATION FOR PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH.




STAGE 3C - MAINLINE (DESIGNATED WORKING HOURS)




STAGE 3C - MAINLINE (NON-WORKING HOURS)

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CONSTRUCTION STAGING TYPICALS | SHEET 66 | E |
|---|---|---|---|---|---|

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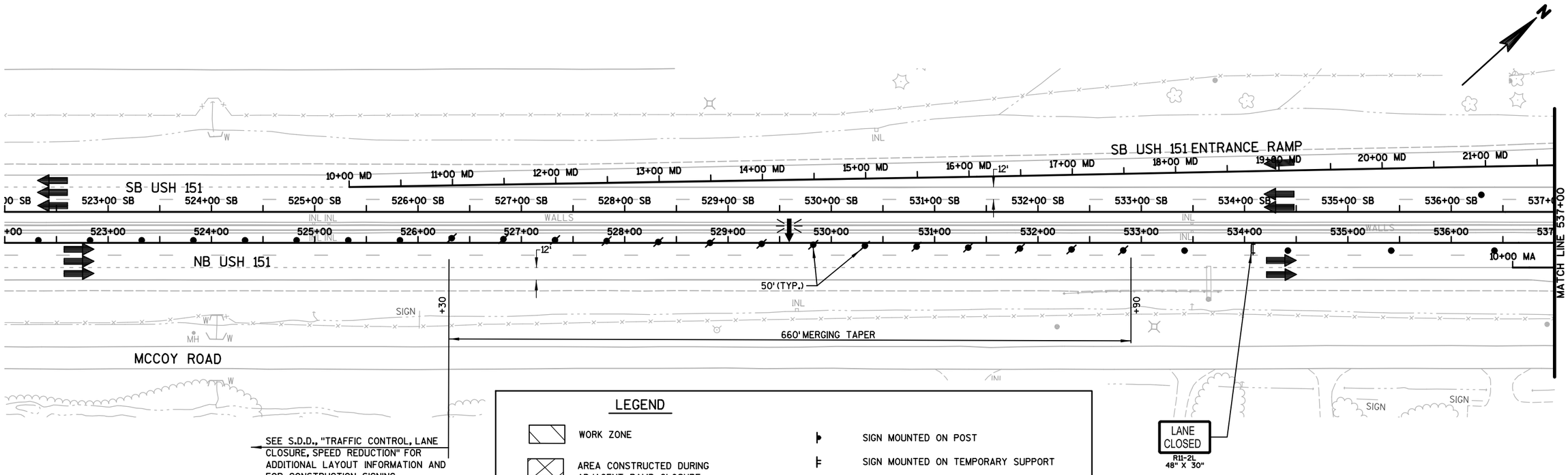
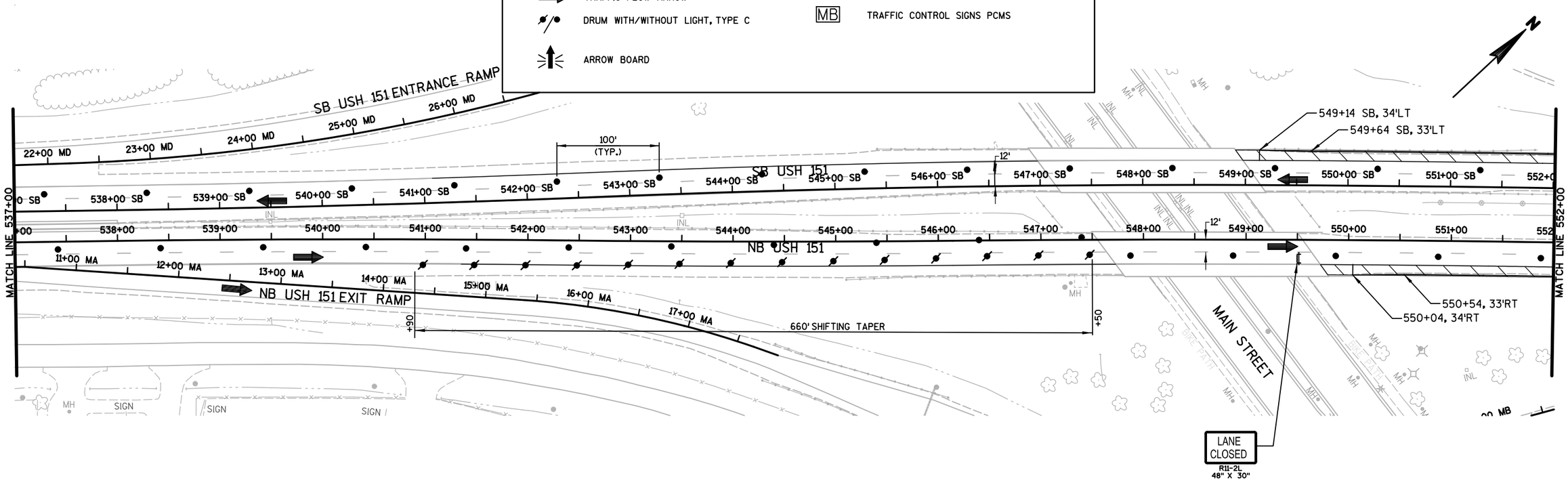



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 67 | E |
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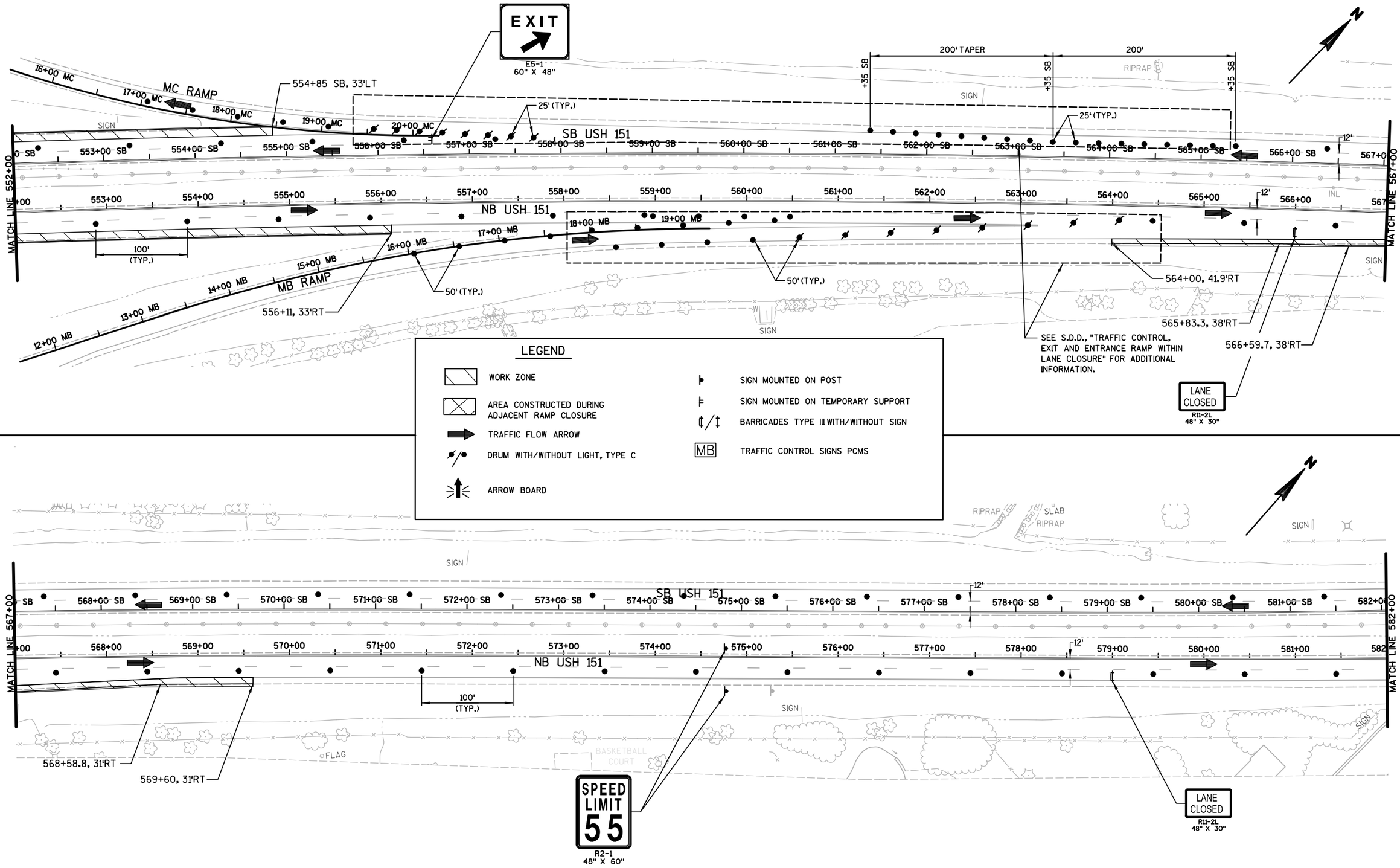


## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 68 E |
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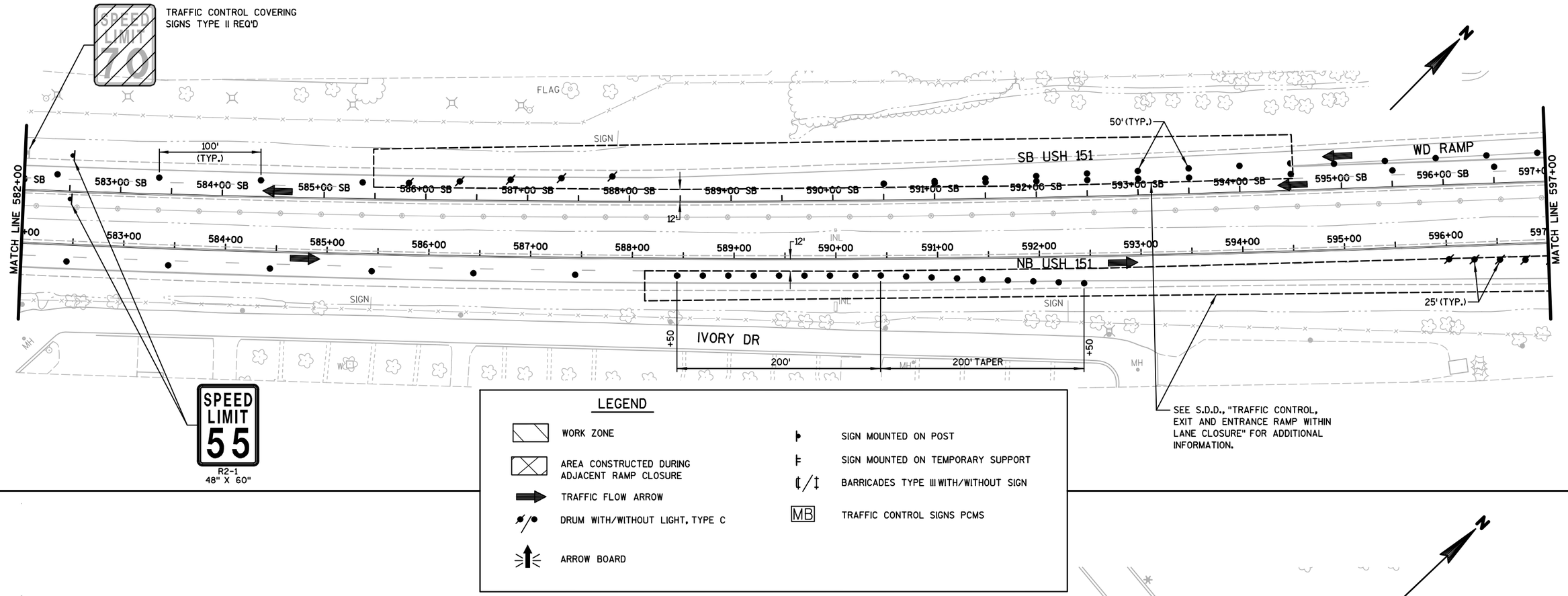
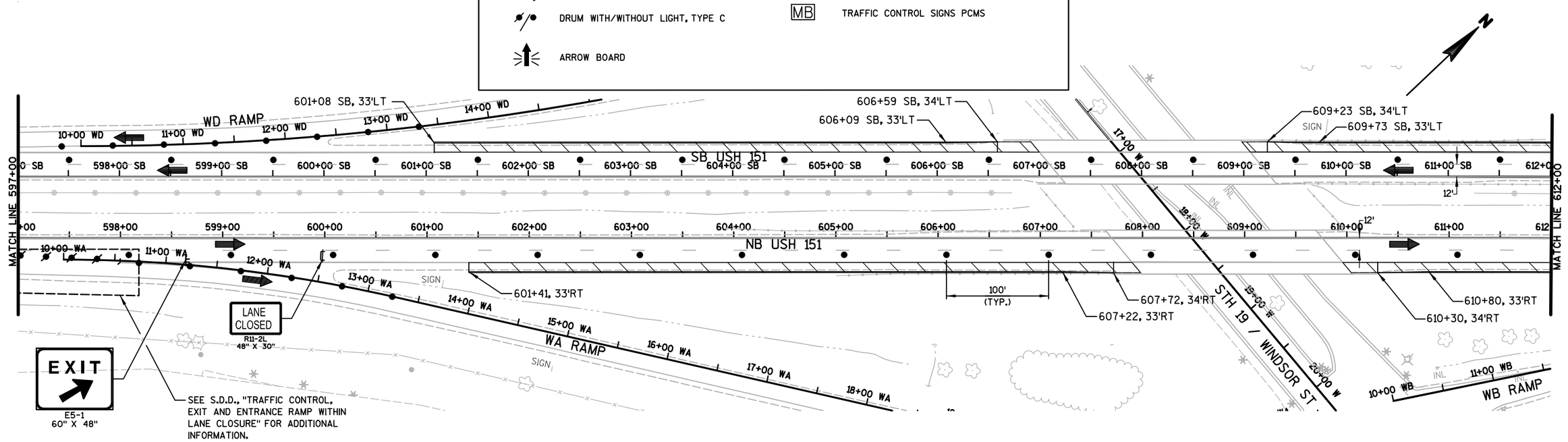
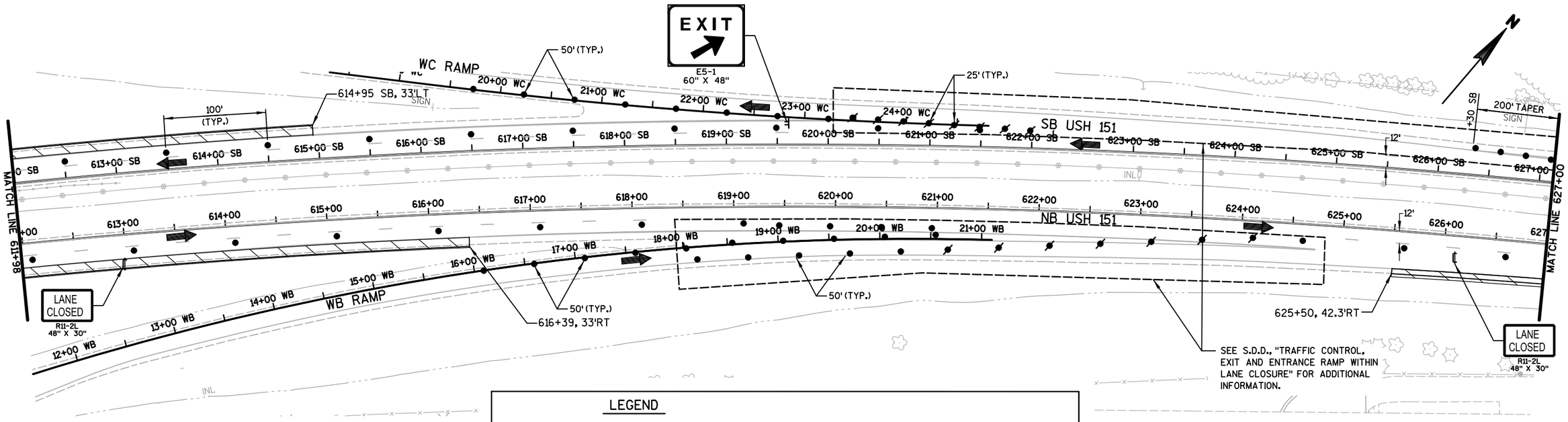



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

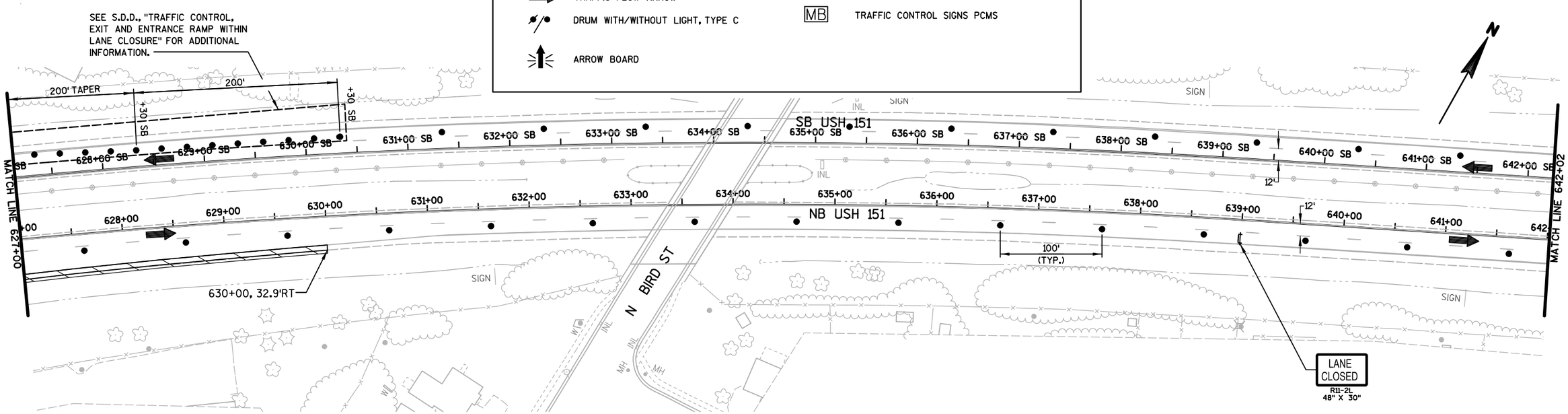



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 69 | E |
|---|---|---|---|---|---|

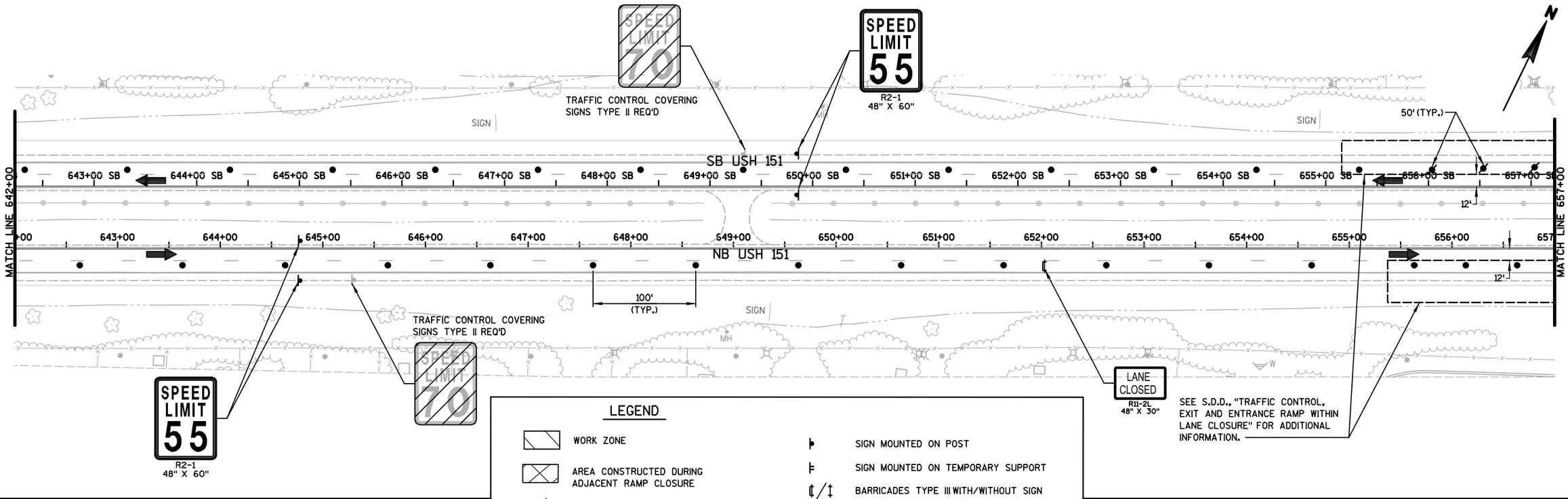


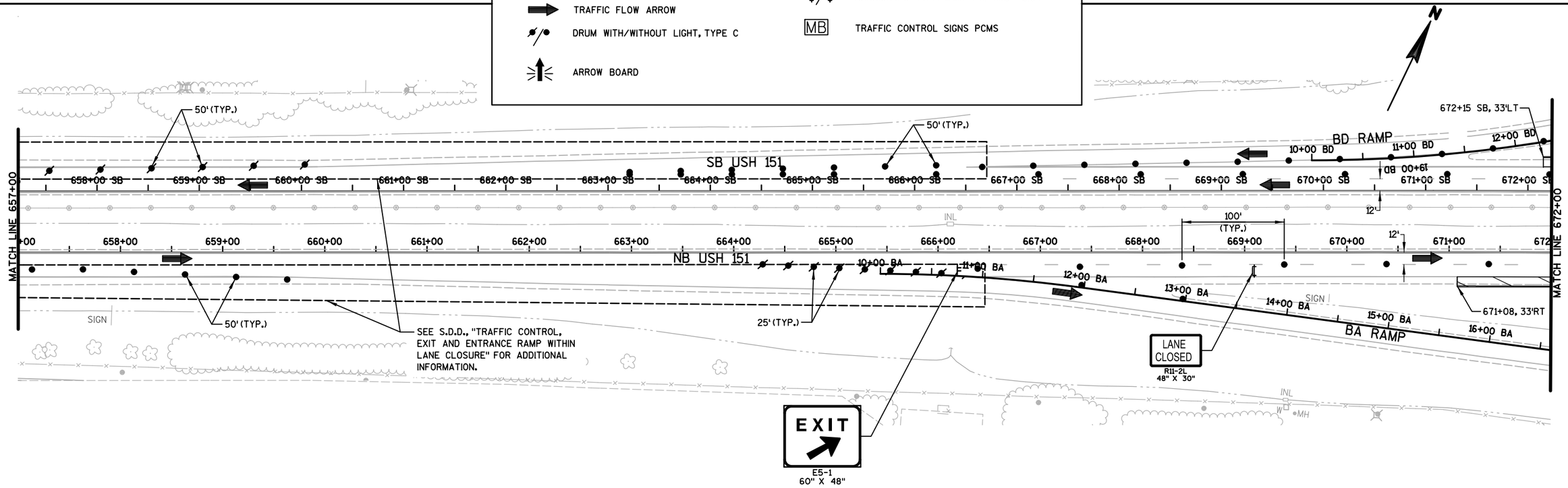

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

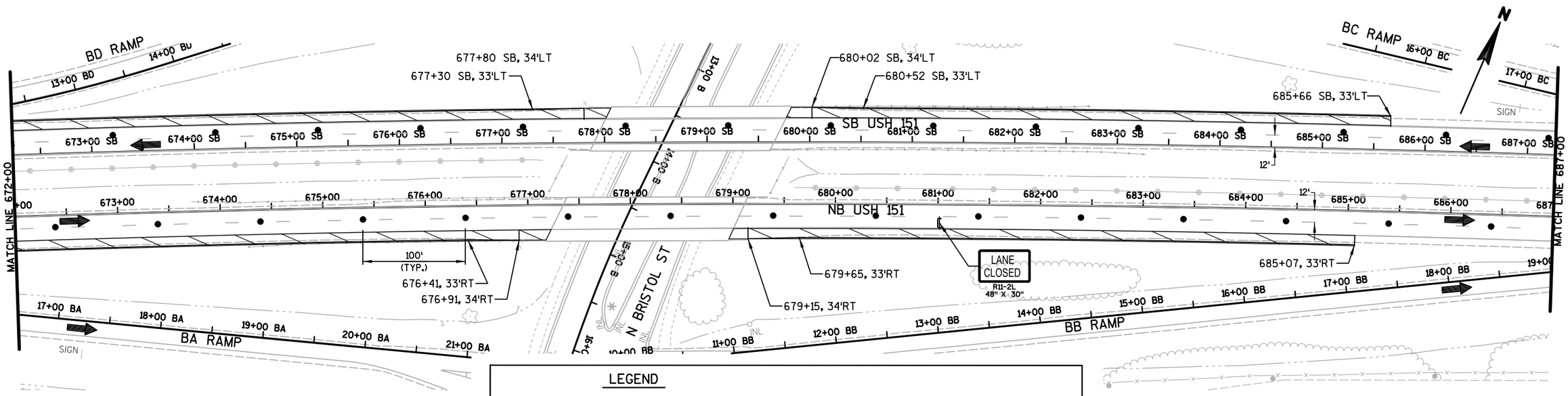



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 70 | E |
|---|---|---|---|---|---|



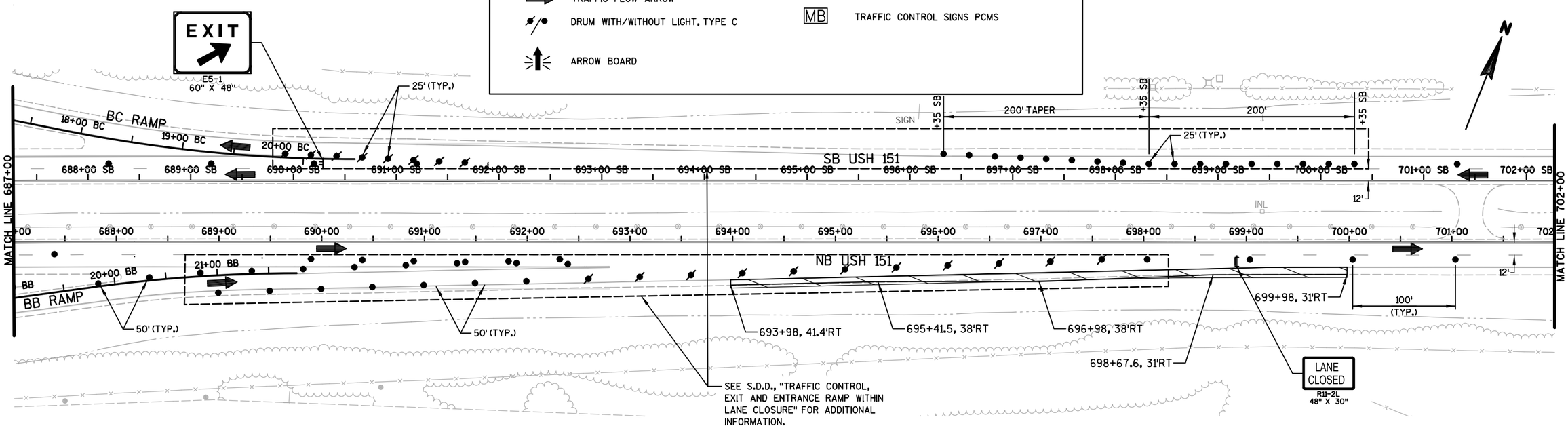




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 71 | E |
|---|---|---|---|---|---|

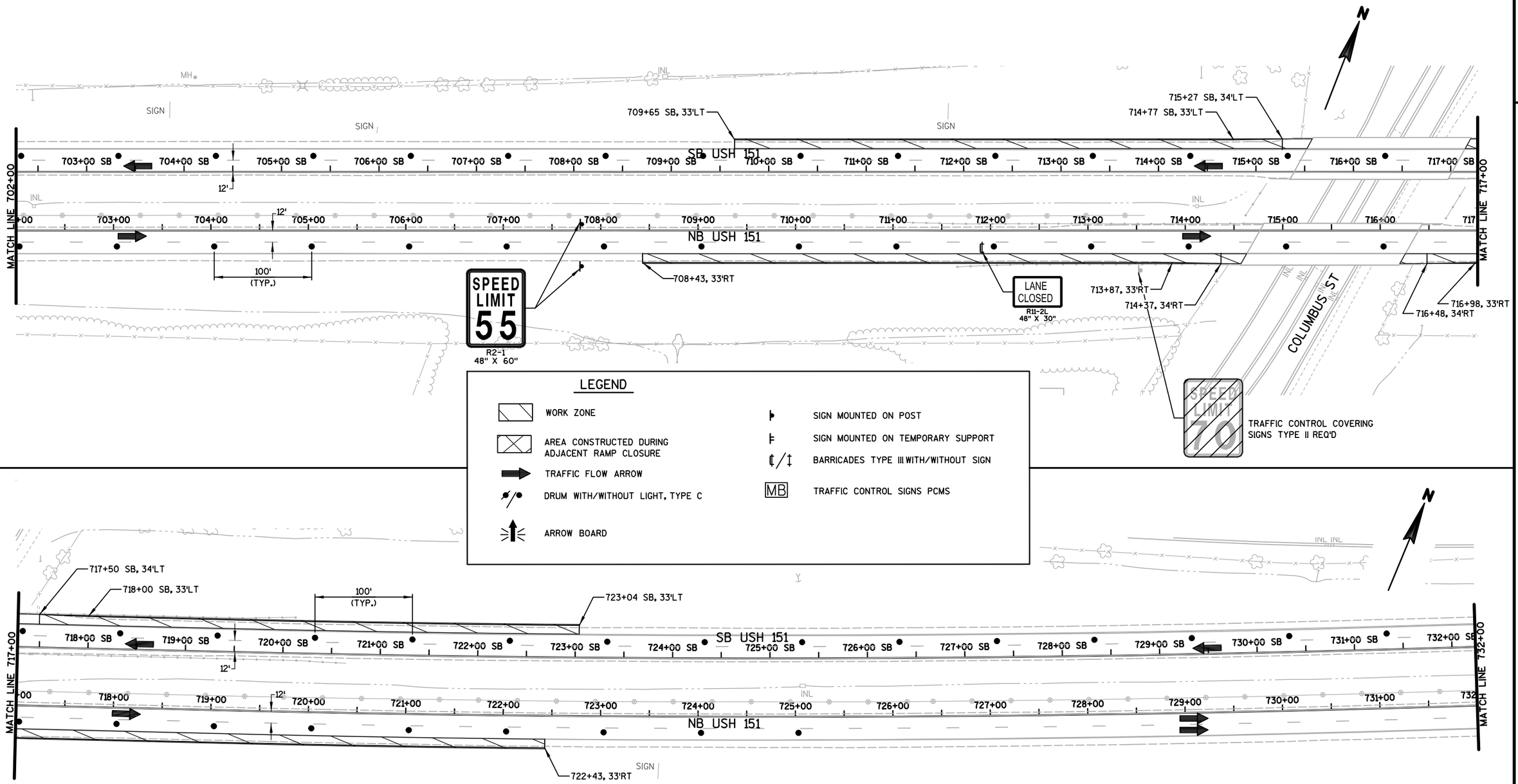



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 72 | E |
|---|---|---|---|---|---|



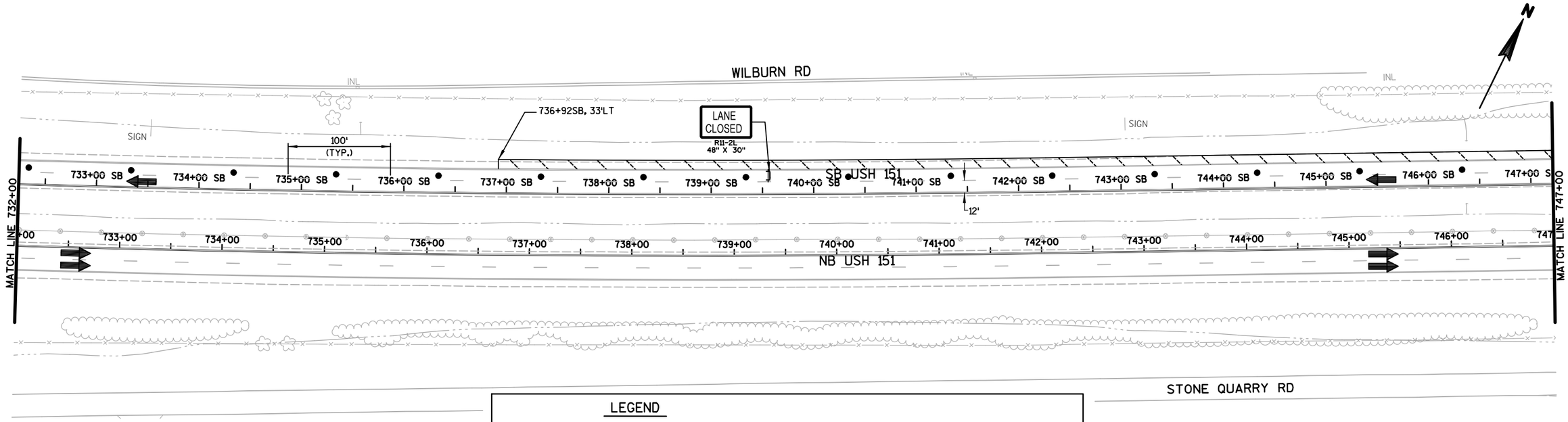

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 73 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026107_s1.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

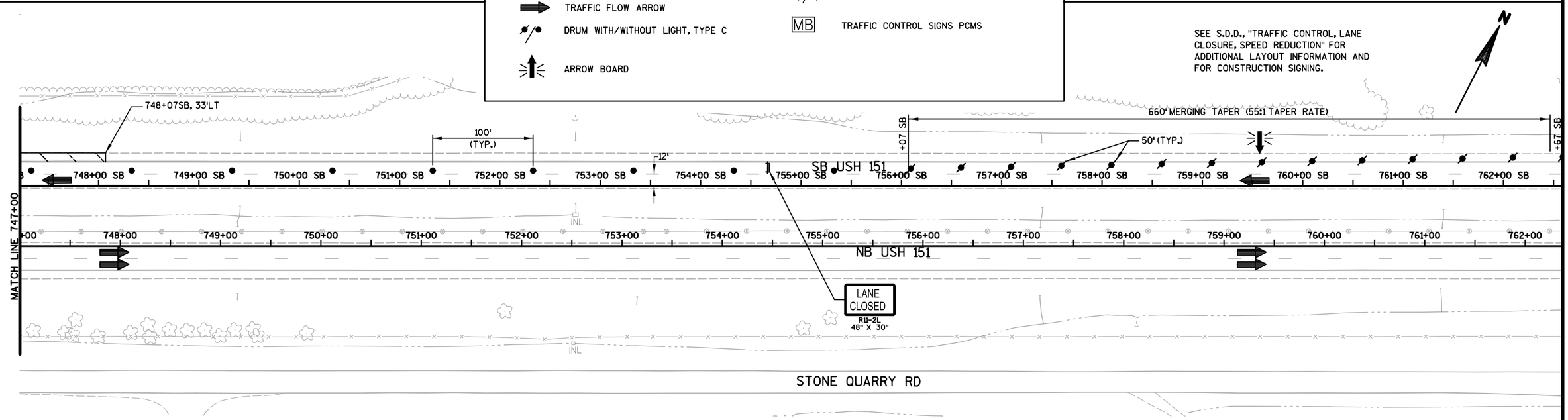
2



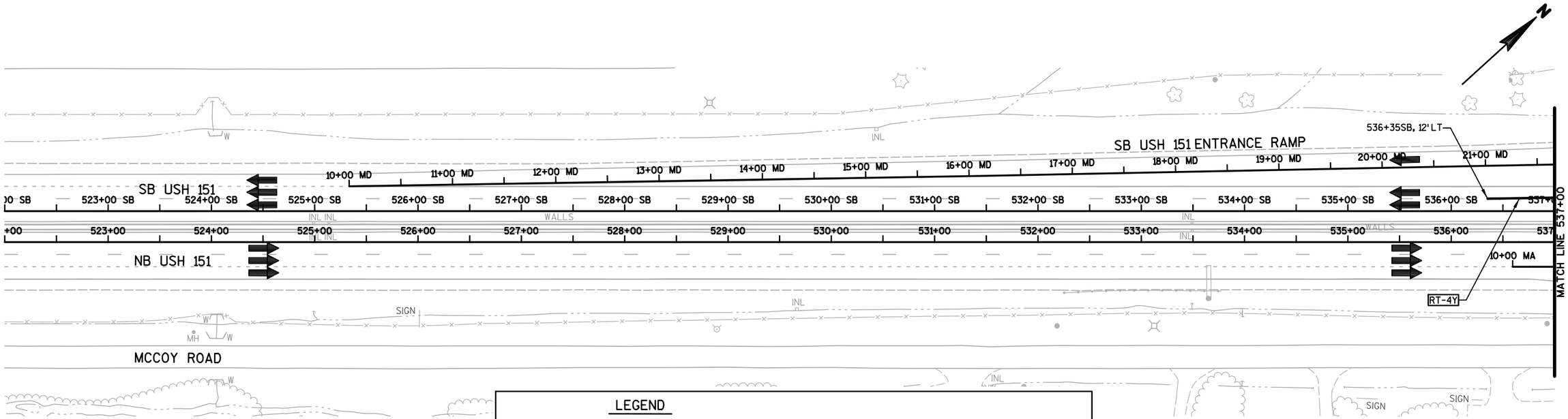

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

SEE S.D.D., "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION" FOR ADDITIONAL LAYOUT INFORMATION AND FOR CONSTRUCTION SIGNING.

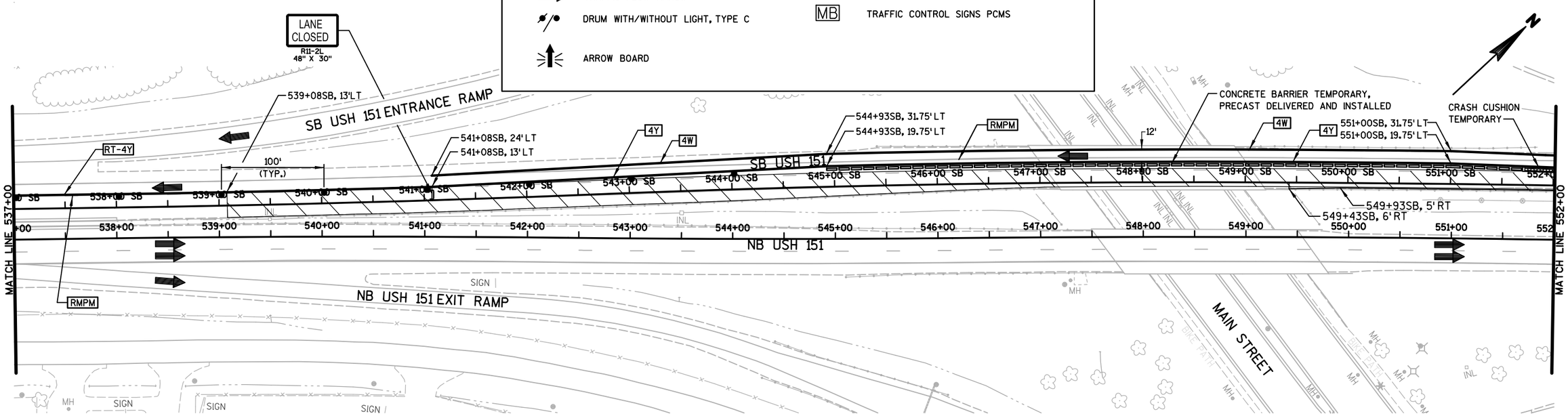



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 | SHEET 74 | E |
|---|---|---|---|---|---|

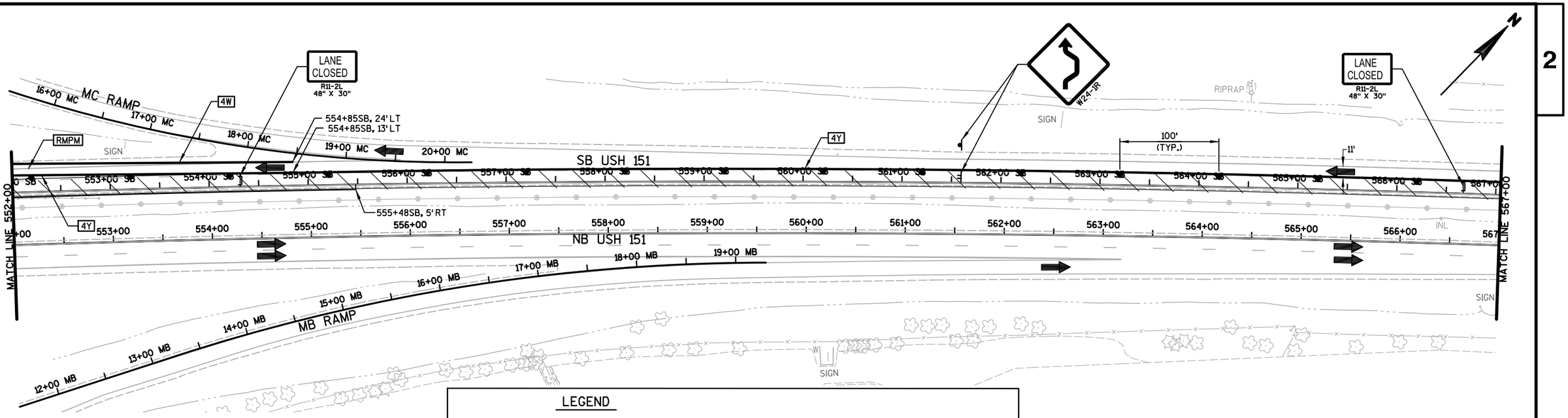



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

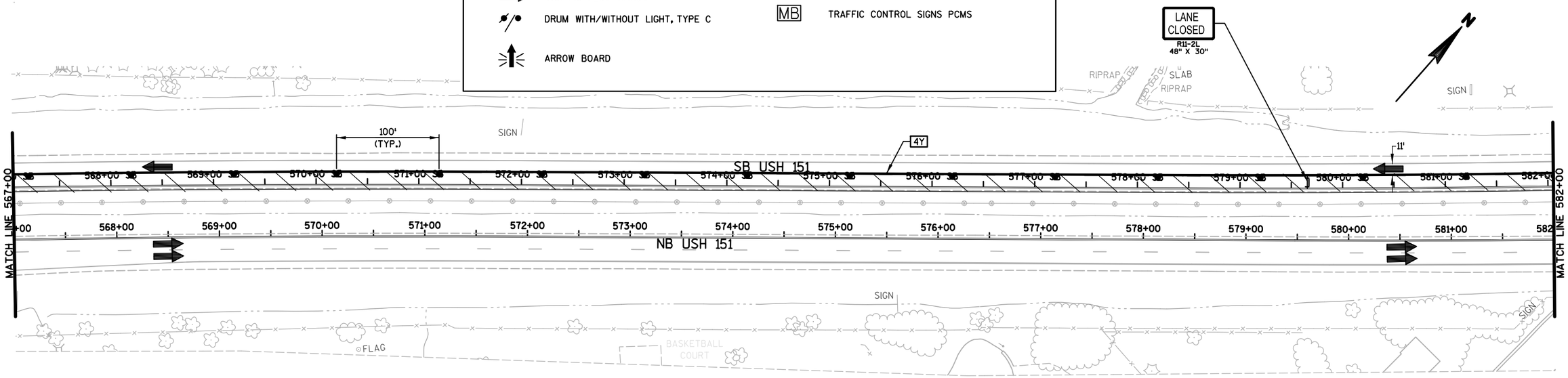



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET 75 | E |
|---|---|---|---|---|---|

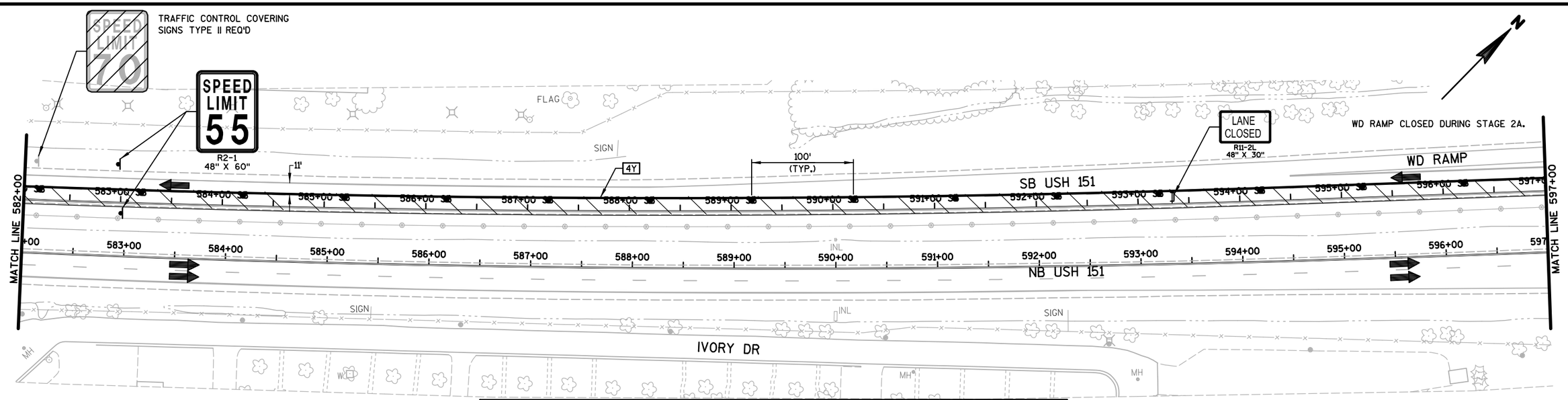



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

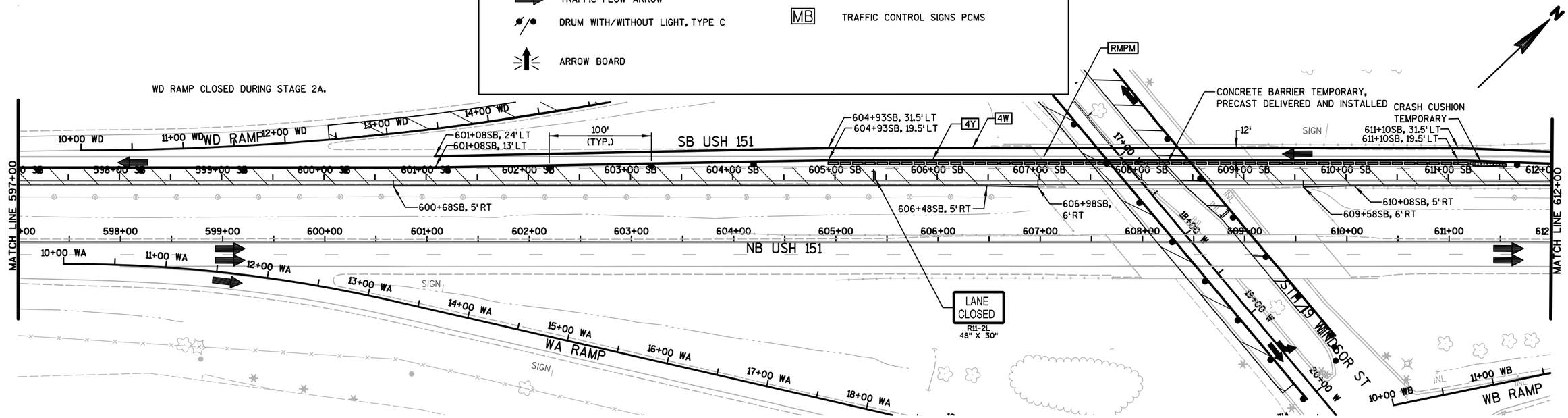



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET 76 | E |
|---|---|---|---|---|---|

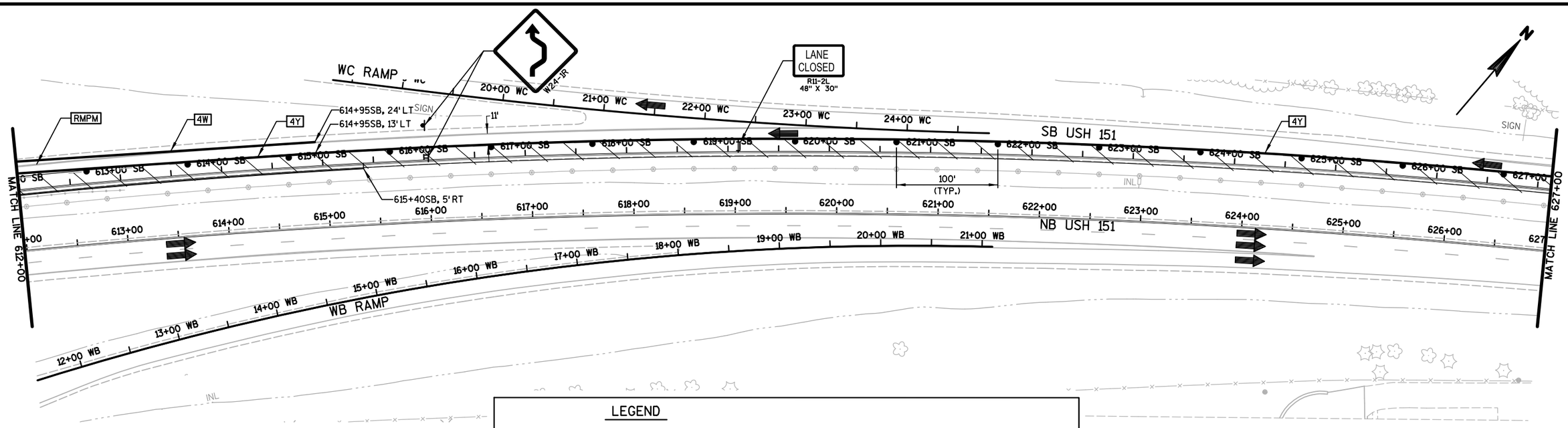



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

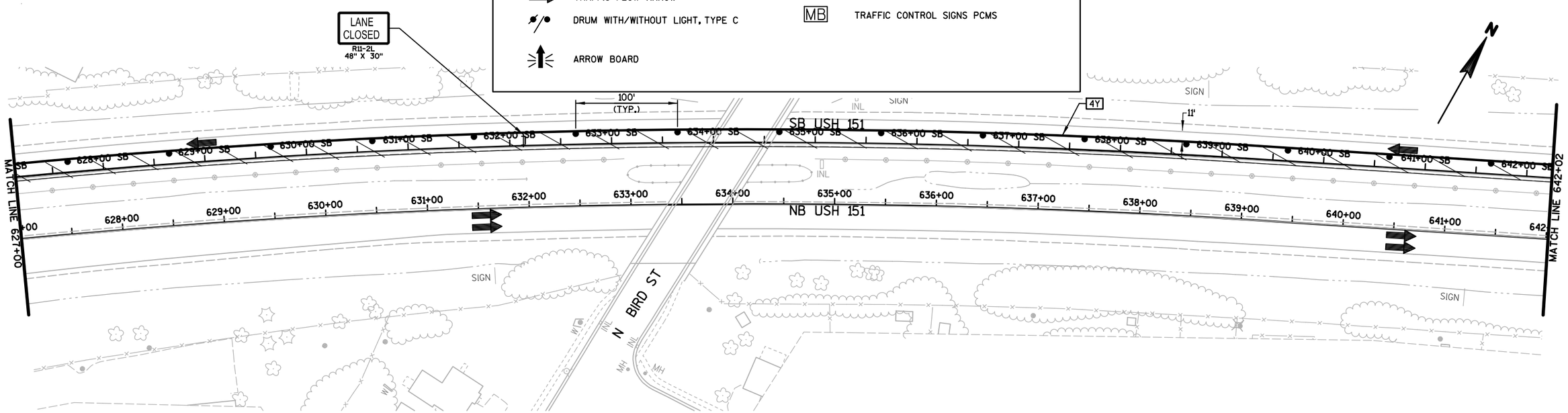



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET 77 | E |
|---|---|---|---|---|---|

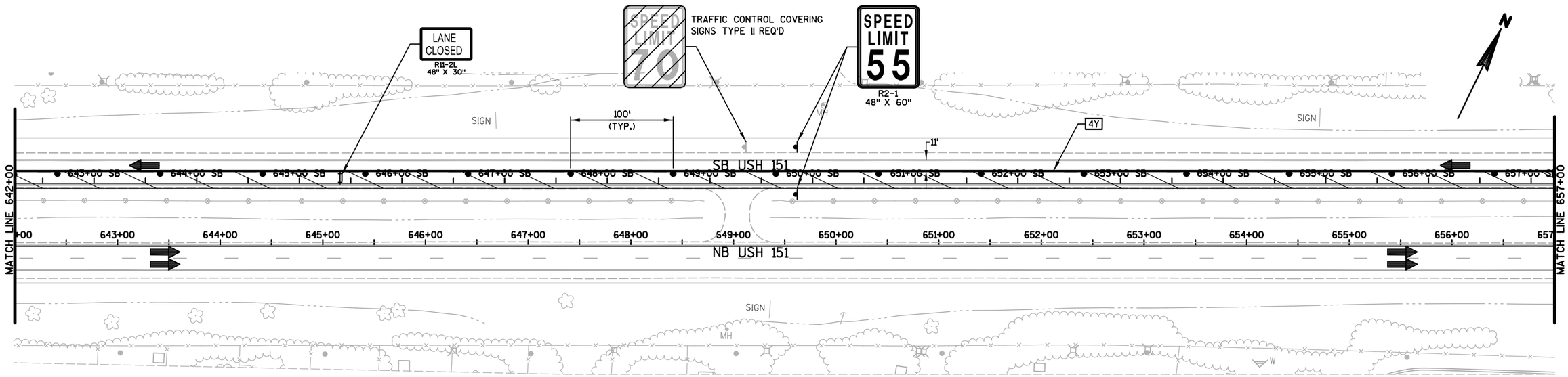



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS



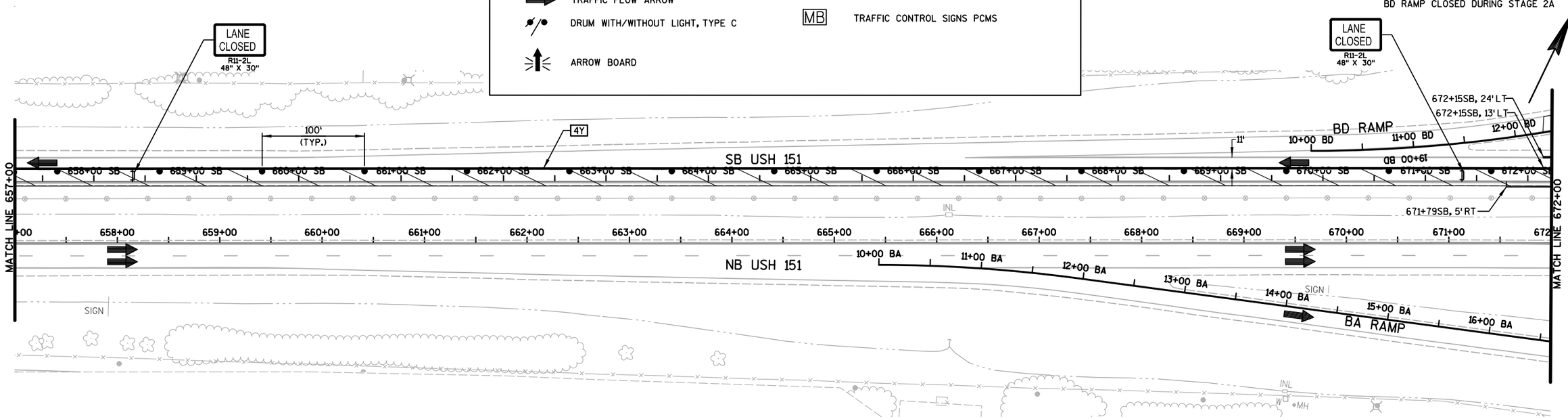

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET 78 | E |
|---|---|---|---|---|---|



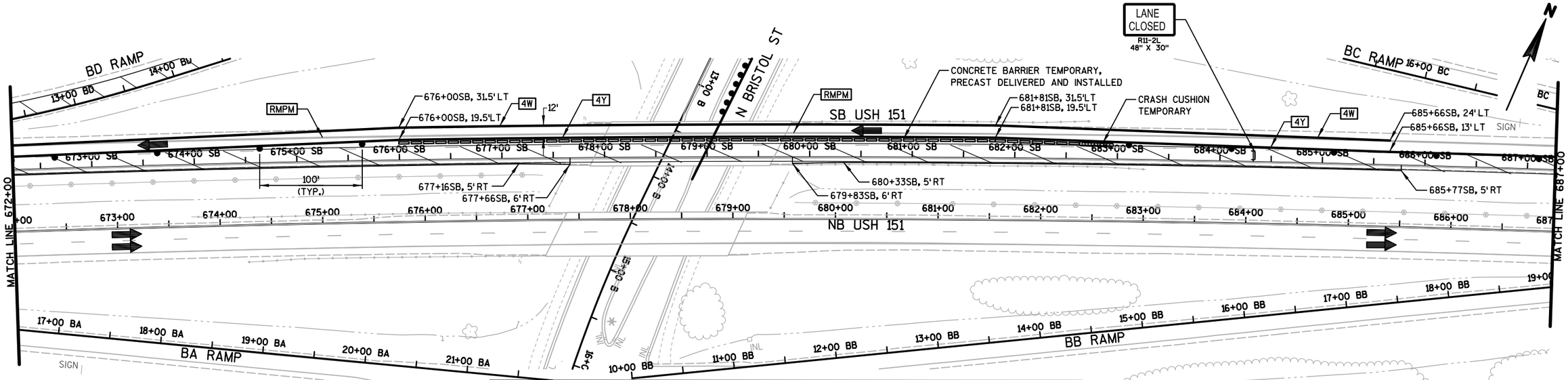

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

BD RAMP CLOSED DURING STAGE 2A

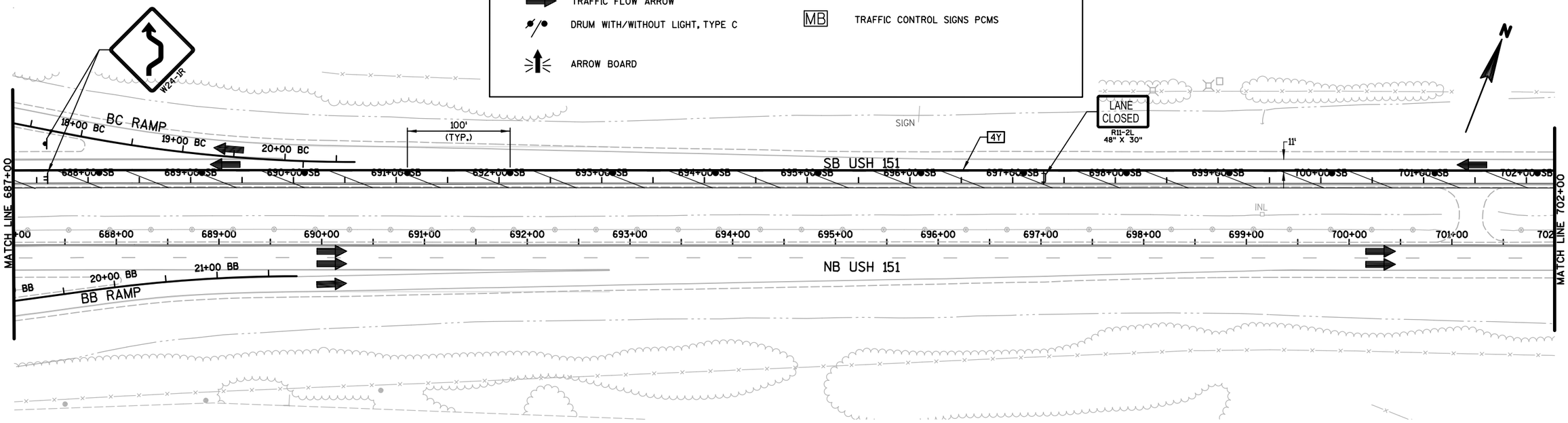



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET 79 | E |
|---|---|---|---|---|---|




## LEGEND

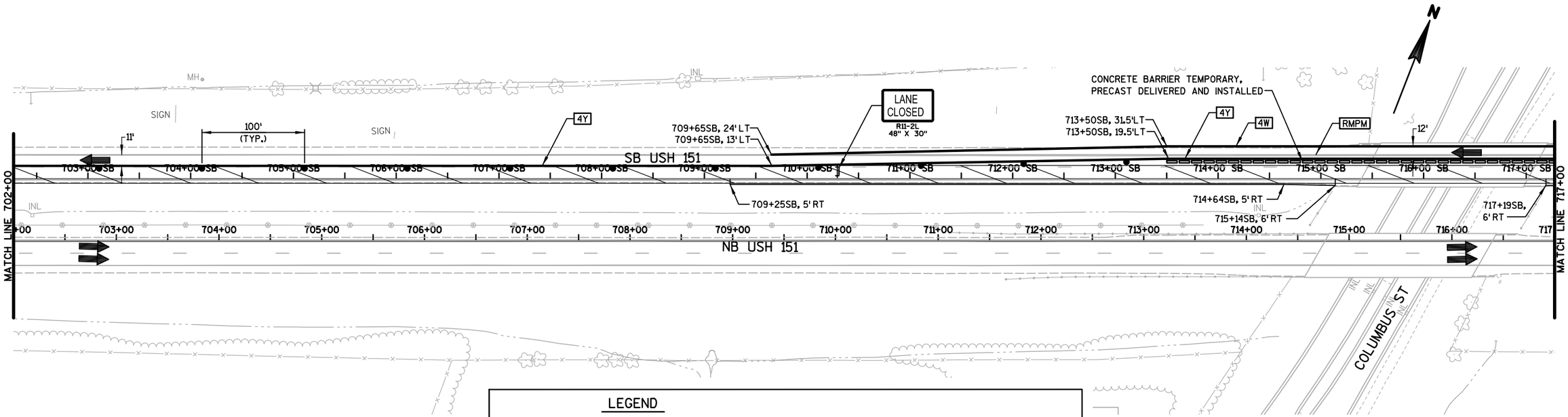
- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET | E |
|---|---|---|---|---|---|

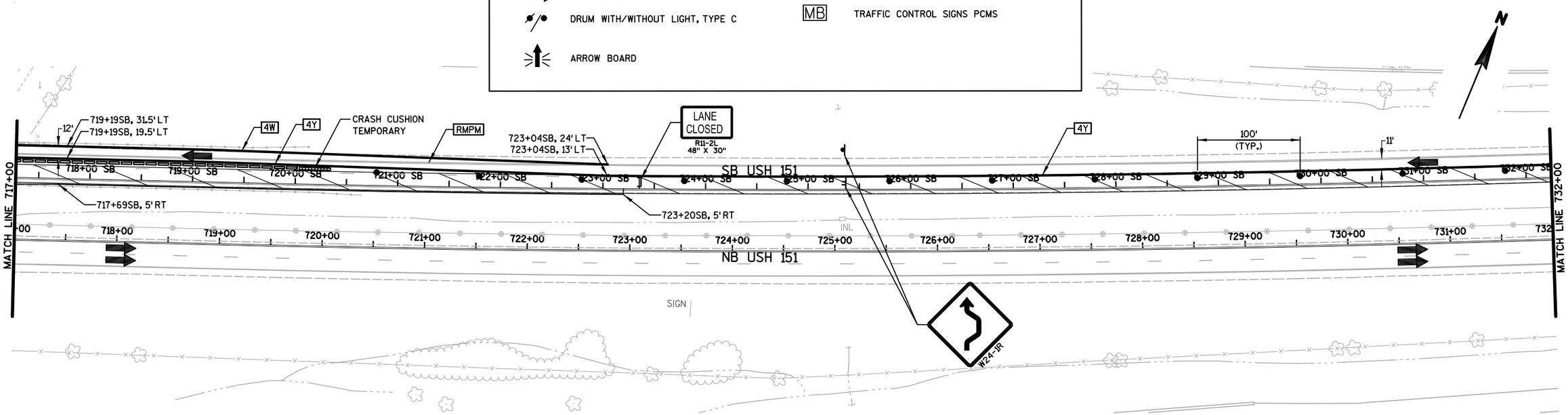


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026206_s2A.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$




## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET | E |
|---|---|---|---|---|---|



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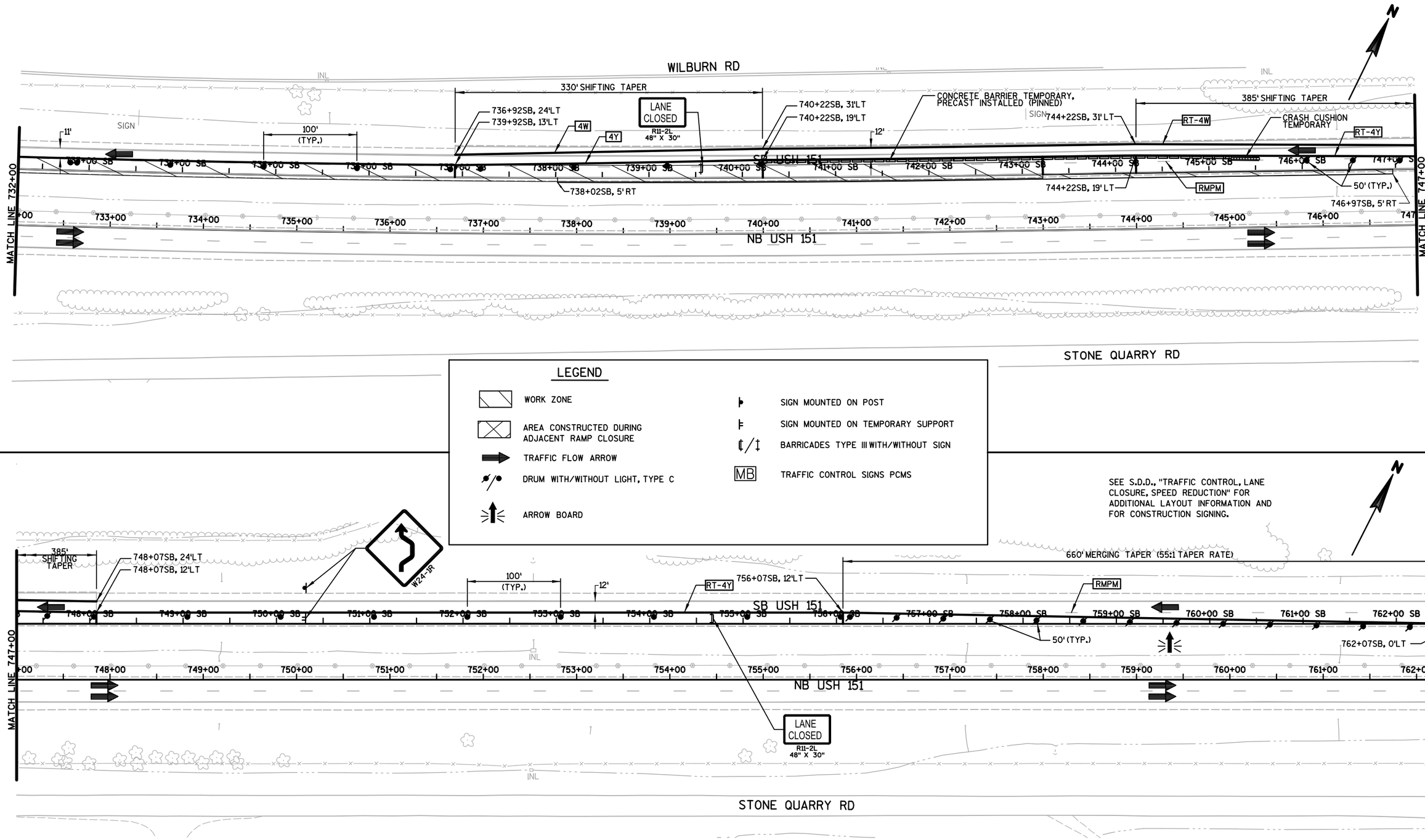



## LEGEND

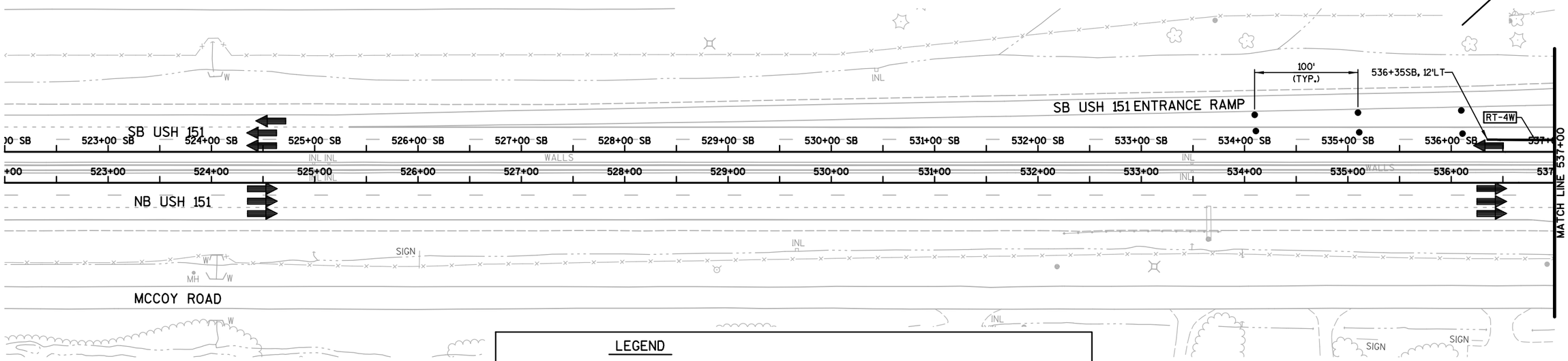
- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

SEE S.D.D., "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION" FOR ADDITIONAL LAYOUT INFORMATION AND FOR CONSTRUCTION SIGNING.



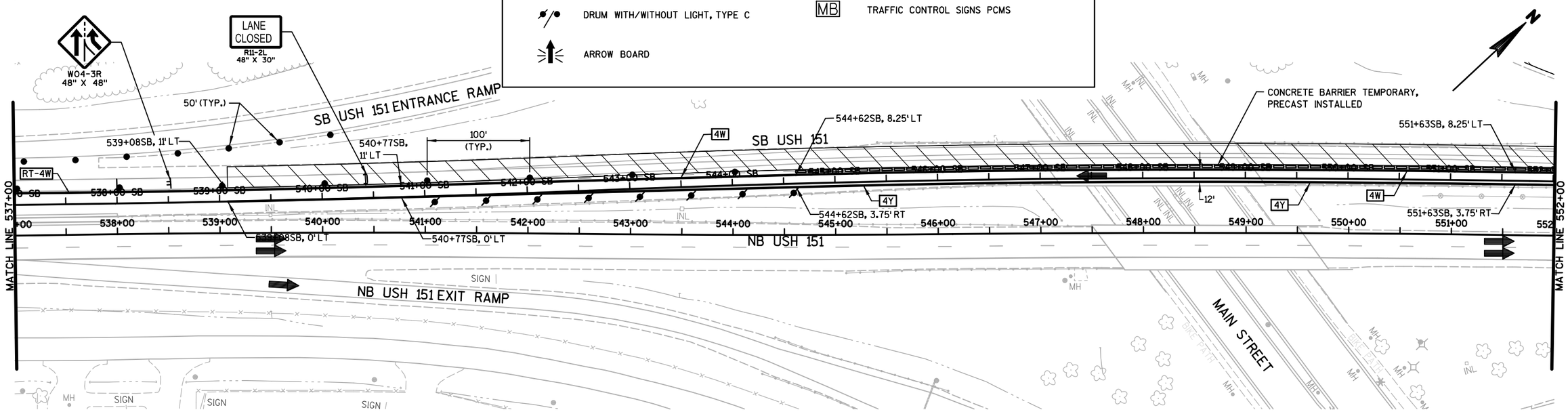

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A | SHEET 82 | E |
|---|---|---|---|---|---|

2

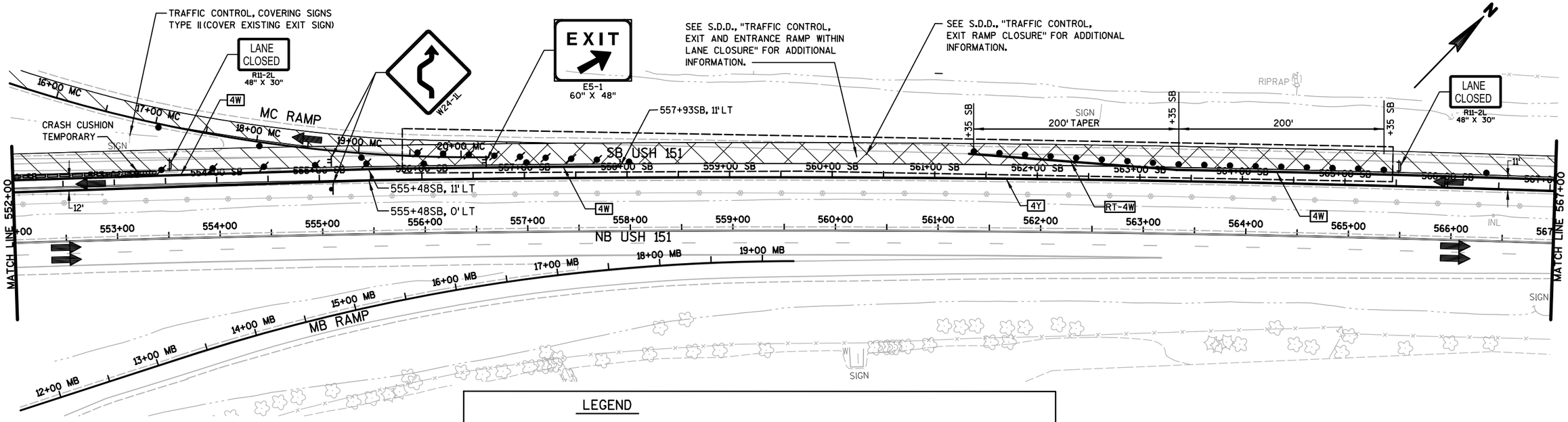



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

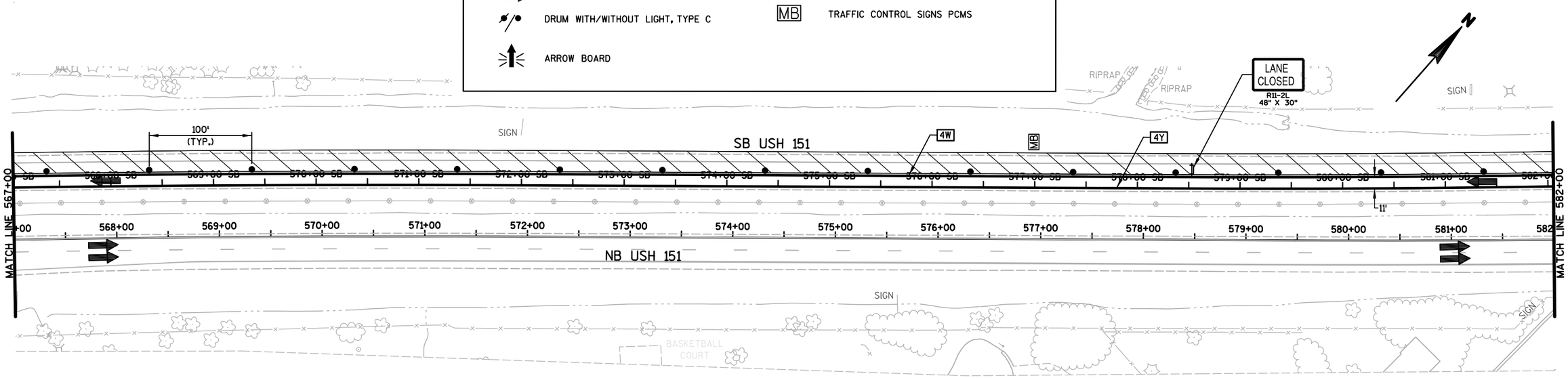



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 83 | E |
|---|---|---|---|---|---|



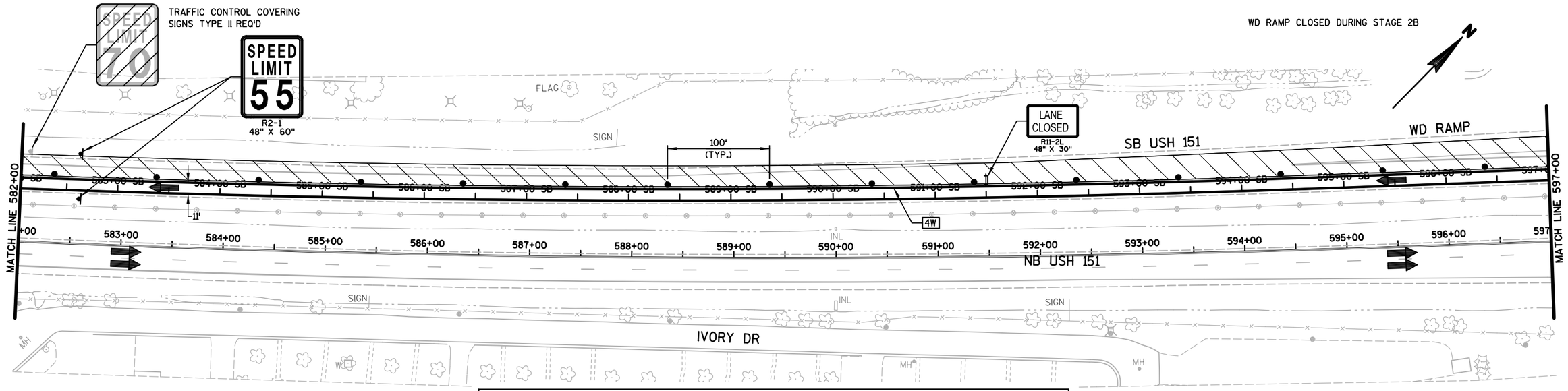

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS



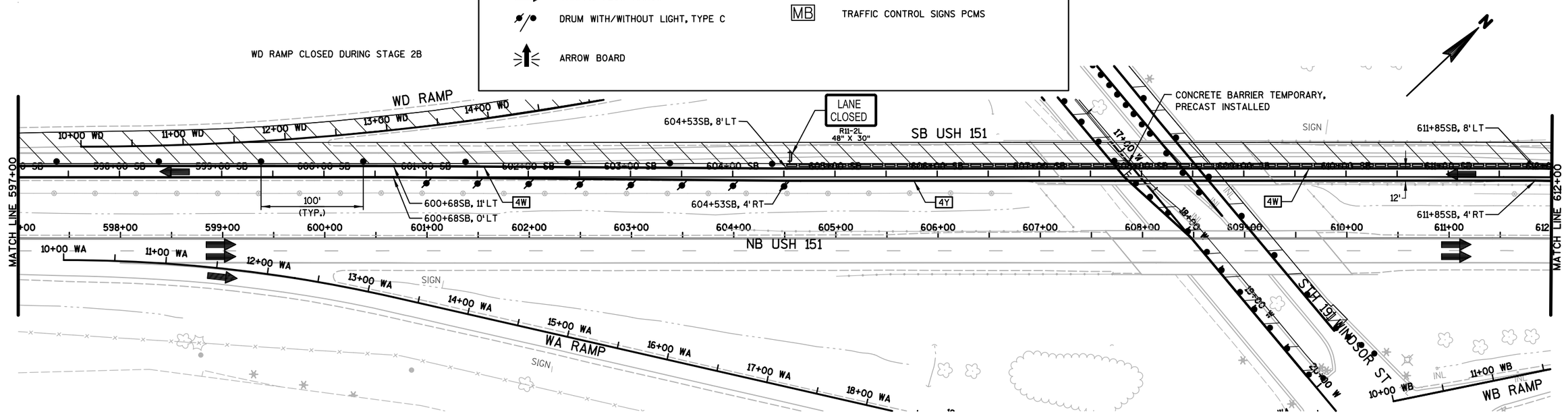

NOTE:
TRAFFIC CONTROL SIGNS PCMS TO BE INSTALLED 7 DAYS PRIOIR TO CLOSURE OF MC RAMP.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 84 | E |
|---|---|---|---|---|---|

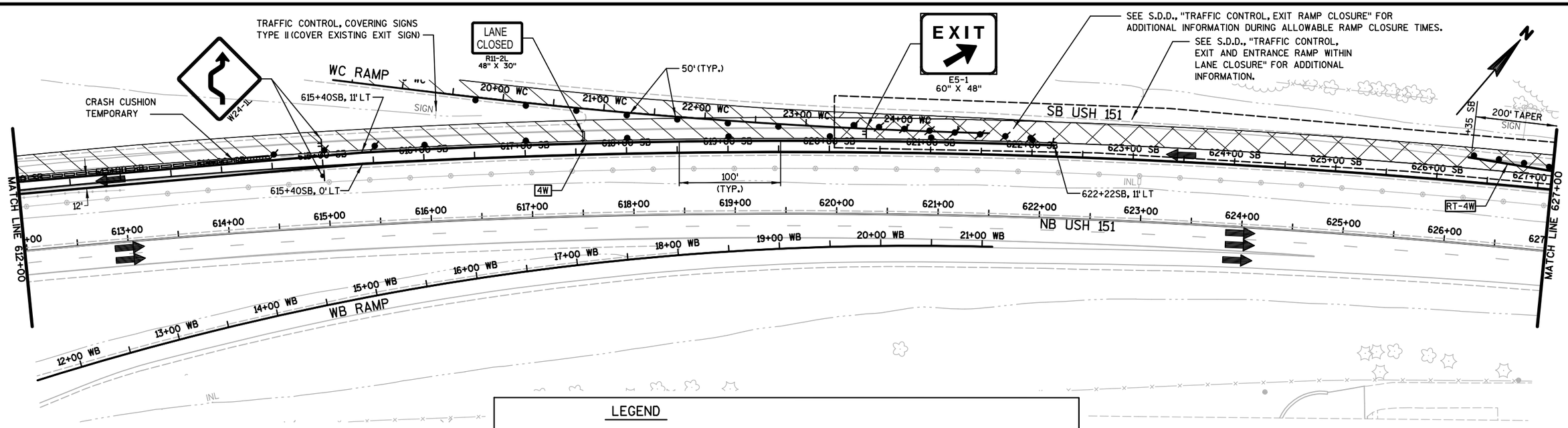



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

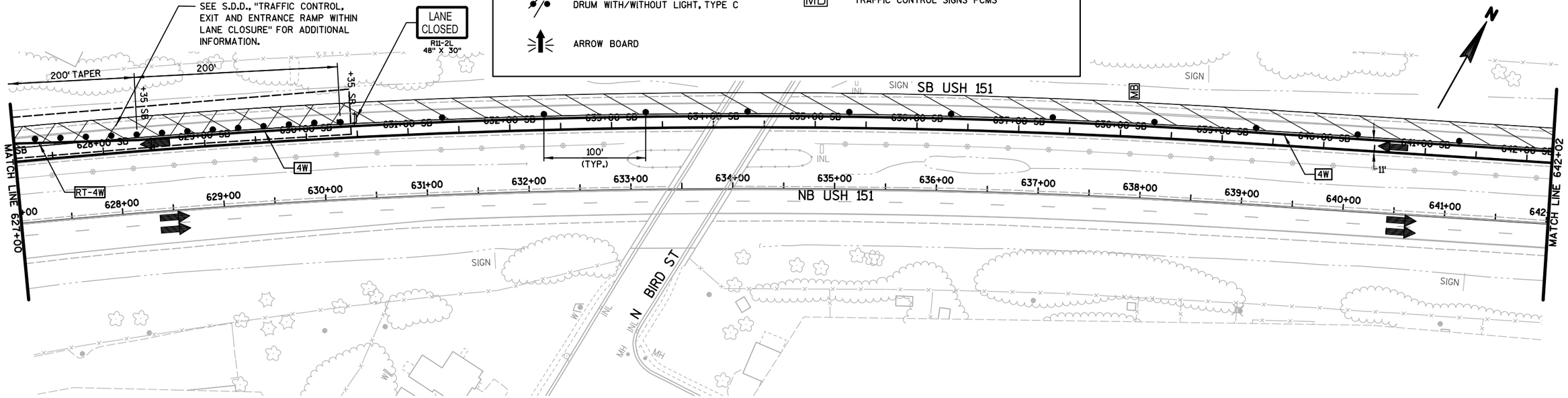



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 85 | E |
|---|---|---|---|---|---|



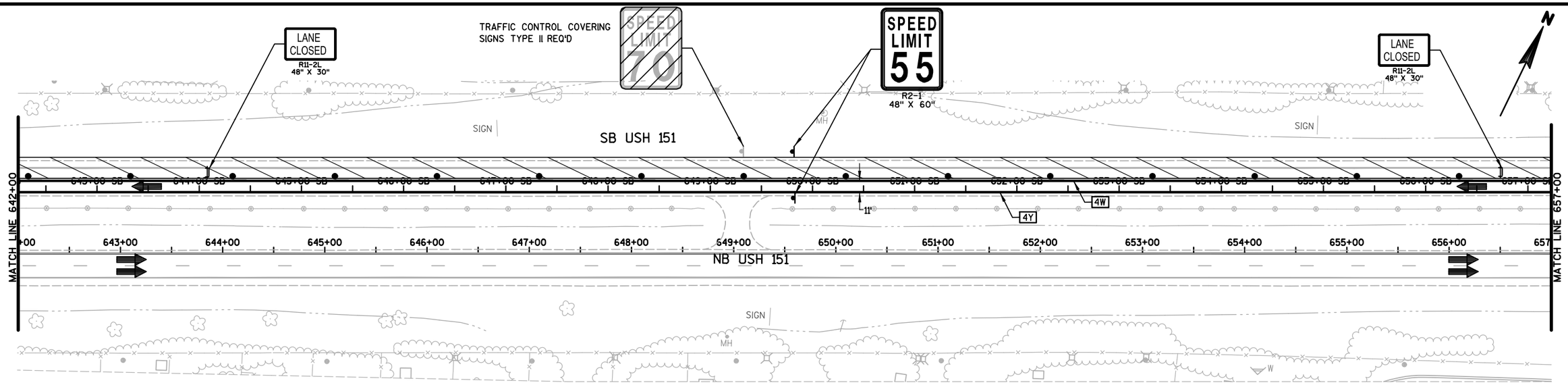

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS



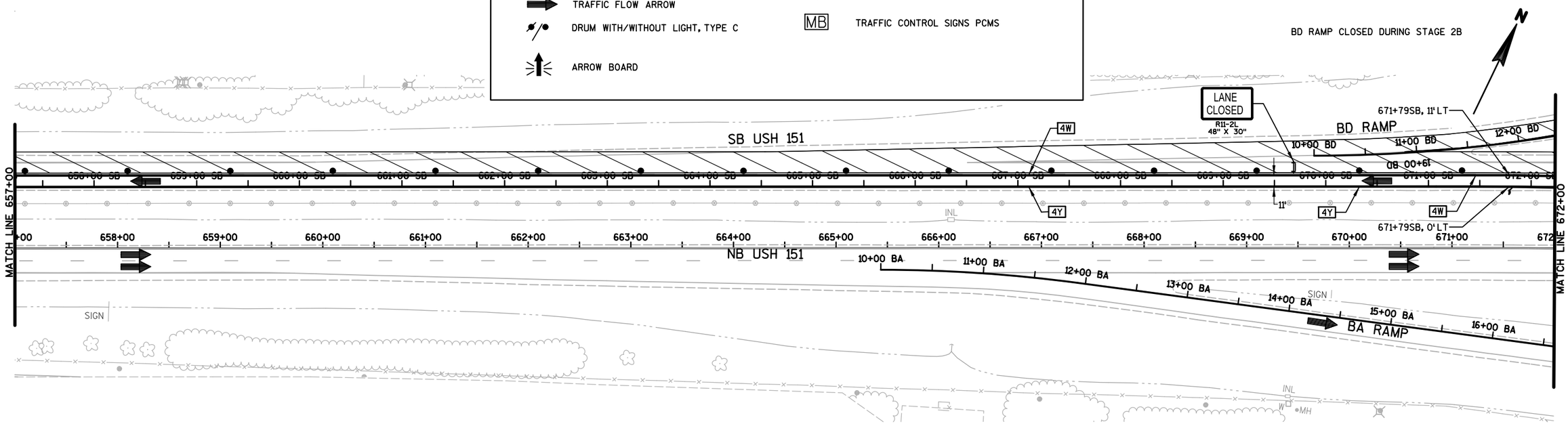

NOTE:
TRAFFIC CONTROL SIGNS PCMS TO BE INSTALLED 7 DAYS PRIOIR TO CLOSURE OF WC RAMP.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 86 | E |
|---|---|---|---|---|---|




## LEGEND

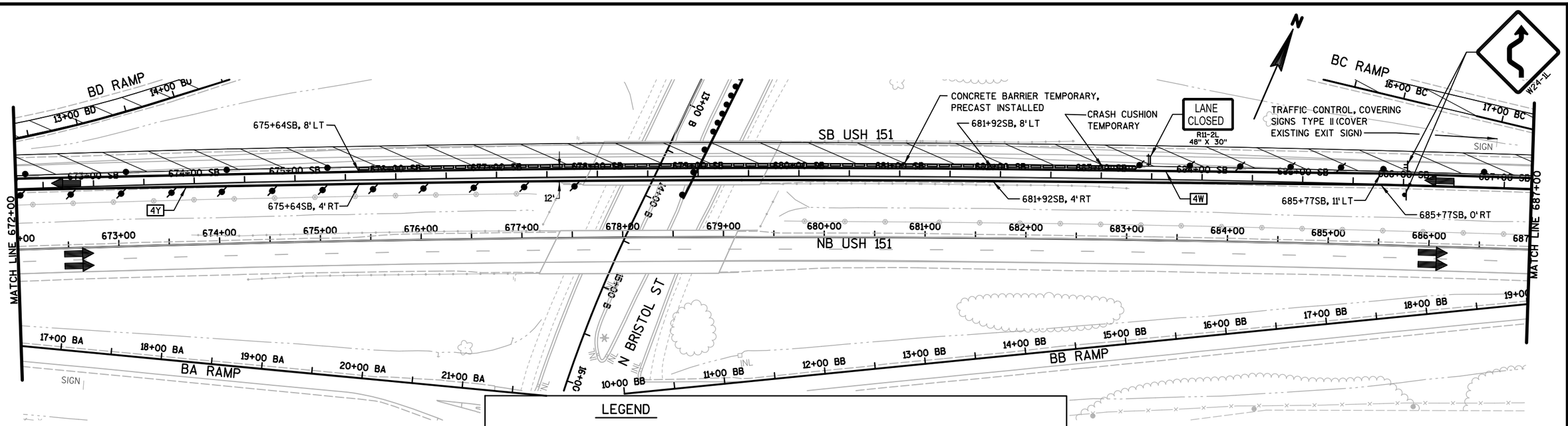
- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET | E |
|---|---|---|---|---|---|

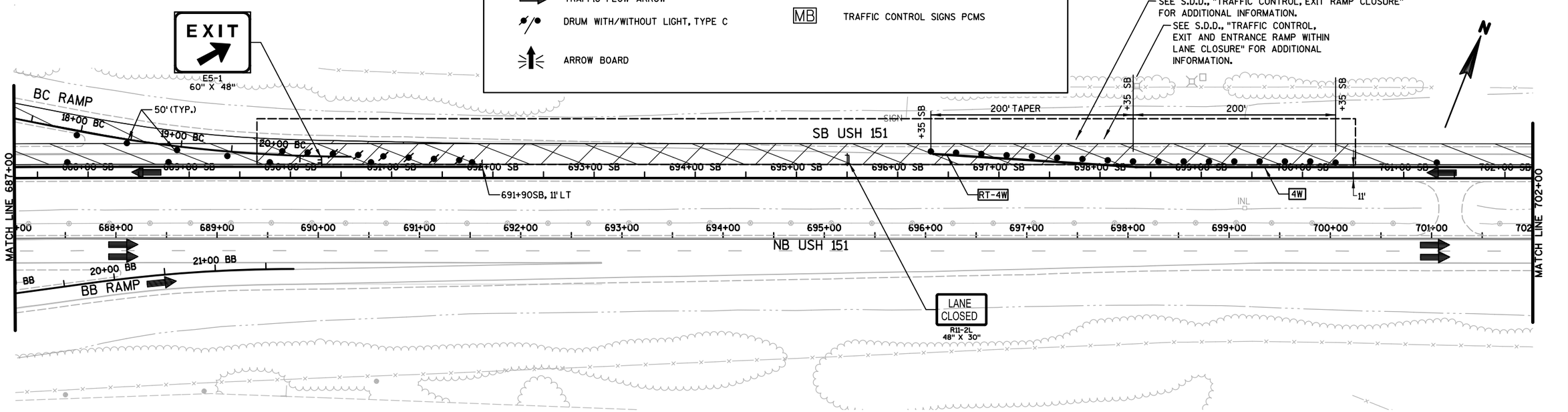


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026305_s2B.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42



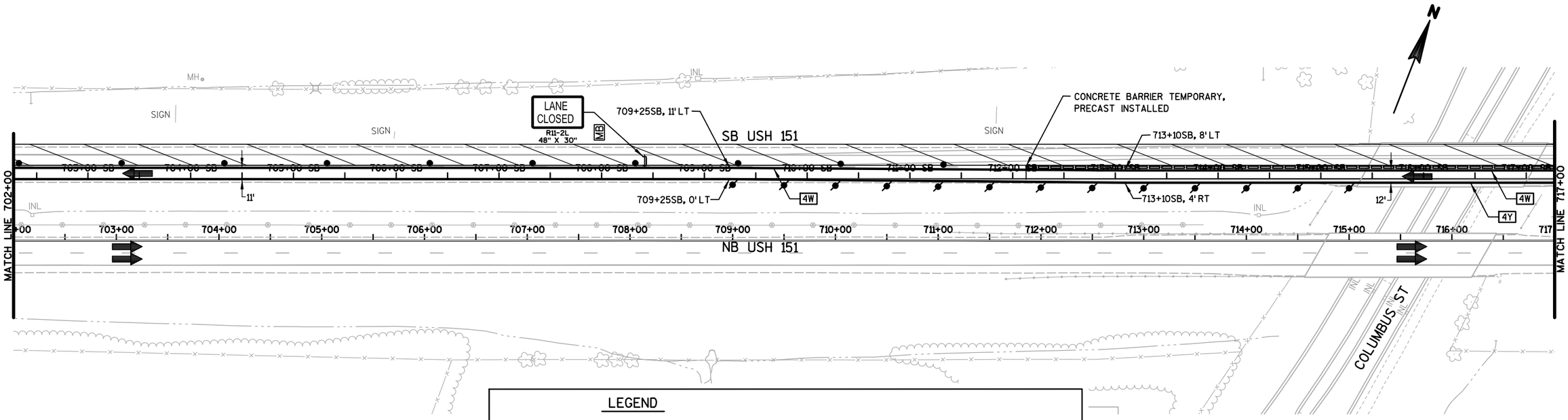

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS



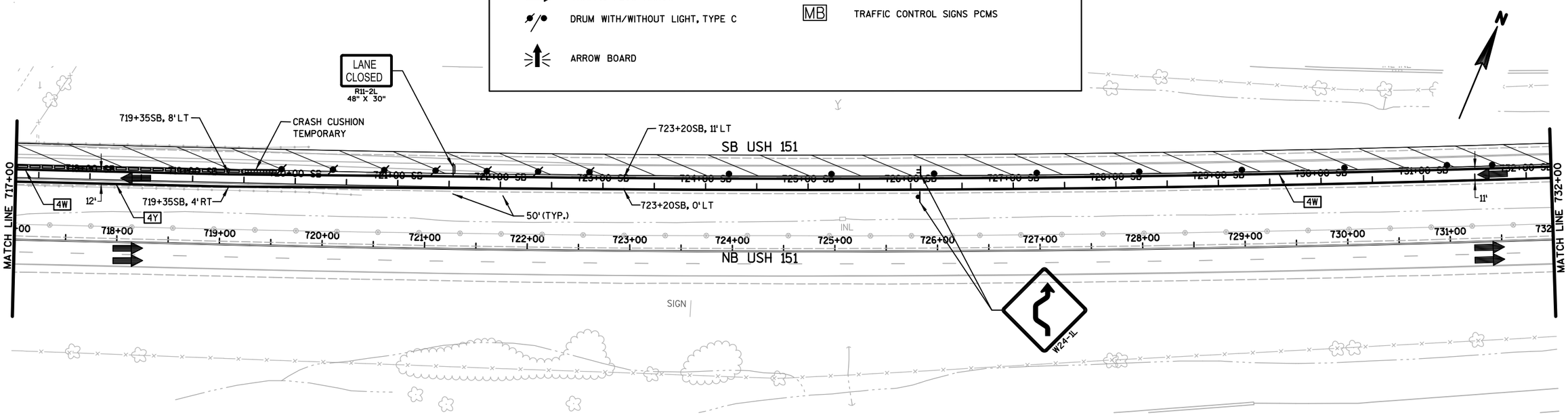

NOTES:
TRAFFIC CONTROL SIGNS PCMS TO BE INSTALLED 7 DAYS PRIOR TO CLOSURE OF BC RAMP.

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 88 | E |
|---|---|---|---|---|---|

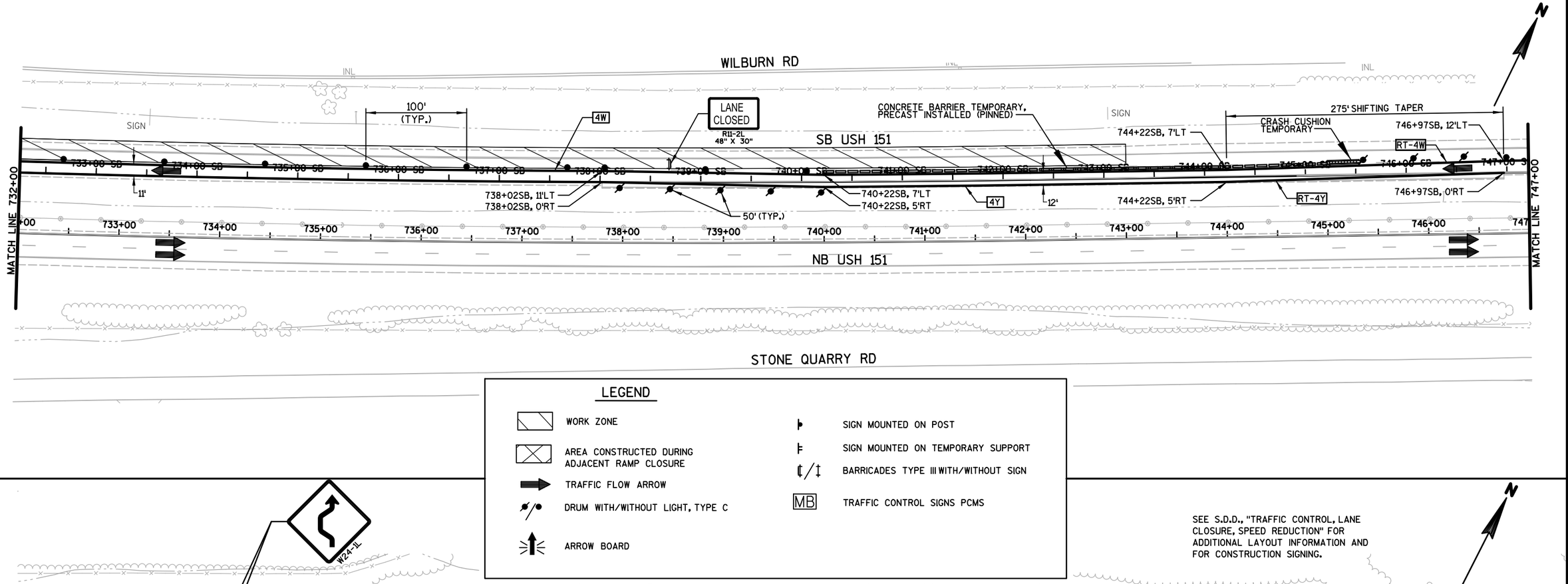



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

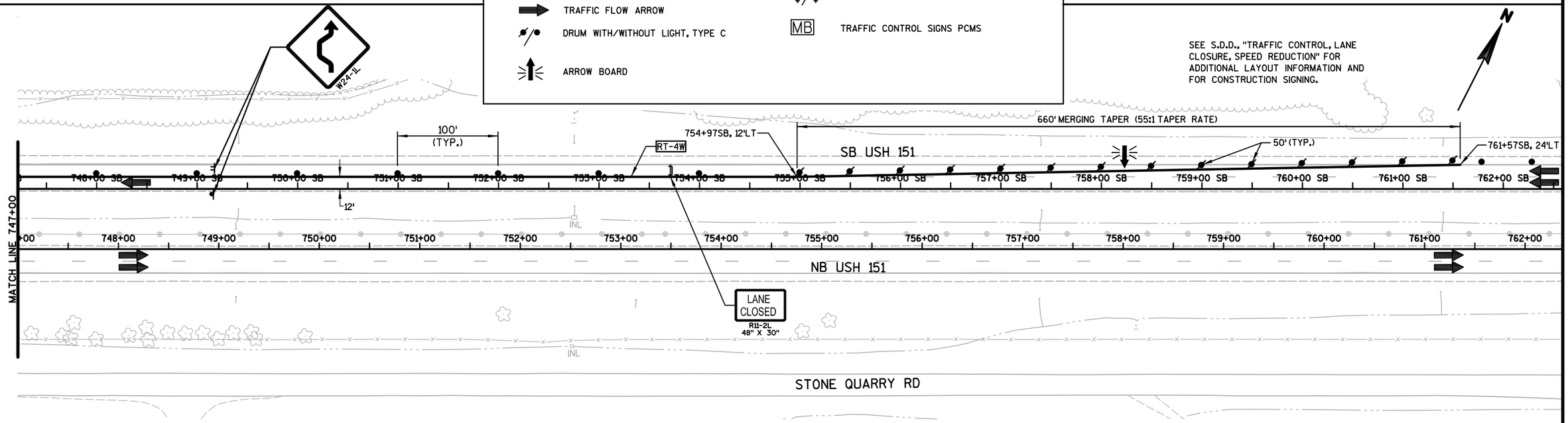



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 89 | E |
|---|---|---|---|---|---|



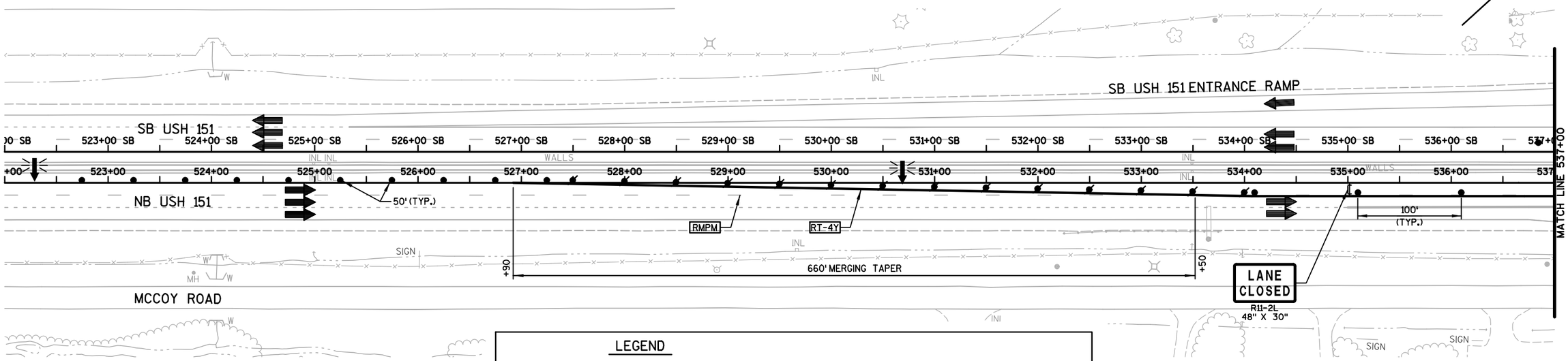

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS



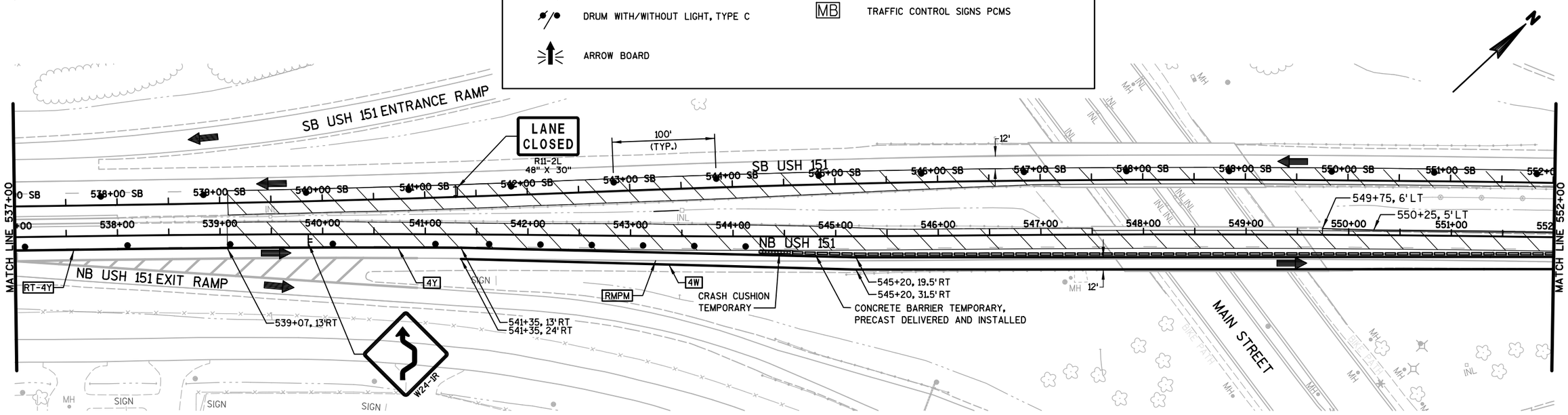

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B | SHEET 90 | E |
|---|---|---|---|---|---|

SEE S.D.D., "TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION" FOR ADDITIONAL INFORMATION




## LEGEND

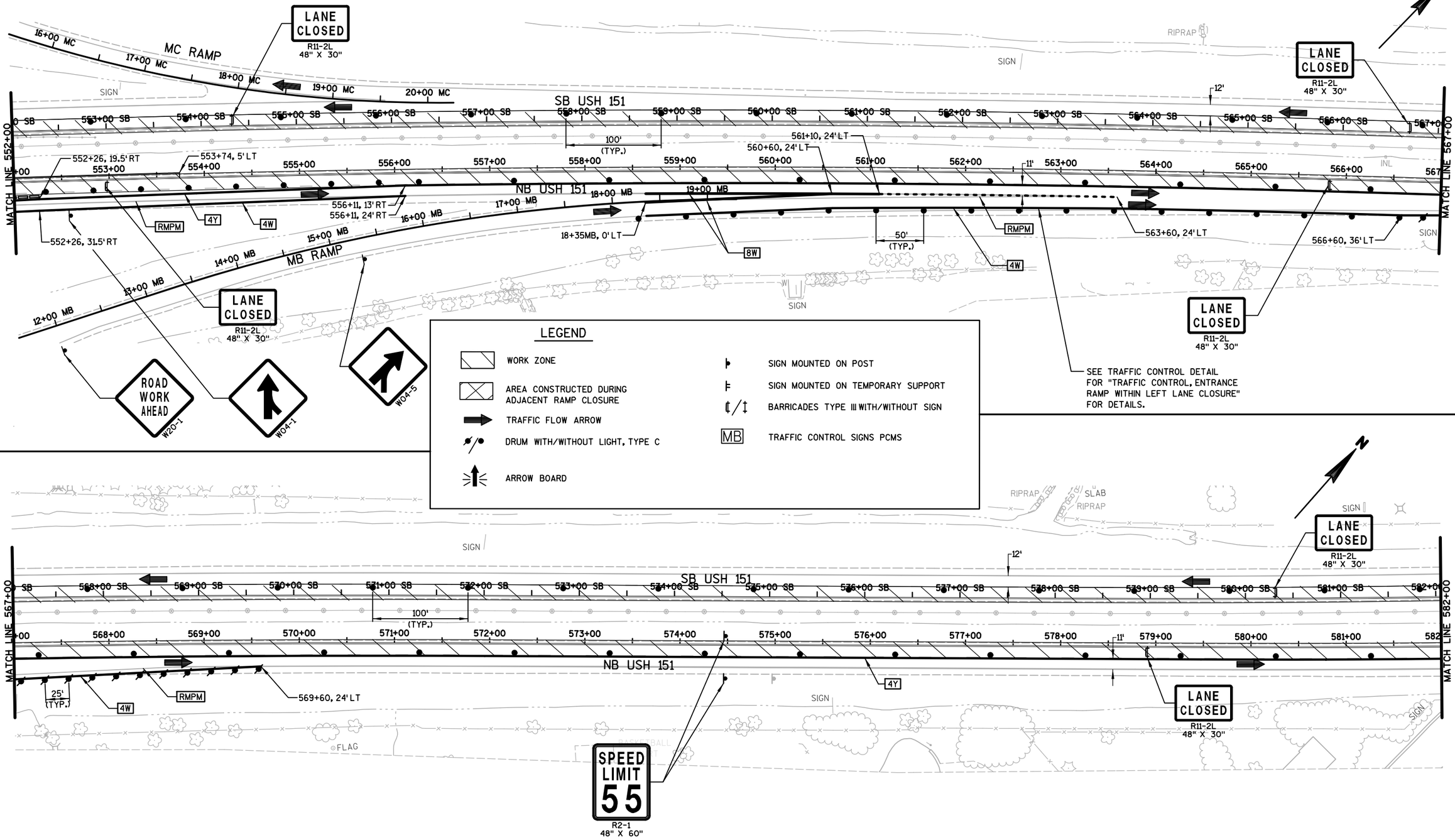
- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026401_s3A.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$
WISDOT/CADDS SHEET 42




## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET | E |
|---|---|---|---|---|---|



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TRAFFIC CONTROL COVERING
SIGNS TYPE II REQ'D

SPEED LIMIT 70

SPEED LIMIT 55
R2-1
48" X 60"

UNEVEN LANES
W8-11
36" X 36"

LANE CLOSED
R11-2L
48" X 30"

MATCH LINE 582+00

MATCH LINE 597+00

SB USH 151

NB USH 151

WD RAMP

IVORY DR

W24-1R

4Y

100'
(TYP.)

12'

11'

INL

SIGN

FLAG

MH

WD

LANE CLOSED
R11-2L
48" X 30"

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

MATCH LINE 597+00

MATCH LINE 612+00

SB USH 151

NB USH 151

WD RAMP

WA RAMP

WB RAMP

STH 19 WINDSOR ST

LANE CLOSED
R11-2L
48" X 30"

603+42, 5' LT

607+40, 6' LT

606+90, 5' LT

609+97, 6' LT

610+47, 5' LT

601+41, 13' RT

601+41, 24' RT

605+26, 19.5' RT

605+26, 31.5' RT

CRASH CUSHION TEMPORARY

CONCRETE BARRIER TEMPORARY, PRECAST DELIVERED AND INSTALLED

4Y

4W

RMPM

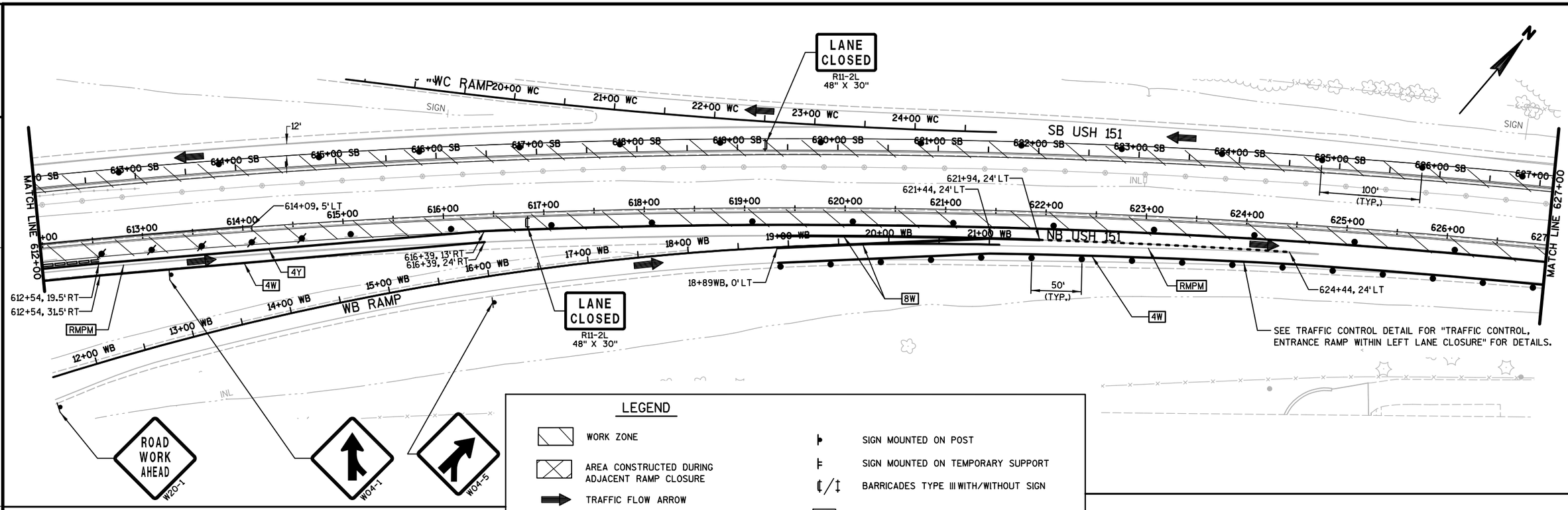
100'
(TYP.)

12'

11'

INL

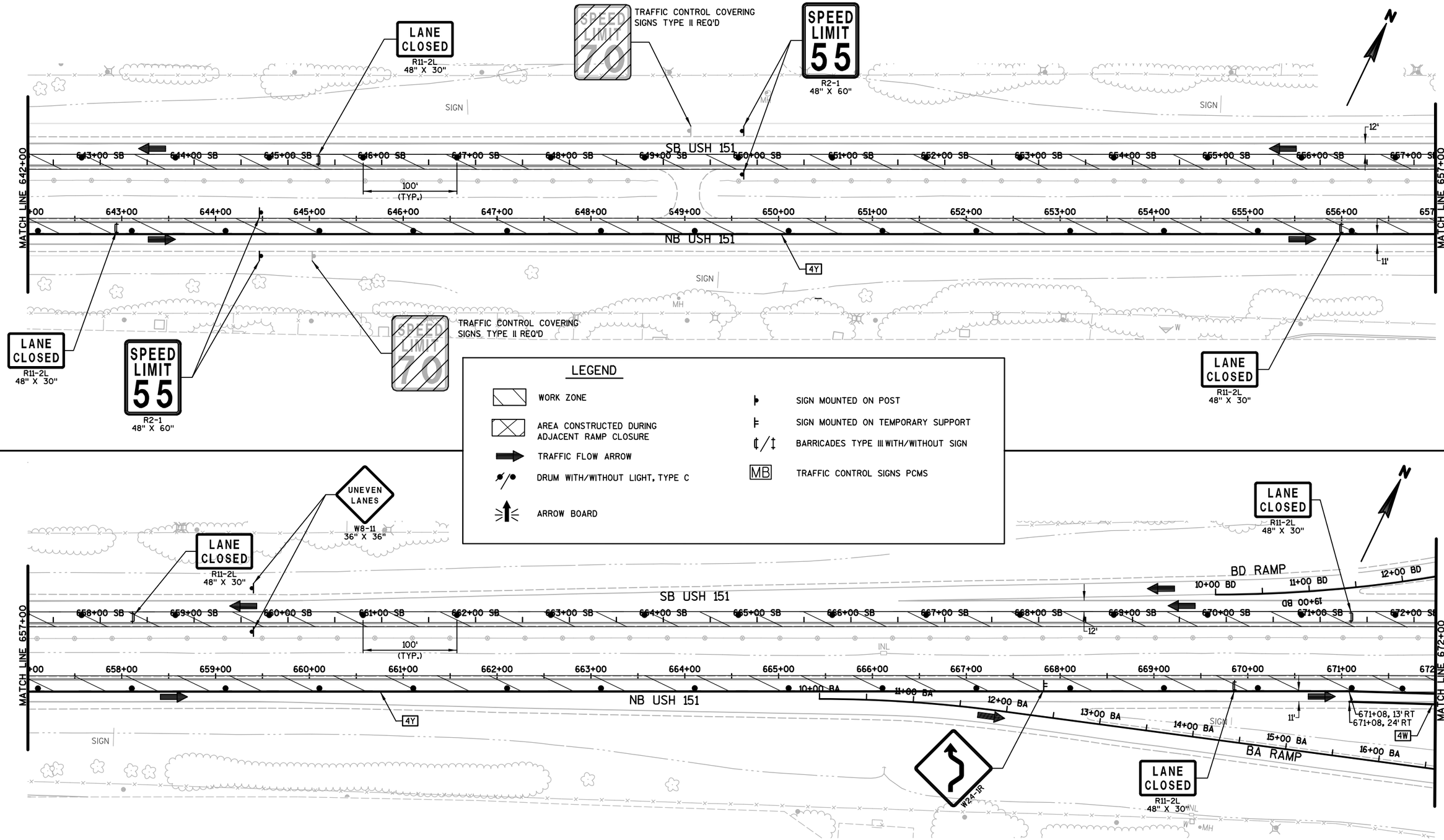
SIGN




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET 94 E |
|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026404_s3A.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 42



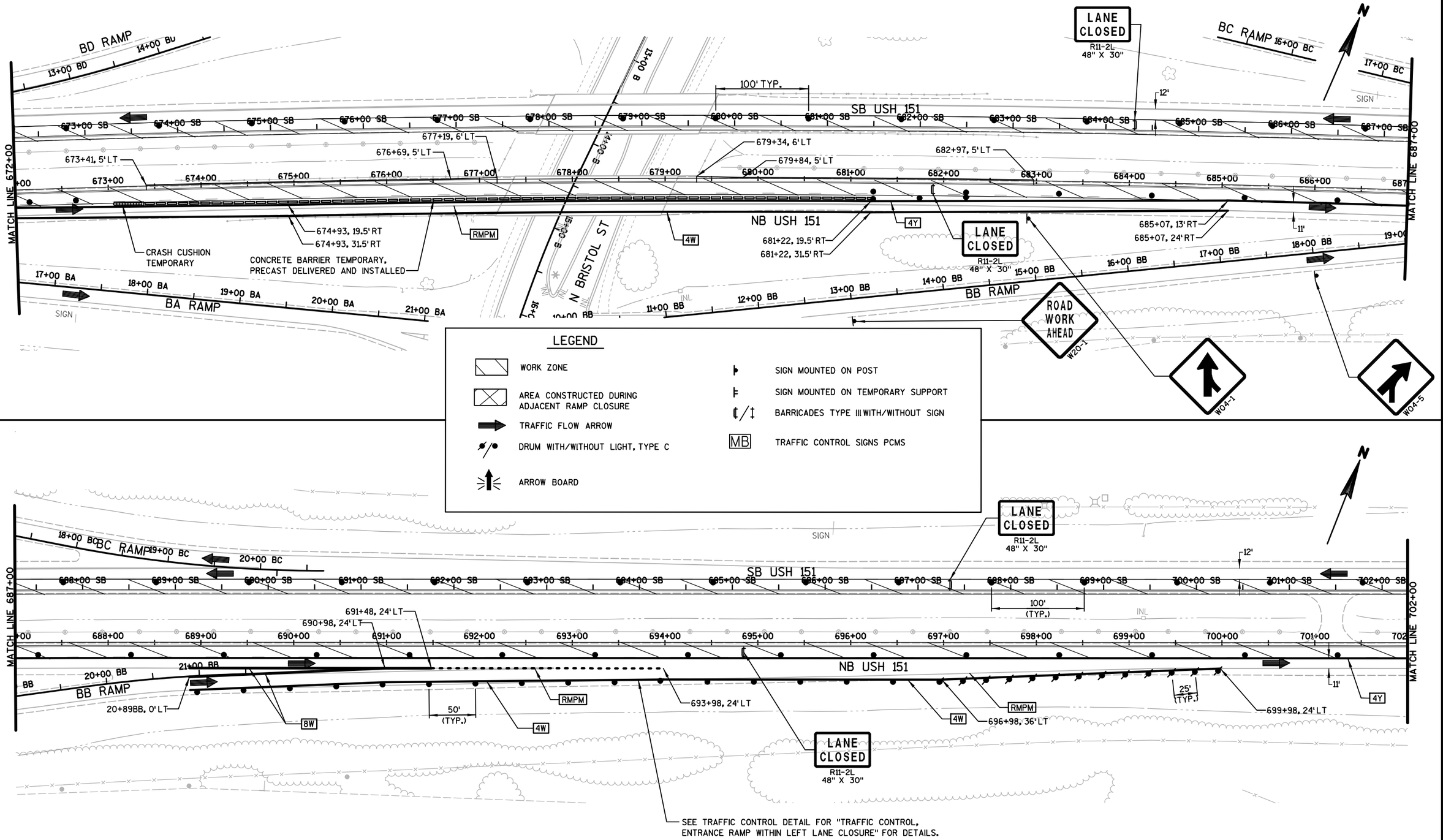




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026405_s3A.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$




## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET | E |
|---|---|---|---|---|---|



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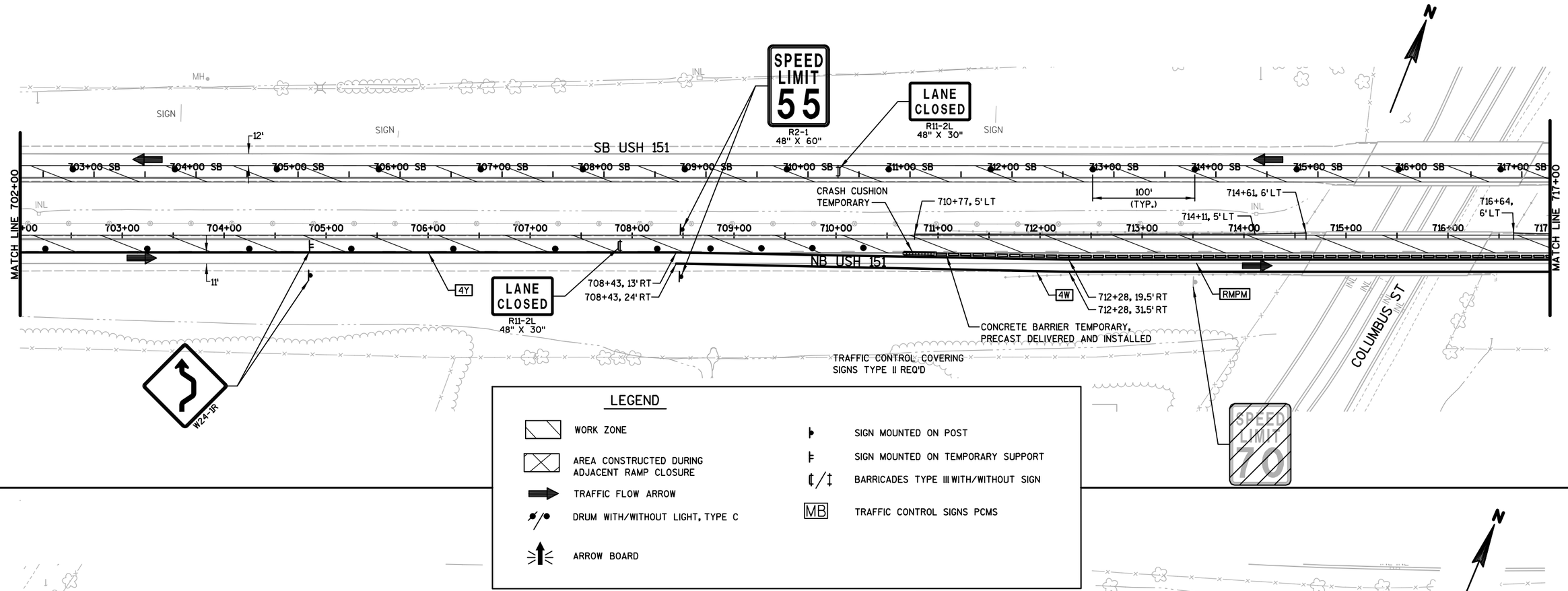
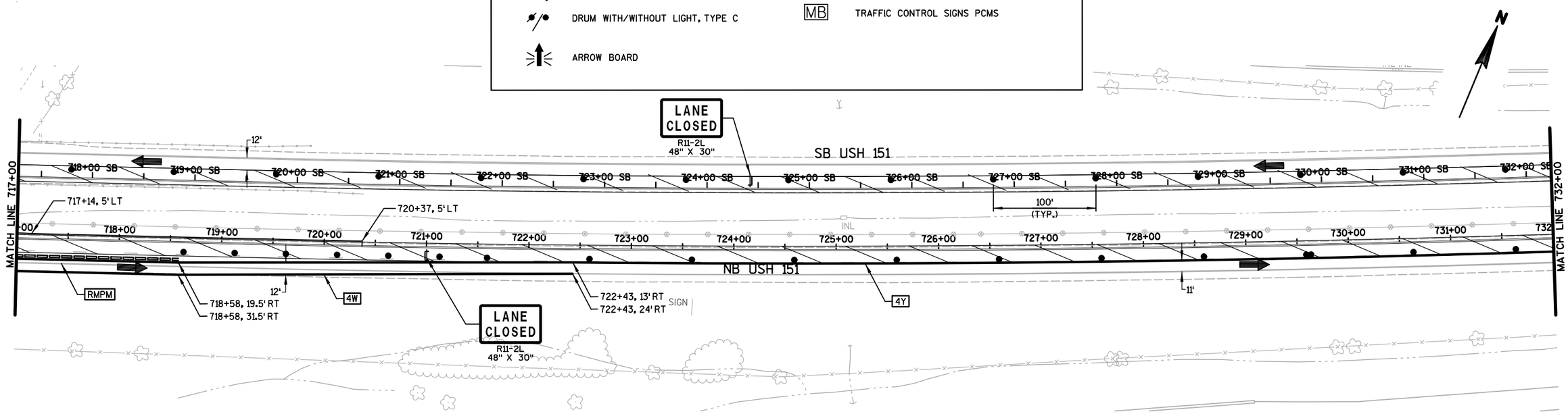
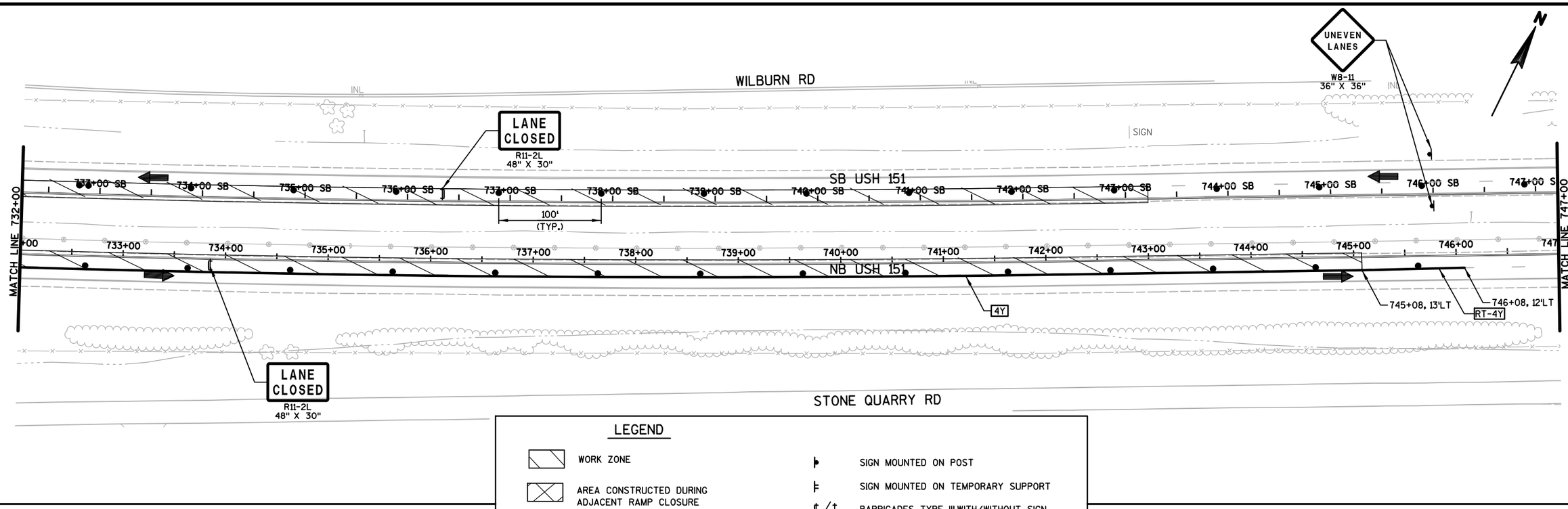



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

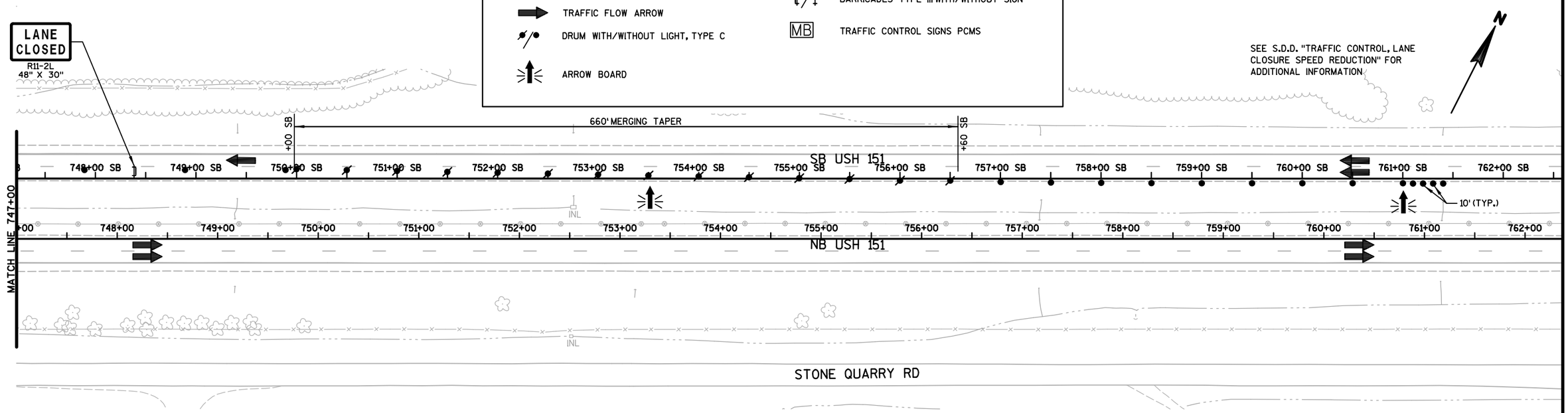



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET 97 | E |
|---|---|---|---|---|---|




## LEGEND

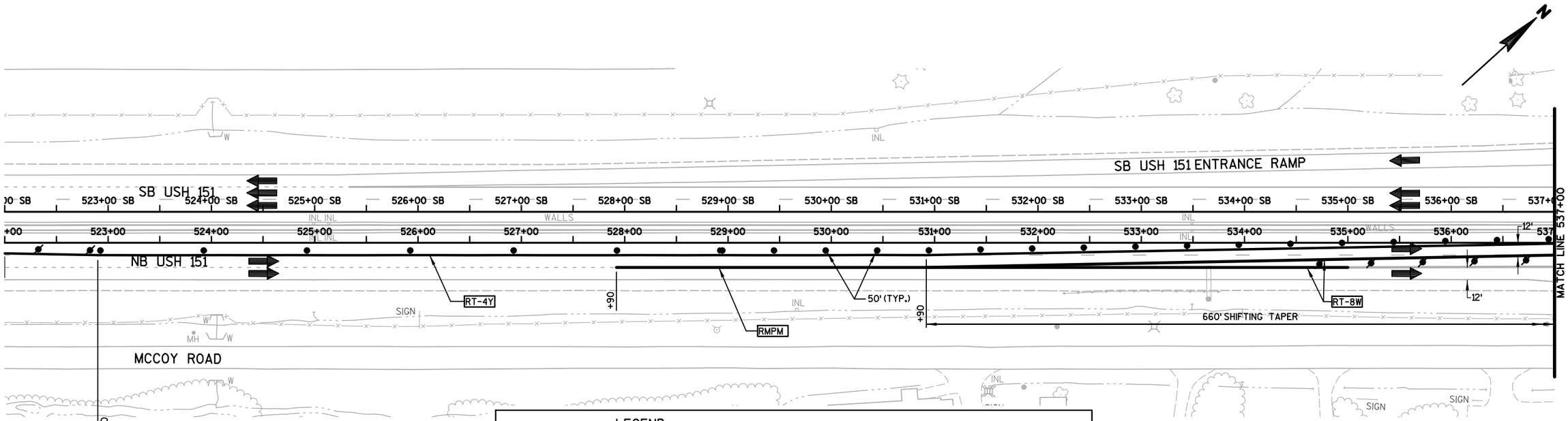
- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS




SEE S.D.D. "TRAFFIC CONTROL, LANE CLOSURE SPEED REDUCTION" FOR ADDITIONAL INFORMATION

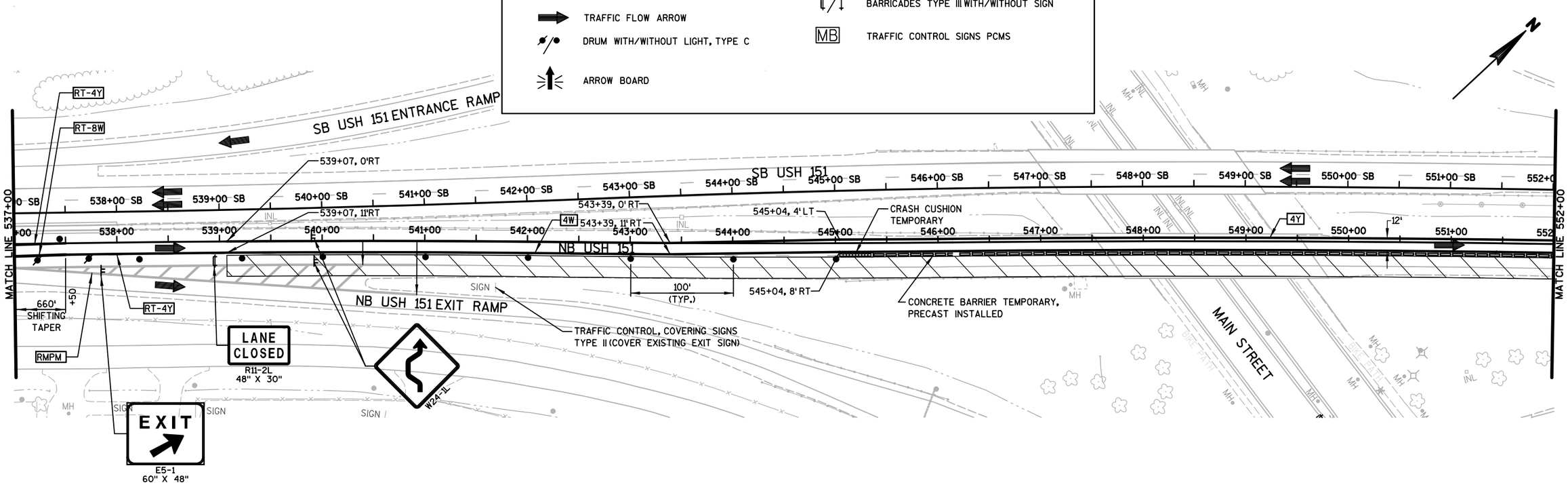
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A | SHEET 98 | E |
|---|---|---|---|---|---|

2

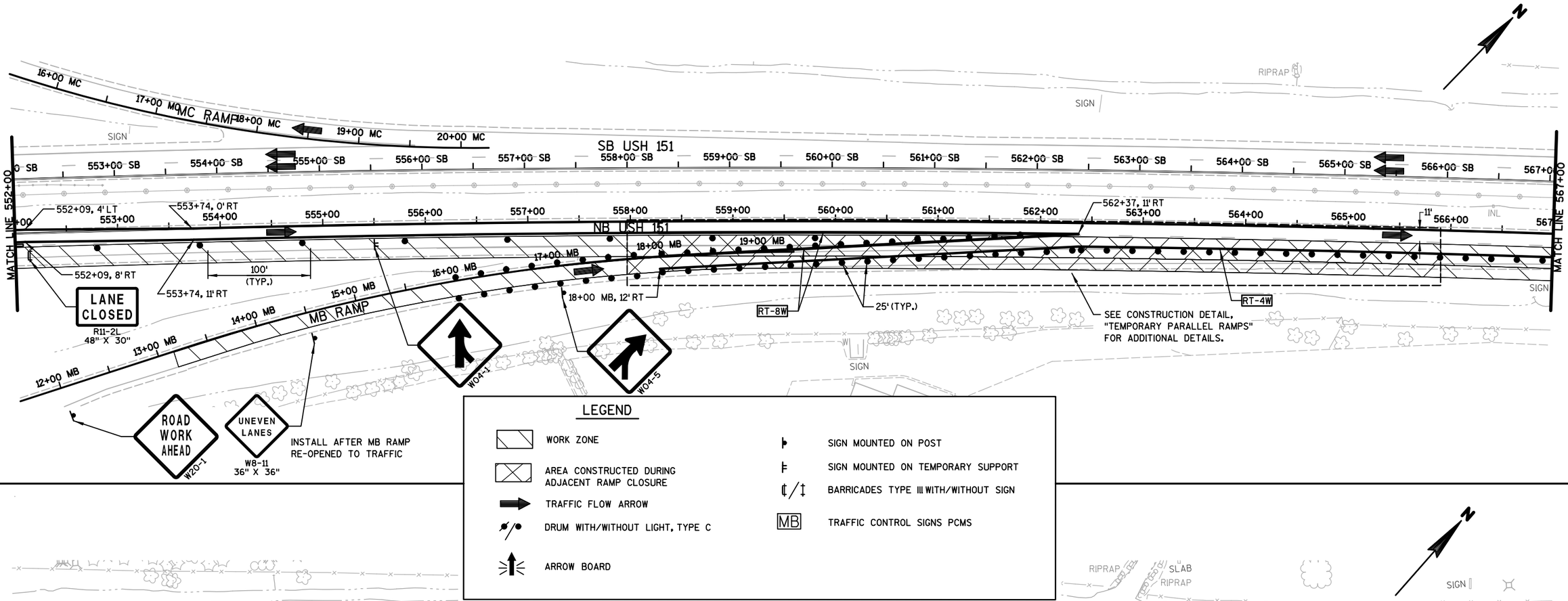



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

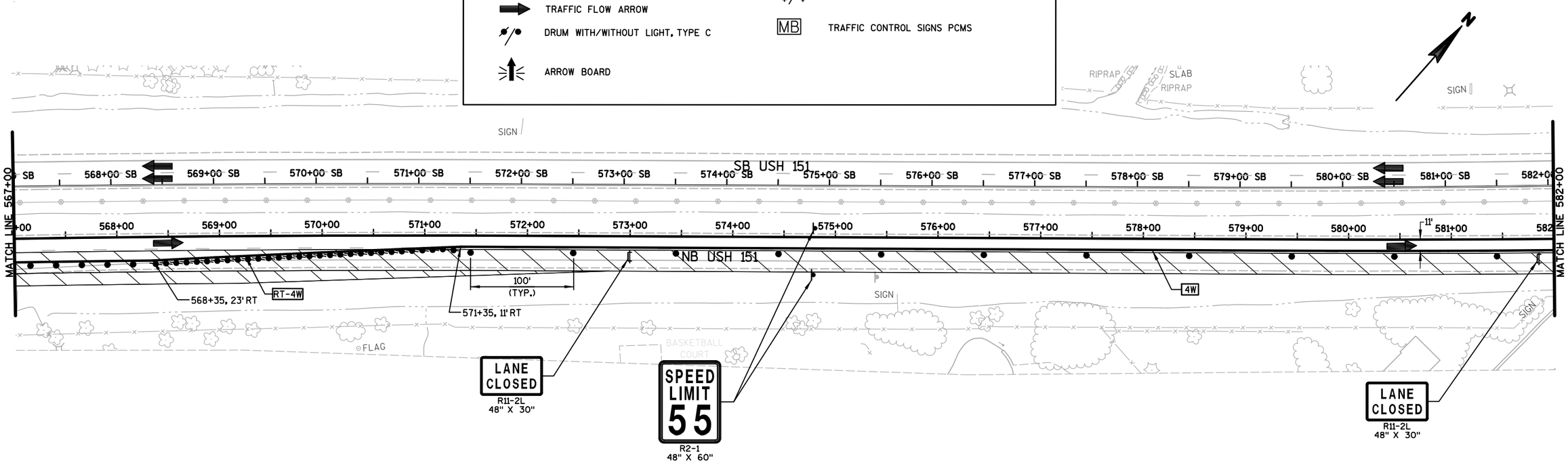



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET 99 | E |
|---|---|---|---|---|---|

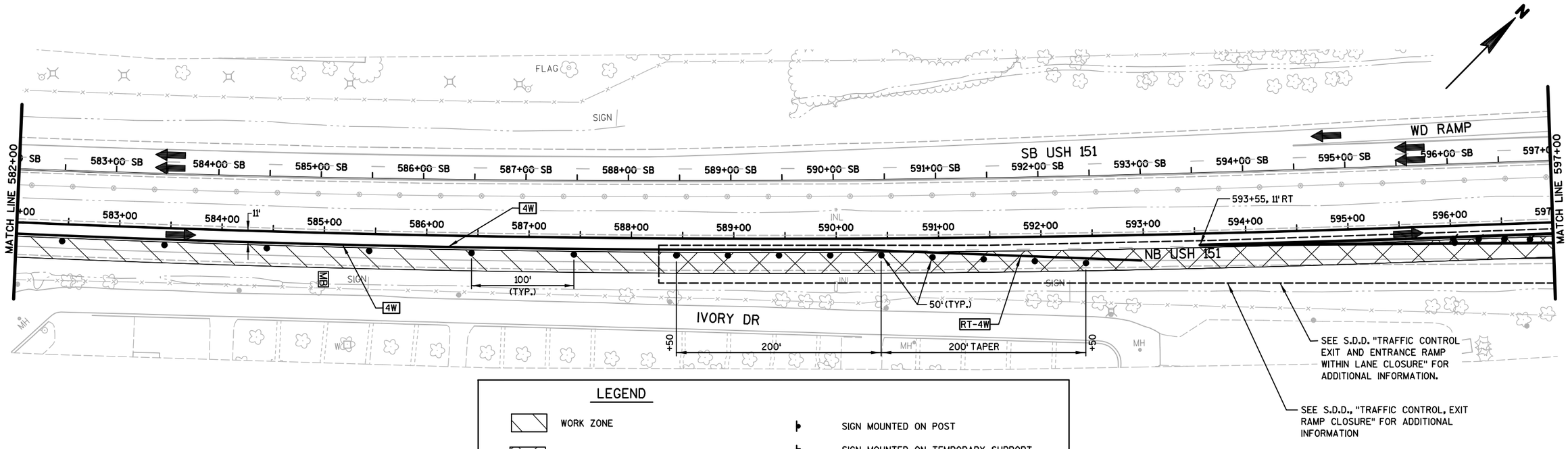



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET 100 | E |
|---|---|---|---|---|---|

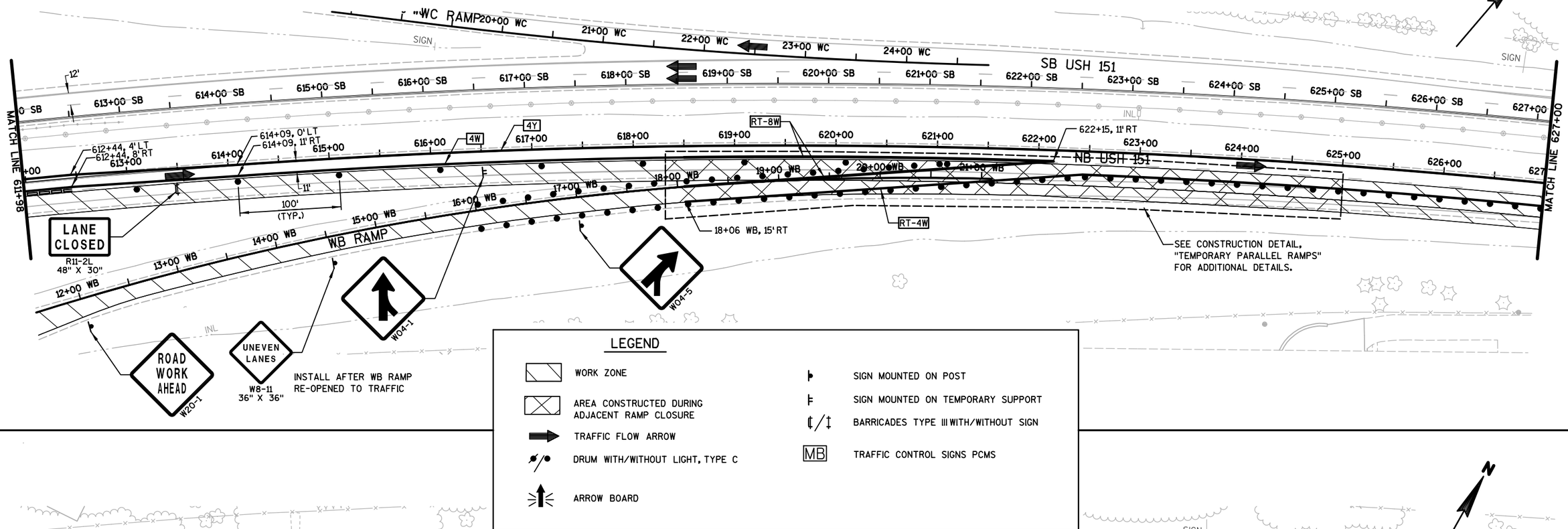



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET | E |
|---|---|---|---|---|---|



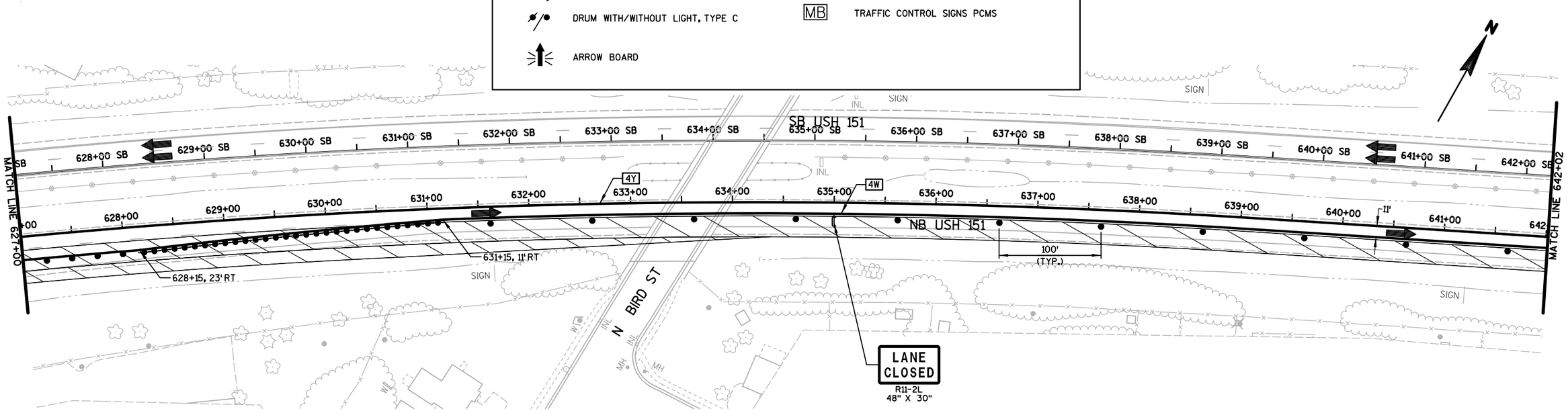
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026503_s3B.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 42

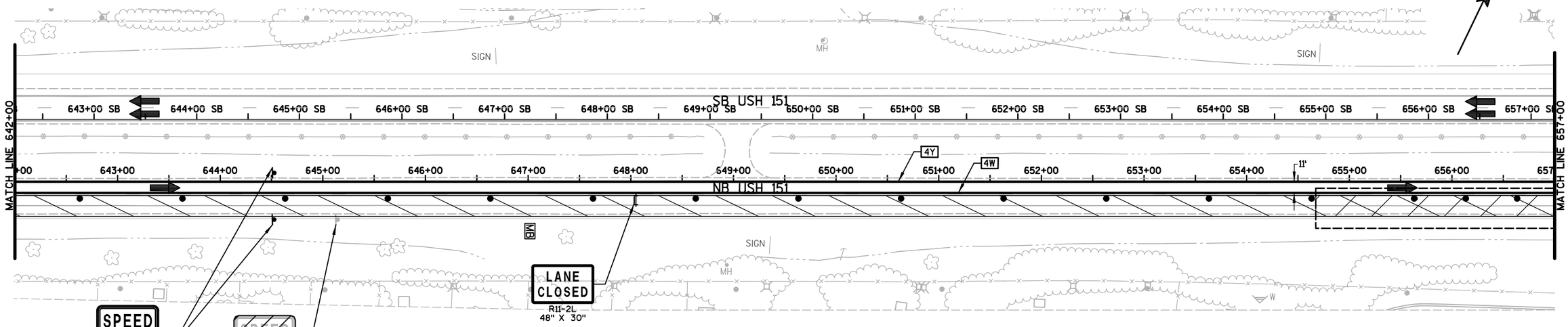



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

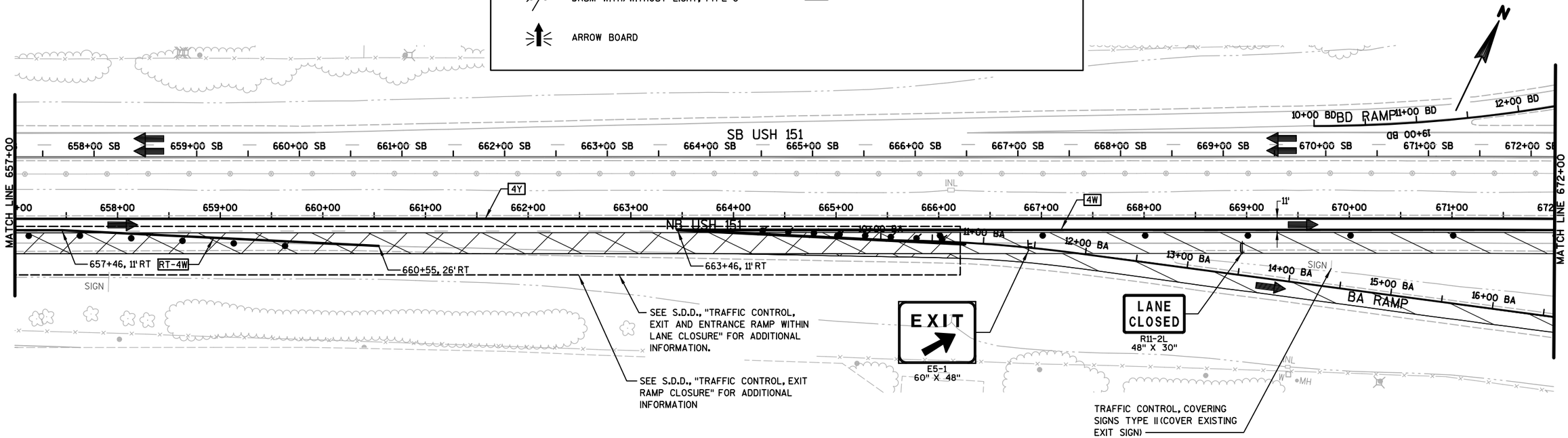



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET 102 | E |
|---|---|---|---|---|---|



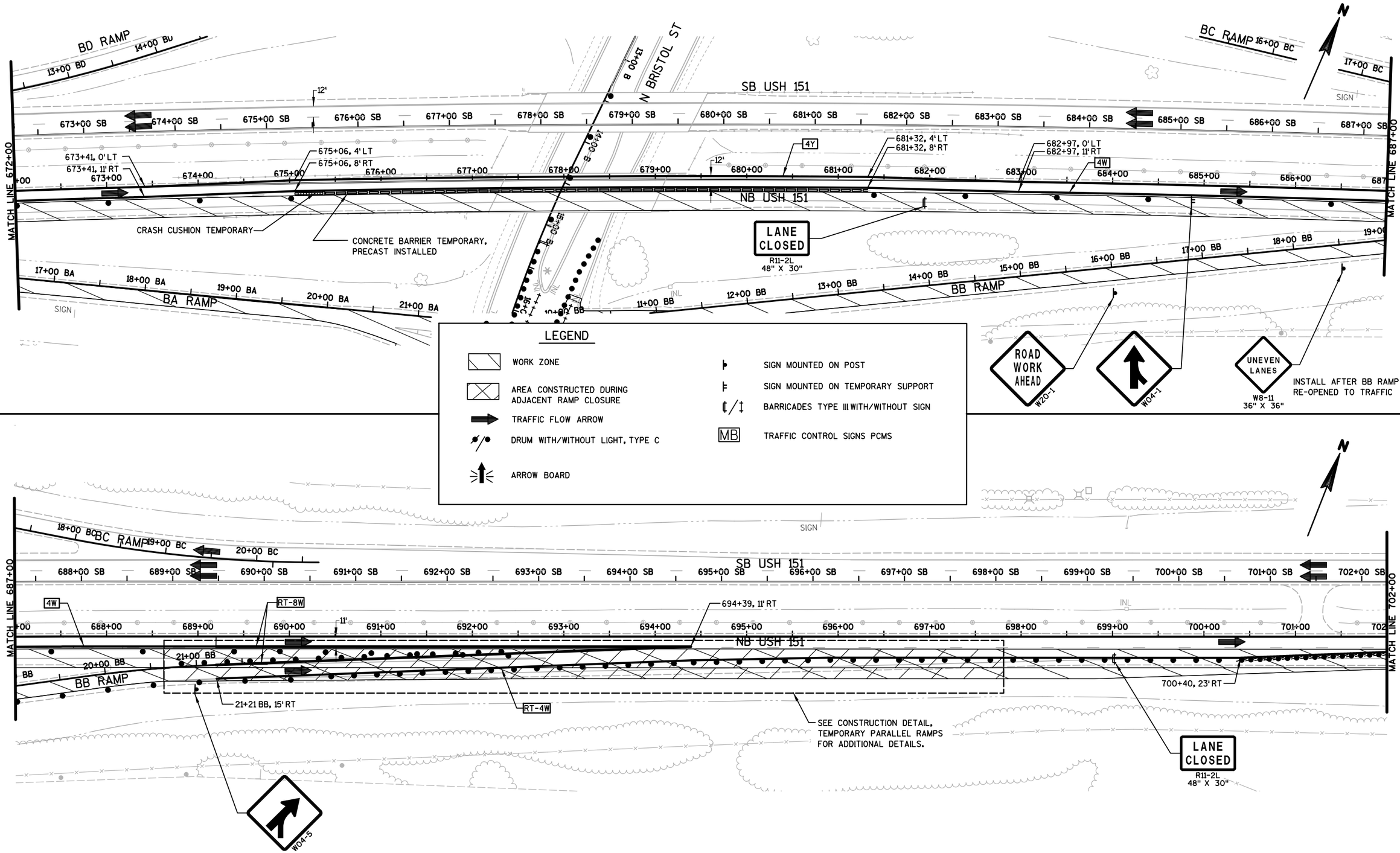

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET 103 | E |
|---|---|---|---|---|---|

2

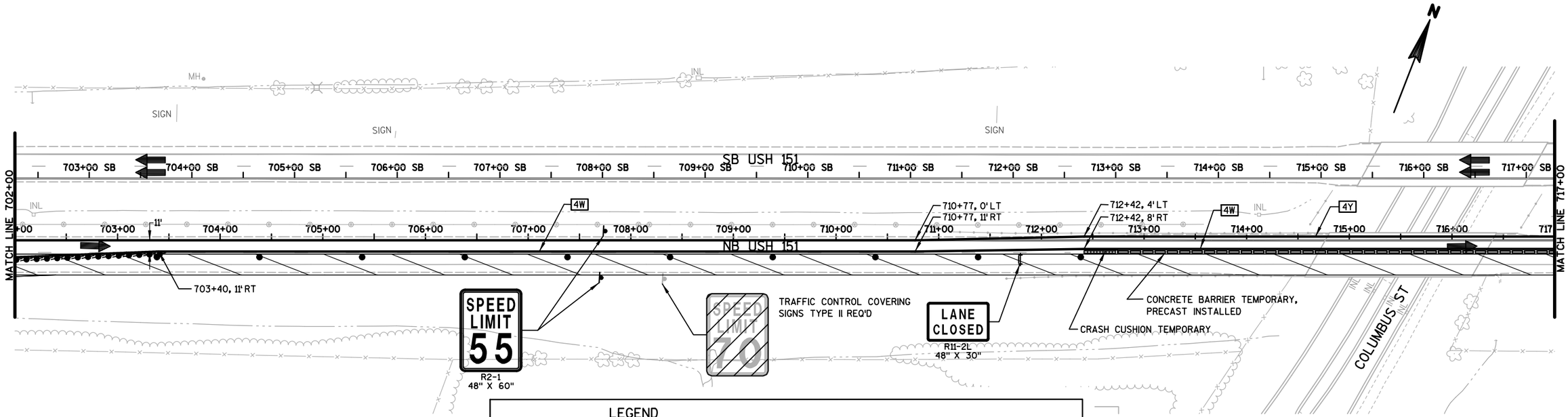



## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

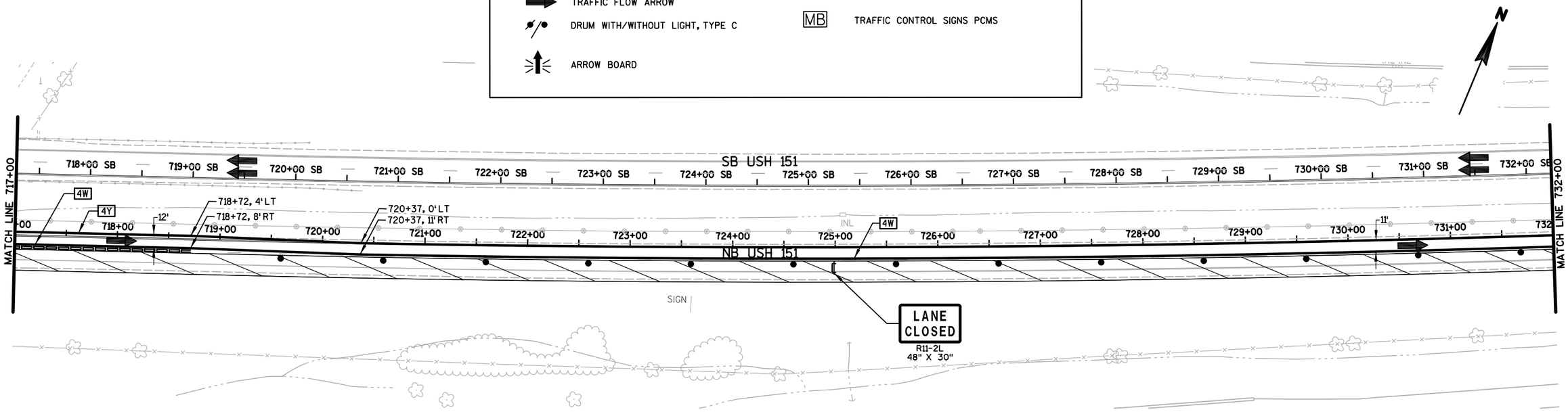



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET 104 | E |
|---|---|---|---|---|---|




## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

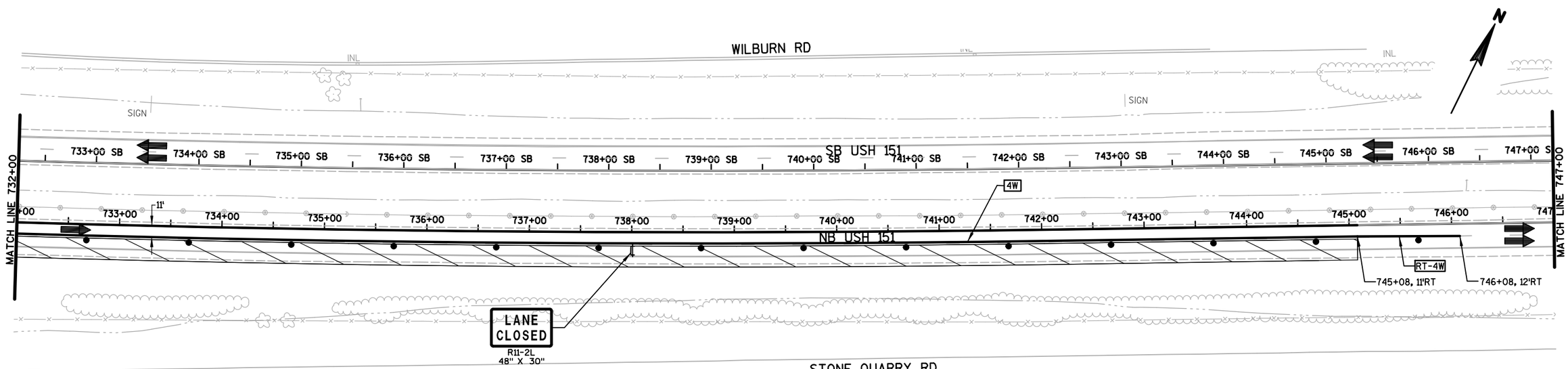



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET E |
|---|---|---|---|---|



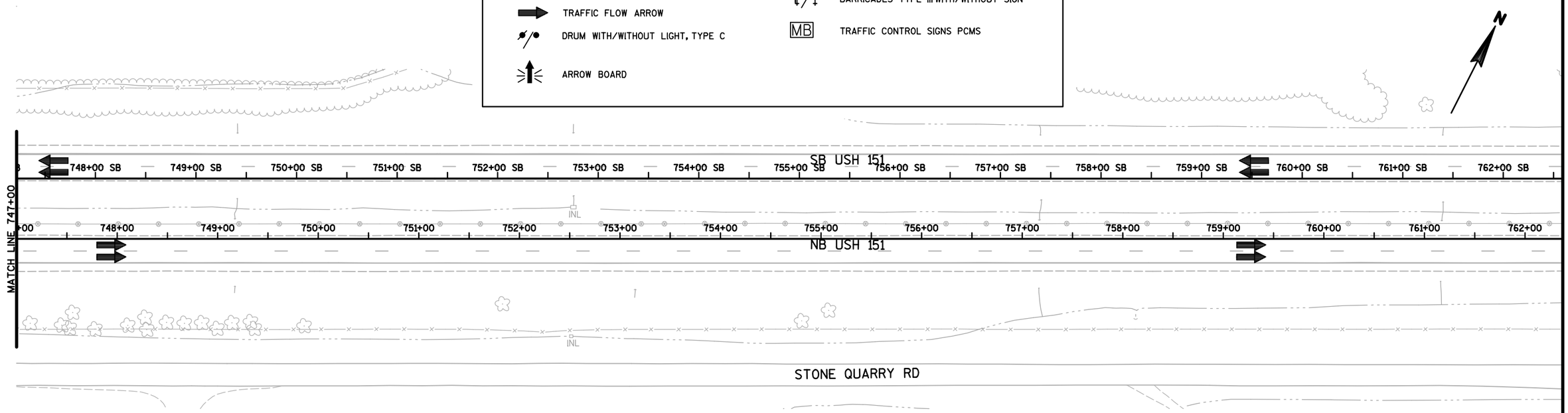
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026507_s3B.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 42



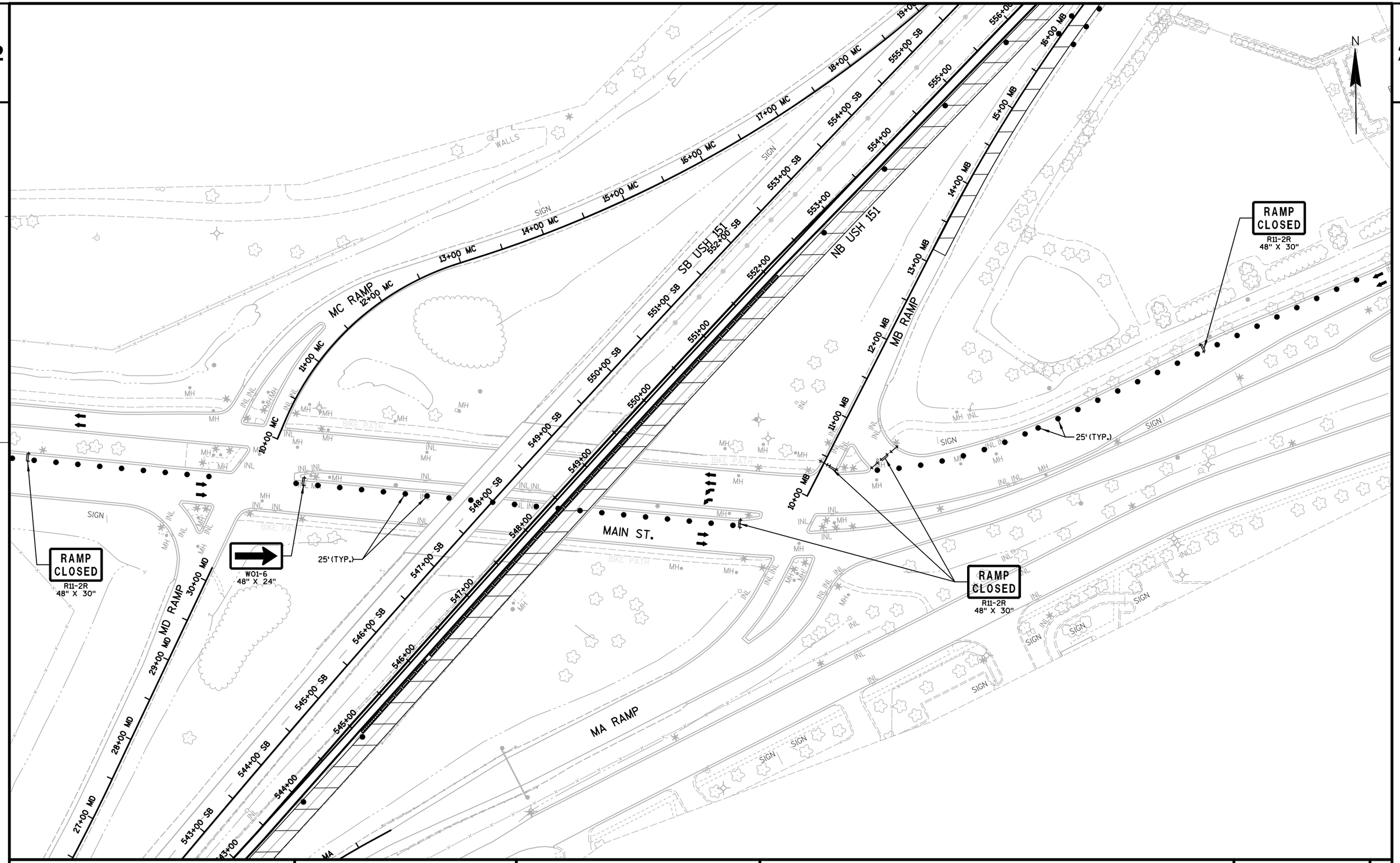

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B | SHEET 106 | E |
|---|---|---|---|---|---|

2




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B (MAIN NB ENTRANCE RAMP CLOSURE) | SHEET 107 | E |
|---|---|---|---|---|---|

2

N

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL INFORMATION

SEE S.D.D., "TRAFFIC CONTROL, INTERSECTION WITHIN LANE CLOSURE" FOR ADDITIONAL INFORMATION

LOIS DR

STH 19 (WINDSOR ST)

25'(TYP.)

9+00 W 10+00 W 11+00 W 12+00 W 13+00 W 14+00 W 15+00 W 16+00 W 17+00 W 18+00 W 19+00 W 20+00 W 21+00 W 22+00 W 23+00 W 24+00 W

RT-4W

RMPM

+55 W

+00 W

245' MERGING TAPER

W01-6
48" X 24"

LANE CLOSED
R11-2L
48" X 30"

SIDEWALK CLOSED
R9-9
24" X 12"

TEMP. CURB RAMP REQ'D

TEMP. PEDESTRIAN SAFETY FENCE REQ'D

RAMP CLOSED
R11-2R
48" X 30"

WC RAMP

10+00 WC 11+00 WC 12+00 WC 13+00 WC 14+00 WC

WD RAMP

15+00 WD 16+00 WD 17+00 WD 18+00 WD

SB USH 151

603+00 SB 604+00 SB 605+00 SB 606+00 SB 607+00 SB 608+00 SB 609+00 SB 610+00 SB 611+00 SB 612+00 SB 613+00 SB

NB USH 151

603+00 604+00 605+00 606+00 607+00 608+00 609+00 610+00 611+00 612+00 613+00

WB RAMP

10+00 WB 11+00 WB 12+00 WB 13+00 WB

WA RAMP

18+00 WA 19+00 WA 20+00 WA 21+00 WA 22+00 WA

50' TYP.

SIGN

MH

INL

BIKE PATH

COORDINATE STH 19 PAVEMENT REPAIRS WITH WD RAMP PAVEMENT REPLACEMENT TO ALLOW PEDESTRIAN AND BICYCLE ACCESS AT ALL TIMES. USE TEMPORARY CURB RAMPS AND TEMPORARY PEDESTRIAN SAFETY FENCE AS SHOWN WHEN ACCESS ACROSS WD RAMP IS UNAVAILABLE.

SEE S.D.D., "TRAFFIC CONTROL, PEDESTRIAN ACCOMMONDATION" AND "TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION" FOR EXISTING INFORMATION.

SEE S.D.D., "TRAFFIC CONTROL, INTERSECTION WITHIN LANE CLOSURE" FOR ADDITIONAL INFORMATION

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A (STH 19/WINDSOR ST.) | SHEET 108 | E |
|---|---|---|---|---|---|

2

N

W01-6
48" X 24"

LANE CLOSED
R11-2L
48" X 30"

SEE S.D.D., "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE" FOR ADDITIONAL INFORMATION

LOIS DR

WC RAMP

SB USH 151

NB USH 151

WB RAMP

RAMP CLOSED
R11-2R
48" X 30"

LANE CLOSED
R11-2L
48" X 30"

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/ EXPRESSWAY" FOR ADDITIONAL INFORMATION

BEGIN RIGHT TURN LANE
R3-20R
24" X 36"

245' MERGING TAPER

25' (TYP.)

RT-4W

RT-4Y

RT-8W

STH 19 (WINDSOR ST)

9+00 W
10+00 W
11+00 W
12+00 W
13+00 W
14+00 W
15+00 W
16+00 W
17+00 W
18+00 W
19+00 W
20+00 W
21+00 W
22+00 W
23+00 W
24+00 W

+05 W
+50 W
+40 W

10' (TYP.)

4W

LANE CLOSED
R11-2L
48" X 30"

RAMP CLOSED
R11-2R
48" X 30"

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/ EXPRESSWAY" FOR ADDITIONAL INFORMATION

WD RAMP

14+00 WC
15+00 WC
16+00 WC
17+00 WD
18+00 WD
15+00 WD

605+00 SB
606+00
607+00
608+00
609+00
610+00
611+00
612+00
613+00

10+00 WB
11+00 WB
12+00 WB
13+00 WB
14+

WA RAMP

18+00 WA
19+00 WA
20+00 WA
21+00 WA
22+00 WA

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

W01-6
48" X 24"

SEE S.D.D., "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE" FOR ADDITIONAL INFORMATION

PEDESTRIAN AND BICYCLE ACCESS TO BE PROVIDED ACROSS WD RAMP ON PERMANENT PAVEMENT COMPLETED DURING STAGE 2A.

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- 8W — TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH (WHITE)
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B (STH 19/WINDSOR ST.) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026602_S2B STH 19.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

N

LANE CLOSED
R11-2L
48" X 30"

SEE S.D.D., "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE" FOR ADDITIONAL INFORMATION

RAMP CLOSED
R11-2R
48" X 30"

LANE CLOSED
R11-2L
48" X 30"

LANE CLOSED
R11-2L
48" X 30"

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/ EXPRESSWAY" FOR ADDITIONAL INFORMATION

LOIS DR

WC RAMP

SB USH 151

WB RAMP

STH 19 (WINDSOR ST)

WD RAMP

WA RAMP

W01-6
48" X 24"

RT-4Y

BEGIN LEFT TURN LANE
R3-20L
24" X 36"

245' MERGING TAPER

245'
MERGING TAPER

25' (TYP.)

15' (TYP.)

50' (TYP.)

RMPM

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL INFORMATION

SEE S.D.D., "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE" FOR ADDITIONAL INFORMATION

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- 8W — TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH (WHITE)
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3A (STH 19/WINDSOR ST.) | SHEET 110 | E |
|---|---|---|---|---|---|

2

N

LOIS DR

STH 19 (WINDSOR ST)

WC RAMP

WD RAMP

WA RAMP

WB RAMP

SB USH 151

NB USH 151

LANE CLOSED
R11-2L
48" X 30"

RAMP CLOSED
R11-2R
48" X 30"

LANE CLOSED
R11-2L
48" X 30"

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/ EXPRESSWAY" FOR ADDITIONAL INFORMATION

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/ EXPRESSWAY" FOR ADDITIONAL INFORMATION

245' MERGING TAPER

245' MERGING TAPER

25' (TYP.)

25' TYP.

50' TYP.

10' (TYP.)

RT-4W

RT-4Y

WO1-6
48" X 24"

WO1-6
48" X 24"

SIDEWALK CLOSED
R9-9
24" X 12"

SIDEWALK CLOSED
R9-9
24" X 12"

TEMP. CURB RAMP REQ'D

TEMP. CURB RAMP REQ'D

RAMP CLOSED
R11-2R
48" X 30"

TEMP. PEDESTRIAN SAFETY FENCE REQ'D

COORDINATE STH 19 PAVEMENT REPAIRS WITH WA RAMP PAVEMENT REPLACEMENT TO ALLOW PEDESTRIAN AND BICYCLE ACCESS AT ALL TIMES. USE TEMPORARY CURB RAMPS AND TEMPORARY PEDESTRIAN SAFETY FENCE AS SHOWN WHEN ACCESS ACROSS WA RAMP IS UNAVAILABLE.

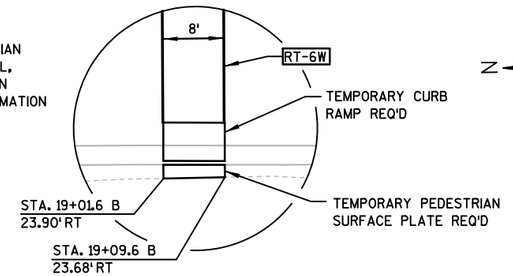
SEE S.D.D., "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" AND "TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION" FOR EXISTING INFORMATION.

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- 8W — TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH (WHITE)
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

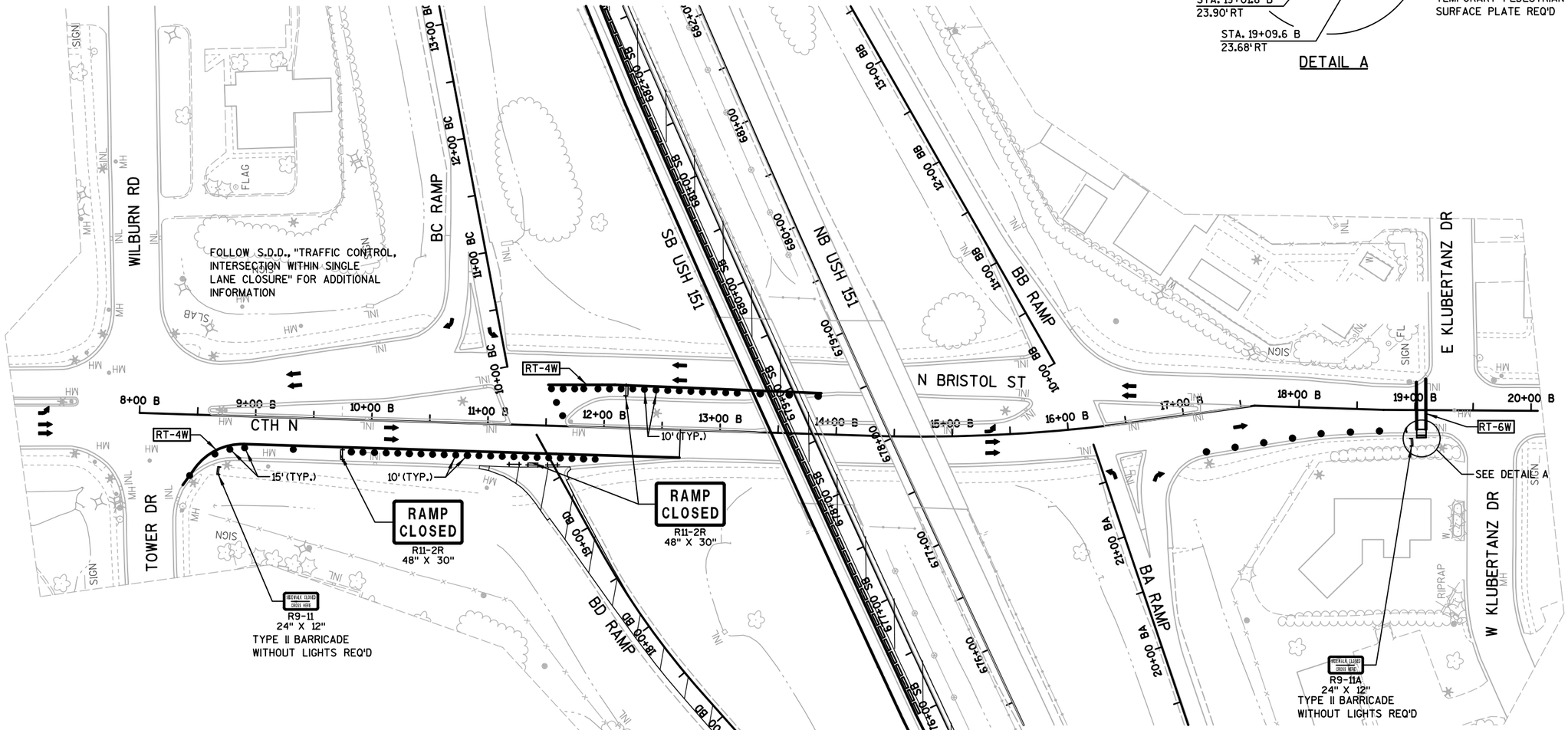
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B (STH 19/WINDSOR ST.) | SHEET 111 E |
|---|---|---|---|---|

SEE S.D.D., "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION" AND "TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL INFORMATION




DETAIL A

N




## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2A (CTH N/N. BRISTOL ST. RAMPS) | SHEET 112 | E |
|---|---|---|---|---|---|

2

N

R9-11
24" X 12"
TYPE II BARRICADE
WITHOUT LIGHTS REQ'D

TYPE II BARRICADE
WITHOUT LIGHTS REQ'D
R9-11A
24" X 12"

WILBURN RD
BC RAMP
SB USH 151
NB USH 151
BB RAMP
N BRISTOL ST
E KLUBERTANZ DR
W KLUBERTANZ DR
CTH N
TOWER DR
BD RAMP
BA RAMP

RT-4Y
RT-4W
10' (TYP.)

LANE
CLOSED
R11-2L
48" X 30"

RAMP
CLOSED
R11-2R
48" X 30"

NOTE:
PEDESTRIAN ACCOMMODATIONS SHOWN FOR CLOSURE OF SIDEWALK ON EAST SIDE OF CTH N. IF PERMANENT PEDESTRIAN ACCOMMODATIONS ACROSS BD RAMP ARE NOT COMPLETE, PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATIONS ACROSS BD RAMP WHILE THE BC RAMP IS CLOSED.

## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2B (CTH N/N. BRISTOL ST.) | SHEET | E |
|---|---|---|---|---|---|

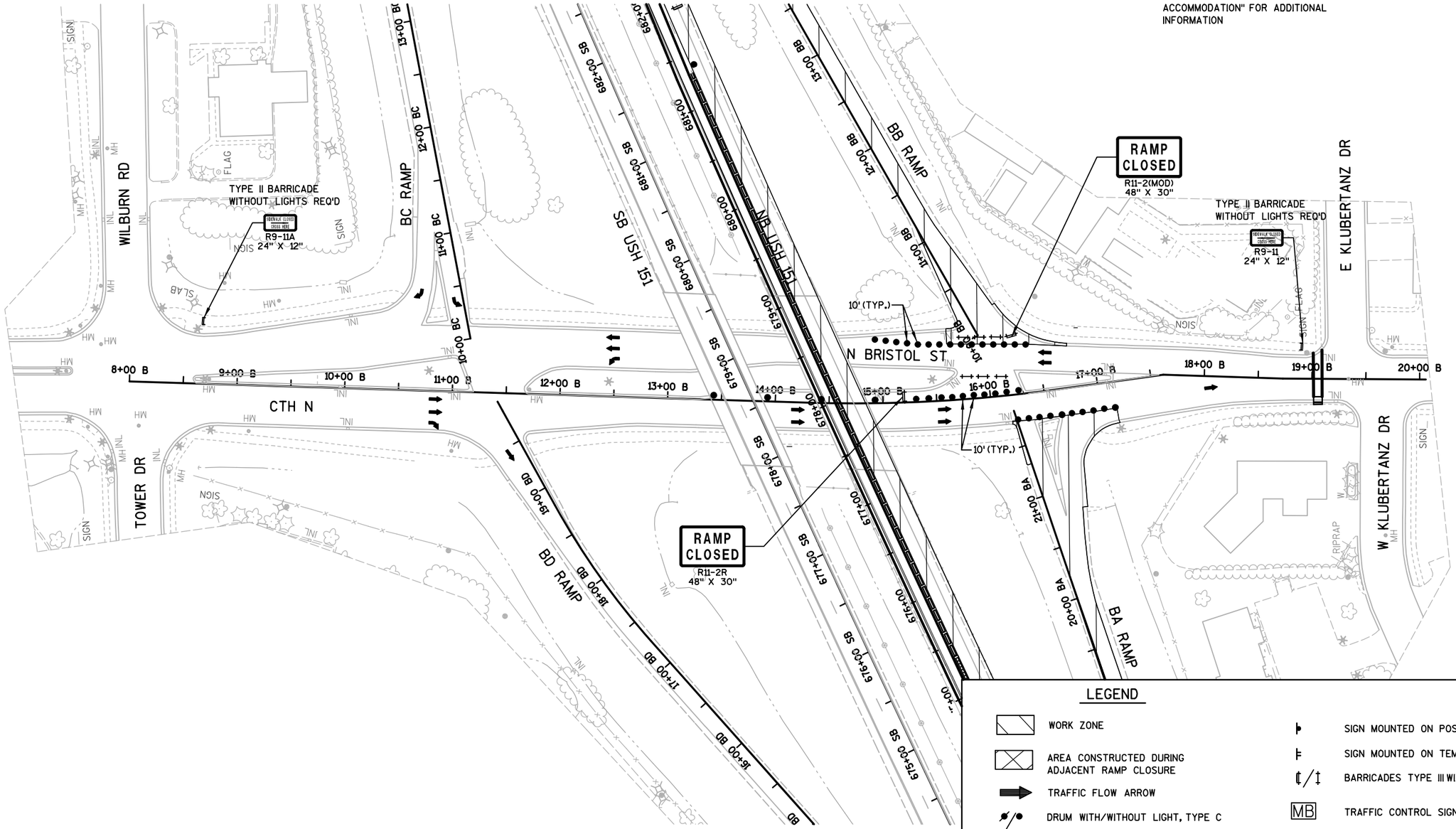


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026713_S2B.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

SIDEWALK ALONG EAST SIDE OF CTH N IS SHOWN CLOSED. COMPLETE CONSTRUCTION OPERATIONS SUCH THAT PEDESTRIAN ACCOMMODATIONS ARE PROVIDED ALONG ONE SIDE OF CTH N AT ALL TIMES. PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATIONS IF NECESSARY.

SEE S.D.D., "TRAFFIC CONTROL, PEDESTRIAN, ACCOMMODATION" AND "TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION" FOR ADDITIONAL INFORMATION

N




## LEGEND

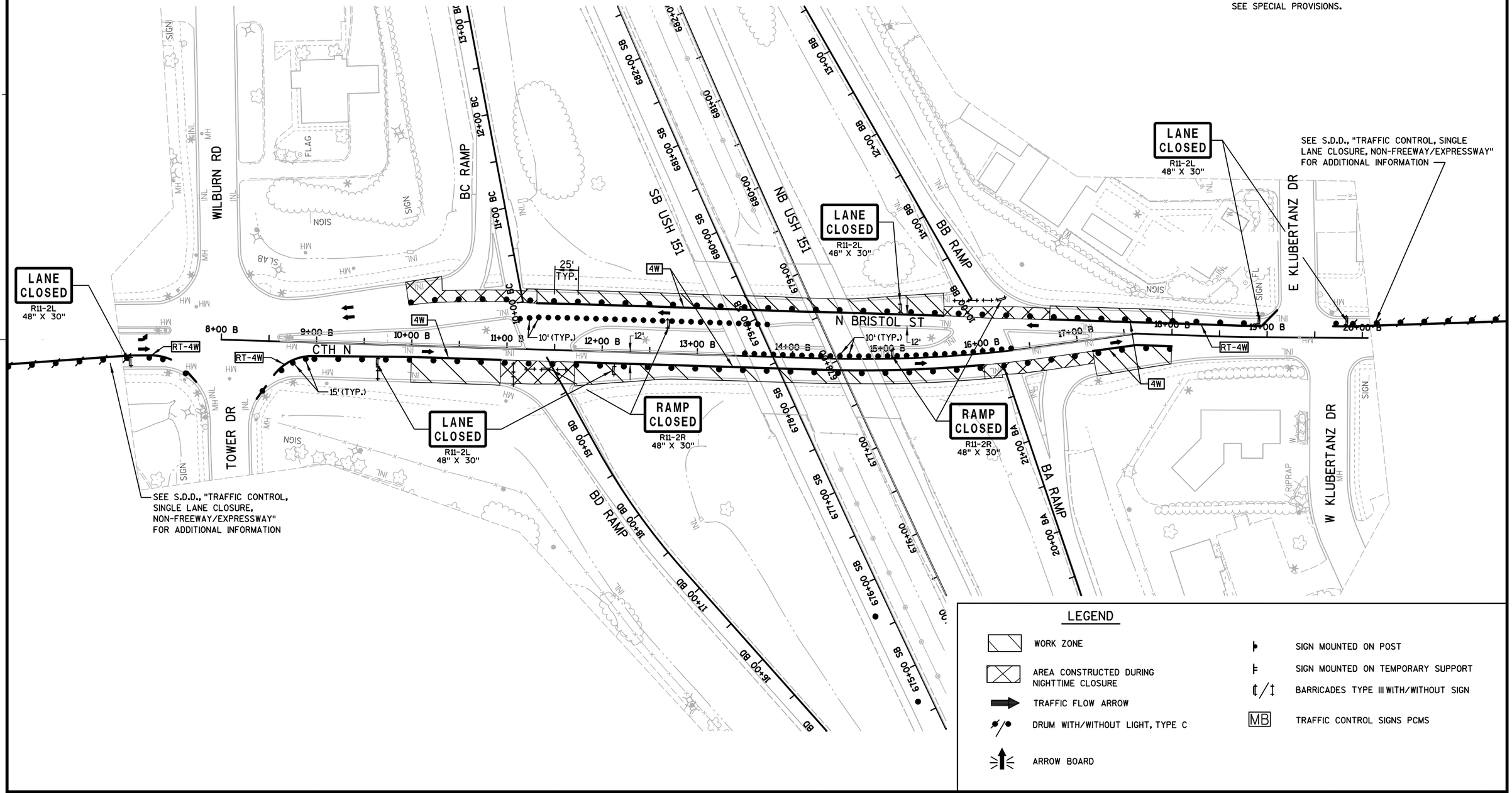
- WORK ZONE
- AREA CONSTRUCTED DURING ADJACENT RAMP CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 3B (CTH N/N. BRISTOL ST.) | SHEET 114 | E |
|---|---|---|---|---|---|

2

N

TRAFFIC CONTROL SHOWN FOR WHEN RAMPS ARE CLOSED DURING NIGHTTIME HOURS. ADJUST TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER DURING DAYTIME HOURS TO ALLOW FOR TRAFFIC MOVEMENTS TO AND FROM THE RAMPS. SEE SPECIAL PROVISIONS.




## LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING NIGHTTIME CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 1 (CTH N/N. BRISTOL ST.) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026801_S1 CTH N.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

2

N

TRAFFIC CONTROL SHOWN FOR WHEN LEFT TURN LANES ARE CLOSED DURING NIGHTTIME HOURS. ADJUST TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER DURING DAYTIME HOURS TO ALLOW FOR LEFT TURN MOVEMENTS.
SEE SPECIAL PROVISIONS.

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL INFORMATION

LANE CLOSED
R11-2L
48" X 30"

WILBURN RD

TOWER DR

E KLUBERTANZ DR

W KLUBERTANZ DR

N BRISTOL ST

CTH N

SB USH 151

NB USH 151

BC RAMP

BD RAMP

BB RAMP

BA RAMP

W01-6
48" X 24"

R3-2
24" X 24"

R3-60L
30" X 36"
(UNCOVER WHEN LT TURN IS AVAILABLE)

RT-4Y

10' (TYP.)

25' (TYP.)

12'

100' TAPER

SEE S.D.D., "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL INFORMATION

LEGEND

- WORK ZONE
- AREA CONSTRUCTED DURING NIGHTTIME CLOSURE
- TRAFFIC FLOW ARROW
- DRUM WITH/WITHOUT LIGHT, TYPE C
- ARROW BOARD
- SIGN MOUNTED ON POST
- SIGN MOUNTED ON TEMPORARY SUPPORT
- BARRICADES TYPE III WITH/WITHOUT SIGN
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | STAGING PLANS - STAGE 2 (CTH N/N. BRISTOL ST.) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\026801_S2 CTH N.dgn PLOT DATE : 8/10/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

2

## 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 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.

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

ALL DETOUR ROUTE SIGN SPACING SHALL FOLLOW SSD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES".

TRAFFIC CONTROL SIGNS PCMS TO BE INSTALLED TWO WEEKS PRIOR TO DETOUR.

SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES", "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL 3, AND "BARRICADES FOR SIDEROAD CLOSURES" FOR ADDITIONAL INFORMATION.

ALL SIGNS SHOWN ON DETOUR SHEETS SHALL BE PAID FOR AS TRAFFIC CONTROL DETOUR SIGNS UNLESS OTHERWISE NOTED.

## LEGEND

- DETOUR ROUTE
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- EXISTING PERMANENT SIGN SUPPORT
- COVERING SIGNS TYPE I OR II
- WORK AREA
- MB — TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - GENERAL NOTES | SHEET 117 | E |
|---|---|---|---|---|---|

2

2

STONEHAVEN DR.

M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
TO SOUTH 151

DETOUR AHEAD
W20-2
48" X 48"

JCT 151

BUSINESS PARK DR.

N

WILBURN RD.

DETOUR TO SOUTH 151
M4-8 24" X 12"
M4-5 24" X 12"

MB

RAMP CLOSED

M06-1 21" X 21"

TOWER DR.

MB

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

COUNTY N
TRUCK ROUTES HAVE YELLOW POSTS

CTH N (BRISTOL ST.)

USH 151

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

JCT 19

WEST 19 COUNTY N

M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
TO SOUTH 151

M06-1 21" X 21"

COLUMBUS ST.

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

M05-1R 21" X 21"

WEST 19

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

WEST 19 COUNTY N

M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
TO SOUTH 151

M05-1L 21" X 21"

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

M06-1 21" X 21"

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

M06-1 21" X 21"

MADISON

BIRD ST.

STH 19 (WINDSOR ST.)

MB

STH 19 (WINDSOR ST.)

WEST 19

M4-8 24" X 12"
M4-5 24" X 12"
M3-3 24" X 12"
M1-4 24" X 24"
DETOUR TO SOUTH 151

MATCH LINE SHEET 2 OF 2

NORTH 151 EAST 19

MB

RAMP CLOSED

MADISON
WAUNAKEE
COLUMBUS

M4-8 24" X 12"
M4-5 24" X 12"
DETOUR TO SOUTH WEST NORTH 151 19 151

WALMAR DR.

BROADWAY DR.

USH 151

LEGEND

- DETOUR ROUTE
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- EXISTING PERMANENT SIGN SUPPORT
- COVERING SIGNS TYPE I OR II
- WORK AREA
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - USH 151 SB (STAGE 2A/2B) (SHEET 1 OF 2) | SHEET E |
|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027001_dt.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - USH 151 SB (STAGE 2A/2B) (SHEET 2 OF 2) | SHEET E |
|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027002_dt.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

N

EXIT 103
BUSINESS
N 151
Bristol St
3/4 MILE

M4-8
36" X 18"
DETOUR
M1-6
36" X 36"
19
M05-2R
30" X 30"

1000'

USH 151

WILBURN RD.

BUSINESS PARK DR.

EXIT 103
BUSINESS
N 151
Bristol St

STONEHAVEN DR.

Bristol St
SOUTH NORTH

BUSINESS 151 COUNTY N

EXIT 102
19
Windsor St

CLOSED
G20-60
108" X 24"

TOWER DR.

M1-6
36" X 36"
19
DETOUR AHEAD
W20-2
48" X 48"

DETOUR
19
M4-8
36" X 18"
M1-6
36" X 36"
M06-1
30" X 30"

DETOUR
19
M4-8
36" X 18"
M1-6
36" X 36"
M05-1L
30" X 30"

DETOUR
19
M4-8
36" X 18"
M1-6
36" X 36"
M06-2
30" X 30"

DETOUR
19
M4-8
24" X 12"
M1-6
24" X 24"

COUNTY
N
TRUCK ROUTES HAVE YELLOW POSTS

EXIT 102
19
Windsor St

CLOSED
G20-60
108" X 24"

USH 151

BIRD ST.

COLUMBUS ST.

DETOUR
19
M4-8
24" X 12"
M1-6
24" X 24"

CTH N (BRISTOL ST.)

END DETOUR
19
M4-8A
24" X 18"

RAMP CLOSED

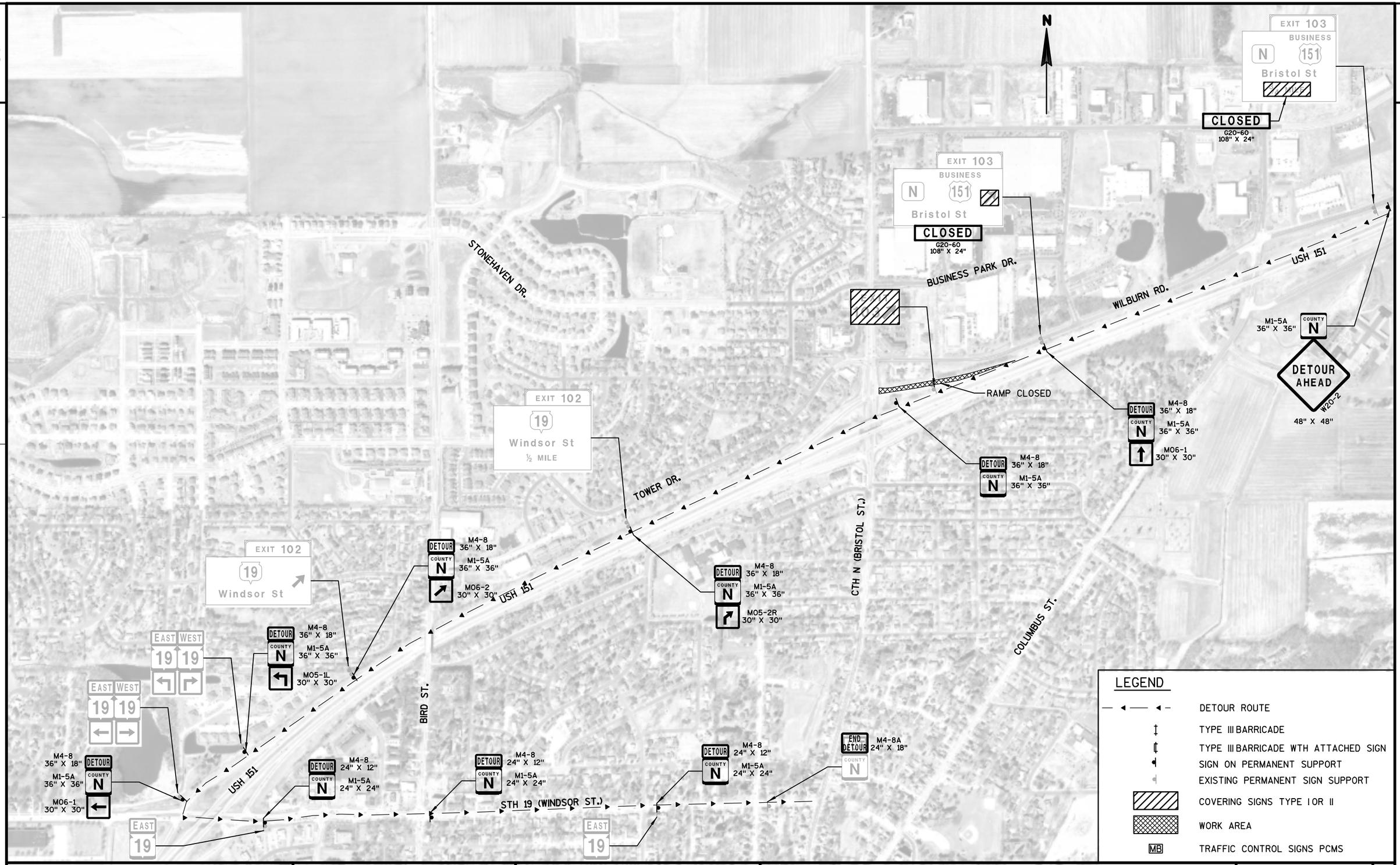
USH 151

STH 19 (WINDSOR ST.)

LEGEND

- DETOUR ROUTE
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- EXISTING PERMANENT SIGN SUPPORT
- COVERING SIGNS TYPE I OR II
- WORK AREA
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - USH 151 SB TO STH 19 (STAGE 2B) | SHEET 120 | E |
|---|---|---|---|---|---|

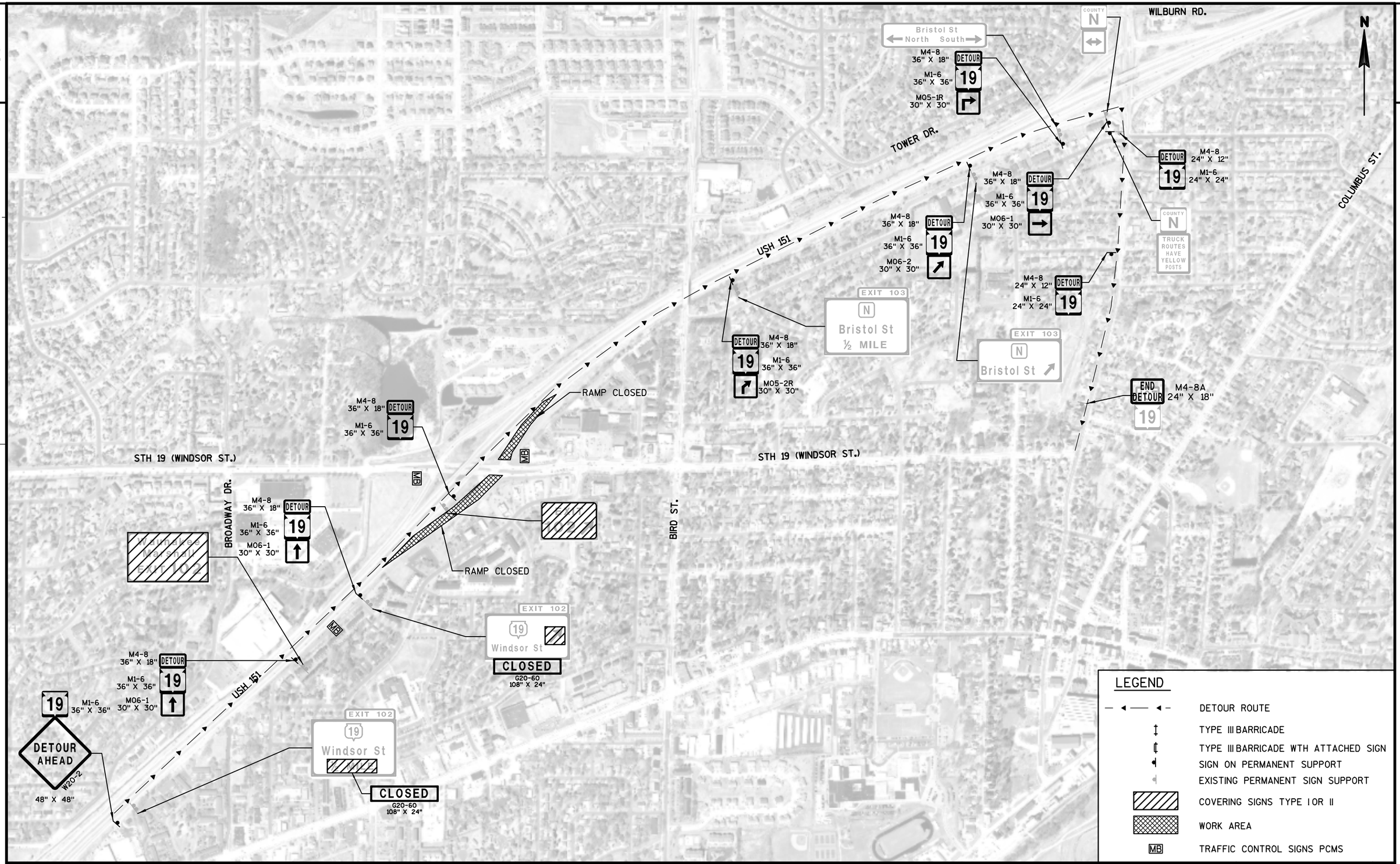



| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - USH 151 SB TO CTH N (STAGE 2B) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027004_dt.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

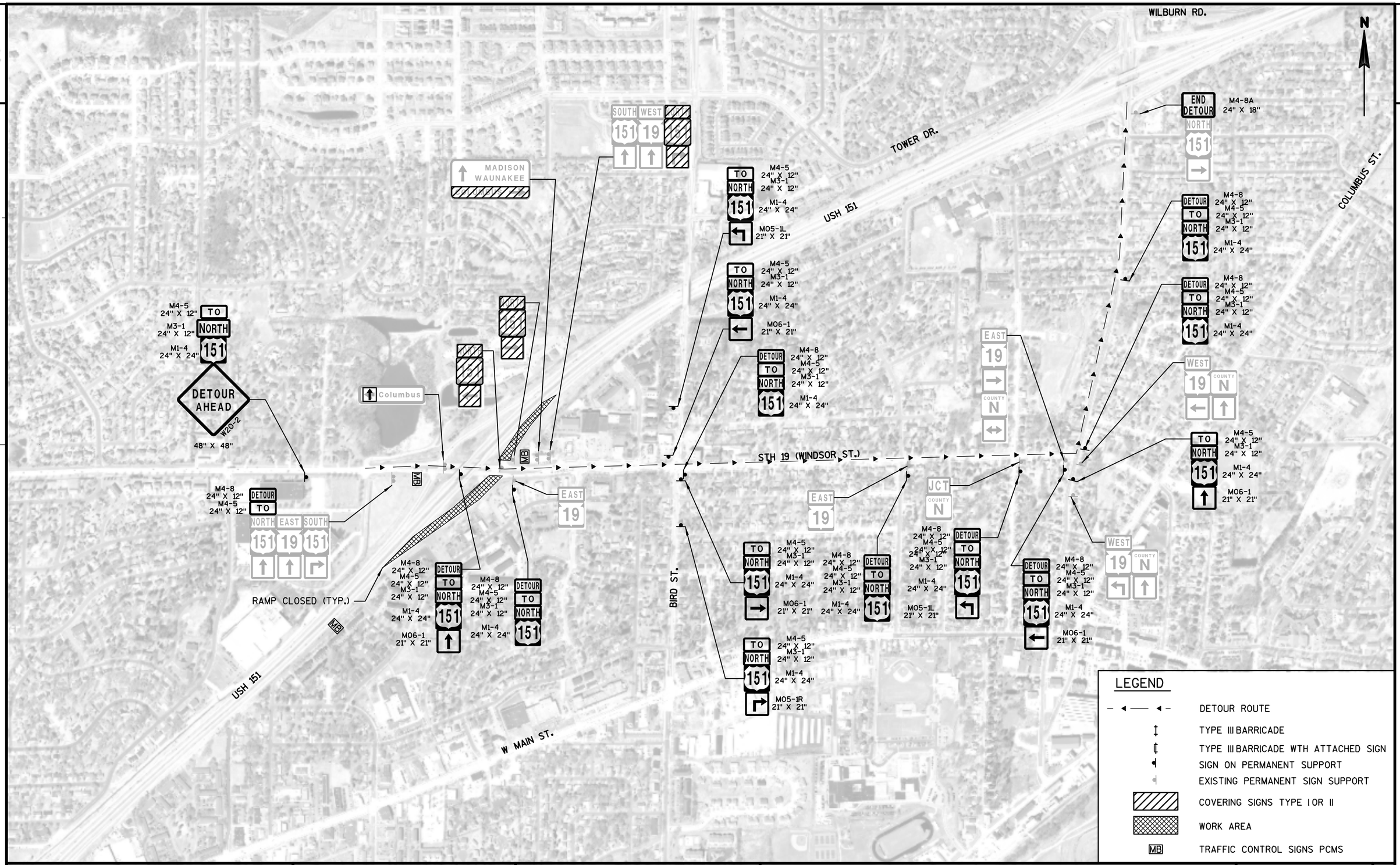
WISDOT/CADDS SHEET 42




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - USH 151 NB TO STH 19 (STAGE 3B) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027005_dt.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - STH 19 WB/EB TO USH 151 NB (STAGE 3B) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027006_dt.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

WILBURN RD.

N

RAMP CLOSED

RAMP CLOSED

MB

MB

TOWER DR.

MB

EXIT 103

N

Bristol St

CLOSED

G20-60
108" X 24"

CTH N (BRISTOL ST.)

COLUMBUS ST.

USH 151

EXIT 103

N

Bristol St

CLOSED

G20-60
108" X 24"

M4-8
36" X 18"

DETOUR

COUNTY
N

M1-5A
36" X 36"

M06-1
30" X 30"

STH 19 (WINDSOR ST.)

DETOUR
COUNTY
N
M4-8
24" X 12"
M1-5A
24" X 24"

DETOUR
COUNTY
N
M4-8
24" X 12"
M1-5A
24" X 24"

STH 19 (WINDSOR ST.)

EXIT
102

BROADWAY DR.

EAST
19

BIRD ST.

EAST
19

DETOUR
COUNTY
N
M4-8
24" X 12"
M1-5A
24" X 24"

END
DETOUR
COUNTY
N
M4-8A
24" X 18"

DETOUR
COUNTY
N
M4-8
36" X 18"
M1-5A
36" X 36"
M05-1R
30" X 30"

Waunakee
Marshall
EXIT 102

EXIT 102

19

Windsor St

USH 151

COUNTY
N
M1-5A
36" X 36"

DETOUR
AHEAD
W20-2

48" X 48"

DETOUR
COUNTY
N
M4-8
36" X 18"
M1-5A
36" X 36"
M05-2R
30" X 30"

DETOUR
COUNTY
N
M4-8
36" X 18"
M1-5A
36" X 36"
M06-2
30" X 30"

W MAIN ST.

EXIT 102

19

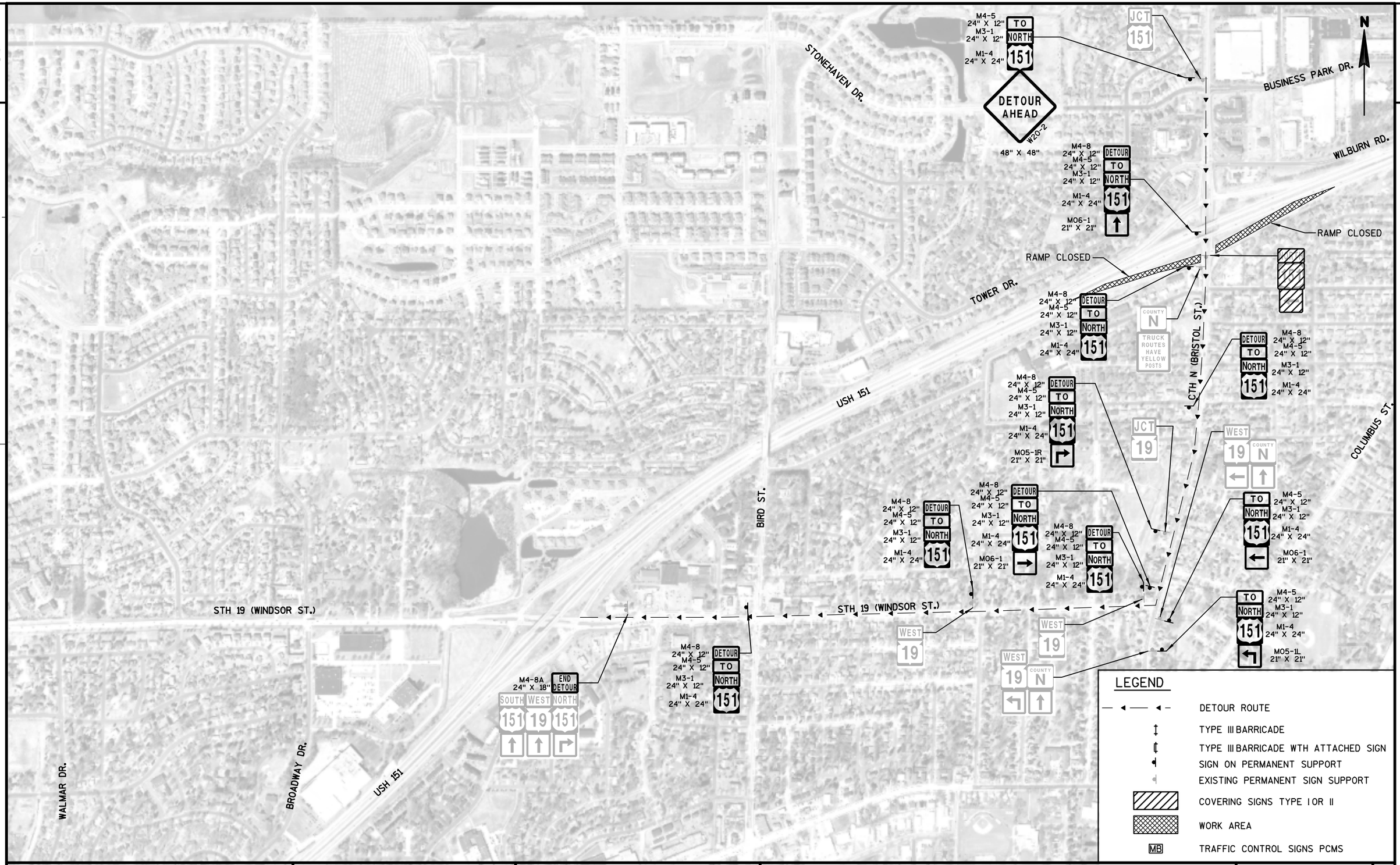
Windsor St
½ MILE

1,000 FEET

LEGEND

- DETOUR ROUTE
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- EXISTING PERMANENT SIGN SUPPORT
- COVERING SIGNS TYPE I OR II
- WORK AREA
- MB TRAFFIC CONTROL SIGNS PCMS

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - USH 151 NB TO CTH N (STAGE 3B) | SHEET 124 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | DETOUR - CTH N NB/SB TO USH 151 NB (STAGE 3B) | SHEET E |
|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027008_dt.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

**CURVE 1**

P.I. = 540+19.85
Y = 519,183.38
X = 856,526.10
DELTA = 1° 27' 56" (RT)
D = 0° 20' 00"
T = 219.85'
L = 439.67'
R = 17,188.73'
P.C. = 538+00.00
Y = 519,020.54
X = 856,378.39
P.T. = 542+39.67
Y = 519,342.38
X = 856,677.93
e = NORMAL CROWN

**CURVE 2**

P.I. = 544+26.84
Y = 519,477.75
X = 856,807.19
DELTA = 1° 14' 52" (LT)
D = 0° 20' 00"
T = 187.17'
L = 374.32'
R = 17,188.73'
P.C. = 542+39.67
Y = 519,342.38
X = 856,677.93
P.T. = 546+13.99
Y = 519,615.90
X = 856,933.47
e = NORMAL CROWN

**CURVE 3**

P.I. = 559+05.85
Y = 520,569.42
X = 857,805.06
DELTA = 6° 27' 09" (RT)
D = 0° 15' 00"
T = 1,291.85'
L = 2,580.98'
R = 22,918.32'
P.C. = 546+13.99
Y = 519,615.90
X = 856,933.47
P.T. = 571+94.97
Y = 521,418.96
X = 858,778.29
e = NORMAL CROWN

**CURVE SB 1**

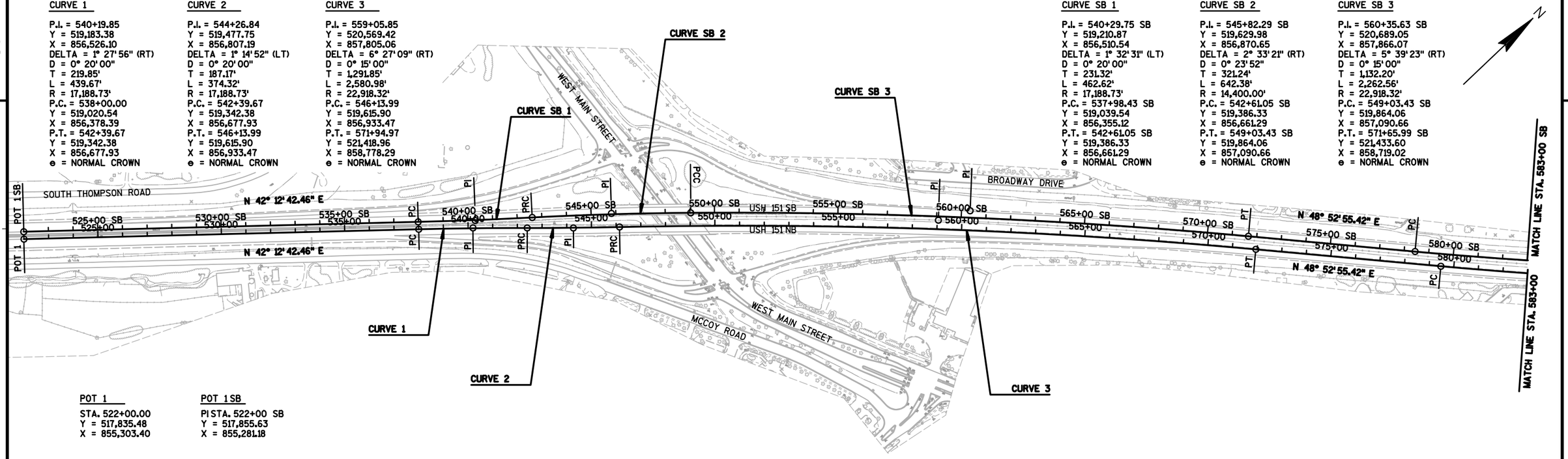
P.I. = 540+29.75 SB
Y = 519,210.87
X = 856,510.54
DELTA = 1° 32' 31" (LT)
D = 0° 20' 00"
T = 231.32'
L = 462.62'
R = 17,188.73'
P.C. = 537+98.43 SB
Y = 519,039.54
X = 856,355.12
P.T. = 542+61.05 SB
Y = 519,386.33
X = 856,661.29
e = NORMAL CROWN

**CURVE SB 2**

P.I. = 545+82.29 SB
Y = 519,629.98
X = 856,870.65
DELTA = 2° 33' 21" (RT)
D = 0° 23' 52"
T = 321.24'
L = 642.38'
R = 14,400.00'
P.C. = 542+61.05 SB
Y = 519,386.33
X = 856,661.29
P.T. = 549+03.43 SB
Y = 519,864.06
X = 857,090.66
e = NORMAL CROWN

**CURVE SB 3**

P.I. = 560+35.63 SB
Y = 520,689.05
X = 857,866.07
DELTA = 5° 39' 23" (RT)
D = 0° 15' 00"
T = 1,132.20'
L = 2,262.56'
R = 22,918.32'
P.C. = 549+03.43 SB
Y = 519,864.06
X = 857,090.66
P.T. = 571+65.99 SB
Y = 521,433.60
X = 858,719.02
e = NORMAL CROWN




**POT 1**

STA. 522+00.00
Y = 517,835.48
X = 855,303.40

**POT 1 SB**

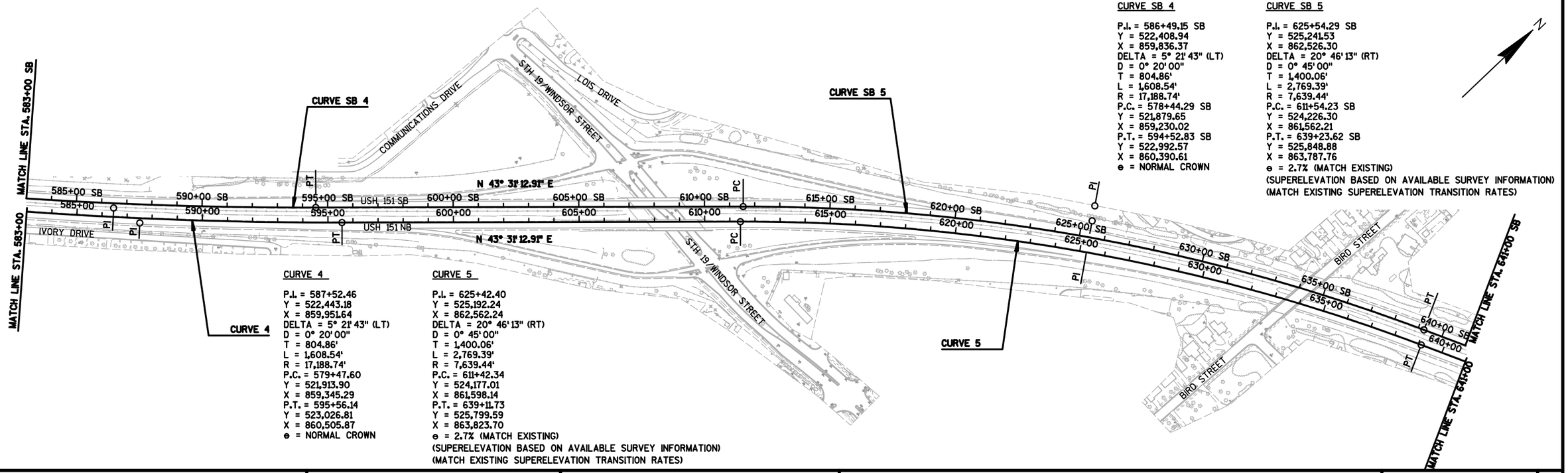
PI STA. 522+00 SB
Y = 517,855.63
X = 855,281.18

**CURVE SB 4**

P.I. = 586+49.15 SB
Y = 522,408.94
X = 859,836.37
DELTA = 5° 21' 43" (LT)
D = 0° 20' 00"
T = 804.86'
L = 1,608.54'
R = 17,188.74'
P.C. = 578+44.29 SB
Y = 521,879.65
X = 859,230.02
P.T. = 594+52.83 SB
Y = 522,992.57
X = 860,390.61
e = NORMAL CROWN

**CURVE SB 5**

P.I. = 625+54.29 SB
Y = 525,241.53
X = 862,526.30
DELTA = 20° 46' 13" (RT)
D = 0° 45' 00"
T = 1,400.06'
L = 2,769.39'
R = 7,639.44'
P.C. = 611+54.23 SB
Y = 524,226.30
X = 861,562.21
P.T. = 639+23.62 SB
Y = 525,848.88
X = 863,787.76
e = 2.7% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE SURVEY INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)




**CURVE 4**

P.I. = 587+52.46
Y = 522,443.18
X = 859,951.64
DELTA = 5° 21' 43" (LT)
D = 0° 20' 00"
T = 804.86'
L = 1,608.54'
R = 17,188.74'
P.C. = 579+47.60
Y = 521,913.90
X = 859,345.29
P.T. = 595+56.14
Y = 523,026.81
X = 860,505.87
e = NORMAL CROWN

**CURVE 5**

P.I. = 625+42.40
Y = 525,192.24
X = 862,562.24
DELTA = 20° 46' 13" (RT)
D = 0° 45' 00"
T = 1,400.06'
L = 2,769.39'
R = 7,639.44'
P.C. = 611+42.34
Y = 524,177.01
X = 861,598.14
P.T. = 639+11.73
Y = 525,799.59
X = 863,823.70
e = 2.7% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE SURVEY INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ALIGNMENT DETAIL - MAINLINE | SHEET | E |
|---|---|---|---|---|---|



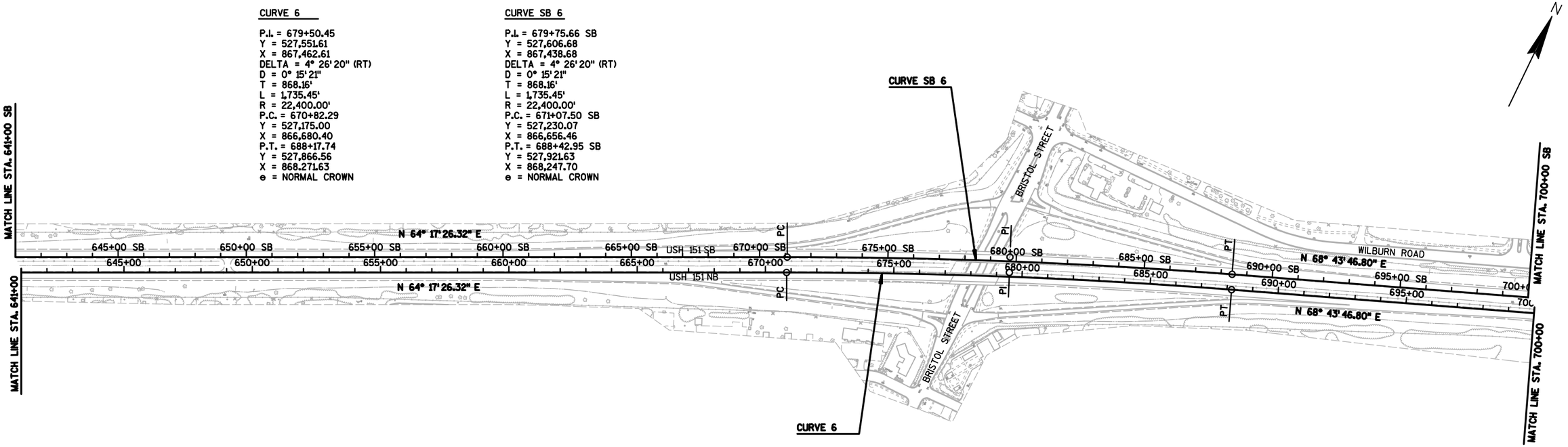
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027201_ad.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

**CURVE 6**

P.I. = 679+50.45
Y = 527,551.61
X = 867,462.61
DELTA = 4° 26' 20" (RT)
D = 0° 15' 21"
T = 868.16'
L = 1,735.45'
R = 22,400.00'
P.C. = 670+82.29
Y = 527,175.00
X = 866,680.40
P.T. = 688+17.74
Y = 527,866.56
X = 868,271.63
e = NORMAL CROWN

**CURVE SB 6**

P.I. = 679+75.66 SB
Y = 527,606.68
X = 867,438.68
DELTA = 4° 26' 20" (RT)
D = 0° 15' 21"
T = 868.16'
L = 1,735.45'
R = 22,400.00'
P.C. = 671+07.50 SB
Y = 527,230.07
X = 866,656.46
P.T. = 688+42.95 SB
Y = 527,921.63
X = 868,247.70
e = NORMAL CROWN

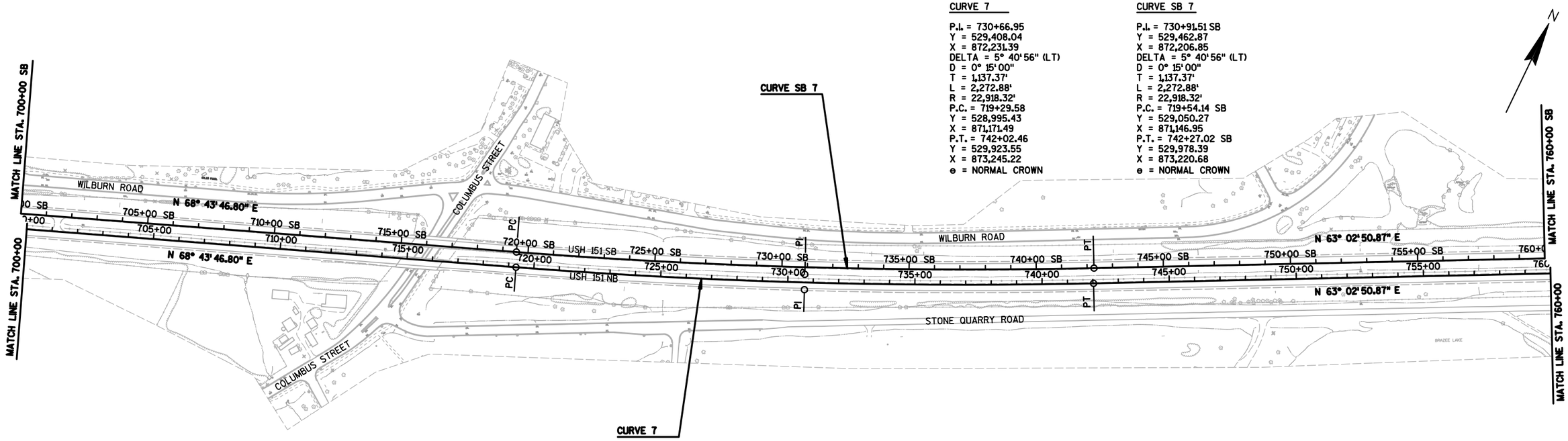



**CURVE 7**

P.I. = 730+66.95
Y = 529,408.04
X = 872,231.39
DELTA = 5° 40' 56" (LT)
D = 0° 15' 00"
T = 1,137.37'
L = 2,272.88'
R = 22,918.32'
P.C. = 719+29.58
Y = 528,995.43
X = 871,171.49
P.T. = 742+02.46
Y = 529,923.55
X = 873,245.22
e = NORMAL CROWN

**CURVE SB 7**

P.I. = 730+91.51 SB
Y = 529,462.87
X = 872,206.85
DELTA = 5° 40' 56" (LT)
D = 0° 15' 00"
T = 1,137.37'
L = 2,272.88'
R = 22,918.32'
P.C. = 719+54.14 SB
Y = 529,050.27
X = 871,146.95
P.T. = 742+27.02 SB
Y = 529,978.39
X = 873,220.68
e = NORMAL CROWN




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ALIGNMENT DETAIL - MAINLINE | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027202_ad.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

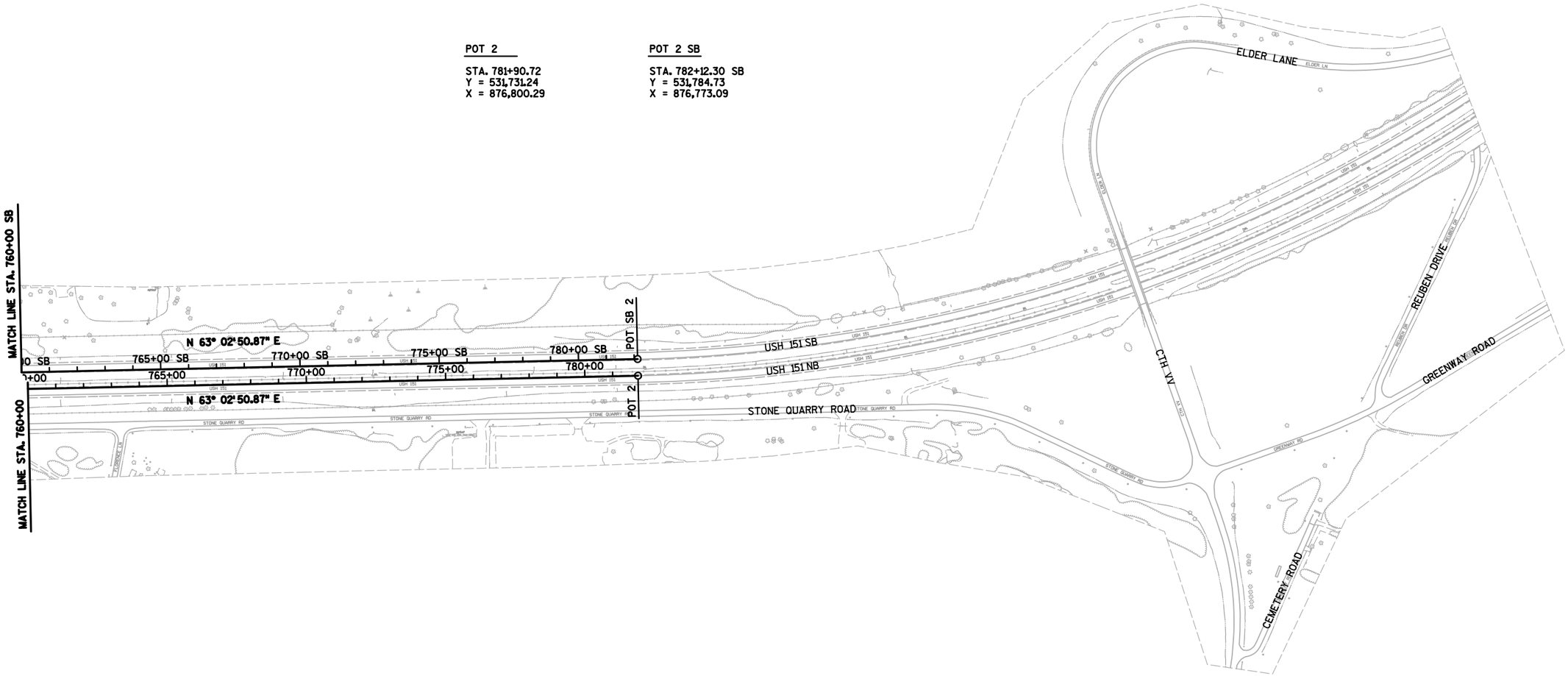
2

**POT 2**

STA. 781+90.72
Y = 531,731.24
X = 876,800.29

**POT 2 SB**

STA. 782+12.30 SB
Y = 531,784.73
X = 876,773.09




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ALIGNMENT DETAIL - MAINLINE | SHEET 128 | E |
|---|---|---|---|---|---|

2

**POT MC 1**

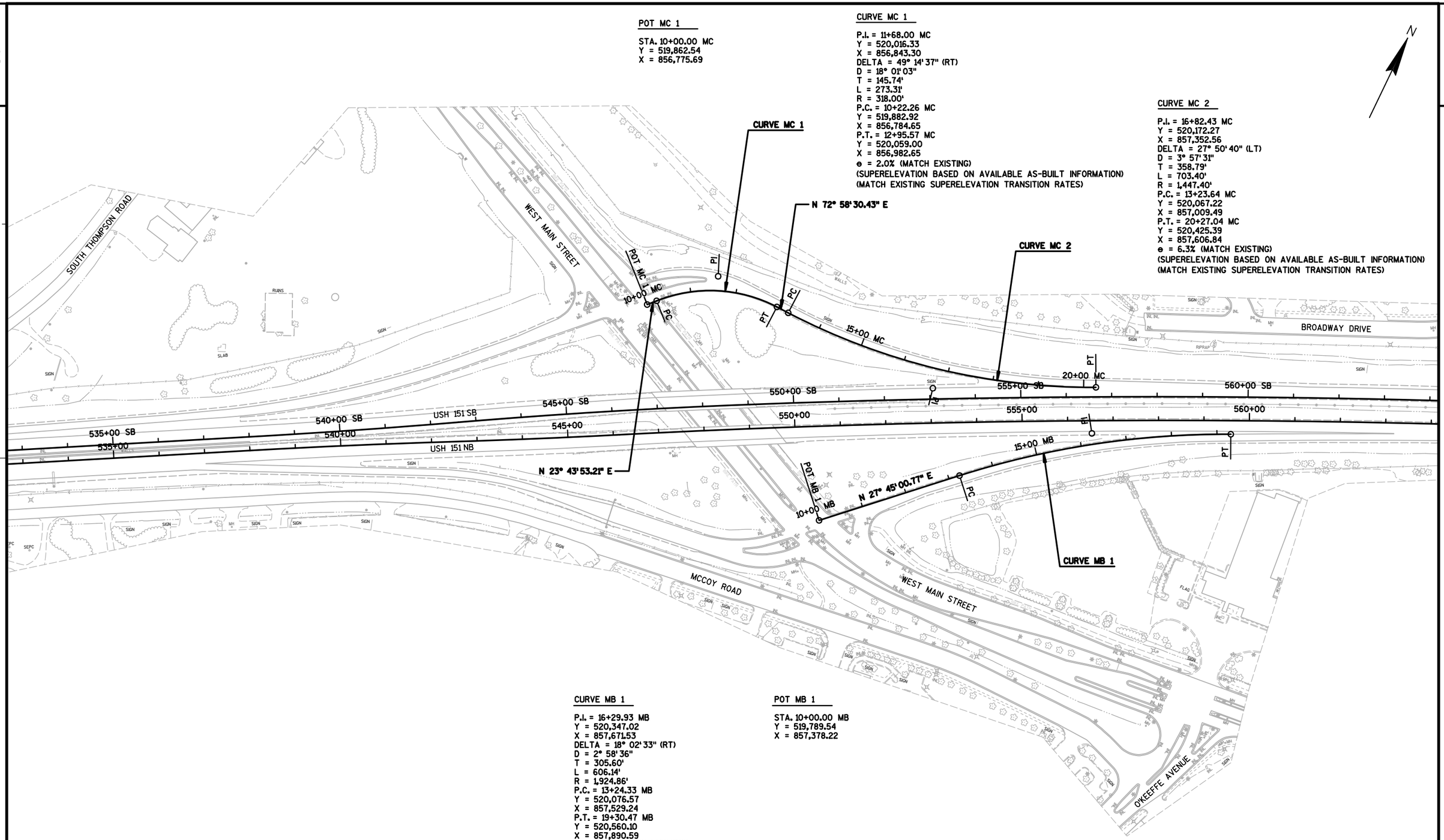
STA. 10+00.00 MC
Y = 519,862.54
X = 856,775.69

**CURVE MC 1**

P.I. = 11+68.00 MC
Y = 520,016.33
X = 856,843.30
DELTA = 49° 14' 37" (RT)
D = 18° 01' 03"
T = 145.74'
L = 273.31'
R = 318.00'
P.C. = 10+22.26 MC
Y = 519,882.92
X = 856,784.65
P.T. = 12+95.57 MC
Y = 520,059.00
X = 856,982.65
e = 2.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**CURVE MC 2**

P.I. = 16+82.43 MC
Y = 520,172.27
X = 857,352.56
DELTA = 27° 50' 40" (LT)
D = 3° 57' 31"
T = 358.79'
L = 703.40'
R = 1,447.40'
P.C. = 13+23.64 MC
Y = 520,067.22
X = 857,009.49
P.T. = 20+27.04 MC
Y = 520,425.39
X = 857,606.84
e = 6.3% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)




**CURVE MB 1**

P.I. = 16+29.93 MB
Y = 520,347.02
X = 857,671.53
DELTA = 18° 02' 33" (RT)
D = 2° 58' 36"
T = 305.60'
L = 606.14'
R = 1,924.86'
P.C. = 13+24.33 MB
Y = 520,076.57
X = 857,529.24
P.T. = 19+30.47 MB
Y = 520,560.10
X = 857,890.59
e = 5.3% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**POT MB 1**

STA. 10+00.00 MB
Y = 519,789.54
X = 857,378.22

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ALIGNMENT DETAIL - MAIN STREET INTERCHANGE | SHEET 129 | E |
|---|---|---|---|---|---|

2

**CURVE WD 1**

P.I. = 13+32.80 WD
Y = 523,478.96
X = 860,811.13
DELTA = 13° 11' 04" (LT)
D = 1° 59' 22"
T = 332.80'
L = 662.67'
R = 2,879.79'
P.C. = 10+00.00 WD
Y = 523,237.63
X = 860,581.96
P.T. = 16+62.67 WD
Y = 523,766.20
X = 860,979.22
e = 3.8% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**POT WD 1**

STA. 18+92.32 WD
Y = 523,964.40
X = 861,095.21

**POT WC 1**

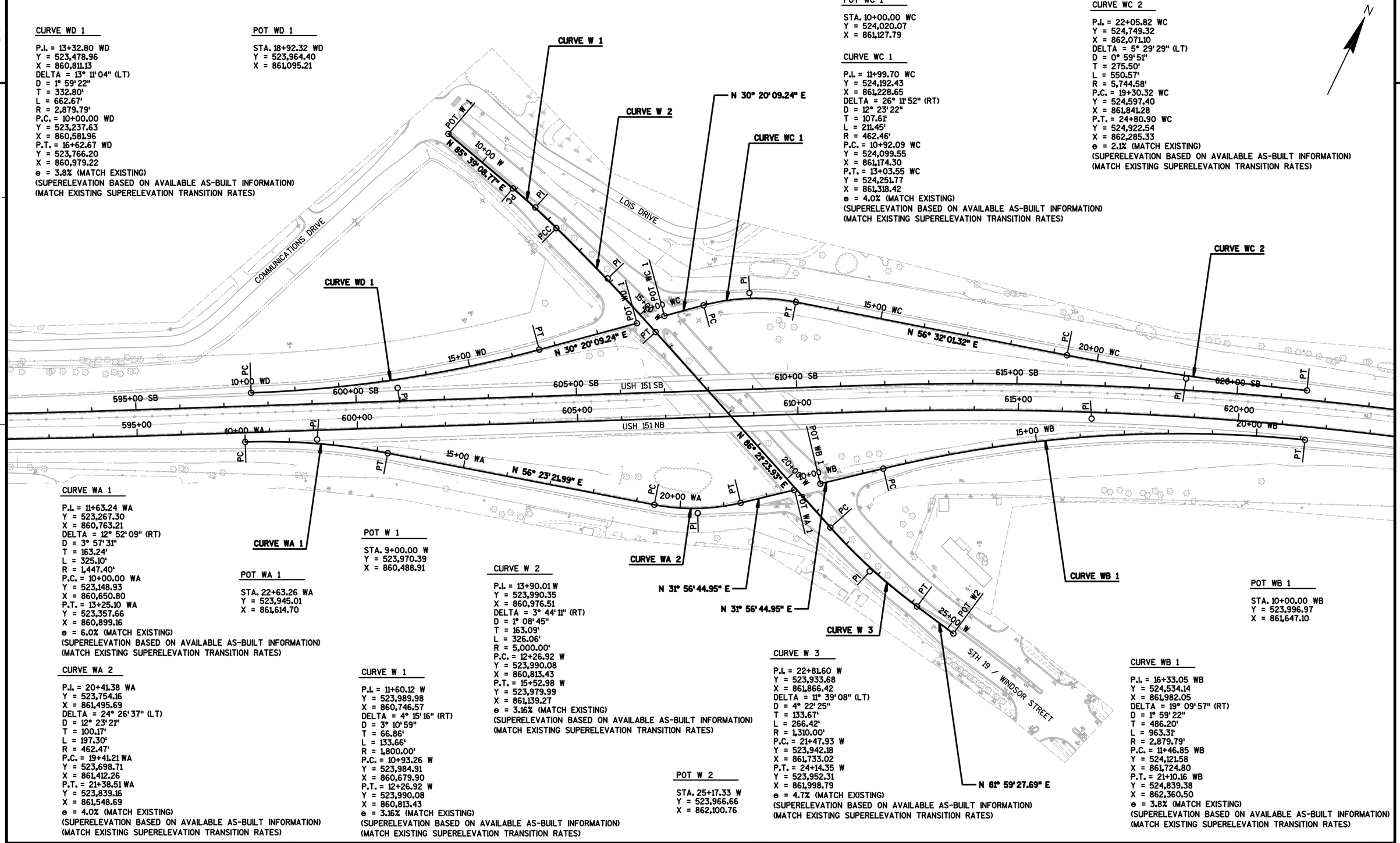
STA. 10+00.00 WC
Y = 524,020.07
X = 861,127.79

**CURVE WC 1**

P.I. = 11+99.70 WC
Y = 524,192.43
X = 861,228.65
DELTA = 26° 11' 52" (RT)
D = 12° 23' 22"
T = 107.61'
L = 211.45'
R = 462.46'
P.C. = 10+92.09 WC
Y = 524,099.55
X = 861,174.30
P.T. = 13+03.55 WC
Y = 524,251.77
X = 861,318.42
e = 4.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**CURVE WC 2**

P.I. = 22+05.82 WC
Y = 524,749.32
X = 862,071.10
DELTA = 5° 29' 29" (LT)
D = 0° 59' 51"
T = 275.50'
L = 550.57'
R = 5,744.58'
P.C. = 19+30.32 WC
Y = 524,597.40
X = 861,841.28
P.T. = 24+80.90 WC
Y = 524,922.54
X = 862,285.33
e = 2.1% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)




**CURVE WA 1**

P.I. = 11+63.24 WA
Y = 523,267.30
X = 860,763.21
DELTA = 12° 52' 09" (RT)
D = 3° 57' 31"
T = 163.24'
L = 325.10'
R = 1,447.40'
P.C. = 10+00.00 WA
Y = 523,148.93
X = 860,650.80
P.T. = 13+25.10 WA
Y = 523,357.66
X = 860,899.16
e = 6.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**POT WA 1**

STA. 22+63.26 WA
Y = 523,945.01
X = 861,614.70

**CURVE WA 2**

P.I. = 20+41.38 WA
Y = 523,754.16
X = 861,495.69
DELTA = 24° 26' 37" (LT)
D = 12° 23' 21"
T = 100.17'
L = 197.30'
R = 462.47'
P.C. = 19+41.21 WA
Y = 523,698.71
X = 861,412.26
P.T. = 21+38.51 WA
Y = 523,839.16
X = 861,548.69
e = 4.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**POT W 1**

STA. 9+00.00 W
Y = 523,970.39
X = 860,488.91

**CURVE W 1**

P.I. = 11+60.12 W
Y = 523,989.98
X = 860,746.57
DELTA = 4° 15' 16" (RT)
D = 3° 10' 59"
T = 66.86'
L = 133.66'
R = 1,800.00'
P.C. = 10+93.26 W
Y = 523,984.91
X = 860,679.90
P.T. = 12+26.92 W
Y = 523,990.08
X = 860,813.43
e = 3.16% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**CURVE W 2**

P.I. = 13+90.01 W
Y = 523,990.35
X = 860,976.51
DELTA = 3° 44' 11" (RT)
D = 1° 08' 45"
T = 163.09'
L = 326.06'
R = 5,000.00'
P.C. = 12+26.92 W
Y = 523,990.08
X = 860,813.43
P.T. = 15+52.98 W
Y = 523,979.99
X = 861,139.27
e = 3.16% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**POT W 2**

STA. 25+17.33 W
Y = 523,966.66
X = 862,100.76

**CURVE W 3**

P.I. = 22+81.60 W
Y = 523,933.68
X = 861,866.42
DELTA = 11° 39' 08" (LT)
D = 4° 22' 25"
T = 133.67'
L = 266.42'
R = 1,310.00'
P.C. = 21+47.93 W
Y = 523,942.18
X = 861,733.02
P.T. = 24+14.35 W
Y = 523,952.31
X = 861,998.79
e = 4.7% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

**POT WB 1**

STA. 10+00.00 WB
Y = 523,996.97
X = 861,647.10

**CURVE WB 1**

P.I. = 16+33.05 WB
Y = 524,534.14
X = 861,982.05
DELTA = 19° 09' 57" (RT)
D = 1° 59' 22"
T = 486.20'
L = 963.31'
R = 2,879.79'
P.C. = 11+46.85 WB
Y = 524,121.58
X = 861,724.80
P.T. = 21+10.16 WB
Y = 524,839.38
X = 862,360.50
e = 3.8% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ALIGNMENT DETAIL - STH 19 INTERCHANGE | SHEET 130 | E |
|---|---|---|---|---|---|

2

CURVE BD 1

P.I. = 11+95.02 BD
Y = 527,290.09
X = 866,711.98
DELTA = 15° 20' 52" (LT)
D = 3° 57' 31"
T = 195.02'
L = 387.71'
R = 1,447.40'
P.C. = 10+00.00 BD
Y = 527,205.49
X = 866,536.26
P.T. = 13+87.71 BD
Y = 527,418.19
X = 866,859.03
e = 6.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

CURVE BD 2

P.I. = 18+04.35 BD
Y = 527,691.84
X = 867,173.20
DELTA = 12° 39' 44" (RT)
D = 8° 10' 16"
T = 77.80'
L = 154.96'
R = 701.20'
P.C. = 17+26.55 BD
Y = 527,640.74
X = 867,114.54
P.T. = 18+81.51 BD
Y = 527,728.84
X = 867,241.64
e = 3.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

POT BD 1

STA. 19+91.52 BD
Y = 527,781.15
X = 867,338.41

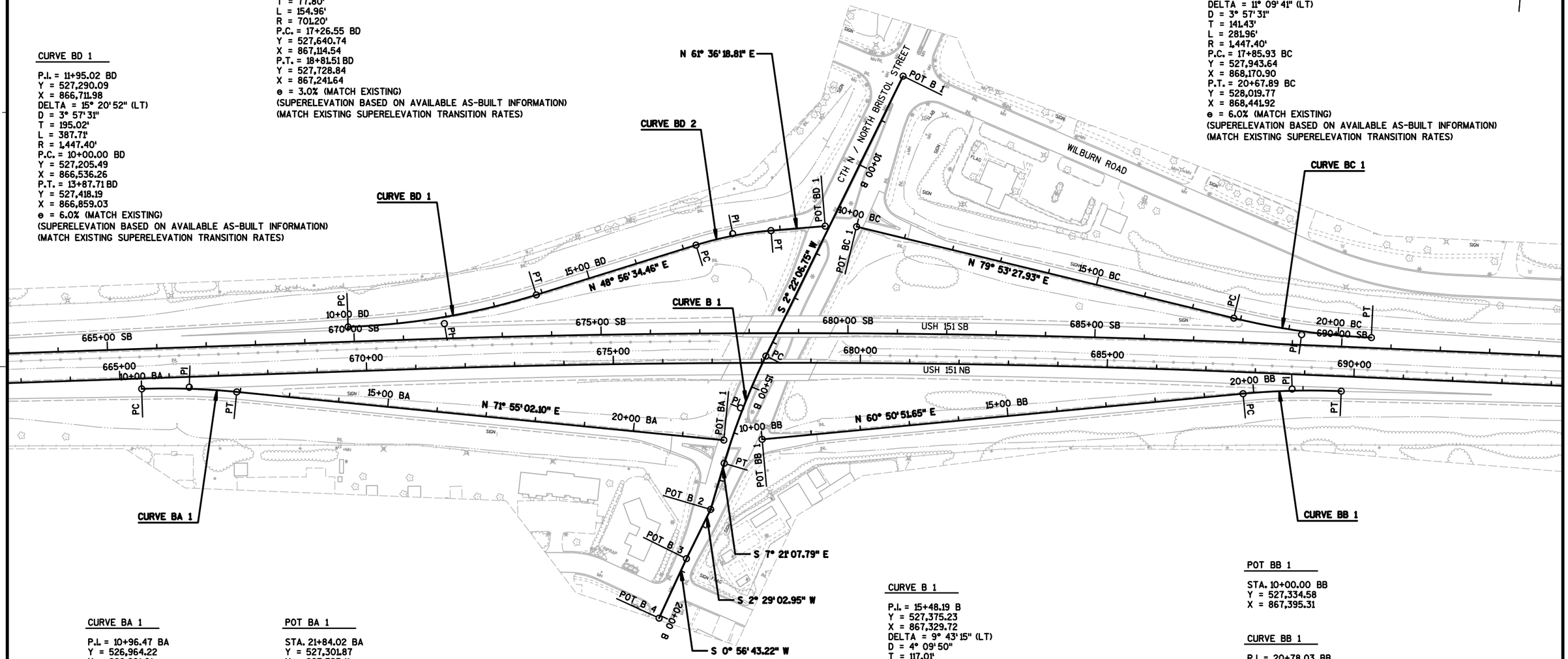
NOTE:
CTH N/ NORTH BRISTOL STREET ALIGNMENT
RUNS NORTH TO SOUTH.

POT BC 1

STA. 10+00.00 BC
Y = 527,805.69
X = 867,397.17

CURVE BC 1

P.I. = 19+27.36 BC
Y = 527,968.46
X = 868,310.13
DELTA = 11° 09' 41" (LT)
D = 3° 57' 31"
T = 141.43'
L = 281.96'
R = 1,447.40'
P.C. = 17+85.93 BC
Y = 527,943.64
X = 868,170.90
P.T. = 20+67.89 BC
Y = 528,019.77
X = 868,441.92
e = 6.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)




CURVE BA 1

P.I. = 10+96.47 BA
Y = 526,964.22
X = 866,291.01
DELTA = 7° 37' 36" (RT)
D = 3° 57' 31"
T = 96.47'
L = 192.66'
R = 1,447.40'
P.C. = 10+00.00 BA
Y = 526,922.37
X = 866,204.09
P.T. = 11+92.66 BA
Y = 526,994.16
X = 866,382.72
e = 6.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

POT BA 1

STA. 21+84.02 BA
Y = 527,301.87
X = 867,325.11

CURVE B 1

P.I. = 15+48.19 B
Y = 527,375.23
X = 867,329.72
DELTA = 9° 43' 15" (LT)
D = 4° 09' 50"
T = 117.01'
L = 233.45'
R = 1,376.00'
P.C. = 14+31.18 B
Y = 527,492.14
X = 867,334.55
P.T. = 16+64.63 B
Y = 527,259.19
X = 867,344.69
e = UNAVAILABLE (MATCH EXISTING)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

POT BB 1

STA. 10+00.00 BB
Y = 527,334.58
X = 867,395.31

CURVE BB 1

P.I. = 20+78.03 BB
Y = 527,859.72
X = 868,336.78
DELTA = 7° 52' 55" (RT)
D = 3° 57' 31"
T = 99.71'
L = 199.11'
R = 1,447.40'
P.C. = 19+78.32 BB
Y = 527,811.15
X = 868,249.70
P.T. = 21+77.43 BB
Y = 527,895.90
X = 868,429.70
e = 6.0% (MATCH EXISTING)
(SUPERELEVATION BASED ON AVAILABLE AS-BUILT INFORMATION)
(MATCH EXISTING SUPERELEVATION TRANSITION RATES)

| POT B 1 | POT B 2 | POT B 3 | POT B 3 |
|---|---|---|---|
| STA. 8+00.00 B | STA. 17+61.98 B | STA. 18+73.04 B | STA. 20+05.71 B |
| Y = 528,112.78 | Y = 527,162.64 | Y = 527,051.69 | Y = 526,919.03 |
| X = 867,360.64 | X = 867,357.15 | X = 867,352.33 | X = 867,350.15 |

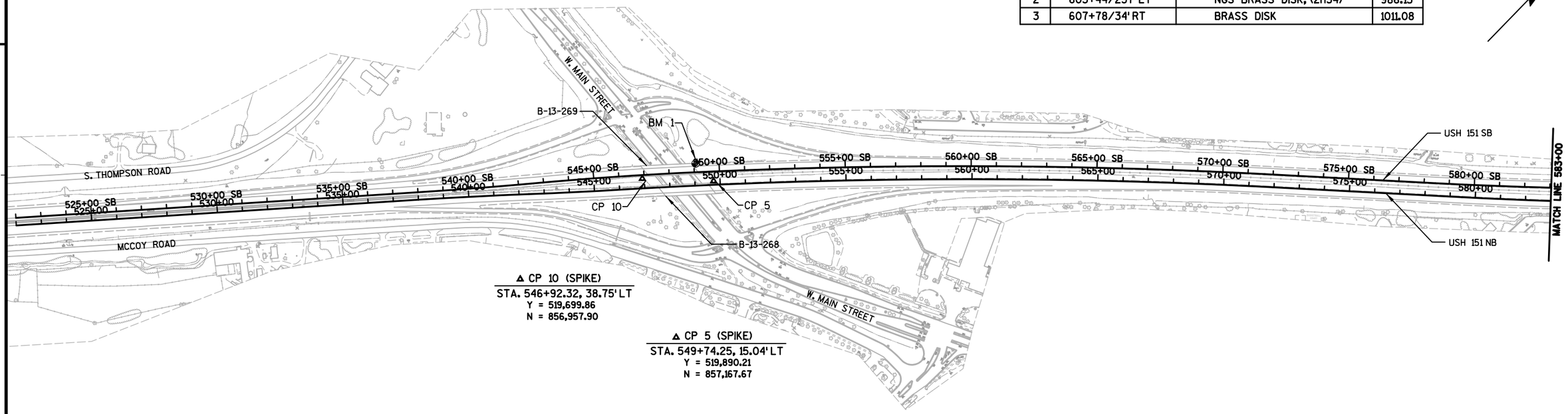
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | ALIGNMENT DETAIL - CTH N INTERCHANGE | SHEET 131 | E |
|---|---|---|---|---|---|

2

2

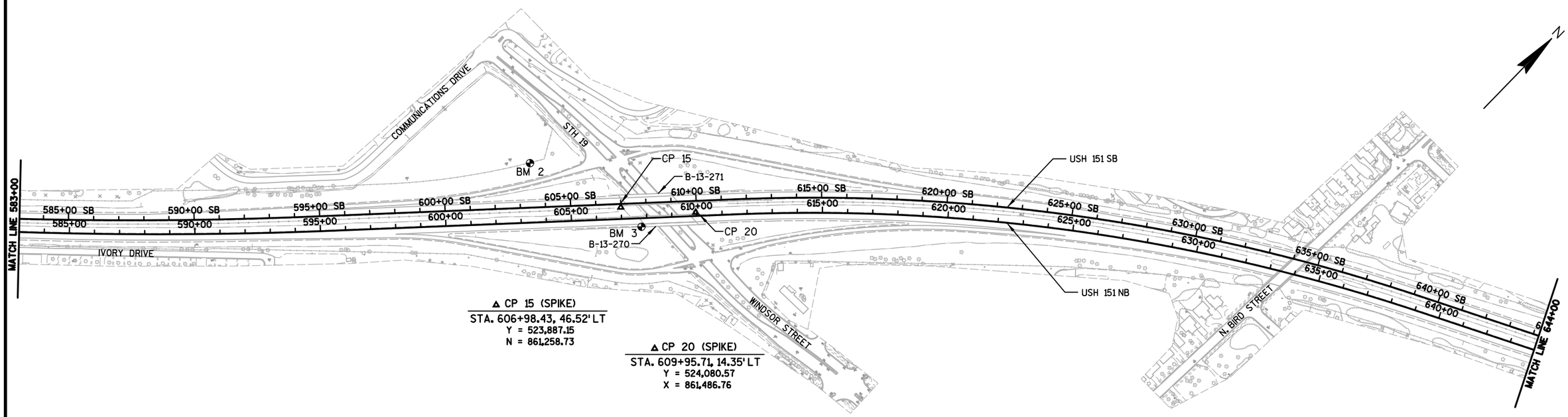
BENCH MARKS

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 1 | 549+06/88' LT | BRASS DISK | 993.91 |
| 2 | 603+44/237' LT | NGS BRASS DISK, (2H54) | 986.15 |
| 3 | 607+78/34' RT | BRASS DISK | 1011.08 |




△ CP 10 (SPIKE)
STA. 546+92.32, 38.75' LT
Y = 519,699.86
N = 856,957.90

△ CP 5 (SPIKE)
STA. 549+74.25, 15.04' LT
Y = 519,890.21
N = 857,167.67




△ CP 15 (SPIKE)
STA. 606+98.43, 46.52' LT
Y = 523,887.15
N = 861,258.73

△ CP 20 (SPIKE)
STA. 609+95.71, 14.35' LT
Y = 524,080.57
X = 861,486.76

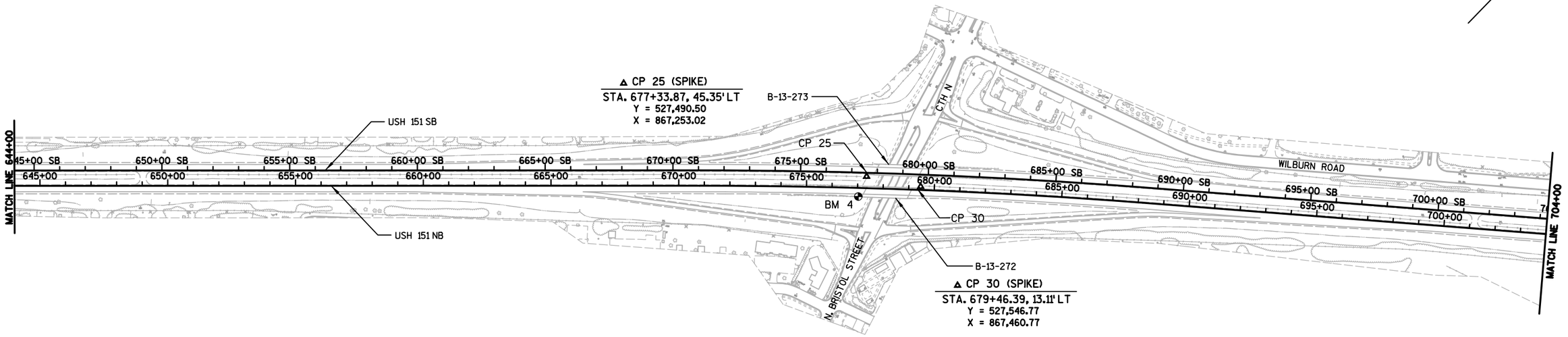
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | BENCHMARK/CONTROL POINT DATA | SHEET | E |
|---|---|---|---|---|---|

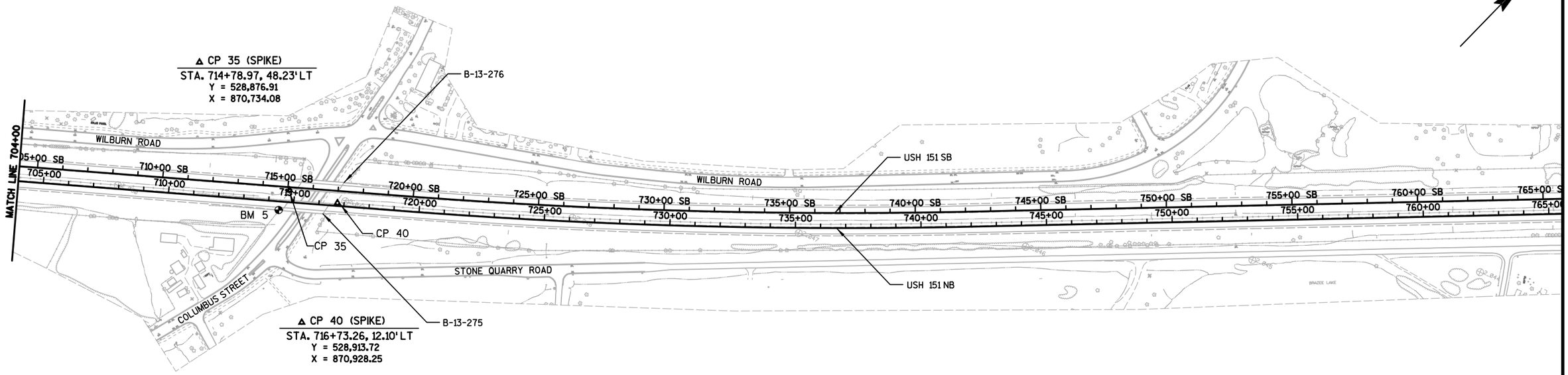


FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\027301_cp.dgn PLOT DATE : 7/27/2016 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$
WISDOT/CADDS SHEET 42

## BENCH MARKS

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 4 | 677+03/34' RT | BRASS DISK | 1013.05 |
| 5 | 714+42/34' RT | BRASS DISK | 1004.42 |




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | BENCHMARK/CONTROL POINT DATA | SHEET 133 | E |
|---|---|---|---|---|---|

DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 0010 | 108.3100.S | Incentive/Disincentive for Interim Completion of Work | CD | 15.000 | 15.000 |
| 0020 | 203.0100 | Removing Small Pipe Culverts | EACH | 8.000 | 8.000 |
| 0030 | 203.0200 | Removing Old Structure (station) 01. Sta. 548+54.48 | LS | 1.000 | 1.000 |
| 0040 | 203.0200 | Removing Old Structure (station) 02. Sta. 548+14.91 SB | LS | 1.000 | 1.000 |
| 0050 | 203.0200 | Removing Old Structure (station) 03. Sta. 608+75.84 | LS | 1.000 | 1.000 |
| 0060 | 203.0200 | Removing Old Structure (station) 04. Sta. 608+25.67 SB | LS | 1.000 | 1.000 |
| 0070 | 203.0200 | Removing Old Structure (station) 05. Sta. 678+21.89 | LS | 1.000 | 1.000 |
| 0080 | 203.0200 | Removing Old Structure (station) 06. Sta. 678+76.74 | LS | 1.000 | 1.000 |
| 0090 | 203.0200 | Removing Old Structure (station) 07. Sta. 715+44.00 | LS | 1.000 | 1.000 |
| 0100 | 203.0200 | Removing Old Structure (station) 08. Sta. 715+78.64 | LS | 1.000 | 1.000 |
| 0110 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 01. B-13-268 | LS | 1.000 | 1.000 |
| 0120 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 02. B-13-269 | LS | 1.000 | 1.000 |
| 0130 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 03. B-13-270 | LS | 1.000 | 1.000 |
| 0140 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 04. B-13-271 | LS | 1.000 | 1.000 |
| 0150 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 05. B-13-272 | LS | 1.000 | 1.000 |
| 0160 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 06. B-13-273 | LS | 1.000 | 1.000 |
| 0170 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 07. B-13-275 | LS | 1.000 | 1.000 |
| 0180 | 203.0210.S | Abatement of Asbestos Containing Material (structure) 08. B-13-276 | LS | 1.000 | 1.000 |
| 0190 | 203.0225.S | Debris Containment (structure) 01. B-13-268 | LS | 1.000 | 1.000 |
| 0200 | 203.0225.S | Debris Containment (structure) 02. B-13-269 | LS | 1.000 | 1.000 |
| 0210 | 203.0225.S | Debris Containment (structure) 03. B-13-270 | LS | 1.000 | 1.000 |
| 0220 | 203.0225.S | Debris Containment (structure) 04. B-13-271 | LS | 1.000 | 1.000 |
| 0230 | 203.0225.S | Debris Containment (structure) 05. B-13-272 | LS | 1.000 | 1.000 |
| 0240 | 203.0225.S | Debris Containment (structure) 06. B-13-273 | LS | 1.000 | 1.000 |
| 0250 | 203.0225.S | Debris Containment (structure) 07. B-13-275 | LS | 1.000 | 1.000 |
| 0260 | 203.0225.S | Debris Containment (structure) 08. B-13-276 | LS | 1.000 | 1.000 |
| 0270 | 204.0100 | Removing Pavement | SY | 2,790.000 | 2,790.000 |
| 0280 | 204.0110 | Removing Asphaltic Surface | SY | 17.000 | 17.000 |
| 0290 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 1,054.000 | 1,054.000 |
| 0300 | 204.0120 | Removing Asphaltic Surface Milling | SY | 185,750.000 | 185,750.000 |
| 0310 | 204.0130 | Removing Curb | LF | 260.000 | 260.000 |
| 0320 | 204.0150 | Removing Curb & Gutter | LF | 1,106.000 | 1,106.000 |
| 0330 | 204.0155 | Removing Concrete Sidewalk | SY | 25.000 | 25.000 |

3

DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 0340 | 204.0165 | Removing Guardrail | LF | 6,510.000 | 6,510.000 |
| 0350 | 204.0175 | Removing Concrete Slope Paving | SY | 120.000 | 120.000 |
| 0360 | 204.0180 | Removing Delineators and Markers | EACH | 349.000 | 349.000 |
| 0370 | 204.0190 | Removing Surface Drains | EACH | 8.000 | 8.000 |
| 0380 | 204.0195 | Removing Concrete Bases | EACH | 4.000 | 4.000 |
| 0390 | 205.0100 | Excavation Common | CY | 10,832.000 | 10,832.000 |
| 0400 | 213.0100 | Finishing Roadway (project) 01. 1111-02-78 | EACH | 1.000 | 1.000 |
| 0410 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 7,316.000 | 7,316.000 |
| 0420 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 5,822.000 | 5,822.000 |
| 0430 | 305.0500 | Shaping Shoulders | STA | 948.000 | 948.000 |
| 0440 | 312.0110 | Select Crushed Material | TON | 11,585.000 | 11,585.000 |
| 0450 | 390.0303 | Base Patching Concrete | SY | 2,130.000 | 2,130.000 |
| 0460 | 415.0100 | Concrete Pavement 10-Inch | SY | 580.000 | 580.000 |
| 0470 | 416.0610 | Drilled Tie Bars | EACH | 538.000 | 538.000 |
| 0480 | 416.0620 | Drilled Dowel Bars | EACH | 5,030.000 | 5,030.000 |
| 0490 | 416.0750.S | Concrete Pavement Partial Depth Repair Joint Repair | LF | 96.000 | 96.000 |
| 0500 | 416.0752.S | Concrete Pavement Partial Depth Repair Crack Repair | LF | 108.000 | 108.000 |
| 0510 | 416.0754.S | Concrete Pavement Partial Depth Repair Surface Repair | SF | 100.000 | 100.000 |
| 0520 | 416.0756.S | Concrete Pavement Partial Depth Repair Edge Repair | LF | 5.000 | 5.000 |
| 0530 | 416.0758.S | Concrete Pavement Partial Depth Repair Full Depth Adjustment | SF | 2.000 | 2.000 |
| 0540 | 416.1015 | Concrete Surface Drains HES | CY | 25.300 | 25.300 |
| 0550 | 416.1710 | Concrete Pavement Repair | SY | 164.000 | 164.000 |
| 0560 | 416.1720 | Concrete Pavement Replacement | SY | 2,440.000 | 2,440.000 |
| 0570 | 440.4410 | Incentive IRI Ride | DOL | 28,700.000 | 28,700.000 |
| 0580 | 455.0605 | Tack Coat | GAL | 23,004.000 | 23,004.000 |
| 0590 | 460.2000 | Incentive Density HMA Pavement | DOL | 60,230.000 | 60,230.000 |
| 0600 | 460.2010 | Incentive Air Voids HMA Pavement | DOL | 59,150.000 | 59,150.000 |
| 0610 | 460.4110.S | Reheating HMA Pavement Longitudinal Joints | LF | 39,290.000 | 39,290.000 |
| 0620 | 465.0105 | Asphaltic Surface | TON | 3.000 | 3.000 |
| 0630 | 465.0110 | Asphaltic Surface Patching | TON | 100.000 | 100.000 |
| 0640 | 465.0305 | Asphaltic Surface Safety Islands | TON | 21.000 | 21.000 |
| 0650 | 465.0315 | Asphaltic Flumes | SY | 5.000 | 5.000 |
| 0660 | 465.0400 | Asphaltic Shoulder Rumble Strips | LF | 71,830.000 | 71,830.000 |
| 0670 | 502.0100 | Concrete Masonry Bridges | CY | 322.000 | 322.000 |
| 0680 | 502.3100 | Expansion Device (structure) 01. B-13-268 | LS | 1.000 | 1.000 |
| 0690 | 502.3100 | Expansion Device (structure) 02. B-13-269 | LS | 1.000 | 1.000 |
| 0700 | 502.3100 | Expansion Device (structure) 03. B-13-270 | LS | 1.000 | 1.000 |
| 0710 | 502.3100 | Expansion Device (structure) 04. B-13-271 | LS | 1.000 | 1.000 |
| 0720 | 502.3100 | Expansion Device (structure) 05. B-13-272 | LS | 1.000 | 1.000 |
| 0730 | 502.3100 | Expansion Device (structure) 06. B-13-273 | LS | 1.000 | 1.000 |
| 0740 | 502.3100 | Expansion Device (structure) 07. B-13-275 | LS | 1.000 | 1.000 |

3

DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

LINE 1111-02-78

| NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | QUANTITY |
|---|---|---|---|---|---|
| 0750 | 502.3100 | Expansion Device (structure) 08. B-13-276 | LS | 1.000 | 1.000 |
| 0760 | 502.3200 | Protective Surface Treatment | SY | 6,650.000 | 6,650.000 |
| 0770 | 502.3210 | Pigmented Surface Sealer | SY | 1,710.000 | 1,710.000 |
| 0780 | 502.4204 | Adhesive Anchors No. 4 Bar | EACH | 2,256.000 | 2,256.000 |
| 0790 | 502.4205 | Adhesive Anchors No. 5 Bar | EACH | 4,700.000 | 4,700.000 |
| 0800 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 80,730.000 | 80,730.000 |
| 0810 | 505.0904 | Bar Couplers No. 4 | EACH | 16.000 | 16.000 |
| 0820 | 505.0905 | Bar Couplers No. 5 | EACH | 24.000 | 24.000 |
| 0830 | 505.0906 | Bar Couplers No. 6 | EACH | 56.000 | 56.000 |
| 0840 | 505.0907 | Bar Couplers No. 7 | EACH | 120.000 | 120.000 |
| 0850 | 509.0301 | Preparation Decks Type 1 | SY | 1,620.000 | 1,620.000 |
| 0860 | 509.0302 | Preparation Decks Type 2 | SY | 650.000 | 650.000 |
| 0870 | 509.1000 | Joint Repair | SY | 362.000 | 362.000 |
| 0880 | 509.1500 | Concrete Surface Repair | SF | 278.000 | 278.000 |
| 0890 | 509.2000 | Full-Depth Deck Repair | SY | 88.000 | 88.000 |
| 0900 | 509.2500 | Concrete Masonry Overlay Decks | CY | 1,221.000 | 1,221.000 |
| 0910 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 01. B-13-268 | SY | 840.000 | 840.000 |
| 0920 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 02. B-13-269 | SY | 840.000 | 840.000 |
| 0930 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 03. B-13-270 | SY | 880.000 | 880.000 |
| 0940 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 04. B-13-271 | SY | 880.000 | 880.000 |
| 0950 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 05. B-13-272 | SY | 740.000 | 740.000 |
| 0960 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 06. B-13-273 | SY | 736.000 | 736.000 |
| 0970 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 07. B-13-275 | SY | 728.000 | 728.000 |
| 0980 | 509.9005.S | Removing Concrete Masonry Deck Overlay (structure) 08. B-13-276 | SY | 728.000 | 728.000 |
| 0990 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 01. B-13-268 | SY | 840.000 | 840.000 |
| 1000 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 02. B-13-269 | SY | 840.000 | 840.000 |
| 1010 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 03. B-13-270 | SY | 880.000 | 880.000 |
| 1020 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 04. B-13-271 | SY | 880.000 | 880.000 |
| 1030 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 05. B-13-272 | SY | 740.000 | 740.000 |
| 1040 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 06. B-13-273 | SY | 736.000 | 736.000 |
| 1050 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 07. B-13-275 | SY | 728.000 | 728.000 |
| 1060 | 509.9010.S | Removing Asphaltic Concrete Deck Overlay (structure) 08. B-13-276 | SY | 728.000 | 728.000 |
| 1070 | 520.8000 | Concrete Collars for Pipe | EACH | 1.000 | 1.000 |
| 1080 | 520.8700 | Cleaning Culvert Pipes | EACH | 13.000 | 13.000 |
| 1090 | 521.1012 | Apron Endwalls for Culvert Pipe Steel 12-Inch | EACH | 8.000 | 8.000 |
| 1100 | 522.0130 | Culvert Pipe Reinforced Concrete Class III 30-Inch | LF | 16.000 | 16.000 |

3

DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 1110 | 524.0630 | Apron Endwalls for Culvert Pipe Salvaged 30-Inch | EACH | 1.000 | 1.000 |
| 1120 | 601.0120 | Concrete Curb Type J | LF | 42.000 | 42.000 |
| 1130 | 601.0409 | Concrete Curb & Gutter 30-Inch Type A | LF | 373.000 | 373.000 |
| 1140 | 601.0411 | Concrete Curb & Gutter 30-Inch Type D | LF | 75.000 | 75.000 |
| 1150 | 602.0410 | Concrete Sidewalk 5-Inch | SF | 2,696.000 | 2,696.000 |
| 1160 | 602.0505 | Curb Ramp Detectable Warning Field Yellow | SF | 360.000 | 360.000 |
| 1170 | 603.8000 | Concrete Barrier Temporary Precast Delivered | LF | 6,890.000 | 6,890.000 |
| 1180 | 603.8125 | Concrete Barrier Temporary Precast Installed | LF | 12,600.000 | 12,600.000 |
| 1190 | 604.0400 | Slope Paving Concrete | SY | 120.000 | 120.000 |
| 1200 | 606.0100 | Riprap Light | CY | 8.000 | 8.000 |
| 1210 | 611.8115 | Adjusting Inlet Covers | EACH | 9.000 | 9.000 |
| 1220 | 612.0212 | Pipe Underdrain Unperforated 12-Inch | LF | 438.000 | 438.000 |
| 1230 | 614.0010 | Barrier System Grading Shaping Finishing | EACH | 17.000 | 17.000 |
| 1240 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard | EACH | 32.000 | 32.000 |
| 1250 | 614.0905 | Crash Cushions Temporary | EACH | 18.000 | 18.000 |
| 1260 | 614.2300 | MGS Guardrail 3 | LF | 5,496.000 | 5,496.000 |
| 1270 | 614.2500 | MGS Thrie Beam Transition | LF | 725.600 | 725.600 |
| 1280 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 17.000 | 17.000 |
| 1290 | 614.2620 | MGS Guardrail Terminal Type 2 | EACH | 3.000 | 3.000 |
| 1300 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 1111-02-78 | EACH | 1.000 | 1.000 |
| 1310 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 1320 | 620.0300 | Concrete Median Sloped Nose | SF | 174.000 | 174.000 |
| 1330 | 624.0100 | Water | MGAL | 128.000 | 128.000 |
| 1340 | 625.0100 | Topsoil | SY | 934.000 | 934.000 |
| 1350 | 627.0200 | Mulching | SY | 934.000 | 934.000 |
| 1360 | 628.1504 | Silt Fence | LF | 3,445.000 | 3,445.000 |
| 1370 | 628.1520 | Silt Fence Maintenance | LF | 3,445.000 | 3,445.000 |
| 1380 | 628.1905 | Mobilizations Erosion Control | EACH | 4.000 | 4.000 |
| 1390 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 4.000 | 4.000 |
| 1400 | 628.2023 | Erosion Mat Class II Type B | SY | 13.000 | 13.000 |
| 1410 | 628.7005 | Inlet Protection Type A | EACH | 21.000 | 21.000 |
| 1420 | 628.7015 | Inlet Protection Type C | EACH | 30.000 | 30.000 |
| 1430 | 628.7504 | Temporary Ditch Checks | LF | 96.000 | 96.000 |
| 1440 | 629.0210 | Fertilizer Type B | CWT | 3.200 | 3.200 |
| 1450 | 630.0110 | Seeding Mixture No. 10 | LB | 10.800 | 10.800 |
| 1460 | 630.0200 | Seeding Temporary | LB | 21.700 | 21.700 |
| 1470 | 633.0100 | Delineator Posts Steel | EACH | 125.000 | 125.000 |
| 1480 | 633.0500 | Delineator Reflectors | EACH | 349.000 | 349.000 |
| 1490 | 633.5200 | Markers Culvert End | EACH | 21.000 | 21.000 |
| 1500 | 634.0612 | Posts Wood 4x6-Inch X 12-FT | EACH | 4.000 | 4.000 |
| 1510 | 634.0614 | Posts Wood 4x6-Inch X 14-FT | EACH | 29.000 | 29.000 |
| 1520 | 634.0616 | Posts Wood 4x6-Inch X 16-FT | EACH | 52.000 | 52.000 |
| 1530 | 634.0618 | Posts Wood 4x6-Inch X 18-FT | EACH | 33.000 | 33.000 |
| 1540 | 634.0620 | Posts Wood 4x6-Inch X 20-FT | EACH | 16.000 | 16.000 |
| 1550 | 634.0622 | Posts Wood 4x6-Inch X 22-FT | EACH | 1.000 | 1.000 |
| 1560 | 637.1220 | Signs Type I Reflective SH | SF | 2,398.500 | 2,398.500 |
| 1570 | 637.2210 | Signs Type II Reflective H | SF | 1,171.630 | 1,171.630 |
| 1580 | 637.2215 | Signs Type II Reflective H Folding | SF | 78.250 | 78.250 |
| 1590 | 637.2230 | Signs Type II Reflective F | SF | 239.250 | 239.250 |

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DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 1600 | 638.2102 | Moving Signs Type II | EACH | 1.000 | 1.000 |
| 1610 | 638.2601 | Removing Signs Type I | EACH | 16.000 | 16.000 |
| 1620 | 638.2602 | Removing Signs Type II | EACH | 143.000 | 143.000 |
| 1630 | 638.3000 | Removing Small Sign Supports | EACH | 133.000 | 133.000 |
| 1640 | 638.4000 | Moving Small Sign Supports | EACH | 5.000 | 5.000 |
| 1650 | 642.5201 | Field Office Type C | EACH | 1.000 | 1.000 |
| 1660 | 643.0100 | Traffic Control (project) 01. 1111-02-78 | EACH | 1.000 | 1.000 |
| 1670 | 643.0300 | Traffic Control Drums | DAY | 97,580.000 | 97,580.000 |
| 1680 | 643.0410 | Traffic Control Barricades Type II | DAY | 208.000 | 208.000 |
| 1690 | 643.0420 | Traffic Control Barricades Type III | DAY | 5,987.000 | 5,987.000 |
| 1700 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 11,117.000 | 11,117.000 |
| 1710 | 643.0715 | Traffic Control Warning Lights Type C | DAY | 17,366.000 | 17,366.000 |
| 1720 | 643.0800 | Traffic Control Arrow Boards | DAY | 592.000 | 592.000 |
| 1730 | 643.0900 | Traffic Control Signs | DAY | 18,479.000 | 18,479.000 |
| 1740 | 643.0910 | Traffic Control Covering Signs Type I | EACH | 5.000 | 5.000 |
| 1750 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 119.000 | 119.000 |
| 1760 | 643.1000 | Traffic Control Signs Fixed Message | SF | 216.000 | 216.000 |
| 1770 | 643.1050 | Traffic Control Signs PCMS | DAY | 373.000 | 373.000 |
| 1780 | 643.2000 | Traffic Control Detour (project) 01. 1111-02-78 | EACH | 1.000 | 1.000 |
| 1790 | 643.3000 | Traffic Control Detour Signs | DAY | 7,552.000 | 7,552.000 |
| 1800 | 644.1430.S | Temporary Pedestrian Surface Plate | SF | 95.000 | 95.000 |
| 1810 | 644.1601.S | Temporary Curb Ramp | EACH | 5.000 | 5.000 |
| 1820 | 644.1616.S | Temporary Pedestrian Safety Fence | LF | 700.000 | 700.000 |
| 1830 | 645.0130 | Geotextile Type R | SY | 24.000 | 24.000 |
| 1840 | 646.0106 | Pavement Marking Epoxy 4-Inch | LF | 575.000 | 575.000 |
| 1850 | 646.0600 | Removing Pavement Markings | LF | 1,655.000 | 1,655.000 |
| 1860 | 646.0690.S | Removing Pavement Markings Water Blasting | LF | 16,675.000 | 16,675.000 |
| 1870 | 646.0841.S | Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch | LF | 11,390.000 | 11,390.000 |
| 1880 | 646.0842.S | Pavement Marking Grooved Contrast Wet Reflective Epoxy 4-Inch | LF | 6,460.000 | 6,460.000 |
| 1890 | 646.0843.S | Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch | LF | 10,095.000 | 10,095.000 |
| 1900 | 646.0844.S | Pavement Marking Grooved Contrast Wet Reflective Epoxy 8-Inch | LF | 1,485.000 | 1,485.000 |
| 1910 | 646.2304.S | Pavement Marking Grooved Wet Reflective Epoxy 4-Inch | LF | 98,130.000 | 98,130.000 |
| 1920 | 647.0166 | Pavement Marking Arrows Epoxy Type 2 | EACH | 3.000 | 3.000 |
| 1930 | 647.0356 | Pavement Marking Words Epoxy | EACH | 2.000 | 2.000 |
| 1940 | 647.0456 | Pavement Marking Curb Epoxy | LF | 580.000 | 580.000 |
| 1950 | 647.0526 | Pavement Marking Yield Line Symbols Epoxy 18-Inch | EACH | 14.000 | 14.000 |
| 1960 | 647.0566 | Pavement Marking Stop Line Epoxy 18-Inch | LF | 267.000 | 267.000 |
| 1970 | 647.0606 | Pavement Marking Island Nose Epoxy | EACH | 6.000 | 6.000 |
| 1980 | 647.0746 | Pavement Marking Diagonal Epoxy 24-Inch | LF | 940.000 | 940.000 |
| 1990 | 647.0766 | Pavement Marking Crosswalk Epoxy 6-Inch | LF | 649.000 | 649.000 |
| 2000 | 649.0400 | Temporary Pavement Marking Removable Tape 4-Inch | LF | 29,210.000 | 29,210.000 |
| 2010 | 649.0402 | Temporary Pavement Marking Paint 4-Inch | LF | 125,045.000 | 125,045.000 |
| 2020 | 649.0600 | Temporary Pavement Marking Removable Tape 6-Inch | LF | 85.000 | 85.000 |
| 2030 | 649.0801 | Temporary Pavement Marking Removable Tape 8-Inch | LF | 5,990.000 | 5,990.000 |

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DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 2040 | 649.0802 | Temporary Pavement Marking Paint 8-Inch | LF | 10,000.000 | 10,000.000 |
| 2050 | 650.4500 | Construction Staking Subgrade | LF | 17,255.000 | 17,255.000 |
| 2060 | 650.5000 | Construction Staking Base | LF | 16,855.000 | 16,855.000 |
| 2070 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 1,607.000 | 1,607.000 |
| 2080 | 650.6000 | Construction Staking Pipe Culverts | EACH | 1.000 | 1.000 |
| 2090 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-13-268 | LS | 1.000 | 1.000 |
| 2100 | 650.6500 | Construction Staking Structure Layout (structure) 02. B-13-269 | LS | 1.000 | 1.000 |
| 2110 | 650.6500 | Construction Staking Structure Layout (structure) 03. B-13-270 | LS | 1.000 | 1.000 |
| 2120 | 650.6500 | Construction Staking Structure Layout (structure) 04. B-13-271 | LS | 1.000 | 1.000 |
| 2130 | 650.6500 | Construction Staking Structure Layout (structure) 05. B-13-272 | LS | 1.000 | 1.000 |
| 2140 | 650.6500 | Construction Staking Structure Layout (structure) 06. B-13-273 | LS | 1.000 | 1.000 |
| 2150 | 650.6500 | Construction Staking Structure Layout (structure) 07. B-13-275 | LS | 1.000 | 1.000 |
| 2160 | 650.6500 | Construction Staking Structure Layout (structure) 08. B-13-276 | LS | 1.000 | 1.000 |
| 2170 | 650.7000 | Construction Staking Concrete Pavement | LF | 400.000 | 400.000 |
| 2180 | 650.8000 | Construction Staking Resurfacing Reference | LF | 40,810.000 | 40,810.000 |
| 2190 | 650.8500 | Construction Staking Electrical Installations (project) 01. 1111-02-78 | LS | 1.000 | 1.000 |
| 2200 | 650.9910 | Construction Staking Supplemental Control (project) 01. 1111-02-78 | LS | 1.000 | 1.000 |
| 2210 | 652.0125 | Conduit Rigid Metallic 2-Inch | LF | 30.000 | 30.000 |
| 2220 | 652.0225 | Conduit Rigid Nonmetallic Schedule 40 2-Inch | LF | 418.000 | 418.000 |
| 2230 | 652.0235 | Conduit Rigid Nonmetallic Schedule 40 3-Inch | LF | 74.000 | 74.000 |
| 2240 | 652.0605 | Conduit Special 2-Inch | LF | 55.000 | 55.000 |
| 2250 | 652.0615 | Conduit Special 3-Inch | LF | 120.000 | 120.000 |
| 2260 | 652.0700.S | Install Conduit into Existing Item | EACH | 2.000 | 2.000 |
| 2270 | 653.0140 | Pull Boxes Steel 24x42-Inch | EACH | 9.000 | 9.000 |
| 2280 | 653.0905 | Removing Pull Boxes | EACH | 2.000 | 2.000 |
| 2290 | 654.0101 | Concrete Bases Type 1 | EACH | 4.000 | 4.000 |
| 2300 | 654.0105 | Concrete Bases Type 5 | EACH | 2.000 | 2.000 |
| 2310 | 655.0230 | Cable Traffic Signal 5-14 AWG | LF | 459.000 | 459.000 |
| 2320 | 655.0240 | Cable Traffic Signal 7-14 AWG | LF | 438.000 | 438.000 |
| 2330 | 655.0305 | Cable Type UF 2-12 AWG Grounded | LF | 210.000 | 210.000 |
| 2340 | 655.0515 | Electrical Wire Traffic Signals 10 AWG | LF | 2,541.000 | 2,541.000 |
| 2350 | 655.0525 | Electrical Wire Traffic Signals 6 AWG | LF | 1,140.000 | 1,140.000 |
| 2360 | 655.0610 | Electrical Wire Lighting 12 AWG | LF | 125.000 | 125.000 |
| 2370 | 656.0200 | Electrical Service Meter Breaker Pedestal (location) 01. MBN01 | LS | 1.000 | 1.000 |
| 2380 | 656.0500 | Electrical Service Breaker Disconnect Box (location) 01. CCTV-13-0128 | LS | 1.000 | 1.000 |
| 2390 | 656.0500 | Electrical Service Breaker Disconnect Box (location) 02. CCTV-13-0129 | LS | 1.000 | 1.000 |
| 2400 | 657.0100 | Pedestal Bases | EACH | 2.000 | 2.000 |
| 2410 | 657.0255 | Transformer Bases Breakaway 11 1/2-Inch Bolt Circle | EACH | 1.000 | 1.000 |

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DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 2420 | 657.0310 | Poles Type 3 | EACH | 1.000 | 1.000 |
| 2430 | 657.0322 | Poles Type 5-Aluminum | EACH | 1.000 | 1.000 |
| 2440 | 657.0410 | Traffic Signal Standards Aluminum 9-FT | EACH | 1.000 | 1.000 |
| 2450 | 657.0420 | Traffic Signal Standards Aluminum 13-FT | EACH | 1.000 | 1.000 |
| 2460 | 657.0590 | Trombone Arms 20-FT | EACH | 1.000 | 1.000 |
| 2470 | 657.0614 | Luminaire Arms Single Member 4-Inch Clamp 8-FT | EACH | 1.000 | 1.000 |
| 2480 | 658.0500 | Pedestrian Push Buttons | EACH | 1.000 | 1.000 |
| 2490 | 659.1125 | Luminaires Utility LED C | EACH | 1.000 | 1.000 |
| 2500 | 670.0100 | Field System Integrator | LS | 1.000 | 1.000 |
| 2510 | 670.0200 | ITS Documentation | LS | 1.000 | 1.000 |
| 2520 | 672.0250 | Base Camera Pole 50-FT | EACH | 2.000 | 2.000 |
| 2530 | 673.0225.S | Install Pole Mounted Cabinet | EACH | 2.000 | 2.000 |
| 2540 | 674.0300 | Remove Cable | LF | 179.000 | 179.000 |
| 2550 | 675.0300 | Install Mounted Controller Microwave Detector Assembly | EACH | 3.000 | 3.000 |
| 2560 | 675.0400.S | Install Ethernet Switch | EACH | 2.000 | 2.000 |
| 2570 | 677.0150 | Install Camera Pole 50-FT | EACH | 2.000 | 2.000 |
| 2580 | 677.0200 | Install Camera Assembly | EACH | 2.000 | 2.000 |
| 2590 | 690.0150 | Sawing Asphalt | LF | 17,973.000 | 17,973.000 |
| 2600 | 690.0250 | Sawing Concrete | LF | 14,495.000 | 14,495.000 |
| 2610 | 715.0415 | Incentive Strength Concrete Pavement | DOL | 500.000 | 500.000 |
| 2620 | 715.0502 | Incentive Strength Concrete Structures | DOL | 4,000.000 | 4,000.000 |
| 2630 | ASP.1T0A | On-the-Job Training Apprentice at $5.00/HR | HRS | 1,600.000 | 1,600.000 |
| 2640 | ASP.1T0G | On-the-Job Training Graduate at $5.00/HR | HRS | 625.000 | 625.000 |
| 2650 | SPV.0060 | Special 01. Cleaning and Painting Bearings | EACH | 46.000 | 46.000 |
| 2660 | SPV.0060 | Special 02. Relocate Signal Face | EACH | 4.000 | 4.000 |
| 2670 | SPV.0060 | Special 03. Relocating Existing Pole | EACH | 3.000 | 3.000 |
| 2680 | SPV.0060 | Special 04. Install Solar Power System Assembly | EACH | 1.000 | 1.000 |
| 2690 | SPV.0060 | Special 05. Install 5.8 GHz Ethernet Bridge | EACH | 6.000 | 6.000 |
| 2700 | SPV.0060 | Special 06. Ground Rod | EACH | 3.000 | 3.000 |
| 2710 | SPV.0060 | Special 07. Asphaltic Surface Patching Mobilization | EACH | 8.000 | 8.000 |
| 2720 | SPV.0060 | Special 08. HMA Percent Within Limits (PWL) Test Strip | EACH | 2.000 | 2.000 |
| 2730 | SPV.0090 | Special 01. Concrete Joint and Crack Cleaning and Repair | LF | 6,290.000 | 6,290.000 |
| 2740 | SPV.0090 | Special 02. Cleaning Parapets Special | LF | 3,570.000 | 3,570.000 |
| 2750 | SPV.0090 | Special 03. Concrete Curb HES Type J | LF | 14.000 | 14.000 |
| 2760 | SPV.0090 | Special 04. Concrete Curb & Gutter HES 30-Inch Type A | LF | 397.000 | 397.000 |
| 2770 | SPV.0090 | Special 05. Concrete Curb & Gutter HES 30-Inch Type D | LF | 699.000 | 699.000 |
| 2780 | SPV.0090 | Special 06. Removing HMA Pavement Notched Wedge Longitudinal Joint Milling | LF | 39,290.000 | 39,290.000 |
| 2790 | SPV.0105 | Special 01. Modify Existing Sign Structure S-13-215 | LS | 1.000 | 1.000 |
| 2800 | SPV.0105 | Special 02. Modify Existing Sign Structure S-13-216 | LS | 1.000 | 1.000 |
| 2810 | SPV.0105 | Special 03. Construction Staking Ramp Terminal Layout USH 151 NB Off-Ramp at STH 19 | LS | 1.000 | 1.000 |

DATE 20SEP16 E S T I M A T E O F Q U A N T I T I E S

| LINE NUMBER | ITEM | ITEM DESCRIPTION | UNIT | TOTAL | 1111-02-78 QUANTITY |
|---|---|---|---|---|---|
| 2820 | SPV.0105 | Special 04. Construction Staking Ramp Terminal Layout USH 151 NB On-Ramp at STH 19 | LS | 1.000 | 1.000 |
| 2830 | SPV.0105 | Special 05. Construction Staking Ramp Terminal Layout USH 151 SB Off-Ramp at STH 19 | LS | 1.000 | 1.000 |
| 2840 | SPV.0105 | Special 06. Construction Staking Ramp Terminal Layout USH 151 SB On-Ramp at STH 19 | LS | 1.000 | 1.000 |
| 2850 | SPV.0105 | Special 07. Construction Staking Ramp Terminal Layout USH 151 NB Off-Ramp at CTH N | LS | 1.000 | 1.000 |
| 2860 | SPV.0105 | Special 08. Construction Staking Ramp Terminal Layout USH 151 NB On-Ramp at CTH N | LS | 1.000 | 1.000 |
| 2870 | SPV.0105 | Special 09. Construction Staking Ramp Terminal Layout USH 151 SB Off-Ramp at CTH N | LS | 1.000 | 1.000 |
| 2880 | SPV.0105 | Special 10. Construction Staking Ramp Terminal Layout USH 151 SB On-Ramp at CTH N | LS | 1.000 | 1.000 |
| 2890 | SPV.0105 | Special 11. Concrete Pavement Joint Layout | LS | 1.000 | 1.000 |
| 2900 | SPV.0120 | Special 01. Water For Seeded Areas | MGAL | 19.500 | 19.500 |
| 2910 | SPV.0165 | Special 01. PPC Beam Surface Repair | SF | 89.000 | 89.000 |
| 2920 | SPV.0195 | Special 01. HMA Pavement 3 MT 58-28 S 3. 0% Va Regression Special | TON | 990.000 | 990.000 |
| 2930 | SPV.0195 | Special 02. HMA Pavement 4 MT 58-28 S 3. 0% Va Regression Special | TON | 660.000 | 660.000 |
| 2940 | SPV.0195 | Special 03. HMA Pavement 3 HT 58-28 S 3. 0% Va Regression Special | TON | 23,699.000 | 23,699.000 |
| 2950 | SPV.0195 | Special 04. HMA Pavement 4 HT 58-28 S 3. 0% Va Regression Special | TON | 21,477.000 | 21,477.000 |

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## REMOVING SMALL PIPE CULVERTS

| CATEGORY | STATION | LOCATION | 203.0100 EACH | REMARK |
|---|---|---|---|---|
| 0010 | 546+56 SB | LT | 1 | 12" x 52' CMCP |
| | 547+42 | RT | 1 | 12" x 68' CMCP |
| | 606+59 SB | LT | 1 | 12" x 20' CMCP |
| | 607+67 | RT | 1 | 12" x 68' CMCP |
| | 676+92 | RT | 1 | 12" x 58' CMCP |
| | 677+81 SB | LT | 1 | 12" x 66' CMCP |
| | 716+47 | RT | 1 | 12" x 56' CMCP |
| | 717+48 SB | LT | 1 | 12" x 46' CMCP |
| | | TOTAL | 8 | |

## REMOVING PAVEMENT

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0100 SY |
|---|---|---|---|---|
| 0010 | STAGE 2A | 741+22 - 743+22 | SB INSIDE | 270 |
| | | 18+51 BD - 19+60 BD | RAMP | 360 |
| | | SUBTOTAL (STAGE 2A) | | 630 |
| | STAGE 2B | 741+22 - 743+22 | SB OUTSIDE | 270 |
| | | 10+12 BC - 11+86 BC | RAMP | 630 |
| | | SUBTOTAL (STAGE 2B) | | 900 |
| | STAGE 3B | 19+99 BA - 21+74 BA | RAMP | 670 |
| | | 9+91 BB - 11+91 BB | RAMP | 590 |
| | | SUBTOTAL (STAGE 3B) | | 1,260 |
| | | | TOTAL | 2,790 |

## REMOVING ASPHALTIC SURFACE BUTT JOINTS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0115 SY | REMARKS |
|---|---|---|---|---|---|
| 0010 | STAGE 2A | 539+08 SB - 539+18 SB | SB INSIDE | 13 | LOWER PAVEMENT LAYER |
| | | 539+08 SB - 539+58 SB | SB INSIDE | 67 | UPPER PAVEMENT LAYER |
| | | SUBTOTAL (STAGE 2A) | | 80 | |
| | STAGE 2B | 539+08 SB - 539+18 SB | SB OUTSIDE | 13 | LOWER PAVEMENT LAYER |
| | | 539+08 SB - 539+58 SB | SB OUTSIDE | 67 | UPPER PAVEMENT LAYER |
| | | SUBTOTAL (STAGE 2B) | | 80 | |
| | STAGE 3A | 539+07 NB - 539+17 NB | NB INSIDE | 13 | LOWER PAVEMENT LAYER |
| | | 539+07 NB - 539+57 NB | NB INSIDE | 67 | UPPER PAVEMENT LAYER |
| | | 742+33 NB - 742+46 NB | NB INSIDE | 17 | LOWER PAVEMENT LAYER |
| | | 742+46 NB - 745+08 NB | NB INSIDE | 350 | UPPER PAVEMENT LAYER |
| | | SUBTOTAL (STAGE 3A) | | 447 | |
| | STAGE 3B | 539+07 NB - 539+17 NB | NB OUTSIDE | 13 | LOWER PAVEMENT LAYER |
| | | 539+07 NB - 539+57 NB | NB OUTSIDE | 67 | UPPER PAVEMENT LAYER |
| | | 742+33 NB - 742+46 NB | NB OUTSIDE | 17 | LOWER PAVEMENT LAYER |
| | | 742+46 NB - 745+08 NB | NB OUTSIDE | 350 | UPPER PAVEMENT LAYER |
| | | SUBTOTAL (STAGE 3B) | | 447 | |
| | | | TOTAL | 1,054 | |

## REMOVING ASPHALTIC SURFACE

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0110 SY | REMARKS |
|---|---|---|---|---|---|
| 0010 | STAGE 2A | 19+01 W - 19+80 W | RT, PATH | 17 | REMOVE 2' ADJ. TO C&G |
| | | | TOTAL | 17 | |

## REMOVING ASPHALTIC SURFACE MILLING

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0120 SY |
|---|---|---|---|---|
| 0010 | STAGE 2A | 539+18 SB - 547+11 SB | SB INSIDE | 1,950 |
| | | 549+11 SB - 607+15 SB | SB INSIDE | 9,650 |
| | | 609+21 SB - 677+93 SB | SB INSIDE | 11,500 |
| | | 679+68 SB - 715+43 SB | SB INSIDE | 5,950 |
| | | 717+05 SB - 741+22 SB | SB INSIDE | 4,050 |
| | | 588+17 SB - 17+07 WD | SB ON-RAMP | 2,900 |
| | | 660+50 SB - 18+51 BD | SB ON-RAMP | 3,300 |
| | | SUBTOTAL (STAGE 2A) | | 39,300 |
| | STAGE 2B | 539+18 SB - 547+02 SB | SB OUTSIDE | 1,900 |
| | | 549+02 SB - 607+05 SB | SB OUTSIDE | 12,300 |
| | | 609+11 SB - 677+99 SB | SB OUTSIDE | 14,500 |
| | | 679+74 SB - 715+49 SB | SB OUTSIDE | 7,550 |
| | | 717+11 SB - 741+22 SB | SB OUTSIDE | 5,100 |
| | | 12+92 MC - 562+00 SB | SB OFF-RAMP | 2,050 |
| | | 11+21 WC - 626+27 SB | SB OFF-RAMP | 3,700 |
| | | 11+86 BC - 697+04 SB | SB OFF-RAMP | 2,500 |
| | | SUBTOTAL (STAGE 2B PHASE 1) | | 49,600 |
| | STAGE 3A | 539+17 - 547+60 | NB INSIDE | 2,050 |
| | | 549+99 - 607+75 | NB INSIDE | 9,650 |
| | | 609+81 - 677+32 | NB INSIDE | 11,300 |
| | | 679+09 - 714+73 | NB INSIDE | 5,950 |
| | | 716+36 - 742+46 | NB INSIDE | 4,350 |
| | | SUBTOTAL (STAGE 3A) | | 33,300 |
| | STAGE 3B | 539+17 - 547+68 | NB OUTSIDE | 2,100 |
| | | 549+68 - 607+81 | NB OUTSIDE | 12,300 |
| | | 609+91 - 677+26 | NB OUTSIDE | 14,200 |
| | | 679+03 - 714+66 | NB OUTSIDE | 7,500 |
| | | 716+29 - 742+33 | NB OUTSIDE | 5,500 |
| | | 13+06 MB - 570+45 | NB ON-RAMP | 2,700 |
| | | 592+49 - 20+97 WA | NB OFF-RAMP | 3,050 |
| | | 11+24 WB - 630+70 | NB ON-RAMP | 3,700 |
| | | 660+23 - 19+99 BA | NB OFF-RAMP | 2,850 |
| | | 11+91 BB - 698+84 | NB ON-RAMP | 3,650 |
| | | SUBTOTAL (STAGE 3B PHASE 1) | | 57,550 |
| | STAGE 1 CTH N | 10+00 B - 18+00 B | SB OUTSIDE | 1,600 |
| | | 10+00 B - 18+00 B | NB OUTSIDE | 1,300 |
| | | SUBTOTAL (STAGE 1 CTH N) | | 2,900 |
| | STAGE 2 CTH N | 10+00 B - 18+00 B | SB INSIDE & MEDIAN | 2,100 |
| | | 10+00 B - 18+00 B | NB INSIDE | 1,000 |
| | | SUBTOTAL (STAGE 2 CTH N) | | 3,100 |
| | | | TOTAL | 185,750 |

3

## REMOVING CURB

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0130 LF |
|---|---|---|---|---|
| 0010 | STAGE 2B | 10+20 BC - 10+76 BC | ISLAND | 140 |
| | STAGE 3B | 21+16 BA - 21+65 BA | ISLAND | 120 |
| | | | TOTAL | 260 |

## REMOVING CONCRETE SIDEWALK

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0155 SY |
|---|---|---|---|---|
| 0010 | STAGE 2A | 19+40 BD - 19+53 BD | LT | 10 |
| | STAGE 3B | 22+19 WA - 22+29 WA | LT | 15 |
| | | | TOTAL | 25 |

## REMOVING CONCRETE BASES

| CATEGORY | LOCATION | EQUIP. LOCATION | STATION | LOCATION | 204.0195 EACH |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 | EXSB-2 | 14+03 W | 41.6' RT | 1 |
| | (WINDSOR STREET) | EXLP-1 | 14+39 W | 80.7' RT | 1 |
| | | EXSB-5 | 20+48 W | 75.1' LT | 1 |
| | | EXSB-6 | 21+60 W | 80.3' LT | 1 |
| | | | | TOTAL | 4 |

## REMOVING GUARDRAIL

| CATEGORY | STATION - STATION | LOCATION | 204.0165 LF |
|---|---|---|---|
| 0010 | 538+00 - 547+28 | LT | 930 |
| | 538+00 SB - 546+95 SB | RT | 895 |
| | 545+10 - 547+55 | RT | 245 |
| | 545+41 SB - 546+66 SB | LT | 125 |
| | 549+14 SB - 551+84 SB | LT | 270 |
| | 549+43 SB - 552+89 SB | RT | 345 |
| | 603+92 - 607+40 | LT | 350 |
| | 605+00 - 607+72 | RT | 270 |
| | 609+23 SB - 611+95 SB | LT | 270 |
| | 609+58 SB - 613+03 SB | RT | 345 |
| | 673+72 - 677+19 | LT | 345 |
| | 674+26 - 676+96 | RT | 270 |
| | 679+83 SB - 683+28 SB | RT | 345 |
| | 680+02 SB - 682+73 SB | LT | 270 |
| | 711+13 - 714+61 | LT | 350 |
| | 711+65 - 714+37 | RT | 270 |
| | 717+19 SB - 720+65 | RT | 345 |
| | 717+41 SB - 720+14 | LT | 270 |
| | | TOTAL | 6,510 |

## REMOVING CURB & GUTTER

| CATEGORY | STAGE | STATION - STATION | LOCATION | 204.0150 LF |
|---|---|---|---|---|
| 0010 | STAGE 2A | 13+77 W - 14+45 W | RT | 110 |
| | | 18+46 WD - 18+80 WD | RT | 35 |
| | | 15+99 W - 16+16 W | RT | 20 |
| | | 17+93 W - 18+05 W | LT | 10 |
| | | 19+01 W - 19+80 W | RT | 80 |
| | | 19+23 BD - 19+62 BD | LT | 40 |
| | | 19+21 BD - 19+53 BD | RT | 35 |
| | | SUBTOTAL (STAGE 2A) | | 330 |
| | STAGE 2B | 14+87 W - 15+06 W | MEDIAN | 20 |
| | | 10+61 WC - 10+77 WC | RT | 15 |
| | | 15+67 W - 15+76 W | LT | 9 |
| | | 17+93 W - 18+02 W | LT | 9 |
| | | 19+45 W - 19+80 W | LT | 35 |
| | | 10+42 BC - 11+21 BC | LT | 95 |
| | | 10+12 BC - 10+56 BC | RT | 45 |
| | | SUBTOTAL (STAGE 2B PHASE 1) | | 228 |
| | STAGE 3B | 21+89 WA - 22+37 WA | LT | 50 |
| | | 22+00 WA - 22+50 WA | ISLAND | 110 |
| | | 21+88 WA - 22+53 WA | RT | 70 |
| | | 21+32 BA - 21+73 BA | LT | 45 |
| | | 21+28 BA - 21+43 BA | RT | 40 |
| | | 10+17 BB - 10+50 BB | LT | 45 |
| | | 10+13 BB - 10+45 BB | RT | 30 |
| | | SUBTOTAL (STAGE 3B) | | 390 |
| | STAGE 1 CTH N | 16+65 B - 18+00 B | LT | 140 |
| | STAGE 2 CTH N | 10+99 B - 11+08 B | MEDIAN | 9 |
| | | 14+93 B - 15+02 B | MEDIAN | 9 |
| | | SUBTOTAL (STAGE 2 CTH N) | | 18 |
| | | | TOTAL | 1,106 |

## REMOVING DELINEATORS AND MARKERS

| CATEGORY | STATION - STATION | LOCATION | LOCATION | 204.0180 EACH |
|---|---|---|---|---|
| 0010 | 539+07 - 745+08 | NB MAINLINE | RT | 35 |
| | 13+06 MB - 570+00 | MB RAMP | RT | 30 |
| | 592+60 - 20+97 WA | WA RAMP | RT | 22 |
| | 11+24 WB - 631+50 | WB RAMP | RT | 32 |
| | 659+00 - 19+99 BA | BA RAMP | RT | 25 |
| | 11+91 BB - 700+00 | BB RAMP | RT | 32 |
| | 539+08 SB - 743+22 SB | SB MAINLINE | LT | 37 |
| | 12+92 MC - 561+50 | MC RAMP | LT | 19 |
| | 587+00 - 17+07 WD | WD RAMP | LT | 32 |
| | 11+21 WC - 626+50 | WC RAMP | LT | 28 |
| | 659+50 - 18+51 BD | BD RAMP | LT | 33 |
| | 11+86 BC - 697+00 | BC RAMP | LT | 24 |
| | | | TOTAL | 349 |

## REMOVING SURFACE DRAINS

| CATEGORY | STATION | LOCATION | 204.0190 EACH |
|---|---|---|---|
| 0010 | 546+56 SB | LT | 1 |
| | 547+42 | RT | 1 |
| | 606+59 SB | LT | 1 |
| | 607+67 | RT | 1 |
| | 676+92 | RT | 1 |
| | 677+81 SB | LT | 1 |
| | 716+47 | RT | 1 |
| | 717+48 SB | LT | 1 |
| | | TOTAL | 8 |

## EARTHWORK SUMMARY

| CATEGORY | DIVISION | STAGE | STATION | - | STATION | LOCATION | 205.0100 EXCAVATION COMMON (1) CUT (2) CY | 205.0100 EXCAVATION COMMON (1) EBS EXCAVATION (3) CY | UNUSABLE PAVEMENT MATERIAL CY | AVAILABLE MATERIAL (4) CY | UNEXPANDED FILL CY | EXPANDED FILL (5) FACTOR 1.25 CY | MASS ORDINATE +/- (6) CY | WASTE CY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | 1 | STAGE 1 | 549+14 | - | 554+85 | SB OUTSIDE | 390 | 0 | 0 | 390 | 0 | 0 | 390 | 390 |
| | | | 550+04 | - | 556+11 | NB OUTSIDE | 415 | 0 | 0 | 415 | 0 | 0 | 415 | 415 |
| | | | 564+00 | - | 569+60 | NB OUTSIDE RAMP | 310 | 0 | 0 | 310 | 0 | 0 | 310 | 310 |
| | | | 601+08 | - | 606+59 | SB OUTSIDE | 375 | 0 | 0 | 375 | 0 | 0 | 375 | 375 |
| | | | 601+41 | - | 607+72 | NB Outside | 430 | 0 | 0 | 430 | 0 | 0 | 430 | 430 |
| | | | 609+23 | - | 614+95 | SB Outside | 390 | 0 | 0 | 390 | 0 | 0 | 390 | 390 |
| | | | 610+30 | - | 616+39 | NB Outside | 415 | 0 | 0 | 415 | 0 | 0 | 415 | 415 |
| | | | 625+50 | - | 630+00 | NB OUTSIDE RAMP | 250 | 0 | 0 | 250 | 0 | 0 | 250 | 250 |
| | | | 672+15 | - | 677+80 | SB Outside | 385 | 0 | 0 | 385 | 0 | 0 | 385 | 385 |
| | | | 671+08 | - | 676+91 | NB Outside | 395 | 0 | 0 | 395 | 0 | 0 | 395 | 395 |
| | | | 680+02 | - | 685+66 | SB Outside | 385 | 0 | 0 | 385 | 0 | 0 | 385 | 385 |
| | | | 679+15 | - | 685+07 | NB Outside | 405 | 0 | 0 | 405 | 0 | 0 | 405 | 405 |
| | | | 693+98 | - | 699+98 | NB OUTSIDE RAMP | 330 | 0 | 0 | 330 | 0 | 0 | 330 | 330 |
| | | | 709+65 | - | 715+27 | SB Outside | 385 | 0 | 0 | 385 | 0 | 0 | 385 | 385 |
| | | | 708+43 | - | 714+37 | NB Outside | 405 | 0 | 0 | 405 | 0 | 0 | 405 | 405 |
| | | | 717+50 | - | 723+04 | SB Outside | 380 | 0 | 0 | 380 | 0 | 0 | 380 | 380 |
| | | | 716+48 | - | 722+43 | NB Outside | 405 | 0 | 0 | 405 | 0 | 0 | 405 | 405 |
| | | | 736+92 | - | 748+07 | SB Outside | 760 | 0 | 0 | 760 | 0 | 0 | 760 | 760 |
| | | | DIVISION 1 (STAGE 1) SUBTOTALS | | | | 7,210 | 0 | 0 | 7,210 | 0 | 0 | 7,210 | 7,210 |
| | 2 | STAGE 2A | 541+08 | - | 546+56 | SB Inside | 275 | 0 | 0 | 275 | 0 | 0 | 275 | 275 |
| | | | 600+68 | - | 606+98 | SB Inside | 285 | 0 | 0 | 285 | 0 | 0 | 285 | 285 |
| | | | 609+58 | - | 615+40 | SB Inside | 260 | 0 | 0 | 260 | 0 | 0 | 260 | 260 |
| | | | 671+79 | - | 677+66 | SB Inside | 265 | 0 | 0 | 265 | 0 | 0 | 265 | 265 |
| | | | 679+83 | - | 685+77 | SB Inside | 270 | 0 | 0 | 270 | 0 | 0 | 270 | 270 |
| | | | 709+25 | - | 715+14 | SB Inside | 265 | 0 | 0 | 265 | 0 | 0 | 265 | 265 |
| | | | 717+19 | - | 723+20 | SB Inside | 270 | 0 | 0 | 270 | 0 | 0 | 270 | 270 |
| | | | 738+02 | - | 746+97 | SB Inside | 405 | 0 | 0 | 405 | 0 | 0 | 405 | 405 |
| | | | 13+77 W | - | 14+34 W | STH 19 RT | 8 | 0 | 0 | 8 | 0 | 0 | 8 | 8 |
| | | | 14+98 W | - | 15+26 W | STH 19 RT | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 4 |
| | | | 11+28 B | - | 11+43 B | CTH N RT | 2 | 0 | 0 | 2 | 0 | 0 | 2 | 2 |
| | | | 11+71 B | - | 11+89 B | CTH N RT | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| | | | DIVISION 2 (STAGE 2A) SUBTOTALS | | | | 2,312 | 0 | 0 | 2,312 | 0 | 0 | 2,312 | 2,312 |
| | 3 | STAGE 2B | 10+23 B | - | 10+53 B | CTH N LT | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 5 |
| | | | 11+11 B | - | 11+24 B | CTH N LT | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| | | | DIVISION 3 (STAGE 2B) SUBTOTALS | | | | 8 | 0 | 0 | 8 | 0 | 0 | 8 | 8 |
| | 4 | STAGE 3A | 549+75 | - | 553+46 | NB Inside | 165 | 0 | 0 | 165 | 0 | 0 | 165 | 165 |
| | | | 603+70 | - | 607+40 | NB Inside | 165 | 0 | 0 | 165 | 0 | 0 | 165 | 165 |
| | | | 609+97 | - | 613+82 | NB Inside | 175 | 0 | 0 | 175 | 0 | 0 | 175 | 175 |
| | | | 673+68 | - | 677+19 | NB Inside | 160 | 0 | 0 | 160 | 0 | 0 | 160 | 160 |
| | | | 679+34 | - | 682+70 | NB Inside | 150 | 0 | 0 | 150 | 0 | 0 | 150 | 150 |
| | | | 711+04 | - | 714+61 | NB Inside | 160 | 0 | 0 | 160 | 0 | 0 | 160 | 160 |
| | | | 716+64 | - | 720+09 | NB Inside | 155 | 0 | 0 | 155 | 0 | 0 | 155 | 155 |
| | | | DIVISION 4 (STAGE 3A) SUBTOTALS | | | | 1,130 | 0 | 0 | 1,130 | 0 | 0 | 1,130 | 1,130 |
| | 5 | STAGE 3B | 19+86 W | - | 20+12 W | STH 19 RT | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 5 |
| | | | 20+55 W | - | 20+76 W | STH 19 RT | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| | | | 16+11 B | - | 16+24 B | CTH N RT | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| | | | 16+87 B | - | 17+08 B | CTH N RT | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 4 |
| | | | 15+56 B | - | 15+70 B | CTH N LT | 3 | 0 | 0 | 3 | 0 | 0 | 3 | 3 |
| | | | 16+03 B | - | 16+27 B | CTH N LT | 4 | 0 | 0 | 4 | 0 | 0 | 4 | 4 |
| | | | DIVISION 5 (STAGE 3B) SUBTOTALS | | | | 22 | 0 | 0 | 22 | 0 | 0 | 22 | 22 |
| | 6 | STAGE 1&2 | 10+00 B | - | 18+00 B | CTH N LT & RT | 0 | 150 | 0 | 0 | 0 | 0 | 0 | 150 |
| | | | DIVISION 6 SUBTOTALS | | | | 0 | 150 | 0 | 0 | 0 | 0 | 0 | 150 |
| | | | TOTALS | | | | 10,682 | 150 | 0 | 10,682 | 0 | 0 | 10,682 | 10,832 |

TOTAL EXCAVATION COMMON = 10,832

1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100.
2) UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) EXCAVATED EBS MATERIAL IS UNUSABLE IN FILLS.
4) AVAILABLE MATERIAL = CUT - UNUSABLE PAVEMENT MATERIAL.
5) EXPANDED FILL = UNEXPANDED FILL * EXPANDED FILL FACTOR. EXPANDED FILL FACTOR = 1.25.
6) MASS ORDINATE: MASS ORDINATE = (CUT - UNUSABLE PAVEMENT MATERIAL) - (FILL * FILL FACTOR).
PLUS MASS ORDINATE QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS MASS ORDINATE QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

## BASE AGGREGATE DENSE SUMMARY

| CATEGORY | STAGE | STATION | LOCATION | 305.0110 BASE AGGREGATE DENSE 3/4-INCH TON* | 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON | 312.0110 SELECT CRUSHED MATERIAL TON | 624.0100 WATER** MGAL |
|---|---|---|---|---|---|---|---|
| 0010 | STAGE 1 | 549+14 SB - 554+85 SB | SB SHOULDER | 25 | 180 | 420 | 2.1 |
| | | 550+04 - 556+11 | NB SHOULDER | 30 | 190 | 450 | 2.2 |
| | | 564+00 - 569+60 | NB SHOULDER RAMP | 55 | 160 | 330 | 2.2 |
| | | 601+08 SB - 606+59 SB | SB SHOULDER | 25 | 180 | 410 | 2.1 |
| | | 601+41 - 607+72 | NB SHOULDER | 30 | 200 | 470 | 2.3 |
| | | 609+23 SB - 614+95 SB | SB SHOULDER | 25 | 180 | 420 | 2.1 |
| | | 610+30 - 616+39 | NB SHOULDER | 30 | 200 | 450 | 2.3 |
| | | 625+50 - 630+00 | NB SHOULDER RAMP | 45 | 120 | 270 | 1.7 |
| | | 672+15 SB - 677+80 SB | SB SHOULDER | 25 | 180 | 420 | 2.1 |
| | | 671+08 - 676+91 | NB SHOULDER | 25 | 190 | 430 | 2.2 |
| | | 680+02 SB - 685+66 SB | SB SHOULDER | 25 | 180 | 420 | 2.1 |
| | | 679+15 - 685+07 | NB SHOULDER | 25 | 190 | 440 | 2.2 |
| | | 693+98 - 699+98 | NB SHOULDER RAMP | 60 | 170 | 360 | 2.3 |
| | | 709+65 SB - 715+27 SB | SB SHOULDER | 25 | 180 | 420 | 2.1 |
| | | 708+43 - 714+37 | NB SHOULDER | 30 | 190 | 440 | 2.2 |
| | | 717+50 SB - 723+04 SB | SB SHOULDER | 25 | 180 | 410 | 2.1 |
| | | 716+48 - 722+43 | NB SHOULDER | 30 | 190 | 440 | 2.2 |
| | | 736+92 - 748+07 | SB SHOULDER | 50 | 360 | 820 | 4.1 |
| | | SUBTOTALS (STAGE 1) | | 585 | 3,420 | 7,820 | 40.6 |
| | STAGE 2A | 549+43 SB - 555+48 SB | SB SHOULDER | 30 | 140 | 280 | 1.7 |
| | | 600+68 SB - 606+98 SB | SB SHOULDER | 30 | 140 | 290 | 1.7 |
| | | 609+58 SB - 615+40 SB | SB SHOULDER | 25 | 130 | 270 | 1.6 |
| | | 671+79 SB - 677+66 SB | SB SHOULDER | 25 | 130 | 270 | 1.6 |
| | | 679+83 SB - 685+77 SB | SB SHOULDER | 30 | 140 | 270 | 1.7 |
| | | 709+25 SB - 715+14 SB | SB SHOULDER | 25 | 130 | 270 | 1.6 |
| | | 717+19 SB - 723+20 SB | SB SHOULDER | 30 | 140 | 270 | 1.7 |
| | | 539+08 SB - 547+00 SB | SB INSIDE | 50 | --- | --- | 0.5 |
| | | 549+46 SB - 606+99 SB | SB INSIDE | 290 | --- | --- | 2.9 |
| | | 609+61 SB - 677+66 SB | SB INSIDE | 350 | --- | --- | 3.5 |
| | | 679+83 SB - 715+14 SB | SB INSIDE | 180 | --- | --- | 1.8 |
| | | 717+19 SB - 741+22 SB | SB INSIDE | 120 | --- | --- | 1.2 |
| | | 738+02 SB - 746+97 SB | SB INSIDE | 40 | 200 | 410 | 0.4 |
| | | 741+22 SB - 743+22 SB | SB INSIDE | 20 | 80 | --- | 1.0 |
| | | 10+00 WD - 17+07 WD | WD RAMP LT | 50 | --- | --- | 0.5 |
| | | 12+81 WD - 17+07 WD | WD RAMP RT | 30 | --- | --- | 0.3 |
| | | 17+07 WD - 17+07 WD | WD RAMP | --- | 6 | --- | --- |
| | | 17+74 WD - 18+24 WD | WD RAMP LT | --- | 40 | --- | 0.4 |
| | | 10+00 BD - 18+51 BD | BD RAMP LT | 60 | --- | --- | 0.6 |
| | | 11+97 BD - 18+51 BD | BD RAMP RT | 45 | --- | --- | 0.5 |
| | | 18+51 BD - 19+60 BD | BD RAMP | --- | 90 | --- | 0.9 |
| | | 19+01 W - 19+80 W | PATH | 6 | --- | --- | --- |
| | | SUBTOTALS (STAGE 2A) | | 1,436 | 1,366 | 2,330 | 26.1 |
| | STAGE 2B | 539+08 SB - 546+67 SB | SB OUTSIDE | 50 | --- | --- | 0.5 |
| | | 549+15 SB - 554+18 SB | SB OUTSIDE | 40 | --- | --- | 0.4 |
| | | 556+65 SB - 597+62 SB | SB OUTSIDE | 340 | --- | --- | 3.4 |
| | | 600+43 SB - 606+65 SB | SB OUTSIDE | 50 | --- | --- | 0.5 |
| | | 609+27 SB - 617+73 SB | SB OUTSIDE | 70 | --- | --- | 0.7 |
| | | 621+57 SB - 669+89 SB | SB OUTSIDE | 400 | --- | --- | 4.0 |
| | | 671+86 SB - 677+80 SB | SB OUTSIDE | 50 | --- | --- | 0.5 |
| | | 680+02 SB - 688+05 SB | SB OUTSIDE | 65 | --- | --- | 0.7 |
| | | 690+60 SB - 715+37 SB | SB OUTSIDE | 210 | --- | --- | 2.1 |
| | | 717+42 SB - 741+22 SB | SB OUTSIDE | 200 | --- | --- | 2.0 |
| | | 741+22 SB - 743+22 SB | SB OUTSIDE | 20 | 80 | --- | 1.0 |
| | | 12+92 MC - 20+27 MC | MC RAMP LT | 50 | --- | --- | 0.5 |
| | | 12+92 MC - 17+80 MC | MC RAMP RT | 35 | --- | --- | 0.4 |
| | | 11+21 WC - 24+80 WC | WC RAMP LT | 90 | --- | --- | 0.9 |
| | | 11+21 WC - 20+95 WC | WC RAMP RT | 65 | --- | --- | 0.7 |
| | | 10+12 BC - 11+86 BC | BC RAMP | --- | 120 | --- | 1.2 |
| | | 11+86 BC - 20+68 BC | BC RAMP LT | 60 | --- | --- | 0.6 |
| | | 11+86 BC - 18+13 BC | BC RAMP RT | 45 | --- | --- | 0.5 |
| | | 11+21 WC - 11+21 WC | WC RAMP | --- | 8 | --- | --- |
| | | SUBTOTALS (STAGE 2B) | | 1,840 | 208 | 0 | 20.6 |

CONT'D ABOVE

## BASE AGGREGATE DENSE SUMMARY (CONT'D)

| CATEGORY | STAGE | STATION | LOCATION | 305.0110 BASE AGGREGATE DENSE 3/4-INCH TON* | 305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON | 312.0110 SELECT CRUSHED MATERIAL TON | 624.0100 WATER** MGAL |
|---|---|---|---|---|---|---|---|
| 0010 (CONT'D) | STAGE 3A | 549+75 - 553+46 | NB SHOULDER | 15 | 85 | 170 | 1.0 |
| | | 603+70 - 607+40 | NB SHOULDER | 15 | 85 | 170 | 1.0 |
| | | 609+97 - 613+82 | NB SHOULDER | 20 | 90 | 180 | 1.1 |
| | | 673+68 - 677+19 | NB SHOULDER | 15 | 80 | 160 | 1.0 |
| | | 679+34 - 682+70 | NB SHOULDER | 15 | 75 | 150 | 0.9 |
| | | 711+04 - 714+61 | NB SHOULDER | 15 | 80 | 160 | 1.0 |
| | | 716+64 - 720+09 | NB SHOULDER | 15 | 80 | 160 | 1.0 |
| | | SUBTOTALS (STAGE 3A) | | 110 | 575 | 1,150 | 7.0 |
| | STAGE 3B | 540+42 - 547+57 | NB OUTSIDE | 45 | --- | --- | 0.5 |
| | | 550+04 - 557+19 | NB OUTSIDE | 60 | --- | --- | 0.6 |
| | | 559+59 - 597+44 | NB OUTSIDE | 320 | --- | --- | 3.2 |
| | | 599+99 - 607+74 | NB OUTSIDE | 65 | --- | --- | 0.7 |
| | | 610+30 - 617+96 | NB OUTSIDE | 65 | --- | --- | 0.7 |
| | | 621+55 - 665+44 | NB OUTSIDE | 370 | --- | --- | 3.7 |
| | | 668+10 - 676+97 | NB OUTSIDE | 75 | --- | --- | 0.8 |
| | | 679+15 - 687+77 | NB OUTSIDE | 70 | --- | --- | 0.7 |
| | | 689+76 - 714+35 | NB OUTSIDE | 210 | --- | --- | 2.1 |
| | | 716+48 - 745+08 | NB OUTSIDE | 240 | --- | --- | 2.4 |
| | | 13+06 MB - 16+91 MB | MB RAMP LT | 25 | --- | --- | 0.3 |
| | | 13+06 MB - 19+30 MB | MB RAMP RT | 40 | --- | --- | 0.4 |
| | | 12+55 WA - 20+97 WA | WA RAMP LT | 55 | --- | --- | 0.6 |
| | | 10+00 WA - 20+97 WA | WA RAMP RT | 75 | --- | --- | 0.8 |
| | | 20+97 WA - 20+97 WA | WA RAMP | --- | 5 | --- | --- |
| | | 11+24 WB - 11+24 WB | WB RAMP | --- | 8 | --- | --- |
| | | 11+24 WB - 17+53 WB | WB RAMP LT | 45 | --- | --- | 0.5 |
| | | 11+24 WB - 21+10 WB | WB RAMP RT | 65 | --- | --- | 0.7 |
| | | 12+66 BA - 19+99 BA | BA RAMP LT | 50 | --- | --- | 0.5 |
| | | 10+00 BA - 19+99 BA | BA RAMP RT | 70 | --- | --- | 0.7 |
| | | 19+99 BA - 21+74 BA | BA RAMP | --- | 130 | --- | 1.3 |
| | | 9+91 BB - 11+91 BB | BB RAMP | --- | 110 | --- | 1.1 |
| | | 11+91 BB - 19+84 BB | BB RAMP LT | 55 | --- | --- | 0.6 |
| | | 11+91 BB - 21+77 BB | BB RAMP RT | 65 | --- | --- | 0.7 |
| | | SUBTOTALS (STAGE 3B) | | 2,065 | 254 | 0 | 23.6 |
| | STAGE 3C | 539+07 - 547+27 | NB INSIDE | 50 | --- | --- | 0.5 |
| | | 549+74 - 607+41 | NB INSIDE | 290 | --- | --- | 2.9 |
| | | 609+97 - 677+17 | NB INSIDE | 340 | --- | --- | 3.4 |
| | | 679+34 - 714+58 | NB INSIDE | 180 | --- | --- | 1.8 |
| | | 716+64 - 745+08 | NB INSIDE | 150 | --- | --- | 1.5 |
| | | SUBTOTALS (STAGE 3C) | | 1,010 | 0 | 0 | 10.1 |
| | STAGE 1&2 CTH N | 10+00 B - 18+00 B | CTH N LT & RT | --- | --- | 285 | --- |
| | | SUBTOTALS (STAGE 1&2 CTH N) | | 0 | 0 | 285 | 0 |
| | | TOTALS | | 7,046 | 5,822 | 11,585 | 128.0 |

*ADDITIONAL QUANTITIES LISTED ELSEWHERE
**WATER FOR COMPACTION

## FINISHING ROADWAY

| CATEGORY | PROJECT | 213.0100 EACH |
|---|---|---|
| 0010 | 01. 1111-02-78 | 1 |

## SHAPING SHOULDERS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 305.0500 STA |
|---|---|---|---|---|
| 0010 | STAGE 2A | 539+08 SB - 547+19 SB | SB INSIDE | 9 |
| | | 549+19 SB - 607+25 SB | SB INSIDE | 59 |
| | | 609+32 SB - 677+86 SB | SB INSIDE | 69 |
| | | 679+62 SB - 715+36 SB | SB INSIDE | 37 |
| | | 717+19 SB - 741+22 SB | SB INSIDE | 25 |
| | | 588+00 SB - 17+07 WD | RAMP LT | 17 |
| | | 13+00 WD - 17+07 WD | RAMP RT | 5 |
| | | 660+00 SB - 18+51 BD | RAMP LT | 19 |
| | | 12+00 BD - 18+51 BD | RAMP RT | 7 |
| | | SUBTOTAL (STAGE 2A) | | 247 |
| | STAGE 2B | 538+08 SB - 546+67 SB | SB OUTSIDE | 9 |
| | | 549+15 SB - 554+18 SB | SB OUTSIDE | 6 |
| | | 562+00 SB - 588+00 SB | SB OUTSIDE | 26 |
| | | 600+43 SB - 606+65 SB | SB OUTSIDE | 7 |
| | | 609+27 SB - 617+73 SB | SB OUTSIDE | 9 |
| | | 626+00 SB - 660+00 SB | SB OUTSIDE | 34 |
| | | 671+86 SB - 677+80 SB | SB OUTSIDE | 7 |
| | | 680+02 SB - 688+05 SB | SB OUTSIDE | 9 |
| | | 697+00 SB - 715+37 SB | SB OUTSIDE | 19 |
| | | 717+42 SB - 741+22 SB | SB OUTSIDE | 25 |
| | | 12+92 MC - 562+00 SB | RAMP LT | 14 |
| | | 12+92 MC - 17+80 MC | RAMP RT | 6 |
| | | 11+21 WC - 626+00 SB | RAMP LT | 18 |
| | | 11+21 WC - 20+95 WC | RAMP RT | 10 |
| | | 11+86 BC - 697+00 SB | RAMP LT | 16 |
| | | 11+86 BC - 18+13 BC | RAMP RT | 8 |
| | | SUBTOTAL (STAGE 2B) | | 223 |
| | STAGE 3B | 540+42 - 547+57 | NB OUTSIDE | 8 |
| | | 550+04 - 557+19 | NB OUTSIDE | 8 |
| | | 572+00 - 592+00 | NB OUTSIDE | 20 |
| | | 599+99 - 607+74 | NB OUTSIDE | 9 |
| | | 610+30 - 617+96 | NB OUTSIDE | 8 |
| | | 631+00 - 659+00 | NB OUTSIDE | 28 |
| | | 668+10 - 676+97 | NB OUTSIDE | 9 |
| | | 679+15 - 687+77 | NB OUTSIDE | 9 |
| | | 699+00 - 714+35 | NB OUTSIDE | 16 |
| | | 716+48 - 745+08 | NB OUTSIDE | 30 |
| | | 13+06 MB 572+00 | RAMP RT | 19 |
| | | 13+06 MB 16+91 MB | RAMP LT | 4 |
| | | 592+00 - 20+97 WA | RAMP RT | 17 |
| | | 12+55 WA - 20+97 WA | RAMP LT | 9 |
| | | 11+24 WB - 631+00 | RAMP RT | 20 |
| | | 11+24 WB - 17+53 WB | RAMP LT | 7 |
| | | 659+00 - 19+99 BA | RAMP RT | 17 |
| | | 12+66 BA - 19+99 BA | RAMP LT | 8 |
| | | 11+91 BB - 699+00 | RAMP RT | 20 |
| | | 11+91 BB - 19+84 BB | RAMP LT | 9 |
| | | SUBTOTAL (STAGE 3B) | | 275 |
| | STAGE 3C | 539+07 - 547+27 | NB INSIDE | 9 |
| | | 549+74 - 607+41 | NB INSIDE | 59 |
| | | 609+97 - 677+17 | NB INSIDE | 69 |
| | | 679+34 - 714+58 | NB INSIDE | 36 |
| | | 716+64 - 745+08 | NB INSIDE | 30 |
| | | SUBTOTALS (STAGE 3C) | | 203 |
| | | | TOTAL | 948 |

## BASE PATCHING CONCRETE AND CONCRETE JOINT AND CRACK CLEANING AND REPAIR

| CATEGORY | STAGE | STATION - STATION | LOCATION | 390.0303 BASE PATCHING CONCRETE SY | 690.0250 SAWING CONCRETE LF* | SPV.0090.01 CONCRETE JOINT AND CRACK CLEANING AND REPAIR LF | 416.0620 DRILLED DOWEL BARS EACH* |
|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 539+07 - 743+22 | SB INSIDE | 540 | 2,050 | 1,250 | 1,100 |
| | | 10+00 WD - 17+07 WD | WD RAMP | 100 | 380 | 140 | 280 |
| | | 10+00 BD - 18+51 BD | BD RAMP | 80 | 300 | 140 | 220 |
| | | SUBTOTALS (STAGE 2A) | | 720 | 2,730 | 1,530 | 1,600 |
| | STAGE 2B | 539+07 - 743+22 | SB OUTSIDE | 470 | 1,750 | 1,850 | 940 |
| | | 12+92 MC - 20+27 MC | MC RAMP | 20 | 75 | 80 | 55 |
| | | 11+21 WC - 24+80 WC | WC RAMP | 50 | 190 | 80 | 140 |
| | | 11+86 BC - 20+68 BC | BC RAMP | 15 | 55 | 70 | 40 |
| | | SUBTOTALS (STAGE 2B) | | 555 | 2,070 | 2,080 | 1,175 |
| | STAGE 3A | 539+07 - 745+08 | NB INSIDE | 330 | 1,200 | 850 | 650 |
| | STAGE 3B | 539+07 - 745+08 | NB OUTSIDE | 360 | 1,350 | 1,250 | 710 |
| | | 13+06 MB - 19+30 MB | MB RAMP | 35 | 130 | 150 | 95 |
| | | 10+00 WA - 20+97 WA | WA RAMP | 20 | 75 | 80 | 55 |
| | | 11+24 WB - 21+10 WB | WB RAMP | 25 | 95 | 100 | 70 |
| | | 10+00 BA - 19+99 BA | BA RAMP | 25 | 95 | 110 | 70 |
| | | 11+91 BB - 21+77 BB | BB RAMP | 60 | 230 | 140 | 170 |
| | | SUBTOTALS (STAGE 3B) | | 525 | 1,975 | 1,830 | 1,170 |
| | | | TOTALS | 2,130 | 7,975 | 6,290 | 4,595 |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

## CONCRETE PAVEMENT

| CATEGORY | STAGE | STATION - STATION | LOCATION | 415.0100 CONCRETE PAVEMENT 10-INCH SY | 416.0620 DRILLED DOWEL BARS EACH* |
|---|---|---|---|---|---|
| 0010 | STAGE 2A | 741+22 SB - 743+22 SB | SB INSIDE | 270 | 16 |
| | STAGE 2B | 741+22 SB - 743+22 SB | SB OUTSIDE | 310 | 16 |
| | | | TOTALS | 580 | 32 |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

CONCRETE PAVEMENT REPAIR AND CONCRETE PAVEMENT REPLACEMENT SUMMARY

| CATEGORY | STAGE | STATION - STATION | LOCATION | 416.1710 CONCRETE PAVEMENT REPAIR SY | 416.1720 CONCRETE PAVEMENT REPLACEMENT SY | 416.0750.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR JOINT REPAIR LF | 416.0752.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR CRACK REPAIR LF | 416.0754.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR SURFACE REPAIR SF | 416.0756.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR EDGE REPAIR LF | 416.0758.S CONCRETE PAVEMENT PARTIAL DEPTH REPAIR FULL DEPTH ADJUSTMENT SF | 690.0250 SAWING CONCRETE LF* | 416.0610 DRILLED TIE BARS EACH | 416.0620 DRILLED DOWEL BARS EACH* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 13+23 W - 23+36 W | STH 19 | 110 | 100 | 21 | 50 | 50 | --- | 2 | 600 | 55 | 166 |
| | | 17+07 WD - 18+86 WD | WD RAMP | --- | 650 | --- | --- | --- | --- | --- | 1,550 | 28 | 7 |
| | | SUBTOTALS (STAGE 2A) | | 110 | 750 | 21 | 50 | 50 | 0 | 2 | 2,150 | 83 | 173 |
| | STAGE 2B | 13+23 W - 23+36 W | STH 19 | 40 | 170 | --- | 10 | --- | --- | --- | 660 | 57 | 97 |
| | | 10+24 WC - 11+21 WC | WC RAMP | --- | 470 | --- | --- | --- | --- | --- | 1,250 | 115 | --- |
| | | SUBTOTALS (STAGE 2B) | | 40 | 640 | 0 | 10 | 0 | 0 | 0 | 1,910 | 172 | 97 |
| | STAGE 3A | 13+23 W - 23+36 W | STH 19 | 4 | --- | 24 | 24 | 50 | --- | --- | 25 | 2 | 16 |
| | STAGE 3B | 13+23 W - 23+36 W | STH 19 | 10 | 60 | 51 | 24 | --- | 5 | --- | 290 | 24 | 83 |
| | | 20+97 WA - 22+42 WA | WA RAMP | --- | 520 | --- | --- | --- | --- | --- | 940 | 22 | 11 |
| | | 10+15 WB - 11+24 WB | WB RAMP | --- | 470 | --- | --- | --- | --- | --- | 1,000 | 44 | 23 |
| | | SUBTOTALS (STAGE 3B) | | 10 | 1,050 | 51 | 24 | 0 | 5 | 0 | 2,230 | 90 | 117 |
| | | | TOTALS | 164 | 2,440 | 96 | 108 | 100 | 5 | 2 | 6,315 | 347 | 403 |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

CONCRETE SURFACE DRAIN SUMMARY

| CATEGORY | STRUCTURE | STATION - STATION | LOCATION | 416.1015 CONCRETE SURFACE DRAIN HES CY | 416.0610 DRILLED TIE BARS EACH* | 612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH LF | 521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH | 606.0100 RIPRAP LIGHT CY | 645.0130 GEOTEXTILE FABRIC TYPE R SY |
|---|---|---|---|---|---|---|---|---|---|
| 0010 | B-13-268 | 547+44 - 547+80 | NB RT | 3.2 | 25 | 72 | 1 | 1 | 3 |
| | B-13-269 | 546+54 SB - 546+94 SB | SB LT | 3.3 | 26 | 52 | 1 | 1 | 3 |
| | B-13-270 | 607+61 - 607+97 | NB RT | 3.2 | 26 | 64 | 1 | 1 | 3 |
| | B-13-271 | 606+55 SB - 606+95 SB | SB LT | 3.4 | 26 | 22 | 1 | 1 | 3 |
| | B-13-272 | 676+84 - 677+19 | NB RT | 3.1 | 22 | 58 | 1 | 1 | 3 |
| | B-13-273 | 677+73 SB - 678+05 SB | SB LT | 3.0 | 22 | 64 | 1 | 1 | 3 |
| | B-13-275 | 716+20 - 716+52 | NB RT | 3.0 | 22 | 58 | 1 | 1 | 3 |
| | B-13-276 | 717+18 SB - 717+53 SB | SB LT | 3.1 | 22 | 48 | 1 | 1 | 3 |
| | | | TOTALS | 25.3 | 191 | 438 | 8 | 8 | 24 |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

ASPHALTIC ITEMS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 455.0605 TACK COAT GAL | SPV.0195.01 HMA PAVEMENT 3 MT 58-28 S 3.0% Va REGRESSION SPECIAL TON | SPV.0195.02 HMA PAVEMENT 4 MT 58-28 S 3.0% Va REGRESSION SPECIAL TON | SPV.0195.03 HMA PAVEMENT 3 HT 58-28 S 3.0% Va REGRESSION SPECIAL TON | SPV.0195.04 HMA PAVEMENT 4 HT 58-28 S 3.0% Va REGRESSION SPECIAL TON | 465.0305 ASPHALTIC SURFACE SAFETY ISLANDS TON | 460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF | SPV.0090.06 REMOVING HMA PAVEMENT NOTCHED WEDGE LONGITUDINAL JOINT MILLING LF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 1 | 549+14 SB - 554+85 SB | SB SHOULDER | --- | --- | --- | --- | 125 | --- | --- | --- |
| | | 550+04 - 556+11 | NB SHOULDER | --- | --- | --- | --- | 135 | --- | --- | --- |
| | | 564+00 - 569+60 | NB SHOULDER RAMP | --- | --- | --- | --- | 83 | --- | --- | --- |
| | | 601+08 SB - 606+59 SB | SB SHOULDER | --- | --- | --- | --- | 120 | --- | --- | --- |
| | | 601+41 - 607+72 | NB SHOULDER | --- | --- | --- | --- | 140 | --- | --- | --- |
| | | 609+23 SB - 614+95 SB | SB SHOULDER | --- | --- | --- | --- | 125 | --- | --- | --- |
| | | 610+30 - 616+39 | NB SHOULDER | --- | --- | --- | --- | 135 | --- | --- | --- |
| | | 625+50 - 630+00 | NB SHOULDER RAMP | --- | --- | --- | --- | 55 | --- | --- | --- |
| | | 672+15 SB - 677+80 SB | SB SHOULDER | --- | --- | --- | --- | 125 | --- | --- | --- |
| | | 671+08 - 676+91 | NB SHOULDER | --- | --- | --- | --- | 130 | --- | --- | --- |
| | | 680+02 SB - 685+66 SB | SB SHOULDER | --- | --- | --- | --- | 125 | --- | --- | --- |
| | | 679+15 - 685+07 | NB SHOULDER | --- | --- | --- | --- | 130 | --- | --- | --- |
| | | 693+98 - 699+98 | NB SHOULDER RAMP | --- | --- | --- | --- | 95 | --- | --- | --- |
| | | 709+65 SB - 715+27 SB | SB SHOULDER | --- | --- | --- | --- | 125 | --- | --- | --- |
| | | 708+43 - 714+37 | NB SHOULDER | --- | --- | --- | --- | 130 | --- | --- | --- |
| | | 717+50 SB - 723+04 SB | SB SHOULDER | --- | --- | --- | --- | 125 | --- | --- | --- |
| | | 716+48 - 722+43 | NB SHOULDER | --- | --- | --- | --- | 130 | --- | --- | --- |
| | | 736+92 SB - 748+07 SB | SB SHOULDER | --- | --- | --- | --- | 245 | --- | --- | --- |
| | | SUBTOTALS (STAGE 1) | | 0 | 0 | 0 | 0 | 2,278 | 0 | 0 | 0 |
| | STAGE 2A | 539+08 SB - 547+11 SB | SB INSIDE | 135 | --- | --- | 240 | --- | --- | --- | --- |
| | | 549+11 SB - 607+15 SB | SB INSIDE | 675 | --- | --- | 1,200 | --- | --- | --- | --- |
| | | 549+43 SB - 555+48 SB | SB SHOULDER | --- | --- | --- | --- | 75 | --- | --- | --- |
| | | 600+68 SB - 606+98 SB | SB SHOULDER | --- | --- | --- | --- | 78 | --- | --- | --- |
| | | 609+21 SB - 677+93 SB | SB INSIDE | 800 | --- | --- | 1,420 | --- | --- | --- | --- |
| | | 609+58 SB - 615+40 SB | SB SHOULDER | --- | --- | --- | --- | 72 | --- | --- | --- |
| | | 671+79 SB - 677+66 SB | SB SHOULDER | --- | --- | --- | --- | 72 | --- | --- | --- |
| | | 679+68 SB - 715+43 SB | SB INSIDE | 415 | --- | --- | 735 | --- | --- | --- | --- |
| | | 679+83 SB - 685+77 SB | SB SHOULDER | --- | --- | --- | --- | 73 | --- | --- | --- |
| | | 709+25 SB - 715+14 SB | SB SHOULDER | --- | --- | --- | --- | 73 | --- | --- | --- |
| | | 717+05 SB - 741+22 SB | SB INSIDE | 280 | --- | --- | 500 | --- | --- | --- | --- |
| | | 717+19 SB - 723+20 SB | SB SHOULDER | --- | --- | --- | --- | 74 | --- | --- | --- |
| | | 738+02 SB - 746+97 SB | SB SHOULDER | --- | --- | --- | --- | 110 | --- | --- | --- |
| | | 588+17 SB - 17+07 WD | WD RAMP | 320 | --- | --- | 330 | 255 | --- | --- | --- |
| | | 660+50 SB - 18+51 BD | BD RAMP | 370 | --- | --- | 380 | 295 | --- | --- | --- |
| | | 18+51 BD - 19+60 BD | BD RAMP | 36 | --- | --- | 89 | 35 | --- | --- | --- |
| | | 14+37 W - 14+84 W | ISLAND RT | --- | --- | --- | --- | --- | 7 | --- | --- |
| | | SUBTOTALS (STAGE 2A) | | 3,031 | 0 | 0 | 4,894 | 1,212 | 7 | 0 | 0 |
| | STAGE 2B | 539+08 SB - 547+02 SB | SB OUTSIDE | 220 | --- | --- | 230 | 180 | --- | --- | --- |
| | | 549+02 SB - 607+05 SB | SB OUTSIDE | 1,620 | --- | --- | 1,680 | 1,300 | --- | --- | --- |
| | | 609+11 SB - 677+99 SB | SB OUTSIDE | 1,930 | --- | --- | 1,990 | 1,550 | --- | --- | --- |
| | | 679+74 SB - 715+49 SB | SB OUTSIDE | 1,000 | --- | --- | 1,030 | 805 | --- | --- | --- |
| | | 717+11 SB - 741+22 SB | SB OUTSIDE | 675 | --- | --- | 695 | 540 | --- | --- | --- |
| | | 12+92 MC - 562+00 SB | MC RAMP | 230 | --- | --- | 235 | 185 | --- | --- | --- |
| | | 11+21 WC - 626+27 SB | WC RAMP | 425 | --- | --- | 435 | 340 | --- | --- | --- |
| | | 10+12 BC - 11+86 BC | BC RAMP | 60 | --- | --- | 155 | 61 | --- | --- | --- |
| | | 11+86 BC - 697+04 SB | BC RAMP | 280 | --- | --- | 290 | 225 | --- | --- | --- |
| | | 10+21 BC - 10+68 BC | ISLAND LT | --- | --- | --- | --- | --- | 4 | --- | --- |
| | | SUBTOTALS (STAGE 2B) | | 6,440 | 0 | 0 | 6,740 | 5,186 | 4 | 0 | 0 |

CONT'D NEXT PAGE

ASPHALTIC ITEMS (CONT'D)

| CATEGORY | STAGE | STATION - STATION | LOCATION | 455.0605 TACK COAT GAL | SPV.0195.01 HMA PAVEMENT 3 MT 58-28 S 3.0% Va REGRESSION SPECIAL TON | SPV.0195.02 HMA PAVEMENT 4 MT 58-28 S 3.0% Va REGRESSION SPECIAL TON | SPV.0195.03 HMA PAVEMENT 3 HT 58-28 S 3.0% Va REGRESSION SPECIAL TON | SPV.0195.04 HMA PAVEMENT 4 HT 58-28 S 3.0% Va REGRESSION SPECIAL TON | 465.0305 ASPHALTIC SURFACE SAFETY ISLANDS TON | 460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF | SPV.0090.06 REMOVING HMA PAVEMENT NOTCHED WEDGE LONGITUDINAL JOINT MILLING LF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 (CONT'D) | STAGE 3A | 539+08 SB - 547+11 SB | SB INSIDE | 97 | --- | --- | --- | 185 | --- | 805 | 805 |
| | | 549+11 SB - 607+15 SB | SB INSIDE | 485 | --- | --- | --- | 930 | --- | 5,800 | 5,800 |
| | | 609+21 SB - 677+93 SB | SB INSIDE | 575 | --- | --- | --- | 1,100 | --- | 6,870 | 6,870 |
| | | 679+68 SB - 715+43 SB | SB INSIDE | 300 | --- | --- | --- | 575 | --- | 3,580 | 3,580 |
| | | 717+05 SB - 741+22 SB | SB INSIDE | 200 | --- | --- | --- | 390 | --- | 2,420 | 2,420 |
| | | 539+07 - 547+60 | NB INSIDE | 145 | --- | --- | 255 | --- | --- | --- | --- |
| | | 549+99 - 607+75 | NB INSIDE | 675 | --- | --- | 1,190 | --- | --- | --- | --- |
| | | 549+75 - 553+46 | NB SHOULDER | --- | --- | --- | --- | 46 | --- | --- | --- |
| | | 603+70 - 607+40 | NB SHOULDER | --- | --- | --- | --- | 46 | --- | --- | --- |
| | | 609+81 - 677+32 | NB INSIDE | 790 | --- | --- | 1,390 | --- | --- | --- | --- |
| | | 609+97 - 613+82 | NB SHOULDER | --- | --- | --- | --- | 48 | --- | --- | --- |
| | | 673+68 - 677+19 | NB SHOULDER | --- | --- | --- | --- | 43 | --- | --- | --- |
| | | 679+09 - 714+73 | NB INSIDE | 415 | --- | --- | 735 | --- | --- | --- | --- |
| | | 679+34 - 682+70 | NB SHOULDER | --- | --- | --- | --- | 42 | --- | --- | --- |
| | | 711+04 - 714+61 | NB SHOULDER | --- | --- | --- | --- | 44 | --- | --- | --- |
| | | 716+36 - 745+08 | NB INSIDE | 335 | --- | --- | 590 | --- | --- | --- | --- |
| | | 716+64 - 720+09 | NB SHOULDER | --- | --- | --- | --- | 43 | --- | --- | --- |
| | | SUBTOTALS (STAGE 3A) | | 4,017 | 0 | 0 | 4,160 | 3,492 | 0 | 19,475 | 19,475 |
| | STAGE 3B | 539+07 - 547+68 | NB OUTSIDE | 250 | --- | --- | 255 | 200 | --- | --- | --- |
| | | 549+68 - 607+81 | NB OUTSIDE | 1,630 | --- | --- | 1,680 | 1,310 | --- | --- | --- |
| | | 609+91 - 677+26 | NB OUTSIDE | 1,890 | --- | --- | 1,940 | 1,510 | --- | --- | --- |
| | | 679+03 - 714+66 | NB OUTSIDE | 1,000 | --- | --- | 1,030 | 800 | --- | --- | --- |
| | | 716+29 - 745+08 | NB OUTSIDE | 805 | --- | --- | 830 | 645 | --- | --- | --- |
| | | 13+06 MB - 570+45 | MB RAMP | 295 | --- | --- | 305 | 240 | --- | --- | --- |
| | | 592+49 - 20+97 WA | WA RAMP | 350 | --- | --- | 360 | 280 | --- | --- | --- |
| | | 11+24 WB - 630+70 | WB RAMP | 410 | --- | --- | 425 | 330 | --- | --- | --- |
| | | 10+25 WB - 10+52 WB | ISLAND RT | --- | --- | --- | --- | --- | 6 | --- | --- |
| | | 660+23 - 19+99 BA | BA RAMP | 325 | --- | --- | 335 | 260 | --- | --- | --- |
| | | 19+99 BA - 21+74 BA | BA RAMP | 70 | --- | --- | 165 | 65 | --- | --- | --- |
| | | 21+20 BA - 21+65 BA | ISLAND RT | --- | --- | --- | --- | --- | 4 | --- | --- |
| | | 9+91 BB - 11+91 BB | BB RAMP | 60 | --- | --- | 145 | 57 | --- | --- | --- |
| | | 11+91 BB - 698+84 | BB RAMP | 425 | --- | --- | 435 | 340 | --- | --- | --- |
| | | SUBTOTALS (STAGE 3B) | | 7,510 | 0 | 0 | 7,905 | 6,037 | 10 | 0 | 0 |
| | STAGE 3C | 539+07 - 547+60 | NB INSIDE | 105 | --- | --- | --- | 200 | --- | 855 | 855 |
| | | 549+99 - 607+75 | NB INSIDE | 480 | --- | --- | --- | 925 | --- | 5,780 | 5,780 |
| | | 609+81 - 677+32 | NB INSIDE | 565 | --- | --- | --- | 1,080 | --- | 6,750 | 6,750 |
| | | 648+72 - 649+38 | MEDIAN | 10 | --- | --- | --- | 19 | --- | --- | --- |
| | | 679+09 - 714+73 | NB INSIDE | 295 | --- | --- | --- | 570 | --- | 3,560 | 3,560 |
| | | 700+87 - 701+52 | MEDIAN | 10 | --- | --- | --- | 18 | --- | --- | --- |
| | | 716+36 - 745+08 | NB INSIDE | 240 | --- | --- | --- | 460 | --- | 2,870 | 2,870 |
| | | SUBTOTALS (STAGE 3C) | | 1,705 | 0 | 0 | 0 | 3,272 | 0 | 19,815 | 19,815 |
| | STAGE 1 CTH N | 10+00 B - 18+00 B | SB OUTSIDE | 80 | 265 | 175 | --- | --- | --- | --- | --- |
| | | 10+00 B - 18+00 B | NB OUTSIDE | 65 | 215 | 145 | --- | --- | --- | --- | --- |
| | | SUBTOTALS (STAGE 1 CTH N) | | 145 | 480 | 320 | 0 | 0 | 0 | 0 | 0 |
| | STAGE 2 CTH N | 10+00 B - 18+00 B | SB INSIDE & MEDIAN | 89 | 290 | 195 | --- | --- | --- | --- | --- |
| | | 10+00 B - 18+00 B | NB INSIDE | 67 | 220 | 145 | --- | --- | --- | --- | --- |
| | | SUBTOTALS (STAGE 2 CTH N) | | 156 | 510 | 340 | 0 | 0 | 0 | 0 | 0 |
| | | | TOTALS | 23,004 | 990 | 660 | 23,699 | 21,477 | 21 | 39,290 | 39,290 |

NOTES: HMA PAVEMENT (TYPE) WEIGHT CALCULATIONS ARE BASED ON 110 LB/SY/IN
TACK COAT WAS MEASURED AT A RATE OF 0.07 GAL/SY ON MILLED SURFACES AND 0.05 GAL/SY BETWEEN HMA PAVEMENT LAYERS.

## HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP

| CATEGORY | LOCATION | SPV.0060.08 EACH |
|---|---|---|
| 0010 | LOWER LAYER | 1 |
| | UPPER LAYER | 1 |
| | TOTAL | 2 |

## ASPHALTIC SURFACE PATCHING

| CATEGORY | LOCATION | 465.0110 TON | REMARKS |
|---|---|---|---|
| 0010 | UNDISTRIBUTED | 100 | MINOR REPAIRS AND RAMPING |

## ASPHALTIC SURFACE PATCHING MOBILIZATION

| CATEGORY | STAGE | SPV.0060.07 EACH |
|---|---|---|
| 0010 | 2A | 2 |
| | 2B | 2 |
| | 3A | 2 |
| | 3B | 2 |
| | TOTAL | 8 |

## ASPHALTIC SURFACE

| CATEGORY | STATION | | STATION | LOCATION | 465.0105 TON | REMARKS |
|---|---|---|---|---|---|---|
| 0010 | 19+01 W | - | 19+80 W | RT, PATH | 3 | REPLACE 2' ADJ. TO C&G |

## CULVERT PIPE ITEMS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 520.8000 CONCRETE COLLARS FOR PIPE EACH | 522.0130 CULVERT PIPE REINFORCED CONCRETE CLASS III 30-INCH LF | 524.0630 APRON ENDWALLS FOR CULVERT PIPE SALVAGED 30-INCH EACH | 628.2023 EROSION MAT CLASS II TYPE B SY | 650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH |
|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 13+90 W - 14+12 W | RT | 1 | 16 | 1 | 13 | 1 |

## ASPHALTIC FLUMES

| CATEGORY | STATION | LOCATION | 465.0315 SY |
|---|---|---|---|
| 0010 | 20+75 BA | RT | 5 |

## CLEANING CULVERT PIPES

| CATEGORY | STATION | LOCATION | 520.8700 EACH |
|---|---|---|---|
| 0010 | 539+50 | LT/RT | 1 |
| | 543+50 | LT/RT | 1 |
| | 546+55 SB | LT | 1 |
| | 547+55 | RT | 1 |
| | 13+30 MA | LT | 1 |
| | 590+05 SB | LT/RT | 1 |
| | 18+20 WD | LT/RT | 1 |
| | 606+50 SB | LT | 1 |
| | 10+30 WC | LT | 1 |
| | 623+05 SB | LT/RT | 1 |
| | 633+10 | RT | 1 |
| | 11+05 BC | LT/RT | 1 |
| | 676+90 | RT | 1 |
| | | TOTAL | 13 |

## ASPHALTIC SHOULDER RUMBLE STRIPS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 465.0400 LF |
|---|---|---|---|---|
| 0010 | STAGE 2B | 539+08 SB - 554+18 SB | SB OUTSIDE | 1,510 |
| | | 561+25 SB - 588+39 SB | SB OUTSIDE | 2,710 |
| | | 600+43 SB - 617+73 SB | SB OUTSIDE | 1,730 |
| | | 626+72 SB - 659+79 SB | SB OUTSIDE | 3,310 |
| | | 671+86 SB - 688+05 SB | SB OUTSIDE | 1,620 |
| | | 695+90 SB - 743+22 SB | SB OUTSIDE | 4,730 |
| | | SUBTOTAL (STAGE 2B) | | 15,610 |
| | STAGE 3A | 539+08 SB - 743+22 SB | SB INSIDE | 20,400 |
| | STAGE 3B | 540+42 - 557+19 | NB OUTSIDE | 1,680 |
| | | 568+80 - 591+98 | NB OUTSIDE | 2,320 |
| | | 599+99 - 617+96 | NB OUTSIDE | 1,800 |
| | | 631+00 - 659+61 | NB OUTSIDE | 2,860 |
| | | 668+10 - 687+77 | NB OUTSIDE | 1,970 |
| | | 699+20 - 745+08 | NB OUTSIDE | 4,590 |
| | | SUBTOTAL (STAGE 3B) | | 15,220 |
| | STAGE 3C | 539+07 - 745+08 | NB INSIDE | 20,600 |
| | | | TOTAL | 71,830 |

## CONCRETE SIDEWALK SUMMARY

| CATEGORY | STAGE | STATION - STATION | LOCATION | 602.0410 CONCRETE SIDEWALK 5-INCH SF | 602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF |
|---|---|---|---|---|---|
| 0010 | STAGE 2A | 13+77 W - 14+25 W | RT | 375 | 24 |
| | | 14+52 W - 14+78 W | ISLAND | 170 | 32 |
| | | 14+99 W - 15+26 W | RT | 195 | 16 |
| | | 11+28 B - 11+43 B | RT | 105 | 16 |
| | | 11+72 B - 11+89 B | RT | 155 | 20 |
| | | SUBTOTALS (STAGE 2A) | | 1,000 | 108 |
| | STAGE 2B | 10+23 B - 10+53 B | LT | 255 | 30 |
| | | 10+76 B - 10+92 B | ISLAND | 155 | 40 |
| | | 11+11 B - 11+24 B | LT | 125 | 20 |
| | | SUBTOTALS (STAGE 2B) | | 535 | 90 |
| | STAGE 3B | 19+86 W - 20+12 W | RT | 205 | 16 |
| | | 20+28 W - 20+39 W | ISLAND | 56 | --- |
| | | 20+55 W - 20+76 W | RT | 140 | 24 |
| | | 16+11 B - 16+24 B | RT | 125 | 20 |
| | | 16+42 B - 16+59 B | ISLAND | 130 | 32 |
| | | 16+87 B - 17+08 B | RT | 180 | 30 |
| | | 15+56 B - 15+70 B | LT | 120 | 20 |
| | | 16+036 B - 16+27 B | LT | 205 | 20 |
| | | SUBTOTALS (STAGE 3B) | | 1,161 | 162 |
| | | | TOTALS | 2,696 | 360 |

## CONCRETE CURB AND CONCRETE CURB & GUTTER SUMMARY

| CATEGORY | STAGE | STATION - STATION | LOCATION | 601.0120 CONCRETE CURB TYPE J LF | SPV.0090.03 CONCRETE CURB HES TYPE J LF | 601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A LF | 601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF | SPV.0090.04 CONCRETE CURB & GUTTER HES 30-INCH TYPE A LF | SPV.0090.05 CONCRETE CURB & GUTTER HES 30-INCH TYPE D LF | 650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF |
|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 13+76.8 W - 17+74 WD | RT | --- | --- | 110 | --- | --- | --- | 110 |
| | | 14+36.7 W - 14+84.4 W | ISLAND | 42 | --- | 115 | --- | --- | --- | 199 |
| | | 18+46 WD - 18+80 WD | RT | --- | --- | 36 | --- | --- | --- | 36 |
| | | 15+99 W - 16+16 W | RT | --- | --- | 20 | --- | --- | --- | 20 |
| | | 17+93 W - 18+05 W | MEDIAN | --- | --- | 12 | --- | --- | --- | 12 |
| | | 19+01 W - 19+80 W | RT | --- | --- | 80 | --- | --- | --- | 80 |
| | | 19+23 BD - 19+62 BD | RT | --- | --- | --- | 40 | --- | --- | 40 |
| | | 19+21 BD - 19+53 BD | LT/RT | --- | --- | --- | 35 | --- | --- | --- |
| | | SUBTOTALS (STAGE 2A) | | 42 | 0 | 373 | 75 | 0 | 0 | 497 |
| | STAGE 2B | 14+87 W - 15+06 W | MEDIAN | --- | --- | --- | --- | 21 | --- | 21 |
| | | 10+61 WC - 10+77 WC | RT | --- | --- | --- | --- | 16 | --- | 16 |
| | | 15+67 W - 15+76 W | LT | --- | --- | --- | --- | 9 | --- | 9 |
| | | 17+93 W - 18+02 W | LT | --- | --- | --- | --- | 9 | --- | 9 |
| | | 19+45 W - 19+80 W | LT | --- | --- | --- | --- | 35 | --- | 35 |
| | | 10+42 BC - 11+21 BC | RT | --- | --- | --- | --- | --- | 97 | 97 |
| | | 10+20 BC - 10+68 BC | ISLAND | --- | --- | --- | --- | --- | 120 | 120 |
| | | 10+12 BC - 10+56 BC | RT | --- | --- | --- | --- | --- | 46 | 46 |
| | | SUBTOTALS (STAGE 2B PHASE 1) | | 0 | 0 | 0 | 0 | 90 | 263 | 353 |
| | STAGE 3B | 21+89 WA - 22+37 WA | LT | --- | --- | --- | --- | 51 | --- | 51 |
| | | 22+00 WA - 22+50 WA | ISLAND | --- | --- | --- | --- | 105 | --- | 105 |
| | | 20+28 W - 20+39 W | ISLAND | --- | 14 | --- | --- | --- | --- | 14 |
| | | 21+88 WA - 22+53 WA | RT | --- | --- | --- | --- | 69 | --- | 69 |
| | | 10+25 WB - 10+52 WB | ISLAND | --- | --- | --- | --- | 82 | --- | 82 |
| | | 21+32 BA - 21+73 BA | LT | --- | --- | --- | --- | --- | 43 | 43 |
| | | 21+19 BA - 21+66 BA | ISLAND | --- | --- | --- | --- | --- | 115 | 115 |
| | | 21+28 BA - 21+43 BA | RT | --- | --- | --- | --- | --- | 42 | 42 |
| | | 10+17 BB - 10+50 BB | LT | --- | --- | --- | --- | --- | 46 | 46 |
| | | 10+13 BB - 10+45 BB | RT | --- | --- | --- | --- | --- | 32 | 32 |
| | | SUBTOTALS (STAGE 3B) | | 0 | 14 | 0 | 0 | 307 | 278 | 599 |
| | STAGE 1 CTH N | 16+65 B - 18+00 B | LT | --- | --- | --- | --- | --- | 140 | 140 |
| | STAGE 2 CTH N | 10+99 B - 11+08 B | MEDIAN | --- | --- | --- | --- | --- | 9 | 9 |
| | | 14+93 B - 15+02 B | MEDIAN | --- | --- | --- | --- | --- | 9 | 9 |
| | | SUBTOTALS (STAGE 2 CTH N) | | 0 | 0 | 0 | 0 | 0 | 18 | 18 |
| | | | TOTALS | 42 | 14 | 373 | 75 | 397 | 699 | 1,607 |

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## CONCRETE BARRIER TEMPORARY PRECAST SUMMARY AND CRASH CUSHION TEMPORARY

| CATEGORY | STAGE | STATION - STATION | LOCATION | 603.8000 DELIVERED LF | 603.8125 INSTALLED LF | 614.0905 CRASH CUSHION TEMPORARY EACH |
|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 544+93 SB - 551+69 SB | SB INSIDE | 680 | 680 | 1 |
| | | 604+93 SB - 611+19 SB | SB INSIDE | 630 | 630 | 1 |
| | | 676+00 SB - 682+63 SB | SB INSIDE | 660 | 660 | 1 |
| | | 713+50 SB - 720+04 SB | SB INSIDE | 650 | 650 | 1 |
| | | 740+22 SB - 745+22 SB | SB INSIDE | 500 | 500 | 1 |
| | | SUBTOTALS (STAGE 2A) | | 3,120 | 3,120 | 5 |
| | STAGE 2B | 544+62 SB - 553+06 SB | SB OUTSIDE | 160 | 840 | 1 |
| | | 604+53 SB - 614+13 SB | SB OUTSIDE | 330 | 960 | 1 |
| | | 675+64 SB - 683+03 SB | SB OUTSIDE | 80 | 740 | 1 |
| | | 712+13 SB - 719+47 SB | SB OUTSIDE | 70 | 730 | 1 |
| | | 740+22 SB - 745+22 SB | SB OUTSIDE | 0 | 500 | 1 |
| | | SUBTOTALS (STAGE 2B) | | 640 | 3,770 | 5 |
| | STAGE 3A | 544+56 - 552+26 | NB INSIDE | 770 | 770 | 1 |
| | | 604+34 - 612+54 | NB INSIDE | 820 | 820 | 1 |
| | | 673+38 - 681+22 | NB INSIDE | 780 | 780 | 1 |
| | | 710+98 - 718+58 | NB INSIDE | 760 | 760 | 1 |
| | | SUBTOTALS (STAGE 3A) | | 3,130 | 3,130 | 4 |
| | STAGE 3B | 545+38 - 552+09 | NB INSIDE | --- | 670 | 1 |
| | | 605+38 - 612+44 | NB INSIDE | --- | 710 | 1 |
| | | 675+40 - 681+32 | NB INSIDE | --- | 590 | 1 |
| | | 712+67 - 718+72 | NB INSIDE | --- | 610 | 1 |
| | | SUBTOTALS (STAGE 3B) | | 0 | 2,580 | 4 |
| | | | TOTALS | 6,890 | 12,600 | 18 |

## ADJUSTING INLET COVERS

| CATEGORY | STATION | LOCATION | 611.8115 EACH |
|---|---|---|---|
| 0010 | 15+72 W | LT | 1 |
| | 16+07 W | RT | 1 |
| | 17+98 W | LT | 1 |
| | 17+99 W | LT | 1 |
| | 20+55 W | LT | 1 |
| | 11+03 B | LT | 1 |
| | 14+97 B | LT | 1 |
| | 15+65 B | LT | 1 |
| | 16+50 B | RT | 1 |
| | | TOTAL | 9 |

## MAINTENANCE AND REPAIR OF HAUL ROADS

| CATEGORY | PROJECT | 618.0100 EACH |
|---|---|---|
| 0010 | 01. 1111-02-78 | 1 |

## MOBILIZATION

| CATEGORY | PROJECT | 619.1000 EACH |
|---|---|---|
| 0010 | 1111-02-78 | 1 |

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## MGS GUARDRAIL ITEMS

| CATEGORY | STATION | - | STATION | LOCATION | 614.2300 MGS GUARDRAIL 3 LF | 614.2500 MGS THRIE BEAM TRANSITION LF | 614.2610 MGS GUARDRAIL TERMINAL EAT EACH | 614.2620 MGS GUARDRAIL TERMINAL TYPE 2 EACH | 614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH | 305.0110 BASE AGGREGATE DENSE 3/4-INCH TON* | FOR INFORMATION ONLY TOPSOIL CY | MULCHING SY | FERTILIZER TYPE B CWT | SEEDING MIXTURE NO. 20 LB | SEEDING TEMPORARY LB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | 537+99.66 | - | 547+29.7 | 1 | 851.3 | 78.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 545+07.8 | - | 547+59.8 | 2 | 162.5 | 39.4 | 1 | --- | 1 | 15 | 1.68 | 180 | 0.11 | 5 | 5 |
| | 604+38.5 | - | 607+43.5 | 3 | 212.5 | 39.4 | 1 | --- | 1 | 5 | 0.02 | 35 | 0.02 | 1 | 1 |
| | 605+22.0 | - | 607+77.0 | 4 | 162.5 | 39.4 | 1 | --- | 1 | 25 | 0.71 | 150 | 0.09 | 4 | 4 |
| | 629+36.9 | - | 634+07.1 | 5 | 412.5 | --- | 1 | 1 | 1 | 50 | 1.40 | 130 | 0.08 | 4 | 4 |
| | 674+14.3 | - | 677+19.3 | 6 | 212.5 | 39.4 | 1 | --- | 1 | 5 | 0.11 | 50 | 0.03 | 1 | 1 |
| | 674+44.2 | - | 676+99.3 | 7 | 162.5 | 39.4 | 1 | --- | 1 | 5 | 0.18 | 60 | 0.04 | 2 | 2 |
| | 711+55.8 | - | 714+60.8 | 8 | 212.5 | 39.4 | 1 | --- | 1 | 5 | 0.00 | 30 | 0.02 | 1 | 1 |
| | 711+82.7 | - | 714+37.7 | 9 | 162.5 | 39.4 | 1 | --- | 1 | 5 | 0.00 | 20 | 0.01 | 1 | 1 |
| | 545+31.6 SB | - | 546+69.4 SB | 10 | 129.6 | 8.2 | --- | 1 | --- | --- | --- | --- | --- | --- | --- |
| | 537+99.8 SB | - | 546+99.1 SB | 11 | 851.7 | 47.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 549+12.8 SB | - | 551+67.8 SB | 12 | 162.5 | 39.4 | 1 | --- | 1 | 10 | 0.25 | 65 | 0.04 | 2 | 2 |
| | 549+43.2 SB | - | 552+48.2 SB | 13 | 21.25 | 39.4 | 1 | --- | 1 | 5 | 0.00 | 20 | 0.01 | 1 | 1 |
| | 609+24.5 SB | - | 611+79.4 SB | 14 | 162.5 | 39.4 | 1 | --- | 1 | 20 | 0.34 | 80 | 0.05 | 2 | 2 |
| | 609+58.0 SB | - | 612+63.0 SB | 15 | 212.5 | 39.4 | 1 | --- | 1 | 5 | 0.07 | 50 | 0.03 | 1 | 1 |
| | 631+72.9 SB | - | 638+80.6 SB | 16 | 654.6 | --- | 1 | 1 | 1 | 70 | 1.56 | 105 | 0.06 | 3 | 3 |
| | 680+00.0 SB | - | 682+55.0 SB | 17 | 162.5 | 39.4 | 1 | --- | 1 | 15 | 0.07 | 50 | 0.03 | 1 | 1 |
| | 679+80.5 SB | - | 682+85.5 SB | 18 | 212.5 | 39.4 | 1 | --- | 1 | 5 | 0.38 | 65 | 0.04 | 2 | 2 |
| | 717+39.5 SB | - | 719+94.5 SB | 19 | 162.5 | 39.4 | 1 | --- | 1 | 15 | 1.01 | 140 | 0.09 | 4 | 4 |
| | 717+16.4 SB | - | 720+21.4 SB | 20 | 212.5 | 39.4 | 1 | --- | 1 | 10 | 0.53 | 140 | 0.09 | 4 | 4 |
| | | | | TOTALS | 5,496.0 | 725.6 | 17 | 3 | 17 | 270 | 8.31 | 1,370 | 0.84 | 39 | 39 |

*ADDITIONAL QUANTITIES LISTED ELSEWHERE

## SILT FENCE

| CATEGORY | STATION | | STATION | LOCATION | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF |
|---|---|---|---|---|---|---|
| 0010 | 544+00 | - | 547+60 | GUARDRAIL LOCATION 2 | 360 | 360 |
| | 604+00 | - | 607+80 | GUARDRAIL LOCATION 4 | 380 | 380 |
| | 673+20 | - | 677+00 | GUARDRAIL LOCATION 7 | 380 | 380 |
| | 710+70 | - | 714+40 | GUARDRAIL LOCATION 9 | 370 | 370 |
| | 544+90 SB | - | 546+70 SB | GUARDRAIL LOCATION 10 | 180 | 180 |
| | 549+10 SB | - | 553+50 SB | GUARDRAIL LOCATION 12 | 440 | 440 |
| | 609+20 SB | - | 614+00 SB | GUARDRAIL LOCATION 14 | 480 | 480 |
| | 680+00 SB | - | 683+80 SB | GUARDRAIL LOCATION 17 | 380 | 380 |
| | 717+35 SB | - | 721+10 SB | GUARDRAIL LOCATION 19 | 375 | 375 |
| | 13+76.8 W | - | 17+74 WD | STH 19 RT | 100 | 100 |
| | | | | TOTALS | 3,445 | 3,445 |

## MOBILIZATIONS EROSION CONTROL

| CATEGORY | STAGE | 628.1905 MOBILIZATIONS EROSION CONTROL EACH | 628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH |
|---|---|---|---|
| 0010 | STAGE 2A | 1 | 1 |
| | STAGE 2B | 1 | 1 |
| | STAGE 3A | 1 | 1 |
| | STAGE 3B | 1 | 1 |
| | TOTALS | 4 | 4 |

## FINISHING SUMMARY

| CATEGORY | LOCATION | STATION - STATION | LOCATION | 625.0100 TOPSOIL SY | 627.0200 MULCHING SY | 629.0210 FERTILIZER TYPE B CWT | 630.0110 SEEDING MIXTURE NO. 10 LB | 630.0200 SEEDING TEMPORARY LB | SPV.0120.01 WATER FOR SEEDED AREAS MGAL |
|---|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 13+76.8 W - 17+74 WD | RT | 290 | 290 | 0.2 | 3.9 | 7.8 | 7.0 |
| | | 18+46 WD - 18+80 WD | RT | 9 | 9 | 0.1 | 0.1 | 0.2 | 0.2 |
| | | 15+99 W - 16+16 W | RT | 7 | 7 | 0.1 | 0.1 | 0.2 | 0.2 |
| | | 17+93 W - 18+05 W | MEDIAN | 4 | 4 | 0.1 | 0.1 | 0.1 | 0.1 |
| | | 19+01 W - 19+80 W | RT | 25 | 25 | 0.1 | 0.4 | 0.7 | 0.6 |
| | | 19+23 BD - 19+62 BD | RT | 10 | 10 | 0.1 | 0.1 | 0.3 | 0.2 |
| | | 19+21 BD - 19+53 BD | LT/RT | 8 | 8 | 0.1 | 0.1 | 0.2 | 0.2 |
| | | SUBTOTALS (STAGE 2A) | | 353 | 353 | 0.8 | 4.8 | 9.5 | 8.5 |
| | STAGE 2B PHASE 1 | 14+87 W - 15+06 W | MEDIAN | 7 | 7 | 0.1 | 0.1 | 0.2 | 0.2 |
| | | 10+61 WC - 10+77 WC | RT | 5 | 5 | 0.1 | 0.1 | 0.1 | 0.1 |
| | | 15+67 W - 15+76 W | LT | 3 | 3 | 0.1 | 0.0 | 0.1 | 0.1 |
| | | 17+93 W - 18+02 W | LT | 3 | 3 | 0.1 | 0.0 | 0.1 | 0.1 |
| | | 19+45 W - 19+80 W | LT | 10 | 10 | 0.1 | 0.2 | 0.3 | 0.3 |
| | | 10+42 BC - 11+21 BC | RT | 30 | 30 | 0.1 | 0.4 | 0.8 | 0.7 |
| | | 10+12 BC - 10+56 BC | RT | 10 | 10 | 0.1 | 0.2 | 0.3 | 0.3 |
| | | SUBTOTALS (STAGE 2B PHASE 1) | | 68 | 68 | 0.7 | 1.0 | 1.9 | 1.8 |
| | STAGE 3B | 21+89 WA - 22+37 WA | LT | 15 | 15 | 0.1 | 0.2 | 0.4 | 0.3 |
| | | 21+88 WA - 22+53 WA | RT | 20 | 20 | 0.1 | 0.3 | 0.5 | 0.5 |
| | | 21+32 BA - 21+73 BA | LT | 10 | 10 | 0.1 | 0.1 | 0.3 | 0.3 |
| | | 21+28 BA - 21+43 BA | RT | 10 | 10 | 0.1 | 0.1 | 0.3 | 0.3 |
| | | 10+17 BB - 10+50 BB | LT | 10 | 10 | 0.1 | 0.2 | 0.3 | 0.3 |
| | | 10+13 BB - 10+45 BB | RT | 7 | 7 | 0.1 | 0.1 | 0.2 | 0.2 |
| | | SUBTOTALS (STAGE 3B) | | 72 | 72 | 0.6 | 1.0 | 2.0 | 1.9 |
| | STAGE 1 CTH N | 16+65 B - 18+00 B | LT | 45 | 45 | 0.1 | 0.6 | 1.3 | 1.1 |
| | STAGE 2 CTH N | 10+99 B - 11+08 B | MEDIAN | 3 | 3 | 0.1 | 0.0 | 0.1 | 0.1 |
| | | 14+93 B - 15+02 B | MEDIAN | 3 | 3 | 0.1 | 0.0 | 0.1 | 0.1 |
| | | SUBTOTALS (STAGE 2B PHASE 3) | | 6 | 6 | 0.2 | 0.0 | 0.2 | 0.2 |
| | | CULVERT PIPE REMOVAL AREAS | LT/RT | 250 | 250 | 0.2 | 3.4 | 6.8 | 6.0 |
| | | UNDISTRIBUTED | | 140 | 140 | 0.6 | --- | --- | --- |
| | | TOTALS | | 934 | 934 | 3.2 | 10.8 | 21.7 | 19.5 |

## CONCRETE MEDIAN SLOPED NOSE

| CATEGORY | STATION | LOCATION | 620.0300 SF | REMARKS |
|---|---|---|---|---|
| 0010 | 14+40 W | RT | 28 | TYPE 1 |
| | 14+80 W | RT | 31 | TYPE 1 |
| | 20+90 W | LT | 31 | TYPE 1 |
| | 21+15 W | LT | 28 | TYPE 1 |
| | 21+20 BA | RT | 28 | TYPE 1 |
| | 10+68 BC | LT | 28 | TYPE 1 |
| | | TOTAL | 174 | |

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## INLET PROTECTION

| CATEGORY | STATION | LOCATION | 628.7005 TYPE A EACH | 628.7015 TYPE C EACH |
|---|---|---|---|---|
| 0010 | 539+50 | MEDIAN | 1 | --- |
| | 543+50 | MEDIAN | 1 | --- |
| | 566+41 | MEDIAN | 1 | --- |
| | 590+00 | MEDIAN | 1 | --- |
| | 622+98 | MEDIAN | 1 | --- |
| | 634+87 | MEDIAN | 1 | --- |
| | 635+20 | LT | 1 | --- |
| | 666+12 | MEDIAN | 1 | --- |
| | 699+15 | MEDIAN | 1 | --- |
| | 702+18 | MEDIAN | 1 | --- |
| | 714+12 | MEDIAN | 1 | --- |
| | 725+08 | MEDIAN | 1 | --- |
| | 752+54 | MEDIAN | 1 | --- |
| | 15+08 W | LT | --- | 1 |
| | 15+17 W | RT | --- | 1 |
| | 15+72 W | LT | --- | 1 |
| | 15+86 W | LT | --- | 1 |
| | 16+00 W | LT | --- | 1 |
| | 16+07 W | RT | --- | 1 |
| | 17+99 W | LT | --- | 3 |
| | 20+39 W | LT | --- | 1 |
| | 20+55 W | LT | --- | 1 |
| | 20+62 W | LT | --- | 1 |
| | 20+77 W | LT | --- | 1 |
| | 21+35 W | LT | --- | 1 |
| | 10+49 WB | LT | 1 | --- |
| | 11+00 WB | RT | 1 | --- |
| | 10+27 WC | LT | 1 | --- |
| | 11+26 WC | RT | 1 | --- |
| | 9+96 B | MEDIAN | --- | 1 |
| | 9+96 B | LT | 1 | --- |
| | 10+04 B | LT | --- | 1 |
| | 10+05 B | RT | --- | 1 |
| | 10+96 B | MEDIAN | --- | 1 |
| | 11+03 B | MEDIAN | --- | 1 |
| | 14+97 B | MEDIAN | --- | 1 |
| | 15+63 B | MEDIAN | --- | 1 |
| | 15+65 B | MEDIAN | --- | 1 |
| | 15+65 B | LT | --- | 1 |
| | 16+13 B | RT | --- | 1 |
| | 16+50 B | RT | --- | 1 |
| | 16+53 B | MEDIAN | --- | 1 |
| | 17+08 B | MEDIAN | --- | 2 |
| | 19+09 B | LT | --- | 1 |
| | 19+23 B | RT | --- | 1 |
| | 11+16 BB | RT | 1 | --- |
| | 11+18 BB | LT | 1 | --- |
| | 11+04 BC | LT | 1 | --- |
| | TOTALS | | 21 | 30 |

## TEMPORARY DITCH CHECKS

| CATEGORY | STATION | LOCATION | 628.7504 TEMPORARY DITCH CHECKS LF |
|---|---|---|---|
| 0010 | 554+00 | MEDIAN | 12 |
| | 603+00 | MEDIAN | 12 |
| | 614+00 | MEDIAN | 12 |
| | 628+00 | RT | 12 |
| | 631+00 | LT | 12 |
| | 672+50 | MEDIAN | 12 |
| | 685+50 | MEDIAN | 12 |
| | 722+00 | MEDIAN | 12 |
| | | TOTAL | 96 |

## MARKERS CULVERT END

| CATEGORY | STATION | LOCATION | 633.5200 EACH |
|---|---|---|---|
| 0010 | 539+50 | RT | 1 |
| | 543+50 | RT | 1 |
| | 546+55 SB | LT | 1 |
| | 547+55 | RT | 1 |
| | 11+05 MC | LT | 1 |
| | 16+10 MC | LT | 1 |
| | 578+50 SB | LT | 1 |
| | 589+60 SB | LT | 1 |
| | 590+00 | RT | 1 |
| | 590+05 SB | LT | 1 |
| | 605+95 | RT | 1 |
| | 18+05 WD | LT | 1 |
| | 18+35 WD | RT | 1 |
| | 606+45 SB | LT | 1 |
| | 623+05 SB | LT | 1 |
| | 632+00 | LT | 1 |
| | 634+85 | LT | 1 |
| | 11+05 BC | LT | 1 |
| | 11+05 BC | RT | 1 |
| | 708+80 | RT | 1 |
| | 725+30 SB | LT | 1 |
| | | TOTAL | 21 |

## DELINEATOR ITEMS

| CATEGORY | STATION - STATION | LOCATION | LOCATION | 633.0100 DELINEATOR POSTS STEEL EACH | 633.0500 DELINEATOR REFLECTORS EACH |
|---|---|---|---|---|---|
| 0010 | 539+07 - 745+08 | NB MAINLINE | RT | 18 | 35 |
| | 13+06 MB - 570+00 | MB RAMP | RT | 9 | 30 |
| | 592+60 - 20+97 WA | WA RAMP | RT | 8 | 22 |
| | 11+24 WB - 631+50 | WB RAMP | RT | 10 | 32 |
| | 659+00 - 19+99 BA | BA RAMP | RT | 8 | 25 |
| | 11+91 BB - 700+00 | BB RAMP | RT | 10 | 32 |
| | 539+08 SB - 743+22 SB | SB MAINLINE | LT | 19 | 37 |
| | 12+92 MC - 561+50 | MC RAMP | LT | 6 | 19 |
| | 587+00 - 17+07 WD | WD RAMP | LT | 9 | 32 |
| | 11+21 WC - 626+50 | WC RAMP | LT | 10 | 28 |
| | 659+50 - 18+51 BD | BD RAMP | LT | 10 | 33 |
| | 11+86 BC - 697+00 | BC RAMP | LT | 8 | 24 |
| | | | TOTALS | 125 | 349 |

PERMANENT SIGNING SUMMARY

| CAT. | SIGN NO. | APPROX. STA. | LOC. | SIGN CODE | SIGN MESSAGE | SIGN SIZE (W x H) IN | 637.1220 SIGNS TYPE I REFLECTIVE SH SF | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH | 634.0614 X 14-FT EACH | 634.0616 X 16-FT EACH | 634.0618 X 18-FT EACH | 634.0620 X 20-FT EACH | 634.0622 X 22-FT EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.2601 REMOVING SIGNS TYPE I EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.4000 MOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | | | | | | | | | | |
| | 1 - 1 | NB | RT | E6-1 | EXIT GORE SIGN (OVERHEAD) | 168 x 120 | 140.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | MOUNTED ON S-13-215 |
| | 1 - 1 | NB | RT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 108 x 30 | 22.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | MOUNTED ON S-13-215 |
| | 1 - 2 | SB | LT | I55-56 | ADOPTAHIGHWAY (CHILDRENS DENTAL CENTER OF MADISON) | 30 x 36 | --- | 7.50 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | EXISTING SIGN 'SUN PRAIRIE ED. ASSOC.' |
| | 1 - 5 | NB | RT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 2 - 1 | 524+40 SB | LT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 2 - 2 | 539+60 SB | LT | I55-56 | ADOPTAHIGHWAY (SUN PRAIRIE WATER & LIGHT AND WPPI) | 30 x 36 | --- | 7.50 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 2 - 3 | 541+15 SB | LT | W4-3R | MERGE - ADDED LANE FROM RIGHT | 48 x 48 | --- | --- | --- | 16.00 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 2 - 4 | 530+45 | RT | R3-33R | RIGHT LANE MUST EXIT | 78 x 36 | --- | 19.50 | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | 1 | 2 | --- | |
| | 2 - 5 | 533+55 | RT | E6-1 | EXIT GORE SIGN (OVERHEAD) | 168 x 132 | 154.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | MOUNTED ON S-13-216 |
| | 2 - 5 | 533+55 | RT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 108 x 30 | 22.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | MOUNTED ON S-13-216 |
| | 2 - 6 | 536+05 | RT | W13-2 | EXIT SPEED_ MPH | 48 x 60 | --- | --- | --- | 20.00 | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | --- | |
| | 2 - 7 | 541+70 | RT | E5-1A | EXIT NUMBER WITH NO LETTERS (ARROW) 1-4 DIGITS | 90 x 60 | --- | 37.50 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | 1 | 2 | --- | |
| | 3 - 1 | 551+80 | RT | W4-1 | MERGING TRAFFIC SYMBOL (RIGHT) | 48 x 48 | --- | --- | --- | 16.00 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 3 - 2 | 553+15 SB | LT | E5-1A | EXIT NUMBER WITH NO LETTERS (ARROW) 1-4 DIGITS | 90 x 60 | --- | 37.50 | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | --- | |
| | 3 - 3 | 562+60 SB | LT | E4-1A | EXIT DIRECTION SIGN WITH ARROW | 192 x 48 | 64.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 3 - 3 | 562+60 SB | LT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 108 x 30 | 22.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 3 - 4 | 567+00 | RT | E1-1A | ADVANCE EXIT GUIDE SIGN _ MILE | 204 x 126 | 178.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 3 - 4 | 567+00 | RT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 3 - 5 | 569+60 | RT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | MOVE TO STA. 573+00 RT |
| | 4 - 2 | 587+40 SB | LT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 4 - 3 | 602+00 SB | LT | I55-56 | ADOPTAHIGHWAY (SUN PRAIRIE WATER & LIGHT AND WPPI) | 30 x 36 | --- | 7.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 4 - 4 | 604+40 SB | LT | W4-1 | MERGING TRAFFIC SYMBOL (RIGHT) | 48 x 48 | --- | --- | --- | 16.00 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 2 | MOVE TO STA. 607+50 SB LT |
| | 4 - 5 | 609+80 SB | LT | E1-1A | ADVANCE EXIT GUIDE SIGN _ MILE | 156 x 78 | 84.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 4 - 5 | 609+80 SB | LT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 108 x 30 | 22.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 4 - 7 | 585+45 | RT | E3-1 | DESTINATION - NEXT RIGHT - EXIT NUMBER | 132 x 84 | 77.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 4 - 8 | 592+30 | RT | E4-1A | EXIT DIRECTION SIGN WITH ARROW | 252 x 96 | 168.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 4 - 8 | 592+30 | RT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 4 - 9 | 601+15 | RT | E5-1A | EXIT NUMBER WITH NO LETTERS (ARROW) 1-4 DIGITS | 90 x 60 | --- | 37.50 | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | --- | |
| | 4 - 10 | 13+80 WA | RT | W3-3 | SIGNAL AHEAD | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 4 - 11 | 14+95 WA | RT | D1-2 | TWO DESTINATIONS (ARROWS) | 72 x 30 | --- | 15.00 | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | 1 | 2 | --- | |
| | 4 - 12 | 16+55 WA | RT | J2-2 | ROUTE TURN ASSEMBLY (2 HEADED ROUTE PANEL) | 48 x 57 | --- | 19.00 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | SUBTOTALS | | | | | | 1006.00 | 242.50 | 0.00 | 77.00 | 0 | 0 | 2 | 7 | 7 | 1 | 0 | 7 | 18 | 17 | 3 | |

PERMANENT SIGNING SUMMARY (CONT.)

| CAT. | SIGN NO. | APPROX. STA. | LOC. | SIGN CODE | SIGN MESSAGE | SIGN SIZE (W x H) IN | 637.1220 SIGNS TYPE I REFLECTIVE SH SF | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH | 634.0614 X 14-FT EACH | 634.0616 X 16-FT EACH | 634.0618 X 18-FT EACH | 634.0620 X 20-FT EACH | 634.0622 X 22-FT EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.2601 REMOVING SIGNS TYPE I EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.4000 MOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | | | | | | | | | | |
| | 5 - 1 | 14+20 WC | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 5-2 |
| | 5 - 2 | 14+20 WC | LT | D1-60 | ADVANCED CROSSROAD NAME WITH CARDINALS & ARROWS | 78 x 24 | --- | 13.00 | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 5 - 3 | 15+85 WC | LT | D1-2 | TWO DESTINATIONS (ARROWS) | 72 x 30 | --- | 15.00 | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | 1 | 2 | --- | |
| | 5 - 4 | 18+00 WC | LT | J2-2 | ROUTE TURN ASSEMBLY (2 HEADED ROUTE PANEL) | 48 x 57 | --- | 19.00 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 5 - 5 | 616+15 SB | LT | E5-1A | EXIT NUMBER WITH NO LETTERS (ARROW) 1-4 DIGITS | 90 x 60 | --- | 37.50 | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | --- | |
| | 5 - 6 | 20+75 WC | LT | W3-3 | SIGNAL AHEAD | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 5 - 7 | 626+80 SB | LT | E4-1A | EXIT DIRECTION SIGN WITH ARROW | 252 x 96 | 168.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 5 - 7 | 626+80 SB | LT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 5 - 8 | 635+95 SB | LT | E3-1 | DESTINATION - NEXT RIGHT - EXIT NUMBER | 132 x 60 | 55.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 5 - 9 | 14+20 WC | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 5 - 10 | 613+00 | RT | W4-1 | MERGING TRAFFIC SYMBOL (RIGHT) | 48 x 48 | --- | --- | --- | 16.00 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 5 - 11 | 616+00 | RT | I55-56 | ADOPTAHIGHWAY (C.H. ROBINSON) | 30 x 36 | --- | 7.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | MOVE TO STA. 616+00 RT |
| | 5 - 12 | 635+00 | RT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | MOVE TO STA. 635+00 RT |
| | 6 - 1 | 648+80 | MEDIAN | R3-4B | NO U TURN SIGN COMBINED WITH MAINT. AND POLICE VEHICLE | 36 x 48 | --- | 12.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 6 - 3 | 654+95 SB | LT | E1-1A | ADVANCE EXIT GUIDE SIGN _ MILE | 204 x 126 | 178.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 6 - 3 | 654+95 SB | LT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 6 - 4 | 657+00 SB | LT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | 1 | MOVE TO STA. 657+00 SB LT |
| | 6 - 5 | 641+25 | RT | E1-1A | ADVANCE EXIT GUIDE SIGN _ MILE | 192 x 120 | 160.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 6 - 5 | 641+25 | RT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 6 - 7 | 649+55 | MEDIAN | R3-4B | NO U TURN SIGN COMBINED WITH MAINT. AND POLICE VEHICLE | 36 x 48 | --- | 12.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 6 - 8 | 657+90 | RT | E4-1A | EXIT DIRECTION SIGN WITH ARROW | 228 x 90 | 142.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 6 - 8 | 657+90 | RT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 6 - 9 | 669+85 | RT | E5-1A | EXIT NUMBER WITH NO LETTERS (ARROW) 1-4 DIGITS | 90 x 60 | --- | 37.50 | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | --- | |
| | 6 - 10 | 14+45 BA | RT | W3-1 | STOP AHEAD | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 7 - 1 | 673+90 SB | LT | I55-56 | ADOPTAHIGHWAY (C.H. ROBINSON) | 30 x 36 | --- | 7.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 7 - 2 | 676+50 SB | LT | W4-1 | MERGING TRAFFIC SYMBOL (RIGHT) | 48 x 48 | --- | --- | --- | 16.00 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 7 - 3 | 16+70 BC | LT | W3-1 | STOP AHEAD | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 7 - 4 | 686+90 SB | LT | E5-1A | EXIT NUMBER WITH NO LETTERS (ARROW) 1-4 DIGITS | 90 x 60 | --- | 37.50 | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | 1 | 2 | --- | |
| | 7 - 5 | 696+10 SB | LT | E4-1A | EXIT DIRECTION SIGN WITH ARROW | 228 x 114 | 180.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 7 - 5 | 696+10 SB | LT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 7 - 6 | 680+90 | RT | W4-1 | MERGING TRAFFIC SYMBOL (RIGHT) | 48 x 48 | --- | --- | --- | 16.00 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 7 - 7 | 699+45 | RT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 8 - 1 | 701+30 | MEDIAN | R3-4B | NO U TURN SIGN COMBINED WITH MAINT. AND POLICE VEHICLE | 36 x 48 | --- | 12.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 8 - 2 | 705+90 SB | LT | I2-3A | CITY OF (BROOKFIELD) | 84 x 30 | --- | 17.50 | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | 1 | 2 | --- | |
| | 8 - 3 | 703+00 | RT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 36 x 54 | --- | 13.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 8 - 4 | 701+45 | MEDIAN | R3-4B | NO U TURN SIGN COMBINED WITH MAINT. AND POLICE VEHICLE | 36 x 48 | --- | 12.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 8 - 6 | 723+60 | RT | D2-3 | DESTINATION/DISTANCE (THREE) WITH DIE CUT LETTERS | 192 x 84 | 112.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 9 - 1 | 733+50 SB | LT | E1-1A | ADVANCE EXIT GUIDE SIGN _ MILE | 192 x 144 | 192.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 9 - 1 | 733+50 SB | LT | E1-5P | EXIT NUMBER FOR E1-1 & E4-1 | 120 x 30 | 25.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 9 - 2 | 743+05 SB | LT | E9-1 | (AREA) NEXT_ EXITS | 144 x 54 | 54.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | |
| | 9 - 3 | 745+30 | RT | R8-7 | EMERGENCY STOPPING ONLY | 48 x 36 | --- | 12.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | SUBTOTALS | | | | | | 1392.50 | 304.50 | 0.00 | 75.00 | 0 | 0 | 8 | 6 | 6 | 0 | 0 | 9 | 23 | 21 | 2 | |

PERMANENT SIGNING SUMMARY (CONT.)

| CAT. | SIGN NO. | APPROX. STA. | LOC. | SIGN CODE | SIGN MESSAGE | SIGN SIZE (W x H) IN | 637.1220 SIGNS TYPE I REFLECTIVE SH SF | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH | 634.0614 X 14-FT EACH | 634.0616 X 16-FT EACH | 634.0618 X 18-FT EACH | 634.0620 X 20-FT EACH | 634.0622 X 22-FT EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.2601 REMOVING SIGNS TYPE I EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.4000 MOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | | | | | | | | | | |
| | 11 - 1 | 15+10 W | LT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 2 | 13+50 W | LT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 24 x 36 | --- | 6.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 3 | 13+50 W | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 11-2 |
| | 11 - 4 | 12+15 W | LT | D2-1 | DESTINATION/DISTANCE (ONE) WITH DIE CUT LETTERS | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 11 - 5 | 14+15 W | RT | R6-2L | ONE WAY LEFT ARROW | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 6 | 11+50 W | RT | D1-72 | ADVANCED ENTRANCE DIRECTION SIGN | 120 x 60 | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | 1 | 2 | --- | 8' MIN. VERT. CLEARANCE |
| | 11 - 7 | 13+25 W | RT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 8 | 14+00 W | RT | R1-1F | STOP (FOLDING) | 30 x 30 | --- | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 11 - 9 | 10+20 WC | LT | R1-2 | YIELD | 36 x 31 | --- | 7.75 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 10 | 15+70 W | MEDIAN | R4-7 | KEEP RIGHT | 24 x 30 | --- | 5.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 11 - 11 | 10+55 WC | LT | W12-1D | DOUBLE DOWN ARROWS | 24 x 24 | --- | --- | --- | 4.00 | 1 | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | MOUNT AT HEIGHT OF 2'-3" |
| | 11 - 12 | 10+35 WC | LT | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 11 - 12A | 10+35 WC | LT | R6-3 | DIVIDED HIGHWAY CROSSING SIGN AND INTERSECTION | 30 x 24 | --- | 5.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON SIGNAL POLE ABOVE SIGN 11-12 |
| | 11 - 13 | 11+45 WC | LT | J3-2 | DIRECTIONAL ASSEMBLY ( 2 HEADED ROUTE PANEL) | 48 x 57 | --- | 19.00 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 14 | 10+70 WC | RT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 15 | 15+80 W | LT | R3-1 | NO RIGHT TURN SYMBOL | 24 x 24 | --- | 4.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 11 - 16 | 15+80 W | LT | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE BELOW SIGN 11-15 |
| | 11 - 17 | 15+80 W | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | ON SIGNAL POLE BEHIND SIGN 11-15 |
| | 11 - 18 | 15+70 W | MEDIAN | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE BEHIND SIGN 11-10 |
| | 11 - 19 | 13+90 W | RT | R5-1 | DO NOT ENTER | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 20 | 18+20 WD | LT | W11-2 | PEDESTRIAN CROSSING SYMBOL | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 21 | 14+95 W | MEDIAN | R3-2 | NO LEFT TURN SYMBOL | 24 x 24 | --- | 4.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 22 | 16+15 WD | LT | R5-57 | PEDESTRIANS ETC PROHIBITED | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 23 | 17+55 W | LT | D1-1 | ONE DESTINATION (ARROW) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 11 - 24 | 15+45 W | RT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 11 - 25 | 15+10 W | RT | R6-2L | ONE WAY LEFT ARROW | 24 x 30 | --- | 5.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 11 - 26 | 18+55 WD | RT | W11-2 | PEDESTRIAN CROSSING SYMBOL | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 11 - 27 | 9+20 W | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 11 - 28 | EB | RT | J1-1 | JUNCTION OR END ASSEMBLY | 24 x 39 | --- | 6.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 11 - 29 | 13+55 W | RT | D1-71 | ENTRANCE DIRECTION SIGN (TWO DESTINATIONS) | 72 x 60 | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | |
| | 11 - 30 | 15+05 W | RT | D1-70 | ENTRANCE DIRECTION SIGN (ONE DESTINATION) | 66 x 30 | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 11 - 31 | 16+85 W | MEDIAN | J2-1 | ROUTE TURN ASSEMBLY (1 HEAD PANEL) | 24 x 57 | --- | 9.50 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | |
| | 11 - 32 | 14+10 W | RT | R1-2 | YIELD | 36 x 31 | --- | 7.75 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 11 - 33 | 14+25 W | RT | R1-1 | STOP | 18 x 18 | --- | 2.25 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 11 - 34 | 14+80 W | RT | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON SIGNAL POLE |
| | 11 - 35 | 14+80 W | RT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON SIGNAL POLE BEHIND SIGN 11-34 |
| | 11 - 36 | 15+00 W | RT | R1-1 | STOP | 18 x 18 | --- | 2.25 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | SUBTOTALS | | | | | | 0.00 | 124.00 | 42.25 | 4.00 | 1 | 5 | 7 | 3 | 3 | 0 | 0 | 0 | 25 | 20 | 0 | |

PERMANENT SIGNING SUMMARY (CONT.)

| CAT. | SIGN NO. | APPROX. STA. | LOC. | SIGN CODE | SIGN MESSAGE | SIGN SIZE (W x H) IN | 637.1220 SIGNS TYPE I REFLECTIVE SH SF | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH | 634.0614 X 14-FT EACH | 634.0616 X 16-FT EACH | 634.0618 X 18-FT EACH | 634.0620 X 20-FT EACH | 634.0622 X 22-FT EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.2601 REMOVING SIGNS TYPE I EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.4000 MOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | | | | | | | | | | |
| | 12 - 1 | 19+95 W | MEDIAN | R4-7 | KEEP RIGHT | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 2 | 19+85 W | MEDIAN | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 12 - 3 | 18+30 W | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 4 | 18+20 W | MEDIAN | D1-1 | ONE DESTINATION (ARROW) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 12 - 5 | 20+15 W | LT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 12 - 6 | 20+45 W | LT | R6-2L | ONE WAY LEFT ARROW | 24 x 30 | --- | 5.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 12 - 7 | 18+40 W | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 8 | 19+95 W | RT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | ON SIGNAL POLE BEHIND SIGN 12-9 |
| | 12 - 9 | 19+95 W | RT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 12 - 10 | 19+95 W | RT | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE BELOW SIGN 12-9 |
| | 12 - 11 | 22+15 WA | LT | W11-2 | PEDESTRIAN CROSSING SYMBOL | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 12 | 21+95 WA | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 13 | 19+55 WA | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 14 | 12+75 WB | RT | R5-57 | PEDESTRIANS ETC PROHIBITED | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 15 | 20+95 W | LT | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 12 - 16 | 21+90 W | LT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 17 | 20+95 W | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | ON SIGNAL POLE BEHIND SIGN 12-15 |
| | 12 - 18 | 23+30 W | LT | D1-3 | TRIPLE DESTINATION/ARROW | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 12 - 19 | 20+80 WA | RT | W11-1 | BICYCLE WARNING SIGN | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 20 | 19+55 WA | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 12-21 |
| | 12 - 21 | 19+55 WA | RT | D1-60 | ADVANCED CROSSROAD NAME WITH CARDINALS & ARROWS | 78 x 24 | --- | 13.00 | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 12 - 22 | 22+25 WA | RT | R1-1F | STOP (FOLDING) | 36 x 36 | --- | --- | 9.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | --- | --- | ON SIGNAL POLE |
| | 12 - 22A | 22+25 WA | RT | R6-3 | DIVIDED HIGHWAY CROSSING SIGN AND INTERSECTION | 30 x 24 | --- | 5.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON SIGNAL POLE BELOW SIGN 12-22 |
| | 12 - 23 | 22+10 WA | RT | W12-1D | DOUBLE DOWN ARROWS | 24 x 24 | --- | --- | --- | 4.00 | 1 | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | MOUNT AT HEIGHT OF 2'-3" |
| | 12 - 24 | 20+80 WA | RT | J3-2 | DIRECTIONAL ASSEMBLY ( 2 HEADED ROUTE PANEL) | 48 x 57 | --- | 19.00 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 25 | 22+30 WA | RT | W11-2 | PEDESTRIAN CROSSING SYMBOL | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 26 | 22+25 WA | RT | R1-2 | YIELD | 36 x 31 | --- | 7.75 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 27 | 20+60 W | MEDIAN | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | 24 x 57 | --- | 9.50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 28 | 22+15 W | RT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 24 x 36 | --- | 6.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 29 | 21+65 W | MEDIAN | R1-1F | STOP (FOLDING) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 12 - 30 | 24+60 W | LT | J2-3 | ROUTE TURN ASSEMBLY ( 3HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 12 - 31 | 24+60 W | LT | R2-1 | SPEED LIMIT_ MPH | --- x --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | MOVED TO WHERE 12-30 WAS |
| | 12 - 32 | 19+20 W | MEDIAN | J2-1 | ROUTE TURN ASSEMBLY (1 HEAD PANEL) | 24 x 57 | --- | 9.50 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 33 | 23+15 W | LT | D1-71 | ENTRANCE DIRECTION SIGN (TWO DESTINATIONS) | 72 x 60 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 34 | 20+60 W | LT | D1-70 | ENTRANCE DIRECTION SIGN (ONE DESTINATION) | 72 x 30 | --- | --- | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 35 | WB | LT | D1-72 | ADVANCED ENTRANCE DIRECTION SIGN | 120 x 60 | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 36 | WB | LT | J1-1 | JUNCTION OR END ASSEMBLY | 24 x 39 | --- | 6.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 37 | 21+40 W | LT | R1-2 | YIELD | 36 x 31 | --- | 7.75 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 38 | 21+05 W | LT | R1-2 | YIELD | 36 x 31 | --- | 7.75 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 39 | 20+00 W | RT | R1-1 | STOP | 18 x 18 | --- | 2.25 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 12 - 40 | 20+65 W | RT | R1-1 | STOP | 18 x 18 | --- | 2.25 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | SUBTOTALS | | | | | | 0.00 | 164.25 | 36.00 | 4.00 | 1 | 9 | 10 | 5 | 0 | 0 | 1 | 0 | 29 | 26 | 0 | |

PERMANENT SIGNING SUMMARY (CONT.)

| CAT. | SIGN NO. | APPROX. STA. | LOC. | SIGN CODE | SIGN MESSAGE | SIGN SIZE (W x H) IN | 637.1220 SIGNS TYPE I REFLECTIVE SH SF | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH | 634.0614 X 14-FT EACH | 634.0616 X 16-FT EACH | 634.0618 X 18-FT EACH | 634.0620 X 20-FT EACH | 634.0622 X 22-FT EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.2601 REMOVING SIGNS TYPE I EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.4000 MOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | | | | | | | | | | |
| | 15 - 1 | 13+10 BC | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 2 | 14+60 BC | LT | D1-60 | ADVANCED CROSSROAD NAME WITH CARDINALS & ARROWS | 90 x 24 | --- | 15.00 | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 15 - 3 | 13+10 BC | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-4 |
| | 15 - 4 | 13+10 BC | LT | M1-86 | WILDLIFE VIEWING AREA | 18 x 36 | --- | 4.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 4A | 13+10 BC | LT | M6-1 | ARROW- RIGHT LEFT OR AHEAD | 21 x 21 | --- | 3.06 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 15-4 |
| | 15 - 5 | 11+80 BC | LT | J3-2 | DIRECTIONAL ASSEMBLY ( 2 HEADED ROUTE PANEL) | 48 x 57 | --- | 19.00 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 6 | 10+60 BC | LT | R1-1 | STOP | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 7 | 10+70 BC | LT | W11-2 | PEDESTRIAN CROSSING SYMBOL | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 8 | 10+70 BC | LT | W11-2 | PEDESTRIAN CROSSING SYMBOL | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-7 |
| | 15 - 9 | 10+00 B | LT | J4-1 | REASSURANCE ASSEMBLY ( 1 HEADED ROUTE PANEL) | 24 x 36 | --- | 6.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 10 | 10+00 B | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-9 |
| | 15 - 11 | 8+95 B | LT | W6-1 | DIVIDED HIGHWAY AHEAD SYMBOL | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 12 | 8+95 B | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-11 |
| | 15 - 13 | 11+05 B | LT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 14 | SB | RT | J1-1 | JUNCTION OR END ASSEMBLY | 24 x 39 | --- | 6.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 15 | 10+90 B | MEDIAN | R3-2 | NO LEFT TURN SYMBOL | 24 x 24 | --- | 4.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 16 | 9+20 B | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | BACK OF SIGN 15-32 |
| | 15 - 17 | 10+90 B | RT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 18 | 11+80 B | MEDIAN | R4-7 | KEEP RIGHT | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 19 | 11+80 B | RT | R6-2L | ONE WAY LEFT ARROW | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 20 | 19+25 BD | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | 30 x 30 | --- | --- | --- | 6.25 | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 20A | 19+25 BD | RT | W16-7R | RIGHT DIAGONAL DOWNWARD POINTING ARROW (YELLOW) | 24 x 12 | --- | --- | --- | 2.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 15-20 |
| | 15 - 21 | 13+50 B | RT | W6-2 | DIVIDED HIGHWAY ENDS SYMBOL | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 22 | 16+80 BD | LT | R5-57 | PEDESTRIANS ETC PROHIBITED | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 23 | 10+30 BD | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 24 | 10+35 BC | LT | R1-1 | STOP | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 24A | 10+35 BC | LT | R6-3 | DIVIDED HIGHWAY CROSSING SIGN AND INTERSECTION | 30 x 24 | --- | 5.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 15-24 |
| | 15 - 25 | 10+30 BD | RT | R1-1 | STOP | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 26 | 10+35 BD | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 27 | 10+35 BD | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-26 |
| | 15 - 28 | 11+95 B | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-29 |
| | 15 - 29 | 11+95 B | LT | R3-1 | NO RIGHT TURN SYMBOL | 24 x 24 | --- | 4.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 30 | 13+05 B | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-31 |
| | 15 - 31 | 13+05 B | LT | R2-1 | SPEED LIMIT_ MPH | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 15 - 32 | 9+20 B | RT | D1-72 | ADVANCED ENTRANCE DIRECTION SIGN | 120 x 60 | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | |
| | 15 - 33 | 10+95 B | RT | D1-71 | ENTRANCE DIRECTION SIGN (TWO DESTINATIONS) | 72 x 60 | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | --- | |
| | 15 - 34 | 10+95 B | RT | D1-70 | ENTRANCE DIRECTION SIGN (ONE DESTINATION) | 66 x 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 15-33 |
| | 15 - 35 | 12+65 B | RT | W4-2R | LANE REDUCTION TRANSITION SYMBOL - RIGHT | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 15 - 36 | 13+30 B | MEDIAN | J2-1 | ROUTE TURN ASSEMBLY (1 HEAD PANEL) | 24 x 57 | --- | 9.50 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | |
| | 15 - 37 | 10+60 BC | LT | W12-1D | DOUBLE DOWN ARROWS | 24 x 24 | --- | --- | --- | 4.00 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | MOUNT AT HEIGHT OF 2'-3" |
| | 15 - 38 | 19+30 BD | LT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | 30 x 30 | --- | --- | --- | 6.25 | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 15 - 38A | 19+30 BD | LT | W16-7L | LEFT DIAGONAL DOWNWARD POINTING ARROW (YELLOW) | 24 x 12 | --- | --- | --- | 2.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 15-39 |
| | SUBTOTALS | | | | | | 0.00 | 176.31 | 0.00 | 47.50 | 1 | 8 | 12 | 7 | 0 | 0 | 0 | 0 | 24 | 25 | 0 | |

PERMANENT SIGNING SUMMARY (CONT.)

| CAT. | SIGN NO. | APPROX. STA. | LOC. | SIGN CODE | SIGN MESSAGE | SIGN SIZE (W x H) IN | 637.1220 SIGNS TYPE I REFLECTIVE SH SF | 637.2210 SIGNS TYPE II REFLECTIVE H SF | 637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF | 637.2230 SIGNS TYPE II REFLECTIVE F SF | 634.0612 POSTS WOOD 4x6-INCH X 12-FT EACH | 634.0614 X 14-FT EACH | 634.0616 X 16-FT EACH | 634.0618 X 18-FT EACH | 634.0620 X 20-FT EACH | 634.0622 X 22-FT EACH | 638.2102 MOVING SIGNS TYPE II EACH | 638.2601 REMOVING SIGNS TYPE I EACH | 638.2602 REMOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.4000 MOVING SMALL SIGN SUPPORTS EACH | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | | | | | | | | | | | | | | | | | | | | | | |
| | 16 - 1 | 10+45 BB | LT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | 30 x 30 | --- | --- | --- | 6.25 | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 1A | 10+45 BB | LT | W16-7R | RIGHT DIAGONAL DOWNWARD POINTING ARROW (YELLOW) | 24 x 12 | --- | --- | --- | 2.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 16-1 |
| | 16 - 2 | 10+45 BB | LT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | 30 x 30 | --- | --- | --- | 6.25 | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 2A | 10+45 BB | LT | W16-7L | LEFT DIAGONAL DOWNWARD POINTING ARROW (YELLOW) | 24 x 12 | --- | --- | --- | 2.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 16-2 |
| | 16 - 3 | 15+65 B | LT | R6-2L | ONE WAY LEFT ARROW | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 4 | 15+60 B | MEDIAN | R4-7 | KEEP RIGHT | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 5 | 16+05 B | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 6 | 16+05 B | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-5 |
| | 16 - 7 | 14+50 B | RT | R2-1 | SPEED LIMIT_ MPH | 24 x 30 | --- | 5.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 8 | 14+50 B | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-7 |
| | 16 - 9 | 15+40 B | RT | R3-1 | NO RIGHT TURN SYMBOL | 24 x 24 | --- | 4.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 10 | 20+50 BA | LT | R5-1 | DO NOT ENTER | 30 x 30 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 11 | 17+90 BA | LT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | |
| | 16 - 12 | 11+90 BB | RT | R5-57 | PEDESTRIANS ETC PROHIBITED | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 13 | 16+35 B | MEDIAN | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 14 | 16+40 B | MEDIAN | R3-2 | NO LEFT TURN SYMBOL | 24 x 24 | --- | 4.00 | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 15 | 17+05 B | LT | J3-1 | DIRECTIONAL ASSEMBLY (1 HEADED ROUTE PANEL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 16 | 17+00 B | MEDIAN | R4-7 | KEEP RIGHT | 24 x 30 | --- | 5.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 16A | 17+00 B | MEDIAN | W5-54 | CLEARANCE MARKER WITH YELLOW TYPE F SHEETING | 18 x 18 | --- | --- | --- | 2.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 16-16 |
| | 16 - 17 | 21+55 BA | MEDIAN | R1-1 | STOP | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 17A | 21+55 BA | MEDIAN | R6-3 | DIVIDED HIGHWAY CROSSING SIGN AND INTERSECTION | 30 x 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 16 - 18 | 17+35 B | RT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-21 |
| | 16 - 19 | 18+90 B | LT | R2-1 | SPEED LIMIT_ MPH | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 20 | 18+10 B | RT | W6-3 | TWOWAY TRAFFIC SYMBOL | 36 x 36 | --- | --- | --- | 9.00 | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 21 | 17+35 B | RT | JV | ANY VERTICALLY CONFIGURED J - PANEL | 24 x 60 | --- | 10.00 | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 22 | 21+20 BA | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 23 | 21+20 BA | RT | W11-15 | TRAIL CROSSING (BIKE AND PED SYMBOL) | --- x --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-22 |
| | 16 - 24 | 21+25 BA | RT | R1-1 | STOP | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 25 | 21+25 BA | LT | R1-1 | STOP | 36 x 36 | --- | 9.00 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 26 | 15+40 B | RT | R5-1 | DO NOT ENTER | 30 x 30 | --- | 6.25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-9 |
| | 16 - 27 | 19+90 BA | RT | J13-1 | DIRECTIONAL WITHOUT CARDINAL (1 HEADED ROUTE PANEL) | 24 x 45 | --- | 7.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 28 | 17+85 BA | RT | R5-1A | WRONG WAY | 36 x 24 | --- | 6.00 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-29 |
| | 16 - 29 | 17+85 BA | RT | M1-86 | WILDLIFE VIEWING AREA | 18 x 36 | --- | 4.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | 1 | 1 | --- | |
| | 16 - 29A | 17+85 BA | RT | MN6-1 | ARROW - RIGHT LEFT OR AHEAD - NAT'L. FOREST ROAD | 21 x 21 | --- | 3.06 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ON POST BELOW SIGN 16-29 |
| | 16 - 30 | 17+25 BA | RT | D1-60 | ADVANCED CROSSROAD NAME WITH CARDINALS & ARROWS | 90 x 24 | --- | 15.00 | --- | --- | --- | 1 | 1 | --- | --- | --- | --- | --- | 1 | 2 | --- | |
| | 16 - 31 | 14+80 B | MEDIAN | J2-1 | ROUTE TURN ASSEMBLY (1 HEAD PANEL) | 24 x 57 | --- | 9.50 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | |
| | 16 - 32 | 16+55 B | LT | D1-70 | ENTRANCE DIRECTION SIGN (ONE DESTINATION) | 72 x 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | BACK OF SIGN 16-33 |
| | 16 - 33 | 16+55 B | LT | D1-71 | ENTRANCE DIRECTION SIGN (TWO DESTINATIONS) | 72 x 60 | --- | --- | --- | --- | --- | --- | --- | --- | 2 | --- | --- | --- | --- | --- | --- | |
| | 16 - 34 | 18+50 B | LT | J2-1 | ROUTE TURN ASSEMBLY (1 HEAD PANEL) | 24 x 57 | --- | 9.50 | --- | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | |
| | 16 - 35 | NB BRISTOL | LT | J1-1 | JUNCTION OR END ASSEMBLY | 24 x 39 | --- | 6.50 | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | |
| | 16 - 36 | 21+30 BA | MEDIAN | W12-1D | DOUBLE DOWN ARROWS | 24 x 24 | --- | --- | --- | 4.00 | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | MOUNT AT HEIGHT OF 2'-3" |
| | SUBTOTALS | | | | | | 0.00 | 160.06 | 0.00 | 31.75 | 1 | 7 | 13 | 5 | 0 | 0 | 0 | 0 | 24 | 24 | 0 | |
| | TOTALS | | | | | | 2398.50 | 1171.63 | 78.25 | 239.25 | 4 | 29 | 52 | 33 | 16 | 1 | 1 | 16 | 143 | 133 | 5 | |

TRAFFIC CONTROL SUMMARY

| CATEGORY | STAGE | DURATION DAYS | LOCATION | 643.0300 DRUMS EACH | 643.0300 DRUMS DAY | 643.0410 BARRICADES TYPE II EACH | 643.0410 BARRICADES TYPE II DAY | 643.0420 BARRICADES TYPE III EACH | 643.0420 BARRICADES TYPE III DAY | 643.0705 WARNING LIGHTS TYPE A EACH | 643.0705 WARNING LIGHTS TYPE A DAY | 643.0715 WARNING LIGHTS TYPE C EACH | 643.0715 WARNING LIGHTS TYPE C DAY | 643.0800 ARROW BOARDS EACH | 643.0800 ARROW BOARDS DAY | 643.0900 SIGNS EACH | 643.0900 SIGNS DAY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | 1 | 16 | ADVANCED WARNING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 640 |
| | | 16 | NB/SB USH 151 | 689 | 11,024 | 0 | 0 | 15 | 240 | 30 | 480 | 122 | 1,952 | 4 | 64 | 52 | 832 |
| | | 1 | SHOULDER CLOSURE, S-13-215 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 4 |
| | | 1 | SHOULDER CLOSURE, S-13-216 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 4 |
| | | | SUBTOTALS (STAGE 1) | | 11,044 | | 0 | | 240 | | 480 | | 1,952 | | 68 | | 1,480 |
| | 2A | 28 | ADVANCED WARNING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 1,120 |
| | | 28 | SB USH 151 | 220 | 6,160 | 0 | 0 | 17 | 476 | 34 | 952 | 19 | 532 | 2 | 56 | 37 | 1,036 |
| | | 28 | STH 19 | 52 | 1,456 | 0 | 0 | 7 | 196 | 13 | 364 | 10 | 280 | 0 | 0 | 10 | 280 |
| | | 28 | CTH N | 56 | 1,568 | 2 | 56 | 5 | 140 | 8 | 224 | 0 | 0 | 0 | 0 | 5 | 140 |
| | | | SUBTOTALS (STAGE 2A) | | 9,184 | | 56 | | 812 | | 1,540 | | 812 | | 56 | | 2,576 |
| | 2B | 28 | ADVANCED WARNING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 1,120 |
| | | 28 | SB USH 151 | 341 | 9,548 | 0 | 0 | 17 | 476 | 34 | 952 | 107 | 2,996 | 2 | 56 | 41 | 1,148 |
| | | 3 | SB USH 151/MAIN STREET RAMP CLOSURE | 22 | 66 | 0 | 0 | 4 | 12 | 6 | 18 | 0 | 0 | 0 | 0 | 9 | 27 |
| | | 10 | SB USH 151/STH 19 RAMP CLOSURE | 25 | 250 | 0 | 0 | 4 | 40 | 6 | 60 | 0 | 0 | 0 | 0 | 9 | 90 |
| | | 10 | SB USH 151/CTH N RAMP CLOSURE | 26 | 260 | 0 | 0 | 4 | 40 | 6 | 60 | 0 | 0 | 0 | 0 | 9 | 90 |
| | | 28 | STH 19 | 128 | 3,584 | 0 | 0 | 8 | 224 | 15 | 420 | 23 | 644 | 1 | 28 | 16 | 448 |
| | | 28 | CTH N | 61 | 1,708 | 2 | 56 | 6 | 168 | 10 | 280 | 0 | 0 | 0 | 0 | 5 | 140 |
| | | | SUBTOTALS (STAGE 2B) | | 15,416 | | 56 | | 960 | | 1,790 | | 3,640 | | 84 | | 3,063 |
| | 3A | 28 | ADVANCED WARNING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 1,120 |
| | | 28 | NB/SB USH 151 | 563 | 15,764 | 0 | 0 | 33 | 924 | 66 | 1,848 | 74 | 2,072 | 4 | 112 | 75 | 2,100 |
| | | 28 | STH 19 | 88 | 2,464 | 0 | 0 | 11 | 308 | 21 | 588 | 20 | 560 | 1 | 28 | 17 | 476 |
| | | 28 | CTH N | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | SUBTOTALS (STAGE 3A) | | 18,228 | | 0 | | 1,232 | | 2,436 | | 2,632 | | 140 | | 3,696 |
| | 3B | 28 | ADVANCED WARNING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 1,120 |
| | | 28 | NB USH 151 | 522 | 14,616 | 0 | 0 | 14 | 392 | 28 | 784 | 125 | 3,500 | 2 | 56 | 44 | 1,232 |
| | | 10 | NB USH 151/STH 19 RAMP CLOSURE | 23 | 230 | 0 | 0 | 4 | 40 | 6 | 60 | 0 | 0 | 0 | 0 | 9 | 90 |
| | | 10 | NB USH 151/CTH N RAMP CLOSURE | 27 | 270 | 0 | 0 | 4 | 40 | 6 | 60 | 0 | 0 | 0 | 0 | 9 | 90 |
| | | 3 | MAIN STREET LEFT TURN LANE CLOSURE | 66 | 198 | 0 | 0 | 9 | 27 | 15 | 45 | 0 | 0 | 0 | 0 | 6 | 18 |
| | | 28 | STH 19 | 79 | 2,212 | 0 | 0 | 13 | 364 | 22 | 616 | 20 | 560 | 1 | 28 | 12 | 336 |
| | | 28 | CTH N | 39 | 1,092 | 2 | 56 | 8 | 224 | 11 | 308 | 0 | 0 | 0 | 0 | 4 | 112 |
| | | | SUBTOTALS (STAGE 3B) | | 18,618 | | 56 | | 1,087 | | 1,873 | | 4,060 | | 84 | | 2,998 |
| | 3C | 6 | ADVANCED WARNING | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 240 |
| | | 6 | NB/SB USH 151 | 250 | 1,500 | 0 | 0 | 10 | 60 | 20 | 120 | 14 | 84 | 2 | 12 | 25 | 150 |
| | | | SUBTOTALS (STAGE 3C) | | 1,500 | | 0 | | 60 | | 120 | | 84 | | 12 | | 390 |
| | 1 | 14 | CTH N | 153 | 2,142 | 0 | 0 | 17 | 238 | 27 | 378 | 16 | 224 | 2 | 28 | 16 | 224 |
| | | 4 | RAMP CLOSURES | 53 | 212 | 0 | 0 | 8 | 32 | 12 | 48 | 0 | 0 | 0 | 0 | 18 | 72 |
| | 2 | 14 | CTH N | 124 | 1,736 | 0 | 0 | 9 | 126 | 18 | 252 | 33 | 462 | 0 | 0 | 20 | 280 |
| | | | SUBTOTALS (CTH N) | | 4,090 | | 0 | | 396 | | 678 | | 686 | | 28 | | 576 |
| | | | UNDISTRIBUTED | | 19,500 | | 40 | | 1,200 | | 2,200 | | 3,500 | | 120 | | 3,700 |
| | | | TOTALS | | 97,580 | | 208 | | 5,987 | | 11,117 | | 17,366 | | 592 | | 18,479 |

3

FIELD OFFICE TYPE C

| CATEGORY | PROJECT | 642.5201 EACH |
|---|---|---|
| 0010 | 1111-02-78 | 1 |

TRAFFIC CONTROL DETOUR

| CATEGORY | PROJECT | 643.2000 EACH |
|---|---|---|
| 0010 | .01 1111-02-78 | 1 |

TRAFFIC CONTROL PROJECT

| CATEGORY | PROJECT | 643.0100 EACH |
|---|---|---|
| 0010 | .01 1111-02-78 | 1 |

TRAFFIC CONTROL COVERING SIGNS SUMMARY

| CATEGORY | STAGE | LOCATION | NUMBER OF CYCLES | NUMBER OF SIGNS | 643.0910 TYPE I EACH | 643.0920 TYPE II EACH |
|---|---|---|---|---|---|---|
| 0010 | STAGE 1 | USH 151 | 16 | 4 | --- | 64 |
| | STAGE 2A | USH 151 | 1 | 2 | --- | 2 |
| | | DETOUR | 1 | 3 | --- | 3 |
| | STAGE 2B | USH 151 | 1 | 3 | --- | 3 |
| | | DETOUR | 1 | 2 | --- | 2 |
| | STAGE 3A | USH 151 SB | 14 | 2 | --- | 28 |
| | | USH 151 NB | 1 | 2 | --- | 2 |
| | STAGE 3B | USH 151 | 1 | 4 | --- | 4 |
| | | MAIN STREET | 1 | 4 | --- | 4 |
| | | MAIN STREET | 1 | 3 | 3 | --- |
| | | DETOUR | 1 | 2 | 2 | --- |
| | | DETOUR | 1 | 7 | --- | 7 |
| | | SUBTOTALS (STAGE 3B) | | | 5 | 15 |
| | | TOTALS | | | 5 | 119 |

TRAFFIC CONTROL SIGNS FIXED MESSAGE

| CATEGORY | STAGE | LOCATION | SIGN CODE | 643.1000 SF |
|---|---|---|---|---|
| 0010 | | NB USH 151 (ADVANCE WARNING) | G20-58 | 36.0 |
| | | NB USH 151 ENTRANCE RAMP (ADVANCE WARNING) | G20-58 | 36.0 |
| | STAGE 2B | SB USH 151, WINDSOR STREET EXIT 1/2 MILE | G20-60 | 18.0 |
| | | SB USH 151, WINDSOR STREET EXIT | G20-60 | 18.0 |
| | | SB USH 151, BRISTOL STREET EXIT 3/4 MILE | G20-60 | 18.0 |
| | | SB USH 151, BRISTOL STREET EXIT | G20-60 | 18.0 |
| | STAGE 3B | NB USH 151, WINDSOR STREET EXIT 1/2 MILE | G20-60 | 18.0 |
| | | NB USH 151, WINDSOR STREET EXIT | G20-60 | 18.0 |
| | | NB USH 151, BRISTOL STREET EXIT 1/2 MILE | G20-60 | 18.0 |
| | | NB USH 151, BRISTOL STREET EXIT | G20-60 | 18.0 |
| | | TOTAL | | 216.0 |

TRAFFIC CONTROL DETOUR SIGNS

| CATEGORY | STAGE | LOCATION | DAYS | 643.3000 EACH | 643.3000 DAY |
|---|---|---|---|---|---|
| 0010 | 2A | DETOUR | 56 | 97 | 5,432 |
| | 2B | DETOUR | 10 | 49 | 490 |
| | 3B | DETOUR | 10 | 163 | 1,630 |
| | | TOTALS | | | 7,552 |

TRAFFIC CONTROL SIGNS PCMS

| CATEGORY | STAGE | DURATION | LOCATION | EACH | 643.1050 DAY |
|---|---|---|---|---|---|
| 0010 | 1 | 7 | USH 151 NB/SB ADVANCE WARNING | 2 | 14 |
| | | 7 | W. MAIN ST ADVANCE WARNING | 2 | 14 |
| | | 7 | STH 19/WINDSOR RD ADVANCE WARNING | 2 | 14 |
| | | 7 | CTH N/BRISTOL ST ADVANCE WARNING | 2 | 14 |
| | | | SUBTOTAL (STAGE 1) | | 56 |
| | 2A | 7 | USH 151 NB/SB ADVANCE WARNING | 2 | 14 |
| | | 7 | STH 19/WINDSOR RD ENTRANCE RAMP CLOSURE | 2 | 14 |
| | | 7 | CTH N/BRISTOL ST ENTRANCE RAMP CLOSURE | 2 | 14 |
| | | | SUBTOTAL (STAGE 2A) | | 42 |
| | 2B | 7 | USH 151 NB/SB ADVANCE WARNING | 2 | 14 |
| | | 7 | W. MAIN ST. EXIT RAMP CLOSURE | 1 | 7 |
| | | 7 | STH 19/WINDSOR RD EXIT RAMP CLOSURE | 1 | 7 |
| | | 7 | CTH N/BRISTOL ST EXIT RAMP CLOSURE | 1 | 7 |
| | | | SUBTOTAL (STAGE 2B) | | 35 |
| | 3A | 7 | USH 151 NB/SB ADVANCE WARNING | 2 | 14 |
| | 3B | 7 | USH 151 NB/SB ADVANCE WARNING | 2 | 14 |
| | | 7 | W. MAIN ST. EXIT RAMP CLOSURE | 2 | 14 |
| | | 7 | STH 19/WINDSOR RD | 3 | 21 |
| | | 7 | CTH N/BRISTOL ST | 3 | 21 |
| | | | SUBTOTAL (STAGE 3B) | | 70 |
| | 3C | 7 | USH 151 NB/SB ADVANCE WARNING | 2 | 14 |
| | | | SUBTOTAL (STAGE 3C) | | 14 |
| | CTH N STAGE 1 | 12 | CTH N NIGHTLY RAMP CLOSURES | 4 | 48 |
| | CTH N STAGE 2 | 6 | CTH N NIGHTLY LT TURN CLOSURES | 4 | 24 |
| | | | UNDISTRIBUTED | --- | 70 |
| | | | TOTAL | | 373 |

## TEMPORARY PEDESTRIAN ACCOMMODATIONS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 644.1430.S TEMPORARY PEDESTRIAN SURFACE PLATE SF | 644.1601.S TEMPORARY CURB RAMP EACH | 644.1616.S TEMPORARY PEDESTRIAN SAFETY FENCE LF |
|---|---|---|---|---|---|---|
| 0010 | 2A | 13+45 W - 15+40 W | RT | 50 | 2 | 440 |
| | | 19+05 B | RT | 15 | 1 | --- |
| | | SUBTOTAL STAGE 2A | | 65 | 3 | 440 |
| | 3B | 19+80 W - 20+95 W | RT | 30 | 2 | 260 |
| | | | TOTALS | 95 | 5 | 700 |

## REMOVING PAVEMENT MARKINGS SUMMARY

| CATEGORY | STAGE | STATION | - | STATION | LOCATION | DESCRIPTION | 646.0600 REMOVING PAVEMENT MARKINGS LF | 646.0690.S REMOVING PAVEMENT MARKINGS WATER BLASTING LF |
|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 536+35SB | - | 539+08SB | SOUTHBOUND | LANE LINE | 75 | --- |
| | STAGE 2A | 541+08SB | - | 554+85SB | SOUTHBOUND | EDGE LINE | --- | 1,380 |
| | STAGE 2A | 601+08SB | - | 614+95SB | SOUTHBOUND | EDGE LINE | --- | 1,390 |
| | STAGE 2A | 672+15SB | - | 685+66SB | SOUTHBOUND | EDGE LINE | --- | 1,350 |
| | STAGE 2A | 709+65SB | - | 723+04SB | SOUTHBOUND | EDGE LINE | --- | 1,340 |
| | STAGE 2A | 736+92SB | - | 748+07SB | SOUTHBOUND | EDGE LINE | --- | 1,120 |
| | STAGE 2A | 743+22SB | - | 756+07SB | SOUTHBOUND | LANE LINE | 325 | --- |
| | STAGE 2A | 756+07SB | - | 762+07SB | SOUTHBOUND | LANE LINE | --- | 175 |
| | SUBTOTAL STAGE 2A | | | | | | 400 | 6,755 |
| | STAGE 3A | 526+90NB | - | 533+50NB | NORTHBOUND | LANE LINE | --- | 175 |
| | STAGE 3A | 533+50NB | - | 539+07NB | NORTHBOUND | LANE LINE | 150 | --- |
| | STAGE 3A | 541+35NB | - | 556+11NB | NORTHBOUND | EDGE LINE | --- | 1,480 |
| | STAGE 3A | 558+60NB | - | 563+20NB | NORTHBOUND | GORE LINES | --- | 670 |
| | STAGE 3A | 565+00NB | - | 569+60NB | NORTHBOUND | EDGE LINE | --- | 460 |
| | STAGE 3A | 601+41NB | - | 616+39NB | NORTHBOUND | EDGE LINE | --- | 1,500 |
| | STAGE 3A | 619+30NB | - | 624+70NB | NORTHBOUND | GORE LINES | --- | 820 |
| | STAGE 3A | 626+00NB | - | 628+50NB | NORTHBOUND | EDGE LINE | --- | 250 |
| | STAGE 3A | 671+08NB | - | 685+07NB | NORTHBOUND | EDGE LINE | --- | 1,400 |
| | STAGE 3A | 688+85NB | - | 692+80NB | NORTHBOUND | GORE LINES | --- | 530 |
| | STAGE 3A | 694+50NB | - | 699+98NB | NORTHBOUND | EDGE LINE | --- | 550 |
| | STAGE 3A | 708+43NB | - | 722+43NB | NORTHBOUND | EDGE LINE | --- | 1,400 |
| | STAGE 3A | 745+08NB | - | 746+08NB | NORTHBOUND | LANE LINE | 25 | --- |
| | SUBTOTAL STAGE 3A | | | | | | 175 | 9,235 |
| | STAGE 3B | 516+30NB | - | 522+90NB | NORTHBOUND | LANE LINE | --- | 175 |
| | STAGE 3B | 522+90NB | - | 526+90NB | NORTHBOUND | LANE LINE | 100 | --- |
| | STAGE 3B | 527+90NB | - | 535+00NB | NORTHBOUND | DOTTED LANE LINE | 180 | --- |
| | STAGE 3B | 535+00NB | - | 539+07NB | NORTHBOUND | 8" EDGE LINE | 410 | --- |
| | STAGE 3B | 537+00NB | - | 540+93NB | NB EXIT RAMP | 8" EDGE LINE | 390 | --- |
| | STAGE 3B | 537+00NB | - | 540+40NB | NORTHBOUND | 24" DIAGONAL | --- | 510 |
| | SUBTOTAL STAGE 3B | | | | | | 1,080 | 685 |
| | TOTALS | | | | | | 1,655 | 16,675 |

## PAVEMENT MARKING ITEMS

| CAT. | STATION | - | STATION | LOCATION | 646.0106 EPOXY 4-INCH (DOUBLE YELLOW) LF | 646.0841.S GROOVED WET REFLECTIVE CONTRAST TAPE, 4-INCH (WHITE)(12.5'SEG, 37.5'GAP) LF | 646.0842.S GROOVED CONTRAST WET REFLECTIVE EPOXY, 4-INCH (WHITE)(12.5'SEG, 37.5'GAP) LF | (WHITE) LF | (YELLOW) LF | 646.0843.S GROOVED WET REFLECTIVE CONTRAST TAPE, 8-INCH (WHITE)(3'SEG, 9'GAP) LF | (WHITE) LF | 646.0844.S GROOVED CONTRAST WET REFLECTIVE EPOXY, 8-INCH (WHITE) LF | 646.2304.S GROOVED WET REFLECTIVE EPOXY, 4-INCH (WHITE) LF | (YELLOW) LF | 647.0166 ARROWS EPOXY TYPE 2 (WHITE) EACH | 647.0356 WORDS EPOXY (WHITE) EACH | 647.0456 CURB EPOXY (YELLOW) LF | 647.0526 YIELD LINE SYMBOLS EPOXY 18-INCH (WHITE) EACH | 647.0566 STOP LINE EPOXY 18-INCH (WHITE) LF | 647.0606 ISLAND NOSE EPOXY (YELLOW) EACH | 647.0746 DIAGONAL EPOXY 24-INCH (WHITE) LF | 647.0766 CROSSWALK EPOXY 6-INCH (WHITE) LF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | S.PROJ. LIMITS | - | 522+00 | NB MAINLINE | --- | 145 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 522+00 | - | 548+50 | NB MAINLINE | --- | 665 | --- | --- | --- | 155 | 1,070 | --- | 705 | 895 | --- | --- | --- | --- | --- | --- | 290 | --- |
| | 522+00 SB | - | 548+50 SB | SB MAINLINE | --- | 305 | --- | --- | --- | --- | --- | --- | 890 | 895 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 548+50 | - | 608+50 | NB MAINLINE | --- | 1,500 | --- | --- | --- | --- | 1,690 | --- | 5,470 | 6,050 | --- | --- | --- | --- | --- | --- | 115 | --- |
| | 548+50 SB | - | 608+50 SB | SB MAINLINE | --- | 1,500 | --- | --- | --- | --- | 1,640 | --- | 5,450 | 6,050 | --- | --- | --- | --- | --- | --- | 115 | --- |
| | 608+50 | - | 634+00 | NB MAINLINE | --- | 640 | --- | --- | --- | --- | 1,350 | --- | 2,180 | 2,550 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 608+50 SB | - | 634+00 SB | SB MAINLINE | --- | 640 | --- | --- | --- | --- | 625 | --- | 2,120 | 2,570 | --- | --- | --- | --- | --- | --- | 160 | --- |
| | 634+00 | - | 678+50 | NB MAINLINE | --- | 1,110 | --- | --- | --- | --- | 485 | --- | 4,120 | 4,450 | --- | --- | --- | --- | --- | --- | 145 | --- |
| | 634+00 SB | - | 678+50 SB | SB MAINLINE | --- | 1,110 | --- | --- | --- | --- | 1,040 | --- | 4,250 | 4,460 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 678+50 | - | 716+00 | NB MAINLINE | --- | 940 | --- | --- | --- | --- | 1,050 | --- | 3,530 | 3,750 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 678+50 SB | - | 716+00 SB | SB MAINLINE | --- | 940 | --- | --- | --- | --- | 450 | --- | 3,430 | 3,750 | --- | --- | --- | --- | --- | --- | 115 | --- |
| | 716+00 | - | 781+91 | NB MAINLINE | --- | 755 | --- | --- | --- | --- | --- | --- | 2,910 | 2,910 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 716+00 SB | - | 782+12 SB | SB MAINLINE | --- | 1,140 | --- | --- | --- | --- | --- | --- | 3,180 | 3,070 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 10+50 MA | - | 17+92 MA | MA RAMP | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 10+00 MD | - | 30+16 MD | MD RAMP | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 10+58 MB | - | 19+30 MB | MB RAMP | --- | --- | --- | --- | --- | --- | --- | --- | 775 | 610 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 10+28 MC | - | 19+37 MC | MC RAMP | --- | --- | --- | --- | --- | --- | --- | --- | 1,030 | 685 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 10+93 WA | - | 22+60 WA | WA RAMP | --- | --- | --- | --- | --- | --- | 120 | --- | 1,240 | 905 | --- | --- | --- | 7 | 16 | --- | --- | 68 |
| | 10+00 WD | - | 18+82 WD | WD RAMP | --- | --- | --- | --- | --- | --- | --- | --- | 770 | 500 | --- | --- | --- | --- | --- | --- | --- | 98 |
| | 10+16 WB | - | 21+10 WB | WB RAMP | --- | --- | --- | --- | --- | --- | --- | --- | 1,000 | 1,080 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 10+13 WC | - | 23+41 WC | WC RAMP | --- | --- | --- | --- | --- | --- | 130 | --- | 1,480 | 990 | --- | --- | --- | --- | 17 | --- | --- | --- |
| | 10+93 BA | - | 21+76 BA | BA RAMP | --- | --- | --- | --- | --- | --- | 165 | --- | 1,140 | 825 | --- | --- | --- | --- | 42 | --- | --- | 91 |
| | 10+00 BD | - | 19+92 BD | BD RAMP | --- | --- | --- | --- | --- | --- | --- | --- | 925 | 730 | --- | --- | --- | --- | --- | --- | --- | 64 |
| | 10+17 BB | - | 21+77 BB | BB RAMP | --- | --- | --- | --- | --- | --- | --- | --- | 1,150 | 920 | --- | --- | --- | --- | --- | --- | --- | 67 |
| | 10+11 BC | - | 19+75 BC | BC RAMP | --- | --- | --- | --- | --- | --- | 125 | --- | 1,020 | 720 | --- | --- | --- | --- | 36 | --- | --- | 81 |
| | 9+00 W | - | 25+89 W | STH 19 | --- | --- | 640 | 2,550 | 2,630 | --- | --- | 1,040 | --- | --- | 3 | 2 | 265 | 7 | 120 | 4 | --- | --- |
| | 8+51 B | - | 19+45 B | CTH N | 575 | --- | 435 | 205 | --- | --- | --- | 445 | --- | --- | --- | --- | 315 | --- | 36 | 2 | --- | 180 |
| | SUBTOTALS | | | | 575 | 11,390 | 1,075 | 2,755 | 2,630 | 155 | 9,940 | 1,485 | 48,765 | 49,365 | 3 | 2 | 580 | 14 | 267 | 6 | 940 | 649 |
| | TOTALS | | | | 575 | 11,390 | 6,460 | | | 10,095 | | 1,485 | 98,130 | | 3 | 2 | 580 | 14 | 267 | 6 | 940 | 649 |

## TEMPORARY PAVEMENT MARKING REMOVABLE TAPE

| CATEGORY | STAGE | STATION | - | STATION | LOCATION | 649.0400 4-INCH (WHITE) LF | 649.0400 4-INCH (YELLOW) LF | 649.0801 8-INCH (WHITE) LF |
|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 536+35 SB | - | 539+08 SB | SB USH 151 | --- | 275 | --- |
| | | 743+22 SB | - | 748+07 SB | SB USH 151 | 485 | --- | --- |
| | | 743+22 SB | - | 762+07 SB | SB USH 151 | --- | 1,890 | --- |
| | | 13+44 W | - | 25+85 W | STH 19 | --- | 1,100 | --- |
| | | 9+55 W | - | 20+00 W | STH 19 | 1,045 | --- | --- |
| | | 8+39 B | - | 12+65 B | SB CTH N | 445 | --- | --- |
| | | 11+50 B | - | 13+85 B | NB CTH N | --- | 235 | --- |
| | | SUBTOTALS (STAGE 2A) | | | | 1,975 | 3,500 | 0 |
| | STAGE 2B | 536+35 SB | - | 539+08 SB | SB USH 151 | 275 | --- | --- |
| | | 561+35 SB | - | 563+35 SB | SB USH 151 | 200 | --- | --- |
| | | 626+35 SB | - | 628+35 SB | SB USH 151 | 200 | --- | --- |
| | | 696+35 SB | - | 698+35 SB | SB USH 151 | 200 | --- | --- |
| | | 743+22 SB | - | 746+97 SB | SB USH 151 | --- | 375 | --- |
| | | 743+22 SB | - | 761+57 SB | SB USH 151 | 1,835 | --- | --- |
| | | B-13-269/271/273/276 | | | SB USH 151 | 1,000 | 1,000 | --- |
| | | 11+05 W | - | 19+86 W | STH 19 | --- | 885 | --- |
| | | 11+20 W | - | 16+13 W | STH 19 | 495 | --- | --- |
| | | 13+20 W | - | 19+70 W | STH 19 | 650 | --- | --- |
| | | 15+20 W | - | 18+15 W | STH 19 | --- | 295 | --- |
| | | 18+05 W | - | 19+86 W | STH 19 | --- | --- | 185 |
| | | 21+45 W | - | 25+85 W | STH 19 | 440 | --- | --- |
| | | 21+60 W | - | 22+55 W | STH 19 | -- | --- | 95 |
| | | SUBTOTALS (STAGE 2B) | | | | 5,295 | 2,555 | 280 |
| | STAGE 3A | 526+90 | - | 539+07 | NB USH 151 | --- | 1,220 | --- |
| | | 745+08 | - | 746+08 | NB USH 151 | --- | 100 | --- |
| | | 11+05 W | - | 14+60 W | STH 19 | --- | 355 | --- |
| | | 15+98 W | - | 18+83 W | STH 19 | --- | 290 | --- |
| | | 17+95 W | - | 20+15 W | STH 19 | --- | 445 | --- |
| | | 17+95 W | - | 20+07 W | STH 19 | 215 | --- | --- |
| | | 20+50 W | - | 24+00 W | STH 19 | --- | 350 | --- |
| | | SUBTOTALS (STAGE 3A) | | | | 215 | 2,760 | 0 |
| | STAGE 3B | 516+30 | - | 537+50 | NB USH 151 | --- | 2,120 | --- |
| | | 527+90 | - | 537+50 | NB USH 151 | --- | --- | 960 |
| | | 527+90 | - | 535+00 | NB USH 151 | --- | --- | 710 |
| | | 537+50 | - | 539+07 | NB USH 151 | --- | 160 | --- |
| | | 558+28 | - | 562+37 | NB USH 151 | --- | --- | 410 |
| | | B-13-268/270/272/275 | | | NB USH 151 | 1,000 | 1,000 | --- |
| | | 18+00 MB | - | 562+37 | RAMP | --- | --- | 410 |
| | | 18+00 MB | - | 571+35 | RAMP | 1,310 | --- | --- |
| | | 590+50 | - | 592+98 | NB USH 151 | 250 | --- | --- |
| | | 593+55 | - | 598+00 | NB USH 151 | --- | --- | 445 |
| | | 593+55 | - | 10+55 WA | NB USH 151 | --- | --- | 445 |
| | | 618+50 | - | 622+15 | NB USH 151 | --- | --- | 365 |
| | | 18+06 WB | - | 622+15 | RAMP | --- | --- | 365 |
| | | 18+06 WB | - | 631+15 | RAMP | 1,260 | --- | --- |
| | | 657+46 | - | 660+55 | RAMP | 310 | --- | --- |
| | | 663+46 | - | 666+24 | NB USH 151 | --- | --- | 280 |
| | | 663+46 | - | 10+82 BA | RAMP | --- | --- | 280 |
| | | 689+20 | - | 694+39 | NB USH 151 | --- | --- | 520 |
| | | 21+21 BB | - | 694+39 | RAMP | --- | --- | 520 |
| | | 21+21 BB | - | 703+40 | RAMP | 1,420 | --- | --- |
| | | 745+08 | - | 746+08 | NB USH 151 | 100 | --- | --- |
| | | 16+32 W | - | 23+50 W | STH 19 | 720 | --- | --- |
| | | 17+50 W | - | 20+50 W | STH 19 | --- | 300 | --- |
| | | 18+82 W | - | 25+73 W | STH 19 | 690 | --- | --- |
| | | SUBTOTALS (STAGE 3B) | | | | 7,060 | 3,580 | 5,710 |
| | STAGE 1 CTH N | 5+25 B | - | 10+00 B | SB CTH N | 410 | --- | --- |
| | | 18+00 B | - | 19+20 B | NB CTH N | 120 | --- | --- |
| | | 19+69 B | - | 21+68 B | NB CTH N | 200 | --- | --- |
| | | SUBTOTALS (STAGE 1 CTH N) | | | | 730 | 0 | 0 |
| | STAGE 2 CTH N | 2+38 B | - | 7+43 B | SB CTH N | --- | 710 | --- |
| | | 8+62 B | - | 18+00 B | SB CTH N | --- | 790 | --- |
| | | 9+60 B | - | 19+00 B | NB CTH N | --- | 770 | --- |
| | | SUBTOTALS (STAGE 2 CTH N) | | | | 0 | 2,270 | 0 |
| | | | | | SUBTOTALS (PROJECT) | 14,545 | 14,665 | 5,990 |
| | | | | | TOTALS | | 29,210 | 5,990 |

## TEMPORARY PAVEMENT MARKING PAINT

| CATEGORY | STAGE | STATION | - | STATION | LOCATION | 649.0402 4-INCH (WHITE) LF | 649.0402 4-INCH (YELLOW) LF | 649.0802 8-INCH (WHITE) LF |
|---|---|---|---|---|---|---|---|---|
| 0010 | STAGE 2A | 539+08 SB | - | 743+22 SB | SB USH 151 | --- | 20,420 | --- |
| | | 541+08 SB | - | 554+85 SB | SB USH 151 | 1,380 | --- | --- |
| | | 601+08 SB | - | 614+95 SB | SB USH 151 | 1,390 | --- | --- |
| | | 672+15 SB | - | 685+66 SB | SB USH 151 | 1,350 | --- | --- |
| | | 709+65 SB | - | 723+04 SB | SB USH 151 | 1,340 | --- | --- |
| | | SUBTOTALS (STAGE 2A) | | | | 5,460 | 20,420 | 0 |
| | STAGE 2B | 539+08 SB | - | 743+22 SB | SB USH 151 | 20,420 | --- | --- |
| | | 540+77 SB | - | 555+48 SB | SB USH 151 | --- | 1,470 | --- |
| | | 600+68 SB | - | 615+40 SB | SB USH 151 | --- | 1,470 | --- |
| | | 671+79 SB | - | 685+77 SB | SB USH 151 | --- | 1,400 | --- |
| | | 709+25 SB | - | 723+20 SB | SB USH 151 | --- | 1,400 | --- |
| | | 539+08 SB | - | 743+22 SB | SB USH 151 | 1,630 | --- | 3,755 |
| | | SUBTOTALS (STAGE 2B) | | | | 22,050 | 5,740 | 3,755 |
| | STAGE 3A | 539+08 SB | - | 743+22 SB | SB USH 151 | 1,630 | --- | --- |
| | | 539+07 | - | 745+08 | NB USH 151 | --- | 20,600 | --- |
| | | 541+35 | - | 556+11 | NB USH 151 | 1,480 | --- | --- |
| | | 558+64 | - | 561+10 | NB USH 151 | --- | --- | 250 |
| | | 18+35MB | - | 560+60 | NB USH 151 | --- | --- | 195 |
| | | 561+10 | - | 563+60 | NB USH 151 | --- | --- | 60 |
| | | 18+35MB | - | 569+60 | NB USH 151 | 1,090 | --- | --- |
| | | 601+41 | - | 616+39 | NB USH 151 | 1,500 | --- | --- |
| | | 619+32 | - | 621+94 | NB USH 151 | --- | --- | 260 |
| | | 18+89WB | - | 621+44 | NB USH 151 | --- | --- | 210 |
| | | 621+94 | - | 624+44 | NB USH 151 | --- | --- | 60 |
| | | 18+89WB | - | 630+44 | NB USH 151 | 1,110 | --- | --- |
| | | 671+08 | - | 685+07 | NB USH 151 | 1,400 | --- | --- |
| | | 688+88 | - | 691+48 | NB USH 151 | --- | --- | 260 |
| | | 20+89BB | - | 690+98 | NB USH 151 | --- | --- | 210 |
| | | 691+48 | - | 693+98 | NB USH 151 | --- | --- | 60 |
| | | 20+89BB | - | 699+98 | NB USH 151 | 1,110 | --- | --- |
| | | 708+43 | - | 722+43 | NB USH 151 | 1,400 | --- | --- |
| | | SUBTOTALS (STAGE 3A) | | | | 10,720 | 20,600 | 1,565 |
| | STAGE 3B | 539+07 | - | 745+08 | NB USH 151 | --- | 20,600 | --- |
| | | 539+07 | - | 558+28 | NB USH 151 | 1,920 | --- | --- |
| | | 571+35 | - | 590+50 | NB USH 151 | 1,915 | --- | --- |
| | | 598+00 | - | 618+50 | NB USH 151 | 2,050 | --- | --- |
| | | 631+15 | - | 657+46 | NB USH 151 | 2,630 | --- | --- |
| | | 666+24 | - | 689+20 | NB USH 151 | 2,300 | --- | --- |
| | | 703+40 | - | 745+08 | NB USH 151 | 4,170 | --- | --- |
| | | 539+07 | - | 745+08 | NB USH 151 | 1,650 | --- | 4,680 |
| | | SUBTOTALS (STAGE 3B) | | | | 16,635 | 20,600 | 4,680 |
| | STAGE 3C | 539+07 | - | 745+08 | NB USH 151 | 1,650 | --- | --- |
| | STAGE 1 CTH N | 10+00 B | - | 18+00 B | SB CTH N | 610 | --- | --- |
| | | 11+30 B | - | 18+00 B | NB CTH N | 560 | --- | --- |
| | | SUBTOTALS (STAGE 1 CTH N) | | | | 1,170 | 0 | 0 |
| | | | | | SUBTOTALS (PROJECT) | 57,685 | 67,360 | |
| | | | | | TOTALS | | 125,045 | 10,000 |

## TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 6-INCH

| CATEGORY | STAGE | STATION | LOCATION | 649.0600 LF |
|---|---|---|---|---|
| 0010 | STAGE 2A | 19+05 B | CROSSWALK | 85 |

## CONSTRUCTION STAKING ITEMS

| CATEGORY | STAGE | STATION - STATION | LOCATION | 650.4500 CONSTRUCTION STAKING SUBGRADE LF | 650.5000 CONSTRUCTION STAKING BASE LF | 650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF |
|---|---|---|---|---|---|---|
| 0010 | STAGE 1 | 549+14 SB - 554+85 SB | SB SHOULDER | 570 | 570 | --- |
| | | 550+04 - 556+11 | NB SHOULDER | 605 | 605 | --- |
| | | 601+08 SB - 606+59 SB | SB SHOULDER | 550 | 550 | --- |
| | | 601+41 - 607+72 | NB SHOULDER | 630 | 630 | --- |
| | | 609+23 SB - 614+95 SB | SB SHOULDER | 570 | 570 | --- |
| | | 610+30 - 616+39 | NB SHOULDER | 610 | 610 | --- |
| | | 672+15 SB - 677+80 SB | SB SHOULDER | 565 | 565 | --- |
| | | 671+08 - 676+91 | NB SHOULDER | 585 | 585 | --- |
| | | 680+02 SB - 685+66 SB | SB SHOULDER | 565 | 565 | --- |
| | | 679+15 - 685+07 | NB SHOULDER | 590 | 590 | --- |
| | | 709+65 SB - 715+27 SB | SB SHOULDER | 560 | 560 | --- |
| | | 708+43 - 714+37 | NB SHOULDER | 595 | 595 | --- |
| | | 717+50 SB - 723+04 SB | SB SHOULDER | 555 | 555 | --- |
| | | 716+48 - 722+43 | NB SHOULDER | 595 | 595 | --- |
| | | 736+92 SB - 748+07 SB | SB SHOULDER | 1,120 | 1,120 | --- |
| | | SUBTOTALS (STAGE 1) | | 9,265 | 9,265 | 0 |
| | STAGE 2A | 549+43 SB - 555+48 SB | SB SHOULDER | 605 | 605 | --- |
| | | 600+68 SB - 606+98 SB | SB SHOULDER | 630 | 630 | --- |
| | | 609+58 SB - 615+40 SB | SB SHOULDER | 580 | 580 | --- |
| | | 671+79 SB - 677+66 SB | SB SHOULDER | 585 | 585 | --- |
| | | 679+83 SB - 685+77 SB | SB SHOULDER | 595 | 595 | --- |
| | | 709+25 SB - 715+14 SB | SB SHOULDER | 590 | 590 | --- |
| | | 717+19 SB - 723+20 SB | SB SHOULDER | 600 | 600 | --- |
| | | 738+02 SB - 746+97 SB | SB SHOULDER | 895 | 895 | --- |
| | | 741+22 SB - 743+22 SB | SB INSIDE | 200 | --- | 200 |
| | | SUBTOTALS (STAGE 2A) | | 5,280 | 5,080 | 200 |
| | STAGE 2B | 741+22 SB - 743+22 SB | SB OUTSIDE | 200 | 0 | 200 |
| | STAGE 3A | 549+75 - 553+46 | NB SHOULDER | 370 | 370 | --- |
| | | 603+70 - 607+40 | NB SHOULDER | 370 | 370 | --- |
| | | 609+97 - 613+82 | NB SHOULDER | 385 | 385 | --- |
| | | 673+68 - 677+19 | NB SHOULDER | 350 | 350 | --- |
| | | 679+34 - 682+70 | NB SHOULDER | 335 | 335 | --- |
| | | 711+04 - 714+61 | NB SHOULDER | 355 | 355 | --- |
| | | 716+64 - 720+09 | NB SHOULDER | 345 | 345 | --- |
| | | SUBTOTALS (STAGE 3A) | | 2,510 | 2,510 | 0 |
| | | | TOTALS | 17,255 | 16,855 | 400 |

## CONSTRUCTION STAKING RESURFACING REFERENCE

| CATEGORY | STATION - STATION | LOCATION | 650.8000 LF |
|---|---|---|---|
| 0010 | 539+07 - 745+08 | NORTHBOUND | 20,600 |
| | 539+08 SB - 741+22 SB | SB SHOULDER | 20,210 |
| | | TOTAL | 40,810 |

## INSTALL CONDUIT INTO EXISTING ITEM

| CATEGORY | LOCATION | STATION | LOCATION | 652.0700.S EACH | REMARKS |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 | 20+44.3 W | 75.0' LT | 1 | STUB |
| | (WINDSOR STREET) | 21+52.9 W | 100.7' LT | 1 | EXPB-6 |
| | | | TOTAL | 2 | |

## PULL BOXES STEEL 24X42-INCH

| CATEGORY | LOCATION | NO. | STATION | LOCATION | 653.0140 EACH |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 | PB-1 | 14+68.0 W | 51.3' RT | 1 |
| | (WINDSOR STREET) | PB-2 | 14+24.2 W | 61.6' RT | 1 |
| | | PB-3 | 13+93.2 W | 42.5' RT | 1 |
| | | PB-4 | 21+02.1 W | 71.3' LT | 1 |
| | | | | TOTAL | 4 |

## TRAFFIC SIGNAL CONDUIT SUMMARY

| CATEGORY | LOCATION | LOCATION FROM | LOCATION TO | 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF | 652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF | 652.0615 CONDUIT SPECIAL 3-INCH LF |
|---|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 | PB-1 | SB-1 | 22 | --- | --- |
| | (WINDSOR STREET) | PB-1 | SB-2 | 18 | --- | --- |
| | | PB-2 | LP-1 | 30 | --- | --- |
| | | PB-2 | PB-3 | --- | 74 | --- |
| | | EXPB-6 | PB-4 | --- | --- | 120 |
| | | PB-4 | SB-5 | 8 | --- | --- |
| | | SB-4 | STUB | 5 | --- | --- |
| | | | TOTALS | 83 | 74 | 120 |

## REMOVING PULL BOXES

| CATEGORY | LOCATION | EQUIP. LOCATION | STATION | LOCATION | 653.0905 EACH |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 | EXPB-1 | 13+95 W | 40.7' RT | 1 |
| | (WINDSOR STREET) | EXPB-2 | 14+32 W | 59.7' RT | 1 |
| | | | | TOTAL | 2 |

3

## TRAFFIC SIGNAL BASES

| CATEGORY | LOCATION | BASE NO. | STATION | LOCATION | 654.0101 CONCRETE BASES TYPE 1 EACH | 654.0105 CONCRETE BASES TYPE 5 EACH | 657.0100 PEDESTAL BASES EACH |
|---|---|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | SB-1 | 14+64.9 W | 30.1'RT | 1 | -- | --- |
| | | SB-2 | 14+74.7 W | 35.4'RT | 1 | --- | 1 |
| | | LP-1 | 14+32.3 W | 90.3'RT | --- | 1 | --- |
| | | SB-4 | 20+47.6 W | 75.1'LT | 1 | --- | 1 |
| | | SB-5 | 21+08.8 W | 67.5'LT | 1 | --- | --- |
| | | | | TOTALS | 4 | 1 | 2 |

## CABLE TRAFFIC SIGNAL SUMMARY

| CATEGORY | LOCATION | LOCATION FROM | LOCATION TO | 655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF | 655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | EXCB-1 | SB-1 | --- | 380 |
| | | SB-1 | SB-2 | 34 | --- |
| | | SB-2 | 90 | 12 | --- |
| | | SB-2 | BUTTON | 6 | --- |
| | | EXSC-1 | SB-3 | --- | 58 |
| | | SB-3 | HEAD 20 | 22 | --- |
| | | SB-3 | HEAD 16 | 45 | --- |
| | | EXSC-1 | SB-4 | 71 | --- |
| | | SB-4 | HEAD 19 | 19 | --- |
| | | EXSC-1 | SB-5 | 250 | --- |
| | | | TOTALS | 459 | 438 |

## ELECTRICAL WIRE LIGHTING

| CATEGORY | LOCATION | LOCATION FROM | LOCATION TO | 655.0305 CABLE TYPE UF 2-12 AWG GROUNDED LF | 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | EXSB-1 | LP-1 | 210 | --- |
| | | | POLE | --- | --- |
| | | EXSC-1 | SB-3 | --- | --- |
| | | | POLE | --- | 125 |
| | | | TOTALS | 210 | 125 |

## TRAFFIC SIGNAL EQUIPMENT GROUNDING AND GROUNDED CONDUCTORS

| CATEGORY | LOCATION | LOCATION FROM | LOCATION TO | 655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG (GREEN) LF | 655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG (WHITE) LF |
|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | EXSB-2 | SB-2 | 120 | 120 |
| | | SB-2 | SB-1 | 61 | 61 |
| | | SB-1 | EXSB-4 | 310 | 310 |
| | | SB-2 | PB-1 | 37 | --- |
| | | SB-2 | PB-2 | 97 | --- |
| | | SB-2 | PB-3 | 150 | --- |
| | | EXCS-1 | SB-5 | 250 | 250 |
| | | SB-5 | EXSB-7 | 245 | 245 |
| | | SB-3 | SB-4 | 53 | 53 |
| | | SB-4 | EXSC-1 | 76 | 76 |
| | | SB-5 | PB-4 | 27 | --- |
| | | | SUBTOTALS | 1,426 | 1,115 |
| | | | TOTAL | 2,541 | |

## TRAFFIC SIGNAL POLES

| CATEGORY | LOCATION | BASE NO. | STATION | LOCATION | 657.0310 TYPE 3 EACH | 657.0410 TRAFFIC SIGNAL STANDARDS ALUMINUM 9-FT EACH | 657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH | 657.0590 TROMBONE ARMS 20-FT EACH | 657.0614 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 8-FT EACH | 658.0500 PEDESTRIAN PUSH BUTTONS EACH | 659.1125 LUMINAIRES UTILITY LED C EACH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | SB-2 | 14+74.7 W | 35.4'RT | --- | 1 | --- | --- | --- | 1 | --- |
| | | SB-3 | 20+17.3 W | 75.0'LT | 1 | --- | --- | 1 | 1 | --- | 1 |
| | | SB-4 | 20+47.6 W | 75.1'LT | --- | --- | 1 | --- | --- | --- | --- |
| | | | | TOTALS | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

## REMOVE CABLE

| CATEGORY | LOCATION | LOCATION FROM | LOCATION TO | 674.0300 LF |
|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | EXPB-1 | EXPB-4 | 64 |
| | | EXPB-2 | EXPB-3 | 92 |
| | | EXPB-5 | EXSB-5 | 23 |
| | | | TOTAL | 179 |

## RELOCATE SIGNAL FACE

| CATEGORY | LOCATION | BASE NO. FROM | BASE NO. TO | STATION | LOCATION | SPV.0060.02 EACH |
|---|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | EXSB-3 | SB-2 | 14+74.7 | 35.4' RT | 1 |
| | | EXSB-5 | SB-3 | 20+17.3 | 75.0' LT | 1 |
| | | EXSB-5 | SB-4 | 20+47.6 | 75.1' LT | 1 |
| | | EXSB-8 | SB-3 | 20+17.3 | 75.0' LT | 1 |
| | | | | | TOTAL | 4 |

## RELOCATING EXISTING POLE

| CATEGORY | LOCATION | BASE NO. FROM | BASE NO. TO | STATION | LOCATION | SPV.0060.03 EACH |
|---|---|---|---|---|---|---|
| 0010 | USH 151 & STH 19 (WINDSOR STREET) | EXSB-3 | SB-1 | 14+64.9 W | 30.1' RT | 1 |
| | | EXLP-1 | LP-1 | 14+32.3 W | 90.3' RT | 1 |
| | | EXSB-6 | SB-5 | 21+08.8 W | 67.5' LT | 1 |
| | | | | | TOTAL | 3 |

## SAWING SUMMARY

| CATEGORY | STAGE | STATION - STATION | LOCATION | 690.0150 SAWING ASPHALT LF | 690.0250 SAWING CONCRETE LF* |
|---|---|---|---|---|---|
| 0010 | STAGE 1 | 549+14 SB - 554+85 SB | SB Outside | 590 | --- |
| | | 550+04 - 556+11 | NB Outside | 625 | --- |
| | | 564+00 - 569+60 | NB Outside Ramp | 570 | --- |
| | | 601+08 SB - 606+59 SB | SB Outside | 570 | --- |
| | | 601+41 - 607+72 | NB Outside | 650 | --- |
| | | 609+23 SB - 614+95 SB | SB Outside | 590 | --- |
| | | 610+30 - 616+39 | NB Outside | 625 | --- |
| | | 625+50 - 630+00 | NB Outside Ramp | 460 | --- |
| | | 672+15 SB - 677+80 SB | SB Outside | 580 | --- |
| | | 671+08 - 676+91 | NB Outside | 600 | --- |
| | | 680+02 SB - 685+66 SB | SB Outside | 580 | --- |
| | | 679+15 - 685+07 | NB Outside | 610 | --- |
| | | 693+98 - 699+98 | NB Outside Ramp | 610 | --- |
| | | 709+65 SB - 715+27 SB | SB Outside | 580 | --- |
| | | 708+43 - 714+37 | NB Outside | 610 | --- |
| | | 717+50 SB - 723+04 SB | SB Outside | 570 | --- |
| | | 716+48 - 722+43 | NB Outside | 610 | --- |
| | | SUBTOTALS (STAGE 1) | | 10,030 | 0 |
| | STAGE 2A | 549+43 SB - 555+48 SB | SB Inside | 615 | --- |
| | | 600+68 SB - 606+98 SB | SB Inside | 640 | --- |
| | | 609+58 SB - 615+40 SB | SB Inside | 590 | --- |
| | | 671+79 SB - 677+66 SB | SB Inside | 595 | --- |
| | | 679+83 SB - 685+77 SB | SB Inside | 605 | --- |
| | | 709+25 SB - 715+14 SB | SB Inside | 600 | --- |
| | | 717+19 SB - 723+20 SB | SB Inside | 610 | --- |
| | | 741+22 SB | RAMP | --- | 24 |
| | | 743+22 SB | RAMP | --- | 24 |
| | | 17+07 WD | RAMP | --- | 17 |
| | | 18+51 BD | RAMP | --- | 19 |
| | | 19+01 W - 19+80 W | RT, PATH | 83 | --- |
| | | SUBTOTALS (STAGE 2A) | | 4,338 | 84 |
| | STAGE 2B | 11+21 WC | RAMP | --- | 24 |
| | | 11+86 BC | RAMP | --- | 15 |
| | | SUBTOTALS (STAGE 2B) | | 0 | 39 |
| | STAGE 3A | 549+75 - 553+46 | NB Inside | 380 | --- |
| | | 603+70 - 607+40 | NB Inside | 380 | --- |
| | | 609+97 - 613+82 | NB Inside | 395 | --- |
| | | 673+68 - 677+19 | NB Inside | 360 | --- |
| | | 679+34 - 682+70 | NB Inside | 345 | --- |
| | | 711+04 - 714+61 | NB Inside | 365 | --- |
| | | 716+64 - 720+09 | NB Inside | 355 | --- |
| | | 742+33 | NB | 34 | --- |
| | | SUBTOTALS (STAGE 3A) | | 2,614 | 0 |
| | STAGE 3B | 20+97 WA | RAMP | --- | 17 |
| | | 11+24 WB | RAMP | --- | 25 |
| | | 19+99 BA | RAMP | --- | 15 |
| | | 11+91 BB | RAMP | --- | 15 |
| | | SUBTOTALS (STAGE 3B) | | 0 | 72 |
| | STAGE 1 CTH N | 10+00 B | CTH N | 46 | --- |
| | | 18+00 B | CTH N | 28 | --- |
| | | SUBTOTALS (STAGE 1 CTH N) | | 74 | 0 |
| | STAGE 2 CTH N | 10+00 B | CTH N | 38 | --- |
| | | 18+00 B | CTH N | 24 | --- |
| | | SUBTOTALS (STAGE 2 CTH N) | | 62 | 0 |
| | | UNDISTRIBUTED | | 855 | 10 |
| | | | TOTALS | 17,973 | 205 |

* ADDITIONAL QUANTITIES LISTED ELSEWHERE

3

## FTMS PULL BOXES, CONDUIT, AND CABLE

| CATEGORY | ROADWAY | ITEM ID | 652.0125 CONDUIT RIGID METALLIC 2-INCH LF | 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF | 652.0605 CONDUIT SPECIAL 2-INCH LF | 653.0140 PULL BOXES STEEL 24 X 42- INCH EACH | 655.0525 ELECTRICAL WIRE TRAFFIC SIGNALS 6 AWG LF |
|---|---|---|---|---|---|---|---|
| 0020 | US 151 | | | | | | |
| | | EX-SIGCAB - PB1901 | 10 | -- | -- | -- | 30 |
| | | PB1901 | -- | -- | -- | 1 | -- |
| | | PB1901 - PB1902 | -- | 160 | -- | -- | 480 |
| | | PB1902 | -- | -- | -- | 1 | -- |
| | | PB1902 - CCTV-13-0128 | 10 | 20 | -- | -- | 30 |
| | | MBN01 - PBN01 | -- | 50 | -- | -- | 150 |
| | | PBN01 | -- | -- | -- | 1 | -- |
| | | PBN01 - PBN02 | -- | -- | 55 | -- | 165 |
| | | PBN02 | -- | -- | -- | 1 | -- |
| | | PBN02 - PBN03 | -- | 85 | -- | -- | 255 |
| | | PBN03 | -- | -- | -- | 1 | -- |
| | | PBN03 - CCTV-13-0129 | 10 | 20 | -- | -- | 30 |
| | | TOTALS | 30 | 335 | 55 | 5 | 1140 |

## FTMS LUMP SUM ITEMS

| CATEGORY | ROADWAY | 670.0100 FIELD SYSTEM INTEGRATOR LS | 670.0200 ITS DOCUMENTATION LS |
|---|---|---|---|
| 0020 | US 151 | | |
| | PROJECT | 1 | 1 |
| | TOTALS | 1 | 1 |

3

## FTMS COMMUNICATIONS AND CABINETS

| CATEGORY | ROADWAY | ITEM ID | 654.0105 CONCRETE BASES TYPE 5 EACH | 656.0200.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL (MBN01) L.S. | 656.0500.01 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (CCTV-13-0128) L.S. | 656.0500.02 ELECTRICAL SERVICE BREAKER DISCONNECT BOX (CCTV-13-0129) L.S. | 657.0255 TRANSFORMER BASES 11 1/2-INCH INCH BOLT CIRCLE EACH | 657.0322 POLES TYPE 5-ALUMINUM EACH | 672.0250 BASE CAMERA POLE 50-FT EACH | 673.0225.S INSTALL POLE MOUNTED CABINET EACH | 675.0300 INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR EACH | 675.0400.S INSTALL ETHERNET SWITCH EACH | 677.0100 INSTALL CAMERA POLE EACH | 677.0200 INSTALL CAMERA ASSEMBLY EACH | SPV.0060.04 INSTALL SOLAR POWER SYSTEM ASSEMBLY EACH | SPV.0060.05 INSTALL 5.8 GHZ ETHERNET BRIDGE EACH | SPV.0060.06 GROUND ROD EACH | * PLAQUES SEQUENCE IDENTIFICATION EACH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0020 | US 151 | | | | | | | | | | | | | | | | | |
| | | EX-CCTV-13-0033 | -- | -- | -- | -- | -- | -- | -- | -- | 1 | -- | -- | -- | -- | 1 | -- | 1 |
| | | CCTV-13-0128 | -- | -- | 1 | -- | -- | -- | 1 | 1 | 1 | 1 | 1 | 1 | -- | 2 | 1 | 1 |
| | | RP15101 | 1 | -- | -- | -- | 1 | 1 | -- | -- | -- | -- | -- | -- | 1 | 2 | 1 | 1 |
| | | CCTV-13-0129 | -- | -- | -- | 1 | -- | -- | 1 | 1 | 1 | 1 | 1 | 1 | -- | 1 | 1 | 1 |
| | | MBN01 | -- | 1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | | TOTALS | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 1 | 6 | 3 | 4 |

* NON-BID ITEM
(FOR INFORMATION ONLY)

| PROJECT NO: 1111-02-78 | HWY: US 151 | COUNTY: DANE | FTMS MISCELLANEOUS QUANTITIES | SHEET: | E |
|---|---|---|---|---|---|

PLOT DATE : PLOT BY : PLOT NAME : PLOT SCALE : 1:1

# Standard Detail Drawing List

| | |
|---|---|
| 08D01-19 | CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES |
| 08D02-06 | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D04-05 | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES |
| 08D05-17A | CURB RAMPS TYPES 1 AND 1-A |
| 08D05-17B | CURB RAMPS TYPES 2 AND 3 |
| 08D05-17C | CURB RAMPS TYPES 4A AND 4A1 |
| 08D05-17D | CURB RAMPS TYPE 4B AND 4B1 |
| 08D05-17E | CURB RAMPS TYPES 5, 6, 7A, 7B & 8 |
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 08F04-07 | JOINT TIES FOR CONCRETE PIPE  AND CONCRETE COLLAR DETAIL |
| 09B02-09 | CONDUIT |
| 09B04-11 | PULL BOX |
| 09C02-07 | CONCRETE BASES, TYPES 1, 2,  5, & 6 |
| 09C03-04 | TRANSFORMER/PEDESTAL BASES |
| 09E01-14B | POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY) |
| 09E01-14D | POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET) |
| 09E01-14G | HARDWARE DETAILS FOR POLE MOUNTINGS |
| 09E03-05 | NON-FREEWAY LIGHTING UNIT POLE WIRING |
| 09E06-05 | TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT. |
| 09E07-05 | TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL  MOUNTING DETAILS |
| 09H04-01 | 2 CIRCUIT ELECTRICAL SERVICE METER BREAKER PEDESTAL AND BREAKER DISCONNECT BOX |
| 09H11-01 | IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS |
| 11A01-05 | MAINTENANCE CROSSOVER FOR FREEWAYS |
| 11B02-02 | CONCRETE MEDIAN NOSE |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 13A05-05A | SHOULDER RUMBLE STRIP, MILLING |
| 13A05-05B | SHOULDER RUMBLE STRIP, MILLING |
| 13C01-18 | CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES |
| 13C09-13A | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C09-13B | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C09-13C | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C11-11A | RURAL DOWELED CONCRETE PAVEMENT |
| 13C11-11B | RURAL DOWELED CONCRETE PAVEMENT |
| 13C14-06A | BASE PATCHING CONCRETE |
| 13C14-06B | BASE PATCHING CONCRETE |
| 13C14-06C | BASE PATCHING CONCRETE |
| 13C18-03A | CONCRETE PAVEMENT JOINTING |
| 13C18-03B | CONCRETE PAVEMENT STEEL REINFORCEMENT |
| 13C18-03C | CONCRETE PAVEMENT JOINT TIES |
| 13C18-03D | CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES |
| 14B07-14A | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14B | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14C | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14D | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14E | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14F | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14G | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-14H | 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 |
| 14B42-03A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-03B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-03C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B44-02A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-02B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-02C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B45-04A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-04D | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B47-02A | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |

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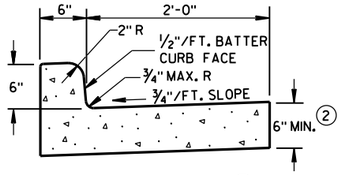
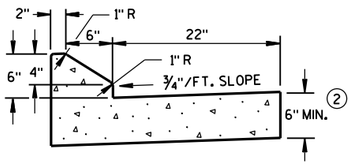
# Standard Detail Drawing List

| | |
|---|---|
| 14B47-02B | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-02C | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 15A02-09 | DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A06-02 | DELINEATOR LAYOUT |
| 15C02-06A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-06B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-06C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C07-13B | PAVEMENT MARKING WORDS |
| 15C07-13C | PAVEMENT MARKING ARROWS |
| 15C08-16A | PAVEMENT MARKING (MAINLINE) |
| 15C08-16E | PAVEMENT MARKING (LEFT TURN LANE) |
| 15C08-16F | PAVEMENT MARKING (ISLANDS) |
| 15C18-03 | MEDIAN ISLAND MARKING |
| 15C20-02 | YIELD MARKING |
| 15C27-01 | DOUBLE ARROW WARNING SIGN PLACEMENT |
| 15C31-01A | PAVEMENT MARKING (RAMPS AND GORES) |
| 15C33-02 | STOP LINE AND CROSSWALK PAVEMENT MARKING |
| 15D03-03 | TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER |
| 15D12-06B | TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION |
| 15D15-02 | TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE |
| 15D16-03 | TRAFFIC CONTROL, EXIT RAMP CLOSURE |
| 15D20-04 | TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY |
| 15D21-04 | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D27-03 | TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH |
| 15D30-03A | TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION |
| 15D30-03B | TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION |
| 15D30-03C | TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION |
| 15D38-01A | TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS |
| 15D38-01B | ATTACHMENT OF SIGNS TO POSTS |

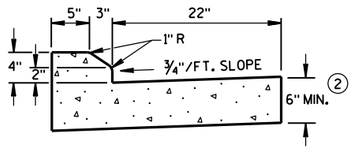

6




TYPES A & D ①

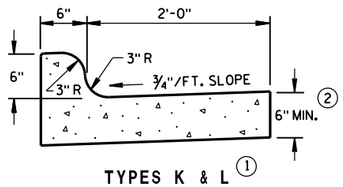



6" SLOPED CURB TYPES G & J ①

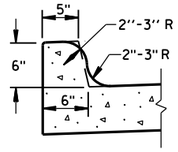



4" SLOPED CURB TYPES G & J ①

## CONCRETE CURB & GUTTER 30"

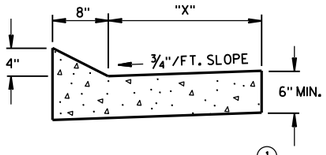



TYPES K & L ①




OPTIONAL CURB SHAPE FOR TYPES K & L ①

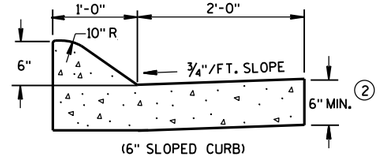
## CONCRETE CURB & GUTTER 30"



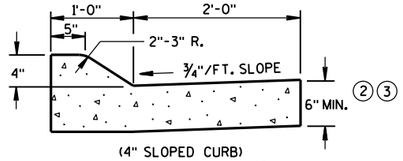

TYPES TBT & TBTT ①

## CONCRETE CURB & GUTTER

| TBT & TBTT | "X" |
|---|---|
| 30" | 22" |
| 36" | 28" |

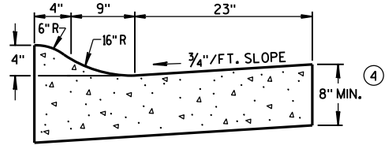



(6" SLOPED CURB)




(4" SLOPED CURB)

TYPES A & D ①




4" SLOPED CURB TYPES R & T ①⑤

## CONCRETE CURB & GUTTER 36"

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

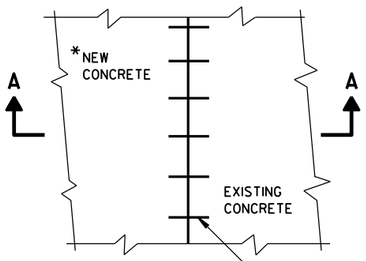
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

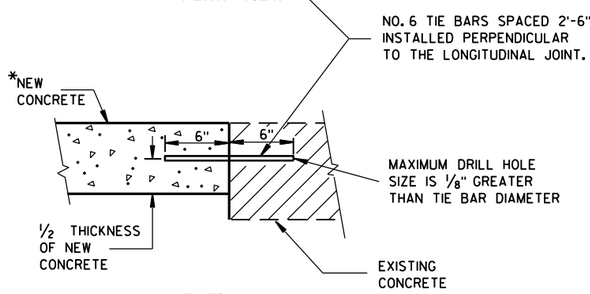
⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



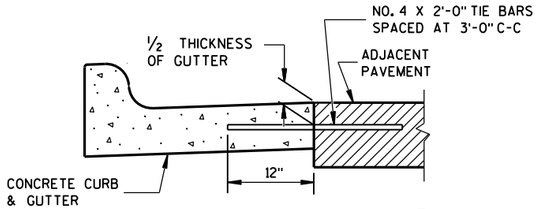

PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

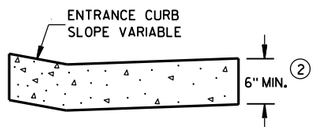



SECTION A-A

## TIE BARS DRILLED INTO EXISTING PAVEMENT

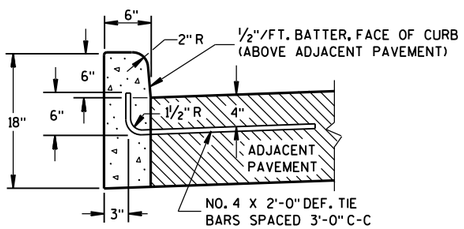



TYPICAL TIE BAR LOCATION ①

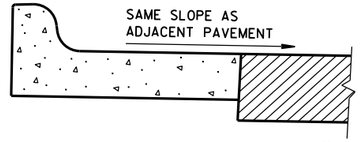



## DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)

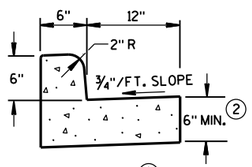



① TYPES A & D



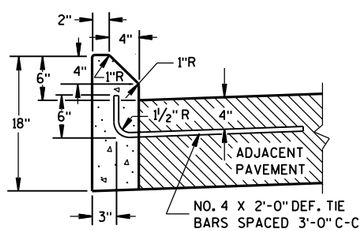

⑥ REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)



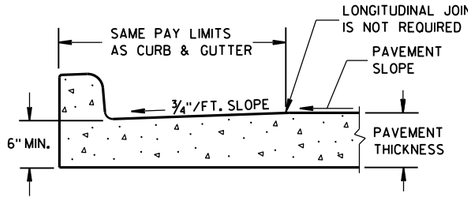

① TYPES A & D

## CONCRETE CURB & GUTTER 18"

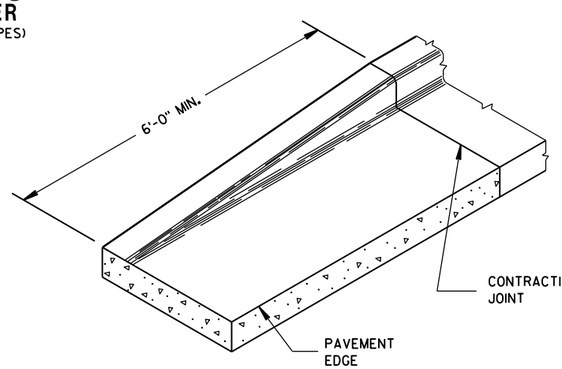



① TYPES G & J

## CONCRETE CURB




## PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER




## END SECTION CURB & GUTTER

# CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



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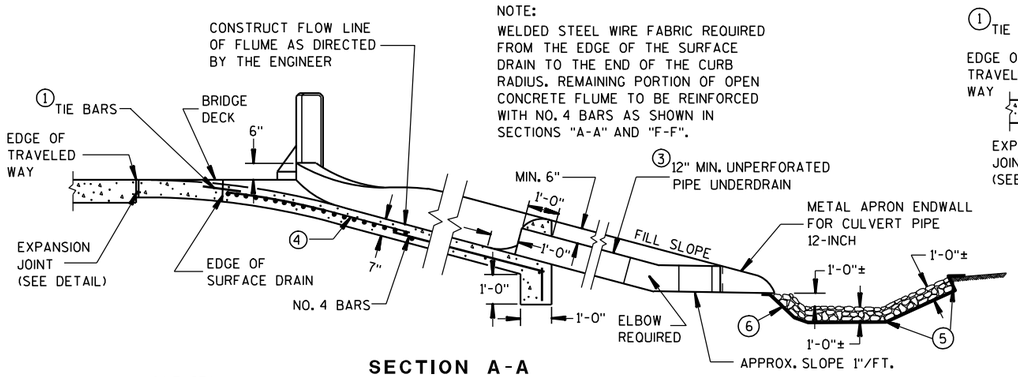
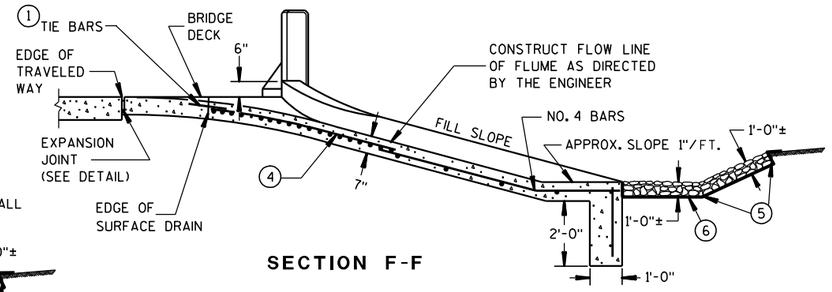
S.D.D. 8 D 1-19




SECTION A-A




SECTION F-F

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.

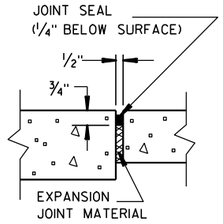
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

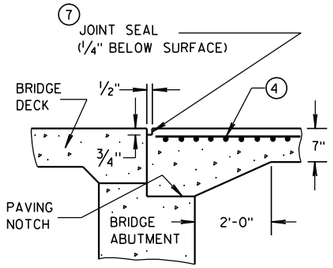
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

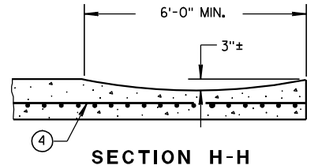
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



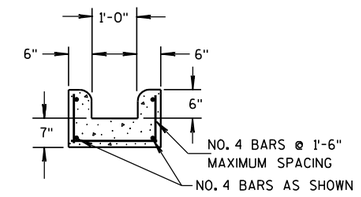

EXPANSION JOINT DETAIL



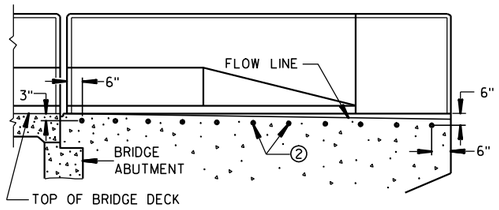

SECTION D-D



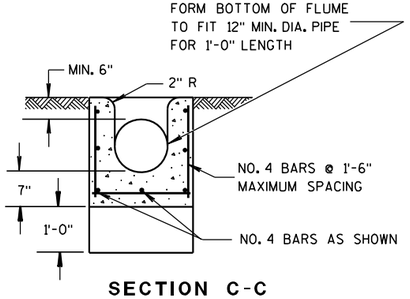

SECTION H-H



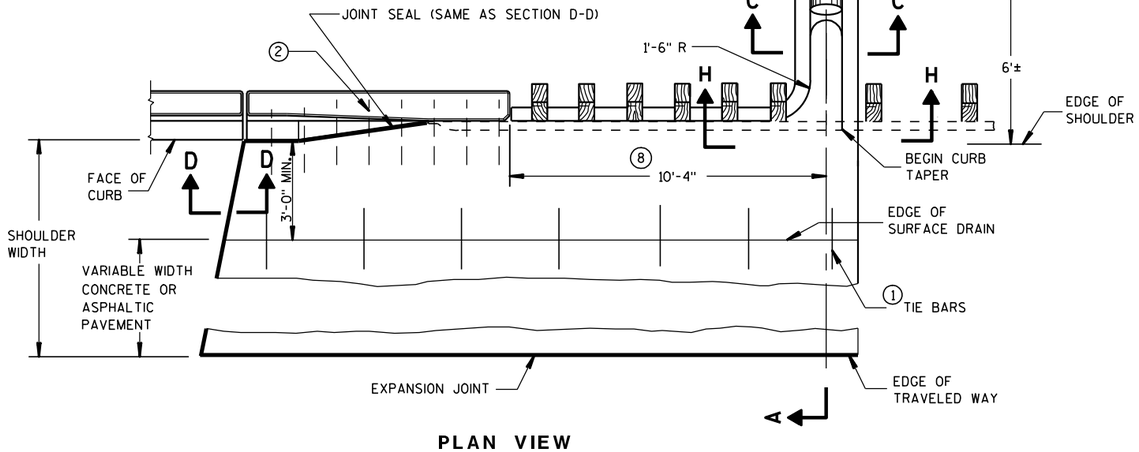

SECTION E-E



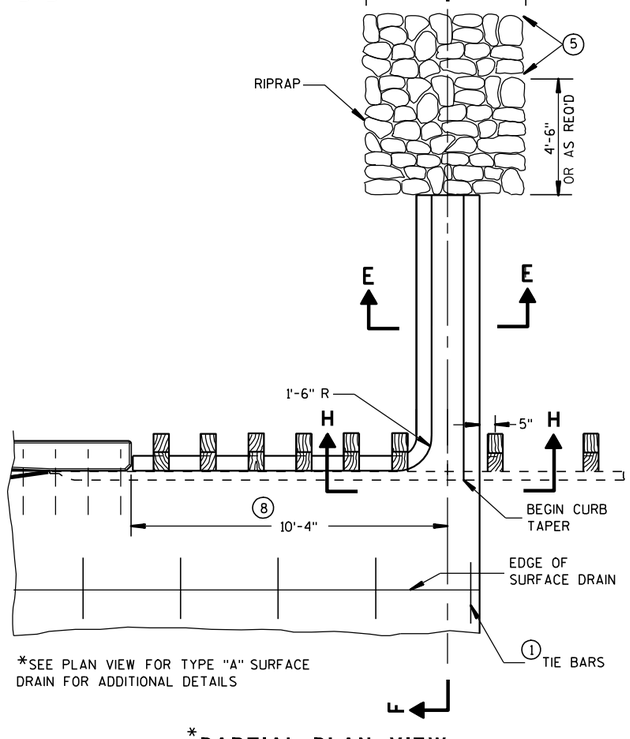

LOCATION OF TIE BARS IN WINGWALL




SECTION C-C




PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"




*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

*PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
172
FHWA

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S.D.D. 8 D 2-6

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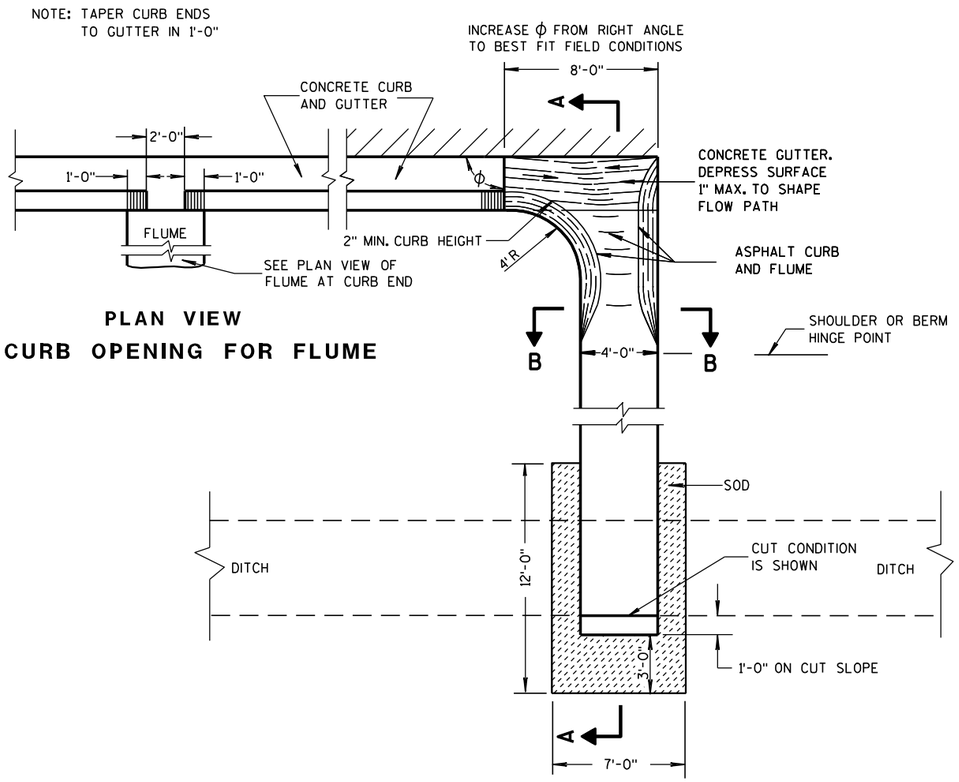
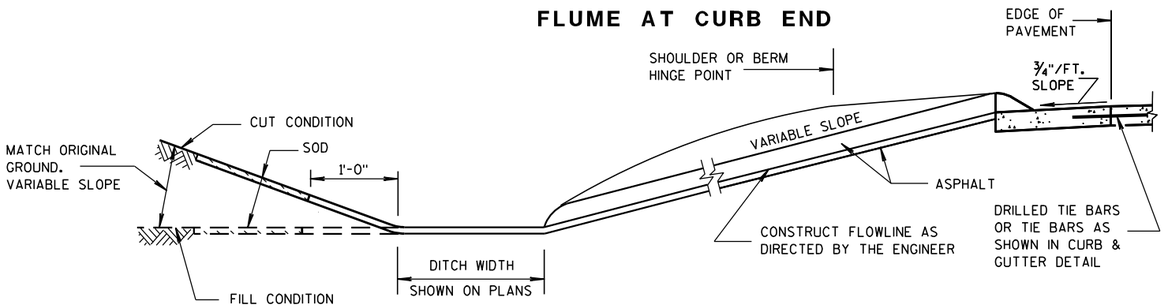
S.D.D. 8 D 2-6

## ASPHALTIC FLUME

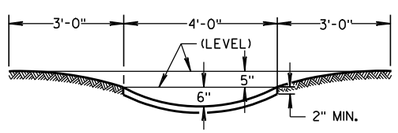



PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END




SECTION A-A




SECTION B-B

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

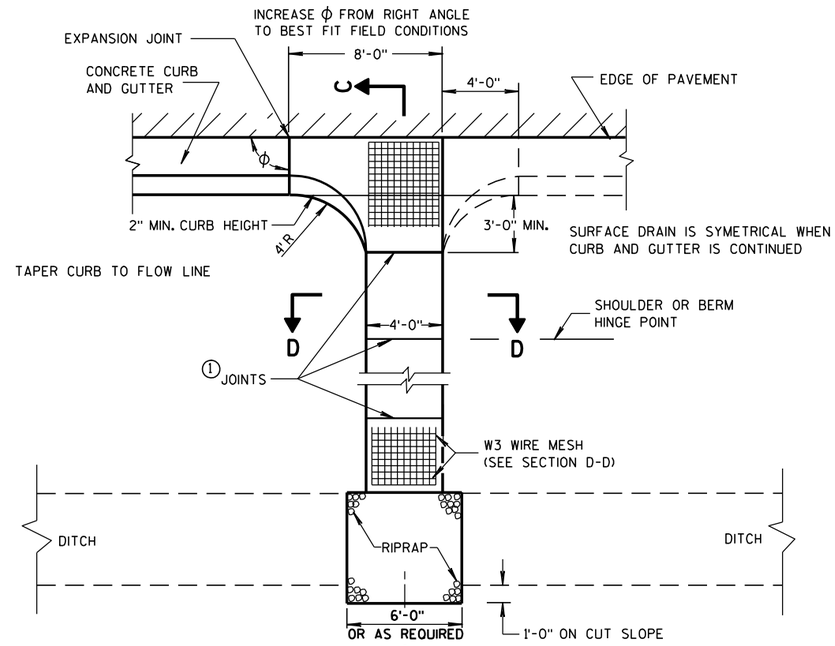
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

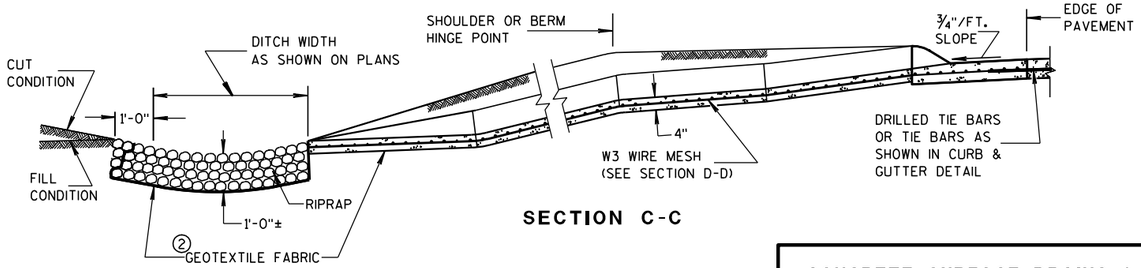
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

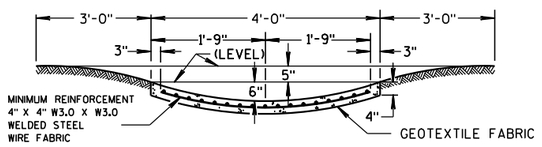
## ③ CONCRETE SURFACE DRAIN




PLAN VIEW




SECTION C-C




SECTION D-D

## CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA

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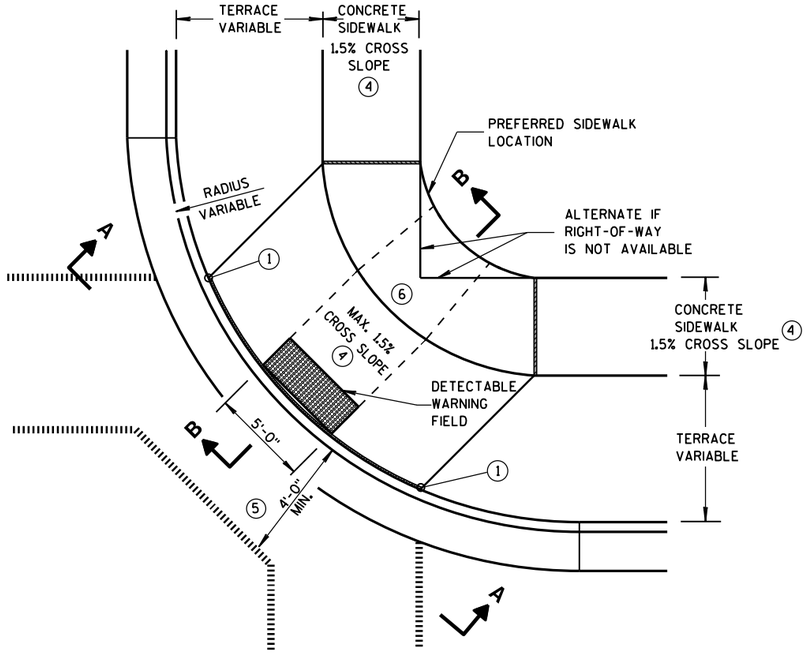
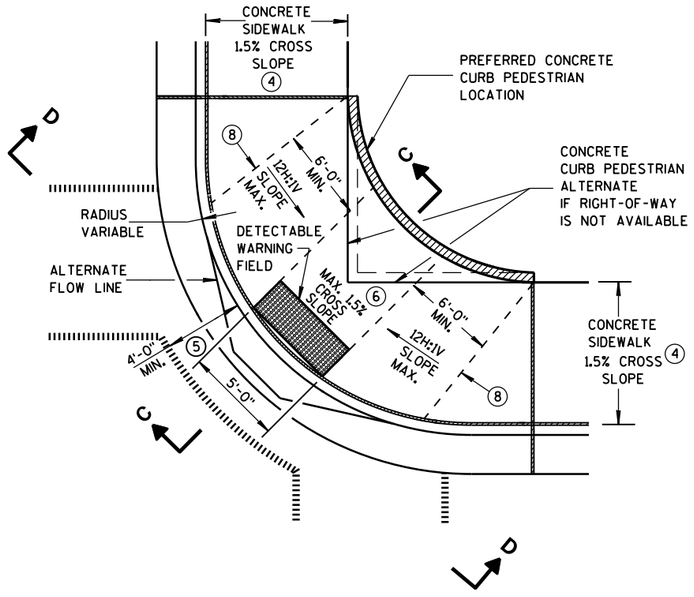
S.D.D. 8 D 4-5




PLAN VIEW

## TYPE 1 RAMP

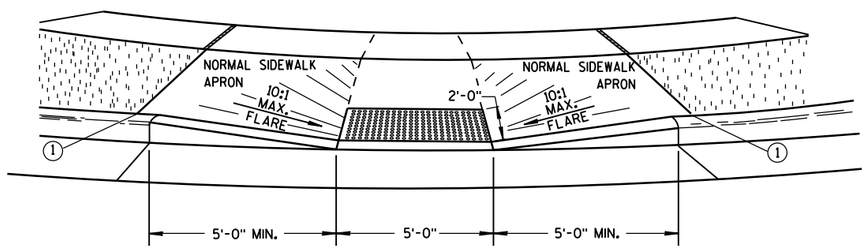
(CENTER OF CORNER RADIUS)




PLAN VIEW

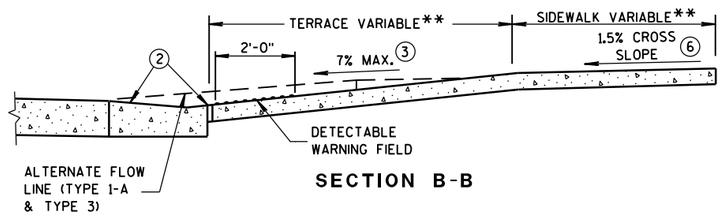
## TYPE 1-A RAMP

(NO TERRACE)

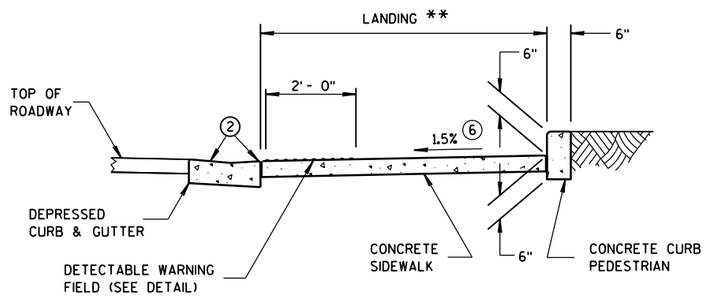



VIEW A-A

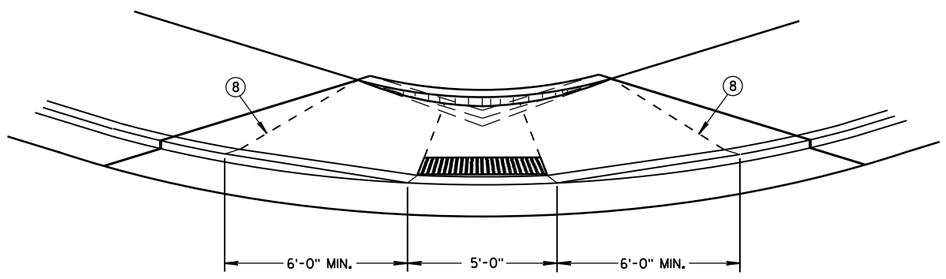
** WIDTH SHOWN ELSEWHERE IN THE PLANS




SECTION B-B




SECTION C-C




VIEW D-D

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

### LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

**CURB RAMPS TYPES 1 AND 1-A**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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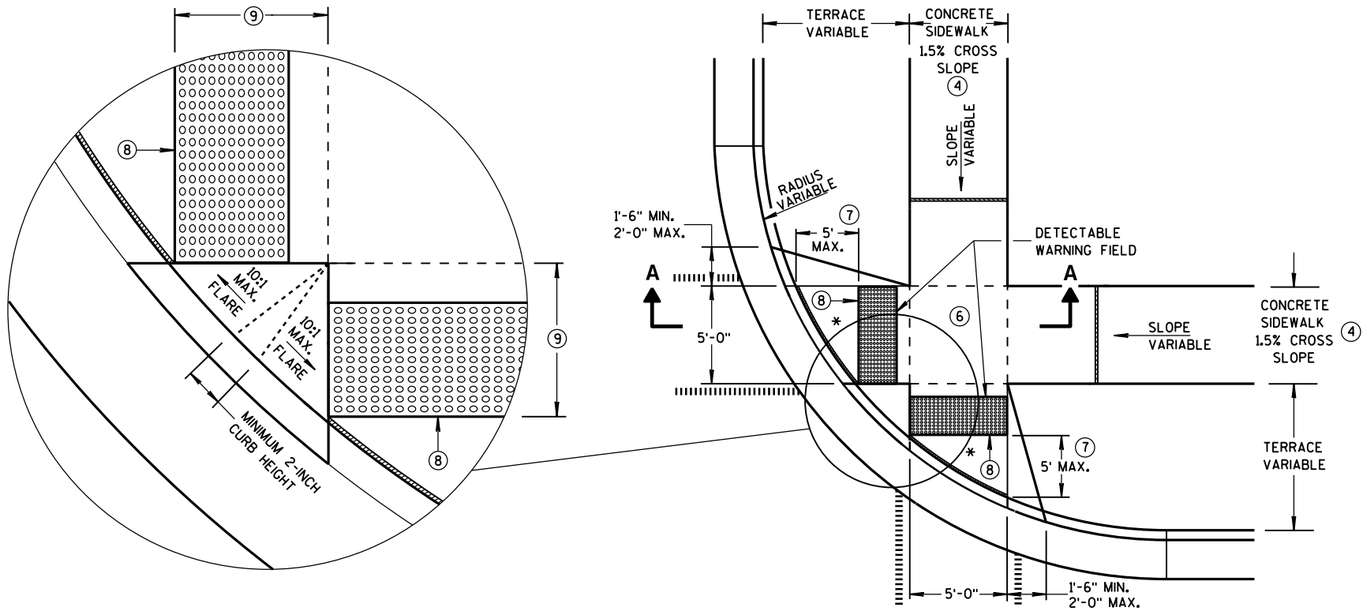
S.D.D. 8 D 5-17a

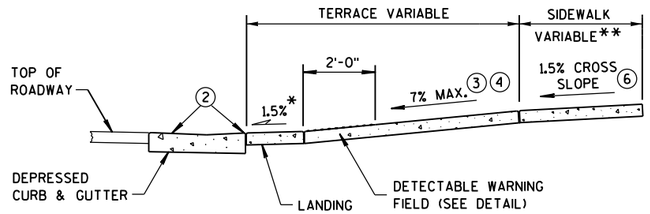



PLAN VIEW

## TYPE 2 RAMP

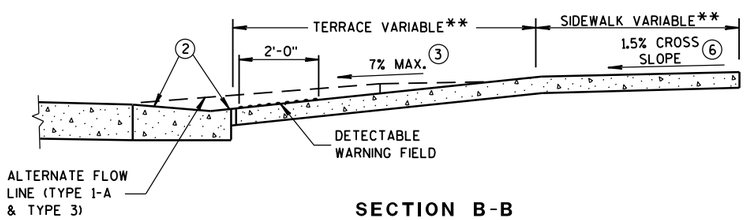
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK




SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS




SECTION B-B

## GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

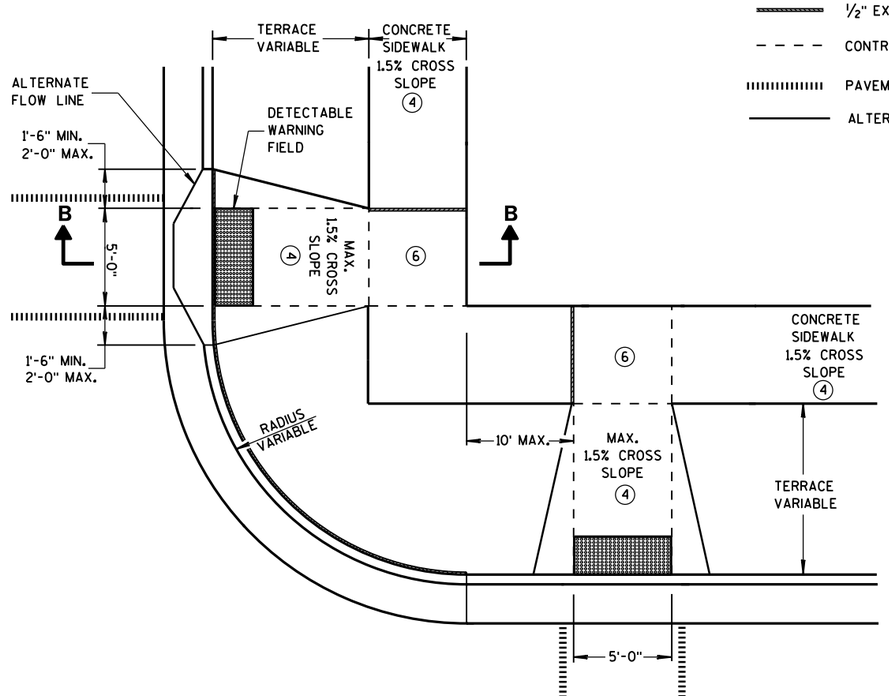
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

## LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT




PLAN VIEW

## TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)

## CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

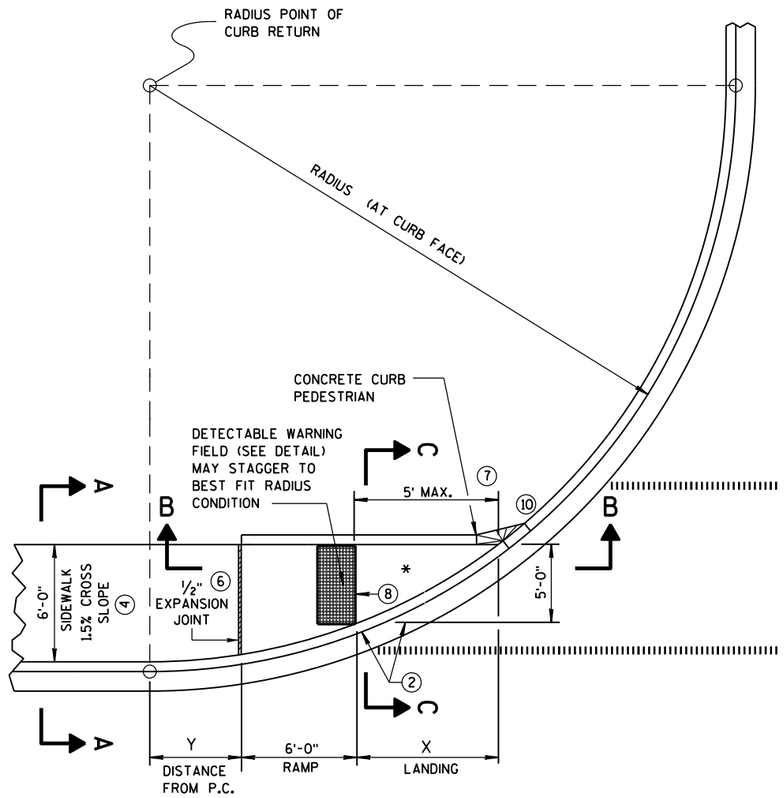






6

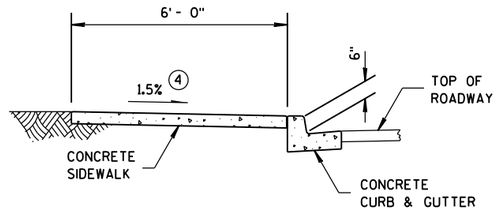
S.D.D. 8 D 5-17b



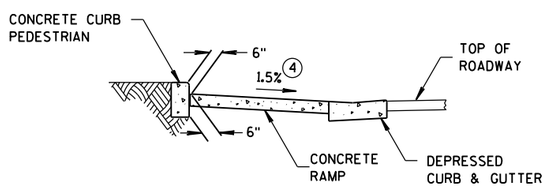

## CURB RAMP TYPE 4A
### PLAN VIEW

| RADIUS (AT CURB FACE) | X | Y |
|---|---|---|
| 20 FEET | 7'-11" | 0'-2" |
| 30 FEET | 10'-2¾" | 1'-7½" |
| 40 FEET | 12'-1¼" | 2'-10" |
| 50 FEET | 13'-8¾" | 3'-10¾" |
| 60 FEET | 15'-2" | 4'-10¼" |

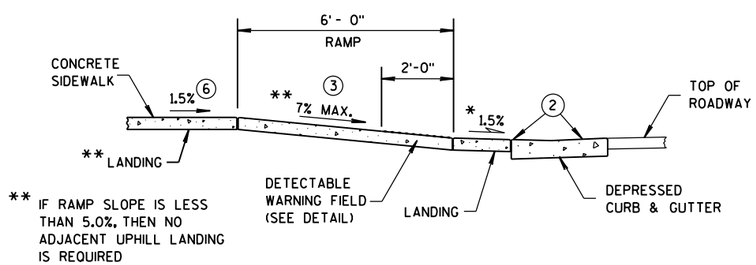
INTERMEDIATE RADII CAN BE INTERPOLATED



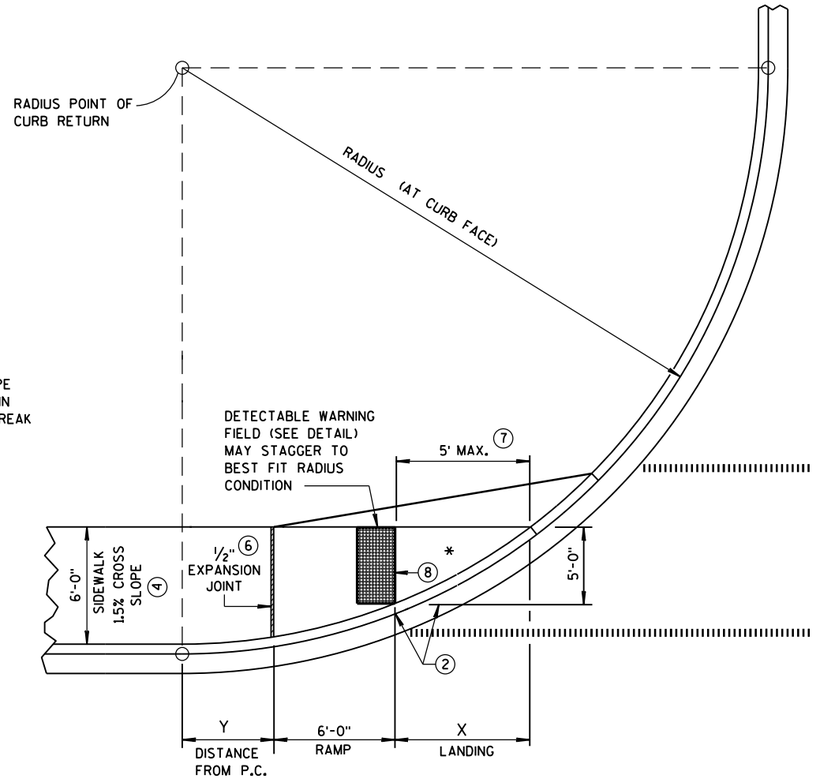

SECTION A-A FOR TYPE 4A




SECTION C-C FOR TYPE 4A




SECTION B-B FOR TYPE 4A




* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

## CURB RAMP TYPE 4A1
### PLAN VIEW

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

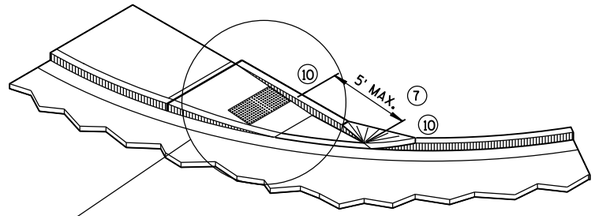
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

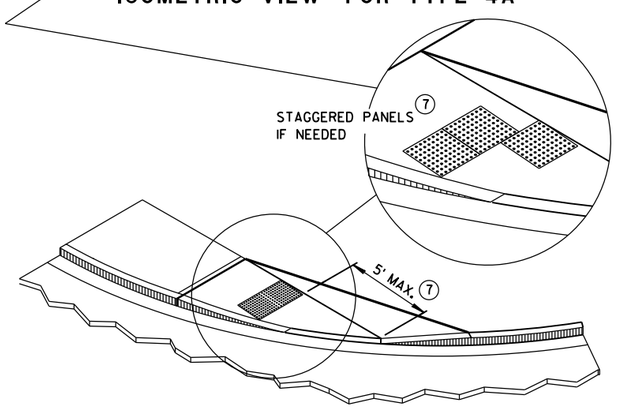
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.




ISOMETRIC VIEW FOR TYPE 4A




ISOMETRIC VIEW FOR TYPE 4A1

### LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

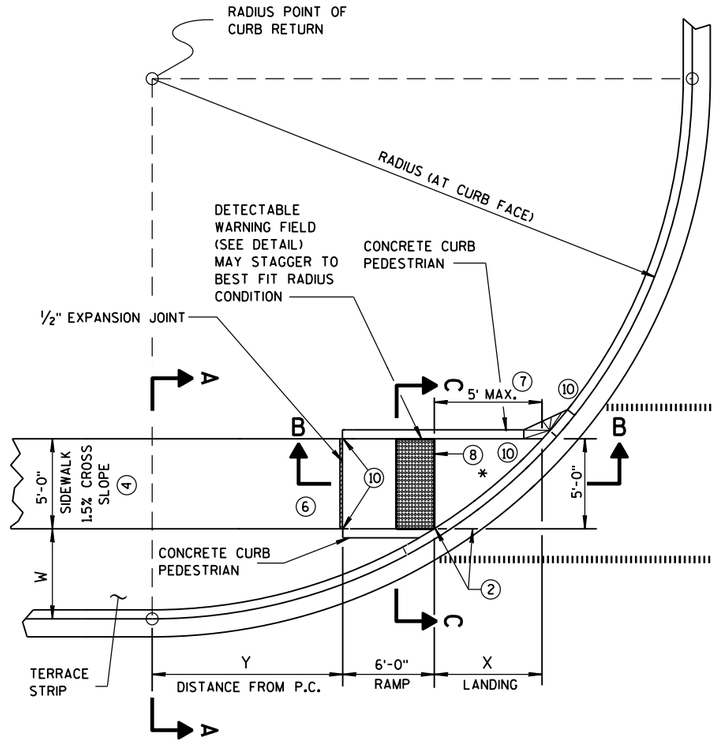
CURB RAMPS
TYPES 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

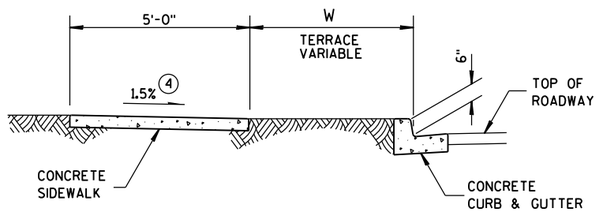



6

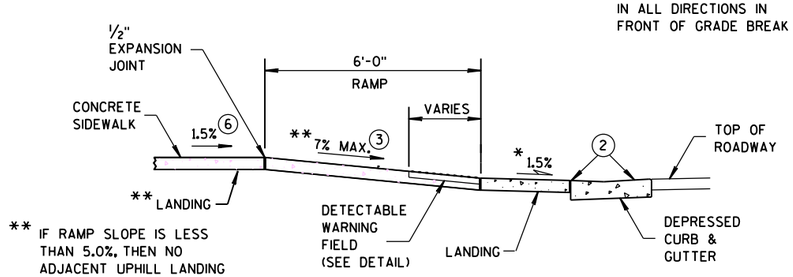
S.D.D. 8 D 5-17c




## CURB RAMP TYPE 4B
### PLAN VIEW




SECTION A-A FOR TYPE 4B



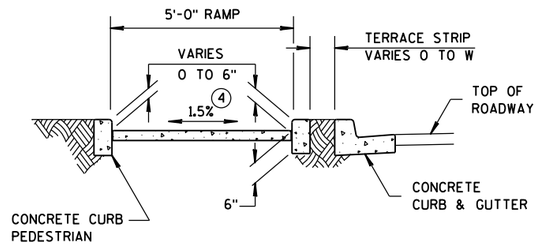

SECTION B-B FOR TYPE 4B

## LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)




SECTION C-C FOR TYPE 4B

| RADIUS (AT CURB FACE) | W = 3'-0" | | W = 4'-0" | | W = 5'-0" | | W = 6'-0" | | W = 7'-0" | |
|---|---|---|---|---|---|---|---|---|---|---|
| | X | Y | X | Y | X | Y | X | Y | X | Y |
| 20 FEET | 5'-9¾" | 3'-6½" | 4'-11½" | 5'-1¾" | 4'-3¼" | 6'-5½" | 3'-8¾" | 7'-6¾" | 3'-3" | 8'-6¼" |
| 30 FEET | 7'-9¼" | 5'-10½" | 6'-9½" | 7'-11¼" | 6'-0¼" | 9'-8" | 5'-5" | 11'-1¾" | 4'-10¾" | 12'-5¾" |
| 40 FEET | 9'-4" | 7'-10" | 8'-2¾" | 10'-3" | 7'-4¾" | 12'-3¾" | 6'-8½" | 14'-1¼" | 6'-1¾" | 15'-8½" |
| 50 FEET | 10'-8" | 9'-6½" | 9'-5½" | 12'-3¼" | 8'-6½" | 14'-7½" | 7'-9¾" | 16'-8¼" | 7'-2½" | 18'-6¼" |
| 60 FEET | 11'-10¼" | 11'-0¾" | 10'-6½" | 14'-1¼" | 9'-6½" | 16'-8½" | 8'-9¼" | 18'-11¾" | 8'-1½" | 21'-0½" |

INTERMEDIATE RADII CAN BE INTERPOLATED

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

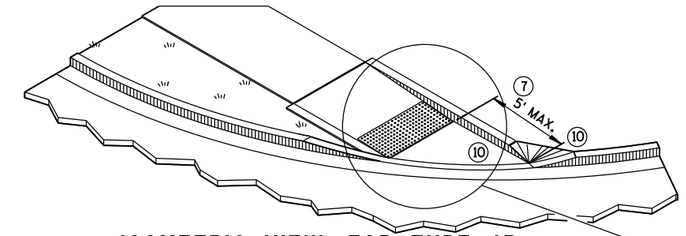
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

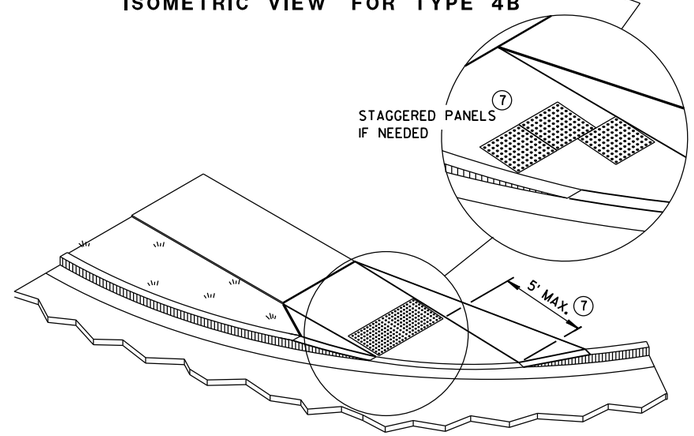
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

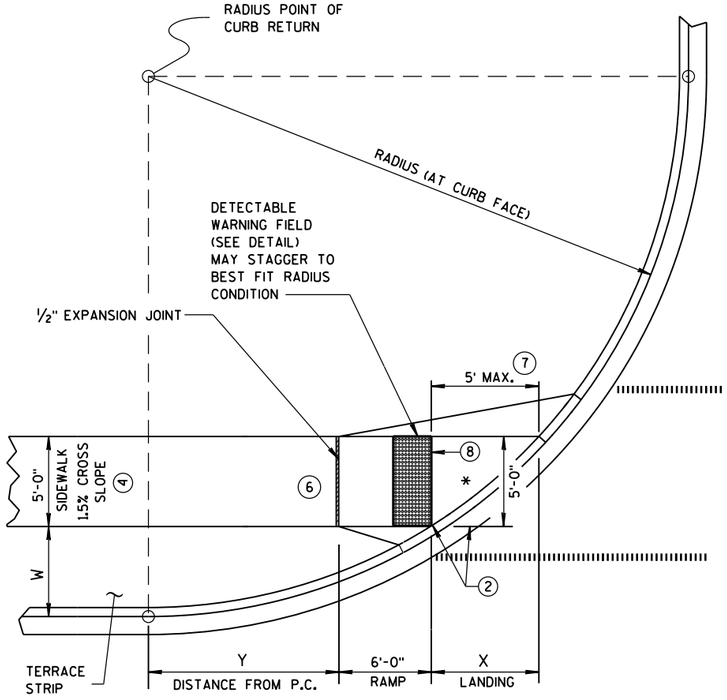
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.




ISOMETRIC VIEW FOR TYPE 4B




ISOMETRIC VIEW FOR TYPE 4B1




## CURB RAMP TYPE 4B1
### PLAN VIEW

**CURB RAMPS TYPE 4B AND 4B1**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



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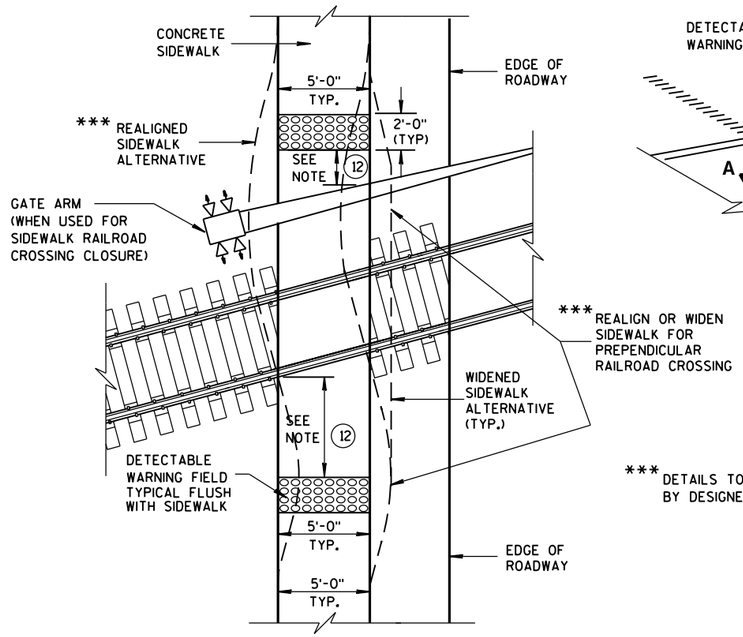
S.D.D. 8 D 5-17d

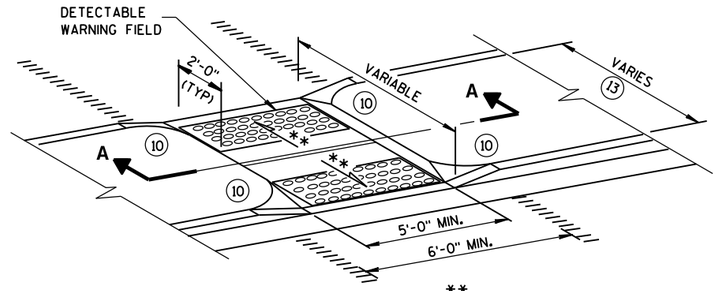
6

S.D.D. 8 D 5-17d




*** DETAILS TO BE DETERMINED BY DESIGNER

## TYPE 8
### DETECTABLE WARNINGS AT RAILROAD CROSSING




## MEDIAN ISLAND NON-ELEVATED CROSSING
## TYPE 5

## GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

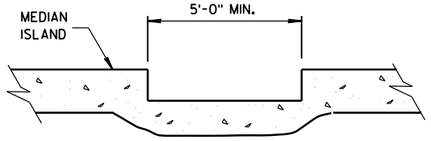
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

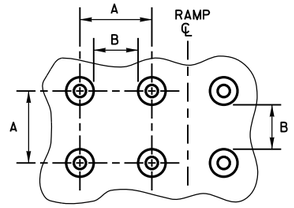
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



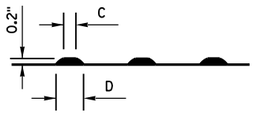

## SECTION A-A

| | MIN. | MAX. |
|---|---|---|
| A | 1.6" | 2.4" |
| B | 0.65" | 1.5" |
| C | * | * |
| D | 0.9" | 1.4" |

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

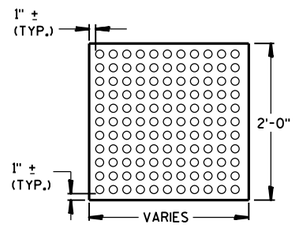



## PLAN VIEW

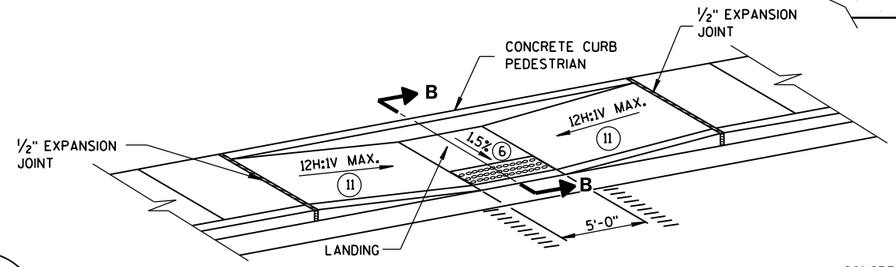



## ELEVATION VIEW

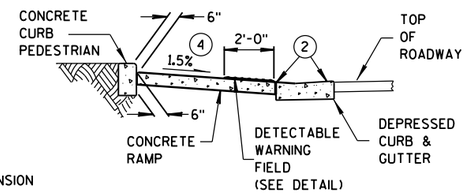
## TRUNCATED DOMES
### DETECTABLE WARNING PATTERN DETAIL




## PLAN VIEW
## DETECTABLE WARNING FIELD (TYPICAL)

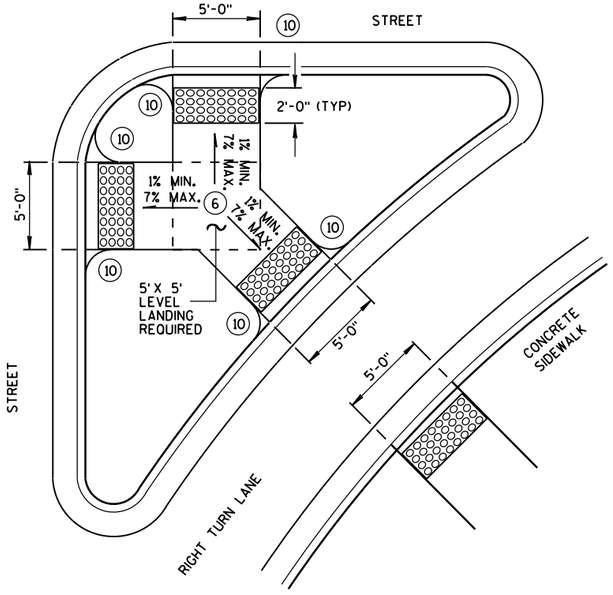



## MID-BLOCK CROSSING
## TYPE 7A

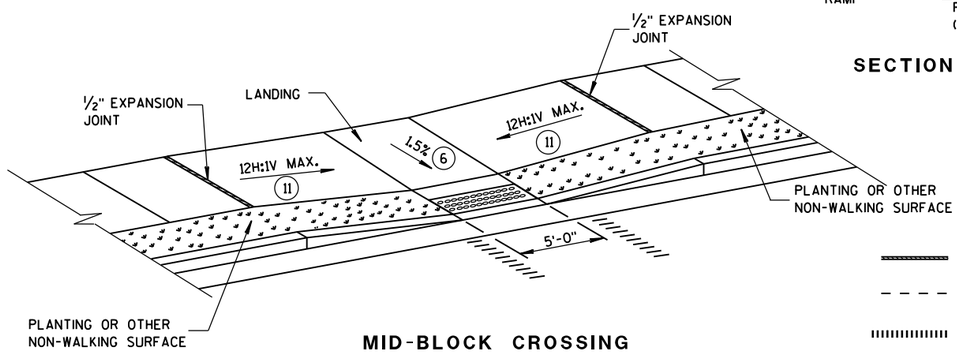



## SECTION B-B

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS




## TYPE 6
### DETECTABLE WARNING AT ISLANDS




## MID-BLOCK CROSSING
## TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

### LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

## CURB RAMPS TYPES 5, 6, 7A, 7B & 8

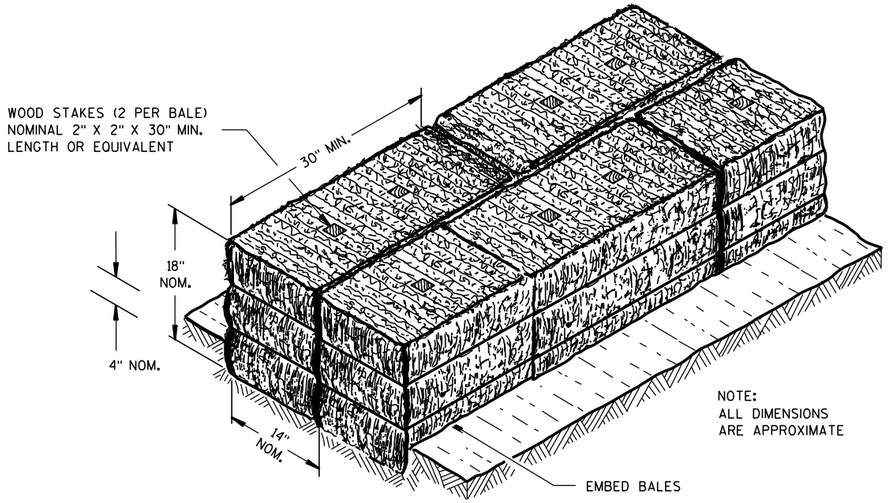
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

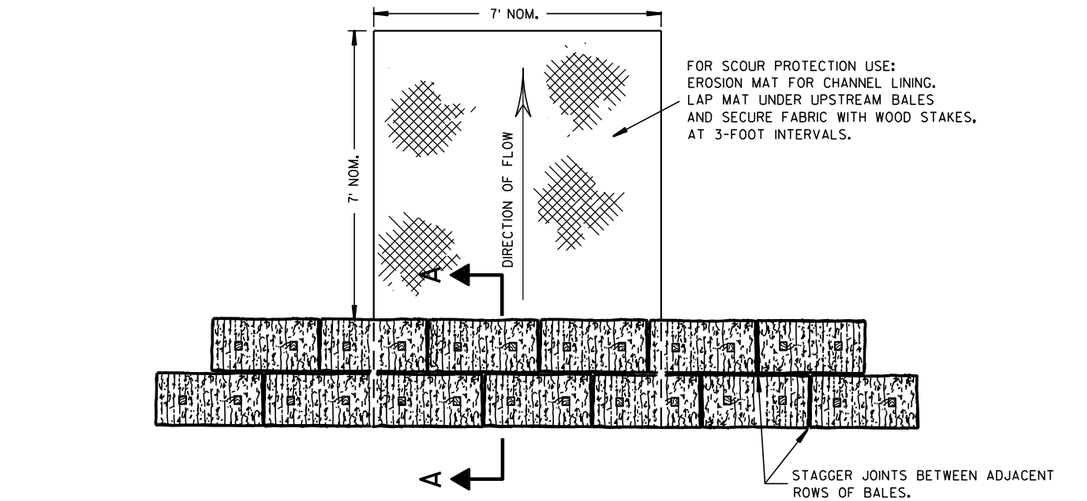



6

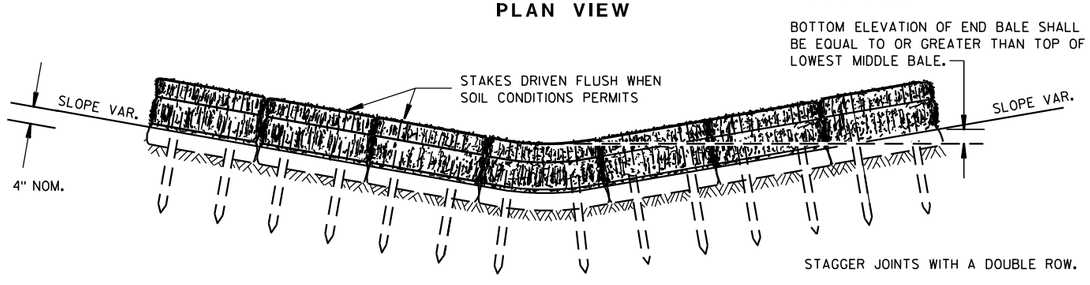
S.D.D. 8 D 5-17e




**SECTION A-A**




**PLAN VIEW**



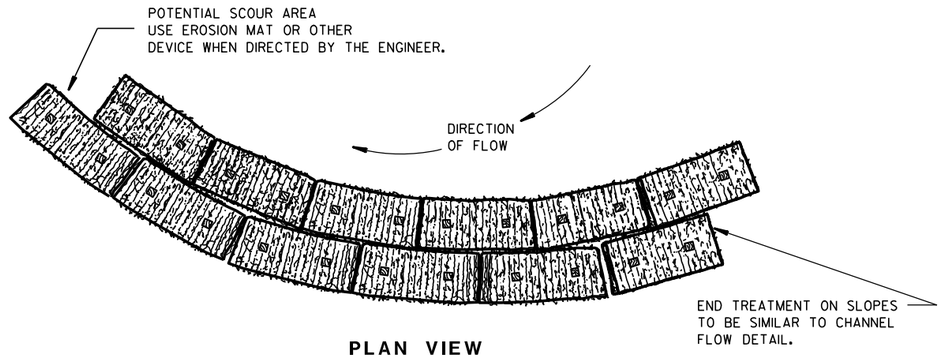

**FRONT ELEVATION**

## TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

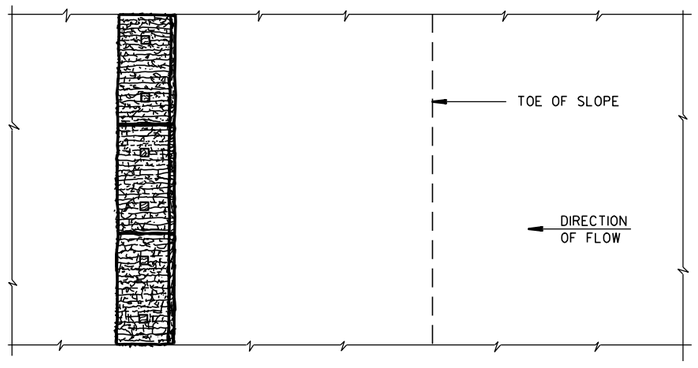
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

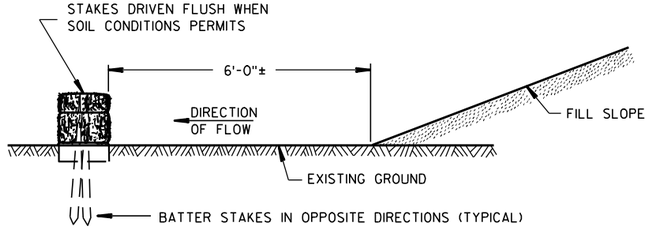



**PLAN VIEW**

WHEN ALTERING THE DIRECTION OF FLOW




**PLAN VIEW**




**FRONT ELEVATION**

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

## EROSION BALES FOR SHEET FLOW

**TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

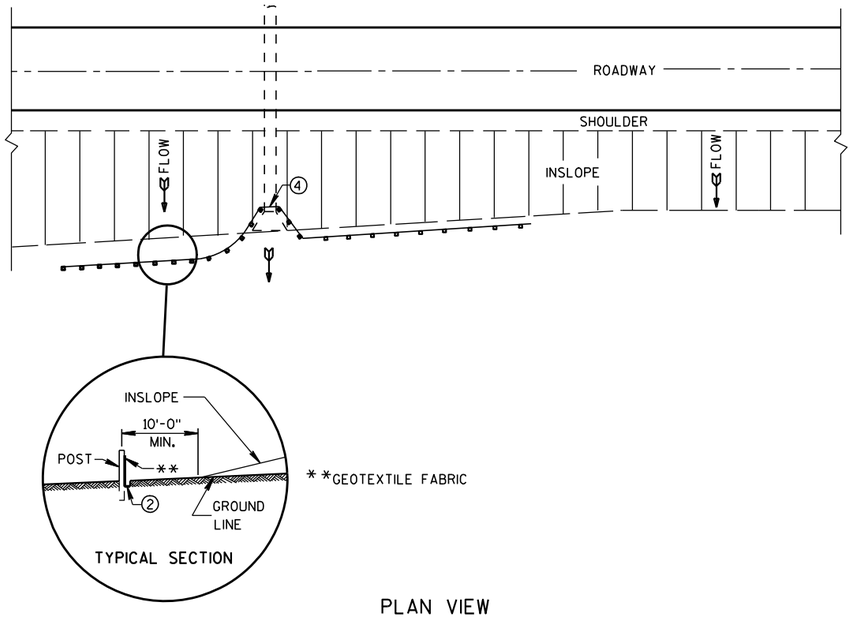


6

S.D.D. 8 E 8-3

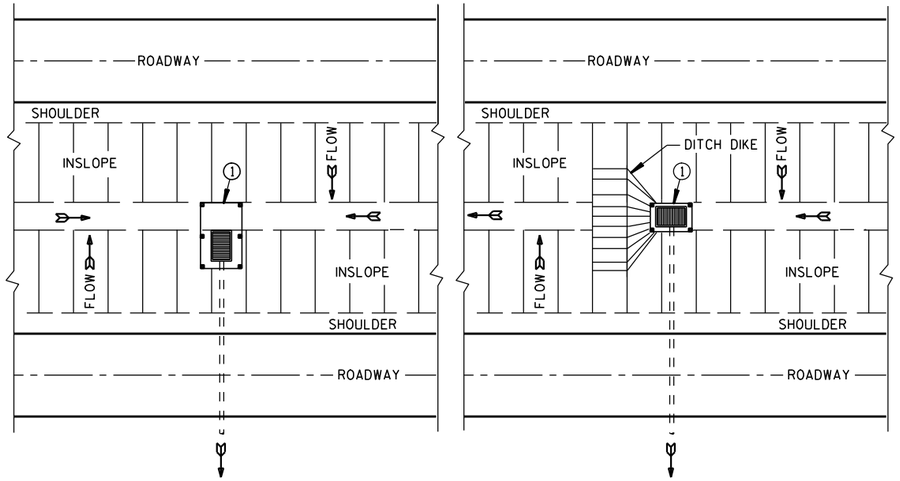
6

S.D.D. 8 E 8-3




PLAN VIEW

## TYPICAL APPLICATION OF SILT FENCE



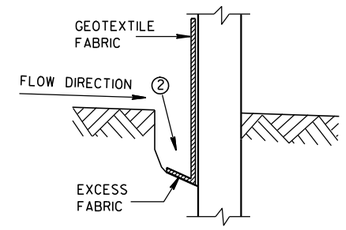

PLAN VIEW

## SILT FENCE AT MEDIAN SURFACE DRAINS

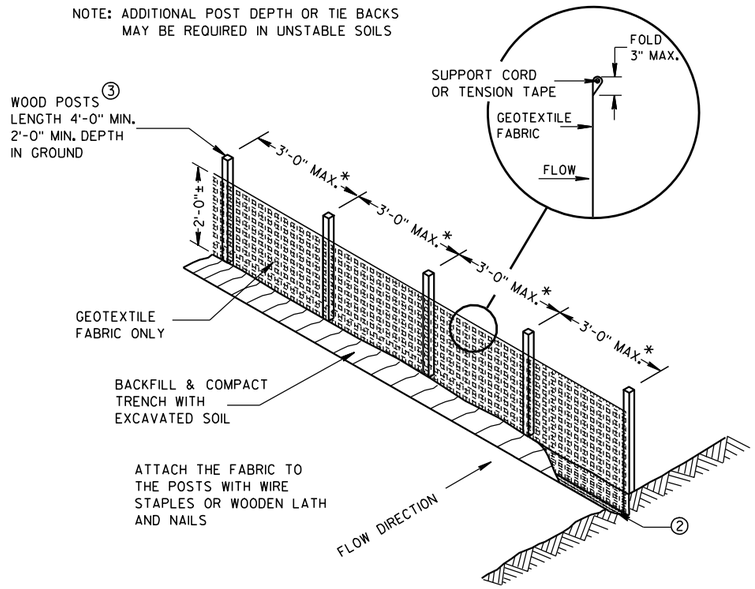
## GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

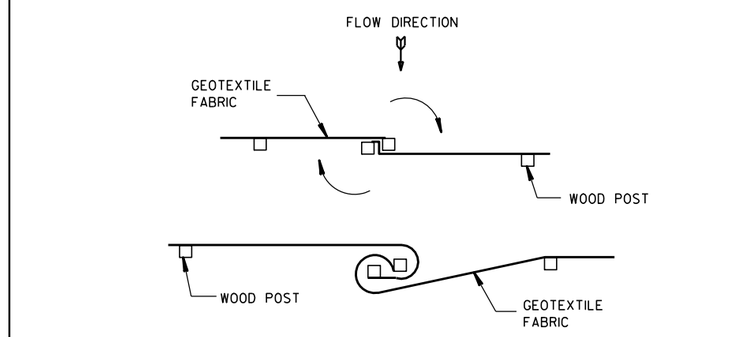



## TRENCH DETAIL

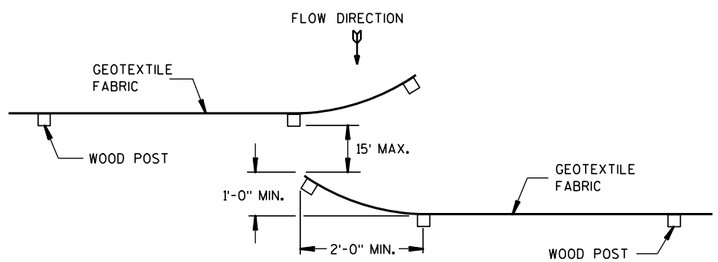



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

## SILT FENCE

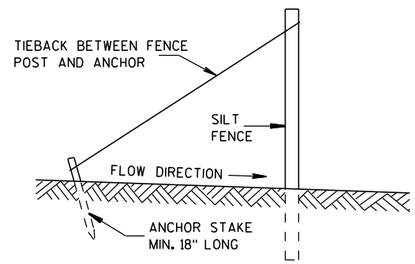



TWIST METHOD




HOOK METHOD

## JOINING TWO LENGTHS OF SILT FENCE 5




## SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

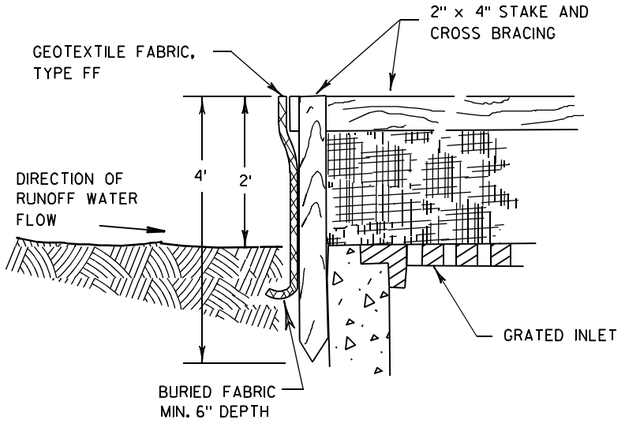
| | |
|---|---|
| SILT FENCE | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED 4-29-05 DATE | /S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER |
| FHWA | |

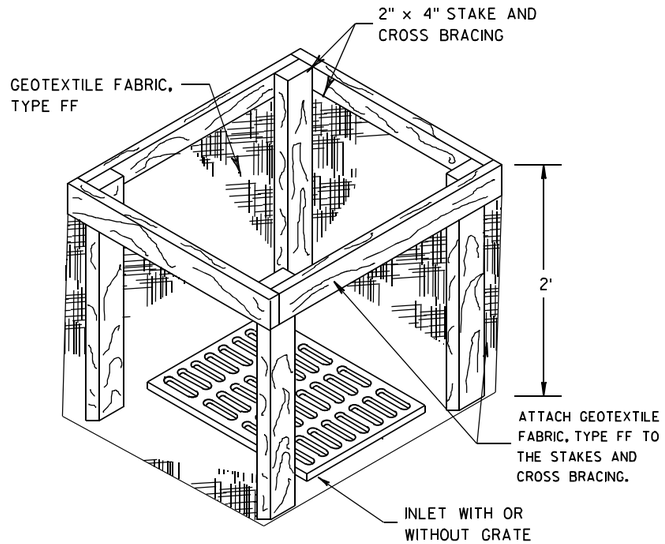
6

S.D.D. 8 E 9-6

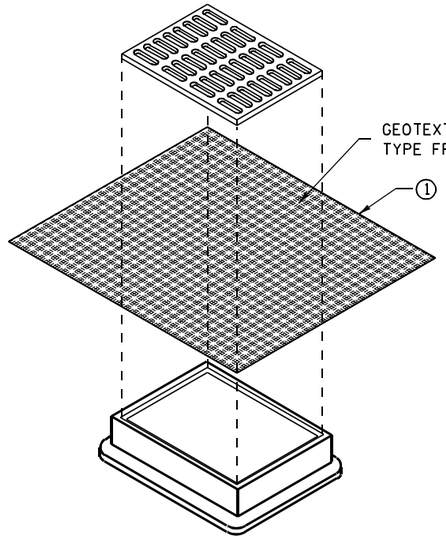
6

S.D.D. 8 E 9-6



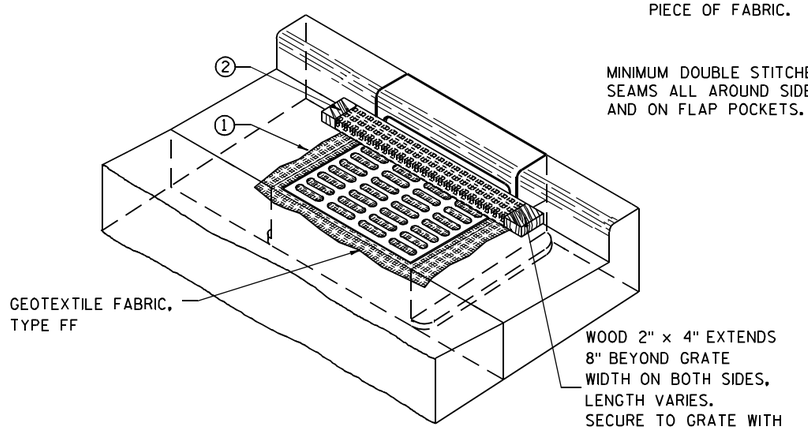




## INLET PROTECTION, TYPE A

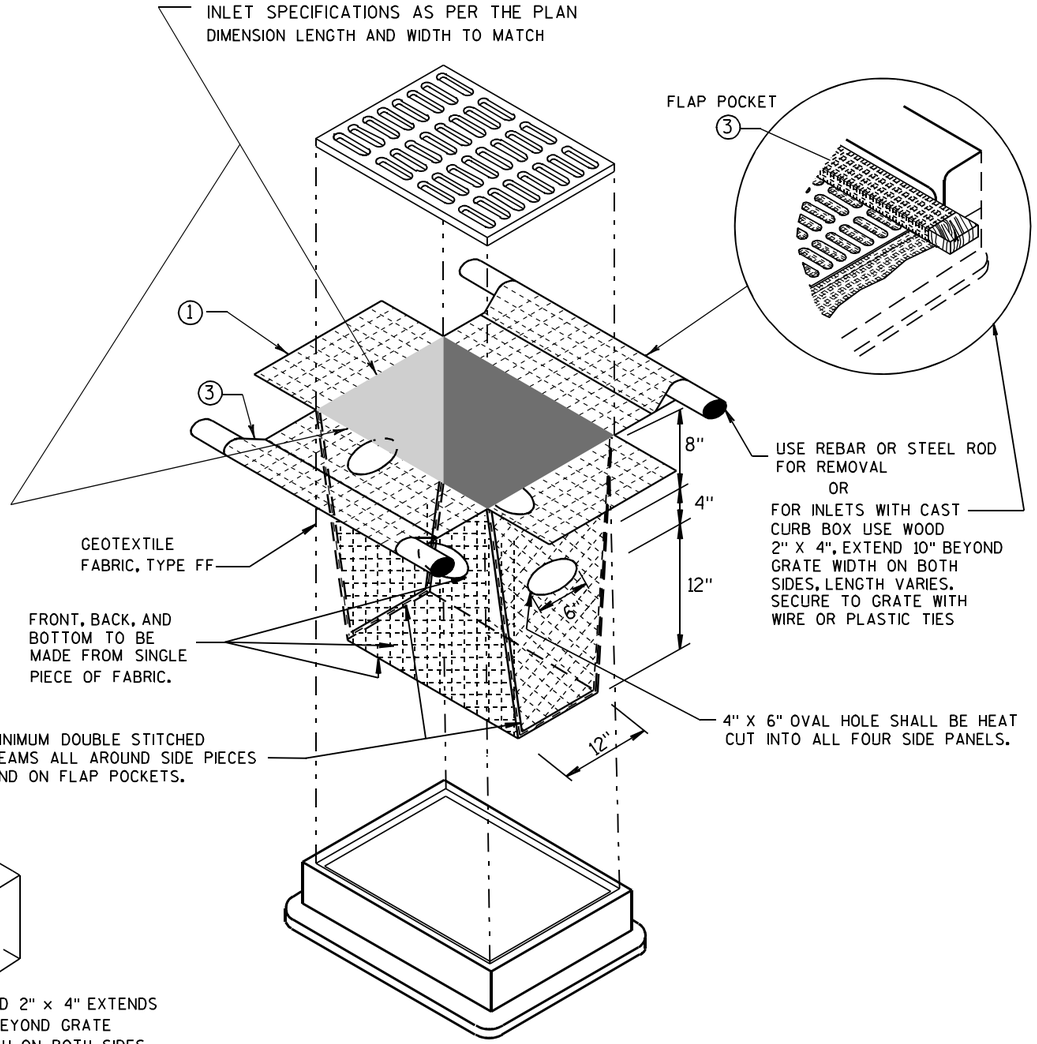



## INLET PROTECTION, TYPE B
## (WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)




## INLET PROTECTION, TYPE C (WITH CURB BOX)




## INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ② )

## GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

## INSTALLATION NOTES

### TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

### TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

**INLET PROTECTION**
**TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA




6
S.D.D. 8 E 10-2

## METAL APRON ENDWALLS

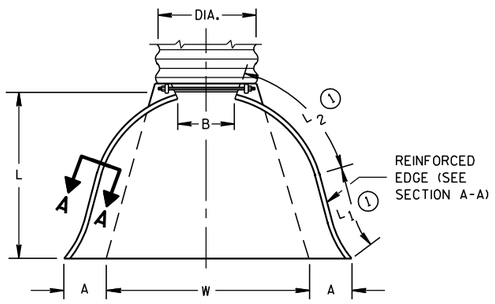
| PIPE DIA. (IN.) | MIN. THICK. (Inches) STEEL | MIN. THICK. (Inches) ALUM. | DIMENSIONS (Inches) A (±1") | B (MAX.) | H (±1") | L (±1 1/2") | L1 ① | L2 ① | W (±2") | APPROX. SLOPE | BODY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | .064 | .060 | 6 | 6 | 6 | 21 | 12 | 17 1/2 | 24 | 2 1/2 to 1 | 1 Pc. |
| 15 | .064 | .060 | 7 | 8 | 6 | 26 | 14 | 21 3/4 | 30 | 2 1/2 to 1 | 1 Pc. |
| 18 | .064 | .060 | 8 | 10 | 6 | 31 | 15 | 28 1/4 | 36 | 2 1/2 to 1 | 1 Pc. |
| 21 | .064 | .060 | 9 | 12 | 6 | 36 | 18 | 29 5/8 | 42 | 2 1/2 to 1 | 1 Pc. |
| 24 | .064 | .075 | 10 | 13 | 6 | 41 | 18 | 37 1/4 | 48 | 2 1/2 to 1 | 1 Pc. |
| 30 | .079 | .075 | 12 | 16 | 8 | 51 | 18 | 52 1/4 | 60 | 2 1/2 to 1 | 1 Pc. |
| 36 | .079 | .105 | 14 | 19 | 9 | 60 | 24 | 59 3/4 | 72 | 2 1/2 to 1 | 2 Pc. |
| 42 | .109 | .105 | 16 | 22 | 11 | 69 | 24 | 75 5/8 | 84 | 2 1/2 to 1 | 2 Pc. |
| 48 | .109 | .105 | 18 | 27 | 12 | 78 | 24 | 81 | 90 | 2 1/4 to 1 | 3 Pc. |
| 54 | .109 | .105 | 18 | 30 | 12 | 84 | 30 | 85 1/2 | 102 | 2 1/4 to 1 | 3 Pc. |
| 60 | .109× | .105× | 18 | 33 | 12 | 87 | — | — | 114 | 2 to 1 | 3 Pc. |
| 66 | .109× | .105× | 18 | 36 | 12 | 87 | — | — | 120 | 2 to 1 | 3 Pc. |
| 72 | .109× | .105× | 18 | 39 | 12 | 87 | — | — | 126 | 2 to 1 | 3 Pc. |
| 78 | .109× | .105× | 18 | 42 | 12 | 87 | — | — | 132 | 1 1/2 to 1 | 3 Pc. |
| 84 | .109× | .105× | 18 | 45 | 12 | 87 | — | — | 138 | 1 1/2 to 1 | 3 Pc. |
| 90 | .109× | .105× | 18 | 37 | 12 | 87 | — | — | 144 | 1 1/2 to 1 | 3 Pc. |
| 96 | .109× | .105× | 18 | 35 | 12 | 87 | — | — | 150 | 1 1/2 to 1 | 3 Pc. |

× EXCEPT CENTER PANEL SEE GENERAL NOTES

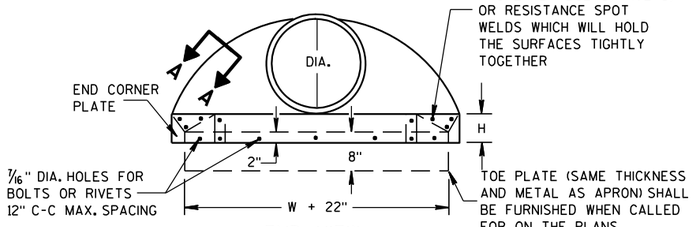
## REINFORCED CONCRETE APRON ENDWALLS

| PIPE DIA. (IN.) | DIMENSIONS (Inches) T | A | B | C | D | E | G | APPROX. SLOPE |
|---|---|---|---|---|---|---|---|---|
| 12 | 2 | 4 | 24 | 48 7/8 | 72 1/8 | 24 | 2 | 3 to 1 |
| 15 | 2 1/4 | 6 | 27 | 46 | 73 | 30 | 2 1/4 | 3 to 1 |
| 18 | 2 1/2 | 9 | 27 | 46 | 73 | 36 | 2 1/2 | 3 to 1 |
| 21 | 2 3/4 | 9 | 36 | 37 1/2 | 73 1/2 | 42 | 2 3/4 | 3 to 1 |
| 24 | 3 | 9 1/2 | 43 1/2 | 30 | 73 1/2 | 48 | 3 | 3 to 1 |
| 27 | 3 1/4 | 10 1/2 | 49 1/2 | 24 | 73 1/2 | 54 | 3 1/4 | 3 to 1 |
| 30 | 3 1/2 | 12 | 54 | 19 3/4 | 73 1/2 | 60 | 3 1/2 | 3 to 1 |
| 36 | 4 | 15 | 63 | 34 3/4 | 97 3/4 | 72 | 4 | 3 to 1 |
| 42 | 4 1/2 | 21 | 63 | 35 | 98 | 78 | 4 1/2 | 3 to 1 |
| 48 | 5 | 24 | 72 | 26 | 98 | 84 | 5 | 3 to 1 |
| 54 | 5 1/2 | 27 | 65 | * 33 1/4 - ** 35 | * 98 1/4 - ** 100 | 90 | 5 1/2 | 2 2/5 to 1 |
| 60 | 6 | * 30 - ** 35 | 60 | 39 | 99 | 96 | 5 | 2 to 1 |
| 66 | 6 1/2 | * 24 - ** 30 | * 72 - ** 78 | * 21 - ** 27 | 99 | 102 | 5 1/2 | 2 to 1 |
| 72 | 7 | * 24 - ** 36 | 78 | 21 | 99 | 108 | 6 | 2 to 1 |
| 78 | 7 1/2 | * 24 - ** 36 | 78 | 21 | 99 | 114 | 6 1/2 | 2 to 1 |
| 84 | 8 | 36 | 90 1/2 | 21 | 111 1/2 | 120 | 6 1/2 | 1 1/2 to 1 |
| 90 | 8 1/2 | 41 | 87 1/2 | 24 | 111 1/2 | 132 | 6 1/2 | 1 1/2 to 1 |

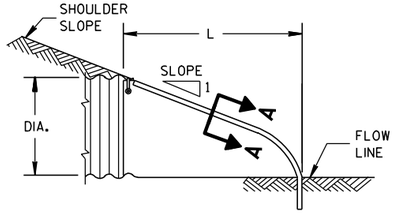
*MINIMUM
**MAXIMUM




PLAN VIEW

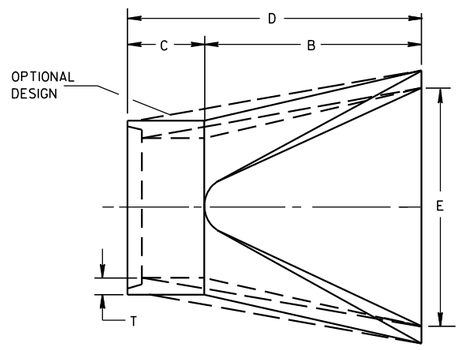



END VIEW

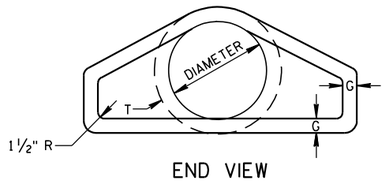



SIDE ELEVATION

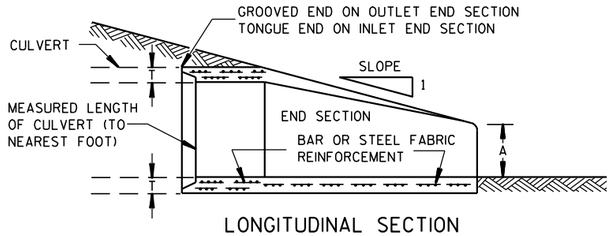
## METAL ENDWALLS




PLAN

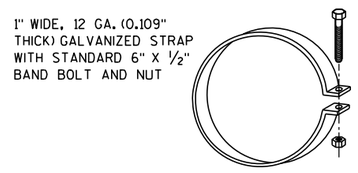



END VIEW



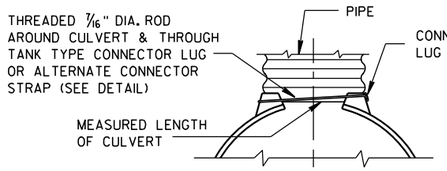

LONGITUDINAL SECTION

## CONCRETE ENDWALLS

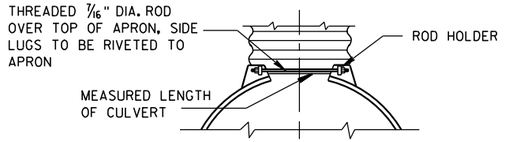



ALTERNATE FOR TYPE 1 CONNECTION

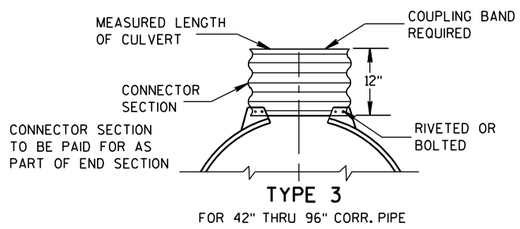
## END SECTION CONNECTOR STRAP



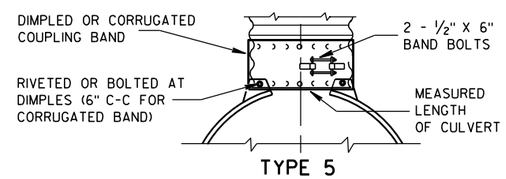

TYPE 1
FOR 12" THRU 24" CORR. PIPE




TYPE 2
FOR 30" THRU 96" CORR. PIPE




TYPE 3
FOR 42" THRU 96" CORR. PIPE




TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

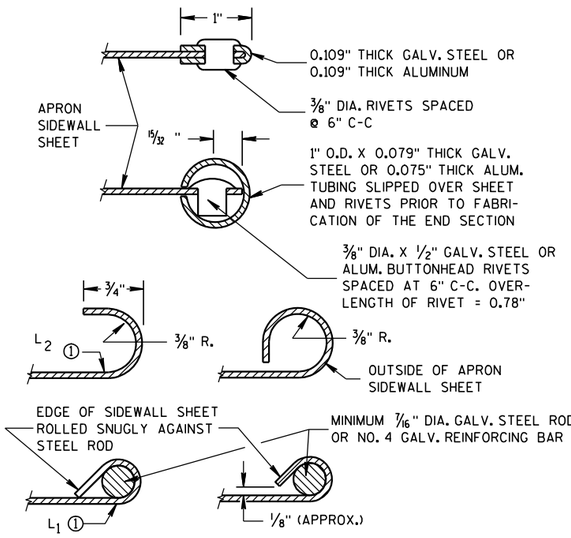
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

## CONNECTION DETAILS




## SECTION A-A

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

# APRON ENDWALLS FOR CULVERT PIPE

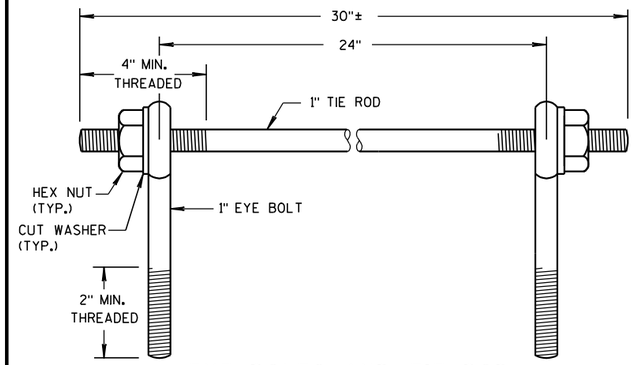
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

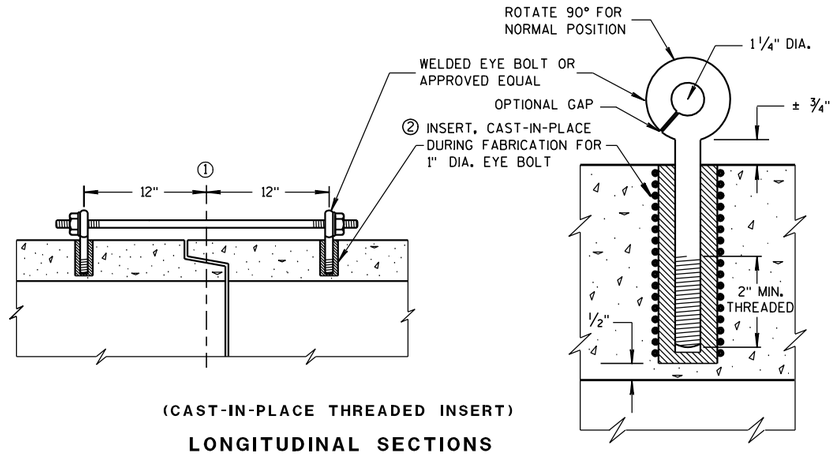




6
S.D.D. 8 F 1-11




EYE BOLTS AND TIE ROD




(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

# EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

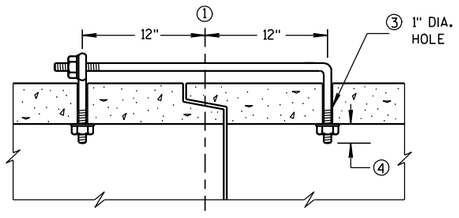
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

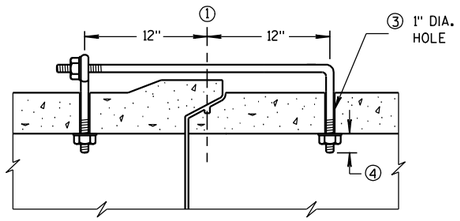
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.




(TONGUE & GROOVE PIPE)

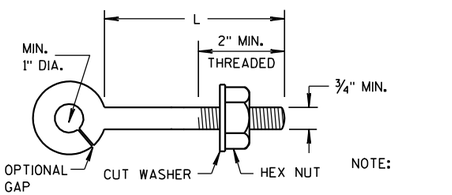



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

**EYE BOLT DIMENSION TABLE**

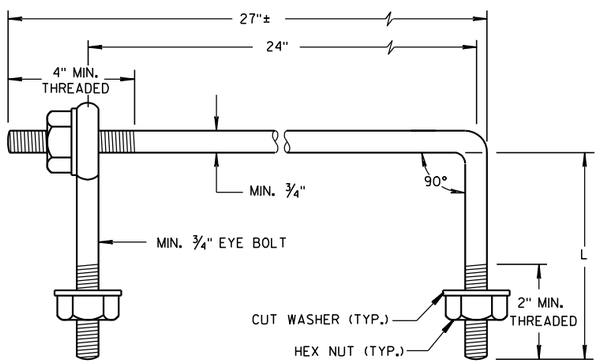
| PIPE SIZE | L = LENGTH | |
|---|---|---|
| | TONGUE & GROOVE PIPE | MODIFIED BELL PIPE |
| 18" TO 24" | 4 1/2" | 6 1/4" |
| 30" | 5" | 7" |
| 36" | 5 1/2" | 7" |
| 42" | 6" | |
| 48" | 6 1/2" | |
| 60" | 7 1/2" | |
| 66" | 8" | |




NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.




EYE BOLT AND TIE ROD

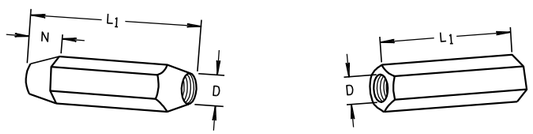
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

# EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

**ADJUSTABLE TIE ROD TABLE**

| PIPE DIAMETER | TIE ROD DIAMETER | D | $L_1$ | N |
|---|---|---|---|---|
| 12-60 | 5/8 | 5/8 | 5 | 1/2 |
| 66-84 | 3/4 | 3/4 | 5 | 1/2 |
| 90-108 | 1 | 1 | 7 | 1 1/16 |

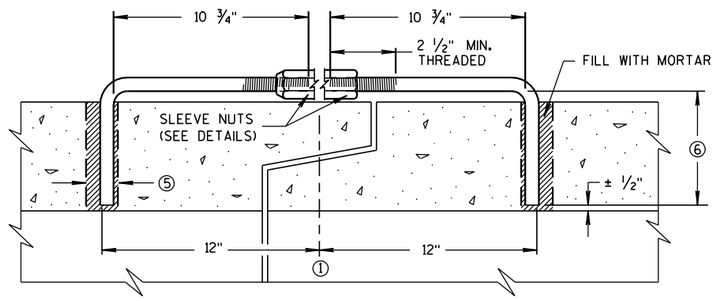
DIMENSIONS SHOWN ARE IN INCHES




TAPERED PLAIN

RIGHT AND LEFT THREADS

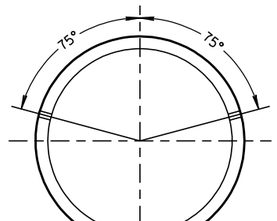
SLEEVE NUTS




LONGITUDINAL SECTION

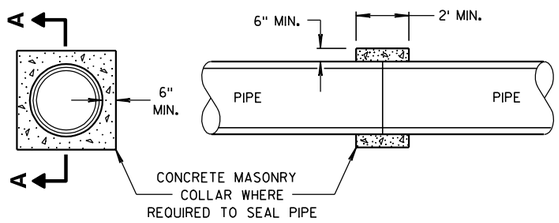
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

# ADJUSTABLE TIE ROD (ALTERNATE NO. 3)




PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION




SECTION A-A

# CONCRETE COLLAR DETAIL

**JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
183
FHWA

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S.D.D. 8 F 4-7

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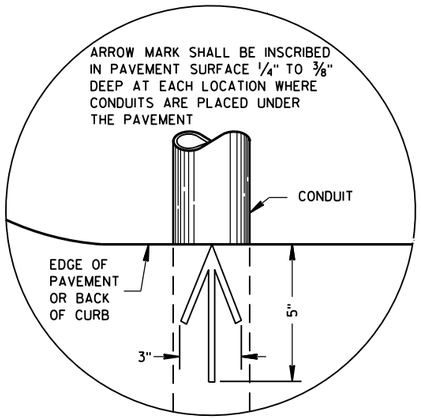
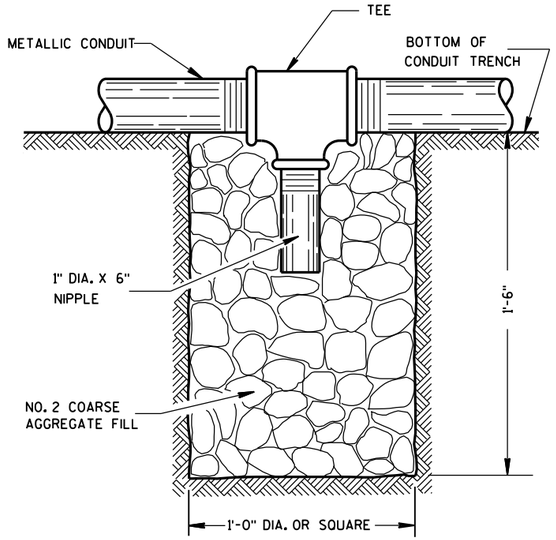
S.D.D. 8 F 4-7



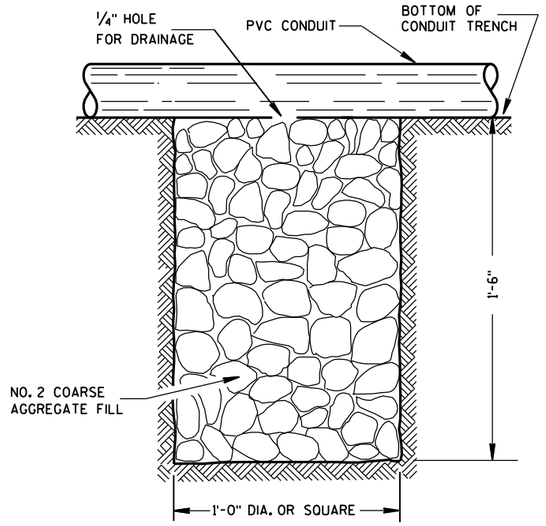

PLAN VIEW

## ARROW MARK




NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

## DRAIN SUMP FOR METALLIC CONDUIT




NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

## DRAIN SUMP FOR PVC CONDUIT

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

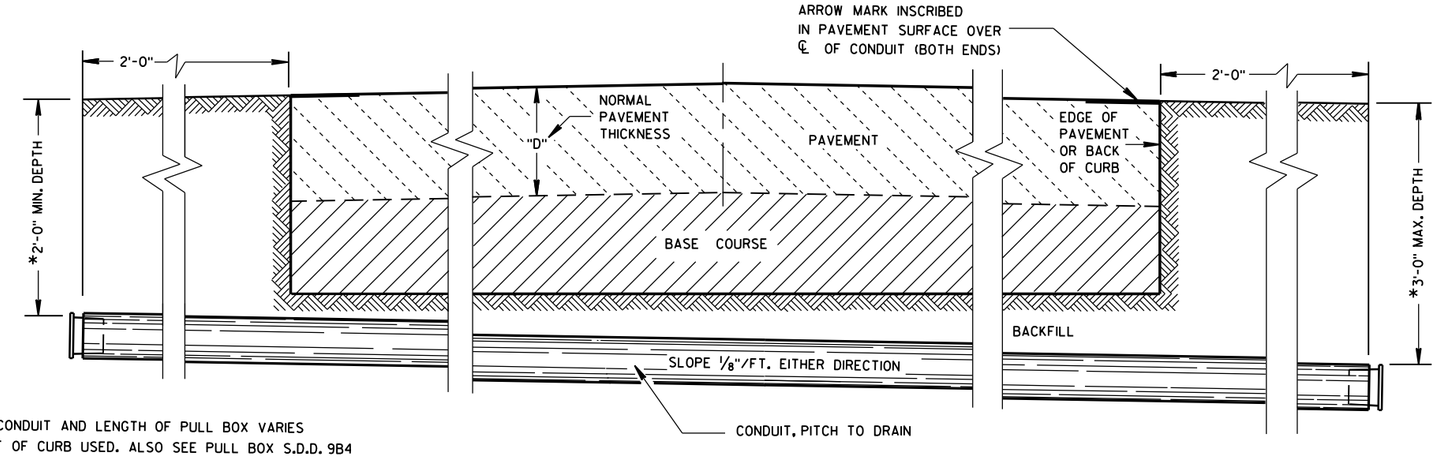
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.




*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

## DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

**CONDUIT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA



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S.D.D. 9 B 2-9

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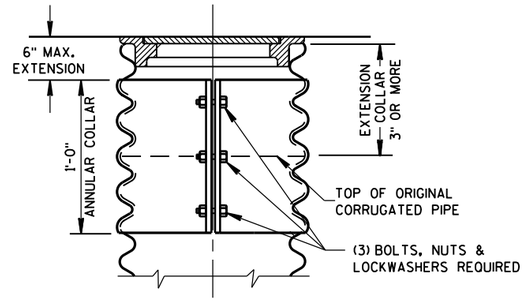
S.D.D. 9 B 2-9

## TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

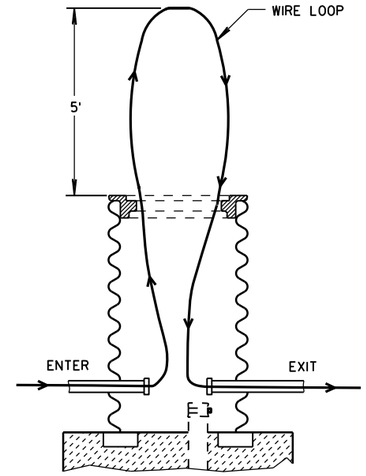
| DIMENSION IN INCHES | | CORRUGATED STEEL PIPE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PIPE DIAMETER (INSIDE) | A | 12 | 12 | 12 | 18 | 18 | 18 | 24 | 24 | 24 |
| PIPE LENGTH ** | B | 24 | 30 | 36 | 24 | 30 | 36 | 36 | 42 | 48 |
| WALL THICKNESS | C | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 |
| COVER | D | 10 1/4 | 10 1/4 | 10 1/4 | 16 1/4 | 16 1/4 | 16 1/4 | 22 1/4 | 22 1/4 | 22 1/4 |
| FRAME | E | 14 1/2 | 14 1/2 | 14 1/2 | 20 1/2 | 20 1/2 | 20 1/2 | 26 1/2 | 26 1/2 | 26 1/2 |
| FRAME | F | 8 1/2 | 8 1/2 | 8 1/2 | 14 1/2 | 14 1/2 | 14 1/2 | 20 1/2 | 20 1/2 | 20 1/2 |
| FRAME | G | 11 1/2 | 11 1/2 | 11 1/2 | 17 1/2 | 17 1/2 | 17 1/2 | 23 1/2 | 23 1/2 | 23 1/2 |
| WEIGHT IN POUNDS * | | | | | | | | | | |
| FRAME AND COVER | | 60 | 60 | 60 | 110 | 110 | 110 | 155 | 155 | 155 |

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

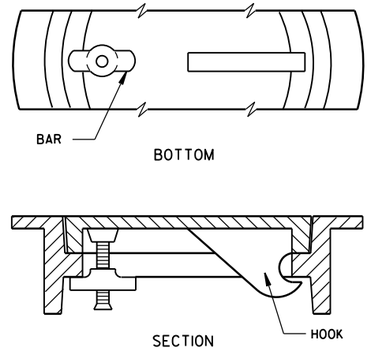
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.




CORRUGATED PIPE EXTENDER

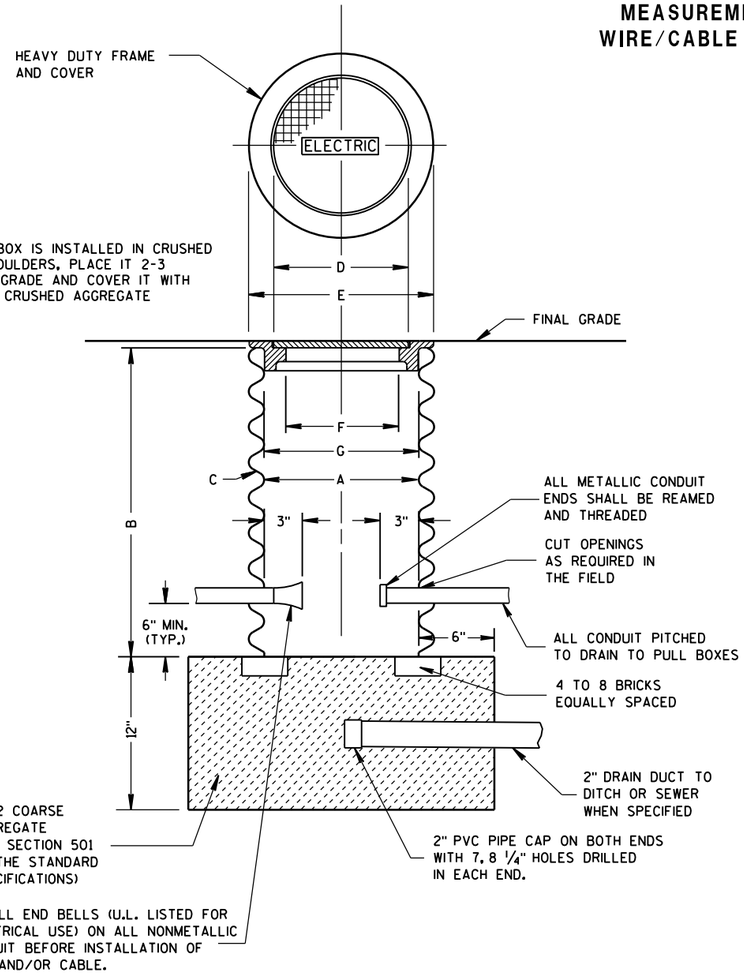



MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



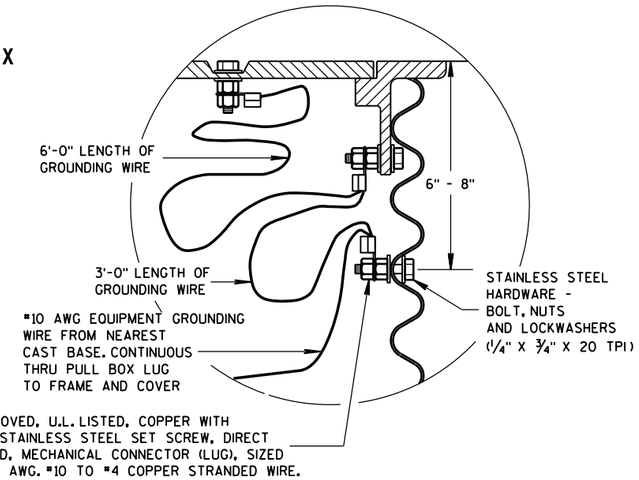

ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

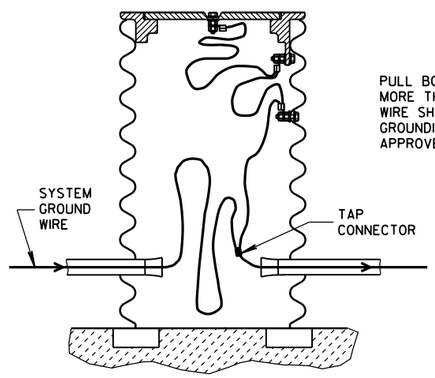



WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX




EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES




PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

# PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA



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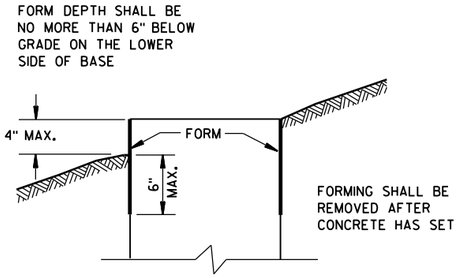
S.D.D. 9 B 4-11




## FORMING DETAIL

| QUANTITY REQUIREMENTS | CONCRETE BASE TYPE | | |
|---|---|---|---|
| | 1 | 2 | 5 & 6 |
| APPROX. CUBIC YARDS OF CONCRETE | 0.40 | 0.57 | 0.40 |
| LBS. OF HOOP BAR STEEL | NONE | 23 | 16 |
| LBS. OF VERTICAL BAR STEEL | NONE | 60 | 18 |

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

## GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

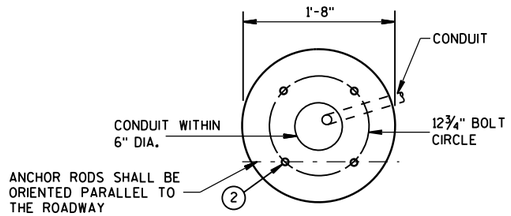
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

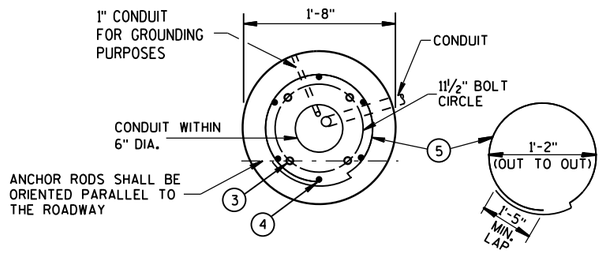
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

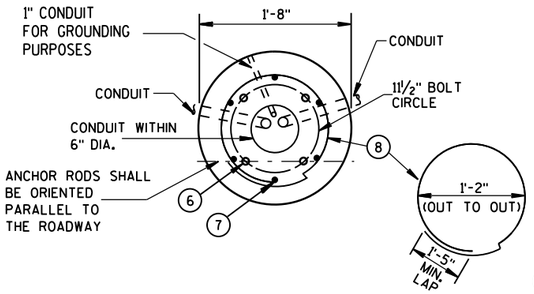
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

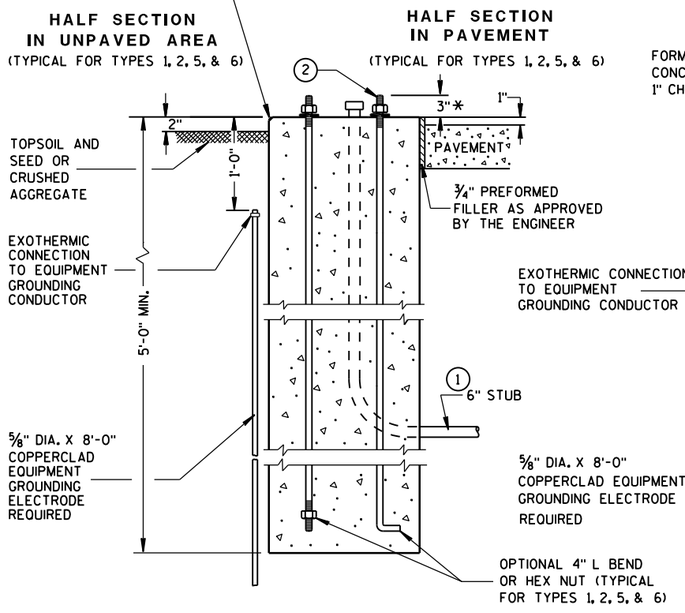
(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

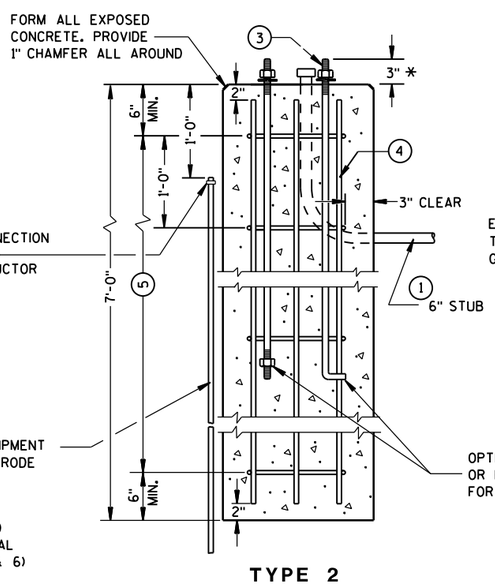
(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



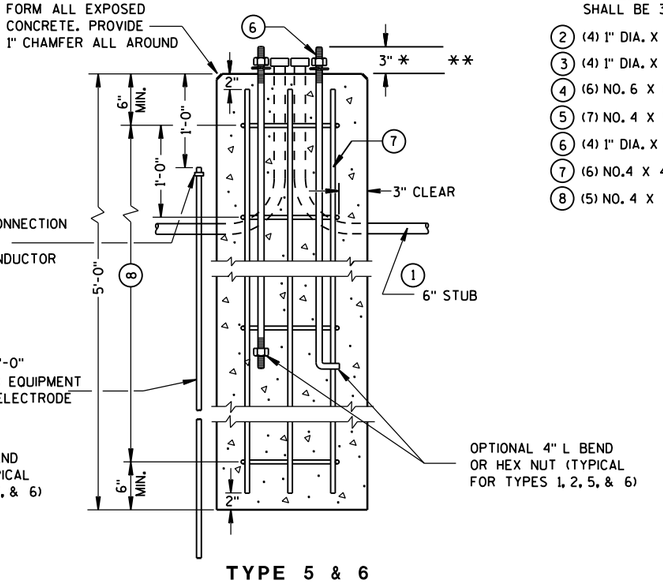




TYPE 2




TYPE 5 & 6

## CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

**CONCRETE BASES, TYPES 1, 2, 5, & 6**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 9 C 2-7

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

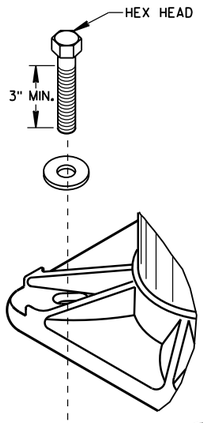
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

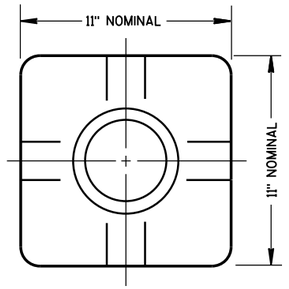
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

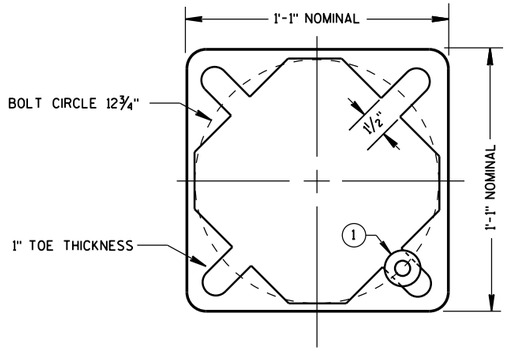
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

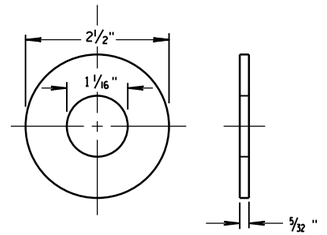



TOP VIEW
(PEDESTAL BASE)

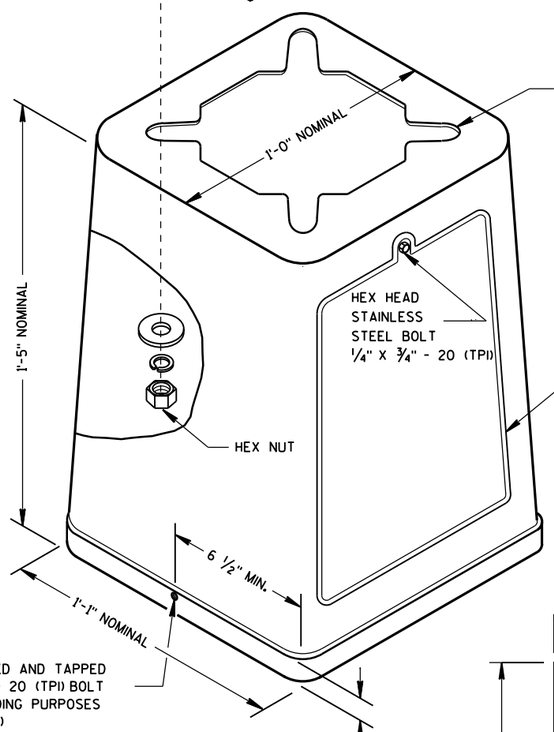



BOTTOM VIEW
(PEDESTAL BASE)

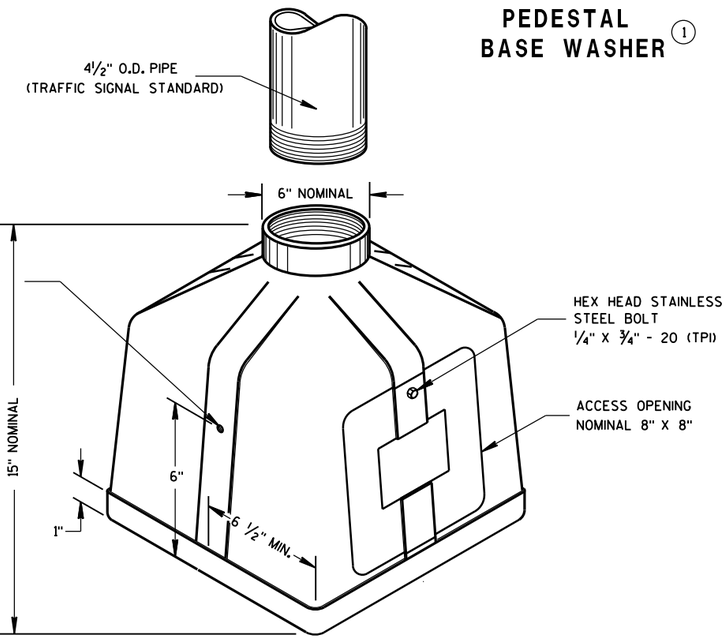



ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

**PEDESTAL BASE WASHER** (1)

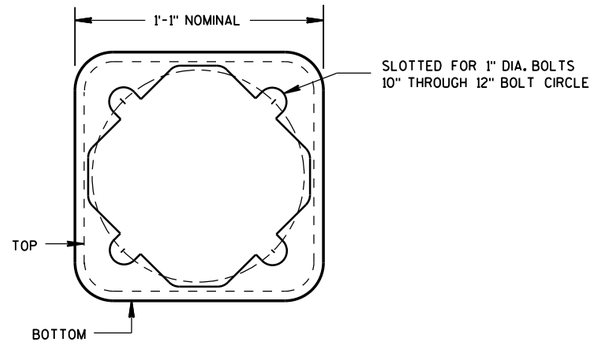



ISOMETRIC VIEW

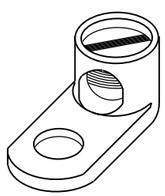



ISOMETRIC VIEW

**PEDESTAL BASE**




BOTTOM VIEW
(TRANSFORMER BASE)

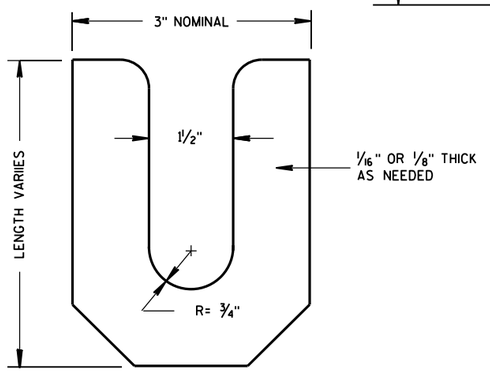


**TYPICAL MECHANICAL CONNECTOR LUG**

TO BE FURNISHED WITH EACH BASE

**TRANSFORMER BASE**

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES




**LEVELING SHIM**

**TRANSFORMER/PEDESTAL BASES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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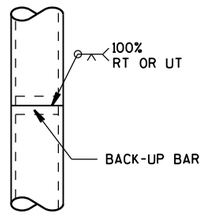
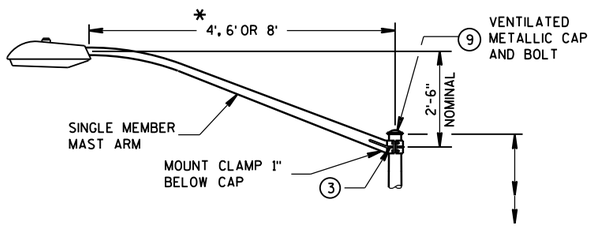
**FOR MANUFACTURERS USE ONLY**

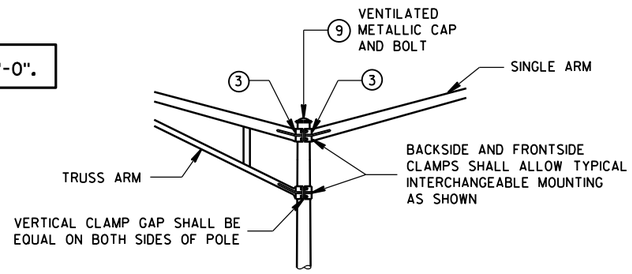
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.




## POLE SPLICE DETAIL

* RISE FOR 4' ARM SHALL BE 2'-0".

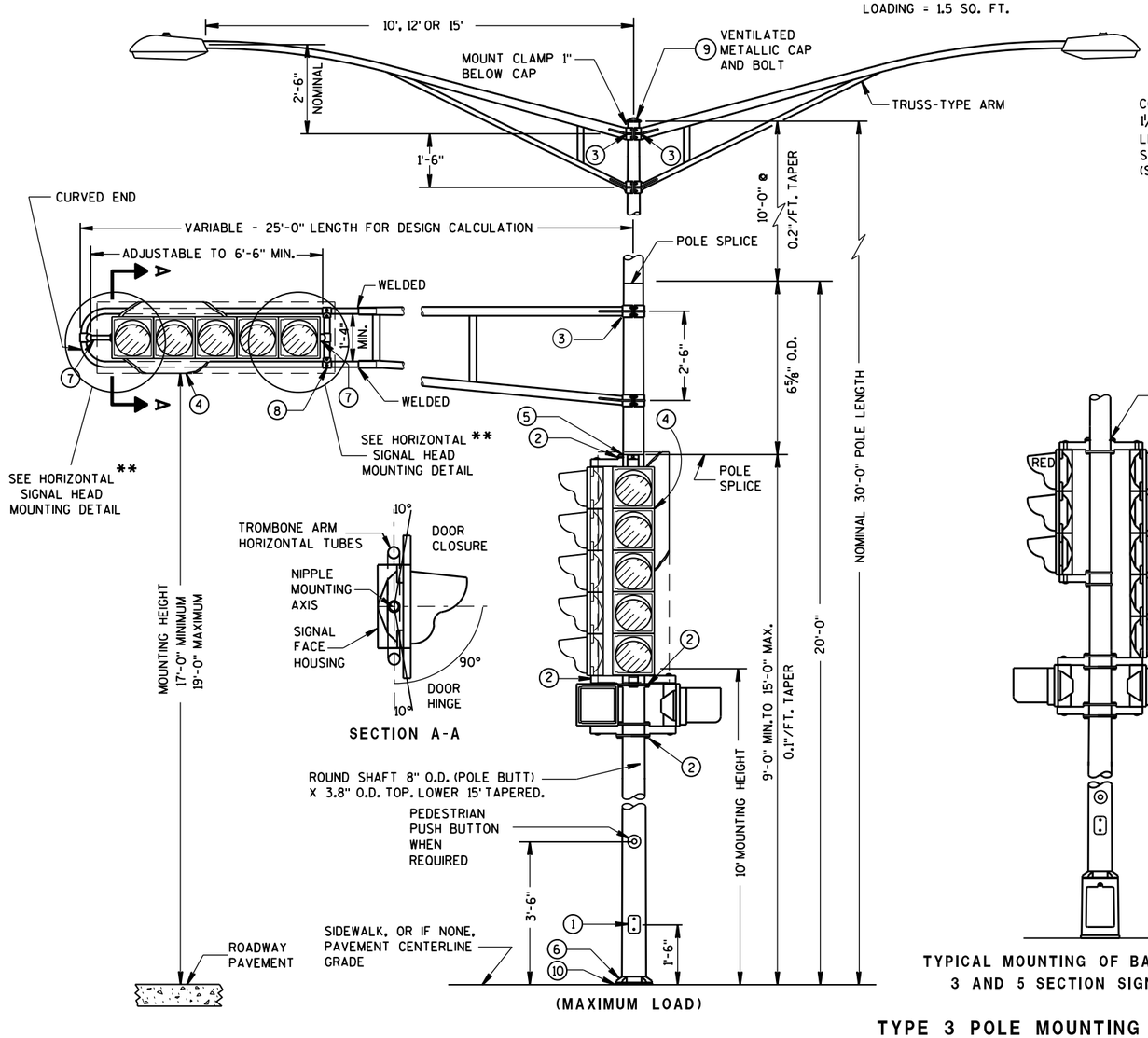


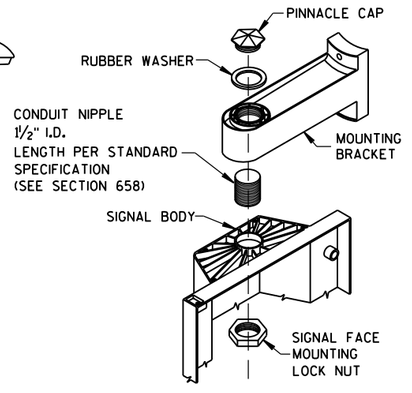




## INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

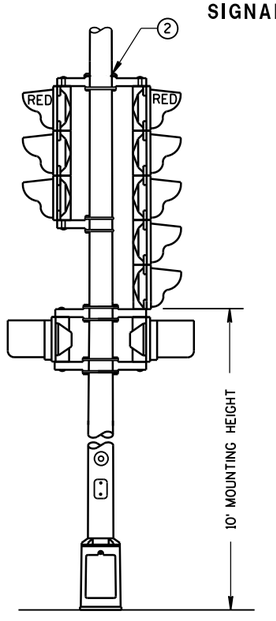
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.



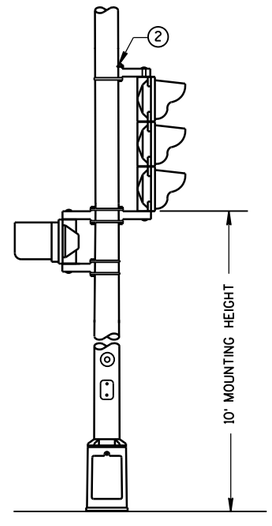




## SIGNAL FACE MOUNTING DETAIL

(BANDED)




TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES




TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.

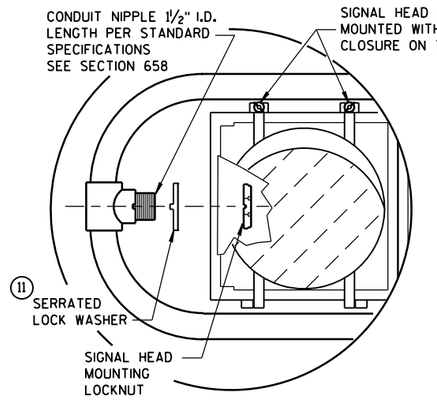
(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.




## HORIZONTAL SIGNAL HEAD MOUNTING DETAIL **

** SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

## TYPE 3 POLE MOUNTING CONFIGURATION

**POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI





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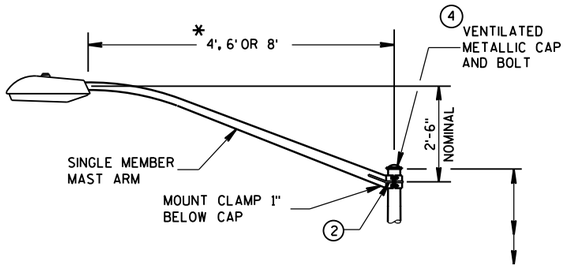
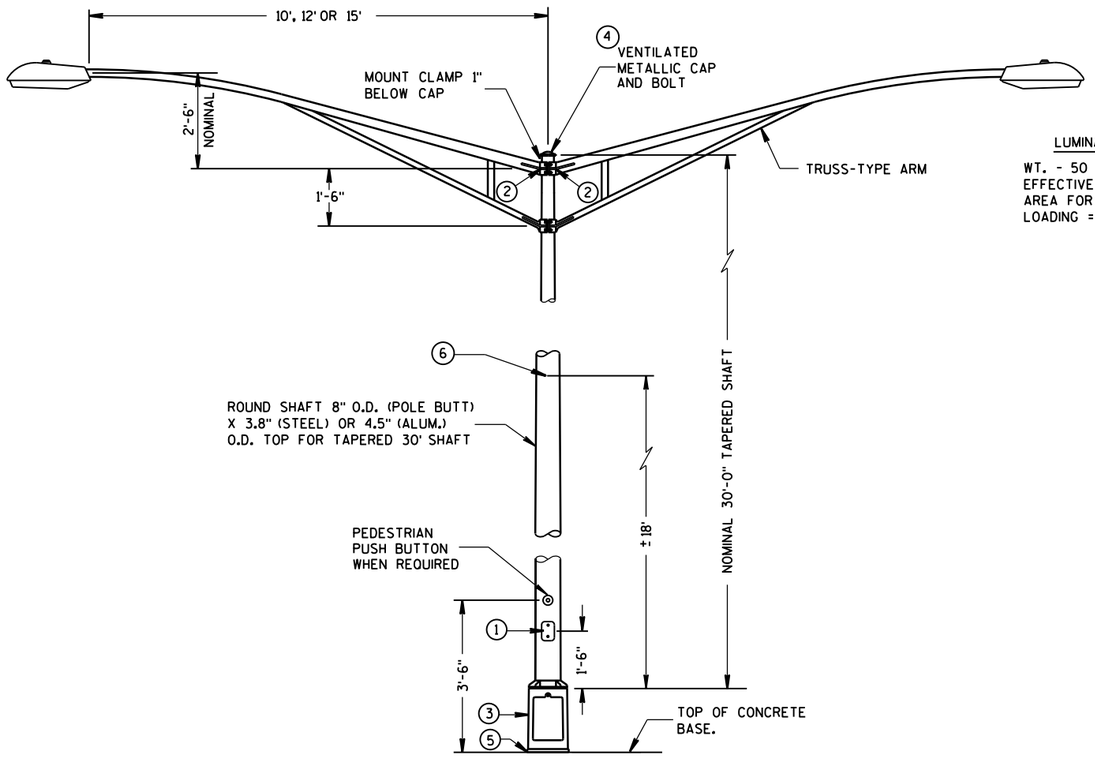
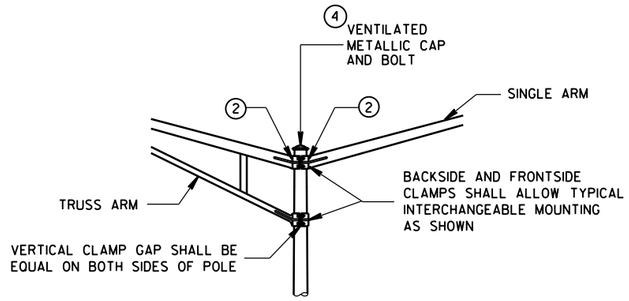
S.D.D. 9 E 1-14b

*RISE FOR 4' ARM SHALL BE 2'-0".




TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY




INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONEECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(4) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(6) INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

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S.D.D. 9 E 1-14d

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



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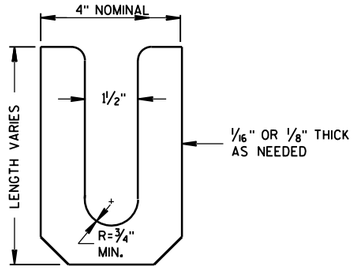
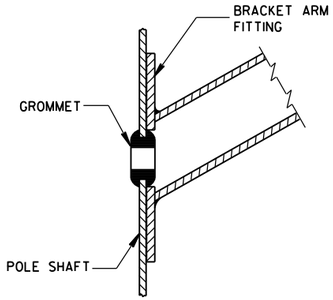
S.D.D. 9 E 1-14d

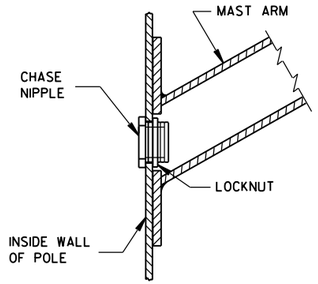



**LEVELING SHIM** (13)

SHALL BE ALUMINUM




**TYPICAL APPLICATION OF GROMMET IN POLE SHAFT**




**TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT**

## GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

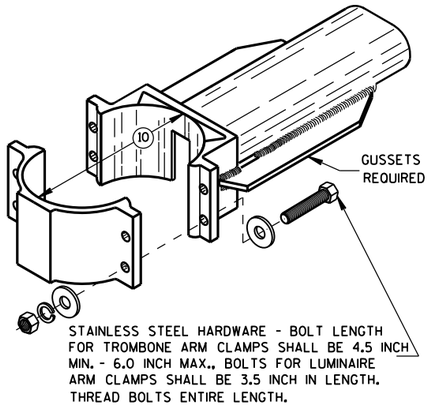
(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

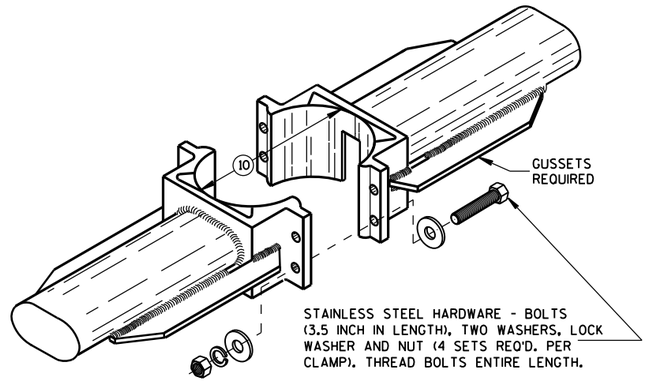
(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

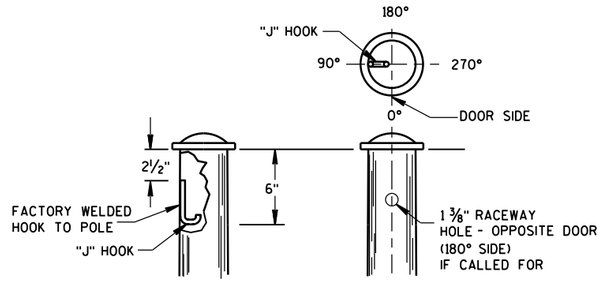
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



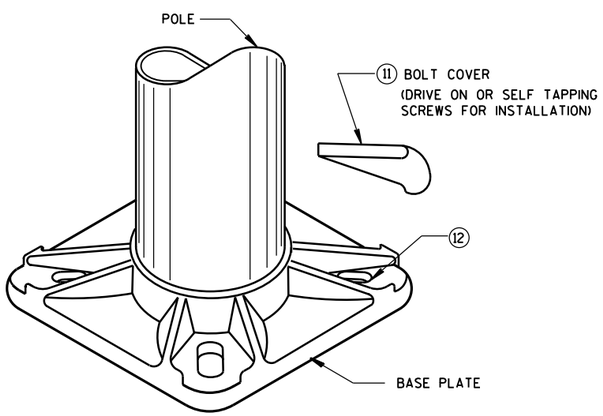

**TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP**



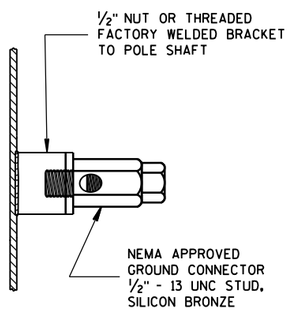

**TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS**

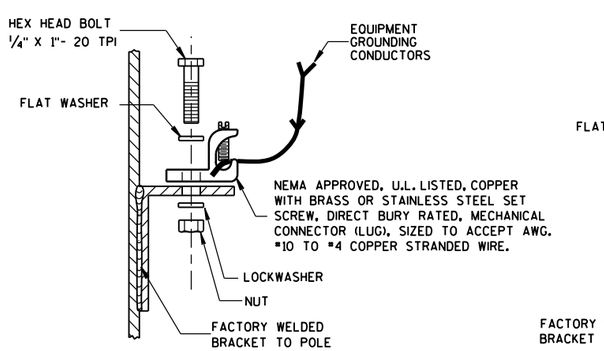



**TYPICAL "J" HOOK LOCATION**



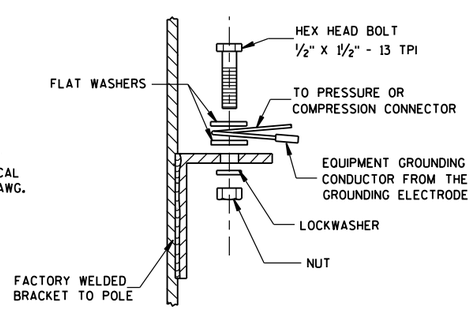

**BASE PLATE**




**TYPICAL GROUNDING CONNECTIONS**

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL




**HARDWARE DETAILS FOR POLE MOUNTINGS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA



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S.D.D. 9 E 1-14g

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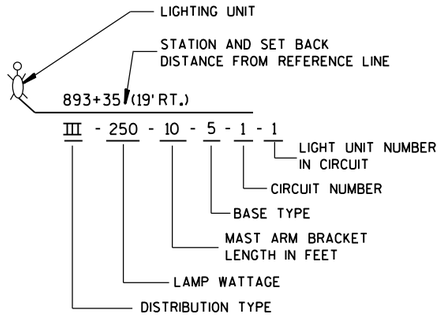
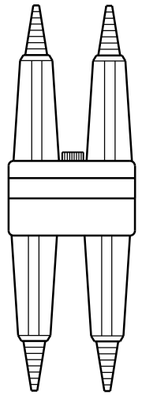
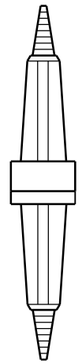
S.D.D. 9 E 1-14g



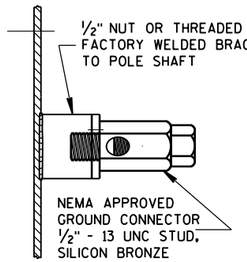

## LIGHTING UNIT CODE
(TYPICAL)

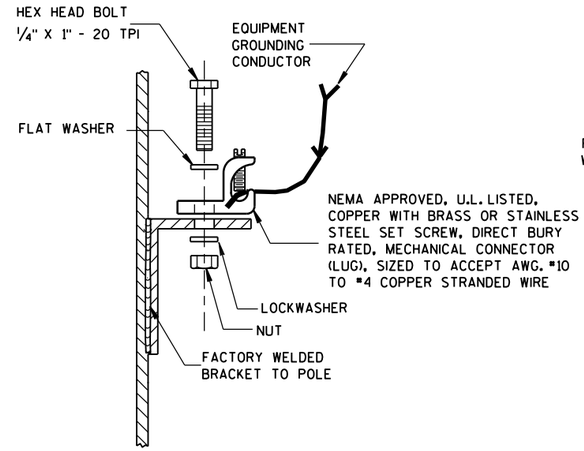


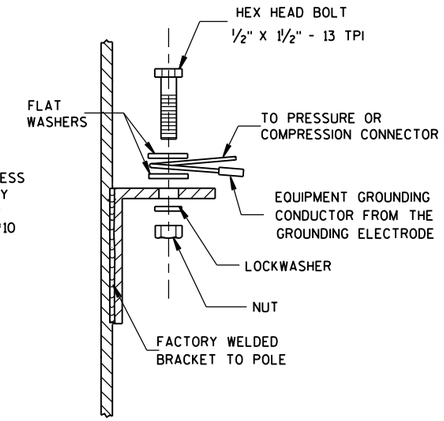
## DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



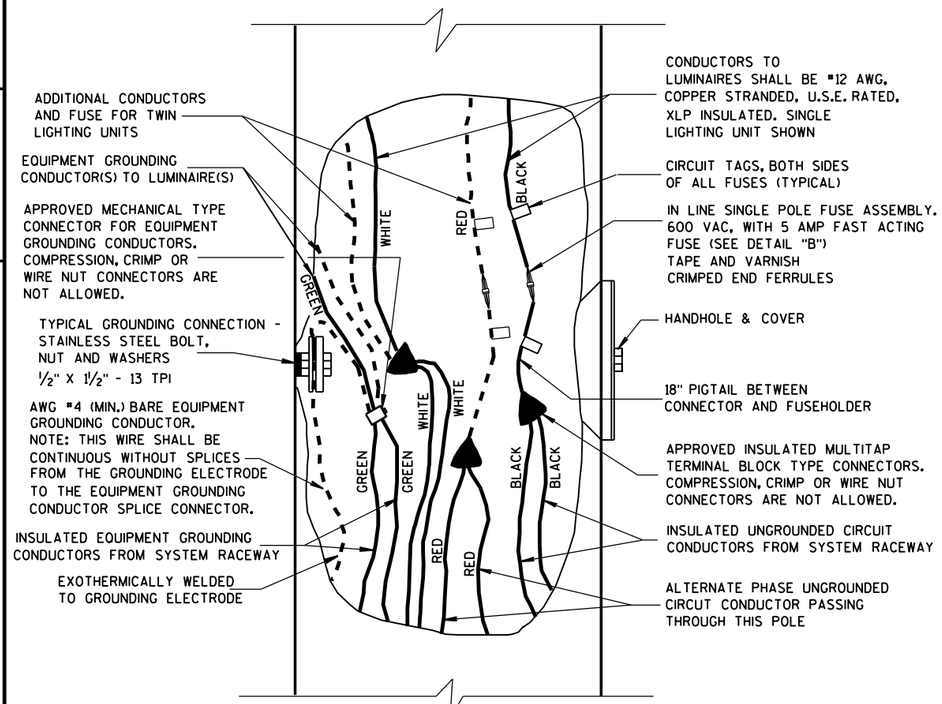
## DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



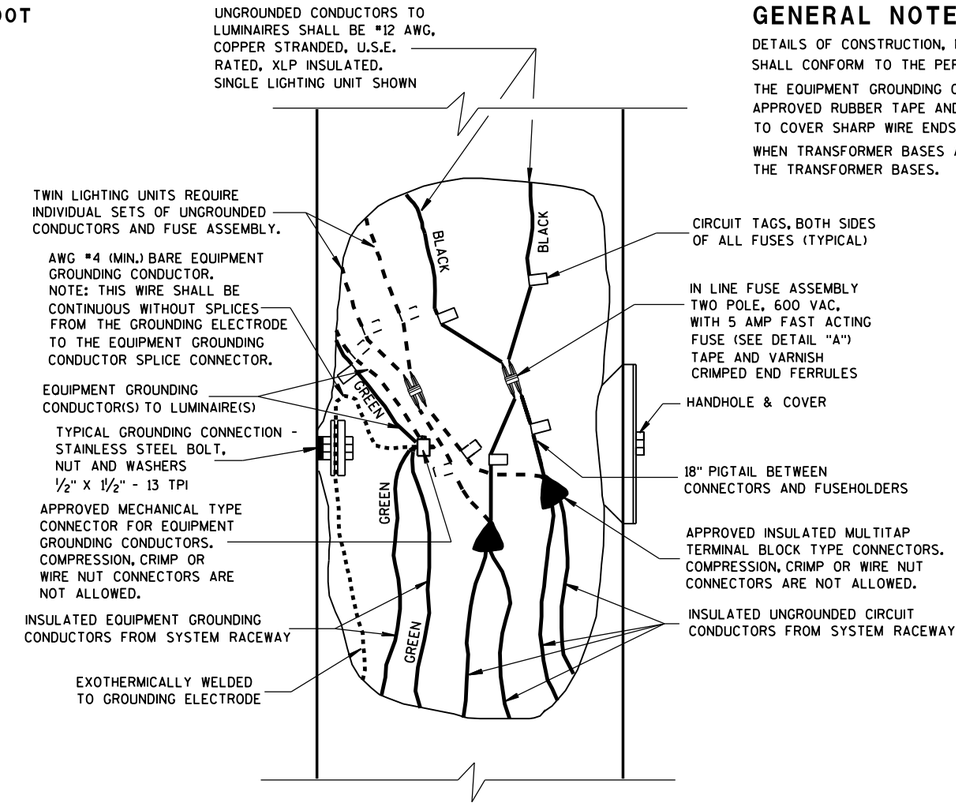




## TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL




## 3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR




## 2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

# NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA



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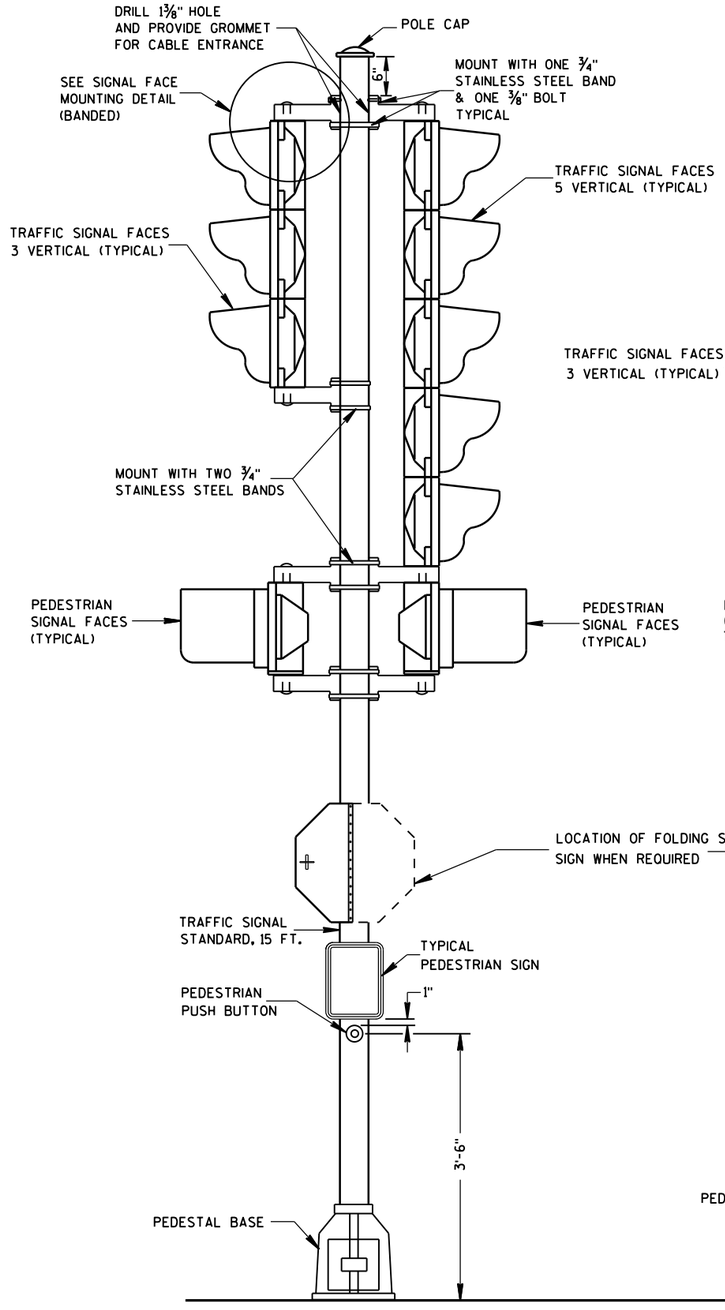
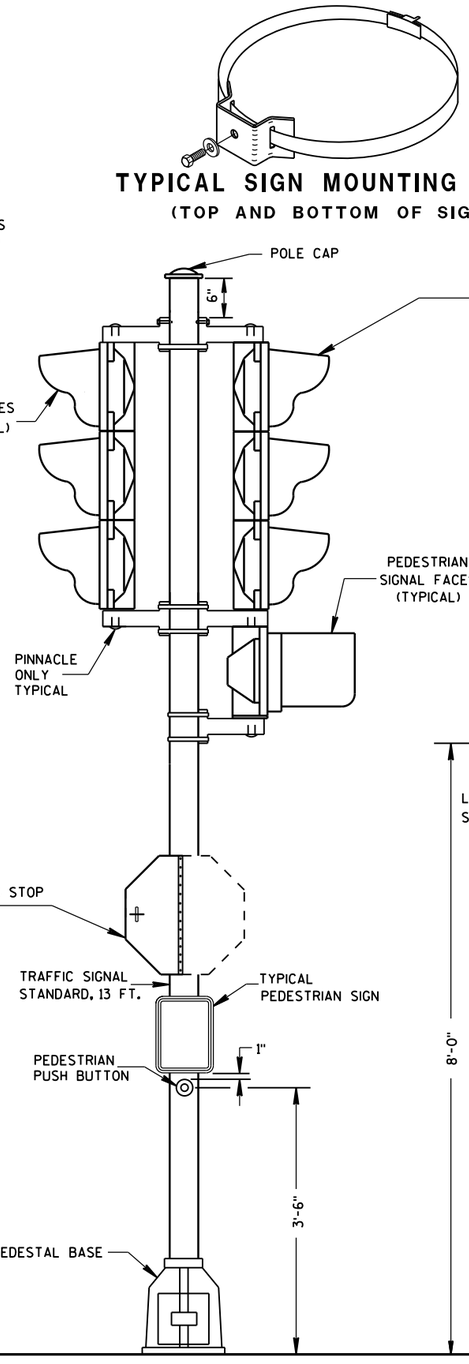
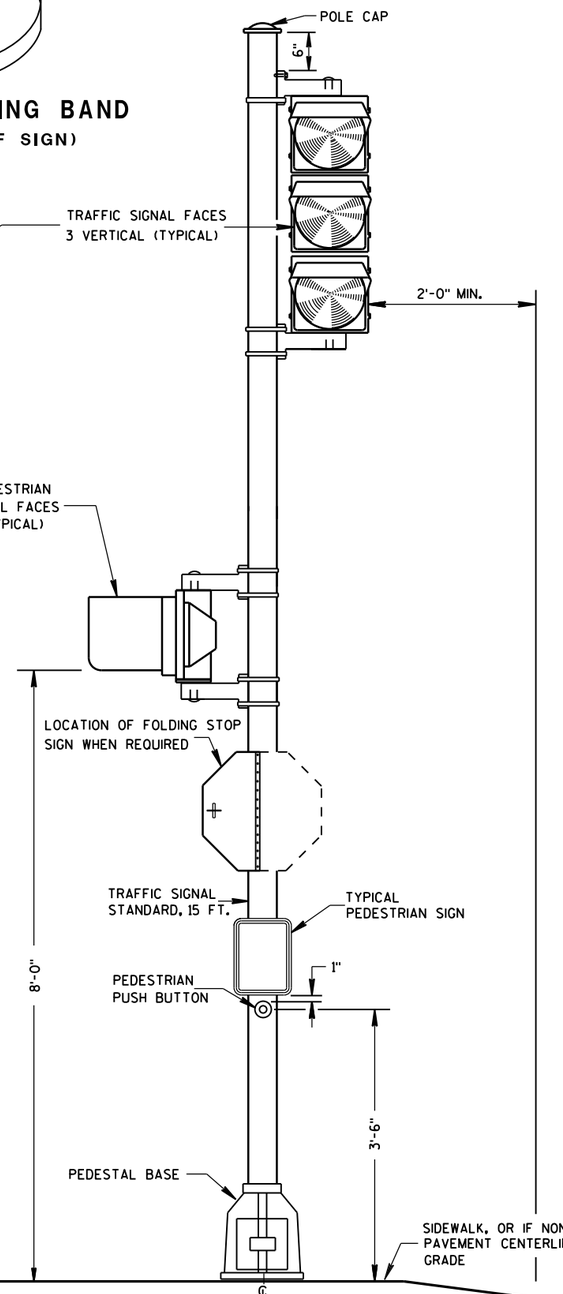



TRAFFIC SIGNAL STANDARD-15 FT.




TRAFFIC SIGNAL STANDARD-13 FT.

## TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)




TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

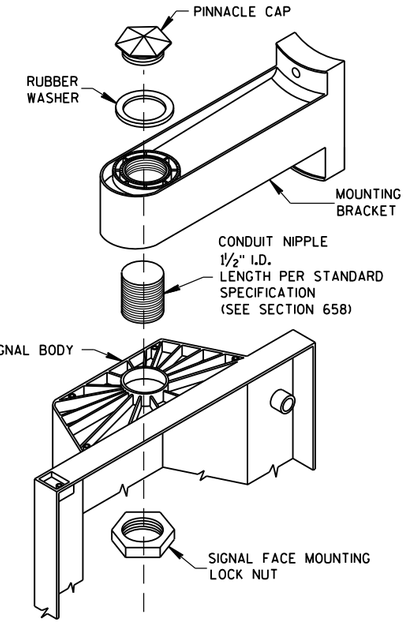
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.




## SIGNAL FACE MOUNTING DETAIL
(BANDED)

**TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA





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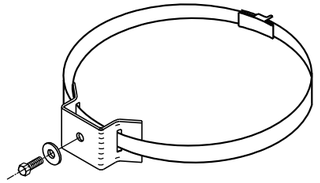
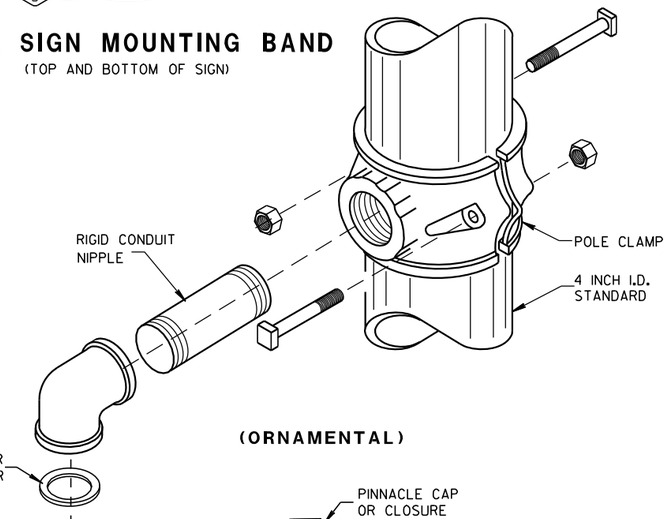
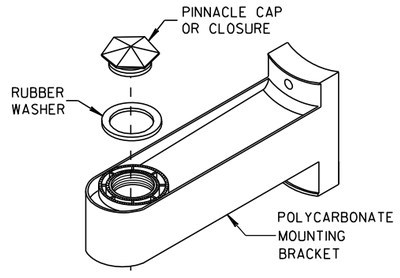


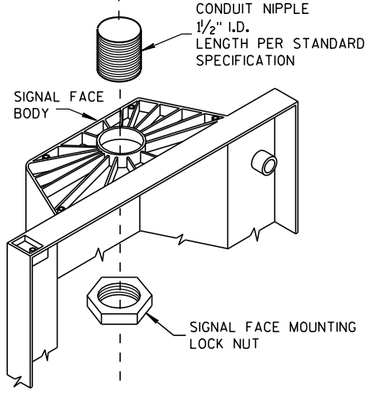
## TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



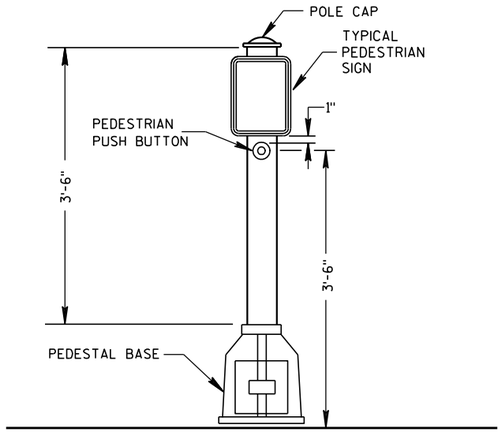

(ORNAMENTAL)




(BANDED)




## SIGNAL FACE MOUNTING DETAILS




## PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

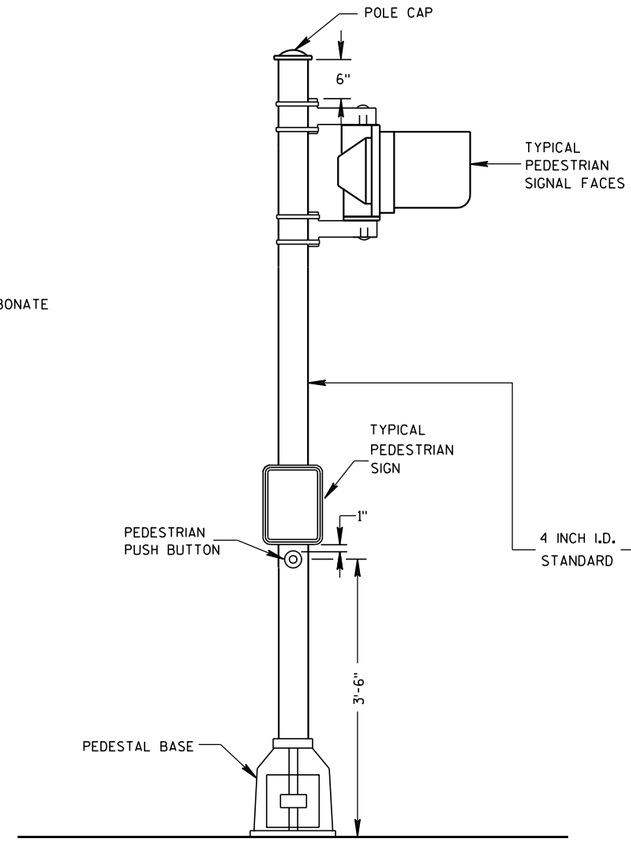
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

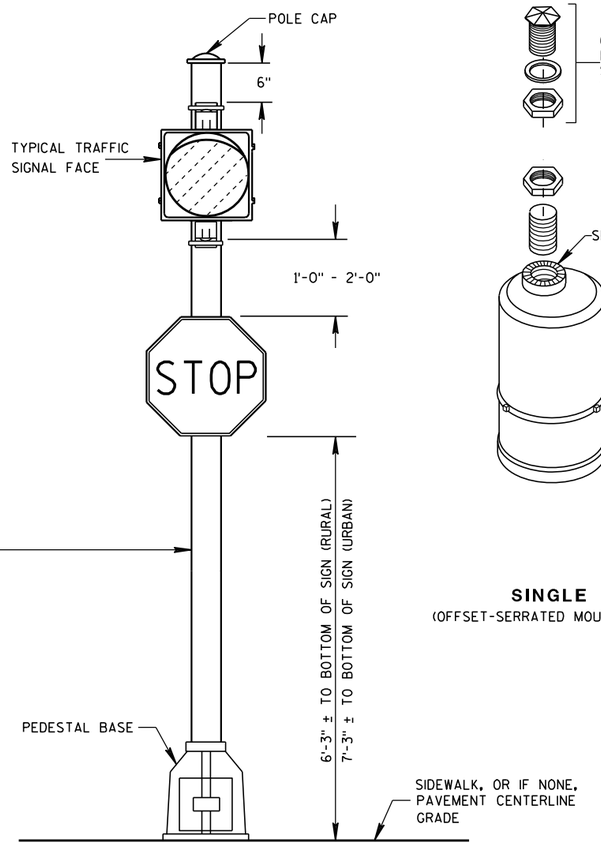
MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

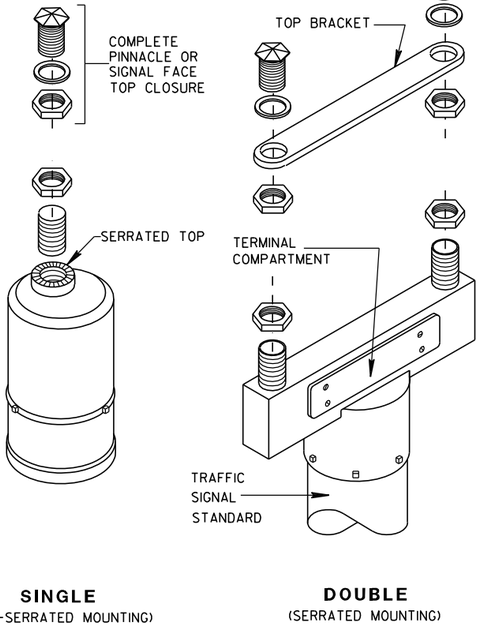
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.




## PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)




## STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED




**SINGLE**
(OFFSET-SERRATED MOUNTING)

**DOUBLE**
(SERRATED MOUNTING)

## SLIPFITTERS

## TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/11/10
DATE

/S/ John Corbin
STATE ELECTRICAL ENGI

FHWA



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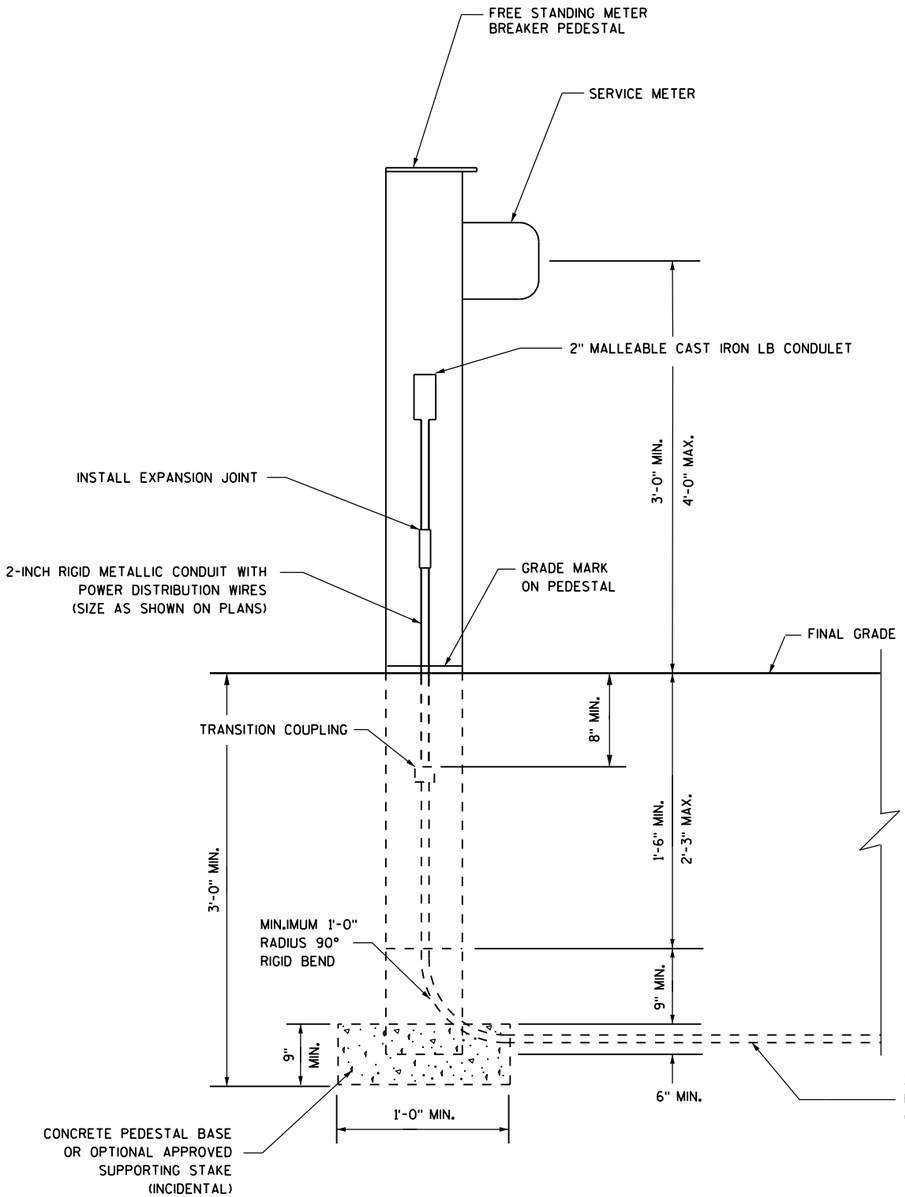


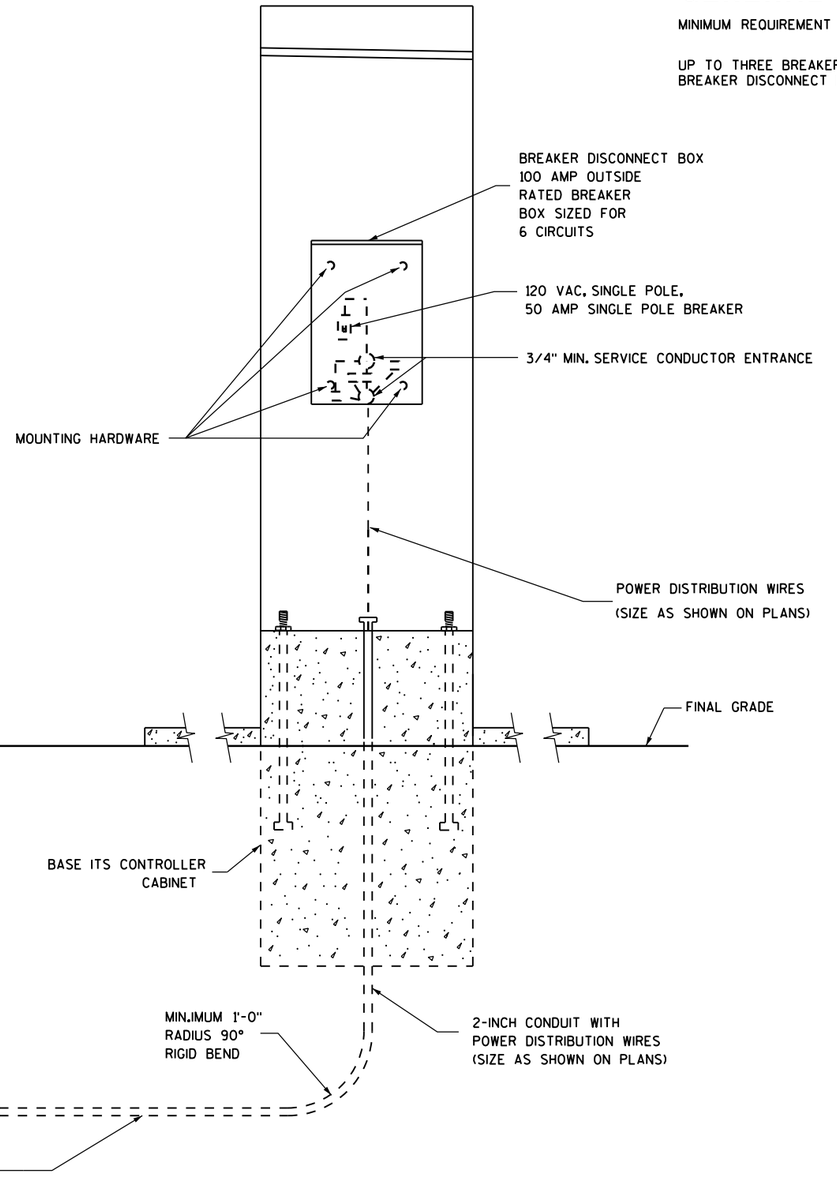


## GENERAL NOTES

MINIMUM REQUIREMENT SHOWN. ADDITIONAL BREAKERS MAY BE REQUIRED.

UP TO THREE BREAKERS WILL BE CONSIDERED INCIDENTAL TO THE ITEM BREAKER DISCONNECT BOX.

# 2 CIRCUIT ELECTRICAL SERVICE METER BREAKER PEDESTAL AND BREAKER DISCONNECT BOX

| 2 CIRCUIT ELECTRICAL SERVICE METER BREAKER PEDESTAL AND BREAKER DISCONNECT BOX | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED Sept. 2014 DATE FHWA | /S/ Ahmet Demirbilek STATE ELECTRICAL |




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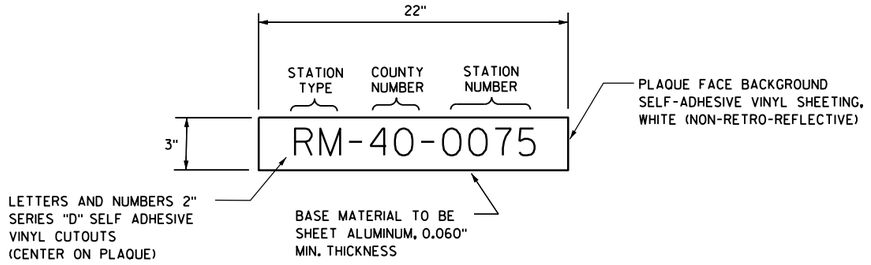
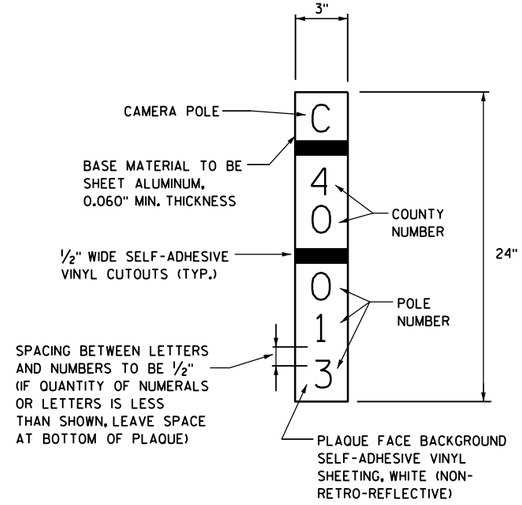


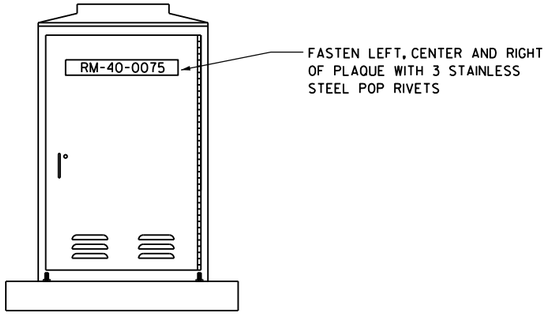

## CONTROL CABINET IDENTIFICATION PLAQUE DETAIL




## POLE IDENTIFICATION PLAQUE DETAIL

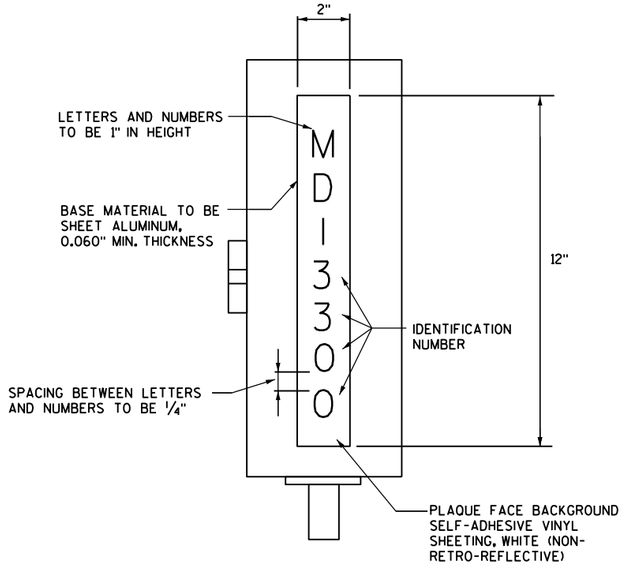
## GENERAL NOTES

1. TWO PLAQUES PER CABINET REQUIRED ON CONTROL CABINET.
2. FASTEN ONE PLAQUE ON FRONT DOOR, UPPER HALF.
3. FASTEN ONE PLAQUE ON SIDE FACING LOCAL STREET. IF NO LOCAL STREET NEARBY, OR IF SUCH LOCATION COINCIDES WITH LOCATION OF PLAQUE IN NOTE (2), FASTEN PLAQUE ON REAR OF CABINET, UPPER HALF.
4. COUNTY NUMBER NOT REQUIRED ON RAMP METER CABINETS.




## CONTROL CABINET IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

(TYPICAL ALL CONTROL CABINETS)




## MICROWAVE DETECTOR FIELD CABINET IDENTIFICATION PLAQUE DETAIL

### LEGEND STATION TYPE

RM - RAMP METER
CCTV - CLOSED CIRCUIT TELEVISION
ATR - AUTOMATIC TRAFFIC RECORDER
SDS - SYSTEM DETECTOR STATION
MD - MICROWAVE DETECTOR

**IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demribilek — STATE ELECTRICAL
FHWA



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S.D.D. 9 H 11-1

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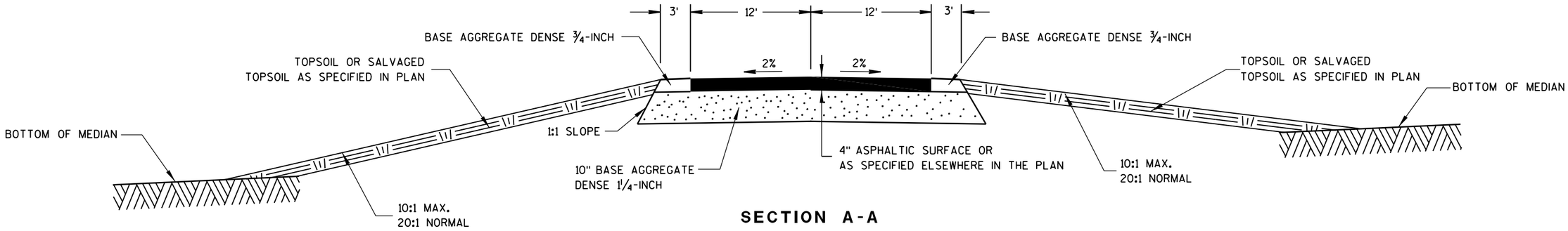
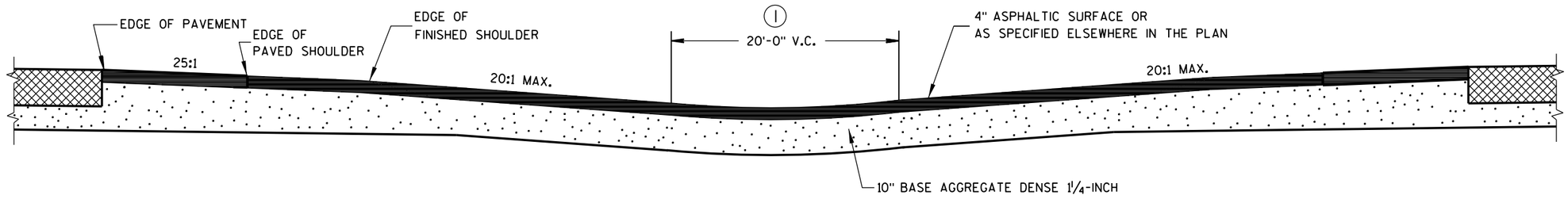
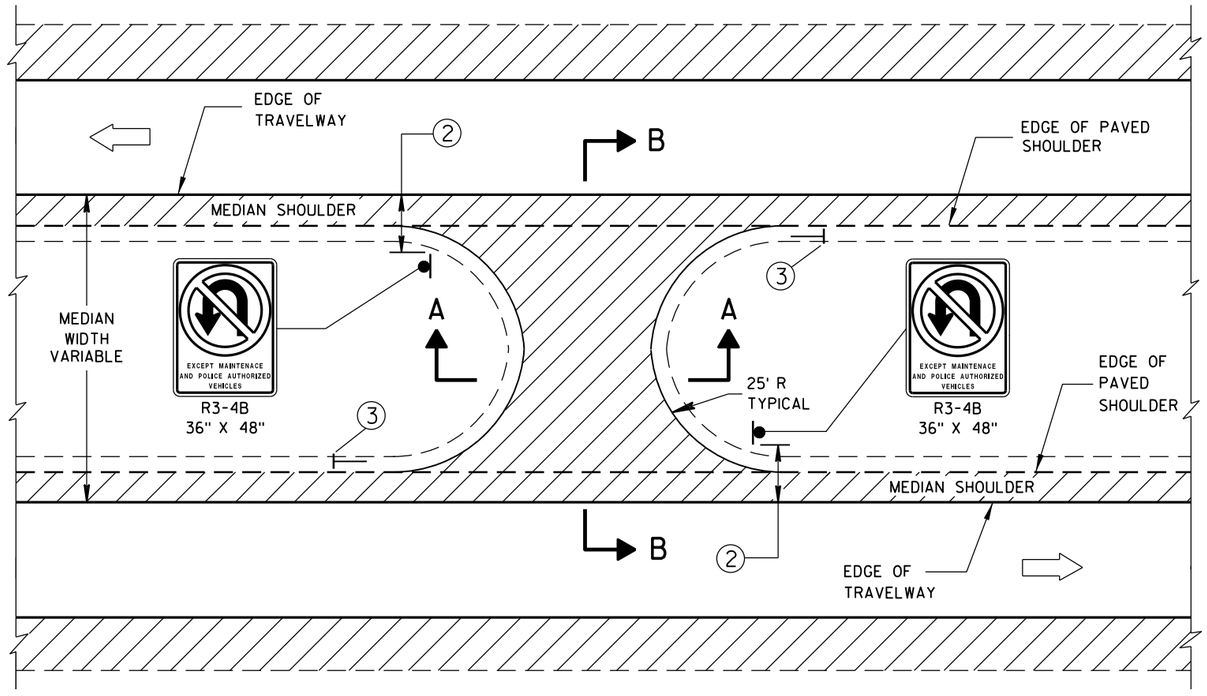
S.D.D. 9 H 11-1



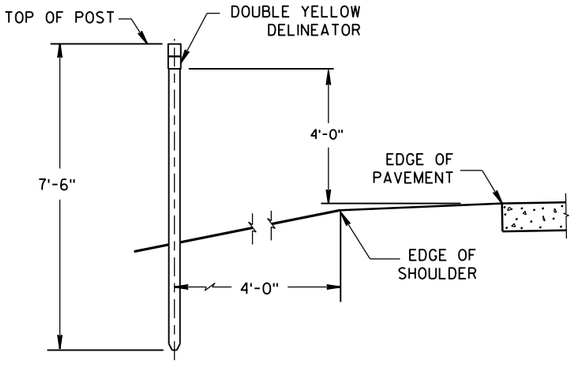

**SECTION A-A**




**SECTION B-B**




**PLAN VIEW**




**DOUBLE YELLOW DELINEATOR INSTALLATION**

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.

(2) SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

(3) INSTALL DOUBLE YELLOW DELINEATOR. SEE STANDARD DETAIL DRAWING 15A2.

**MAINTENANCE CROSSOVER FOR FREEWAYS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



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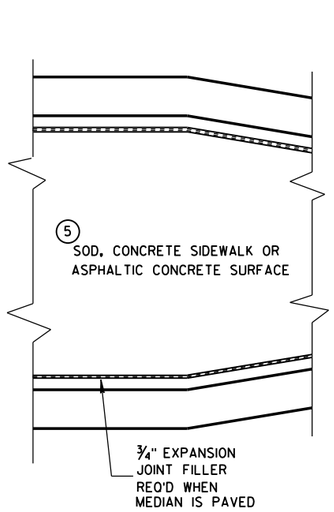
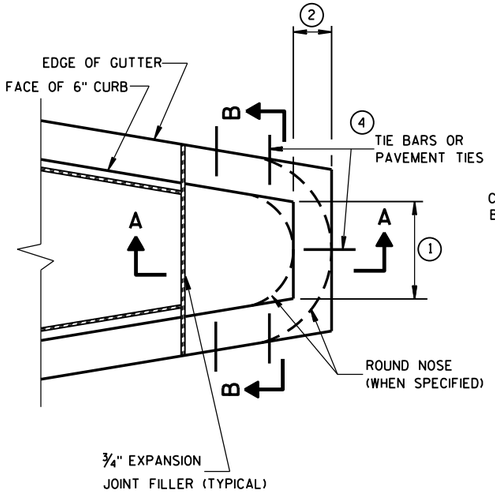
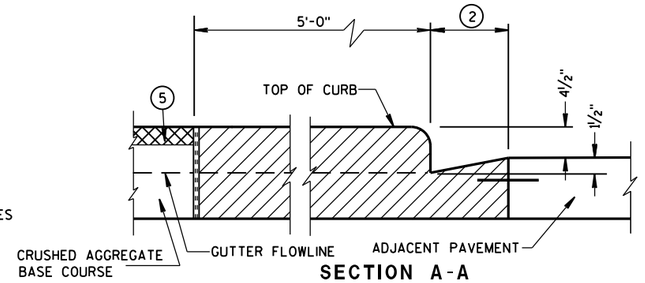
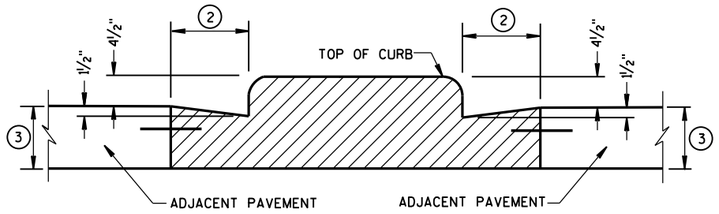



SECTION A-A




SECTION B-B

## CONCRETE MEDIAN BLUNT NOSE DETAIL

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

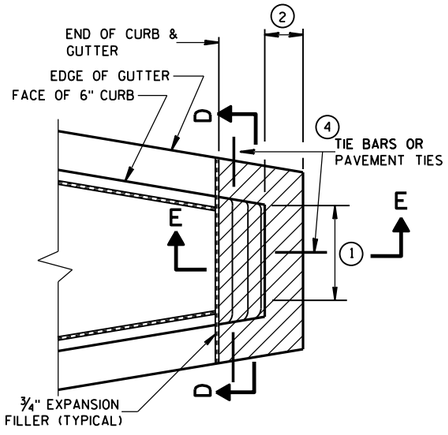
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

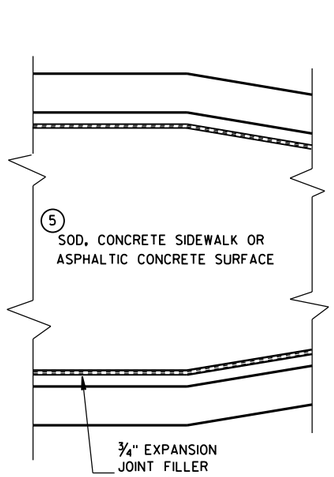
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

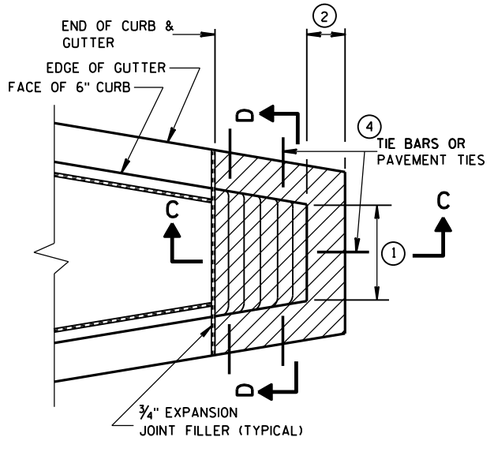
(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

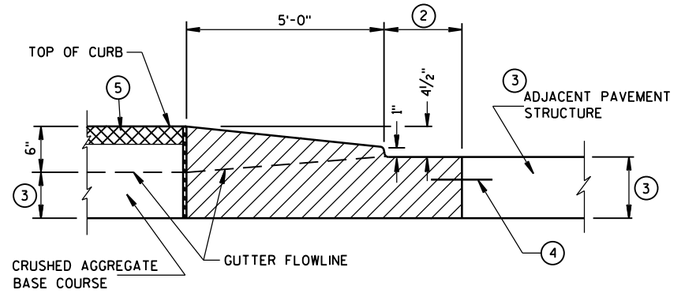
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



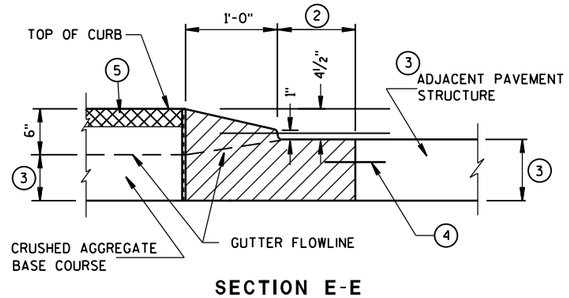




## CONCRETE MEDIAN SLOPED NOSE TYPE 1

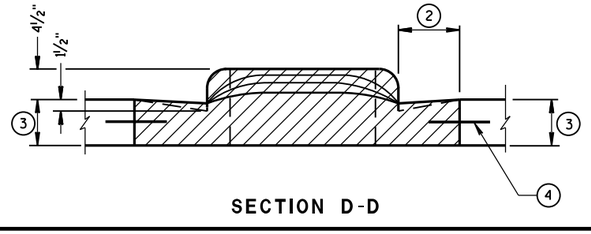



SECTION C-C




SECTION E-E

## CONCRETE MEDIAN SLOPED NOSE TYPE 2




SECTION D-D

## CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/8/2006
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS D ENGINEER

FHWA

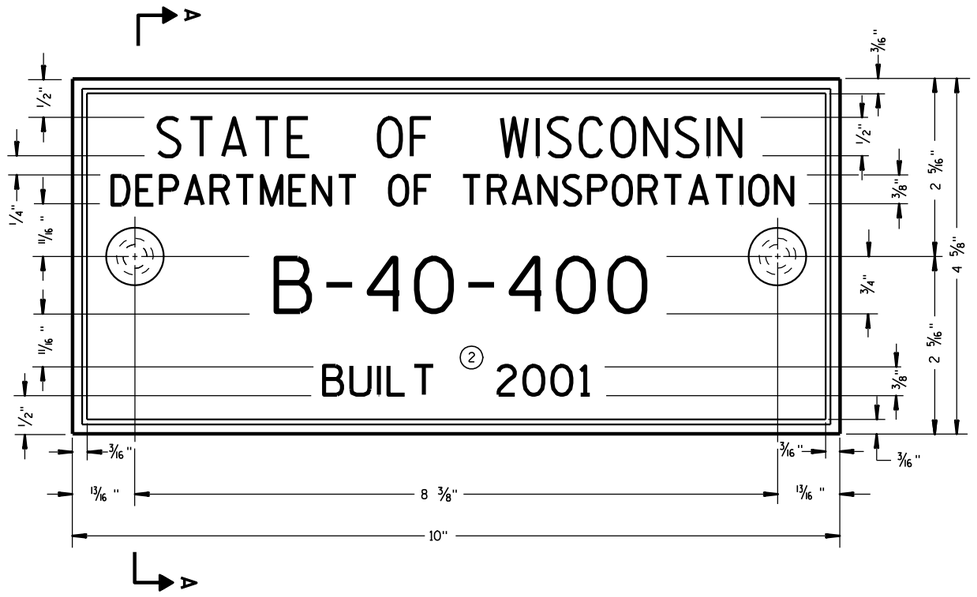


6

S.D.D. 11 B 2-2

6

S.D.D. 11 B 2-2




**TYPICAL NAME PLATE**
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

**NUMBERING DESIGNATION**
**MULTI-UNIT STRUCTURES**

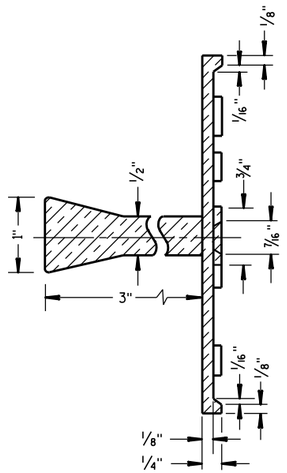
## GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

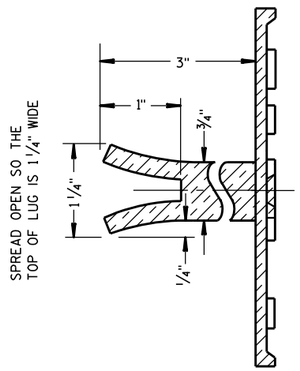
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

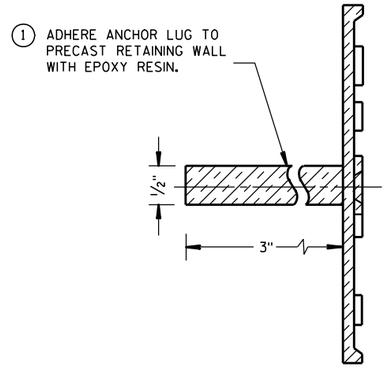
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.




**SECTION A-A**




**ALTERNATE LUG**




**ALTERNATE LUG**
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE (STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP 198 ENGINEER

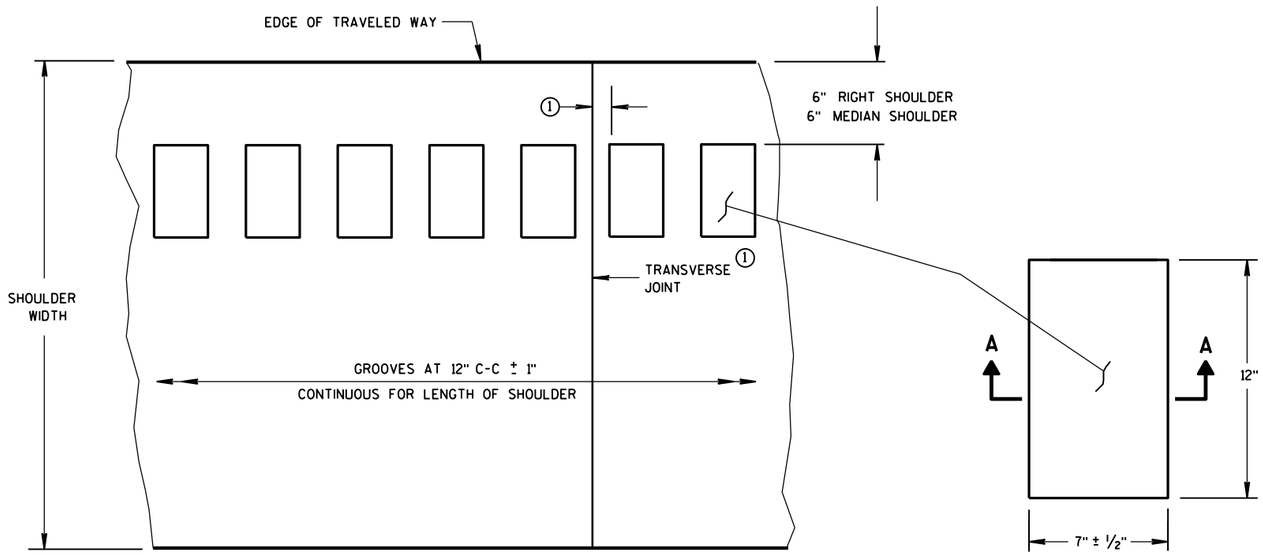
FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10




PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

## PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

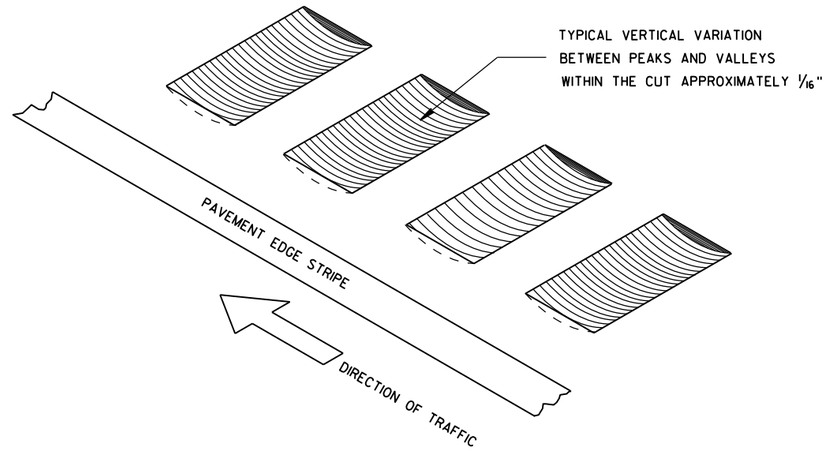
## GENERAL NOTES

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.

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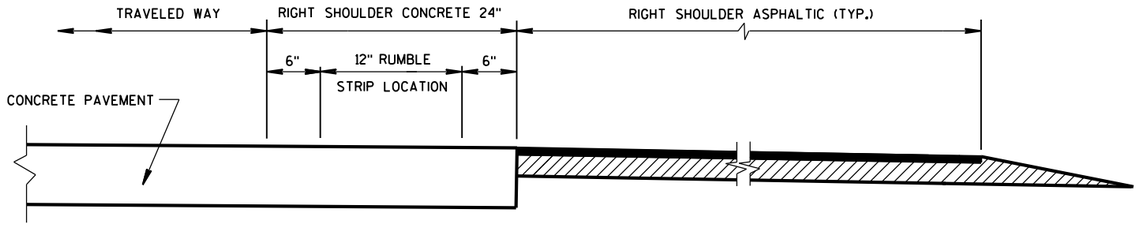
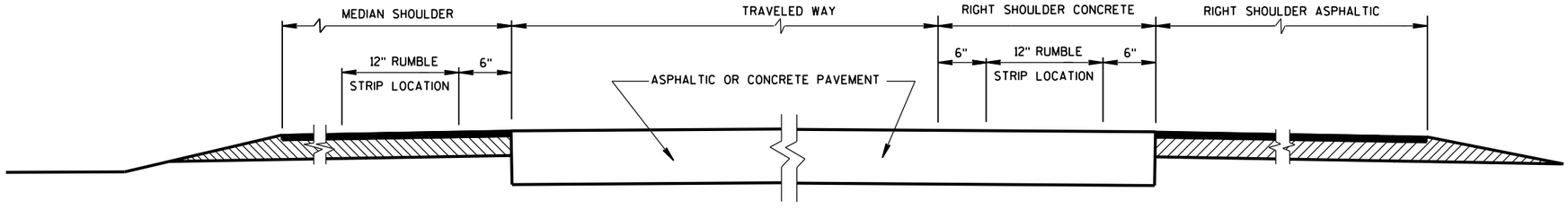


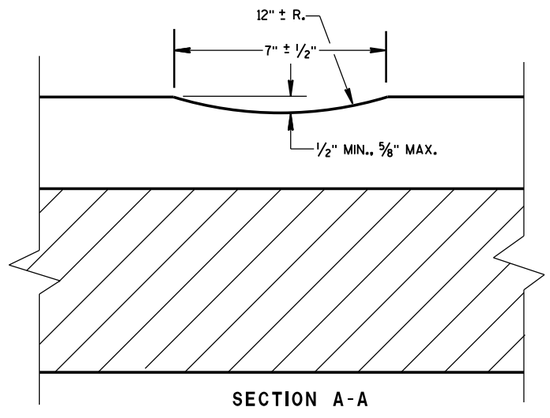

SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)




SECTION VIEW

## TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)




SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



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S.D.D. 13 A 5-5a

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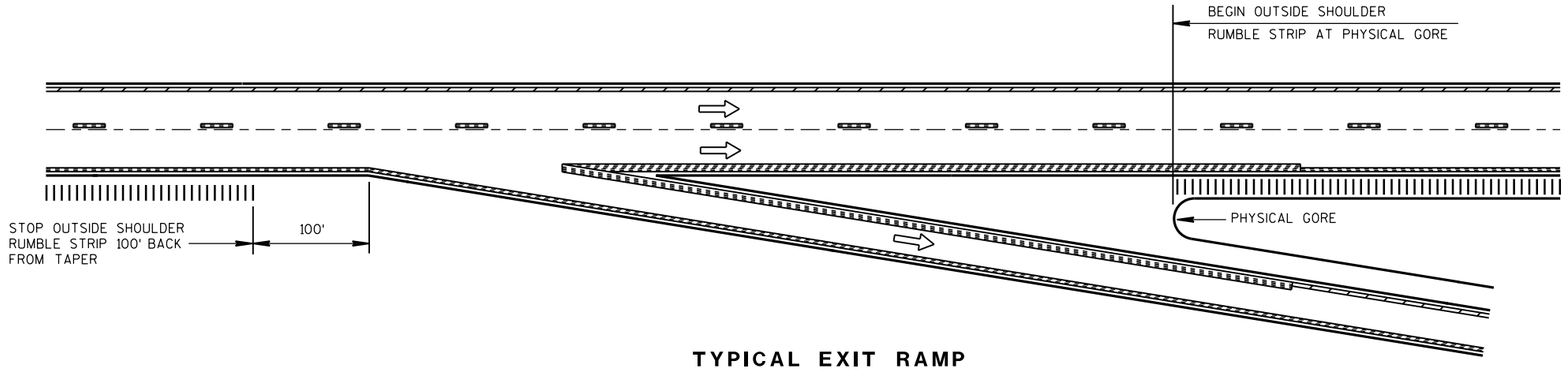
S.D.D. 13 A 5-5a



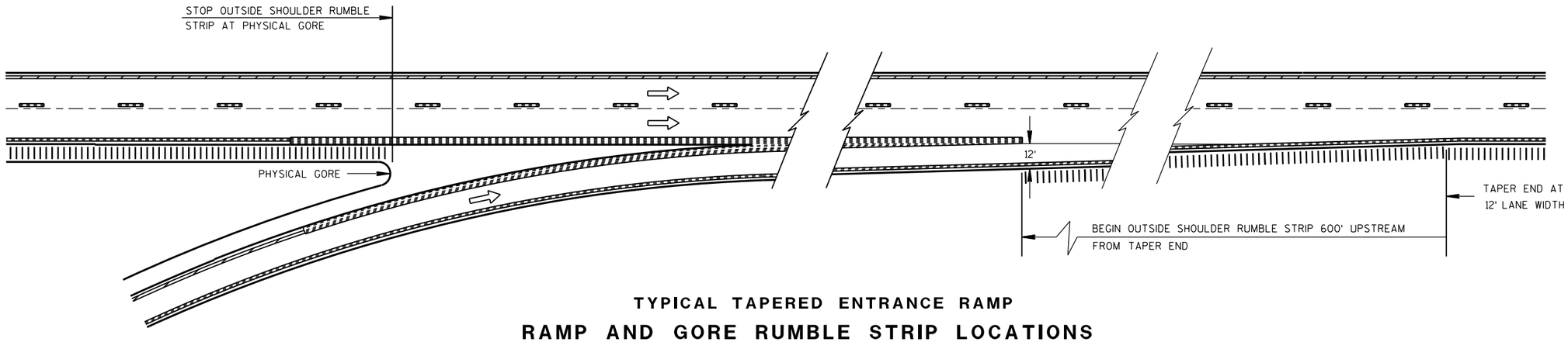

**TYPICAL EXIT RAMP**

## NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

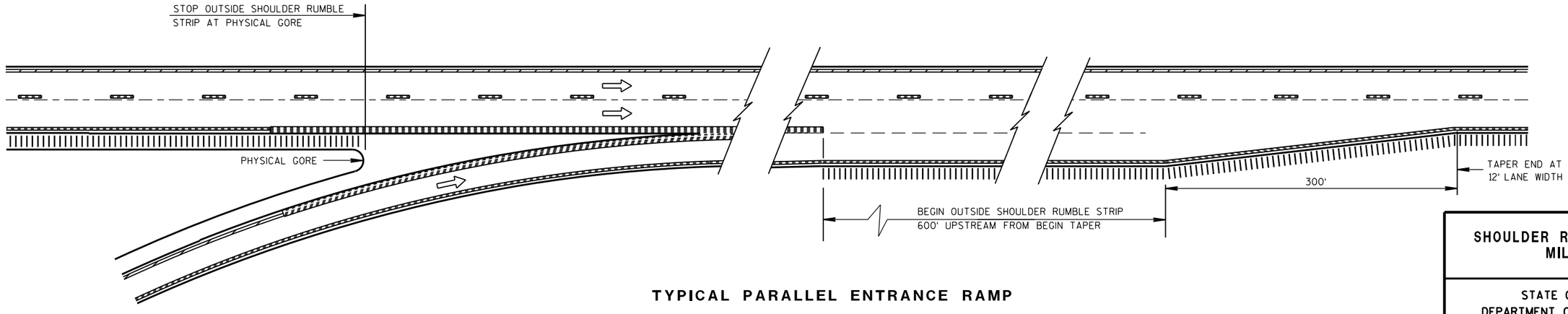
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

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

**SHOULDER RUMBLE STRIP, MILLING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

FHWA

200

6

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

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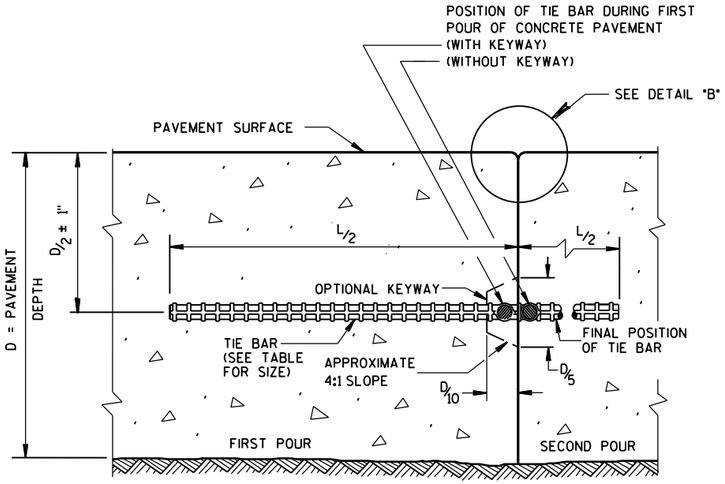
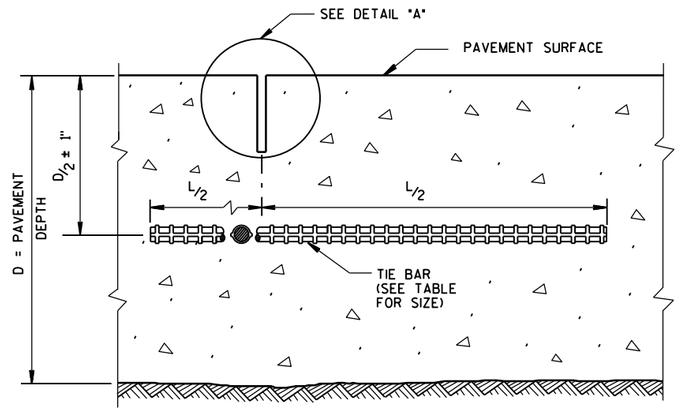
S.D.D. 13 A 5-5b




## CONSTRUCTION JOINT




## SAWED JOINT

## GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.




PLAN VIEW




SECTION A-A

## LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT




DETAIL "A"




DETAIL "B"



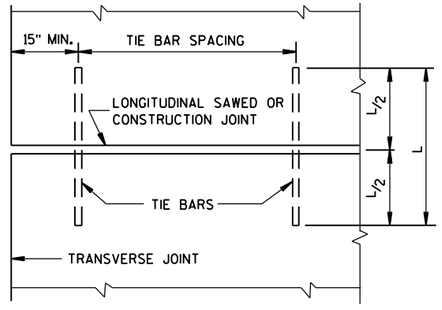

DETAIL "C"

### TIE BAR TABLE

| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4 * | 30" | 24"** |

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.




PLAN VIEW
SHOWING LOCATION OF TIE BARS

## CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPER

FHWA



6

S.D.D. 13 C 1-18

6

S.D.D. 13 C 1-18

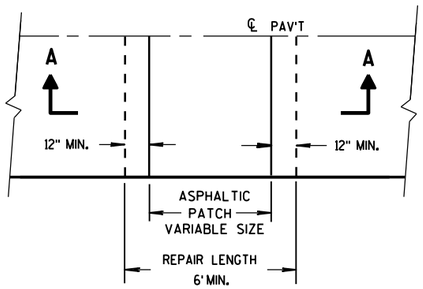
## GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

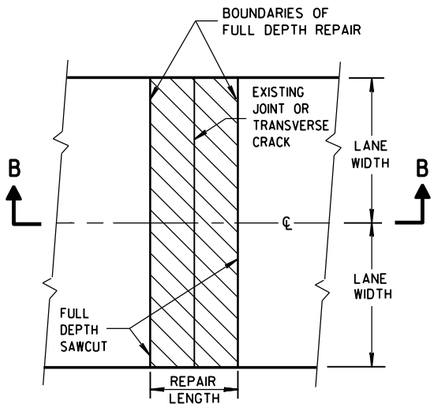
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

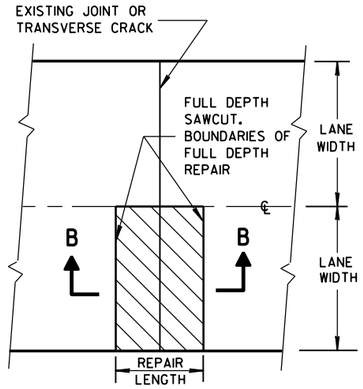
(1) DOWEL BARS MIGHT NOT EXIST.




PLAN VIEW

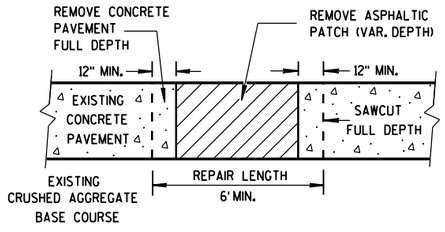



PLAN VIEW
(DOUBLE LANE REPAIR)



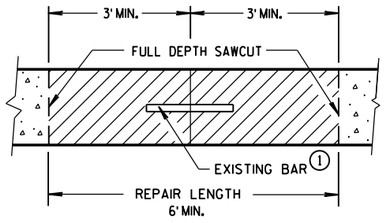

PLAN VIEW
(SINGLE LANE REPAIR)

## FULL DEPTH CONCRETE PAVEMENT REMOVAL




SECTION A-A

**HMA PATCH REMOVAL**




SECTION B-B

**CONCRETE REMOVAL**

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO







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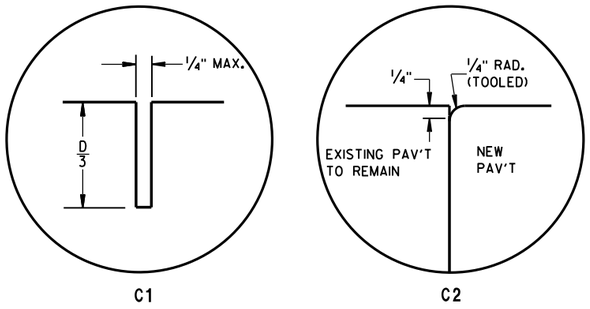
S.D.D. 13 C 9-13a



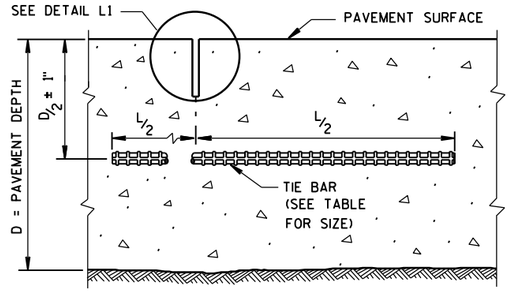

## TRANSVERSE JOINTS

### TIE BAR TABLE

| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 ½" | NO. 4 | 30" | 36" |
| ≥ 10 ½" | NO. 5 | 36" | 36" |
| | NO. 4 * | 30" | 24"** |

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.




SECTION C-C

## SAWED LONGITUDINAL JOINT

## GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

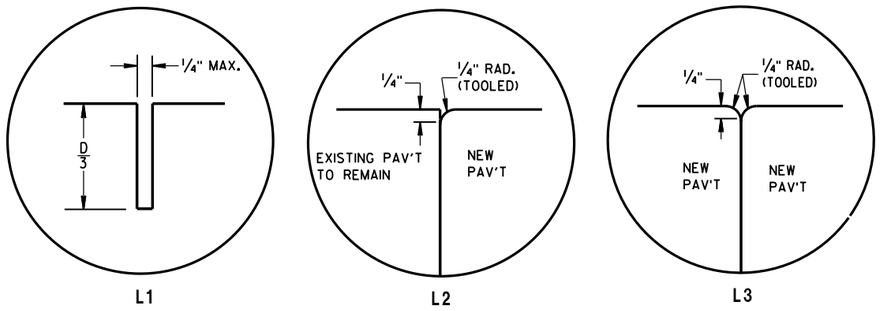
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

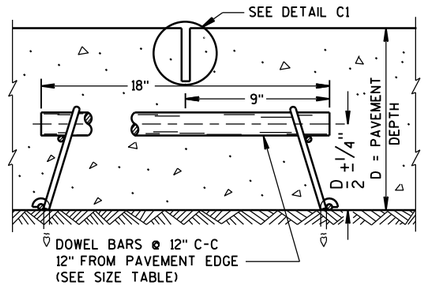
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

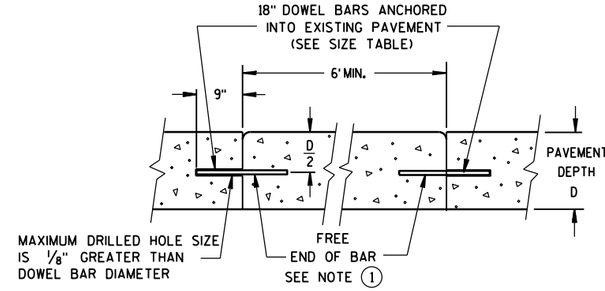



## LONGITUDINAL JOINTS

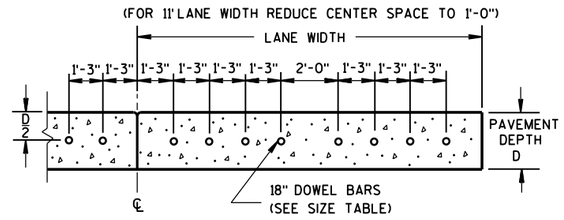



SECTION F-F

## CONTRACTION JOINT




SECTION D-D

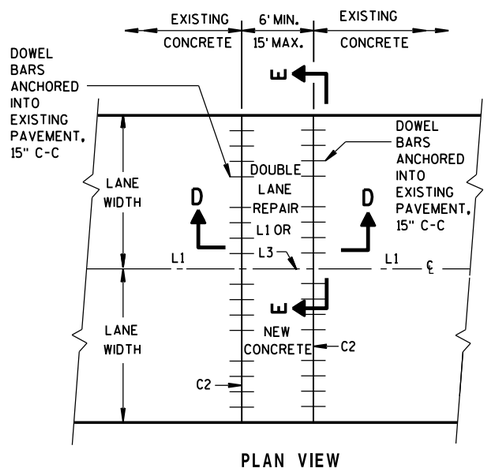



SECTION E-E

## DRILLED DOWEL BAR CONSTRUCTION JOINT

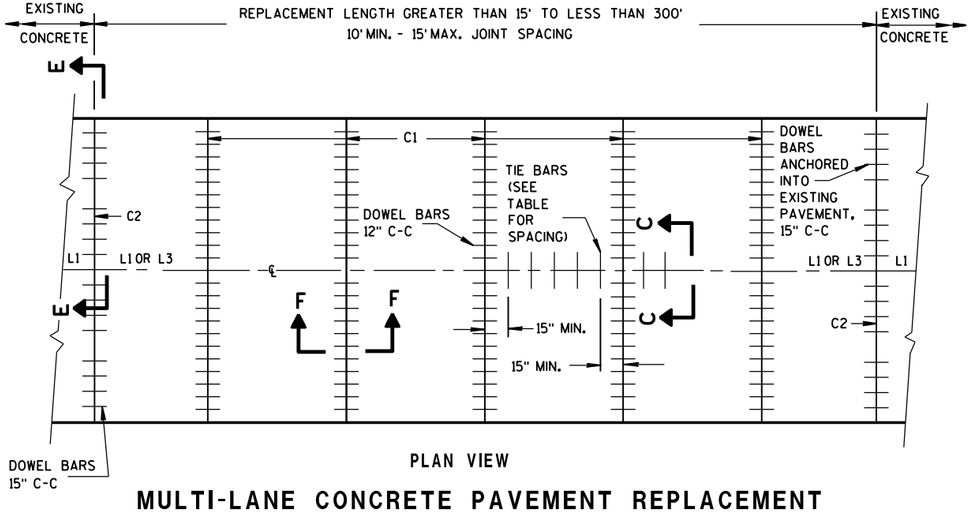
### PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | DOWEL BAR DIAMETER | CONTRACTION JOINT SPACING |
|---|---|---|
| 5 ½", 6",6 ½" | NONE | 12' |
| 7",7 ½" | 1" | 14' |
| 8",8 ½" | 1 ¼" | 15' |
| 9",9 ½" | 1 ¼" | 15' |
| 10" & ABOVE | 1 ½" | 15' |




PLAN VIEW

## MULTI-LANE CONCRETE PAVEMENT REPAIR




PLAN VIEW

## MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

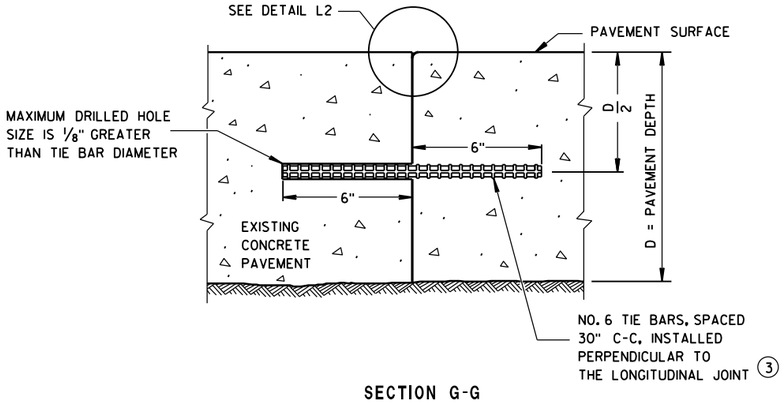
## CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR




6


S.D.D. 13 C 9-13b




SECTION G-G

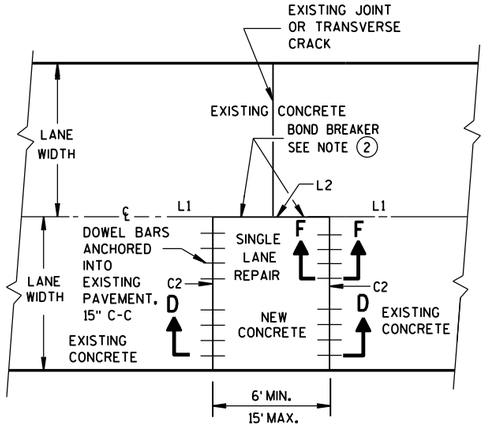
## TIE BARS ANCHORED INTO EXISTING PAVEMENT

## GENERAL NOTES

(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

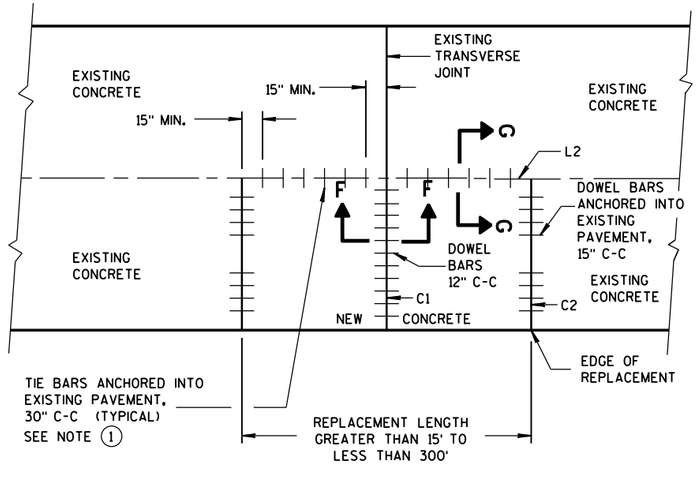
(2) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.

(3) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.




PLAN VIEW

## SINGLE LANE CONCRETE PAVEMENT REPAIR




PLAN VIEW

## SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

## CONCRETE PAVEMENT REPAIR AND REPLACEMENT

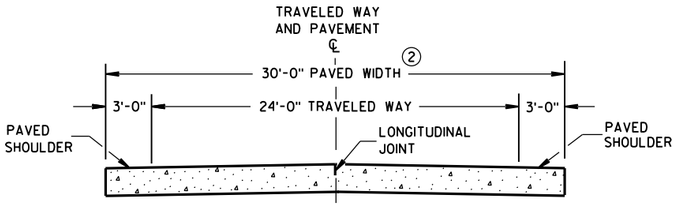
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA



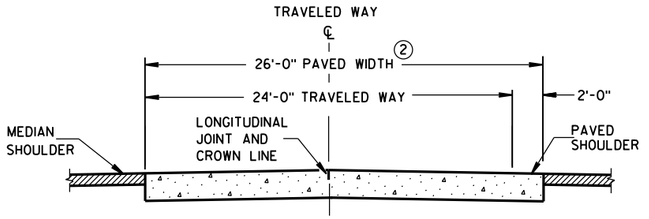

6

S.D.D. 13 C 9-13c

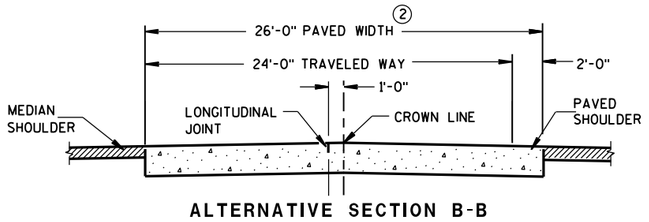



SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY




SECTION B-B




ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

## GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

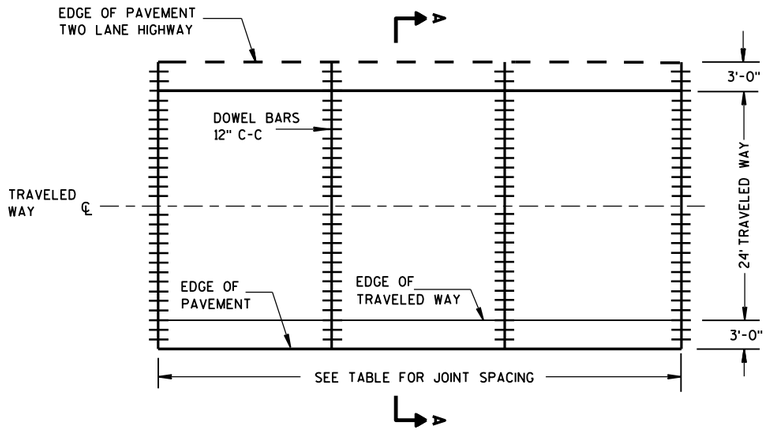
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

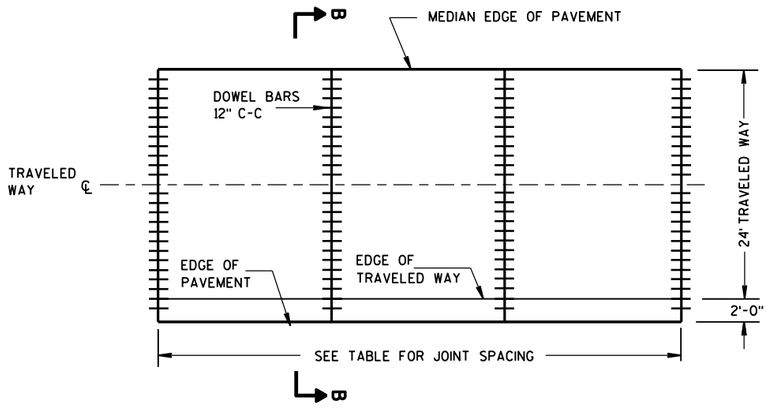
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

### PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | DOWEL BAR DIAMETER | CONTRACTION JOINT SPACING |
|---|---|---|
| 5 ½", 6", 6 ½" | NONE | 12' |
| 7", 7 ½" | 1" | 14' |
| 8", 8 ½" | 1 ¼" | 15' |
| 9", 9 ½" | 1 ¼" | 15' |
| 10" & ABOVE | 1 ½" | 15' |




CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY




CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

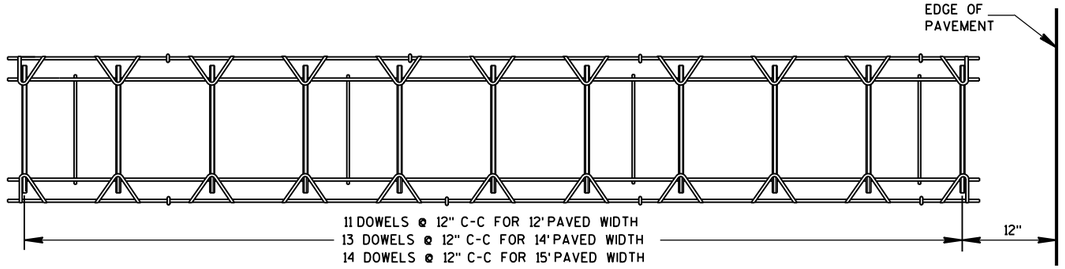




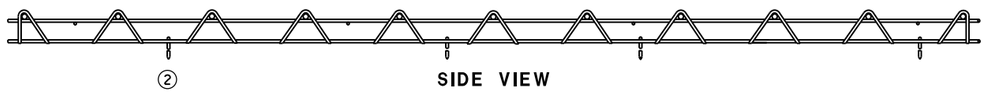
6



S.D.D. 13 C 11-11a



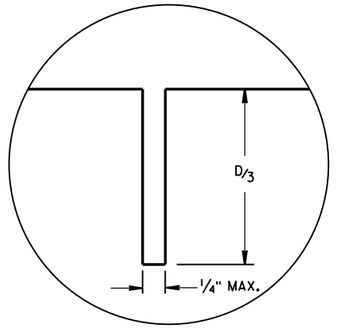

PLAN VIEW




SIDE VIEW

(NORMAL TO CENTERLINE)

## CONTRACTION JOINT DOWEL ASSEMBLY ①




JOINT DETAIL

## GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

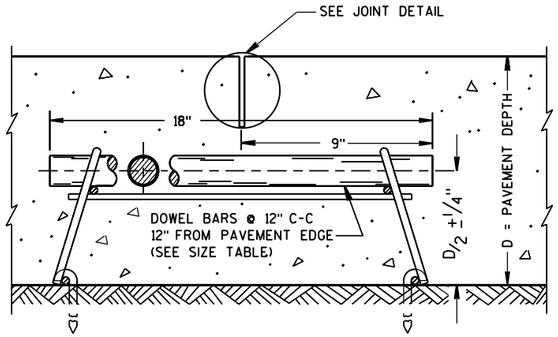
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

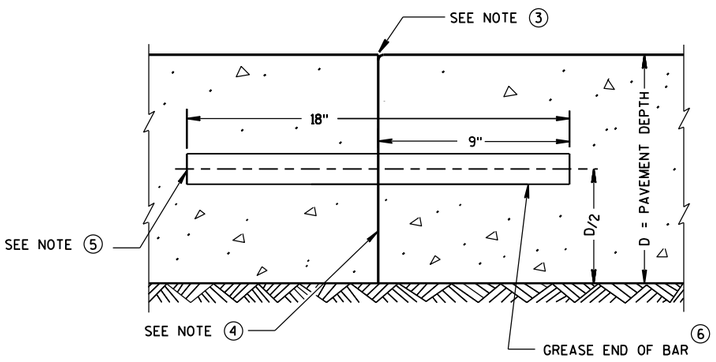
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

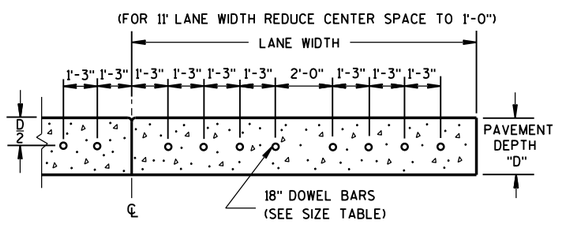
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.




DOWELED CONTRACTION JOINT




TRANSVERSE CONSTRUCTION JOINT




DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ENGINEER
FHWA



6

S.D.D. 13 C 11-11b

6

S.D.D. 13 C 11-11b

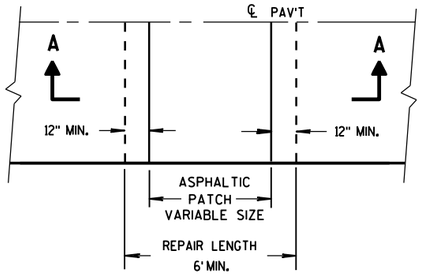
## GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

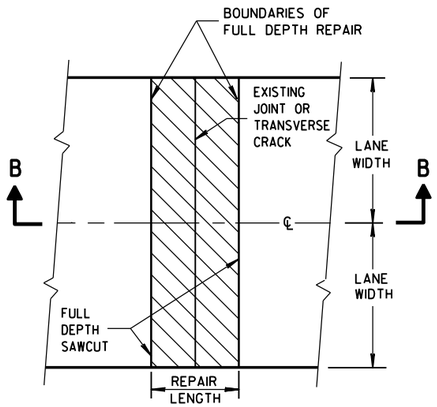
PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

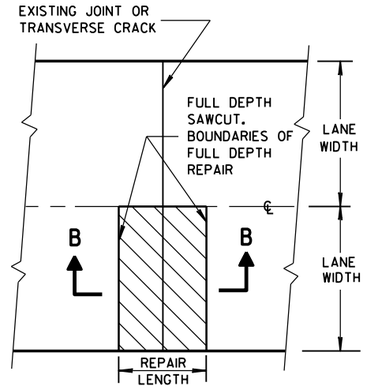
(1) DOWEL BARS MIGHT NOT EXIST.




PLAN VIEW

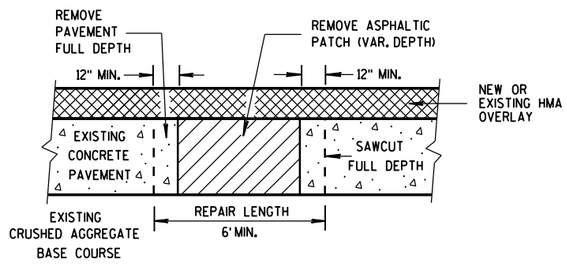



PLAN VIEW
(DOUBLE LANE REPAIR)



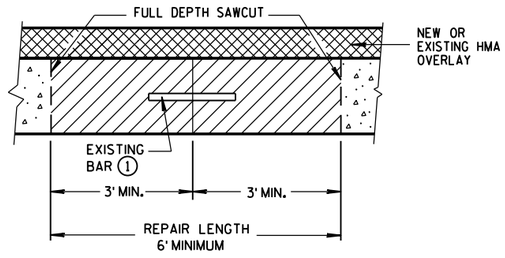

PLAN VIEW
(SINGLE LANE REPAIR)

## FULL DEPTH CONCRETE PAVEMENT REMOVAL




SECTION A-A

HMA PATCH REMOVAL




SECTION B-B

CONCRETE REMOVAL

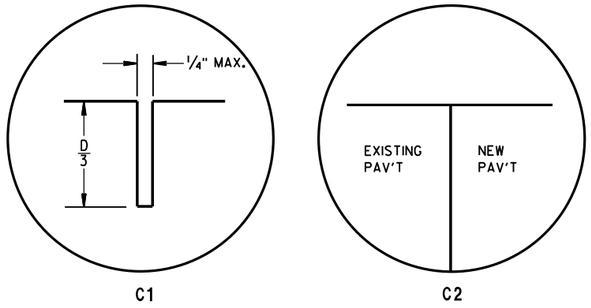
BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

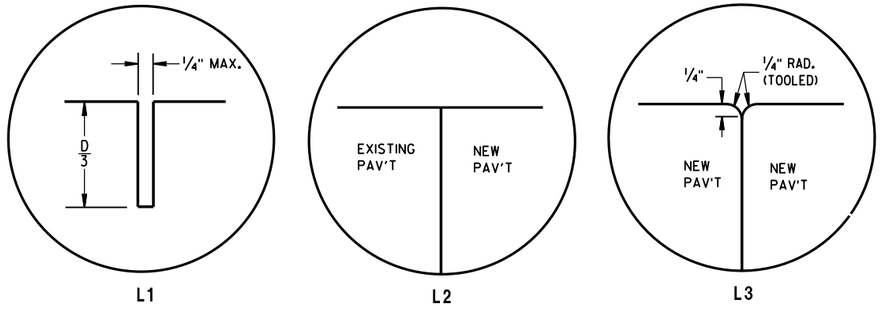


S.D.D. 13 C 14-6a

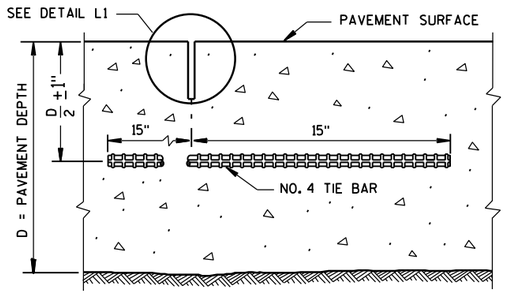
S.D.D. 13 C 14-6a




## TRANSVERSE JOINTS

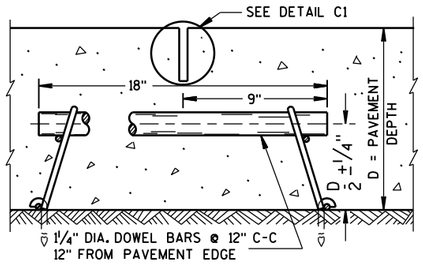



## LONGITUDINAL JOINTS




SECTION C-C

## SAWED LONGITUDINAL JOINT




SECTION F-F

## CONTRACTION JOINT

## GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

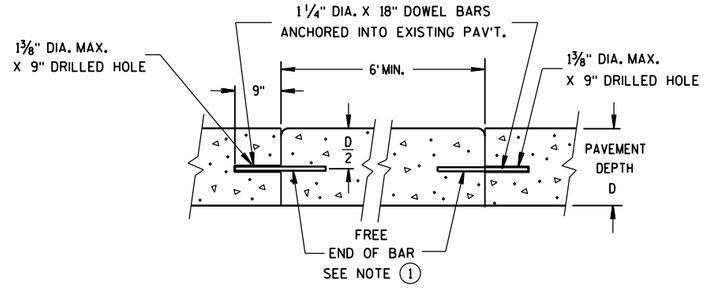
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

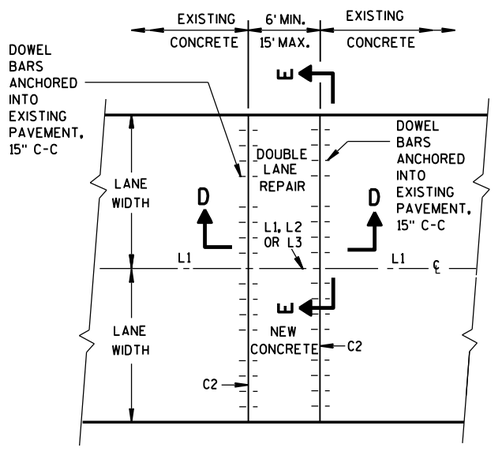
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

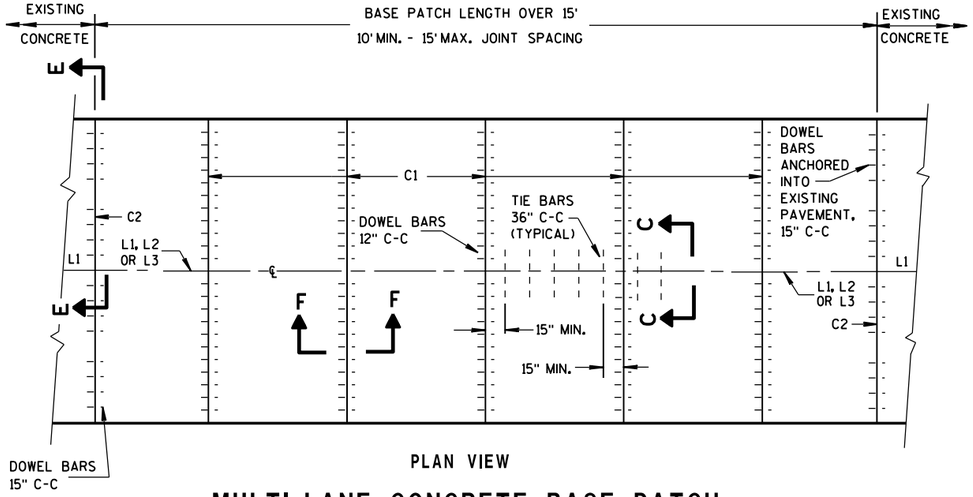



SECTION D-D



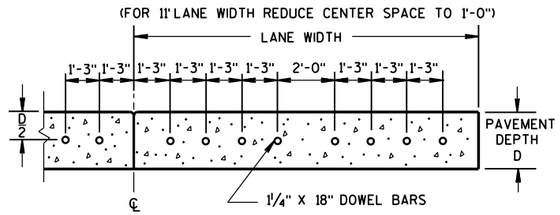

PLAN VIEW

## MULTI-LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH




PLAN VIEW

## MULTI-LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH




SECTION E-E

## SPACING OF DOWEL BARS ANCHORED INTO EXISTING PAVEMENT

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI




6

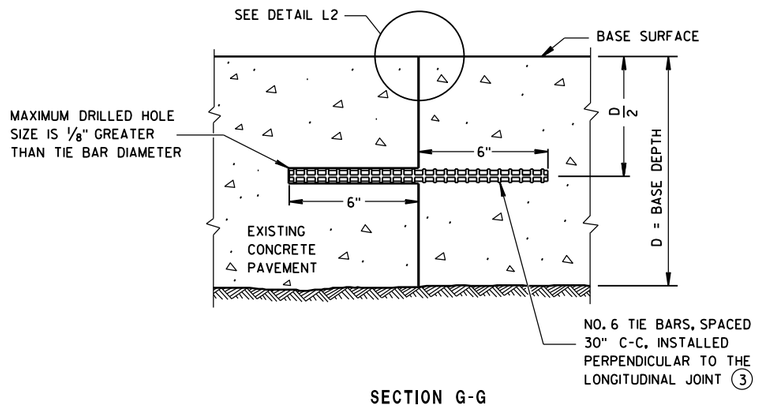

S.D.D. 13 C 14-6b

## GENERAL NOTES

(1) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.

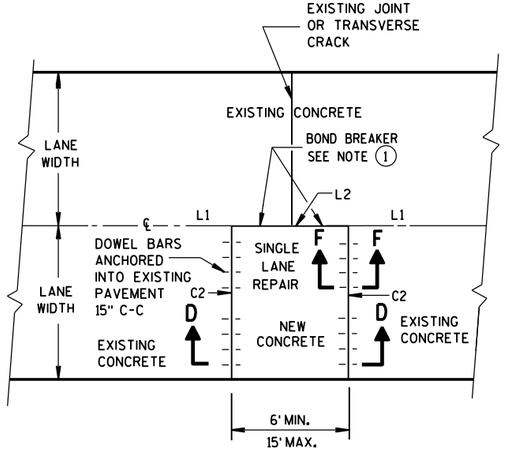
(2) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

(3) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



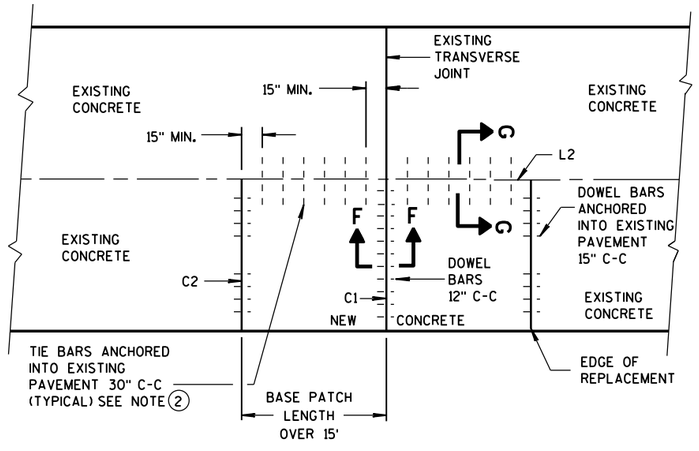

SECTION G-G

## TIE BARS ANCHORED INTO EXISTING PAVEMENT




PLAN VIEW

## SINGLE LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH




PLAN VIEW

## SINGLE LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH

## BASE PATCHING CONCRETE

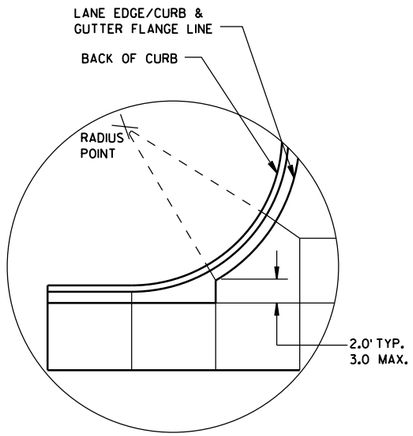
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPER
FHWA

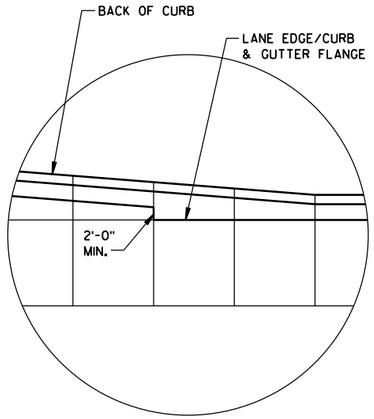



6

S.D.D. 13 C 14-6c




DETAIL "A"

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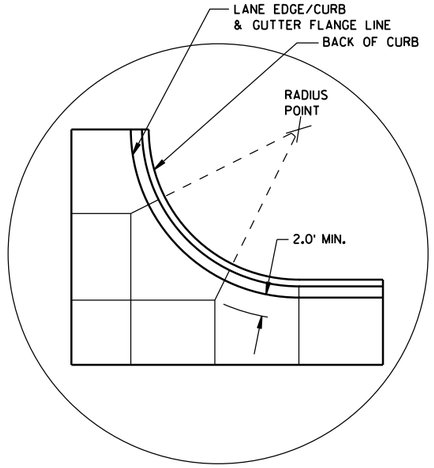
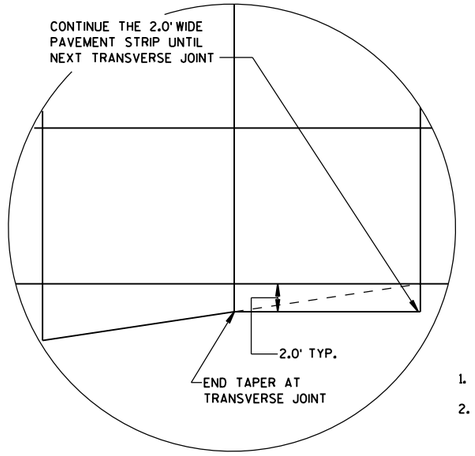



DETAIL "C"




DETAIL "D"

## GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

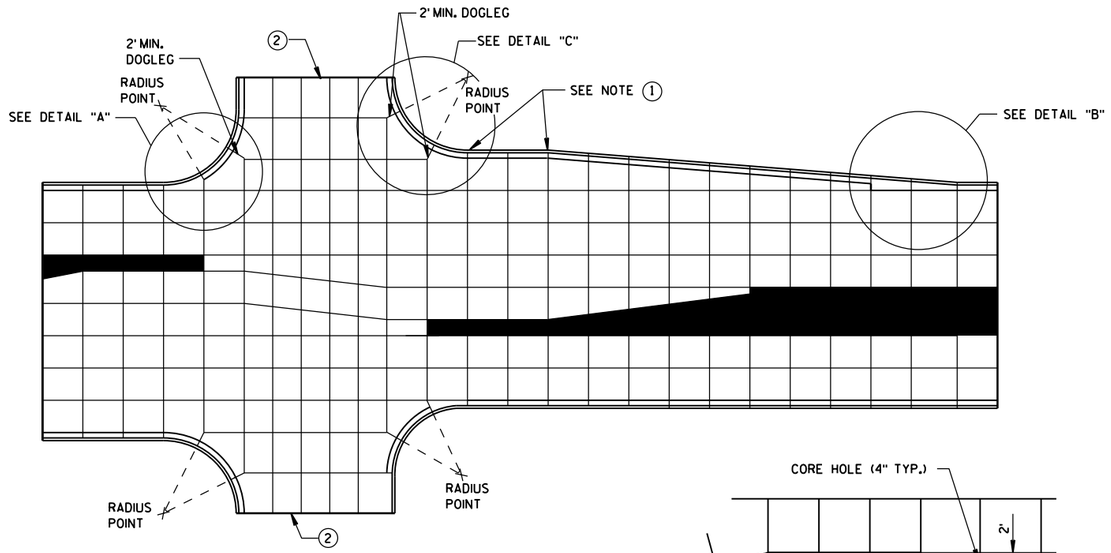
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

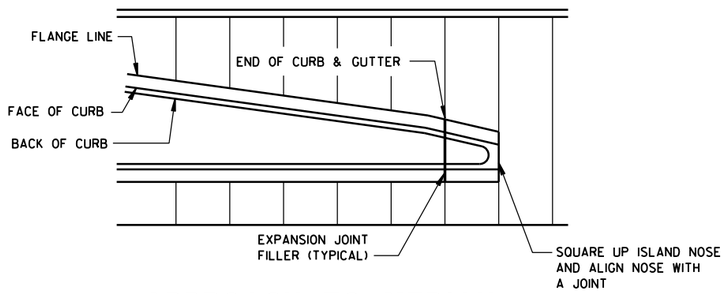
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



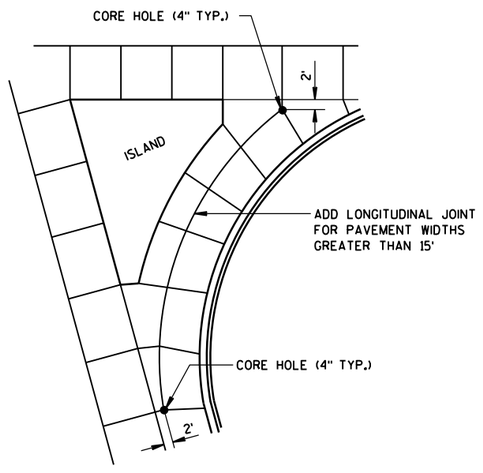

STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

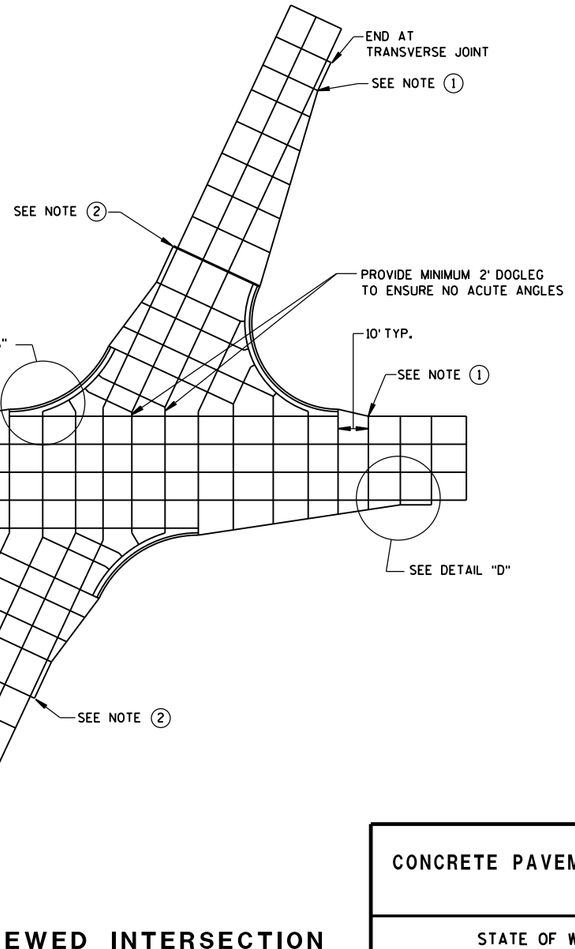
| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|---|---|
| 6", 6½" | 12' |
| 7", 7½" | 14' |
| 8" & ABOVE | 15' |




APPROACH TO MEDIAN




LARGE RIGHT TURN




SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR





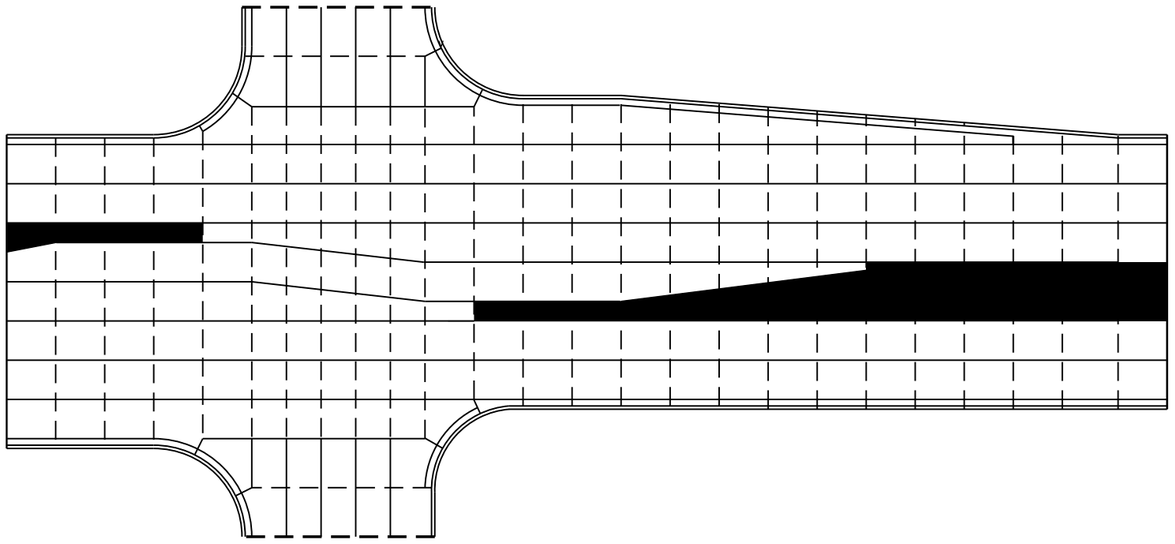
6
S.D.D. 13 C 18-3a

## LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

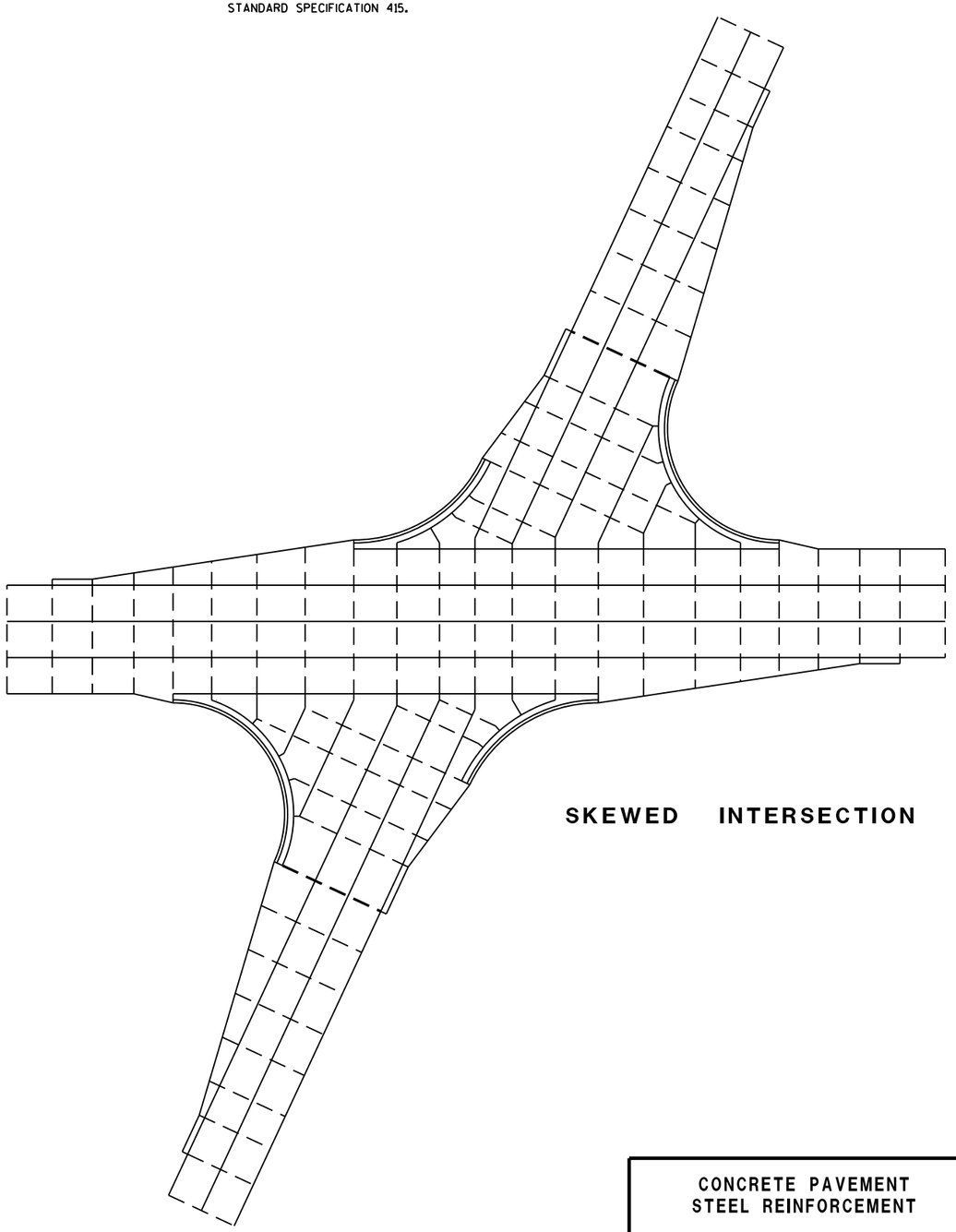
TIED JOINT



STANDARD INTERSECTION

## GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

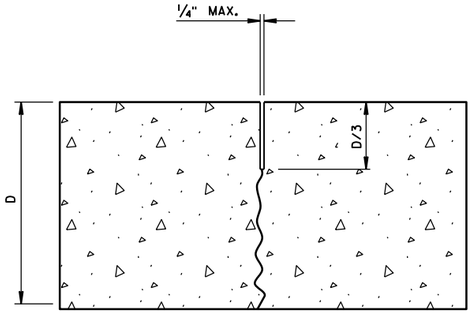


6

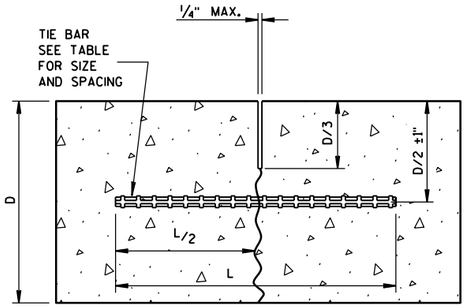
S.D.D. 13 C 18-3b

6

S.D.D. 13 C 18-3b




UNDOWELED-TRANSVERSE




TIED LONGITUDINAL

## TIE BAR TABLE

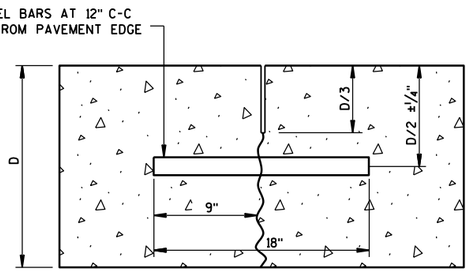
| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|---|---|---|---|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4* | 30" | 24"** |

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

## GENERAL NOTES

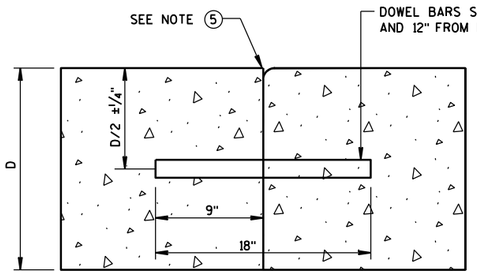
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



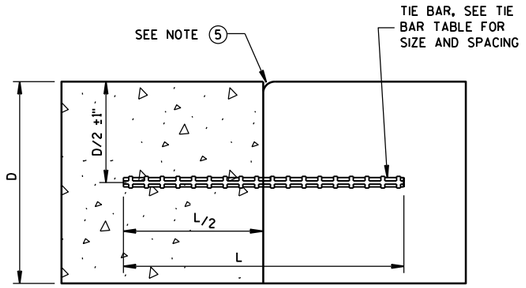

DOWELED-TRANSVERSE

## CONTRACTION JOINTS

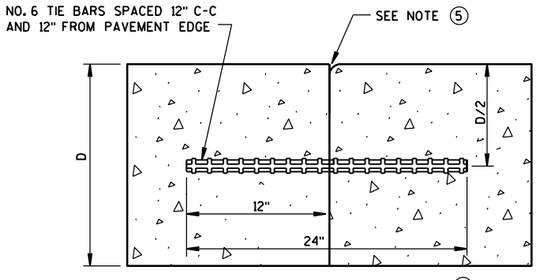
SEE NOTE (2)




DOWELED TRANSVERSE (3)

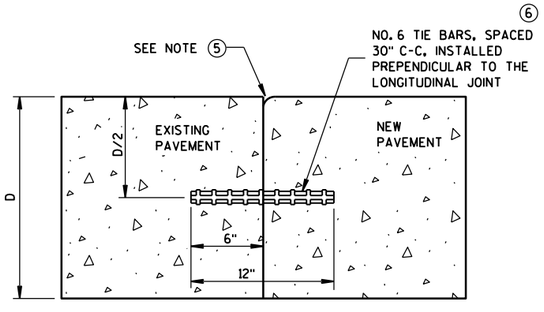



TIED LONGITUDINAL




TIED TRANSVERSE (3)

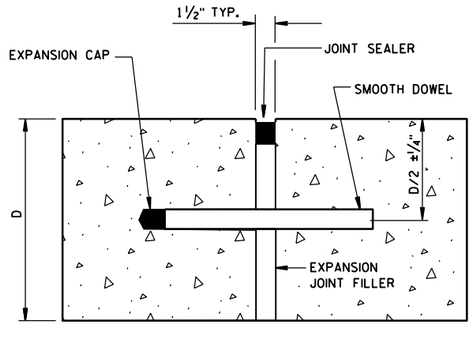
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)




TIED LONGITUDINAL TO EXISTING

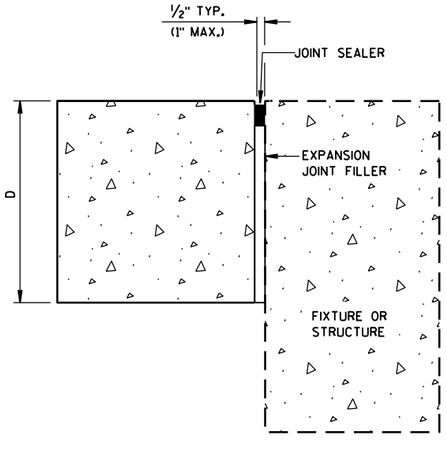
## CONSTRUCTION JOINTS

SEE NOTE (4)




DOWELED-TRANSVERSE

SEE NOTE (1)




UNTIED-LONGITUDINAL

## EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

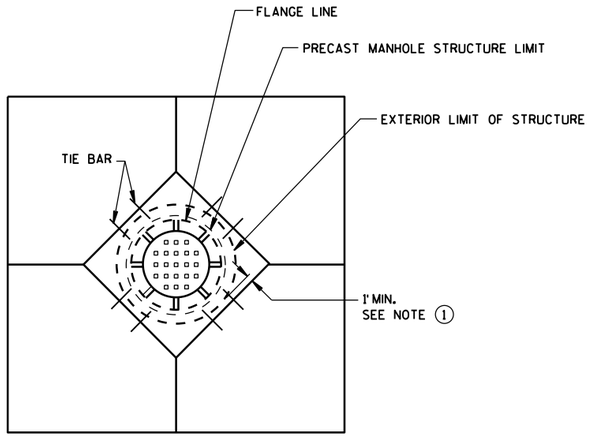




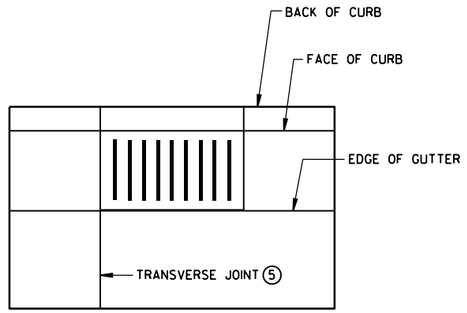
6



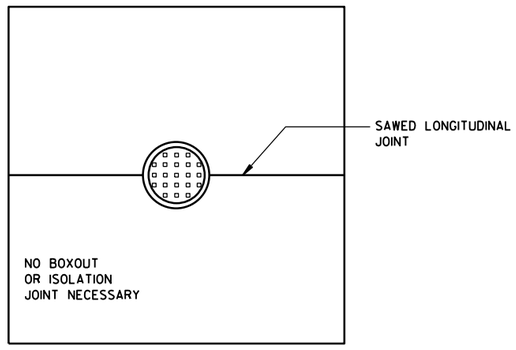
S.D.D. 13 C 18-3c



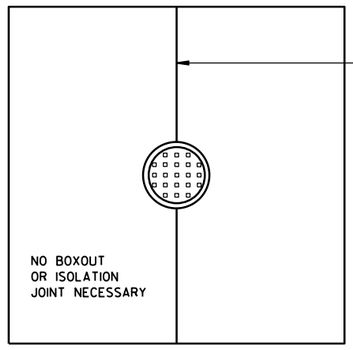

## DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



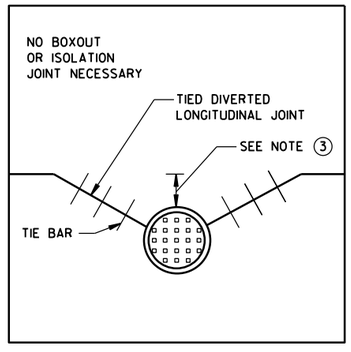

## INLET WITH TRANSVERSE JOINT



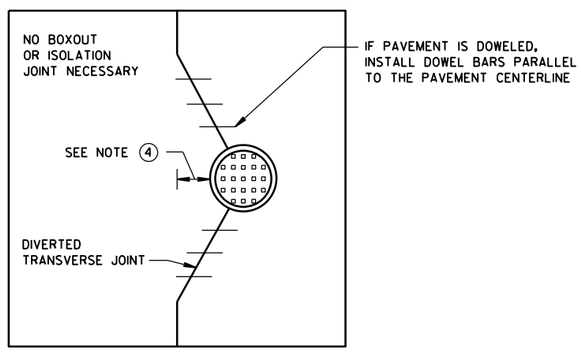

## MANHOLE WITH LONGITUDINAL JOINT




## MANHOLE WITH TRANSVERSE JOINT




## MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT




## MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

## GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

# CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

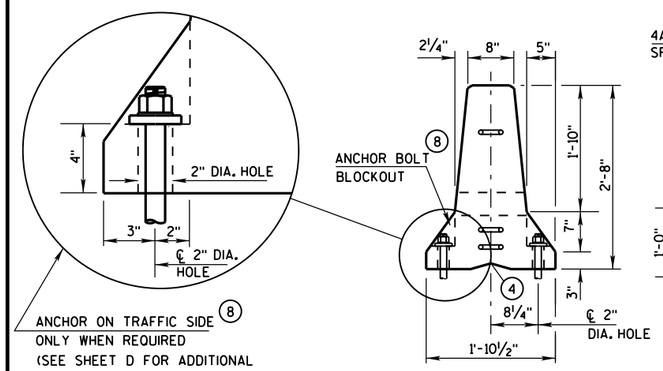
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA




6

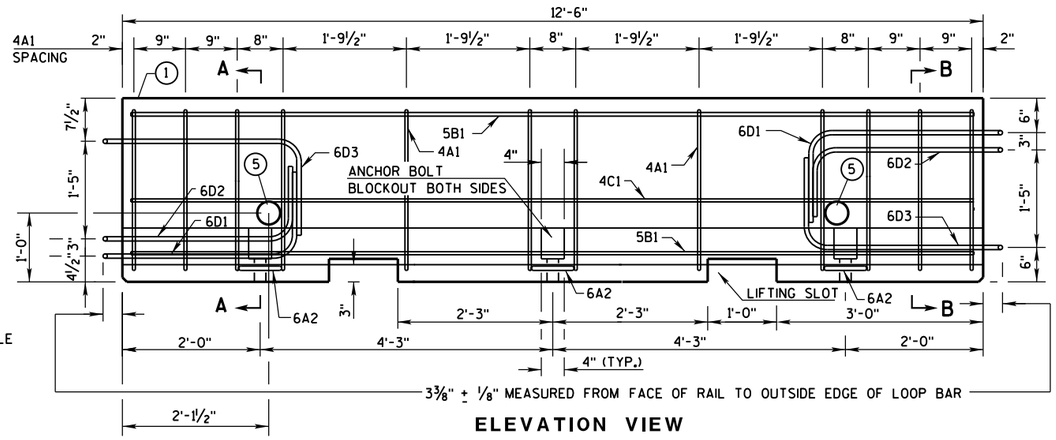
S.D.D. 13 C 18-3d



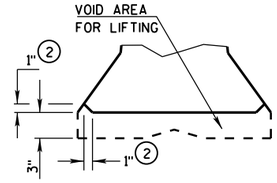




END VIEW




ELEVATION VIEW




DETAIL "B"
LIFTING SLOT DETAIL

## GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(a) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 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 ¾" 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 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" 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: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

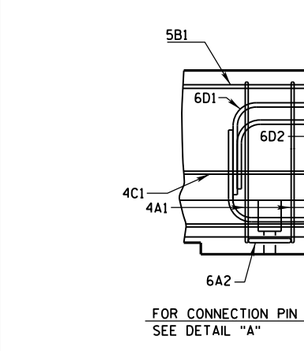
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

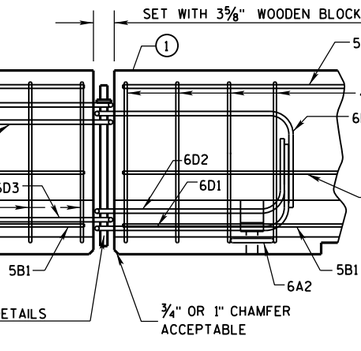
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED 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 ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.




SECTION A-A
(STIRRUP PLACEMENT)




SECTION B-B
(STIRRUP PLACEMENT)

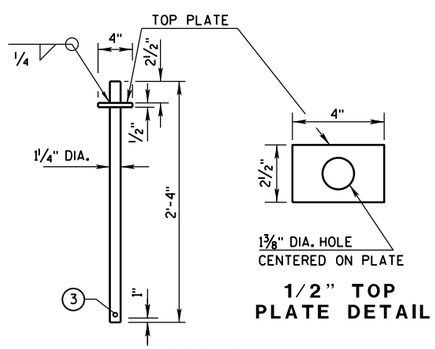



PLAN VIEW

## DETAILS OF BARRIER SECTION

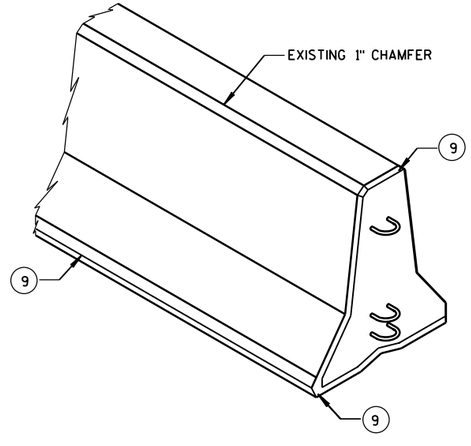



## DETAILS OF BARRIER CONNECTION




1/2" TOP
PLATE DETAIL

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




CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

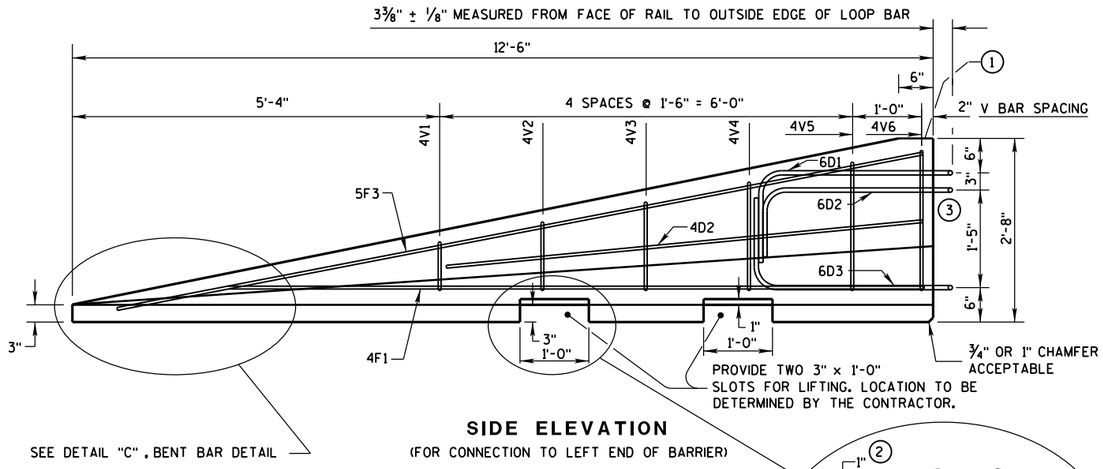
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 214

6

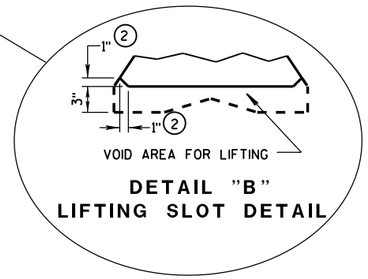
S.D.D. 14 B 7-14a

6

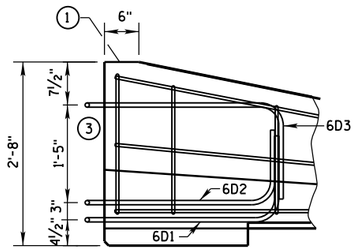
S.D.D. 14 B 7-14a




**SIDE ELEVATION**
(FOR CONNECTION TO LEFT END OF BARRIER)



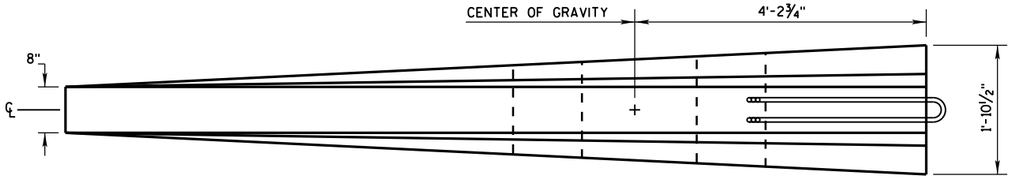

**DETAIL "B"**
**LIFTING SLOT DETAIL**



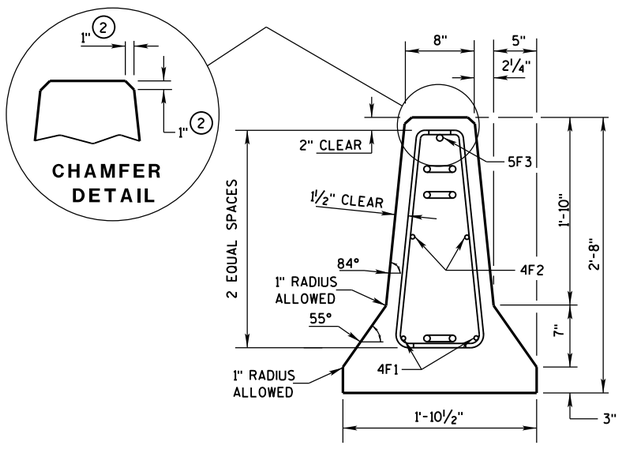

**SIDE ELEVATION**
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

## 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.

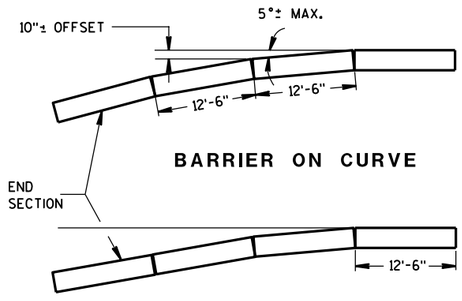



**PLAN VIEW**




**END SECTION**

**FRONT ELEVATION**




**BARRIER ON CURVE**

**FLARE AT BARRIER END**

| 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 TRANSPOR

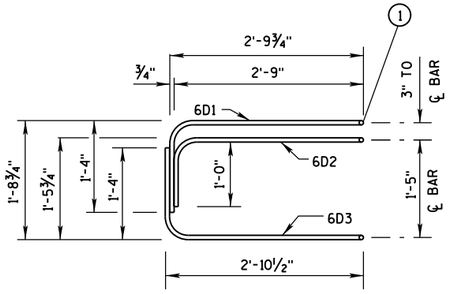



6
S.D.D. 14 B 7-14b

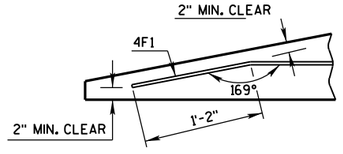
## BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

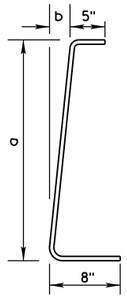
| BAR | BAR SIZE | NO. OF BARS | LENGTH FT. |
|---|---|---|---|
| 4V1 | 4 | 2 | 1'-11" |
| 4V2 | 4 | 2 | 2'-2" |
| 4V3 | 4 | 2 | 2'-6" |
| 4V4 | 4 | 2 | 2'-9" |
| 4V5 | 4 | 2 | 3'-2" |
| 4V6 | 4 | 2 | 3'-4" |
| 4F1 | 4 | 2 | 12'-0" |
| 4F2 | 4 | 2 | 7'-6" |
| 5F3 | 5 | 1 | 11'-9" |
| **LOOP ASSEMBLY** | | | |
| 6D1 | 6 | 1 | 8'-5" |
| 6D2 | 6 | 1 | 7'-7" |
| 6D3 | 6 | 1 | 8'-6" |




ELEVATION
LOOP BAR ASSEMBLY




DETAIL "C"
BENT BAR DETAIL




| BAR | a | b |
|---|---|---|
| V1 | 10" | 1" |
| V2 | 1'-1" | 1¼" |
| V3 | 1'-5" | 1⅝" |
| V4 | 1'-8" | 1⅞" |
| V5 | 2'-0½" | 2⅜" |
| V6 | 2'-3" | 2¾" |

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

## TAPER BARRIER SECTION

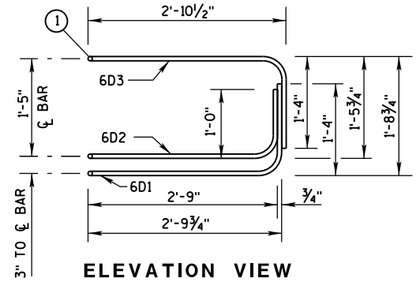
## GENERAL NOTES

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

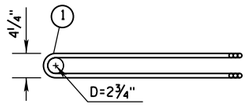
## BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

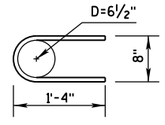
| BAR | BAR SIZE | NO. OF BARS | LENGTH FT. |
|---|---|---|---|
| 4A1 | 4 | 12 | 6'-0" |
| 6A2 | 6 | 6 | 2'-11" |
| 5B1 | 5 | 3 | 12'-2" |
| 4C1 | 4 | 2 | 12'-2" |
| **LOOP ASSEMBLY** | | | |
| 6D1 | 6 | 2 | 8'-5" |
| 6D2 | 6 | 2 | 7'-7" |
| 6D3 | 6 | 2 | 8'-6" |



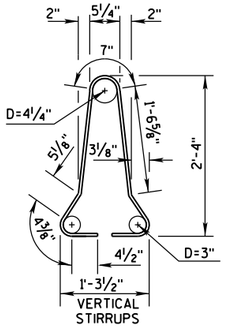

ELEVATION VIEW




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




6A2




4A1

## BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

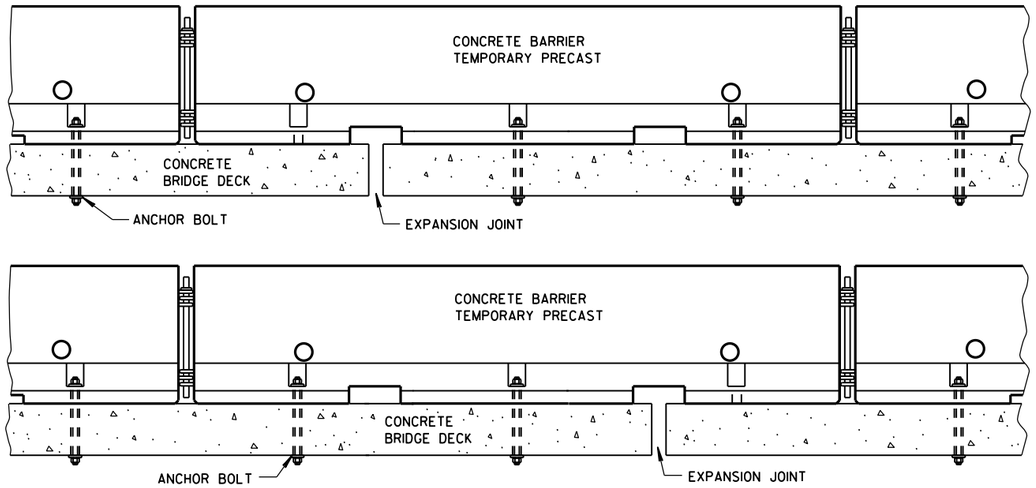






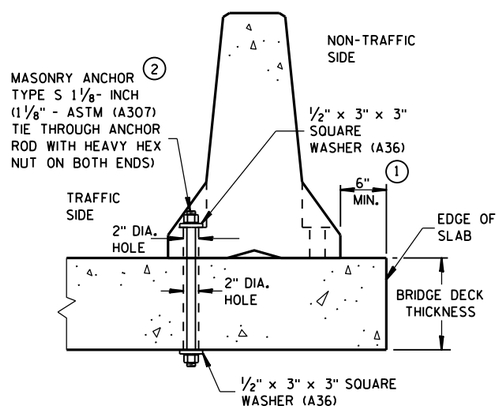
6

S.D.D. 14 B 7-14c



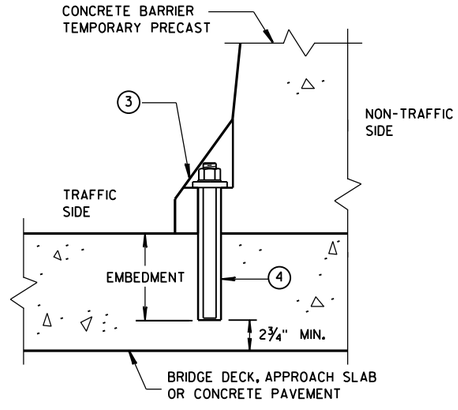

## TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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 NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)




## REMOVABLE ADHESIVE BONDED ANCHOR ② INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

## GENERAL NOTES

① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

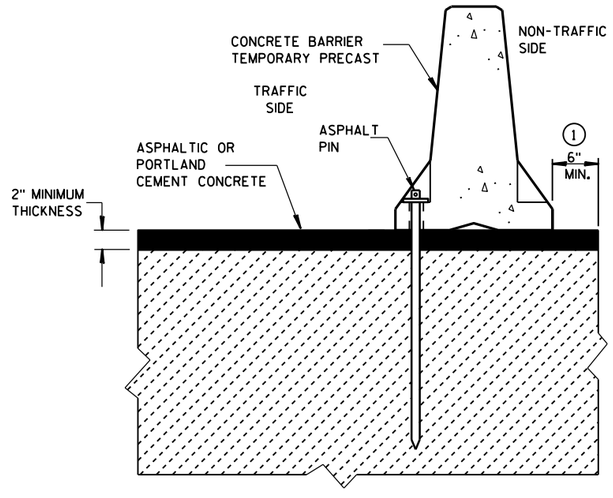
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

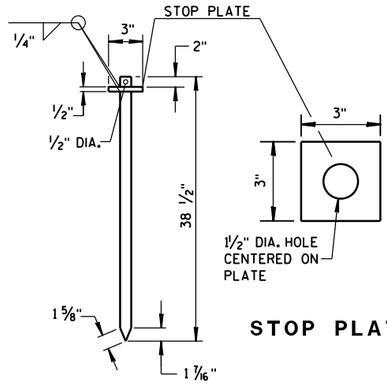
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



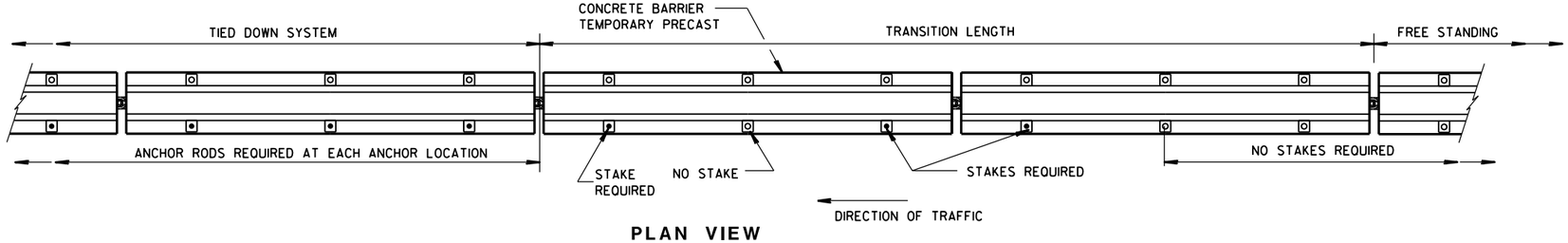

## STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)




STOP PLATE

ASPHALT PIN
(ASTM A36 STEEL)




PLAN VIEW

## 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"

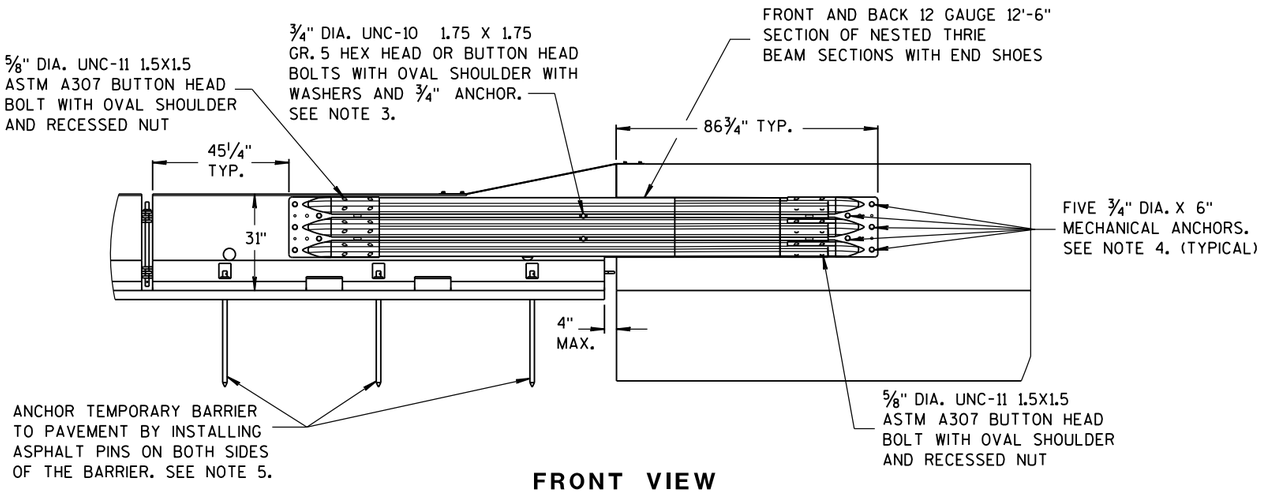
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



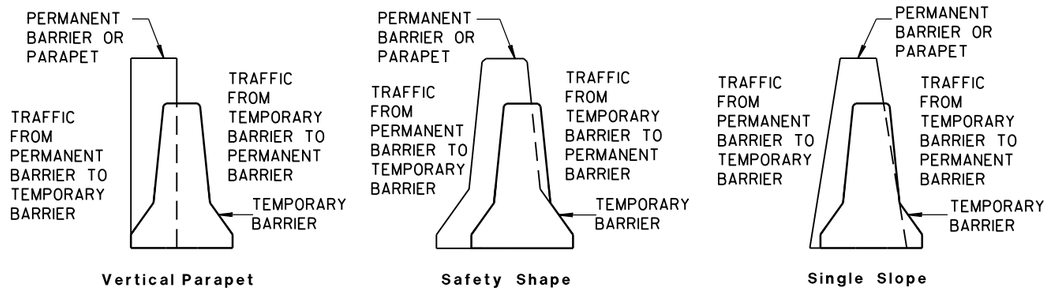


6

S.D.D. 14 B 7-14d




**FRONT VIEW**

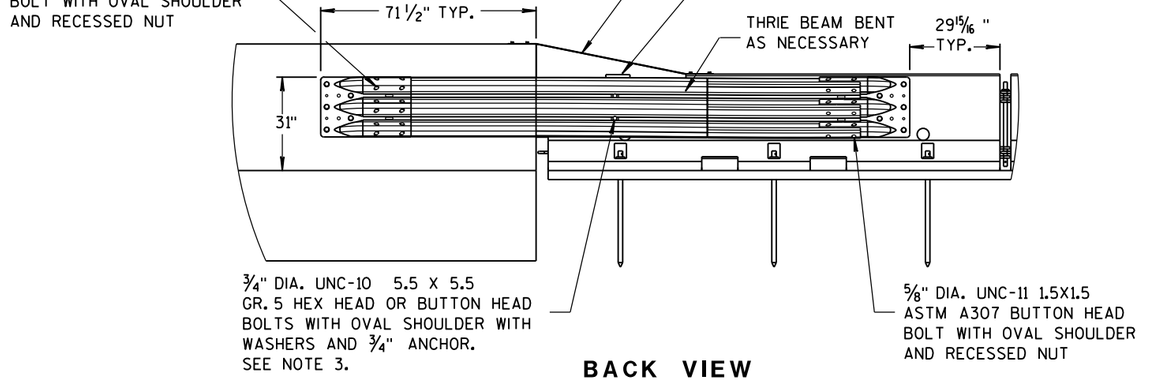



**TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM**

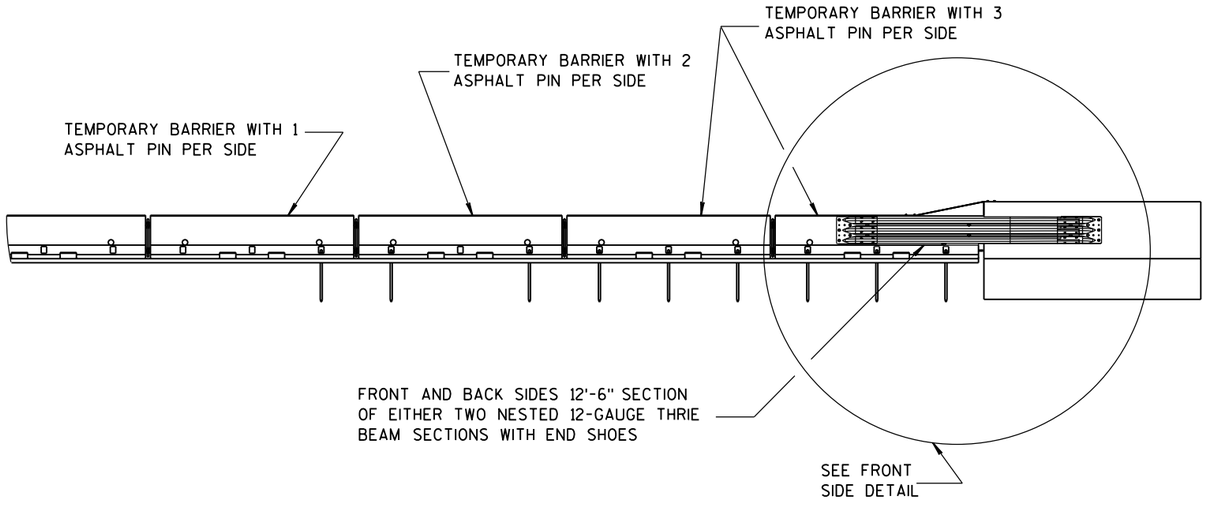
## NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

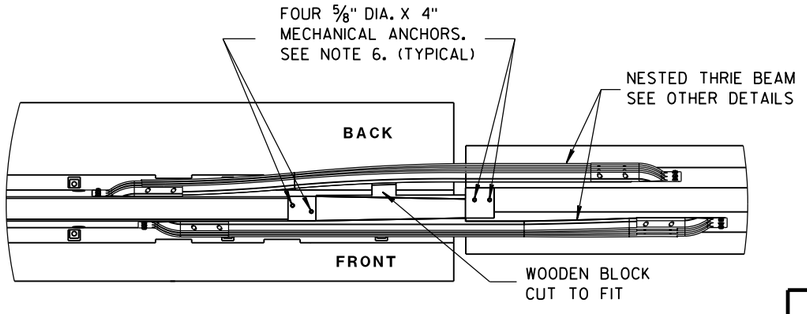
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 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 TRANSPO




6
S.D.D. 14 B 7-14e

GUSSET 1




GUSSET 2

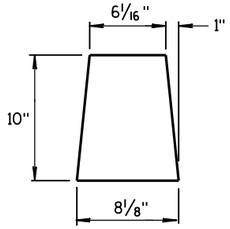



GUSSET 3

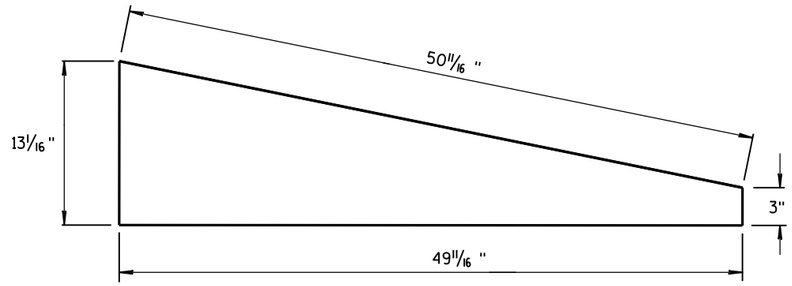



GUSSET 4

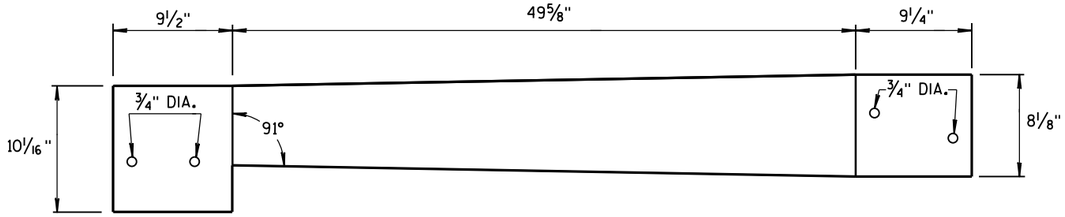
GUSSETS

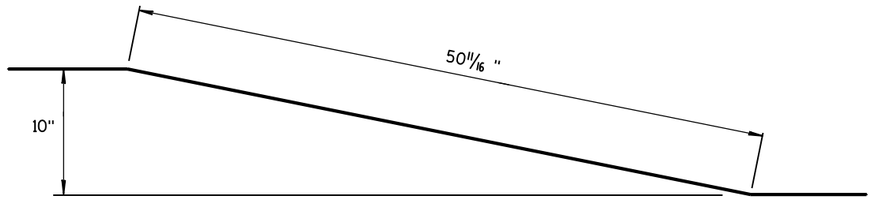



END PLATE

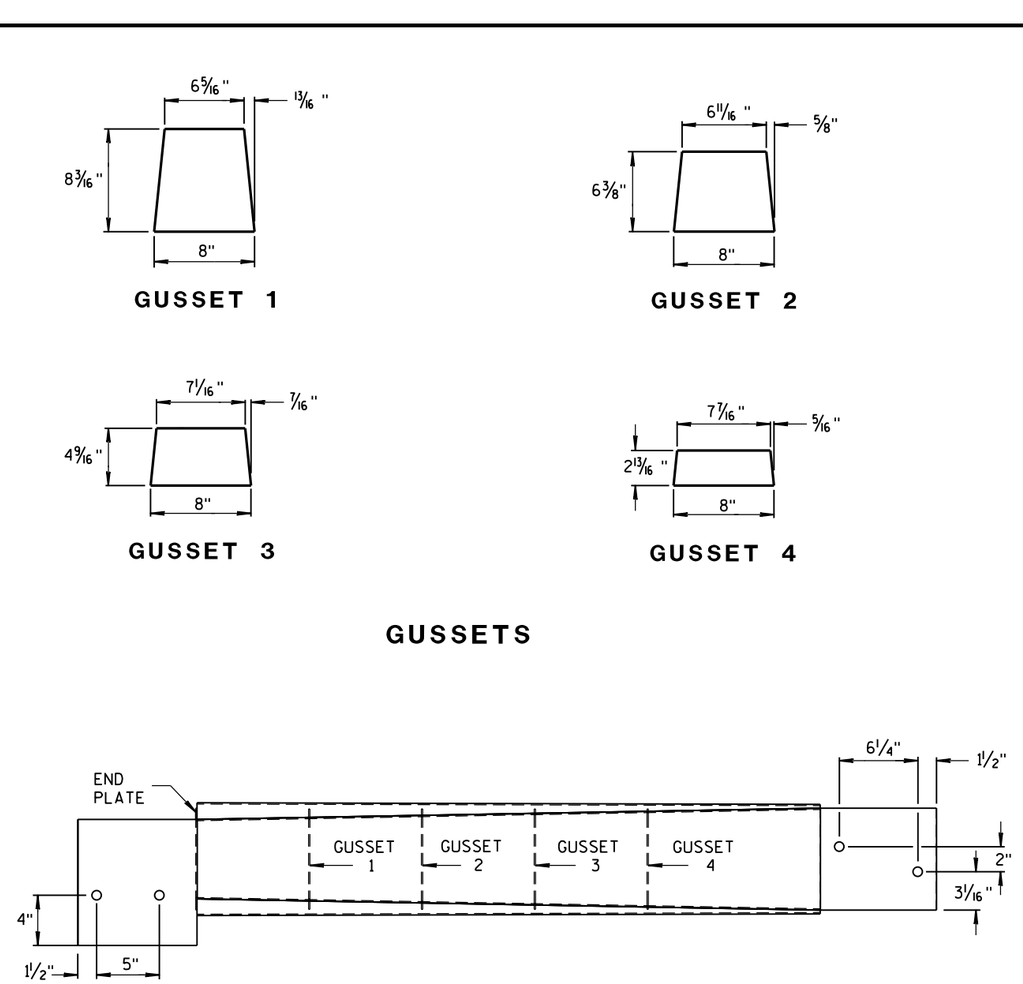


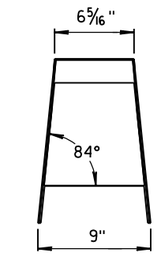

SIDE PLATE




TOP PLATE




SECTION C-C

## 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.

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

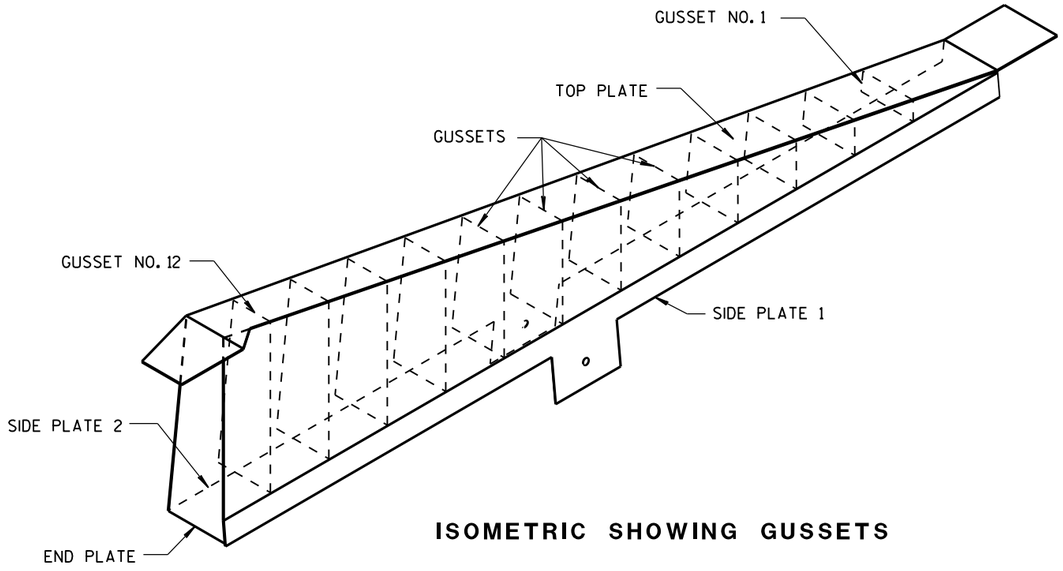
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

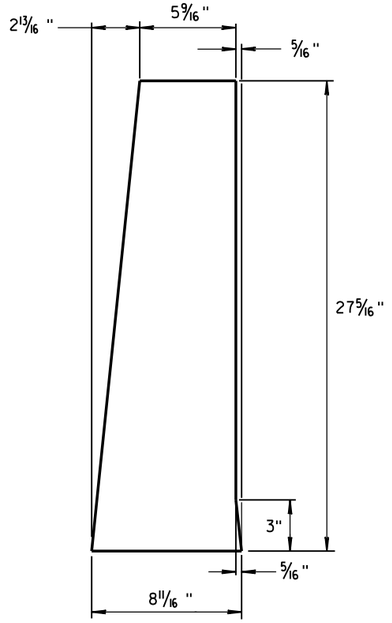




6
S.D.D. 14 B 7-14f

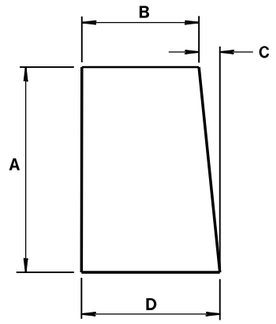



**ISOMETRIC SHOWING GUSSETS**




**END PLATE**

1/8" STEEL PLATE



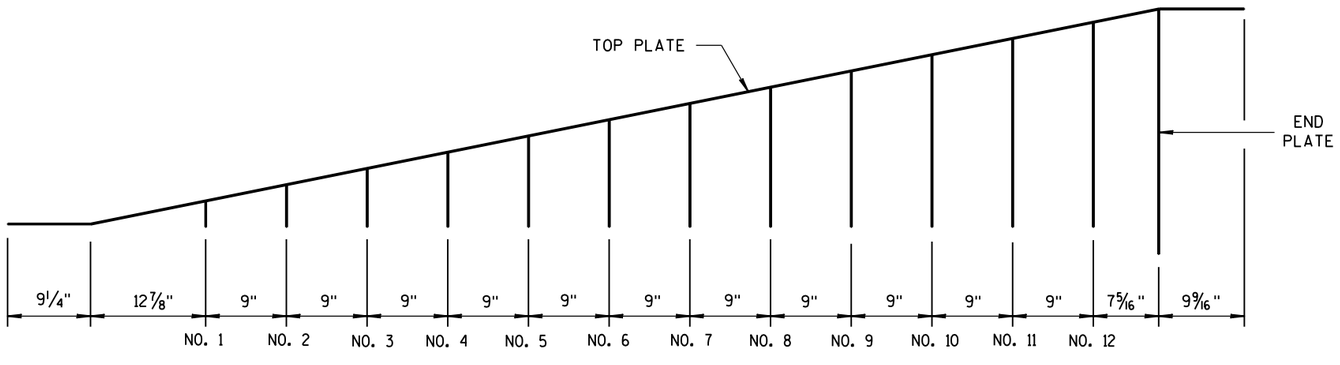

**GUSSETS 1 - 12**

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 11/16 " | 7 9/16 " | 1/2" | 8 |
| 3 | 6 1/2" | 7 3/8" | 11/16 " | 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 15/16 " | 6 13/16 " | 1 1/4" | 8 1/16 " |
| 7 | 13 3/4" | 6 5/8" | 1 7/16 " | 8 1/16 " |
| 8 | 15 9/16 " | 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 11/16 " | 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

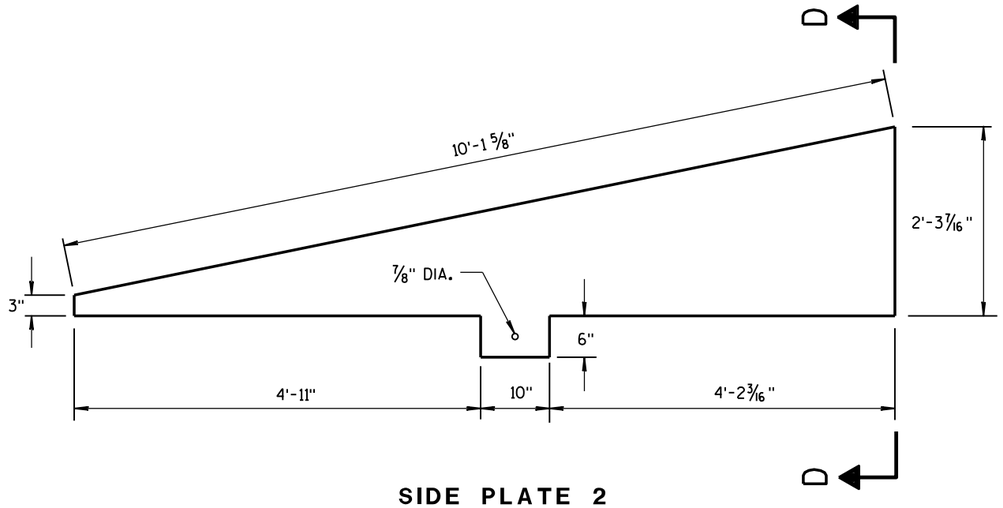
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

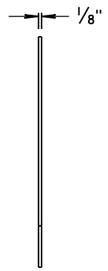




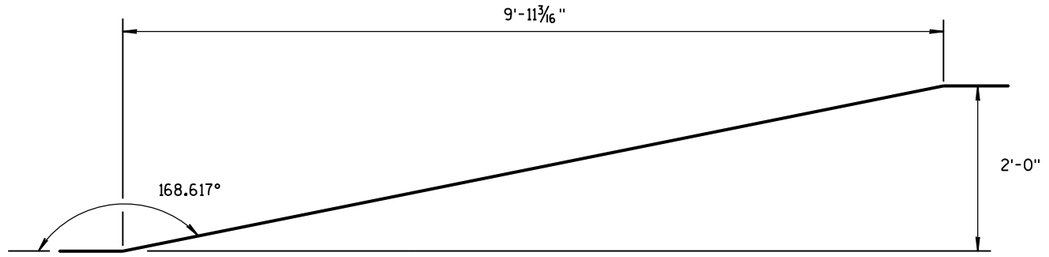
6
S.D.D. 14 B 7-14g




SIDE PLATE 2

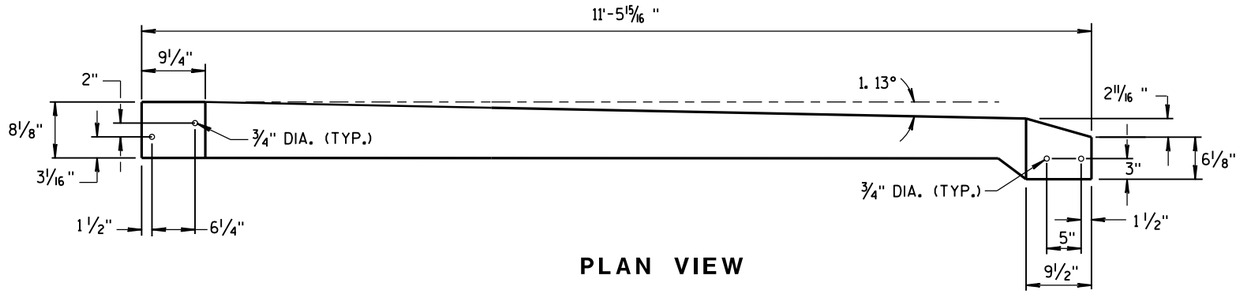



END VIEW



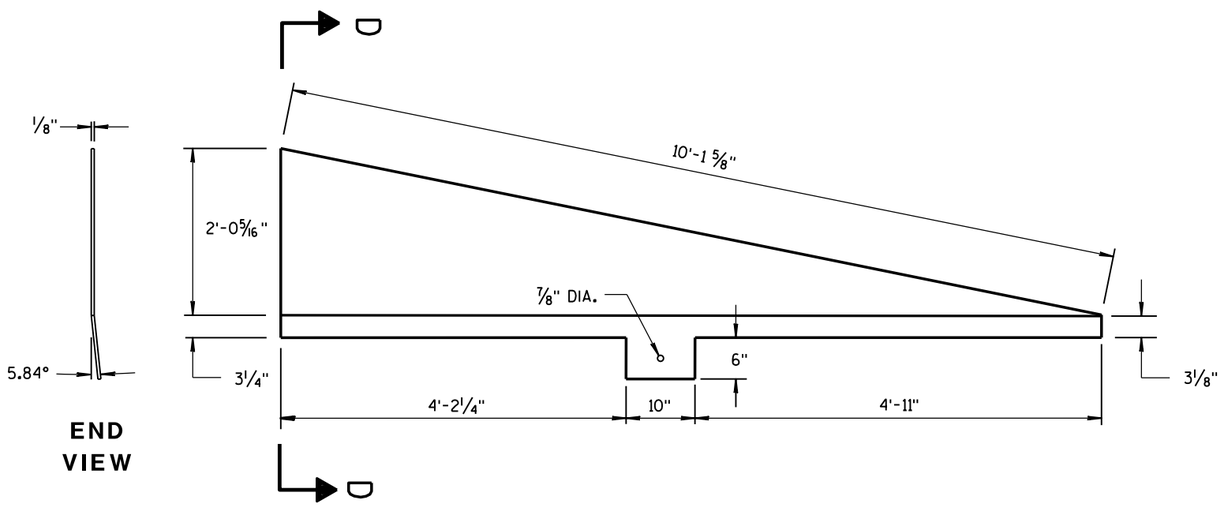

SIDE VIEW

TOP PLATE



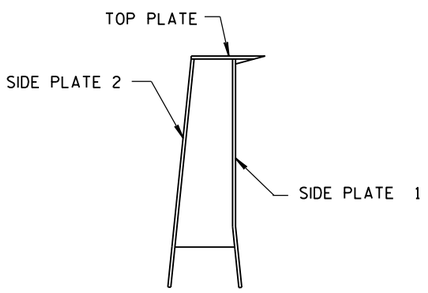

PLAN VIEW

TOP PLATE




END VIEW

SIDE PLATE 1




SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zoaa — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

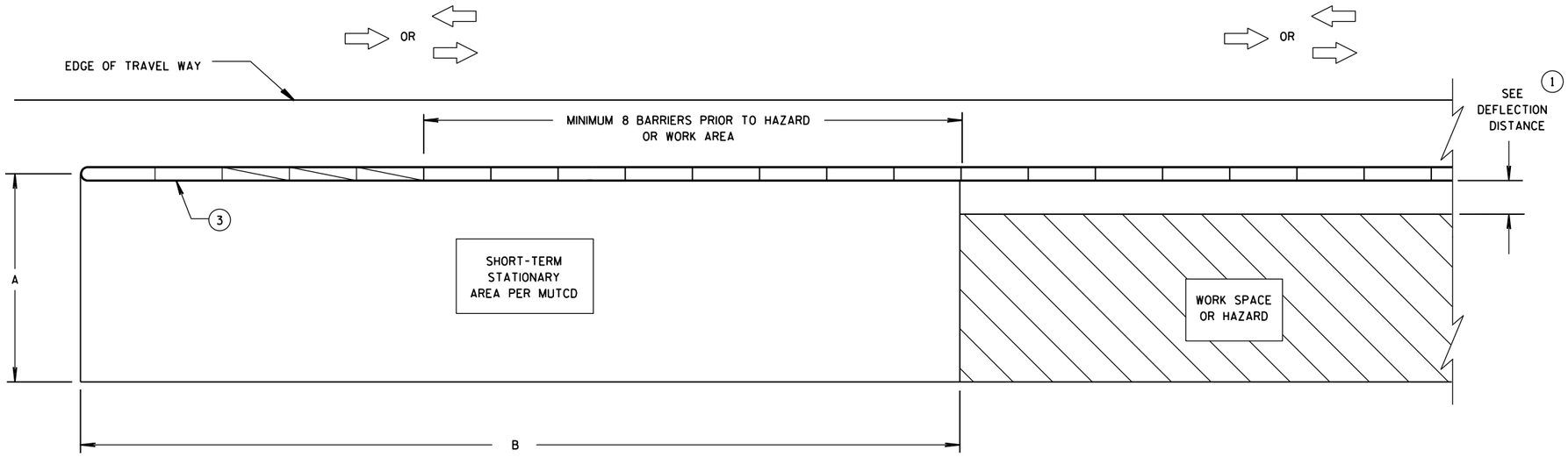


6

S.D.D. 14 B 7-14h

6

S.D.D. 14 B 7-14h



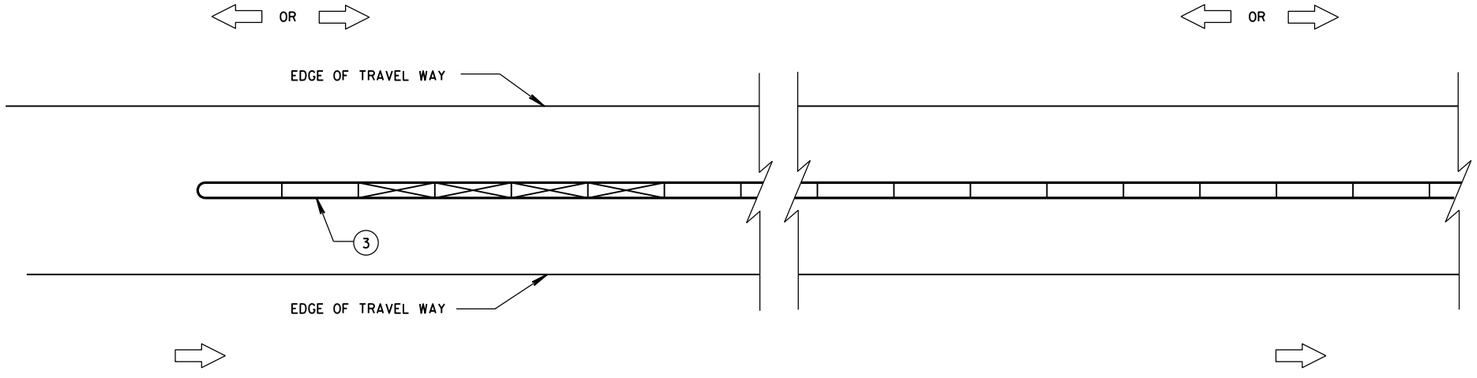

## CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

### DIMENSION A TABLE (2)

| 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 |

### DIMENSION B TABLE (2)

| 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 TRANSPOI

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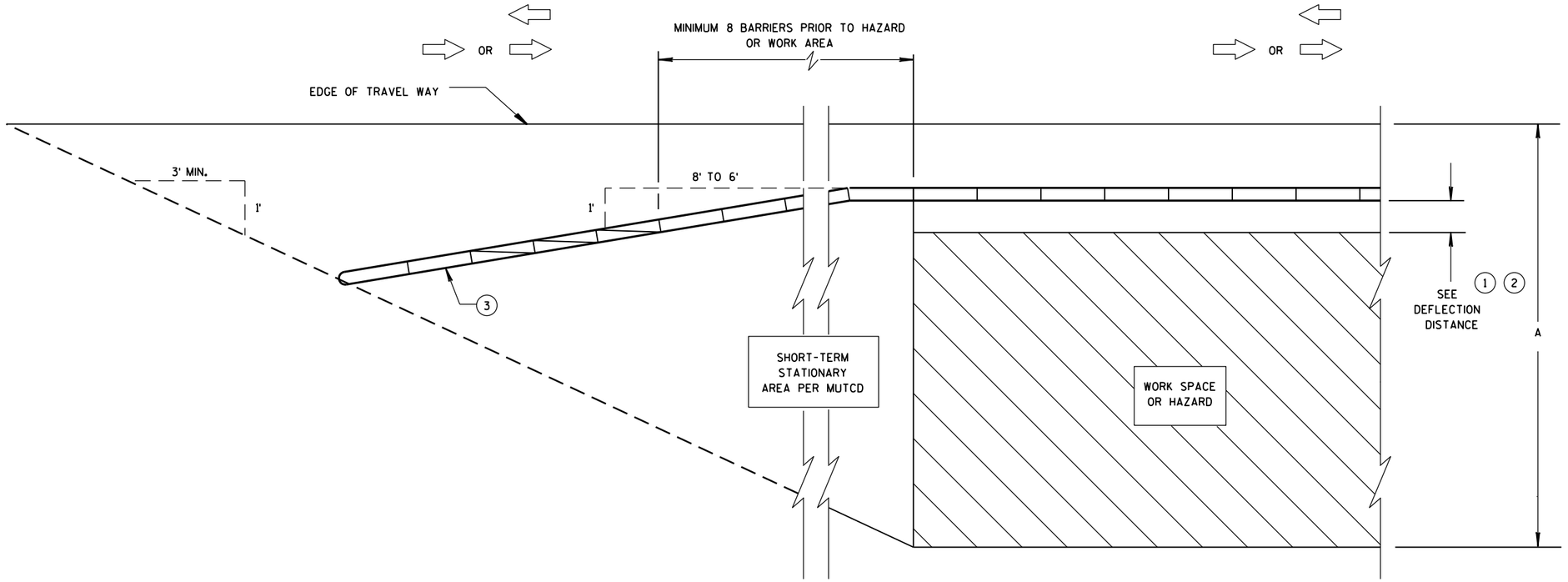
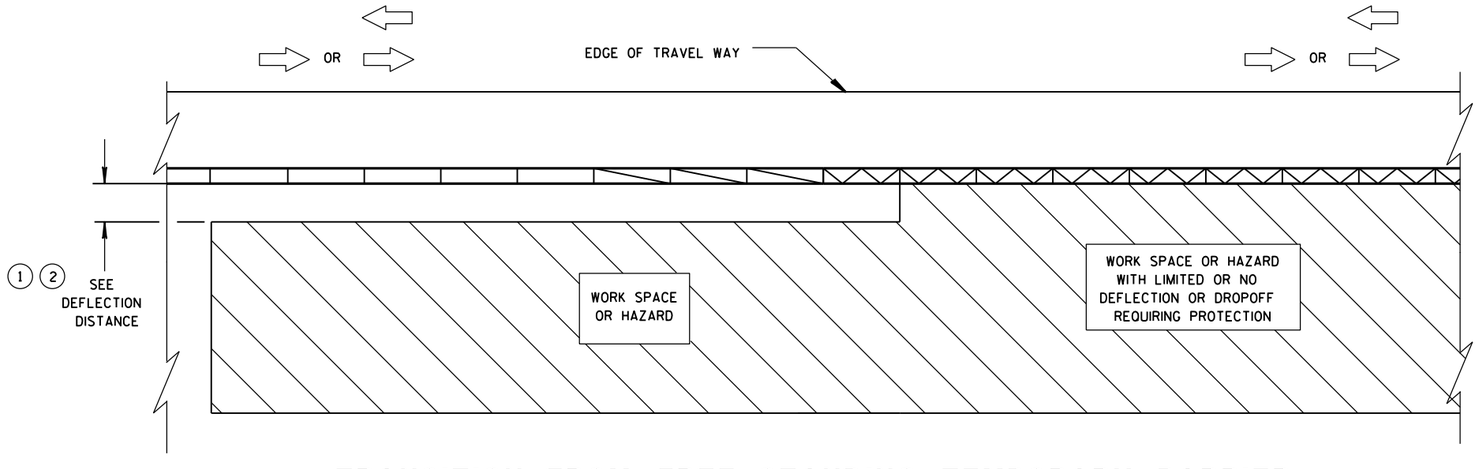
S.D.D. 14 B 8-2a
S.D.D. 14 B 8-2a




## 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 TRANSPOI



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

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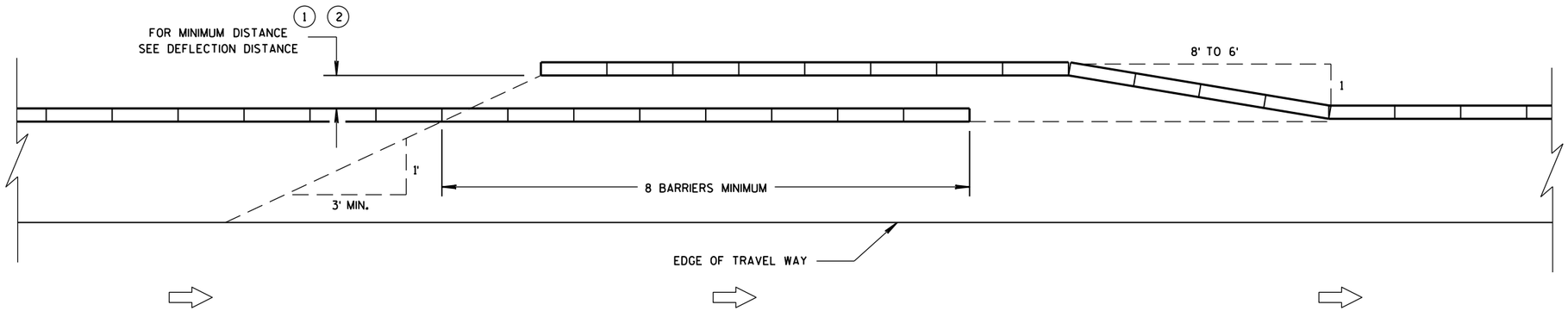
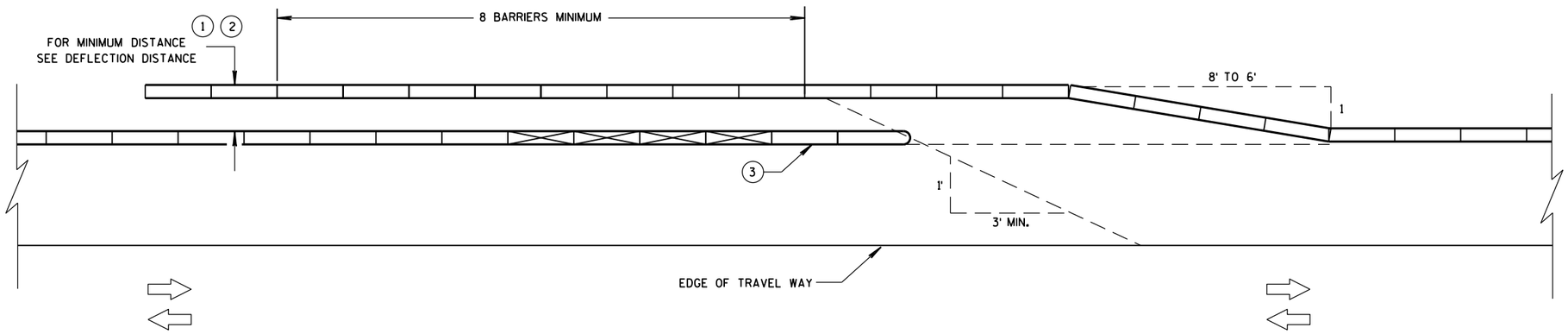
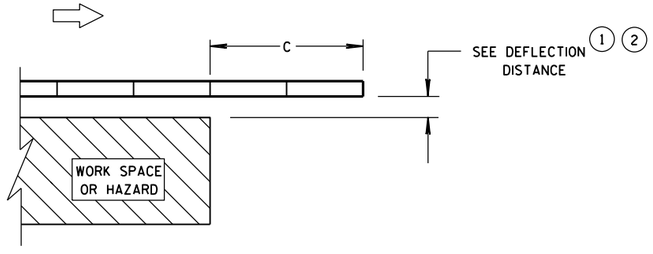


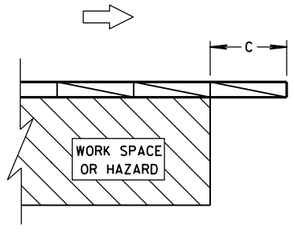

## TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC




## 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

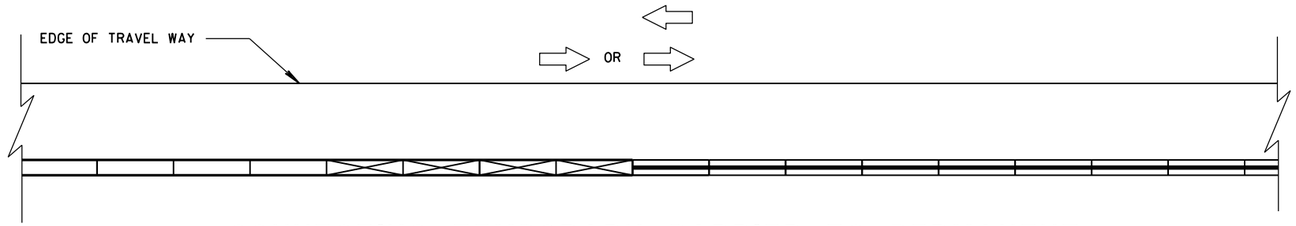
**CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

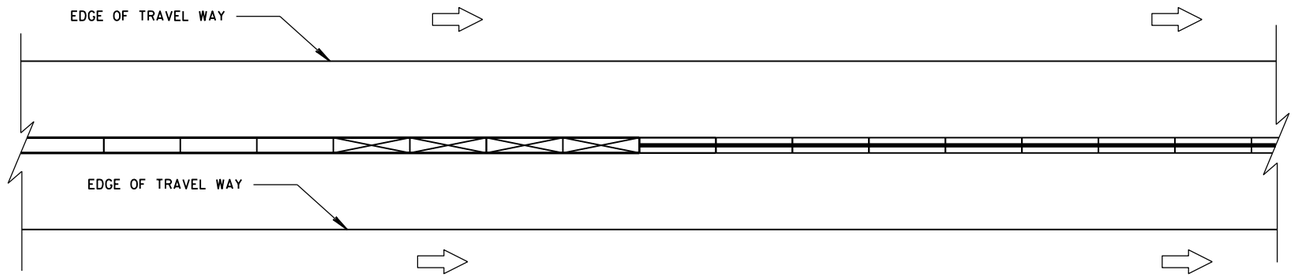



6

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

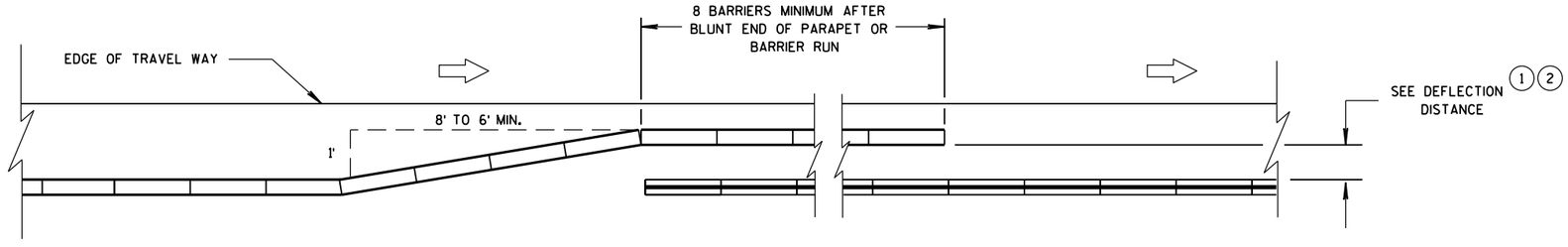
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

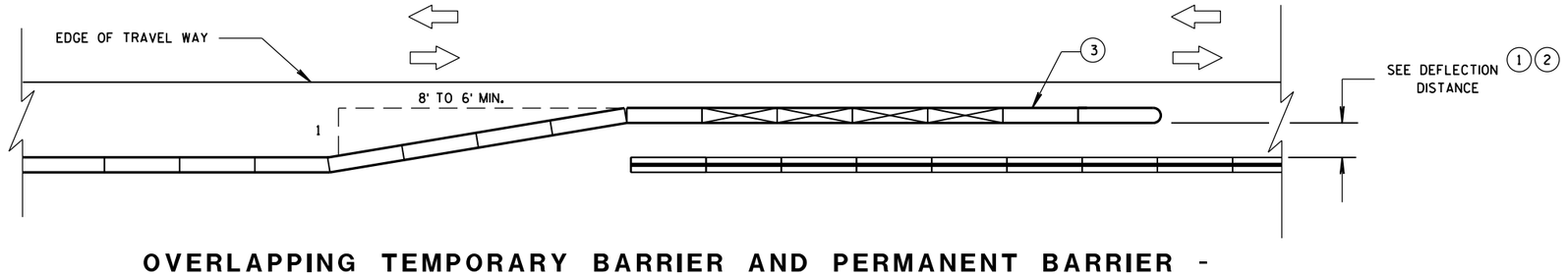
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

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 TRANSPOI

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

## 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

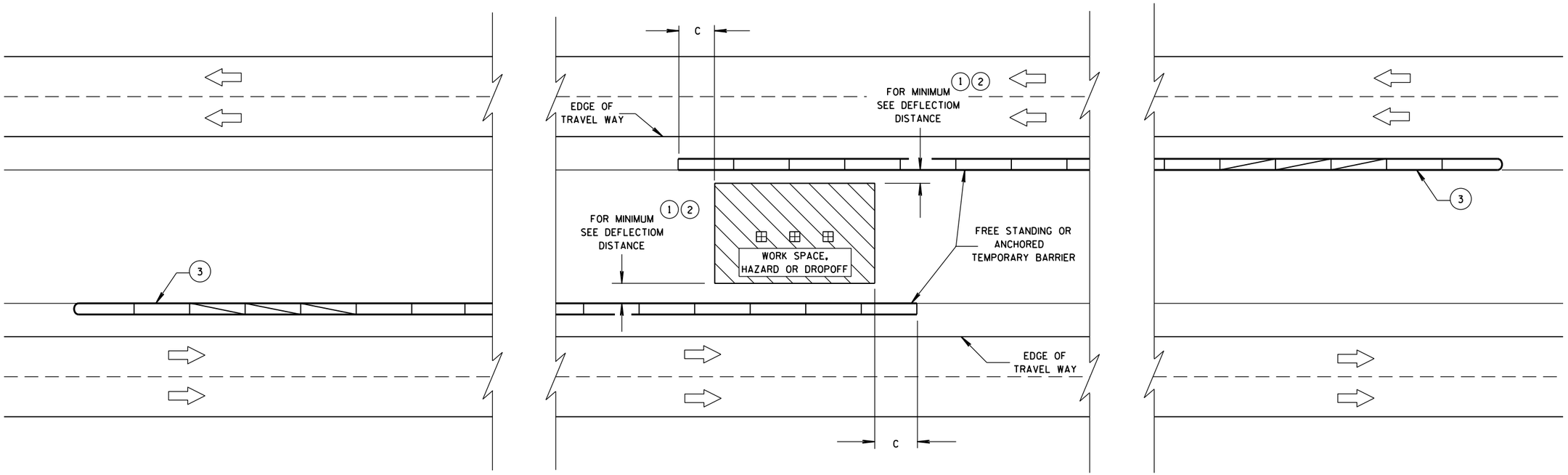
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

## DIMENSION C TABLE (2)

| 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 |




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 ENGINNER
FHWA



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

6

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

## GENERAL NOTES

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

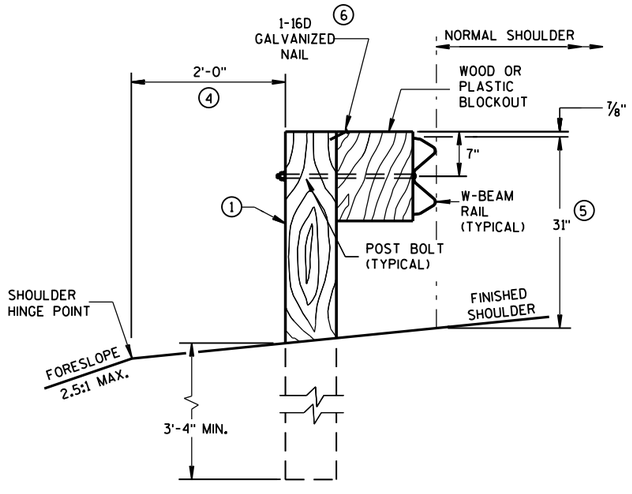
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

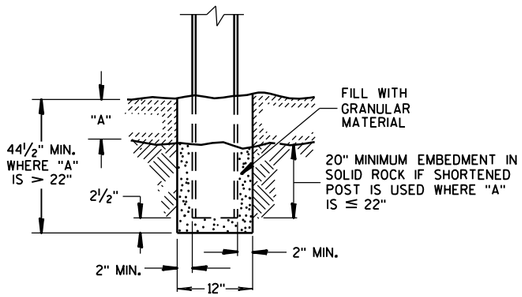
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



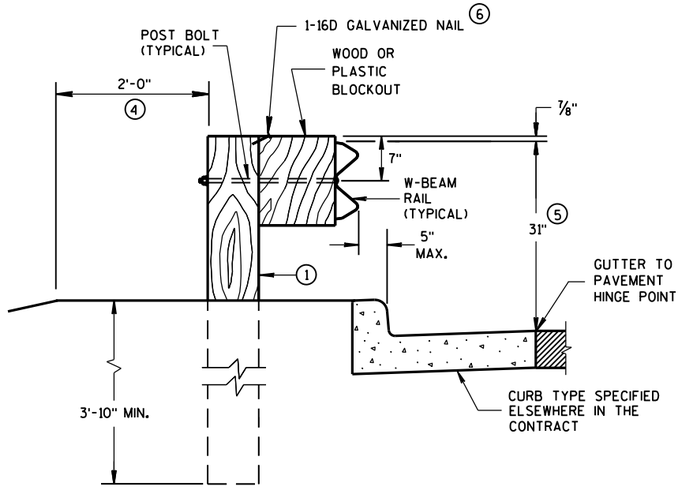

END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



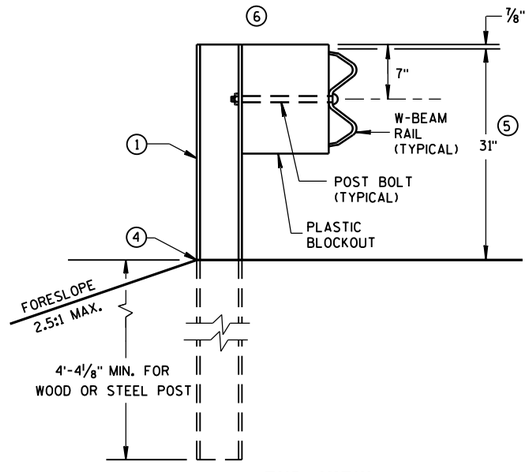

END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



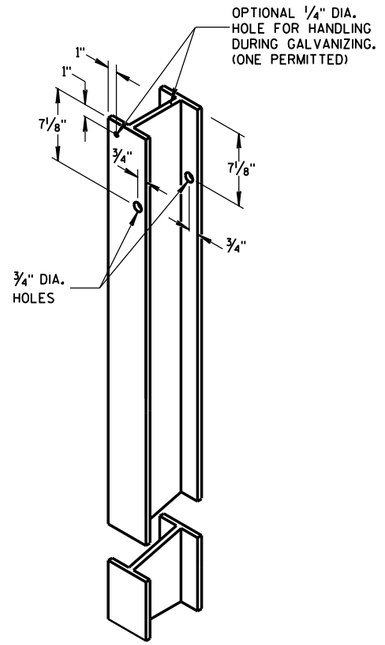

END VIEW

LOCATED ALONG A CURBED ROADWAY

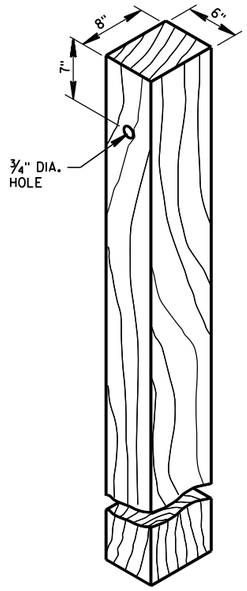



END VIEW

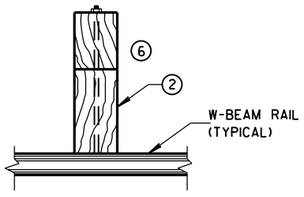
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



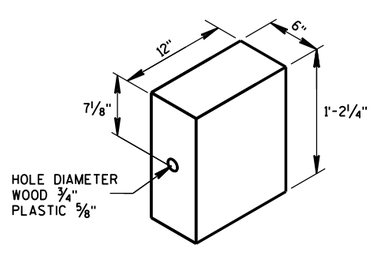

STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



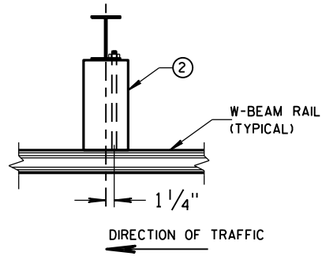

WOOD POST
(6" X 8") NOMINAL (1)




PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM




WOOD OR
PLASTIC BLOCKOUT (2)




PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI





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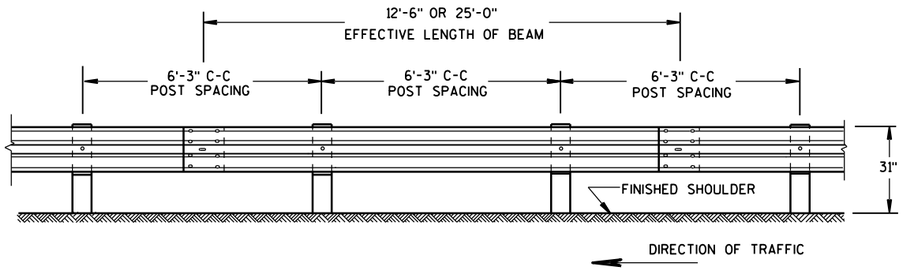
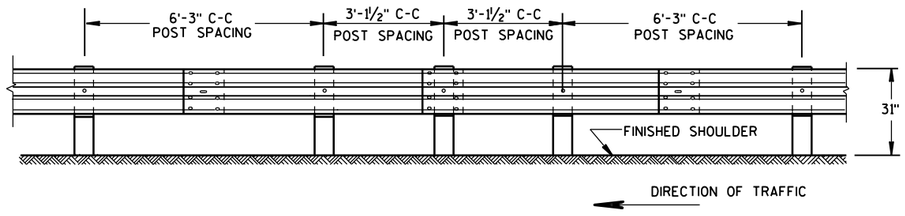
S.D.D. 14 B 42-3a



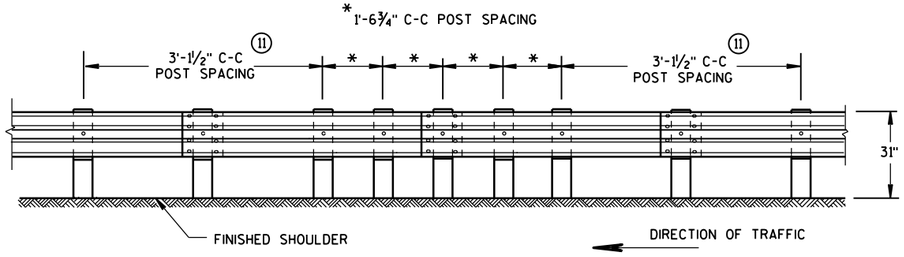

FRONT VIEW

## POST SPACING STANDARD INSTALLATION



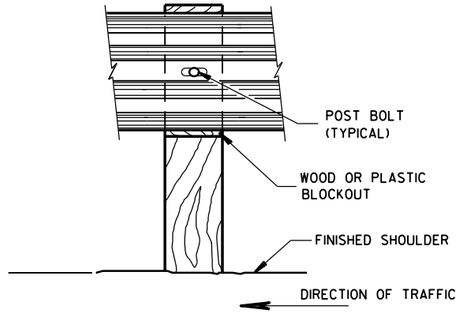

FRONT VIEW

## HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

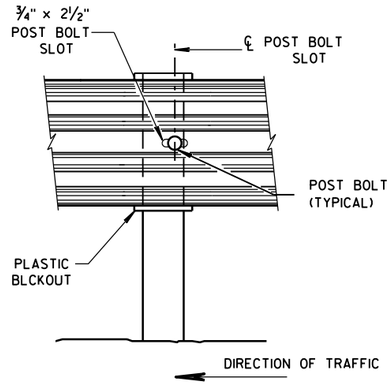



FRONT VIEW

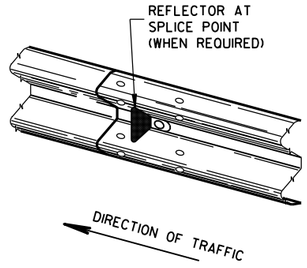
## QUARTER POST SPACING (QS)

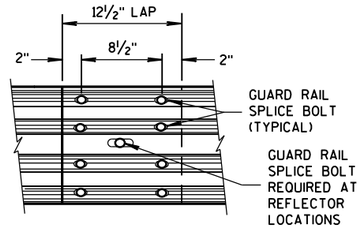



FRONT VIEW AT WOOD POST



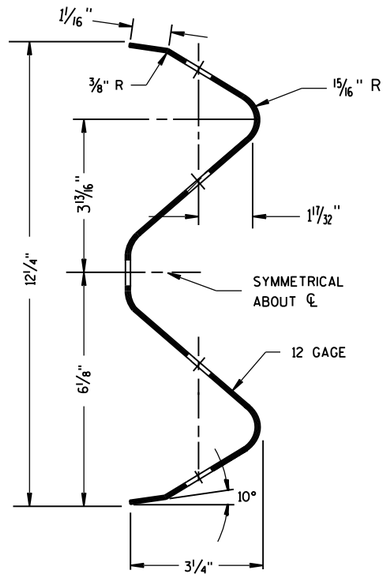

FRONT VIEW AT STEEL POST



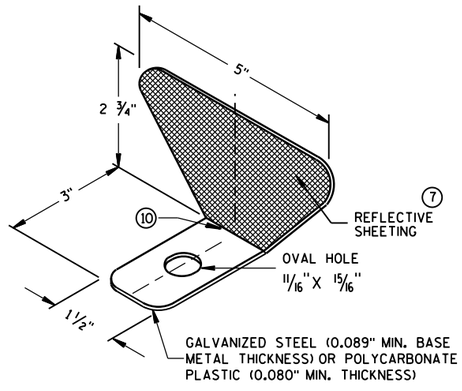




FRONT VIEW

MID-SPAN BEAM SPLICE




SECTION THRU W-BEAM RAIL




## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

## GENERAL NOTES

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

### REFLECTOR SPACING ⑧

| | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|---|---|---|---|---|
| ONE WAY TRAFFIC | < 200'<br>> 200' | 50' C-C<br>100' C-C | 1<br>1 | 3 |
| TWO WAY TRAFFIC | < 200'<br>> 200' | 25' C-C<br>50' C-C | 1 ⑨<br>1 | 6 |
| TWO WAY TRAFFIC | < 200'<br>> 200' | 50' C-C<br>100' C-C | 2<br>2 ⑩ | 3 |

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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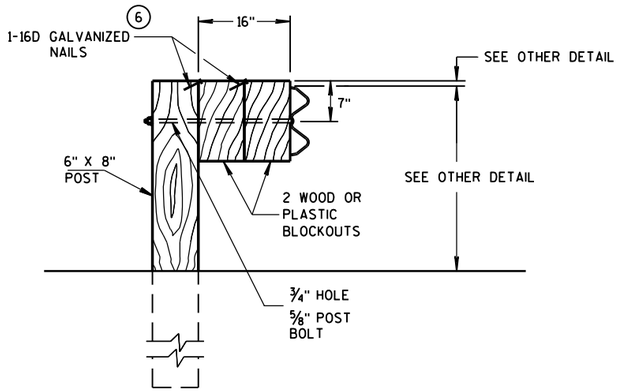
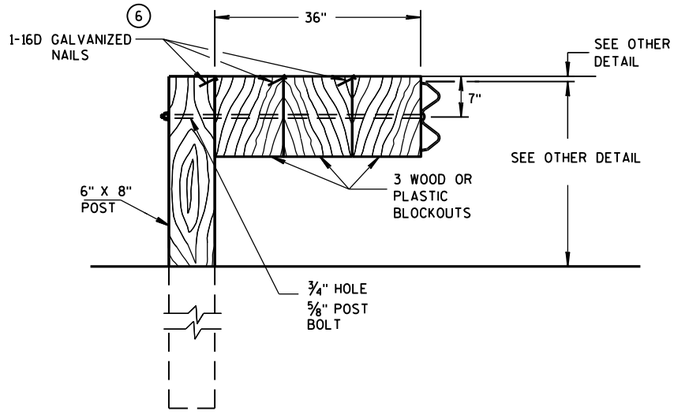
S.D.D. 14 B 42-3b




## DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

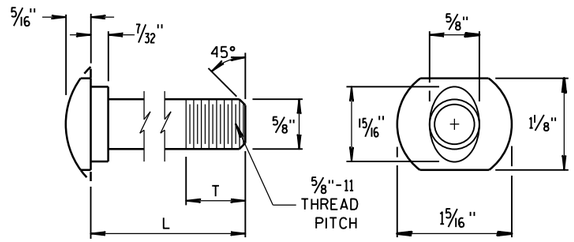



## DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

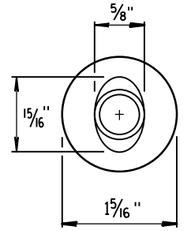
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

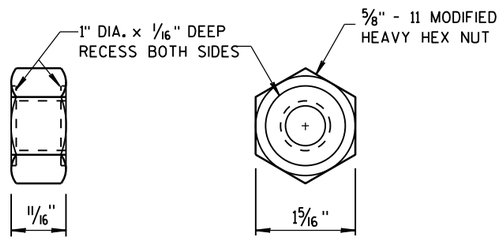



### POST BOLT TABLE

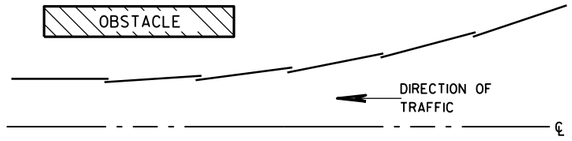
| L | T (MIN.) |
|---|---|
| 1 1/4" | 1 1/8" |
| 2" | 1 3/4" |
| 10" | 4" |
| 14" | 4 1/16" |
| 18" | 4" |
| 21" | 4 1/16" |
| 25" | 4" |




ALTERNATE BOLT HEAD

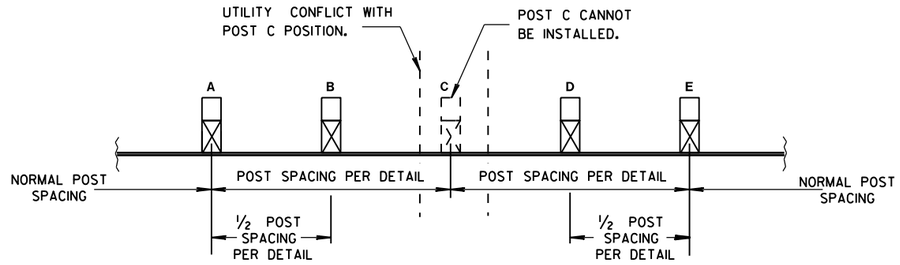



## POST BOLT AND RECESS NUT

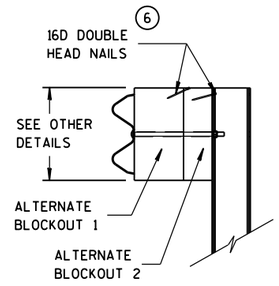



PLAN VIEW

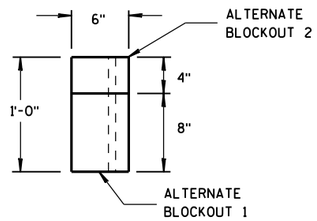
## BEAM LAPPING DETAIL




## POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION




SIDE VIEW




TOP VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA




6
S.D.D. 14 B 42-3c

## GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

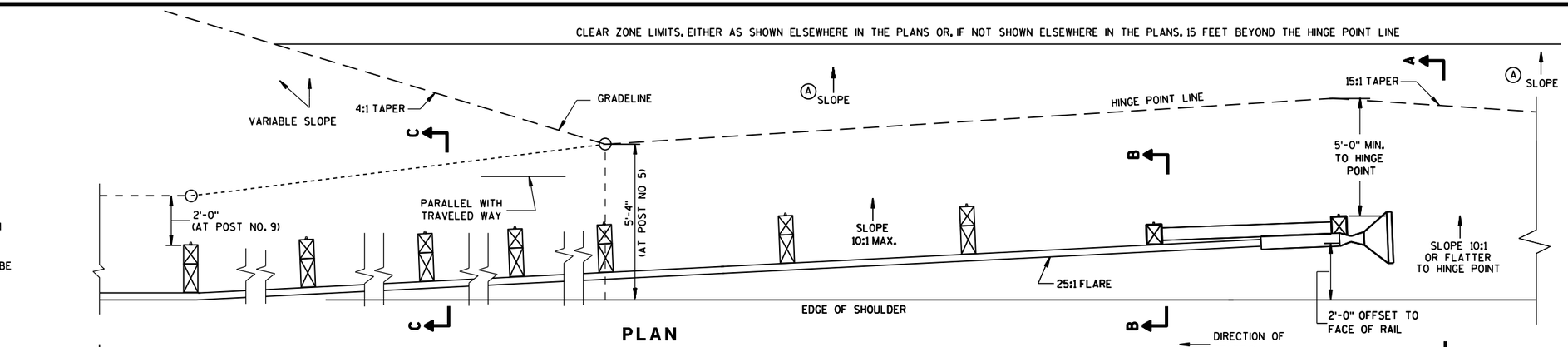
SEE SDD 14B42 FOR MORE INFORMATION.

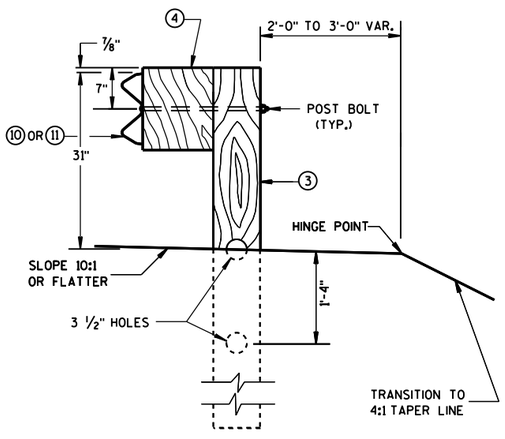
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

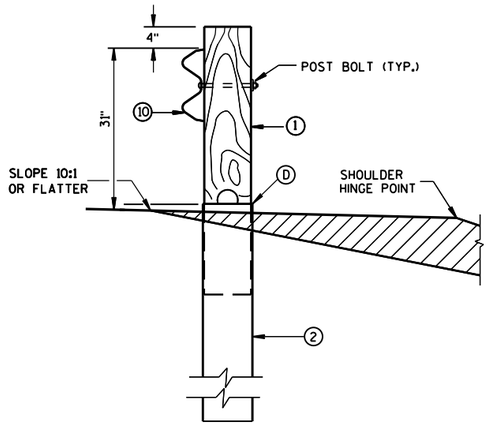
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

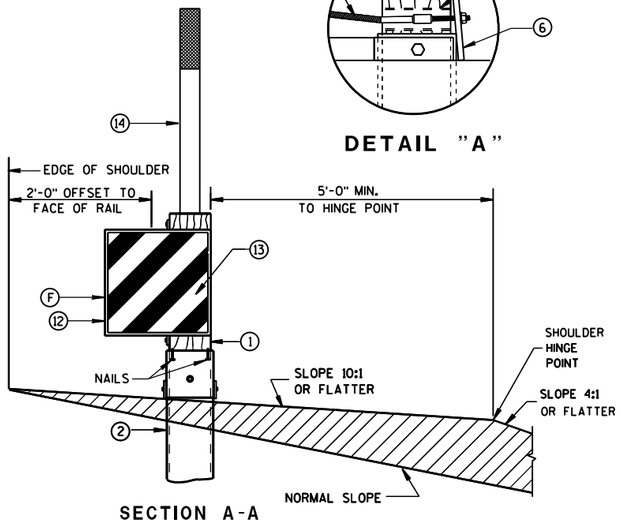


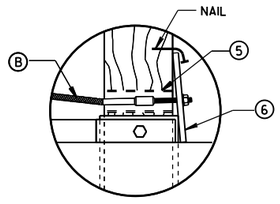

SECTION C-C
TYPICAL AT POST NOS. 3-9



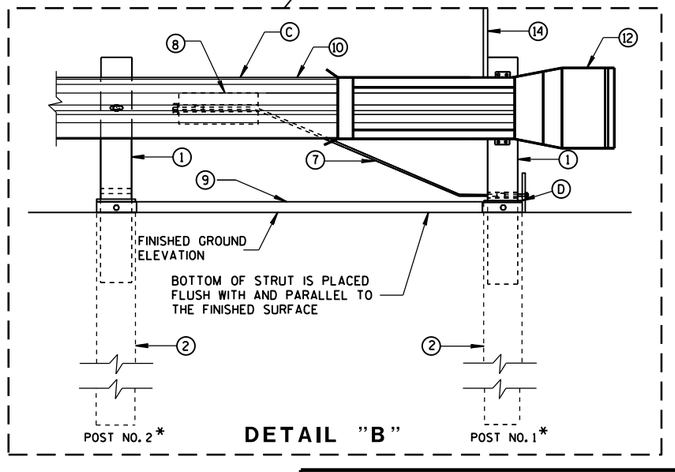

SECTION B-B
TYPICAL AT POST NO. 2*




SECTION A-A
TYPICAL AT POST NO. 1*




DETAIL "A"




DETAIL "B"

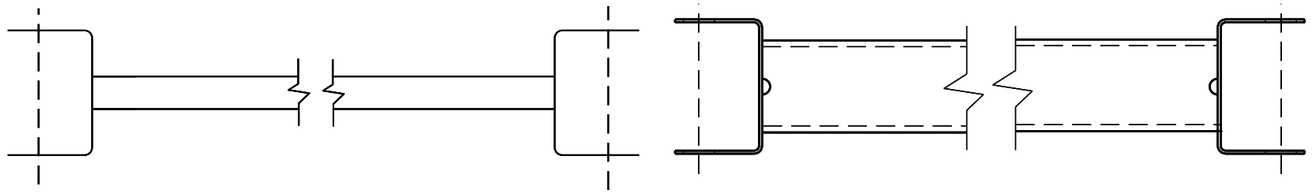
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO



S.D.D. 14 B 44-2a

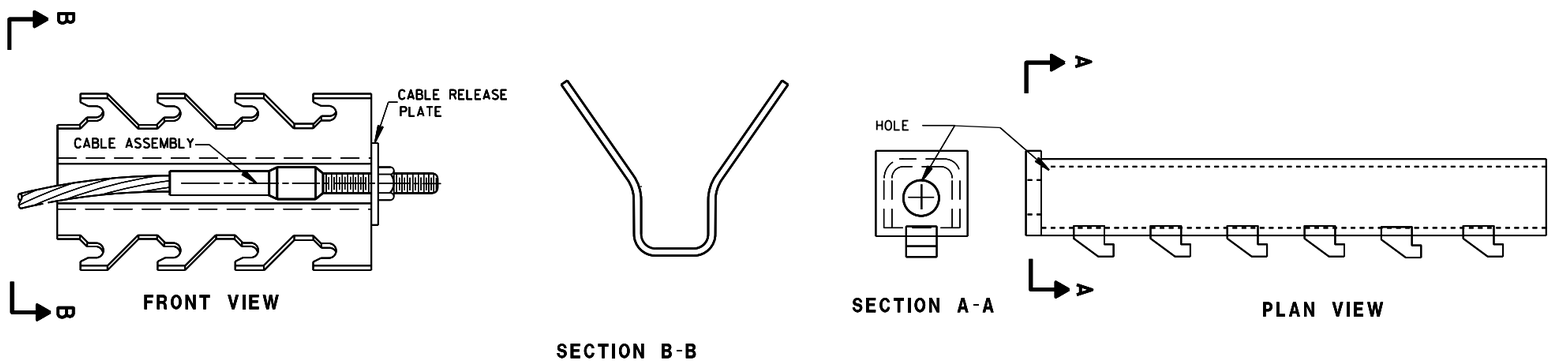
S.D.D. 14 B 44-2a



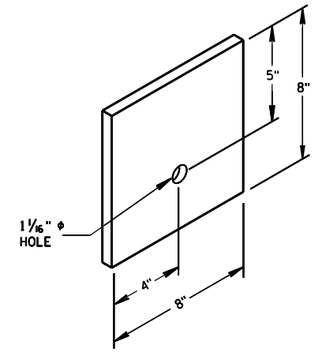
GENERIC GROUND STRUT (9) (H)

## BILL OF MATERIALS

| PART NO. | DESCRIPTION<br>MATERIALS PROVIDED BY MGS EAT MANUFACTURER.<br>SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |
|---|---|
| (1) | WOOD BREAKAWAY POST |
| (2) | 6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE<br>AT POSTS 1 AND 2 |
| (3) | WOOD CRT |
| (4) | WOOD BLOCKOUT |
| (5) | PIPE SLEEVE |
| (6) | BEARING PLATE |
| (7) | BCT CABLE ASSEMBLY |
| (8) | ANCHOR CABLE BOX |
| (9) | GROUND STRUT |
| (10) | PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG. |
| (11) | STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED.<br>SECTIONS VARY IN LENGTH. |
| (12) | END SECTION EAT |
| (13) | 0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING<br>TYPE F PER SECTION 637 OF THE STANDARD<br>SPECIFICATIONS |
| (14) | EAT MARKER POST - YELLOW<br>(SEE APPROVED PRODUCTS LIST) |




GENERIC ANCHOR CABLE BOX (8) (H)




BEARING PLATE (6)

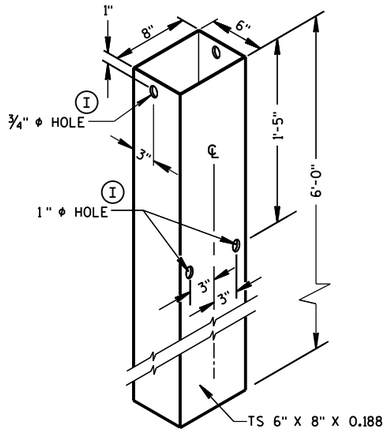
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

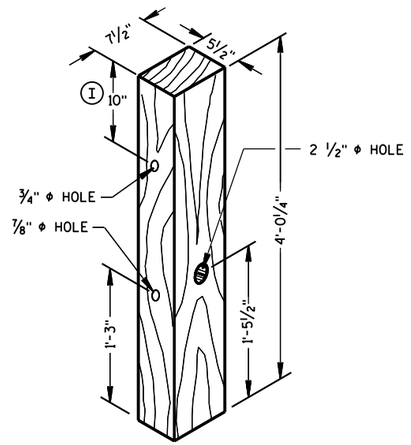




6
S.D.D. 14 B 44-2b

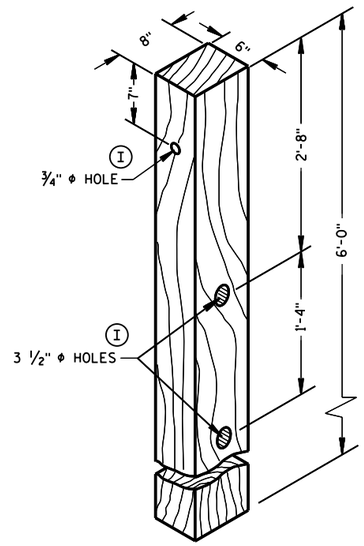



FOUNDATION TUBE (2)



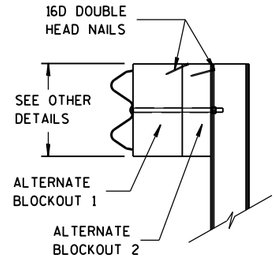

POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

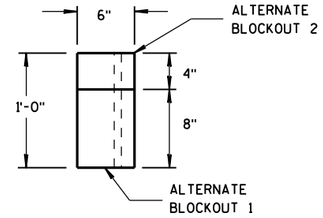



POSTS NUMBER 3-9

WOOD CRT POST (3)

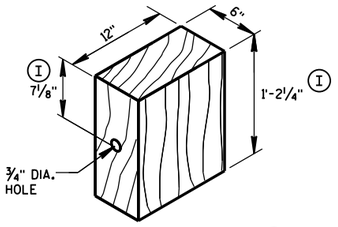



SIDE VIEW



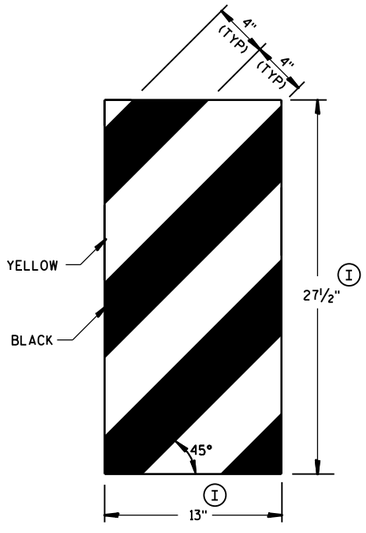

TOP VIEW

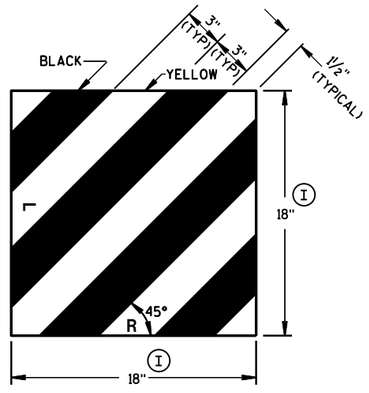
ALTERNATE WOOD BLOCKOUT DETAIL



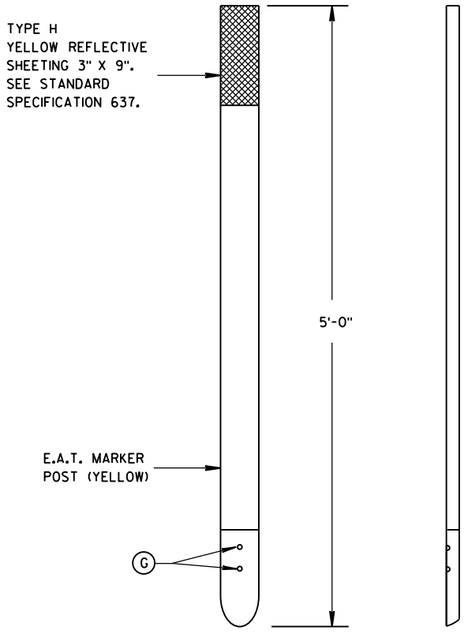

WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



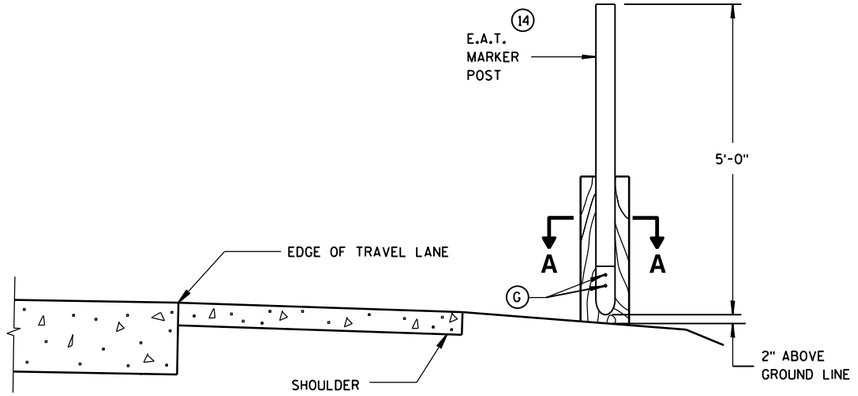

GENERIC REFLECTIVE SHEETING (13) (H)




FRONT VIEW

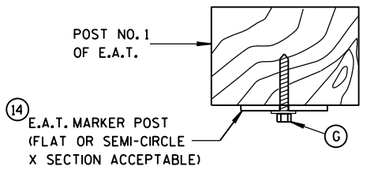
SIDE VIEW

E.A.T. MARKER POST (14)




TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)




SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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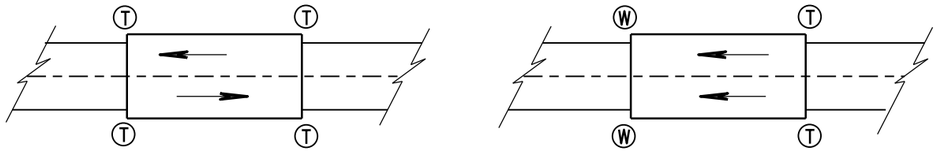
S.D.D. 14 B 44-2c




TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

## TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

## GENERAL NOTES

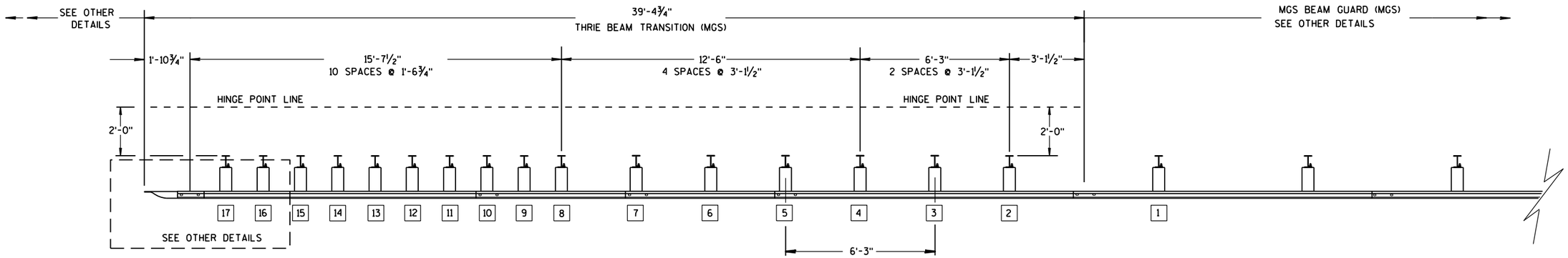
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

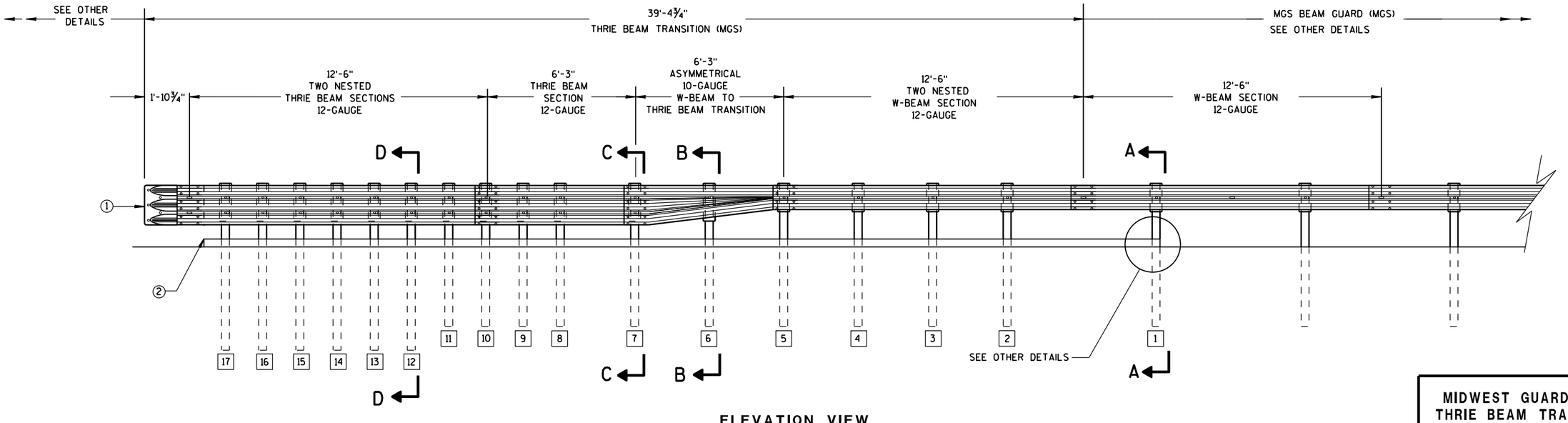
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.




PLAN VIEW




ELEVATION VIEW

## MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



6

S.D.D. 14 B 45-4a

6

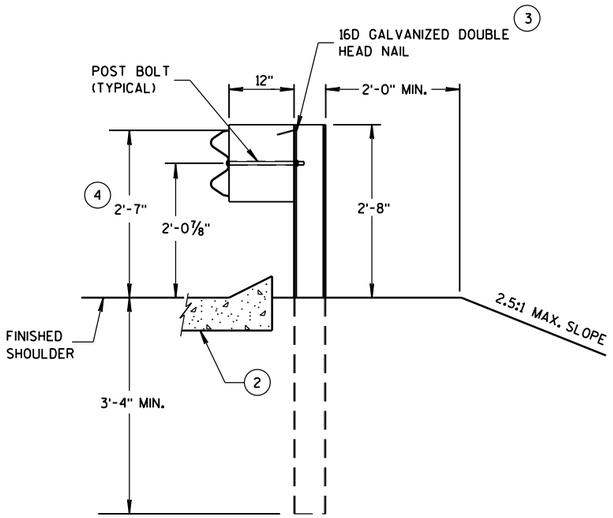
S.D.D. 14 B 45-4a

## GENERAL NOTES

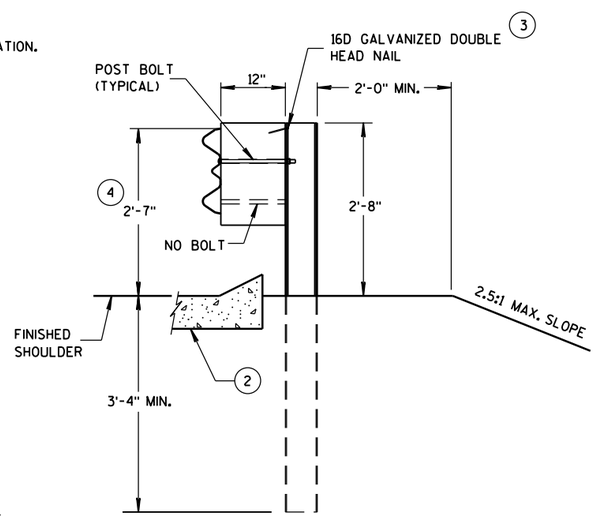
(2) OPTIONAL CURB AND GUTTER OR DRAINAGE_FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

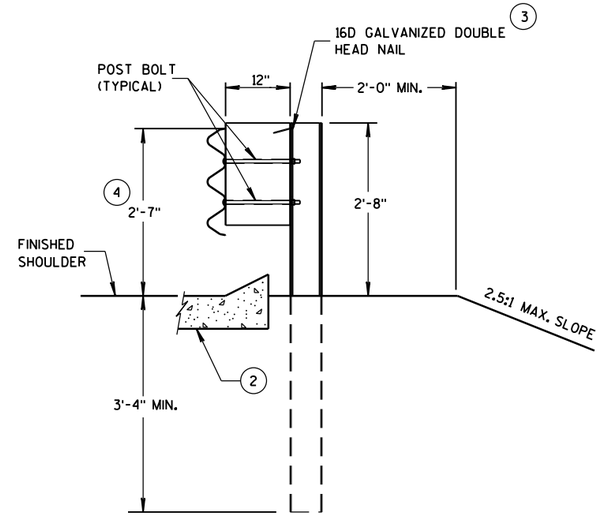
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



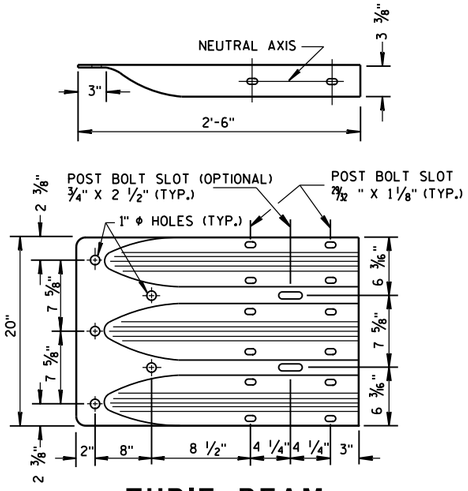

SECTION A-A
**POSTS 1-5**




SECTION B-B
**POST 6**




SECTION C-C
**POSTS 7-11**



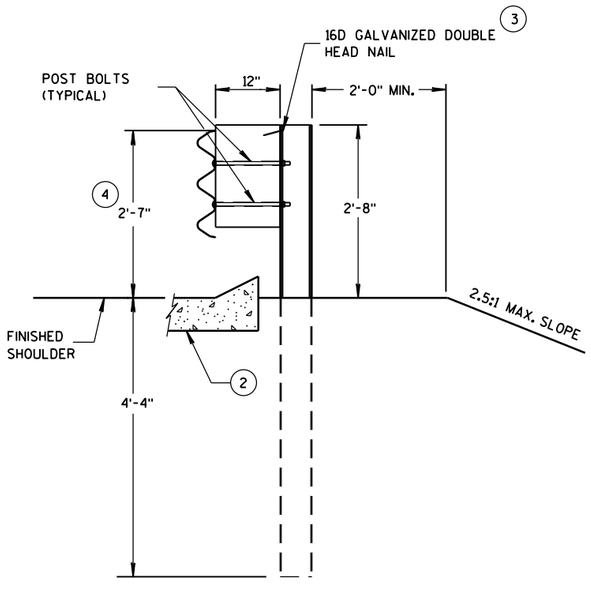

**THRIE BEAM TERMINAL CONNECTOR**



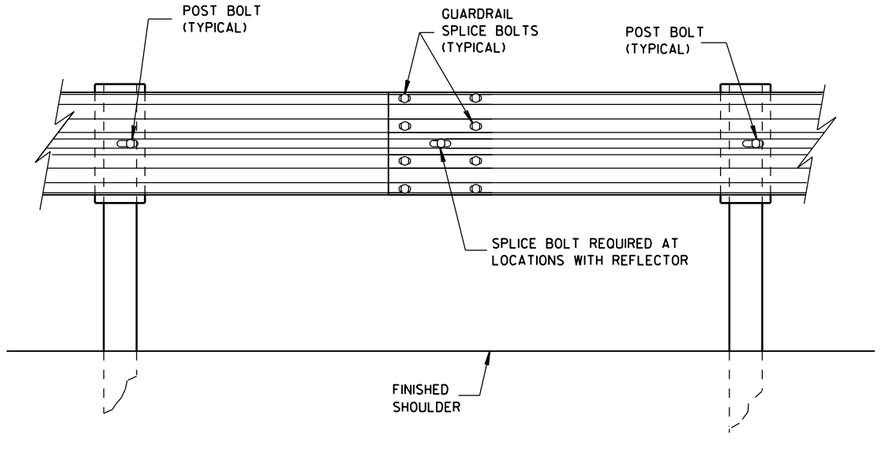

PLATE WASHER DETAIL




**SECTION THRU THRIE BEAM RAIL ELEMENT**




SECTION D-D
**POSTS 12-17**




**SPLICE DETAIL**

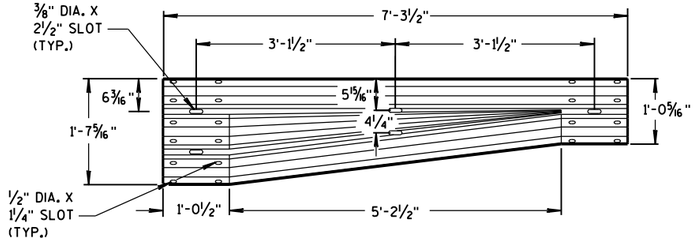
**MIDWEST GUARDRAIL SYSTEM**
**THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

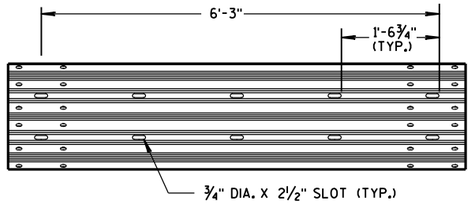



6

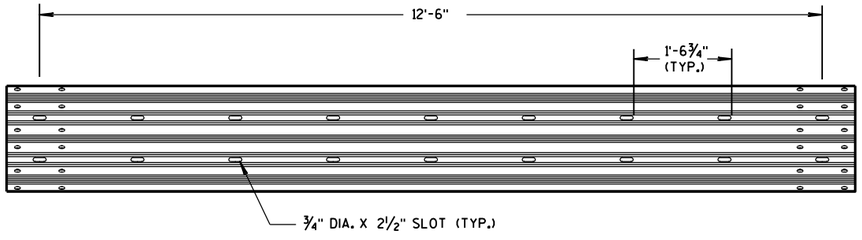
S.D.D. 14 B 45-4b
S.D.D. 14 B 45-4b



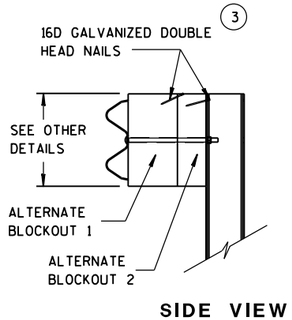

## W-BEAM TO THRIE BEAM TRANSITION SECTION



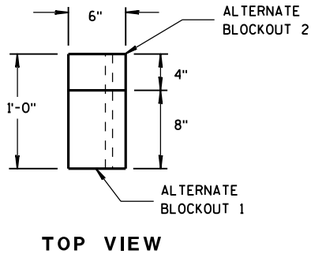

## 6'-3" THRIE BEAM SECTION




## 12'-6" THRIE BEAM SECTION

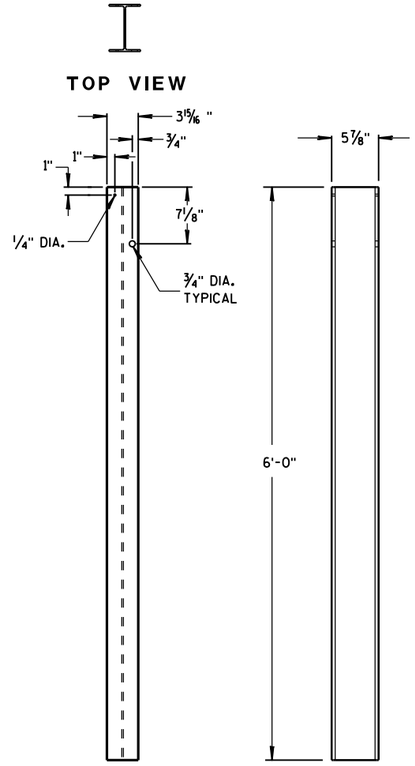



SIDE VIEW

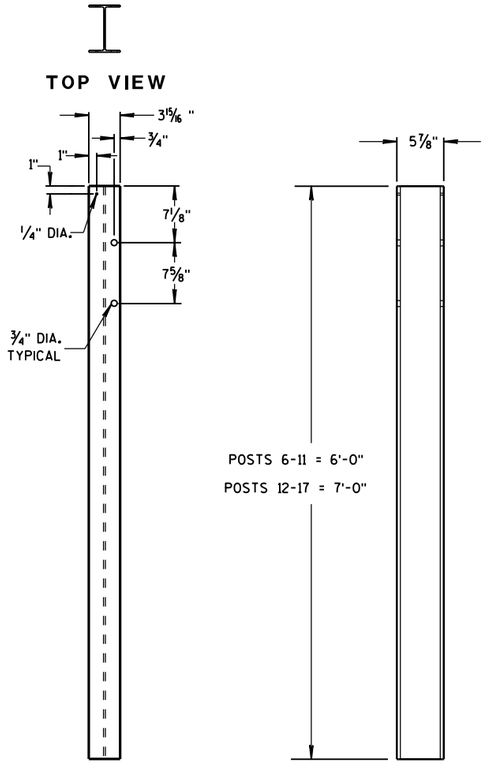



TOP VIEW

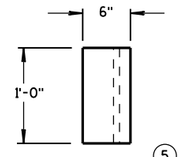
## ALTERNATE WOOD BLOCKOUT DETAIL



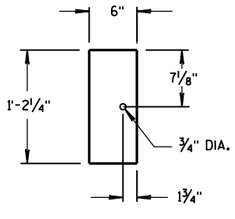

## STEEL POSTS 1-5




## STEEL POSTS 6-17

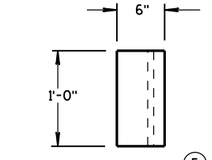



TOP VIEW

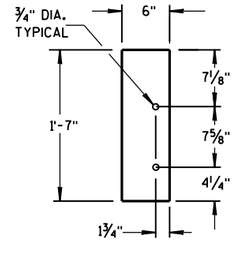



FRONT VIEW

## BLOCKOUT POSTS 1-5




TOP VIEW




FRONT VIEW

## BLOCKOUT POSTS 6-17

## GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

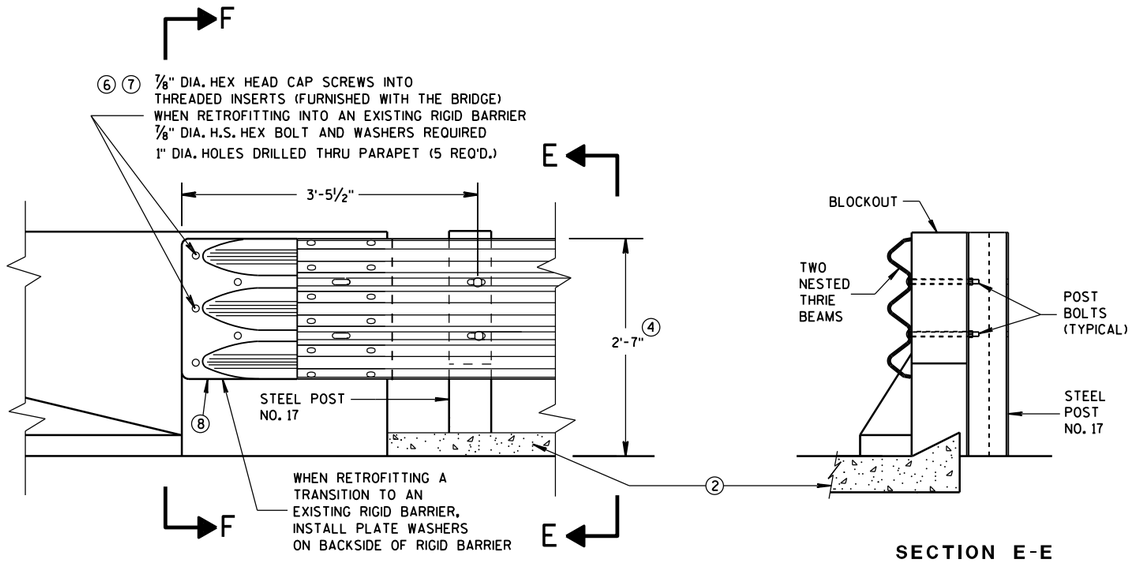
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR




6


S.D.D. 14 B 45-4c




FRONT VIEW

SECTION E-E

# THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

## GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

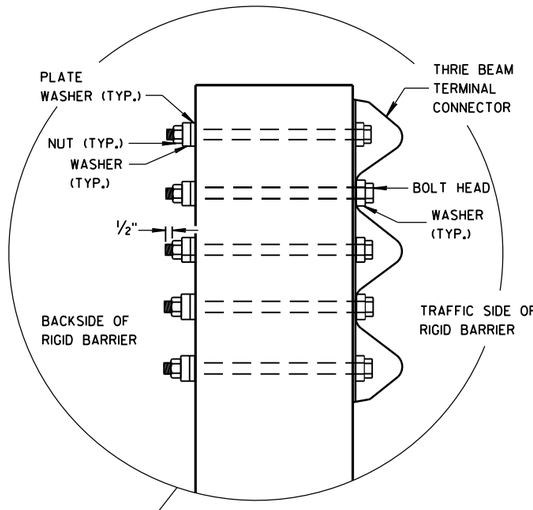
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

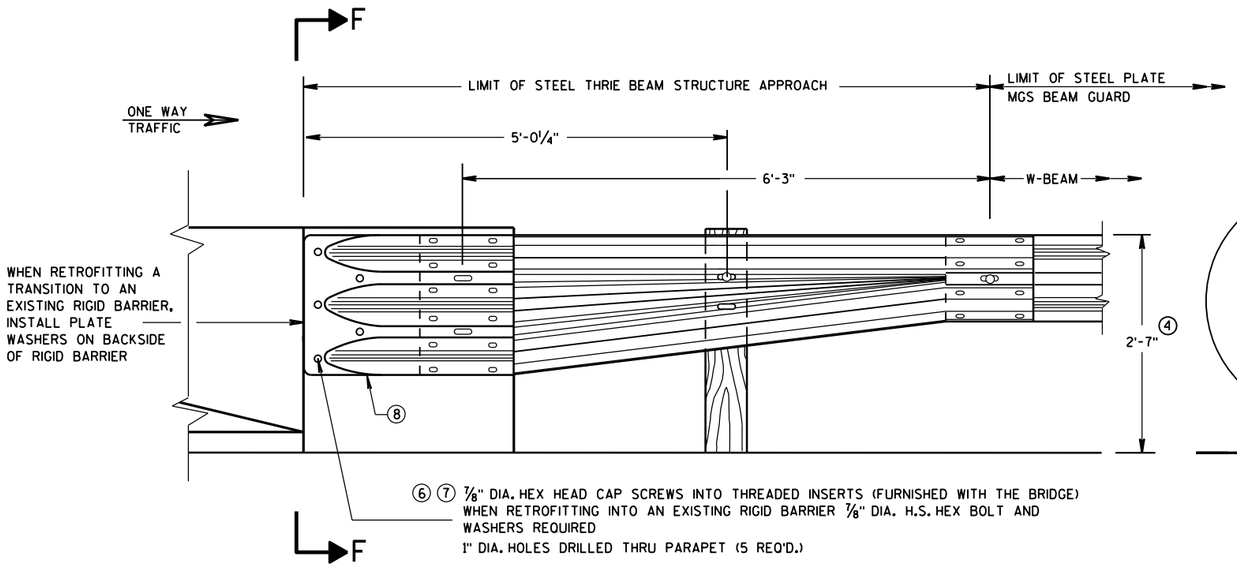
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

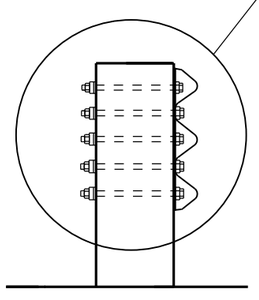
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

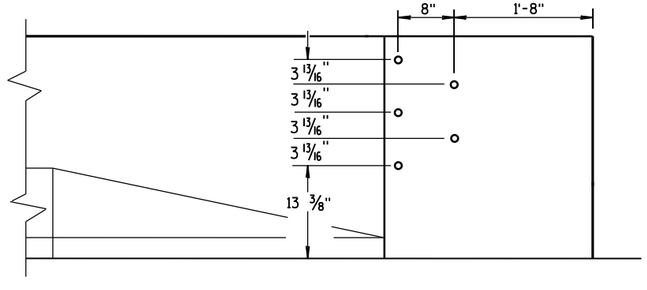



FRONT VIEW



SECTION F-F




DRILL HOLE LOCATION

# W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER



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S.D.D. 14 B 45-4d

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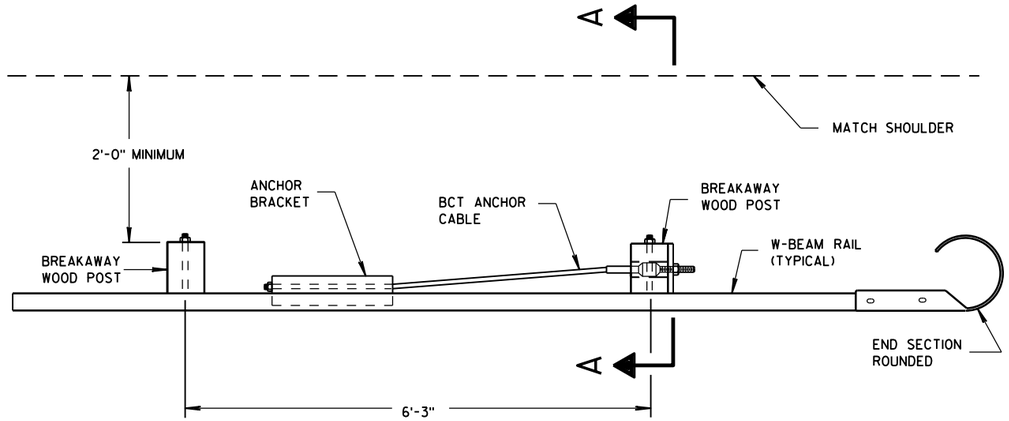
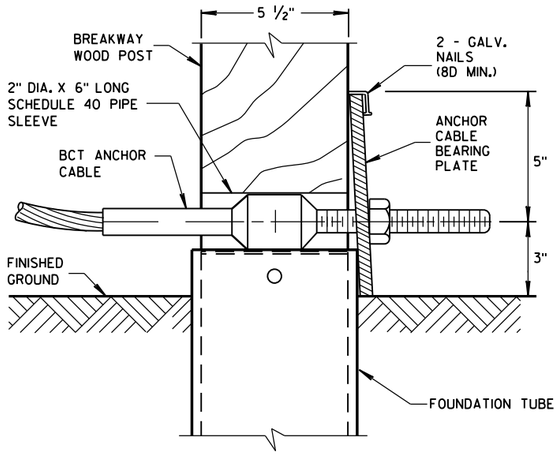
S.D.D. 14 B 45-4d




PLAN VIEW




## DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.

## GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

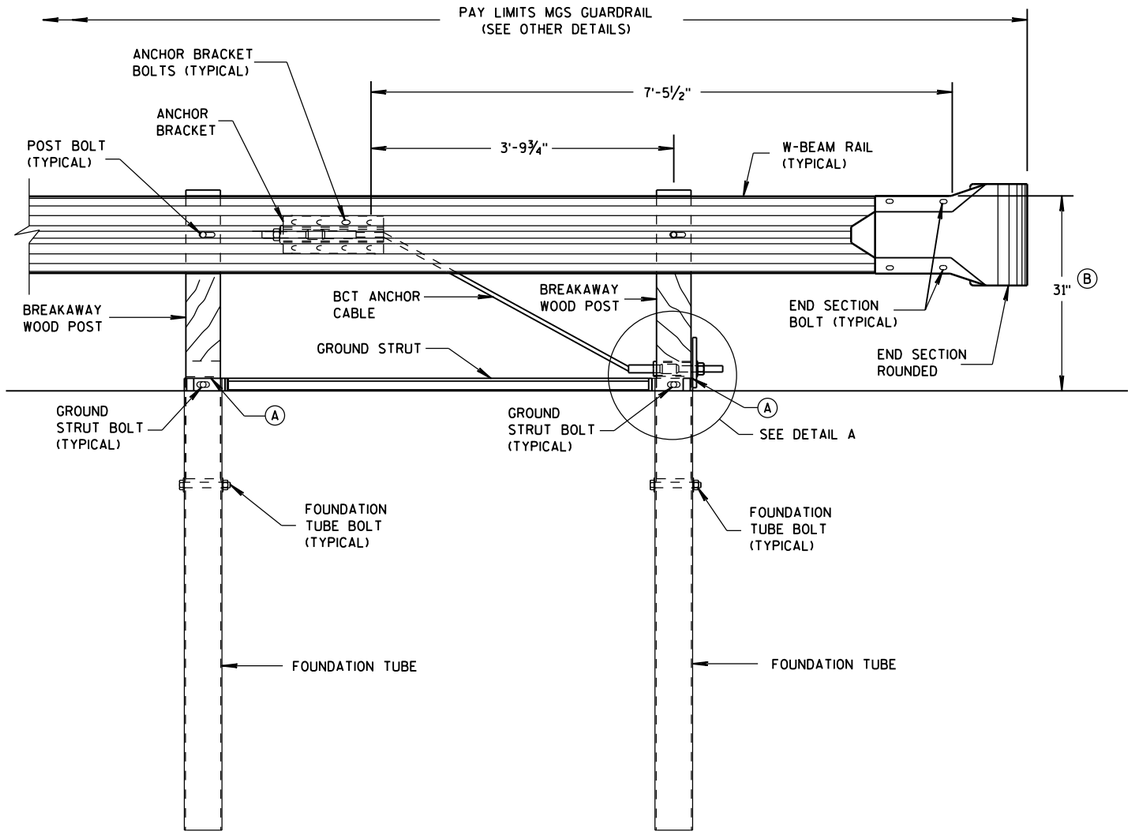
FOUNDATION TUBE BOLTS ARE ⅞" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅞" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A ⅝" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅝" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

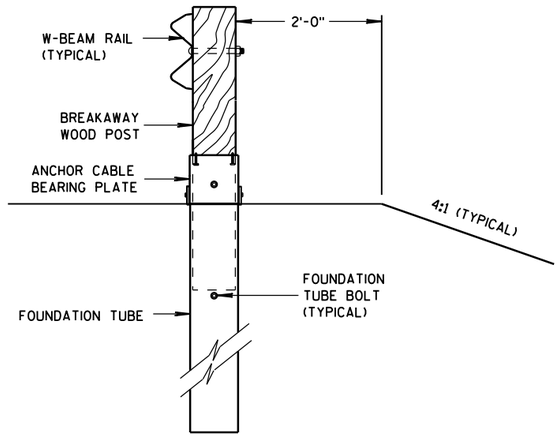
(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".

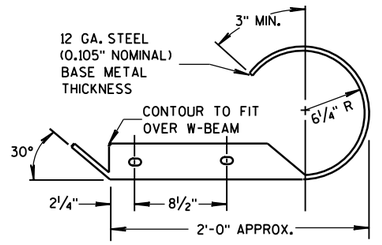



FRONT VIEW

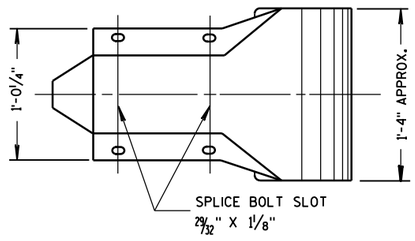
## END RAIL DETAIL




SECTION A-A




PLAN VIEW




FRONT VIEW

## W BEAM END SECTION ROUNDED

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO





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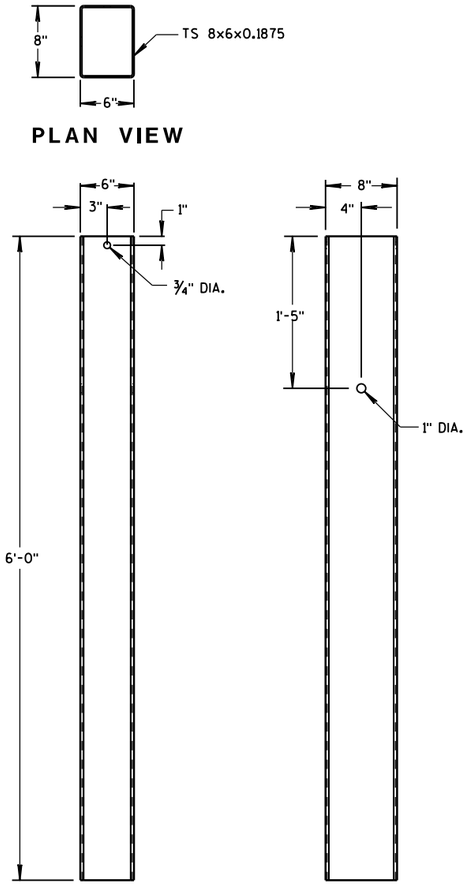
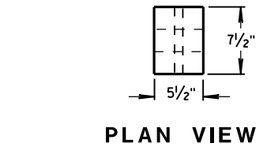
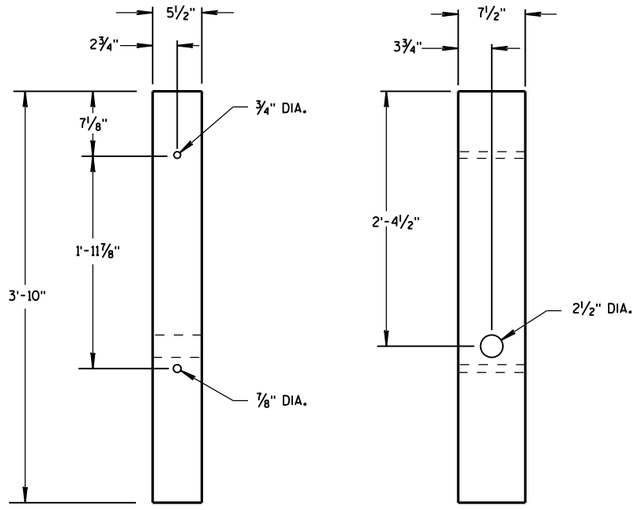
S.D.D. 14 B 47-2a




FOUNDATION TUBE



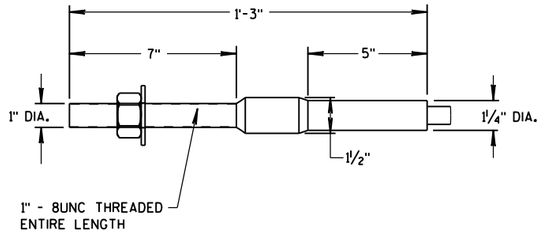

BREAKAWAY WOOD POST

## GENERAL NOTES

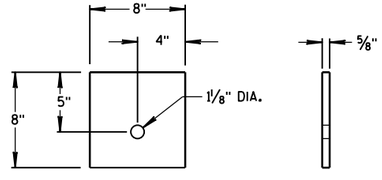
BCT ANCHOR CABLE IS A ¾" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.




BCT ANCHOR CABLE




DETAIL B




ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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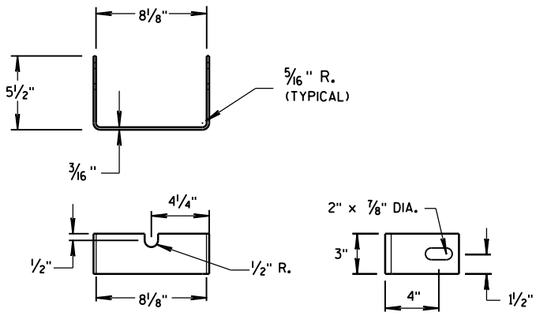
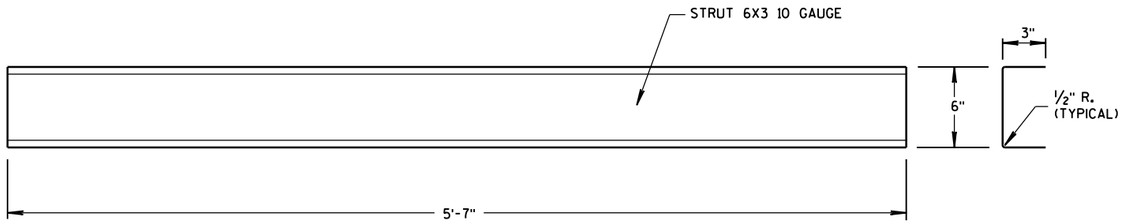
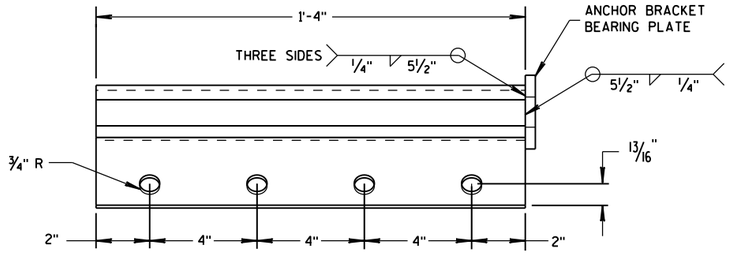
S.D.D. 14 B 47-2b

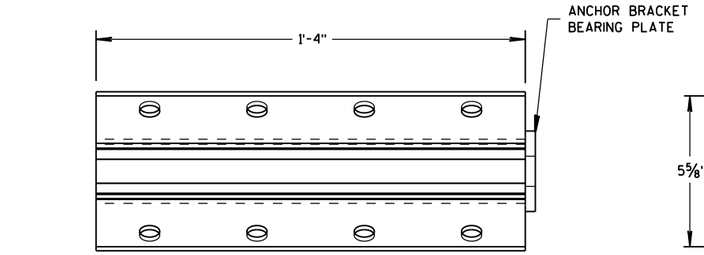


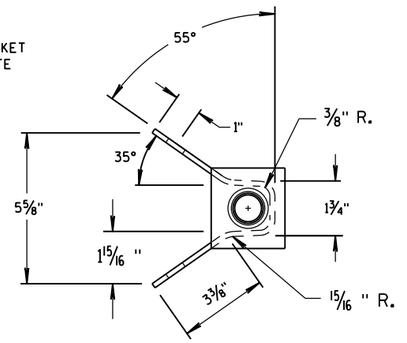

## YOKE DETAIL



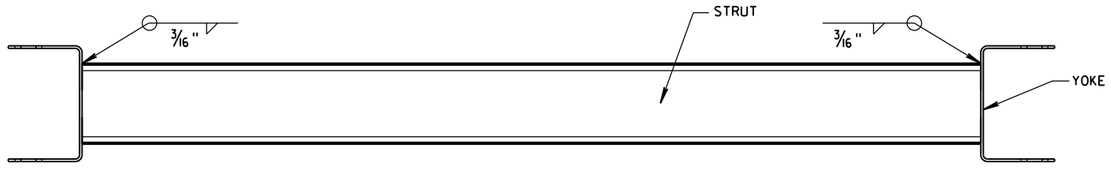

## STRUT DETAIL



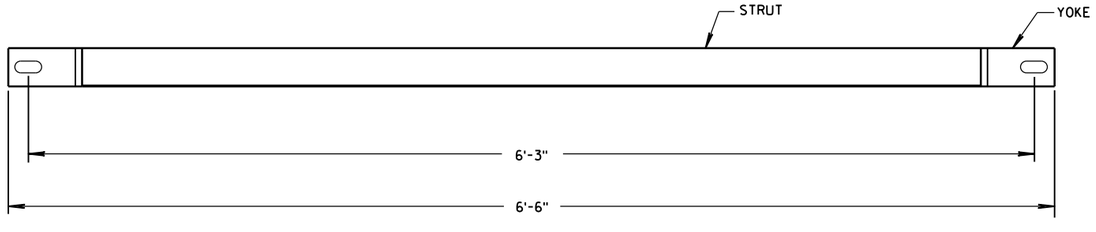




## ANCHOR BRACKET

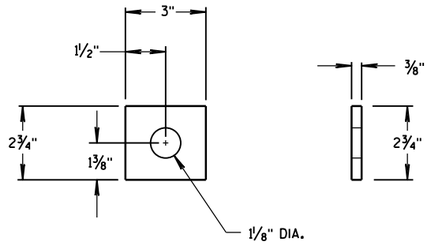



## PLAN VIEW




## FRONT VIEW

## GROUND STRUT DETAIL




## ANCHOR BRACKET BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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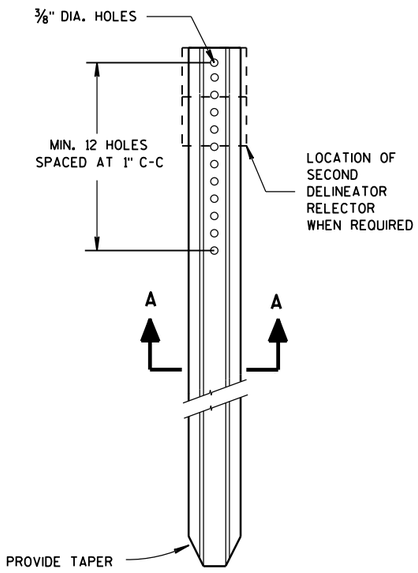
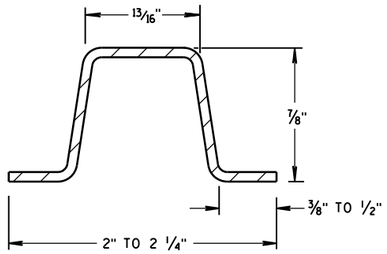
S.D.D. 14 B 47-2c

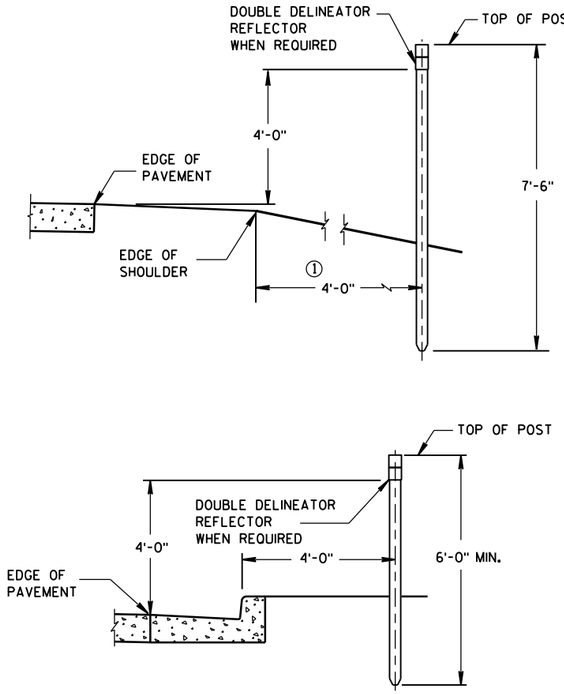



## DELINEATOR POST




## SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

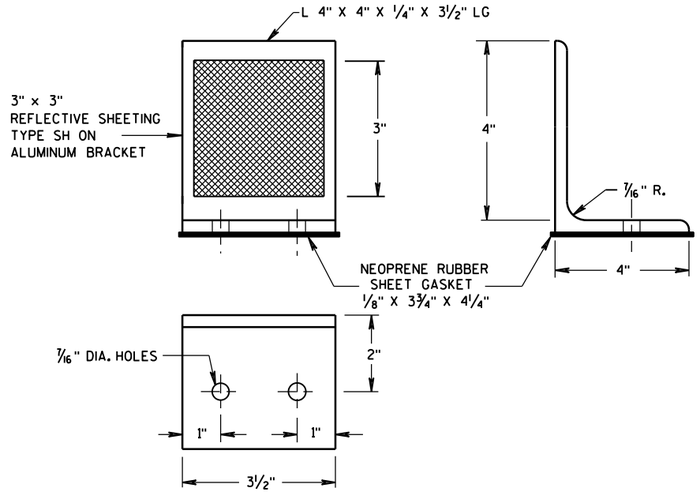



## TYPICAL INSTALLATIONS OF DELINEATOR POSTS

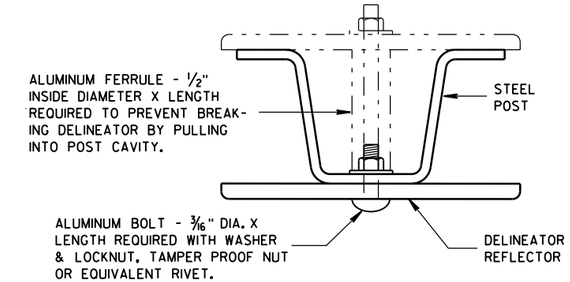
## GENERAL NOTES

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

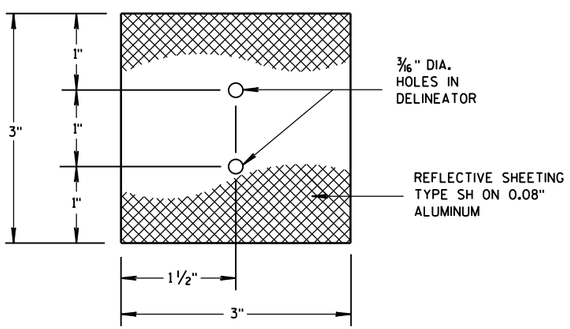
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



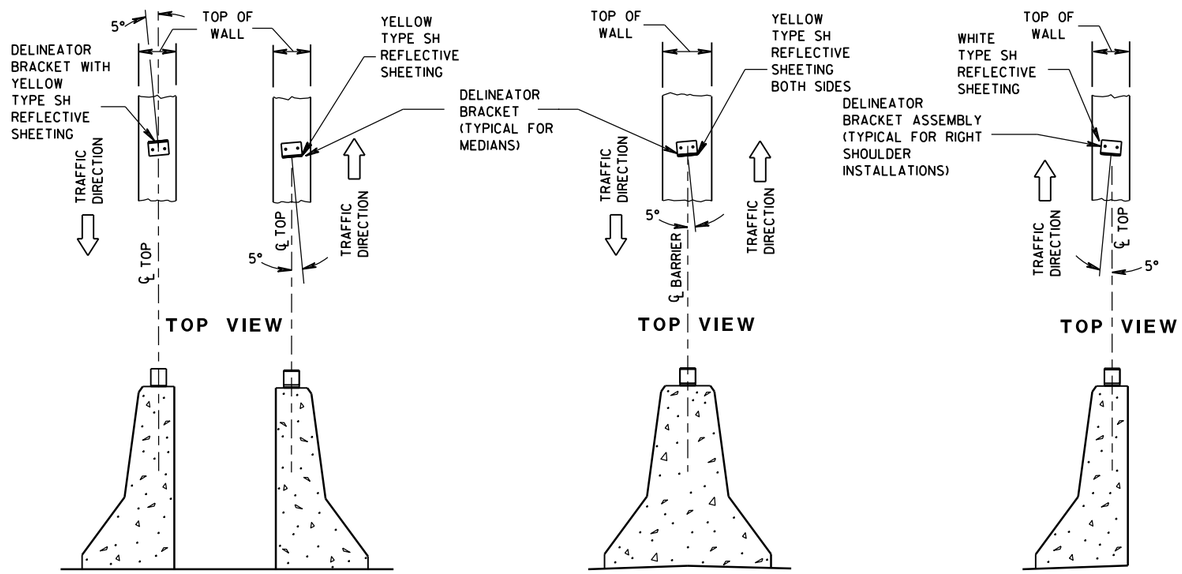

## DELINEATOR BRACKET




## MOUNTING DETAIL FOR DELINEATOR REFLECTOR

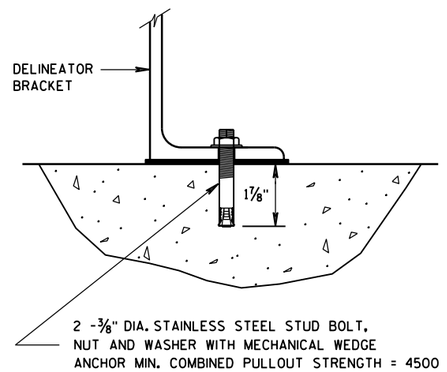



## 3"x 3" DELINEATOR REFLECTOR




DOUBLE BARRIERS IN MEDIAN | MEDIAN BARRIER | BARRIER LOCATED TO RT. OF TRAFFIC FLOW

## LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS




## DELINEATOR BRACKET MOUNTING DETAIL

**DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 DATE
/S/ Matthew R. Rauch
STATE SIGNING AND MAR 240 GINEER
FHWA

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S.D.D. 15 A 2-9

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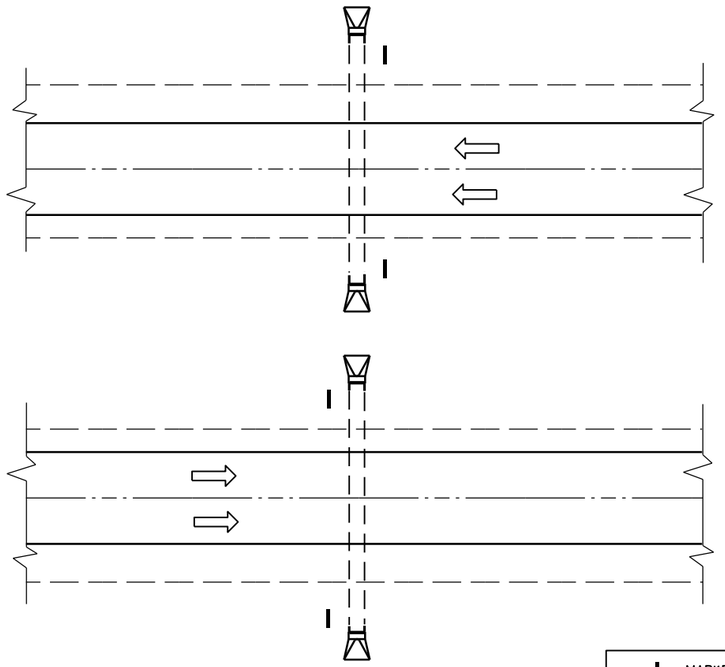
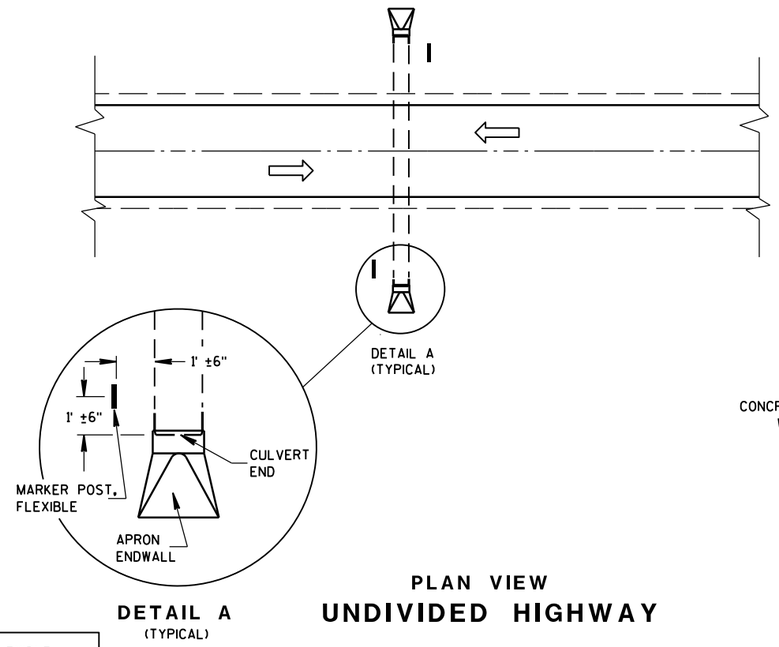
S.D.D. 15 A 2-9



PLAN VIEW

**DIVIDED HIGHWAY**




DETAIL A
(TYPICAL)

PLAN VIEW

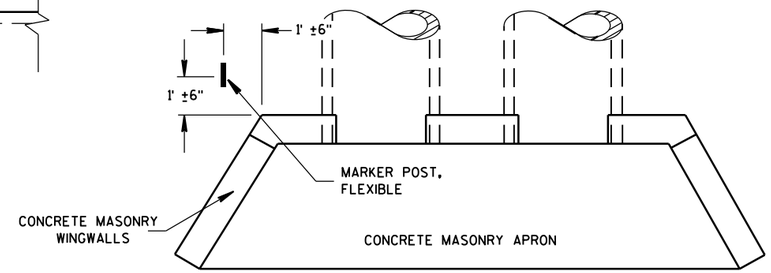
**UNDIVIDED HIGHWAY**

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

## GENERAL NOTES

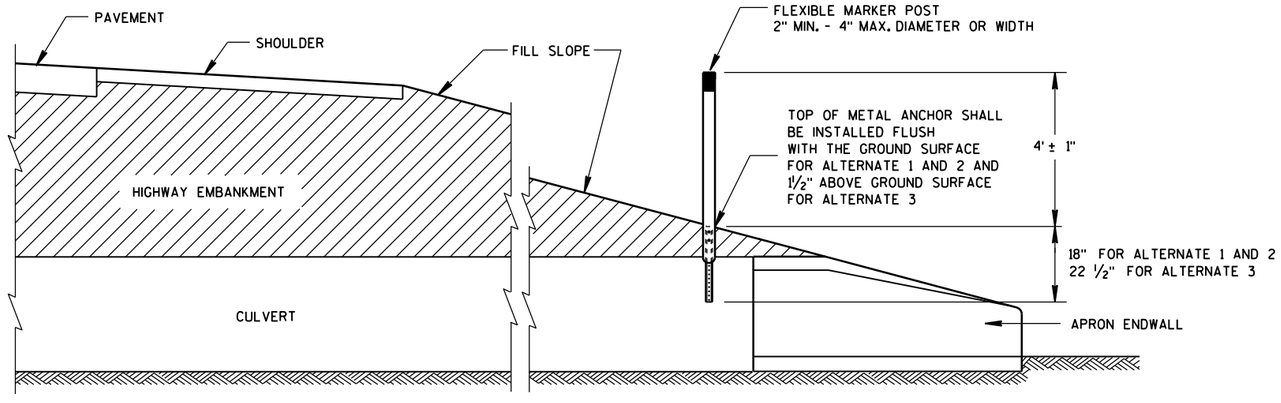
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.




PLAN VIEW

**CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH**

## FLEXIBLE MARKER POST LOCATION




CROSS SECTION

**FLEXIBLE MARKER POST**

**FLEXIBLE MARKER POST FOR CULVERT END**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



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S.D.D. 15 A 3-2a

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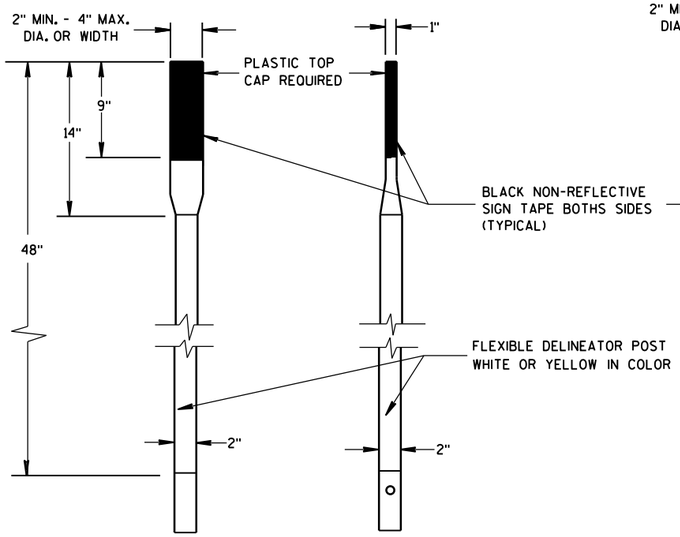
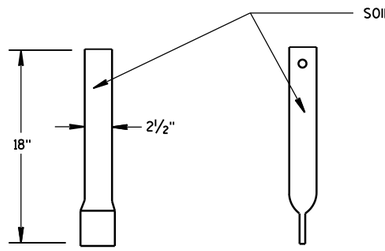
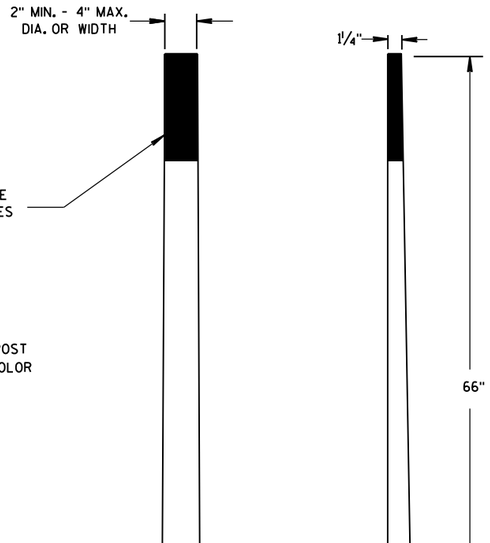
S.D.D. 15 A 3-2a



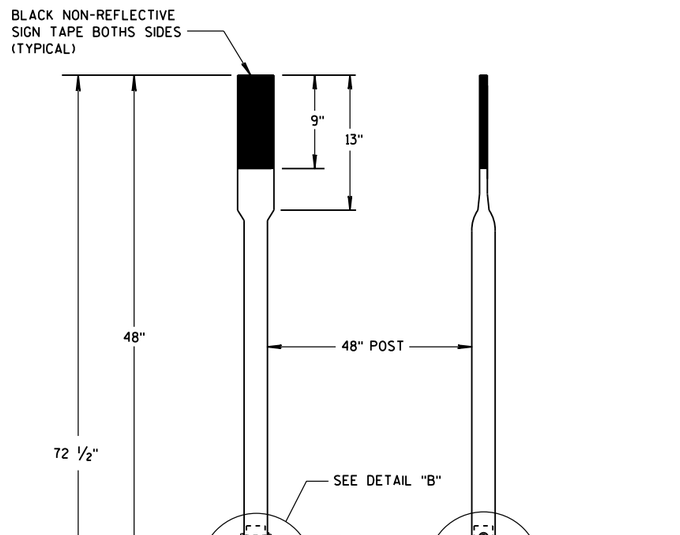

FRONT VIEW SIDE VIEW

ALTERNATE 1




FRONT VIEW SIDE VIEW

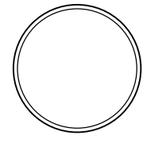
ALTERNATE 2



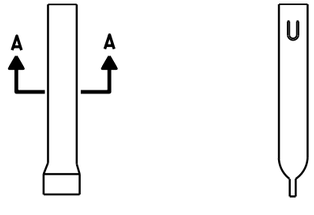

FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POSTS

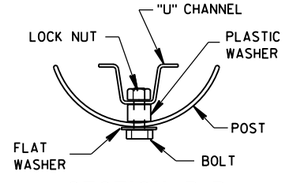


SECTION A-A

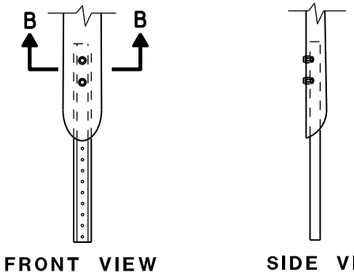



FRONT VIEW SIDE VIEW

ALTERNATE 1

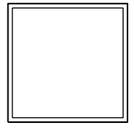



SECTION B-B

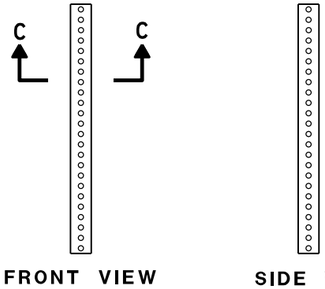



FRONT VIEW SIDE VIEW

ALTERNATE 2



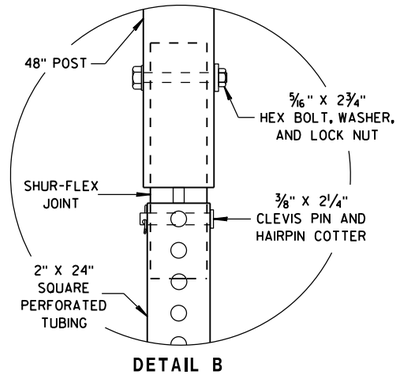
SECTION C-C



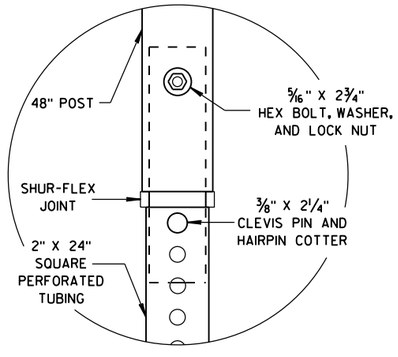

FRONT VIEW SIDE VIEW

ALTERNATE 3

## FLEXIBLE MARKER POST ANCHORS




DETAIL B




DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

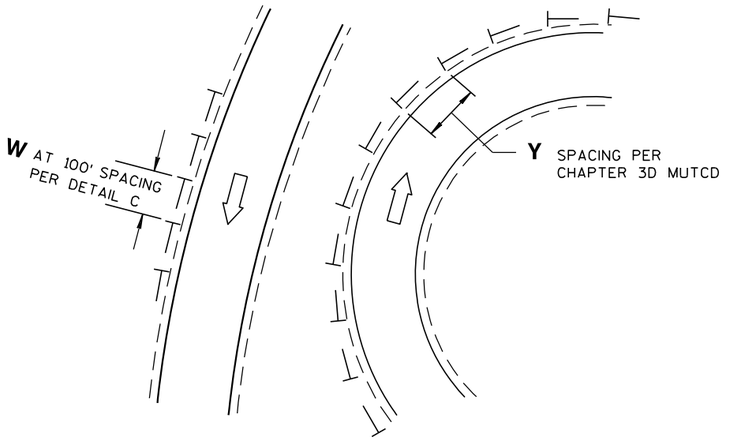




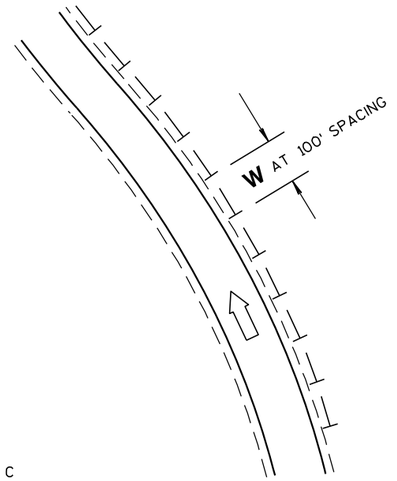
6
S.D.D. 15 A 3-2b

## GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS. USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.



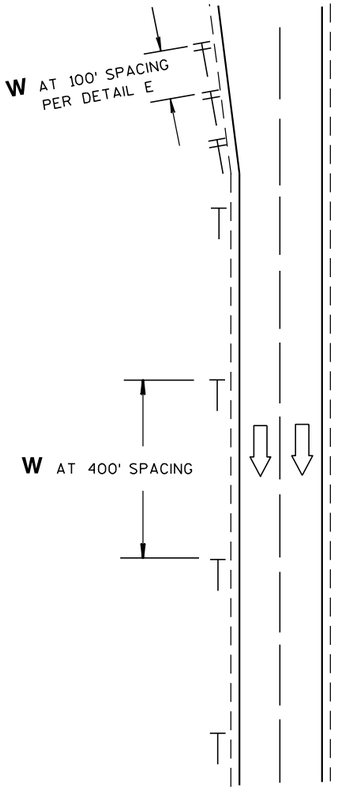

**DETAIL A**
**DELINEATOR LAYOUT AT CURVED RAMP**



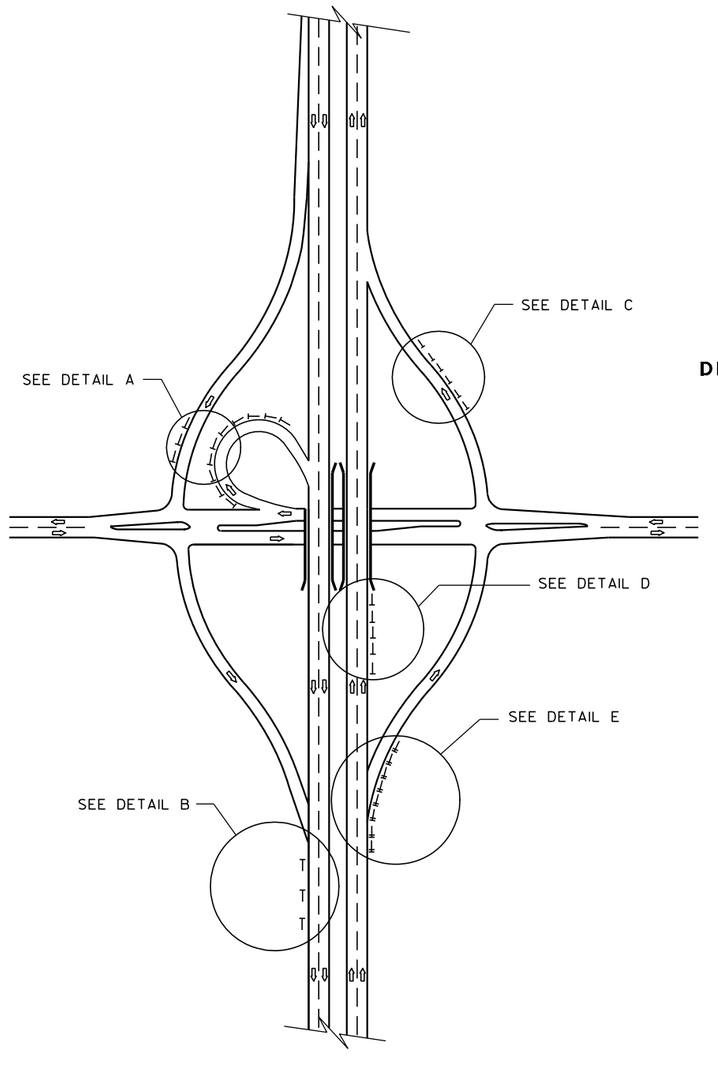

**DETAIL C**
**DELINEATOR LAYOUT ALONG RAMP**

**LEGEND**

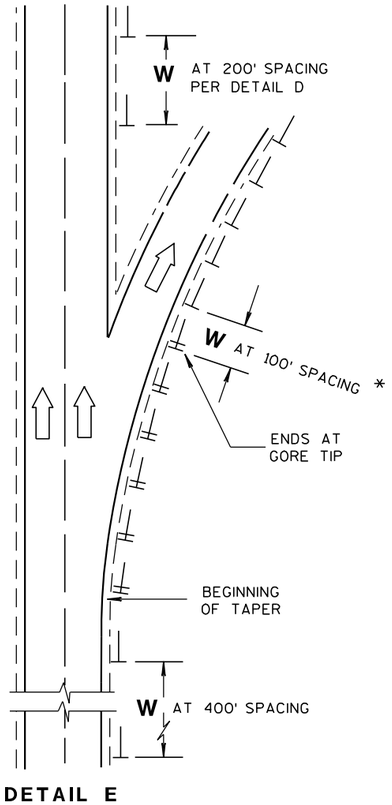
- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W — WHITE
- Y — YELLOW



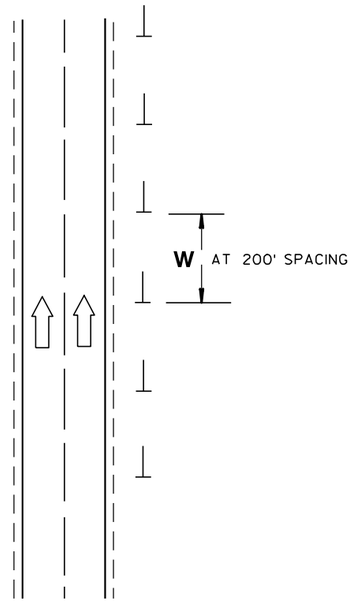

**DETAIL B**
**DELINEATOR LAYOUT ALONG MAINLINE**




**DELINEATOR LAYOUT**




**DETAIL E**
**DELINEATOR LAYOUT FOR ACCELERATION - DECELERATION LANES AND TAPERS AT RAMPS**




**DETAIL D**
**DELINEATOR LAYOUT BETWEEN INTERCHANGE RAMPS**

**DELINEATOR LAYOUT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/5/09 DATE
/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA

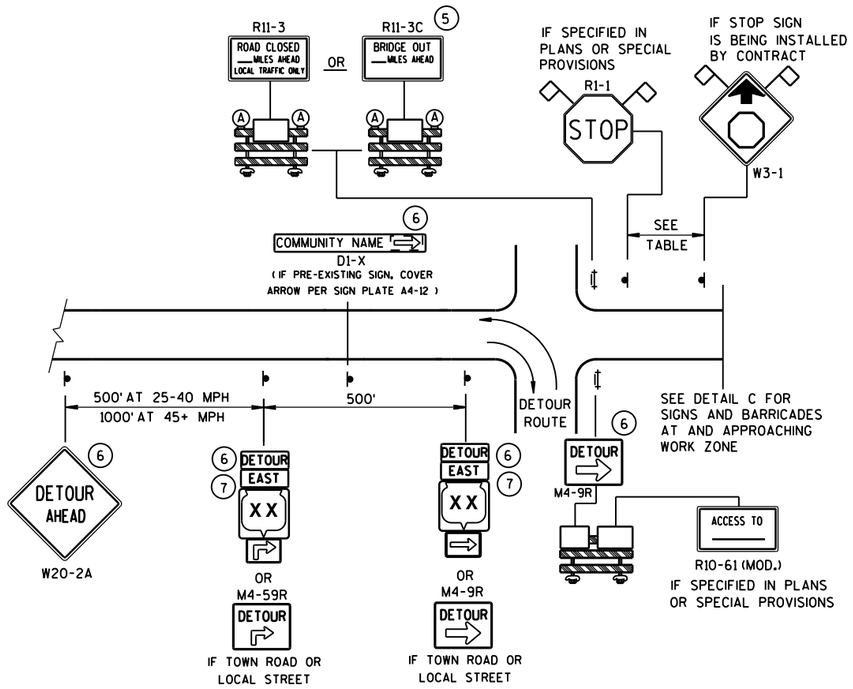


6

S.D.D. 15 A 6-2

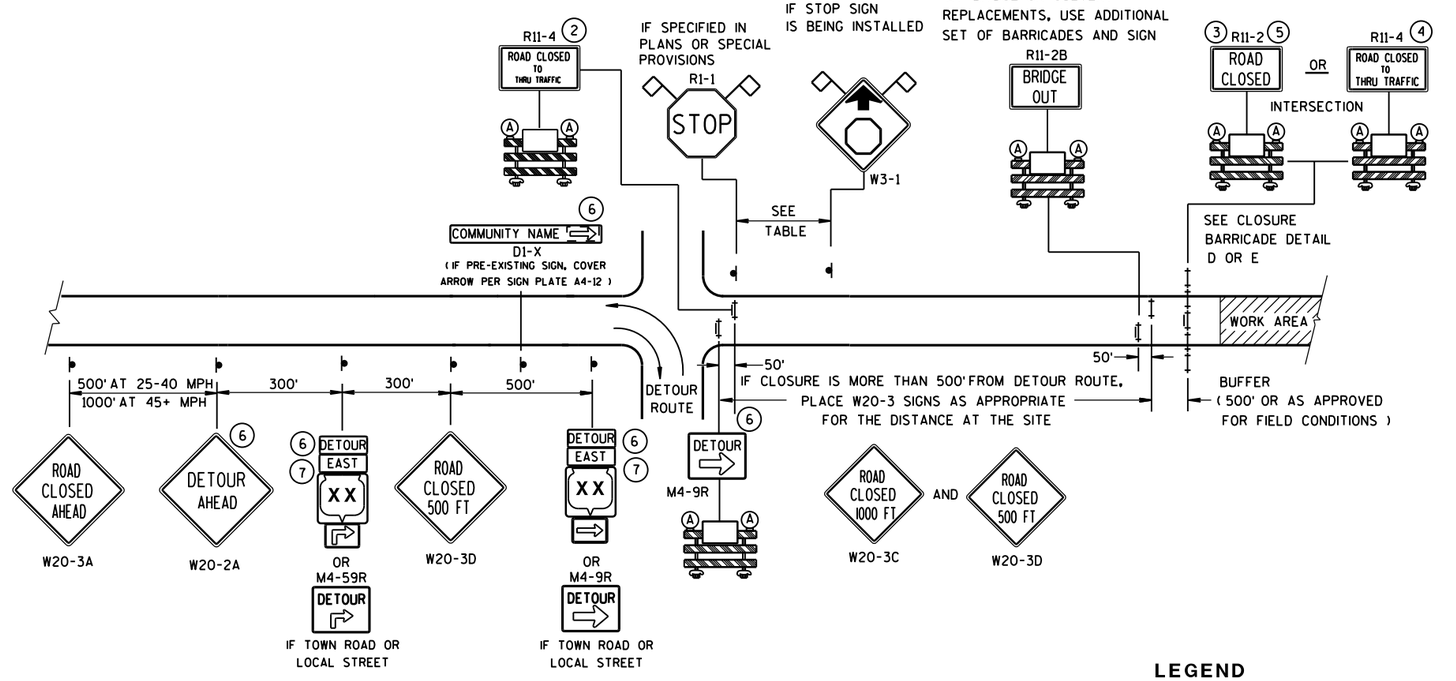
6

S.D.D. 15 A 6-2



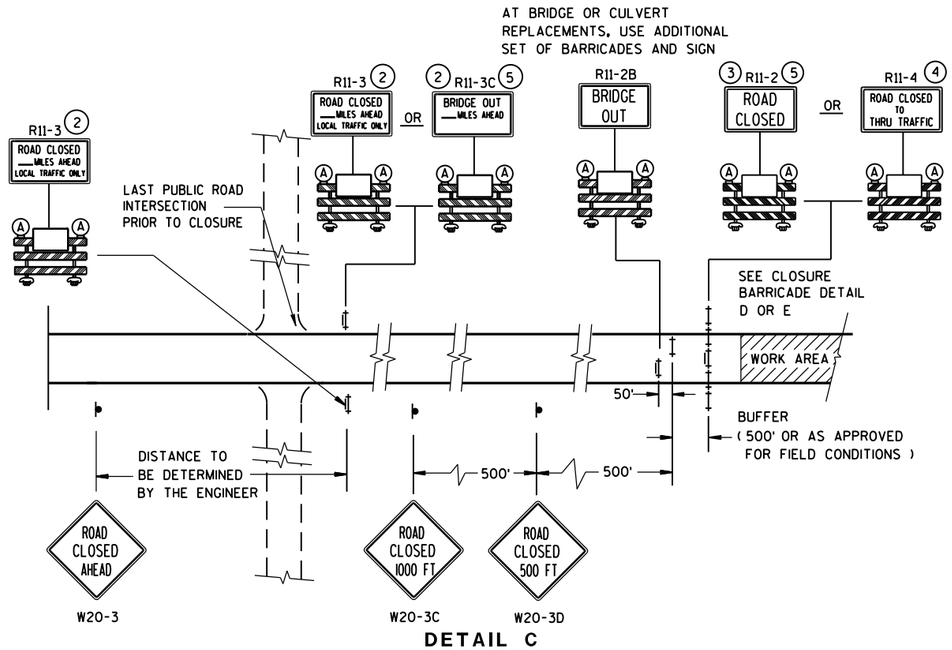

## DETAIL A
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




## DETAIL B
## MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )




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

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

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

### LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

**BARRICADES AND SIGNS FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

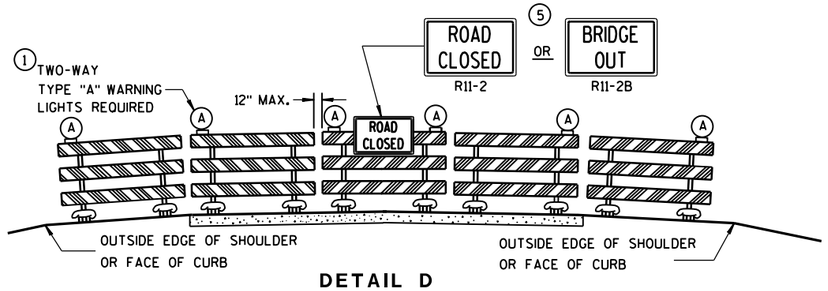


6

S.D.D. 15 C 2-6a

6

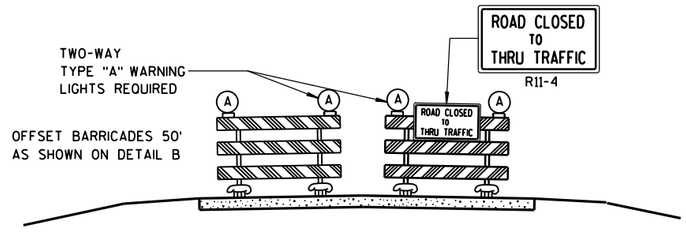
S.D.D. 15 C 2-6a




**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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" 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.)
- M05-1 AND M06-1 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 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 LANE 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 MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

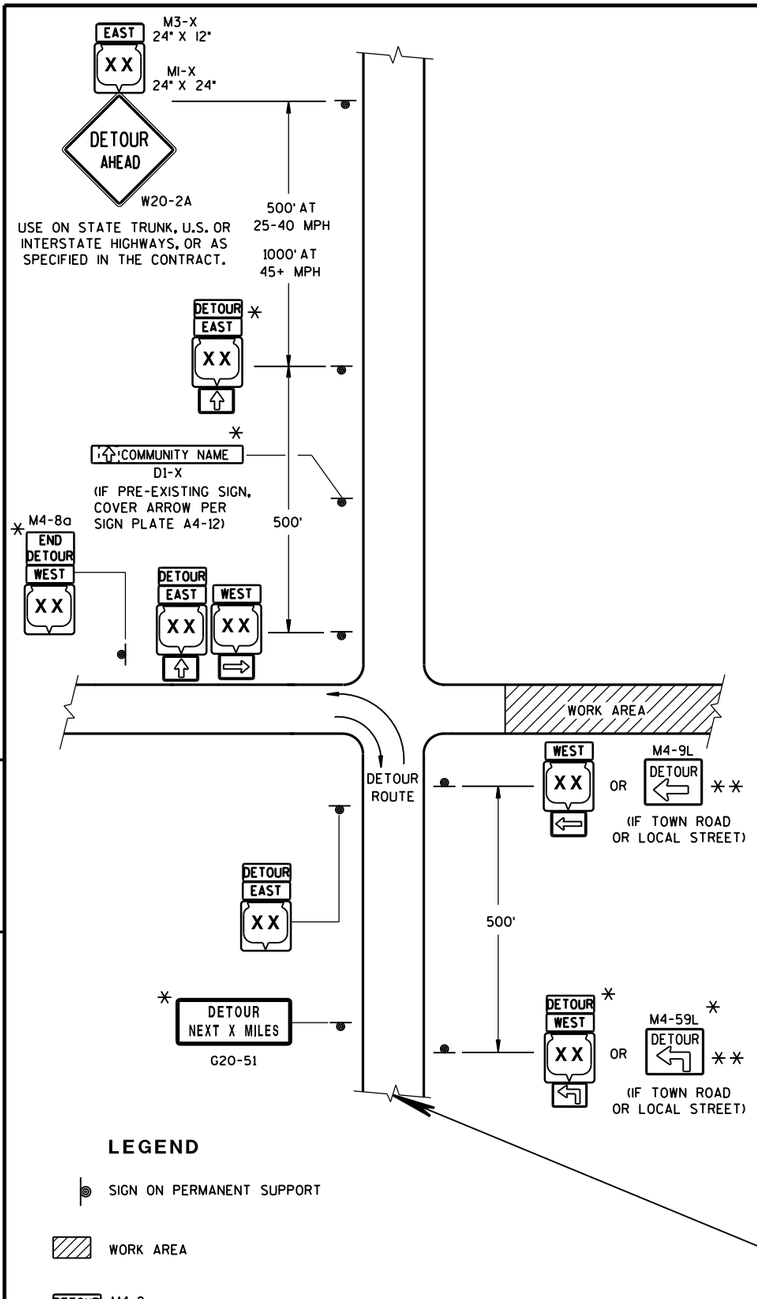
Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FHWA




6


S.D.D. 15 C 2-6b




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

## 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.

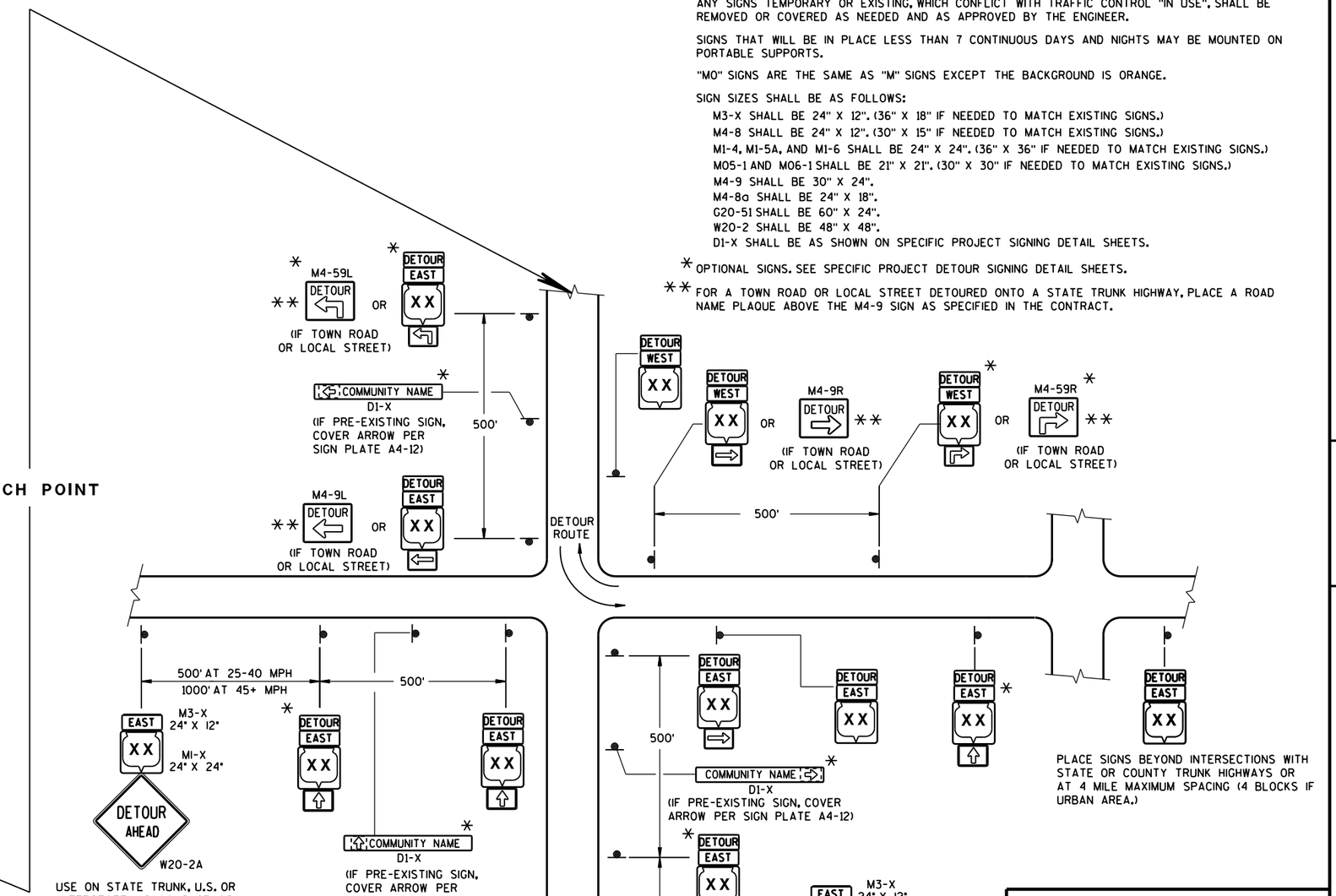
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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". (30" X 15" 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.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 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.




SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

### LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR M4-8 / EAST M3-X
- XX OR COUNTY XX OR XX — M1-4, M1-5A, M1-6
- MO5-1 OR MO6-1 OR MO6-1

DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI

FHWA

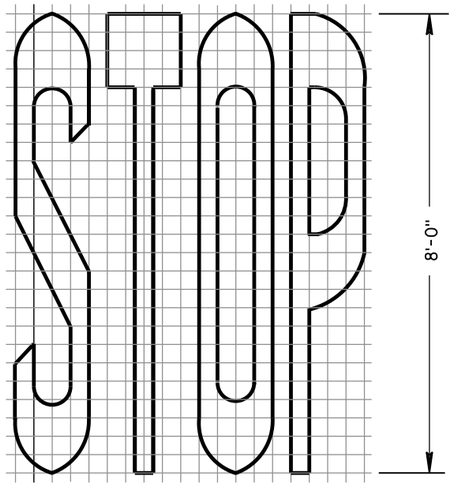


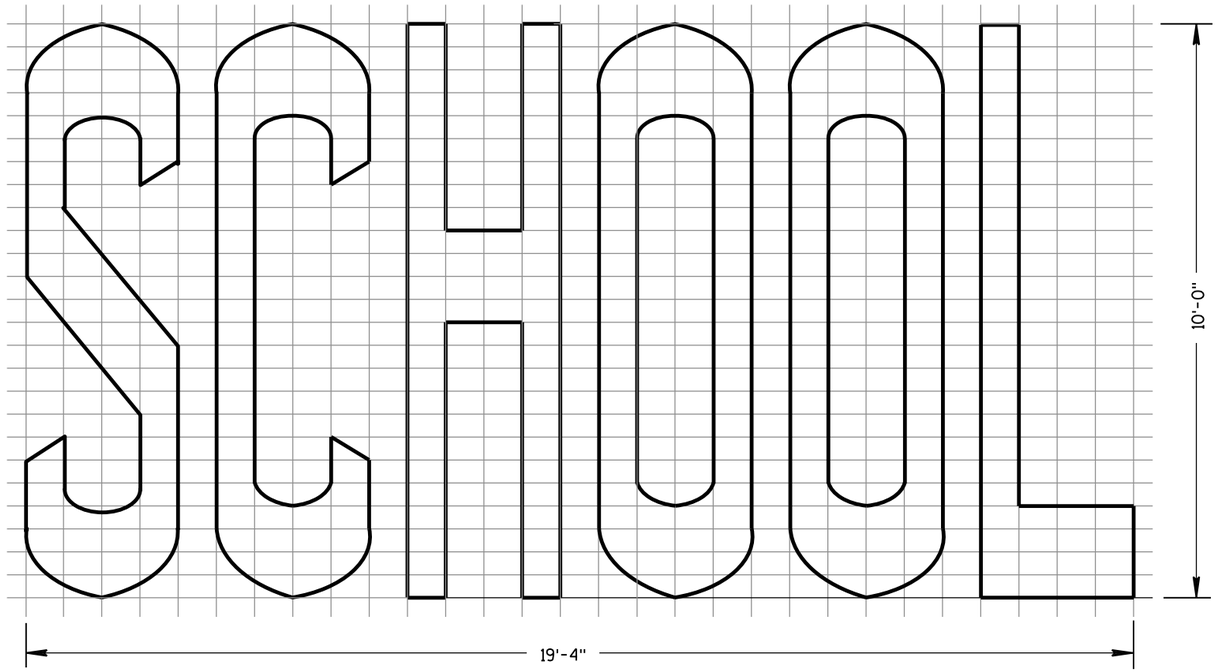
S.D.D. 15 C 2-6c

6

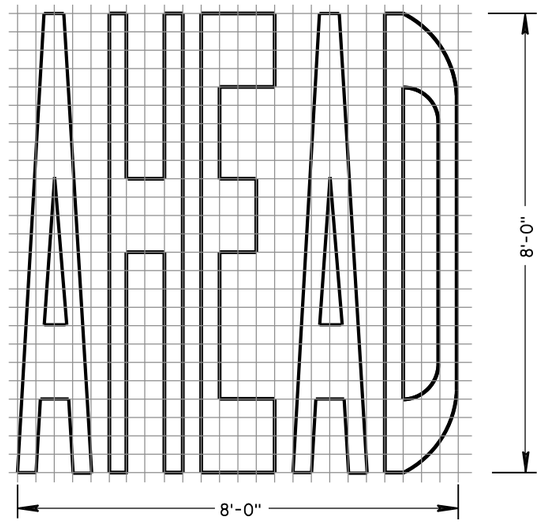
## GENERAL NOTES

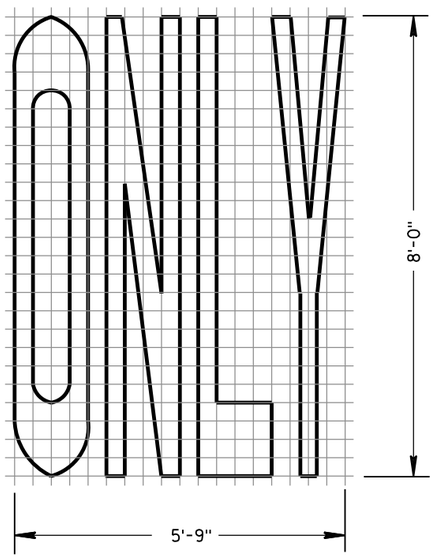
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

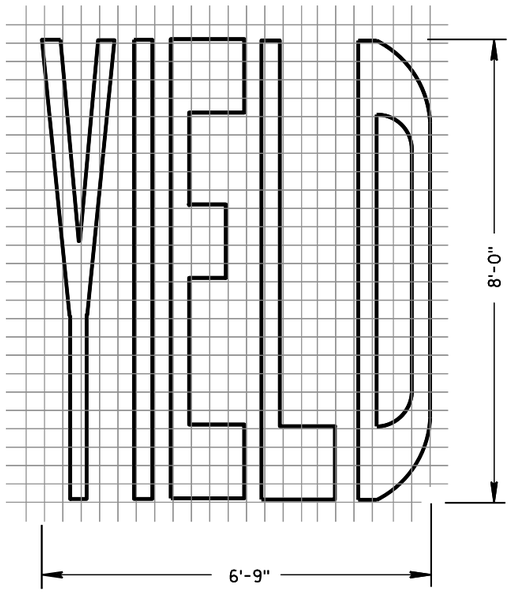


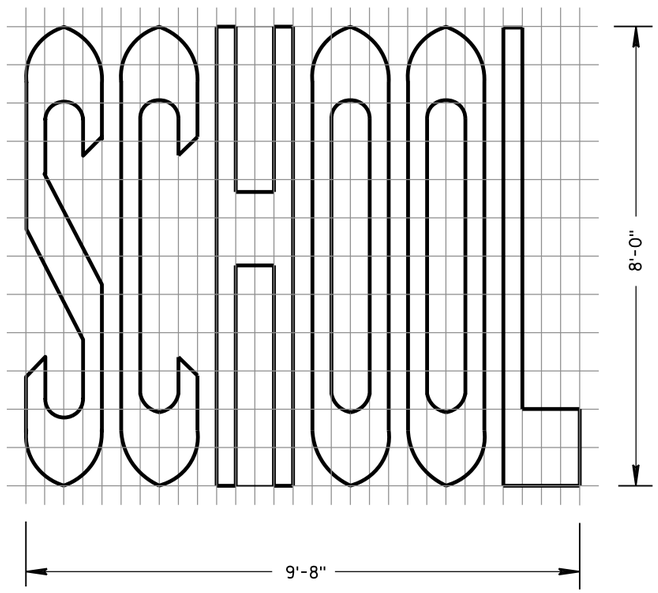



**TWO-LANE**




**SINGLE-LANE**

**PAVEMENT MARKING WORDS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

| 4-18-16 | /S/ Matthew R. Rauch | |
|---|---|---|
| DATE | STATE SIGNING AND MARK | EER |

FHWA



6

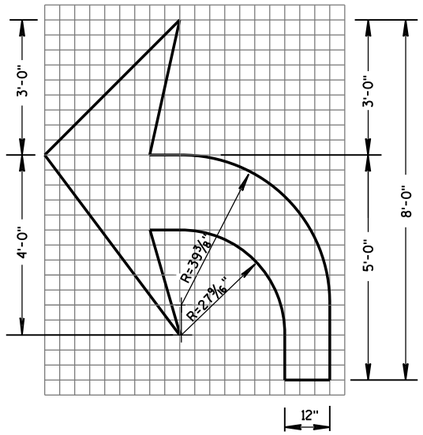
S.D.D. 15 C 7-13b

6

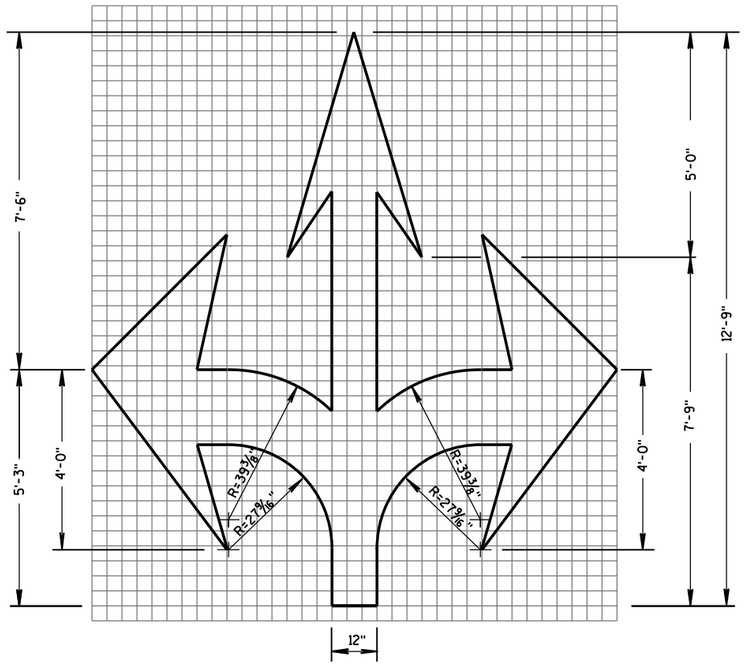
S.D.D. 15 C 7-13b

## GENERAL NOTES

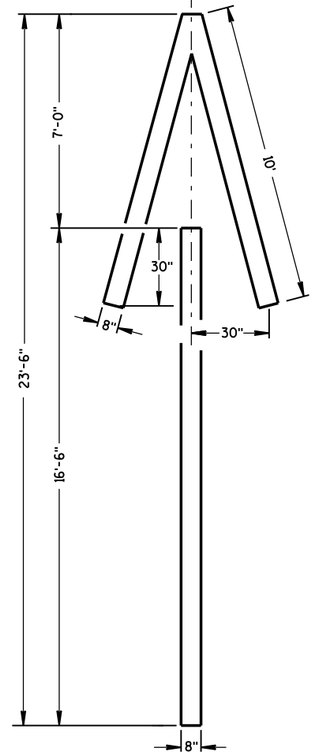
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



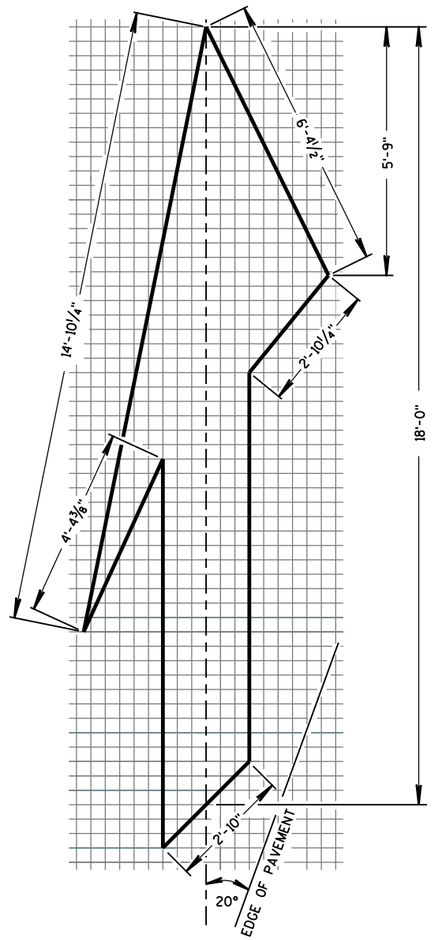

TYPE 2



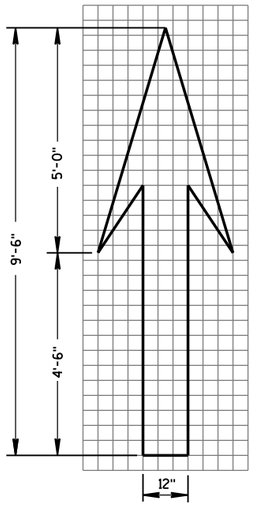

TYPE 6




TYPE 4




TYPE 5 LANE DROP ARROW

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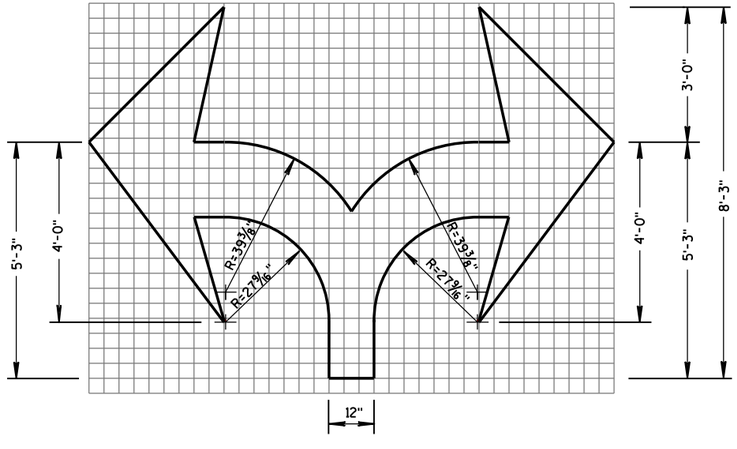
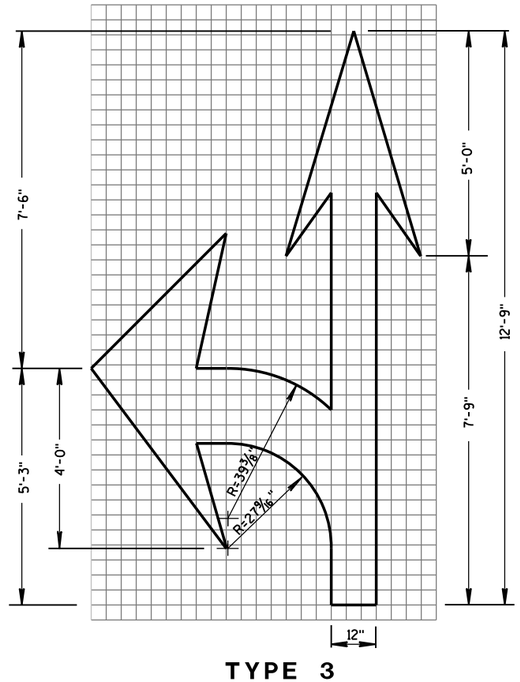



TYPE 7




TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16
DATE
/S/ Matthew R. Rauch
STATE SIGNING AND MAR[illegible]NEER
FHWA

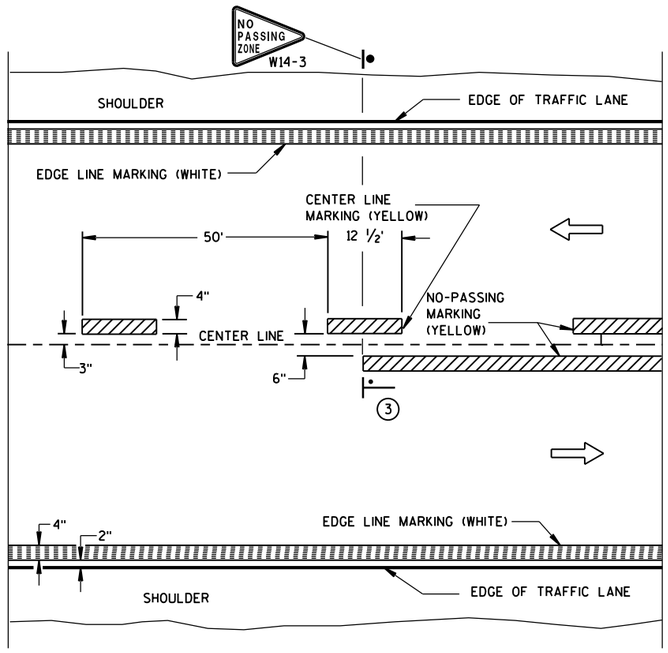


6

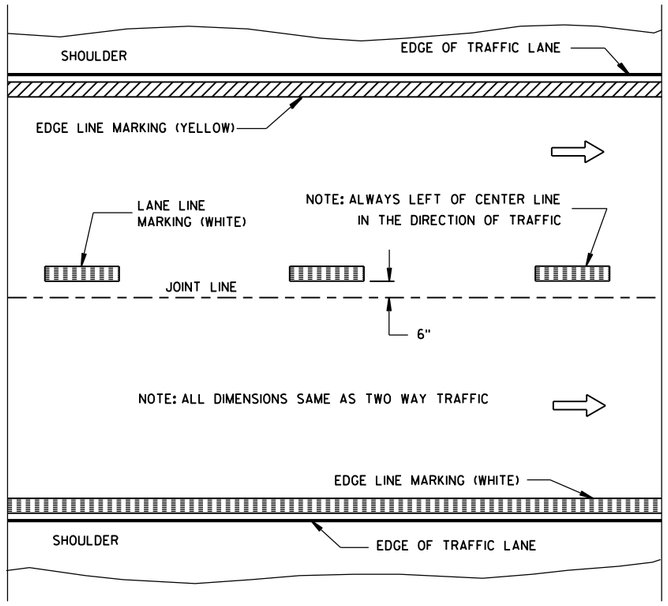
S.D.D. 15 C 7-13c

6

S.D.D. 15 C 7-13c

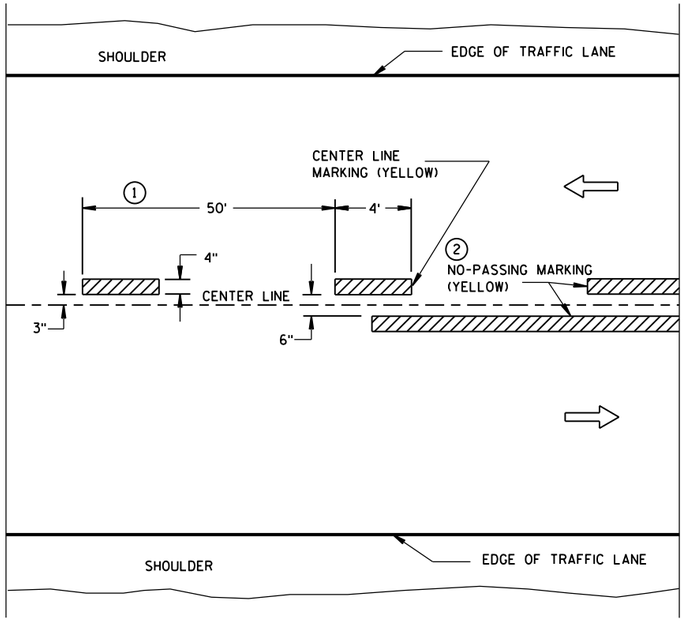



TWO WAY TRAFFIC

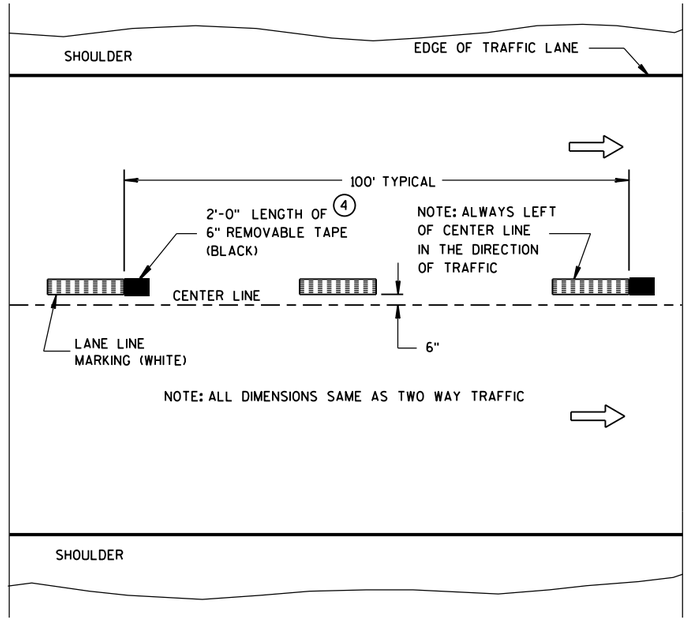



ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING




TWO WAY TRAFFIC




ONE WAY TRAFFIC

## TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

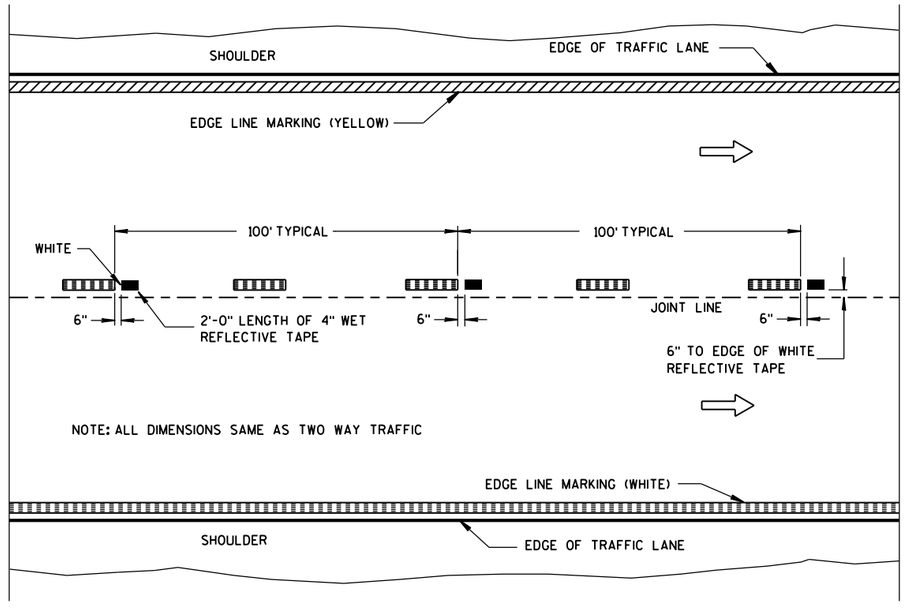
## GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

## NOTE

ARROW SYMBOL ( ⇨ ) SHOWS DIRECTION OF TRAVEL




WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

**LEGEND**

"T" MARKING

POST MOUNTED SIGN

**PAVEMENT MARKING (MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA



6

S.D.D. 15 C 8-16a

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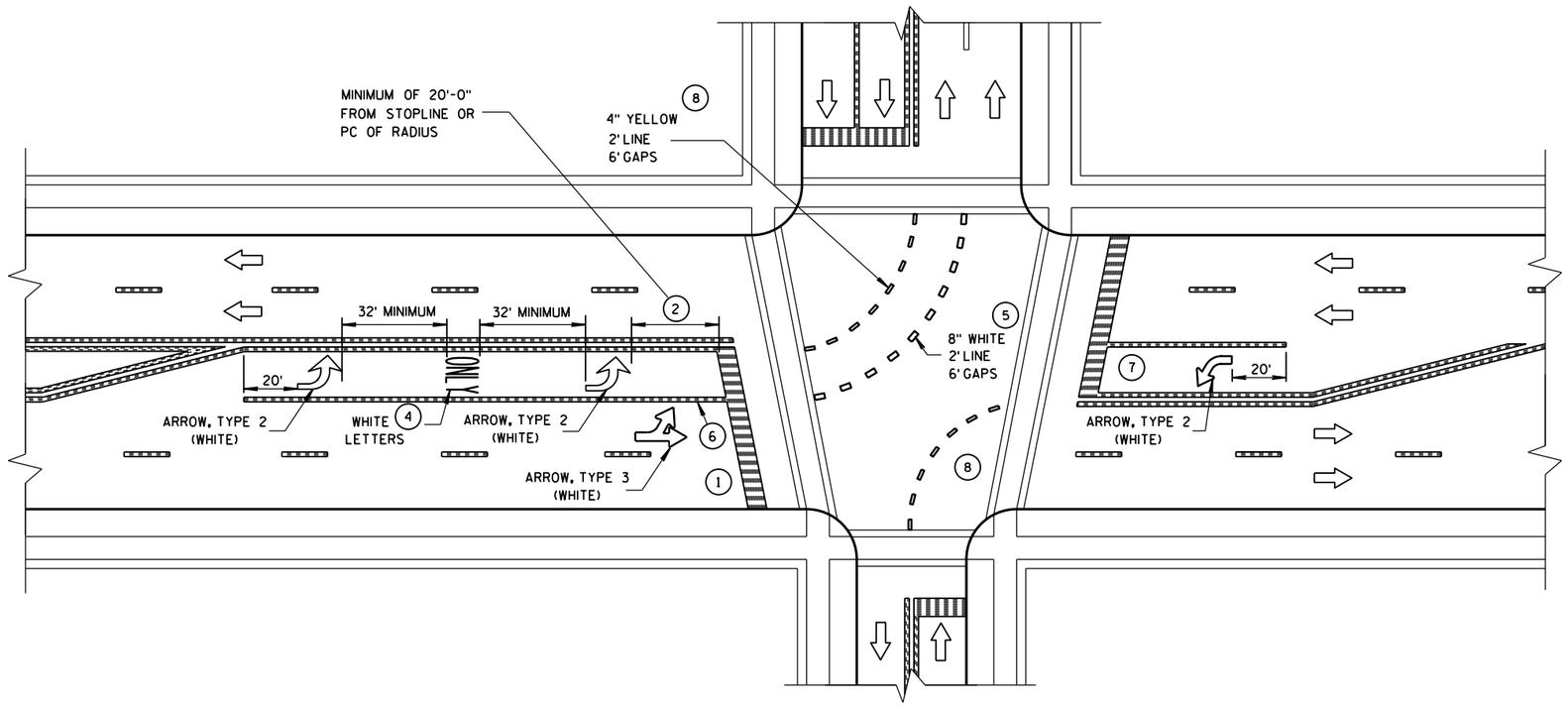
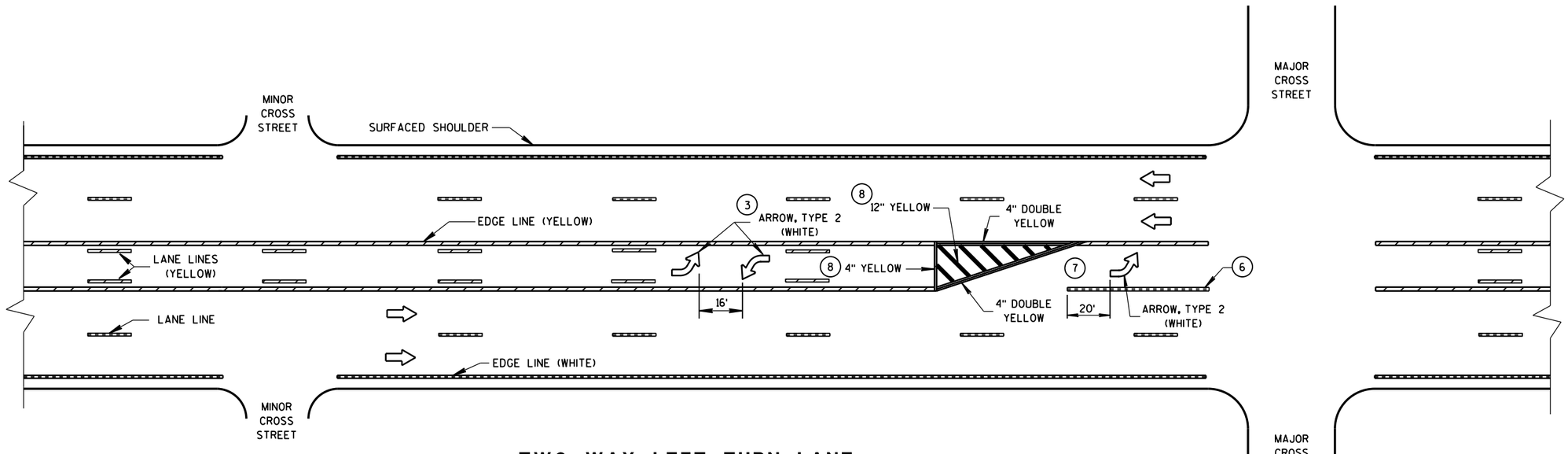
S.D.D. 15 C 8-16a




## GENERAL NOTES

1. STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
3. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
5. 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
6. 8" WHITE
7. ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
8. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL ( ⇨ )
SHOWS DIRECTION OF TRAVEL




## TWO WAY LEFT TURN LANE

**PAVEMENT MARKING (LEFT TURN LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

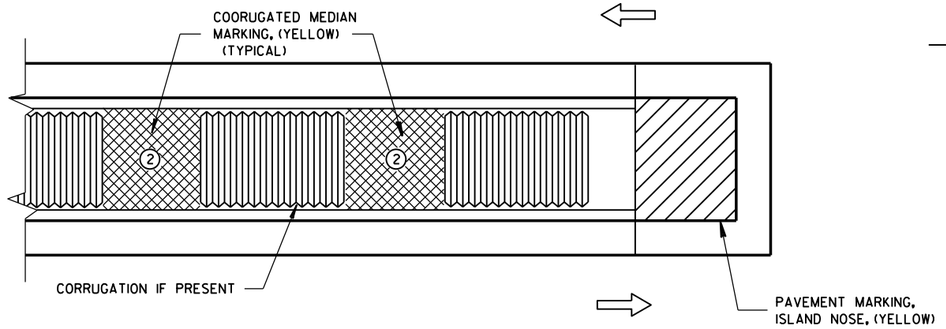


6

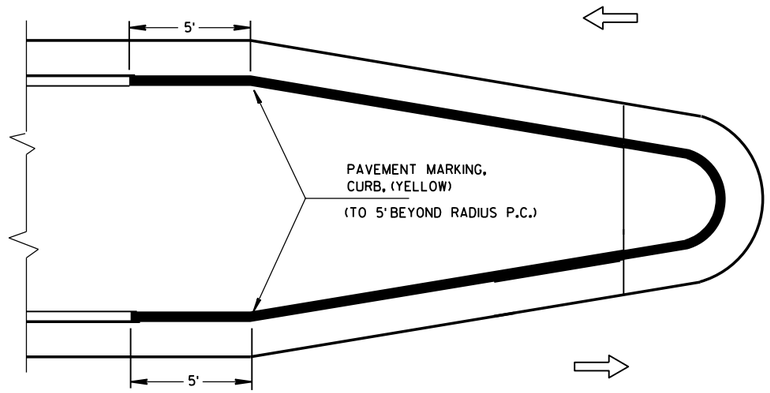
S.D.D. 15 C 8-16e

6

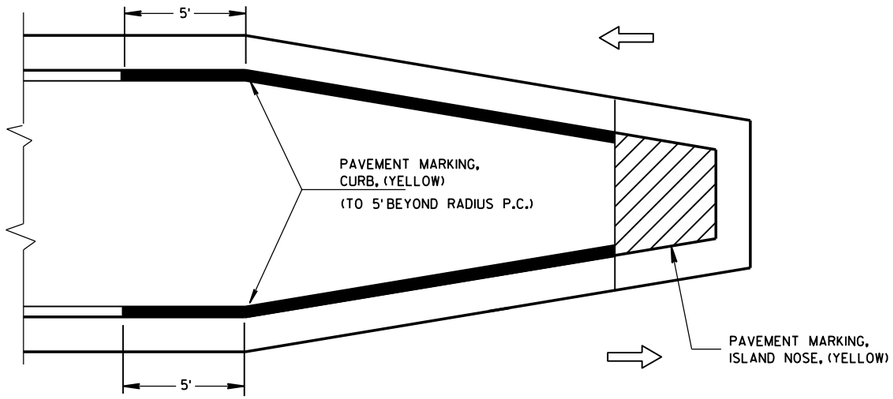
S.D.D. 15 C 8-16e




MEDIAN ISLAND WITH SQUARE BLUNT NOSE

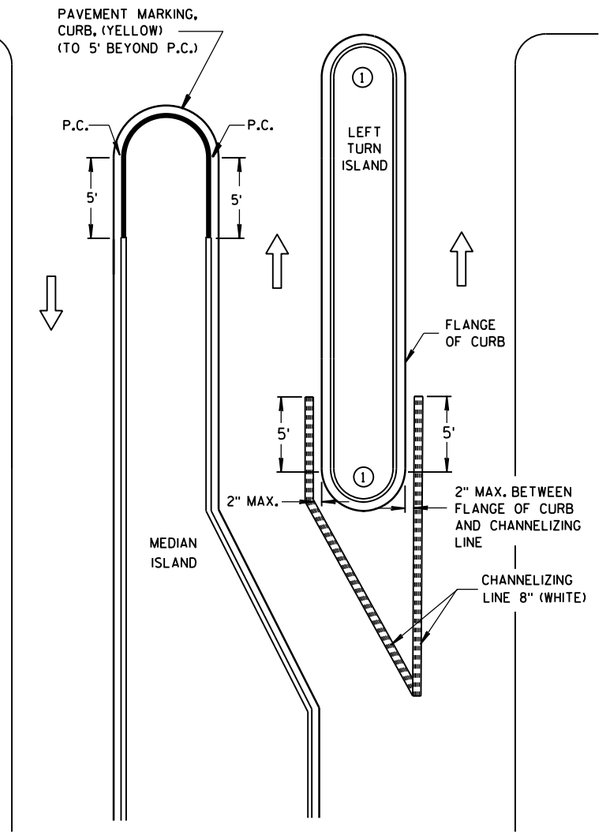



MEDIAN ISLAND WITH ROUND BLUNT NOSE




MEDIAN ISLAND WITH SLOPED NOSE

## TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

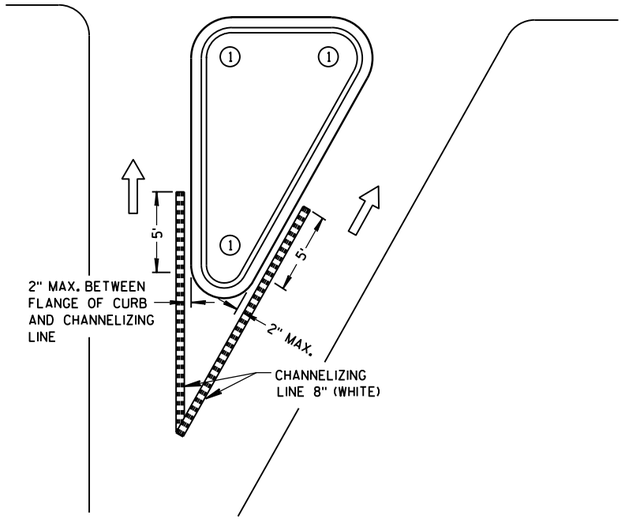



LEFT TURN & MEDIAN ISLAND

## GENERAL NOTES

1. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.

2. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.




RIGHT TURN ISLAND

### LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



6

S.D.D. 15 C 8-16f

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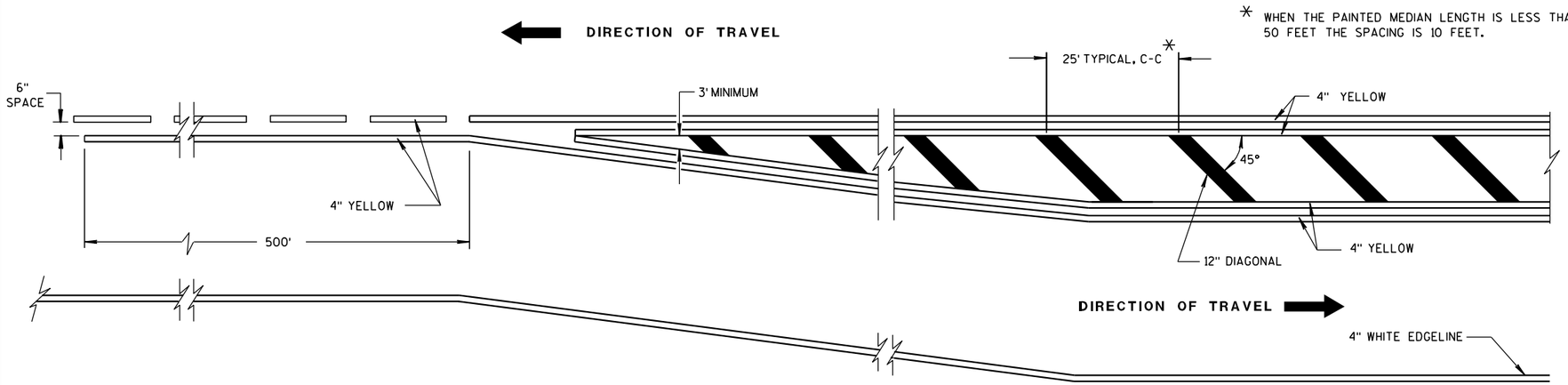
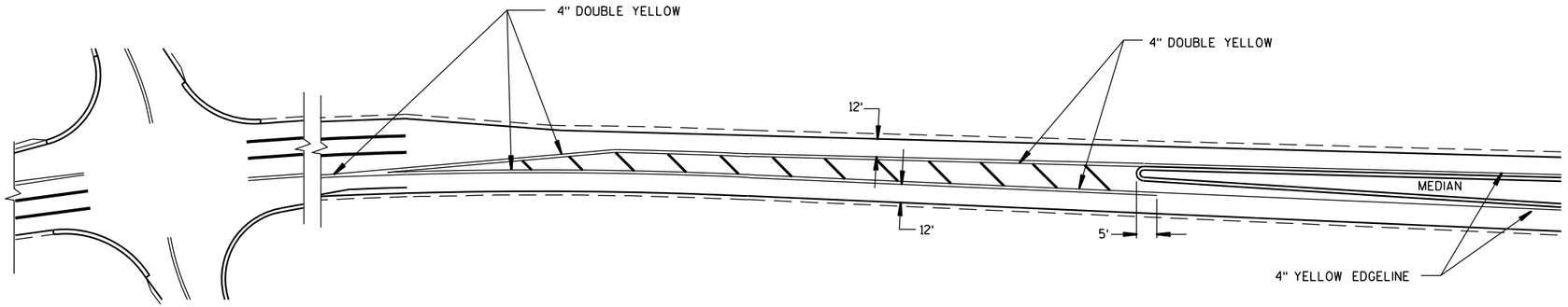
S.D.D. 15 C 8-16f



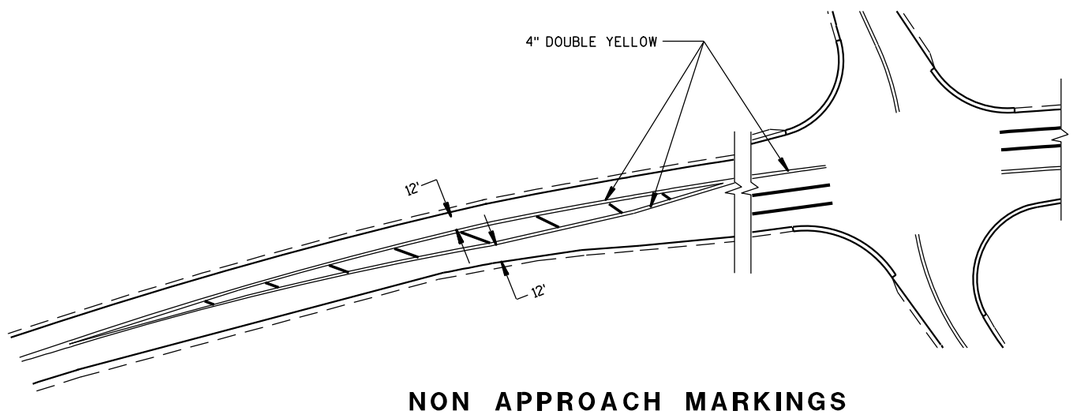

## MEDIAN ISLAND DETAIL

## GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.




## APPROACH MARKINGS FOR OTHER MEDIAN TYPES




## NON APPROACH MARKINGS

6

6

S.D.D. 15 C 18-3

S.D.D. 15 C 18-3

**MEDIAN ISLAND MARKING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

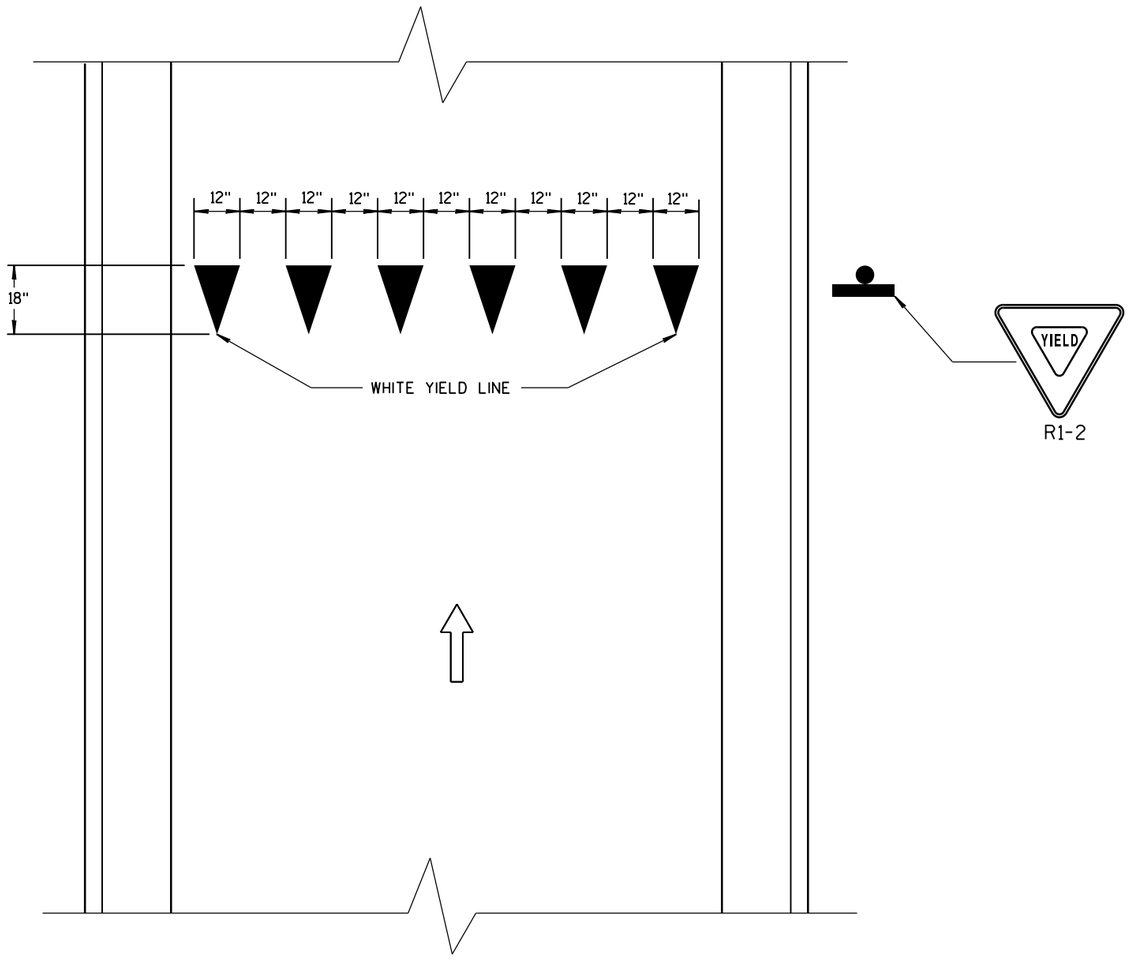
APPROVED

2-5-09 DATE

/S/ Thomas N. Nothohm
STATE TRAFFIC ENGINEER

252 IGN

FHWA







R1-2

DIRECTION OF TRAVEL

**YIELD LINE**

6

6

S.D.D. 15 C 20-2

S.D.D. 15 C 20-2

YIELD MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

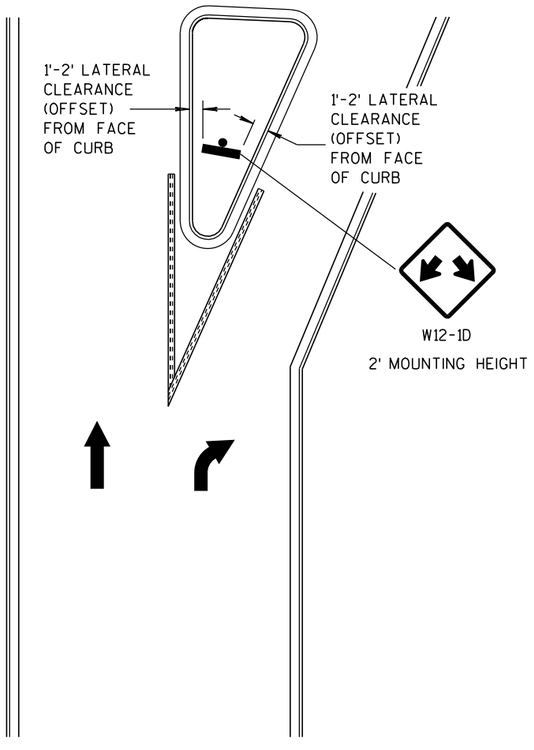
/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

FHWA

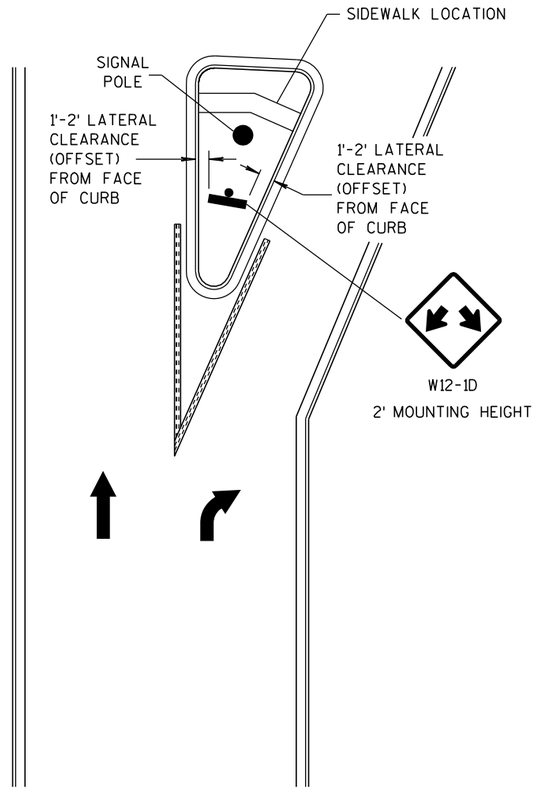
## GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

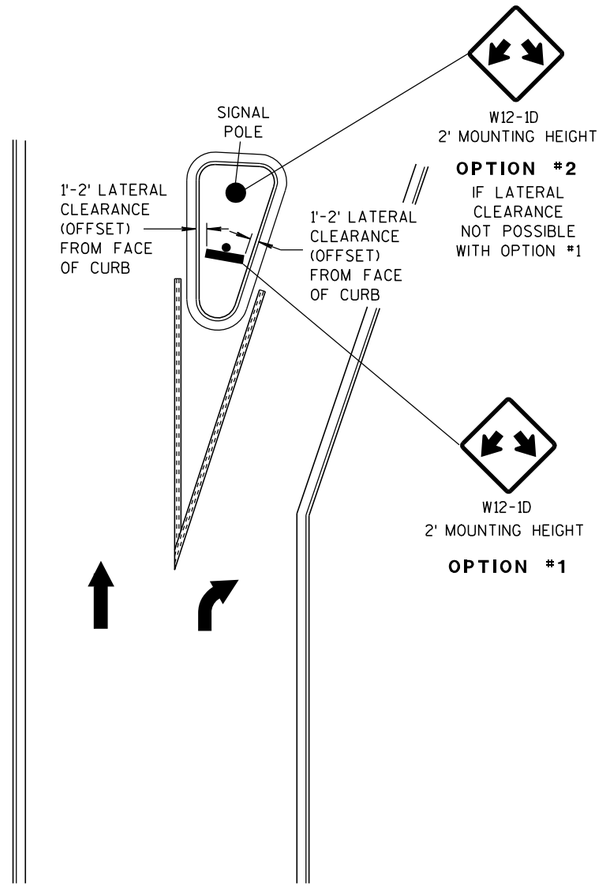
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.




LARGE RIGHT TURN ISLAND




LARGE RIGHT TURN ISLAND
WITH SIGNAL POLE




SMALL RIGHT TURN ISLAND

## DOUBLE ARROW WARNING SIGN PLACEMENT

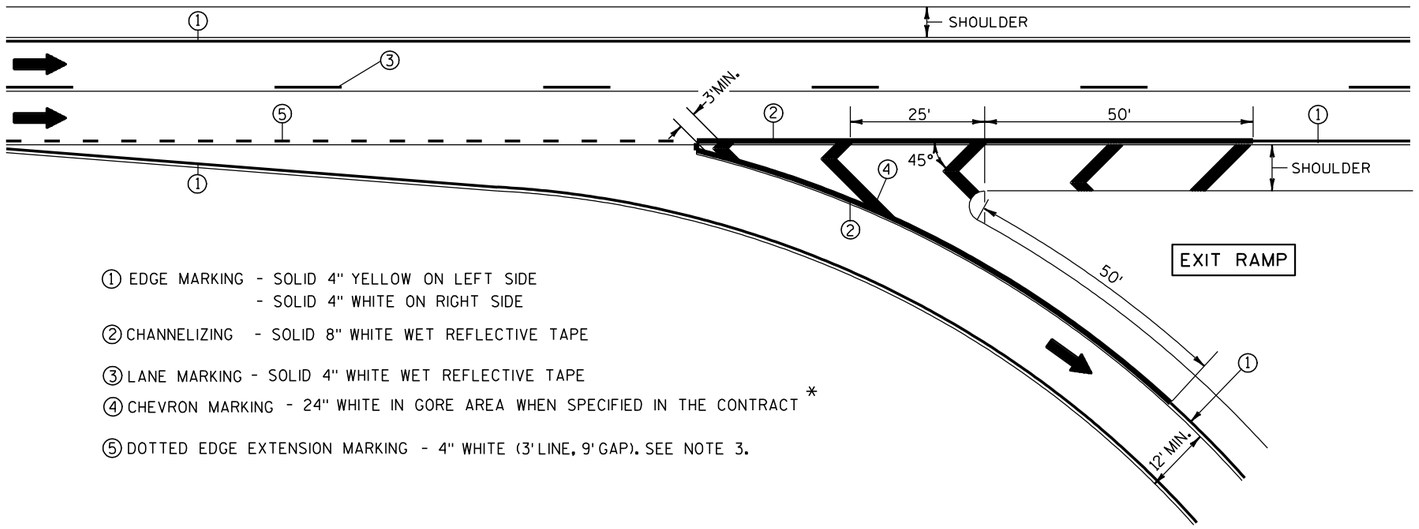
| DOUBLE ARROW WARNING SIGN PLACEMENT | |
|---|---|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED | |
| 10-22-08 DATE | /S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER |
| FHWA | 254 IGN |

6

S.D.D. 15 C 27-1

6

S.D.D. 15 C 27-1




① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE

② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE

③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE

④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *

⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

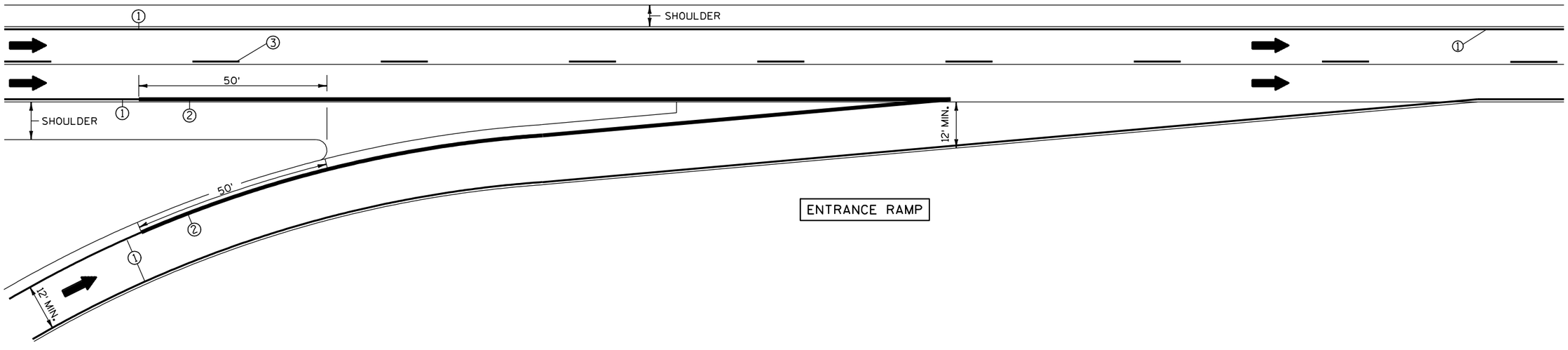
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.




6

S.D.D. 15 C 31-1a

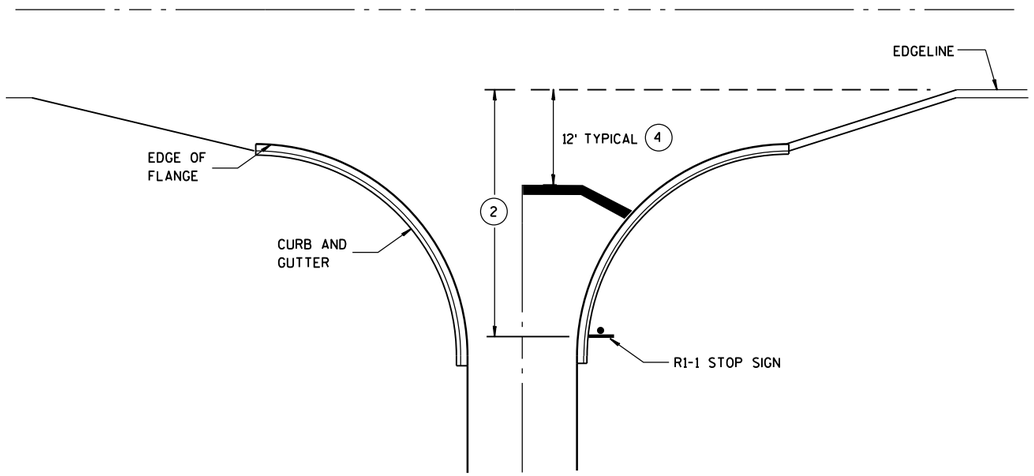
**PAVEMENT MARKING**
**(RAMPS AND GORES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

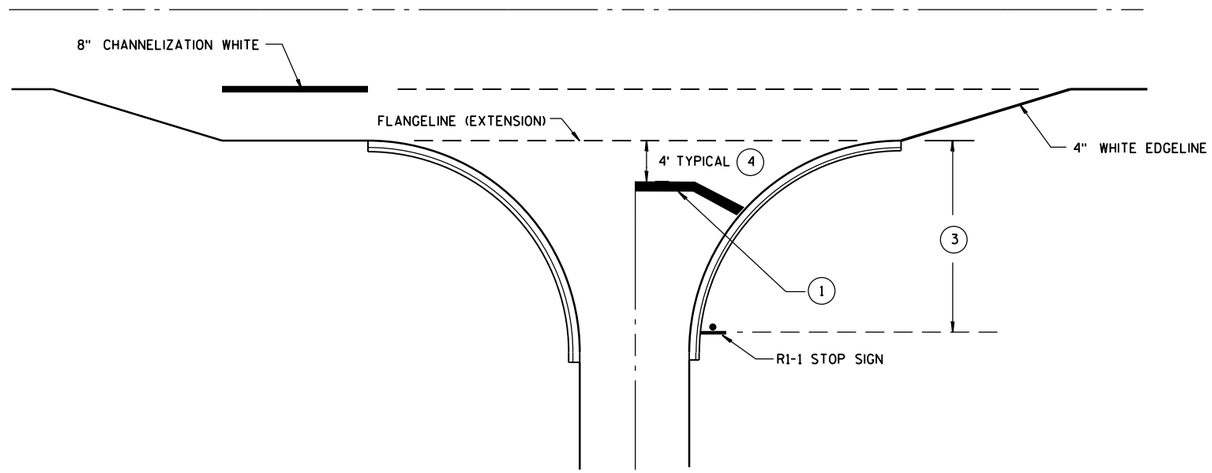


6

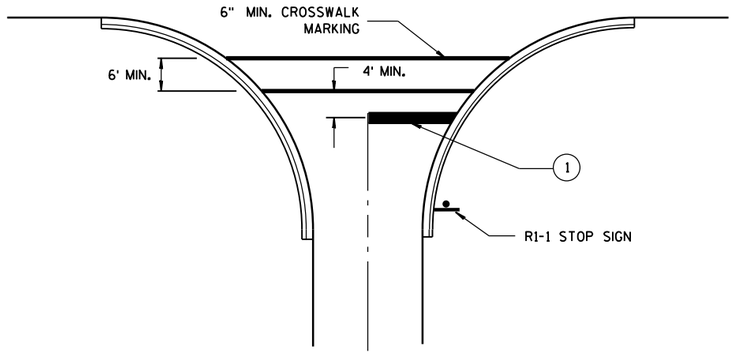
S.D.D. 15 C 31-1a



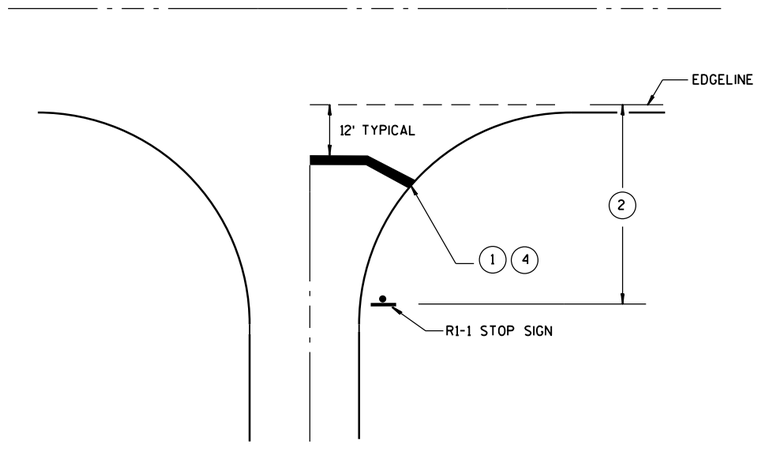

## TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER




## TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE




## TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING




## TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

### GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

**STOP LINE AND CROSSWALK PAVEMENT MARKING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR 256 NEER

FHWA

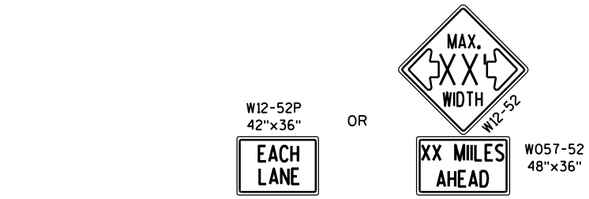

6


S.D.D. 15 C 33-2

## LEGEND

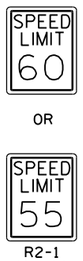
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

| L, TAPER LENGTH (MPH) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SPEED (MPH) | W, LATERAL OFFSET (FT) | | | | | | | | |
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 45 | 450 | 495 | 540 | 585 | 630 | 675 | 720 | 765 | 810 |
| 50 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 |
| 55 | 550 | 605 | 660 | 715 | 770 | 825 | 880 | 935 | 990 |
| 60 | 600 | 660 | 720 | 780 | 840 | 900 | 960 | 1020 | 1080 |
| 65 | 650 | 715 | 780 | 845 | 910 | 975 | 1040 | 1105 | 1170 |
| 70 | 700 | 770 | 840 | 910 | 980 | 1050 | 1120 | 1190 | 1260 |




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).

LOCATED 2600 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.




R2-1
48"x60"
(BLACK AND WHITE)
LOCATED 500 FEET BEYOND W20-5G SIGN.

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. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

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

## 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"x48" 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.

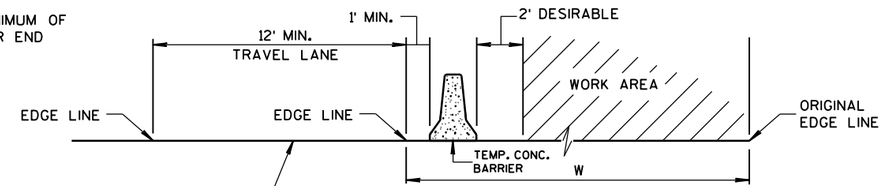
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

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.

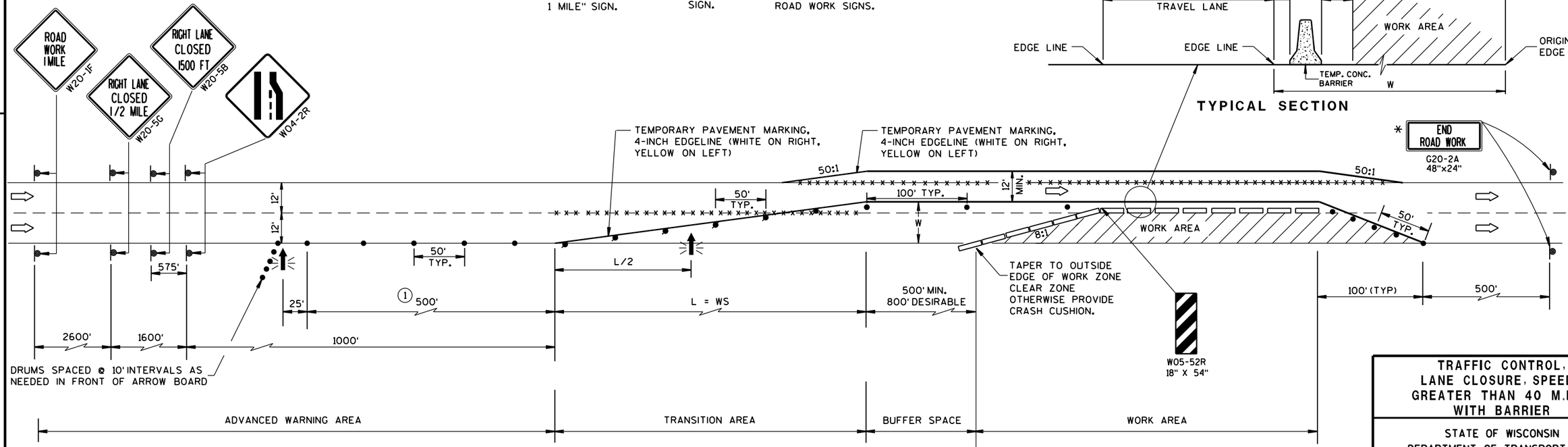
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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 1/2 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.




TYPICAL SECTION




# TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER — IC

FHWA

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S.D.D. 15 D 3-3

## LEGEND

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

## 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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"×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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF 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 FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

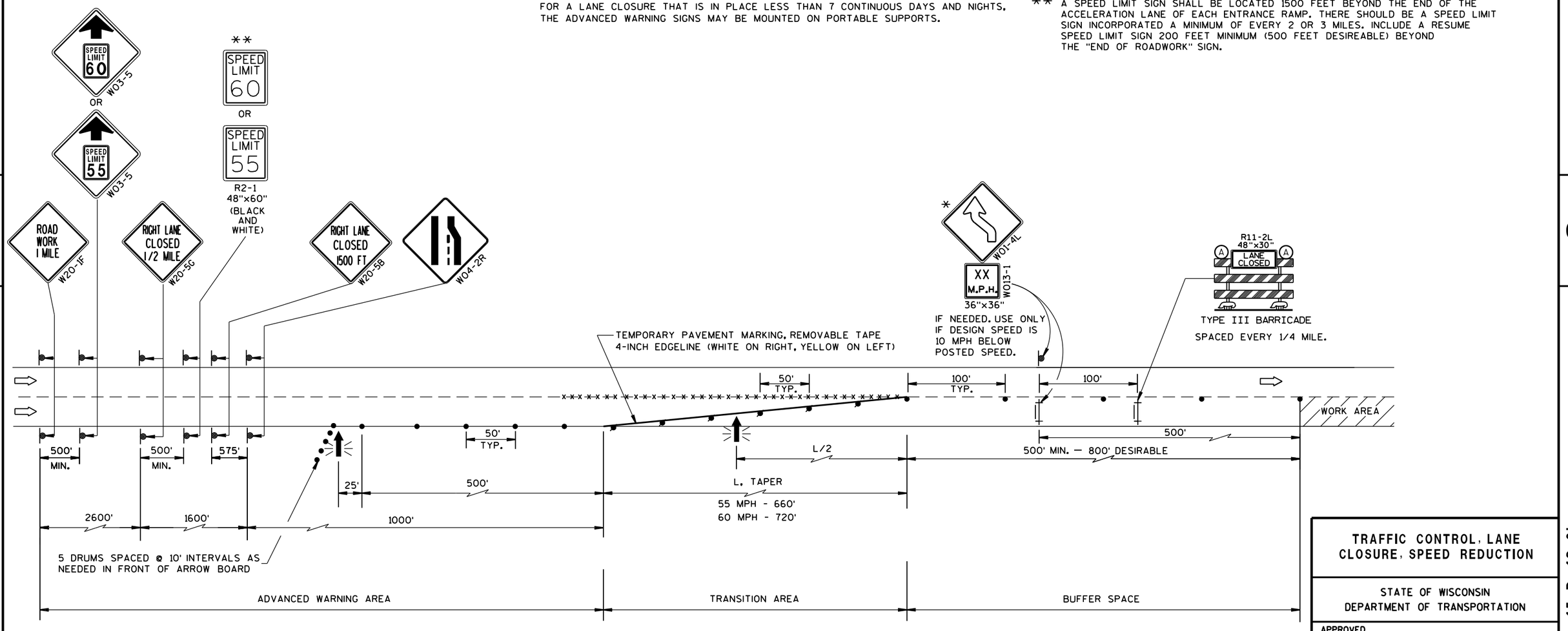
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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. THE LANE CLOSURE MUST 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 1/2 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.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** 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. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.




# TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



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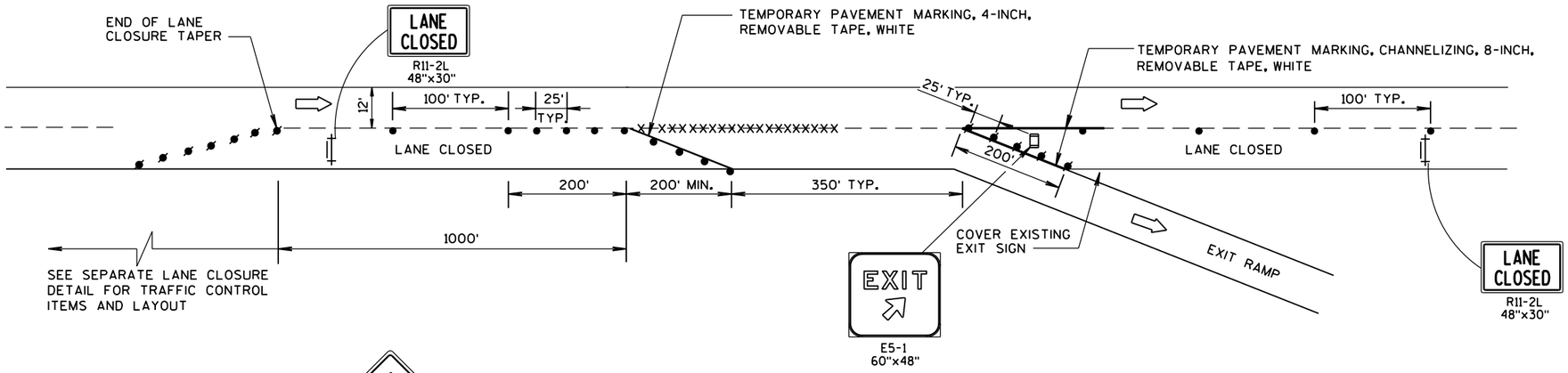
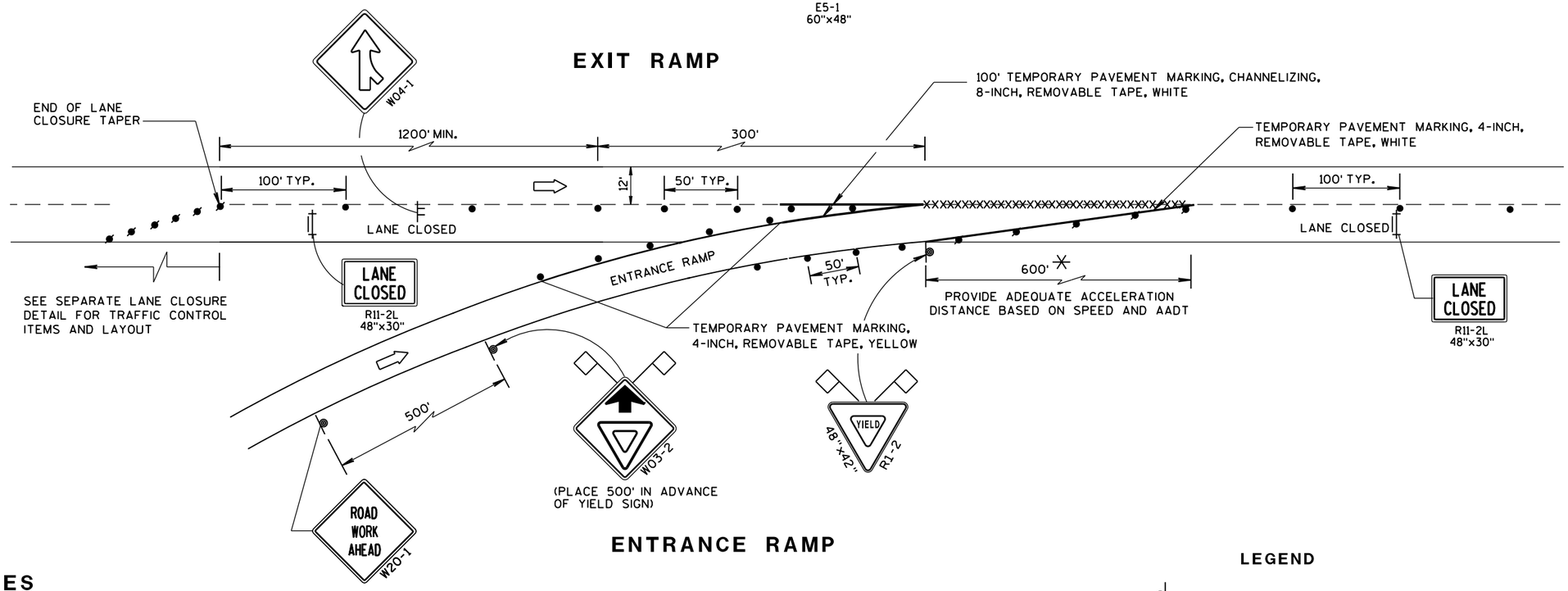



## EXIT RAMP




## ENTRANCE RAMP

## 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"x48" 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.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS 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 ENTRANCE 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 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

### 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
- FLAGS, 16" x 16" MIN., (ORANGE)
- DIRECTION OF TRAFFIC

**TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

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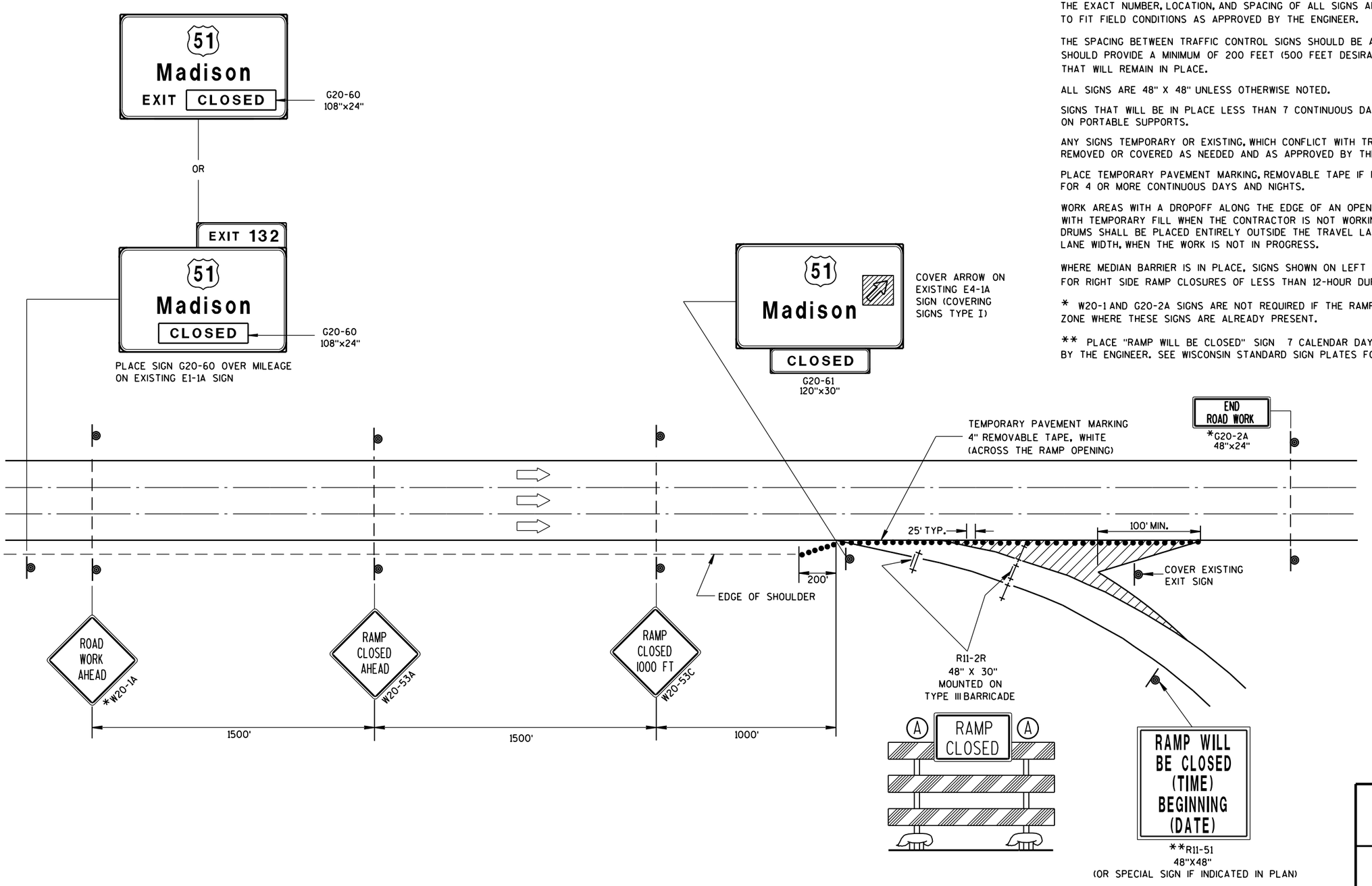


# GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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.

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.

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

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

* W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP WILL BE CLOSED" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

## LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

**TRAFFIC CONTROL, EXIT RAMP CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZO SAFETY ENGII FIC
FHWA



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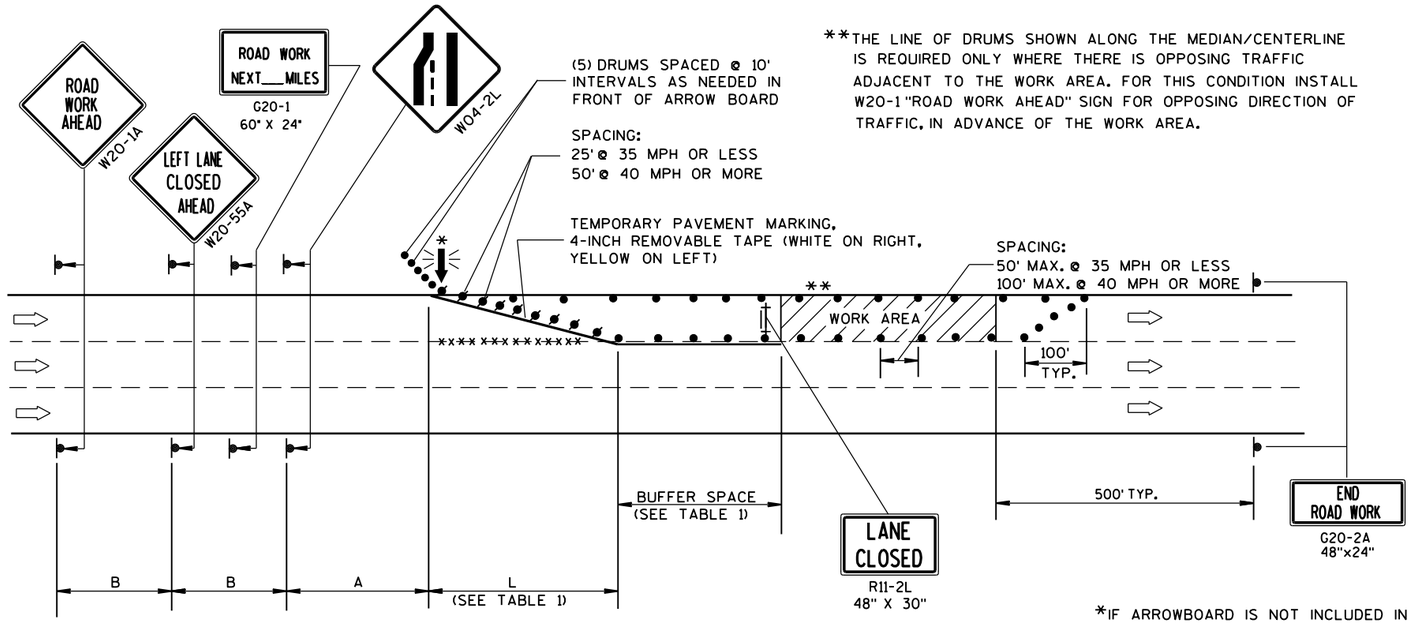


**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

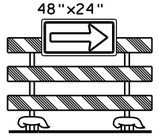

TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

| S | L | BUFFER SPACE |
|---|---|---|
| 25 | 125' | 55' |
| 30 | 180' | 85' |
| 35 | 245' | 120' |
| 40 | 320' | 170' |
| 45 | 540' | 220' |
| 50 | 600' | 280' |
| 55 | 660' | 335' |

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

## LEGEND

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

## GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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 DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

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.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

BARRICADES IN A CLOSED LANE 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.

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

# TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
FHWA

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER



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S.D.D. 15 D 20-4

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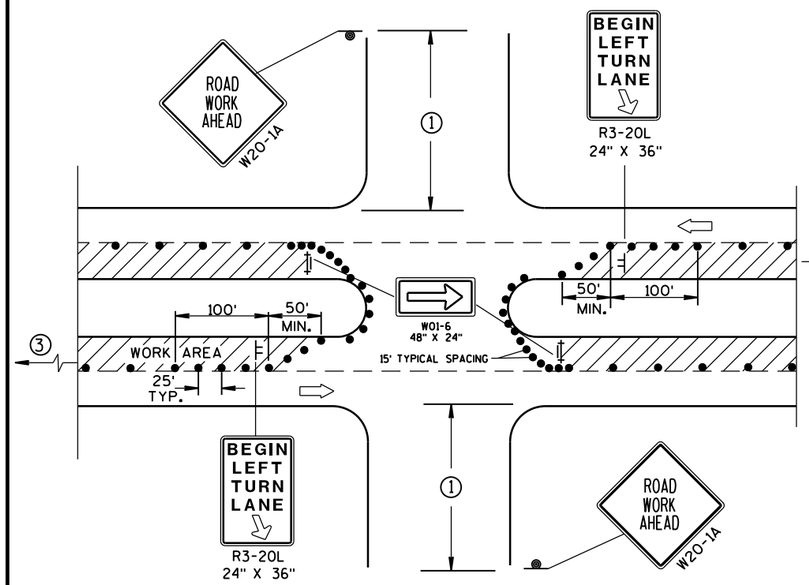
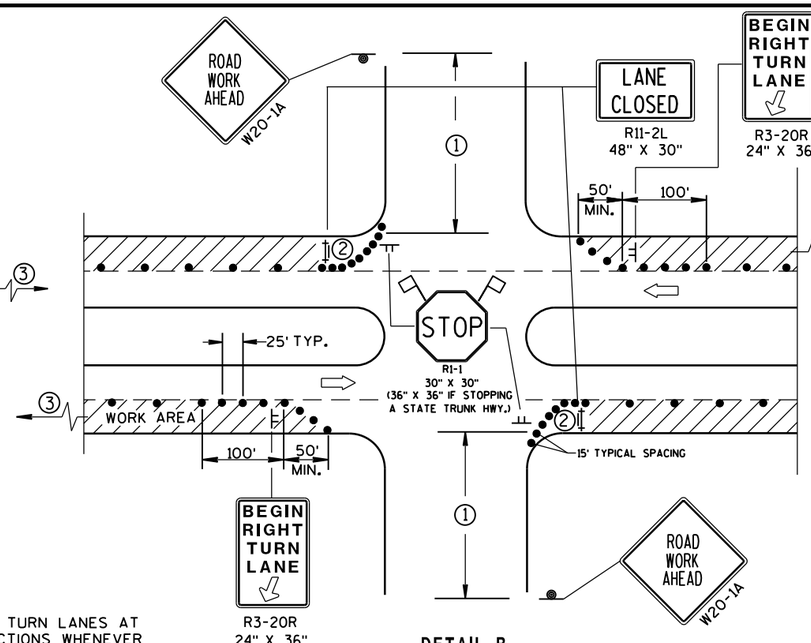



DETAIL A

## FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.




DETAIL B

## FOR RIGHT LANE CLOSURE AT INTERSECTION

## 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 SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

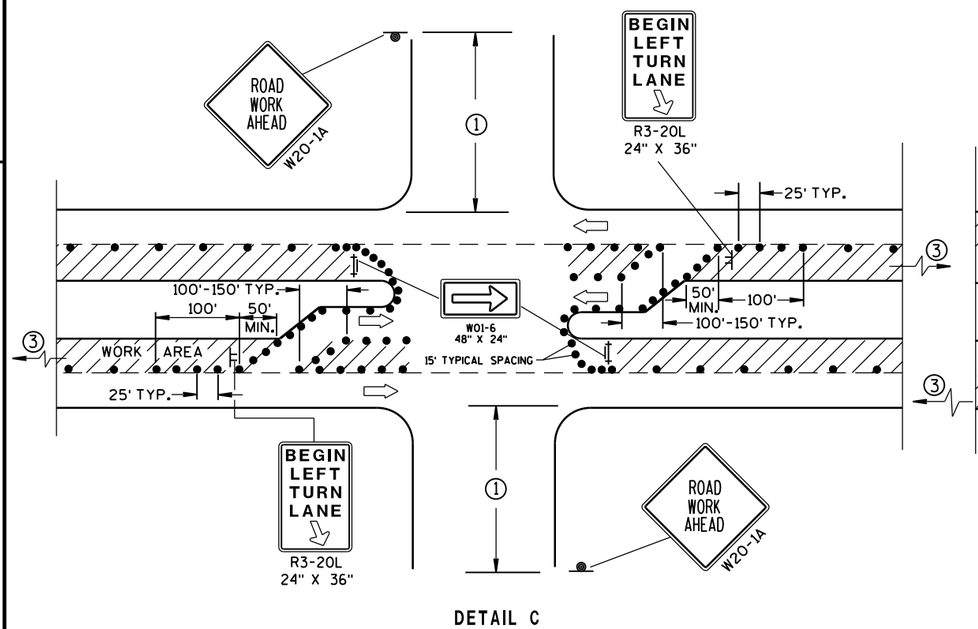
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE 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.

① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.

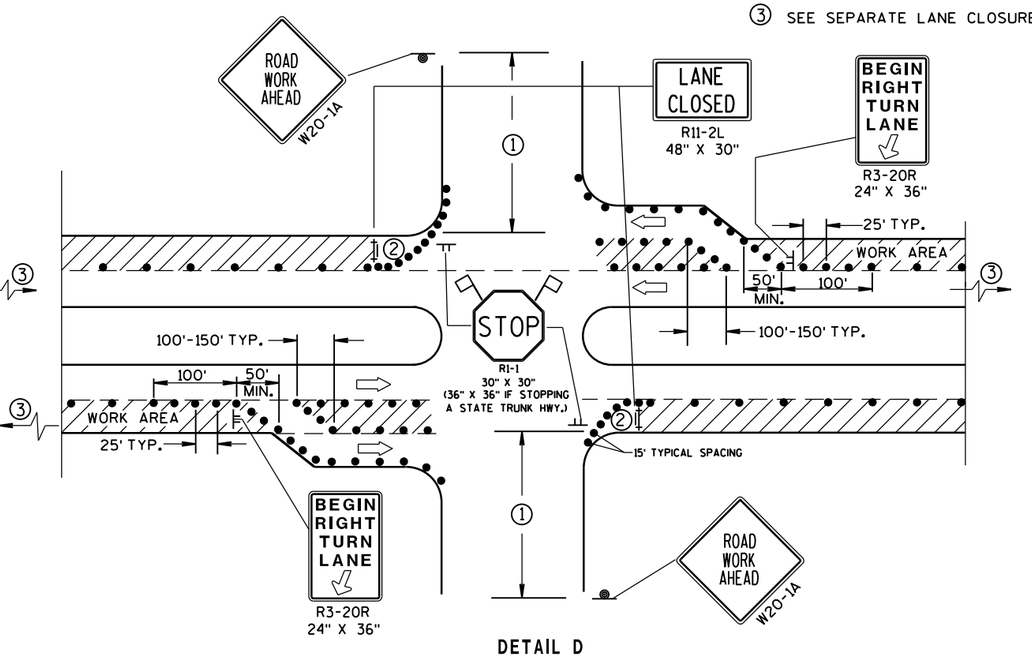
② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.




DETAIL C

## FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)




DETAIL D

## FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

## LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

**TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Peter Anakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA



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S.D.D. 15 D 21-4

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S.D.D. 15 D 21-4

## LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

## 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.

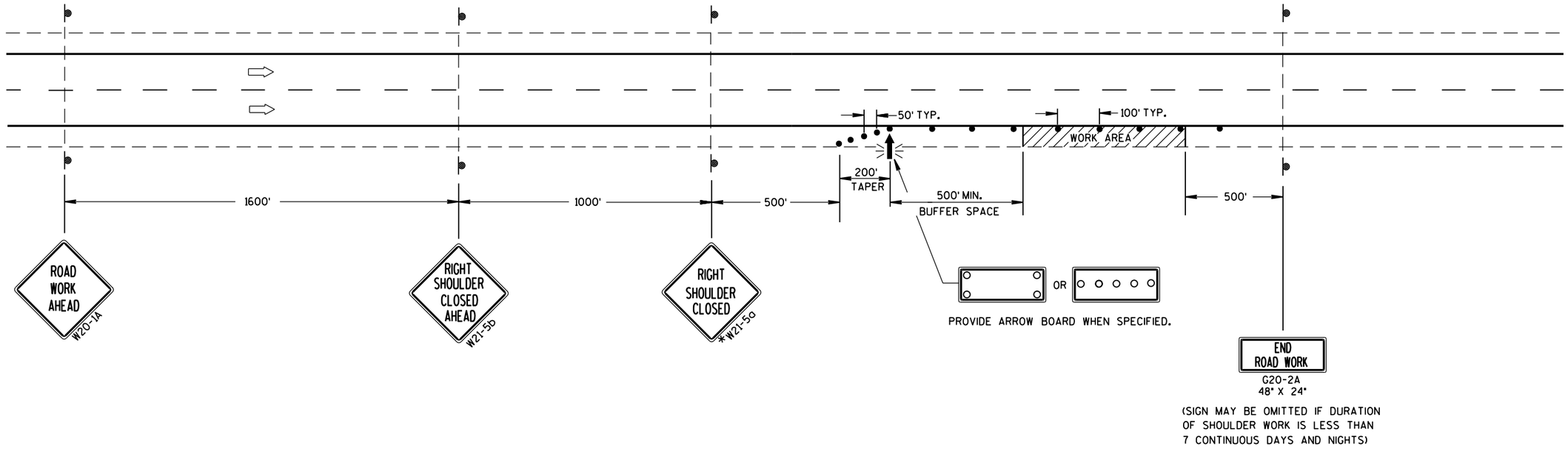
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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 W21-5a SIGN MAY BE OMITTED.




# TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible]

FHWA

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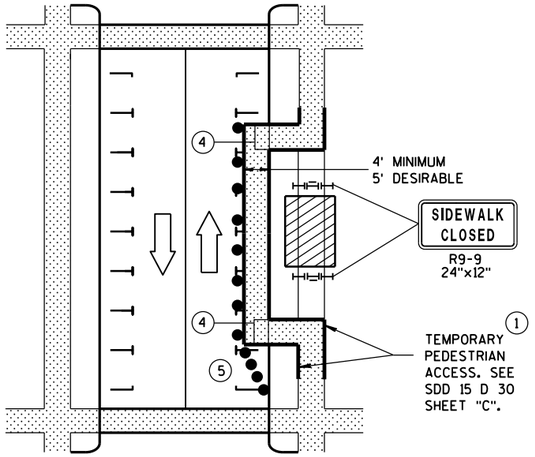
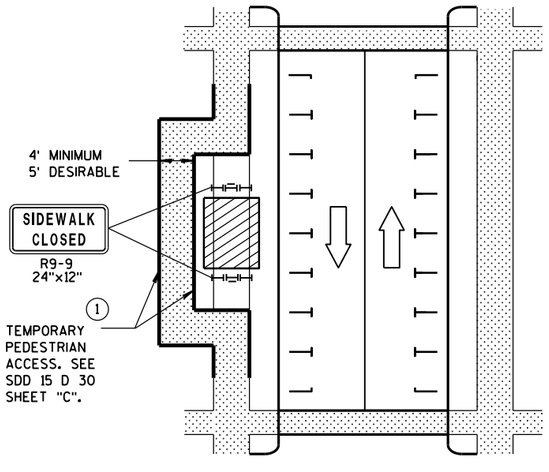
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

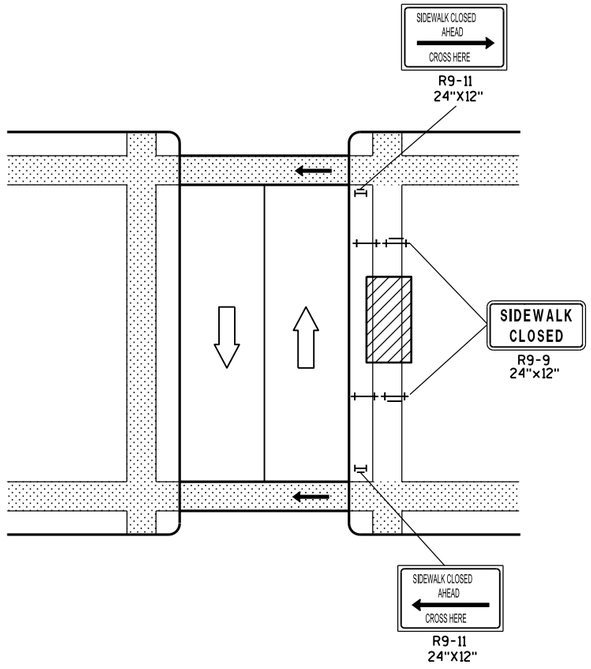



## MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

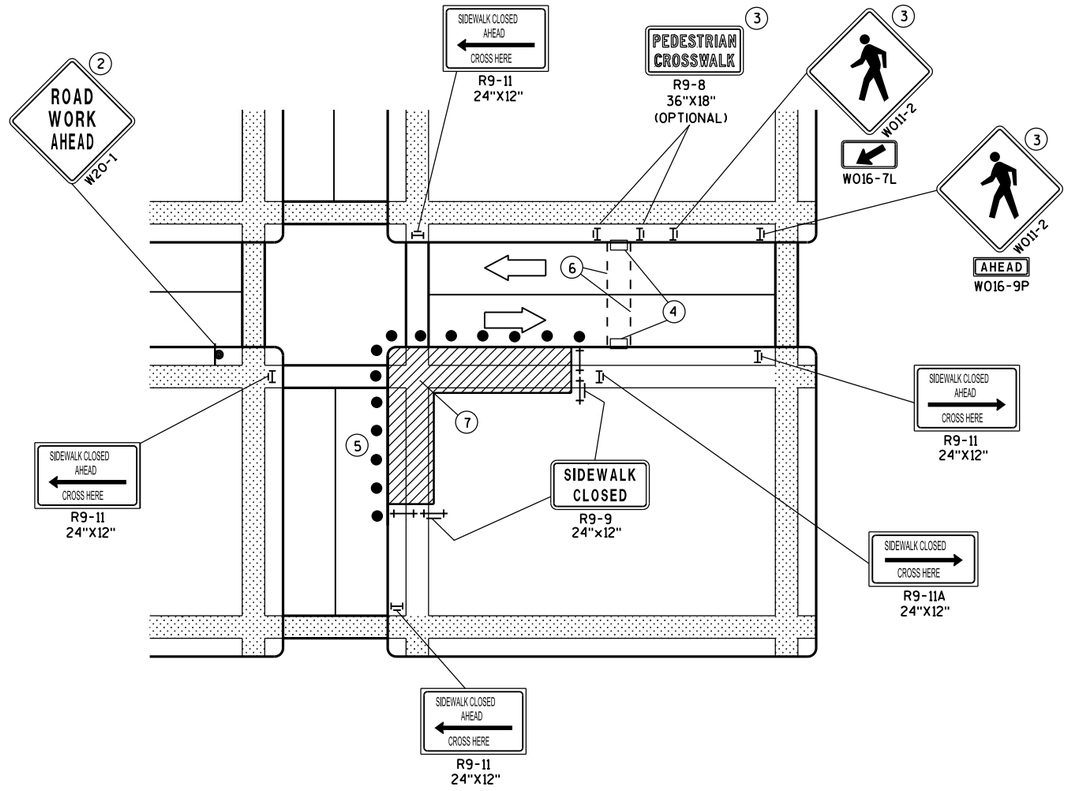
NOTE: LAYOUT SAME AS ABOVE.




## SIDEWALK DIVERSION




## MID-BLOCK SIDEWALK CLOSURE




## CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

## GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

(1) IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.

(2) "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

(3) IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.

(4) TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".

(5) DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

(7) LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

### LEGEND

- SIGN ON PERMANENT SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- DIRECTION OF TRAFFIC
- TRAFFIC CONTOL DRUM

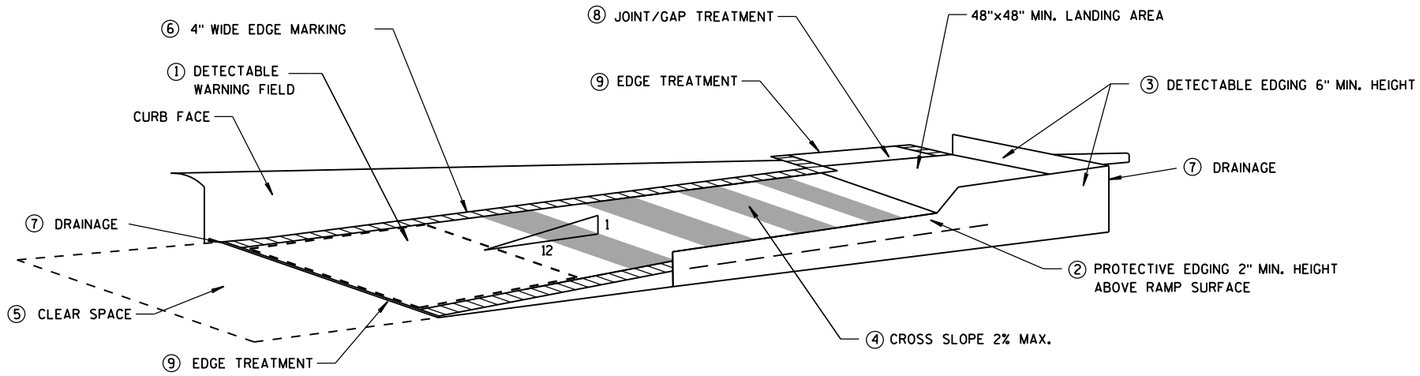
**TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR




6


S.D.D. 15 D 30-3a




## TEMPORARY CURB RAMP PARALLEL TO CURB

## GENERAL NOTES

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".

② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

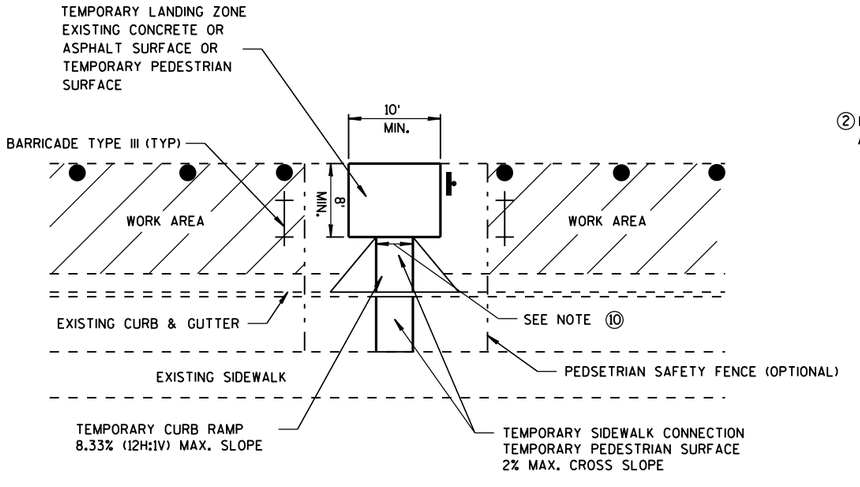
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

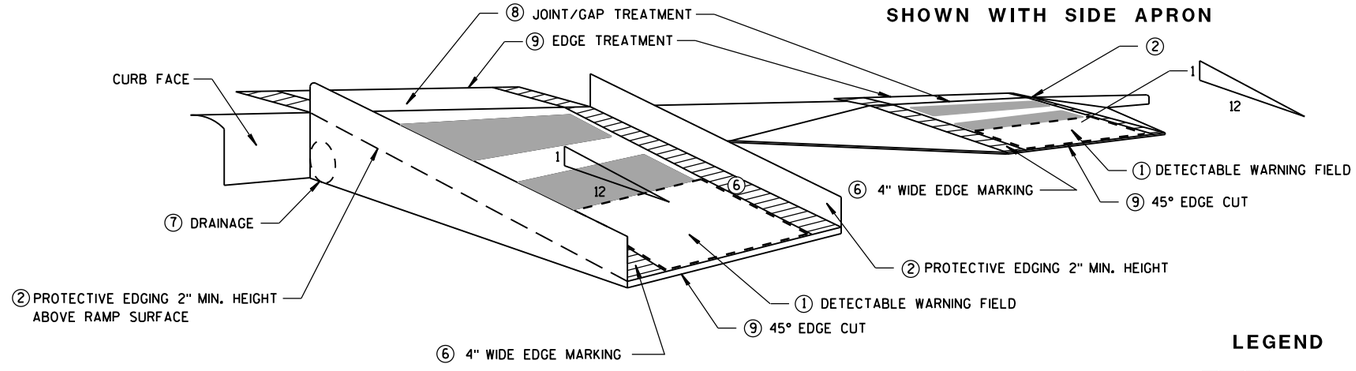
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

⑩ 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.




## TEMPORARY BUS STOP PAD




SHOWN WITH PROTECTIVE EDGE




## TEMPORARY CURB RAMP PERPENDICULAR TO CURB

### LEGEND

WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

## TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA



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S.D.D. 15 D 30-3b

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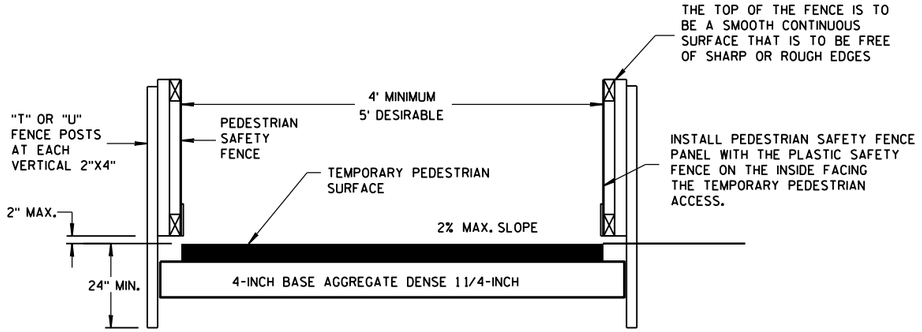
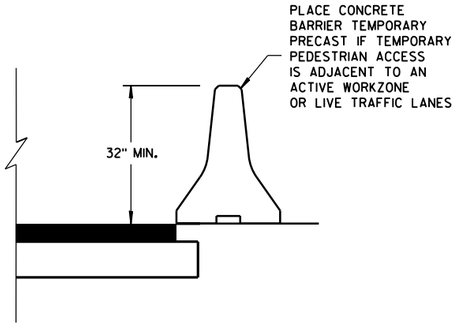
S.D.D. 15 D 30-3b

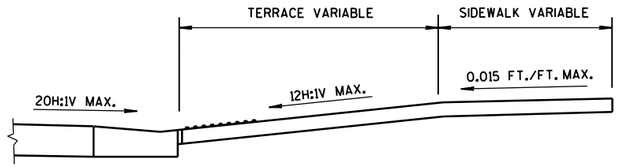


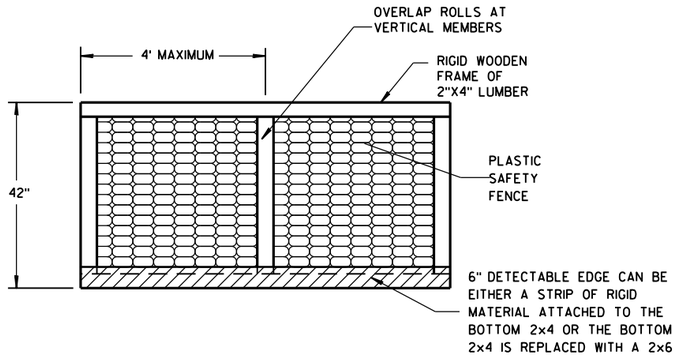

## TEMPORARY PEDESTRIAN ACCESS

## GENERAL NOTES

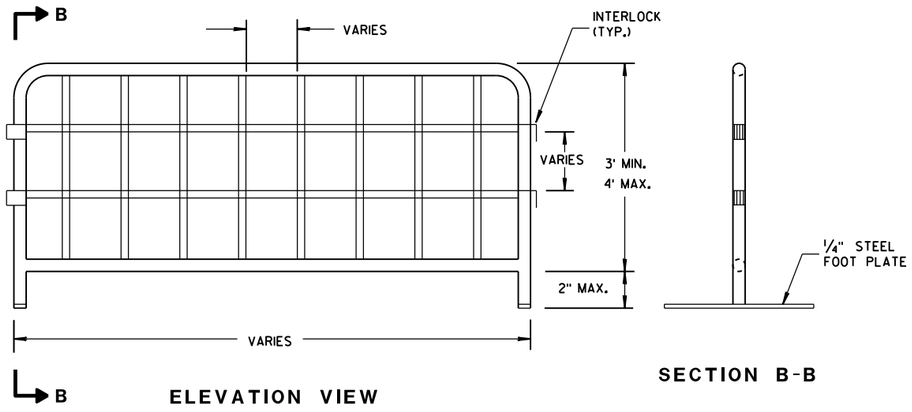
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.




SECTION A-A



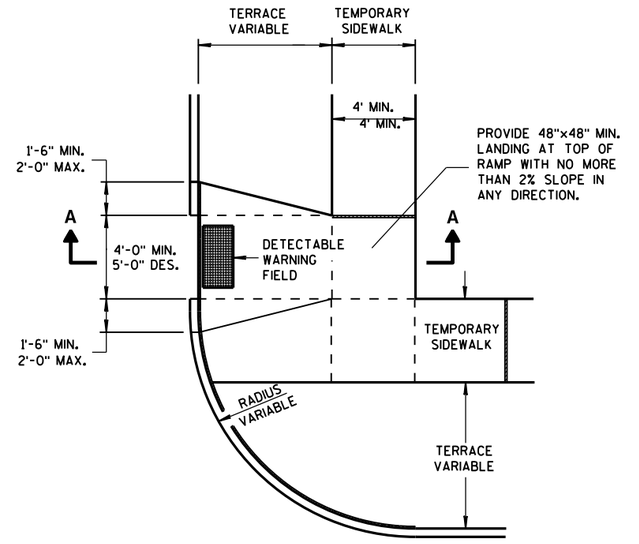

## PEDESTRIAN SAFETY FENCE




ELEVATION VIEW

SECTION B-B

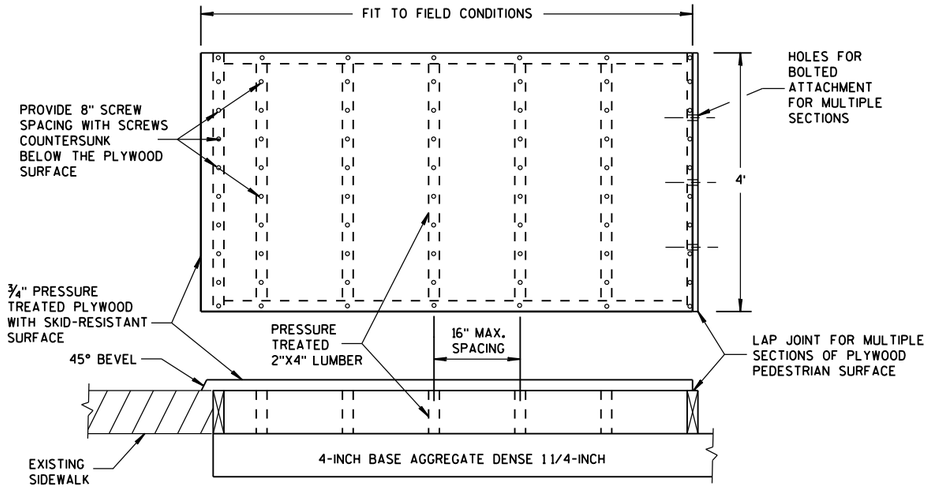
## TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



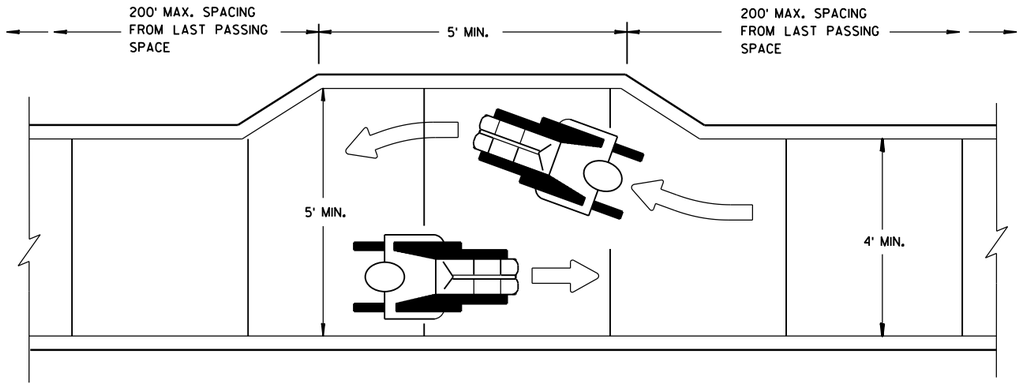

PLAN VIEW

## TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)




## TEMPORARY PEDESTRIAN SURFACE PLYWOOD




## NARROW SIDEWALK PASSING DETAIL

## TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZON SAFETY ENGIN IC
FHWA



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S.D.D. 15 D 30-3c

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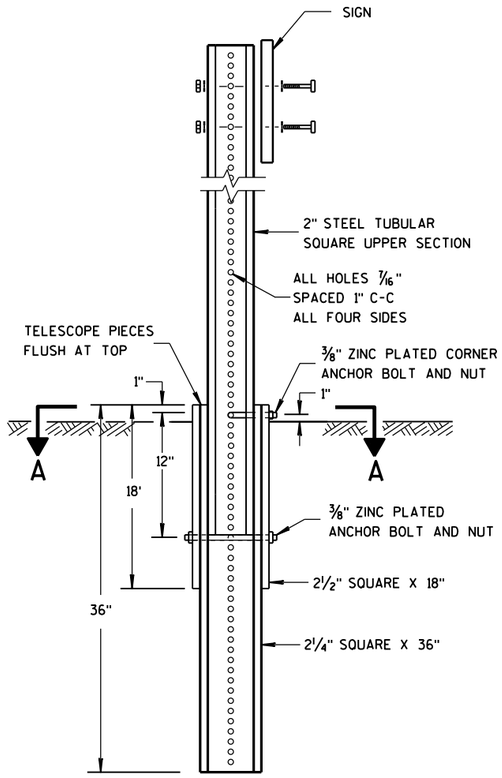
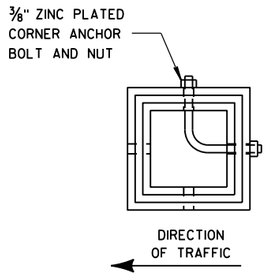
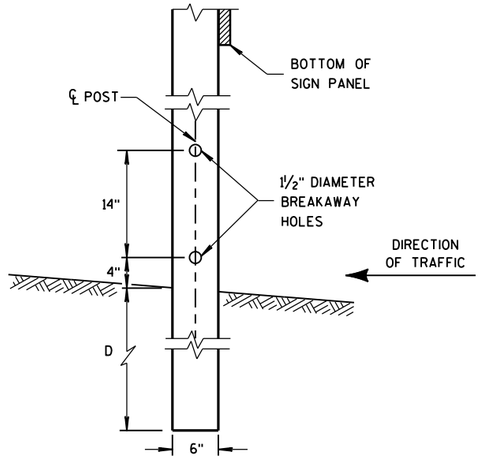
S.D.D. 15 D 30-3c




## DETAIL OF TUBULAR STEEL SIGN POST




## SECTION A-A



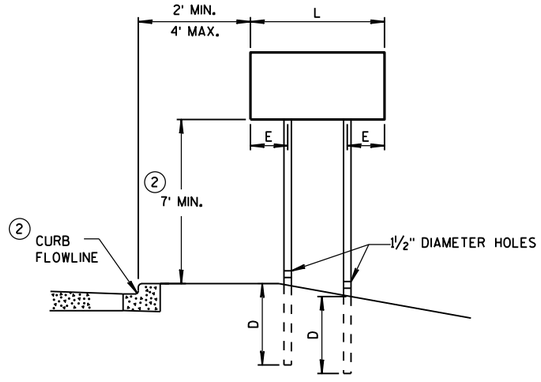

## 4"x6" WOOD POST MODIFICATION

## GENERAL NOTES

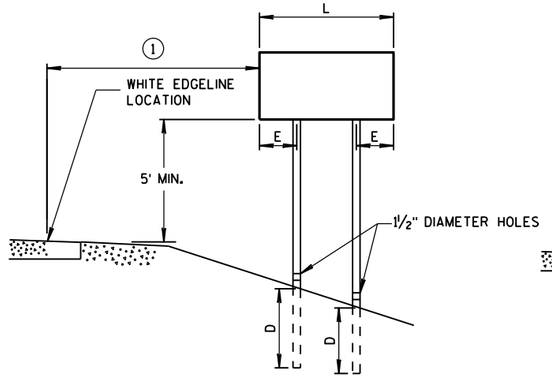
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

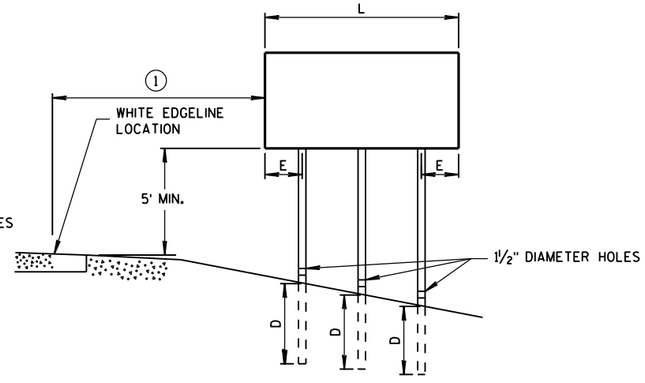
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK 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.




## URBAN AREA




## RURAL AREA

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

### 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.

### WOOD POST EMBEDMENT DEPTH

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

### 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)

TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO







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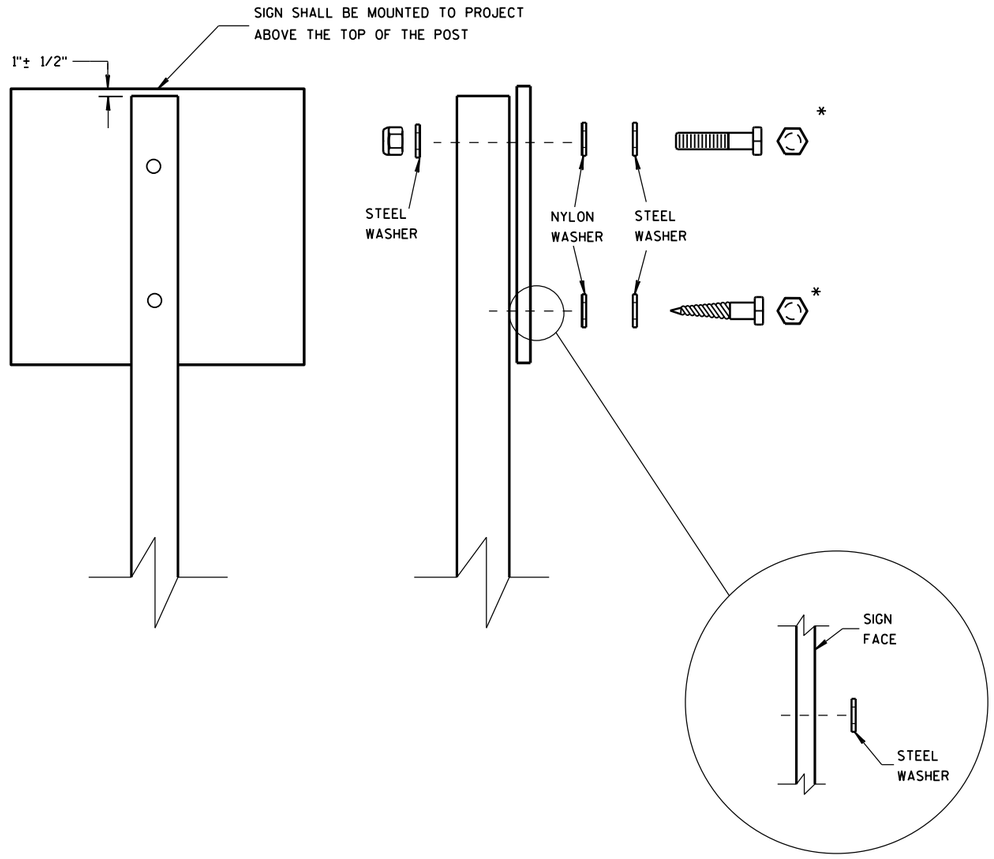
S.D.D. 15 D 38-1a




WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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 - 9/32" (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.

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S.D.D. 15 D 38-1b

S.D.D. 15 D 38-1b

# ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Feb. 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

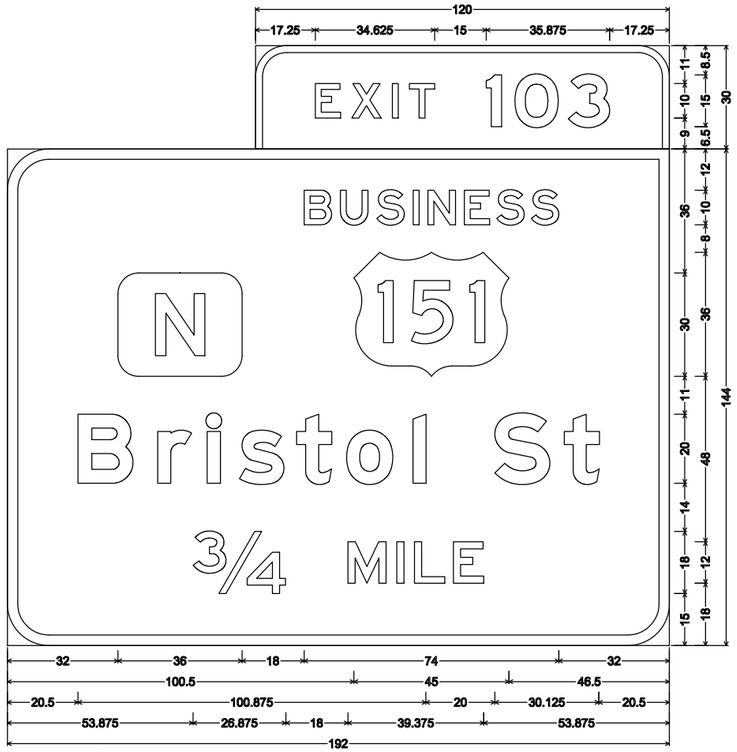
FHWA



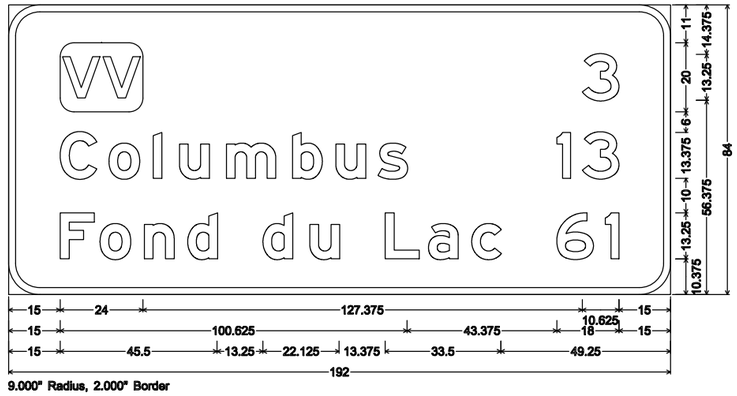
SIGN

## NOTES

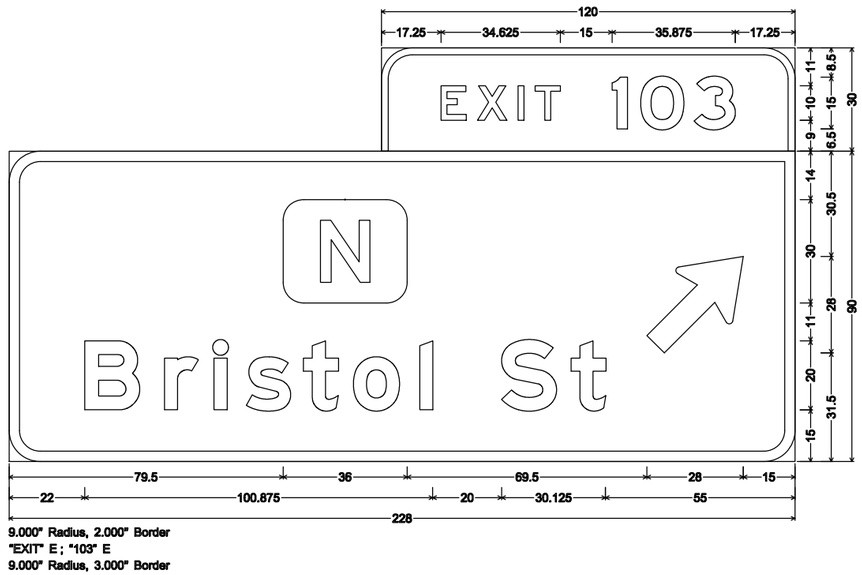
1. All Signs are Type I- Type SH Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E Modified except as noted
4. EXIT ONLY plaque background is Type F Sheeting



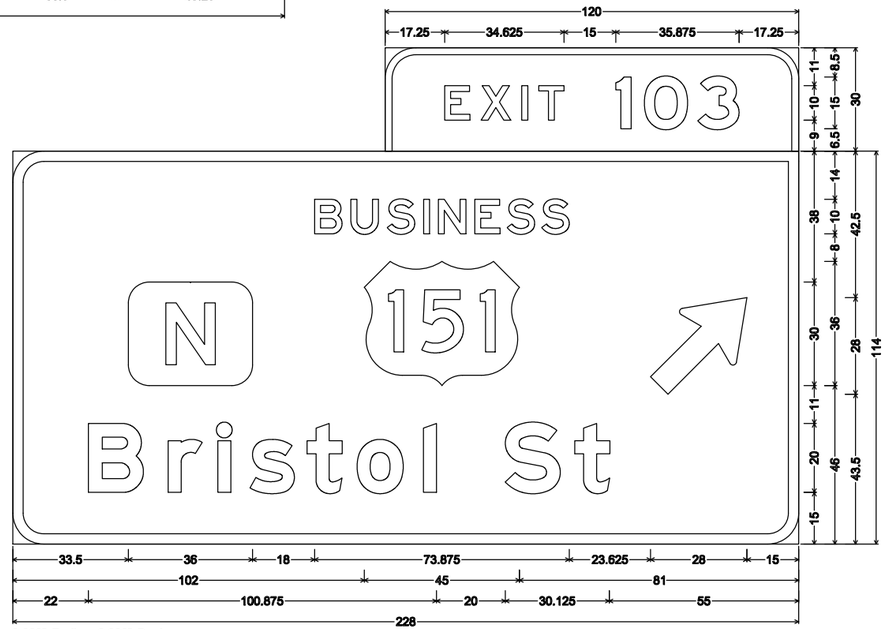

9.000" Radius, 2.000" Border
"EXIT" E ; "103" E
12.000" Radius, 3.000" Border
"BUSINESS" E; "¾" E; "MILE" E




9.000" Radius, 2.000" Border




9.000" Radius, 2.000" Border
"EXIT" E ; "103" E
9.000" Radius, 3.000" Border



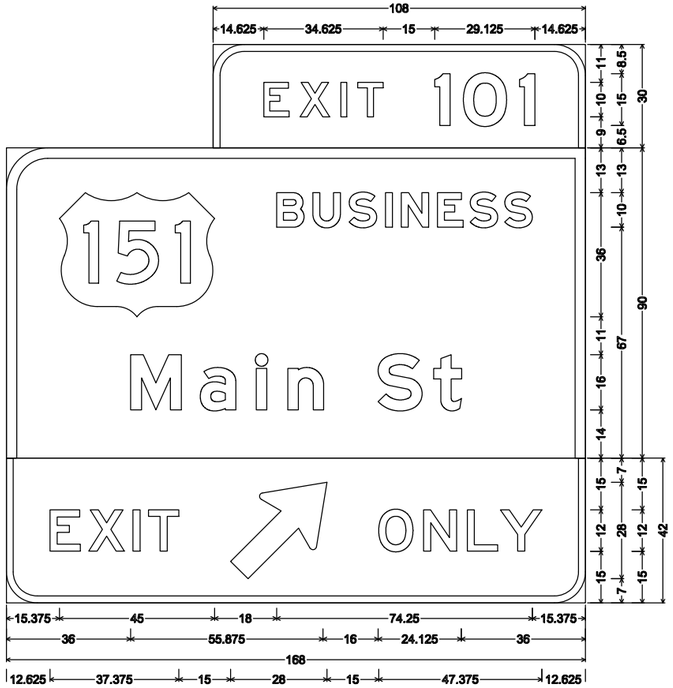

9.000" Radius, 2.000" Border
"EXIT" E ; "103" E
9.000" Radius, 3.000" Border
"BUSINESS" E

7

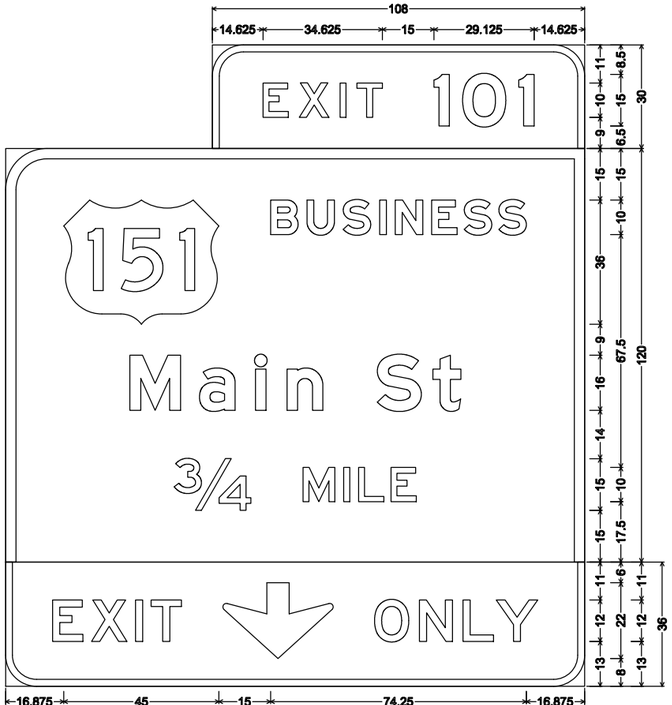
7

## NOTES

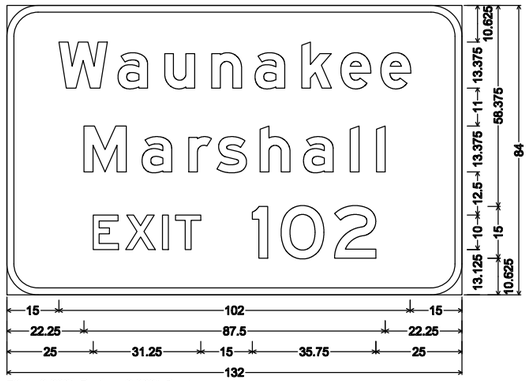
1. All Signs are Type I - Type SH Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E Modified except as noted
4. EXIT ONLY plaque background is Type F Sheeting



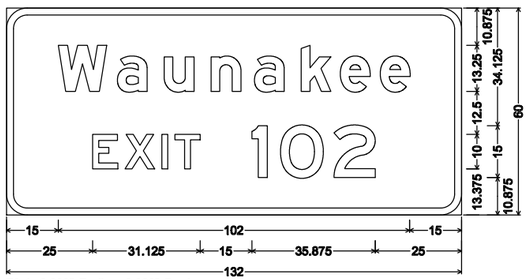

9.000" Radius, 2.000" Border
"EXIT" E; "101" E
12.000" Radius, 3.000" Border
"BUSINESS" E
9.000" Radius, 2.000" Border, Black on Fluorescent yellow;
"EXIT" E; "ONLY" E;



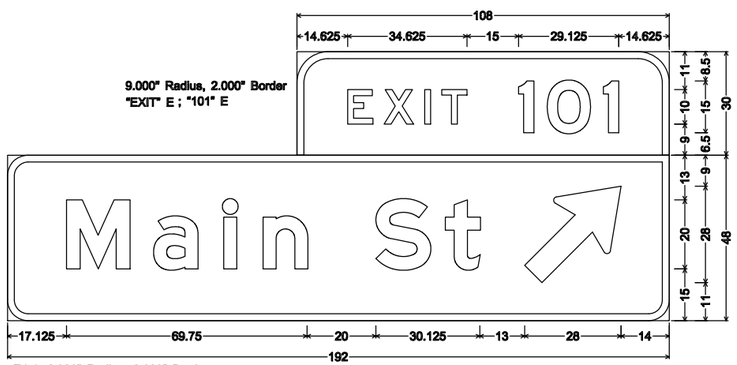

9.000" Radius, 2.000" Border,
"EXIT" E ; "101" E
12.000" Radius, 3.000" Border
"BUSINESS" E; "3/4" E; "MILE" E;
9.000" Radius, 2.000" Border, Black on Fluorescent yellow;
"EXIT" E; "ONLY" E;




E3-1; 9.000" Radius, 2.000" Border
"EXIT" E; "102" E

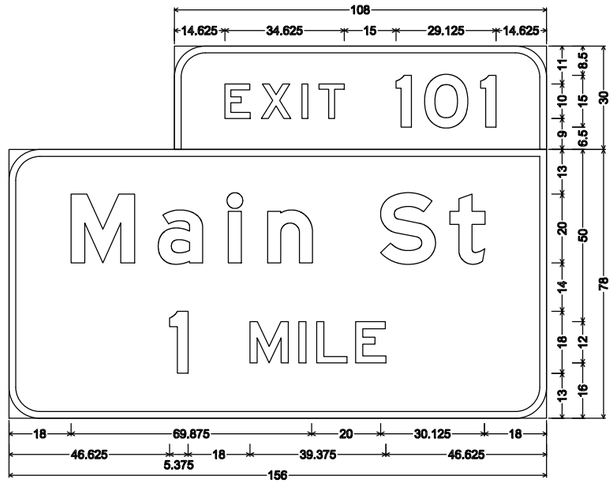



E3-1; 6.000" Radius, 2.000" Border
"EXIT" E; "102" E




9.000" Radius, 2.000" Border
"EXIT" E ; "101" E

E4-1; 6.000" Radius, 2.000" Border




9.000" Radius, 2.000" Border
"EXIT" E ; "101" E
9.000" Radius 2.000" Border
"1" E; "MILE" E;

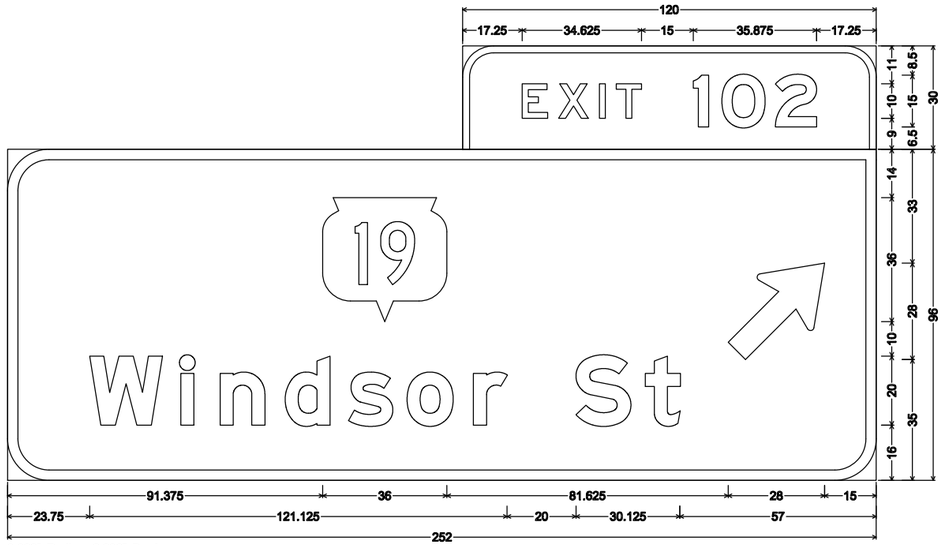
7

7

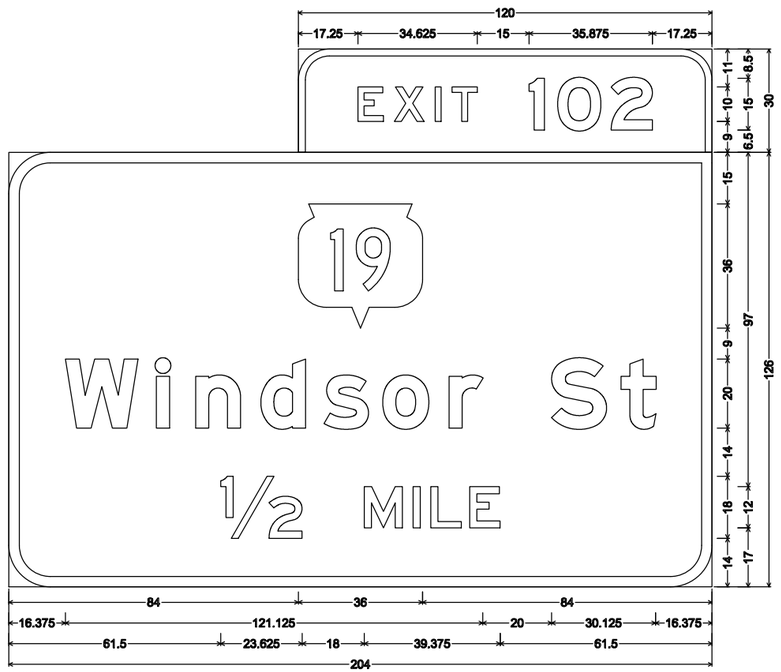
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGNING DETAILS | SHEET 270 | E |
|---|---|---|---|---|---|

## NOTES

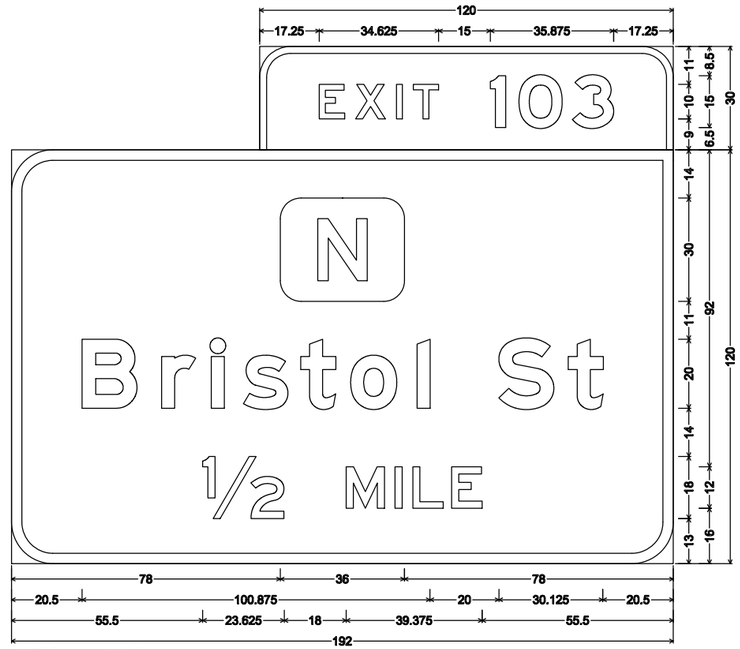
1. All Signs are Type I- Type SH Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - E Modified except as noted
4. EXIT ONLY plaque background is Type F Sheeting



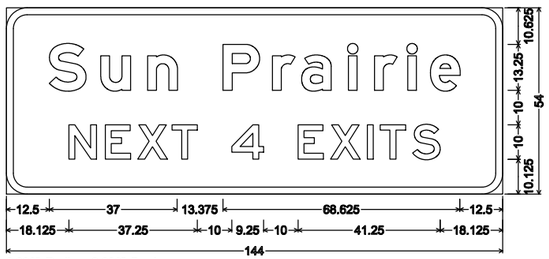

9.000" Radius, 2.000" Border
"EXIT" E; "102" E
12.000" Radius, 3.000" Border




9.000" Radius, 2.000" Border
"EXIT" E; "102" E
E1-1A; 12.000" Radius, 3.000" Border
"½" E; "MILE" E;




9.000" Radius, 2.000" Border
"EXIT" E; "103" E
12.000" Radius, 3.000" Border
"½" E; "MILE" E;




6.000" Radius, 2.000" Border,
"NEXT" E; "4" E; "EXITS" E;

7

7

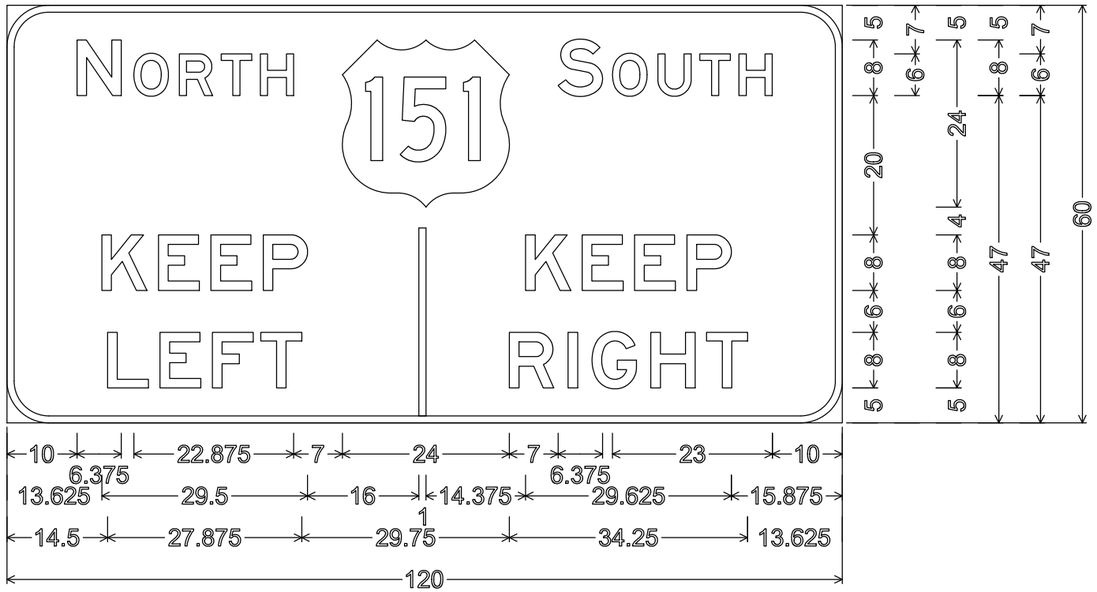
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGNING DETAILS | SHEET E |
|---|---|---|---|---|



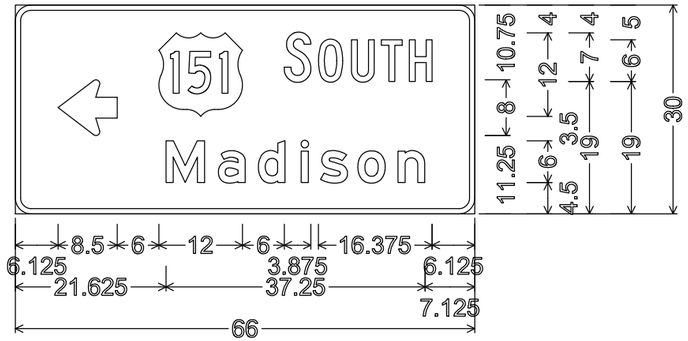
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\070103_sd.DGN PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 47

## NOTES

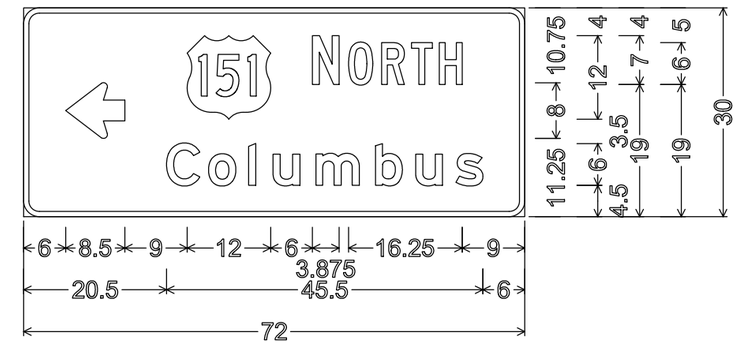
1. All Signs Type II - Type H Reflective
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E except as noted



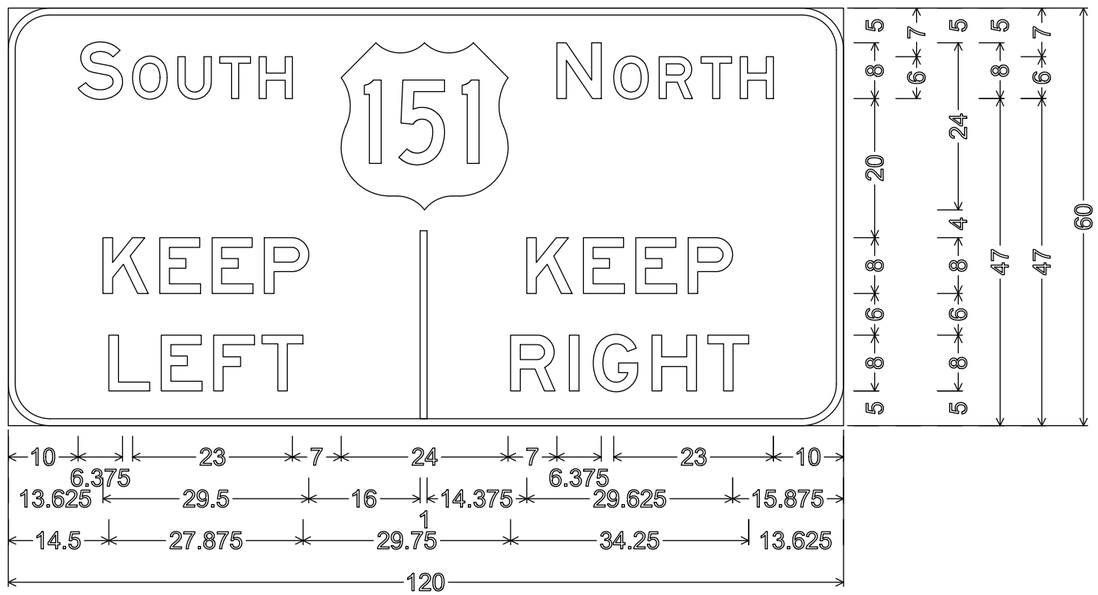

6.000" Radius, 1.000" Border



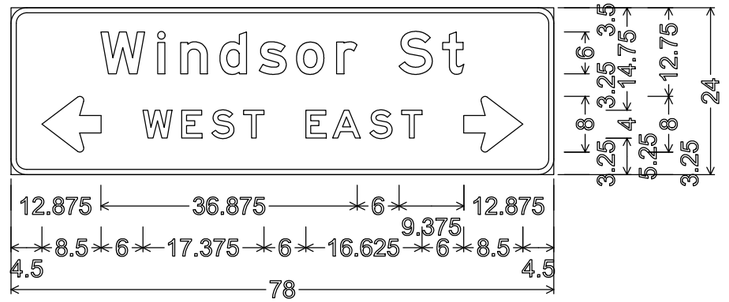

2.250" Radius, 0.750" Border
"SOUTH" C




2.250" Radius, 0.750" Border
"NORTH" C




6.000" Radius, 1.000" Border




D1-60; 2.250" Radius, 0.750" Border

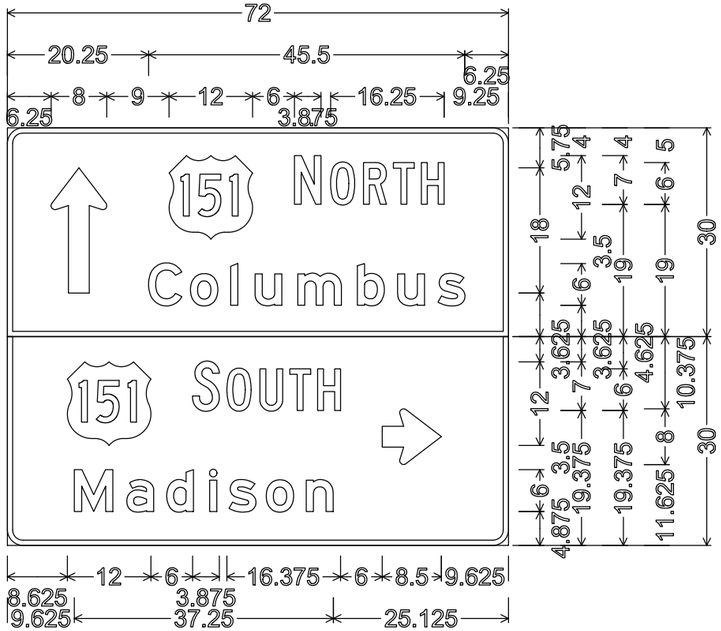
7

7

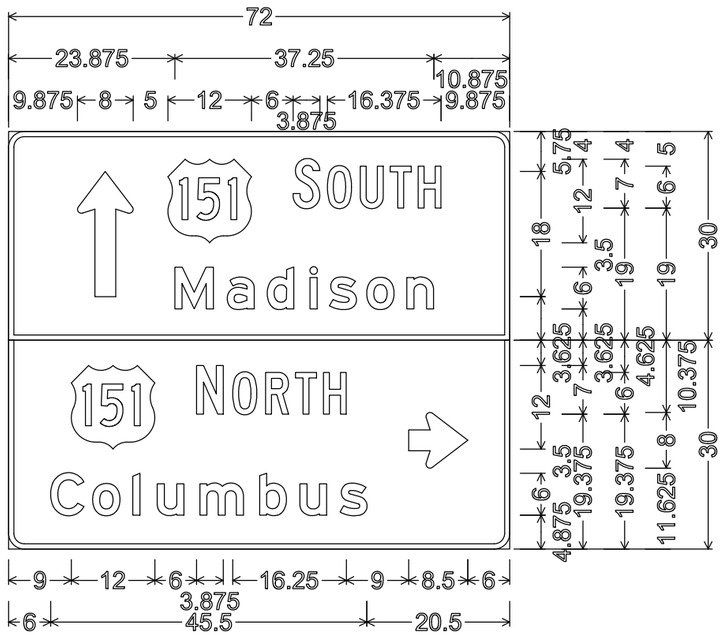
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGNING DETAILS | SHEET 272 | E |
|---|---|---|---|---|---|

## NOTES

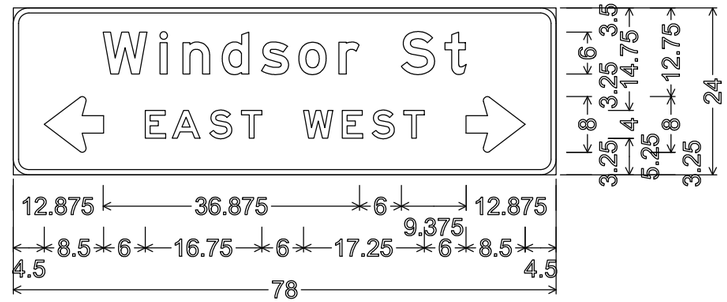
1. All Signs Type II - Type H Reflective
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E except as noted



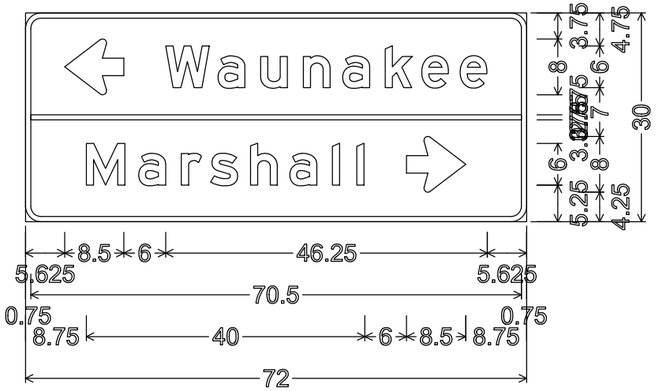

2.250" Radius, 0.750" Border
"SOUTH" C; "NORTH" C



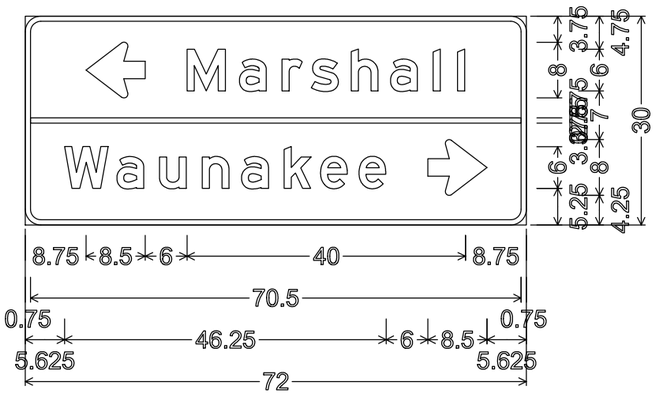

2.250" Radius, 0.750" Border
"SOUTH" C; "NORTH" C



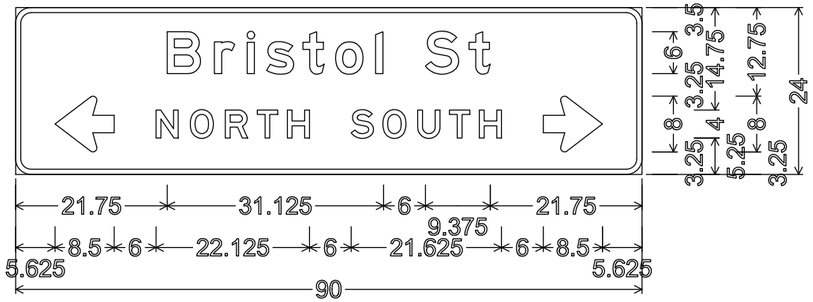

D1-60;
2.250" Radius, 0.750" Border



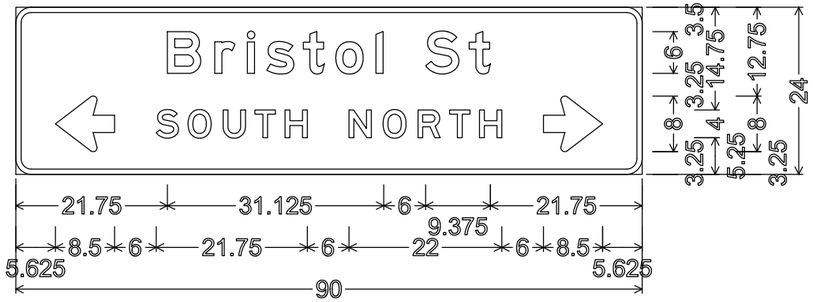

D1-2; 2.250" Radius, 0.750" Border



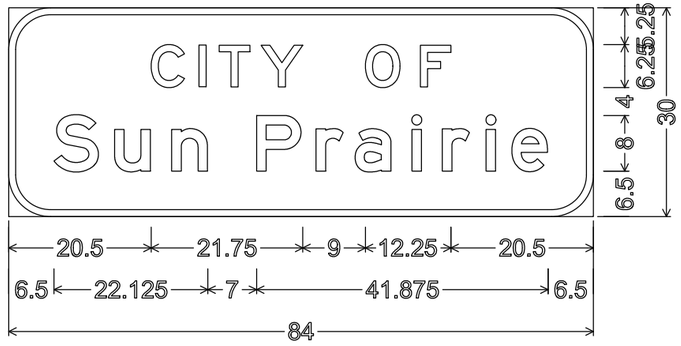

D1-2; 2.250" Radius, 0.750" Border




D1-60; 2.250" Radius, 0.750" Border




D1-60; 2.250" Radius, 0.750" Border

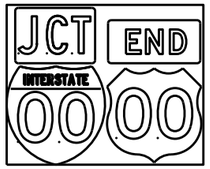



I2-3A; 6.000" Radius, 1.000" Border

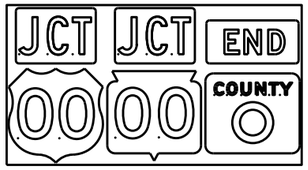
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | SIGNING DETAILS | SHEET 273 | E |
|---|---|---|---|---|---|

## TYPICAL ASSEMBLIES

J1-1

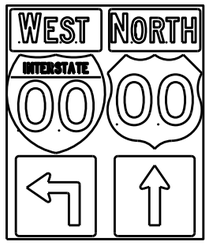


J1-2

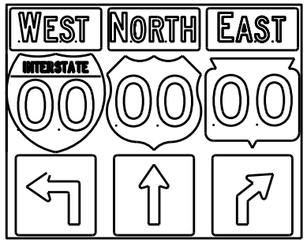


J1-3

J2-1



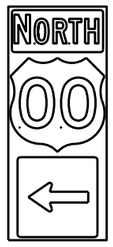
J2-2



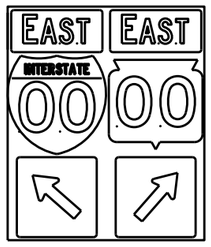
J2-3

JV

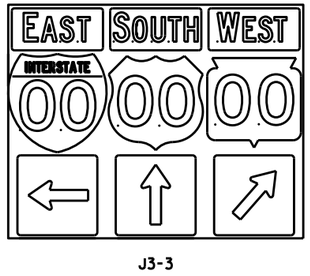
( Typical Vertical J-Assembly
See Note 10 and 11 )



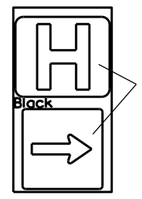
J3-1



J3-2



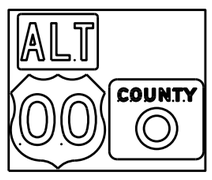
J3-3



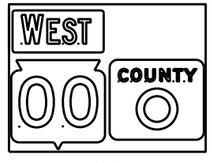
Blue Background

JH-1

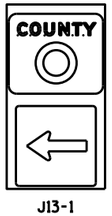
J4-1



J4-2



J4-2



J13-1

J12-1

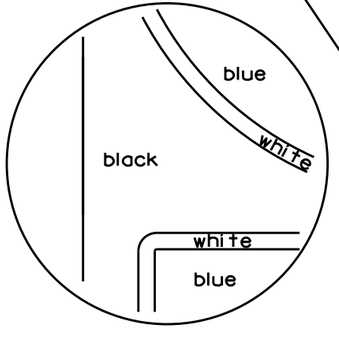
J32-1

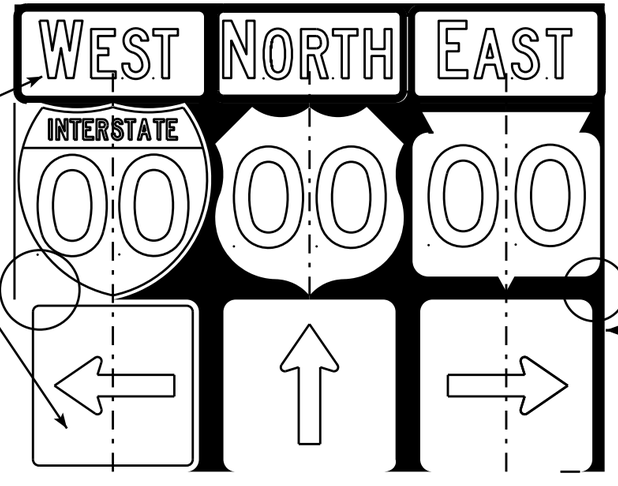
J33-1

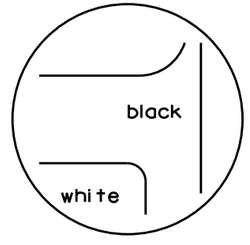
J23-1

J22-1

[blue background with interstate]




[black background]

### NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

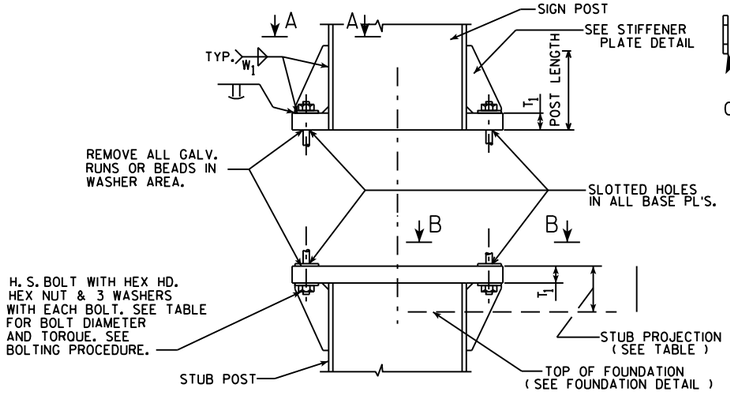
PROJECT NO:

SHEET NO: E

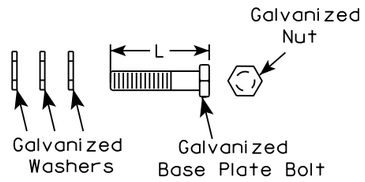


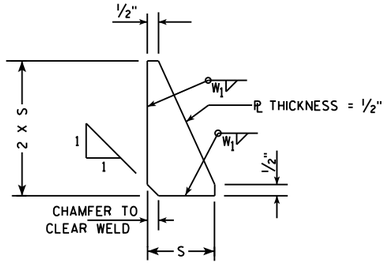
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :

WISDOT/CADDS SHEET 42



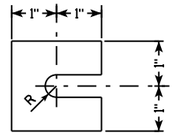

SIGN POST AND STUB POST ELEVATION



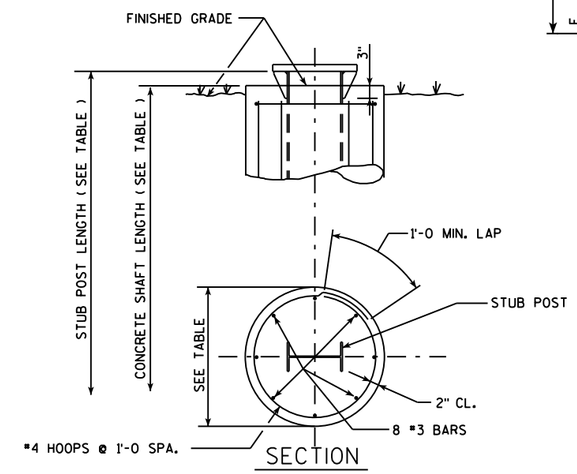

STIFFENER PLATE DETAIL

( SEE TABLE FOR DIMENSIONS )

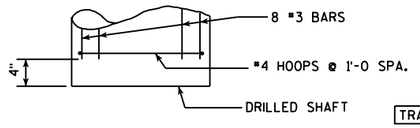



FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M.- B36.

SHIM DETAIL




SECTION



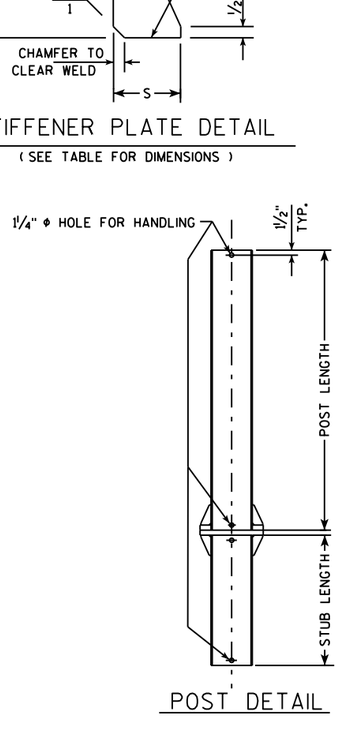

FOUNDATION DETAIL

| QUANTITIES FOR 1 FOOTING | | |
|---|---|---|
| | CONC. MASONRY C.Y. | REINF. STEEL LBS. |
| A | 0.6 | 34 |
| B | 0.8 | 49 |
| C | 0.9 | 50 |
| D | 0.9 | 56 |
| E | 1.0 | 62 |
| | | |

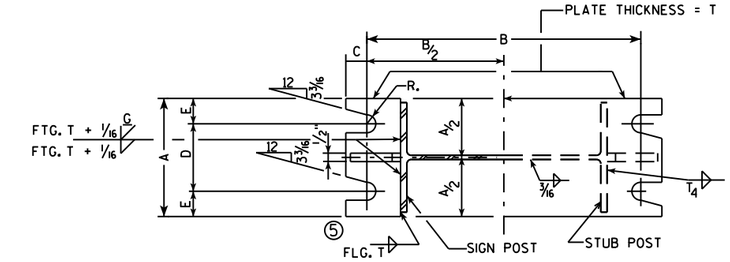
⑦

| REINF. | TYPE | #3 | #4 |
|---|---|---|---|
| | A | 8 @ 4'-5 | 5 @ 6'-3 |
| | B | 8 @ 6'-5 | 7 @ 6'-3 |
| | C | 8 @ 6'-11 | 7 @ 6'-3 |
| | D | 8 @ 7'-5 | 8 @ 6'-3 |
| | E | 8 @ 7'-11 | 9 @ 6'-3 |

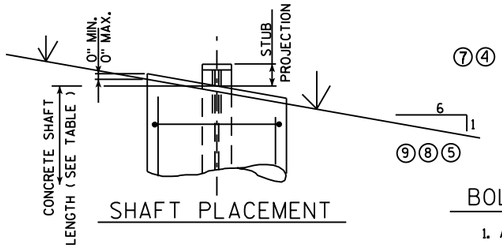
⑦




POST DETAIL




SECTION A-A SECTION B-B




⑦④

SHAFT PLACEMENT

## DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

| GROUP LOADS | PERCENT OF ALLOWABLE STRESS |
|---|---|
| 1. DEAD | 100 |
| 2. DEAD & WIND | 140 |
| 3. DEAD, ICE & ½ WIND[4] | 140 [4]25 P.S.F. MIN. |

ALLOWABLE SOIL PRESSURE = 1½T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

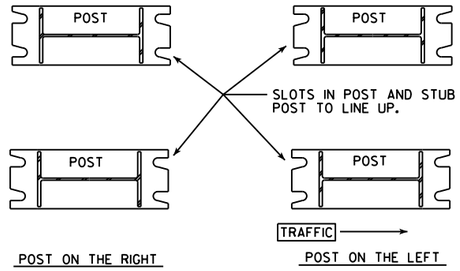
## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
⑨ ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.
THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
FURNISH STEEL BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH SECTION 635 OF THE STANDARD SPECIFICATIONS.

## BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. ( SEE TABLE )
5. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.




POST SLOT ORIENTATION ⑦

| L | X | TYPE | DIMENSION / POST SIZE | BASE CONNECTION DATA TABLE: BOLT SIZE & TORQUE | A | B | C | D | E | $T_1$ | $T_4$ | $W_1$ | R | S | FOUNDATION DATA: STUB LENGTH | STUB PROJECTION | SHAFT DIAMETER | SHAFT LENGTH | ② K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 ¾ | ④ | A | W10"X12.0 #/FT. | ¾" ϕ @ 75#-FT. | 5¼" | 1'-0⅜" | ⅞" | 3½" | ⅞" | 1" | 3/16" | 5/16" | 13/32" | 2⅛" | 3'-6 | 3" | 2'-0 ϕ | 5'-0 | 76.0# ④ |
| 4 ¾ | ④ | B | W12"X16.0 #/FT. | ⅞" ϕ @ 85#-FT. | 5½" | 1'-4¼" | 1" | 3½" | 1" | 1¼" | ¼" | 5/16" | 13/32" | 3" | 5'-6 | 3" | 2'-0 ϕ | 7'-0 | 146.5# ④ |
| 5 | | C | W12"X19.0 #/FT. | ⅞" ϕ @ 85#-FT. | 5½" | 1'-4¼" | 1" | 3½" | 1" | 1½" | 5/16" | 5/16" | 13/32" | 3" | 6'-0 | 3" | 2'-0 ϕ | 7'-6 | 182.1# |
| 5 | | D | W12"X22.0 #/FT. | ⅞" ϕ @ 85#-FT. | 5½" | 1'-4¼" | 1" | 3½" | 1" | 1½" | ⅜" | 5/16" | 13/32" | 3" | 6'-6 | 3" | 2'-0 ϕ | 8'-0 | 210.5# |
| 5 | ③ | E | W12"X26.0 #/FT. | 1" ϕ @ 90#-FT. | 7" | 1'-4¼" | 1¼" | 4" | 1½" | 1½" | ⅜" | 5/16" | 11/32" | 3" | 7'-0 | 3" | 2'-0 ϕ | 8'-6 | 293.0# ③ |
| | | | | | | | | | | | | | | | | | | | |

① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. ( 1 POST ) = K+ ( POST LENGTH X POST WT. )
" K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/12/15 PLATE NO. A3-1.16

| | | |
|---|---|---|
| ⑩ | 1-21-14 | LUBRICATION OF BASE BOLTS |
| ⑨ | 4-26-11 | REMOVE NON-GALVANIZED |
| ⑧ | 10-30-96 | NOT GALVANIZED/GALVANIZED |
| ⑦ | 10-30-92 | QUANT., A588 EXCEPT., ADD SLOT VIEW |
| ⑥ | 8-24-87 | BASE CONN. WELD |
| ⑤ | 10-13-81 | BASE CONN. WELD & FUSE PL WASHERS |
| ④ | 10-19-79 | POST A & B, A572 GR. 50, & K |
| ② | 11-28-78 | "K" ③ 4-23-79 TYPE "E" |
| ① | 5-4-78 | $T_1$ , $T_2$ & $W_1$ |
| NO. | DATE | REVISION |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TYPE A, B, C, D, & E

| CONST. SPEC. | DRAWN BY | PLANS CK'D. |
|---|---|---|
| 2011 | JPH | |

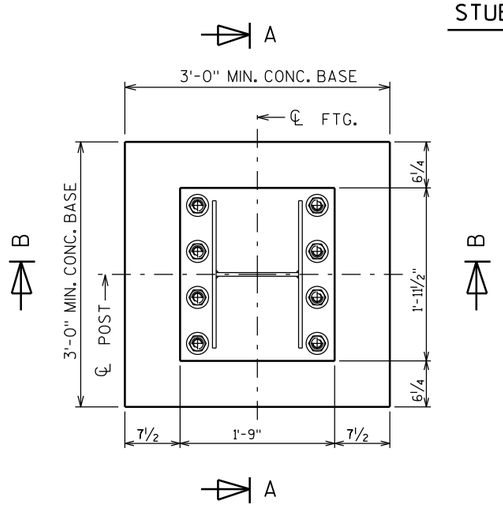
FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS

SHEET 275

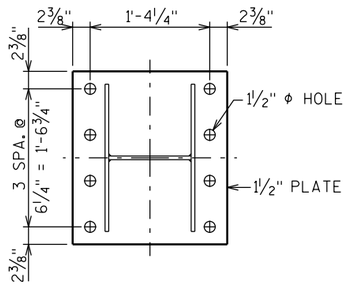
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A31.DGN PLOT DATE : 01-DEC-2015 18:20 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 5.351066:1.000000

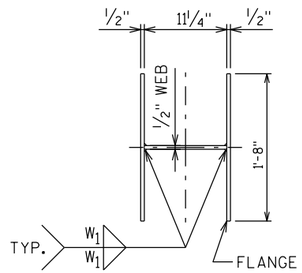
## STUB AND MASONRY ANCHOR DETAILS




STUB SECTION



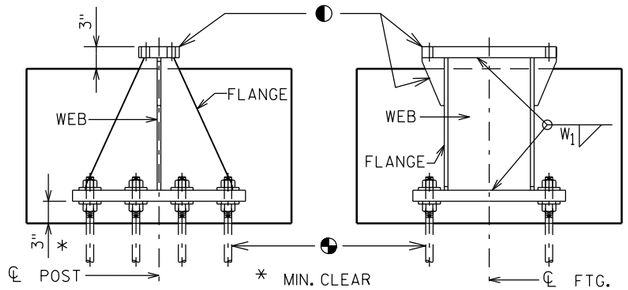

BASE PLATE



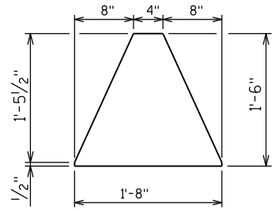

STUB

◐ SEE PLATE NO. A3-1 FOR DETAILS

◒ MASONRY ANCHORS TYPE S 1¼-INCHES (ADHESIVE). ALLOWABLE PULL OUT CAPACITY 14,995 KIPS. EMBED 1'-3" IN ROCK.




SECTION A SECTION B



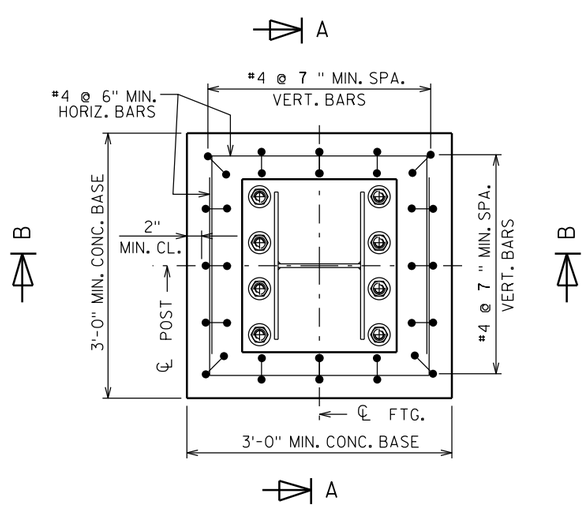

FLANGE

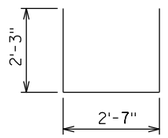
### GENERAL NOTES

1. Quantities per Base:
   - REINFORCING BAR STEEL = 62 LBS
   - CONCRETE = 0.6 C.Y.
   - STEEL WEIGHT = 335 LBS
2. All materials, except anchor rod, nuts and washers, are to be A.S.T.M. A709 grade 50. All materials to be galvanized after fabrication.
3. If the contractor encounters rock before reaching the footing depth, per the A3-1 Sign Detail, determine the pull-out capacity of a test adhesive anchor installed in the rock. If the test result equals or exceeds the pull-out capacity of 14,995 KIPS, the contractor may install the breakaway stub for rock, according to this detail.

## CONCRETE BASE AND REINFORCING STEEL DETAILS

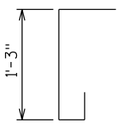
### CONCRETE BASE SECTION



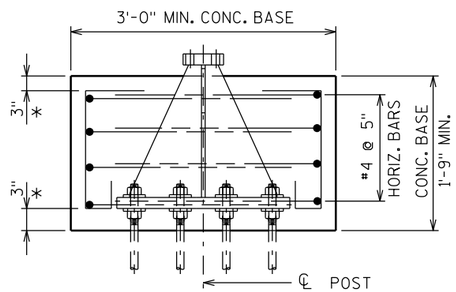

HORIZONTAL BAR

8 BARS @ 6'-11" LENGTH



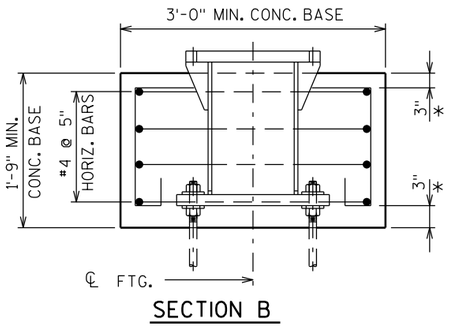

VERTICAL BARS

16 BARS @ 2'-4" LENGTH
MAY BE PLACED IN SKEW
FOR CLEARANCE NEED




SECTION A

* MIN. CLEAR




SECTION B

**ALTERNATE BREAK-AWAY BASE ON ROCK**
**A3-1M**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 2/06/2014 PLATE A3-1M.1

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A31M.DGN PLOT DATE : 10-MAR-2014 15:16 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 1.556674:1.000000 WISDOT/CADDS SHEET 42

VERITCAL DIMENSION ⇨

HORIZONTAL DIMENSION ⇩

| ⇩ \ ⇨ | 2.5 ft. | 3 ft. | 3.5 ft. | 4 ft. | 4.5 ft. | 5 ft. | 5.5 ft. | 6 ft. | 6.5 ft. | 7 ft. | 7.5 ft. | 8 ft. | 8.5 ft. | 9 ft. | 9.5 ft. | 10 ft. | 10.5 ft. | 11 ft. | 11.5 ft. | 12 ft. | 12.5 ft. | 13 ft. | 13.5 ft. | 14 ft. | 14.5 ft. | 15 ft. | 15.5 ft. | 16 ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 ft. | 25 Sq. Ft | 30 Sq. Ft | 35 Sq. Ft | 40 Sq. Ft | 45 Sq. Ft | 50 Sq. Ft | 55 Sq. Ft | 60 Sq. Ft | 65 Sq. Ft | 70 Sq. Ft | 75 Sq. Ft | 80 Sq. Ft | 85 Sq. Ft | 90 Sq. Ft | 95 Sq. Ft | 100 Sq. Ft | 105 Sq. Ft | 110 Sq. Ft | 115 Sq. Ft | 120 Sq. Ft | 125 Sq. Ft | 130 Sq. Ft | 135 Sq. Ft | 140 Sq. Ft | 145 Sq. Ft | 150 Sq. Ft | 155 Sq. Ft | 160 Sq. Ft |
| 11 ft. | 27.5 Sq. Ft | 33 Sq. Ft | 38.5 Sq. Ft | 44 Sq. Ft | 49.5 Sq. Ft | 55 Sq. Ft | 60.5 Sq. Ft | 66 Sq. Ft | 71.5 Sq. Ft | 77 Sq. Ft | 82.5 Sq. Ft | 88 Sq. Ft | 93.5 Sq. Ft | 99 Sq. Ft | 104.5 Sq. Ft | 110 Sq. Ft | 115.5 Sq. Ft | 121 Sq. Ft | 126.5 Sq. Ft | 132 Sq. Ft | 137.5 Sq. Ft | 143 Sq. Ft | 148.5 Sq. Ft | 154 Sq. Ft | 159.5 Sq. Ft | 165 Sq. Ft | 170.5 Sq. Ft | 176 Sq. Ft |
| 12 ft. | 30 Sq. Ft | 36 Sq. Ft | 42 Sq. Ft | 48 Sq. Ft | 54 Sq. Ft | 60 Sq. Ft | 66 Sq. Ft | 72 Sq. Ft | 78 Sq. Ft | 84 Sq. Ft | 90 Sq. Ft | 96 Sq. Ft | 102 Sq. Ft | 108 Sq. Ft | 114 Sq. Ft | 120 Sq. Ft | 126 Sq. Ft | 132 Sq. Ft | 138 Sq. Ft | 144 Sq. Ft | 150 Sq. Ft | 156 Sq. Ft | 162 Sq. Ft | 168 Sq. Ft | 174 Sq. Ft | 180 Sq. Ft | 186 Sq. Ft | 192 Sq. Ft |
| 13 ft. | 32.5 Sq. Ft | 39 Sq. Ft | 45.5 Sq. Ft | 52 Sq. Ft | 58.5 Sq. Ft | 65 Sq. Ft | 71.5 Sq. Ft | 78 Sq. Ft | 84.5 Sq. Ft | 91 Sq. Ft | 97.5 Sq. Ft | 104 Sq. Ft | 110.5 Sq. Ft | 117 Sq. Ft | 123.5 Sq. Ft | 130 Sq. Ft | 136.5 Sq. Ft | 143 Sq. Ft | 149.5 Sq. Ft | 156 Sq. Ft | 162.5 Sq. Ft | 169 Sq. Ft | 175.5 Sq. Ft | 182 Sq. Ft | 188.5 Sq. Ft | 195 Sq. Ft | 201.5 Sq. Ft | 208 Sq. Ft |
| 14 ft. | 35 Sq. Ft | 42 Sq. Ft | 49 Sq. Ft | 56 Sq. Ft | 63 Sq. Ft | 70 Sq. Ft | 77 Sq. Ft | 84 Sq. Ft | 91 Sq. Ft | 98 Sq. Ft | 105 Sq. Ft | 112 Sq. Ft | 119 Sq. Ft | 126 Sq. Ft | 133 Sq. Ft | 140 Sq. Ft | 147 Sq. Ft | 154 Sq. Ft | 161 Sq. Ft | 168 Sq. Ft | 175 Sq. Ft | 182 Sq. Ft | 189 Sq. Ft | 196 Sq. Ft | 203 Sq. Ft | 210 Sq. Ft | 217 Sq. Ft | 224 Sq. Ft |
| 15 ft. | 37.5 Sq. Ft | 45 Sq. Ft | 52.5 Sq. Ft | 60 Sq. Ft | 67.5 Sq. Ft | 75 Sq. Ft | 82.5 Sq. Ft | 90 Sq. Ft | 97.5 Sq. Ft | 105 Sq. Ft | 112.5 Sq. Ft | 120 Sq. Ft | 127.5 Sq. Ft | 135 Sq. Ft | 142.5 Sq. Ft | 150 Sq. Ft | 157.5 Sq. Ft | 165 Sq. Ft | 172.5 Sq. Ft | 180 Sq. Ft | 187.5 Sq. Ft | 195 Sq. Ft | 202.5 Sq. Ft | 210 Sq. Ft | 217.5 Sq. Ft | 225 Sq. Ft | 232.5 Sq. Ft | 240 Sq. Ft |
| 16 ft. | 40 Sq. Ft | 48 Sq. Ft | 56 Sq. Ft | 64 Sq. Ft | 72 Sq. Ft | 80 Sq. Ft | 88 Sq. Ft | 96 Sq. Ft | 104 Sq. Ft | 112 Sq. Ft | 120 Sq. Ft | 128 Sq. Ft | 136 Sq. Ft | 144 Sq. Ft | 152 Sq. Ft | 160 Sq. Ft | 168 Sq. Ft | 176 Sq. Ft | 184 Sq. Ft | 192 Sq. Ft | 200 Sq. Ft | 208 Sq. Ft | 216 Sq. Ft | 224 Sq. Ft | 232 Sq. Ft | 240 Sq. Ft | 248 Sq. Ft | 256 Sq. Ft |
| 17 ft. | 42.5 Sq. Ft | 51 Sq. Ft | 59.5 Sq. Ft | 68 Sq. Ft | 76.5 Sq. Ft | 85 Sq. Ft | 93.5 Sq. Ft | 102 Sq. Ft | 110.5 Sq. Ft | 119 Sq. Ft | 127.5 Sq. Ft | 136 Sq. Ft | 144.5 Sq. Ft | 153 Sq. Ft | 161.5 Sq. Ft | 170 Sq. Ft | 178.5 Sq. Ft | 187 Sq. Ft | 195.5 Sq. Ft | 204 Sq. Ft | 212.5 Sq. Ft | 221 Sq. Ft | 229.5 Sq. Ft | 238 Sq. Ft | 246.5 Sq. Ft | 255 Sq. Ft | 263.5 Sq. Ft | 272 Sq. Ft |
| 18 ft. | 45 Sq. Ft | 54 Sq. Ft | 63 Sq. Ft | 72 Sq. Ft | 81 Sq. Ft | 90 Sq. Ft | 99 Sq. Ft | 108 Sq. Ft | 117 Sq. Ft | 126 Sq. Ft | 135 Sq. Ft | 144 Sq. Ft | 153 Sq. Ft | 162 Sq. Ft | 171 Sq. Ft | 180 Sq. Ft | 189 Sq. Ft | 198 Sq. Ft | 207 Sq. Ft | 216 Sq. Ft | 225 Sq. Ft | 234 Sq. Ft | 243 Sq. Ft | 252 Sq. Ft | 261 Sq. Ft | 270 Sq. Ft | 279 Sq. Ft | 288 Sq. Ft |
| 19 ft. | 47.5 Sq. Ft | 57 Sq. Ft | 66.5 Sq. Ft | 76 Sq. Ft | 85.5 Sq. Ft | 95 Sq. Ft | 104.5 Sq. Ft | 114 Sq. Ft | 123.5 Sq. Ft | 133 Sq. Ft | 142.5 Sq. Ft | 152 Sq. Ft | 161.5 Sq. Ft | 171 Sq. Ft | 180.5 Sq. Ft | 190 Sq. Ft | 199.5 Sq. Ft | 209 Sq. Ft | 218.5 Sq. Ft | 228 Sq. Ft | 237.5 Sq. Ft | 247 Sq. Ft | 256.5 Sq. Ft | 266 Sq. Ft | 275.5 Sq. Ft | 285 Sq. Ft | 294.5 Sq. Ft | 304 Sq. Ft |
| 20 ft. | 50 Sq. Ft | 60 Sq. Ft | 70 Sq. Ft | 80 Sq. Ft | 90 Sq. Ft | 100 Sq. Ft | 110 Sq. Ft | 120 Sq. Ft | 130 Sq. Ft | 140 Sq. Ft | 150 Sq. Ft | 160 Sq. Ft | 170 Sq. Ft | 180 Sq. Ft | 190 Sq. Ft | 200 Sq. Ft | 210 Sq. Ft | 220 Sq. Ft | 230 Sq. Ft | 240 Sq. Ft | 250 Sq. Ft | 260 Sq. Ft | 270 Sq. Ft | 280 Sq. Ft | 290 Sq. Ft | 300 Sq. Ft | 310 Sq. Ft | 320 Sq. Ft |
| 21 ft. | 52.5 Sq. Ft | 63 Sq. Ft | 73.5 Sq. Ft | 84 Sq. Ft | 94.5 Sq. Ft | 105 Sq. Ft | 115.5 Sq. Ft | 126 Sq. Ft | 136.5 Sq. Ft | 147 Sq. Ft | 157.5 Sq. Ft | 168 Sq. Ft | 178.5 Sq. Ft | 189 Sq. Ft | 199.5 Sq. Ft | 210 Sq. Ft | 220.5 Sq. Ft | 231 Sq. Ft | 241.5 Sq. Ft | 252 Sq. Ft | 262.5 Sq. Ft | 273 Sq. Ft | 283.5 Sq. Ft | 294 Sq. Ft | 304.5 Sq. Ft | 315 Sq. Ft | 325.5 Sq. Ft | 336 Sq. Ft |

Type "A" (2 Posts)
1.2 CY Conc.
68 LBs Bar Steel

Type "B" (2 Posts)
1.6 CY Conc.
98 LBs Bar Steel

Type "C" (2 Posts)
1.8 CY Conc.
100 LBs Bar Steel

Type "D" (2 Posts)
1.8 CY Conc.
112 LBs Bar Steel

Type "C" (3 Posts)
2.7 CY Conc.
150 LBs Bar Steel

**STEEL POST SIZE**

"A" - W10" x 12"
"B" - W12" x 16"
"C" - W12" x 19"
"D" - W12 x 22"

7

7

# DETERMINATION OF HIGH STRENGTH STRUCTURAL STEEL SIGN SUPPORT TYPE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/03/10 PLATE NO. A3-2.2

PROJECT NO: | SHEET NO: E

FILE NAME : C:\users\PROJECTS\tr_stdplate\A32.DGN PLOT DATE : 05-MAR-2010 10:10 PLOT BY : ditjph

VERTICAL DIMENSION ⇨

HORIZONTAL DIMENSION ⇩

Type "A" (2 Posts) 1.2 CY Conc. 68 LBs Bar Steel

| ⇩ \ ⇨ | 2.5 ft. | 3 ft. | 3.5 ft. | 4 ft. | 4.5 ft. | 5 ft. | 5.5 ft. | 6 ft. | 6.5 ft. | 7 ft. | 7.5 ft. | 8 ft. | 8.5 ft. | 9 ft. | 9.5 ft. | 10 ft. | 10.5 ft. | 11 ft. | 11.5 ft. | 12 ft. | 12.5 ft. | 13 ft. | 13.5 ft. | 14 ft. | 14.5 ft. | 15 ft. | 15.5 ft. | 16 ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 ft. | 55 Sq. Ft | 66 Sq. Ft | 77 Sq. Ft | 88 Sq. Ft | 99 Sq. Ft | 110 Sq. Ft | 121 Sq. Ft | 132 Sq. Ft | 143 Sq. Ft | 154 Sq. Ft | 165 Sq. Ft | 176 Sq. Ft | 187 Sq. Ft | 198 Sq. Ft | 209 Sq. Ft | 220 Sq. Ft | 231 Sq. Ft | 242 Sq. Ft | 253 Sq. Ft | 264 Sq. Ft | 275 Sq. Ft | 286 Sq. Ft | 297 Sq. Ft | 308 Sq. Ft | 319 Sq. Ft | 330 Sq. Ft | 341 Sq. Ft | 352 Sq. Ft |
| 23 ft. | 57.5 Sq. Ft | 69 Sq. Ft | 80.5 Sq. Ft | 92 Sq. Ft | 103.5 Sq. Ft | 115 Sq. Ft | 126.5 Sq. Ft | 138 Sq. Ft | 149.5 Sq. Ft | 161 Sq. Ft | 172.5 Sq. Ft | 184 Sq. Ft | 195.5 Sq. Ft | 207 Sq. Ft | 218.5 Sq. Ft | 230 Sq. Ft | 241.5 Sq. Ft | 253 Sq. Ft | 264.5 Sq. Ft | 276 Sq. Ft | 287.5 Sq. Ft | 299 Sq. Ft | 310.5 Sq. Ft | 322 Sq. Ft | 333.5 Sq. Ft | 345 Sq. Ft | 356.5 Sq. Ft | 368 Sq. Ft |
| 24 ft. | 60 Sq. Ft | 72 Sq. Ft | 84 Sq. Ft | 96 Sq. Ft | 108 Sq. Ft | 120 Sq. Ft | 132 Sq. Ft | 144 Sq. Ft | 156 Sq. Ft | 168 Sq. Ft | 180 Sq. Ft | 192 Sq. Ft | 204 Sq. Ft | 216 Sq. Ft | 228 Sq. Ft | 240 Sq. Ft | 252 Sq. Ft | 264 Sq. Ft | 276 Sq. Ft | 288 Sq. Ft | 300 Sq. Ft | 312 Sq. Ft | 324 Sq. Ft | 336 Sq. Ft | 348 Sq. Ft | 360 Sq. Ft | 372 Sq. Ft | 384 Sq. Ft |
| 25 ft. | 62.5 Sq. Ft | 75 Sq. Ft | 87.5 Sq. Ft | 100 Sq. Ft | 112.5 Sq. Ft | 125 Sq. Ft | 137.5 Sq. Ft | 150 Sq. Ft | 162.5 Sq. Ft | 175 Sq. Ft | 187.5 Sq. Ft | 200 Sq. Ft | 212.5 Sq. Ft | 225 Sq. Ft | 237.5 Sq. Ft | 250 Sq. Ft | 262.5 Sq. Ft | 275 Sq. Ft | 287.5 Sq. Ft | 300 Sq. Ft | 312.5 Sq. Ft | 325 Sq. Ft | 337.5 Sq. Ft | 350 Sq. Ft | 362.5 Sq. Ft | 375 Sq. Ft | 387.5 Sq. Ft | 400 Sq. Ft |
| 26 ft. | 65 Sq. Ft | 78 Sq. Ft | 91 Sq. Ft | 104 Sq. Ft | 117 Sq. Ft | 130 Sq. Ft | 143 Sq. Ft | 156 Sq. Ft | 169 Sq. Ft | 182 Sq. Ft | 195 Sq. Ft | 208 Sq. Ft | 221 Sq. Ft | 234 Sq. Ft | 247 Sq. Ft | 260 Sq. Ft | 273 Sq. Ft | 286 Sq. Ft | 299 Sq. Ft | 312 Sq. Ft | 325 Sq. Ft | 338 Sq. Ft | 351 Sq. Ft | 364 Sq. Ft | 377 Sq. Ft | 390 Sq. Ft | 403 Sq. Ft | 416 Sq. Ft |
| 27 ft. | 67.5 Sq. Ft | 81 Sq. Ft | 94.5 Sq. Ft | 108 Sq. Ft | 121.5 Sq. Ft | 135 Sq. Ft | 148.5 Sq. Ft | 162 Sq. Ft | 175.5 Sq. Ft | 189 Sq. Ft | 202.5 Sq. Ft | 216 Sq. Ft | 229.5 Sq. Ft | 243 Sq. Ft | 256.5 Sq. Ft | 270 Sq. Ft | 283.5 Sq. Ft | 297 Sq. Ft | 310.5 Sq. Ft | 324 Sq. Ft | 337.5 Sq. Ft | 351 Sq. Ft | 364.5 Sq. Ft | 378 Sq. Ft | 391.5 Sq. Ft | 405 Sq. Ft | 418.5 Sq. Ft | 432 Sq. Ft |
| 28 ft. | 70 Sq. Ft | 84 Sq. Ft | 98 Sq. Ft | 112 Sq. Ft | 126 Sq. Ft | 140 Sq. Ft | 154 Sq. Ft | 168 Sq. Ft | 182 Sq. Ft | 196 Sq. Ft | 210 Sq. Ft | 224 Sq. Ft | 238 Sq. Ft | 252 Sq. Ft | 266 Sq. Ft | 280 Sq. Ft | 294 Sq. Ft | 308 Sq. Ft | 322 Sq. Ft | 336 Sq. Ft | 350 Sq. Ft | 364 Sq. Ft | 378 Sq. Ft | 392 Sq. Ft | 406 Sq. Ft | 420 Sq. Ft | 434 Sq. Ft | 448 Sq. Ft |
| 29 ft. | 72.5 Sq. Ft | 87 Sq. Ft | 101.5 Sq. Ft | 116 Sq. Ft | 130.5 Sq. Ft | 145 Sq. Ft | 159.5 Sq. Ft | 174 Sq. Ft | 188.5 Sq. Ft | 203 Sq. Ft | 217.5 Sq. Ft | 232 Sq. Ft | 246.5 Sq. Ft | 261 Sq. Ft | 275.5 Sq. Ft | 290 Sq. Ft | 304.5 Sq. Ft | 319 Sq. Ft | 333.5 Sq. Ft | 348 Sq. Ft | 362.5 Sq. Ft | 377 Sq. Ft | 391.5 Sq. Ft | 406 Sq. Ft | 420.5 Sq. Ft | 435 Sq. Ft | 449.5 Sq. Ft | 464 Sq. Ft |
| 30 ft. | 75 Sq. Ft | 90 Sq. Ft | 105 Sq. Ft | 120 Sq. Ft | 135 Sq. Ft | 150 Sq. Ft | 165 Sq. Ft | 180 Sq. Ft | 195 Sq. Ft | 210 Sq. Ft | 225 Sq. Ft | 240 Sq. Ft | 255 Sq. Ft | 270 Sq. Ft | 285 Sq. Ft | 300 Sq. Ft | 315 Sq. Ft | 330 Sq. Ft | 345 Sq. Ft | 360 Sq. Ft | 375 Sq. Ft | 390 Sq. Ft | 405 Sq. Ft | 420 Sq. Ft | 435 Sq. Ft | 450 Sq. Ft | 465 Sq. Ft | 480 Sq. Ft |
| 31 ft. | 77.5 Sq. Ft | 93 Sq. Ft | 108.5 Sq. Ft | 124 Sq. Ft | 139.5 Sq. Ft | 155 Sq. Ft | 170.5 Sq. Ft | 186 Sq. Ft | 201.5 Sq. Ft | 217 Sq. Ft | 232.5 Sq. Ft | 248 Sq. Ft | 263.5 Sq. Ft | 279 Sq. Ft | 294.5 Sq. Ft | 310 Sq. Ft | 325.5 Sq. Ft | 341 Sq. Ft | 356.5 Sq. Ft | 372 Sq. Ft | 387.5 Sq. Ft | 403 Sq. Ft | 418.5 Sq. Ft | 434 Sq. Ft | 449.5 Sq. Ft | 465 Sq. Ft | 480.5 Sq. Ft | 496 Sq. Ft |
| 32 ft. | 80 Sq. Ft | 96 Sq. Ft | 112 Sq. Ft | 128 Sq. Ft | 144 Sq. Ft | 160 Sq. Ft | 176 Sq. Ft | 192 Sq. Ft | 208 Sq. Ft | 224 Sq. Ft | 240 Sq. Ft | 256 Sq. Ft | 272 Sq. Ft | 288 Sq. Ft | 304 Sq. Ft | 320 Sq. Ft | 336 Sq. Ft | 352 Sq. Ft | 368 Sq. Ft | 384 Sq. Ft | 400 Sq. Ft | 416 Sq. Ft | 432 Sq. Ft | 448 Sq. Ft | 464 Sq. Ft | 480 Sq. Ft | 496 Sq. Ft | 512 Sq. Ft |
| 33 ft. | 82.5 Sq. Ft | 99 Sq. Ft | 115.5 Sq. Ft | 132 Sq. Ft | 148.5 Sq. Ft | 165 Sq. Ft | 181.5 Sq. Ft | 198 Sq. Ft | 214.5 Sq. Ft | 231 Sq. Ft | 247.5 Sq. Ft | 264 Sq. Ft | 280.5 Sq. Ft | 297 Sq. Ft | 313.5 Sq. Ft | 330 Sq. Ft | 346.5 Sq. Ft | 363 Sq. Ft | 379.5 Sq. Ft | 396 Sq. Ft | 412.5 Sq. Ft | 429 Sq. Ft | 445.5 Sq. Ft | 462 Sq. Ft | 478.5 Sq. Ft | 495 Sq. Ft | 511.5 Sq. Ft | 528 Sq. Ft |
| 34 ft. | 85 Sq. Ft | 102 Sq. Ft | 119 Sq. Ft | 136 Sq. Ft | 153 Sq. Ft | 170 Sq. Ft | 187 Sq. Ft | 204 Sq. Ft | 221 Sq. Ft | 238 Sq. Ft | 255 Sq. Ft | 272 Sq. Ft | 289 Sq. Ft | 306 Sq. Ft | 323 Sq. Ft | 340 Sq. Ft | 357 Sq. Ft | 374 Sq. Ft | 391 Sq. Ft | 408 Sq. Ft | 425 Sq. Ft | 442 Sq. Ft | 459 Sq. Ft | 476 Sq. Ft | 493 Sq. Ft | 510 Sq. Ft | 527 Sq. Ft | 544 Sq. Ft |
| 35 ft. | 87.5 Sq. Ft | 105 Sq. Ft | 122.5 Sq. Ft | 140 Sq. Ft | 157.5 Sq. Ft | 175 Sq. Ft | 192.5 Sq. Ft | 210 Sq. Ft | 227.5 Sq. Ft | 245 Sq. Ft | 262.5 Sq. Ft | 280 Sq. Ft | 297.5 Sq. Ft | 315 Sq. Ft | 332.5 Sq. Ft | 350 Sq. Ft | 367.5 Sq. Ft | 385 Sq. Ft | 402.5 Sq. Ft | 420 Sq. Ft | 437.5 Sq. Ft | 455 Sq. Ft | 472.5 Sq. Ft | 490 Sq. Ft | 507.5 Sq. Ft | 525 Sq. Ft | 542.5 Sq. Ft | 560 Sq. Ft |
| 36 ft. | 90 Sq. Ft | 108 Sq. Ft | 126 Sq. Ft | 144 Sq. Ft | 162 Sq. Ft | 180 Sq. Ft | 198 Sq. Ft | 216 Sq. Ft | 234 Sq. Ft | 252 Sq. Ft | 270 Sq. Ft | 288 Sq. Ft | 306 Sq. Ft | 324 Sq. Ft | 342 Sq. Ft | 360 Sq. Ft | 378 Sq. Ft | 396 Sq. Ft | 414 Sq. Ft | 432 Sq. Ft | 450 Sq. Ft | 468 Sq. Ft | 486 Sq. Ft | 504 Sq. Ft | 522 Sq. Ft | 540 Sq. Ft | 558 Sq. Ft | 576 Sq. Ft |

Type "B" (2 Posts)
1.6 CY Conc.
98 LBs Bar Steel

Type "C" (2 Posts)
1.8 CY Conc.
100 LBs Bar Steel

Type "D" (2 Posts)
1.8 CY Conc.
112 LBs Bar Steel

Type "C" (3 Posts)
2.7 CY Conc.
150 LBs Bar Steel

Type "D" (3 Posts)
2.7 CY Conc.
168 LBs Bar Steel

**STEEL POST SIZE**

"A" - W10" x 12"
"B" - W12" x 16"
"C" - W12" x 19"
"D" - W12 x 22"

# DETERMINATION OF HIGH STRENGTH STRUCTURAL STEEL SIGN SUPPORT TYPE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/5/10 PLATE NO. A3-3.2

PROJECT NO: | SHEET NO: E

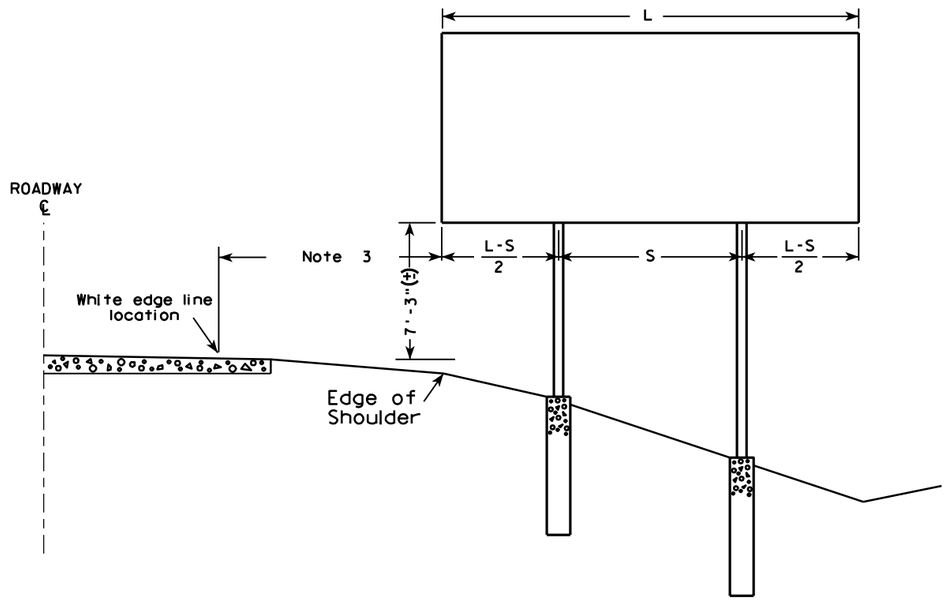
FILE NAME : C:\users\PROJECTS\tr_stdplate\A33.DGN PLOT DATE : 05-MAR-2010 10:07 PLOT BY : ditjph

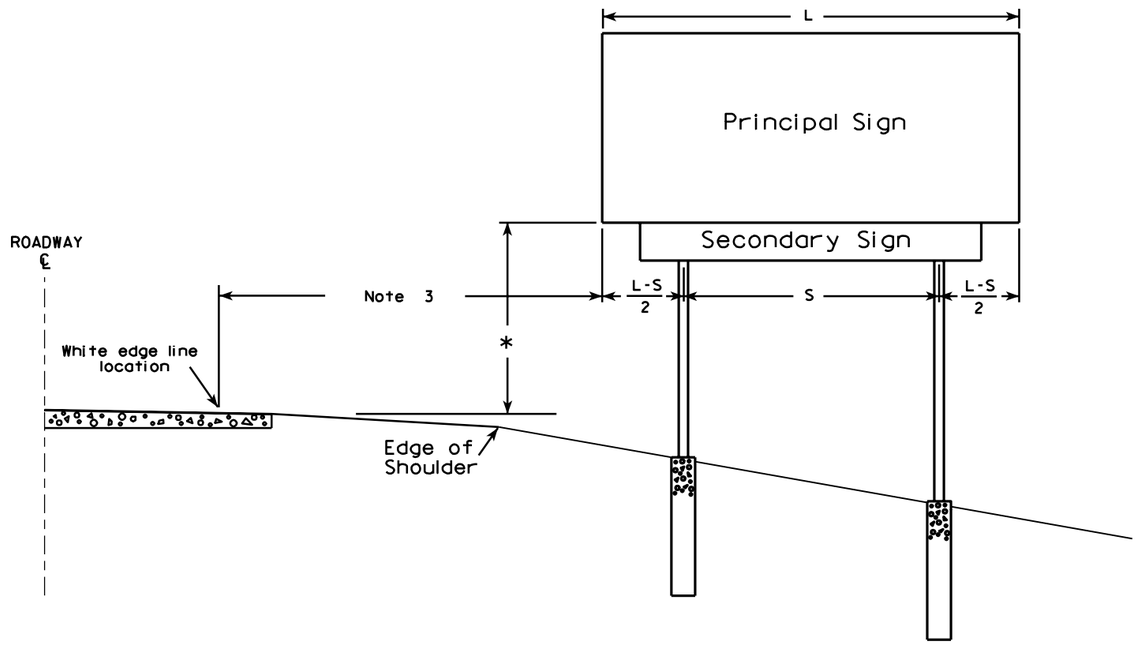




7

7




## GENERAL NOTES

1. For a 2 post installation, S equals 3L/5, but shall not be less than 9 ft.
2. For a 3 post installation, S equals 5L/7, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3"(±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3"(±).

# TYPICAL INSTALLATION OF TYPE I SIGNS

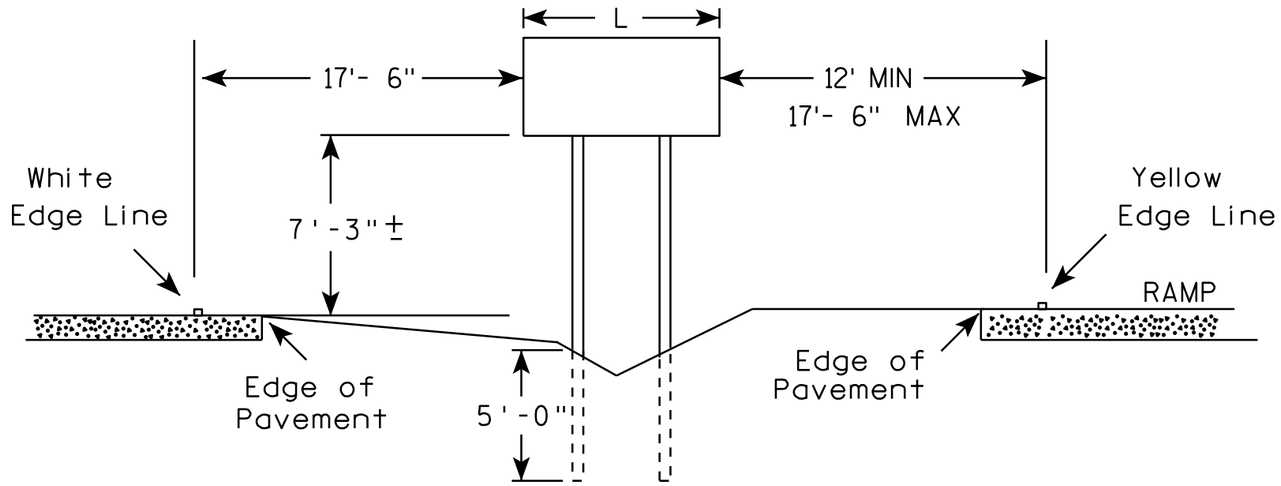
WISCONSIN DEPT OF TRANSPORTATION

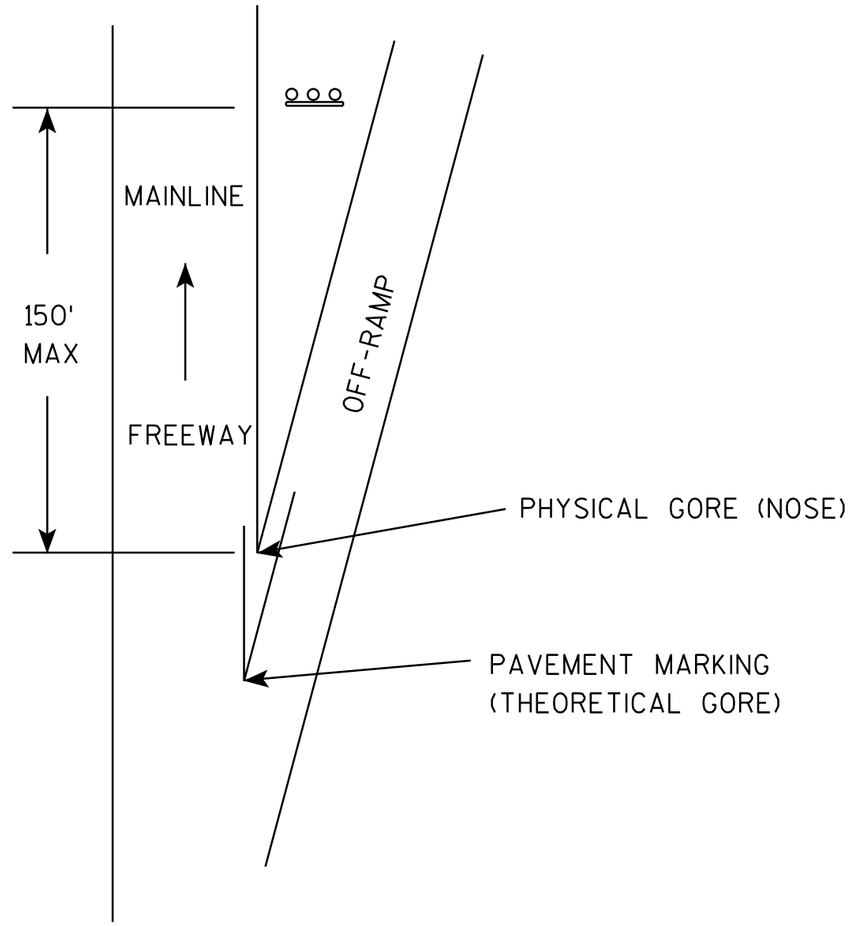
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/02/08 PLATE NO. A4-1.9

PROJECT NO:

SHEET NO: 279 E




GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The (∓) tolerance for the mounting height is 3 inches.

7

7

TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

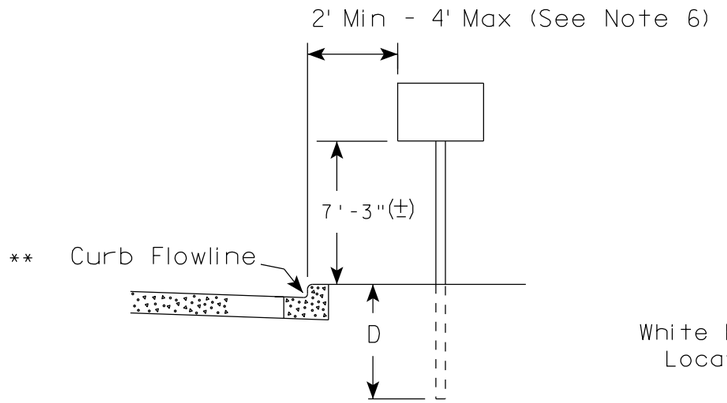
*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

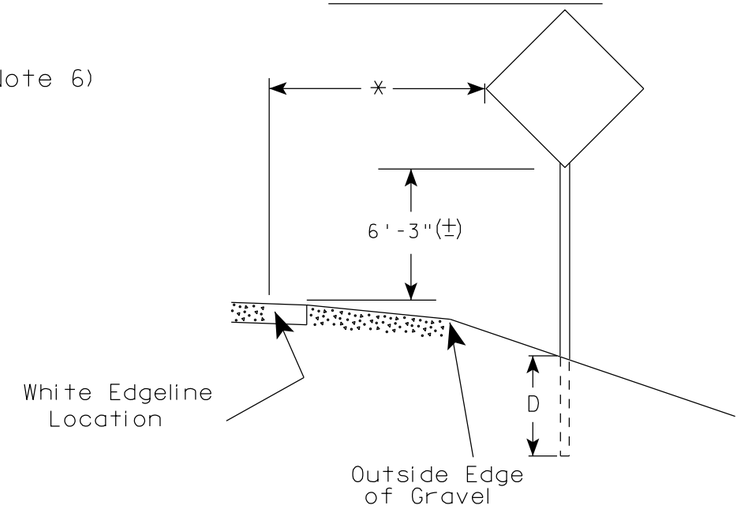
DATE 2/06/14 PLA 280 A4-2.3

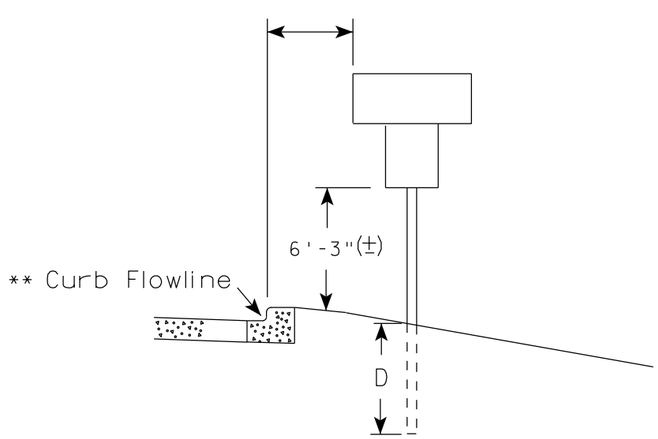
PROJECT NO: | SHEET NO: E

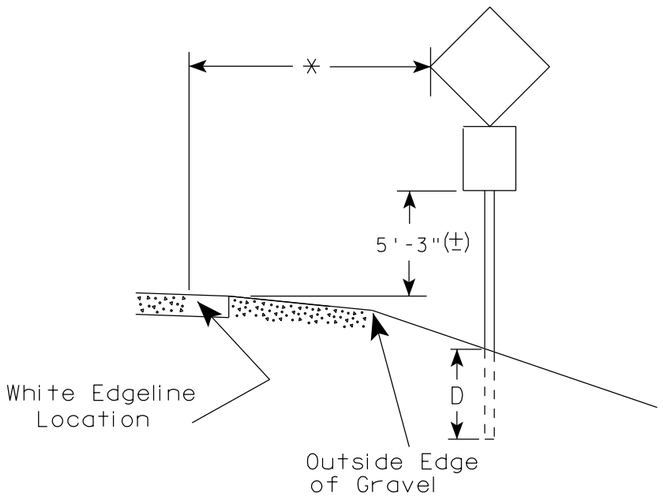
## URBAN AREA




## RURAL AREA (See Note 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. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

### POST EMBEDMENT DEPTH

| Area of Sign Installation ( Sq.Ft. ) | D ( Min ) |
|---|---|
| 20 or Less | 4' |
| Greater than 20 | 5' |

### GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

# TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

*WISCONSIN DEPT OF TRANSPORTATION*

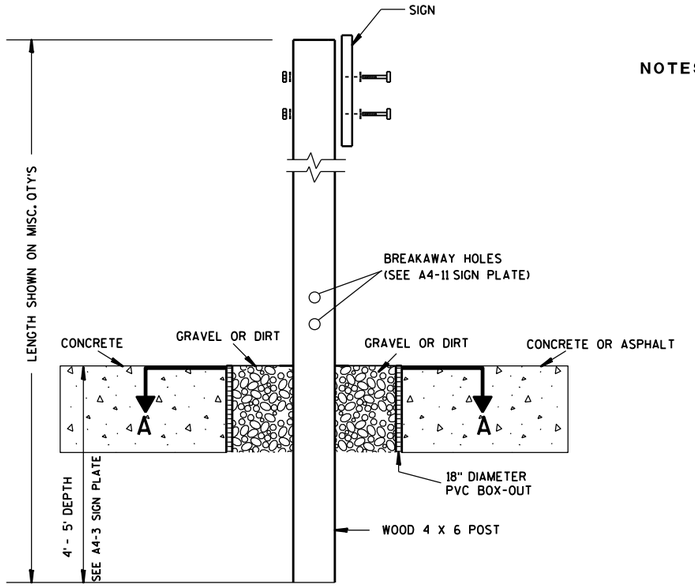
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20



| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

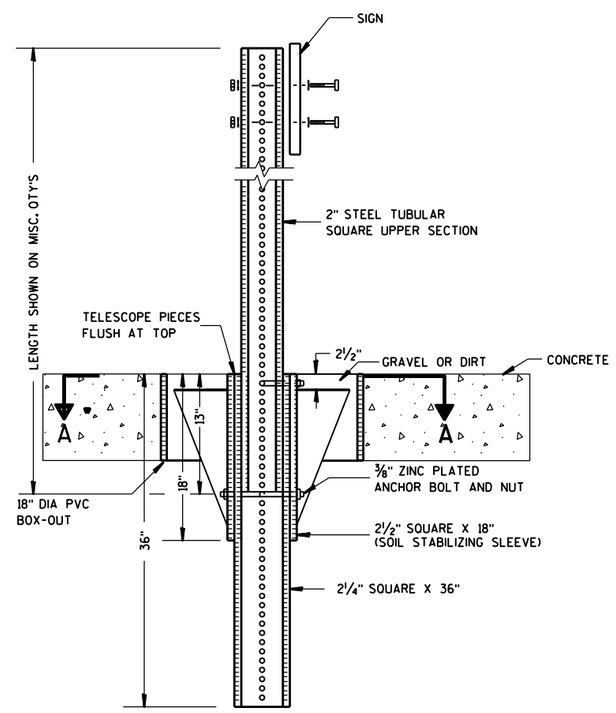
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 23-JUL-2015 15:21 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42




**ELEVATION VIEW**

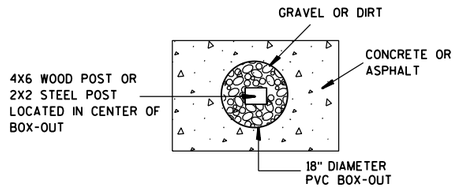
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.




**ELEVATION VIEW**

**DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT**




**PLAN VIEW**

**FOR NEW CONCRETE/ASPHALT INSTALLATIONS**

# SIGN POST BOX-OUTS A4-3B

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

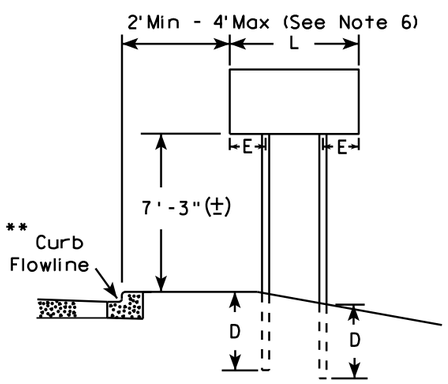
DATE 1/27/14 PLATE NO. A4-3B.1



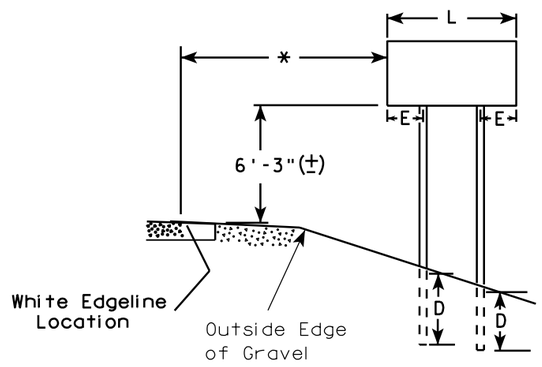
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

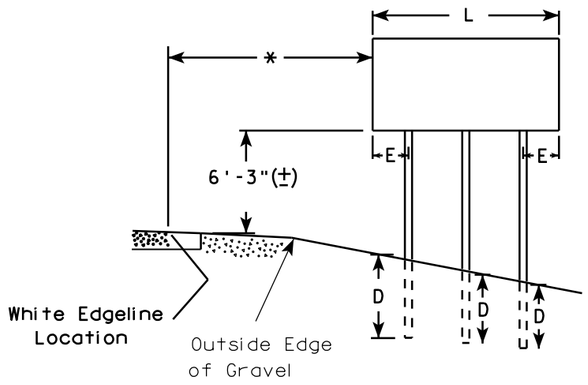
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

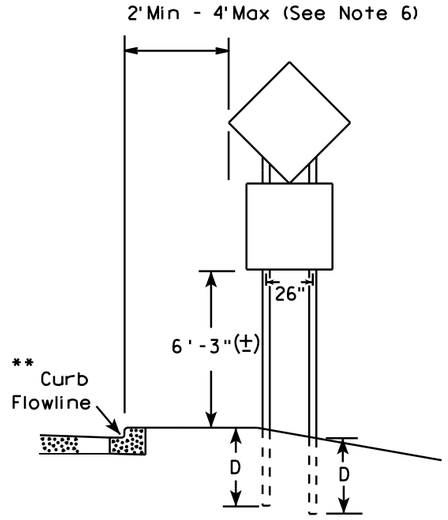
URBAN AREA



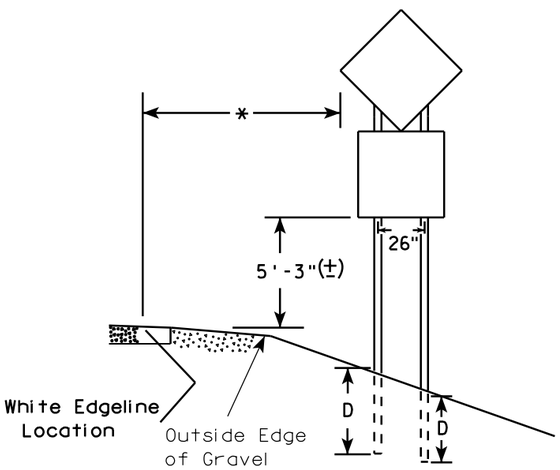

RURAL AREA (See Note 3)




48" DIAMOND WARNING SIGN




48" DIAMOND WARNING SIGN

| *** | SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED) | |
|---|---|---|
| | L | E |
| | Greater than 48" Less than 60" | 12" |
| | 60" to 120" | L/5 |

| SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED) | |
|---|---|
| L | E |
| Greater than 120" less than 168" | 12" |

| SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED) | |
|---|---|
| L | E |
| 168" and greater | 12" |

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** 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. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

| Area of Sign Installation ( Sq. Ft. ) | D ( Min ) |
|---|---|
| 20 or Less | 4' |
| Greater than 20 | 5' |

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

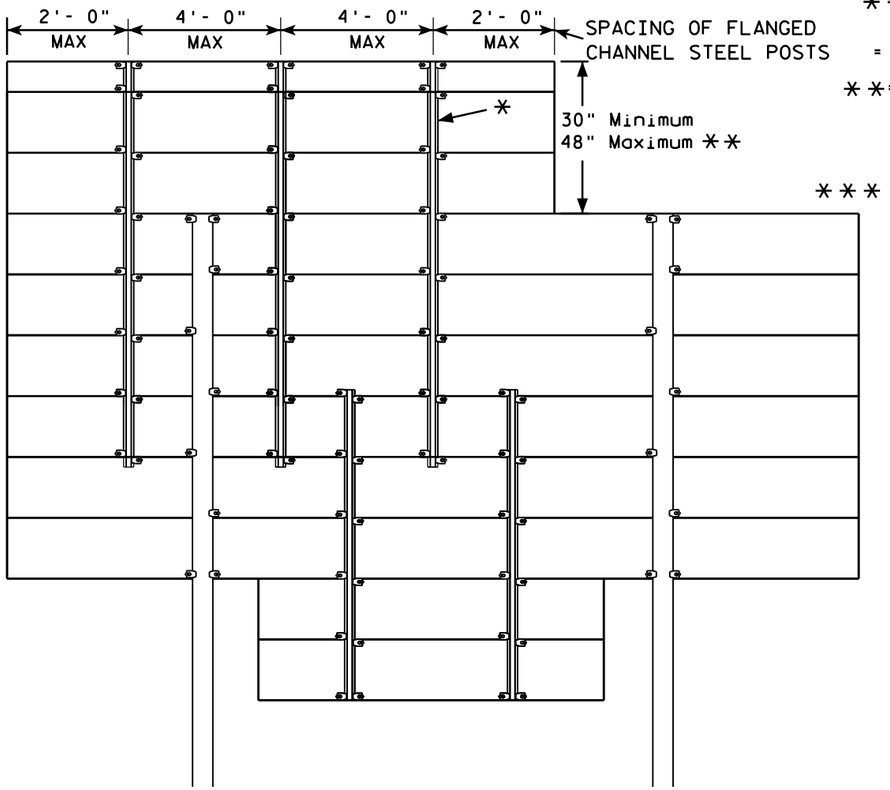
DATE 7/23/15 PLATE NO. A4-4 283 14

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 23-JUL-2015 15:23 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 107.021305:1.000000

WISDOT/CADDS SHEET 42

# GROUND MOUNTED SIGN

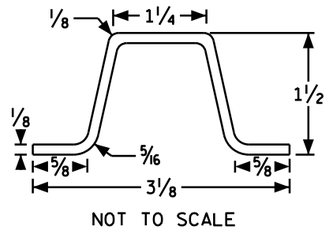



*=2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

**=FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

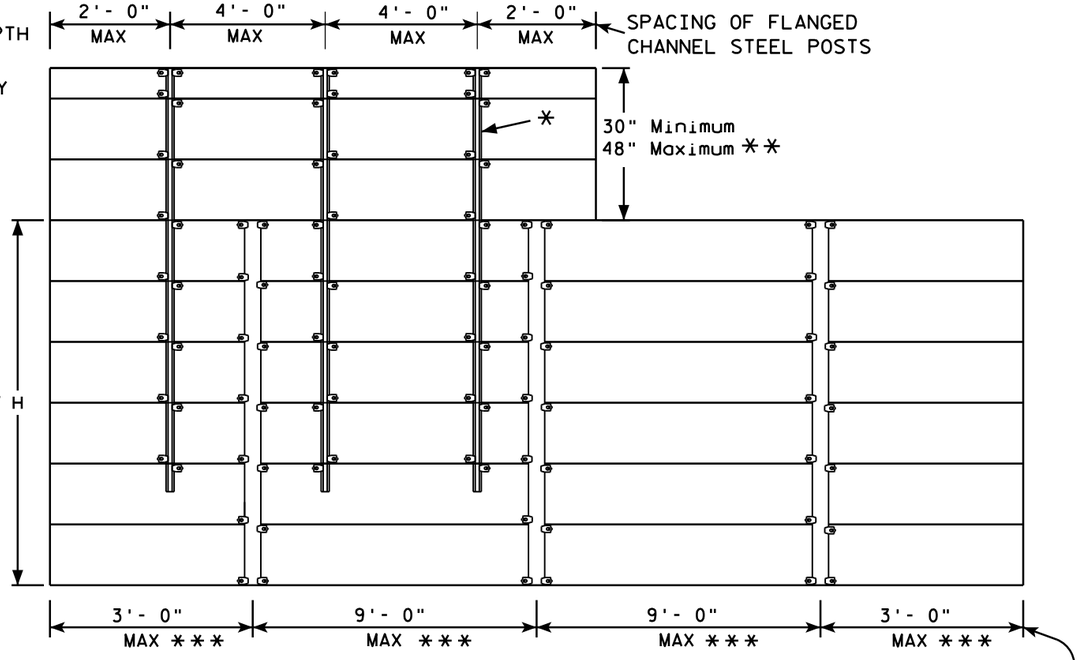
*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

## FLANGE CHANNEL DETAIL




NOT TO SCALE

# SIGN BRIDGE MOUNTED SIGN




SPACING OF ALUMINUM SIGN SUPPORTS
5" X 3.5" X 3.7 LBS./ft.

## GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:

   PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
   PANEL LENGTH 9'- 0" - 12'- 0" = 3 CHANNELS
   PANEL LENGTH 13'- 0" OR MORE = 4 CHANNELS

   If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

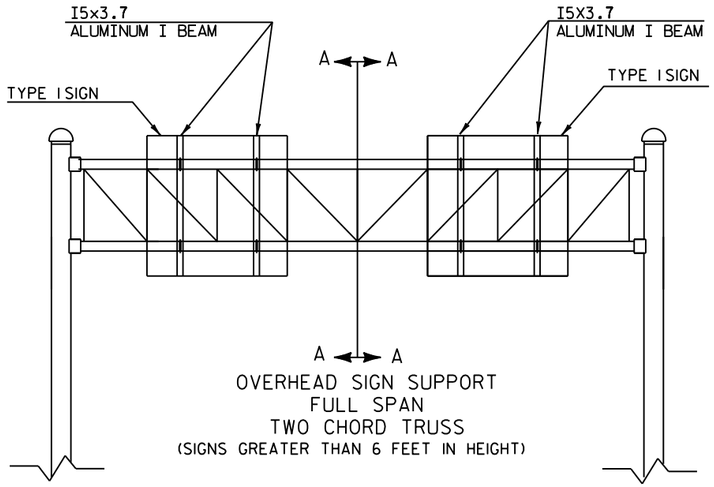
ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

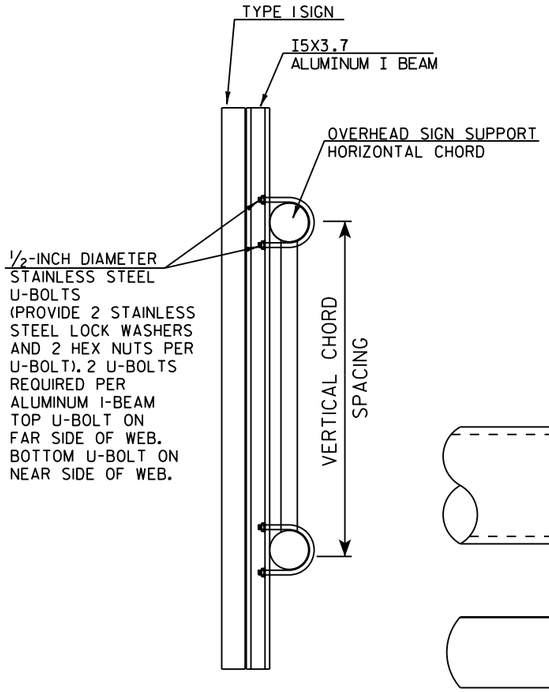
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/05/13 PLAT 284 A4-6.12

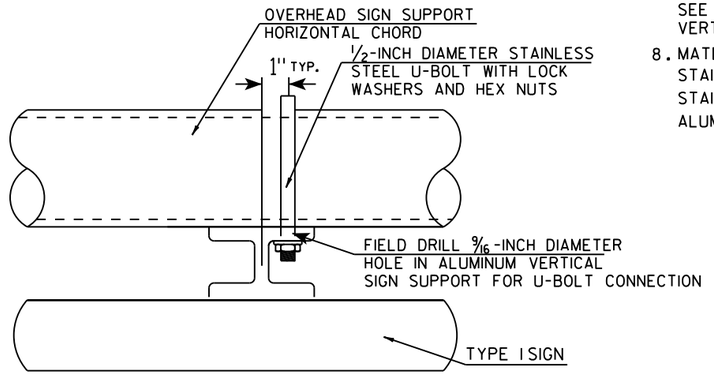
| PROJECT NO: | | | | SHEET NO: | E |
|---|---|---|---|---|---|




OVERHEAD SIGN SUPPORT
FULL SPAN
TWO CHORD TRUSS
(SIGNS GREATER THAN 6 FEET IN HEIGHT)



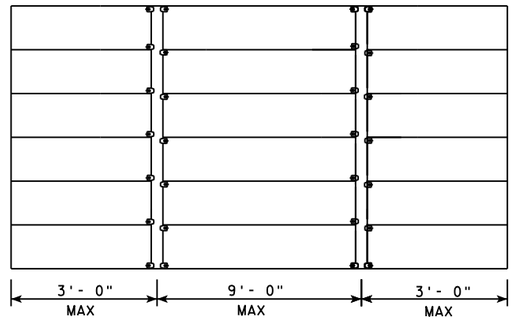

CUT SECTION A-A



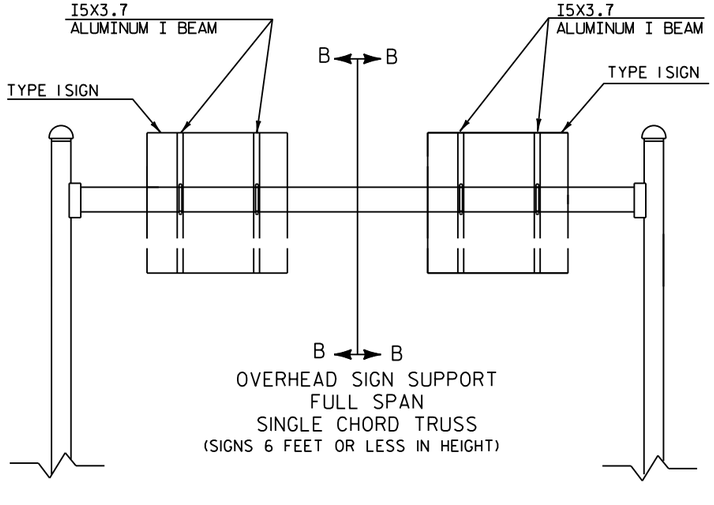

TYPICAL SIGN CONNECTION FOR
TWO CHORD TRUSS
PLAN VIEW

## GENERAL NOTES

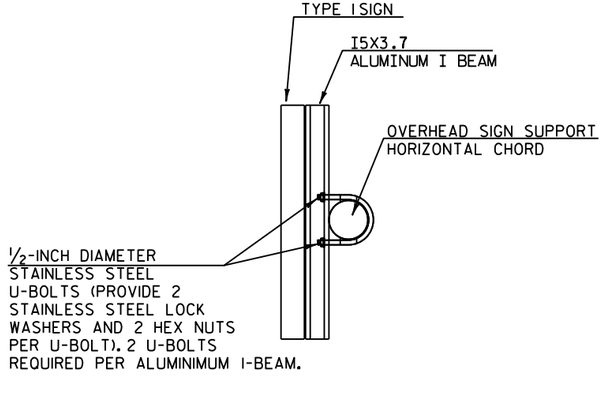
1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE CLIPS ON EVERY EXTRUDED PANEL JOINT PER SIGN PLATE A4-6.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. MINIMUM NUMBER OF BRACKETS PER SIGN IS TWO. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
   STAINLESS STEEL U-BOLTS AND LOCKWASHERS ASTM 304.
   STAINLESS STEEL HEX NUTS ASTM A276.
   ALUMINUM I-BEAMS ARE 6061-T6.



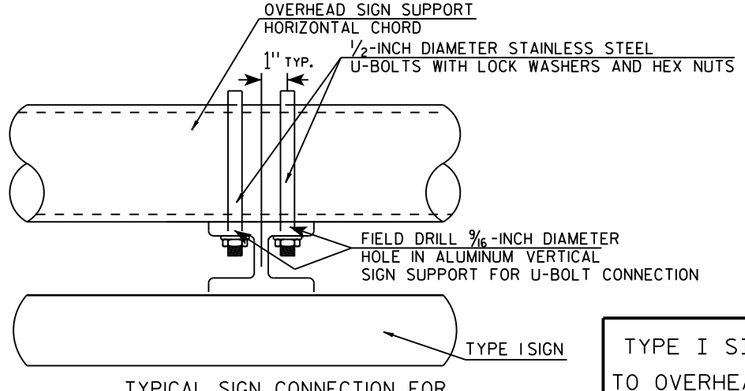

SPACING OF I5X3.7 ALUMINUM
VERTICAL SIGN SUPPORT




OVERHEAD SIGN SUPPORT
FULL SPAN
SINGLE CHORD TRUSS
(SIGNS 6 FEET OR LESS IN HEIGHT)




CUT SECTION B-B




TYPICAL SIGN CONNECTION FOR
SINGLE CHORD TRUSS
PLAN VIEW

# TYPE I SIGN CONNECTION TO OVERHEAD SIGN SUPPORT

*WISCONSIN DEPT OF TRANSPORTATION*

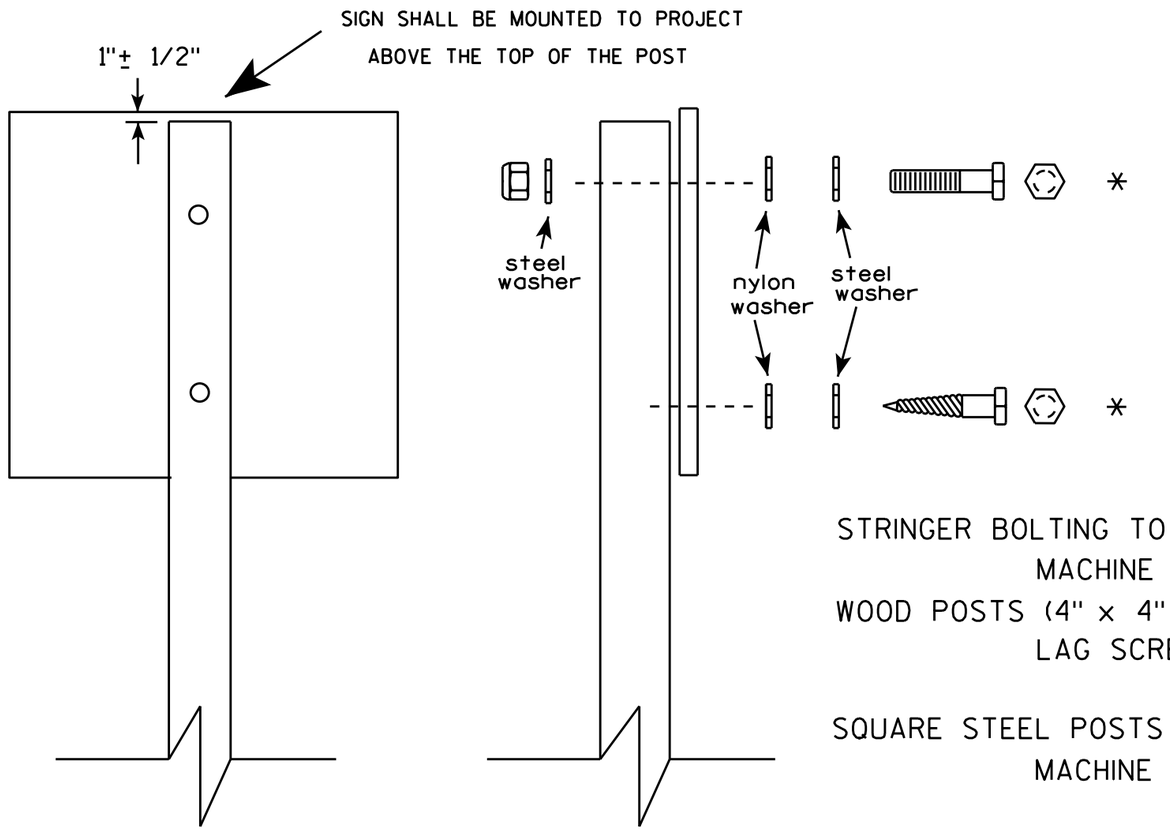
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/15 PLATE NO. A4-7.4



| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A47.DGN PLOT DATE : 01-DEC-2015 17:42 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 38.916838:1.000000




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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
MACHINE BOLTS - 5/16" X 1-3/4" Length w/ nuts
WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)
SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
RIVETS - 9/32 " (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

* 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, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

# ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/27/16 PLATE NO. A4-8.8

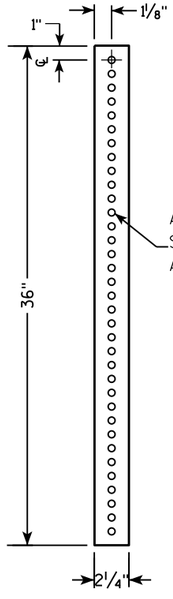


PROJECT NO: SHEET NO: E

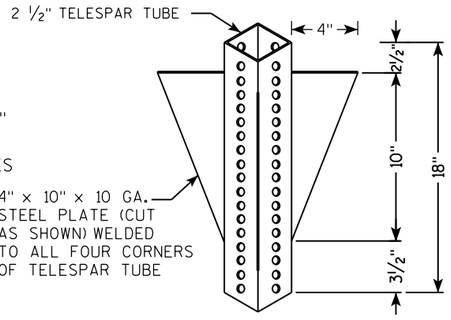
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 27-APR-2016 09:07 PLOT BY : mscj9h
WISDOT/CADDS SHEET 42

## TELESCOPIC TUBING ANCHORS
## TWO PIECE SYSTEM

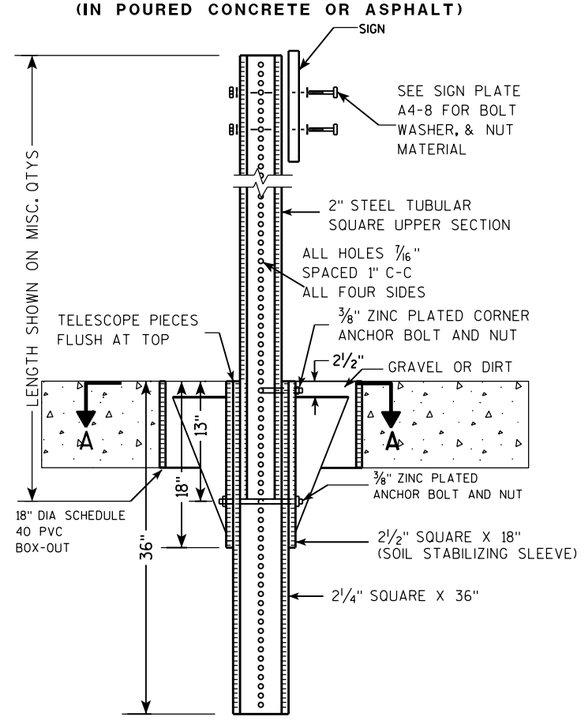
**2 1/4 " SQUARE**
**12 GAUGE**
**PERFORATED**
**GALVANIZED FINISH**



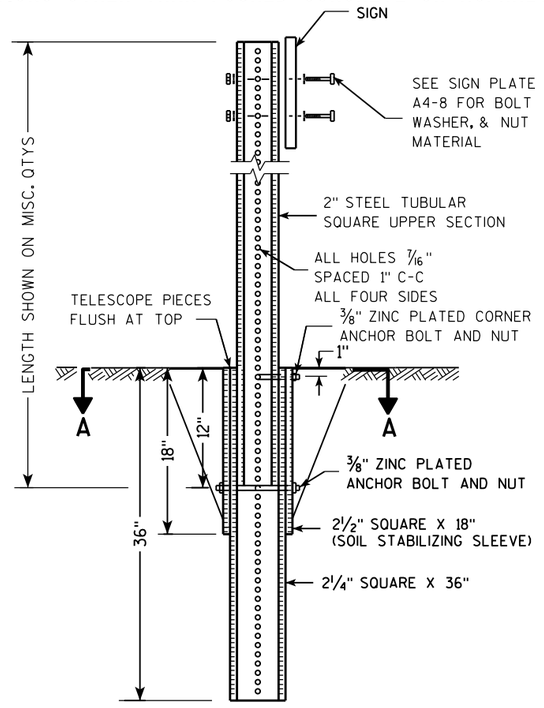

**2 1/2 " SQUARE**
**12 GAUGE**
**OMNI-DIRECTIONAL**
**PERFORATED**
**SOIL STABILIZING SLEEVE**
**GALVANIZED FINISH**

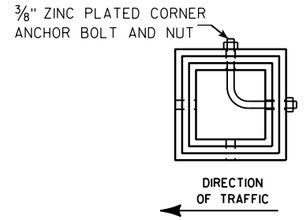



## DETAIL OF TUBULAR STEEL SIGN POST
**(IN POURED CONCRETE OR ASPHALT)**




## DETAIL OF TUBULAR STEEL SIGN POST
**(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**




**SECTION A-A**

| Area of Sign Installation (Sq. Ft.) | Number of Required 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).**

TUBULAR STEEL
SIGN POST
A4-9

*WISCONSIN DEPT OF TRANSPORTATION*

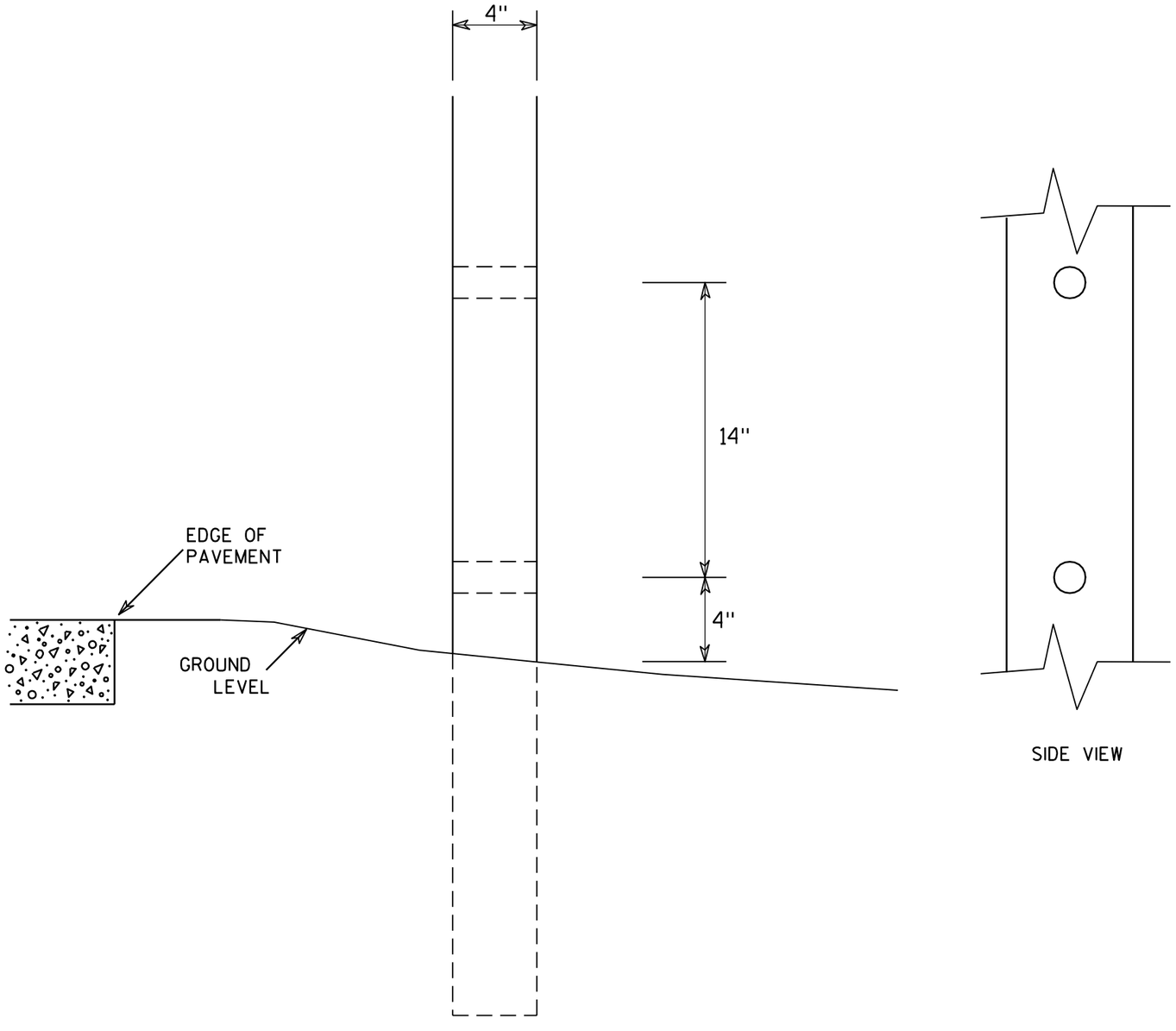
APPROVED Matthew R Rauch
*for* State Traffic Engineer

DATE 2/05/15 PLATE 287 A4-9.9

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42






SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

7

# 4 X 6 WOOD POST MODIFICATIONS

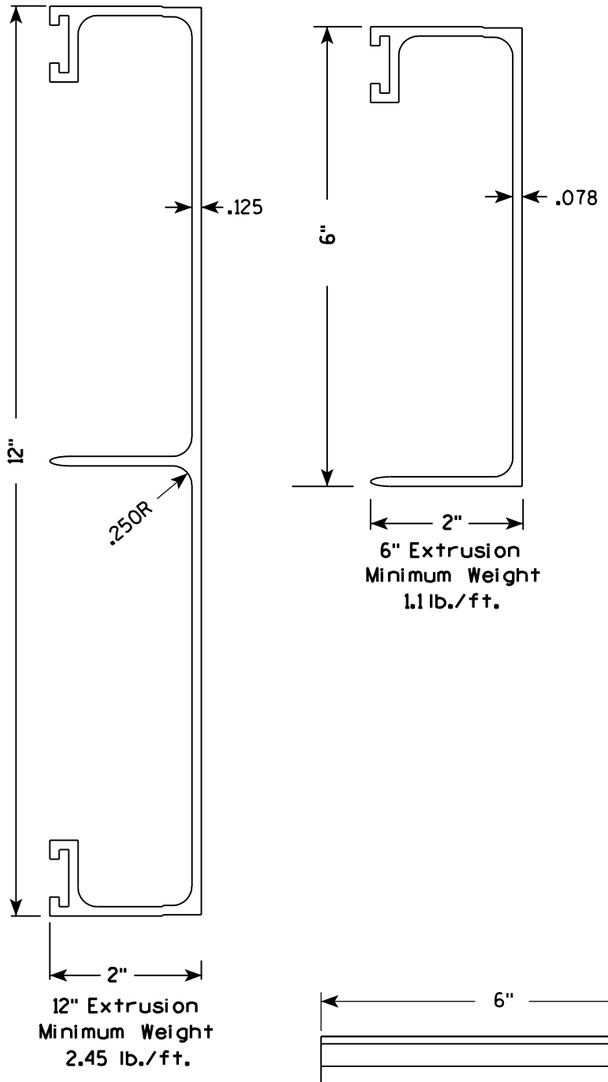
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

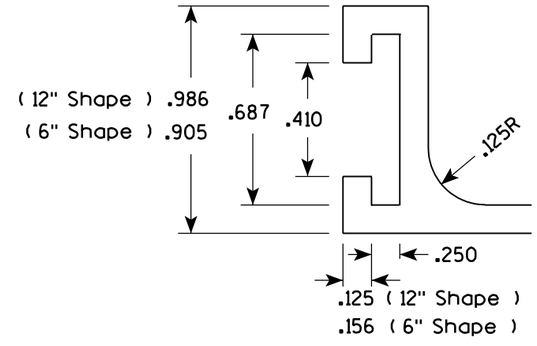
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 288 | E |
|---|---|---|---|---|---|

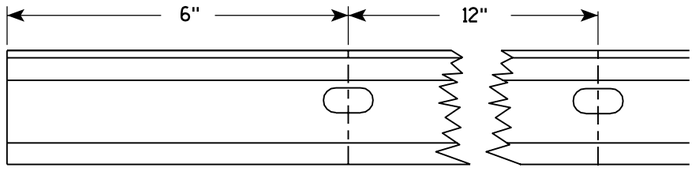
## Extruded Shape



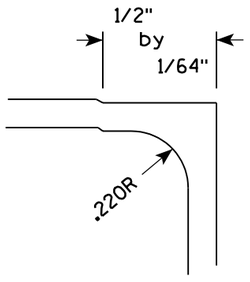







Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

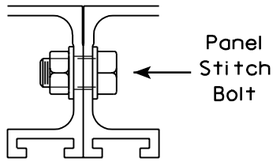



## Hardware

### STITCH BOLT, WASHER & NUT

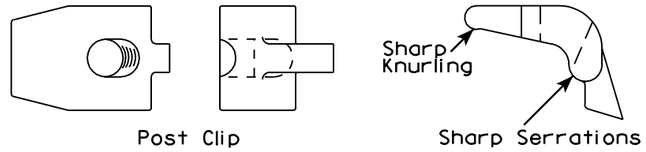
The hardware includes:

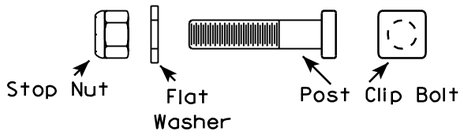
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy




### POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.




### NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

# ALUMINUM EXTRUSIONS FOR TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

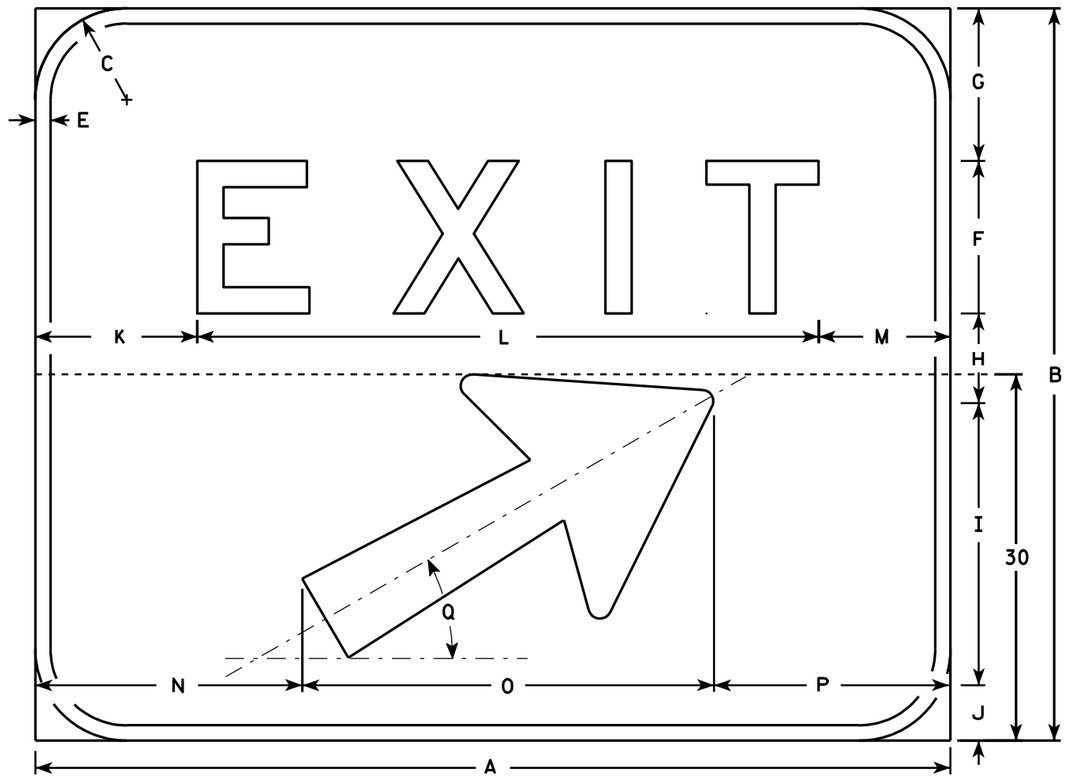
DATE 11/18/99 PLATE NO. A5-2.9

7

7

PROJECT NO:

SHEET NO: 289 E




E5-1

NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but borders shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (----------).
6. Arrow is Type "A" from sign plate A1-1.
7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | 1500 mm X 1200 mm |
| 5 | 1800 mm X 1500 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 60 | 48 | 6 | | 1 | 10 | 10 | 5 7/8 | 18 1/2 | 3 5/8 | 10 5/8 | 40 3/4 | 8 5/8 | 17 1/2 | 27 | 15 1/2 | 30° | | | | | | | | | | 20.0 | 1.80 |
| 5 | 72 | 60 | 6 | | 1 | 12 | 12 | 10 | 18 1/2 | 7 1/2 | 13 1/4 | 48 1/2 | 10 1/4 | 23 1/2 | 27 | 21 1/2 | 30° | | | | | | | | | | 30.0 | 2.70 |

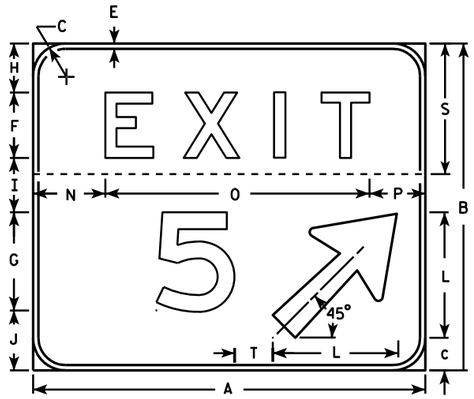
STANDARD SIGN
E5 - 1

WISCONSIN DEPT OF TRANSPORTATION

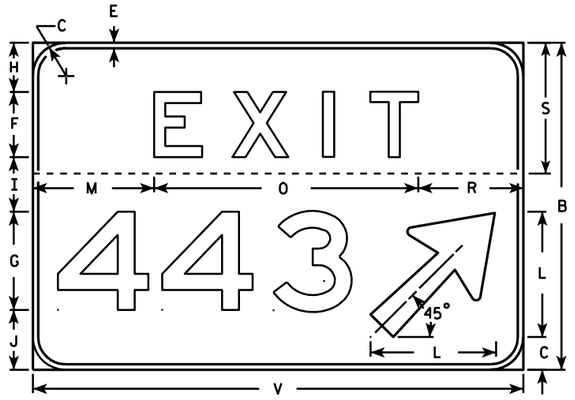
APPROVED Chester J Spang for State Traffic Engineer

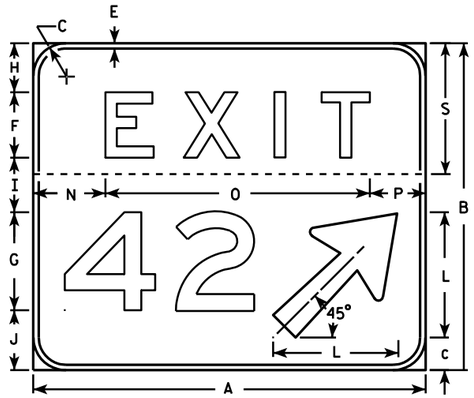
DATE 6/22/00 PLATE NO. E5-1.8

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 290 | E |
|---|---|---|---|---|---|




NOTE: T diminision shall be measured from the back of the number to the front of the arrow



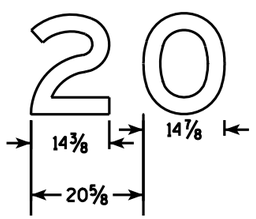

## NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but the border shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two seperate pieces as shown on each detail by the dashed line (----------).
6. Arrow is Type "A" from sign plate A1-1.
7. Substitute appropriate message, space per the table and adjust placement on sign to achieve proper balance.
8. As per the Standard Spec's, these signs shall not have a vertical joint.

## SPACING CHART FOR 18" NUMERALS

| NUMBERS | WIDTH | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 14 7/8 | 21 5/8 | 21 5/8 | 21 1/4 | 20 3/8 | 21 1/4 | 21 1/4 | 21 5/8 | 19 7/8 | 22 1/8 | 21 5/8 | | | |
| 1 | 5 7/8 | 14 | 14 | 14 | 13 1/8 | 12 1/8 | 14 | 14 | 12 1/4 | 14 | 14 | | | |
| 2 | 14 3/8 | 20 5/8 | 21 1/8 | 20 5/8 | 19 3/4 | 20 1/4 | 20 5/8 | 20 5/8 | 18 7/8 | 21 1/8 | 20 5/8 | | | |
| 3 | 14 3/8 | 20 3/4 | 21 1/8 | 20 3/4 | 20 1/4 | 19 3/4 | 20 3/4 | 20 3/4 | 19 3/8 | 21 1/8 | 20 3/4 | | | |
| 4 | 16 5/8 | 22 7/8 | 22 | 22 1/2 | 21 5/8 | 21 5/8 | 22 7/8 | 22 7/8 | 20 5/8 | 23 3/8 | 22 7/8 | | | |
| 5 | 14 1/4 | 20 5/8 | 20 5/8 | 20 1/8 | 18 3/4 | 18 3/4 | 20 5/8 | 20 5/8 | 18 3/8 | 20 5/8 | 20 5/8 | | | |
| 6 | 14 1/2 | 21 1/4 | 20 3/4 | 20 3/4 | 19 7/8 | 19 1/2 | 20 3/8 | 20 3/4 | 19 | 20 3/4 | 20 3/8 | | | |
| 7 | 14 3/8 | 19 3/4 | 19 3/4 | 20 1/4 | 19 3/4 | 17 | 19 3/4 | 20 5/8 | 18 7/8 | 20 5/8 | 19 3/4 | | | |
| 8 | 14 1/4 | 21 1/2 | 21 1/2 | 20 5/8 | 19 1/4 | 19 3/4 | 20 5/8 | 21 1/2 | 19 5/8 | 21 1/2 | 20 5/8 | | | |
| 9 | 14 1/2 | 21 1/4 | 21 1/4 | 20 7/8 | 20 | 20 7/8 | 20 7/8 | 21 1/4 | 19 1/2 | 21 3/4 | 21 1/4 | | | |
| A | 18 | 19 3/4 | 19 3/4 | 20 1/4 | 19 3/4 | 17 | 19 3/4 | 20 5/8 | 18 7/8 | 20 5/8 | 19 3/4 | 21 5/8 | 23 7/8 | 23 |
| B | 14 1/4 | 21 1/2 | 21 1/2 | 20 5/8 | 19 1/4 | 19 3/4 | 20 5/8 | 21 1/2 | 19 5/8 | 21 1/2 | 20 5/8 | 19 1/2 | 22 3/8 | 21 1/2 |
| C | 14 1/4 | 21 1/4 | 21 1/4 | 20 7/8 | 20 | 20 7/8 | 20 7/8 | 21 1/4 | 19 1/2 | 21 3/4 | 21 1/4 | 18 3/8 | 21 | 19 3/4 |

### EXAMPLE FOR USING SPACING CHART




| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 72 | 60 | 6 | | 1 | 12 | 18 | 9 | 10 | 11 | 8 7/8 | 23 | 22 1/4 | 13 1/4 | 48 1/2 | 10 1/4 | | 19 1/4 | 24 | 7 | | 90 | | 96 | 7 1/2 | |

| 1-2 Digit Bid Area | 3 Digit Bid Area |
|---|---|
| Sq. Ft. | |
| 30 | 37.5 |

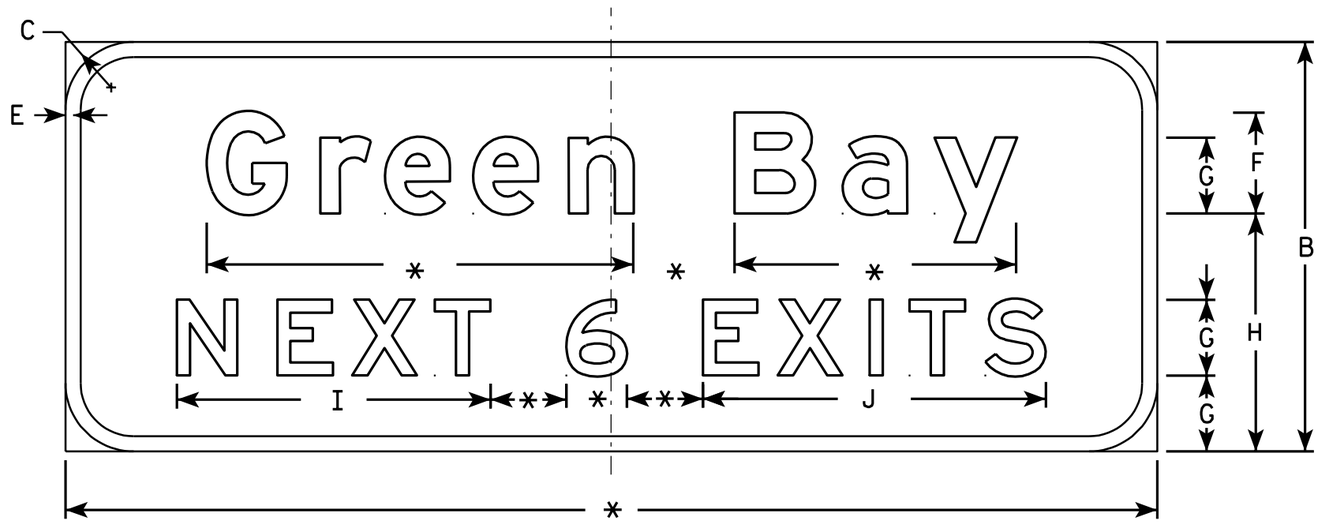
# STANDARD SIGN E5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 5/11/10 PLATE NO. E5-1A.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 291 | E




E9-1

* See Note # 4

NOTES

1. All Signs are Type I - Type SH Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White
3. Message Series - All CAP Letters are Series E. All Upper/Lower case Letters are Series E Modified.
4. Substitute appropriate community name and numeral and optically adjust spacing to achieve proper balance.
5. The border and radius for each sign shall be determined from the table parameters.

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | varies X 1050 mm |
| 5 | varies X 1350 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | varies | 42 | 9 | | 2 | 10 11/16 | 8 | 24 | 33 1/4 | 36 3/8 | | | | | | | | | | | | | | | | | varies | varies |
| 5 | varies | 54 | 9 | | 2 | 13 5/16 | 10 | 31 3/8 | 41 3/8 | 45 1/4 | | | | | | | | | | | | | | | | | varies | varies |

STANDARD SIGN
E9-1

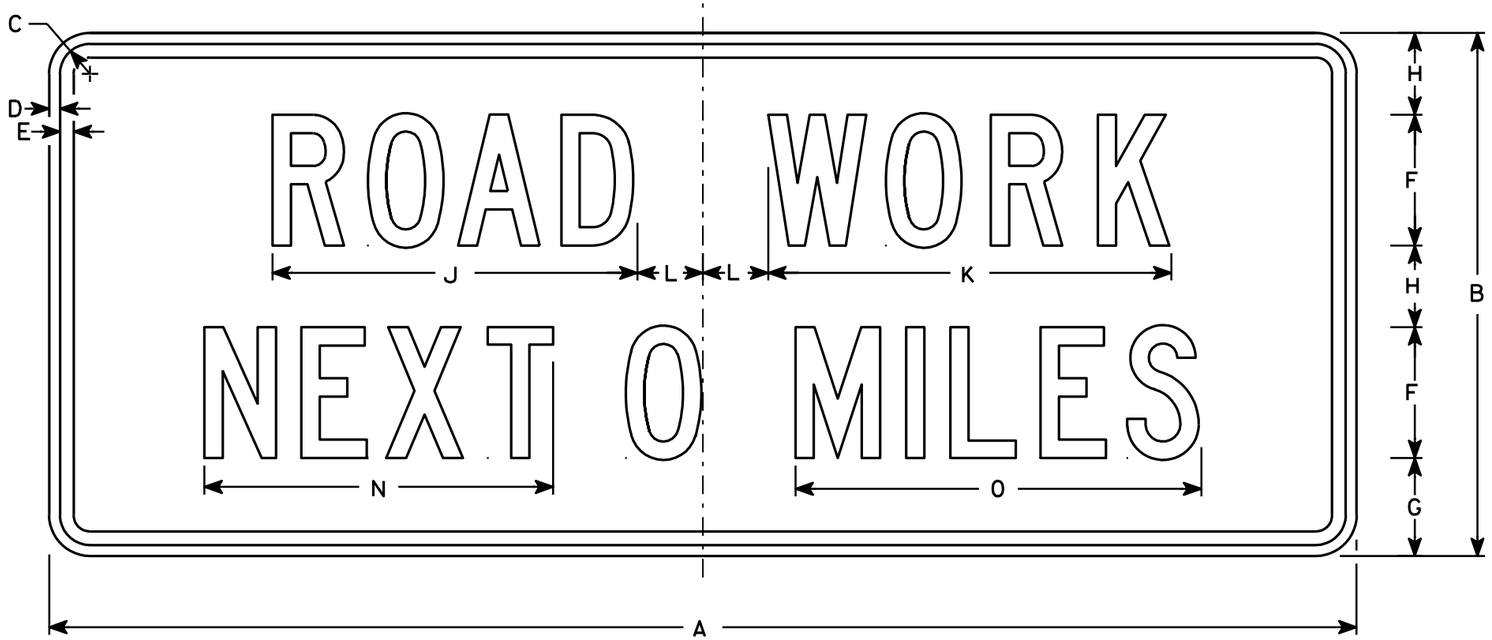
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/8/08 PLATE NO. E9-1.4

PROJECT NO:

SHEET NO: 292 E




G20-1

## NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | 1500 mm X 600 mm |
| 3 | |
| 4 | 1500 mm X 600 mm |
| 5 | |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | | 16 3/4 | 18 1/2 | 3 | | 16 | 18 5/8 | | | | | | | | | | | | 10 | .90 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | | 16 3/4 | 18 1/2 | 3 | | 16 | 18 5/8 | | | | | | | | | | | | 10 | .90 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

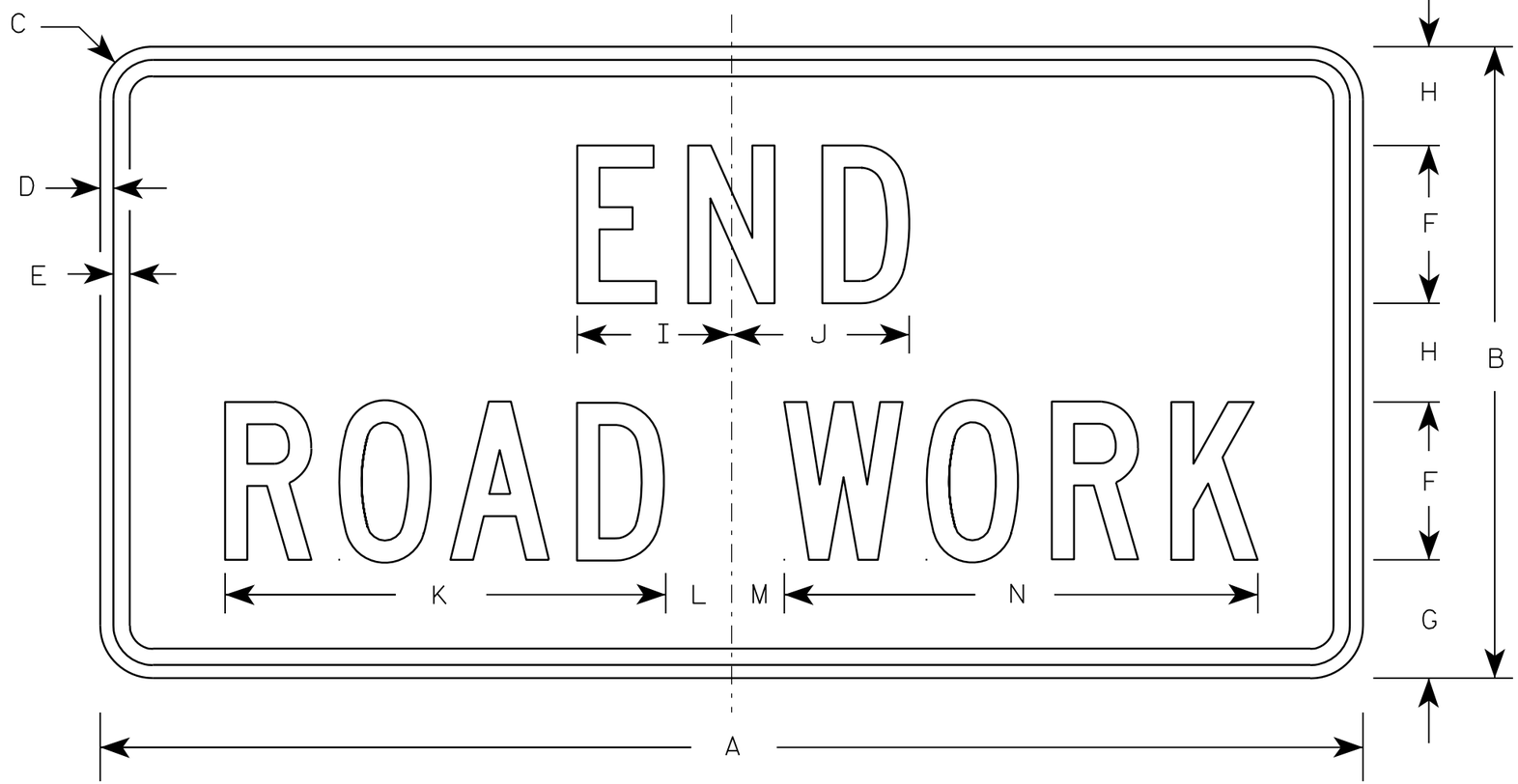
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spray for State Traffic Engineer

DATE 4/8/97 PLATE NO. G20-1.7

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 293 | E |
|---|---|---|---|---|---|




G20-2A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | 900 mm X 450 mm |
| 2 | 1200 mm X 600 mm |
| 3 | 1200 mm X 600 mm |
| 4 | 1200 mm X 600 mm |
| 5 | 1200 mm X 600 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 4 | 3 3/4 | 2 1/2 | 4 1/8 | 4 1/8 | 11 1/8 | 2 | 1 | 12 1/8 | | | | | | | | | | | | | 4.5 | 0.41 |
| 2 | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 | | | | | | | | | | | | | 8.0 | 0.72 |
| 3 | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 | | | | | | | | | | | | | 8.0 | 0.72 |
| 4 | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 | | | | | | | | | | | | | 8.0 | 0.72 |
| 5 | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 | | | | | | | | | | | | | 8.0 | 0.72 |

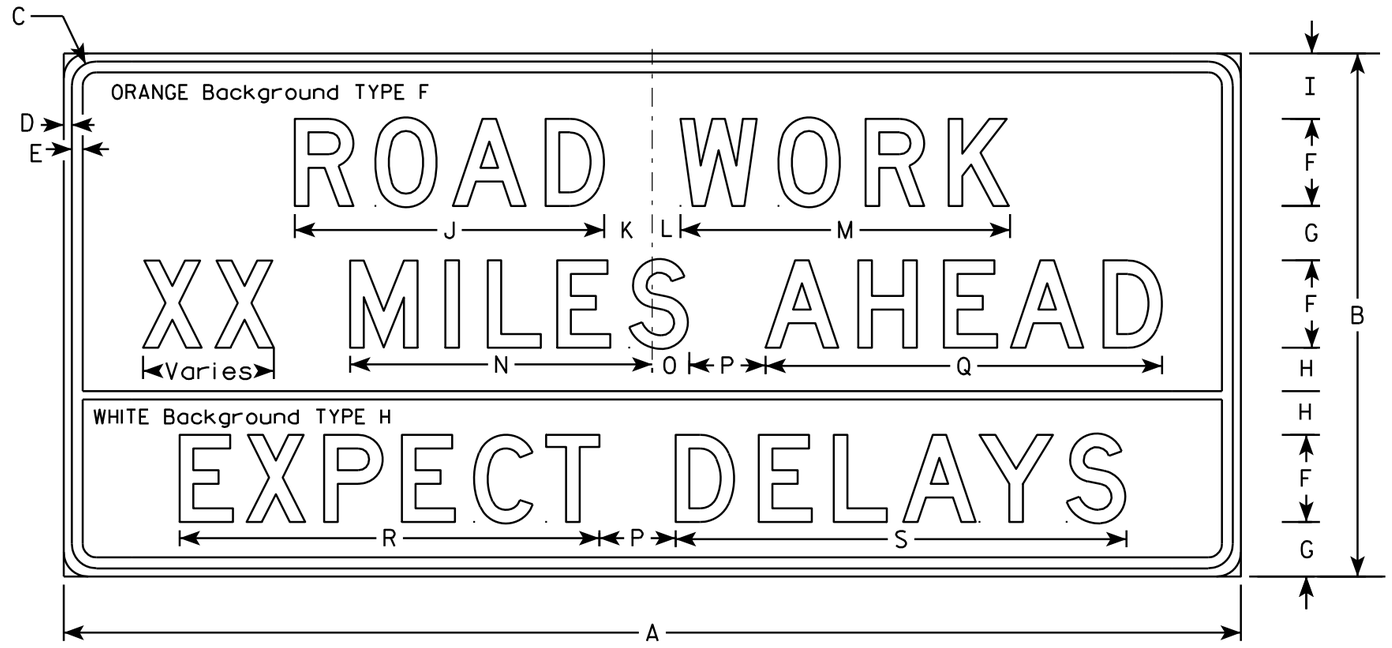
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 294 | E |
|---|---|---|---|---|---|




G20-58

NOTES

1. Sign is Type II - Type F & Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - AS NOTED
   Message - BLACK
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | 2700 mm X 1200 mm |
| 3 | |
| 4 | |
| 5 | |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 108 | 48 | 2 1/4 | 3/4 | 1 | 8 | 5 | 4 | 6 | 28 3/8 | 4 1/2 | 2 1/2 | 30 1/4 | 27 3/4 | 3 3/8 | 7 | 36 3/8 | 38 1/2 | 41 3/8 | | | | | | | | 36.0 | 3.24 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
G20-58

WISCONSIN DEPT OF TRANSPORTATION

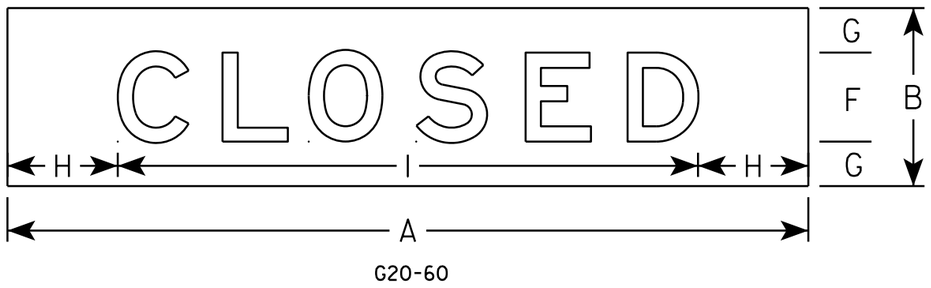
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/13/2009 PLATE NO. G20-58.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 295 | E

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - E
4. Material shall be .040 aluminmum




G20-60

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 108 | 24 | | | | 12 | 6 | 14 7/8 | 78 1/4 | | | | | | | | | | | | | | | | | | 18.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
G20-60

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/15 PLATE NO G20-60.1



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\G2060.DGN PLOT DATE : 13-MAY-2015 08:46 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 20.431338:1.000000
WISDOT/CADDS SHEET 42

7

7

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - E

G20-61

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 120 | 30 | 6 | | 2 | 12 | 9 | 21 | 78 1/4 | 20 3/4 | | | | | | | | | | | | | | | | | 25.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
G20-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO G20-61.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

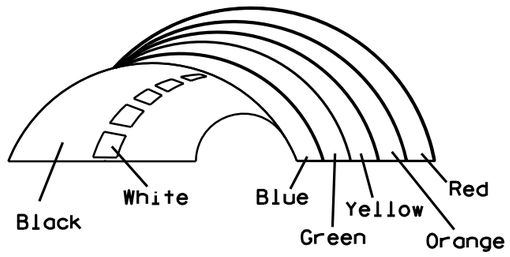


FILE NAME : C:\CAEFiles\Projects\tr_stdplate\G2061.DGN PLOT DATE : 07-MAY-2015 13:47 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 20.431338:1.000000 WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
   Line 1 - Red
   Line 2 - Black
   Line 3-5 - Blue
6. Line 1 - Dutch 8011L
   Line 2 - Series E
   Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

Background Colors of Symbol*




*1/4" Black Border between each color of rainbow and border of rainbow

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 30 | 36 | 1 1/2 | 1/2 | 5/8 | 3 | 2 | 3 1/2 | 2 7/8 | 1 | 8 | 2 1/8 | 11 1/4 | 11 1/8 | 9 3/8 | 1 1/4 | | 3/4 | 12 5/8 | 7 1/2 | | | | | | | 7.5 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
I55-56

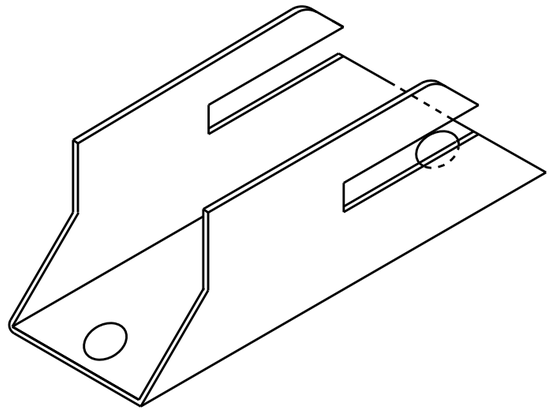
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

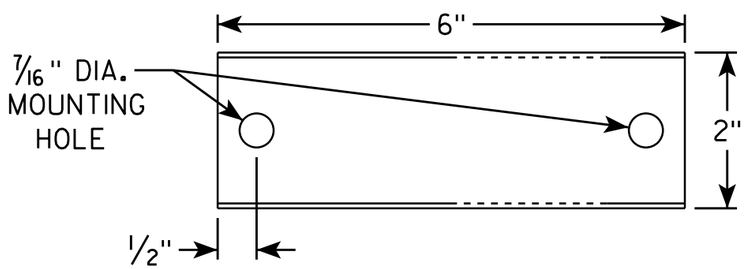
DATE 4/27/11 PLATE NO. 155-56.3

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 298 |
|---|---|---|---|---|

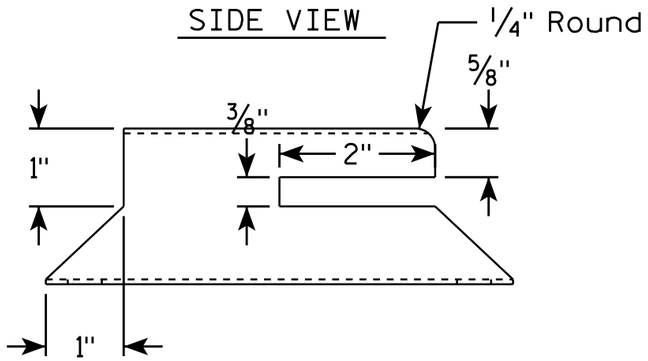
## ISOMETRIC VIEW



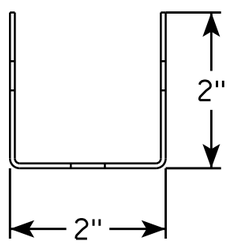
## TOP VIEW




## SIDE VIEW



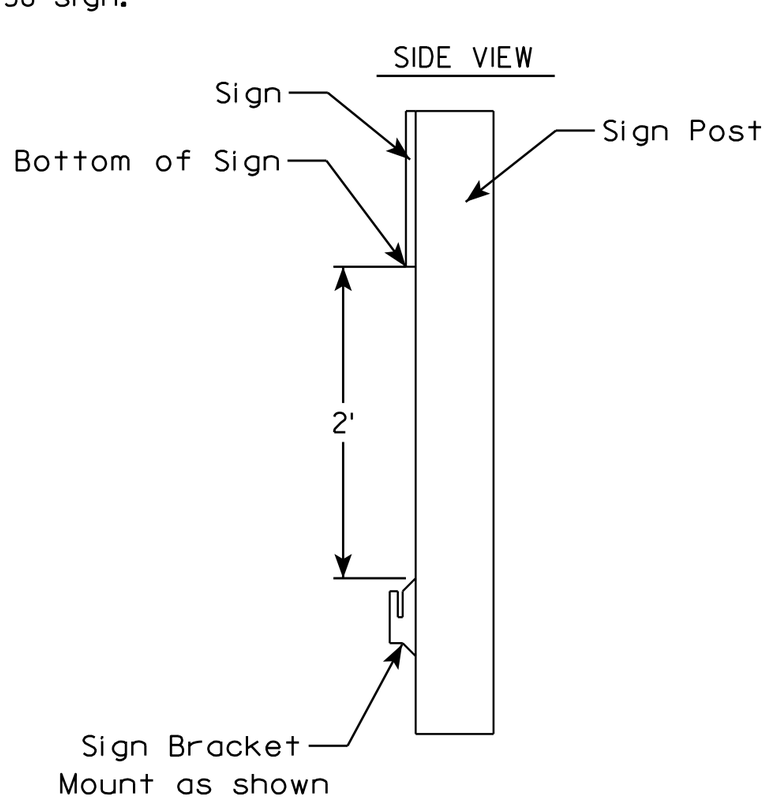

## END VIEW




## NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

## SIDE VIEW




ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/26/16 PLATE I55-56B.2

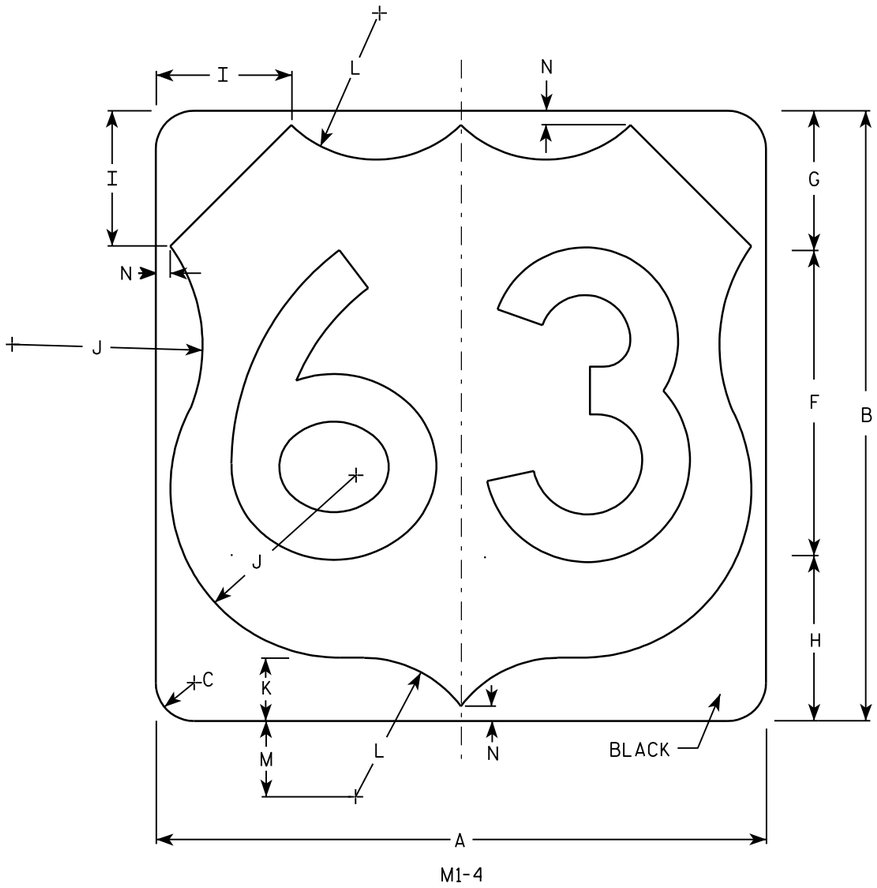
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|



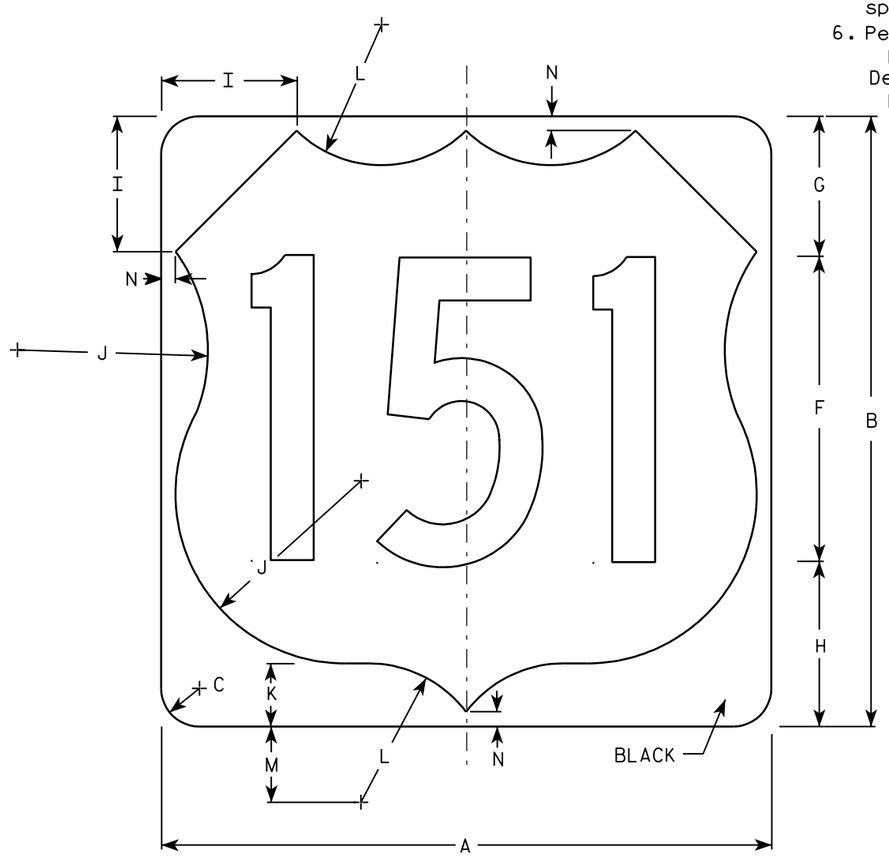
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\I5556B.DGN PLOT DATE : 26-APR-2016 17:29 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 1.945842:1.000000
WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective




M1-4




M1-4

7

7

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | 600 mm X 600 mm |
| 3 | 900 mm X 900 mm |
| 4 | 900 mm X 900 mm |
| 5 | 900 mm X 900 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Areq sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 24 | 1 ½ | | | 12 | 5 ½ | 6 ½ | 5 | 7 ½ | 2 ½ | 5 ½ | 3 | ½ | | | | | | | | | | | | | 4.0 | .36 |
| 3 | 36 | 36 | 2 ¼ | | | 18 | 8 ¼ | 9 ¼ | 7 ¼ | 11 ¼ | 3 ¾ | 8 ¼ | 4 ½ | ¾ | | | | | | | | | | | | | 9.0 | .81 |
| 4 | 36 | 36 | 2 ¼ | | | 18 | 8 ¼ | 9 ¼ | 7 ¼ | 11 ¼ | 3 ¾ | 8 ¼ | 4 ½ | ¾ | | | | | | | | | | | | | 9.0 | .81 |
| 5 | 36 | 36 | 2 ¼ | | | 18 | 8 ¼ | 9 ¼ | 7 ¼ | 11 ¼ | 3 ¾ | 8 ¼ | 4 ½ | ¾ | | | | | | | | | | | | | 9.0 | .81 |

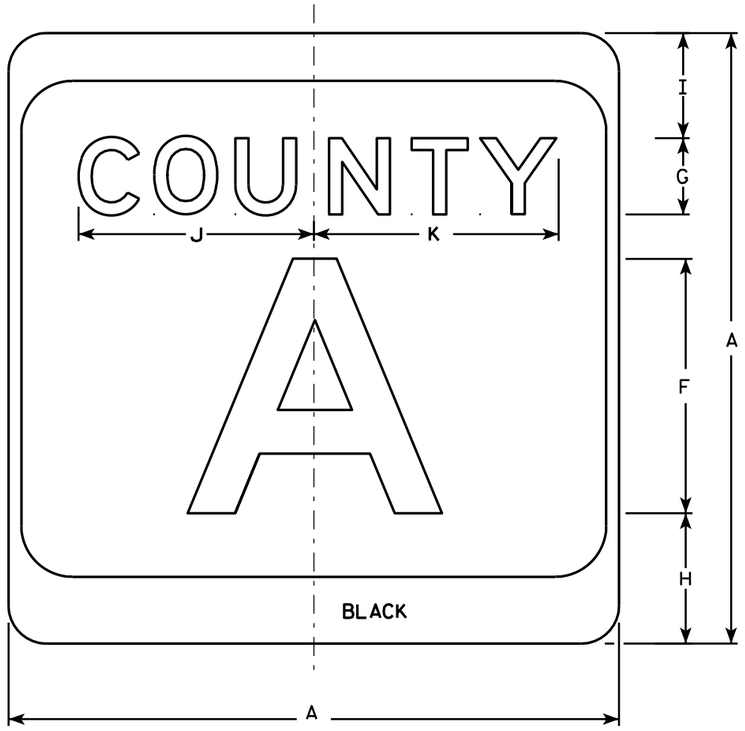
# USH MARKER
# M1-4 FOR ASSEMBLIES

*WISCONSIN DEPT OF TRANSPORTATION*

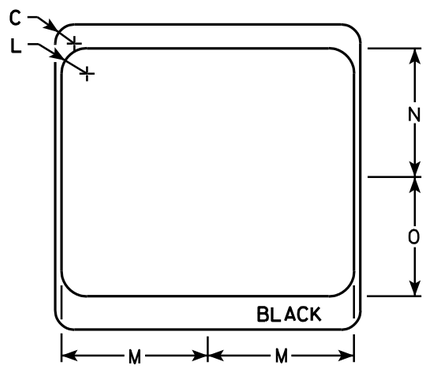
APPROVED *Matthew R Rauch*
*for* State Traffic Engineer

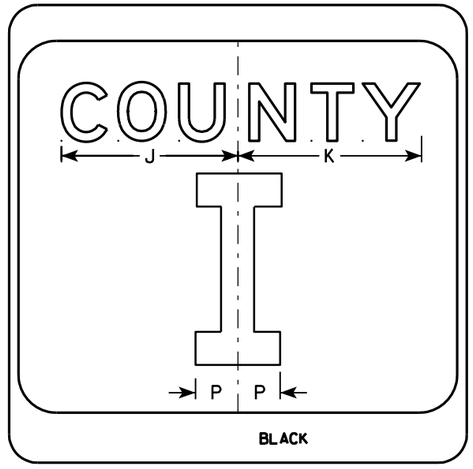
DATE 08/25/05 PLATE NO. M1-4.9

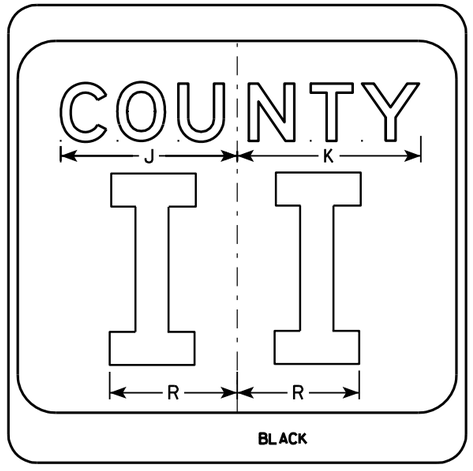
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 300 | E |
|---|---|---|---|---|---|




M1-5A




NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | 1 1/2 | | | 10 | 3 | 5 1/8 | 4 1/8 | 9 1/4 | 9 5/8 | 2 | 11 1/2 | 10 1/8 | 9 3/8 | 2 1/4 | | 6 5/8 | | | | | | | | | 4.0 |
| 3 | 36 | | 2 1/4 | | | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14 | 3 3/8 | | 10 | | | | | | | | | 9.0 |
| 4 | 36 | | 2 1/4 | | | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14 | 3 3/8 | | 10 | | | | | | | | | 9.0 |
| 5 | 36 | | 2 1/4 | | | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14 | 3 3/8 | | 10 | | | | | | | | | 9.0 |

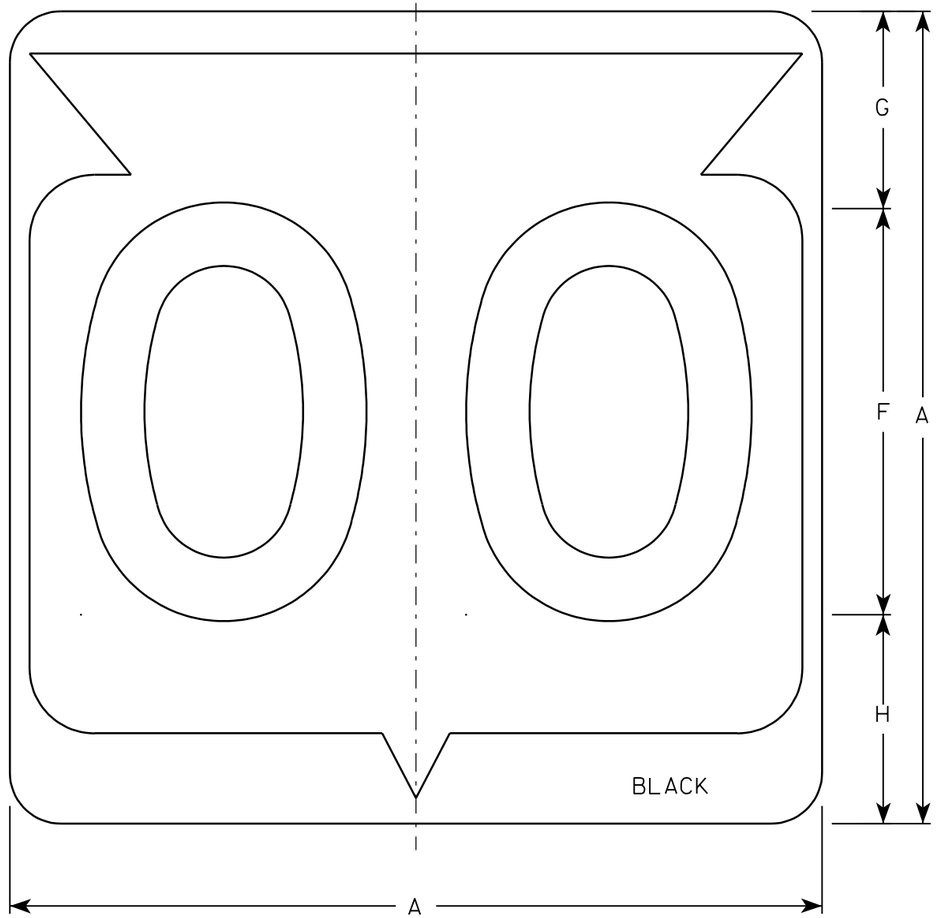
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

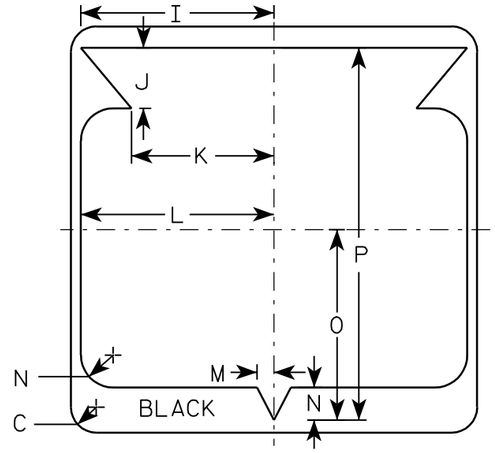
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 301 | E |
|---|---|---|---|---|---|




M1-6

## NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective




Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | 600 mm X 600 mm |
| 3 | 900 mm X 900 mm |
| 4 | 900 mm X 900 mm |
| 5 | 900 mm X 900 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | 1 1/2 | | | 12 | 5 1/2 | 6 1/2 | 10 1/4 | 2 1/2 | 8 7/8 | 11 1/2 | 1 | 1 7/8 | 11 1/4 | 21 7/8 | | | | | | | | | | | 4.0 | .36 |
| 3 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 | .81 |
| 4 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 | .81 |
| 5 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 | .81 |

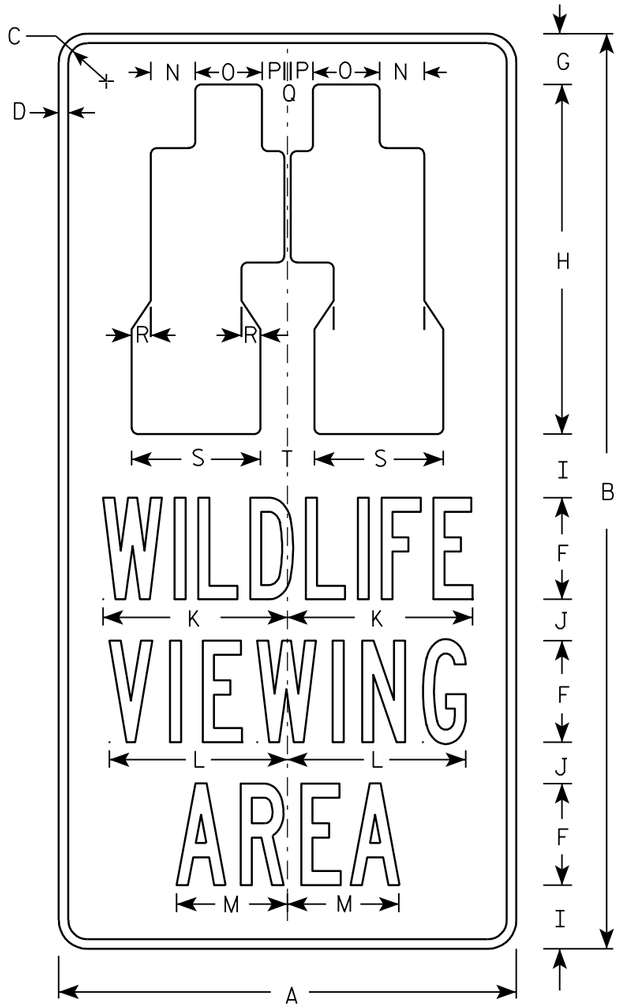
# STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 302 | E |
|---|---|---|---|---|---|




M1-86

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | 450 mm X 900 mm |
| 3 | |
| 4 | |
| 5 | |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 18 | 36 | 1 1/8 | 3/8 | | 4 | 2 | 13 3/4 | 2 1/2 | 1 5/8 | 7 1/4 | 7 | 4 3/8 | 1 3/4 | 2 5/8 | 7/8 | 1/4 | 3/4 | 5 1/8 | 2 1/8 | | | | | | | 4.5 | .41 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

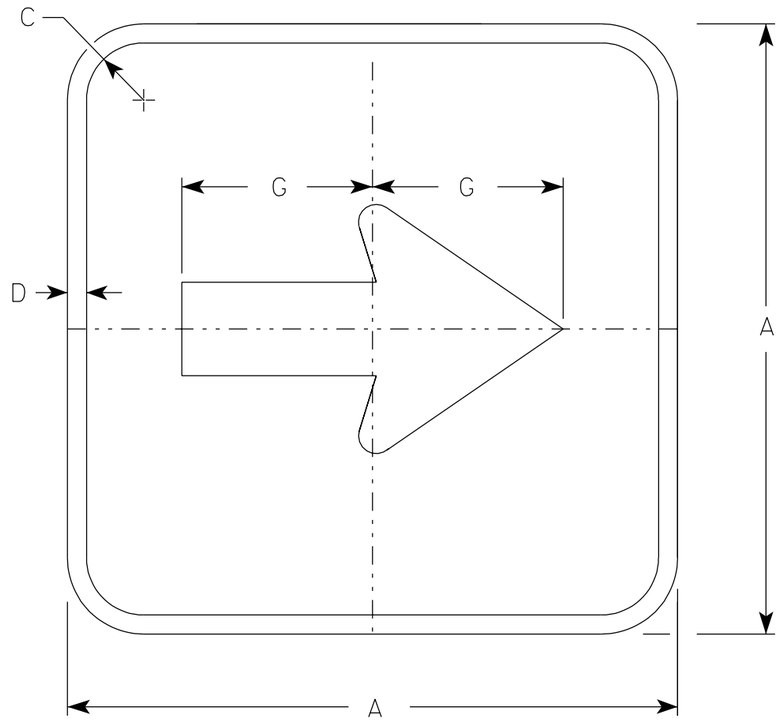
STANDARD SIGN
M1-86

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-86.3

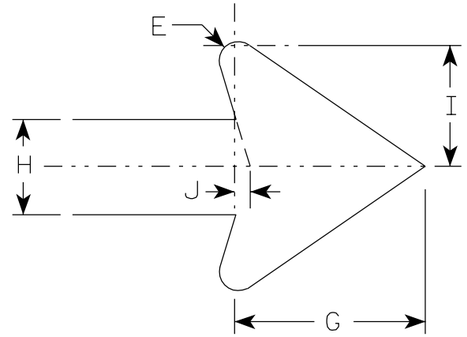
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 303 | E




M1-88A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Brown
   Message - White - Type H Reflective
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




Metric equivalent for this sign is:

| SIZE | |
|---|---|
| 1 | |
| 2 | 300 mm X 300 mm |
| 3 | |
| 4 | |
| 5 | |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area m2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 12 | | 1 1/8 | | | | 3 3/4 | 1 7/8 | 2 3/8 | 5/16 | | | | | | | | | | | | | | | | | 1.0 | .09 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

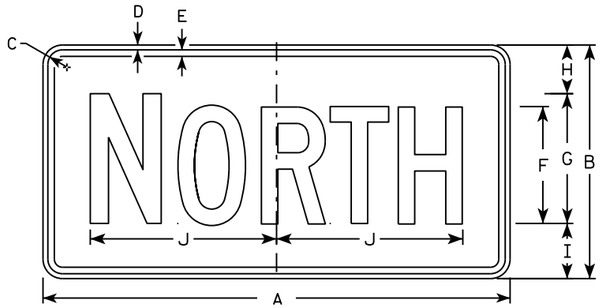
STANDARD SIGN
M1-88A

WISCONSIN DEPT OF TRANSPORTATION

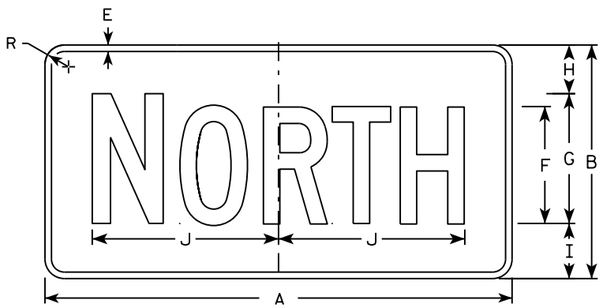
APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-88A.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 304 | E |
|---|---|---|---|---|---|



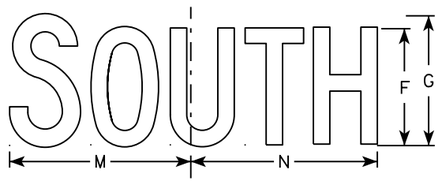

M3-1
MM3-1
MP3-1



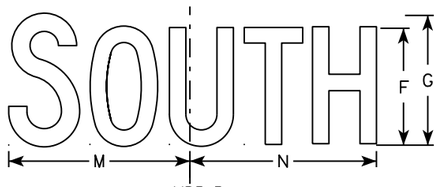

MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

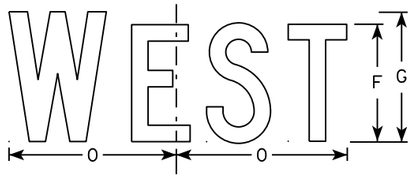
MB3-2
MK3-2
MN3-2



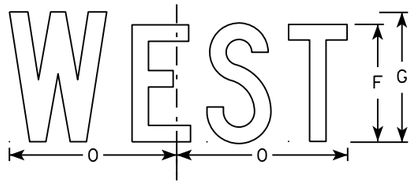

M3-3
MM3-3
MP3-3




MB3-3
MK3-3
MN3-3




M3-4
MM3-4
MP3-4




MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 7 | 2 1/4 | 2 3/4 | 10 1/4 | 7 7/8 | 8 3/8 | 10 1/4 | 9 3/4 | 8 3/4 | | | 1 1/2 | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | 1 1/2 | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | 1 1/2 | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | 1 1/2 | | | | | | | | | 4.5 |

STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

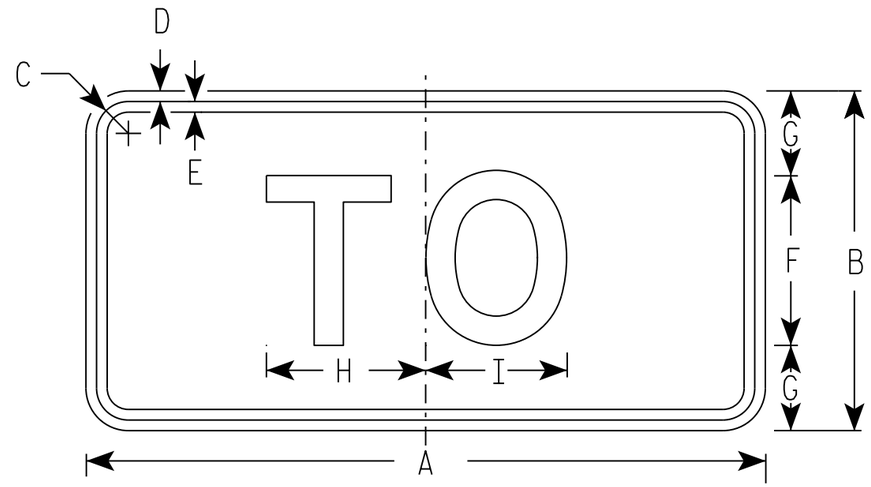
APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

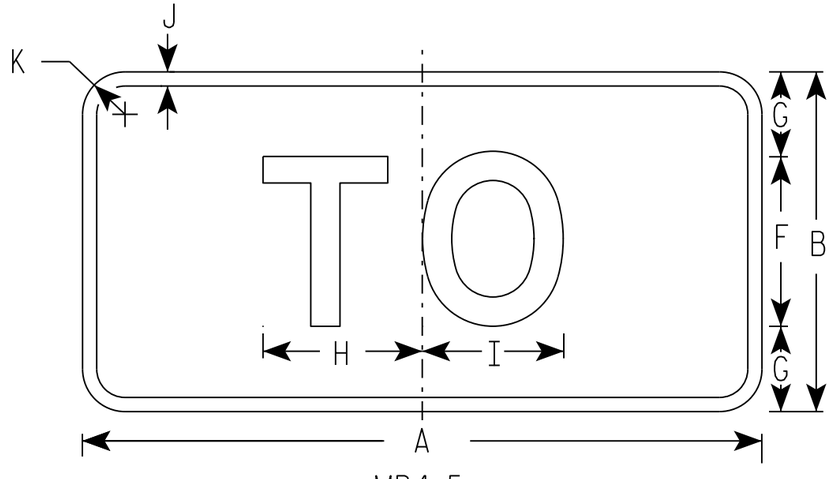


PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000




M4-5
MM4-5
MP4-5




MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

   MP4-5 Background - White
   Message - Blue

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 3 | 5 3/8 | 5 1/4 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 3/8 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 3/8 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 3/8 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 4.5 |

STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

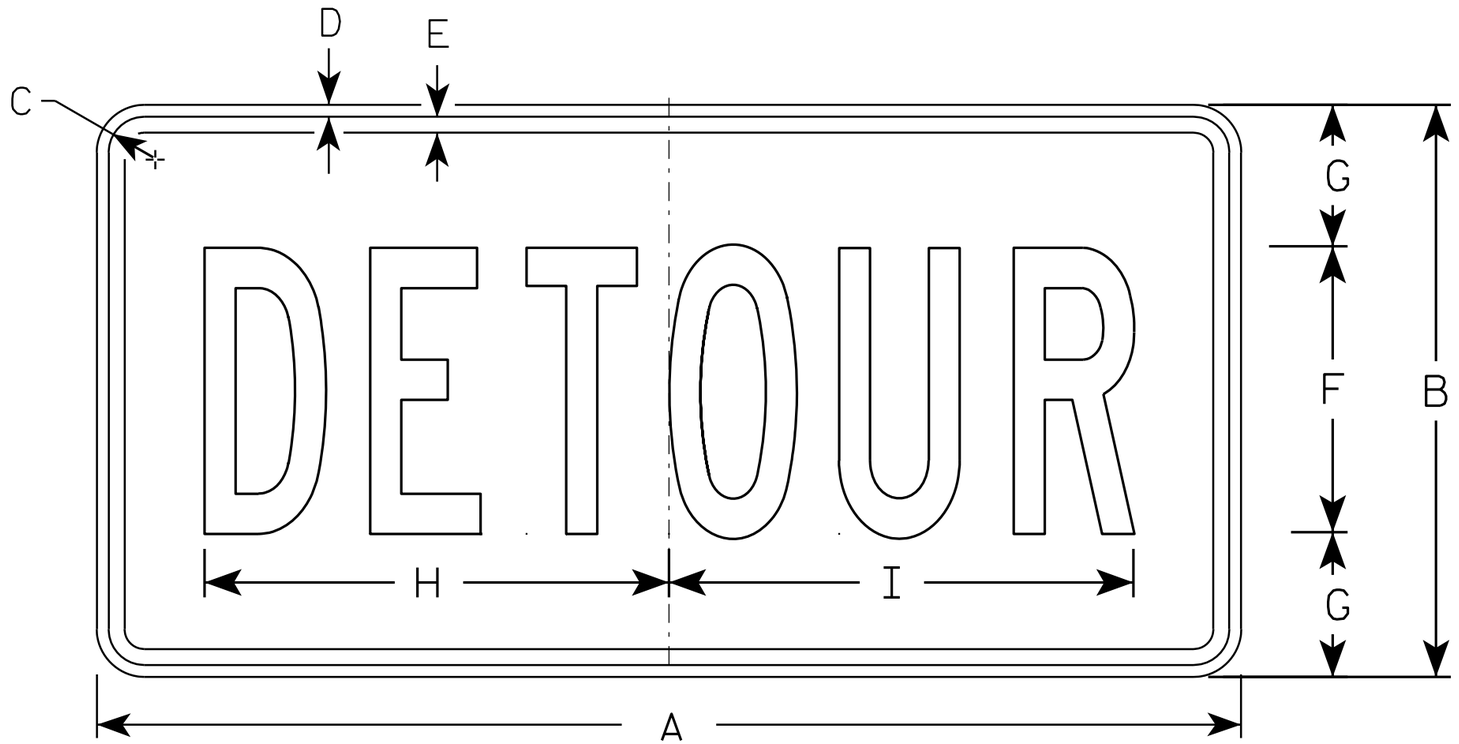
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE M4-5.8



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M45.DGN PLOT DATE : 01-DEC-2015 17:55 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 5.351066:1.000000




M4-8

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 3 | 10 | 10 1/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 3 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 | | | | | | | | | | | | | | | | | | 4.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

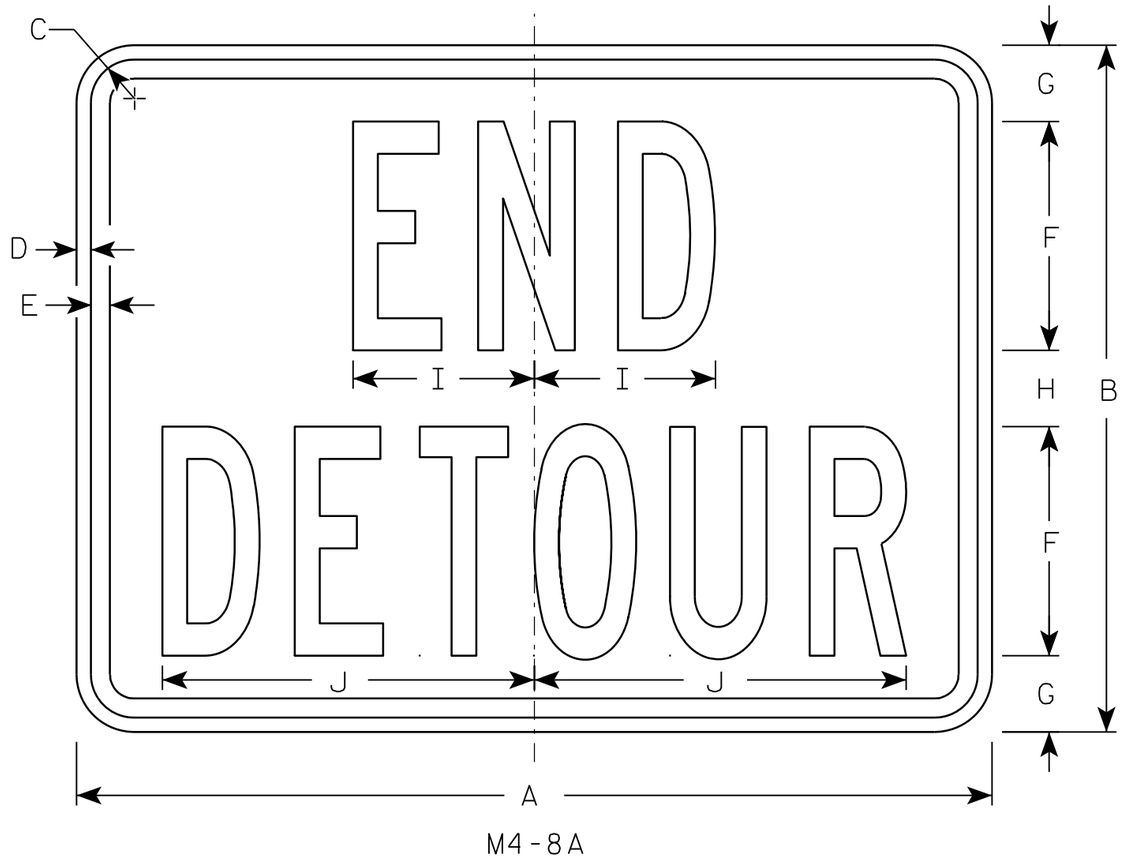
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 307 | E |
|---|---|---|---|---|---|




M4-8A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 18 | 1 1/8 | 3/8 | 1/2 | 6 | 2 | 2 | 4 3/4 | 9 3/4 | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

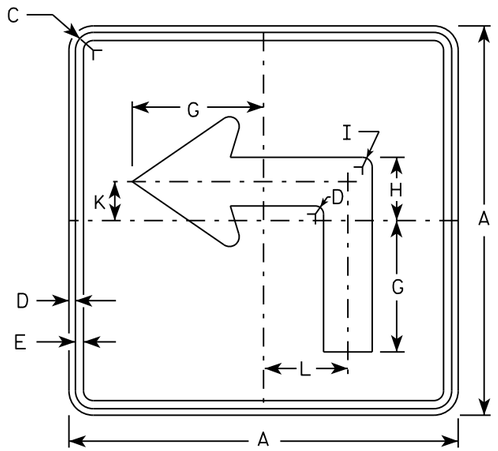
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

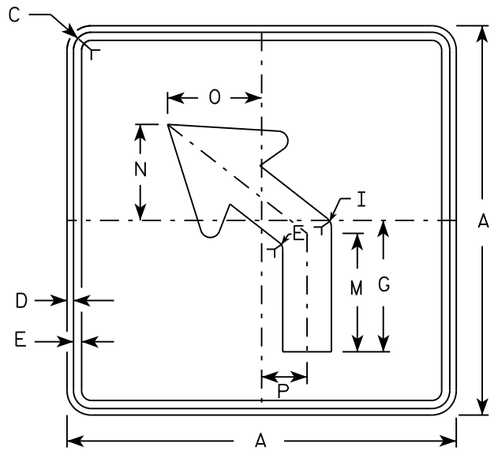
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

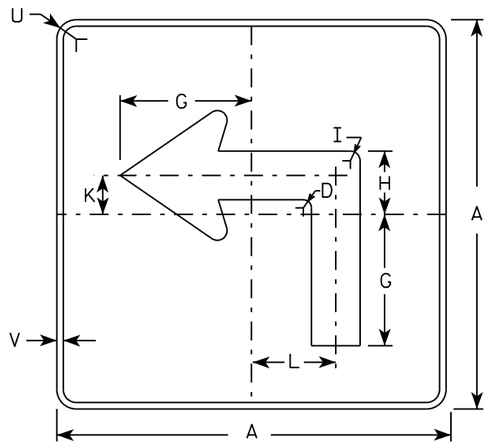
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 308 | E |
|---|---|---|---|---|---|



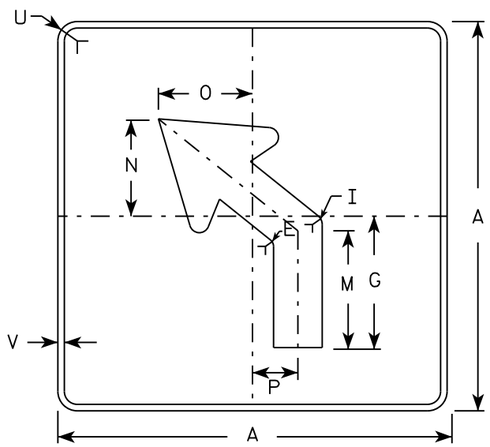

M5-1L
MM5-1L
MO5-1L
MP5-1L



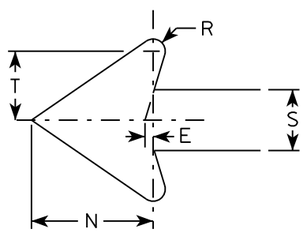

M5-2L
MM5-2L
MO5-2L
MP5-2L




MB5-1L
MK5-1L
MN5-1L
MR5-1L




MB5-2L
MK5-2L
MN5-2L
MR5-2L




## NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 21 | | 1 1/8 | 3/8 | 3/8 | | 7 | 3 3/8 | 5/8 | | 2 1/8 | 4 1/2 | 6 3/8 | 5 1/4 | 5 | 2 1/2 | | 1/2 | 2 5/8 | 3 | 1 1/2 | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 | | | | | 6.25 |

# STANDARD SIGN
# M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

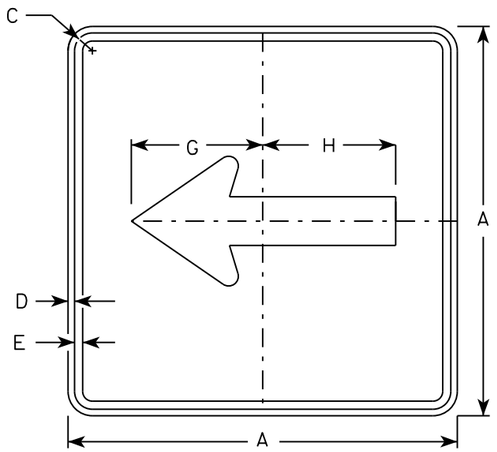
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

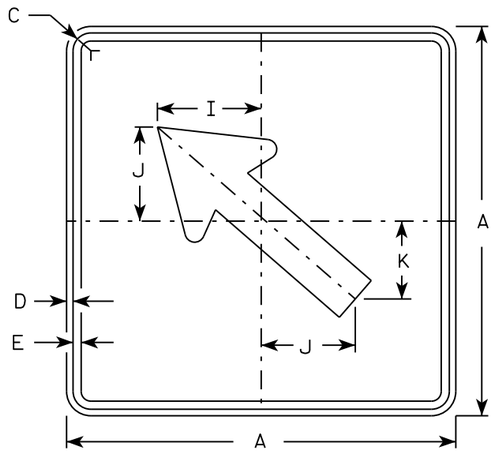
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



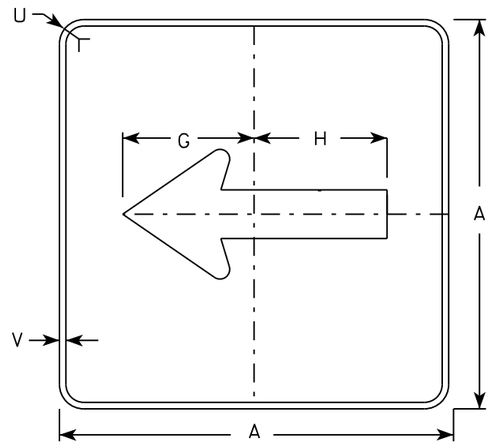

M6-1
MM6-1
MO6-1
MP6-1



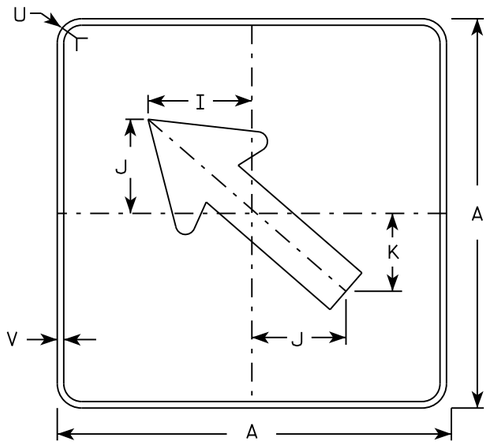

M6-2
MM6-2
MO6-2
MP6-2

NOTES

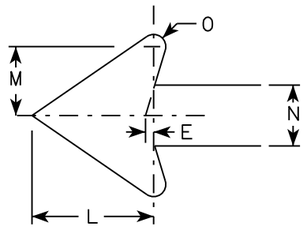
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow




MB6-1
MK6-1
MN6-1
MR6-1




MB6-2
MK6-2
MN6-2
MR6-2




| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 21 | | 1 1/8 | 3/8 | 3/8 | | 7 1/2 | 7 1/8 | 5 5/8 | 5 | 4 1/4 | 5 1/4 | 3 | 2 5/8 | 1/2 | | | | | | 1 1/2 | 1/2 | | | | | | 3.06 |
| 3 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 3/4 | 10 1/4 | 8 | 7 1/4 | 6 | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 | | | | | | 1 7/8 | 1/2 | | | | | | 6.25 |
| 4 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 3/4 | 10 1/4 | 8 | 7 1/4 | 6 | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 | | | | | | 1 7/8 | 1/2 | | | | | | 6.25 |
| 5 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 3/4 | 10 1/4 | 8 | 7 1/4 | 6 | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 | | | | | | 1 7/8 | 1/2 | | | | | | 6.25 |

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

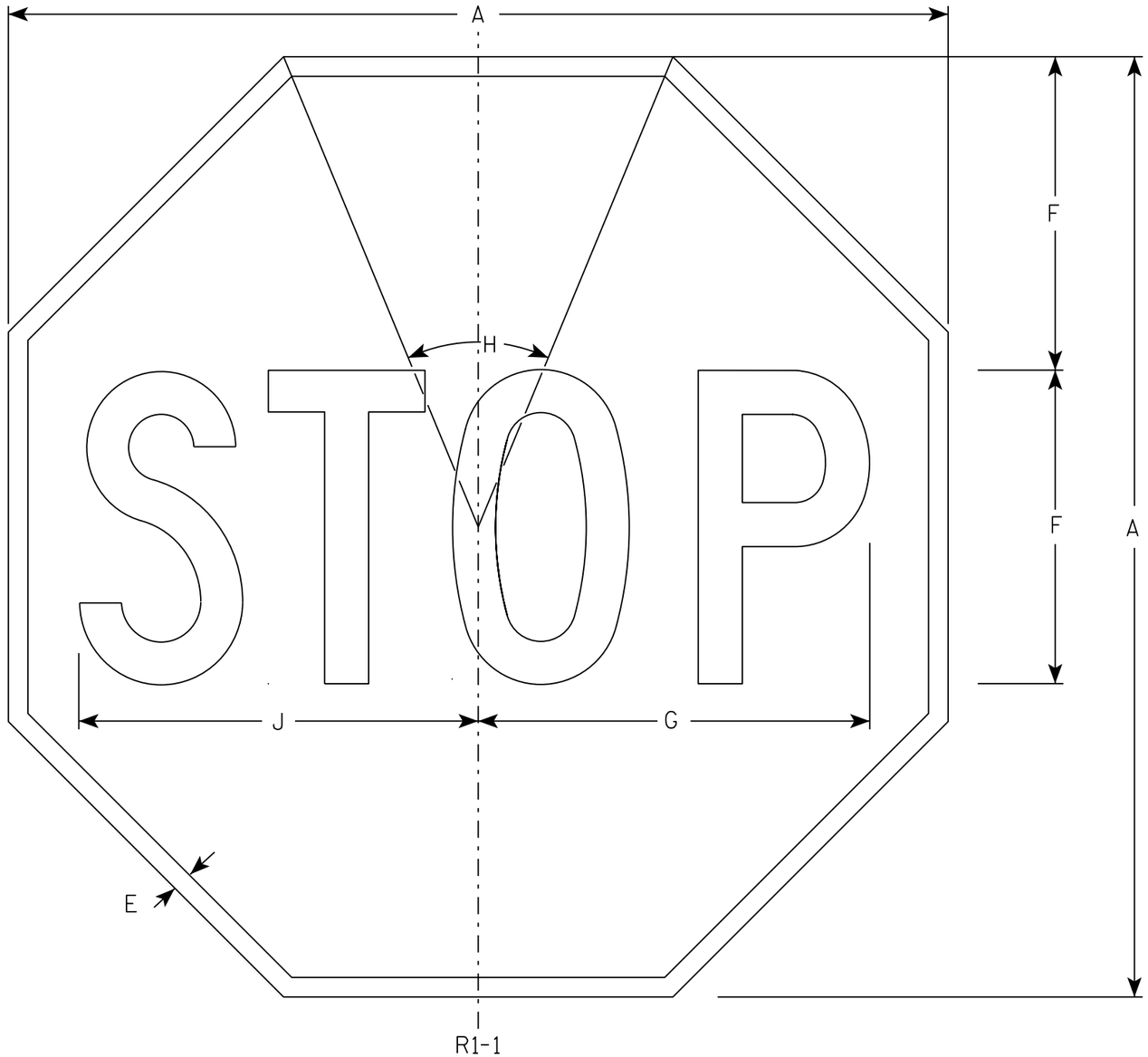
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 310 M6-1.15

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000




R1-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | | | 5/8 | 10 | 12 1/2 | 45° | | 12 3/4 | | | | | | | | | | | | | | | | | 5.18 |
| 2S | 30 | | | | 5/8 | 10 | 12 1/2 | 45° | | 12 3/4 | | | | | | | | | | | | | | | | | 5.18 |
| 2M | 36 | | | | 3/4 | 12 | 15 | 45° | | 15 3/8 | | | | | | | | | | | | | | | | | 7.46 |
| 3 | 36 | | | | 3/4 | 12 | 15 | 45° | | 15 3/8 | | | | | | | | | | | | | | | | | 7.46 |
| 4 | 48 | | | | 1 | 16 | 20 | 45° | | 20 1/2 | | | | | | | | | | | | | | | | | 13.25 |
| 5 | 48 | | | | 1 | 16 | 20 | 45° | | 20 1/2 | | | | | | | | | | | | | | | | | 13.25 |
| 6 | 18 | | | | 3/8 | 6 | 7 3/4 | 45° | | 7 3/4 | | | | | | | | | | | | | | | | | 1.86 |
| 7 | 12 | | | | 1/4 | 4 | 5 | 45° | | 5 1/8 | | | | | | | | | | | | | | | | | 0.78 |

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

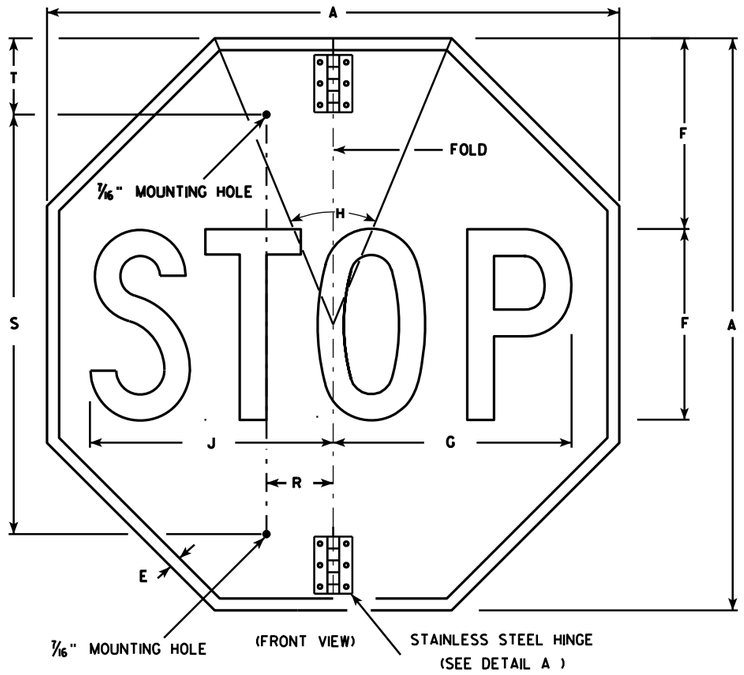
APPROVED Matthew R Rauch
for State Traffic Engineer

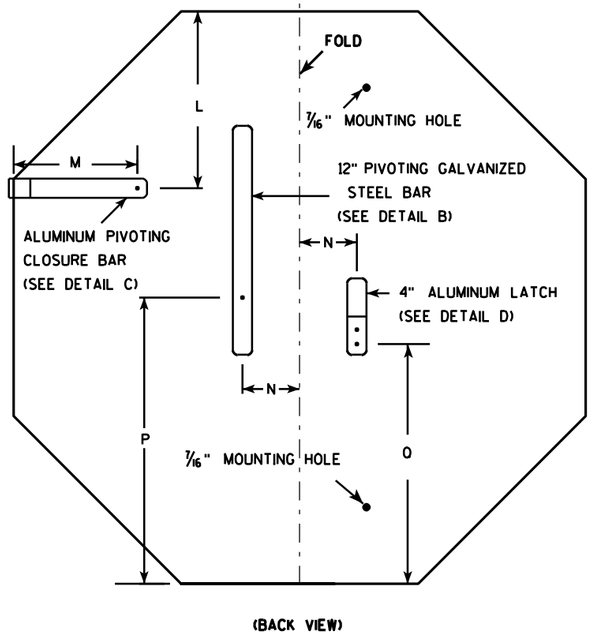
DATE 11/12/15 PLATE R1-1.13



| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E |
|---|---|---|---|---|

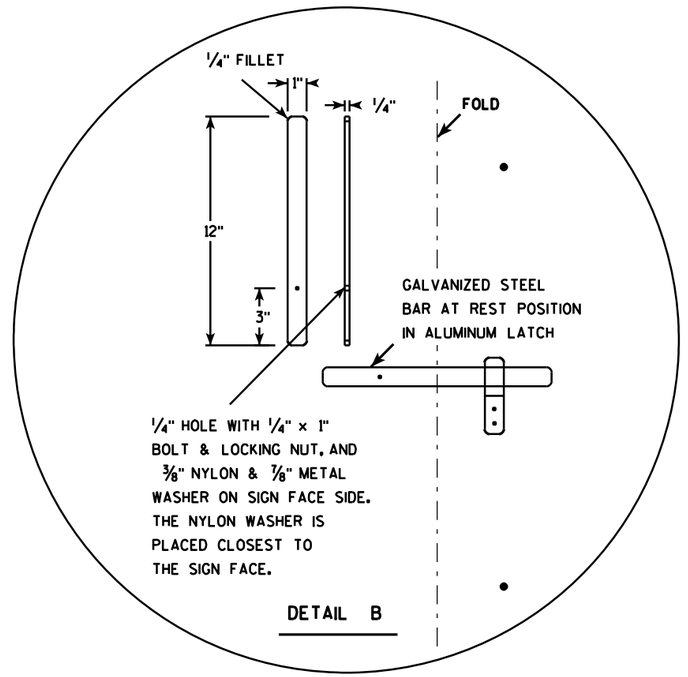
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R11.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 4.378143:1.000000

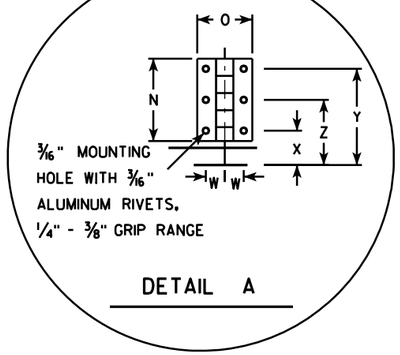


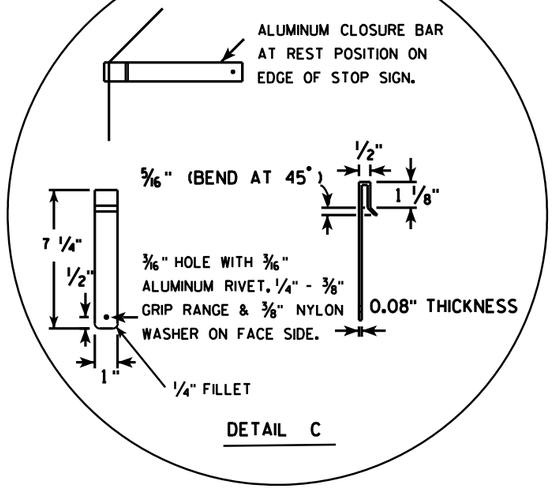



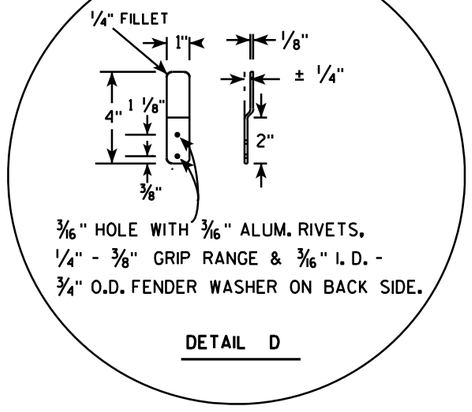

## NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.




| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | | | | 5/8 | 10 | 12 1/2 | 45 | | 12 3/4 | | 9 1/4 | 6 1/2 | 3 | 2 | 15 | 12 3/8 | 2 1/2 | 22 | 5 | | | 11/16 | 1 1/4 | 3 1/2 | 2 3/8 | 5.18 |
| 2M | 36 | | | | 3/4 | 12 | 15 | 45 | | 15 3/8 | | 11 | 6 1/2 | 3 | 2 | 18 | 15 3/8 | 2 1/2 | 26 | 5 | | | 11/16 | 1 1/4 | 3 1/2 | 2 3/8 | 7.46 |
| 3 | 36 | | | | 3/4 | 12 | 15 | 45 | | 15 3/8 | | 11 | 6 1/2 | 3 | 2 | 18 | 15 3/8 | 2 1/2 | 26 | 5 | | | 11/16 | 1 1/4 | 3 1/2 | 2 3/8 | 7.46 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

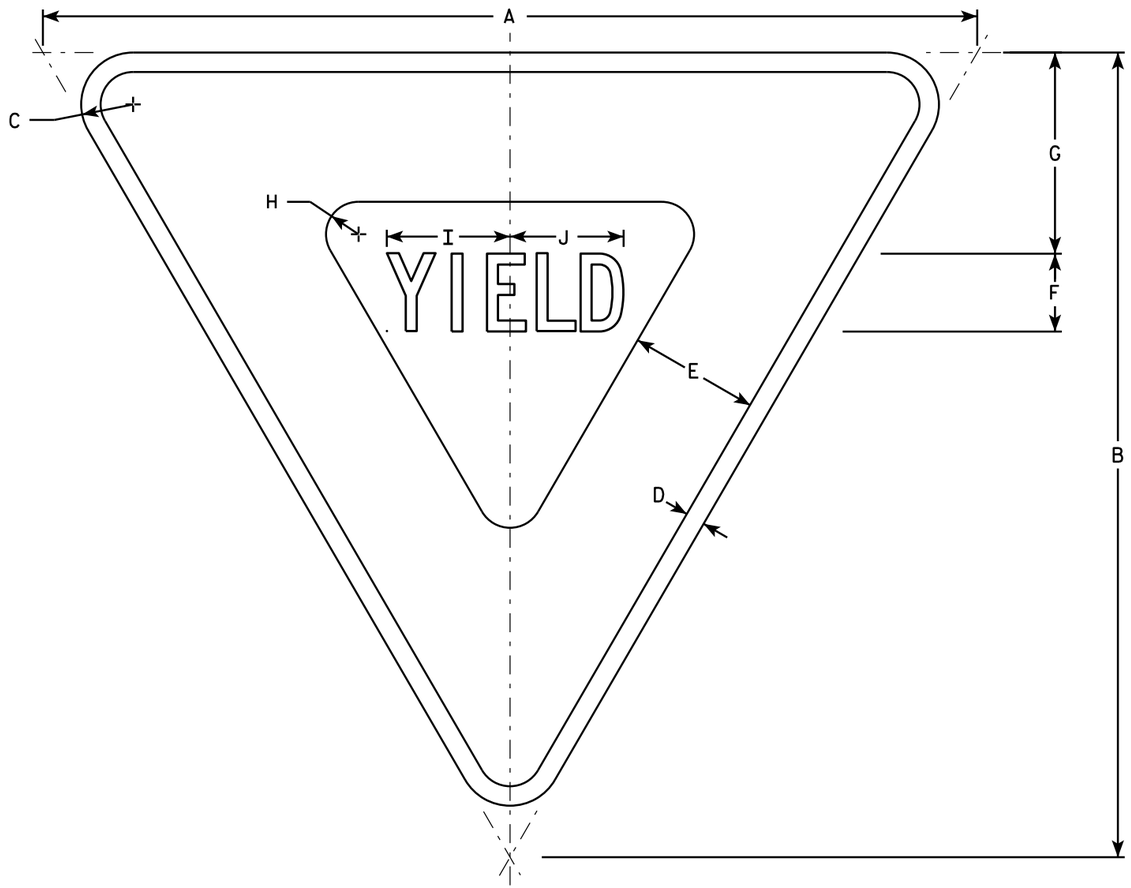
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 312 | E




R1-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The border strip and word message are reflectorized red.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 26 | 1 1/2 | 5/8 | 4 | 2 1/2 | 6 3/8 | 7/8 | 4 | 3 5/8 | | | | | | | | | | | | | | | | | 2.71 |
| 2S | 36 | 31 | 2 | 3/4 | 5 | 3 | 7 3/4 | 1 1/4 | 4 3/4 | 4 3/8 | | | | | | | | | | | | | | | | | 3.88 |
| 2M | 48 | 42 | 3 | 1 | 6 | 4 | 9 3/4 | 2 | 6 1/4 | 5 7/8 | | | | | | | | | | | | | | | | | 7.00 |
| 3 | 48 | 42 | 3 | 1 | 6 | 4 | 9 3/4 | 2 | 6 1/4 | 5 7/8 | | | | | | | | | | | | | | | | | 7.00 |
| 4 | 48 | 42 | 3 | 1 | 6 | 4 | 9 3/4 | 2 | 6 1/4 | 5 7/8 | | | | | | | | | | | | | | | | | 7.00 |
| 5 | 60 | 52 | 3 | 1 1/2 | 8 | 5 | 13 | 2 1/2 | 7 7/8 | 7 1/4 | | | | | | | | | | | | | | | | | 10.83 |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 18 | 15 1/2 | 1 | 3/8 | 2 1/2 | 1 1/2 | 3 7/8 | 5/8 | 2 3/8 | 2 1/4 | | | | | | | | | | | | | | | | | 0.97 |

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

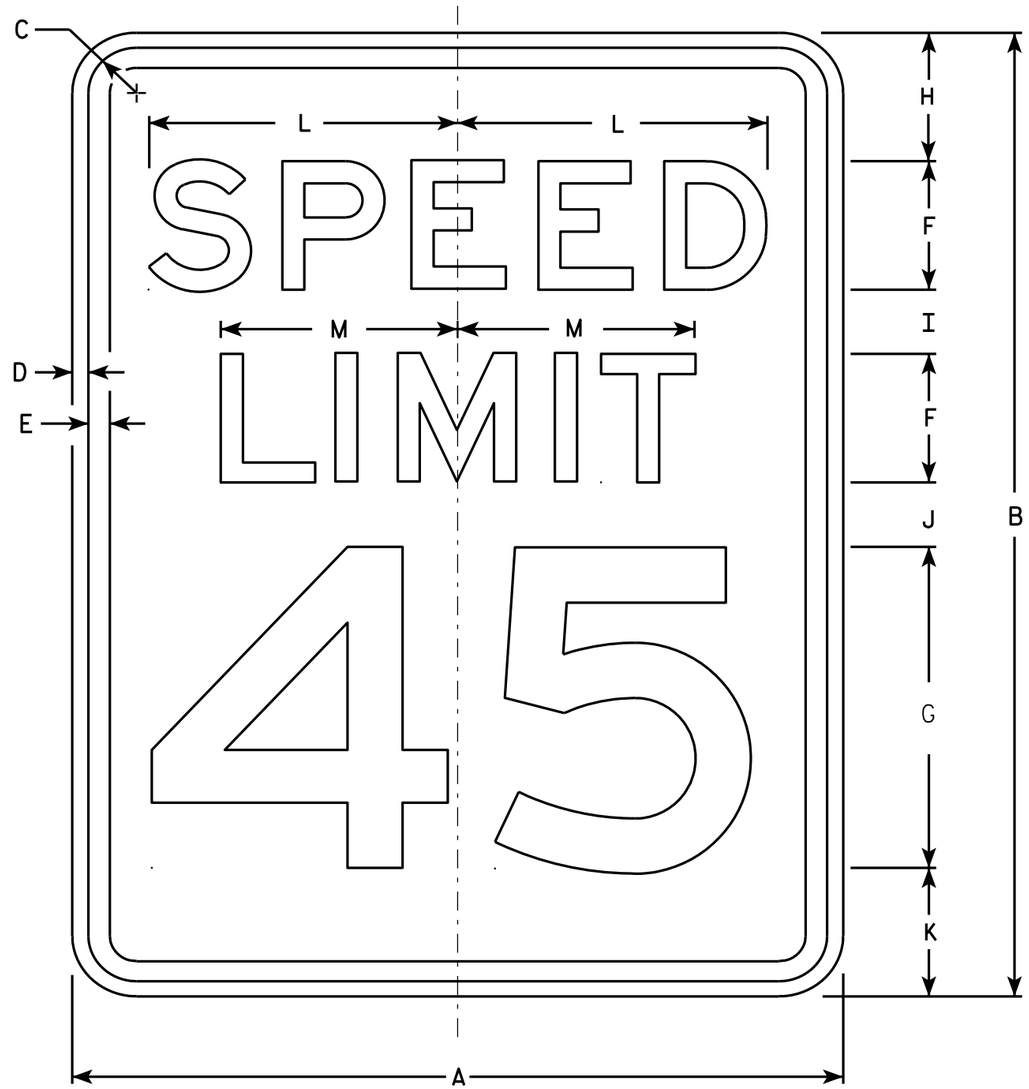
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE P1-2.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000




R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 3 | 8 | 3 | 2 | 2 | 3 | 7 1/4 | 5 1/2 | | | | | | | | | | | | | | 3.0 |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 10 | 3 | 2 1/4 | 3 3/8 | 3 3/8 | 9 5/8 | 7 3/8 | | | | | | | | | | | | | | 5.0 |
| 2M | 30 | 36 | 1 3/8 | 1/2 | 5/8 | 5 | 12 | 5 | 2 1/2 | 2 1/2 | 4 | 12 | 9 1/4 | | | | | | | | | | | | | | 7.5 |
| 3 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 14 | 6 | 5 | 5 | 6 | 14 3/8 | 11 | | | | | | | | | | | | | | 12.0 |
| 4 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 14 | 6 | 5 | 5 | 6 | 14 3/8 | 11 | | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 60 | 2 1/4 | 3/4 | 1 | 8 | 20 | 6 | 4 1/2 | 6 3/4 | 6 3/4 | 19 1/4 | 14 5/8 | | | | | | | | | | | | | | 20.0 |

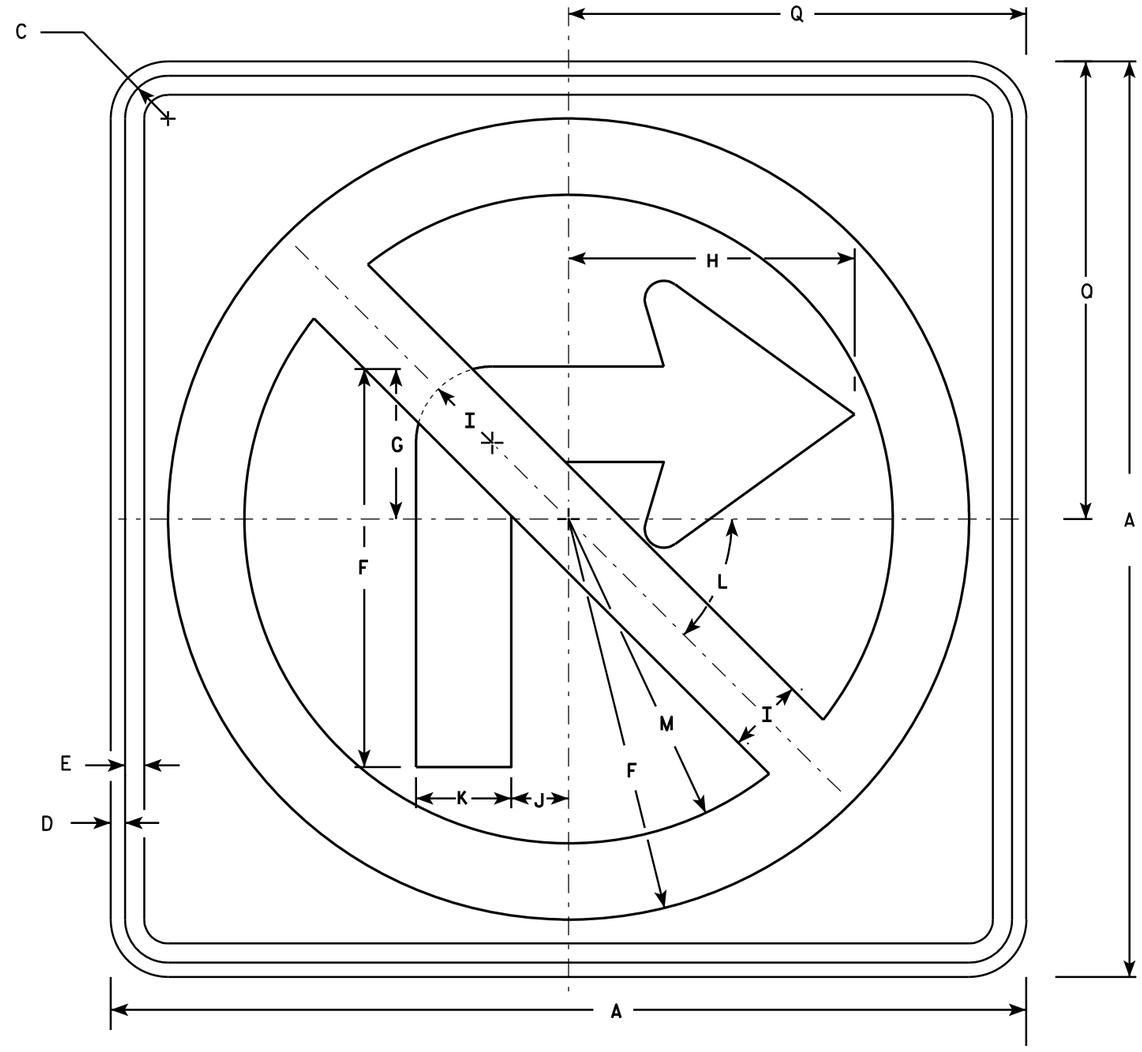
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

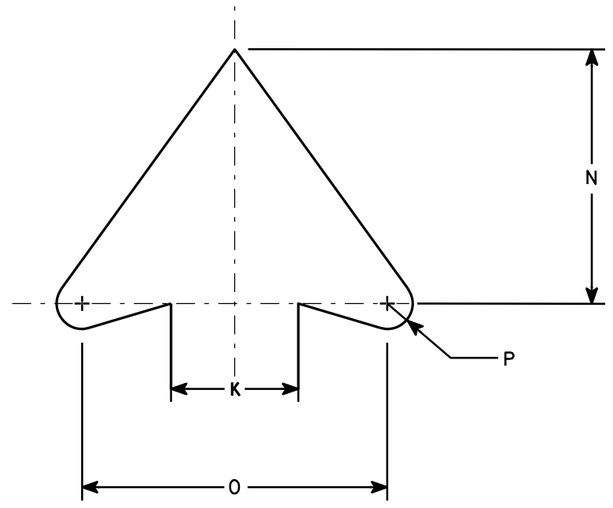
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 314 | E




R3-1

## NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | 10 1/2 | 4 | 7 1/2 | 2 | 1 1/2 | 2 1/2 | 45 | 8 1/2 | 5 | 6 | 1/2 | 12 | | | | | | | | | | 4.0 |
| 2S | 24 | | 1 1/8 | 3/8 | 1/2 | 10 1/2 | 4 | 7 1/2 | 2 | 1 1/2 | 2 1/2 | 45° | 8 1/2 | 5 | 6 | 1/2 | 12 | | | | | | | | | | 4.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45 | 12 3/4 | 7 1/2 | 9 | 3/4 | 18 | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45 | 12 3/4 | 7 1/2 | 9 | 3/4 | 18 | | | | | | | | | | 9.0 |
| 4 | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | 18 | | | | | | | | | | 9.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 21 | 8 | 15 | 4 | 3 | 5 | 45° | 17 | 10 | 12 | 1 | 24 | | | | | | | | | | 16.0 |

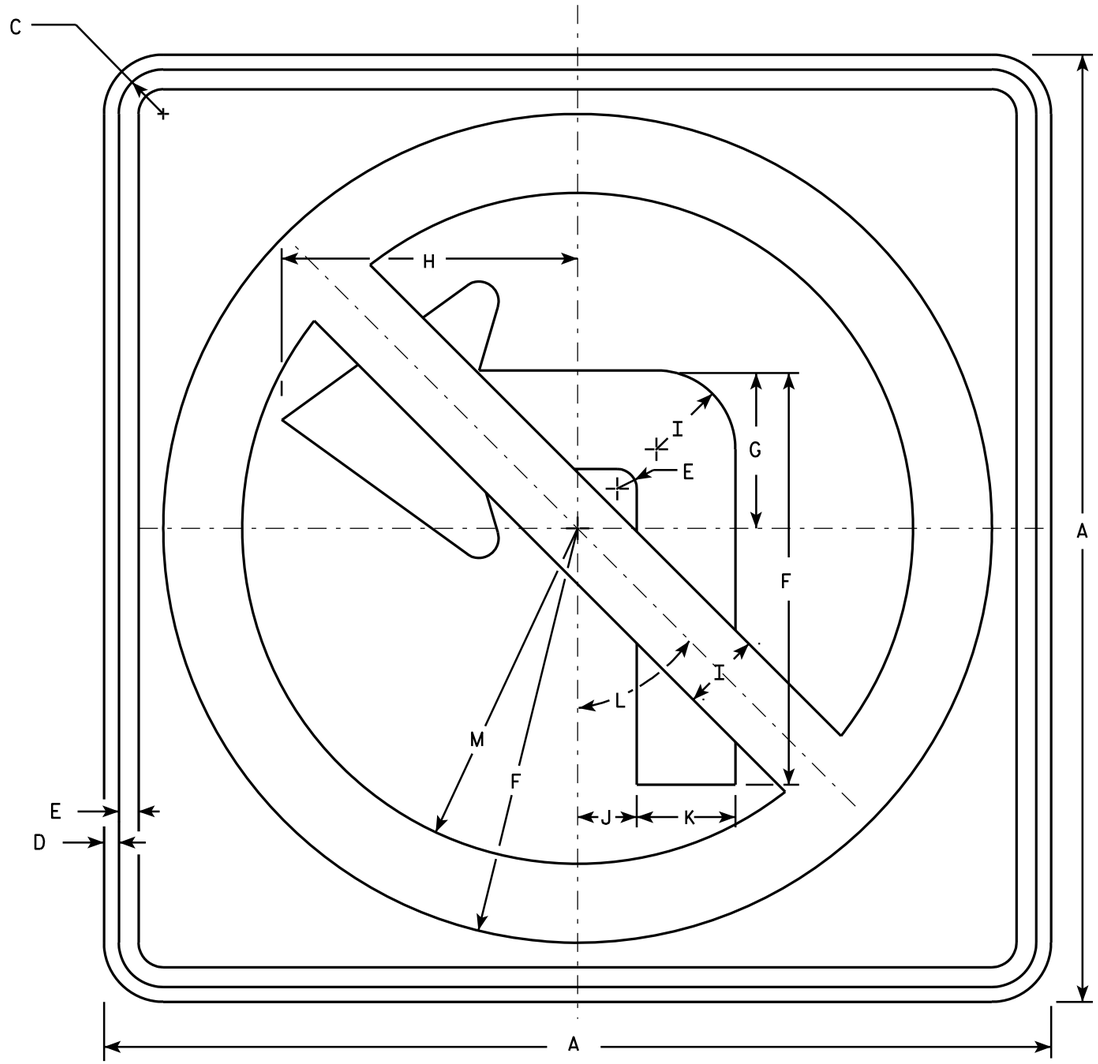
# STANDARD SIGN
# R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

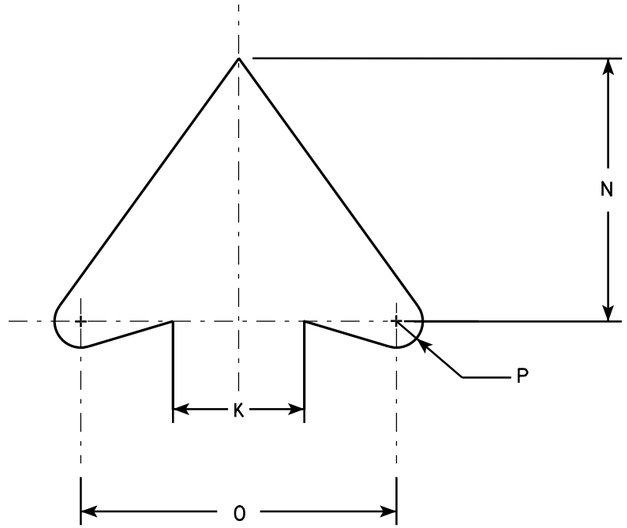
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 315 | E |
|---|---|---|---|---|---|




R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | 10 1/2 | 4 | 7 1/2 | 2 | 1 1/2 | 2 1/2 | 45° | 8 1/2 | 5 | 6 | 1/2 | | | | | | | | | | | 4.0 |
| 2S | 24 | | 1 1/8 | 3/8 | 1/2 | 10 1/2 | 4 | 7 1/2 | 2 | 1 1/2 | 2 1/2 | 45° | 8 1/2 | 5 | 6 | 1/2 | | | | | | | | | | | 4.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | | | | | | | | | | | 9.0 |
| 4 | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | | | | | | | | | | | 9.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 21 | 8 | 15 | 4 | 3 | 5 | 45° | 17 | 10 | 12 | 1 | | | | | | | | | | | 16.0 |

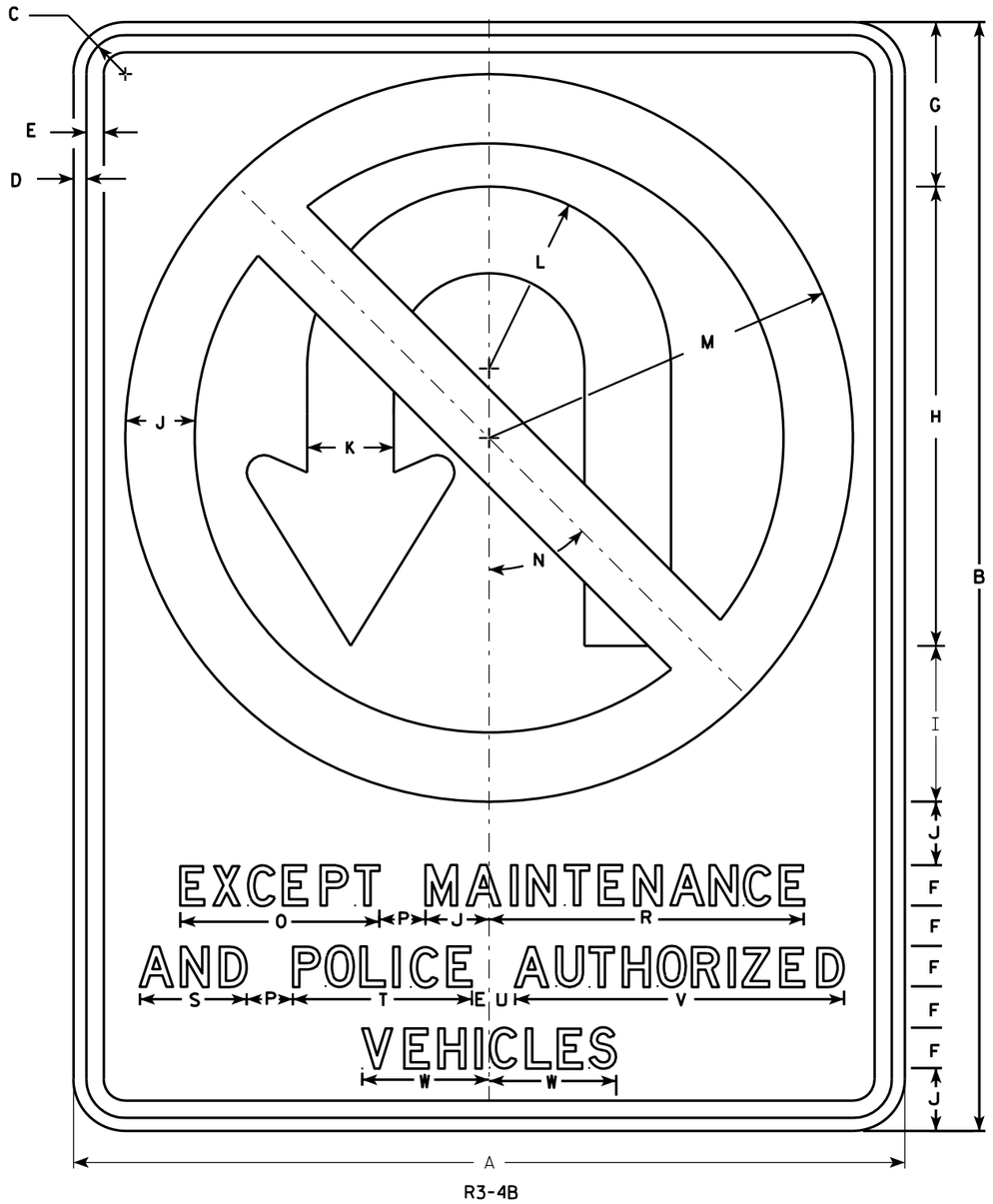
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

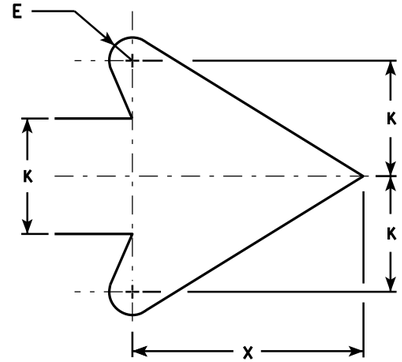
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 316 | E |
|---|---|---|---|---|---|




R3-4B

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2M | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 36 | 48 | 1 5/8 | 5/8 | 3/4 | 1 3/4 | 7 1/8 | 19 7/8 | 6 3/4 | 2 3/4 | 3 3/4 | 7 7/8 | 15 3/4 | 45° | 8 5/8 | 2 | | 13 5/8 | 4 5/8 | 7 3/4 | 1 1/8 | 14 1/4 | 5 1/2 | 7 5/8 | | | 12.0 |
| 5 | 36 | 48 | 1 5/8 | 5/8 | 3/4 | 1 3/4 | 7 1/8 | 19 7/8 | 6 3/4 | 2 3/4 | 3 3/4 | 7 7/8 | 15 3/4 | 45° | 8 5/8 | 2 | | 13 5/8 | 4 5/8 | 7 3/4 | 1 1/8 | 14 1/4 | 5 1/2 | 7 5/8 | | | 12.0 |

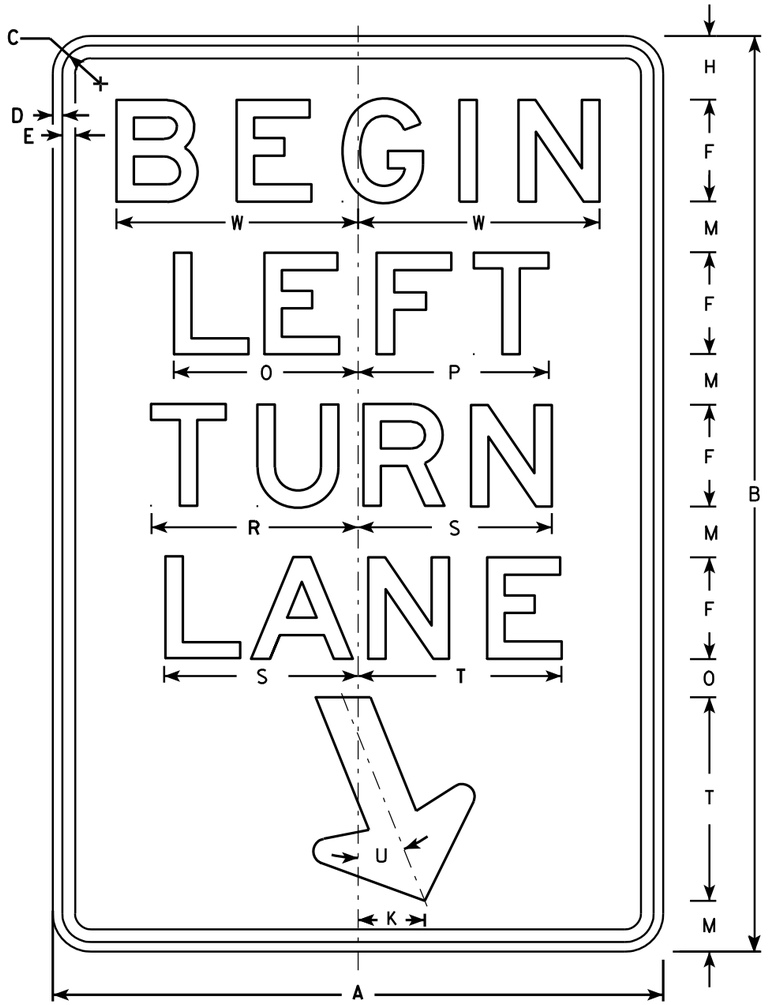
STANDARD SIGN
R3-4B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/17/2011 PLATE NO. R3-4B.2

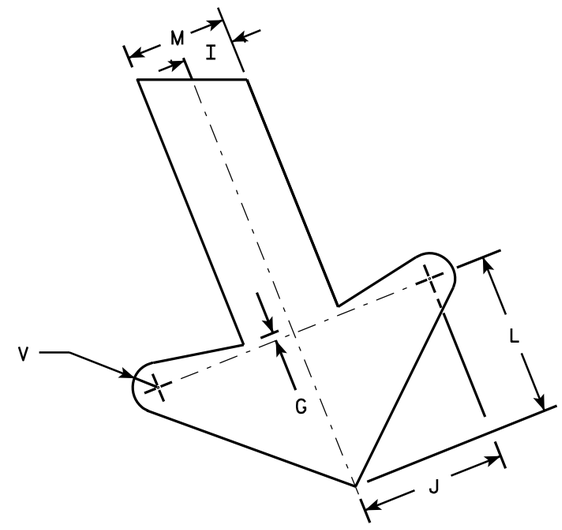
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 317 | E |
|---|---|---|---|---|---|




R3-20L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 7 1/4 | 7 1/2 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 2M | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 7 1/4 | 7 1/2 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 3 | 36 | 54 | 1 3/4 | 1/2 | 5/8 | 6 | 3/8 | 3 3/4 | 1 1/2 | 4 1/4 | 4 | 4 7/8 | 3 | 2 1/4 | 10 7/8 | 11 1/4 | | 12 1/4 | 11 1/2 | 12 | 22° | 3/4 | 13 1/4 | | | | 13.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

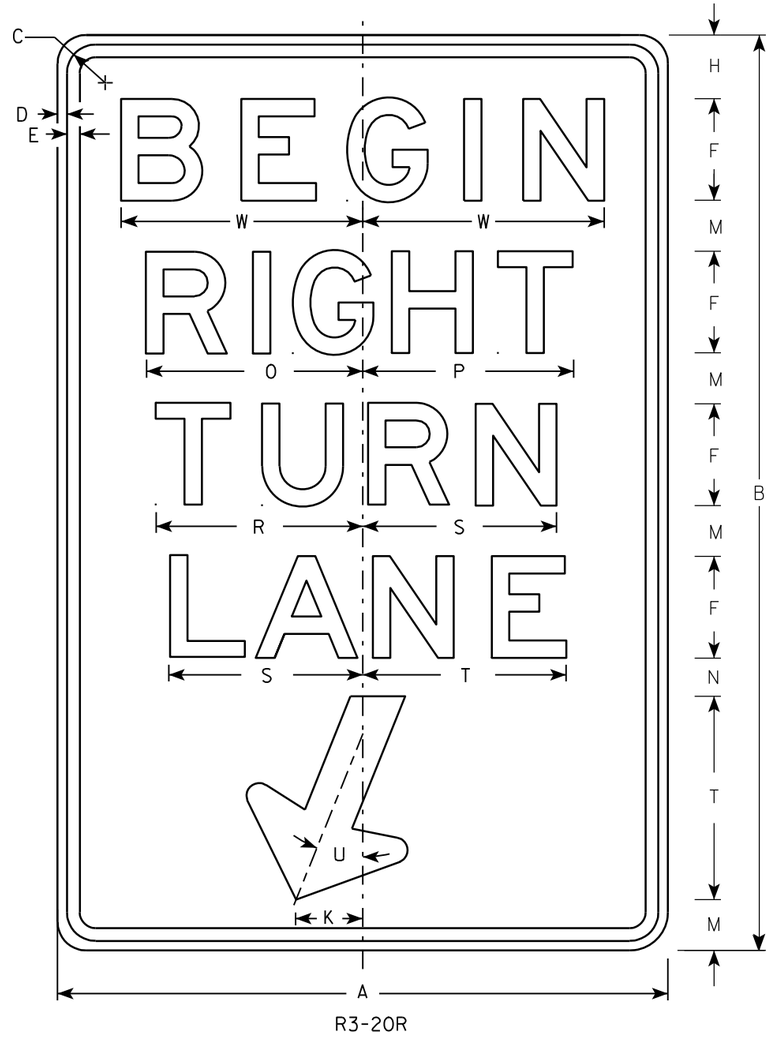
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

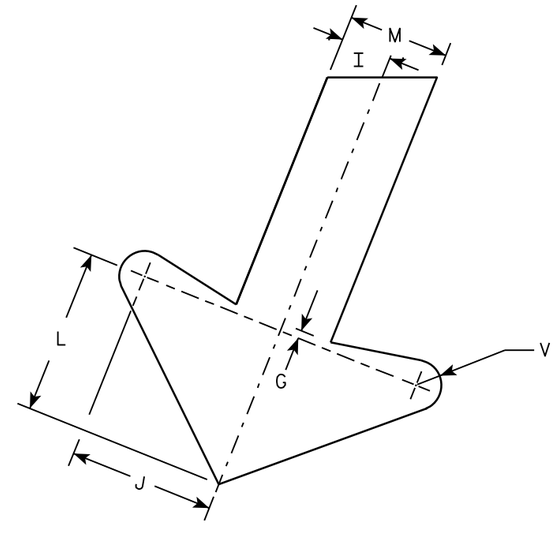
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 318 | E




R3-20R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 8 1/2 | 8 1/4 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 2M | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 8 1/2 | 8 1/4 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 3 | 36 | 54 | 1 3/4 | 1/2 | 5/8 | 6 | 3/8 | 3 3/4 | 1 1/2 | 4 1/4 | 4 | 4 7/8 | 3 | 2 1/4 | 12 3/4 | 12 1/2 | | 12 1/4 | 11 1/2 | 12 | 22° | 3/4 | 13 1/4 | | | | 13.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

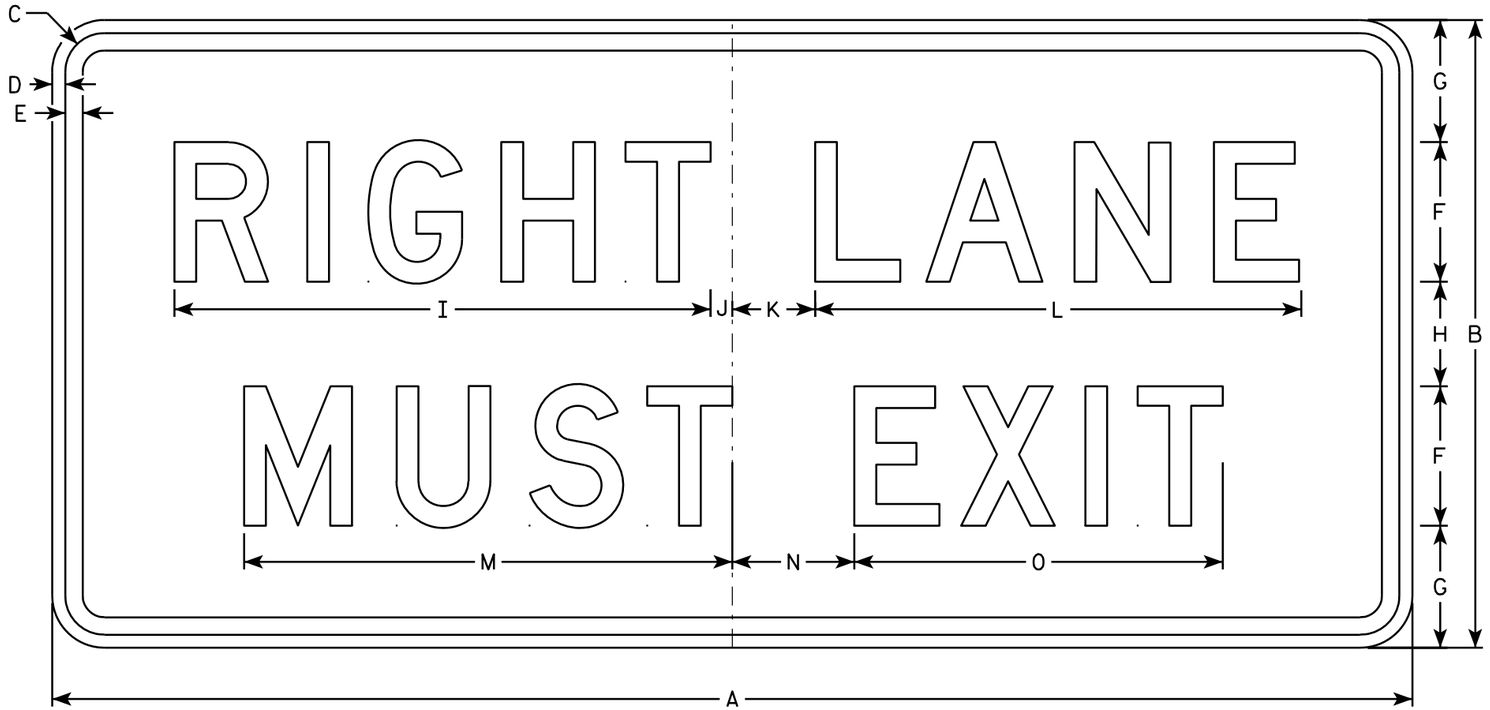
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

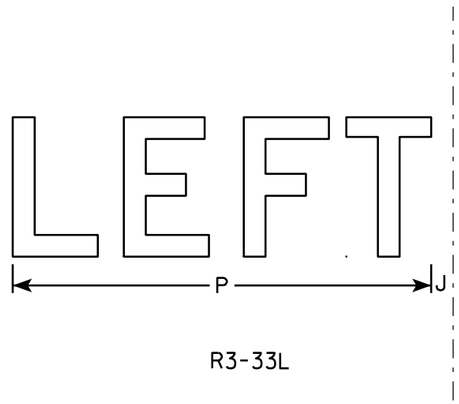
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 319 | E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




R3-33R




R3-33L

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2M | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 78 | 36 | 2 1/4 | 3/4 | 1 | 8 | 7 | 6 | 30 3/4 | 1 1/4 | 4 3/4 | 27 7/8 | 28 | 7 | 21 1/8 | 24 | | | | | | | | | | | 19.5 |
| 5 | 78 | 36 | 2 1/4 | 3/4 | 1 | 8 | 7 | 6 | 30 3/4 | 1 1/4 | 4 3/4 | 27 7/8 | 28 | 7 | 21 1/8 | 24 | | | | | | | | | | | 19.5 |

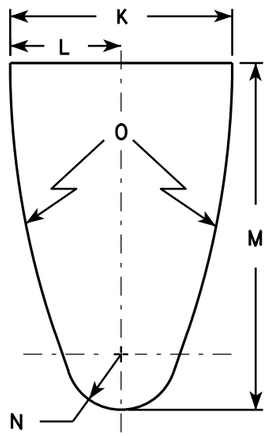
STANDARD SIGN
R3-33

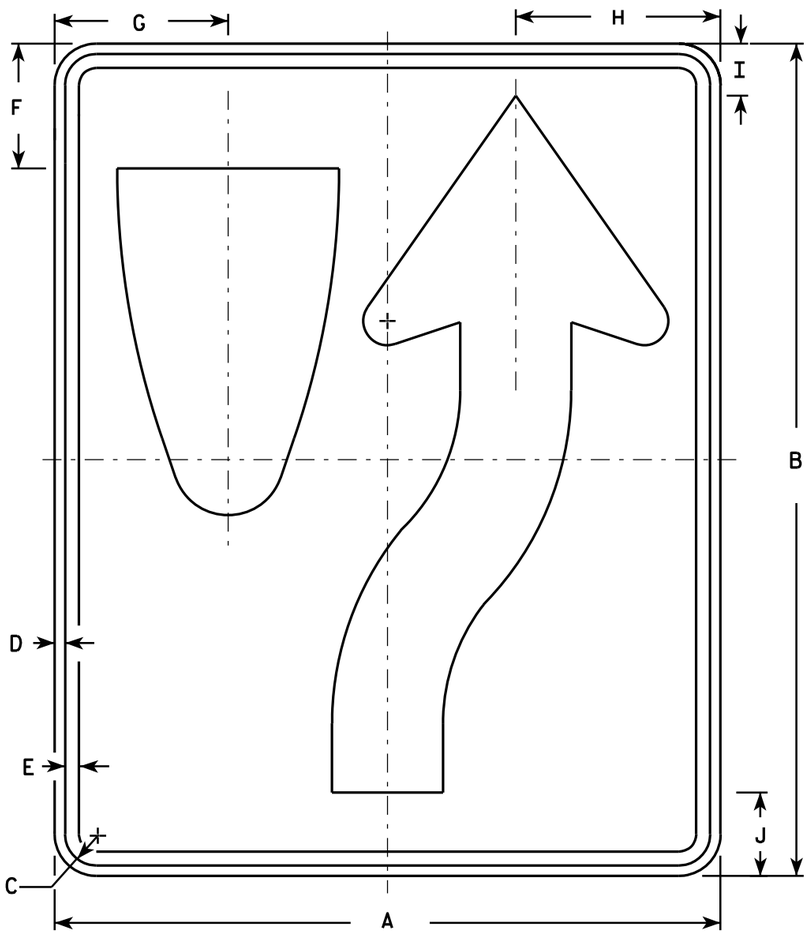
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/7/10 PLATE NO. R3-33.1

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 320 | E

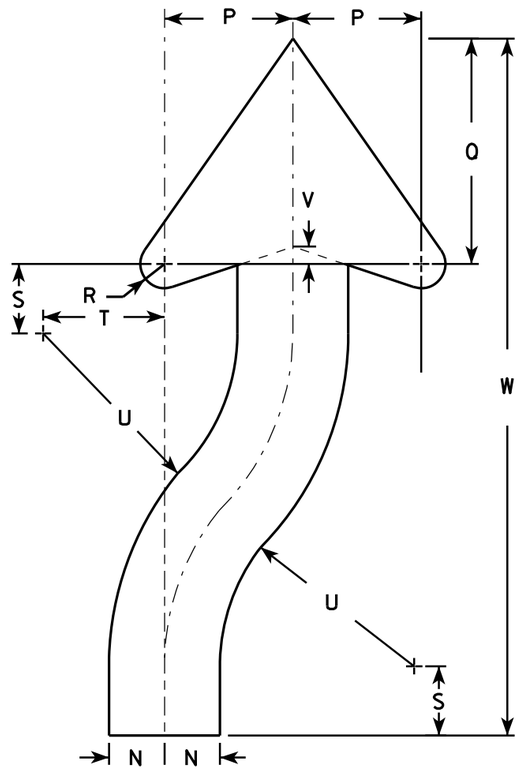



R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 3 3/8 | 4 3/4 | 5 1/2 | 1 3/8 | 2 1/4 | 6 | 3 | 9 3/8 | 1 1/2 | 22 1/2 | 3 1/2 | 6 1/8 | 5/8 | 1 7/8 | 3 1/4 | 6 3/4 | 1/2 | 20 3/8 | | | | 3.0 |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 1/2 | 6 1/4 | 7 3/8 | 1 7/8 | 3 | 8 | 4 | 12 1/2 | 2 | 30 | 4 5/8 | 8 1/8 | 7/8 | 2 1/2 | 4 3/8 | 9 | 5/8 | 25 1/8 | | | | 5.0 |
| 2M | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 1/2 | 6 1/4 | 7 3/8 | 1 7/8 | 3 | 8 | 4 | 12 1/2 | 2 | 30 | 4 5/8 | 8 1/8 | 7/8 | 2 1/2 | 4 3/8 | 9 | 5/8 | 25 1/8 | | | | 5.0 |
| 3 | 36 | 48 | 1 3/4 | 1/2 | 5/8 | 6 3/4 | 9 3/8 | 11 1/8 | 2 7/8 | 4 1/2 | 12 | 6 | 18 3/4 | 3 | 45 | 6 7/8 | 12 1/4 | 1 1/4 | 3 3/4 | 6 5/8 | 13 1/2 | 1 | 40 3/4 | | | | 12.0 |
| 4 | 36 | 48 | 1 3/4 | 1/2 | 5/8 | 6 3/4 | 9 3/8 | 11 1/8 | 2 7/8 | 4 1/2 | 12 | 6 | 18 3/4 | 3 | 45 | 6 7/8 | 12 1/4 | 1 1/4 | 3 3/4 | 6 5/8 | 13 1/2 | 1 | 40 3/4 | | | | 12.0 |
| 5 | 48 | 60 | 2 1/4 | 3/4 | 1 | 9 | 12 1/2 | 14 3/4 | 3 3/4 | 6 | 16 | 8 | 25 | 4 | 60 | 9 1/4 | 16 1/4 | 1 5/8 | 5 | 8 3/4 | 18 | 1 1/4 | 50 1/4 | | | | 20.0 |

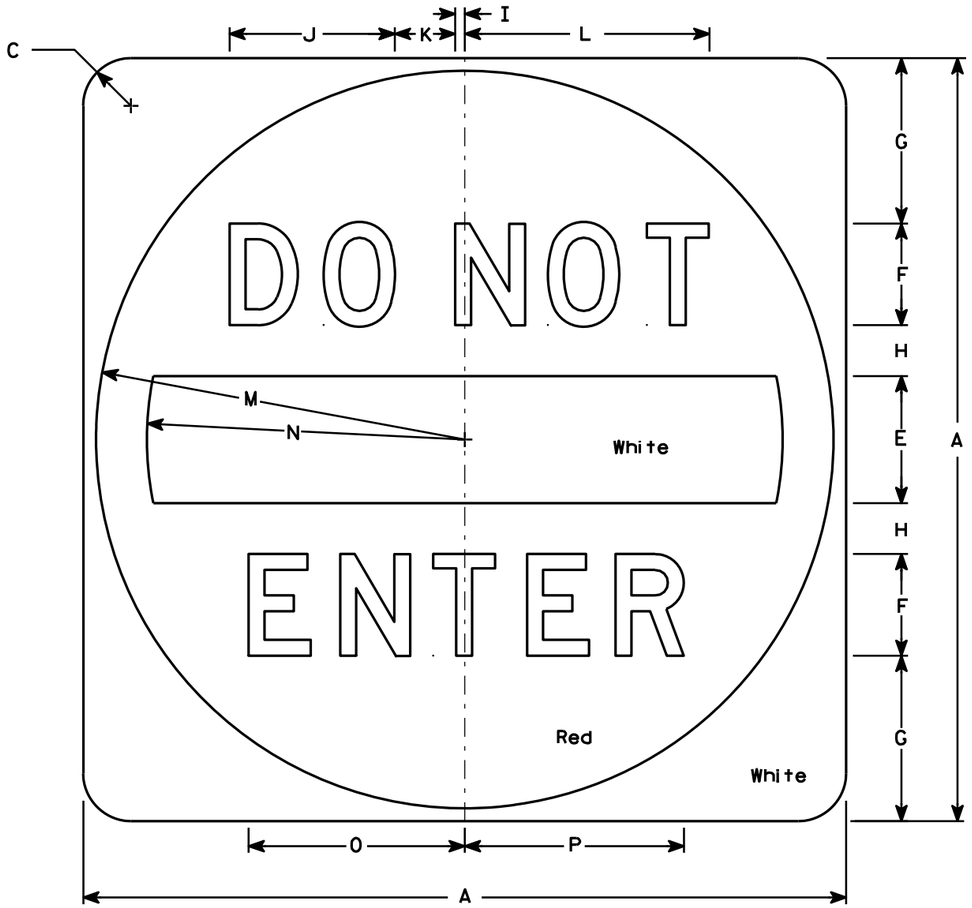
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 321 | E |
|---|---|---|---|---|---|




R5-1

## NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | | 1 7/8 | | 5 | 4 | 6 1/2 | 2 | 3/8 | 6 1/2 | 2 3/8 | 9 5/8 | 14 1/2 | 12 1/2 | 8 1/2 | 8 5/8 | | | | | | | | | | | 6.26 |
| 2M | 36 | | 2 1/4 | | 6 | 5 | 7 1/2 | 2 1/2 | 1/2 | 8 1/8 | 3 | 12 1/8 | 17 1/2 | 15 | 10 5/8 | 10 3/4 | | | | | | | | | | | 9.0 |
| 3 | 36 | | 2 1/4 | | 6 | 5 | 7 1/2 | 2 1/2 | 1/2 | 8 1/8 | 3 | 12 1/8 | 17 1/2 | 15 | 10 5/8 | 10 3/4 | | | | | | | | | | | 9.0 |
| 4 | 36 | | 2 1/4 | | 6 | 5 | 7 1/2 | 2 1/2 | 1/2 | 8 1/8 | 3 | 12 1/8 | 17 1/2 | 15 | 10 5/8 | 10 3/4 | | | | | | | | | | | 9.0 |
| 5 | 48 | | 3 | | 8 | 6 | 11 | 3 | 5/8 | 9 3/4 | 3 5/8 | 14 1/2 | 23 1/2 | 20 | 12 3/4 | 12 7/8 | | | | | | | | | | | 16.0 |

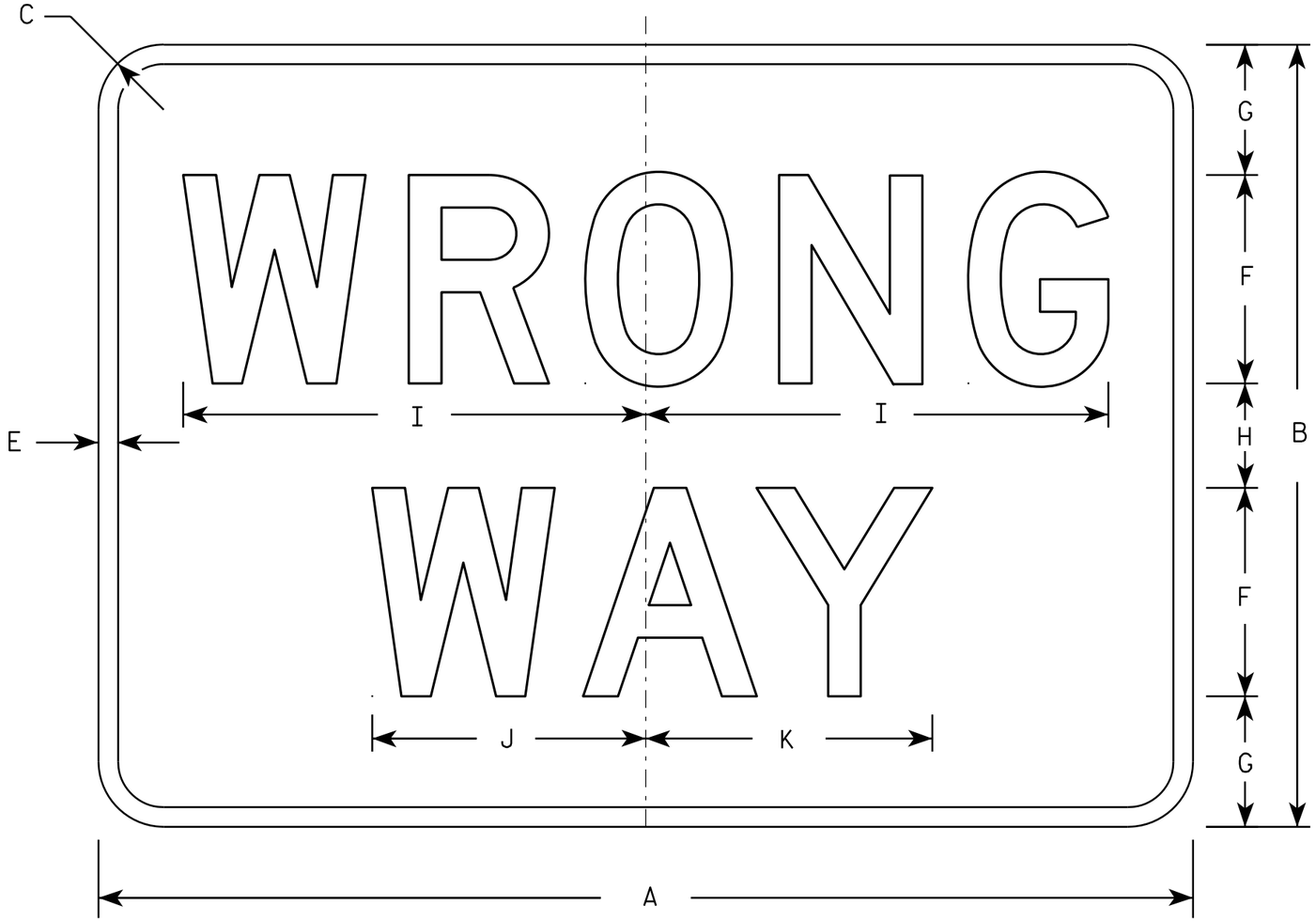
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 322 | E




R5-1A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 18 | 1 1/2 | | 1/2 | 5 | 3 | 2 | 11 | 6 1/2 | 6 7/8 | | | | | | | | | | | | | | | | 3.75 |
| 2S | 36 | 24 | 2 | | 5/8 | 6 | 4 1/2 | 3 | 13 1/4 | 7 7/8 | 8 1/4 | | | | | | | | | | | | | | | | 6.00 |
| 2M | 42 | 30 | 2 1/2 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |
| 3 | 42 | 30 | 2 1/2 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |
| 4 | 42 | 30 | 2 1/2 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |
| 5 | 42 | 30 | 2 1/2 | | 3/4 | 8 | 5 | 4 | 17 3/4 | 10 1/2 | 11 | | | | | | | | | | | | | | | | 8.75 |

STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 323 | E |
|---|---|---|---|---|---|

R5-57

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - Lines 1, 2, and 5 are Series C.
   Lines 3 and 4 are Series B.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2M | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 36 | | 1 5/8 | 5/8 | 3/4 | 4 | 3 | 2 | 3 1/2 | 14 1/4 | 14 7/8 | 11 | 11 1/2 | 4 3/4 | 1 3/4 | 9 | | 1 3/8 | 10 | 11 | 2 1/2 | 1 3/4 | 15 1/2 | 13 | 13 5/8 | | 9.0 |
| 5 | 36 | | 1 5/8 | 5/8 | 3/4 | 4 | 3 | 2 | 3 1/2 | 14 1/4 | 14 7/8 | 11 | 11 1/2 | 4 3/4 | 1 3/4 | 9 | | 1 3/8 | 10 | 11 | 2 1/2 | 1 3/4 | 15 1/2 | 13 | 13 5/8 | | 9.0 |

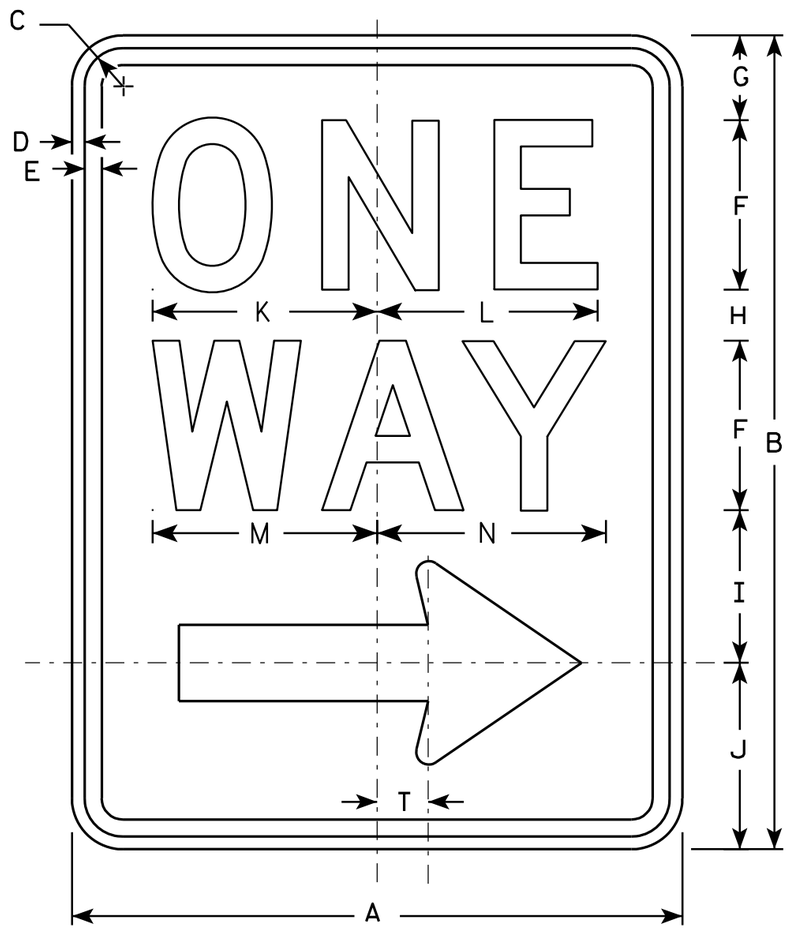
STANDARD SIGN
R5-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-57.10

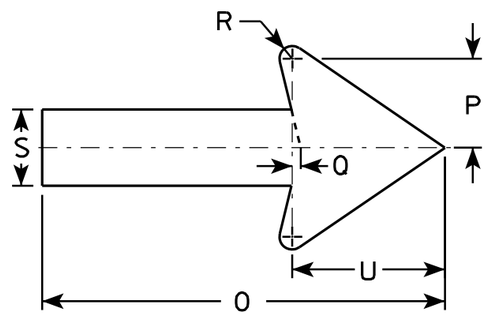
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 324 | E




R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.




| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 5 | 2 1/2 | 1 1/2 | 4 1/2 | 5 1/2 | 6 5/8 | 6 1/2 | 6 5/8 | 6 3/4 | 11 7/8 | 2 5/8 | 1/4 | 3/8 | 2 1/4 | 1 1/2 | 4 1/2 | | | | | |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 6 | 3 | 2 1/2 | 5 1/2 | 7 | 8 1/8 | 8 1/8 | 8 1/2 | 8 5/8 | 16 | 3 1/2 | 3/8 | 1/2 | 3 | 2 | 6 | | | | | |
| 2M | 30 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 2 1/2 | 2 5/8 | 6 7/8 | 8 | 10 1/2 | 10 1/2 | 11 1/4 | 11 1/4 | 20 | 4 3/8 | 1/2 | 5/8 | 3 3/4 | 2 1/2 | 7 1/2 | | | | | |
| 3 | 36 | 48 | 1 7/8 | 1/2 | 5/8 | 10 | 5 1/4 | 3 1/4 | 9 | 10 1/2 | 12 3/4 | 12 3/4 | 13 1/4 | 13 1/2 | 24 | 5 5/8 | 1/2 | 3/4 | 4 3/4 | 3 | 9 | | | | | |
| 4 | 36 | 48 | 1 7/8 | 1/2 | 5/8 | 10 | 5 1/4 | 3 1/4 | 9 | 10 1/2 | 12 3/4 | 12 3/4 | 13 1/4 | 13 1/2 | 24 | 5 5/8 | 1/2 | 3/4 | 4 3/4 | 3 | 9 | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | |

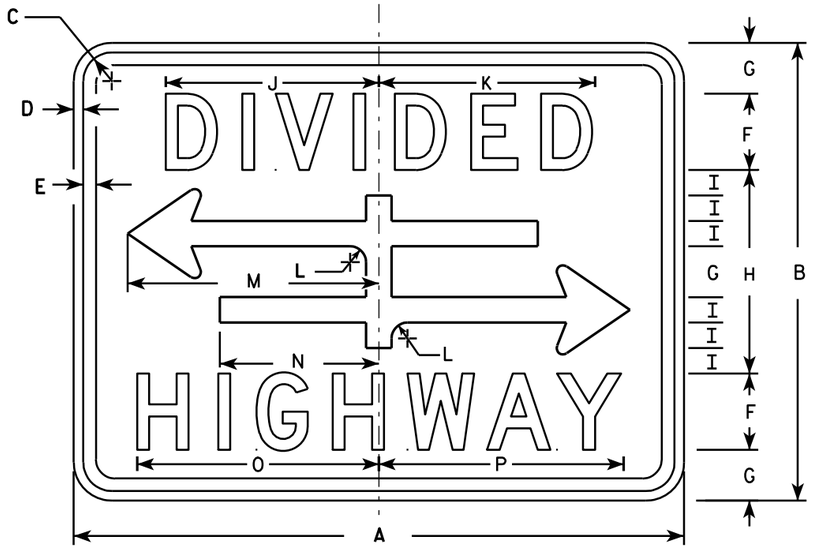
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

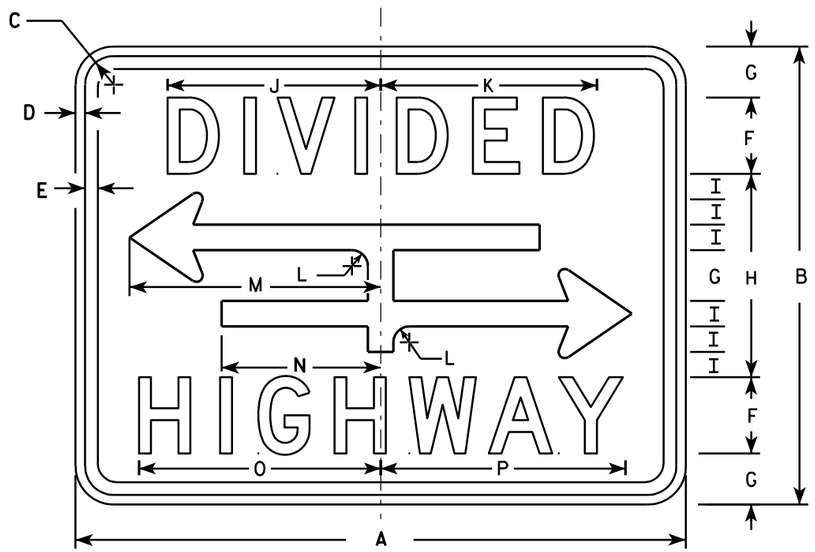
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 325 | E |
|---|---|---|---|---|---|



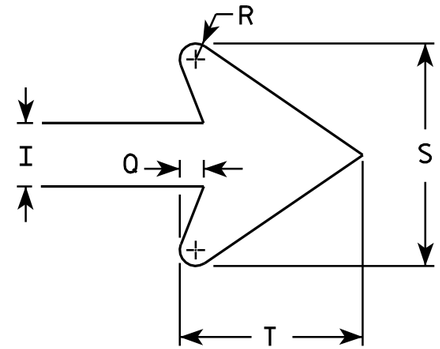

R6-3

## NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




R6-3A




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 18 | 1 1/8 | 3/8 | 3/8 | 3 | 2 | 8 | 1 | 8 3/8 | 8 1/2 | 5/8 | 9 7/8 | 6 1/4 | 9 1/2 | 9 5/8 | 3/8 | 1/4 | 3 1/2 | 2 3/4 | | | | | | | 3.0 |
| 2S | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 5/8 | 10 3/4 | 1 3/8 | 10 1/2 | 10 5/8 | 7/8 | 12 1/2 | 7 7/8 | 12 1/4 | 12 3/8 | 1/2 | 3/8 | 4 5/8 | 3 5/8 | | | | | | | 5.0 |
| 2M | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 5/8 | 10 3/4 | 1 3/8 | 10 1/2 | 10 5/8 | 7/8 | 12 1/2 | 7 7/8 | 12 1/4 | 12 3/8 | 1/2 | 3/8 | 4 5/8 | 3 5/8 | | | | | | | 5.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# STANDARD SIGN
# R6-3 & R6-3A

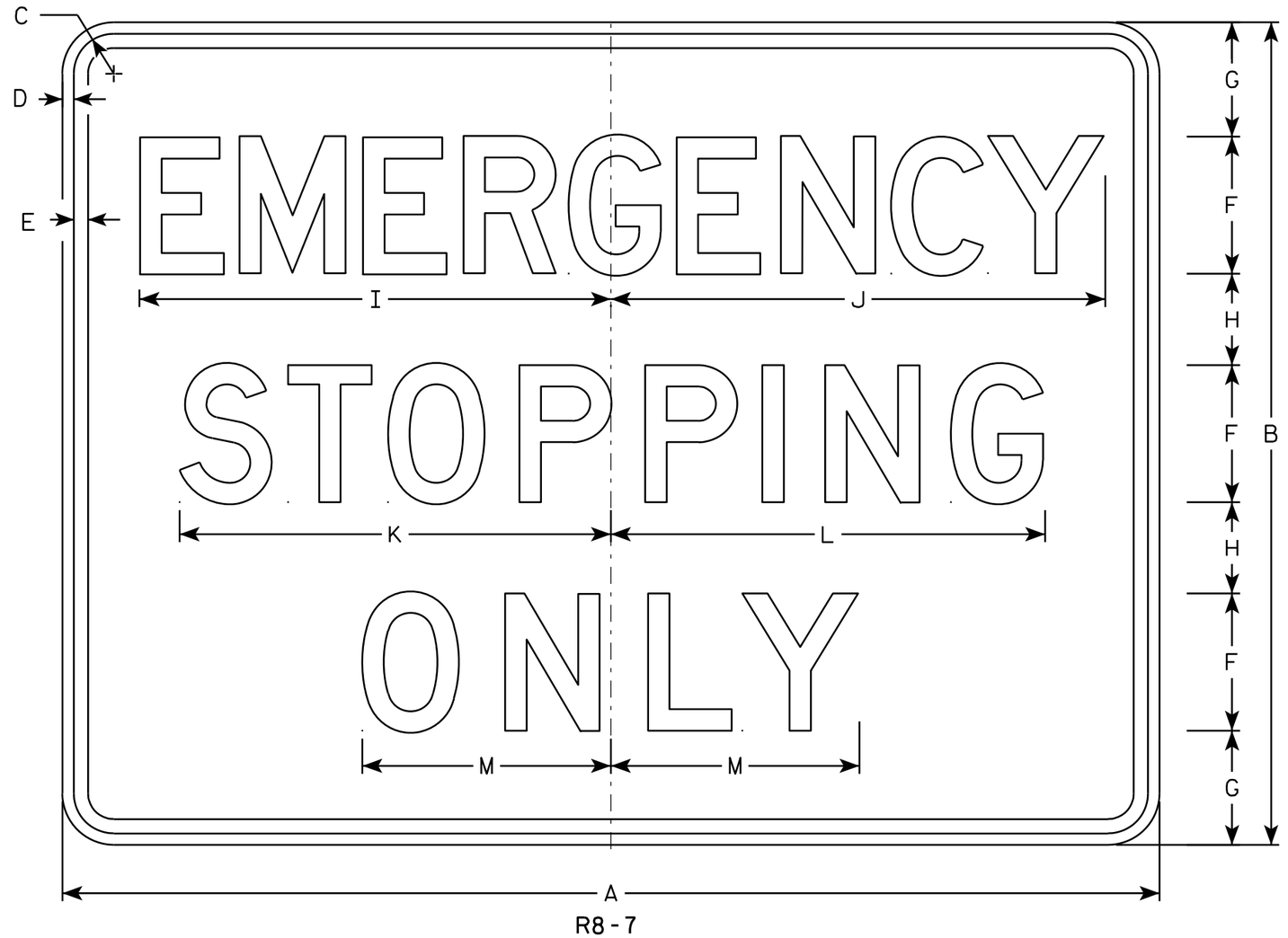
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R6-3.5

PROJECT NO:

SHEET NO: 326 E




R8-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2M | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 48 | 36 | 1 3/4 | 1/2 | 5/8 | 6 | 5 | 4 | 20 5/8 | 21 5/8 | 18 7/8 | 19 | 10 7/8 | | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 36 | 1 3/4 | 1/2 | 5/8 | 6 | 5 | 4 | 20 5/8 | 21 5/8 | 18 7/8 | 19 | 10 7/8 | | | | | | | | | | | | | | 12.0 |

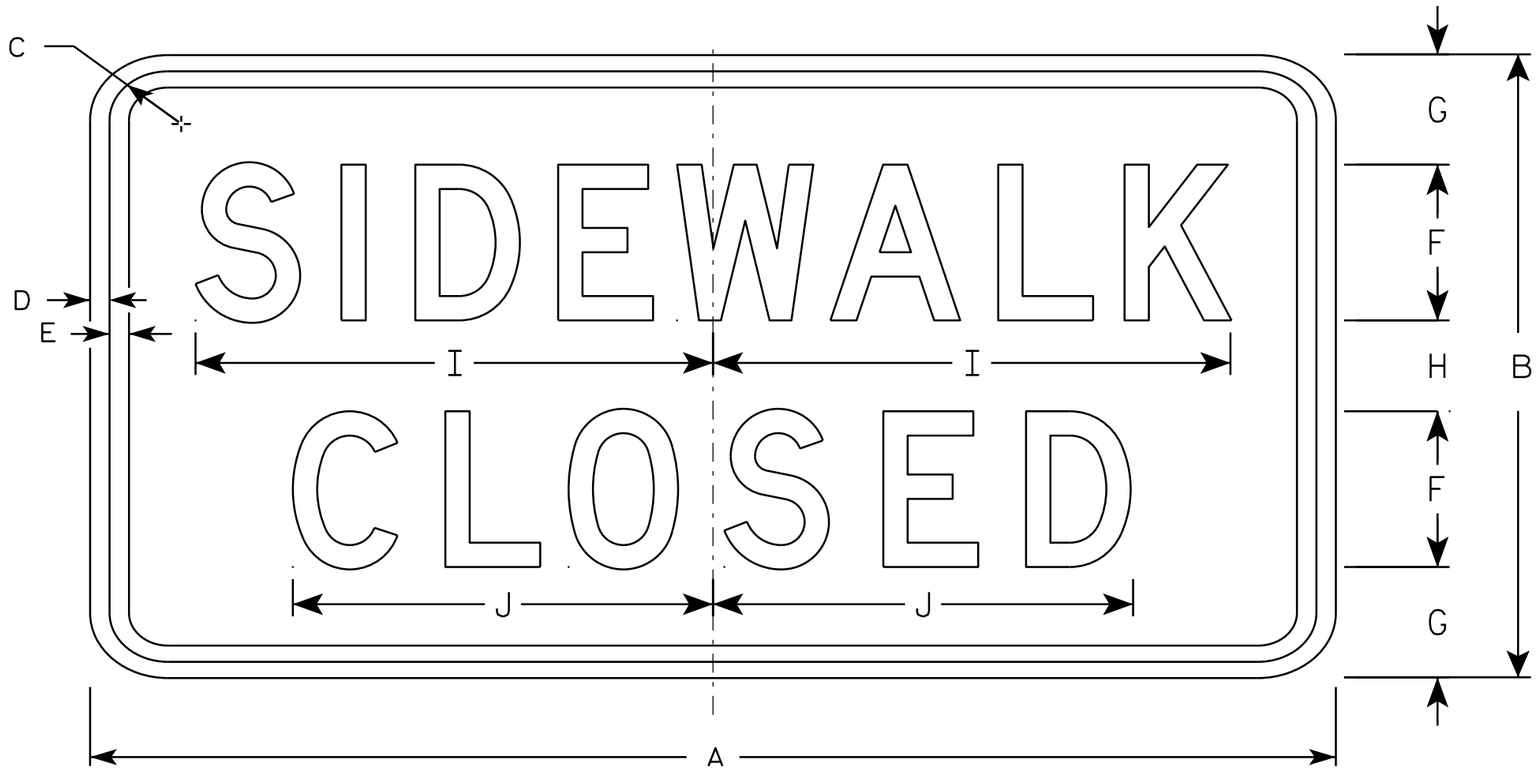
STANDARD SIGN
R8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R8-7.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 327 | E




R9-9

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 3/4 | 1/2 | 1/2 | 3 | 2 1/8 | 1 3/4 | 10 | 8 1/8 | | | | | | | | | | | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 3/4 | 1/2 | 1/2 | 3 | 2 1/8 | 1 3/4 | 10 | 8 1/8 | | | | | | | | | | | | | | | | | 2.0 |
| 3 | 30 | 18 | 1 3/4 | 1/2 | 1/2 | 4 | 3 1/2 | 3 | 12 1/2 | 10 1/4 | | | | | | | | | | | | | | | | | 3.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

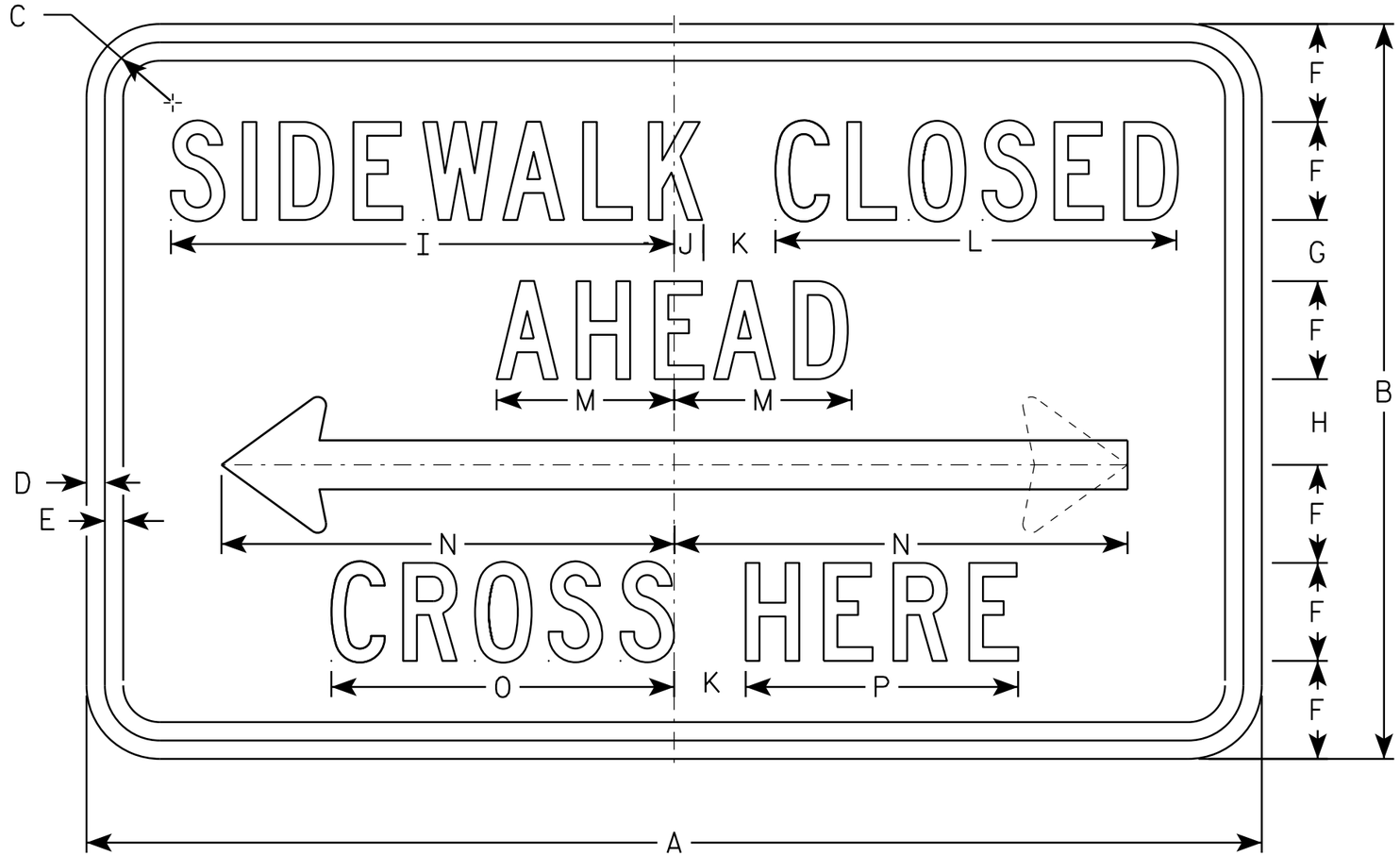
STANDARD SIGN
R9-9

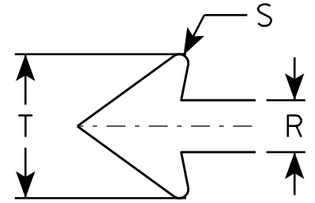
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/10/16 PLATE 328 R9-9.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E




R9-11

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C except Size 1 is Series D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 1 1/2 | 1 1/2 | 1 1/2 | 9 3/4 | 5/8 | 1 1/2 | 7 5/8 | 3 1/2 | 9 1/4 | 6 5/8 | 5 1/8 | | 1 | 1/8 | 2 3/4 | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 1 1/2 | 1 1/2 | 1 1/2 | 9 3/4 | 5/8 | 1 1/2 | 7 5/8 | 3 1/2 | 9 1/4 | 6 5/8 | 5 1/8 | | 1 | 1/8 | 2 3/4 | | | | | | | 2.0 |
| 3 | 48 | 30 | 2 3/4 | 3/4 | 3/4 | 4 | 2 1/2 | 3 1/2 | 20 1/2 | 1 1/4 | 3 | 16 3/8 | 7 1/4 | 18 1/2 | 14 | 11 1/8 | | 2 | 3/8 | 5 1/2 | | | | | | | 10.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

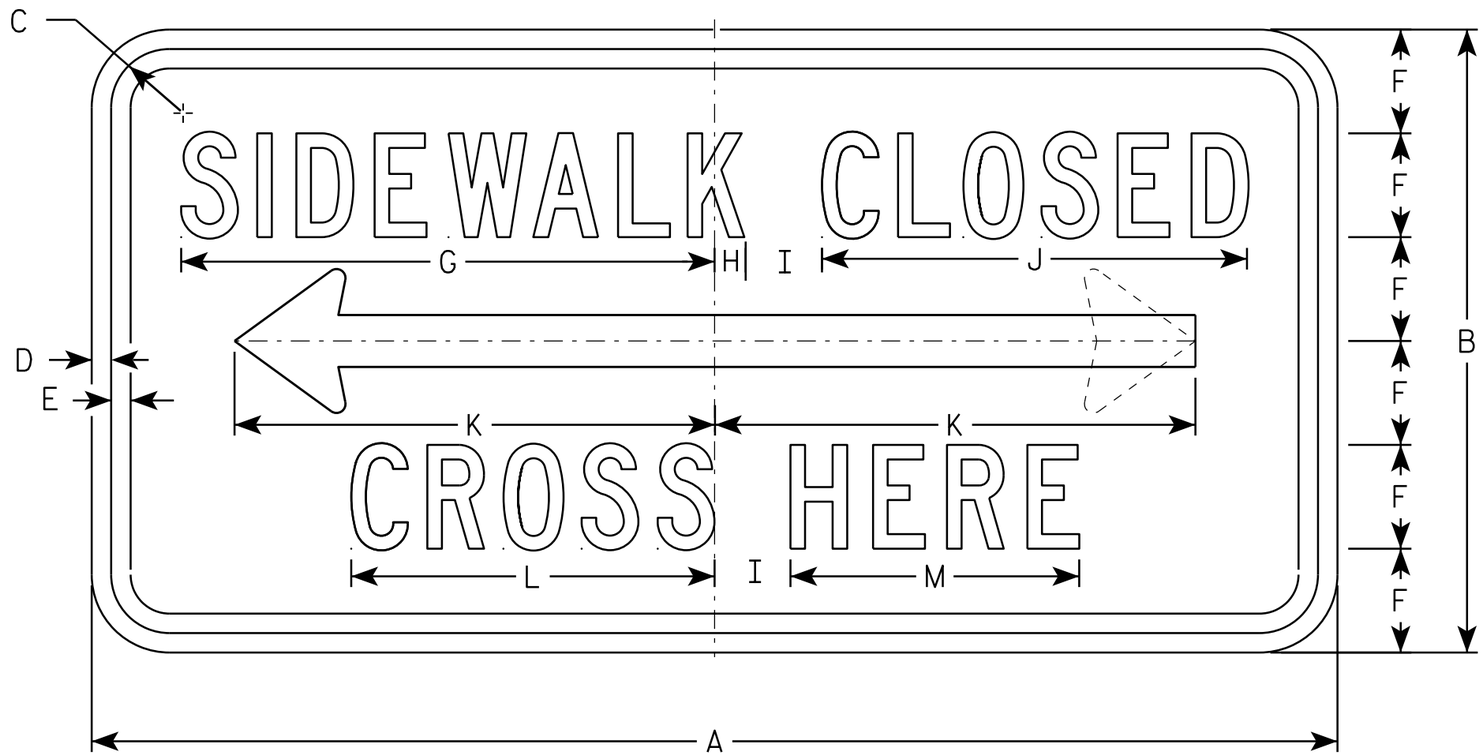
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/10/16 PLATE No. R9-11.3

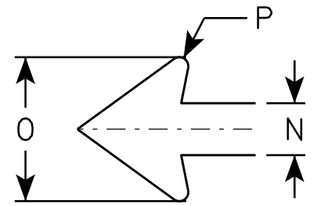
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|



FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R911.DGN PLOT DATE : 10-MAR-2016 14:57 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837529:1.000000
WISDOT/CADDS SHEET 42




R9-11A




NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 2 | 10 1/4 | 5/8 | 1 1/2 | 8 1/4 | 9 1/4 | 7 | 5 5/8 | 1 | 2 3/4 | 1/8 | | | | | | | | | | | 2.0 |
| 2M | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 2 | 10 1/4 | 5/8 | 1 1/2 | 8 1/4 | 9 1/4 | 7 | 5 5/8 | 1 | 2 3/4 | 1/8 | | | | | | | | | | | 2.0 |
| 3 | 48 | 24 | 2 3/4 | 3/4 | 3/4 | 4 | 20 1/2 | 1 1/4 | 3 | 16 3/8 | 18 1/2 | 14 | 11 1/8 | 2 | 5 1/2 | 3/8 | | | | | | | | | | | 8.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R9-11A

WISCONSIN DEPT OF TRANSPORTATION

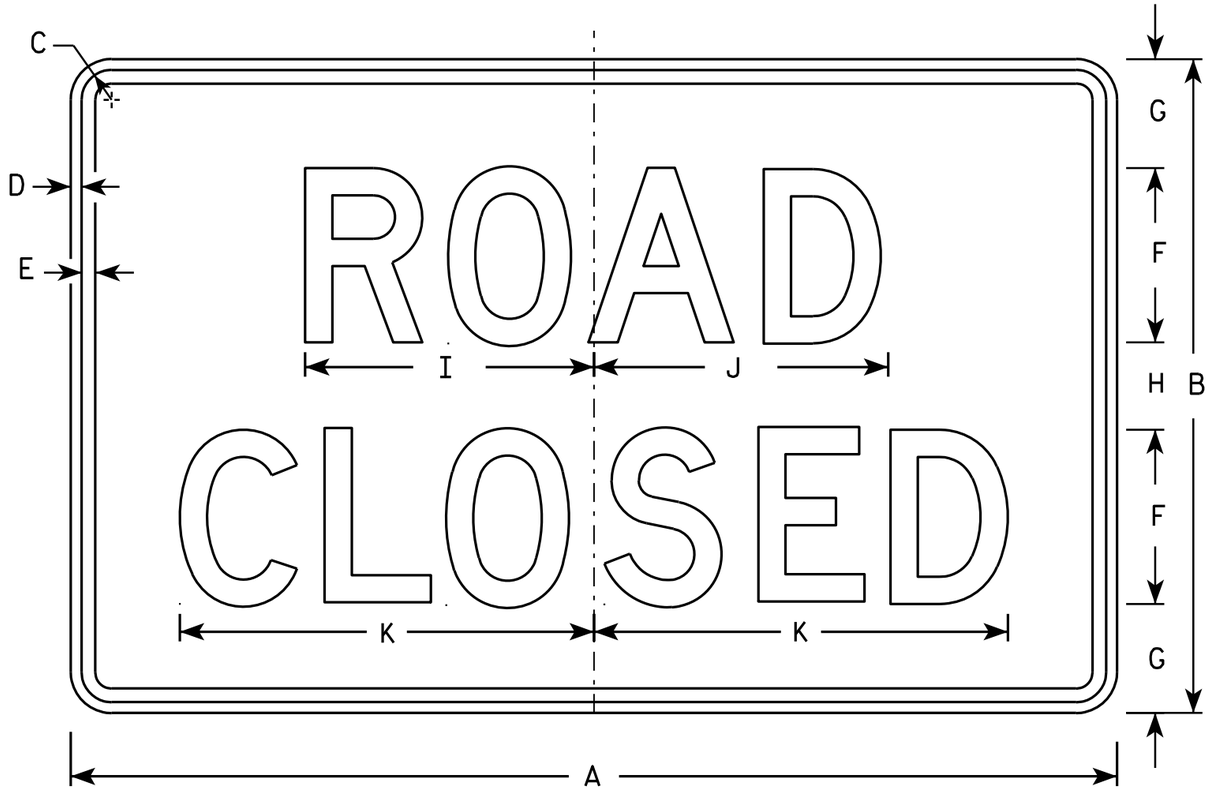
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/10/16 PLATE I.D. R9-11A.3

PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E



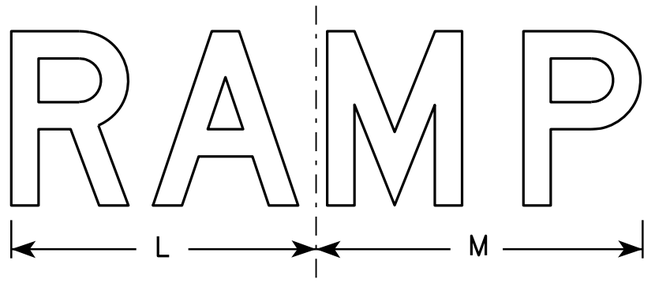
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R911A.DGN PLOT DATE : 10-MAR-2016 15:01 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837529:1.000000
WISDOT/CADDS SHEET 42



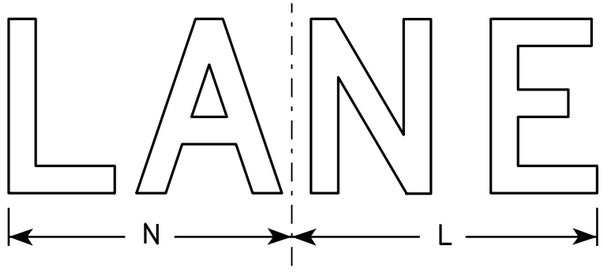

R11-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.




R11-2R




R11-2L

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | | | | | | | | | | | | | 10.0 |
| 2M | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | | | | | | | | | | | | | 10.0 |
| 3 | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | | | | | | | | | | | | | 10.0 |
| 4 | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | | | | | | | | | | | | | 10.0 |
| 5 | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | | | | | | | | | | | | | 10.0 |

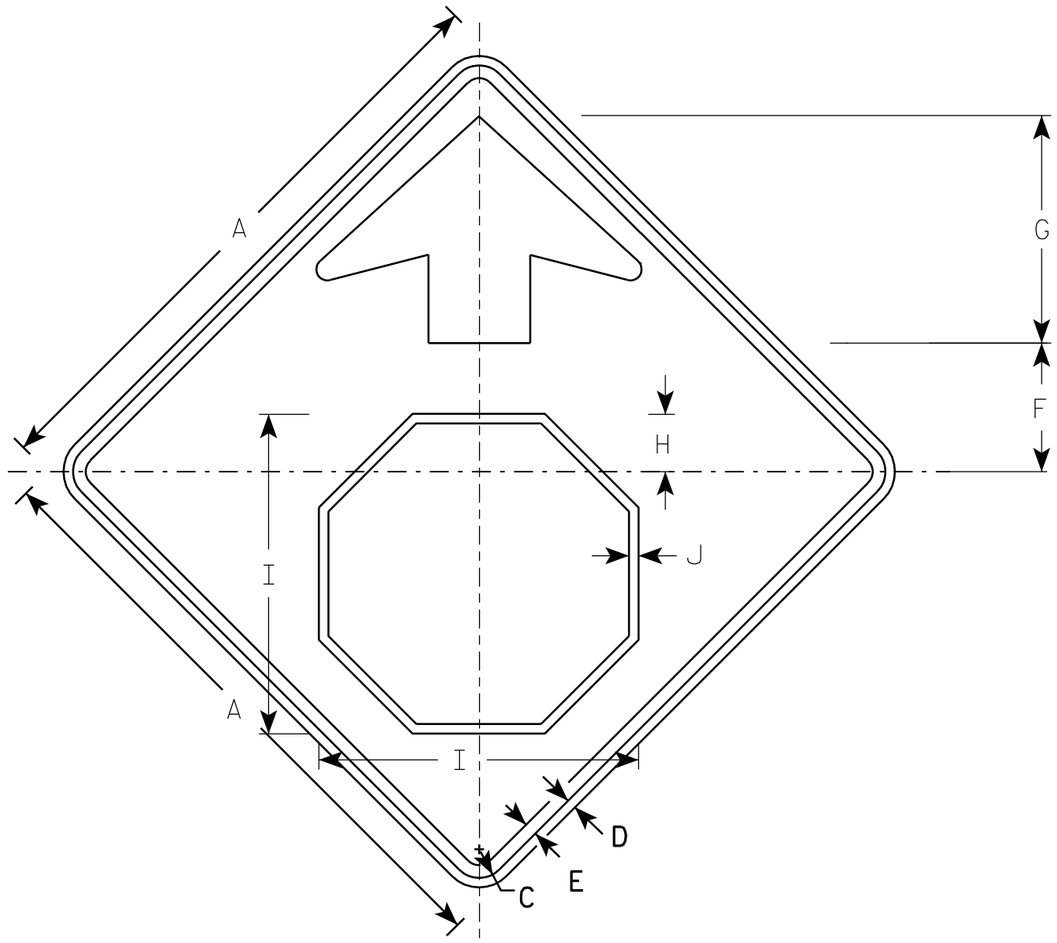
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

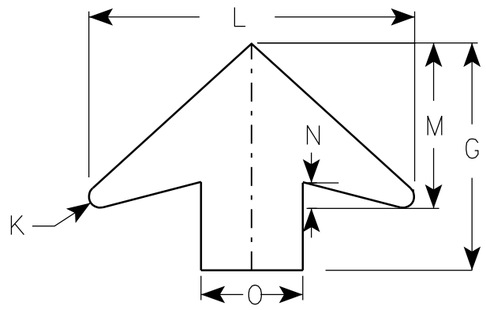
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 331 | E |
|---|---|---|---|---|---|




W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | 6 1/4 | 11 1/4 | 2 7/8 | 15 3/4 | 1/2 | 1/2 | 16 | 8 | 1 1/4 | 5 | | | | | | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 1/2 | 19 | 5/8 | 5/8 | 19 1/4 | 9 3/4 | 1 5/8 | 6 | | | | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 10 | 17 7/8 | 4 1/2 | 25 1/8 | 3/4 | 7/8 | 25 5/8 | 13 | 2 | 8 | | | | | | | | | | | | 16.0 |

STANDARD SIGN
W3-1

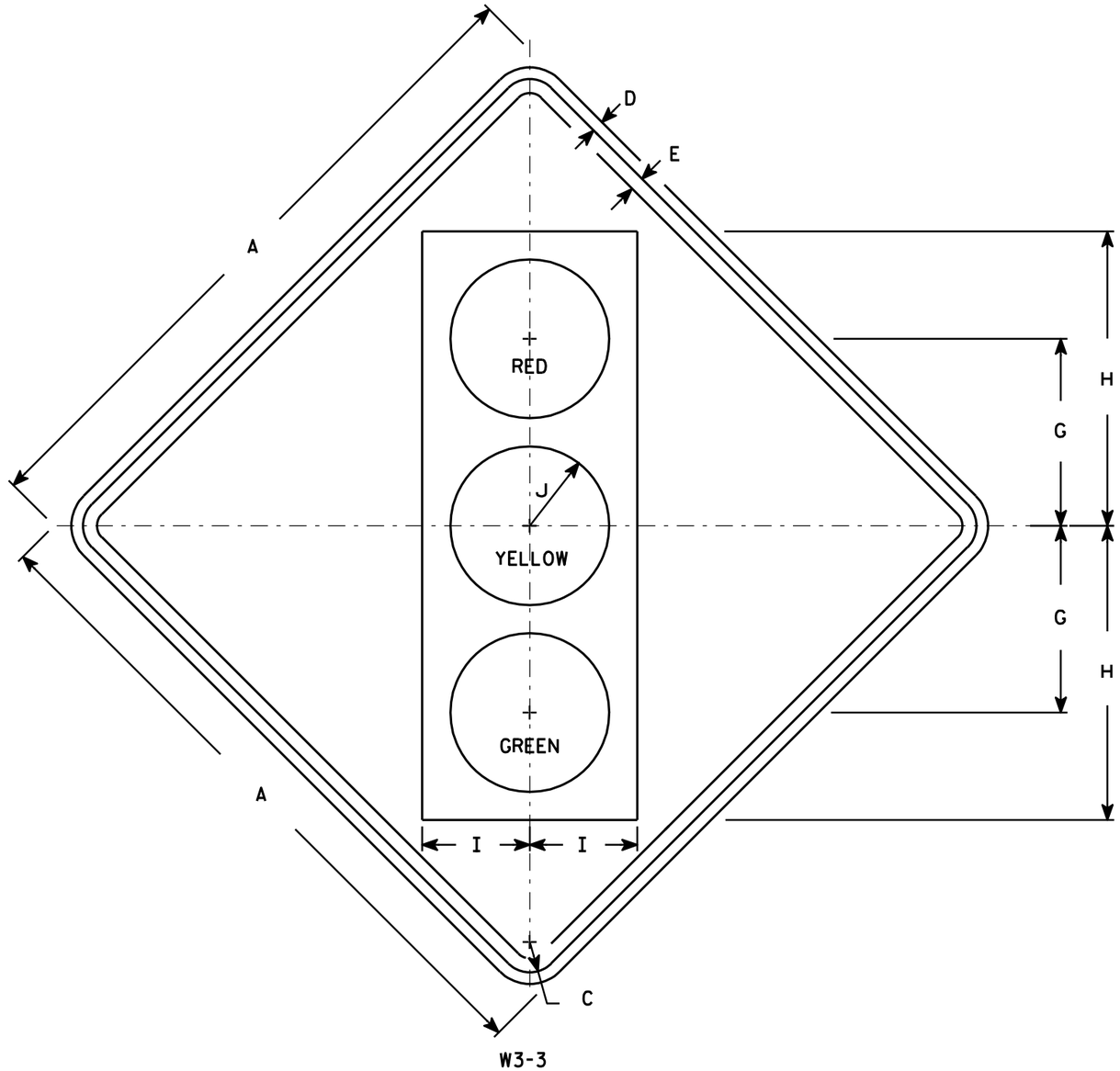
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

SHEET NO: 332 E




NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | | 8 3/4 | 13 3/4 | 5 | 3 3/4 | | | | | | | | | | | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 10 | 15 3/4 | 5 3/4 | 4 1/4 | | | | | | | | | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 10 | 15 3/4 | 5 3/4 | 4 1/4 | | | | | | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | | 10 | 15 3/4 | 5 3/4 | 4 1/4 | | | | | | | | | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 12 1/2 | 20 | 7 1/2 | 5 | | | | | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 12 1/2 | 20 | 7 1/2 | 5 | | | | | | | | | | | | | | | | | 16.0 |

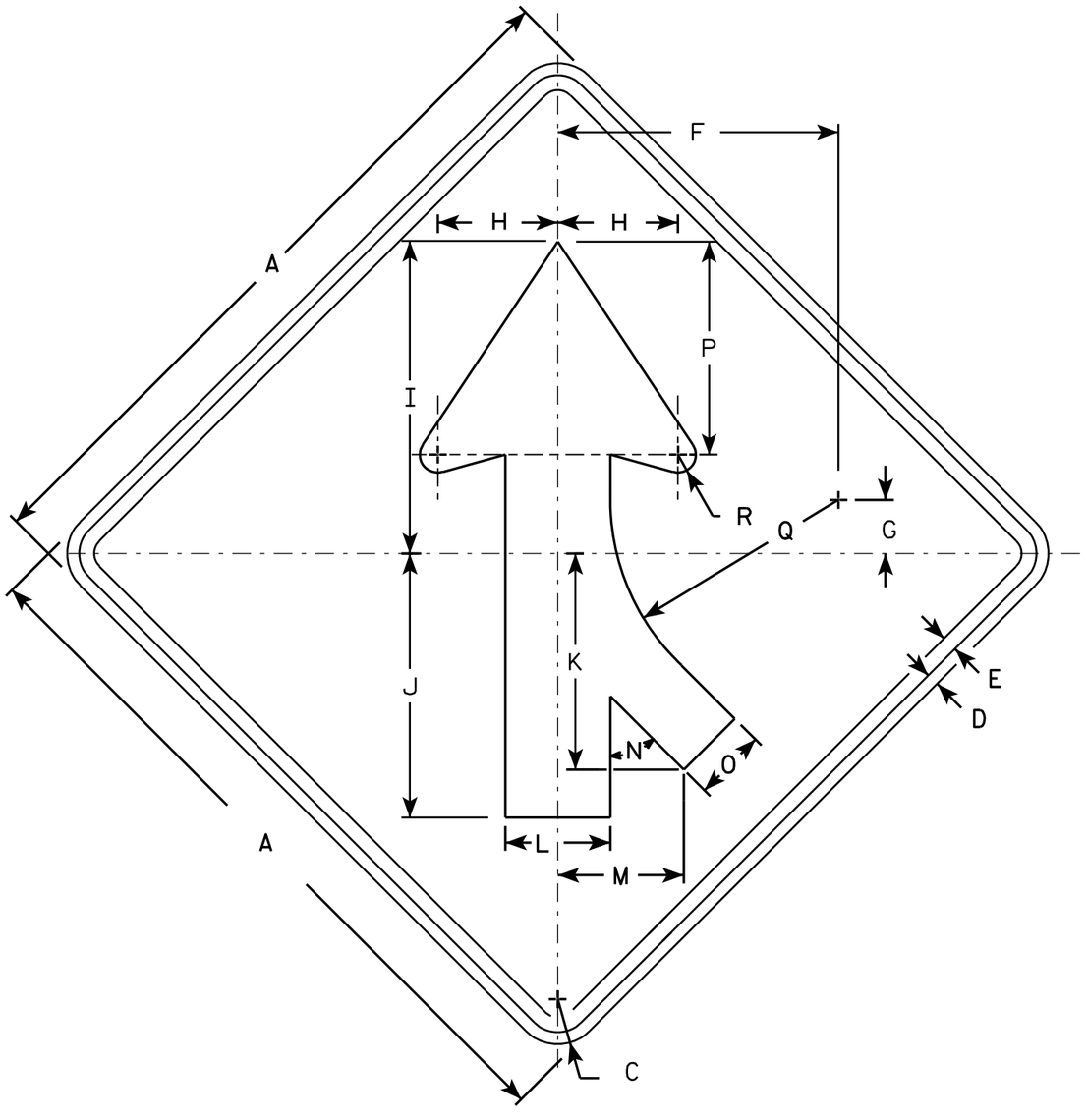
STANDARD SIGN
W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 333 | E




W4-1 R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | 11 5/8 | 2 1/2 | 5 | 13 | 11 | 9 | 4 3/8 | 5 1/4 | 45° | 3 | 8 7/8 | 9 1/2 | 3/4 | | | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 14 | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8 | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 14 | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8 | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 14 | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8 | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |

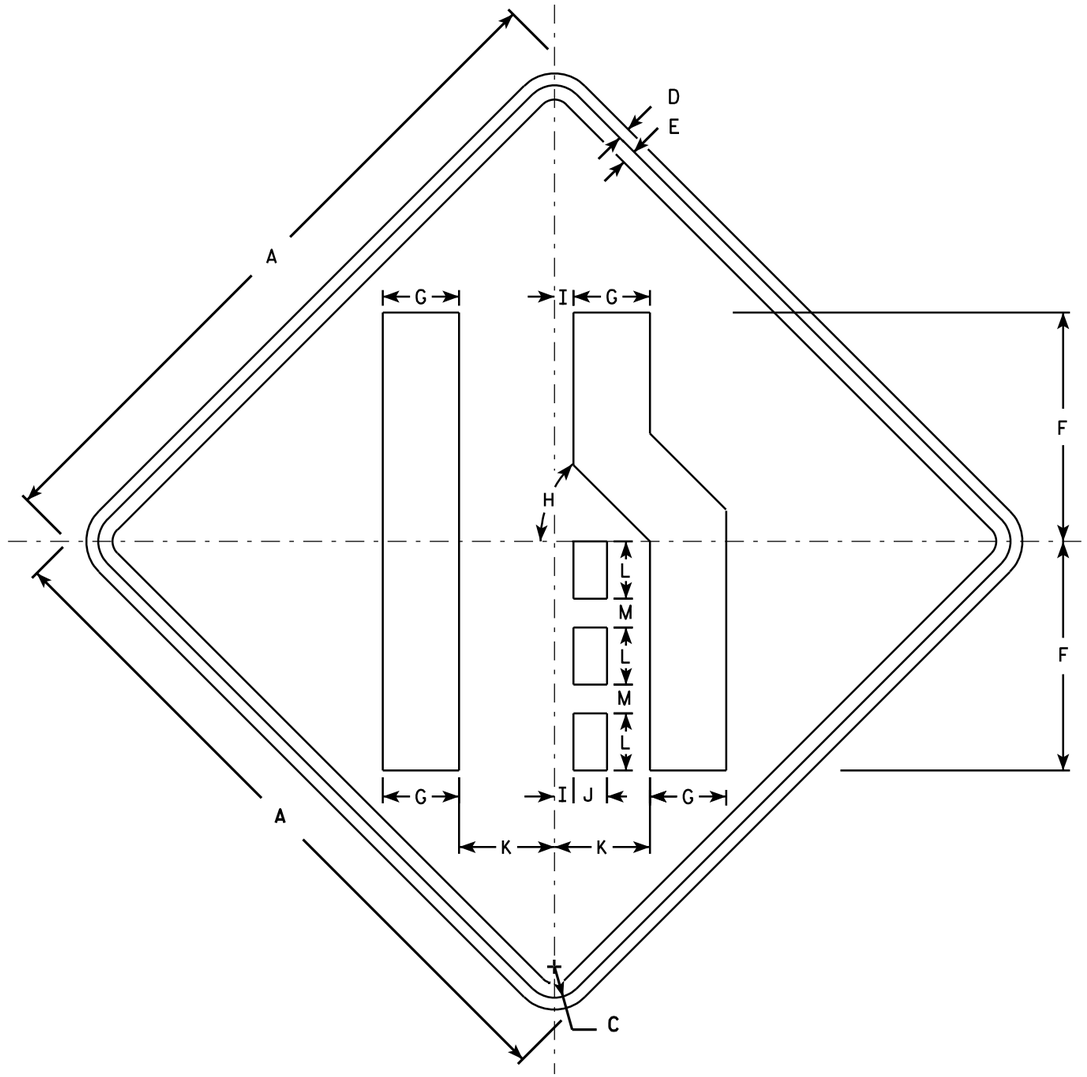
STANDARD SIGN
W4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-1.14

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 334 | E |
|---|---|---|---|---|---|




W4-2R

## NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-2L is the same as W4-2R except the symbol is reversed along the vertical centerline.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | 10 | 3 3/8 | 45° | 7/8 | 1 1/2 | 4 1/4 | 2 1/2 | 1 1/4 | | | | | | | | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 12 | 4 | 45° | 1 | 1 3/4 | 5 | 3 | 1 1/2 | | | | | | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 12 | 4 | 45° | 1 | 1 3/4 | 5 | 3 | 1 1/2 | | | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 12 | 4 | 45° | 1 | 1 3/4 | 5 | 3 | 1 1/2 | | | | | | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |

STANDARD SIGN
W4-2

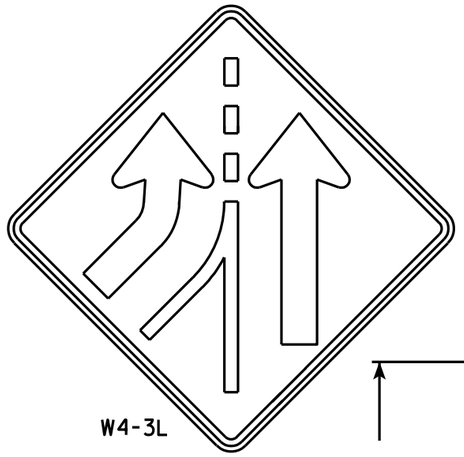
WISCONSIN DEPT OF TRANSPORTATION

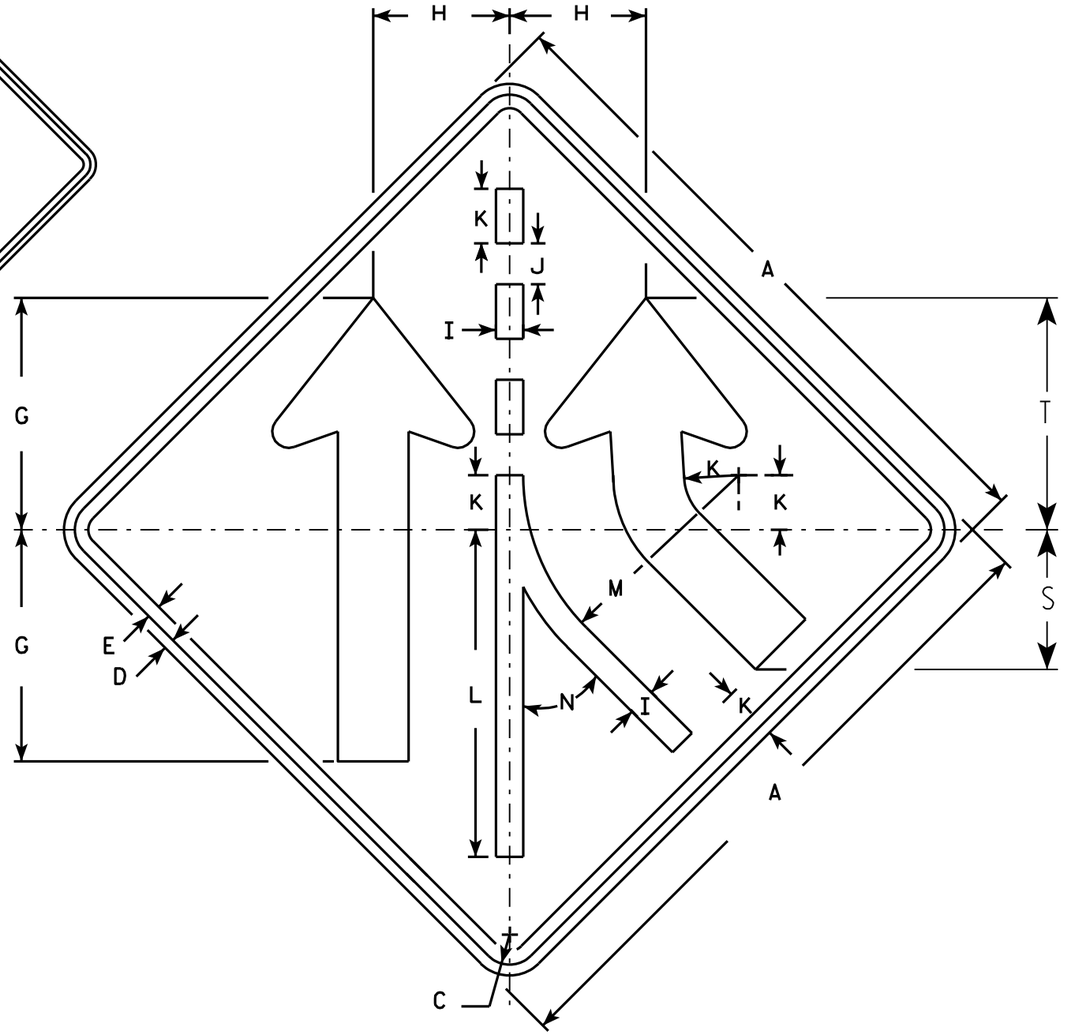
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

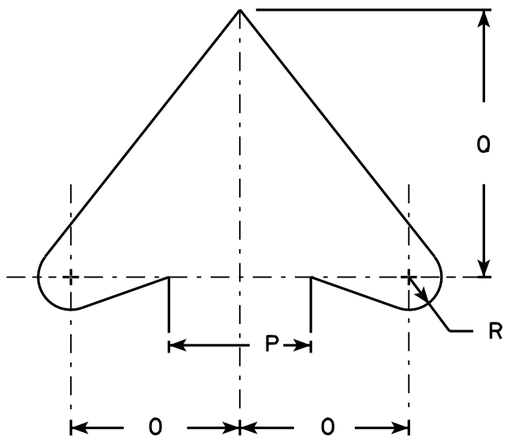
SHEET NO: 335 E




NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-3 L is the same as W4-3 R except the arrow is reversed along the vertical centerline.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 5/8 | 6 1/4 | 1 1/4 | 1 7/8 | 2 1/2 | 15 | 9 7/8 | 45° | 3 7/8 | 3 1/4 | 6 1/8 | 3/4 | 6 3/8 | 10 5/8 | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 12 3/4 | 7 1/2 | 1 1/2 | 2 1/4 | 3 | 18 | 11 7/8 | 45° | 4 5/8 | 4 | 7 3/8 | 7/8 | 7 3/4 | 12 3/4 | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 12 3/4 | 7 1/2 | 1 1/2 | 2 1/4 | 3 | 18 | 11 7/8 | 45° | 4 5/8 | 4 | 7 3/8 | 7/8 | 7 3/4 | 12 3/4 | | | | | | | 9.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |

# STANDARD SIGN
## W4-3

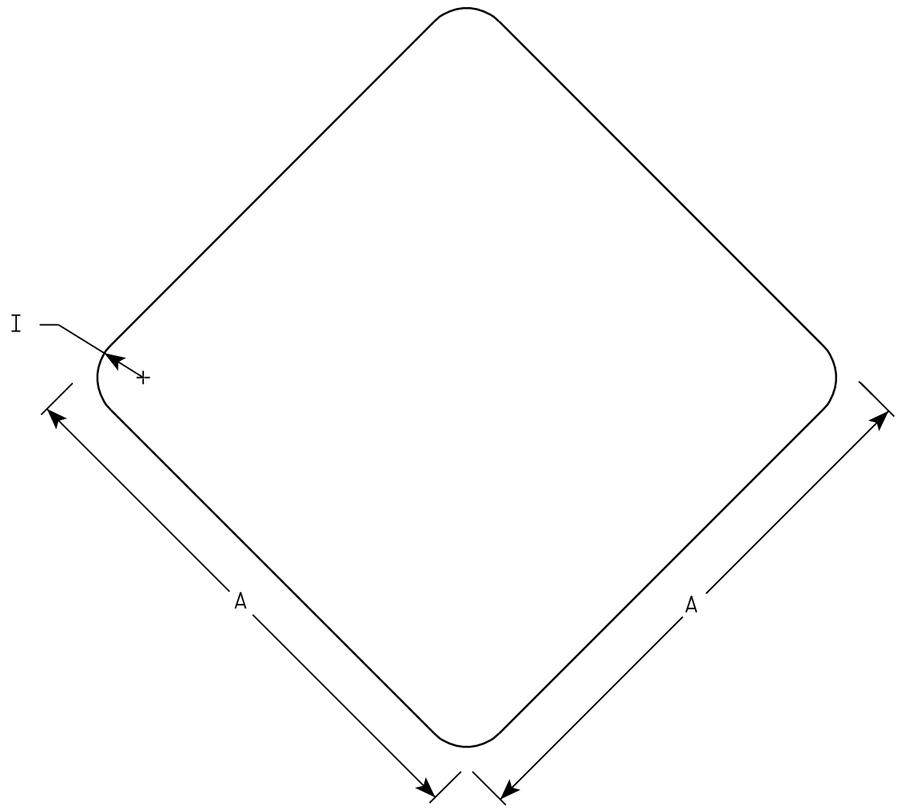
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-3.8

PROJECT NO:

SHEET NO: 336 E




W5-54

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
3. Corners may be square or rounded when base material is plywood. When base material is metal the corners shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | | | | | | | | 1 | | | | | | | | | | | | | | | | | | 1.0 |
| 2S | 18 | | | | | | | | 1 ½ | | | | | | | | | | | | | | | | | | 2.25 |
| 2M | 18 | | | | | | | | 1 ½ | | | | | | | | | | | | | | | | | | 2.25 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

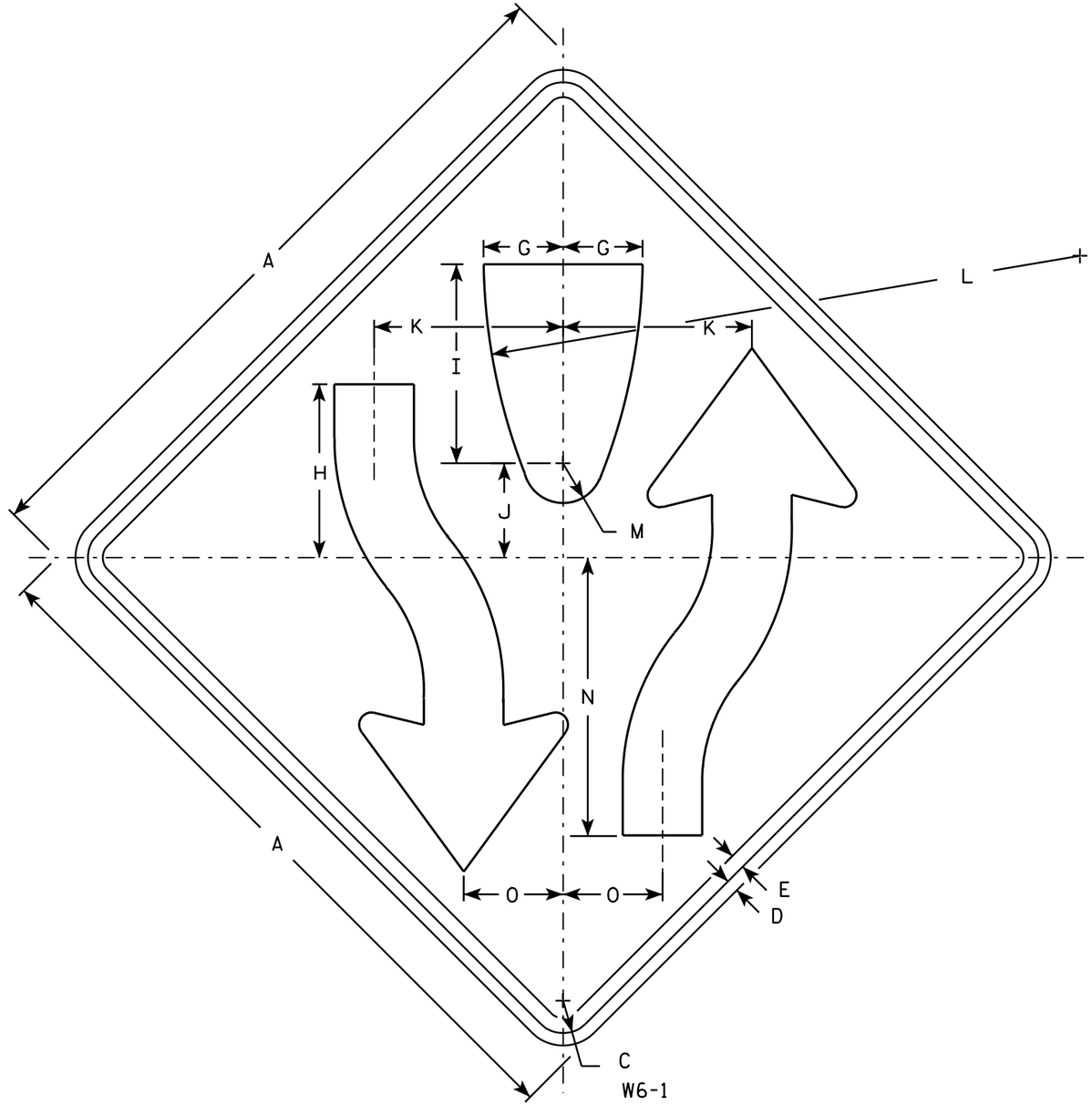
STANDARD SIGN
W5-54

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
*for State Traffic Engineer*

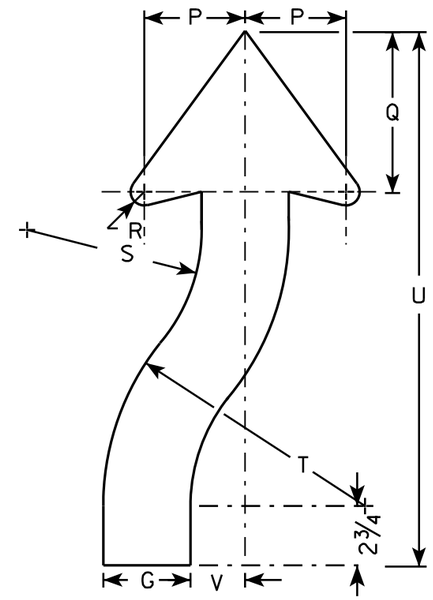
DATE 11/3/10 PLATE NO. W5-54.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 337 | E




NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W6-2 same as W6-1 but is rotated 180° when mounted.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | | 3 1/4 | 8 | 8 1/4 | 4 1/8 | 7 7/8 | 25 | 1 3/4 | 11 5/8 | 4 1/8 | 3 7/8 | 6 3/4 | 5/8 | 6 5/8 | 9 7/8 | 21 5/8 | 2 | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 | 8 3/4 | 10 | 4 3/4 | 9 1/2 | 30 | 2 | 14 | 5 | 4 5/8 | 7 3/8 | 7/8 | 8 | 12 | 24 1/2 | 2 1/2 | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 | 8 3/4 | 10 | 4 3/4 | 9 1/2 | 30 | 2 | 14 | 5 | 4 5/8 | 7 3/8 | 7/8 | 8 | 12 | 24 1/2 | 2 1/2 | | | | | 9.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 5 3/8 | 11 5/8 | 13 3/8 | 6 3/8 | 12 5/8 | 40 | 2 5/8 | 18 5/8 | 6 5/8 | 6 1/4 | 9 7/8 | 1 1/4 | 10 5/8 | 16 | 32 5/8 | 3 3/8 | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 5 3/8 | 11 5/8 | 13 3/8 | 6 3/8 | 12 5/8 | 40 | 2 5/8 | 18 5/8 | 6 5/8 | 6 1/4 | 9 7/8 | 1 1/4 | 10 5/8 | 16 | 32 5/8 | 3 3/8 | | | | | 16.0 |

# STANDARD SIGN
## W6-1 & W6-2

WISCONSIN DEPT OF TRANSPORTATION

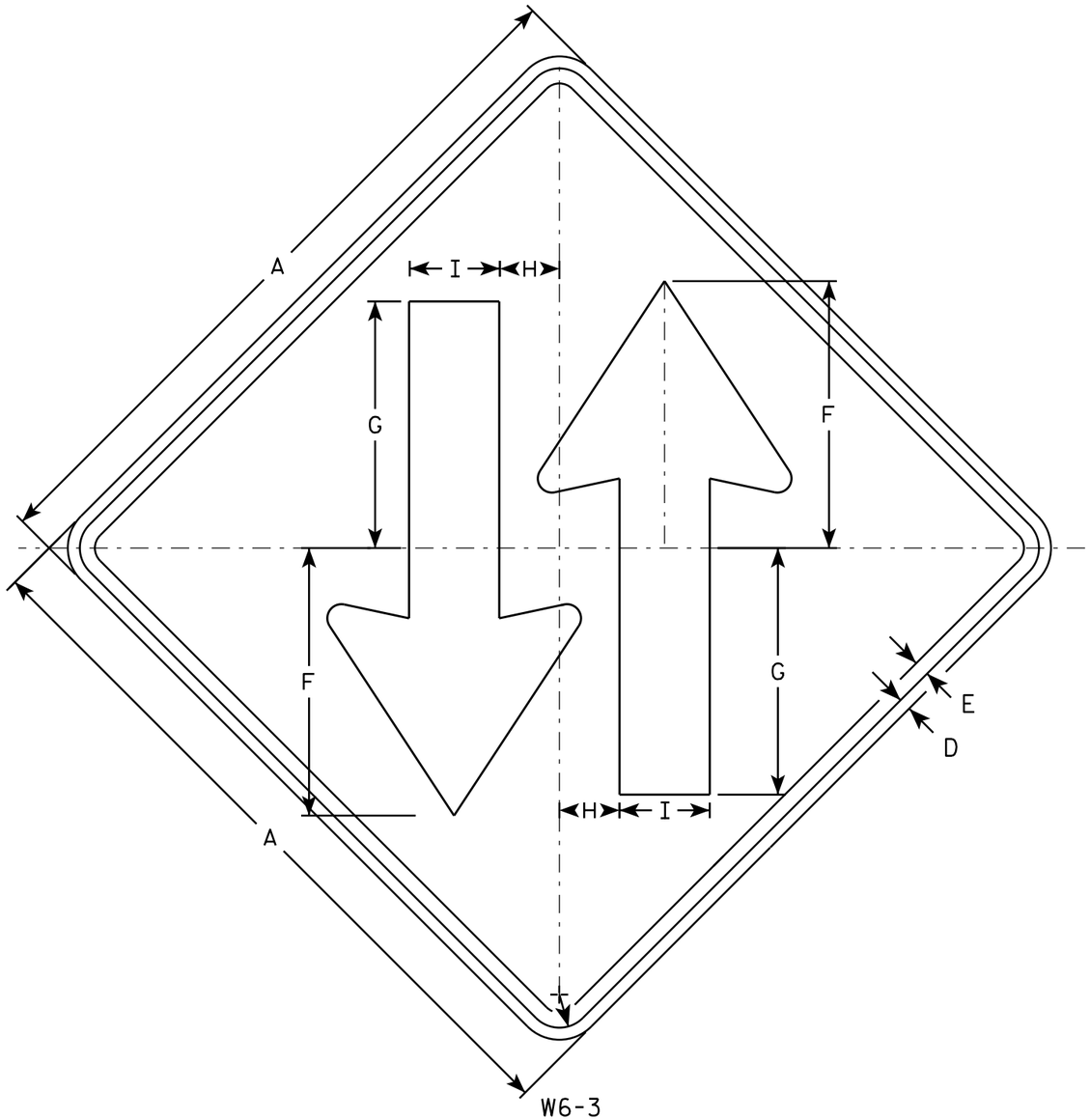
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W6-1.14

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 338 | E |
|---|---|---|---|---|---|



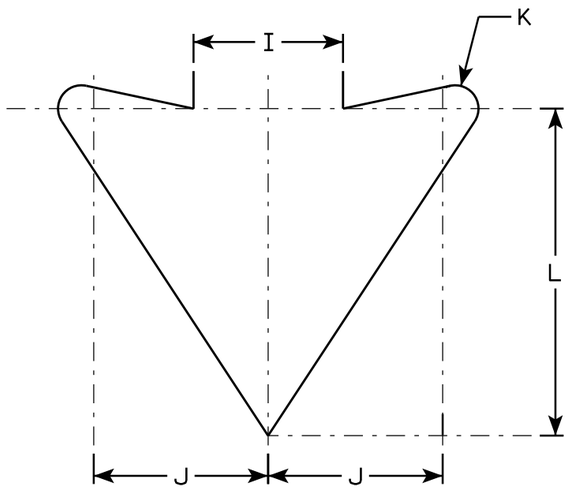
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W61.DGN PLOT DATE : 12-MAR-2013 14:02 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.946657:1.000000
WISDOT/CADDS SHEET 42




W6-3

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | 11 1/8 | 10 1/4 | 2 1/2 | 3 3/4 | 4 3/8 | 5/8 | 8 1/4 | | | | | | | | | | | | | | | 6.25 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 13 3/8 | 12 1/4 | 3 | 4 1/2 | 5 1/4 | 3/4 | 9 7/8 | | | | | | | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 13 3/8 | 12 1/4 | 3 | 4 1/2 | 5 1/4 | 3/4 | 9 7/8 | | | | | | | | | | | | | | | 9.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 17 3/4 | 16 3/8 | 4 | 6 | 7 | 1 | 13 1/8 | | | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 17 3/4 | 16 3/8 | 4 | 6 | 7 | 1 | 13 1/8 | | | | | | | | | | | | | | | 16.0 |

STANDARD SIGN
W6-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

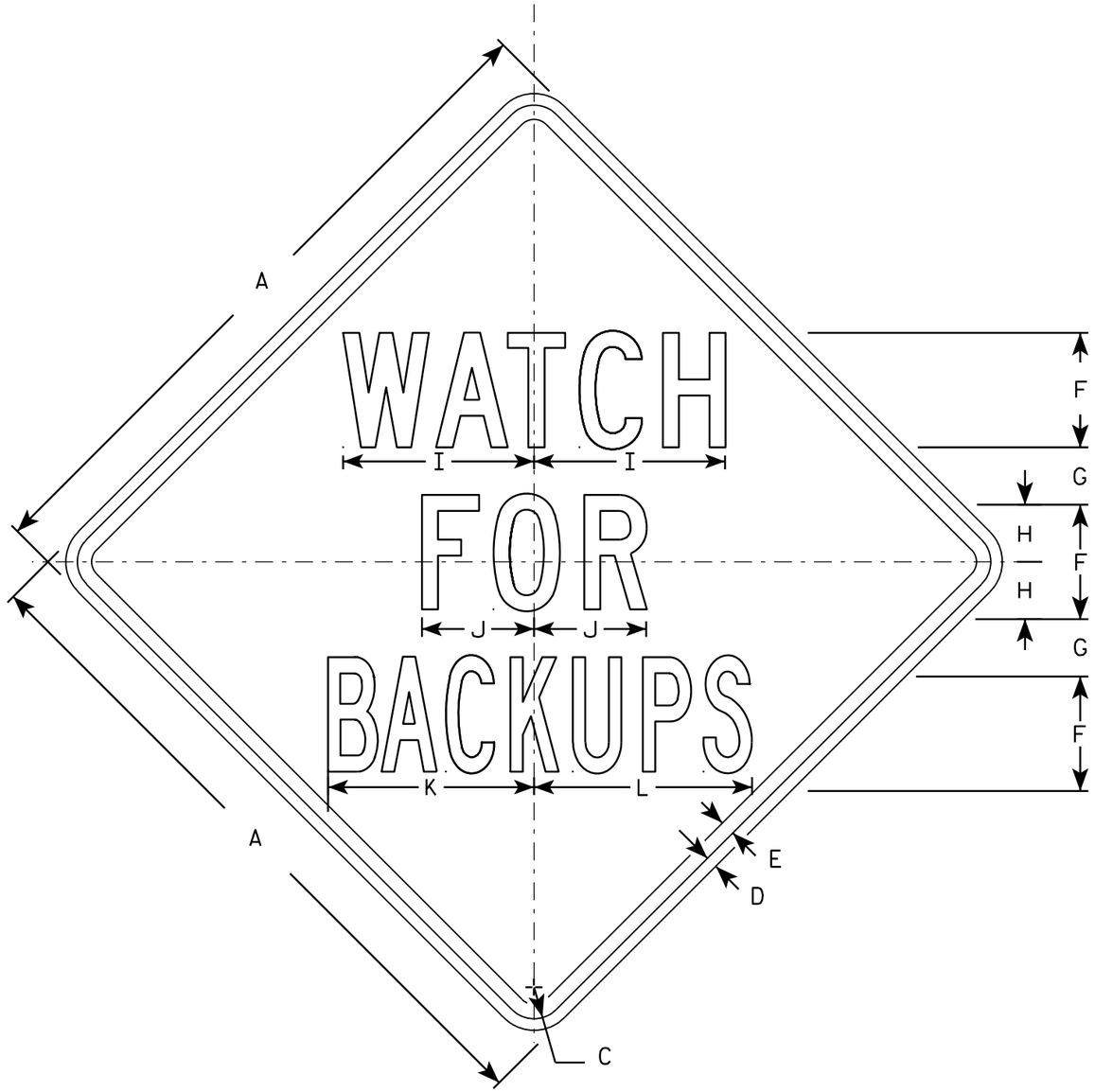
DATE 3/10/16 PLATE W6-3.11



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W63.DGN PLOT DATE : 10-MAR-2016 14:01 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.080757:1.000000
WISDOT/CADDS SHEET 42




W8-74

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - ORANGE
   Message - BLACK
3. Message Series - C except Line 3 is Series B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 6 | 2 1/2 | 3 | 10 | 5 7/8 | 10 3/4 | 11 3/8 | | | | | | | | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 6 | 2 1/2 | 3 | 10 | 5 7/8 | 10 3/4 | 11 3/8 | | | | | | | | | | | | | | | 9.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 4 | 13 5/8 | 7 7/8 | 14 3/8 | 15 1/4 | | | | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 4 | 13 5/8 | 7 7/8 | 14 3/8 | 15 1/4 | | | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 4 | 13 5/8 | 7 7/8 | 14 3/8 | 15 1/4 | | | | | | | | | | | | | | | 16.0 |

STANDARD SIGN
W8-74

WISCONSIN DEPT OF TRANSPORTATION

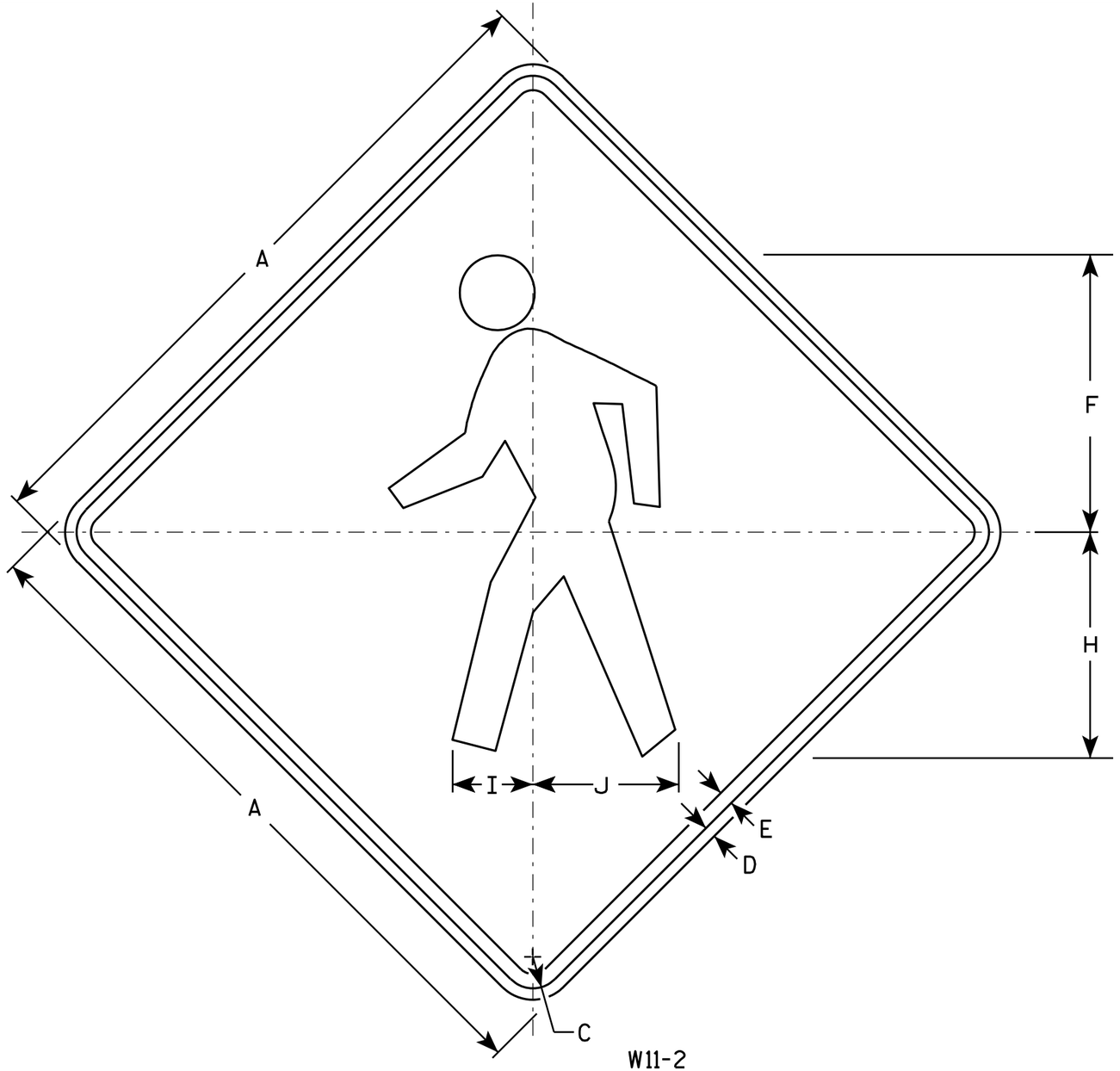
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/11 PLATE NO. W8-74.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 340 | E


7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W874.DGN PLOT DATE : 23-MAR-2011 10:22 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 7.510884:1.000000
WISDOT/CADDS SHEET 42




W11-2

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | 9 3/4 | | 7 7/8 | 2 7/8 | 5 1/8 | | | | | | | | | | | | | | | | | 4.0 |
| 2S | 30 | | 1 3/8 | 1/2 | 5/8 | 12 1/8 | | 9 7/8 | 3 1/2 | 6 3/8 | | | | | | | | | | | | | | | | | 6.25 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 14 1/2 | | 11 7/8 | 4 1/4 | 7 5/8 | | | | | | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 14 1/2 | | 11 7/8 | 4 1/4 | 7 5/8 | | | | | | | | | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 19 3/8 | | 15 3/4 | 5 5/8 | 10 1/4 | | | | | | | | | | | | | | | | | 16.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

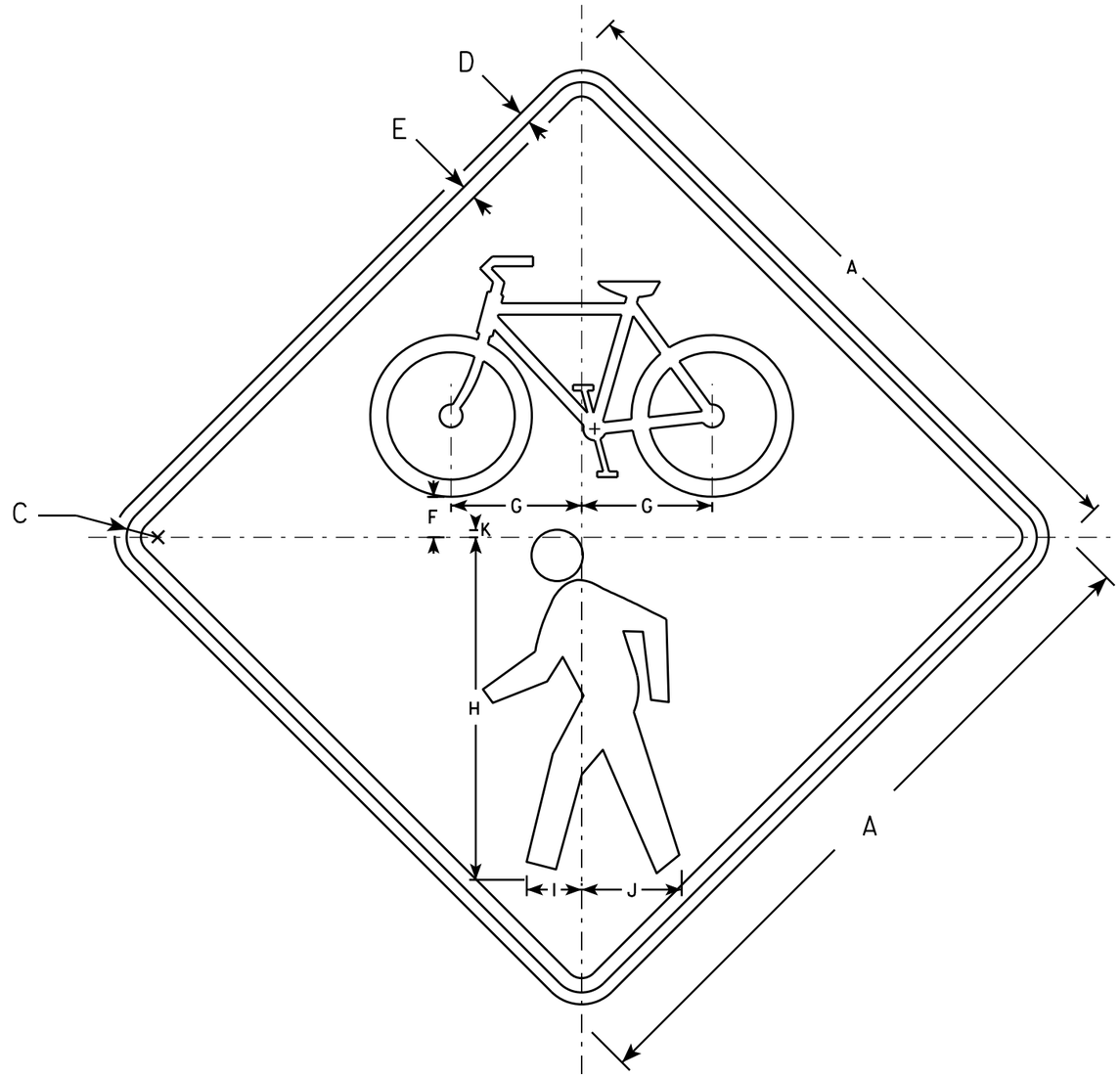
# STANDARD SIGN
# W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 341 | E |
|---|---|---|---|---|---|




W11-15

## NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | 1 3/8 | 4 5/8 | 12 | 1 7/8 | 3 1/2 | 1/4 | | | | | | | | | | | | | | | | 4.0 |
| 2S | 30 | | 1 3/8 | 1/2 | 5/8 | 1 3/4 | 5 3/4 | 15 | 2 3/8 | 4 3/8 | 3/8 | | | | | | | | | | | | | | | | 6.25 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 2 1/8 | 6 7/8 | 18 | 2 7/8 | 5 1/4 | 3/8 | | | | | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 2 1/8 | 6 7/8 | 18 | 2 7/8 | 5 1/4 | 3/8 | | | | | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 2 7/8 | 9 1/8 | 24 | 3 7/8 | 7 | 1/2 | | | | | | | | | | | | | | | | 16.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
W11-15

WISCONSIN DEPT OF TRANSPORTATION

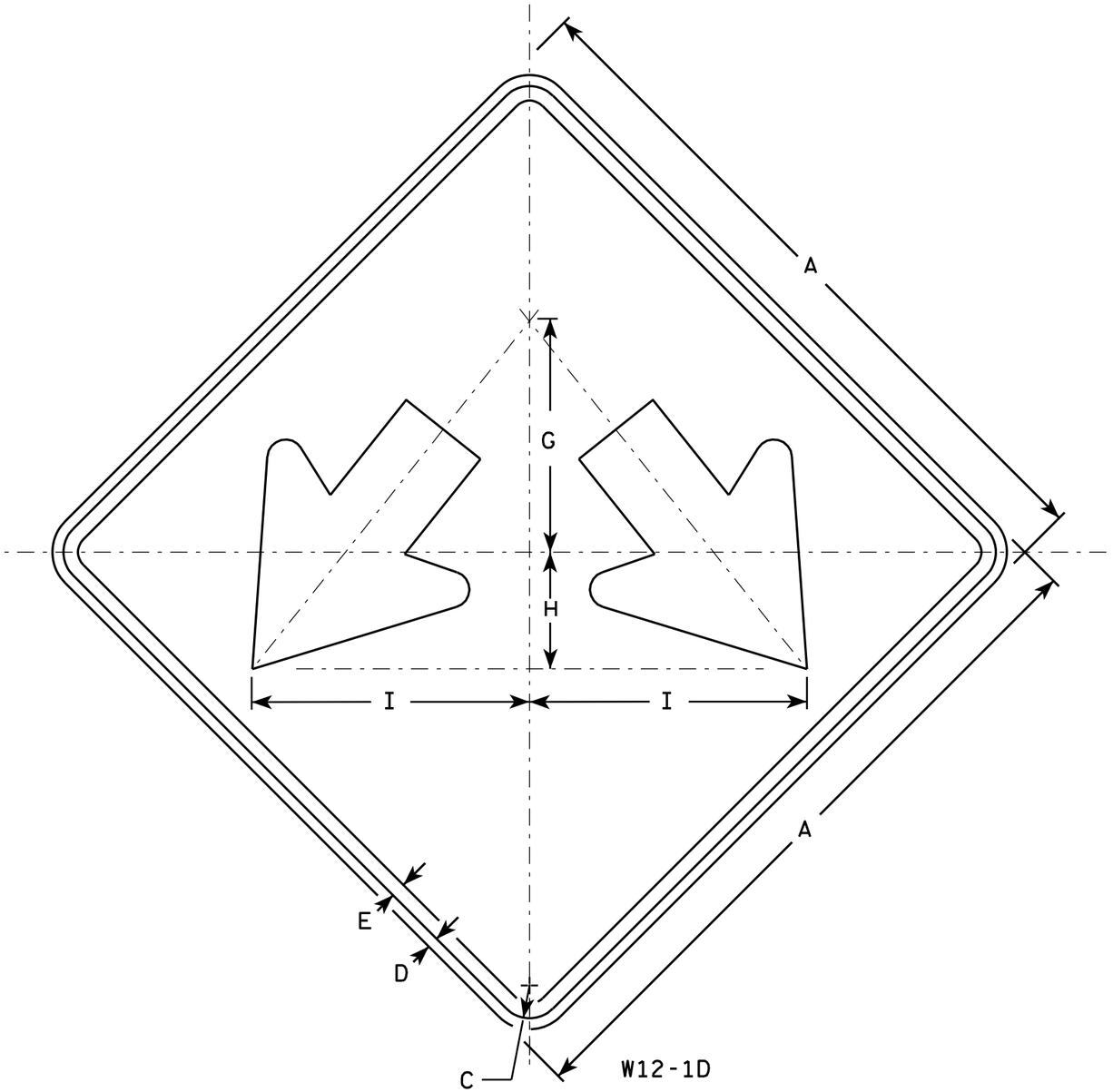
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 2/13/14 PLATE NO. W11-15.4

PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E

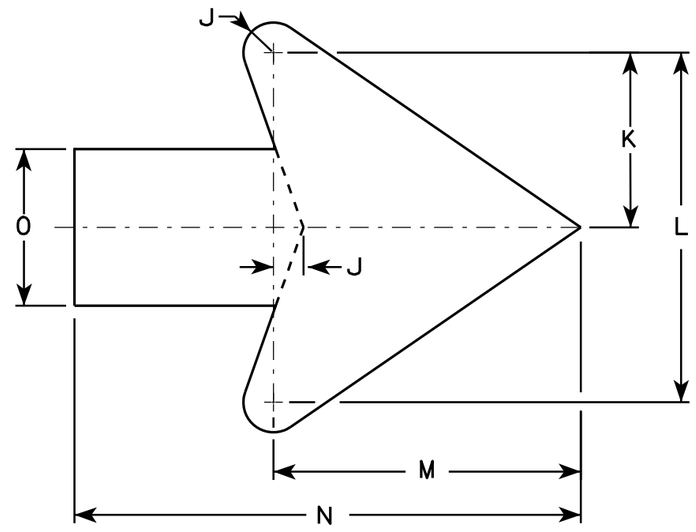


FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W1115.DGN PLOT DATE : 13-FEB-2014 10:54 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 7.783368:1.000000




NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.




Arrow Detail

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | | 1 1/8 | 1/2 | 3/8 | | 8 | 4 | 9 1/2 | 3/8 | 3 3/8 | 7 1/4 | 6 3/8 | 10 3/8 | 3 1/4 | | | | | | | | | | | | 4.0 |
| 2M | 24 | | 1 1/8 | 1/2 | 3/8 | | 8 | 4 | 9 1/2 | 3/8 | 3 3/8 | 7 1/4 | 6 3/8 | 10 3/8 | 3 1/4 | | | | | | | | | | | | 4.0 |
| 3 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 | 5 | 11 7/8 | 3/4 | 4 1/2 | 9 | 7 7/8 | 13 | 4 | | | | | | | | | | | | 6.25 |
| 4 | 36 | | 1 3/8 | 1/2 | 5/8 | | 12 | 6 | 14 1/4 | 1 | 5 1/2 | 10 7/8 | 9 5/8 | 15 3/4 | 4 3/4 | | | | | | | | | | | | 9.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 16 | 8 | 19 | 1 1/4 | 7 1/4 | 14 1/2 | 12 3/4 | 21 | 6 1/4 | | | | | | | | | | | | 16.0 |

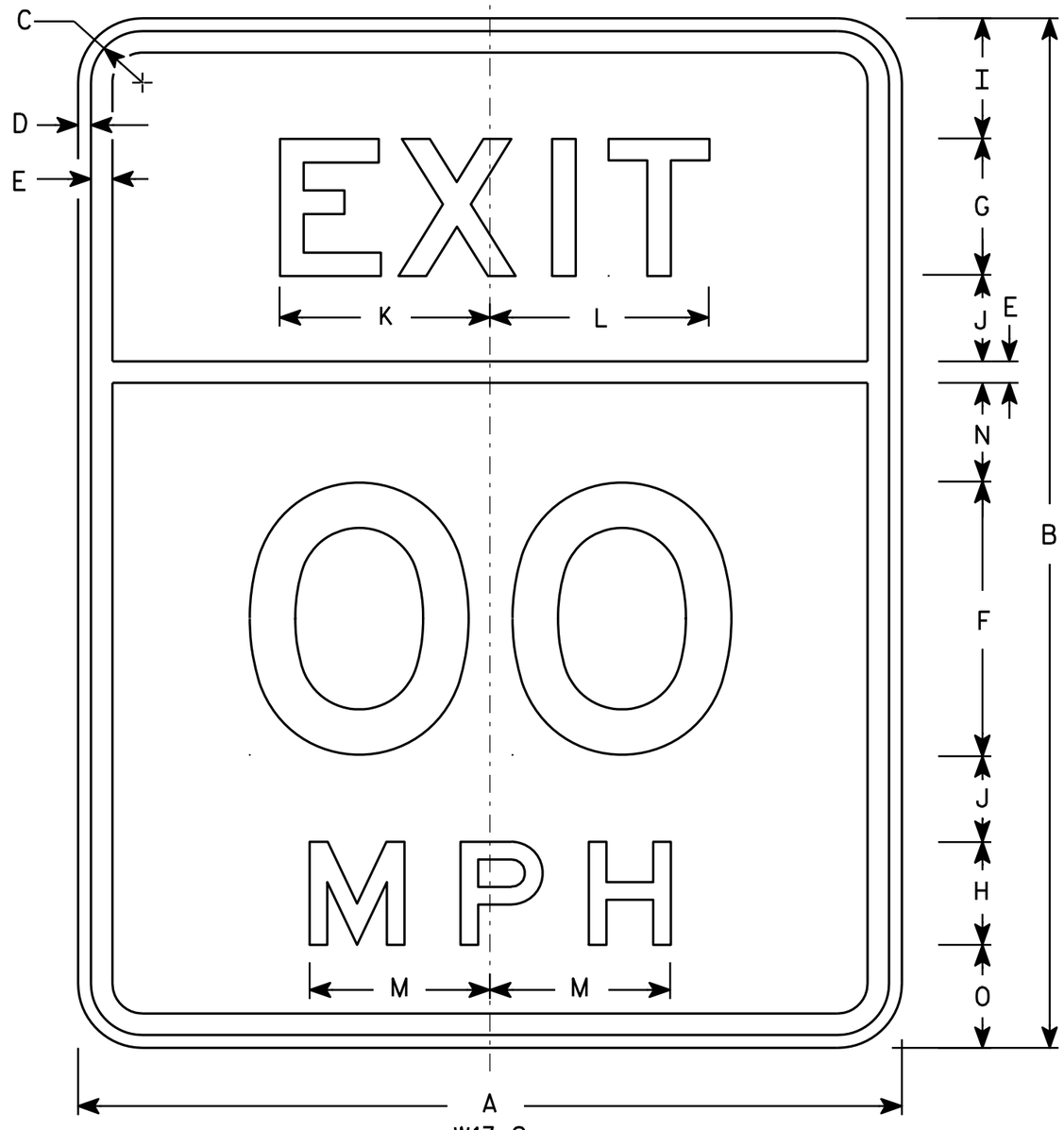
STANDARD SIGN
W12-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1D.15

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 343 | E |
|---|---|---|---|---|---|




W13-2

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 30 | 1 1/2 | 3/8 | 5/8 | 8 | 4 | 3 | 3 1/2 | 2 1/2 | 6 1/8 | 6 3/8 | 5 1/4 | 2 7/8 | 3 | | | | | | | | | | | | 5.0 |
| 2M | 24 | 30 | 1 1/2 | 3/8 | 5/8 | 8 | 4 | 3 | 3 1/2 | 2 1/2 | 6 1/8 | 6 3/8 | 5 1/4 | 2 7/8 | 3 | | | | | | | | | | | | 5.0 |
| 3 | 36 | 48 | 2 1/4 | 5/8 | 7/8 | 12 | 6 | 4 | 6 | 4 | 9 1/4 | 9 1/2 | 7 1/8 | 5 1/8 | 6 | | | | | | | | | | | | 12.0 |
| 4 | 36 | 48 | 2 1/4 | 5/8 | 7/8 | 12 | 6 | 4 | 6 | 4 | 9 1/4 | 9 1/2 | 7 1/8 | 5 1/8 | 6 | | | | | | | | | | | | 12.0 |
| 5 | 48 | 60 | 2 1/4 | 3/4 | 1 | 16 | 8 | 6 | 7 | 5 | 12 1/4 | 12 3/4 | 10 5/8 | 5 3/4 | 6 | | | | | | | | | | | | 20.0 |

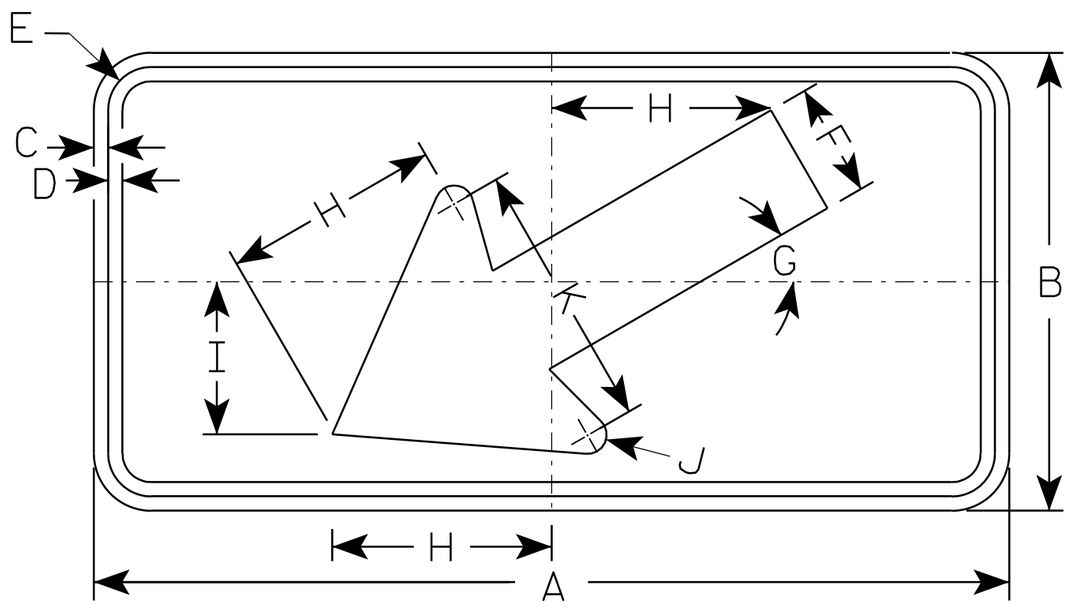
# STANDARD SIGN
# W13-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-2.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 344 | E




W16-7L

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W16-7R is the same as W16-L except the arrow is reversed along the vertical centerline.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 3/8 | 3/8 | 1 1/8 | 3 | 30° | 5 3/4 | 4 | 1/2 | 7 | | | | | | | | | | | | | | | | 2.0 |
| 2M | 30 | 18 | 3/8 | 1/2 | 1 1/8 | 4 1/2 | 30° | 8 1/2 | 6 | 5/8 | 10 1/4 | | | | | | | | | | | | | | | | 3.75 |
| 3 | 30 | 18 | 3/8 | 1/2 | 1 1/8 | 4 1/2 | 30° | 8 1/2 | 6 | 5/8 | 10 1/4 | | | | | | | | | | | | | | | | 3.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 |

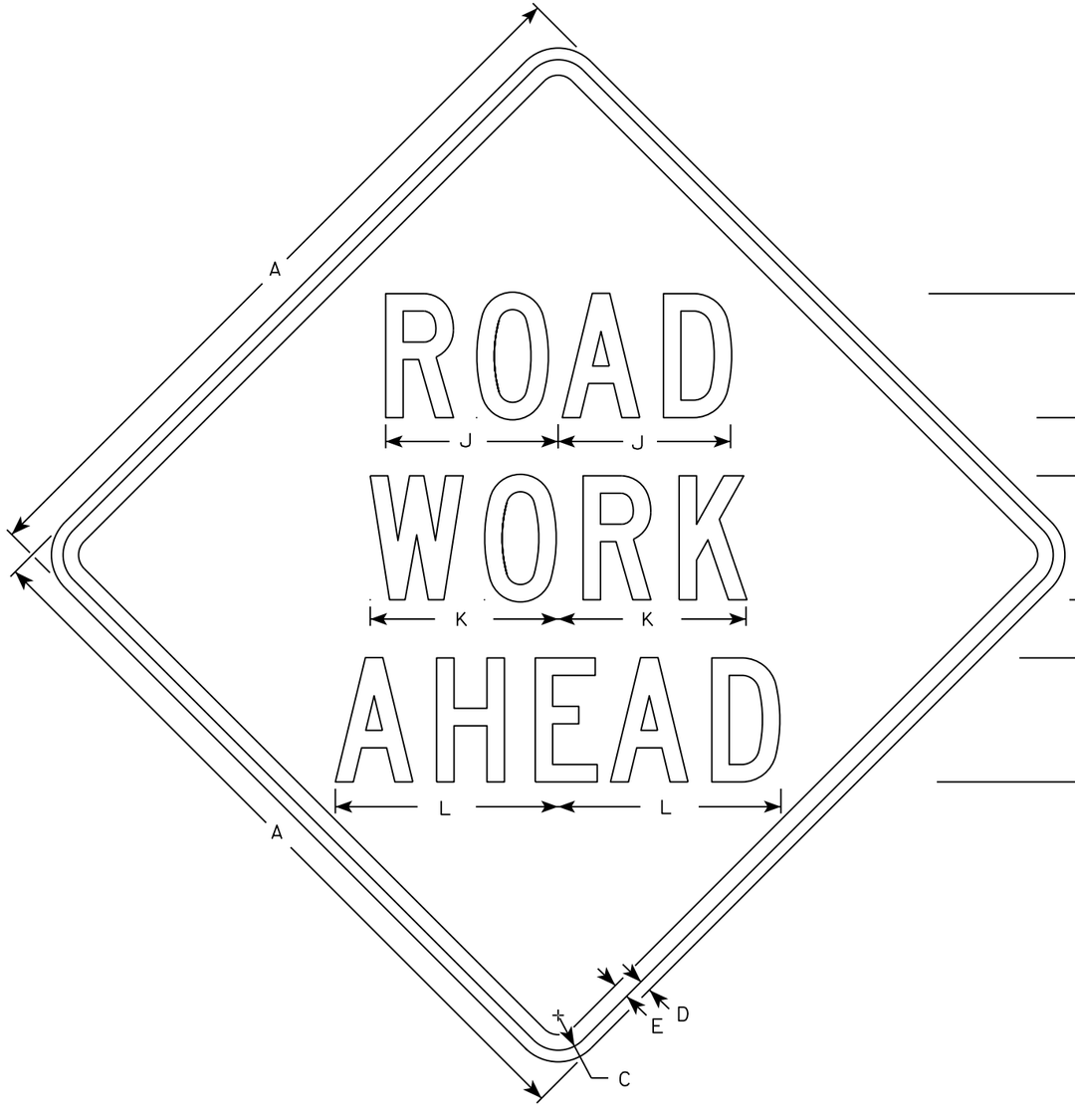
STANDARD SIGN
W16-7

WISCONSIN DEPT OF TRANSPORTATION

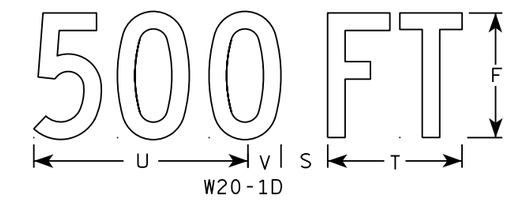
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/02/10 PLATE NO. W16-7.5

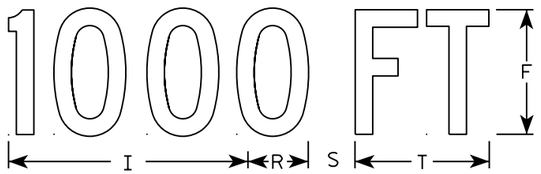
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 345 | E |
|---|---|---|---|---|---|



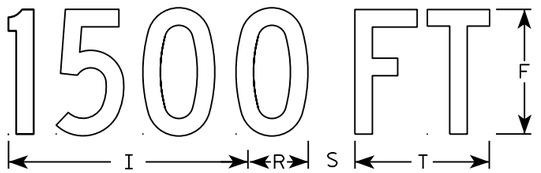

W20-1A




W20-1D

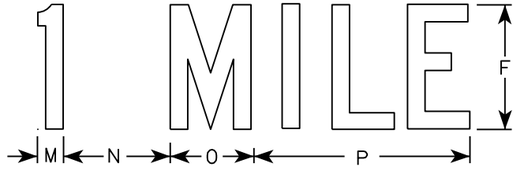



W20-1C

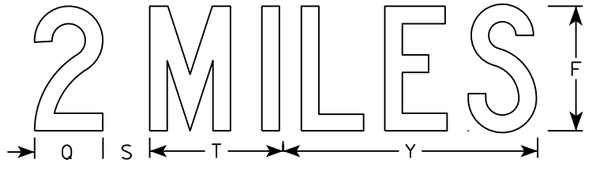



W20-1B

W20-1G




W20-1F




W20-1E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 3/8 | 1/2 | 5/8 | 5 | 2 5/8 | 3 1/4 | 10 1/8 | 7 | 7 5/8 | 8 7/8 | 1 1/8 | 4 1/2 | 3 1/2 | 9 | | 2 1/2 | 2 1/4 | 5 5/8 | 9 | 1 3/8 | 8 | 1 3/4 | 10 3/4 | 6 | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3 | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0 |

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

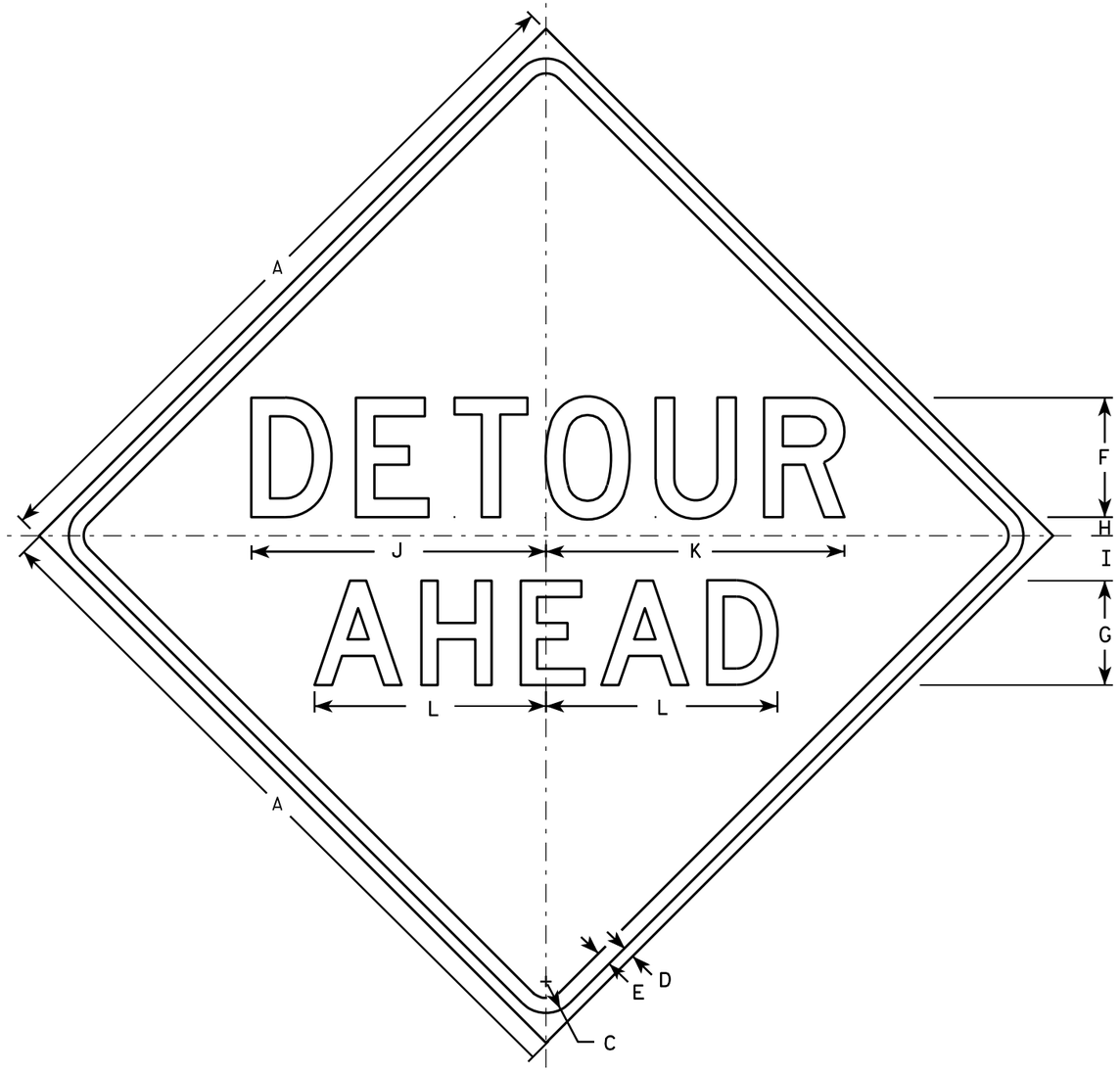


PROJECT NO:

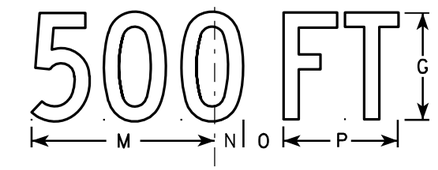
SHEET NO: E



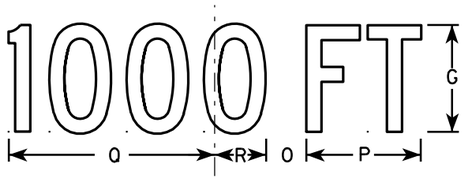
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



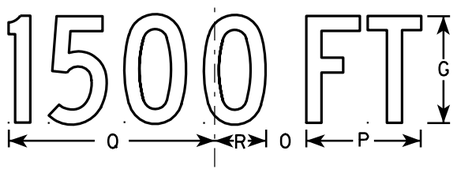

W20-2A



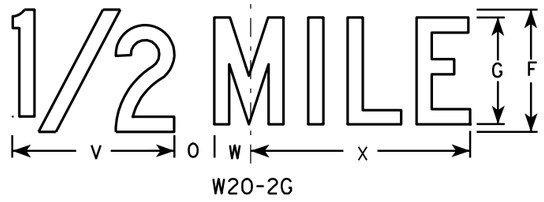

W20-2D




W20-2C




W20-2B




W20-2G

W20-2F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
   Line 2 is Series D for AHEAD and Series C for all other distances.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 6 | 5 | 1 | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9 | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8 | 1 3/4 | 10 3/4 | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |

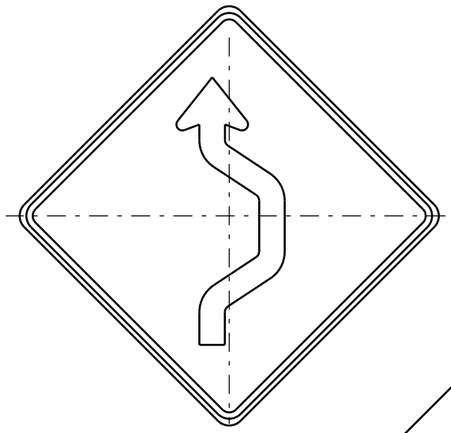
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

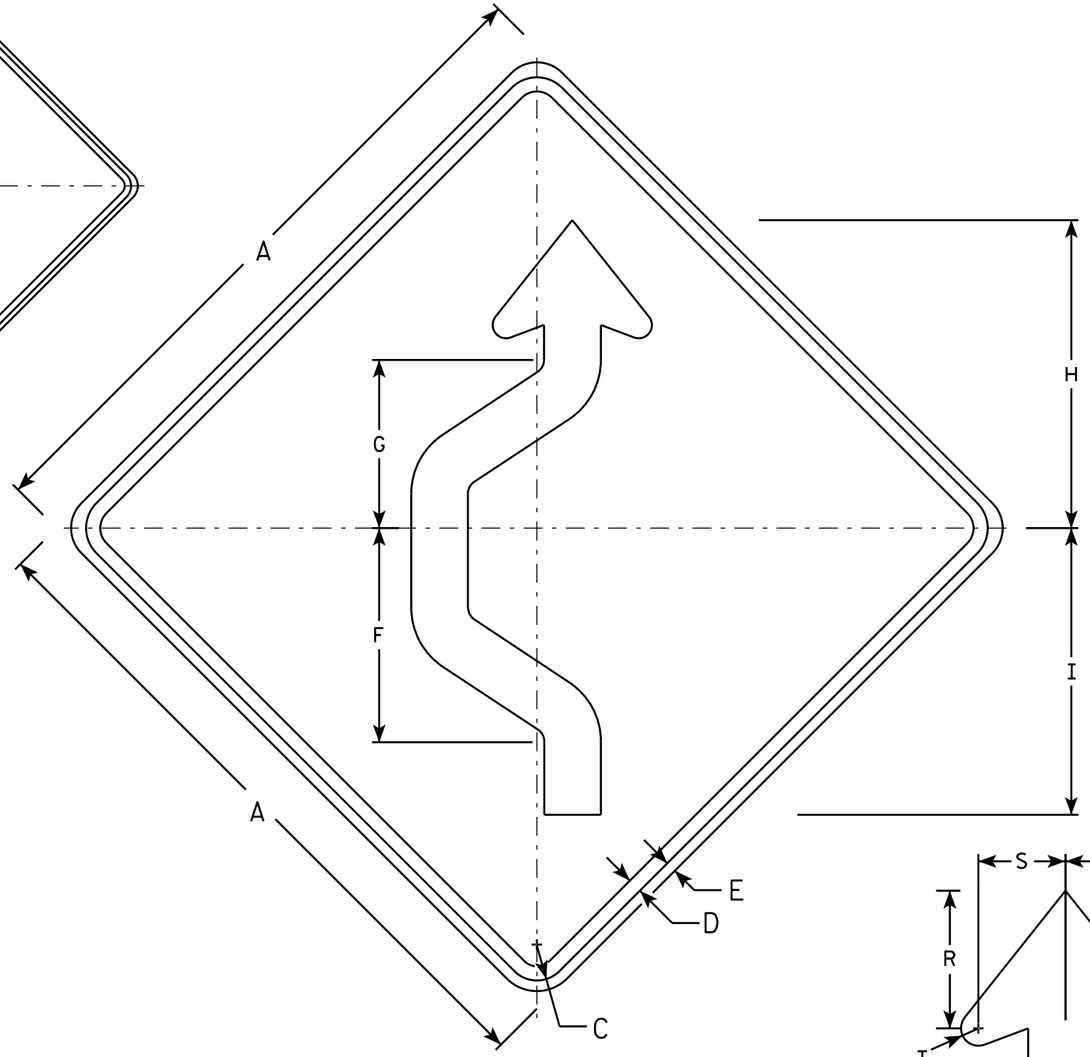
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

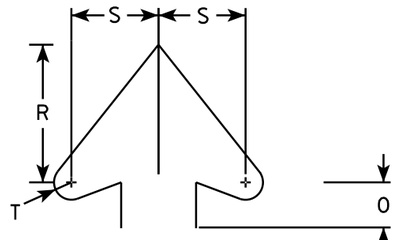
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 347 | E |
|---|---|---|---|---|---|



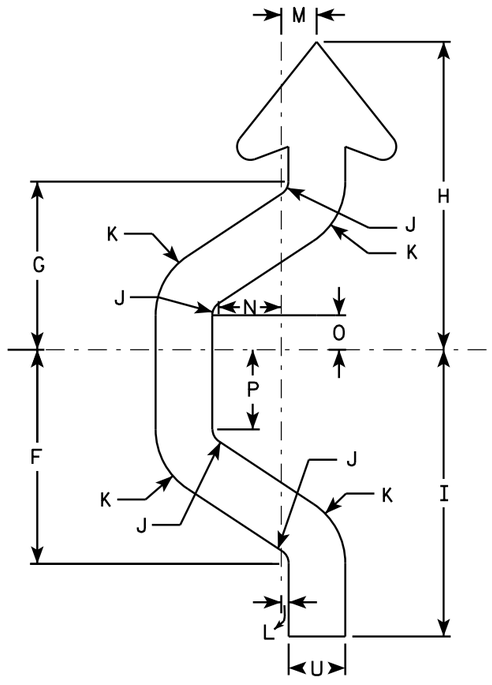
W24-1R




W24-1L




Arrowhead Detail




Arrow Detail

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W24-1R is the same as W24-1L except reversed along the vertical centerline.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 36 | | 1 3/8 | 5/8 | 1/2 | 11 3/8 | 8 7/8 | 16 3/8 | 15 1/4 | 3/4 | 3 3/4 | 3/8 | 2 | 3 3/8 | 1 7/8 | 4 1/4 | | 5 1/2 | 3 1/2 | 5/8 | 3 | | | | | | 9 |
| 2M | 36 | | 1 3/8 | 5/8 | 1/2 | 11 3/8 | 8 7/8 | 16 3/8 | 15 1/4 | 3/4 | 3 3/4 | 3/8 | 2 | 3 3/8 | 1 7/8 | 4 1/4 | | 5 1/2 | 3 1/2 | 5/8 | 3 | | | | | | 9 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# STANDARD SIGN
## W24-1 L & R

WISCONSIN DEPT OF TRANSPORTATION

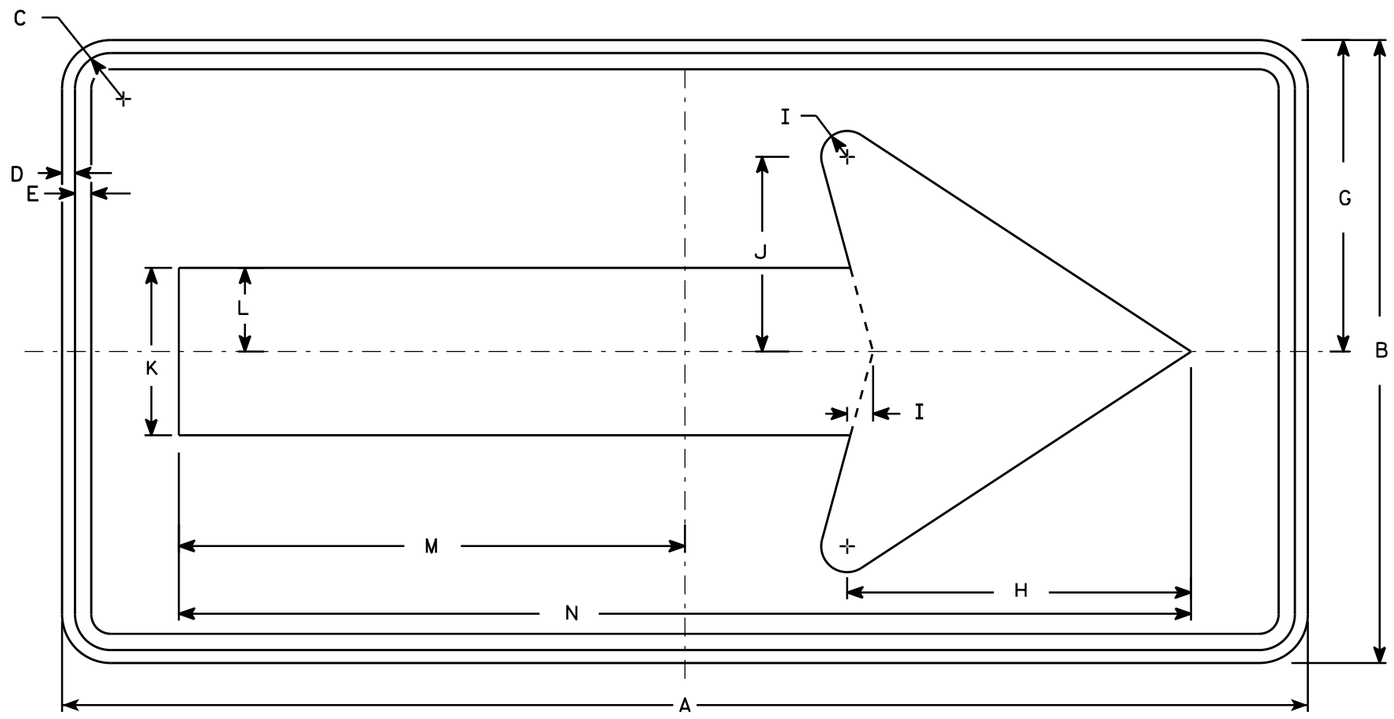
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/25/2013 PLATE NO. W24-1.3

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|



FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W241L.DGN PLOT DATE : 25-SEP-2013 13:00 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 10.702132:1.000000 WISDOT/CADDS SHEET 42




W01-6

## NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |

# STANDARD SIGN
# W01-6

WISCONSIN DEPT OF TRANSPORTATION

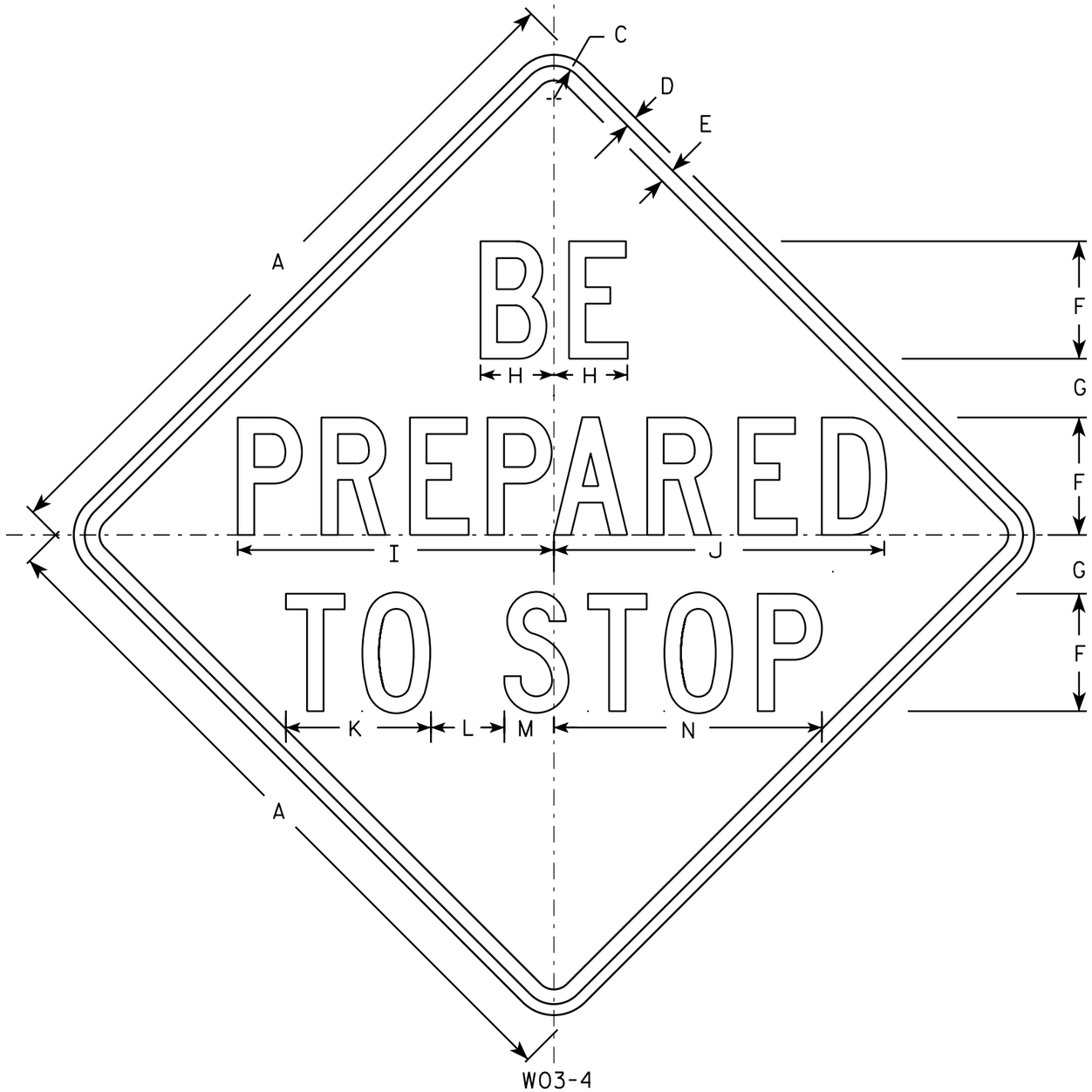
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42




## NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 3/8 | 1/2 | 5/8 | 6 | 2 1/2 | 3 3/4 | 15 7/8 | 16 7/8 | 7 3/8 | 4 | 2 3/8 | 13 3/4 | | | | | | | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 5 | 21 1/2 | 22 1/2 | 9 7/8 | 5 | 3 3/8 | 18 1/4 | | | | | | | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 5 | 21 1/2 | 22 1/2 | 9 7/8 | 5 | 3 3/8 | 18 1/4 | | | | | | | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 5 | 21 1/2 | 22 1/2 | 9 7/8 | 5 | 3 3/8 | 18 1/4 | | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 5 | 21 1/2 | 22 1/2 | 9 7/8 | 5 | 3 3/8 | 18 1/4 | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 4 | 5 | 21 1/2 | 22 1/2 | 9 7/8 | 5 | 3 3/8 | 18 1/4 | | | | | | | | | | | | | 16.0 |

# STANDARD SIGN
# W03-4

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
for State Traffic Engineer

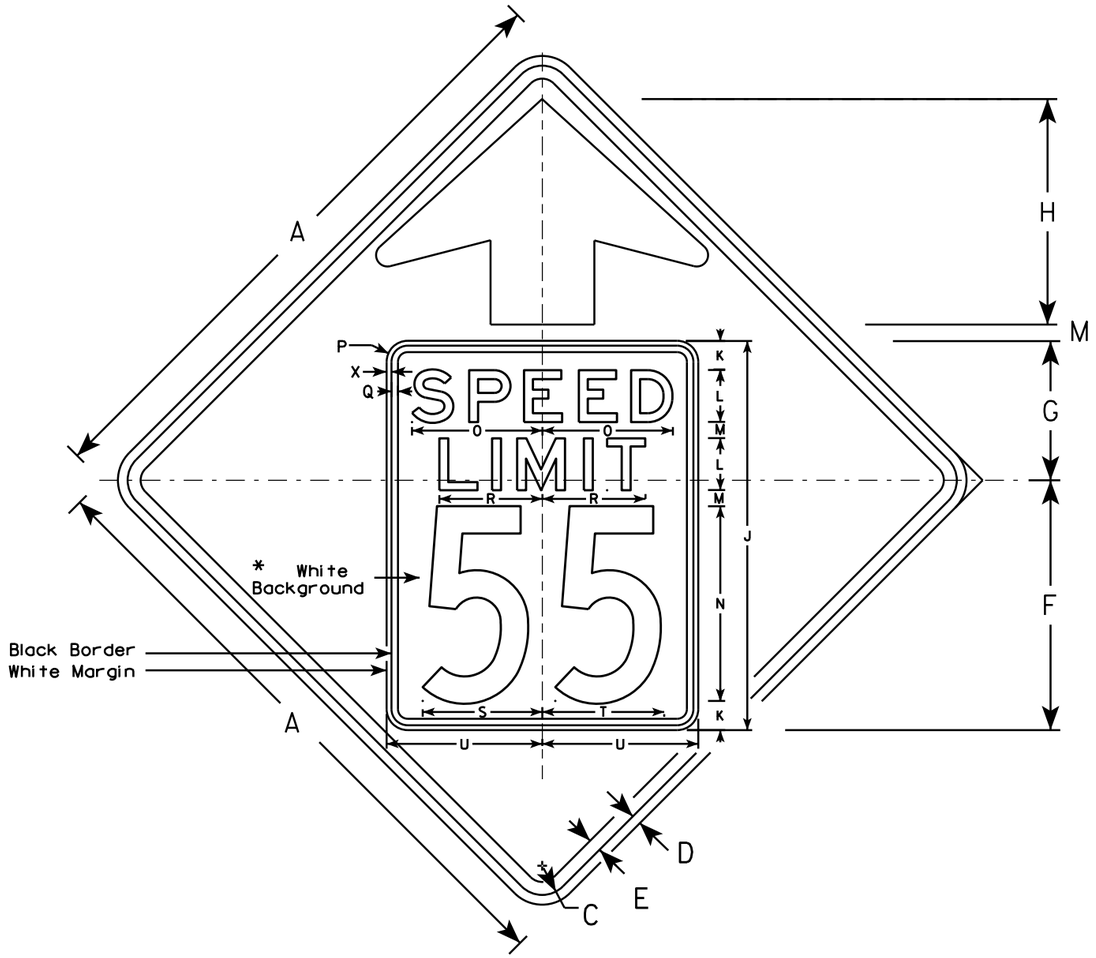
DATE 12/02/13 PLATE NO. W03-4.1



PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W034.DGN PLOT DATE : 02-DEC-2013 14:02 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 8.999518:1.000000
WISDOT/CADDS SHEET 42

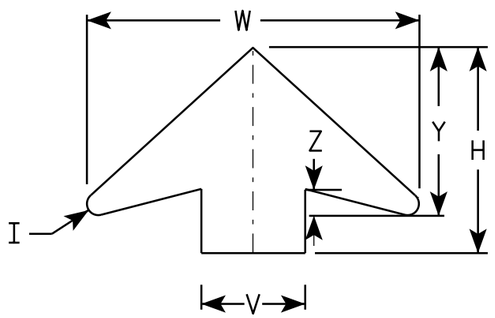



W03-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
   Background - ORANGE*
   Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 14 1/2 | 9 1/2 | 11 1/2 | 5/8 | 24 | 2 | 3 | 1 | 12 | 7 1/8 | 1 1/2 | 3/8 | 5 3/4 | 7 1/4 | 7 1/8 | 9 | 6 | 19 1/4 | 3/8 | 9 3/4 | 1 5/8 | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

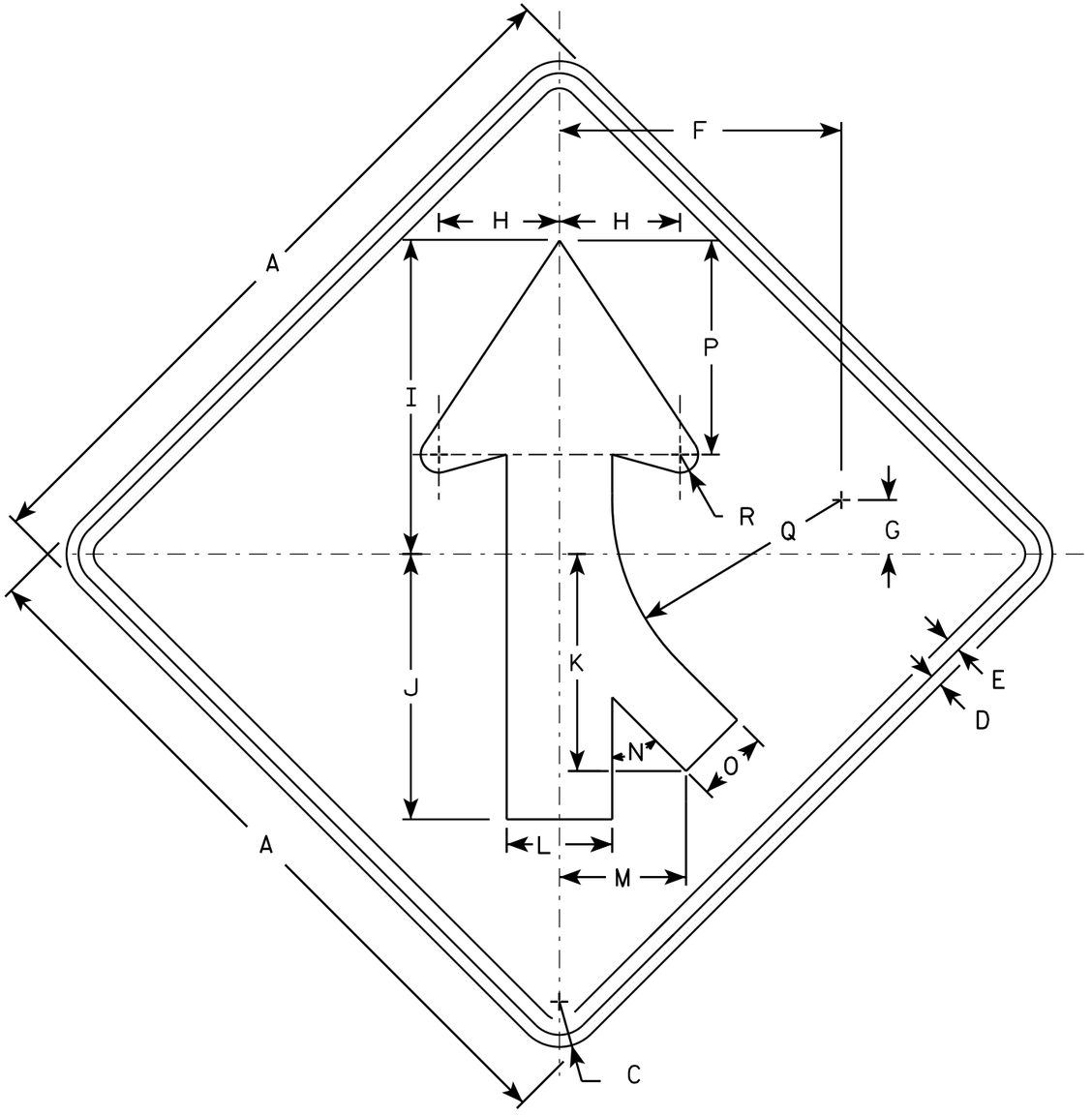
DATE 11/20/13 PLATE W03-5.1



PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42




W04-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 14 | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8 | | | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | | | | | | | | | 16.0 |

STANDARD SIGN
W04-1

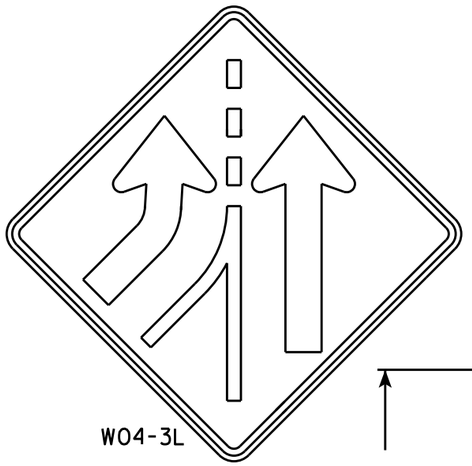
WISCONSIN DEPT OF TRANSPORTATION

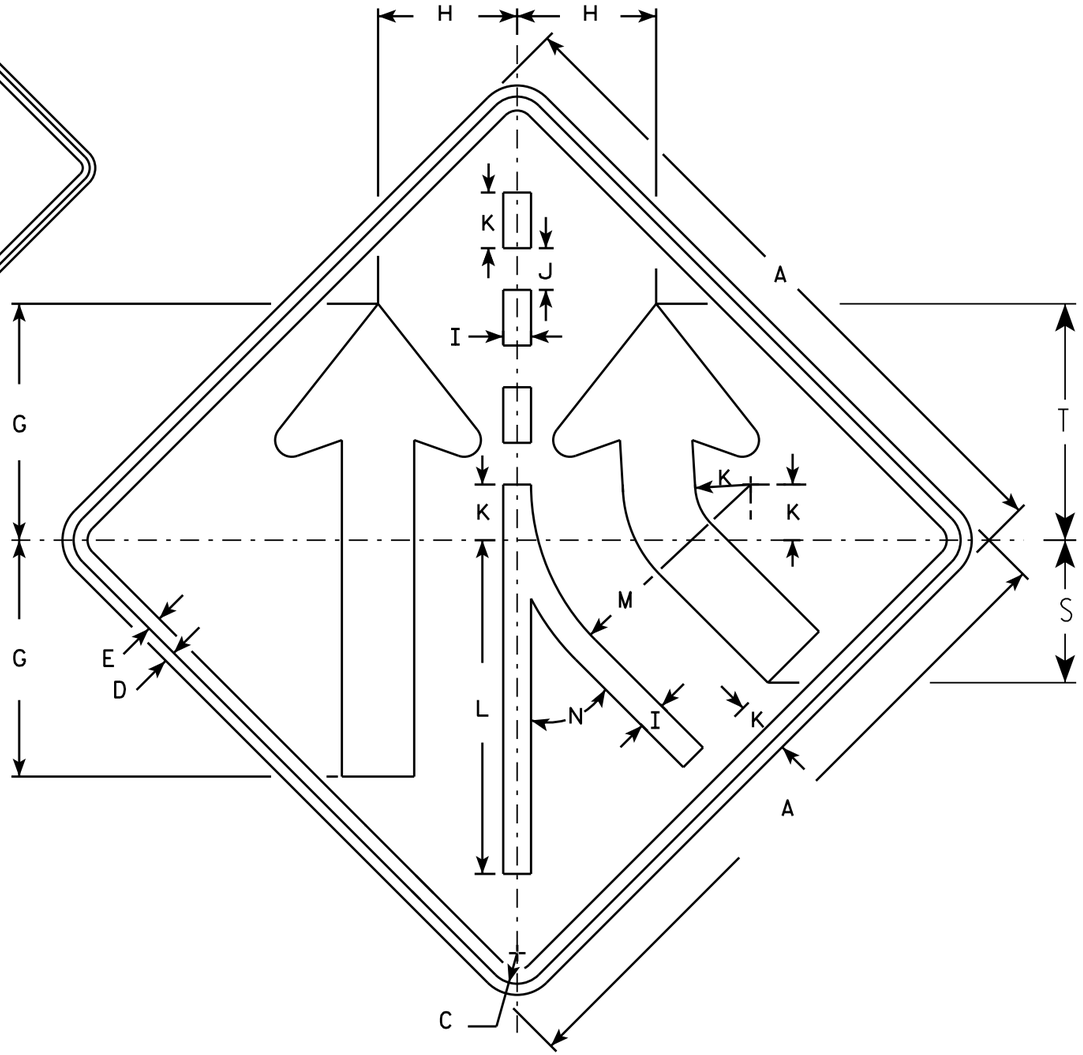
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-1.1



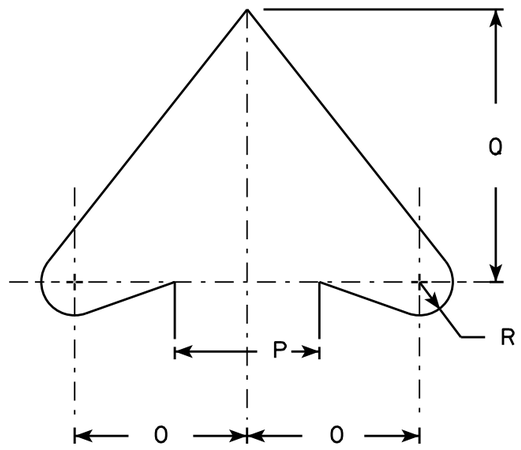
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E




NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-3 L is the same as W04-3 R except the arrow is reversed along the vertical centerline.




ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | | 12 3/4 | 7 1/2 | 1 1/2 | 2 1/4 | 3 | 18 | 11 7/8 | 45° | 4 5/8 | 4 | 7 3/8 | 7/8 | 7 3/4 | 12 3/4 | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |

STANDARD SIGN

W0433

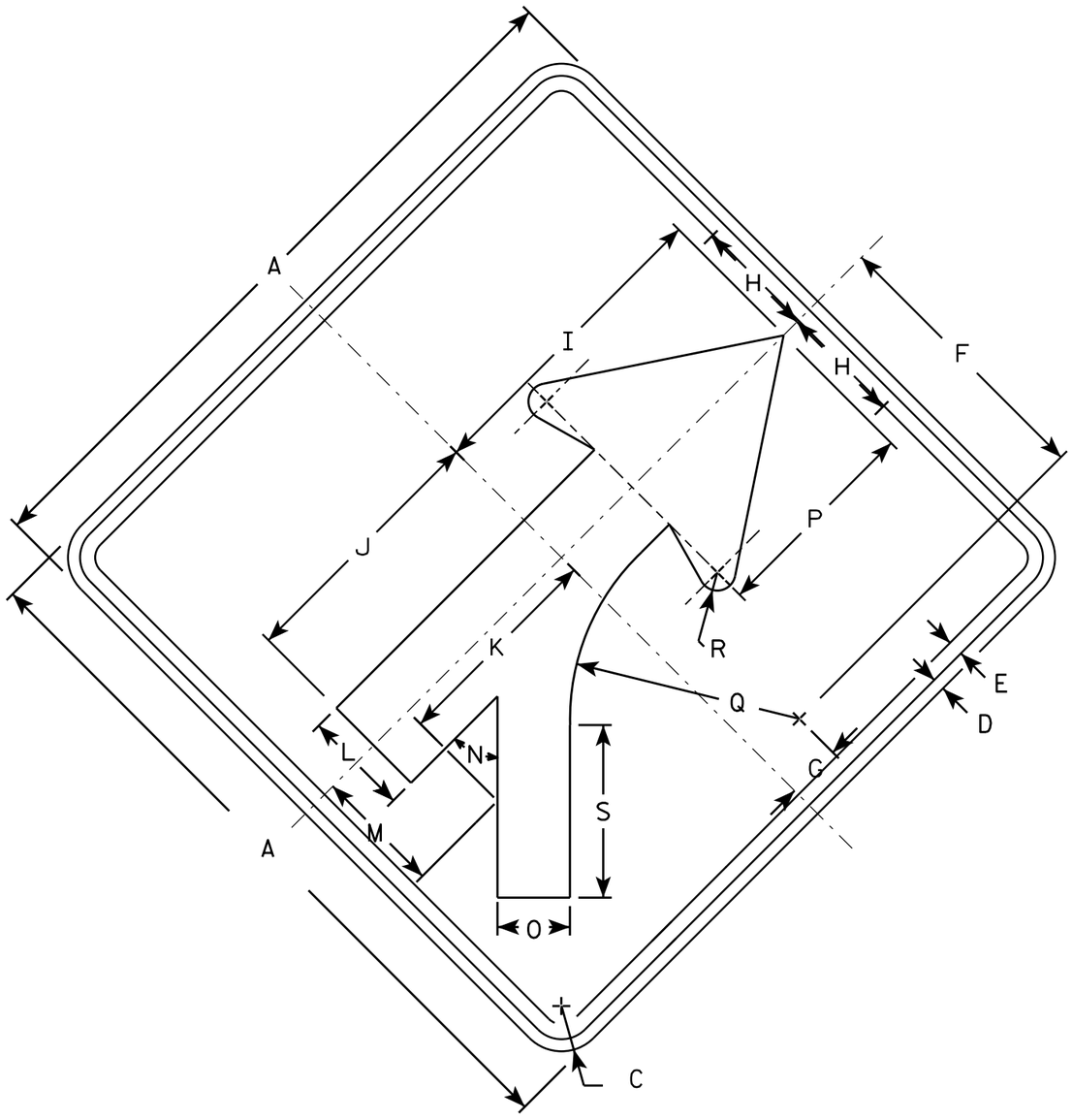
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/20/13 PLATE W04-3.1

PROJECT NO:

SHEET NO: E




W04-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 14 | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8 | 8 1/2 | | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | 11 3/8 | | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | 11 3/8 | | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | 11 3/8 | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | 11 3/8 | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7 | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 | 11 3/8 | | | | | | | | 16.0 |

STANDARD SIGN
W04-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/28/16 PLATE NO W04-5.1

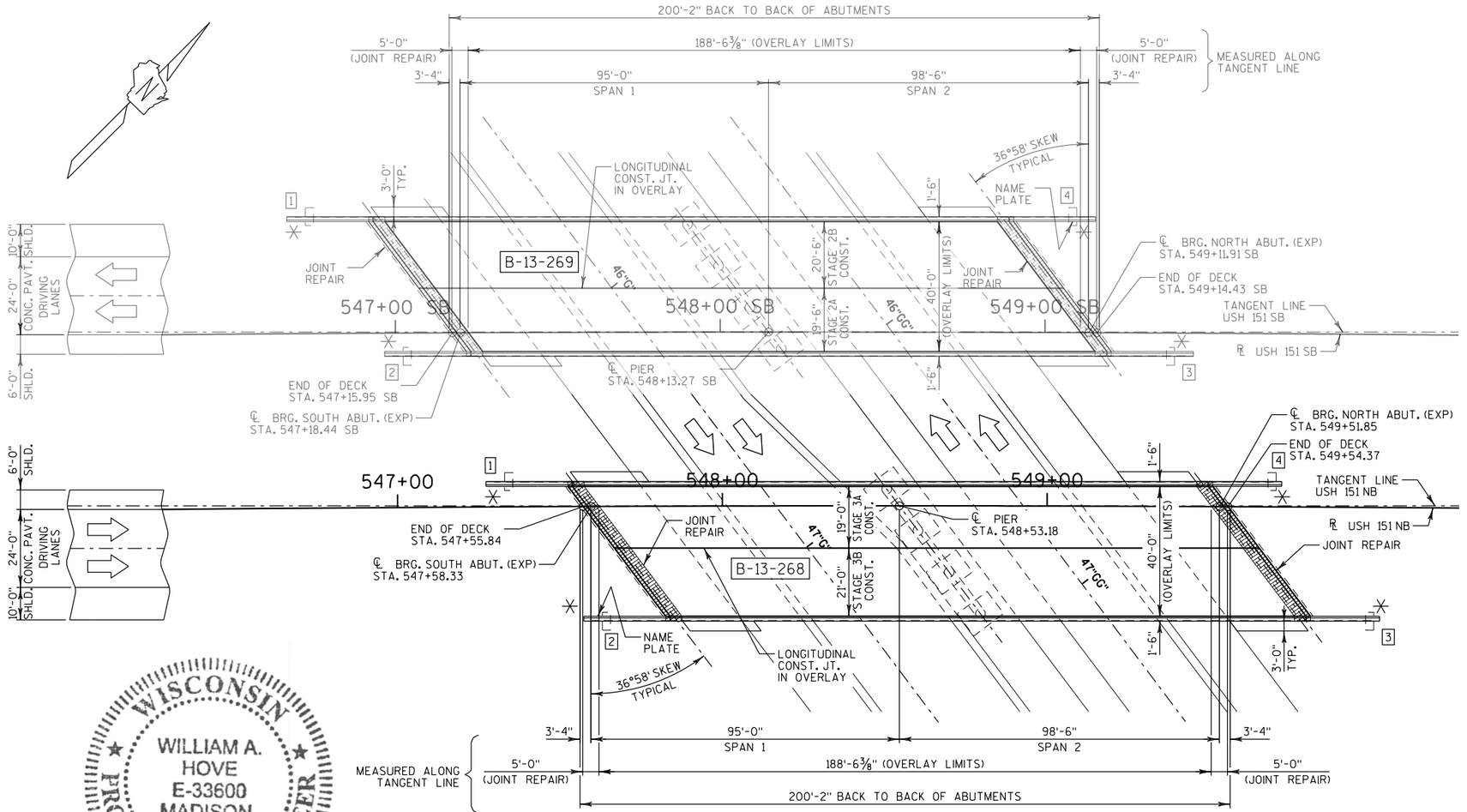
PROJECT NO: | HWY: | COUNTY: | | SHEET NO: E



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W045.DGN PLOT DATE : 28-APR-2016 13:30 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.080757:1.000000
WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER

1111-02-78

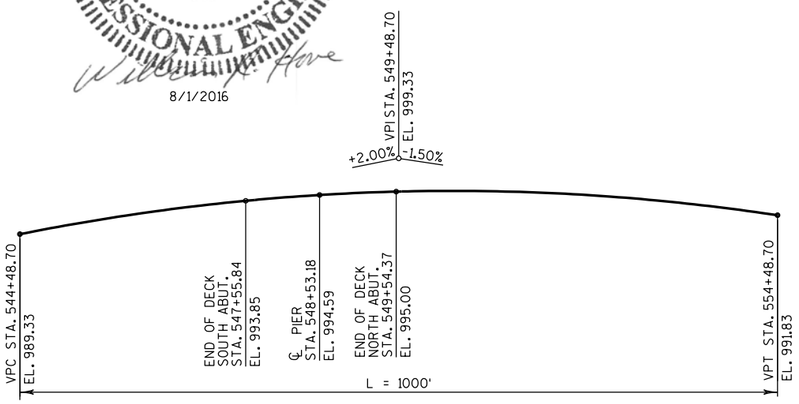






## B-13-268

(CONCRETE OVERLAY - 2-SPAN STEEL PLATE GIRDER)




## PROFILE GRADE LINE USH 151 NB

(STATIONS ALONG ℞, ELEVATIONS AT PGL, LOCATED 13'-0" RIGHT OF ℄)

## PROPOSED HORIZ. CURVE DATA

P.I. = STA. 559+05.85
Y = 520,569.42
X = 857,805.06
Δ = 6°27'09" (RT)
D = 0°15'00"
T = 1,291.85'
L = 2,580.98'
R = 22,918.32
P.C. = 546+13.99
P.T. = 571+94.97

## LEGEND

✳ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.

[X] DENOTES WING NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 27,000
R.D.S. = 70 MPH

MAIN STREET
A.D.T. (2015 EXIST) = 15,600
R.D.S. = 35 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING ____ HS - 21
OPERATIONAL RATING ____ HS - 39
WISCONSIN STANDARD
PERMIT VEHICLE (Wis-SPV) ____ 250 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c ____ 4,000 PSI
CONCRETE MASONRY BRIDGES f'c ____ 4,000 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT (GRADE 60) fy ____ 60,000 PSI

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CLEANING AND PAINTING BEARINGS, CONCRETE SURFACE REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY. A MINIMUM OF 1-INCH OF EXISTING CONCRETE COVER SHALL BE MAINTAINED.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

CLEAN, STRAIGHTEN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-268".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1969.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS
4. SOUTH ABUTMENT
5. NORTH ABUTMENT
6. INFRARED INSPECTION RESULTS
7. REPLACEMENT JOINT DETAILS 1
8. REPLACEMENT JOINT DETAILS 2
9. PARAPET DETAILS 1
10. PARAPET DETAILS 2 & COUPLER DETAILS



SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

CONSULTANT CONTACT:
BILL HOVE (608) 826-6125


WISCONSIN PROFESSIONAL ENGINEER
WILLIAM A. HOVE
E-33600
MADISON, WI
William A. Hove
8/1/2016

| NO. | DATE | REVISION | BY |
|---|---|---|---|


CORRE
Structural Environmental Municipal Transportation
6401 GRAND TETON PLAZA, SUITE 104
MADISON, WI 53719
608.826.6125
www.corre@tds.com


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-13-268

USH 151 NB OVER MAIN STREET

| COUNTY | TOWN/CITY/VILLAGE |
|---|---|
| DANE | SUN PRAIRIE |

DESIGN SPEC.
REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| BH | ETP | TKB | BH |

GENERAL PLAN

SHEET 1 OF 10

355

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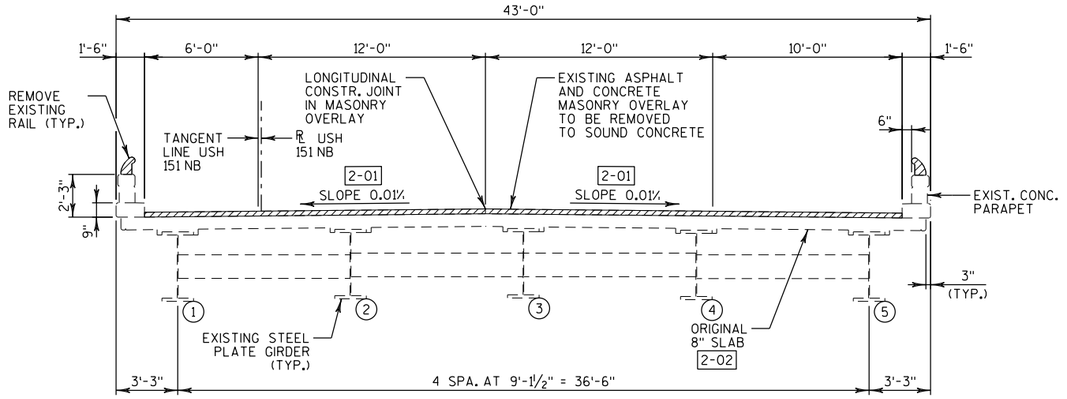
FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-268\B-13-268_01-genplan.dgn PLOT DATE : 8/1/2016

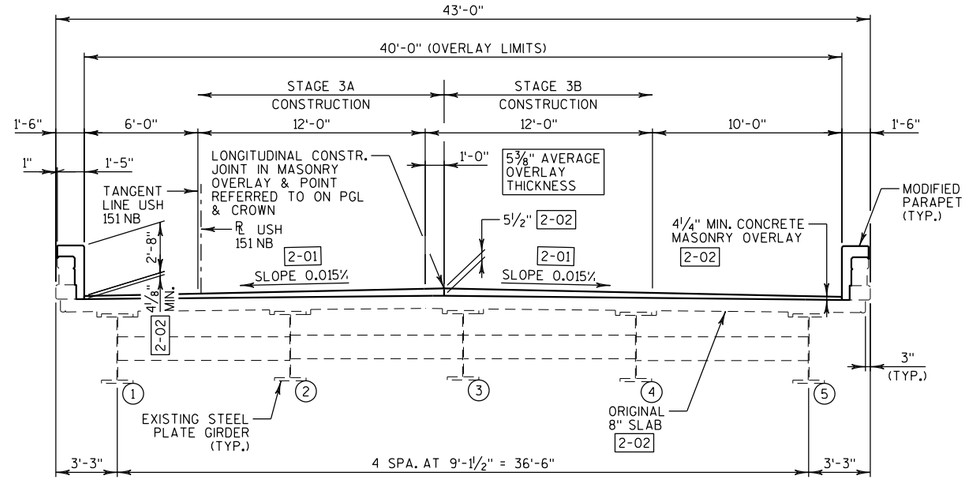
PLOT SCALE : 2.00000 ' / ft.

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## EXISTING CROSS SECTION THRU ROADWAY

LOOKING NORTH




## PROPOSED CROSS SECTION THRU ROADWAY

LOOKING NORTH

## TOTAL ESTIMATED QUANTITIES

ALL ITEMS ARE CATEGORY 0030

| | BID ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUTMENT | PIER #1 | NORTH ABUTMENT | SUPERSTRUCTURE | QUANTITY |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.01 | REMOVING OLD STRUCTURE STA. 548+54.48 | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0210.S.01 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL STRUCTURE B-13-268 | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0225.S.01 | DEBRIS CONTAINMENT B-13-268 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | ---- | ---- | ---- | 38 | 38 |
| | 502.3100.01 | EXPANSION DEVICE B-13-268 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | ---- | ---- | ---- | 880 | 880 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | ---- | ---- | ---- | 230 | 230 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | ---- | ---- | ---- | 128 | 128 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 56 | ---- | 56 | 506 | 618 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 550 | ---- | 560 | 9,440 | 10,550 |
| | 505.0907 | BAR COUPLERS No. 7 | EACH | ---- | ---- | ---- | 18 | 18 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | ---- | ---- | ---- | 80 | 80 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | ---- | ---- | ---- | 30 | 30 |
| | 509.1000 | JOINT REPAIR | SY | ---- | ---- | ---- | 50 | 50 |
| 2-04 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 15 | 10 | 15 | 30 | 70 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | ---- | ---- | ---- | 4 | 4 |
| 2-03 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | ---- | ---- | ---- | 148 | 148 |
| | 509.9005.S.01 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-268 | SY | ---- | ---- | ---- | 840 | 840 |
| | 509.9010.S.01 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-268 | SY | ---- | ---- | ---- | 840 | 840 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | ---- | ---- | ---- | 4 | 4 |
| | SPV.0060.01 | CLEANING AND PAINTING BEARINGS | EACH | 5 | ---- | 5 | ---- | 10 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | ---- | ---- | ---- | 478 | 478 |
| | | | | | | | | |

NOTE: PARAPET ITEMS ON ABUTMENT WINGS ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES

## LEGEND

2-01 EXISTING CROSS SLOPE IS 0.01% AND WILL BE CHANGED TO 0.015%.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM APPROXIMATELY 4⅛" AT THE WEST PARAPET, 5½" AT THE CROWN, AND 4¼" AT THE EAST PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATION. FOR QUANTITY COMPUTATION PURPOSES. THE AVERAGE OVERLAY THICKNESS IS 5⅜" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS.

2-03 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-04 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(X) DENOTES GIRDER NUMBER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

CROSS SECTIONS & QUANTITIES

SHEET 2 OF 10

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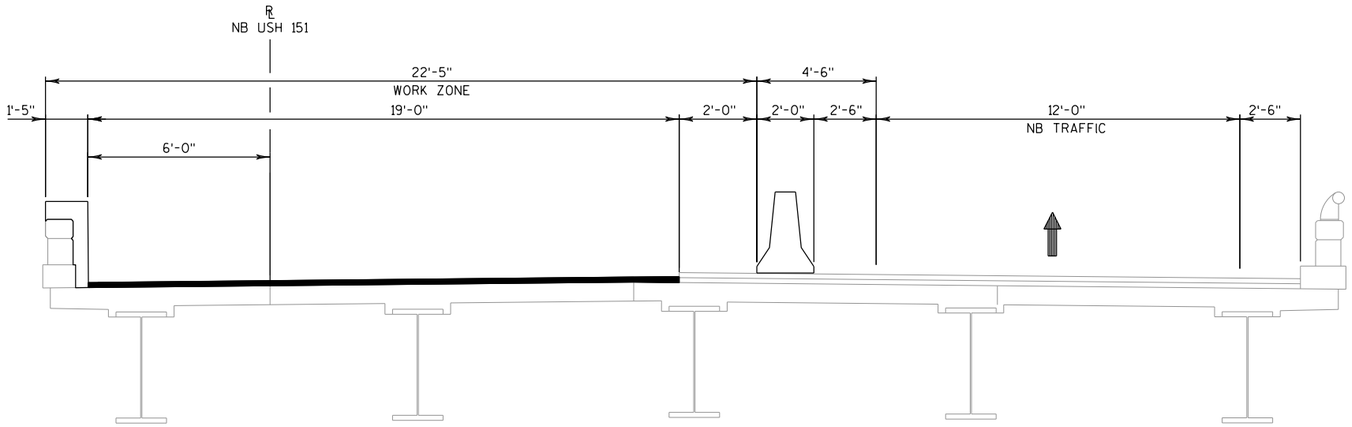
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-268±B-13-268_02-sections.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

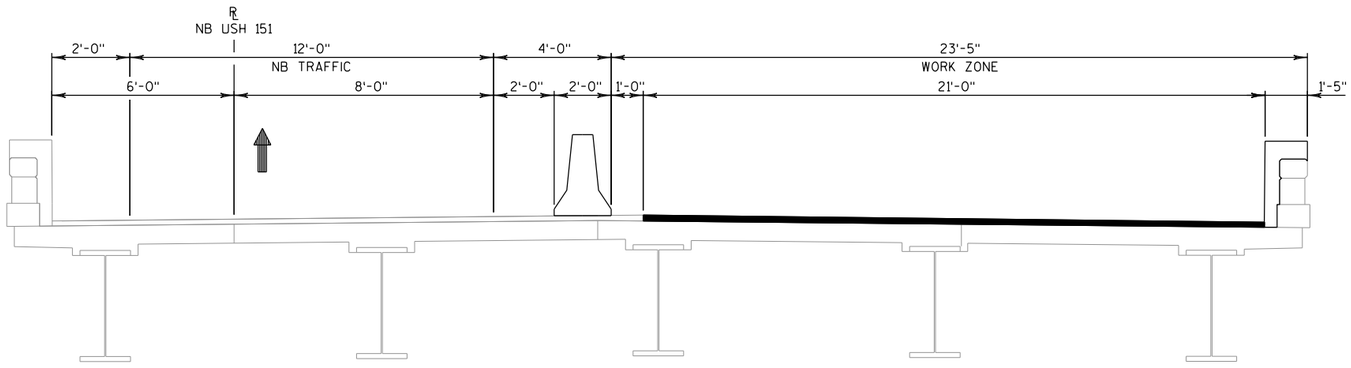
STATE PROJECT NUMBER

1111-02-78




## STAGE 3A - B-13-268

NB PERMANENT LANE CLOSURES
(USH 151 NB CONSTRUCTION LOOKING NORTH)

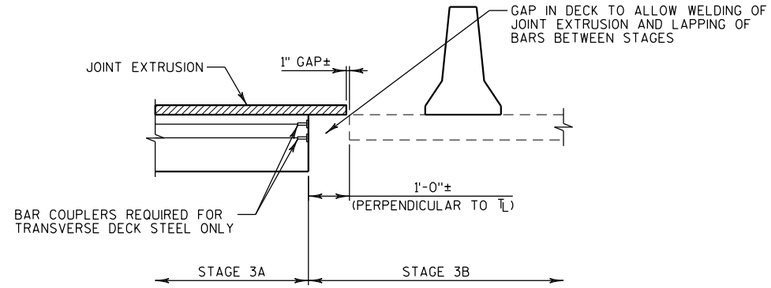



## STAGE 3B - B-13-268

NB PERMANENT LANE CLOSURES
(USH 151 NB CONSTRUCTION LOOKING NORTH)

**NOTE:**

SEE ROAD PLANS FOR CONSTRUCTION STAGES NOT SHOWN.




## JOINT DETAIL

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | End of Deck S. Abut. | C/L of Brg. S. Abut. | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Pier | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Brg. N. Abut. | End of Deck N. Abut. |
| LEFT FLOW LINE | 993.49 | 993.51 | 993.60 | 993.69 | 993.77 | 993.84 | 993.92 | 993.99 | 994.06 | 994.12 | 994.19 | 994.24 | 994.30 | 994.36 | 994.41 | 994.45 | 994.50 | 994.54 | 994.57 | 994.61 | 994.64 | 994.66 | 994.67 |
| CROWN LINE | 993.91 | 993.93 | 994.01 | 994.09 | 994.17 | 994.24 | 994.31 | 994.38 | 994.44 | 994.50 | 994.56 | 994.61 | 994.66 | 994.71 | 994.76 | 994.80 | 994.84 | 994.87 | 994.91 | 994.93 | 994.96 | 994.98 | 994.99 |
| RIGHT FLOW LINE | 993.73 | 993.75 | 993.83 | 993.90 | 993.97 | 994.04 | 994.11 | 994.17 | 994.22 | 994.28 | 994.33 | 994.38 | 994.43 | 994.47 | 994.51 | 994.55 | 994.58 | 994.61 | 994.64 | 994.66 | 994.68 | 994.70 | 994.71 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.

END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

8

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| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS

SHEET 3 OF 10



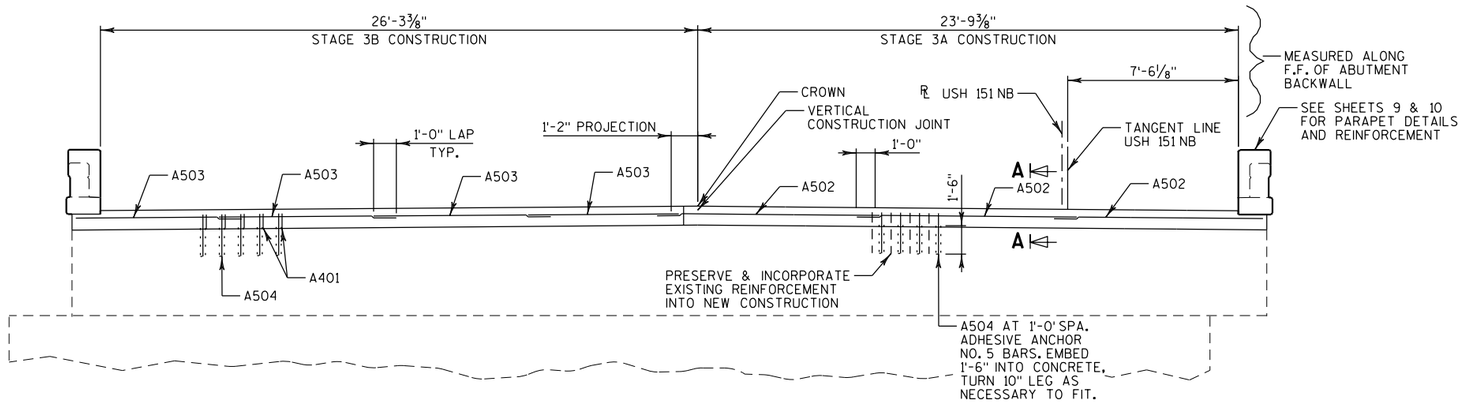
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-268±B-13-268_03-trafficmaint.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

1111-02-78

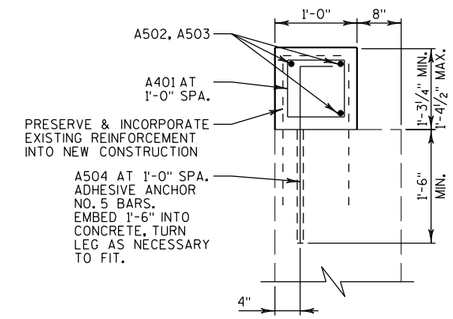



## ELEVATION
LOOKING SOUTH

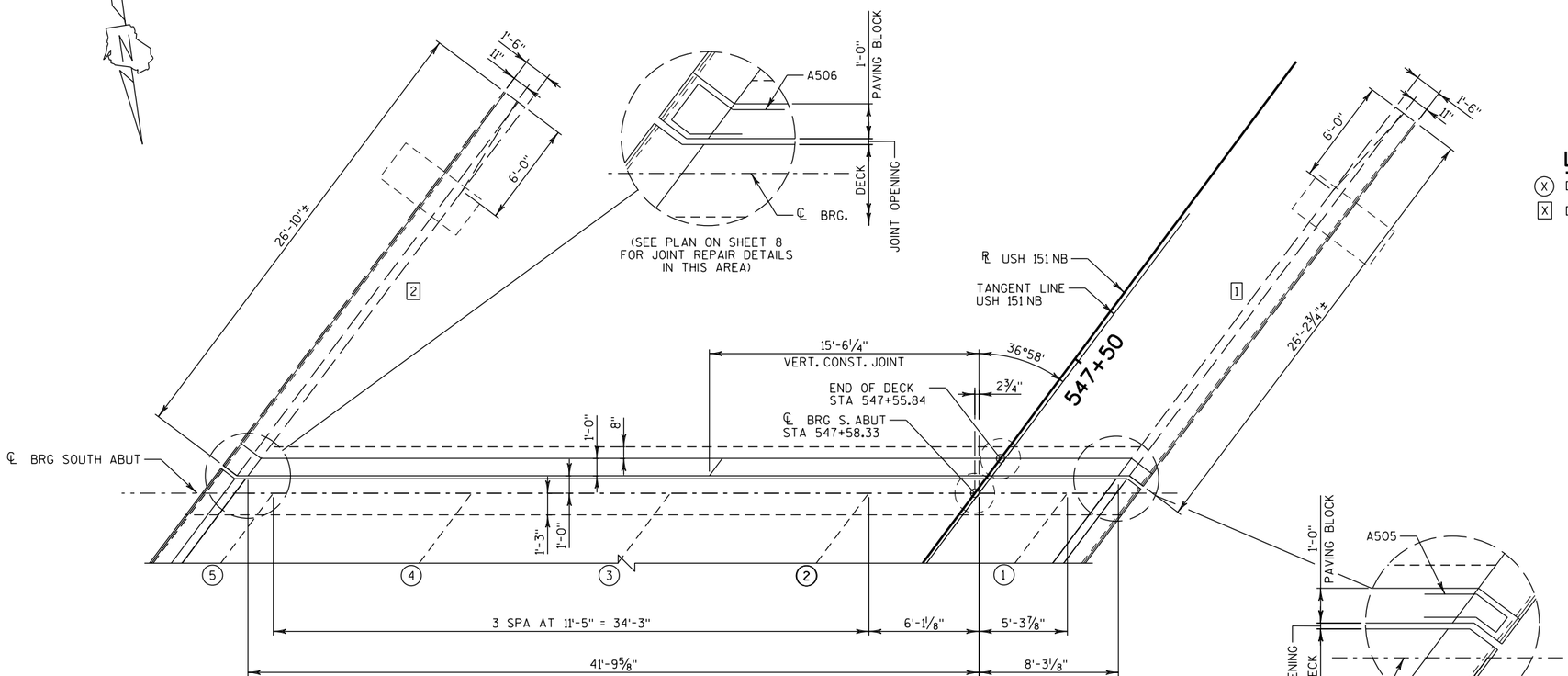
## BILL OF BARS

| BAR MARK | COAT | * REQ'D STAGE 3A | * REQ'D STAGE 3B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| A401 | X | 27 | 29 | 3'-8" | X | | PAVING BLOCK - VERT. |
| A502 | X | 9 | --- | 9'-9" | | | PAVING BLOCK - HORIZ. |
| A503 | X | --- | 12 | 8'-0" | | | PAVING BLOCK - HORIZ. |
| A504 | X | 27 | 29 | 3'-4" | X | | PAVING BLOCK - VERT. |
| A505 | X | 2 | --- | 5'-8" | X | | PAVING BLOCK - ENDS |
| A506 | X | --- | 2 | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 550 LBS. |

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

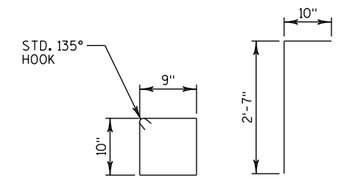



## SECTION A–A

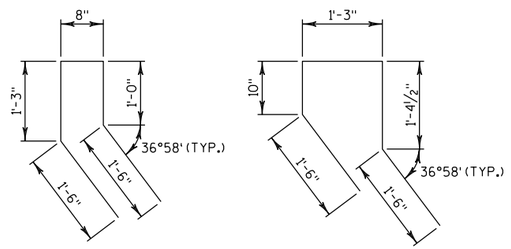



## PLAN

## LEGEND
(X) DENOTES GIRDER NUMBER
[X] DENOTES WING NUMBER




## A401 A504




## A505 A506

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

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SOUTH ABUTMENT

SHEET 4 OF 10

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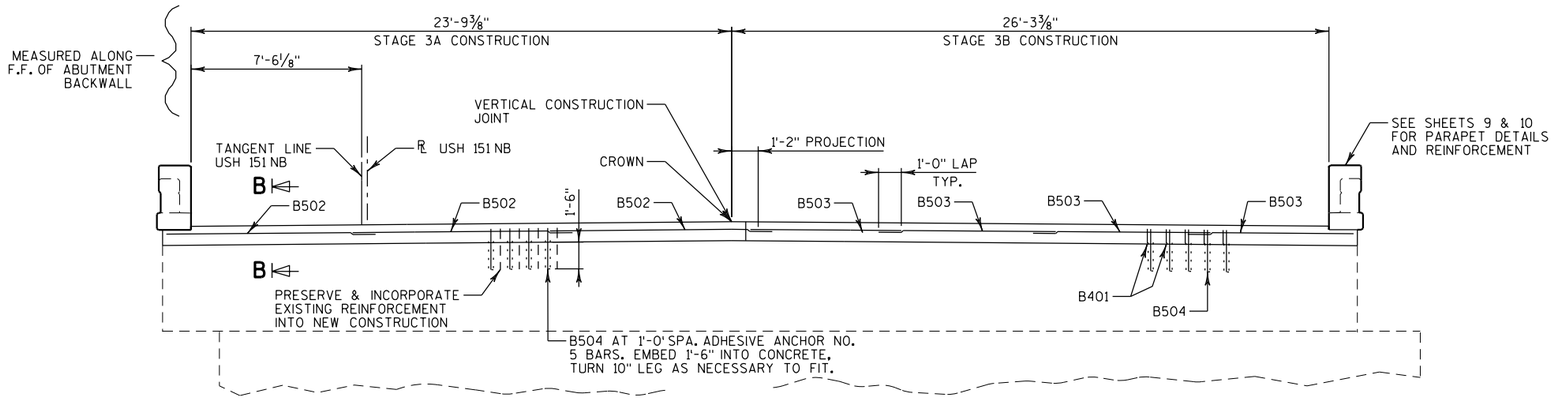
FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-268\B-13-268_04&05-abutS.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 ' / ft.

STATE PROJECT NUMBER

1111-02-78



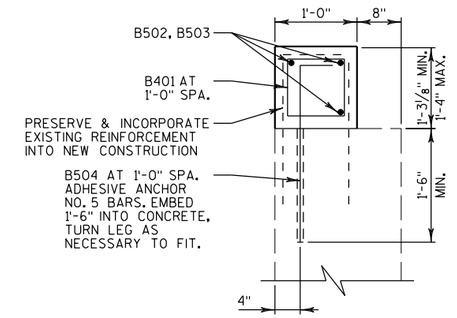

## ELEVATION

LOOKING NORTH

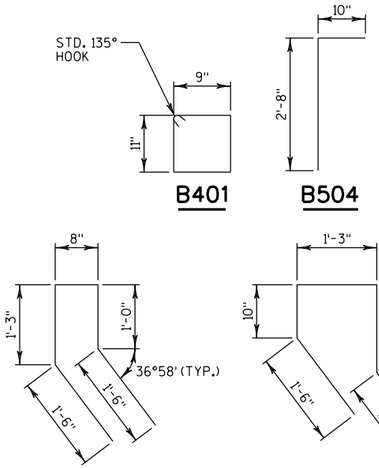
## BILL OF BARS

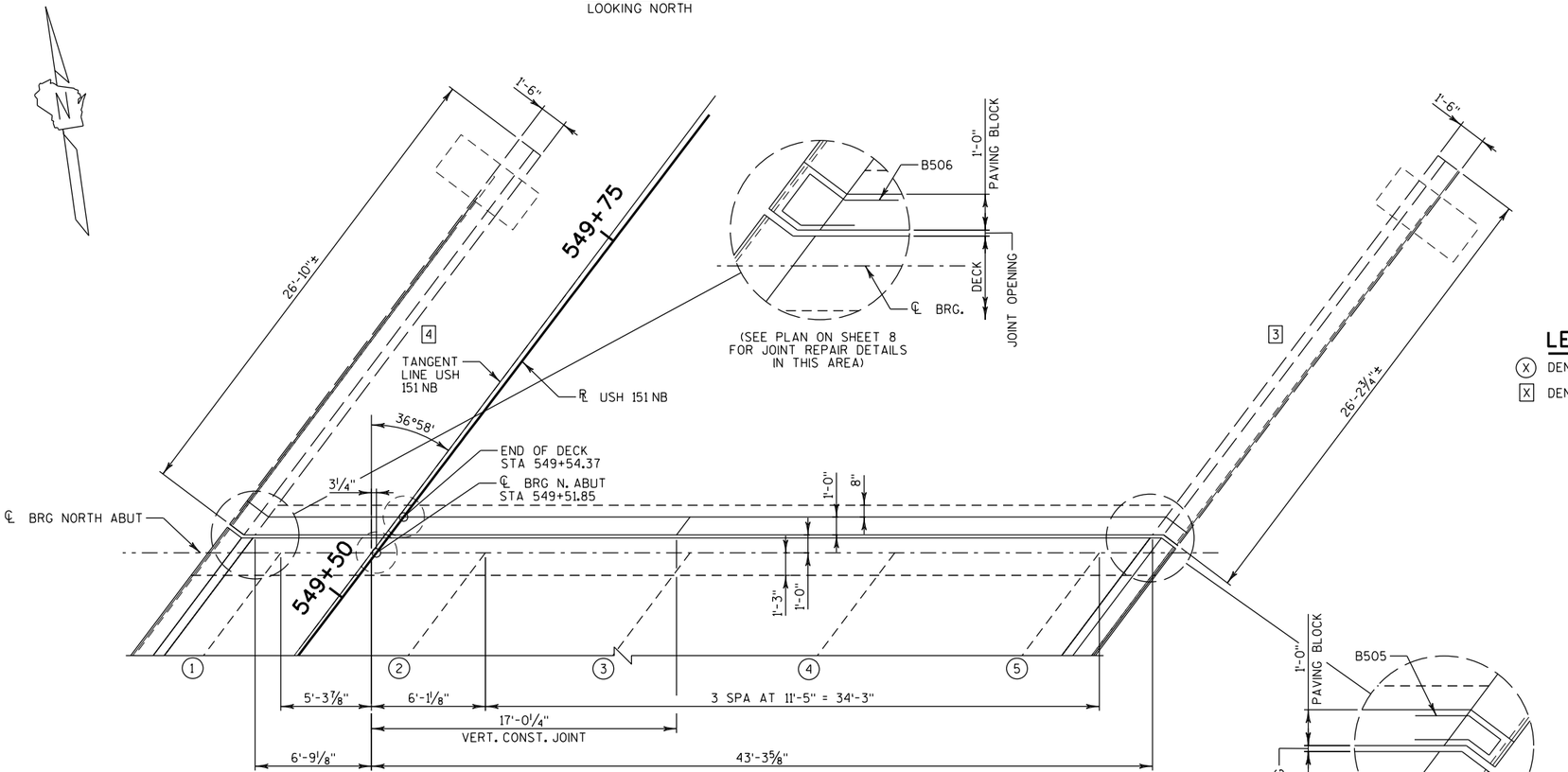
| BAR MARK | COAT | # REQ'D STAGE 3A | # REQ'D STAGE 3B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| B401 | X | 27 | 29 | 3'-10" | X | | PAVING BLOCK - VERT. |
| B502 | X | 9 | --- | 9'-9" | | | PAVING BLOCK - HORIZ. |
| B503 | X | --- | 12 | 8'-0" | | | PAVING BLOCK - HORIZ. |
| B504 | X | 27 | 29 | 3'-5" | X | | PAVING BLOCK - VERT. |
| B505 | X | --- | 2 | 5'-8" | X | | PAVING BLOCK - ENDS |
| B506 | X | 2 | --- | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 560 LBS. |

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.




## SECTION B-B




## PLAN

## LEGEND

(X) DENOTES GIRDER NUMBER

[X] DENOTES WING NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

NORTH ABUTMENT

SHEET 5 OF 10

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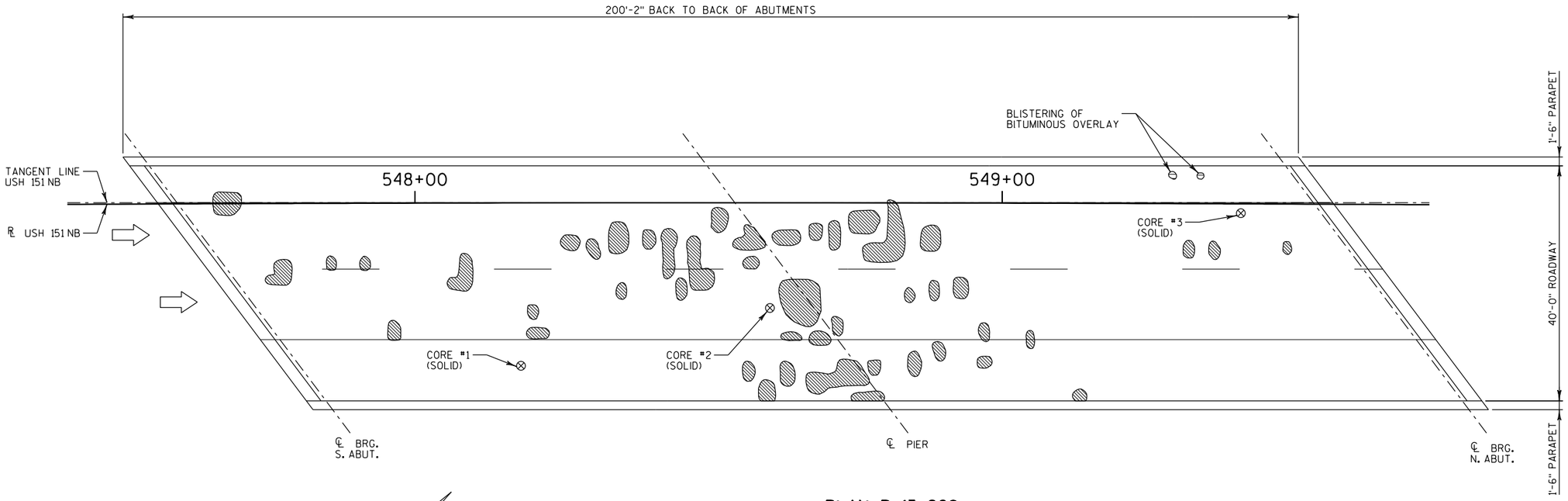
FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-268\B-13-268_04&05-abutS.dgn

PLOT DATE : 8/1/2016

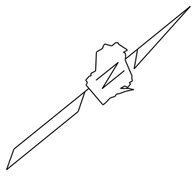
PLOT SCALE : 2.00000 ' / ft.

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




## PLAN B-13-268




## NOTES:

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY. ENGINEER TO VERIFY REPAIR AREAS. DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER.

THE QUANTITIES FOR PREPARATION DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.

SCALE 0' 5' 10' 20'

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/21/12

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

## DECK INSPECTION RESULTS

| | FIELD OBSERVATIONS SUMMARY | | S.N. B-13-268 | | LEGEND |
|---|---|---|---|---|---|
| | ITEM | UNIT | QUANT. | % | |
| 6-01 | TOTAL AREA | $ft^2$ | 7940 | | DELAMINATION |
| | SHADE/DEBRIS | $ft^2$ | 0 | | SPALL |
| | DELAMINATION | $ft^2$ | 485 | 6.1 | DEBOND |
| | SPALL | $ft^2$ | 0 | 0 | ASPHALT PATCH |
| | DEBOND (BLISTERING) | $ft^2$ | 2 | <0.1 | CONCRETE PATCH |
| | ASPHALT PATCH | $ft^2$ | 0 | 0 | SHADE/DEBRIS |
| | CONCRETE PATCH | $ft^2$ | 0 | 0 | |

6-01 TOTAL ROADWAY AREA (BETWEEN PARAPETS AND FACE OF PAVING NOTCHES)

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

INFRARED INSPECTION RESULTS

SHEET 6 OF 10

360

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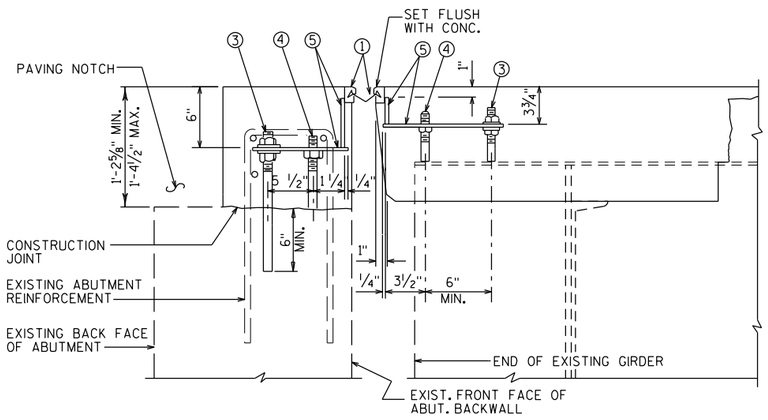
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-268±B-13-268_06-deckinspection.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

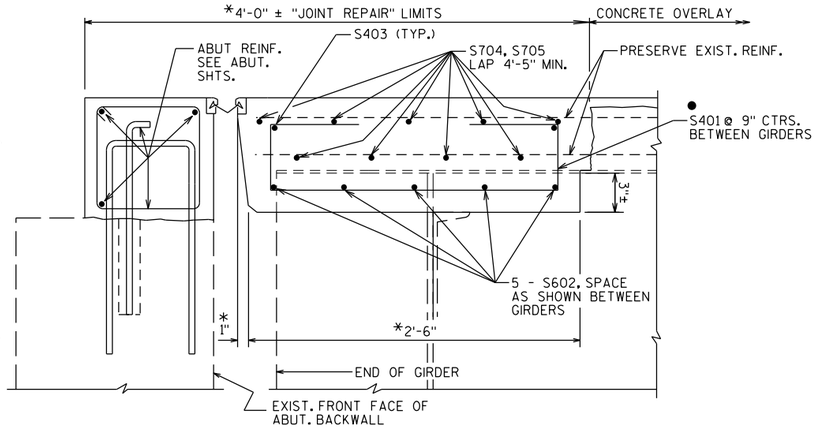
STATE PROJECT NUMBER

1111-02-78




## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE




## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

## LEGEND

① NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".

② STUDS ⅝" Φ x 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

②A ½" THICK ANCHOR PLATE WITH ⅝" Φ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.

③ ¾" Φ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THROUGH FLANGE. ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

④ ¾" Φ THREADED ROD WITH NUT. TACK WELD NUT TO #5.

⑤ FABRICATE SUPPORT FROM 3" x ½" 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 1½" Φ HOLE FOR #3 & 1" Φ HOLE FOR #4.

⑥ GALVANIZED PLATE ⅜" x 10" x 2'-2" LONG WITH HOLES FOR #7.

⑦ ¾" Φ x 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

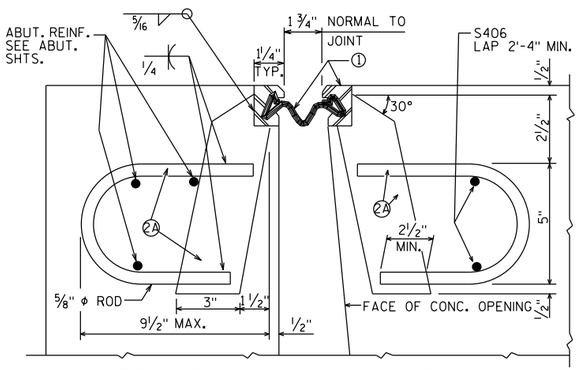
⑧ ¾" Φ x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.

⑨ ¾" Φ x 2¼" GALVANIZED THREADED COUPLING.

⑩ 1" x 5" SLOTTED COUNTERSUNK HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

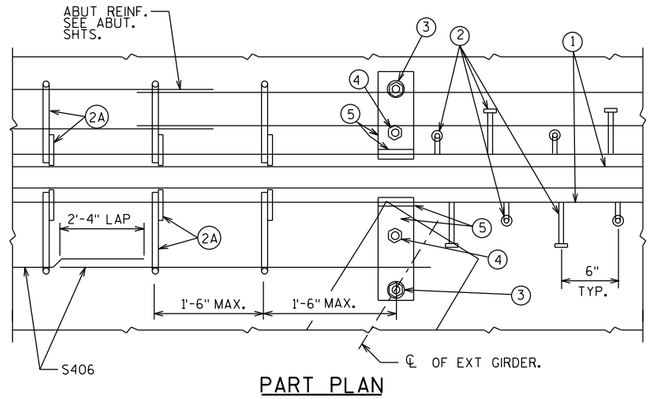
* DIMENSION IS NORMAL TO C/L OF SUBSTRUCTURE UNITS.

● BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ GIRDERS.

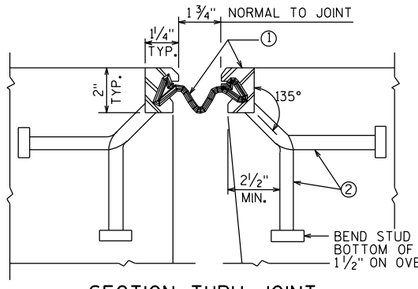



## SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.




## PART PLAN




## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS

## NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

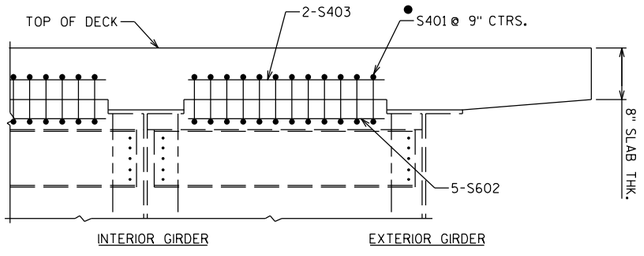
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

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

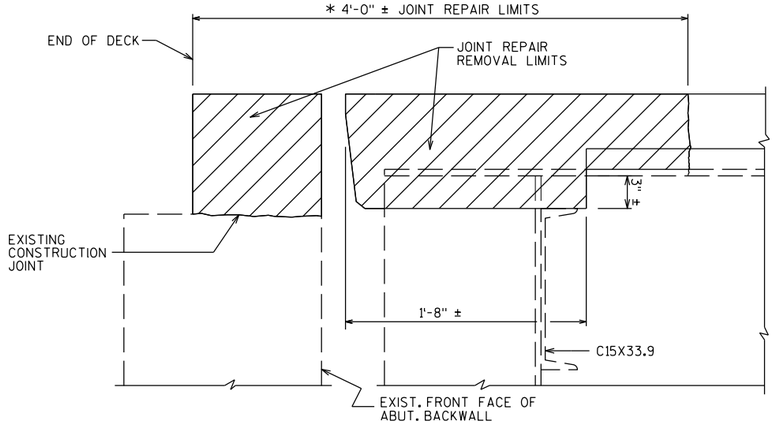
SANDBLAST PLATES, SUPPORTS, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

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

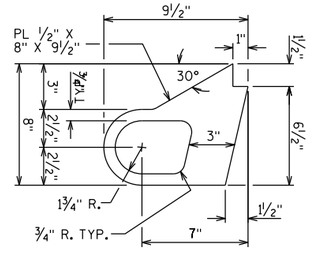
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".




## PART TRANSVERSE SECTION AT DIAPHRAGM




## JOINT REPAIR-REMOVAL




## ALTERNATE STRIP SEAL ANCHOR

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

REPLACEMENT JOINT DETAILS 1

SHEET 7 OF 10

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8

8

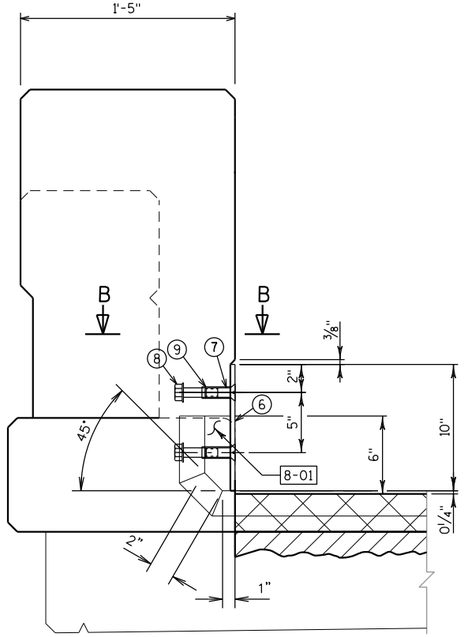
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-268±B-13-268_07&08-jointdet.dgn

PLOT DATE : 8/1/2016

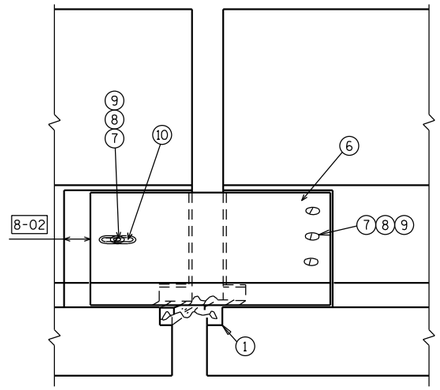
PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

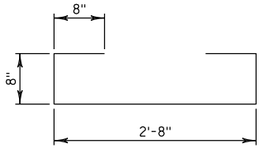
1111-02-78



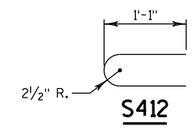

SECTION A-A
(REBAR NOT SHOWN FOR CLARITY)




VIEW OF PARAPET PLATES FROM ROADWAY




S401

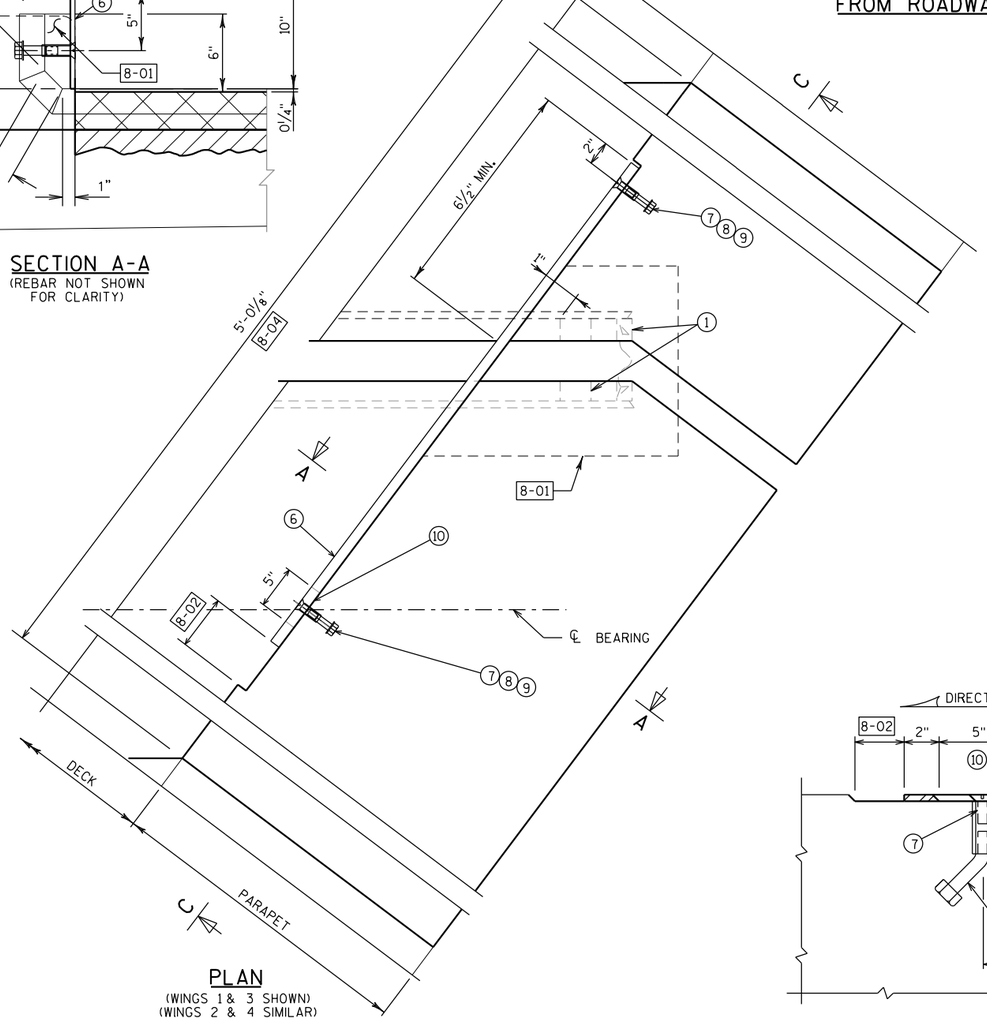



S412

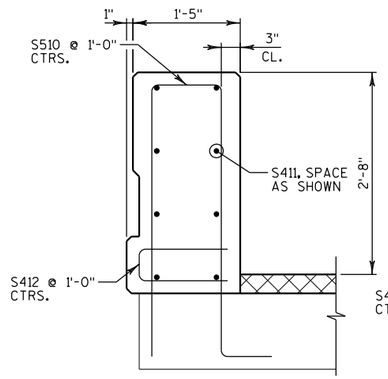
## BILL OF BARS

| MARK | COAT | # REQ'D. STAGE 3A | # REQ'D. STAGE 3B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| S401 | X | 46 | 50 | 5'-0" | X | | SLAB - DIAPHRAGM |
| S602 | X | 20 | 20 | 11'-0" | | | SLAB - DIAPHRAGM |
| S403 | X | 8 | 8 | 11'-0" | | | SLAB - DIAPHRAGM |
| S704 | X | 36 | --- | 15'-0" | | | SLAB - STAGE 3A |
| S705 | X | --- | 36 | 16'-3" | | | SLAB - STAGE 3B |
| S406 | X | 16 | 16 | 7'-0" | | | SLAB - EXPANSION DEVICE - BTWN. GIRDERS |
| | | | | | | | |
| S510 | X | 10 | 10 | 7'-7" | X | | PARAPET - AT JOINT, DECK SIDE |
| S411 | X | 8 | 8 | 3'-7" | X | | PARAPET - AT JOINT, DECK SIDE, B.F. ONLY |
| S412 | X | 16 | 16 | 2'-5" | X | | PARAPET - HORIZ. |
| S513 | X | 6 | 6 | 9'-4" | X | | PARAPET - AT JOINT, ABUTMENT SIDE |
| S414 | X | 8 | 8 | 1'-4" | X | | PARAPET - AT JOINT, ABUTMENT SIDE, B.F. ONLY |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 3,930 LBS. |

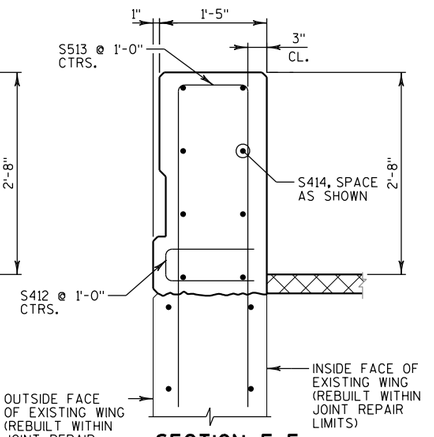
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR



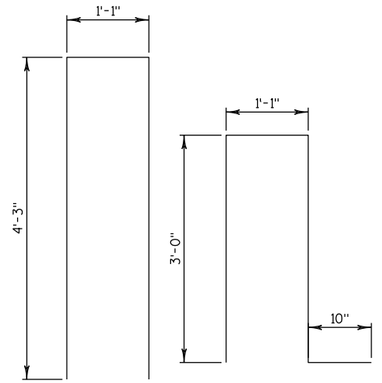

PLAN
(WINGS 1 & 3 SHOWN)
(WINGS 2 & 4 SIMILAR)




SECTION D-D

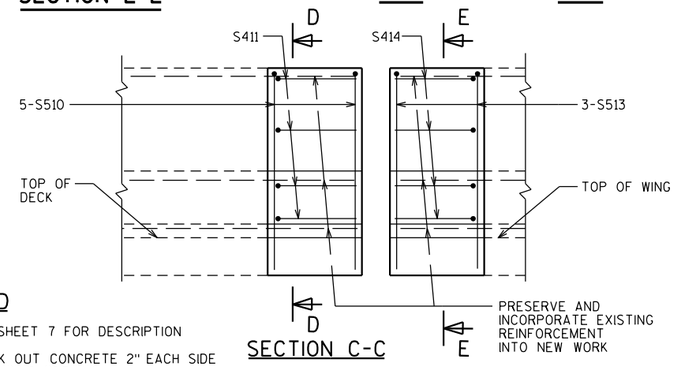



SECTION E-E

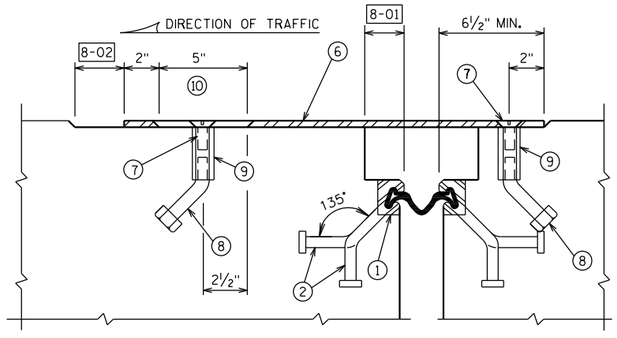



S513 S510

S411, S414
(TURN LEG AS NECESSARY TO FIT)




SECTION C-C




SECTION B-B

## LEGEND

- (X) SEE SHEET 7 FOR DESCRIPTION
- 8-01 BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.
- 8-02 JOINT OPENING DIM. ALONG SKEW PLUS ½"
- 8-03 ACCOUNTS FOR 4'-5" LAP IN BARS MIDWAY BETWEEN CONSTRUCTION JOINT. THESE BARS REQUIRE BAR COUPLERS AT STAGED CONSTRUCTION JOINT.
- 8-04 JOINT REPAIR LIMITS. REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

REPLACEMENT JOINT DETAILS 2

SHEET 8 OF 10

362

8

8

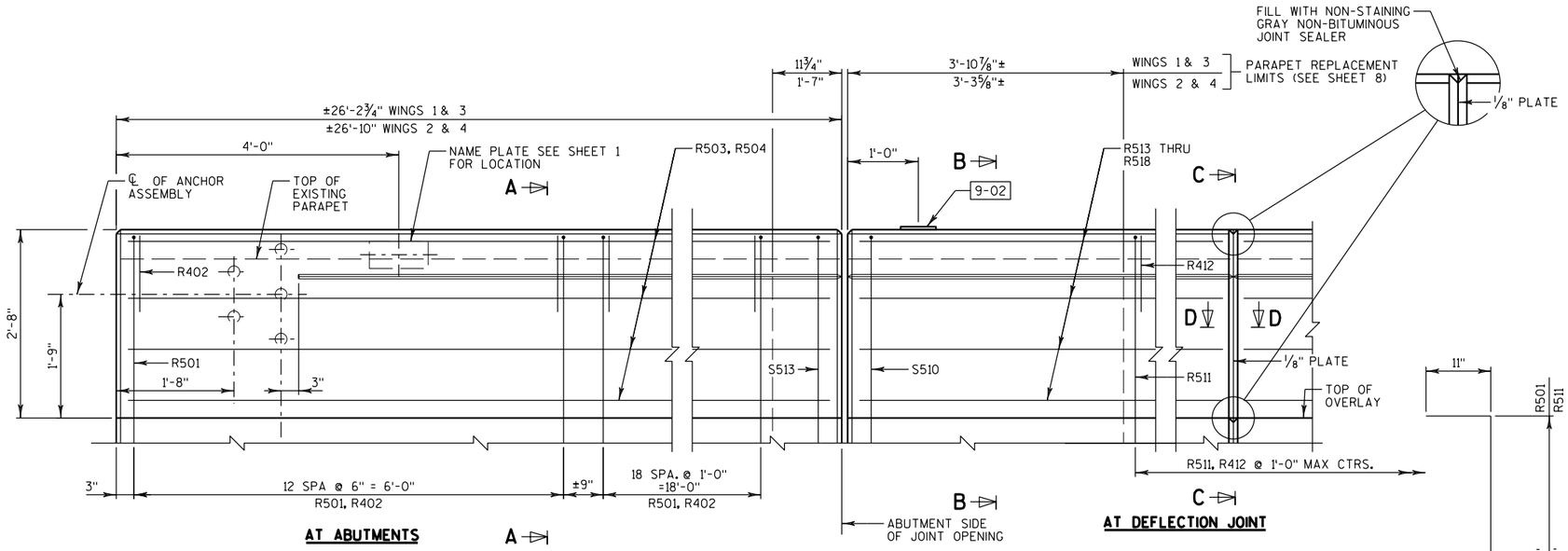
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-268±B-13-268_07&08-Jointdet.dgn

PLOT DATE : 8/1/2016

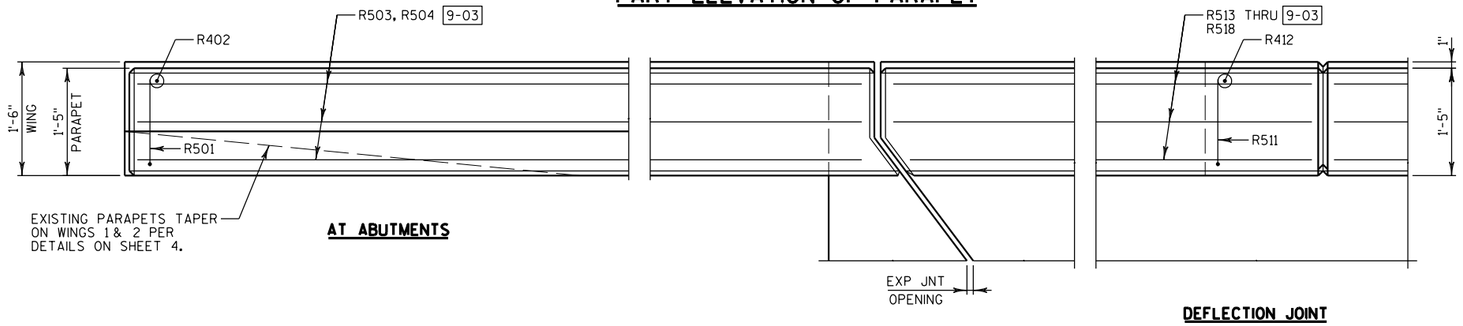
PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

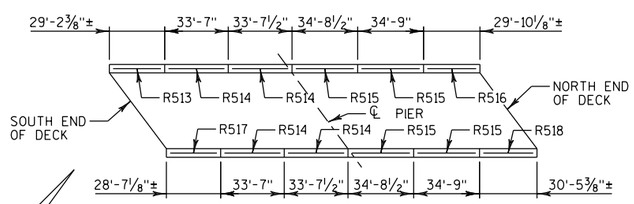
1111-02-78



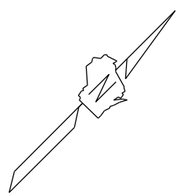

## PART ELEVATION OF PARAPET



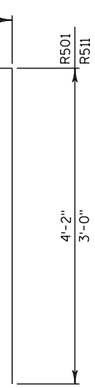

## PART PLAN OF PARAPET




## DEFLECTION JOINT SPACING



## R501, R511




## NOTES & LEGEND

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

9-01 CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

9-02 BENCH MARK CAP (WHEN SUPPLIED). SEE SHEET 1 FOR LOCATION.

9-03 FIELD CUT R503, R504, R513, R516, R517 & R518 AT BLOCK OUT FOR EXTRUSIONS AS REQUIRED TO MAINTAIN 2" CLEAR DISTANCE.

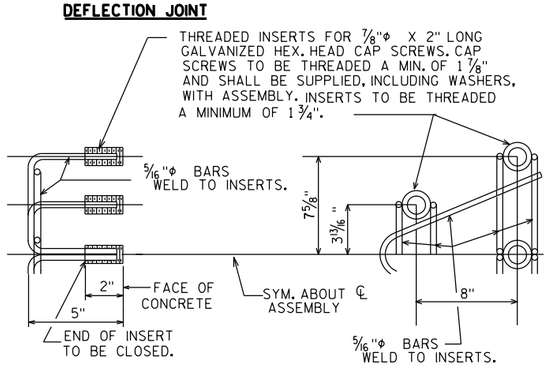
FOR SECTION VIEWS A & B SEE SHEET 10.

## BILL OF BARS

| BAR MARK | COAT | NO. REQ'D. STAGE 3A | NO. REQ'D. STAGE 3B | LENGTH | BENT | bar series | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 64 | 64 | 5'-0" | X | | PARAPET ON WINGS - VERT. |
| R402 | X | 64 | 64 | 0'-9" | | | PARAPET ON WINGS - VERT. |
| R503 | X | 6 | 6 | 25'-10" | | | PARAPET ON WINGS 1 & 3 - HORIZ. |
| R504 | X | 6 | 6 | 26'-6" | | | PARAPET ON WINGS 2 & 4 - HORIZ. |
| | | | | | | | |
| R511 | X | 189 | 189 | 3'-10" | X | | PARAPET ON BRIDGE - VERT. |
| R412 | X | 189 | 189 | 0'-9" | | | PARAPET ON BRIDGE - VERT. |
| R513 | X | 6 | --- | 28'-10" | | | PARAPET ON BRIDGE - HORIZ. |
| R514 | X | 12 | 12 | 33'-3" | | | PARAPET ON BRIDGE - HORIZ. |
| R515 | X | 12 | 12 | 34'-4" | | | PARAPET ON BRIDGE - HORIZ. |
| R516 | X | 6 | --- | 29'-6" | | | PARAPET ON BRIDGE - HORIZ. |
| R517 | X | --- | 6 | 28'-3" | | | PARAPET ON BRIDGE - HORIZ. |
| R518 | X | --- | 6 | 30'-1" | | | PARAPET ON BRIDGE - HORIZ. |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 5,510 LBS. |

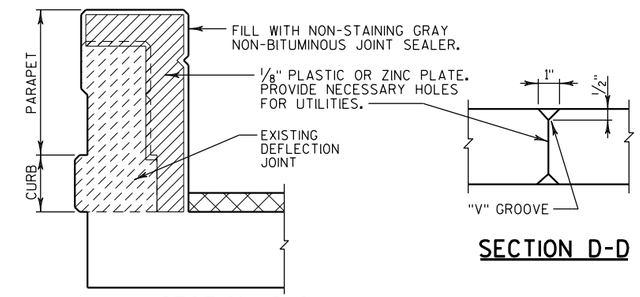
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

## DEFLECTION JOINT




## DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.




## SECTION D-D

## SECTION C-C

(SHOWING DEFLECTION JOINT IN PARAPET.)

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 1

SHEET 9 OF 10

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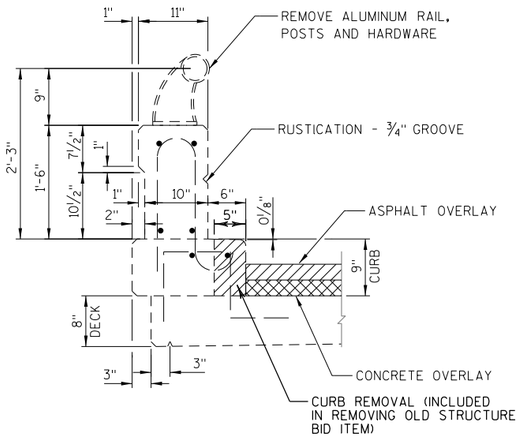
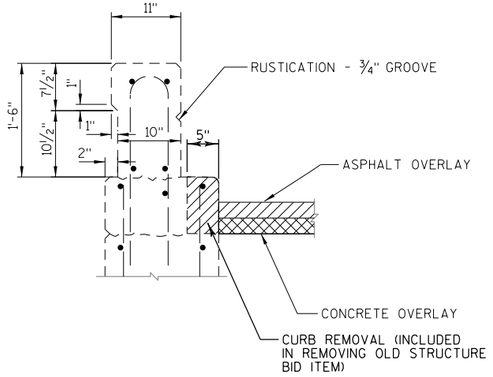
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-268±B-13-268_09-parapetdetails1.dgn

PLOT DATE : 8/1/2016

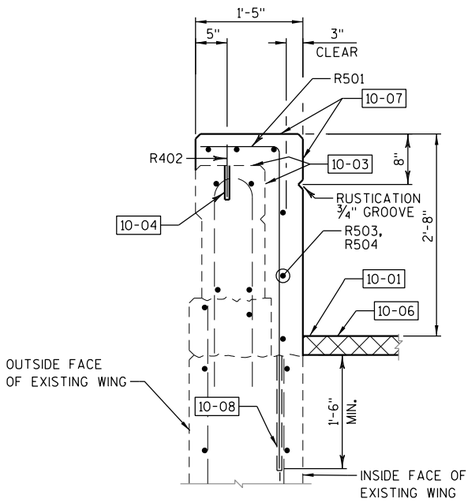
PLOT SCALE : 2.00000 '/ ft.




## EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

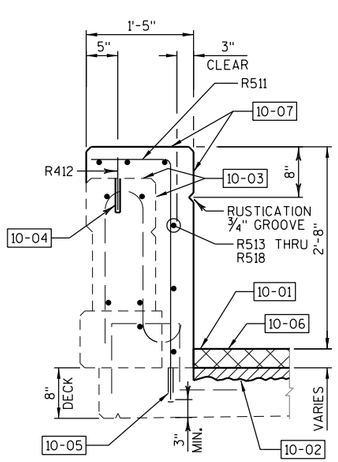



## EXISTING SECTION THRU WING



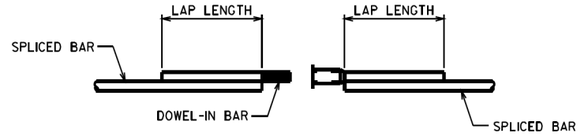

## SECTION A-A

(SEE SHEET 9 FOR LOCATION)




## SECTION B-B

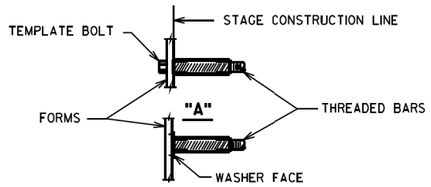
(SEE SHEET 9 FOR LOCATION)




## DOWEL BAR SPLICER

## ONE PIECE THREADED SPLICER

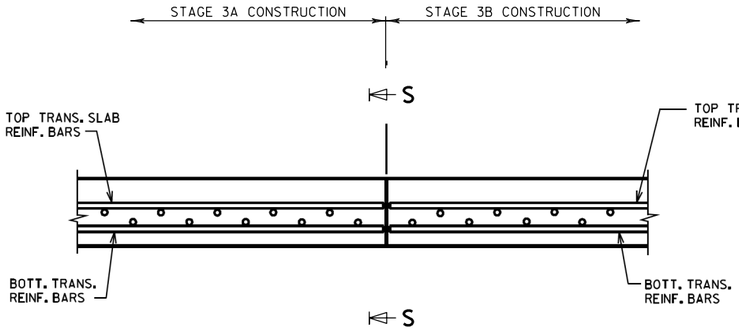
## SPLICER ALTERNATIVES



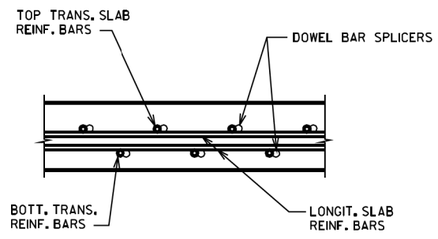

"B"

## INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## SECTION THRU SLAB




## SECTION S

### DOWEL BAR SPLICER LAP LENGTHS

| CONCRETE UNDER BAR | BAR SIZE | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|
| 12" OR LESS | f'c = 3500 | 1'-8" | 2'-8" | 3'-2" | 4'-3" | 5'-6" | 7'-0" | 8'-9" | 10'-11" |
| | f'c = 4000 | 1'-8" | 2'-8" | 3'-2" | 4'-0" | 5'-2" | 6'-6" | 8'-3" | 10'-2" |
| MORE THAN 12" | f'c = 3500 | 2'-3" | 2'-11" | 3'-6" | 4'-8" | 6'-1" | 7'-10" | 9'-10" | 12'-1" |
| | f'c = 4000 | 2'-3" | 2'-11" | 3'-6" | 4'-5" | 5'-8" | 7'-4" | 9'-2" | 11'-4" |

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

## LEGEND

10-01 CONCRETE MASONRY OVERLAY DECKS.

10-02 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

10-03 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL". DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER, UNDER THE BID ITEM "REMOVING OLD STRUCTURE". SALVAGE EXISTING REINFORCING STEEL.

10-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE. EPOXY ANCHORED.

10-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

10-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

10-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

10-08 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" MIN. INTO EXISTING CONCRETE WING. INCREASE EMBEDMENT IF REQUIRED TO MAINTAIN CLEARANCE FROM TOP OF PARAPET TO TOP OF BAR. EPOXY ANCHORED.

## NOTES:

CLEAN, STRAIGHTEN AND EXTEND EXISTING BAR STEEL REINFORCEMENT A MINIMUM OF 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE. DO NOT CUT EXISTING DOWELS OR STIRRUPS THAT EXTEND INTO EXISTING WINGS OR DECK.

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE PROJECT NUMBER

1111-02-78

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-268

DRAWN BY TKB | PLANS CK'D. BH

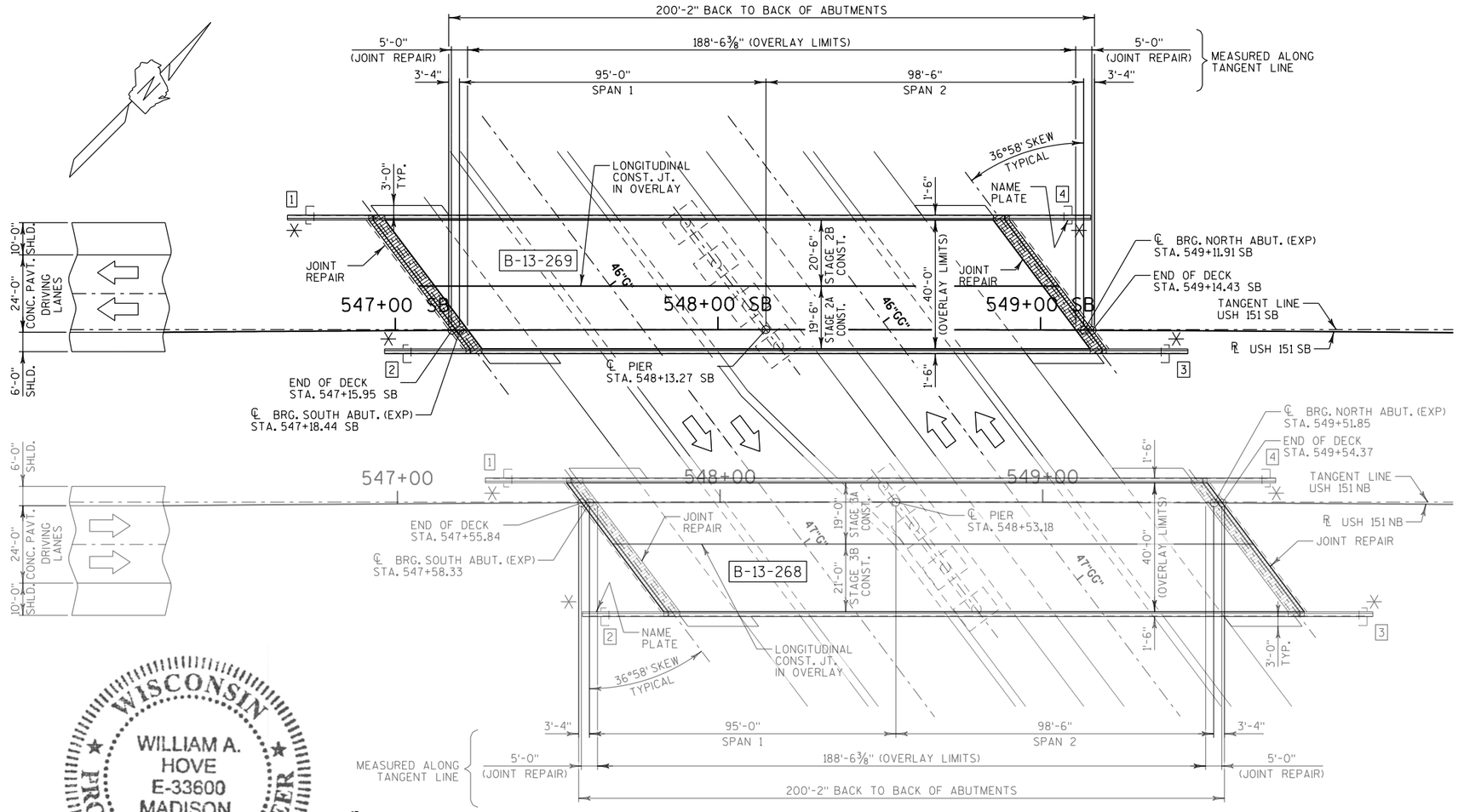
PARAPET DETAILS 2 & COUPLER DETAILS

SHEET 10 OF 10

364

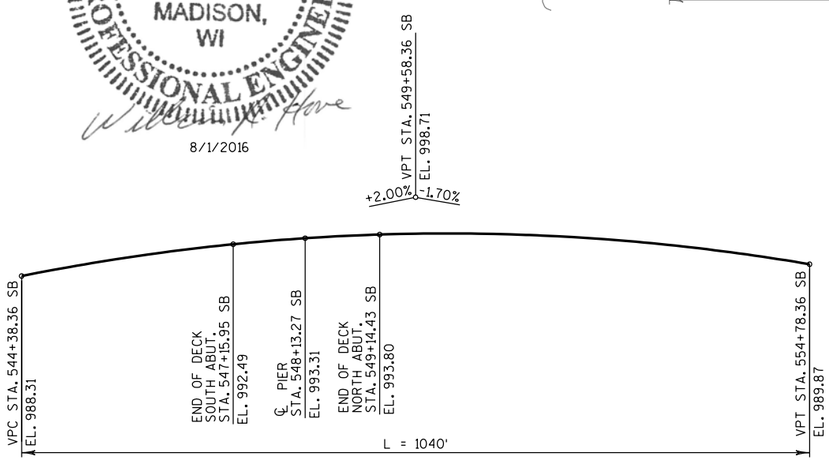
8

8




## B-13-269

(CONCRETE OVERLAY - 2-SPAN STEEL PLATE GIRDER)




## PROFILE GRADE LINE USH 151 SB

(STATIONS ALONG ℞, ELEVATIONS ALONG PGL, LOCATED 13'-6" LEFT OF ℄)

WISCONSIN PROFESSIONAL ENGINEER
WILLIAM A. HOVE
E-33600
MADISON, WI

William A. Hove

8/1/2016

## PROPOSED HORIZ. CURVE DATA

P.I. = STA. 545+82.29 SB
Y = 519,629.98
X = 856,870.65
D = 0°23'52"
Δ = 2°33'21" (RT)
T = 321.24'
L = 642.38'
R = 14,400.00'
P.C.= 542+61.05 SB
P.T.= 549+03.43 SB

## LEGEND

✳ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.

[X] DENOTES WING NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 27,000
R.D.S. = 70 MPH

MAIN STREET
A.D.T. (2015 EXIST) = 15,600
R.D.S. = 35 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING ____ HS - 21
OPERATIONAL RATING ____ HS - 38
WISCONSIN STANDARD
PERMIT VEHICLE (Wis-SPV) ____ 250 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c ____ 4,000 PSI
CONCRETE MASONRY BRIDGES f'c ____ 4,000 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT (GRADE 60) fy ____ 60,000 PSI

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS
4. SOUTH ABUTMENT
5. NORTH ABUTMENT
6. INFRARED INSPECTION RESULTS
7. REPLACEMENT JOINT DETAILS 1
8. REPLACEMENT JOINT DETAILS 2
9. PARAPET DETAILS 1
10. PARAPET DETAILS 2 & COUPLER DETAILS



SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

CONSULTANT CONTACT:
BILL HOVE (608) 826-6125


STATE PROJECT NUMBER

1111-02-78

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CLEANING AND PAINTING BEARINGS, CONCRETE SURFACE REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY. A MINIMUM OF 1-INCH OF EXISTING CONCRETE COVER SHALL BE MAINTAINED.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

CLEAN, STRAIGHTEN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-269".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1969.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY DECKS".

| NO. | DATE | REVISION | BY |
|---|---|---|---|


CORRE Structural Environmental Municipal Transportation
6510 GRAND TETON PLAZA, SUITE 304 MADISON, WI 53719 (608)826-9015 www.correinc.com


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-13-269

USH 151 SB OVER MAIN STREET

| COUNTY | TOWN/CITY/~~VILLAGE~~ |
|---|---|
| DANE | SUN PRAIRIE |

DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| BH | ETP | TKB | BH |

GENERAL PLAN

SHEET 1 OF 10

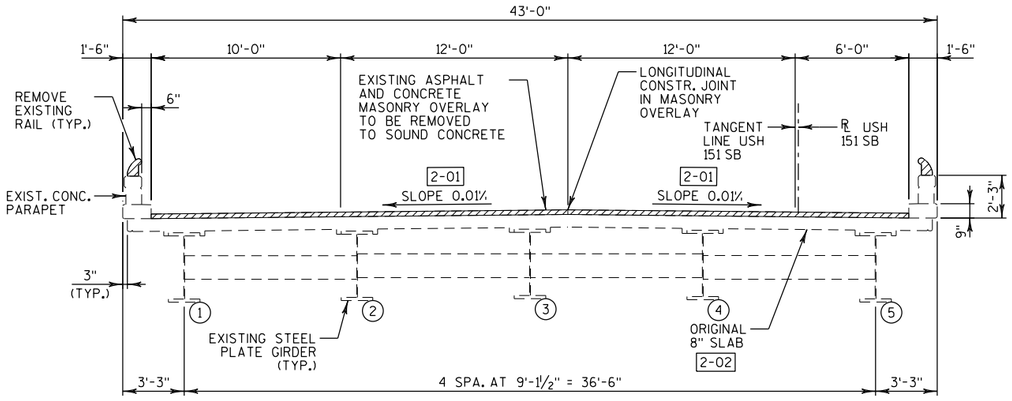


FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-269\B-13-269_01-genplan.dgn PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 ' / ft.

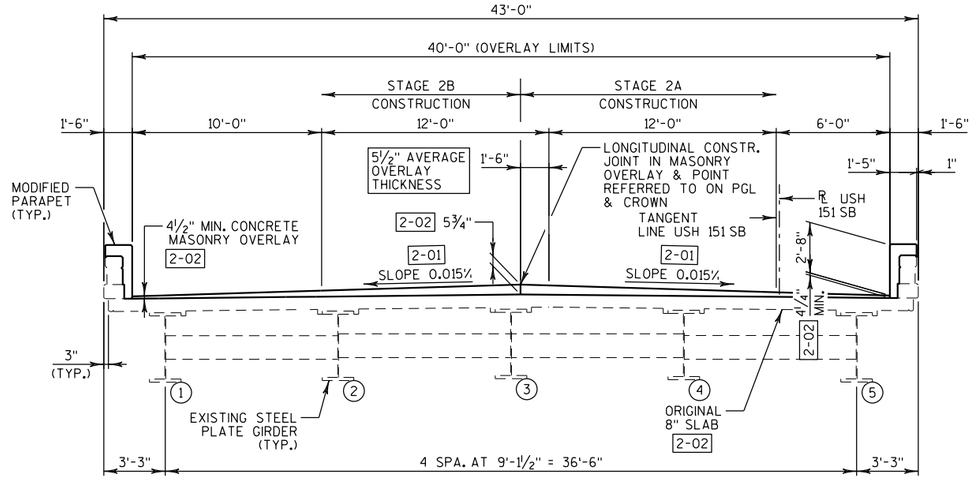
STATE PROJECT NUMBER

1111-02-78




## EXISTING CROSS SECTION THRU ROADWAY

LOOKING NORTH




## PROPOSED CROSS SECTION THRU ROADWAY

LOOKING NORTH

## TOTAL ESTIMATED QUANTITIES

ALL ITEMS ARE CATEGORY 0040

| | BID ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUTMENT | PIER #1 | NORTH ABUTMENT | SUPERSTRUCTURE | QUANTITY |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.02 | REMOVING OLD STRUCTURE STA. 548+14.91 SB | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0210.S.02 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL STRUCTURE B-13-269 | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0225.S.02 | DEBRIS CONTAINMENT B-13-269 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | ---- | ---- | ---- | 38 | 38 |
| | 502.3100.02 | EXPANSION DEVICE B-13-269 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | ---- | ---- | ---- | 880 | 880 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | ---- | ---- | ---- | 230 | 230 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | ---- | ---- | ---- | 128 | 128 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 56 | ---- | 56 | 506 | 618 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 570 | ---- | 560 | 9,440 | 10,570 |
| | 505.0907 | BAR COUPLERS No. 7 | EACH | ---- | ---- | ---- | 18 | 18 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | ---- | ---- | ---- | 260 | 260 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | ---- | ---- | ---- | 110 | 110 |
| | 509.1000 | JOINT REPAIR | SY | ---- | ---- | ---- | 50 | 50 |
| 2-04 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 5 | ---- | 5 | 40 | 50 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | ---- | ---- | ---- | 13 | 13 |
| 2-03 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | ---- | ---- | ---- | 160 | 160 |
| | 509.9005.S.02 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-269 | SY | ---- | ---- | ---- | 840 | 840 |
| | 509.9010.S.02 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-269 | SY | ---- | ---- | ---- | 840 | 840 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | ---- | ---- | ---- | 4 | 4 |
| | SPV.0060.01 | CLEANING AND PAINTING BEARINGS | EACH | 5 | ---- | 5 | ---- | 10 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | ---- | ---- | ---- | 478 | 478 |
| | | | | | | | | |

NOTE: PARAPET ITEMS ON ABUTMENT WINGS ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES

## LEGEND

2-01 EXISTING CROSS SLOPE IS 0.01% AND WILL BE CHANGED TO 0.015%.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM APPROXIMATELY 4½" AT THE WEST PARAPET, 5¾" AT THE CROWN, AND 4¼" AT THE EAST PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATION. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE OVERLAY THICKNESS IS 5½" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS.

2-03 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-04 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(X) DENOTES GIRDER NUMBER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

CROSS SECTIONS & QUANTITIES

SHEET 2 OF 10

366

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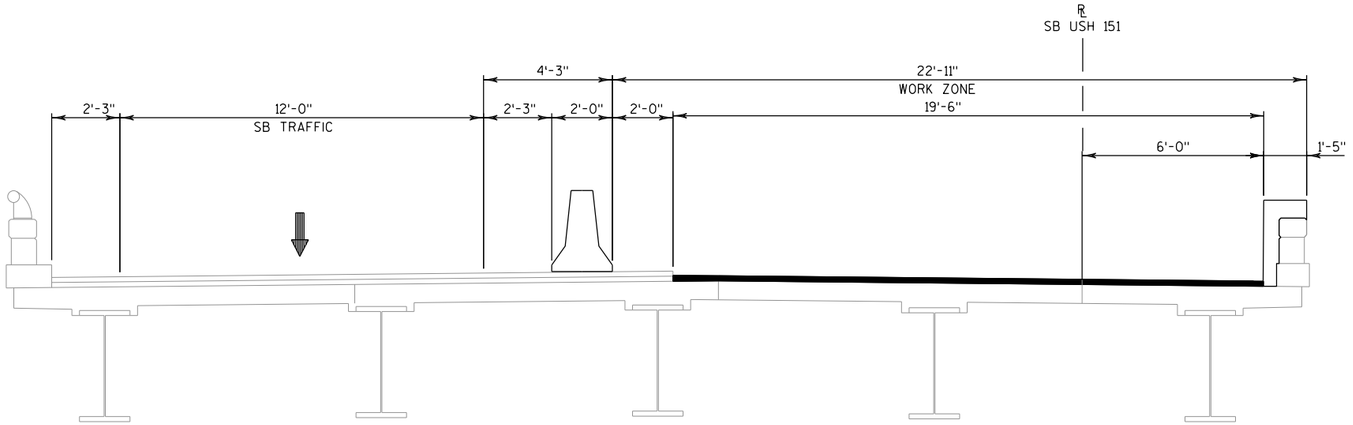
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_02-sections.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

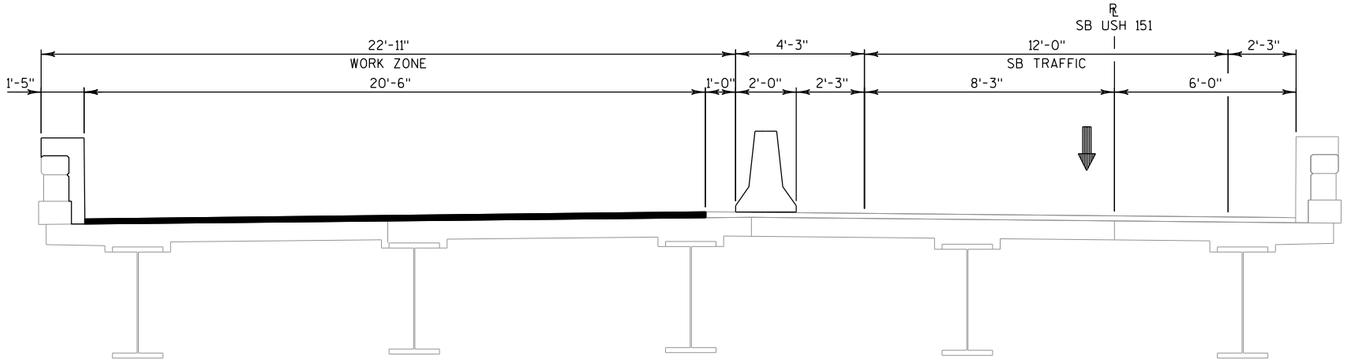
STATE PROJECT NUMBER

1111-02-78




## STAGE 2A - B-13-269

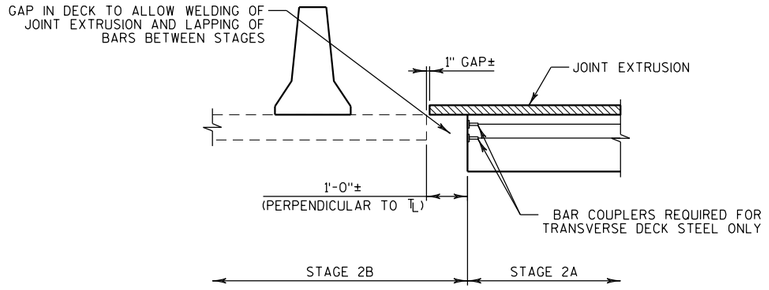
SB PERMANENT LANE CLOSURES
(USH 151 SB CONSTRUCTION LOOKING NORTH)




## STAGE 2B - B-13-269

NB PERMANENT LANE CLOSURES
(USH 151 SB CONSTRUCTION LOOKING NORTH)

**NOTE:**
SEE ROAD PLANS FOR CONSTRUCTION STAGES NOT SHOWN.




## JOINT DETAIL

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | End of Deck S. Abut. | C/L of Brg. S. Abut. | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Pier | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Brg. N. Abut. | End of Deck N. Abut. |
| LEFT FLOW LINE | 991.91 | 991.94 | 992.04 | 992.14 | 992.23 | 992.33 | 992.42 | 992.50 | 992.59 | 992.67 | 992.74 | 992.82 | 992.89 | 992.96 | 993.03 | 993.09 | 993.15 | 993.20 | 993.25 | 993.30 | 993.35 | 993.39 | 993.40 |
| CROWN LINE | 992.38 | 992.41 | 992.51 | 992.60 | 992.69 | 992.78 | 992.86 | 992.95 | 993.02 | 993.10 | 993.17 | 993.24 | 993.31 | 993.37 | 993.43 | 993.49 | 993.54 | 993.59 | 993.64 | 993.68 | 993.72 | 993.75 | 993.76 |
| RIGHT FLOW LINE | 992.25 | 992.27 | 992.36 | 992.45 | 992.53 | 992.62 | 992.70 | 992.77 | 992.85 | 992.92 | 992.98 | 993.05 | 993.11 | 993.17 | 993.22 | 993.27 | 993.32 | 993.37 | 993.41 | 993.45 | 993.49 | 993.52 | 993.53 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.
END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

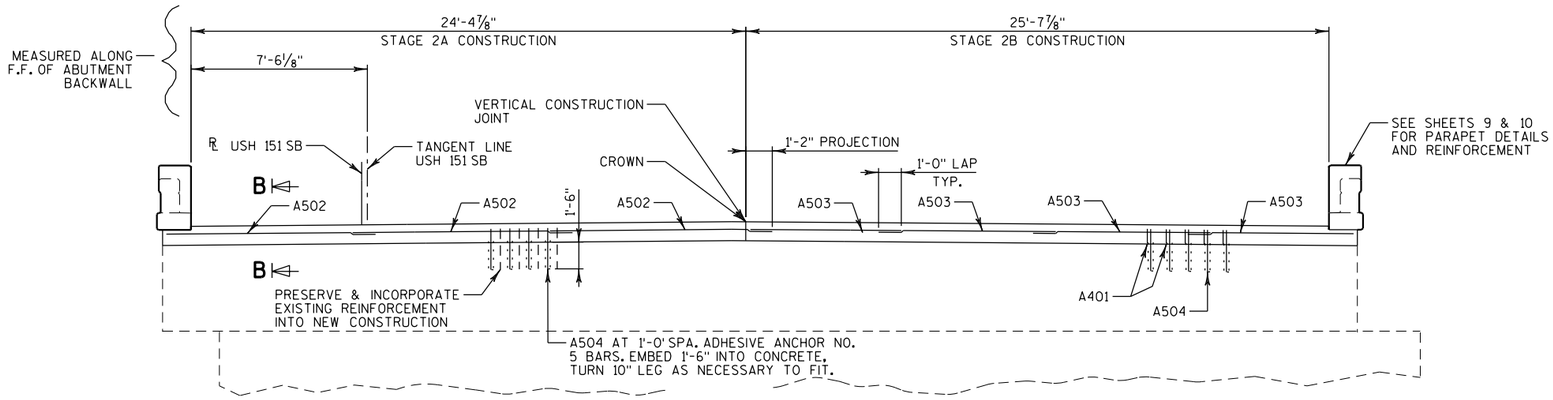
DRAWN BY TKB | PLANS CK'D. BH

MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS

SHEET 3 OF 10

STATE PROJECT NUMBER

1111-02-78



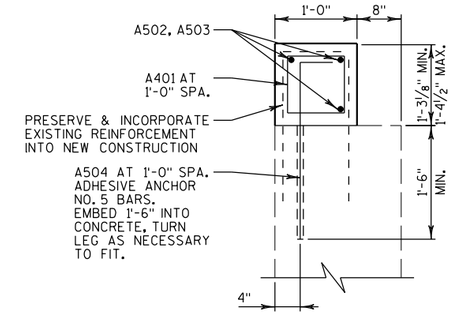

## ELEVATION

LOOKING SOUTH

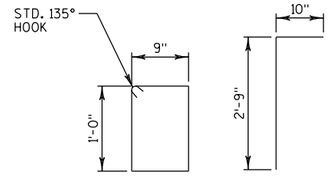
## BILL OF BARS

| BAR MARK | COAT | # REQ'D STAGE 2A | # REQ'D STAGE 2B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| A401 | X | 27 | 29 | 4'-0" | X | | PAVING BLOCK - VERT. |
| A502 | X | 9 | --- | 9'-9" | | | PAVING BLOCK - HORIZ. |
| A503 | X | --- | 12 | 8'-0" | | | PAVING BLOCK - HORIZ. |
| A504 | X | 27 | 29 | 3'-6" | X | | PAVING BLOCK - VERT. |
| A505 | X | --- | 2 | 5'-8" | X | | PAVING BLOCK - ENDS |
| A506 | X | 2 | --- | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 570 LBS. |

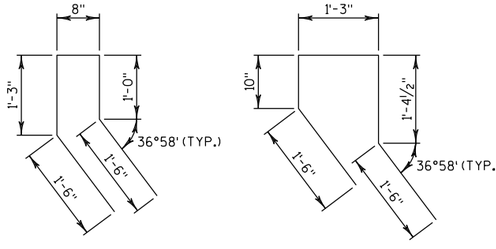
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.




## SECTION B-B




## A401 A504

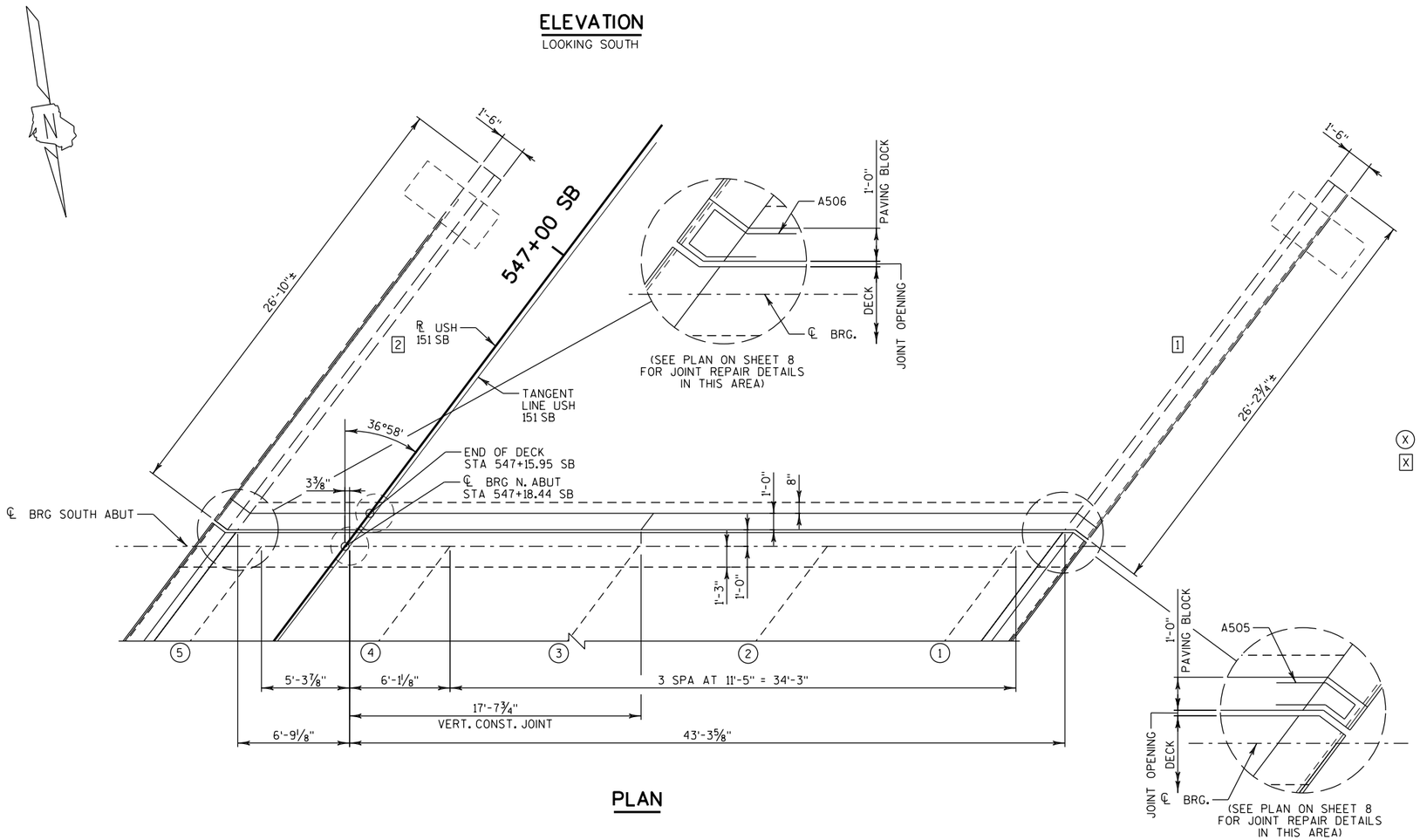



## A505 A506

## LEGEND

(X) DENOTES GIRDER NUMBER

[X] DENOTES WING NUMBER




## PLAN

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

SOUTH ABUTMENT

SHEET 4 OF 10

368

8

8

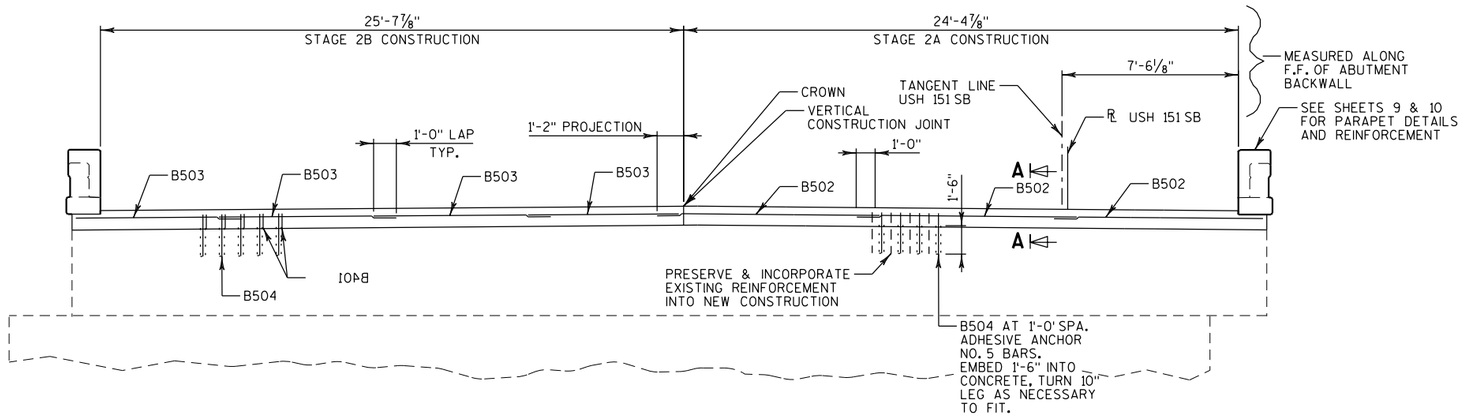
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_04&05-abutS.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

1111-02-78

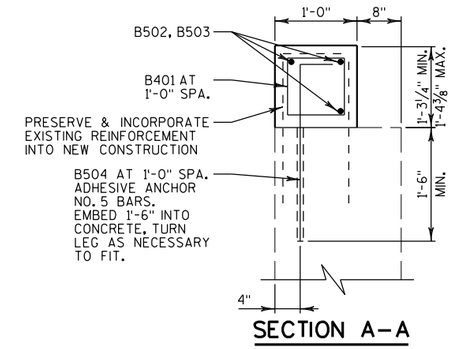



## ELEVATION
LOOKING NORTH

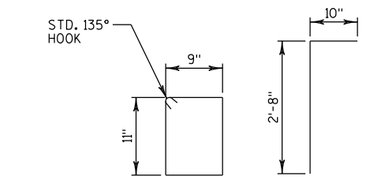
## BILL OF BARS

| BAR MARK | COAT | * REQ'D STAGE 2A | * REQ'D STAGE 2B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| B401 | X | 27 | 29 | 3'-10" | X | | PAVING BLOCK - VERT. |
| B502 | X | 9 | --- | 9'-9" | | | PAVING BLOCK - HORIZ. |
| B503 | X | --- | 12 | 8'-0" | | | PAVING BLOCK - HORIZ. |
| B504 | X | 27 | 29 | 3'-5" | X | | PAVING BLOCK - VERT. |
| B505 | X | 2 | --- | 5'-8" | X | | PAVING BLOCK - ENDS |
| B506 | X | --- | 2 | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 560 LBS. |

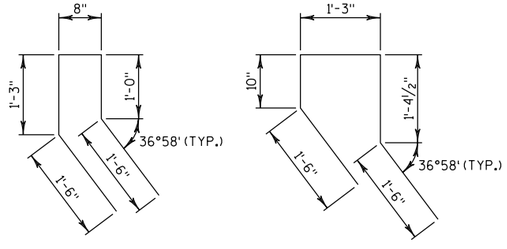
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



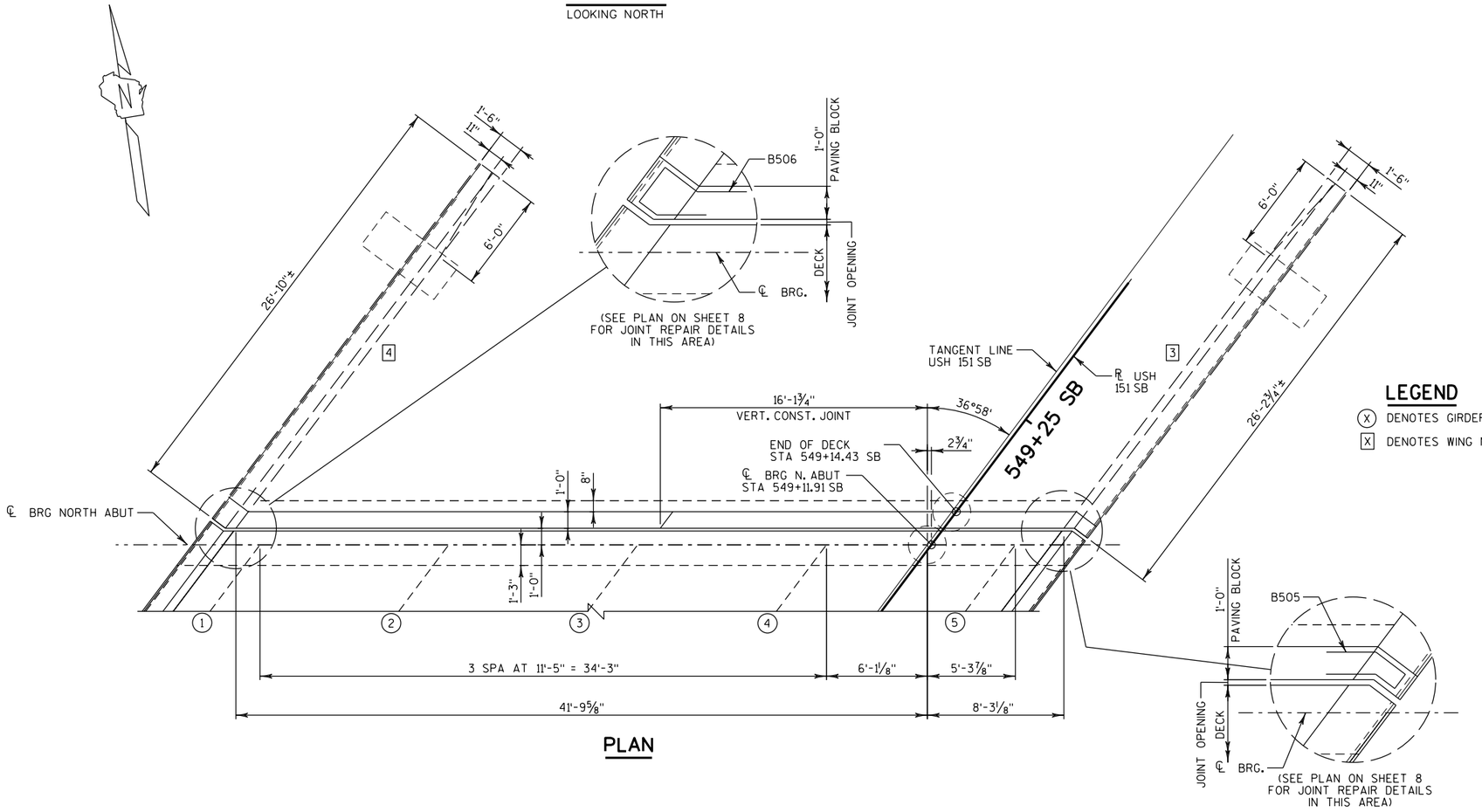

## SECTION A–A




## B401 B504




## B505 B506




## PLAN

## LEGEND
(X) DENOTES GIRDER NUMBER
[X] DENOTES WING NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

NORTH ABUTMENT

SHEET 5 OF 10

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8

8

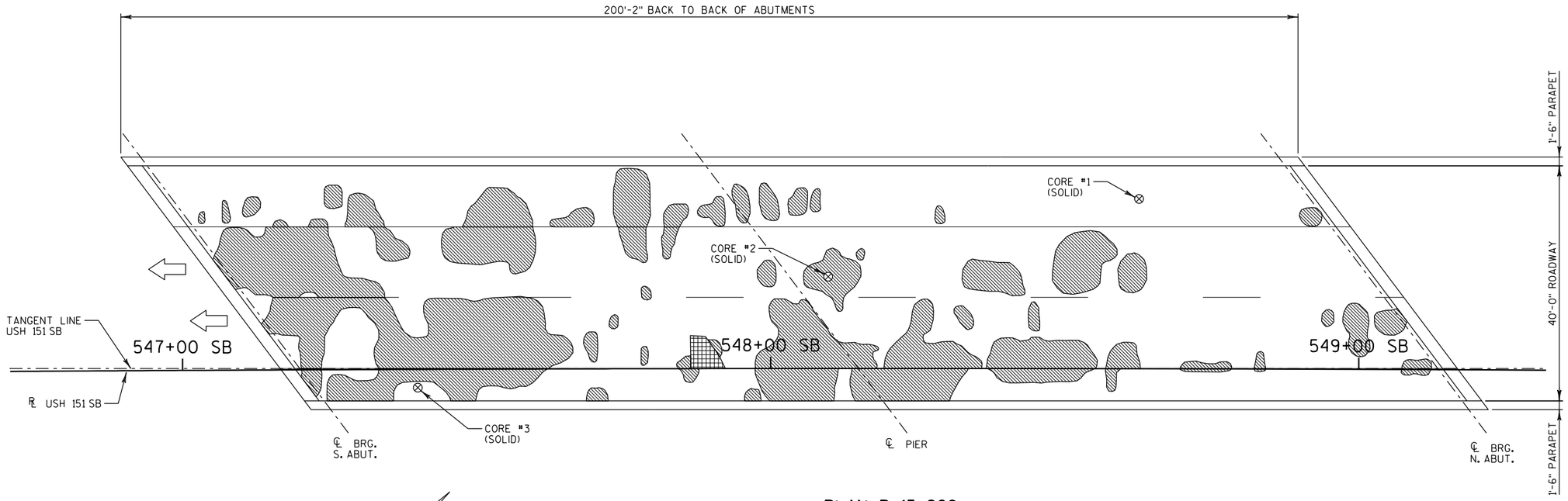
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_04&05-abutS.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




PLAN B-13-269

## NOTES:

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY. ENGINEER TO VERIFY REPAIR AREAS. DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER.

THE QUANTITIES FOR PREPARATION DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.

SCALE 0' 5' 10' 20'

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/21/12

## DECK INSPECTION RESULTS

| | FIELD OBSERVATIONS SUMMARY | | S.N. B-13-269 | | LEGEND |
|---|---|---|---|---|---|
| | ITEM | UNIT | QUANT. | % | DELAMINATION |
| 6-01 | TOTAL AREA | $ft^2$ | 7940 | | SPALL |
| | SHADE/DEBRIS | $ft^2$ | 0 | | DEBOND |
| | DELAMINATION | $ft^2$ | 2192 | 27.6 | ASPHALT PATCH |
| | SPALL | $ft^2$ | 0 | 0 | CONCRETE PATCH |
| | DEBOND (BLISTERING) | $ft^2$ | 2 | <0.1 | SHADE/DEBRIS |
| | ASPHALT PATCH | $ft^2$ | 24 | 0.3 | |
| | CONCRETE PATCH | $ft^2$ | 0 | 0 | |

6-01 TOTAL ROADWAY AREA (BETWEEN PARAPETS AND FACE OF PAVING NOTCHES)

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

INFRARED INSPECTION RESULTS

SHEET 6 OF 10

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8

8

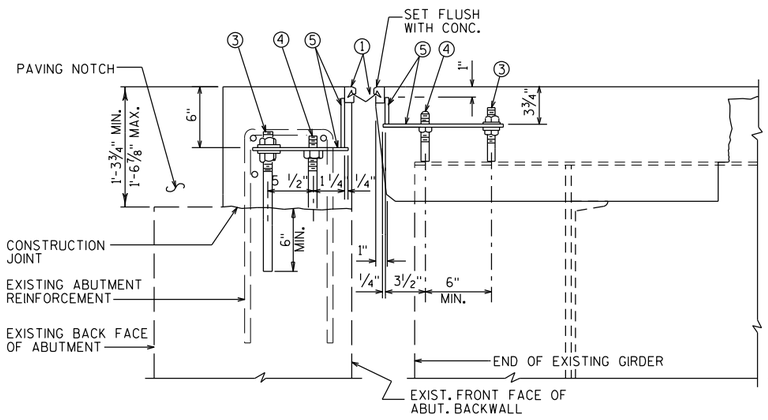
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_06-deckinspection.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

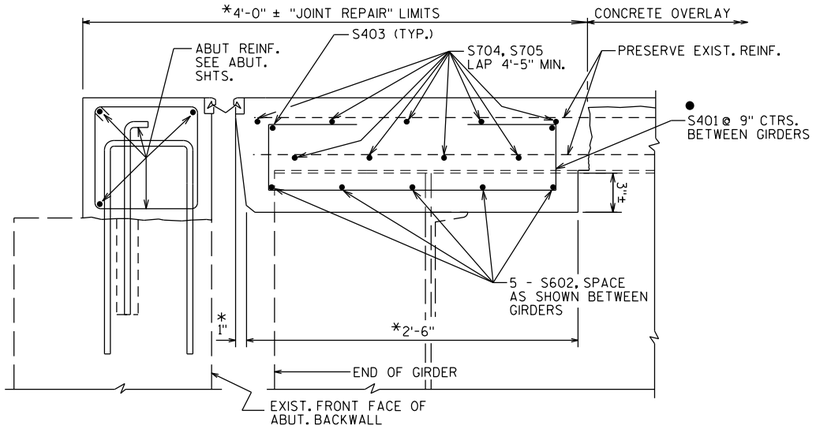
STATE PROJECT NUMBER

1111-02-78




## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE




## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

## LEGEND

① NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".

② STUDS ⅝" Φ x 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

②A ½" THICK ANCHOR PLATE WITH ⅝" Φ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.

③ ¾" Φ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THROUGH FLANGE. ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

④ ¾" Φ THREADED ROD WITH NUT. TACK WELD NUT TO #5.

⑤ FABRICATE SUPPORT FROM 3" x ½" 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 1½" Φ HOLE FOR #3 & 1" Φ HOLE FOR #4.

⑥ GALVANIZED PLATE ⅜" x 10" x 2'-2" LONG WITH HOLES FOR #7.

⑦ ¾" Φ x 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

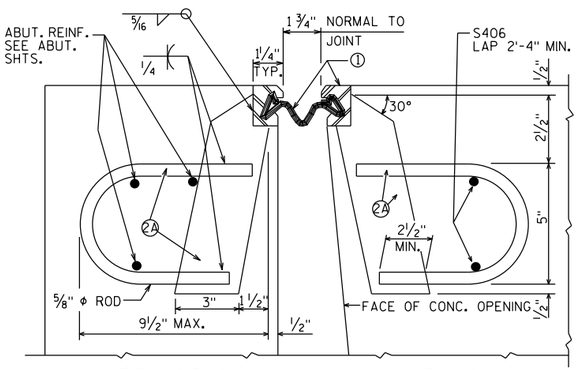
⑧ ¾" Φ x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.

⑨ ¾" Φ x 2¼" GALVANIZED THREADED COUPLING.

⑩ 1" x 5" SLOTTED COUNTERSUNK HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

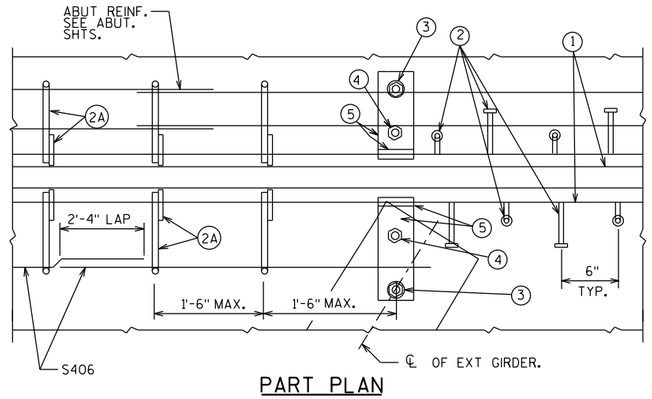
* DIMENSION IS NORMAL TO C/L OF SUBSTRUCTURE UNITS.

● BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ GIRDERS.

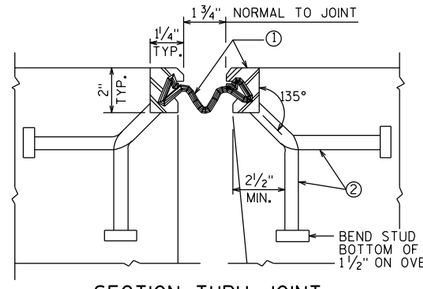



## SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.




## PART PLAN




## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS

## NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

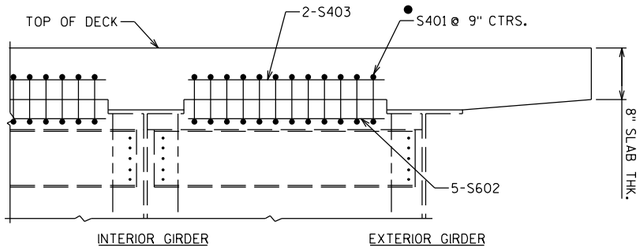
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

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

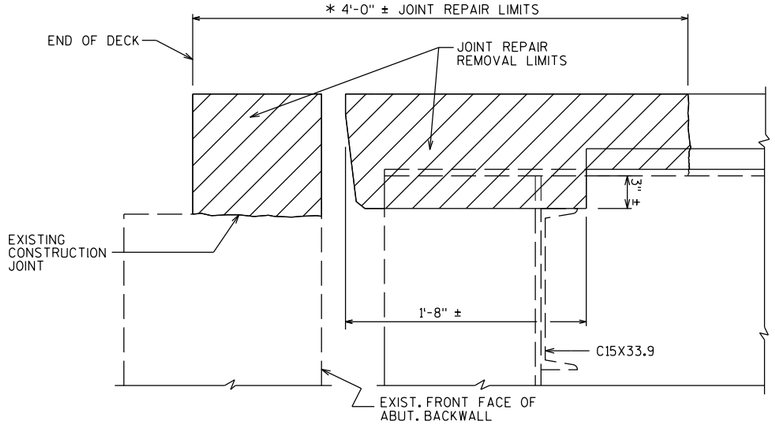
SANDBLAST PLATES, SUPPORTS, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

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

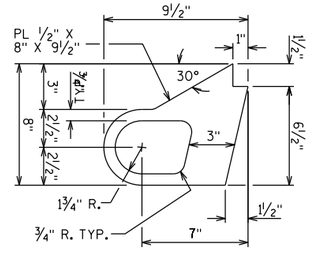
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".




## PART TRANSVERSE SECTION AT DIAPHRAGM




## JOINT REPAIR-REMOVAL




## ALTERNATE STRIP SEAL ANCHOR

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

REPLACEMENT JOINT DETAILS 1

SHEET 7 OF 10

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8

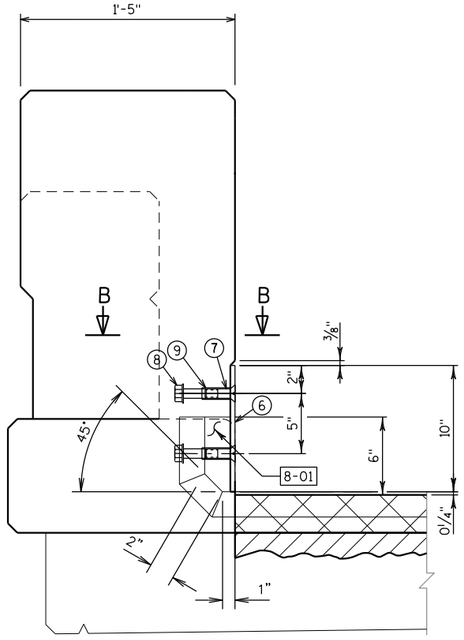
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_07&08-jointdet.dgn

PLOT DATE : 8/1/2016

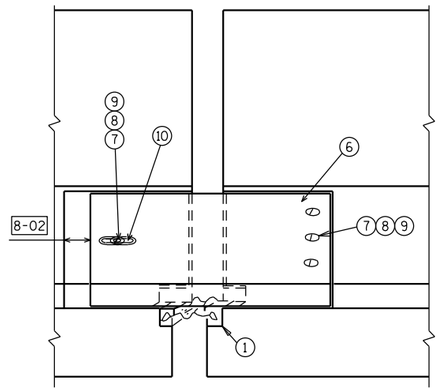
PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

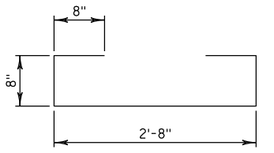
**1111-02-78**



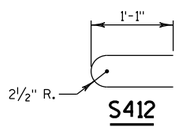

SECTION A-A
(REBAR NOT SHOWN FOR CLARITY)




VIEW OF PARAPET PLATES FROM ROADWAY




S401

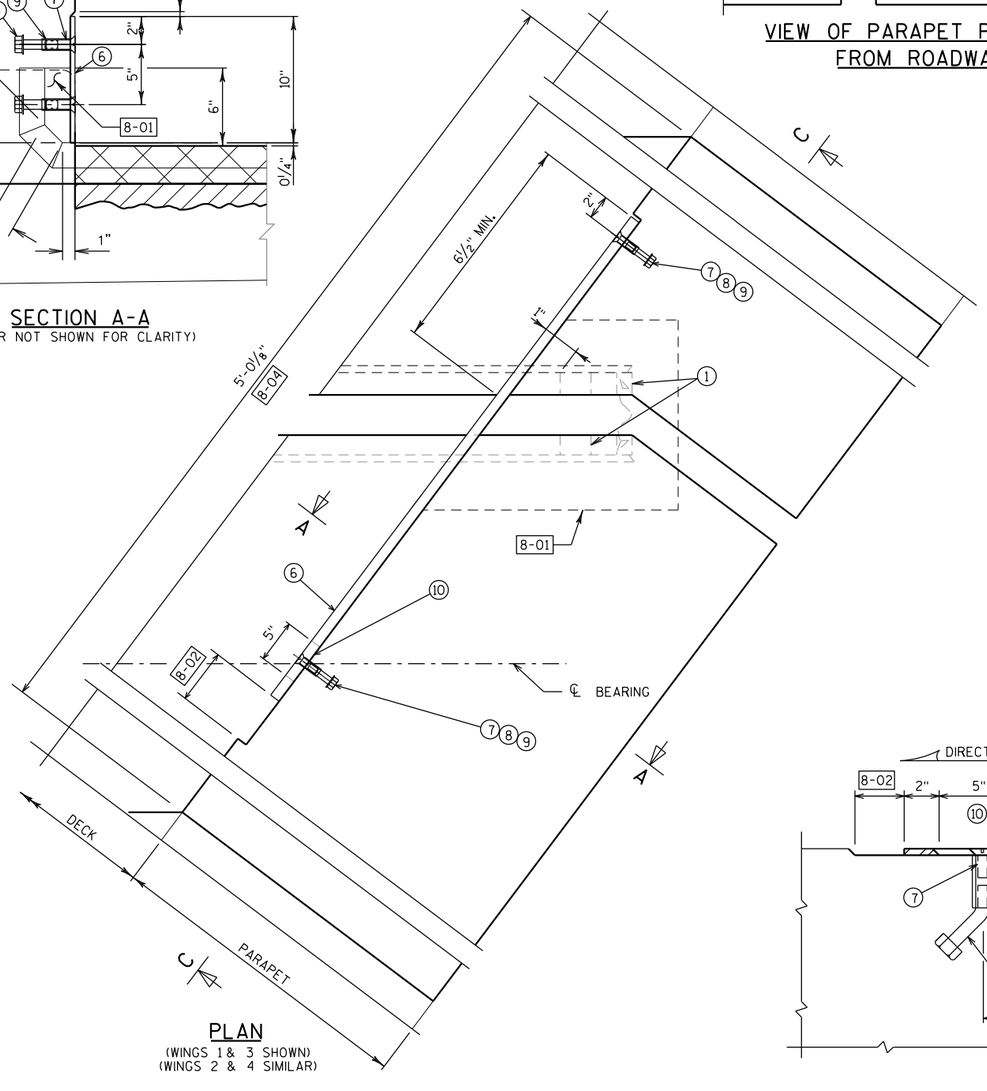



S412

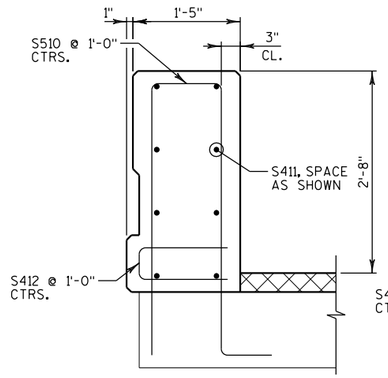
## BILL OF BARS

| MARK | COAT | # REQ'D. STAGE 2A | # REQ'D. STAGE 2B | LENGTH | BEND | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| S401 | X | 46 | 50 | 5'-0" | X | | SLAB - DIAPHRAGM |
| S602 | X | 20 | 20 | 11'-0" | | | SLAB - DIAPHRAGM |
| S403 | X | 8 | 8 | 11'-0" | | | SLAB - DIAPHRAGM |
| S704 | X | 36 | --- | 15'-3" | | | SLAB - STAGE 2A |
| S705 | X | --- | 36 | 16'-0" | | | SLAB - STAGE 2B |
| S406 | X | 16 | 16 | 7'-0" | | | SLAB - EXPANSION DEVICE - BTWN. GIRDERS |
| | | | | | | | |
| S510 | X | 10 | 10 | 7'-7" | X | | PARAPET - AT JOINT, DECK SIDE |
| S411 | X | 8 | 8 | 3'-7" | X | | PARAPET - AT JOINT, DECK SIDE, B.F. ONLY |
| S412 | X | 16 | 16 | 2'-5" | X | | PARAPET - HORIZ. |
| S513 | X | 6 | 6 | 9'-4" | X | | PARAPET - AT JOINT, ABUTMENT SIDE |
| S414 | X | 8 | 8 | 1'-4" | X | | PARAPET - AT JOINT, ABUTMENT SIDE, B.F. ONLY |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 3,930 LBS. |

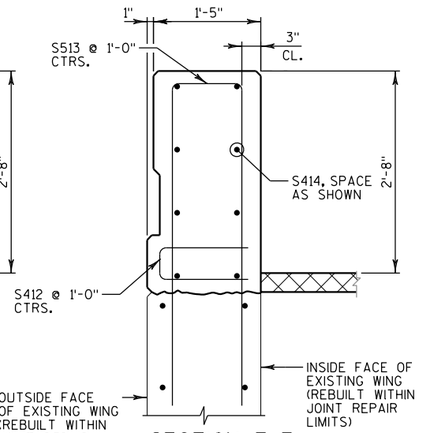
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR



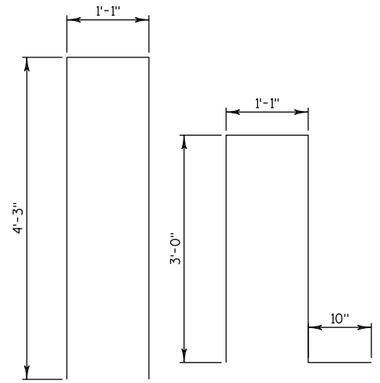

PLAN
(WINGS 1 & 3 SHOWN)
(WINGS 2 & 4 SIMILAR)




SECTION D-D

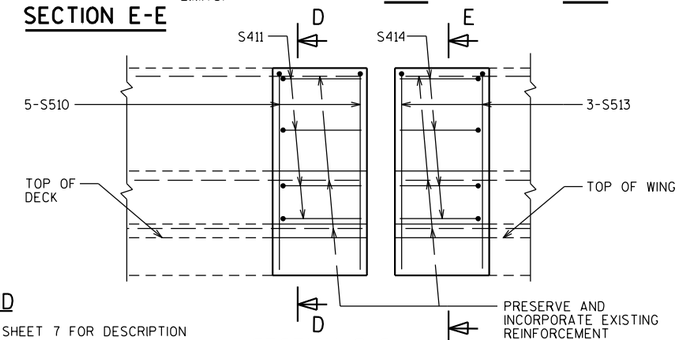



SECTION E-E

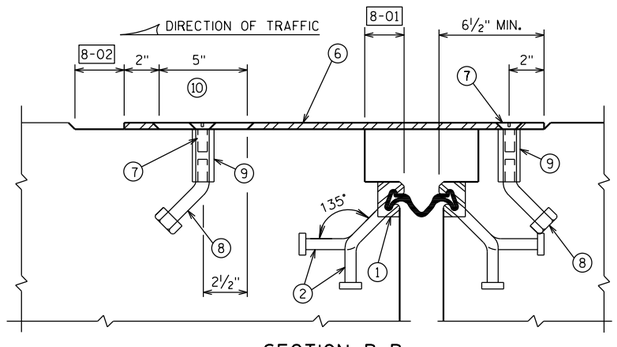



S513 S510

S411, S414
(TURN LEG AS NECESSARY TO FIT)




SECTION C-C




SECTION B-B

## LEGEND

- (X) SEE SHEET 7 FOR DESCRIPTION
- 8-01 BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.
- 8-02 JOINT OPENING DIM. ALONG SKEW PLUS ½"
- 8-03 ACCOUNTS FOR 4'-5" LAP IN BARS MIDWAY BETWEEN CONSTRUCTION JOINT. THESE BARS REQUIRE BAR COUPLERS AT STAGED CONSTRUCTION JOINT.
- 8-04 JOINT REPAIR LIMITS. REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

**REPLACEMENT JOINT DETAILS 2**

SHEET 8 OF 10

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8

8

FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_07&08-jointdet.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

1111-02-78

## NOTES & LEGEND

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

9-01 CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

9-02 BENCH MARK CAP (WHEN SUPPLIED). SEE SHEET 1 FOR LOCATION.

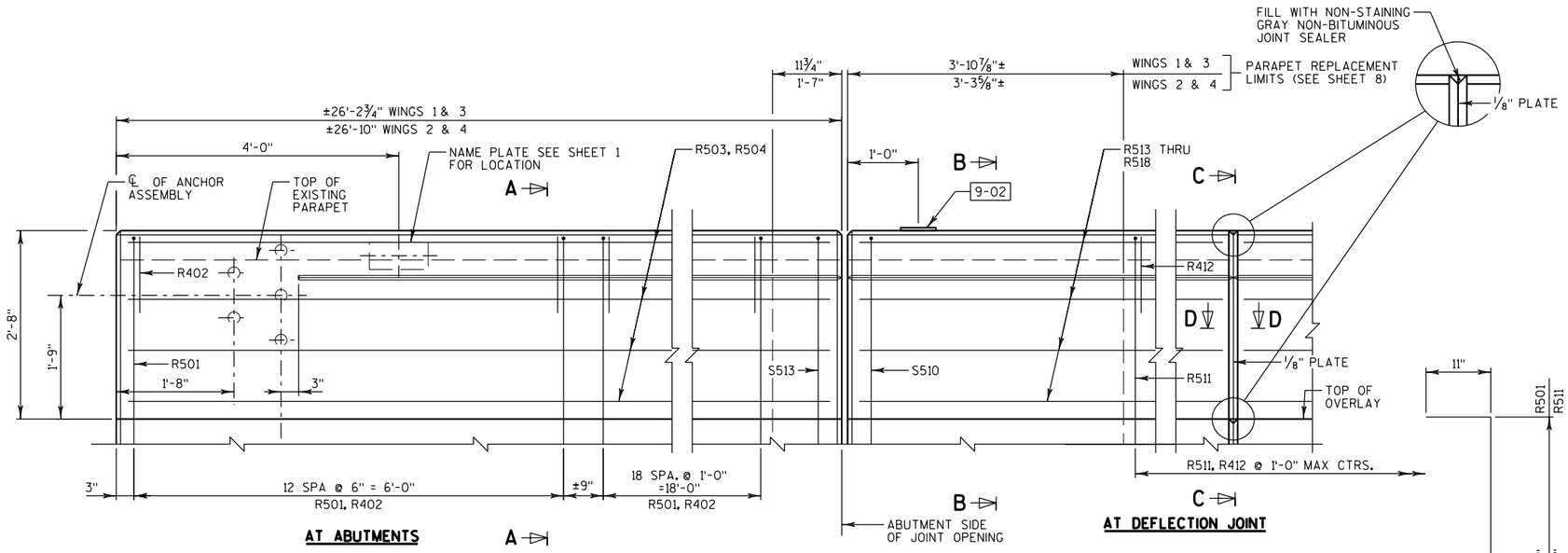
9-03 FIELD CUT R503, R504, R513, R516, R517 & R518 AT BLOCK OUT FOR EXTRUSIONS AS REQUIRED TO MAINTAIN 2" CLEAR DISTANCE.

FOR SECTION VIEWS A & B SEE SHEET 10.

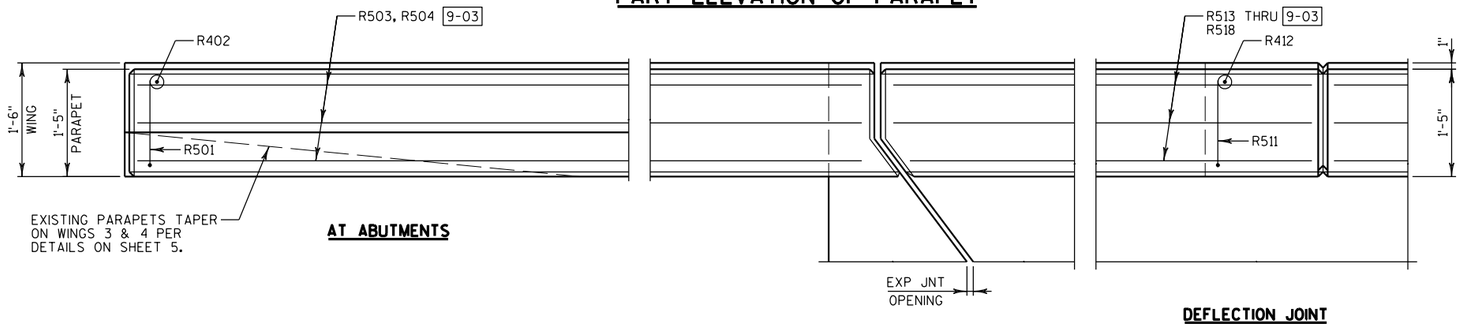
## BILL OF BARS

| BAR MARK | COAT | NO. REQ'D. STAGE 2A | NO. REQ'D. STAGE 2B | LENGTH | BENT | bar series | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 64 | 64 | 5'-0" | X | | PARAPET ON WINGS - VERT. |
| R402 | X | 64 | 64 | 0'-9" | | | PARAPET ON WINGS - VERT. |
| R503 | X | 6 | 6 | 25'-10" | | | PARAPET ON WINGS 1 & 3 - HORIZ. |
| R504 | X | 6 | 6 | 26'-6" | | | PARAPET ON WINGS 2 & 4 - HORIZ. |
| | | | | | | | |
| R511 | X | 189 | 189 | 3'-10" | X | | PARAPET ON BRIDGE - VERT. |
| R412 | X | 189 | 189 | 0'-9" | | | PARAPET ON BRIDGE - VERT. |
| R513 | X | 6 | --- | 28'-10" | | | PARAPET ON BRIDGE - HORIZ. |
| R514 | X | 12 | 12 | 33'-3" | | | PARAPET ON BRIDGE - HORIZ. |
| R515 | X | 12 | 12 | 34'-4" | | | PARAPET ON BRIDGE - HORIZ. |
| R516 | X | 6 | --- | 29'-6" | | | PARAPET ON BRIDGE - HORIZ. |
| R517 | X | --- | 6 | 28'-3" | | | PARAPET ON BRIDGE - HORIZ. |
| R518 | X | --- | 6 | 30'-1" | | | PARAPET ON BRIDGE - HORIZ. |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 5,510 LBS. |

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.




## PART ELEVATION OF PARAPET

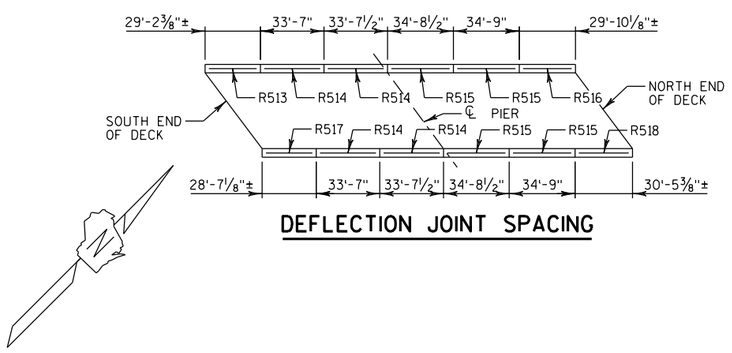






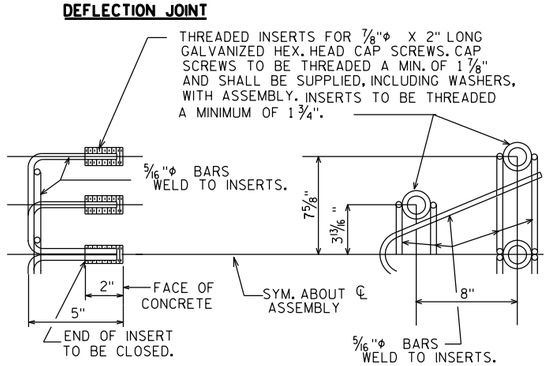
R501, R511

## PART PLAN OF PARAPET



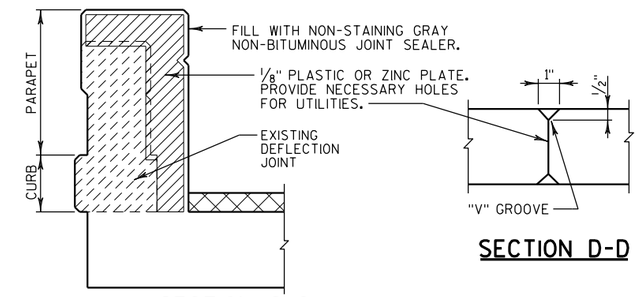

DEFLECTION JOINT SPACING

DEFLECTION JOINT




DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.




SECTION D-D

SECTION C-C

(SHOWING DEFLECTION JOINT IN PARAPET.)

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 1

SHEET 9 OF 10

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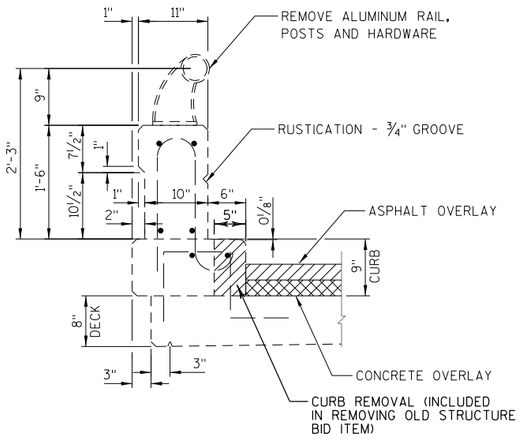
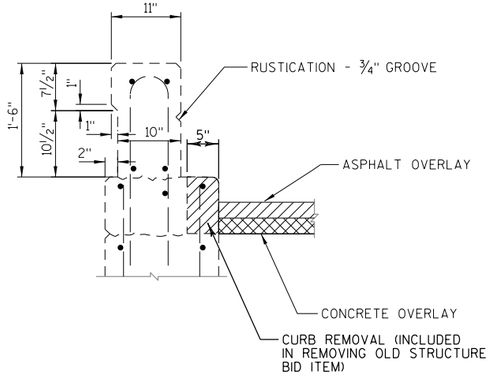
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-269±B-13-269_09-parapetdetails1.dgn

PLOT DATE : 8/1/2016

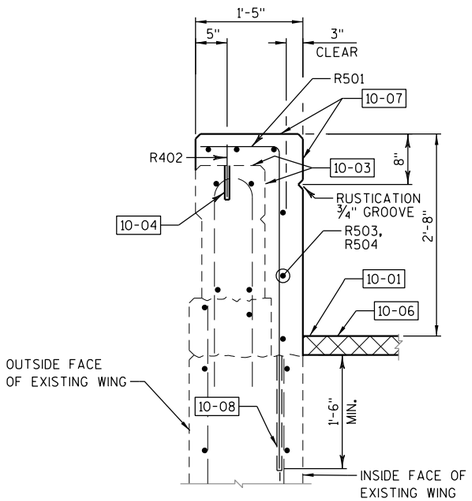
PLOT SCALE : 2.00000 '/ ft.




## EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

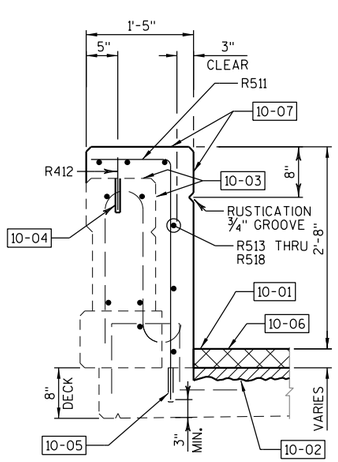



## EXISTING SECTION THRU WING



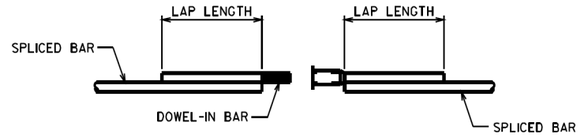

## SECTION A-A

(SEE SHEET 9 FOR LOCATION)




## SECTION B-B

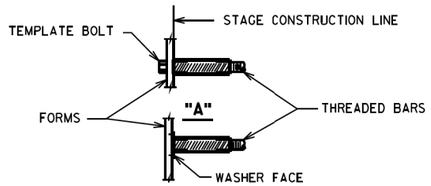
(SEE SHEET 9 FOR LOCATION)




## DOWEL BAR SPLICER

## ONE PIECE THREADED SPLICER

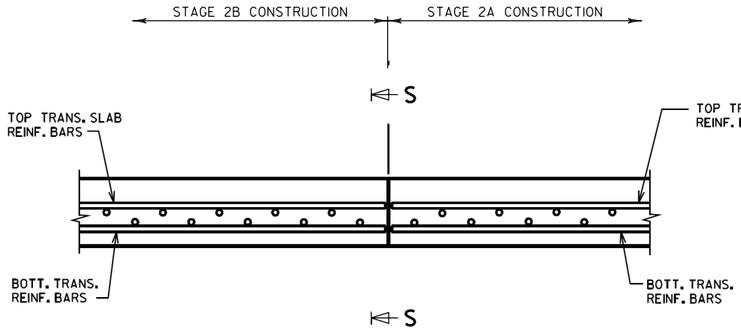
## SPLICER ALTERNATIVES



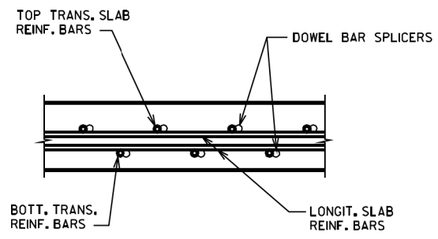

"B"

## INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## SECTION THRU SLAB




## SECTION S

## DOWEL BAR SPLICER LAP LENGTHS

| CONCRETE UNDER BAR | BAR SIZE | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|
| 12" OR LESS | f'c = 3500 | 1'-8" | 2'-8" | 3'-2" | 4'-3" | 5'-6" | 7'-0" | 8'-9" | 10'-11" |
| | f'c = 4000 | 1'-8" | 2'-8" | 3'-2" | 4'-0" | 5'-2" | 6'-6" | 8'-3" | 10'-2" |
| MORE THAN 12" | f'c = 3500 | 2'-3" | 2'-11" | 3'-6" | 4'-8" | 6'-1" | 7'-10" | 9'-10" | 12'-1" |
| | f'c = 4000 | 2'-3" | 2'-11" | 3'-6" | 4'-5" | 5'-8" | 7'-4" | 9'-2" | 11'-4" |

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

## LEGEND

10-01 CONCRETE MASONRY OVERLAY DECKS.

10-02 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

10-03 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL". DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER, UNDER THE BID ITEM "REMOVING OLD STRUCTURE". SALVAGE EXISTING REINFORCING STEEL.

10-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE. EPOXY ANCHORED.

10-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

10-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

10-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

10-08 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" MIN. INTO EXISTING CONCRETE WING. INCREASE EMBEDMENT IF REQUIRED TO MAINTAIN CLEARANCE FROM TOP OF PARAPET TO TOP OF BAR. EPOXY ANCHORED.

## NOTES:

CLEAN, STRAIGHTEN AND EXTEND EXISTING BAR STEEL REINFORCEMENT A MINIMUM OF 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE. DO NOT CUT EXISTING DOWELS OR STIRRUPS THAT EXTEND INTO EXISTING WINGS OR DECK.

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-269

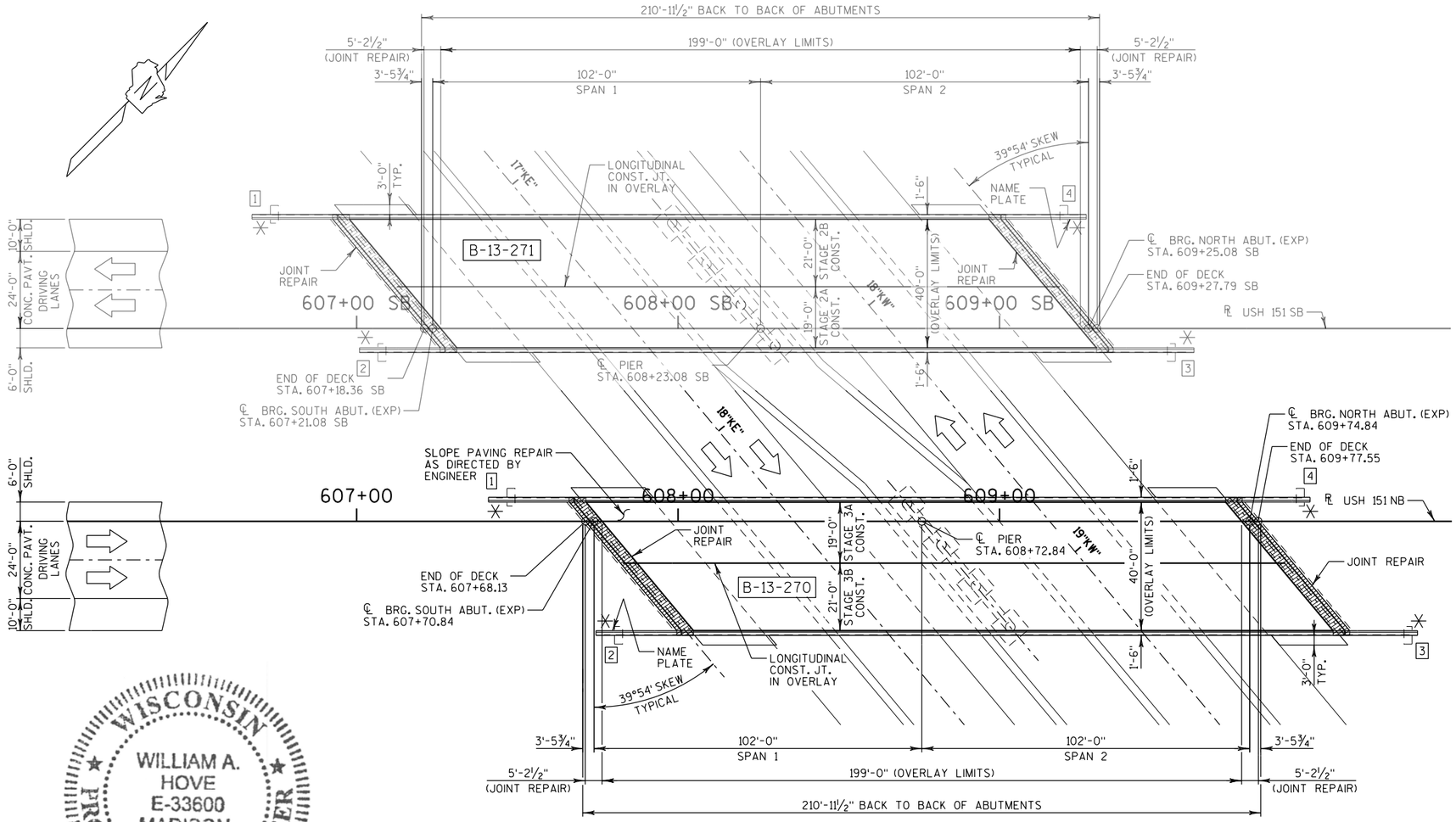
DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 2 & COUPLER DETAILS

SHEET 10 OF 10

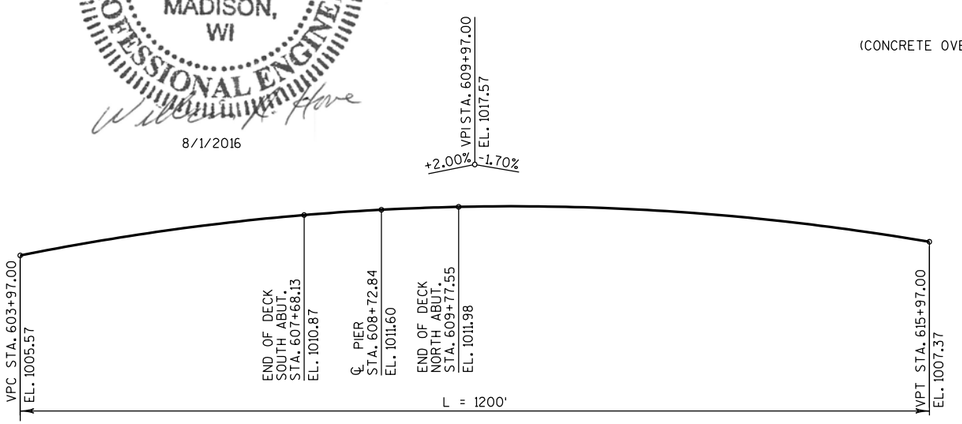
374

8




## B-13-270

(CONCRETE OVERLAY - 2-SPAN STEEL PLATE GIRDER)




## PROFILE GRADE LINE USH 151 NB

(STATIONS ALONG ℄, ELEVATIONS AT PGL, LOCATED 13'-0" RIGHT OF ℄)

WISCONSIN
WILLIAM A. HOVE
E-33600
MADISON, WI
PROFESSIONAL ENGINEER

8/1/2016

## LEGEND

- ✳ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.
- [X] DENOTES WING NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 27,000
R.D.S. = 70 MPH

STH 19
A.D.T. (2015 EXIST) = 18,500
R.D.S. = 40 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING ____ HS - 18
OPERATIONAL RATING ____ HS - 31
WISCONSIN STANDARD
PERMIT VEHICLE (Wis-SPV) ____ 200 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c ____ 4,000 PSI
CONCRETE MASONRY BRIDGES f'c ____ 4,000 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT (GRADE 60) fy ____ 60,000 PSI

STATE PROJECT NUMBER

**1111-02-78**

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CLEANING AND PAINTING BEARINGS, SLOPE PAVING REPAIR, CONCRETE SURFACE REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY. A MINIMUM OF 1-INCH OF EXISTING CONCRETE COVER SHALL BE MAINTAINED.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

CLEAN, STRAIGHTEN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-270".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1969.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS
4. SOUTH ABUTMENT
5. NORTH ABUTMENT
6. INFRARED INSPECTION RESULTS
7. REPLACEMENT JOINT DETAILS 1
8. REPLACEMENT JOINT DETAILS 2
9. PARAPET DETAILS 1
10. PARAPET DETAILS 2 & COUPLER DETAILS



SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

CONSULTANT CONTACT:
BILL HOVE (608) 826-6125


| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


CORRE
Structural Environmental Municipal Transportation
6510 GRAND TETON PLAZA, SUITE 304 MADISON, WI 53719 (608)826-3015 www.correinc.com


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-13-270

USH 151 NB OVER STH 19

| COUNTY | TOWN/CITY/~~VILLAGE~~ |
|---|---|
| DANE | SUN PRAIRIE |

DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| BH | ETP | TKB | BH |

GENERAL PLAN

SHEET 1 OF 10

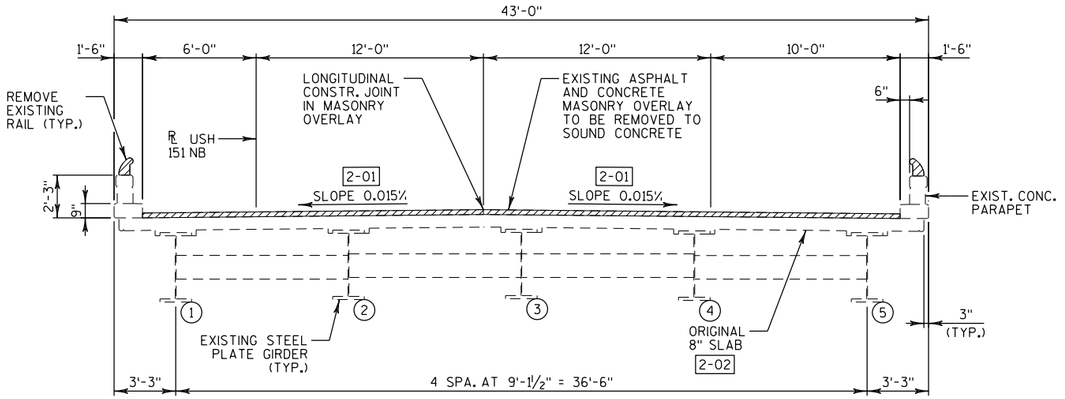


FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-270\B-13-270_01-genplan.dgn PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 ' / ft.

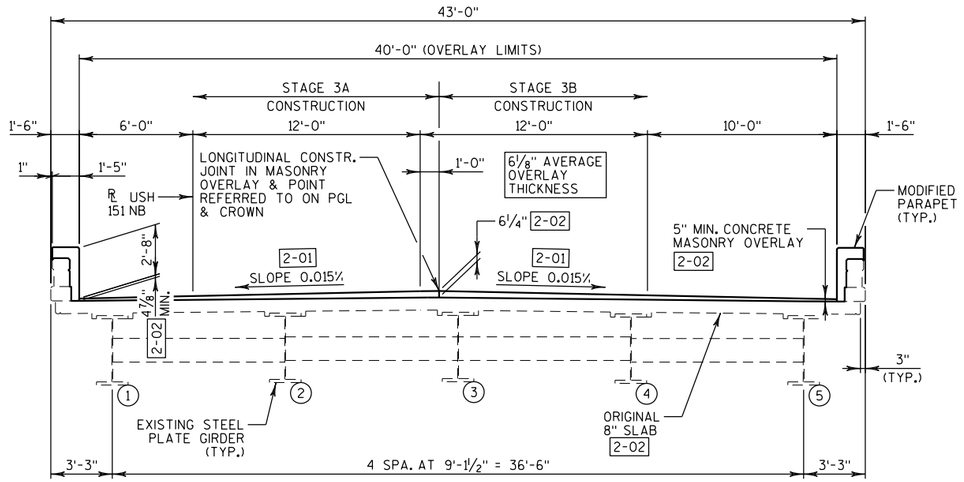
STATE PROJECT NUMBER

1111-02-78




## EXISTING CROSS SECTION THRU ROADWAY

LOOKING NORTH




## PROPOSED CROSS SECTION THRU ROADWAY

LOOKING NORTH

## TOTAL ESTIMATED QUANTITIES

ALL ITEMS ARE CATEGORY 0050

| | BID ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUTMENT | PIER #1 | NORTH ABUTMENT | SUPERSTRUCTURE | QUANTITY |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.03 | REMOVING OLD STRUCTURE STA. 608+75.84 | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0210.S.03 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL STRUCTURE B-13-270 | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0225.S.03 | DEBRIS CONTAINMENT B-13-270 | LS | ---- | ---- | ---- | ---- | 1 |
| | 204.0175 | REMOVING CONCRETE SLOPE PAVING | SY | 10 | ---- | ---- | ---- | 10 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | ---- | ---- | ---- | 40 | 40 |
| | 502.3100.03 | EXPANSION DEVICE B-13-270 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | ---- | ---- | ---- | 930 | 930 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | ---- | ---- | ---- | 240 | 240 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | ---- | ---- | ---- | 128 | 128 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 58 | ---- | 58 | 528 | 644 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 590 | ---- | 580 | 9,890 | 11,060 |
| | 505.0907 | BAR COUPLERS No. 7 | EACH | ---- | ---- | ---- | 18 | 18 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | ---- | ---- | ---- | 70 | 70 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | ---- | ---- | ---- | 30 | 30 |
| | 509.1000 | JOINT REPAIR | SY | ---- | ---- | ---- | 50 | 50 |
| 2-04 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 10 | 10 | 10 | 20 | 50 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | ---- | ---- | ---- | 3 | 3 |
| 2-03 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | ---- | ---- | ---- | 182 | 182 |
| | 509.9005.S.03 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-270 | SY | ---- | ---- | ---- | 880 | 880 |
| | 509.9010.S.03 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-270 | SY | ---- | ---- | ---- | 880 | 880 |
| | 604.0400 | SLOPLE PAVING CONCRETE | SY | 10 | ---- | ---- | ---- | 10 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | ---- | ---- | ---- | 4 | 4 |
| | SPV.0060.01 | CLEANING AND PAINTING BEARINGS | EACH | 5 | ---- | 5 | ---- | 10 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | ---- | ---- | ---- | 499 | 499 |
| | | | | | | | | |

NOTE: PARAPET ITEMS ON ABUTMENT WINGS ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES

## LEGEND

2-01 THE ORIGINAL CROSS SLOPE IS 0.01⅟. EXISTING CROSS SLOPE IS 0.015⅟ AND WILL BE MAINTAINED AT 0.015⅟.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM APPROXIMATELY 4⅞" AT THE WEST PARAPET, 6¼" AT THE CROWN, AND 5" AT THE EAST PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATION. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE OVERLAY THICKNESS IS 6⅛" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS.

2-03 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-04 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(X) DENOTES GIRDER NUMBER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

CROSS SECTIONS & QUANTITIES

SHEET 2 OF 10

376

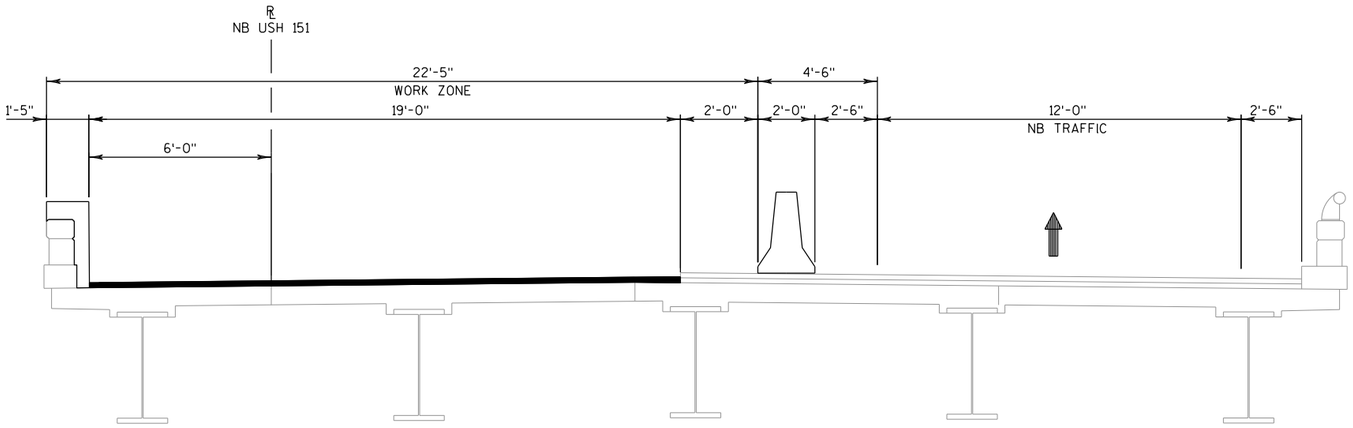
8

8

FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-270±B-13-270_02-sections.dgn

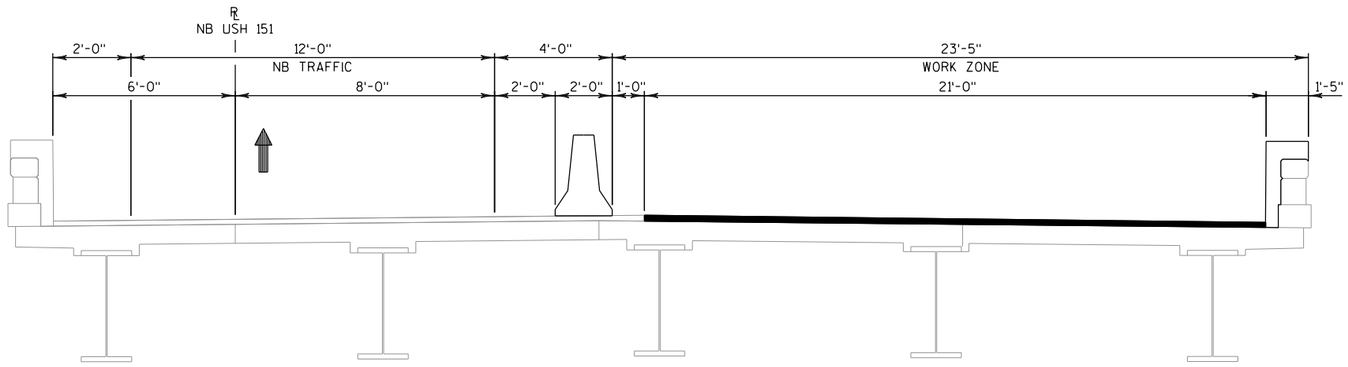
PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.




## STAGE 3A - B-13-270

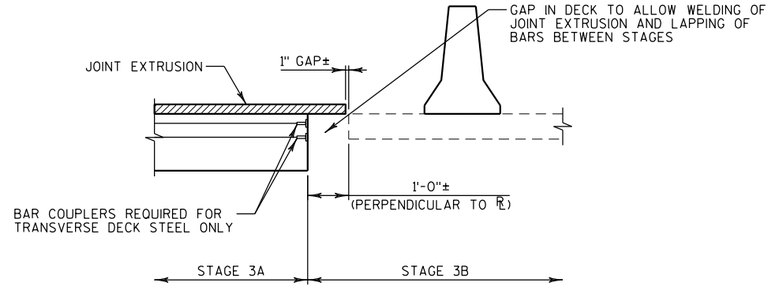
NB PERMANENT LANE CLOSURES
(USH 151 NB CONSTRUCTION LOOKING NORTH)




## STAGE 3B - B-13-270

NB PERMANENT LANE CLOSURES
(USH 151 NB CONSTRUCTION LOOKING NORTH)

**NOTE:**
SEE ROAD PLANS FOR CONSTRUCTION STAGES NOT SHOWN.




## JOINT DETAIL

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | End of Deck S. Abut. | C/L of Brg. S. Abut. | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Pier | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Brg. N. Abut. | End of Deck N. Abut. |
| LEFT FLOW LINE | 1010.54 | 1010.56 | 1010.65 | 1010.73 | 1010.81 | 1010.89 | 1010.96 | 1011.03 | 1011.10 | 1011.17 | 1011.23 | 1011.28 | 1011.34 | 1011.39 | 1011.44 | 1011.48 | 1011.52 | 1011.56 | 1011.60 | 1011.63 | 1011.66 | 1011.68 | 1011.69 |
| CROWN LINE | 1010.96 | 1010.98 | 1011.06 | 1011.14 | 1011.22 | 1011.29 | 1011.36 | 1011.42 | 1011.48 | 1011.54 | 1011.60 | 1011.65 | 1011.70 | 1011.75 | 1011.79 | 1011.83 | 1011.87 | 1011.90 | 1011.93 | 1011.96 | 1011.98 | 1012.00 | 1012.01 |
| RIGHT FLOW LINE | 1010.78 | 1010.81 | 1010.88 | 1010.95 | 1011.02 | 1011.09 | 1011.15 | 1011.21 | 1011.27 | 1011.32 | 1011.37 | 1011.42 | 1011.46 | 1011.50 | 1011.54 | 1011.58 | 1011.61 | 1011.63 | 1011.66 | 1011.68 | 1011.70 | 1011.71 | 1011.72 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.
END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

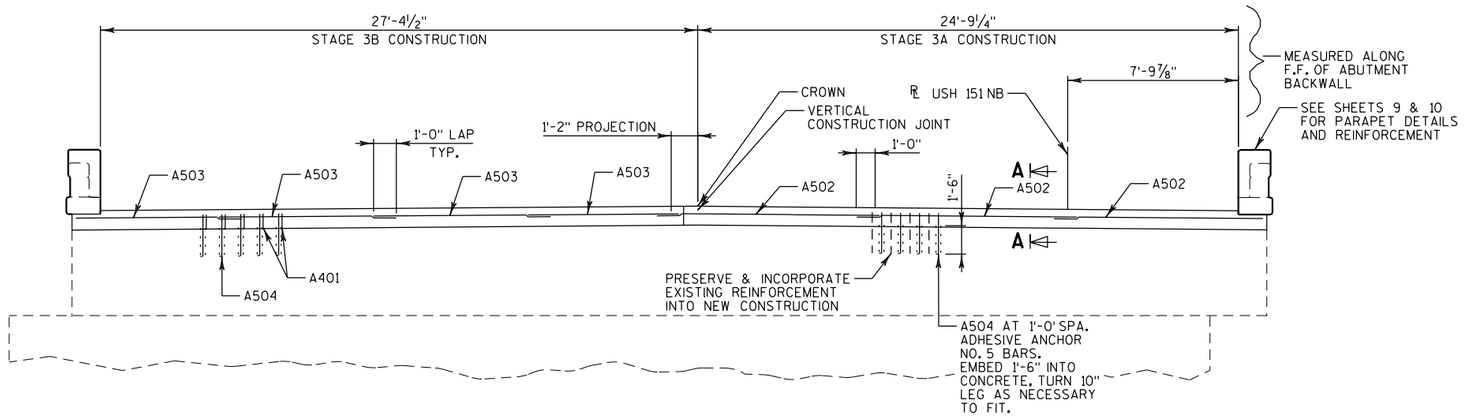
DRAWN BY TKB | PLANS CK'D. BH

MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS

SHEET 3 OF 10

STATE PROJECT NUMBER

1111-02-78



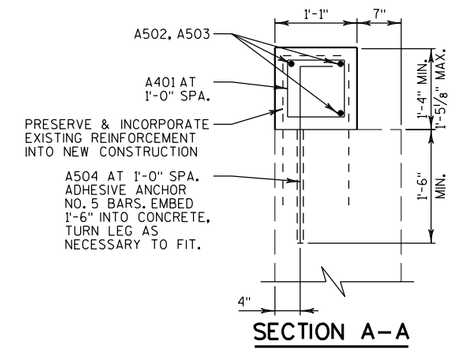

## ELEVATION

LOOKING SOUTH

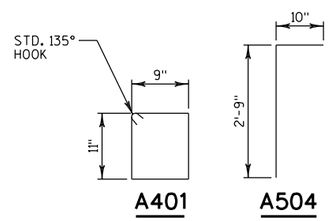
## BILL OF BARS

| BAR MARK | COAT | # REQ'D STAGE 3A | # REQ'D STAGE 3B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| A401 | X | 28 | 30 | 3'-10" | X | | PAVING BLOCK - VERT. |
| A502 | X | 9 | --- | 10'-0" | | | PAVING BLOCK - HORIZ. |
| A503 | X | --- | 12 | 8'-2" | | | PAVING BLOCK - HORIZ. |
| A504 | X | 28 | 30 | 3'-6" | X | | PAVING BLOCK - VERT. |
| A505 | X | 2 | --- | 5'-8" | X | | PAVING BLOCK - ENDS |
| A506 | X | --- | 2 | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 590 LBS. |

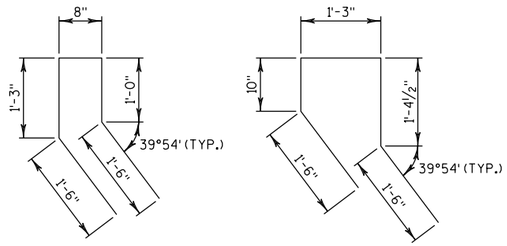
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



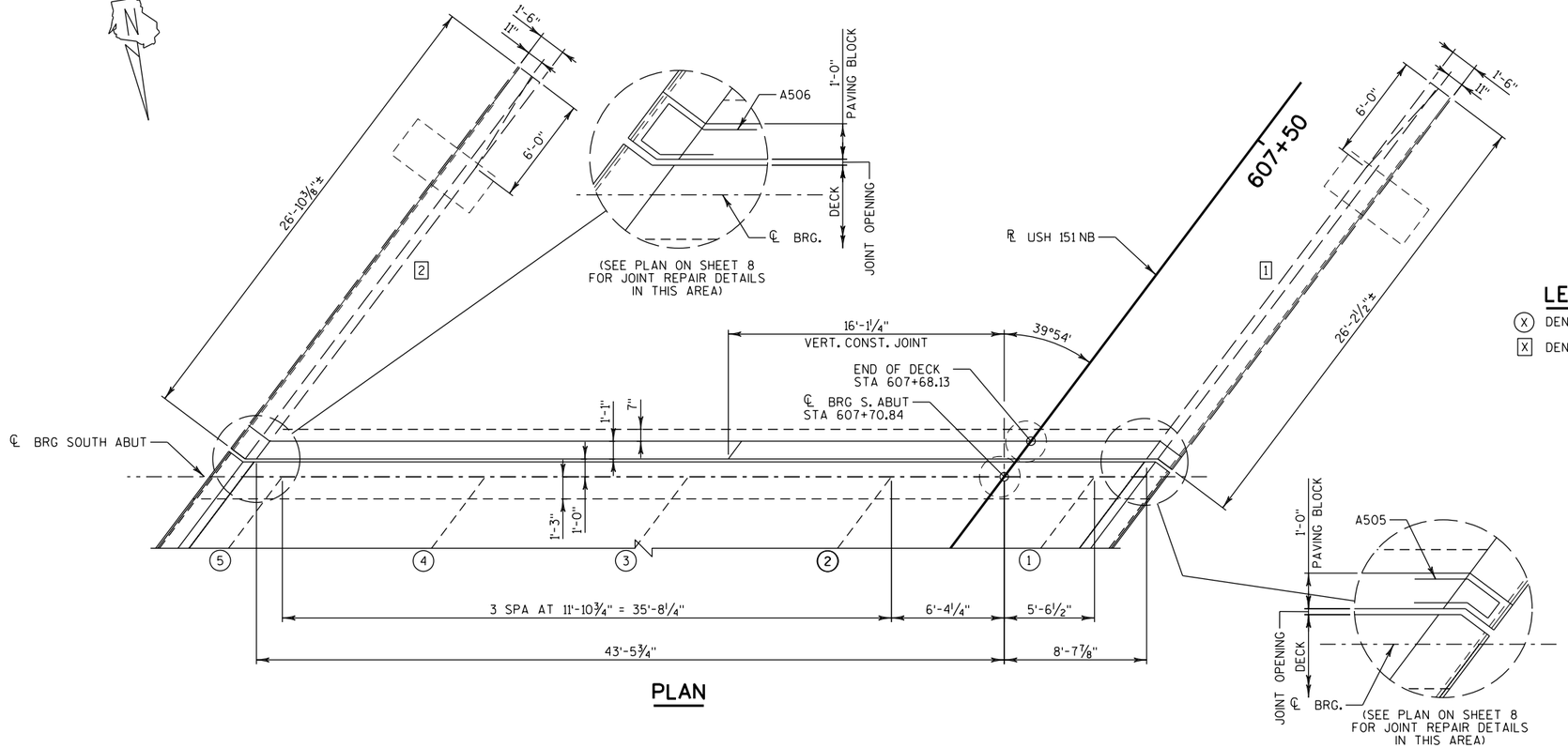

## SECTION A-A




A401 A504




A505 A506




## PLAN

## LEGEND

(X) DENOTES GIRDER NUMBER

[X] DENOTES WING NUMBER




| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

SOUTH ABUTMENT

SHEET 4 OF 10

378

8

8

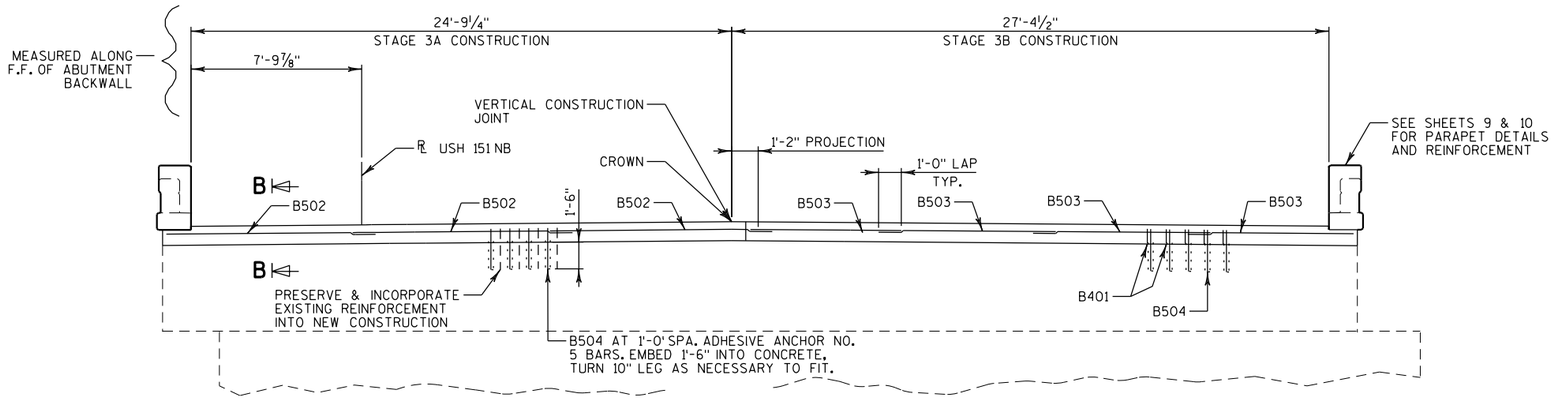
FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-270\B-13-270_04&05-abutS.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 ' / ft.

STATE PROJECT NUMBER

1111-02-78



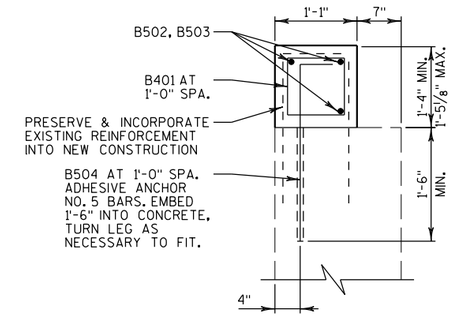

## ELEVATION

LOOKING NORTH

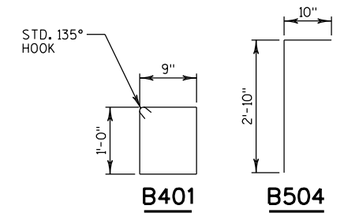
## BILL OF BARS

| BAR MARK | COAT | # REQ'D STAGE 3A | # REQ'D STAGE 3B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| B401 | X | 28 | 30 | 4'-0" | X | | PAVING BLOCK - VERT. |
| B502 | X | 9 | --- | 10'-0" | | | PAVING BLOCK - HORIZ. |
| B503 | X | --- | 12 | 8'-2" | | | PAVING BLOCK - HORIZ. |
| B504 | X | 28 | 30 | 3'-7" | X | | PAVING BLOCK - VERT. |
| B505 | X | --- | 2 | 5'-8" | X | | PAVING BLOCK - ENDS |
| B506 | X | 2 | --- | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 580 LBS. |

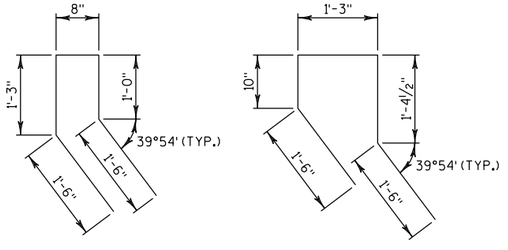
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.




## SECTION B-B




B401 B504

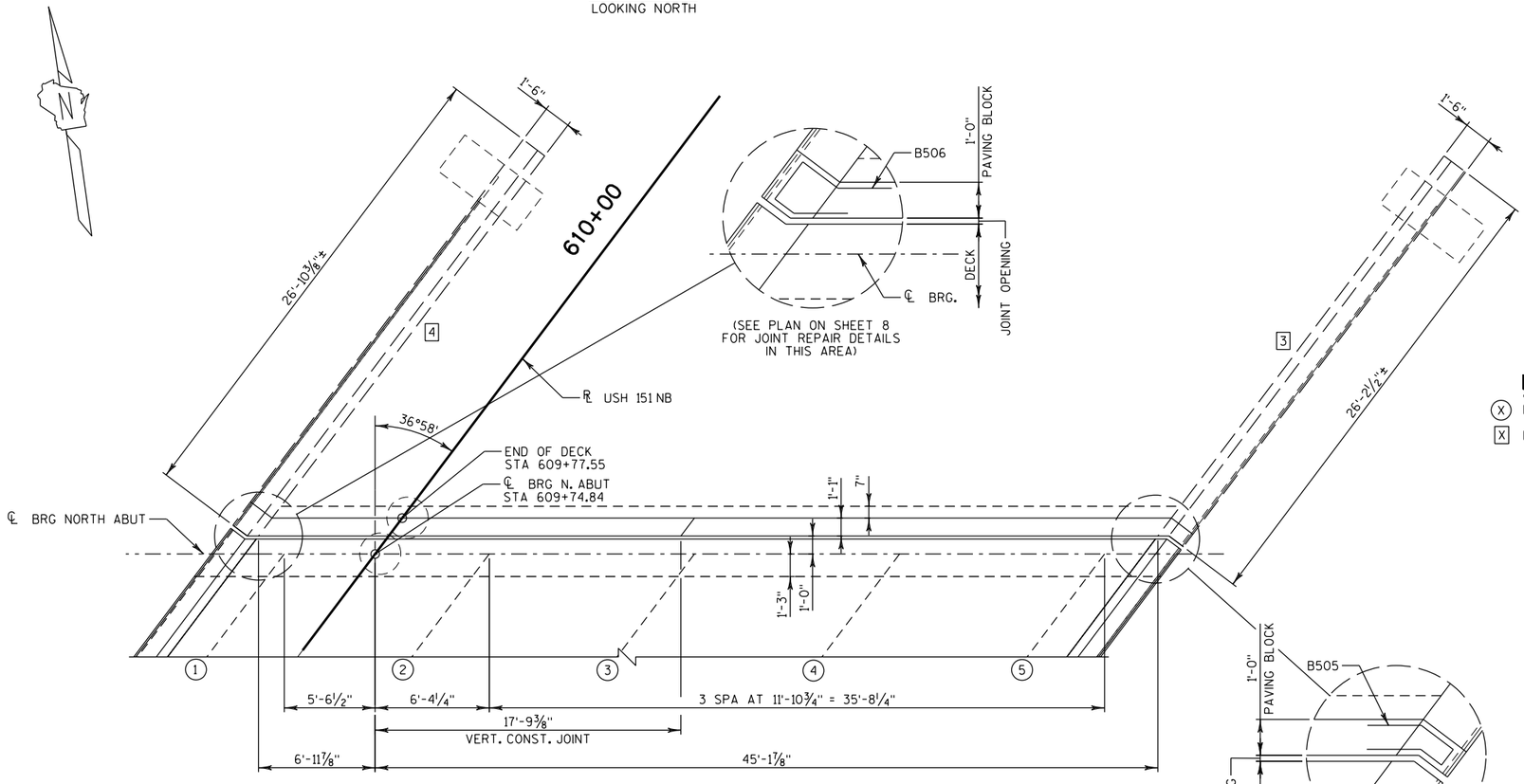



B505 B506

## LEGEND

(X) DENOTES GIRDER NUMBER

[X] DENOTES WING NUMBER




## PLAN

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

NORTH ABUTMENT

SHEET 5 OF 10

379

8

8

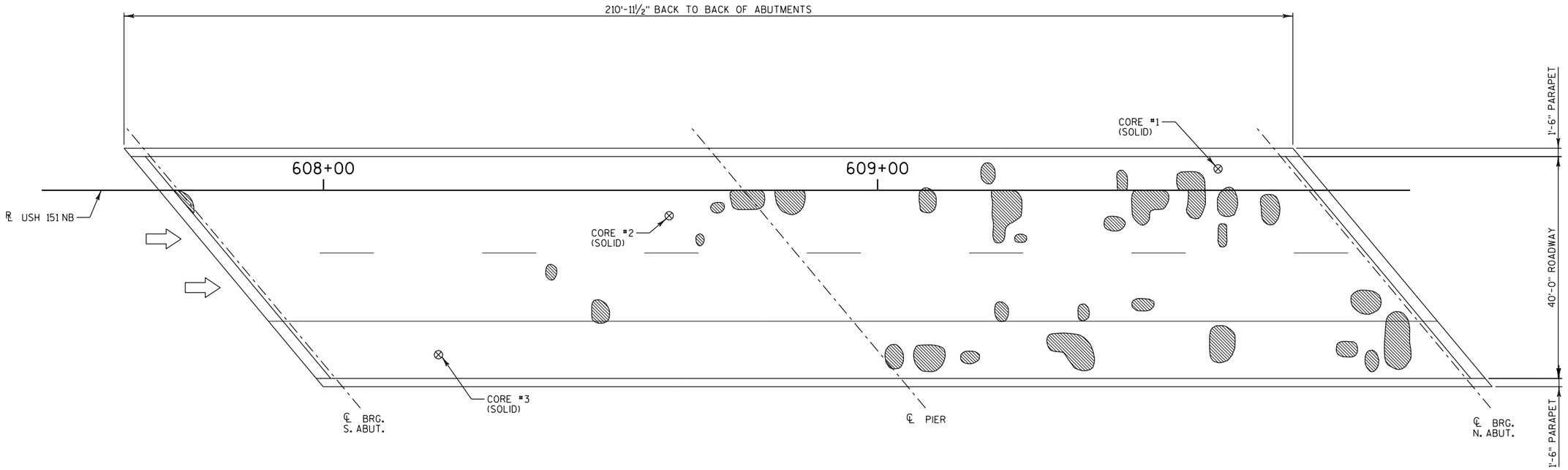
FILE NAME : C:\Users\tbetcher\Google Drive\TKB Projects\Bridge\B-13\B-13-268,269,270,271\Cad\B-13-270\B-13-270_04&05-abutS.dgn

PLOT DATE : 8/1/2016

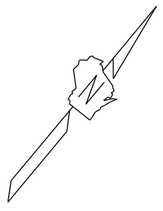
PLOT SCALE : 2.00000 ' / ft.

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




PLAN B-13-270



## NOTES:

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY. ENGINEER TO VERIFY REPAIR AREAS. DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER.

THE QUANTITIES FOR PREPARATION DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.

SCALE 0' 5' 10' 20'

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/20/12 & 8/21/12

## DECK INSPECTION RESULTS

| | FIELD OBSERVATIONS SUMMARY | | S.N. B-13-270 | | LEGEND |
|---|---|---|---|---|---|
| | ITEM | UNIT | QUANT. | % | DELAMINATION |
| 6-01 | TOTAL AREA | $ft^2$ | 8376 | | SPALL |
| | SHADE/DEBRIS | $ft^2$ | 0 | | DEBOND |
| | DELAMINATION | $ft^2$ | 438 | 5.2 | ASPHALT PATCH |
| | SPALL | $ft^2$ | 0 | 0 | CONCRETE PATCH |
| | DEBOND (BLISTERING) | $ft^2$ | 2 | 0 | SHADE/DEBRIS |
| | ASPHALT PATCH | $ft^2$ | 0 | 0 | |
| | CONCRETE PATCH | $ft^2$ | 0 | 0 | |

6-01 TOTAL ROADWAY AREA (BETWEEN PARAPETS AND FACE OF PAVING NOTCHES)

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

INFRARED INSPECTION RESULTS

SHEET 6 OF 10

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8

8

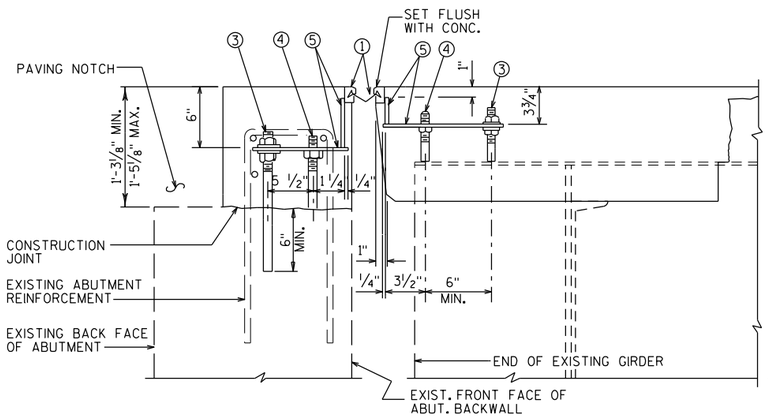
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-270±B-13-270_06-deckinspection.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

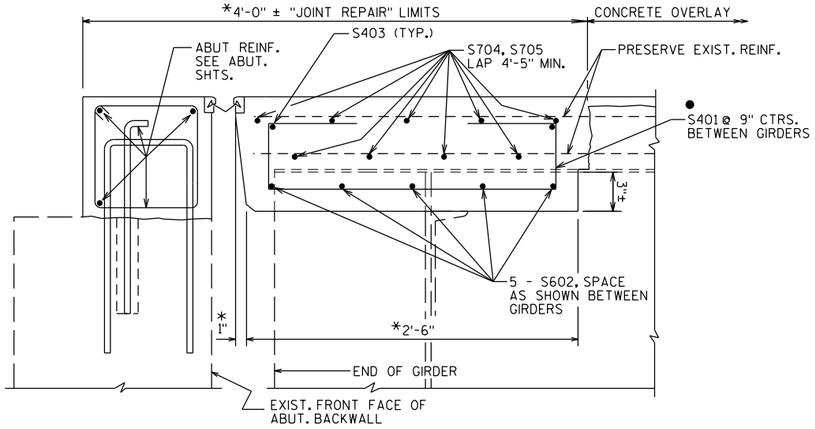
STATE PROJECT NUMBER

1111-02-78



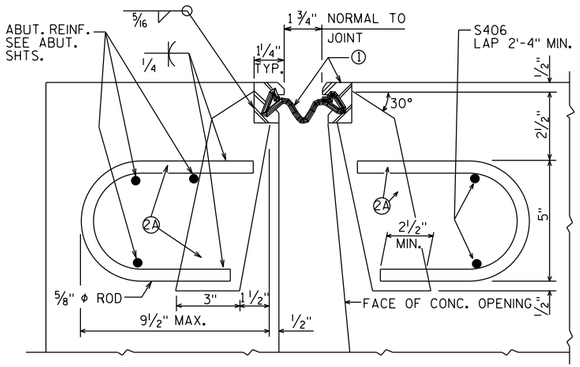

## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE



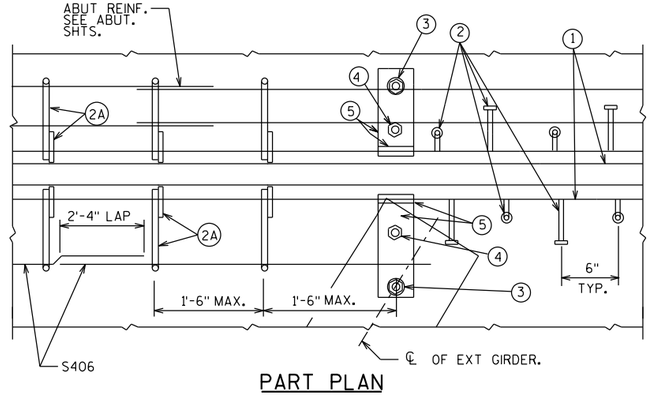

## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

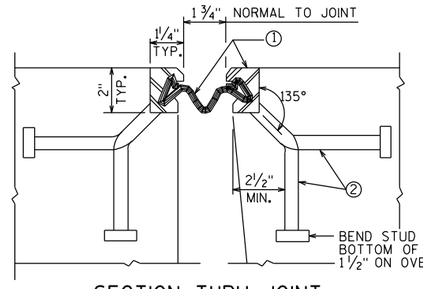



## SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.




## PART PLAN




## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS

## LEGEND

1. NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".
2. STUDS ⅝" ø x 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH ⅝" ø ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.
3. ¾" ø THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THROUGH FLANGE. ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾" ø THREADED ROD WITH NUT. TACK WELD NUT TO #5.
5. FABRICATE SUPPORT FROM 3" x ½" 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 1½" ø HOLE FOR #3 & 1" ø HOLE FOR #4.
6. GALVANIZED PLATE ⅜" x 10" x 2'-2" LONG WITH HOLES FOR #7.
7. ¾" ø x 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" ø x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" ø x 2¼" GALVANIZED THREADED COUPLING.
10. 1" x 5" SLOTTED COUNTERSUNK HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

* DIMENSION IS NORMAL TO C/L OF SUBSTRUCTURE UNITS.

● BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ GIRDERS.

## NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

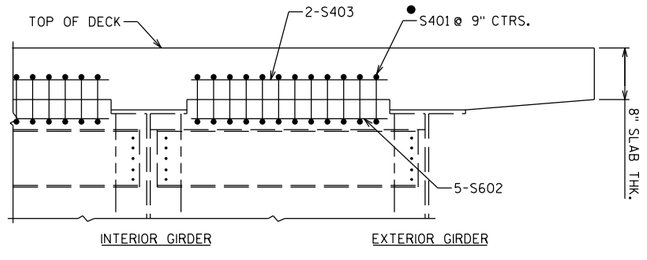
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

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

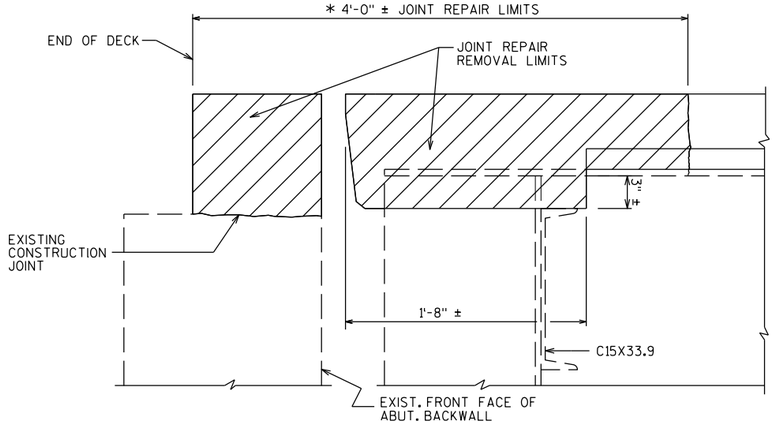
SANDBLAST PLATES, SUPPORTS, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

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

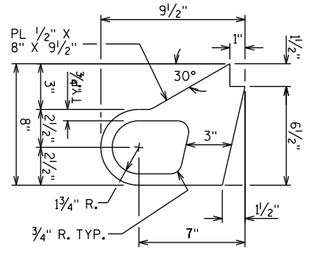
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".




## PART TRANSVERSE SECTION AT DIAPHRAGM




## JOINT REPAIR-REMOVAL




## ALTERNATE STRIP SEAL ANCHOR

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

REPLACEMENT JOINT DETAILS 1

SHEET 7 OF 10

381

8

8

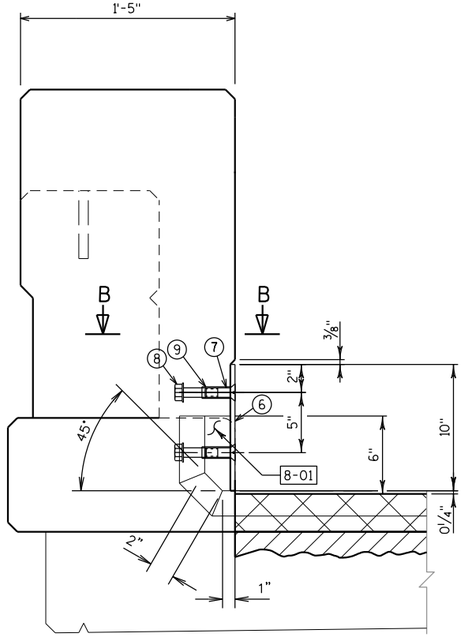
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-270±B-13-270_07&08-jointdet.dgn

PLOT DATE : 8/1/2016

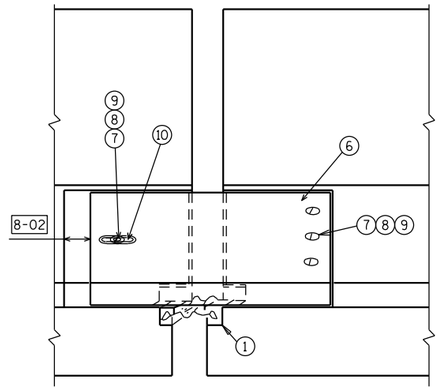
PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

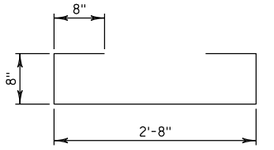
**1111-02-78**



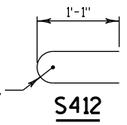

SECTION A-A
(REBAR NOT SHOWN FOR CLARITY)




VIEW OF PARAPET PLATES FROM ROADWAY




S401

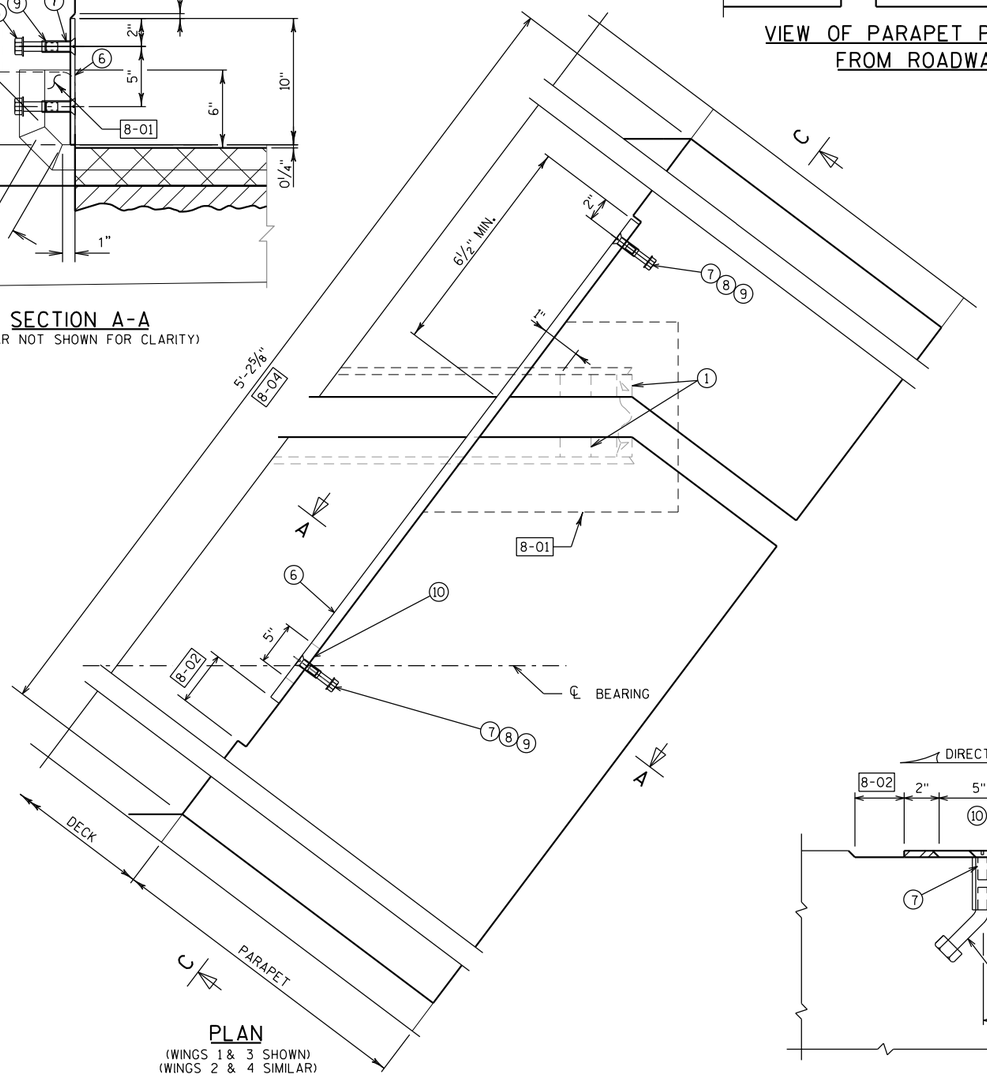



S412

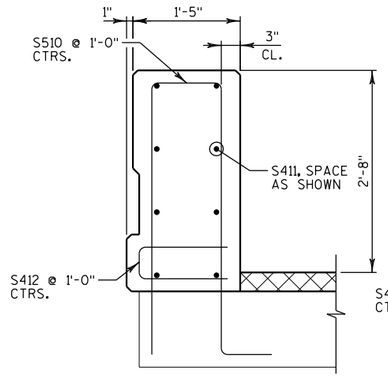
## BILL OF BARS

| MARK | COAT | # REQ'D. STAGE 3A | # REQ'D. STAGE 3B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| S401 | X | 46 | 50 | 5'-2" | X | | SLAB - DIAPHRAGM |
| S602 | X | 20 | 20 | 11'-4" | | | SLAB - DIAPHRAGM |
| S403 | X | 8 | 8 | 11'-4" | | | SLAB - DIAPHRAGM |
| S704 | X | 36 | --- | 15'-6" | | | SLAB - STAGE 3A |
| S705 | X | --- | 36 | 16'-9" | | | SLAB - STAGE 3B |
| S406 | X | 16 | 16 | 7'-3" | | | SLAB - EXPANSION DEVICE - BTWN. GIRDERS |
| | | | | | | | |
| S510 | X | 10 | 10 | 7'-11" | X | | PARAPET - AT JOINT, DECK SIDE |
| S411 | X | 8 | 8 | 3'-7" | X | | PARAPET - AT JOINT, DECK SIDE, B.F. ONLY |
| S412 | X | 16 | 16 | 2'-5" | X | | PARAPET - HORIZ. |
| S513 | X | 6 | 6 | 9'-8" | X | | PARAPET - AT JOINT, ABUTMENT SIDE |
| S414 | X | 8 | 8 | 1'-4" | X | | PARAPET - AT JOINT, ABUTMENT SIDE, B.F. ONLY |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 4,060 LBS. |

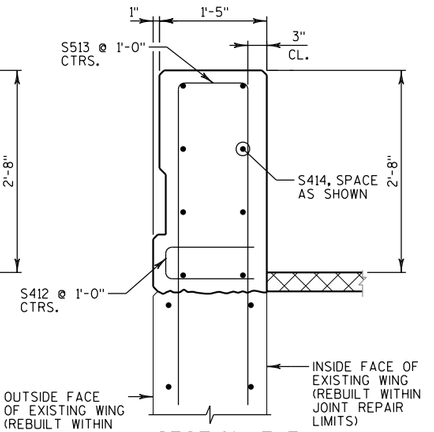
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR



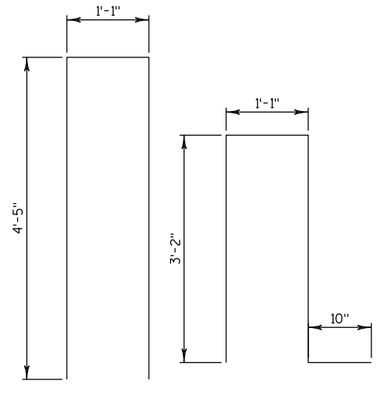

PLAN
(WINGS 1 & 3 SHOWN)
(WINGS 2 & 4 SIMILAR)




SECTION D-D

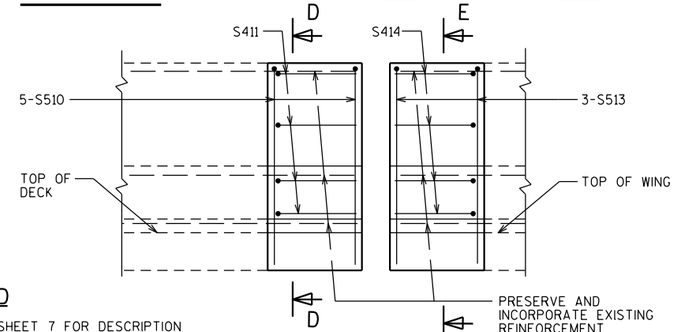



SECTION E-E

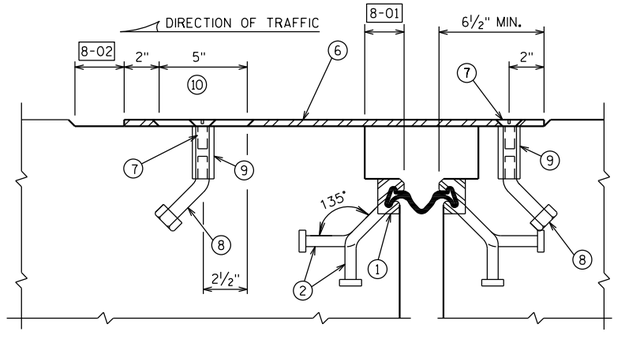



S513 S510

S411, S414
(TURN LEG AS NECESSARY TO FIT)




SECTION C-C




SECTION B-B

## LEGEND

- (X) SEE SHEET 7 FOR DESCRIPTION
- 8-01 BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.
- 8-02 JOINT OPENING DIM. ALONG SKEW PLUS ½"
- 8-03 ACCOUNTS FOR 4'-5" LAP IN BARS MIDWAY BETWEEN CONSTRUCTION JOINT. THESE BARS REQUIRE BAR COUPLERS AT STAGED CONSTRUCTION JOINT.
- 8-04 JOINT REPAIR LIMITS. REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

**REPLACEMENT JOINT DETAILS 2**

SHEET 8 OF 10

382

8

8

FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-270±B-13-270_07&08-Jointdet.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

1111-02-78

## NOTES & LEGEND

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

9-01 CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

9-02 BENCH MARK CAP (WHEN SUPPLIED). SEE SHEET 1 FOR LOCATION.

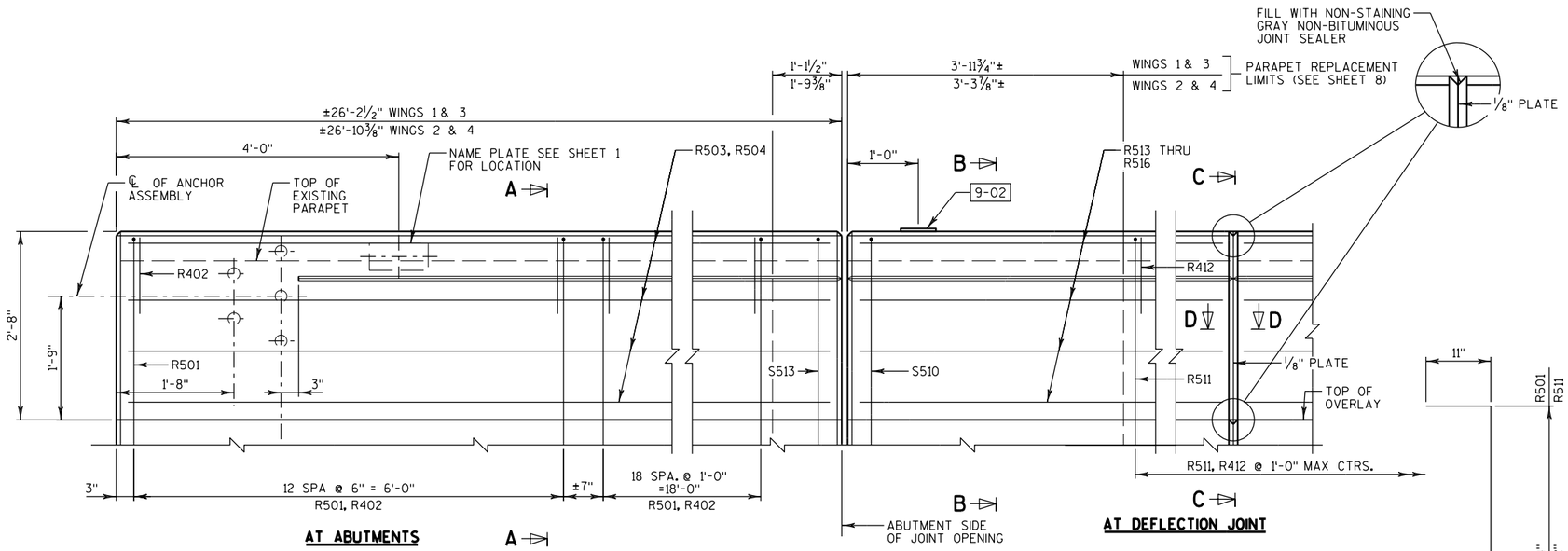
9-03 FIELD CUT R503, R504, R513 & R516 AT BLOCK OUT FOR EXTRUSIONS AS REQUIRED TO MAINTAIN 2" CLEAR DISTANCE.

FOR SECTION VIEWS A & B SEE SHEET 10.

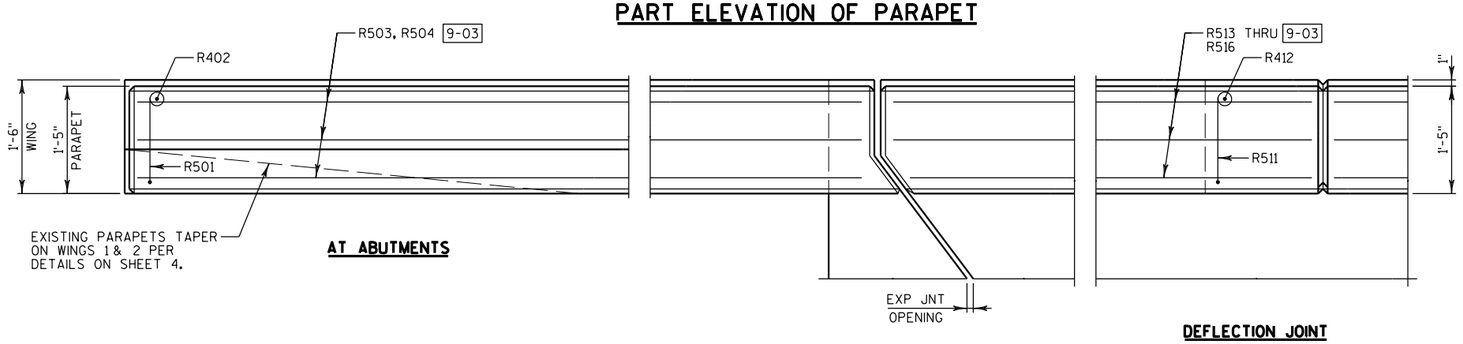
## BILL OF BARS

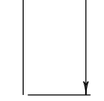
| BAR MARK | COAT | NO. REQ'D. STAGE 3A | NO. REQ'D. STAGE 3B | LENGTH | BENT | bar series | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 64 | 64 | 5'-2" | X | | PARAPET ON WINGS - VERT. |
| R402 | X | 64 | 64 | 0'-9" | | | PARAPET ON WINGS - VERT. |
| R503 | X | 6 | 6 | 25'-10" | | | PARAPET ON WINGS 1 & 3 - HORIZ. |
| R504 | X | 6 | 6 | 26'-6" | | | PARAPET ON WINGS 2 & 4 - HORIZ. |
| | | | | | | | |
| R511 | X | 200 | 200 | 4'-0" | X | | PARAPET ON BRIDGE - VERT. |
| R412 | X | 200 | 200 | 0'-9" | | | PARAPET ON BRIDGE - VERT. |
| R513 | X | 6 | 6 | 27'-9" | | | PARAPET ON BRIDGE - HORIZ. |
| R514 | X | 12 | 12 | 32'-0" | | | PARAPET ON BRIDGE - HORIZ. |
| R515 | X | 24 | 24 | 21'-2" | | | PARAPET ON BRIDGE - HORIZ. |
| R516 | X | 6 | 6 | 27'-1" | | | PARAPET ON BRIDGE - HORIZ. |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 5,830 LBS. |

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



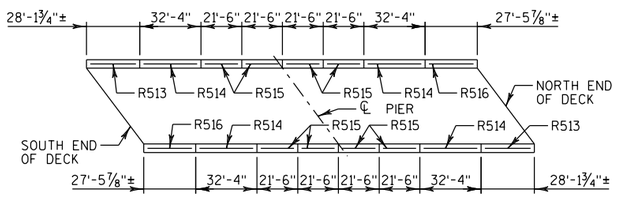

## PART ELEVATION OF PARAPET



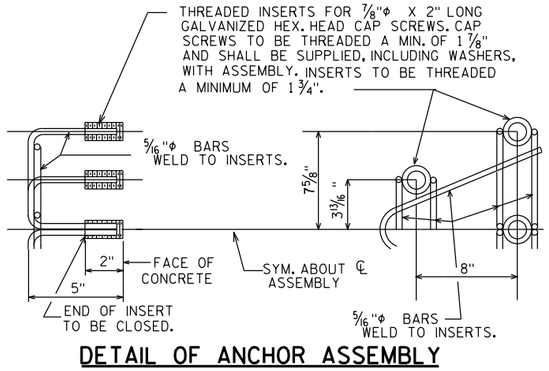

R501, R511

## PART PLAN OF PARAPET



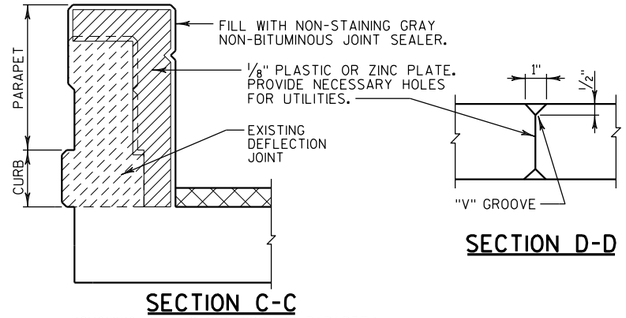

DEFLECTION JOINT SPACING

**DEFLECTION JOINT**




DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.




SECTION D-D

SECTION C-C
(SHOWING DEFLECTION JOINT IN PARAPET.)

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 1

SHEET 9 OF 10

383

8

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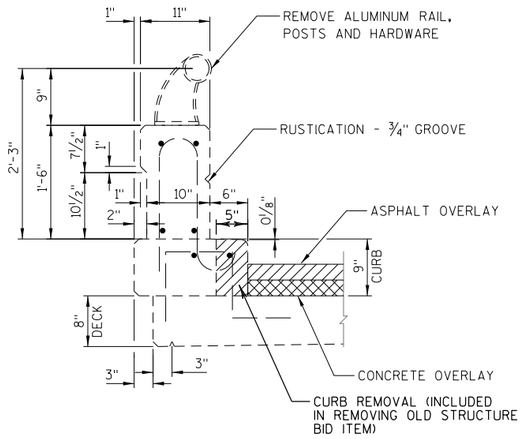
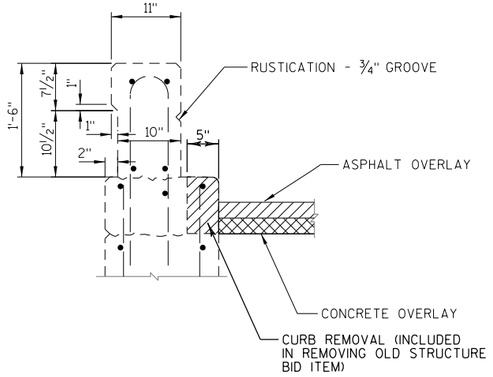
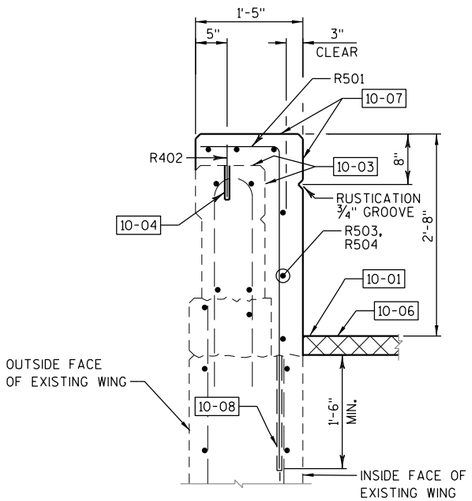



## EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

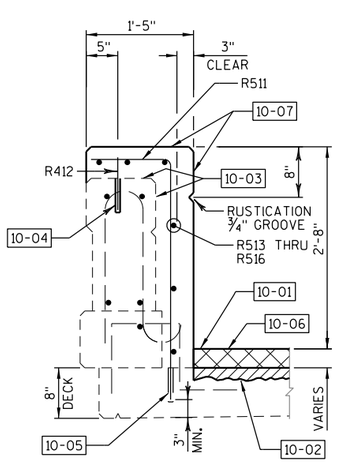



## EXISTING SECTION THRU WING



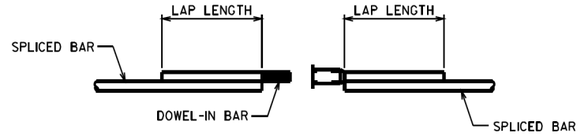

## SECTION A-A

(SEE SHEET 9 FOR LOCATION)




## SECTION B-B

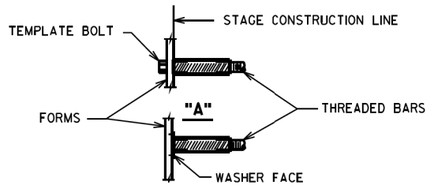
(SEE SHEET 9 FOR LOCATION)




## DOWEL BAR SPLICER

## ONE PIECE THREADED SPLICER

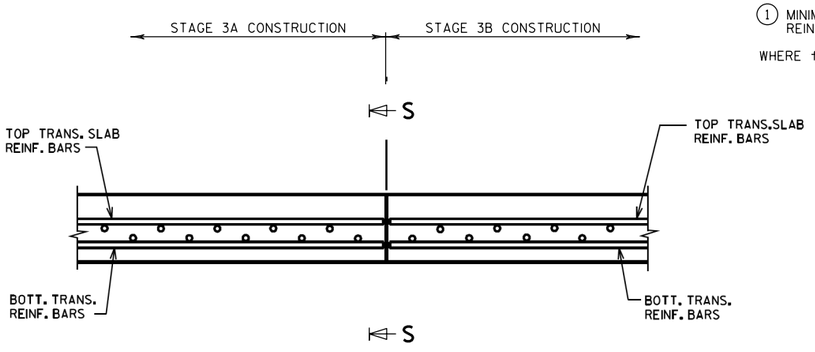
## SPLICER ALTERNATIVES



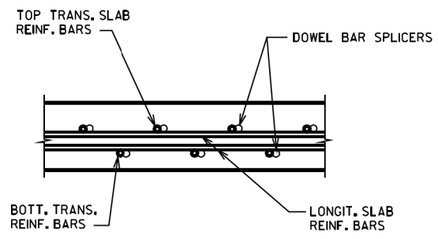

"B"

## INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## SECTION THRU SLAB




## SECTION S

## DOWEL BAR SPLICER LAP LENGTHS

| CONCRETE UNDER BAR | BAR SIZE | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|
| 12" OR LESS | f'c = 3500 | 1'-8" | 2'-8" | 3'-2" | 4'-3" | 5'-6" | 7'-0" | 8'-9" | 10'-11" |
| | f'c = 4000 | 1'-8" | 2'-8" | 3'-2" | 4'-0" | 5'-2" | 6'-6" | 8'-3" | 10'-2" |
| MORE THAN 12" | f'c = 3500 | 2'-3" | 2'-11" | 3'-6" | 4'-8" | 6'-1" | 7'-10" | 9'-10" | 12'-1" |
| | f'c = 4000 | 2'-3" | 2'-11" | 3'-6" | 4'-5" | 5'-8" | 7'-4" | 9'-2" | 11'-4" |

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

## LEGEND

10-01 CONCRETE MASONRY OVERLAY DECKS.

10-02 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

10-03 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL". DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER, UNDER THE BID ITEM "REMOVING OLD STRUCTURE". SALVAGE EXISTING REINFORCING STEEL.

10-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE. EPOXY ANCHORED.

10-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

10-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

10-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

10-08 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" MIN. INTO EXISTING CONCRETE WING. INCREASE EMBEDMENT IF REQUIRED TO MAINTAIN CLEARANCE FROM TOP OF PARAPET TO TOP OF BAR. EPOXY ANCHORED.

## NOTES:

CLEAN, STRAIGHTEN AND EXTEND EXISTING BAR STEEL REINFORCEMENT A MINIMUM OF 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE. DO NOT CUT EXISTING DOWELS OR STIRRUPS THAT EXTEND INTO EXISTING WINGS OR DECK.

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-270

DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 2 & COUPLER DETAILS

SHEET 10 OF 10

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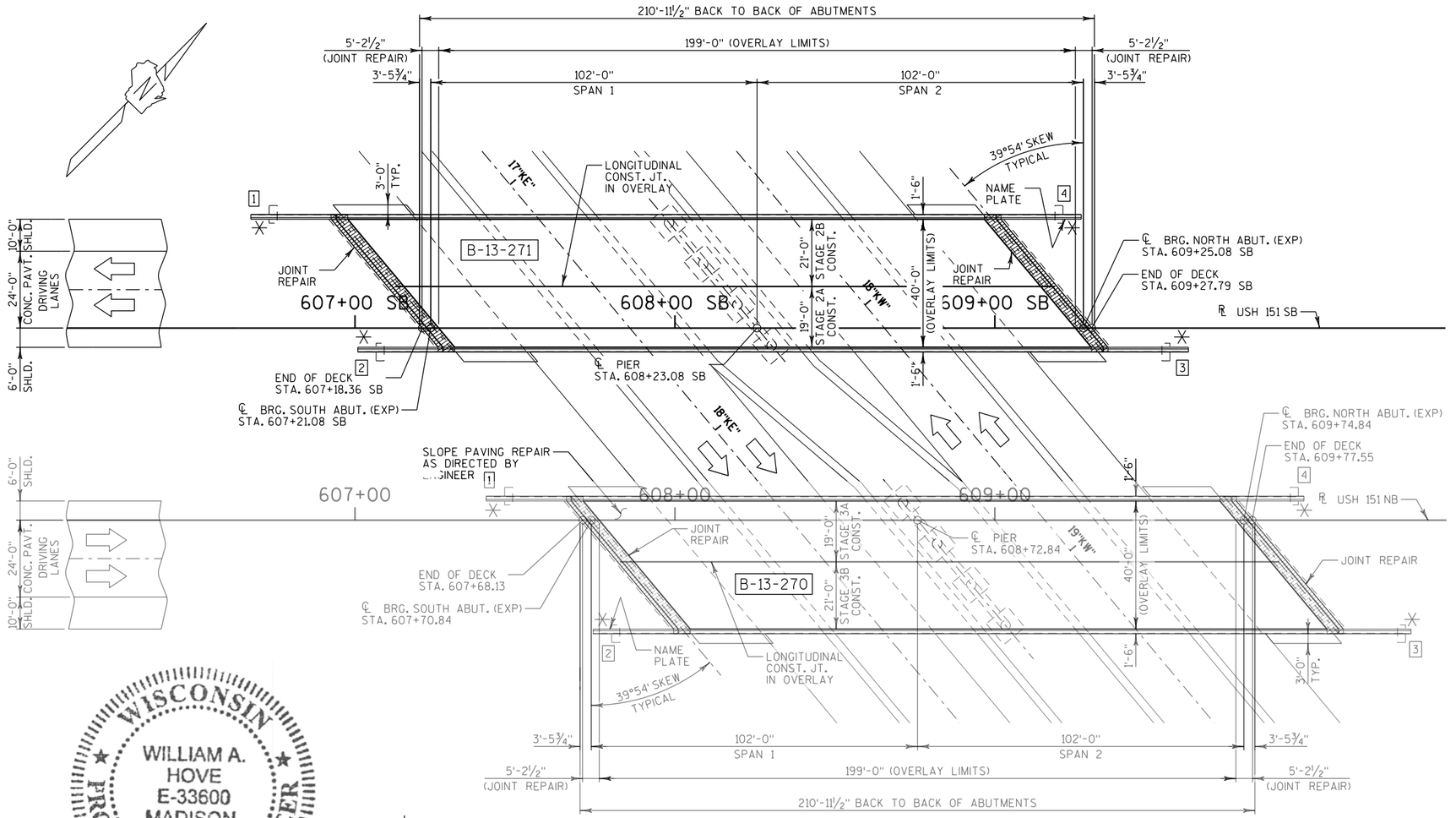
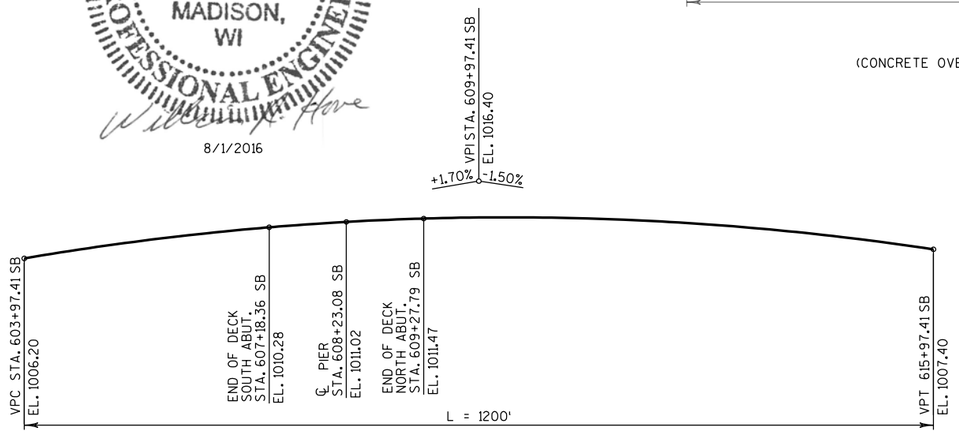



## B-13-271

(CONCRETE OVERLAY - 2-SPAN STEEL PLATE GIRDERS)




## PROFILE GRADE LINE USH 151 SB

(STATIONS ALONG ℄, ELEVATIONS AT PGL, LOCATED 13'-0" LEFT OF ℄)

## LEGEND

- ⊗ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.
- [X] DENOTES WING NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 27,000
R.D.S. = 70 MPH

STH 19
A.D.T. (2015 EXIST) = 18,5000
R.D.S. = 40 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING ____ HS - 20
OPERATIONAL RATING ____ HS - 33
WISCONSIN STANDARD
PERMIT VEHICLE (Wis-SPV) ____ 210 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c ____ 4,000 PSI
CONCRETE MASONRY BRIDGES f'c ____ 4,000 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT (GRADE 60) fy ____ 60,000 PSI

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS
4. SOUTH ABUTMENT
5. NORTH ABUTMENT
6. INFRARED INSPECTION RESULTS
7. REPLACEMENT JOINT DETAILS 1
8. REPLACEMENT JOINT DETAILS 2
9. PARAPET DETAILS 1
10. PARAPET DETAILS 2 & COUPLER DETAILS



SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

CONSULTANT CONTACT:
BILL HOVE (608) 826-6125


STATE PROJECT NUMBER

1111-02-78

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CLEANING AND PAINTING BEARINGS, CONCRETE SURFACE REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTUES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY. A MINIMUM 1-INCH OF EXISTING CONCRETE COVER SHALL BE MAINTAINED.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

CLEAN, STRAIGHTEN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-271".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1969.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

WISCONSIN PROFESSIONAL ENGINEER
WILLIAM A. HOVE
E-33600
MADISON, WI

8/1/2016

| NO. | DATE | REVISION | BY |
|---|---|---|---|

CORRE — Structural Environmental Municipal Transportation
6510 GRAND TETON PLAZA, SUITE 304 MADISON, WI 53719 (608)826-3015 www.correinc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-13-271

USH 151 SB OVER STH 19

| COUNTY | TOWN/CITY/~~VILLAGE~~ |
|---|---|
| DANE | SUN PRAIRIE |

DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| BH | ETP | TKB | BH |

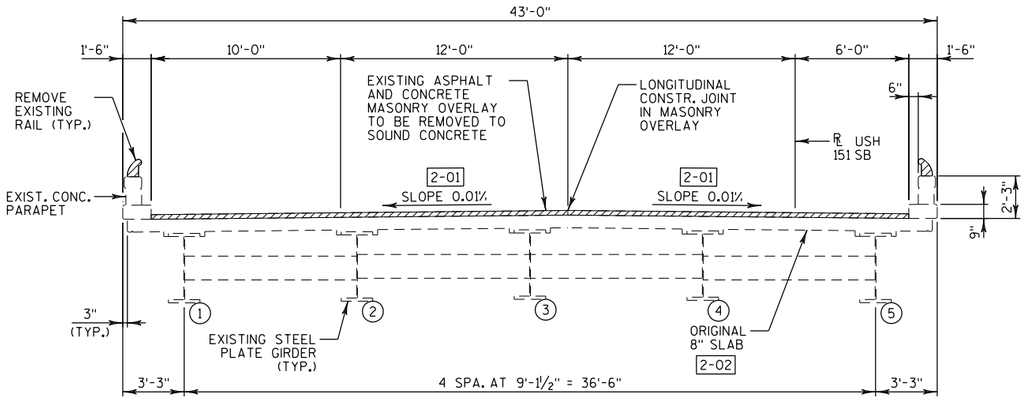
GENERAL PLAN

SHEET 1 OF 10

385

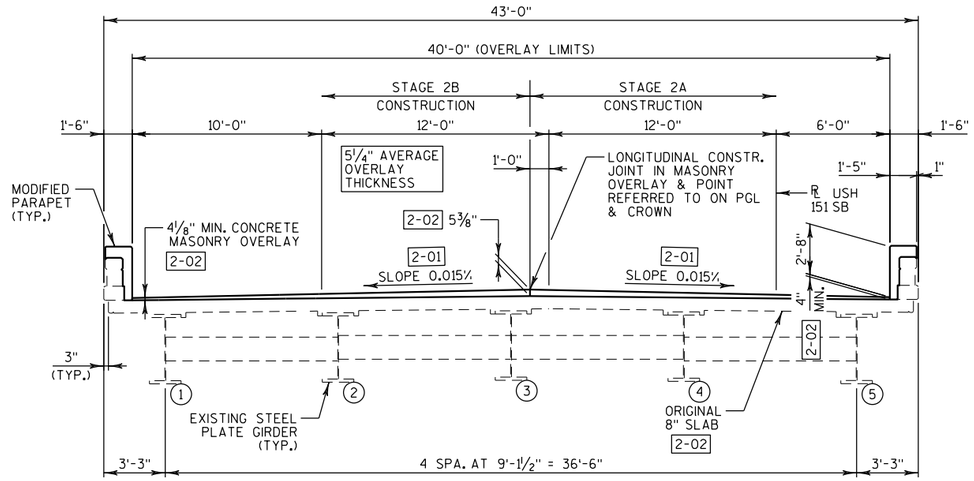
STATE PROJECT NUMBER

1111-02-78




## EXISTING CROSS SECTION THRU ROADWAY

LOOKING NORTH




## PROPOSED CROSS SECTION THRU ROADWAY

LOOKING NORTH

## TOTAL ESTIMATED QUANTITIES

ALL ITEMS ARE CATEGORY 0060

| | BID ITEM NUMBER | BID ITEM | UNIT | SOUTH ABUTMENT | PIER #1 | NORTH ABUTMENT | SUPERSTRUCTURE | QUANTITY |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.04 | REMOVING OLD STRUCTURE STA. 608+25.67 SB | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0210.S.04 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL STRUCTURE B-13-271 | LS | ---- | ---- | ---- | ---- | 1 |
| | 203.0225.S.04 | DEBRIS CONTAINMENT B-13-271 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | ---- | ---- | ---- | 40 | 40 |
| | 502.3100.04 | EXPANSION DEVICE B-13-271 | LS | ---- | ---- | ---- | ---- | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | ---- | ---- | ---- | 930 | 930 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | ---- | ---- | ---- | 240 | 240 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | ---- | ---- | ---- | 128 | 128 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 58 | ---- | 58 | 528 | 644 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 570 | ---- | 570 | 9,780 | 10,920 |
| | 505.0907 | BAR COUPLERS No. 7 | EACH | ---- | ---- | ---- | 18 | 18 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | ---- | ---- | ---- | 160 | 160 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | ---- | ---- | ---- | 60 | 60 |
| | 509.1000 | JOINT REPAIR | SY | ---- | ---- | ---- | 50 | 50 |
| 2-04 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 10 | 10 | 10 | 20 | 50 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | ---- | ---- | ---- | 8 | 8 |
| 2-03 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | ---- | ---- | ---- | 163 | 163 |
| | 509.9005.S.04 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-271 | SY | ---- | ---- | ---- | 880 | 880 |
| | 509.9010.S.04 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-271 | SY | ---- | ---- | ---- | 880 | 880 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | ---- | ---- | ---- | 4 | 4 |
| | SPV.0060.01 | CLEANING AND PAINTING BEARINGS | EACH | 5 | ---- | 5 | ---- | 10 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | ---- | ---- | ---- | 499 | 499 |
| | | | | | | | | |

NOTE: PARAPET ITEMS ON ABUTMENT WINGS ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES

## LEGEND

2-01 EXISTING CROSS SLOPE IS 0.01⅛ AND WILL BE CHANGED TO 0.015⅛.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM APPROXIMATELY 4⅛" AT THE WEST PARAPET, 5⅜" AT THE CROWN, AND 4" AT THE EAST PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATION. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE OVERLAY THICKNESS IS 5¼" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS.

2-03 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-04 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(X) DENOTES GIRDER NUMBER.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

CROSS SECTIONS & QUANTITIES

SHEET 2 OF 10

386

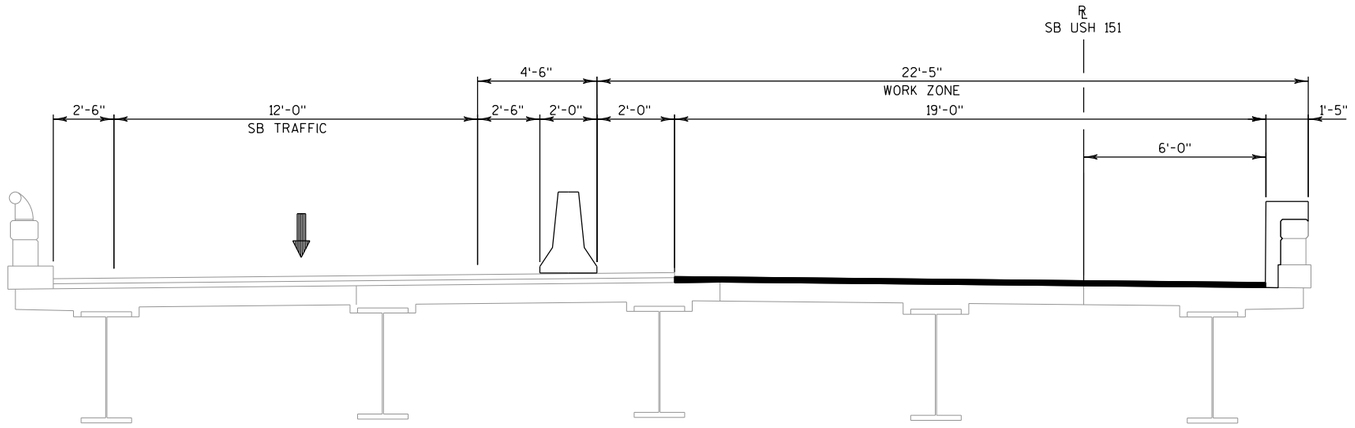
8

8

FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-271±B-13-271_02-sections.dgn

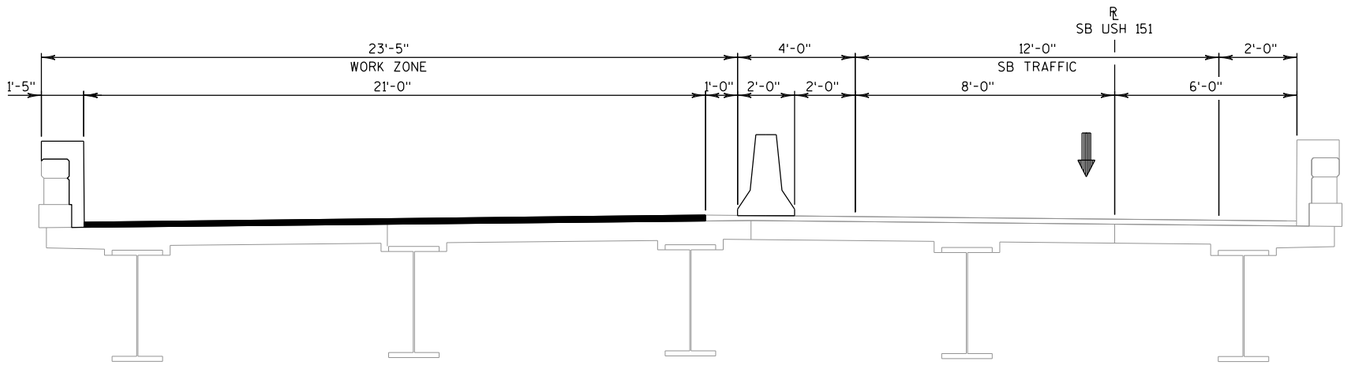
PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.




## STAGE 2A - B-13-271

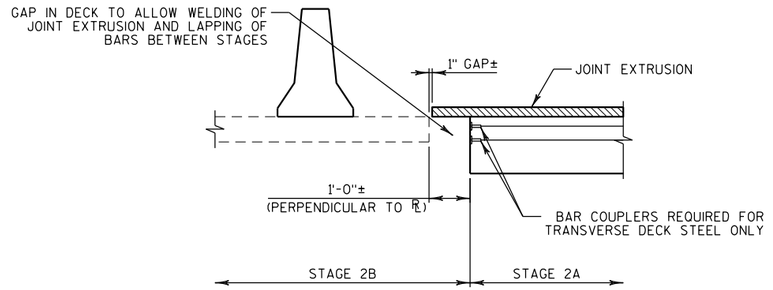
SB PERMANENT LANE CLOSURES
(USH 151 SB CONSTRUCTION LOOKING NORTH)




## STAGE 2B - B-13-271

NB PERMANENT LANE CLOSURES
(USH 151 SB CONSTRUCTION LOOKING NORTH)

**NOTE:**
SEE ROAD PLANS FOR CONSTRUCTION STAGES NOT SHOWN.




## JOINT DETAIL

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | End of Deck S. Abut. | C/L of Brg. S. Abut. | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Pier | 0.1 Pt. | 0.2 Pt. | 0.3 Pt. | 0.4 Pt. | 0.5 Pt. | 0.6 Pt. | 0.7 Pt. | 0.8 Pt. | 0.9 Pt. | C/L of Brg. N. Abut. | End of Deck N. Abut. |
| LEFT FLOW LINE | 1009.72 | 1009.74 | 1009.83 | 1009.92 | 1010.01 | 1010.09 | 1010.17 | 1010.25 | 1010.33 | 1010.40 | 1010.47 | 1010.53 | 1010.60 | 1010.66 | 1010.72 | 1010.77 | 1010.83 | 1010.88 | 1010.92 | 1010.97 | 1011.01 | 1011.05 | 1011.06 |
| CROWN LINE | 1010.19 | 1010.21 | 1010.30 | 1010.38 | 1010.47 | 1010.54 | 1010.62 | 1010.69 | 1010.76 | 1010.83 | 1010.90 | 1010.96 | 1011.02 | 1011.07 | 1011.13 | 1011.18 | 1011.23 | 1011.27 | 1011.31 | 1011.35 | 1011.39 | 1011.42 | 1011.43 |
| RIGHT FLOW LINE | 1010.04 | 1010.06 | 1010.14 | 1010.22 | 1010.30 | 1010.38 | 1010.45 | 1010.52 | 1010.58 | 1010.65 | 1010.71 | 1010.76 | 1010.82 | 1010.87 | 1010.92 | 1010.97 | 1011.01 | 1011.05 | 1011.09 | 1011.12 | 1011.16 | 1011.19 | 1011.19 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.
END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

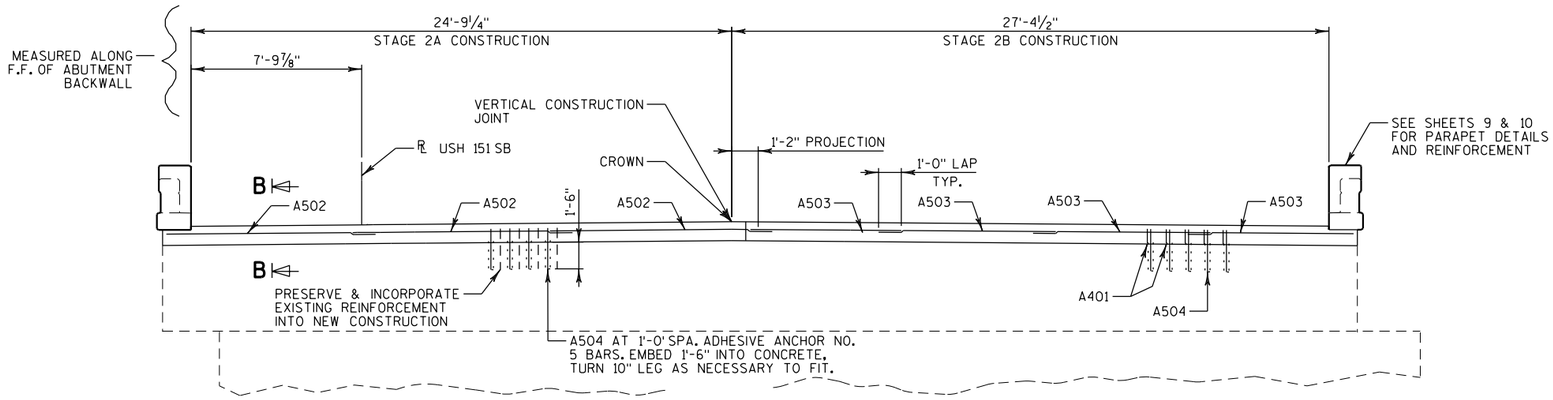
DRAWN BY TKB | PLANS CK'D. BH

MAINTENANCE OF TRAFFIC & OVERLAY ELEVATIONS

SHEET 3 OF 10

STATE PROJECT NUMBER

1111-02-78



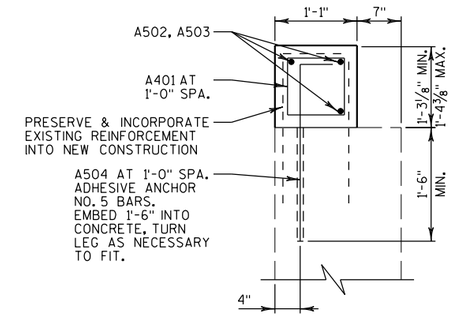

## ELEVATION

LOOKING SOUTH

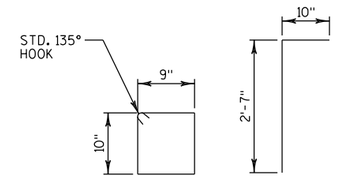
## BILL OF BARS

| BAR MARK | COAT | # REQ'D STAGE 2A | # REQ'D STAGE 2B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| A401 | X | 28 | 30 | 3'-8" | X | | PAVING BLOCK - VERT. |
| A502 | X | 9 | --- | 10'-0" | | | PAVING BLOCK - HORIZ. |
| A503 | X | --- | 12 | 8'-2" | | | PAVING BLOCK - HORIZ. |
| A504 | X | 28 | 30 | 3'-4" | X | | PAVING BLOCK - VERT. |
| A505 | X | --- | 2 | 5'-8" | X | | PAVING BLOCK - ENDS |
| A506 | X | 2 | --- | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 570 LBS. |

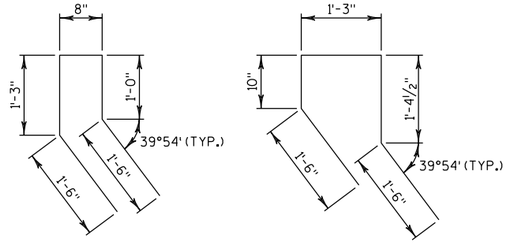
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.




## SECTION B-B




A401 A504

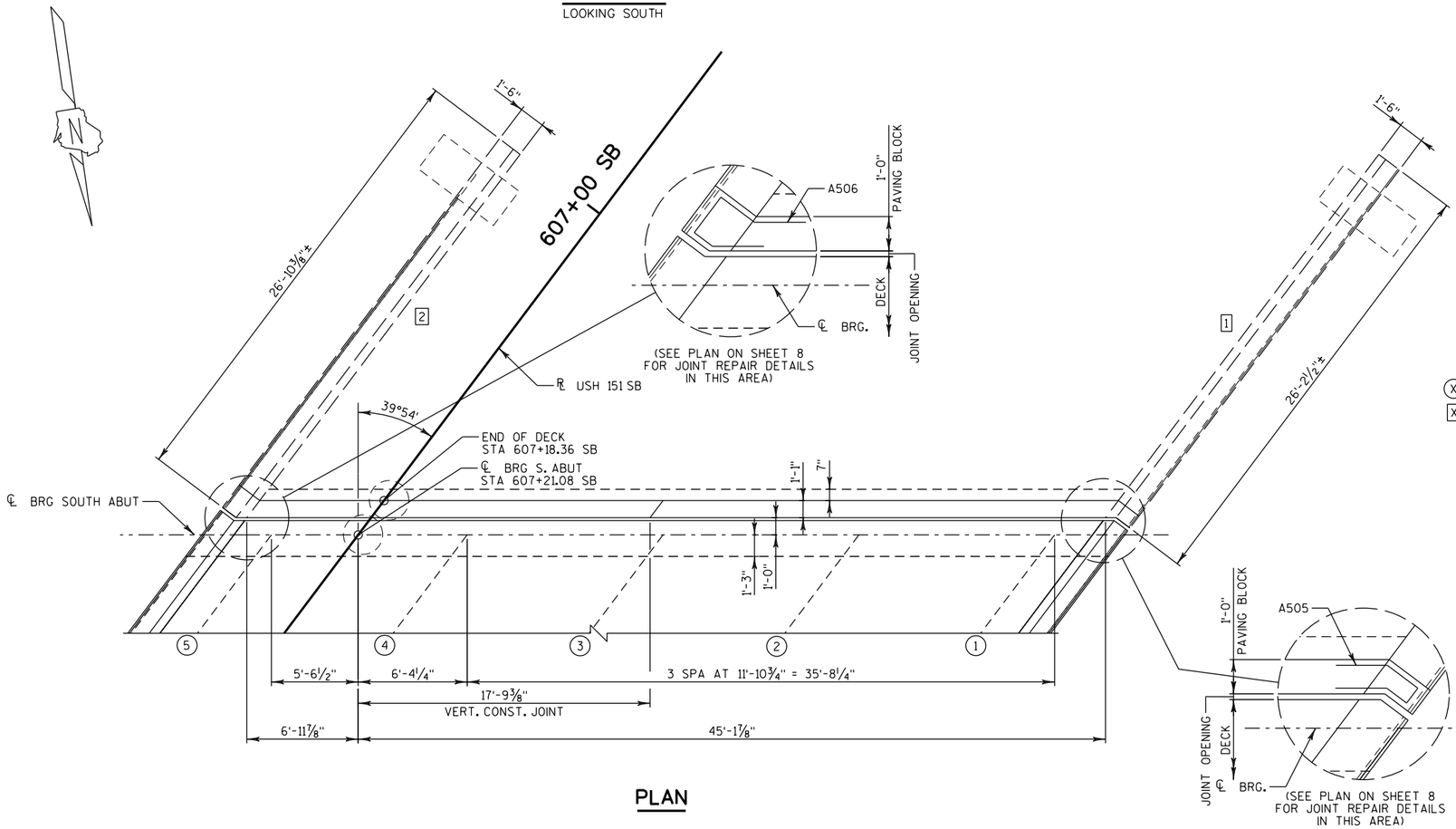



A505 A506

## LEGEND

(X) DENOTES GIRDER NUMBER

[X] DENOTES WING NUMBER




## PLAN

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

SOUTH ABUTMENT

SHEET 4 OF 10

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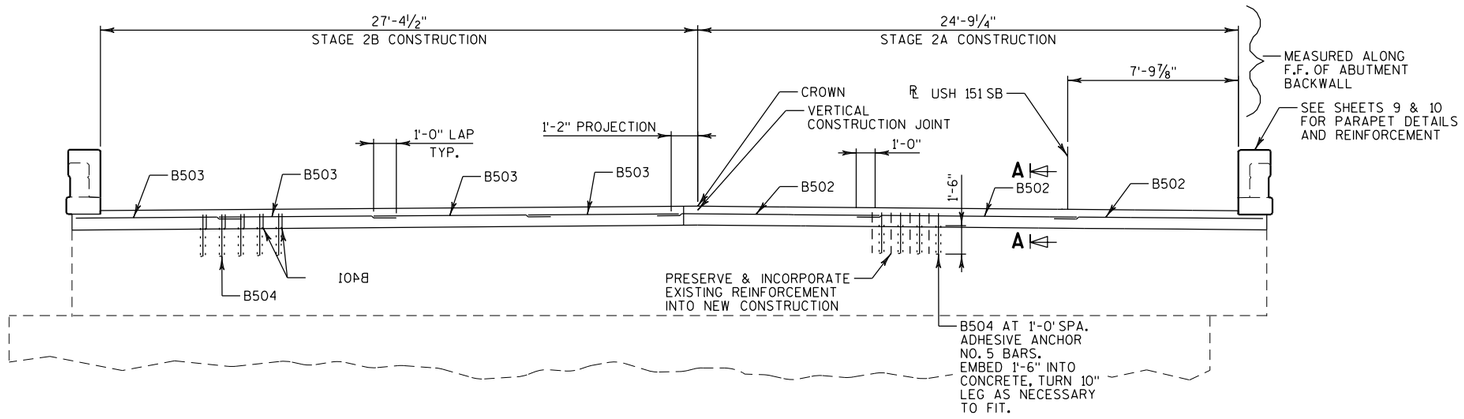
8

8

STATE PROJECT NUMBER

1111-02-78

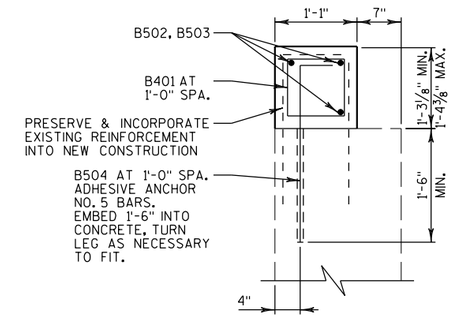



## ELEVATION
LOOKING NORTH

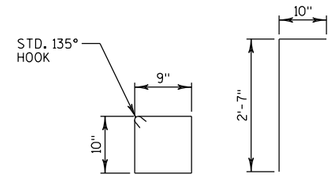
## BILL OF BARS

| BAR MARK | COAT | * REQ'D STAGE 2A | * REQ'D STAGE 2B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| B401 | X | 28 | 30 | 3'-8" | X | | PAVING BLOCK - VERT. |
| B502 | X | 9 | --- | 10'-0" | | | PAVING BLOCK - HORIZ. |
| B503 | X | --- | 12 | 8'-2" | | | PAVING BLOCK - HORIZ. |
| B504 | X | 28 | 30 | 3'-4" | X | | PAVING BLOCK - VERT. |
| B505 | X | 2 | --- | 5'-8" | X | | PAVING BLOCK - ENDS |
| B506 | X | --- | 2 | 6'-2" | X | | PAVING BLOCK - ENDS |
| TOTAL WEIGHT = | | | | | | | 570 LBS. |

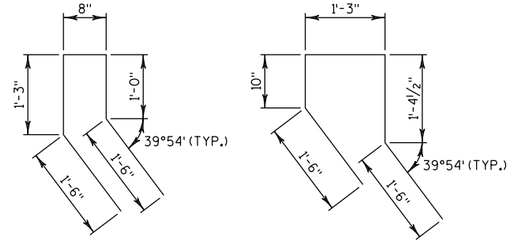
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



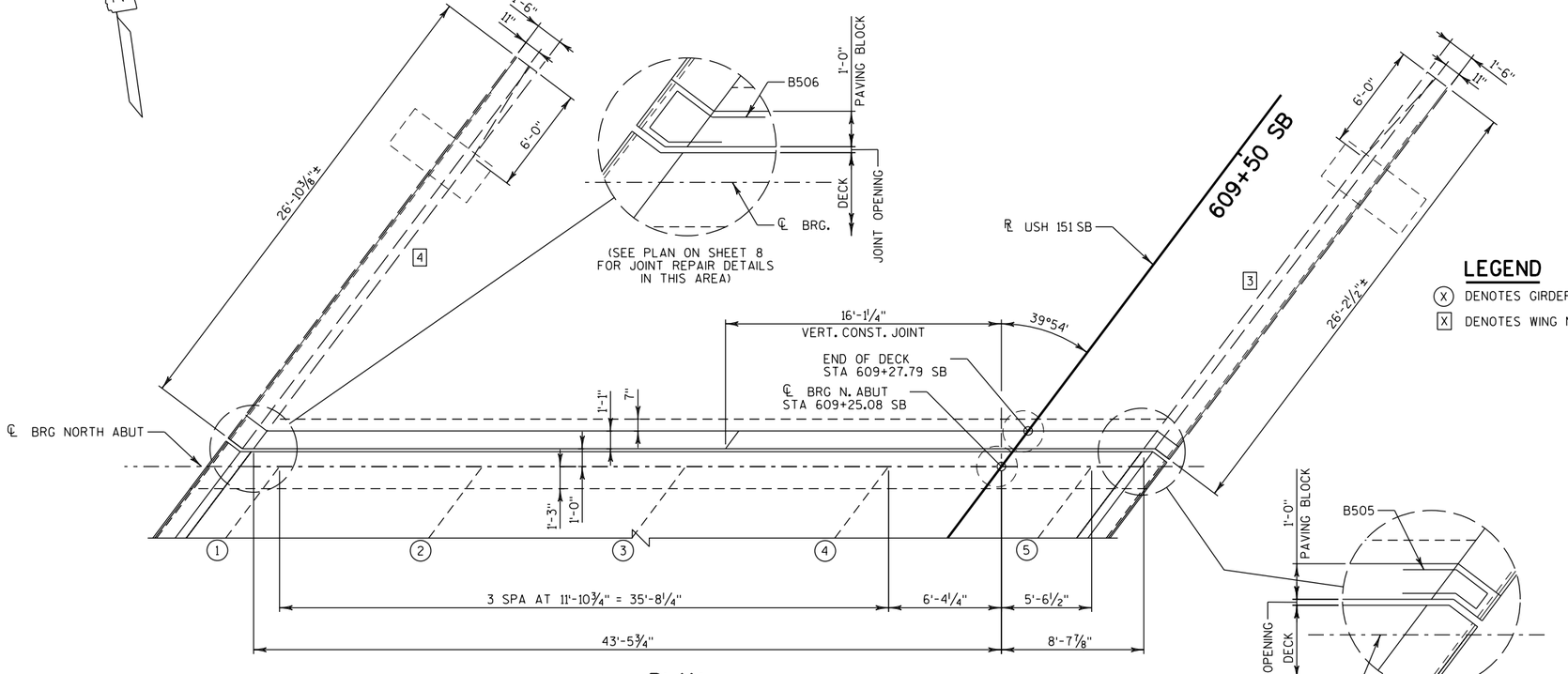

## SECTION A–A




## B401 B504

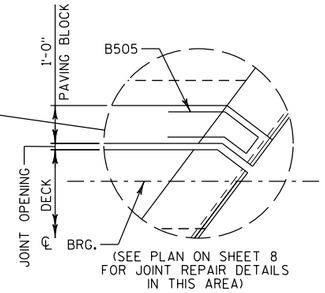



## B505 B506




## PLAN

## LEGEND
(X) DENOTES GIRDER NUMBER
[X] DENOTES WING NUMBER




| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

NORTH ABUTMENT

SHEET 5 OF 10

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8

8

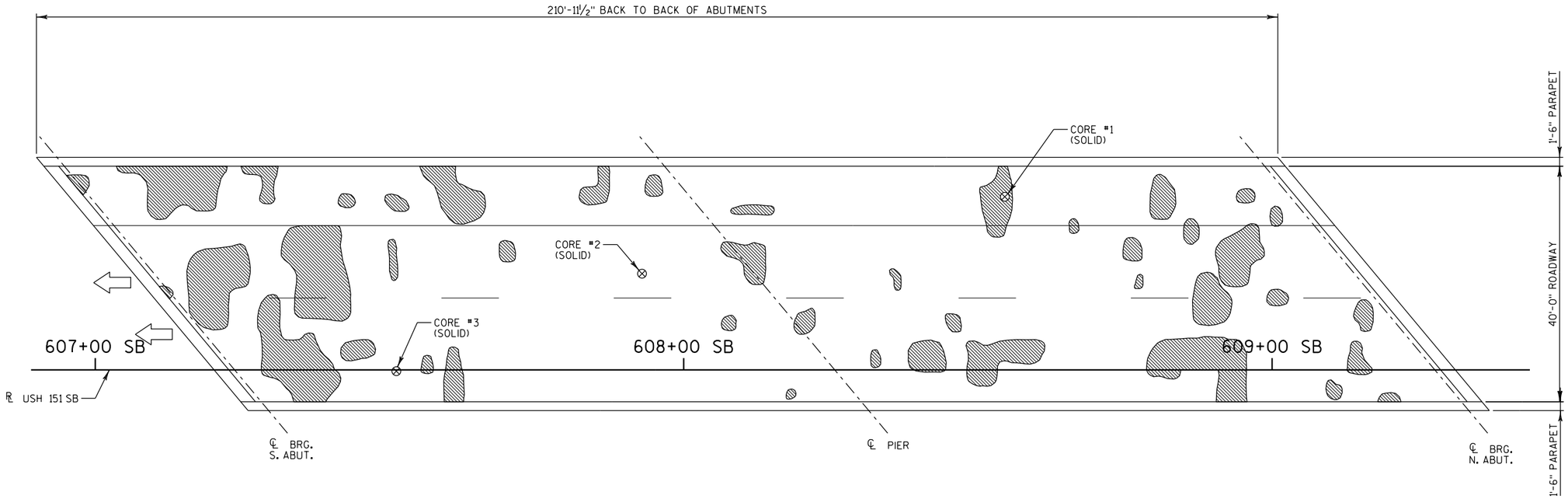
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-271±B-13-271_04&05-abutS.dgn

PLOT DATE : 8/1/2016

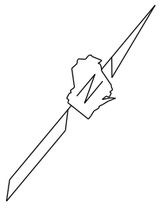
PLOT SCALE : 2.00000 '/ ft.

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




PLAN B-13-271



## NOTES:

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY. ENGINEER TO VERIFY REPAIR AREAS. DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER.

THE QUANTITIES FOR PREPARATION DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.

SCALE 0' 5' 10' 20'

## DECK INSPECTION RESULTS

| | FIELD OBSERVATIONS SUMMARY | | S.N. B-13-271 | | LEGEND |
|---|---|---|---|---|---|
| | ITEM | UNIT | QUANT. | % | DELAMINATION |
| 6-01 | TOTAL AREA | ft² | 8376 | | SPALL |
| | SHADE/DEBRIS | ft² | 0 | | DEBOND |
| | DELAMINATION | ft² | 1251 | 14.9 | ASPHALT PATCH |
| | SPALL | ft² | 0 | 0 | CONCRETE PATCH |
| | DEBOND (BLISTERING) | ft² | 2 | 0 | SHADE/DEBRIS |
| | ASPHALT PATCH | ft² | 0 | 0 | |
| | CONCRETE PATCH | ft² | 0 | 0 | |

6-01 TOTAL ROADWAY AREA (BETWEEN PARAPETS AND FACE OF PAVING NOTCHES)

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/20/12 & 8/21/12

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

INFRARED INSPECTION RESULTS

SHEET 6 OF 10



8

8

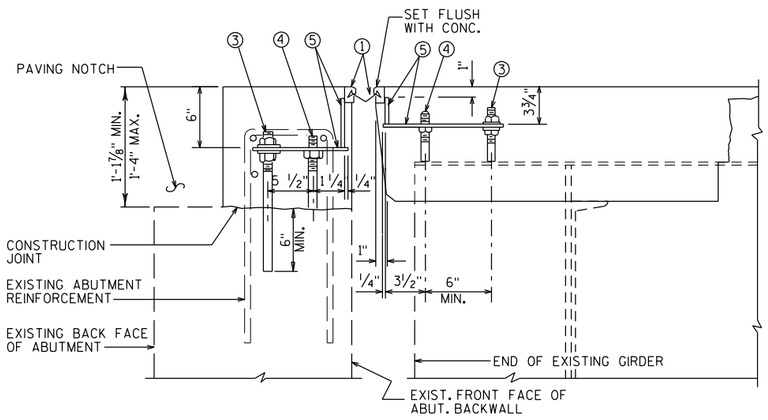
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-271±B-13-271_06-deckinspection.dgn

PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

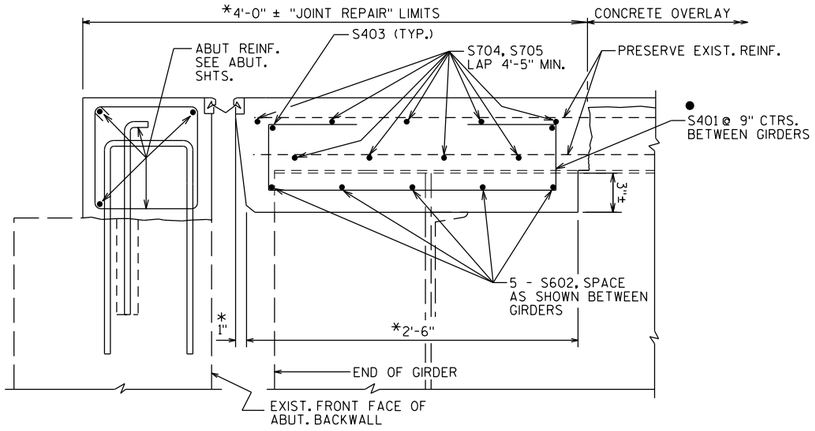
STATE PROJECT NUMBER

1111-02-78




## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE




## SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

## LEGEND

① NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".

② STUDS ⅝" Φ x 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

②A ½" THICK ANCHOR PLATE WITH ⅝" Φ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PL. TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.

③ ¾" Φ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THROUGH FLANGE. ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

④ ¾" Φ THREADED ROD WITH NUT. TACK WELD NUT TO #5.

⑤ FABRICATE SUPPORT FROM 3" x ½" 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 1½" Φ HOLE FOR #3 & 1" Φ HOLE FOR #4.

⑥ GALVANIZED PLATE ⅜" x 10" x 2'-2" LONG WITH HOLES FOR #7.

⑦ ¾" Φ x 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

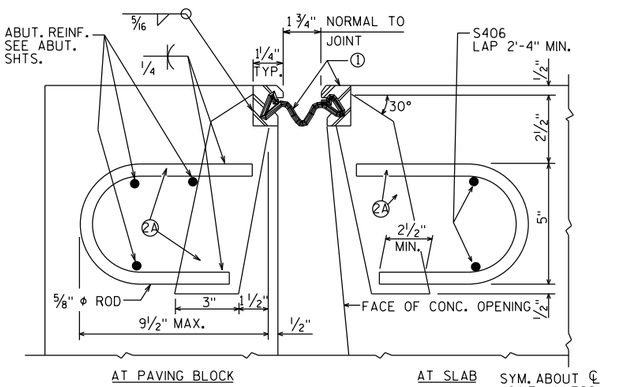
⑧ ¾" Φ x 4" GALVANIZED HEX HEAD BOLT. BEND 45°.

⑨ ¾" Φ x 2¼" GALVANIZED THREADED COUPLING.

⑩ 1" x 5" SLOTTED COUNTERSUNK HOLE FOR #7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

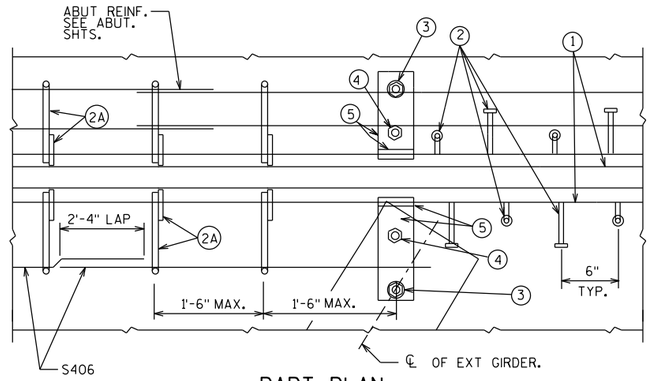
* DIMENSION IS NORMAL TO C/L OF SUBSTRUCTURE UNITS.

● BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄ GIRDERS.

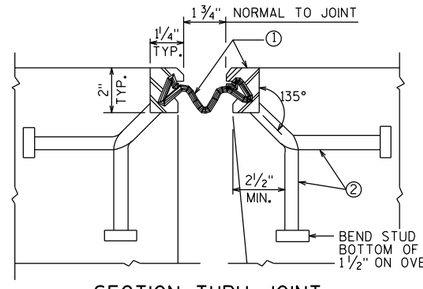



## SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.




## PART PLAN




## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS

## NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

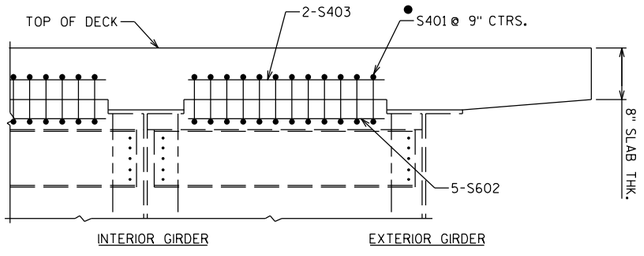
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

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

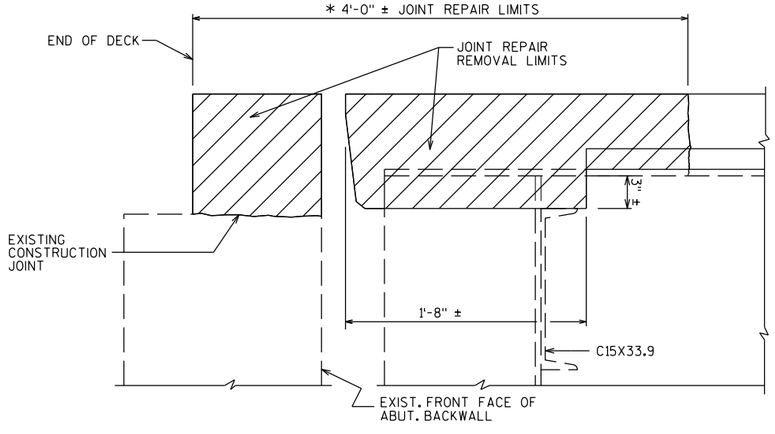
SANDBLAST PLATES, SUPPORTS, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

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

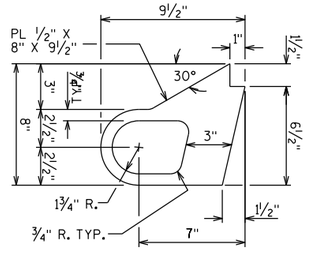
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".




## PART TRANSVERSE SECTION AT DIAPHRAGM




## JOINT REPAIR-REMOVAL




## ALTERNATE STRIP SEAL ANCHOR

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

**REPLACEMENT JOINT DETAILS 1**

SHEET 7 OF 10

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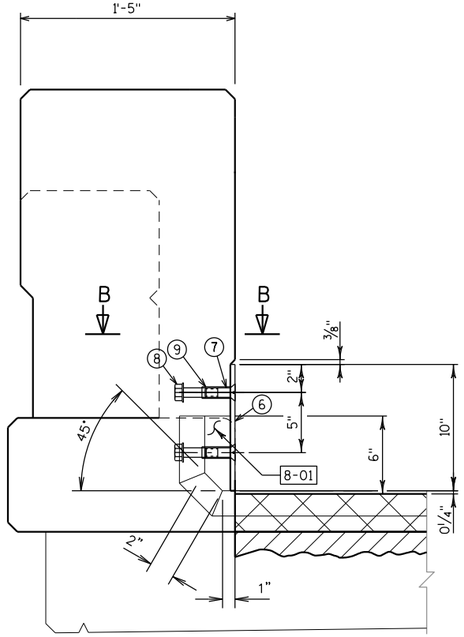
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-271±B-13-271_07&08-jointdet.dgn

PLOT DATE : 8/1/2016

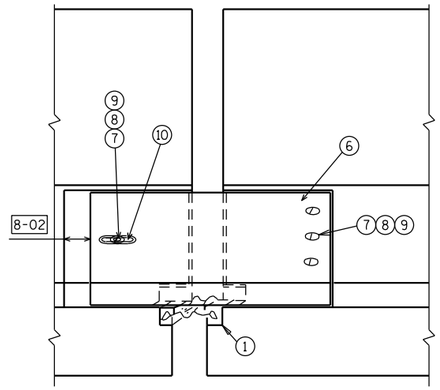
PLOT SCALE : 2.00000 '/ ft.

STATE PROJECT NUMBER

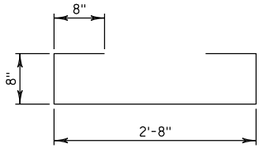
1111-02-78



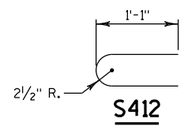

SECTION A-A
(REBAR NOT SHOWN FOR CLARITY)




VIEW OF PARAPET PLATES FROM ROADWAY




S401

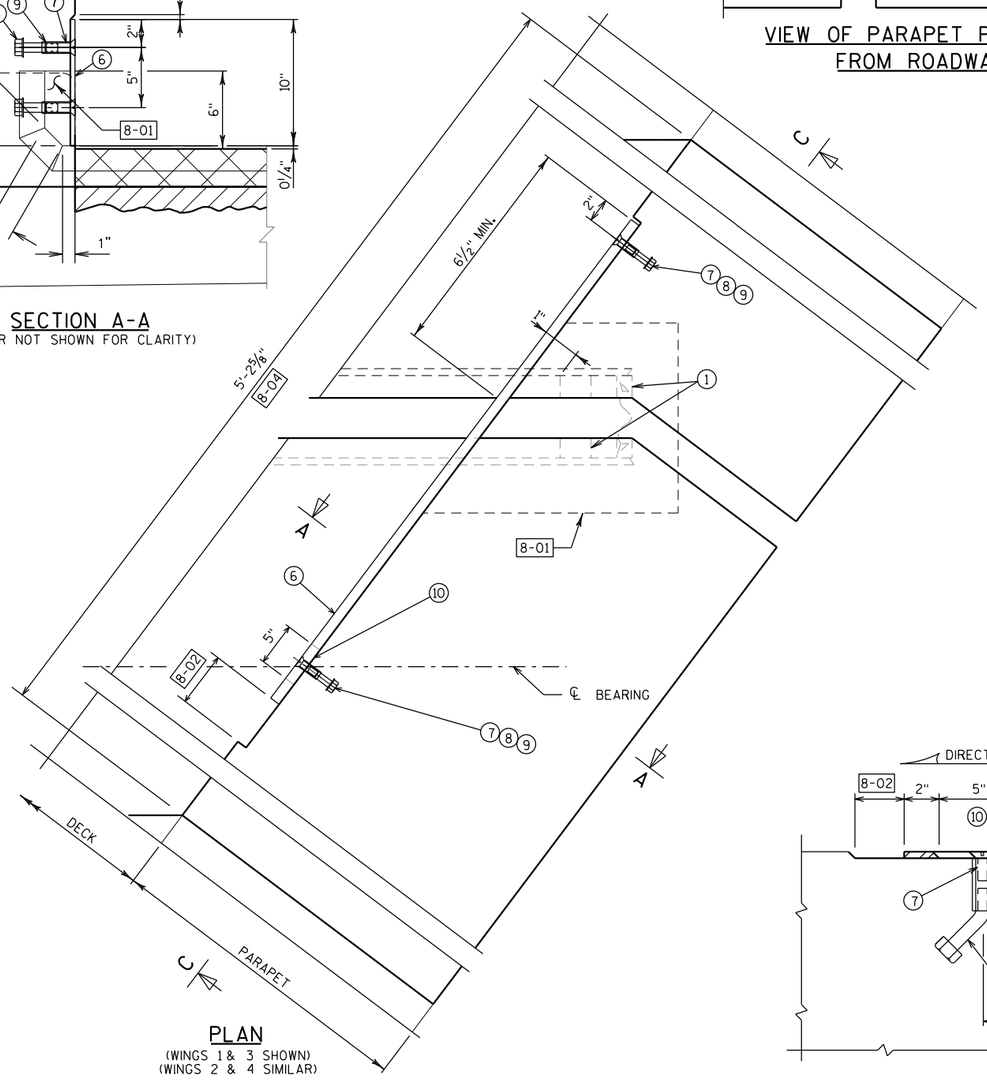



S412

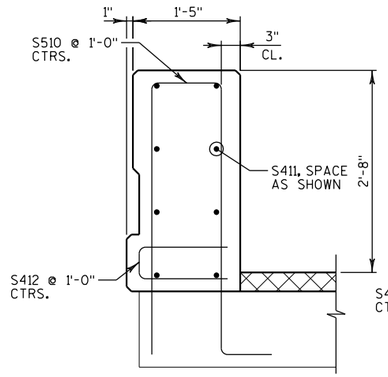
## BILL OF BARS

| MARK | COAT | # REQ'D. STAGE 2A | # REQ'D. STAGE 2B | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| S401 | X | 46 | 50 | 5'-2" | X | | SLAB - DIAPHRAGM |
| S602 | X | 20 | 20 | 11'-4" | | | SLAB - DIAPHRAGM |
| S403 | X | 8 | 8 | 11'-4" | | | SLAB - DIAPHRAGM |
| S704 | X | 36 | --- | 15'-6" | | | SLAB - STAGE 2A |
| S705 | X | --- | 36 | 16'-9" | | | SLAB - STAGE 2B |
| S406 | X | 16 | 16 | 7'-3" | | | SLAB - EXPANSION DEVICE - BTWN. GIRDERS |
| | | | | | | | |
| S510 | X | 10 | 10 | 7'-7" | X | | PARAPET - AT JOINT, DECK SIDE |
| S411 | X | 8 | 8 | 3'-7" | X | | PARAPET - AT JOINT, DECK SIDE, B.F. ONLY |
| S412 | X | 16 | 16 | 2'-5" | X | | PARAPET - HORIZ. |
| S513 | X | 6 | 6 | 9'-0" | X | | PARAPET - AT JOINT, ABUTMENT SIDE |
| S414 | X | 8 | 8 | 1'-4" | X | | PARAPET - AT JOINT, ABUTMENT SIDE, B.F. ONLY |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 4,040 LBS. |

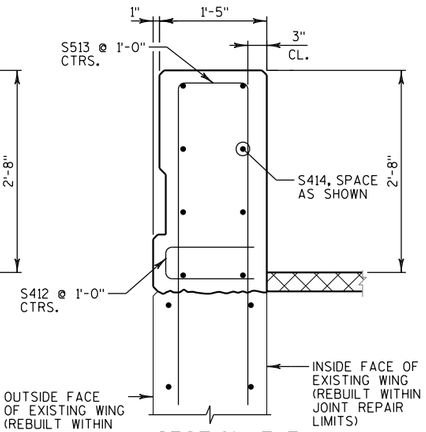
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR



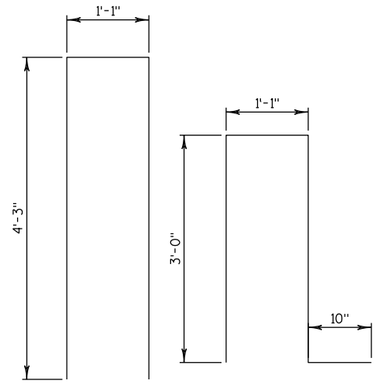

PLAN
(WINGS 1 & 3 SHOWN)
(WINGS 2 & 4 SIMILAR)




SECTION D-D

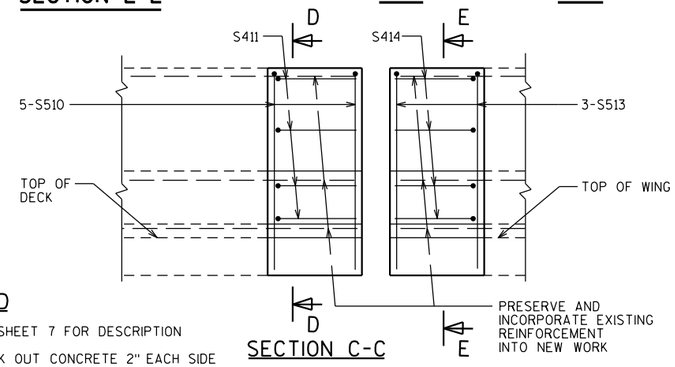



SECTION E-E

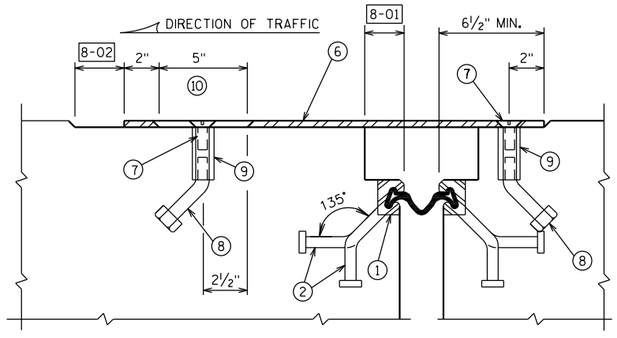



S513 S510

S411, S414
(TURN LEG AS NECESSARY TO FIT)




SECTION C-C




SECTION B-B

## LEGEND

- (X) SEE SHEET 7 FOR DESCRIPTION
- 8-01 BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.
- 8-02 JOINT OPENING DIM. ALONG SKEW PLUS ½"
- 8-03 ACCOUNTS FOR 4'-5" LAP IN BARS MIDWAY BETWEEN CONSTRUCTION JOINT. THESE BARS REQUIRE BAR COUPLERS AT STAGED CONSTRUCTION JOINT.
- 8-04 JOINT REPAIR LIMITS. REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

REPLACEMENT JOINT DETAILS 2

SHEET 8 OF 10

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8

8

FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-271±B-13-271_07&08-Jointdet.dgn

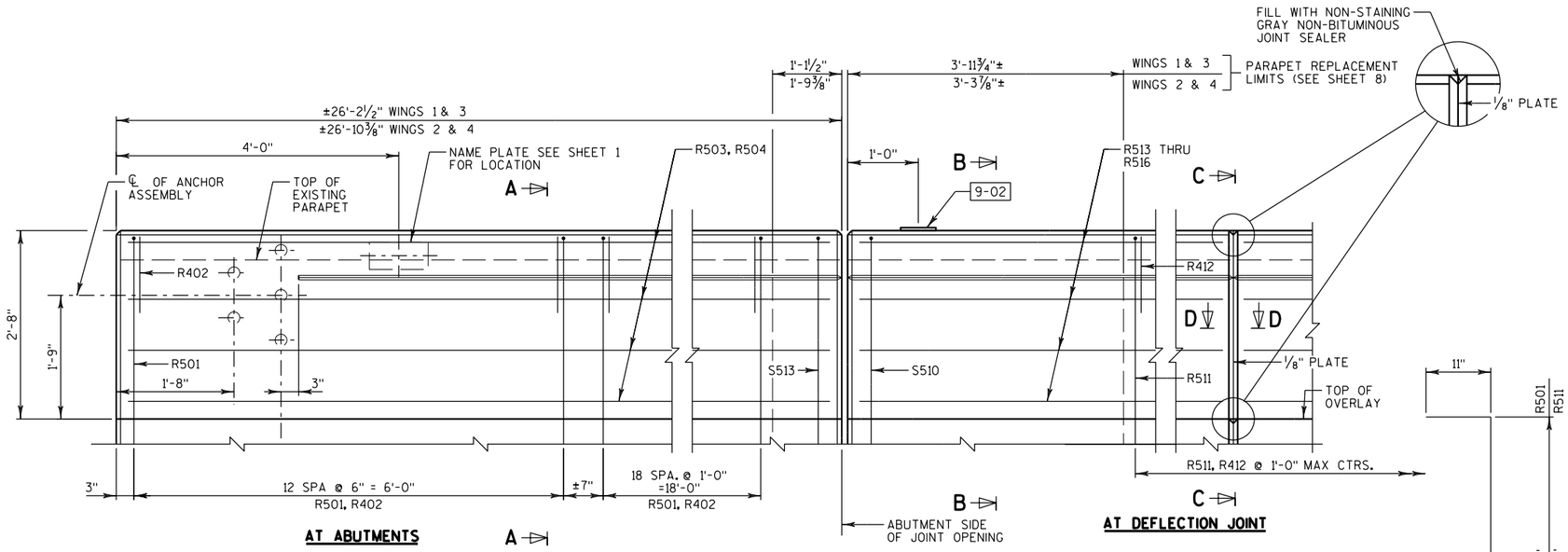
PLOT DATE : 8/1/2016

PLOT SCALE : 2.00000 '/ ft.

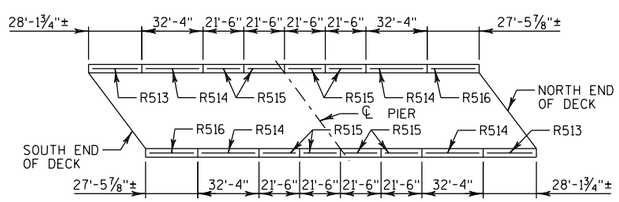
STATE PROJECT NUMBER

1111-02-78

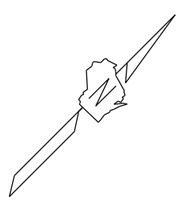
## PART ELEVATION OF PARAPET

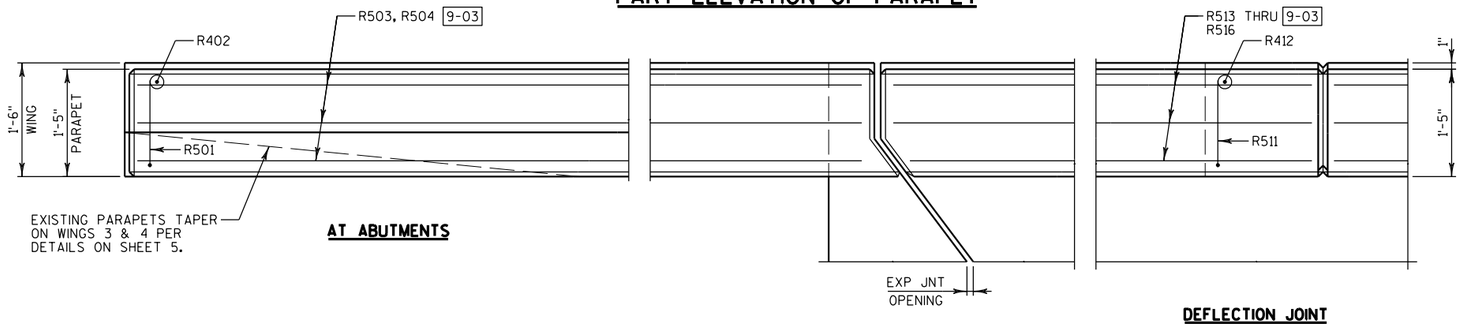



## PART PLAN OF PARAPET




## DEFLECTION JOINT SPACING






## R501, R511

## NOTES & LEGEND

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.

9-01 CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

9-02 BENCH MARK CAP (WHEN SUPPLIED). SEE SHEET 1 FOR LOCATION.

9-03 FIELD CUT R503, R504, R513 & R516 AT BLOCK OUT FOR EXTRUSIONS AS REQUIRED TO MAINTAIN 2" CLEAR DISTANCE.

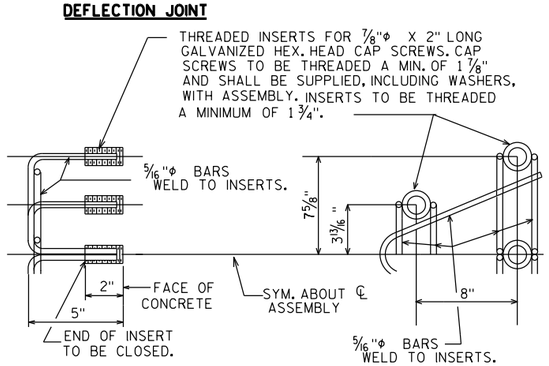
FOR SECTION VIEWS A & B SEE SHEET 10.

## BILL OF BARS

| BAR MARK | COAT | NO. REQ'D. STAGE 2A | NO. REQ'D. STAGE 2B | LENGTH | BENT | bar series | LOCATION |
|---|---|---|---|---|---|---|---|
| R501 | X | 64 | 64 | 5'-0" | X | | PARAPET ON WINGS - VERT. |
| R402 | X | 64 | 64 | 0'-9" | | | PARAPET ON WINGS - VERT. |
| R503 | X | 6 | 6 | 25'-10" | | | PARAPET ON WINGS 1 & 3 - HORIZ. |
| R504 | X | 6 | 6 | 26'-6" | | | PARAPET ON WINGS 2 & 4 - HORIZ. |
| | | | | | | | |
| R511 | X | 200 | 200 | 3'-10" | X | | PARAPET ON BRIDGE - VERT. |
| R412 | X | 200 | 200 | 0'-9" | | | PARAPET ON BRIDGE - VERT. |
| R513 | X | 6 | 6 | 27'-9" | | | PARAPET ON BRIDGE - HORIZ. |
| R514 | X | 12 | 12 | 32'-0" | | | PARAPET ON BRIDGE - HORIZ. |
| R515 | X | 24 | 24 | 21'-2" | | | PARAPET ON BRIDGE - HORIZ. |
| R516 | X | 6 | 6 | 27'-1" | | | PARAPET ON BRIDGE - HORIZ. |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL WEIGHT = | | | | | | | 5,740 LBS. |

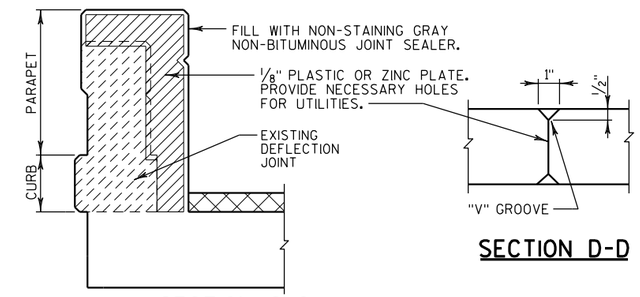
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

## DEFLECTION JOINT




## DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.




## SECTION D-D

## SECTION C-C

(SHOWING DEFLECTION JOINT IN PARAPET.)

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 1

SHEET 9 OF 10

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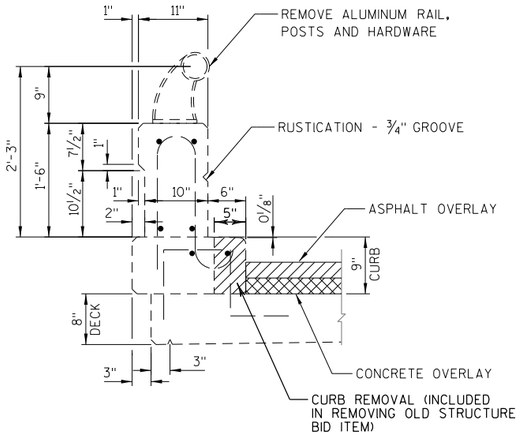
8

8

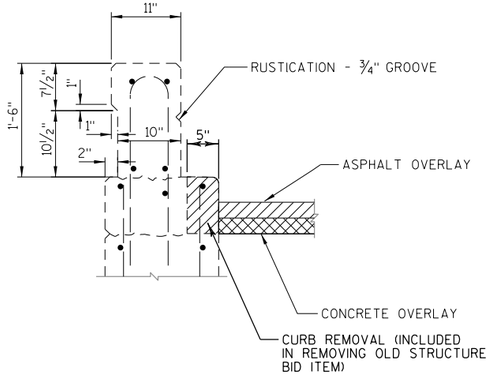
FILE NAME : C:±Users±tbetcher±Google Drive±TKB Projects±Bridge±B-13±B-13-268,269,270,271±Cad±B-13-271±B-13-271_09-parapetdetails1.dgn

PLOT DATE : 8/1/2016

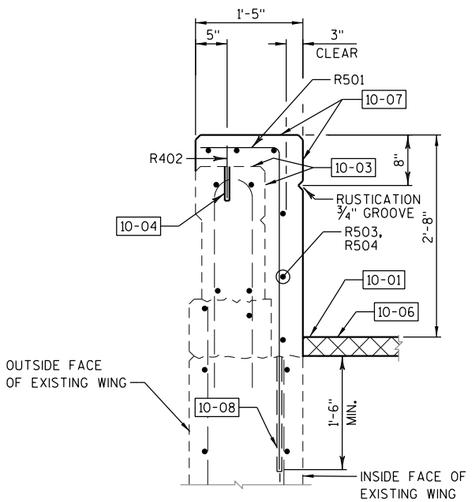
PLOT SCALE : 2.00000 '/ ft.




## EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

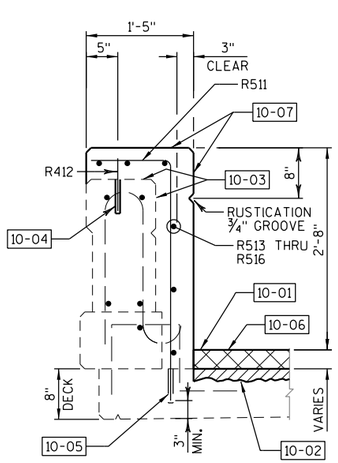



## EXISTING SECTION THRU WING



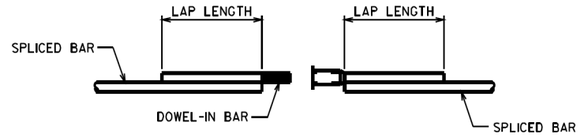

## SECTION A-A

(SEE SHEET 9 FOR LOCATION)




## SECTION B-B

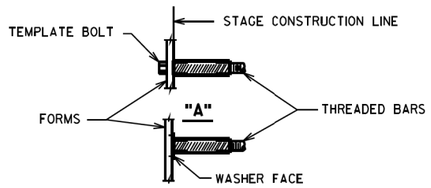
(SEE SHEET 9 FOR LOCATION)




## DOWEL BAR SPLICER

## ONE PIECE THREADED SPLICER

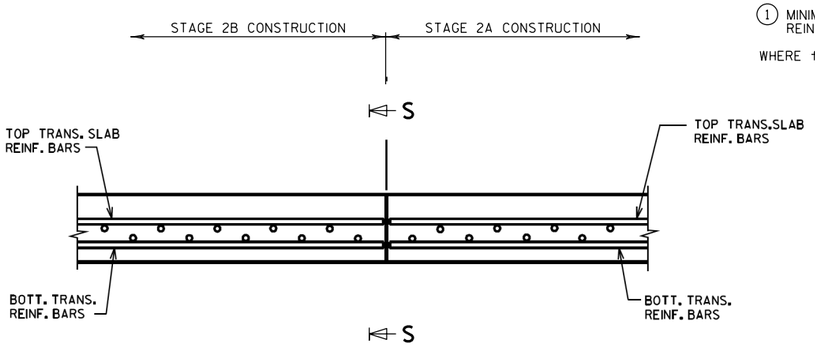
## SPLICER ALTERNATIVES



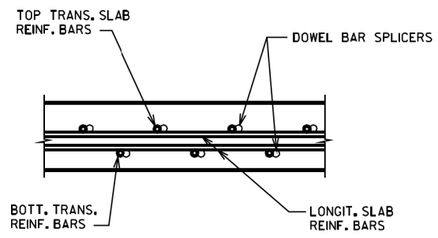

"B"

## INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## SECTION THRU SLAB




## SECTION S

### DOWEL BAR SPLICER LAP LENGTHS

| CONCRETE UNDER BAR | BAR SIZE | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|
| 12" OR LESS | f'c = 3500 | 1'-8" | 2'-8" | 3'-2" | 4'-3" | 5'-6" | 7'-0" | 8'-9" | 10'-11" |
| | f'c = 4000 | 1'-8" | 2'-8" | 3'-2" | 4'-0" | 5'-2" | 6'-6" | 8'-3" | 10'-2" |
| MORE THAN 12" | f'c = 3500 | 2'-3" | 2'-11" | 3'-6" | 4'-8" | 6'-1" | 7'-10" | 9'-10" | 12'-1" |
| | f'c = 4000 | 2'-3" | 2'-11" | 3'-6" | 4'-5" | 5'-8" | 7'-4" | 9'-2" | 11'-4" |

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

## LEGEND

10-01 CONCRETE MASONRY OVERLAY DECKS.

10-02 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

10-03 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL". DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER, UNDER THE BID ITEM "REMOVING OLD STRUCTURE". SALVAGE EXISTING REINFORCING STEEL.

10-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE. EPOXY ANCHORED.

10-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

10-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

10-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

10-08 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" MIN. INTO EXISTING CONCRETE WING. INCREASE EMBEDMENT IF REQUIRED TO MAINTAIN CLEARANCE FROM TOP OF PARAPET TO TOP OF BAR. EPOXY ANCHORED.

## NOTES:

CLEAN, STRAIGHTEN AND EXTEND EXISTING BAR STEEL REINFORCEMENT A MINIMUM OF 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE. DO NOT CUT EXISTING DOWELS OR STIRRUPS THAT EXTEND INTO EXISTING WINGS OR DECK.

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE PROJECT NUMBER

1111-02-78

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-271

DRAWN BY TKB | PLANS CK'D. BH

PARAPET DETAILS 2 & COUPLER DETAILS

SHEET 10 OF 10

394

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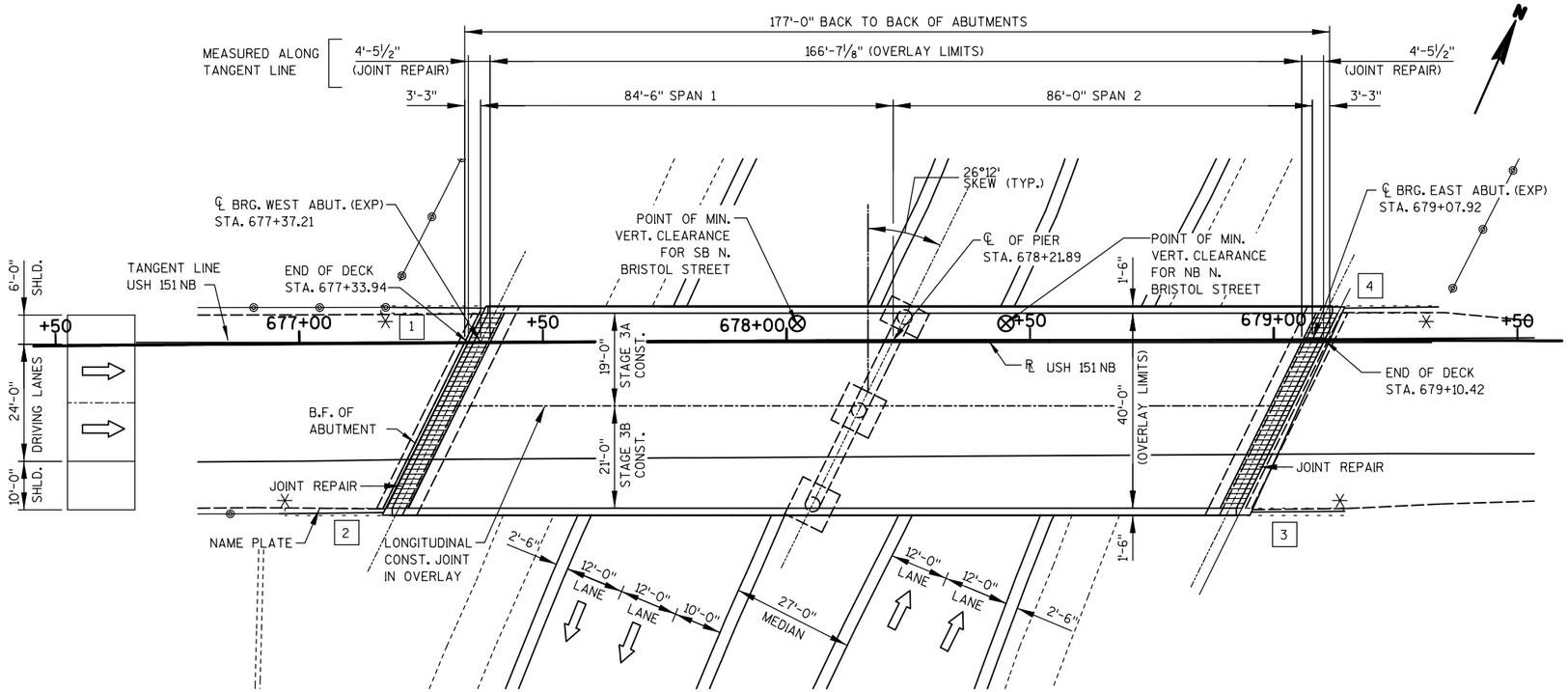
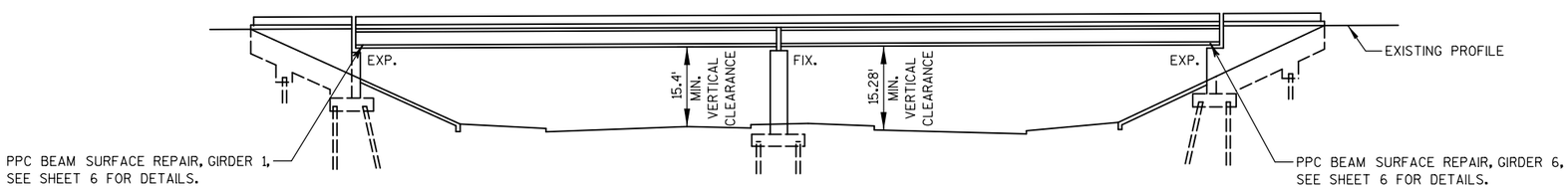



## PLAN

CONCRETE OVERLAY-2 SPAN, 45" PRESTRESSED GIRDERS




## ELEVATION

PARALLEL TO USH 151 NB
(LOOKING NORTH)

## EXISTING HORIZ. CURVE DATA

| | | |
|---|---|---|
| P.I. | = | STA. 679+36.87 |
| D | = | 0° 15' |
| △ | = | 4° 25' 41" |
| T | = | 886.03' |
| L | = | 1771.18' |
| SE | = | NC |
| R | = | 22,918.32' |

## LEGEND

⊗ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.

[X] DENOTES WINGWALL NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 21,000 VPD
R.D.S = 70 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING ——— HS-18
OPERATING RATING ——— HS-44
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) ——— 250 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c ——— 4,000 PSI
CONCRETE MASONRY BRIDGES f'c ——— 4,000 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy ——— 60,000 PSI

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC
4. WEST ABUTMENT
5. EAST ABUTMENT
6. MISC. DETAILS & OVERLAY ELEVATIONS
7. DECK INSPECTION RESULTS
8. REPLACEMENT JOINT DETAILS 1
9. REPLACEMENT JOINT DETAILS 2
10. REPLACEMENT JOINT DETAILS 3
11. PARAPET DETAILS 1
12. PARAPET DETAILS 2


STATE PROJECT NUMBER

1111-02-78

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CONCRETE SURFACE REPAIR, PRESTRESSED GIRDER END REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWING SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGIT OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-272".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1970.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONTACT:
DAVID WALKER, P.E. (608) 251-4843

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


STRAND ASSOCIATES®
910 WEST WINGRA DRIVE
MADISON, WISCONSIN 53715
(608)-251-4843
(608) 251-8655 FAX
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

# STRUCTURE B-13-272

USH 151 NB OVER CTH N BRISTOL STREET

COUNTY: DANE
~~TOWN~~/CITY/~~VILLAGE~~: SUN PRAIRIE

DESIGN SPEC.: REHABILITATION NA

| DESIGNED BY | DEB | DESIGN CK'D. | DJW | DRAWN BY | BSC | PLANS CK'D. | DJW |
|---|---|---|---|---|---|---|---|

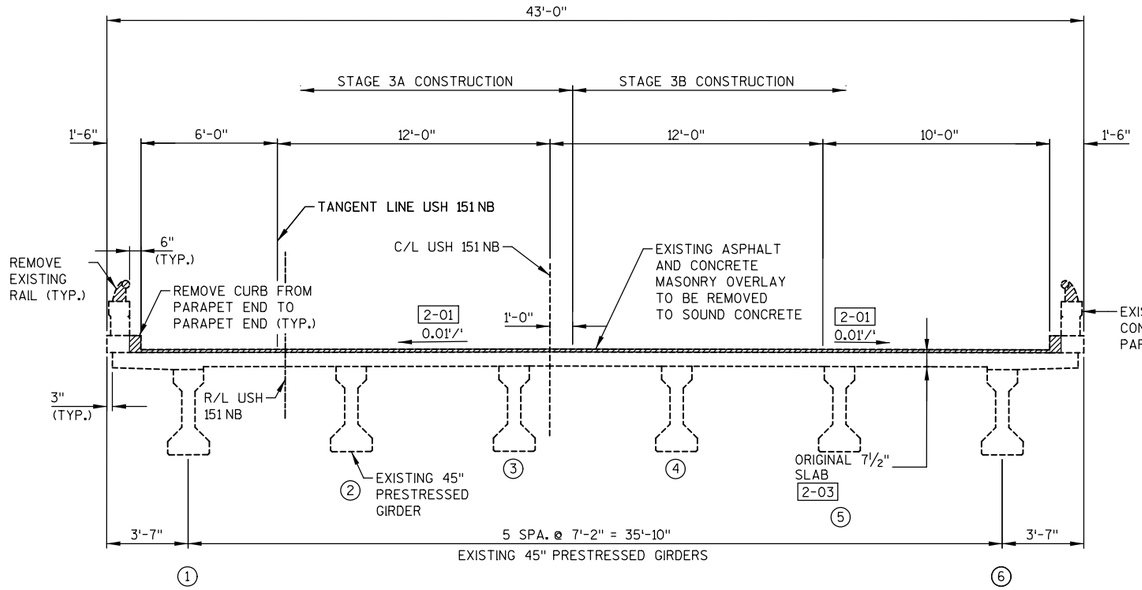
GENERAL PLAN

SHEET 1 OF 12
395

8

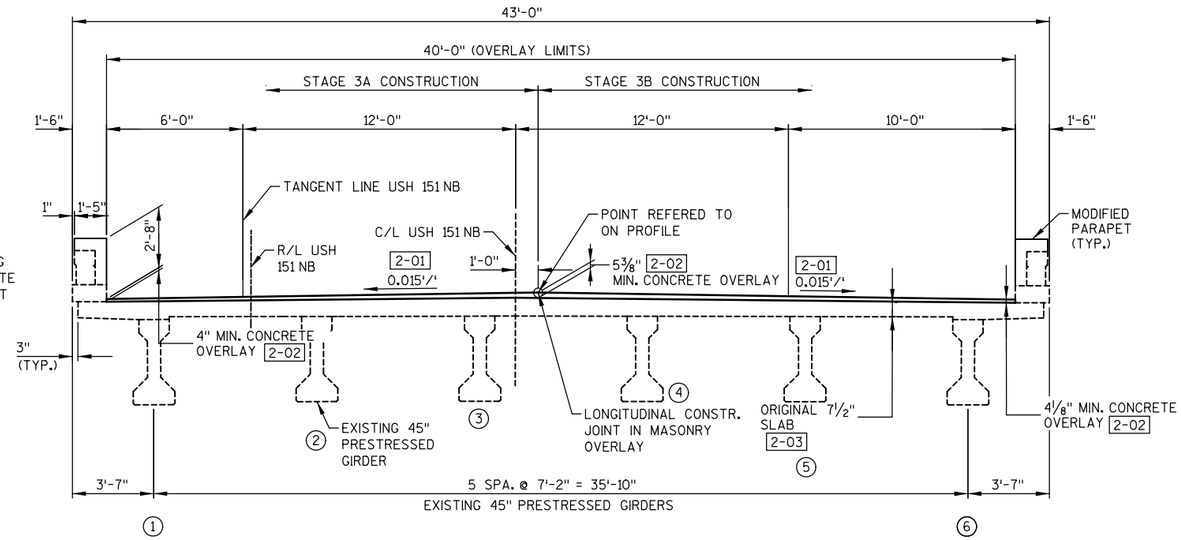
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## EXISTING CROSS SECTION THRU ROADWAY

USH 151 NB
(LOOKING EAST)




## PROPOSED CROSS SECTION THRU ROADWAY

USH 151 NB
(LOOKING EAST)

**BENCH MARK**

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 4 | 677+03/34' RT | BRASS DISK, SW CORNER TOP OF CURB B-13-272 | 1013.05 |

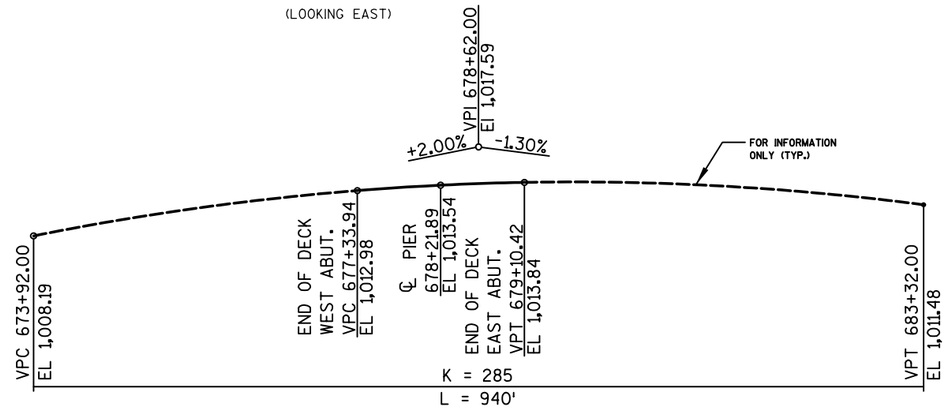
ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88)

## TOTAL ESTIMATED QUANTITIES

| | NO. | BID ITEM | UNIT | WEST ABUT. | PIER | EAST ABUT. | SUPERS. | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.05 | REMOVING OLD STRUCTURE STA. 678+21.89 | LS | | | | | 1 |
| | 203.0210.S.05 | ABATEMENT OF ASBESTOS CONTAING MATERIAL B-13-272 | LS | | | | | 1 |
| | 203.0225.S.05 | DEBRIS CONTAINMENT B-13-272 | LS | | | | | 1 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | | | | 42 | 42 |
| | 502.3100.05 | EXPANSION DEVICE B-13-272 | LS | | | | | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | | | | 787 | 787 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | | | | 198 | 198 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | | | | 448 | 448 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 53 | | 53 | 448 | 554 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 425 | | 425 | 8675 | 9525 |
| | 505.0904 | BAR COUPLERS NO. 4 | EACH | | | | 4 | 4 |
| | 505.0905 | BAR COUPLERS NO. 5 | EACH | 3 | | 3 | | 6 |
| | 505.0906 | BAR COUPLERS NO. 6 | EACH | | | | 14 | 14 |
| | 505.0907 | BAR COUPLERS NO. 7 | EACH | | | | 12 | 12 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | | | | 230 | 230 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | | | | 90 | 90 |
| | 509.1000 | JOINT REPAIR | SY | | | | 40 | 40 |
| 2-05 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 6 | | | 1 | 7 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | | | | 15 | 15 |
| 2-04 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | | | | 149 | 149 |
| | 509.9005.S.05 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-272 | SY | | | | 740 | 740 |
| | 509.9010.S.05 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-272 | SY | | | | 740 | 740 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | | | | 4 | 4 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | | | | 416 | 416 |
| | SPV.0165.01 | PPC BEAM SURFACE REPAIR | SF | | | | 12 | 12 |

ALL ITEMS ARE CATEGORY 0070.

*ENGINEER SHALL FIELD VERIFY ALL CONCRETE SURFACE REPAIR AREAS.




## PROFILE GRADE LINE (PGL)

**LEGEND** (STATIONS ALONG ℄, ELEVATIONS AT PGL, LOCATED 13' RIGHT OF ℄)

2-01 EXISTING CROSS SLOPE IS 0.01'/' AND WILL BE CHANGED TO 0.015'/'.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM AN APPROXIMATE 4" AT THE NORTH PARAPET, 5⅜" AT THE CROWN AND 4⅛" AT THE SOUTH PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATIONS. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE (WEIGHTED) OVERLAY THICKNESS IS 5 1/8" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS IN THE DECK THICKNESS.

2-03 ORIGINAL SLAB DEPTH SHOWN. ASSUMED TO BE REDUCED BY 1" DURING PLACEMENT OF PREVIOUS CONCRETE OVERLAY AS PART OF THE PREVIOUS DECK CLEARING PROCEDURE.

2-04 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1". "PREPARATIONS DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-05 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(#) DENOTES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

DRAWN BY BSC | PLANS CK'D. DJW

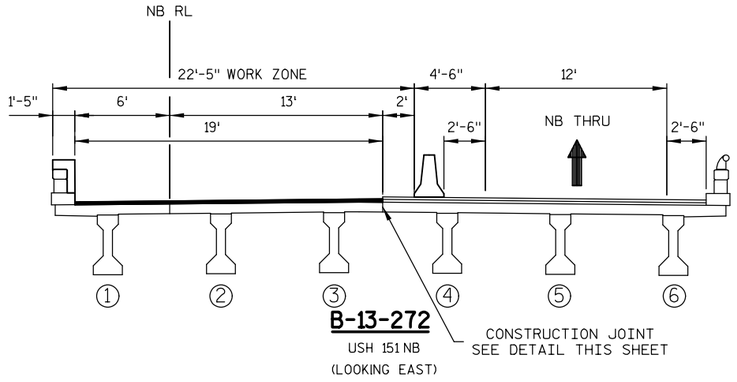
CROSS SECTIONS & QUANTITIES

SHEET 2 OF 12
396

8

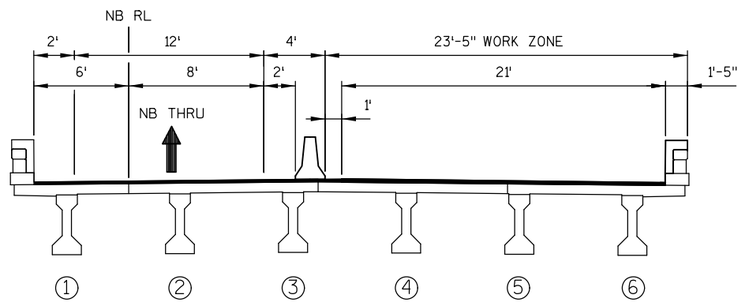
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## STAGE 3A - STRUCTURES

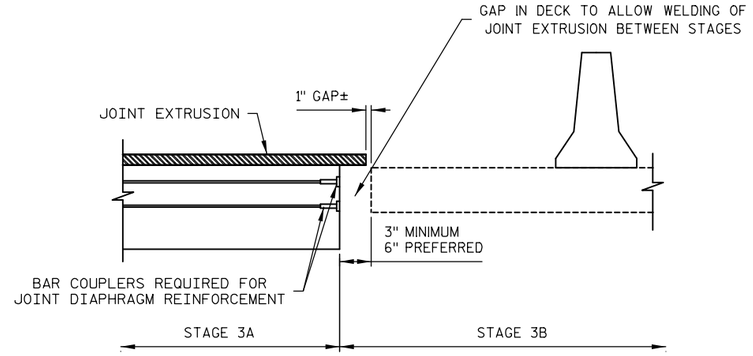
NB PERMANENT LANE CLOSURES
(NB CONSTRUCTION)




**B-13-272**
USH 151 NB
(LOOKING EAST)

## STAGE 3B - STRUCTURES

NB PERMANENT LANE CLOSURES
(NB CONSTRUCTION)




## JOINT DETAIL

## LEGEND

(#) DENOTES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

DRAWN BY BSC | PLANS CK'D. DJW

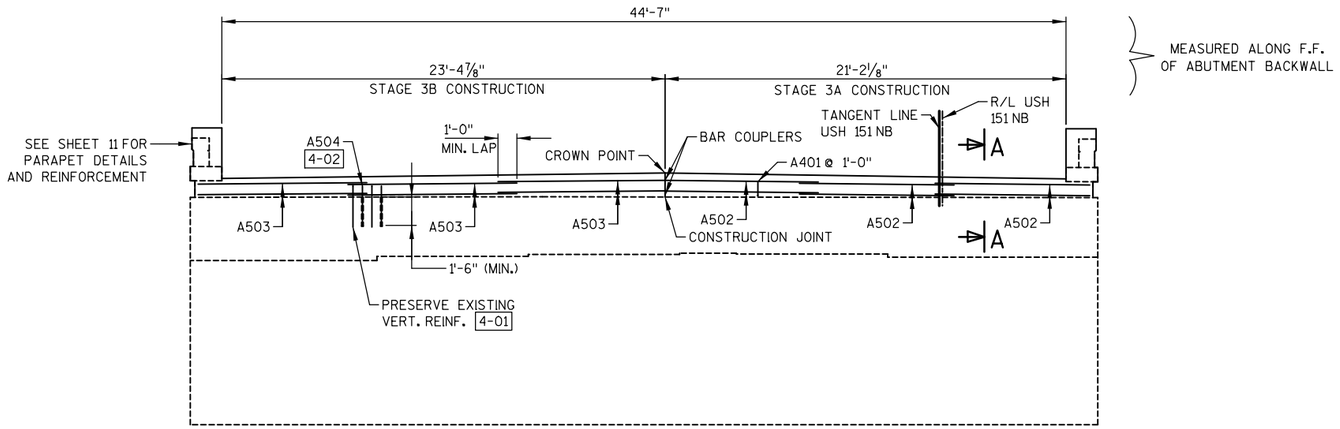
MAINTANENCE OF TRAFFIC

SHEET 3 OF 12
397

8

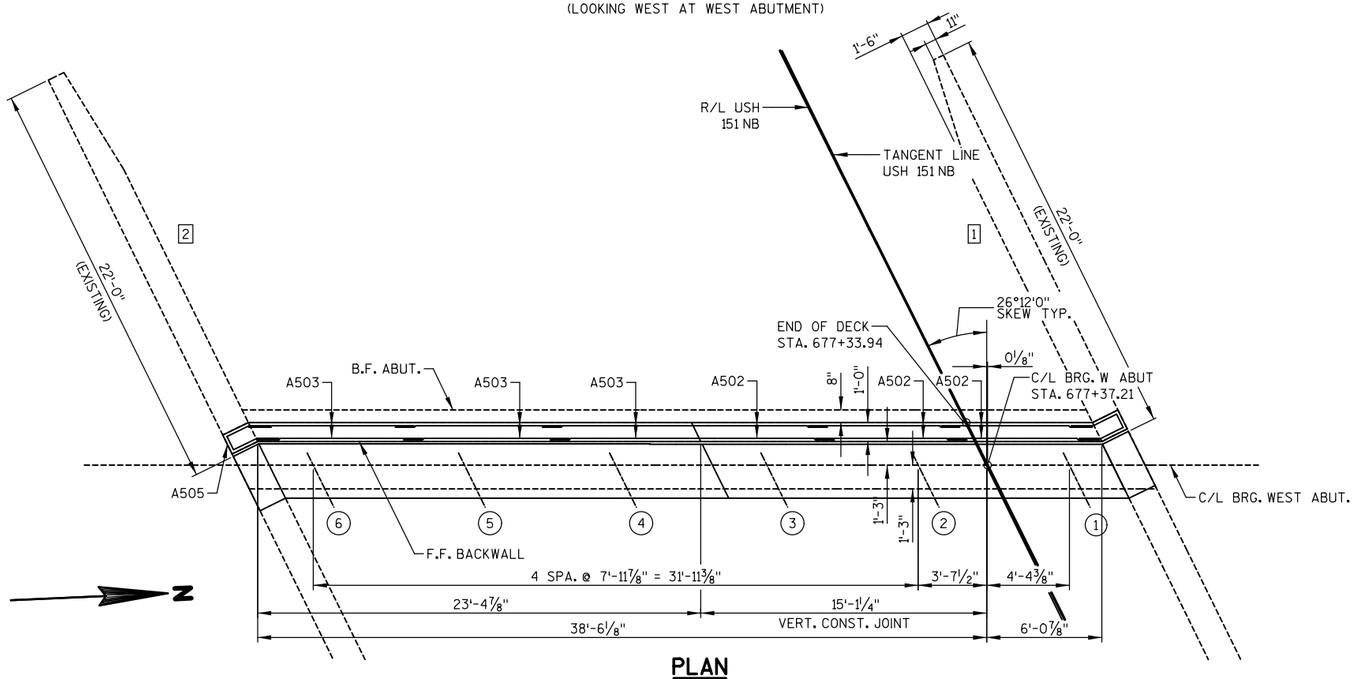
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

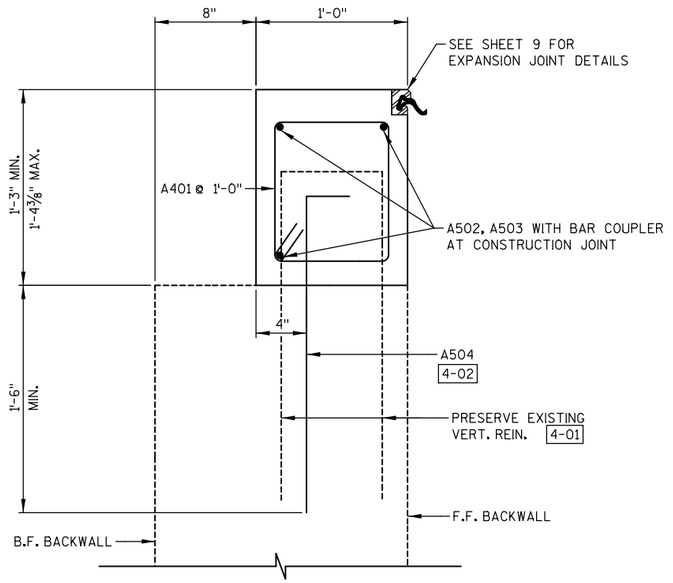



## ELEVATION

(LOOKING WEST AT WEST ABUTMENT)




## PLAN




## SECTION A-A

## BILL OF BARS
## WEST ABUTMENT

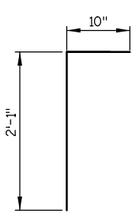
**TOTAL COATED: 425 LBS.**

| | MARK | NO. REQ. 3A | NO. REQ. 3B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| 4-03 | A401 | 21 | 24 | 45 | 3'-10" | X | X | PAVING BLOCK - VERTICAL |
| 4-03 | A502 | 9 | 0 | 9 | 7'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 4-03 | A503 | 0 | 9 | 9 | 8'-6" | | X | PAVING BLOCK - HORIZONTAL |
| 4-02 | A504 | 21 | 24 | 45 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | A505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

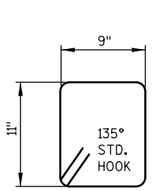
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.

## LEGEND

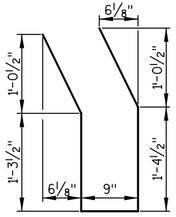
- 4-01 — PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 4-02.
- 4-02 — "ADHESIVE ANCHORS NO. 5 BARS." A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT.
- 4-03 — BAR COUPLER REQUIRED
- (#) — INDICATES GIRDER NUMBER
- [#] — DENOTES WINGWALL NUMBER




A504




A401




A505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

DRAWN BY: BSC | PLANS CK'D.: DJW

WEST ABUTMENT

SHEET 4 OF 12
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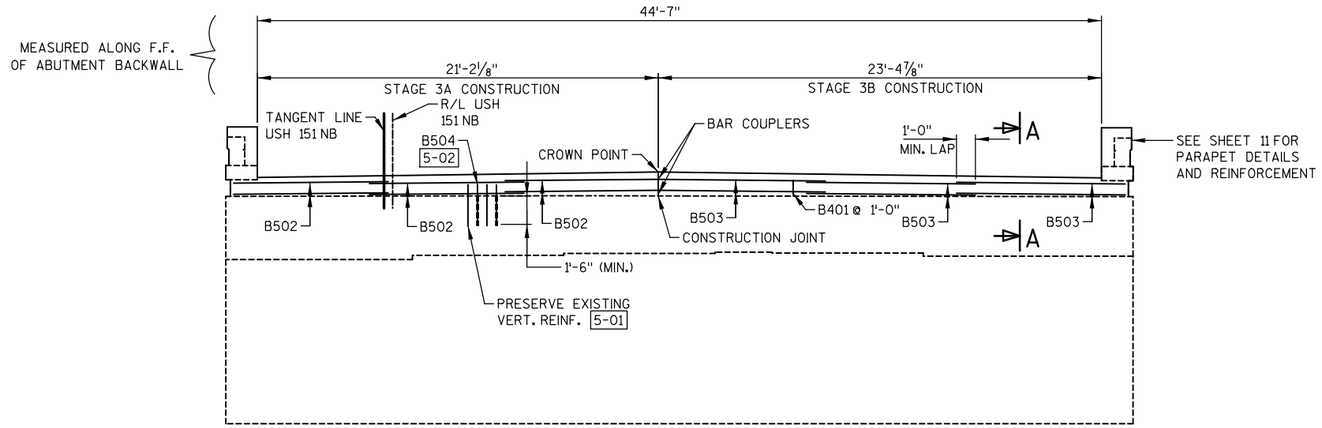
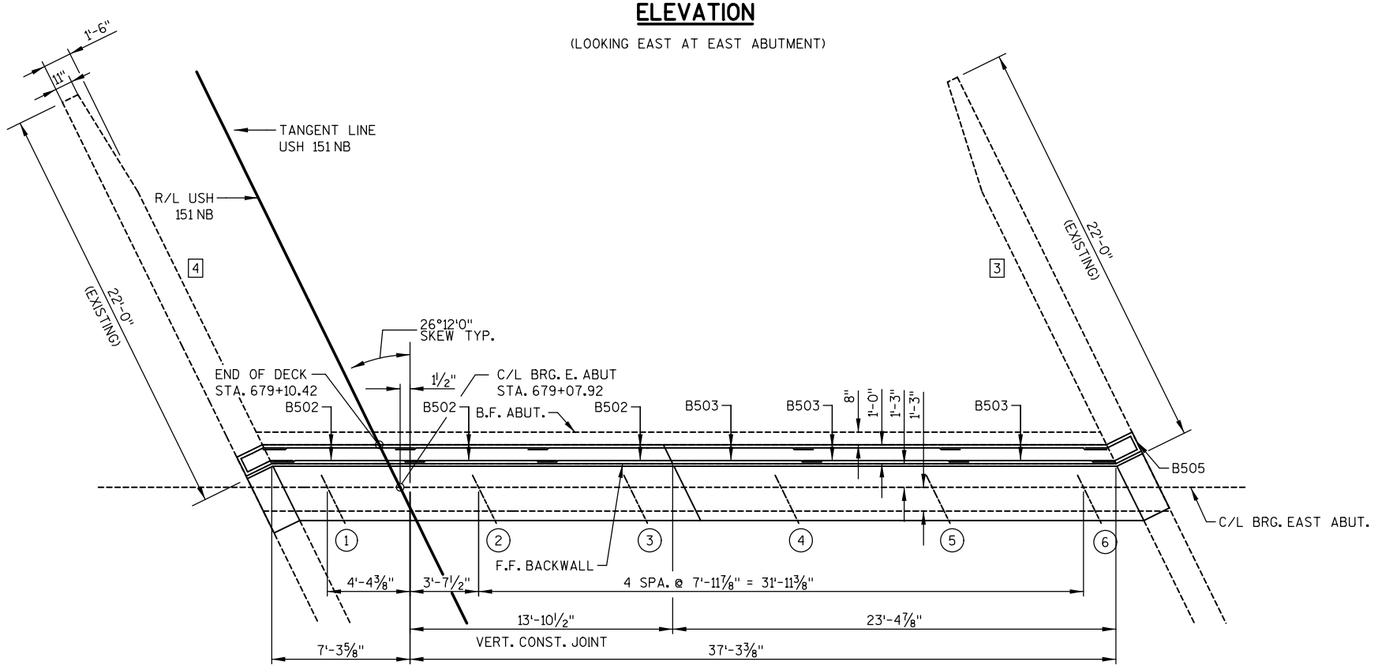
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## ELEVATION

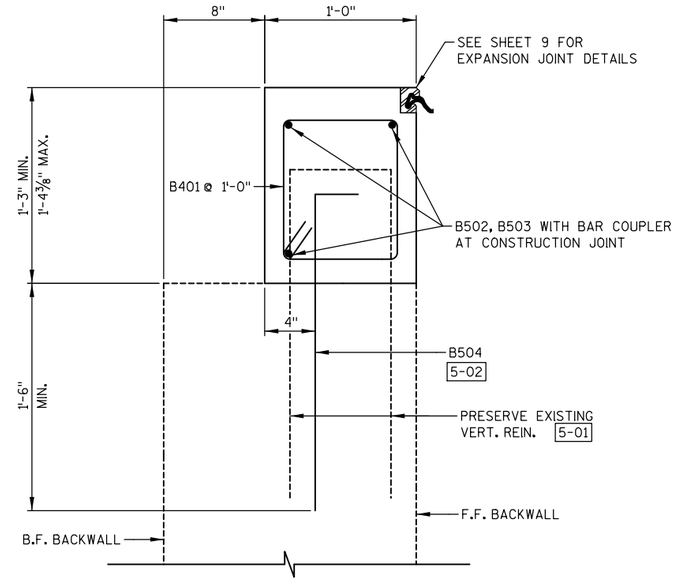
(LOOKING EAST AT EAST ABUTMENT)




## PLAN

## LEGEND

| | |
|---|---|
| 5-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 5-02. |
| 5-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 5-03 | BAR COUPLER REQUIRED |
| (*) | INDICATES GIRDER NUMBER |
| [*] | DENOTES WINGWALL NUMBER |



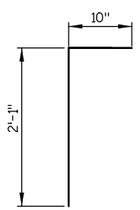

## SECTION A-A

## BILL OF BARS
## EAST ABUTMENT

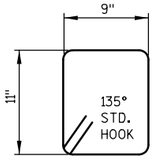
**TOTAL COATED: 425 LBS.**

| | MARK | NO. REQ. 3A | NO. REQ. 3B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | B401 | 21 | 24 | 45 | 3'-10" | X | X | PAVING BLOCK - VERTICAL |
| 5-03 | B502 | 9 | 0 | 9 | 7'-9" | | X | PAVING BLOCK - TRANSVERSE |
| 5-03 | B503 | 0 | 9 | 9 | 8'-6" | | X | PAVING BLOCK - TRANSVERSE |
| 5-02 | B504 | 21 | 24 | 45 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | B505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

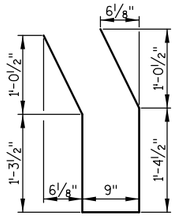
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




B504




B401




B505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

DRAWN BY BSC | PLANS CK'D. DJW

EAST ABUTMENT

SHEET 5 OF 12
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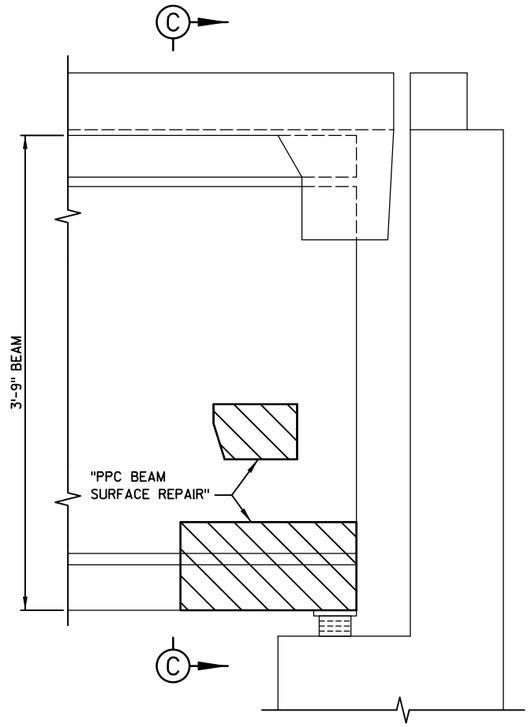
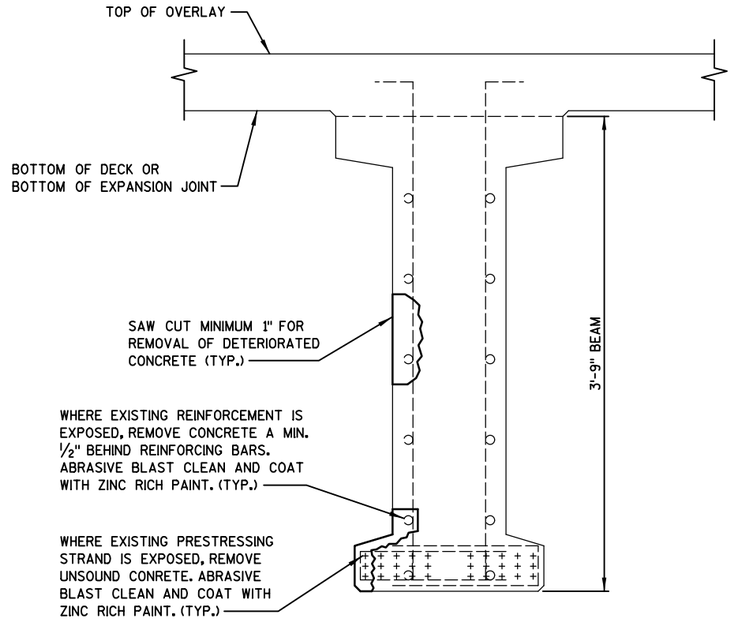



## PPC BEAM SURFACE REPAIR

SEE SHEET 1 FOR LOCATIONS




## SECTION C-C

STATE PROJECT NUMBER

1111-02-78

## BAR COUPLER NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

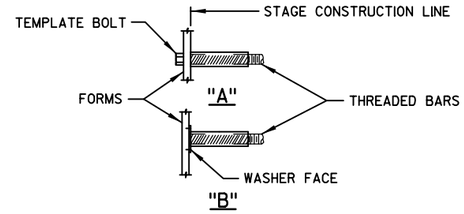
DOWEL BAR SPLICERS (COUPLERS) SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

SPLICER (COUPLER) ASSEMBLIES SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENTS:

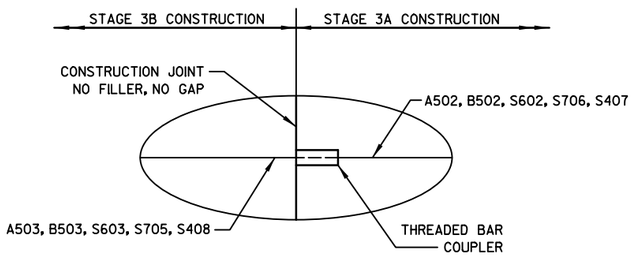
(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.




## BAR COUPLER INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## BAR COUPLER DETAIL

BAR LENGTHS HAVE BEEN COMPUTED TO ℄ OF CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS.

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | END OF DECK W. ABUT. | C/L OF BRG. W. ABUT. | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF PIER #1 | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF BRG. E. ABUT. | END OF DECK E. ABUT. |
| LEFT FLOW LINE | 1012.72 | 1012.74 | 1012.81 | 1012.87 | 1012.93 | 1012.98 | 1013.04 | 1013.09 | 1013.14 | 1013.19 | 1013.23 | 1013.27 | 1013.31 | 1013.35 | 1013.38 | 1013.42 | 1013.45 | 1013.47 | 1013.50 | 1013.52 | 1013.54 | 1013.56 | 1013.56 |
| CROWN LINE | 1012.92 | 1012.95 | 1013.02 | 1013.08 | 1013.14 | 1013.20 | 1013.26 | 1013.32 | 1013.37 | 1013.42 | 1013.47 | 1013.51 | 1013.55 | 1013.59 | 1013.63 | 1013.67 | 1013.70 | 1013.73 | 1013.76 | 1013.78 | 1013.80 | 1013.82 | 1013.83 |
| RIGHT FLOW LINE | 1012.52 | 1012.55 | 1012.62 | 1012.69 | 1012.75 | 1012.82 | 1012.88 | 1012.93 | 1012.99 | 1013.04 | 1013.09 | 1013.14 | 1013.19 | 1013.23 | 1013.27 | 1013.31 | 1013.34 | 1013.38 | 1013.41 | 1013.44 | 1013.46 | 1013.48 | 1013.49 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.
END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

DRAWN BY DTH | PLANS CK'D. ADW

MISC. DETAILS & OVERLAY ELEVATIONS

SHEET 6 OF 12
400

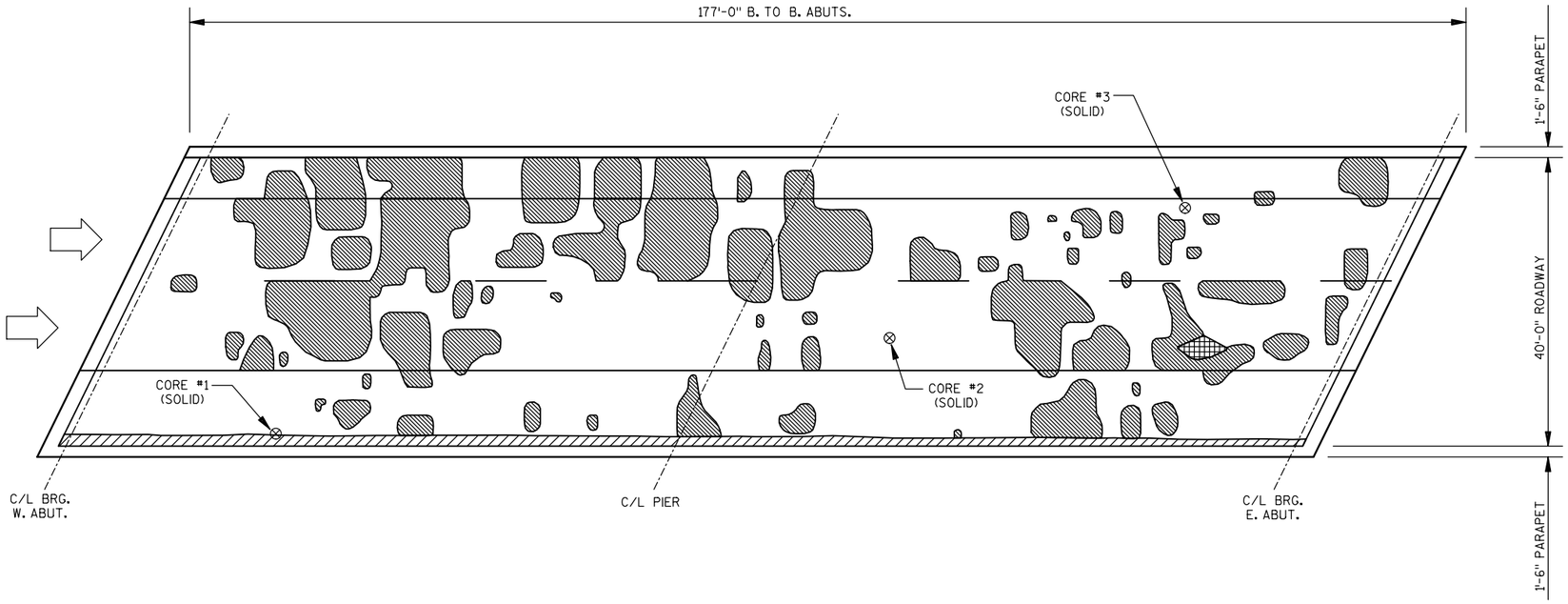
8

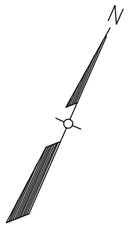
8

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-272\sa_B-13-272_06_det.dgn

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




## PLAN B-13-272

## NOTES

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY. DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER. THE QUANTITIES FOR PREPARATION OF DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.

## DECK INSPECTION RESULTS

| FIELD OBSERVATIONS SUMMARY | | S.N. B-13-272 | |
|---|---|---|---|
| ITEM | UNIT | QUANT. | % |
| TOTAL AREA | $ft^2$ | 7016 | |
| SHADE/DEBRIS | $ft^2$ | 230 | |
| DELAMINATION | $ft^2$ | 1836 | 27.1 |
| SPALL | $ft^2$ | 0 | 0 |
| DEBOND | $ft^2$ | 0 | 0 |
| ASPHALT PATCH | $ft^2$ | 13 | 0.2 |
| CONCRETE PATCH | $ft^2$ | 0 | 0 |

LEGEND

DELAMINATION

SPALL

DEBOND

ASPHALT PATCH

CONCRETE PATCH

SHADE/DEBRIS

SCALE 0' 5' 10' 20'

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/6/12

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

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DECK INSPECTION RESULTS

SHEET 7 OF 12

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| STATE PROJECT NUMBER |
|---|
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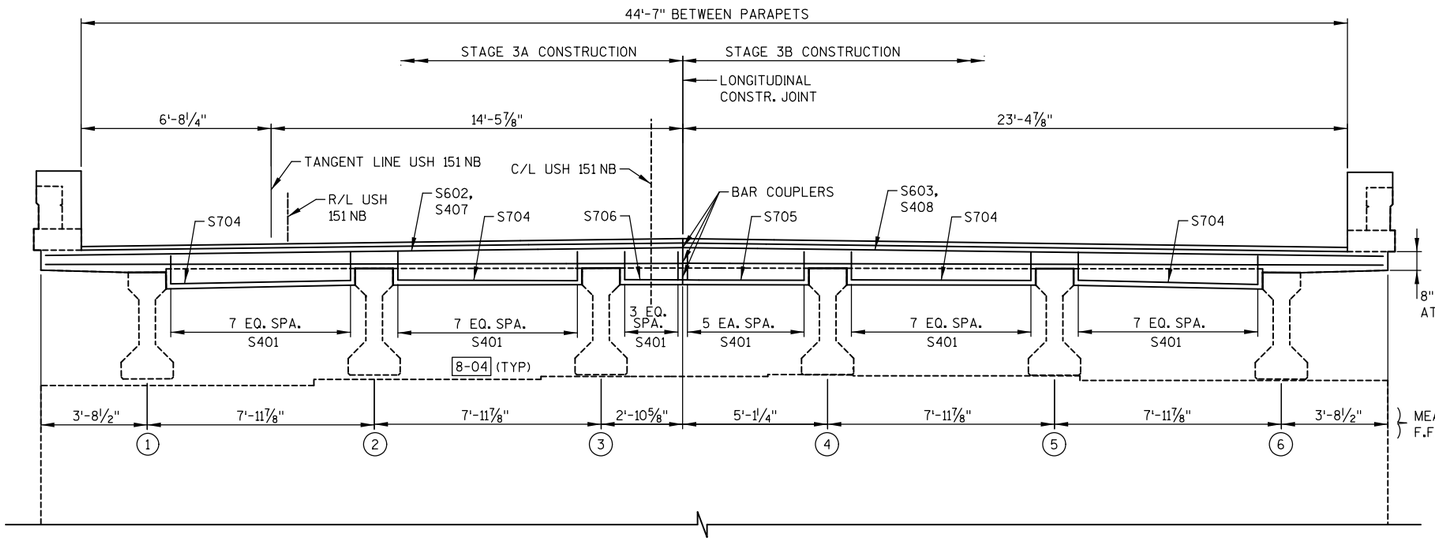
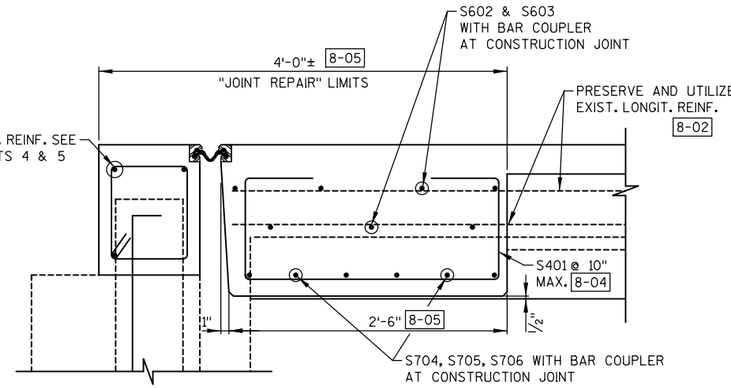


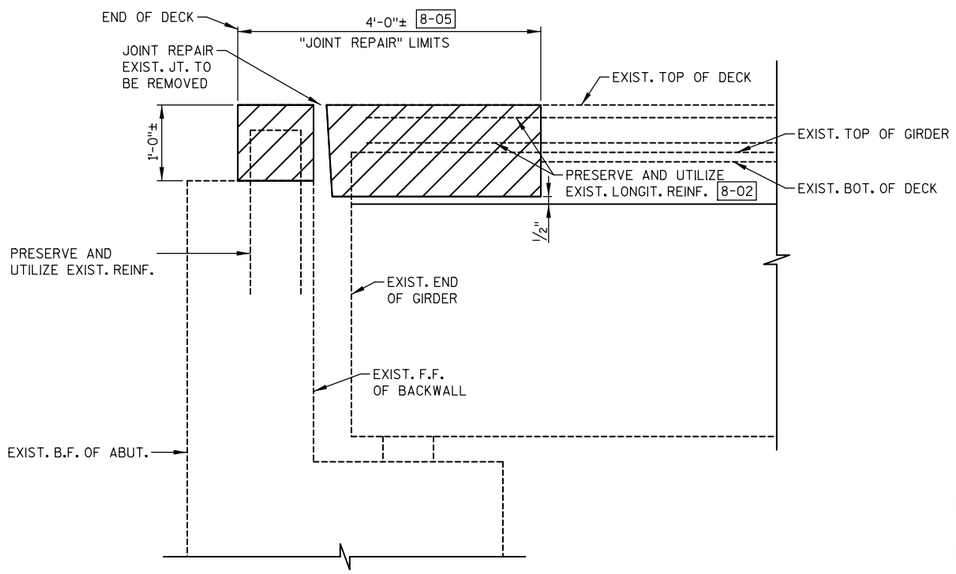

## ELEVATION

EAST ABUTMENT SHOWN
(WEST ABUTMENT MIRROR IMAGE)




## SECTION THRU JOINT AT ABUTMENTS

NORMAL TO SUBSTRUCTURE




## REMOVAL SECTION THRU JOINT AT ABUTMENTS

NORMAL TO SUBSTRUCTURE

## BILL OF BARS
## DECK JOINTS

**COATED: 2,185 LBS.**

| | MARK | NO. REQ. 3A | NO. REQ. 3B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | S401 | 40 | 44 | 84 | 5'-4" | X | X | SLAB - JOINT AT ABUT. - VERTICAL |
| 8-01 8-03 | S602 | 14 | 0 | 14 | 22'-3" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-01 8-03 | S603 | 0 | 14 | 14 | 24'-7" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| | S704 | 24 | 24 | 48 | 6'-2" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 8-01 | S705 | 0 | 12 | 12 | 4'-2" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 8-01 | S706 | 12 | 0 | 12 | 2'-0" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 | S407 | 12 | 0 | 12 | 8'-8" | | X | SLAB - EXPANSION DEVICE - TRANSVERSE |
| 8-03 | S408 | 0 | 12 | 12 | 9'-5" | | X | SLAB - EXPANSION DEVICE - TRANSVERSE |

NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.

## LEGEND

8-01 ADJUST BAR LENGTHS AS NECESSARY TO ACCOMMODATE BAR COUPLER MANUFACTURER RECOMMENDATIONS, IF BARS ARE FIELD CUT, APPLY EPOXY COATING TO BAR ENDS.

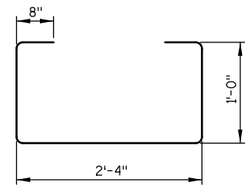
8-02 PRESERVE AND UTILIZE EXISTING LONGITUDINAL REINFORCING. SAVE AND INCORPORATE 1'-6" MIN. OF TRANSVERSE DECK REINFORCING BARS THAT RUN NORMAL TO THE GIRDERS.

8-03 BAR COUPLER REQUIRED

8-04 BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C/L OF GIRDERS.

8-05 DIMENSIONS GIVEN ARE NORMAL TO C/L OF SUBSTRUCTURE UNIT.

(#) INDICATES GIRDER NUMBER




S401

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

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REPLACEMENT JOINT DETAILS 1

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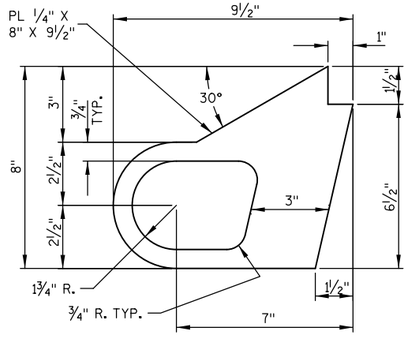
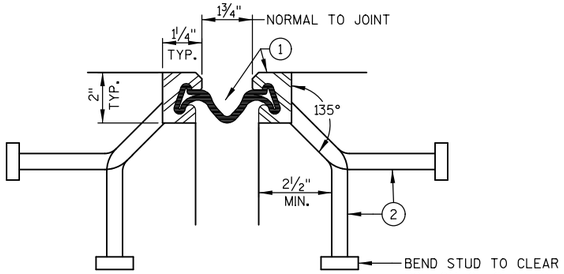
| 1111-02-78 |

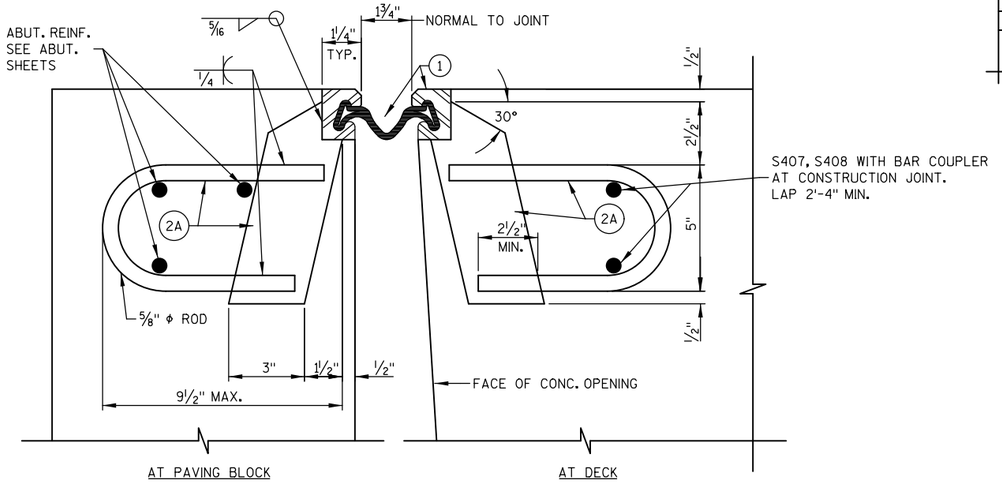



## ALTERNATE STRIP SEAL ANCHOR



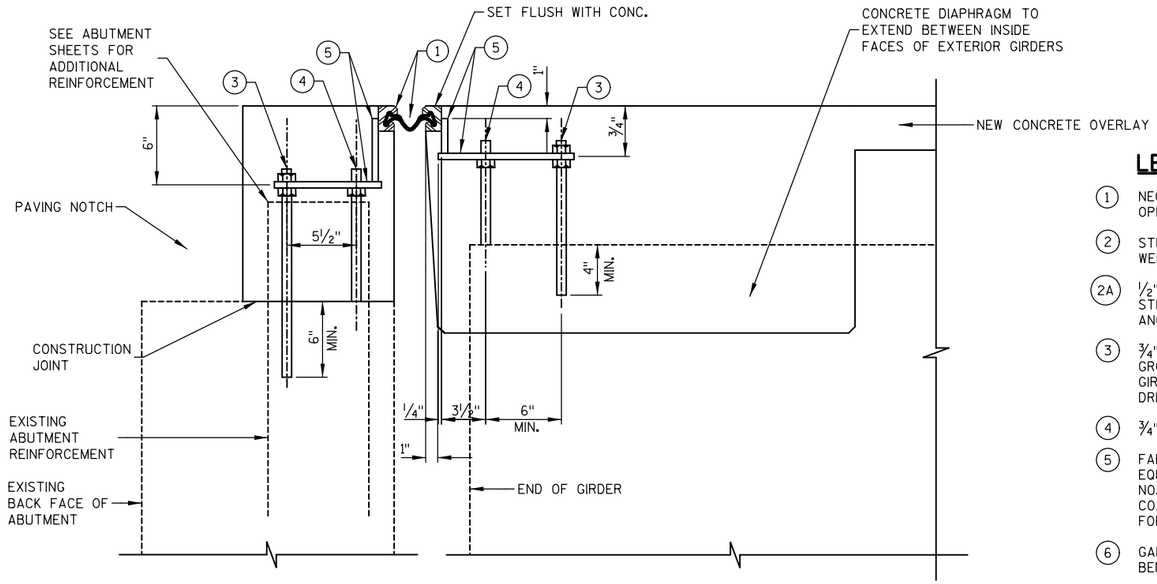

## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS



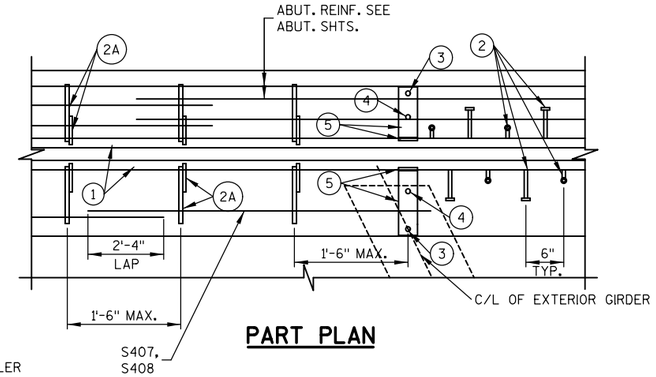

## SECTION THRU JOINT AT ABUTMENTS

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS




## TYPICAL SECTION THRU JOINT AT ABUTMENTS

NORMAL TO C/L OF SUBSTRUCTURE




## PART PLAN

## LEGEND

(1) NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1 3/4".

(2) STUDS 5/8"ϕ 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"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.2 AT 1'-6" CENTERS BETWEEN GIRDERS.

(3) 3/4"ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

(4) 3/4"ϕ 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 OF FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2"ϕ HOLE FOR NO. 2 AND 1"ϕ HOLE FOR NO. 4.

(6) GALVANIZED PLATE 3/8" X 10" X 2'-2" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.

(7) 3/4"ϕ X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

(8) 3/4"ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.

(9) 3/4"ϕ X 2 1/4" GALVANIZED THREADED COUPLING.

(10) 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

## GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION. 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.

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 AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-13-272".

BAR COUPLERS REQUIRED

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

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REPLACEMENT JOINT DETAILS 2

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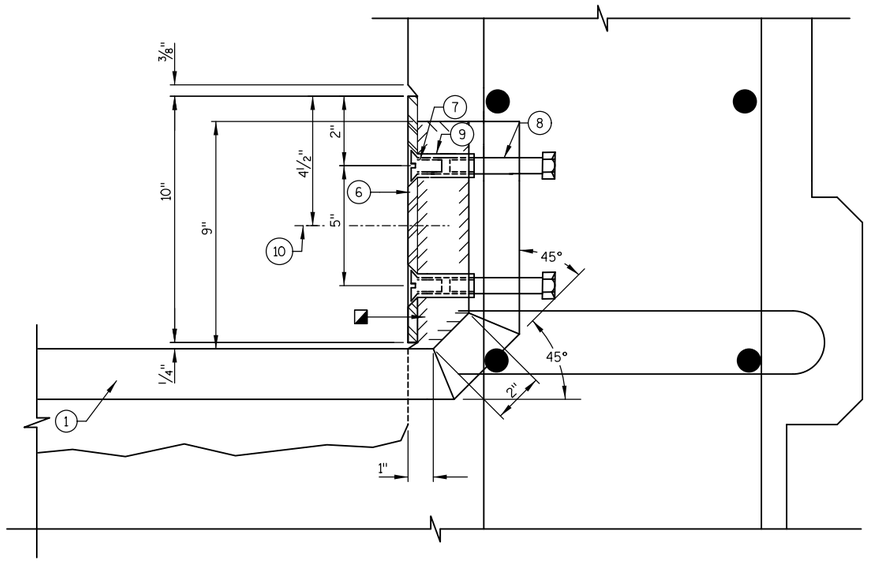
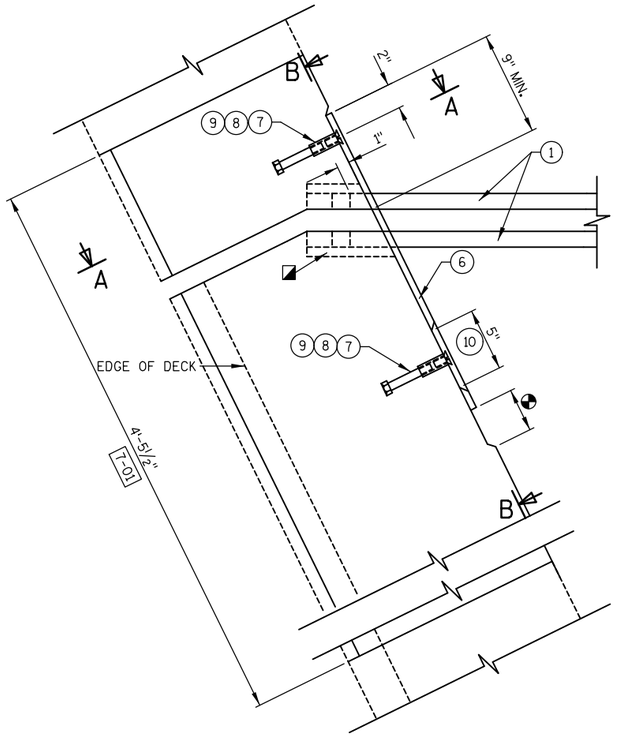
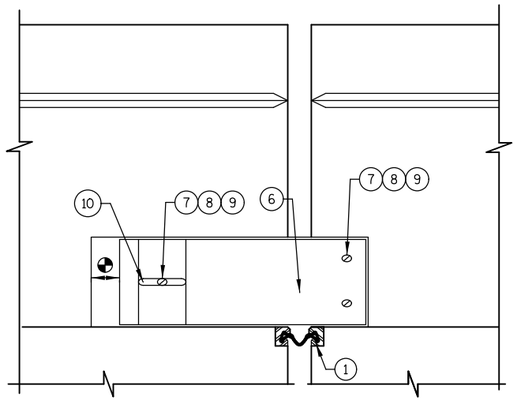


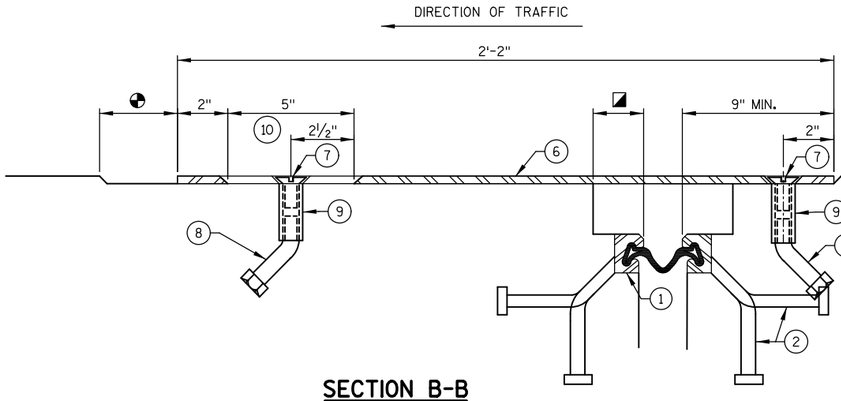

## SECTION A-A



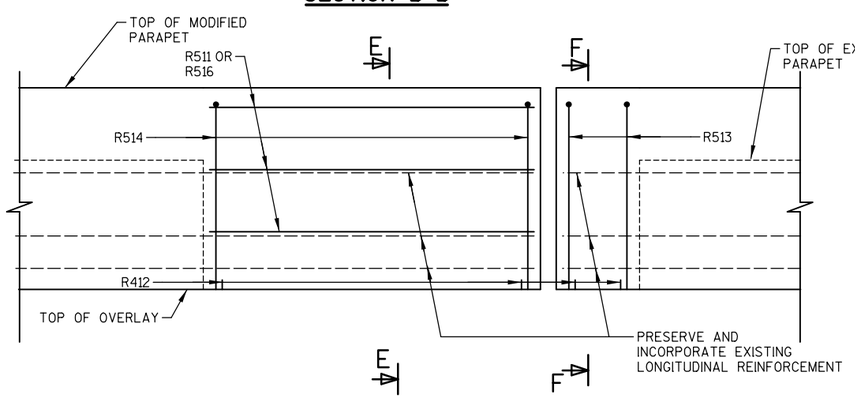

## PLAN AT PARAPET



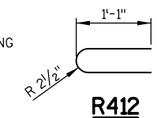
## VIEW OF PARAPET PLATE FROM ROADWAY



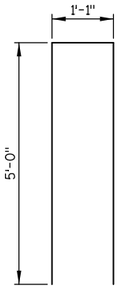

## SECTION B-B



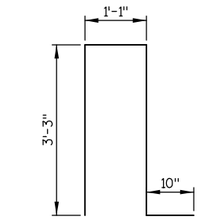

## VIEW OF PARAPET REPLACEMENT FROM ROADWAY



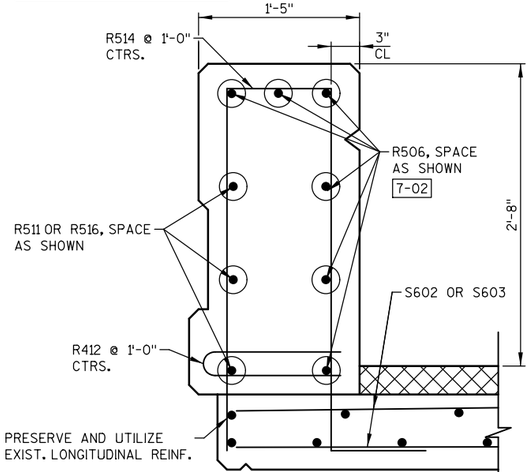

## R412



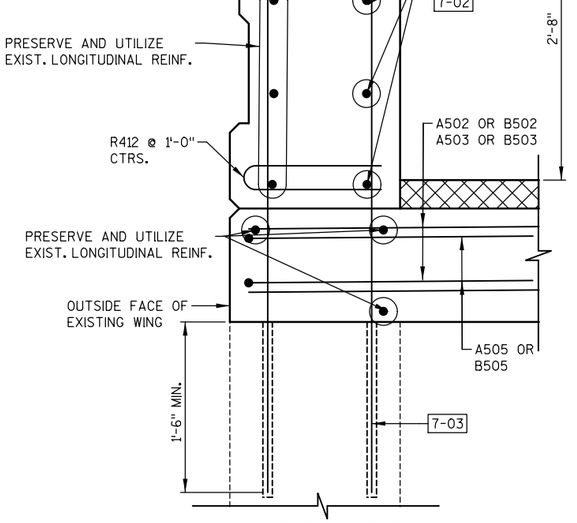

## R513




## R514




## SECTION E-E




## SECTION F-F

## LEGEND

- JOINT OPENING DIMENSION ALONG SKEW PLUS ½".
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- (X) SEE SHEET 9 FOR DESCRIPTION
- [7-01] JOINT REPAIR LIMITS, REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.
- [7-02] SEE SHEET 12 FOR R505 AND R506 REINFORCEMENT DETAILS.
- [7-03] "ADHESIVE ANCHORS NO.5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE.

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

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REPLACEMENT JOINT DETAILS 3

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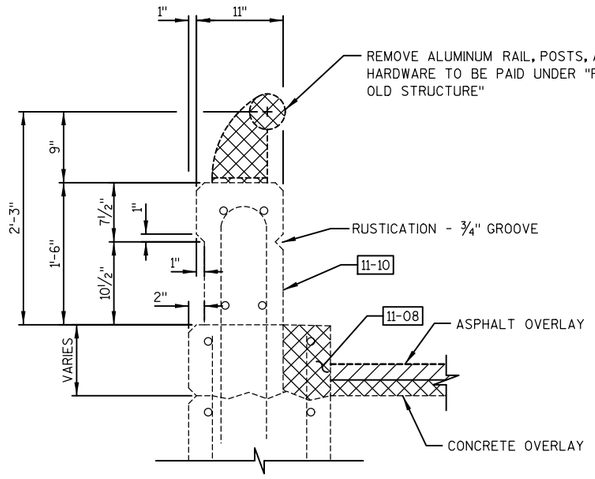
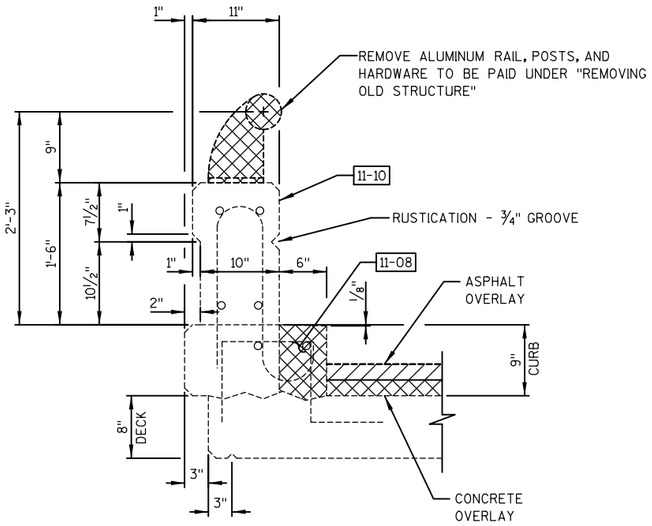
## LEGEND

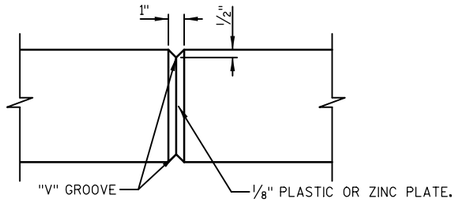
- 11-01 CONCRETE MASONRY OVERLAY DECKS.
- 11-02 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.
- 11-03 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL".
- 11-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE PARAPET. EPOXY ANCHORED.
- 11-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.
- 11-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.
- 11-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.
- 11-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".
- 11-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.
- 11-10 DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER. SALVAGE EXISTING REINFORING STEEL. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".
- 11-11 IN WINGS [1] AND [3] ONLY. LAP 2'-7" MIN. WITH R505 BARS.
- 11-12 LAP 2'-7" MIN. WITH R502 OR R503 BARS.



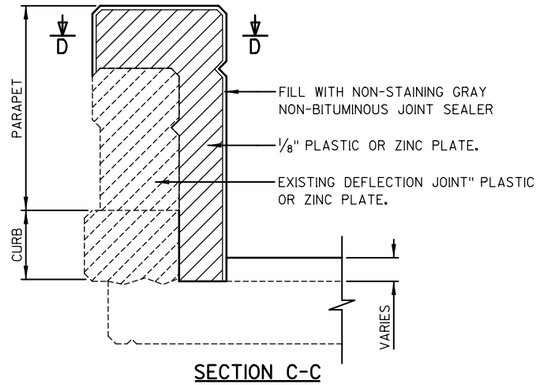

EXISTING SECTION THRU WING



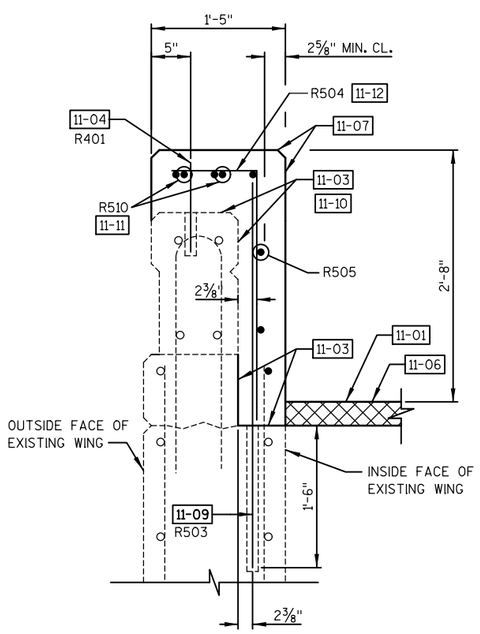

EXISTING SECTION THRU PARAPET & CURB ON BRIDGE



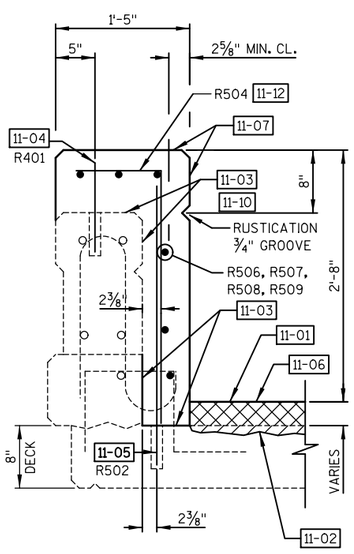

SECTION D-D



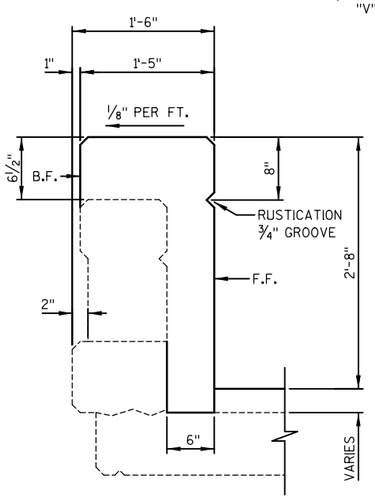

SECTION C-C
(SHOWING DEFLECTION JOINT IN PARAPET.)



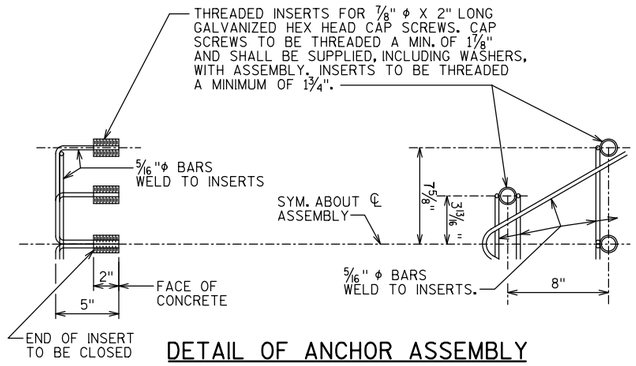

SECTION A-A THRU WINGS




SECTION B-B THRU PARAPET & CURB ON BRIDGE



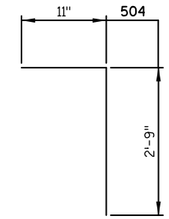

MODIFIED PARAPET SHAPE




DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

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|---|---|---|---|
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-272

| DRAWN BY | BSC | PLANS CK'D. | DJW |
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PARAPET DETAILS 1

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FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-272\sa_B-13-272_11_par.dgn

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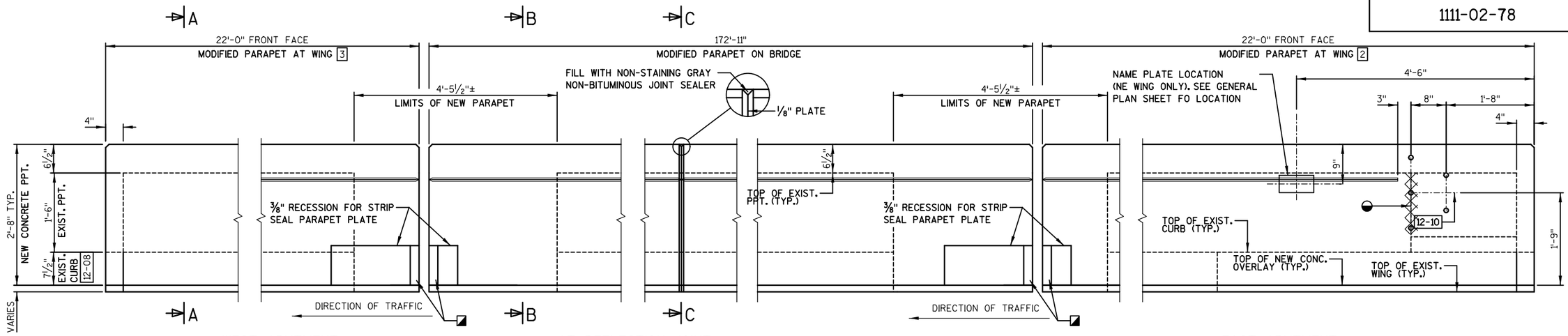
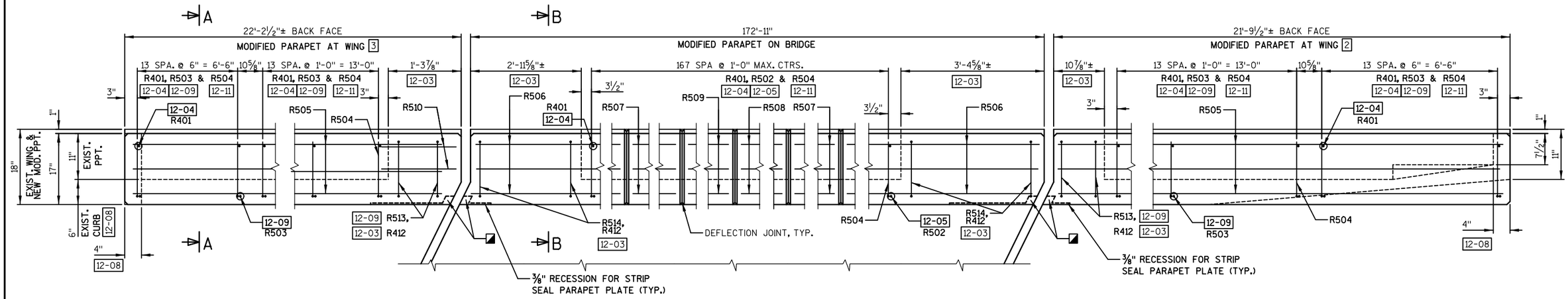



WEST ABUTMENT

AT DEFLECTION JOINT

EAST ABUTMENT

## INSIDE ELEVATION VIEW - SOUTH PARAPET SHOWN




## PLAN VIEW - SOUTH PARAPET SHOWN

## NOTES

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS ARE USED AT DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS OMITTED.

12-03 SEE SHEET 10 FOR CONCRETE AND REINFORCEMENT DETAILS WITHIN LIMITS OF THE NEW PARAPET.

12-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO TOP OF EXISTING CONCRETE PARAPET. EPOXY ANCHORED.

12-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

12-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

12-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

12-10 CENTERLINE OF ANCHOR ASSEMBLY FOR THRIE BEAM, SEE "GENERAL PLAN" SHEET FOR GUARDRAIL LOCATION.

12-11 LAP 2'-7" MIN. WITH R502 OR R503 BARS.

SEE SHEET 11 FOR SECTIONS A, B, & C

## BILL OF BARS - BOTH RAILS

COATED: 6,490 LBS.

| | BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| 12-04 | R401 | X | 448 | 0'-9" | | | PARAPET - VERT. - ALL WINGS AND BRIDGE - B.F. |
| 12-05 | R502 | X | 336 | 3'-2" | | | PARAPET - VERT. - BRIDGE - F.F. |
| 12-09 | R503 | X | 112 | 4'-3" | | | PARAPET - VERT. - ALL WINGS - F.F. |
| | R504 | X | 448 | 3'-7" | X | | PARAPET - VERT. - ALL WINGS AND BRIDGE - F.F. |
| | R505 | X | 24 | 21'-4" | | | PARAPET - HORIZ. - ALL WINGS - F.F. AND TOP |
| | R506 | X | 24 | 29'-0" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R507 | X | 24 | 33'-11" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R508 | X | 12 | 21'-8" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R509 | X | 12 | 23'-2" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R510 | X | 4 | 3'-0" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP - LAP BAR |
| | R511 | X | 6 | 2'-7" | | | PARAPET - AT JOINT - DECK - SE AND NW CORNERS |
| | R412 | X | 24 | 2'-5" | X | | PARAPET - HORIZONTAL |
| 12-09 | R513 | X | 8 | 10'-10" | X | | PARAPET - AT JOINT - ABUTMENT SIDE |
| | R514 | X | 16 | 8'-1" | X | | PARAPET - AT JOINT - DECK SIDE |
| | R516 | X | 6 | 3'-0" | | | PARAPET - AT JOINT - DECK - SW AND NE CORNERS |

## LEGEND

- REMOVE EXIST. PPT. AS NEEDED FOR PROPER INSTALLATION OF THRIE BEAM ANCHOR ASSEMBLY.
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- [*] DENOTES WINGWALL NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

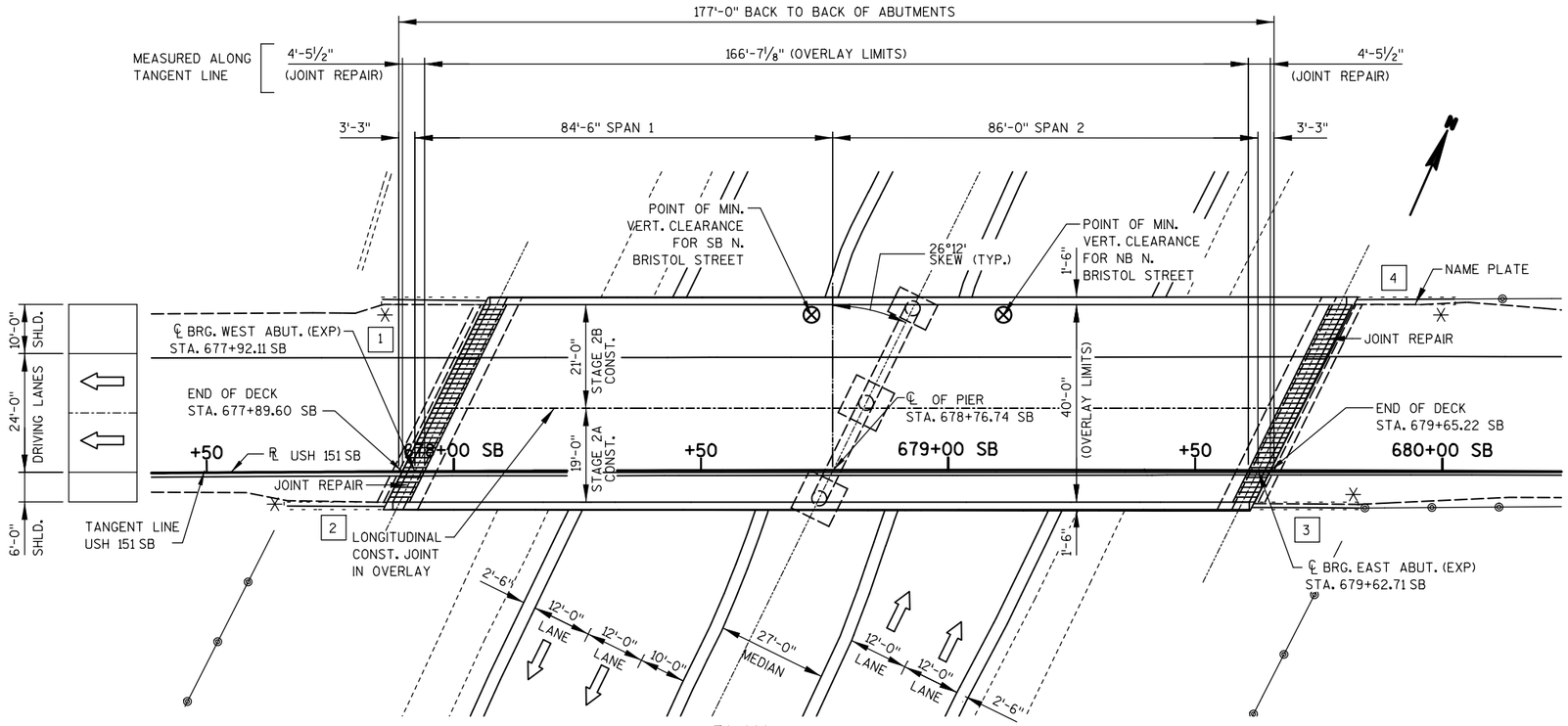
STRUCTURE B-13-272

DRAWN BY BSC | PLANS CK'D. DJW

PARAPET DETAILS 2

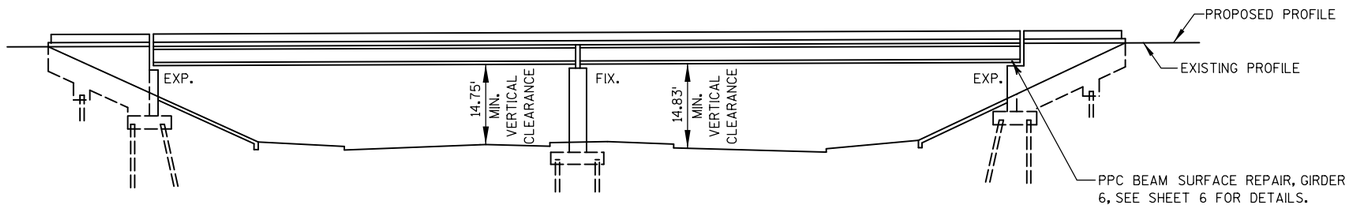
SHEET 12 OF 12
406

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-272\sa_B-13-272_12_par.dgn




## PLAN

CONCRETE OVERLAY-2 SPAN, 45" PRESTRESSED GIRDERS




## ELEVATION

PARALLEL TO USH 151 SB
(LOOKING NORTH)

## EXISTING HORIZ. CURVE DATA

| | | |
|---|---|---|
| P.I. | = | STA. 679+36.87 |
| D | = | 0° 15' |
| △ | = | 4° 25' 41" |
| T | = | 886.03' |
| L | = | 1771.18' |
| SE | = | NC |
| R | = | 22,918.32' |

## LEGEND

✳ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.

[X] DENOTES WINGWALL NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 21,000 VPD
R.D.S = 70 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING — HS-18
OPERATING RATING — HS-44
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) — 250 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c — 4,000 PSI
CONCRETE MASONRY BRIDGES f'c — 4,000 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy — 60,000 PSI

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC
4. WEST ABUTMENT
5. EAST ABUTMENT
6. MISC. DETAILS & OVERLAY ELEVATIONS
7. DECK INSPECTION RESULTS
8. REPLACEMENT JOINT DETAILS 1
9. REPLACEMENT JOINT DETAILS 2
10. REPLACEMENT JOINT DETAILS 3
11. PARAPET DETAILS 1
12. PARAPET DETAILS 2


STATE PROJECT NUMBER

**1111-02-78**

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CONCRETE SURFACE REPAIR, PRESTRESSED GIRDER END REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWING SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGIT OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-273".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1970.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

WISCONSIN
DAVID J. WALKER
E-37209
8-1-2016
PROFESSIONAL ENGINEER

SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONTACT:
DAVID WALKER, P.E. (608) 251-4843

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


STRAND ASSOCIATES®
910 WEST WINGRA DRIVE
MADISON, WISCONSIN 53715
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(608) 251-8655 FAX
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-13-273

USH 151 SB OVER CTH N BRISTOL STREET

COUNTY: DANE — ~~TOWN~~/CITY/~~VILLAGE~~: SUN PRAIRIE

DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| DEB | DJW | BSC | DJW |

GENERAL PLAN

SHEET 1 OF 12
407

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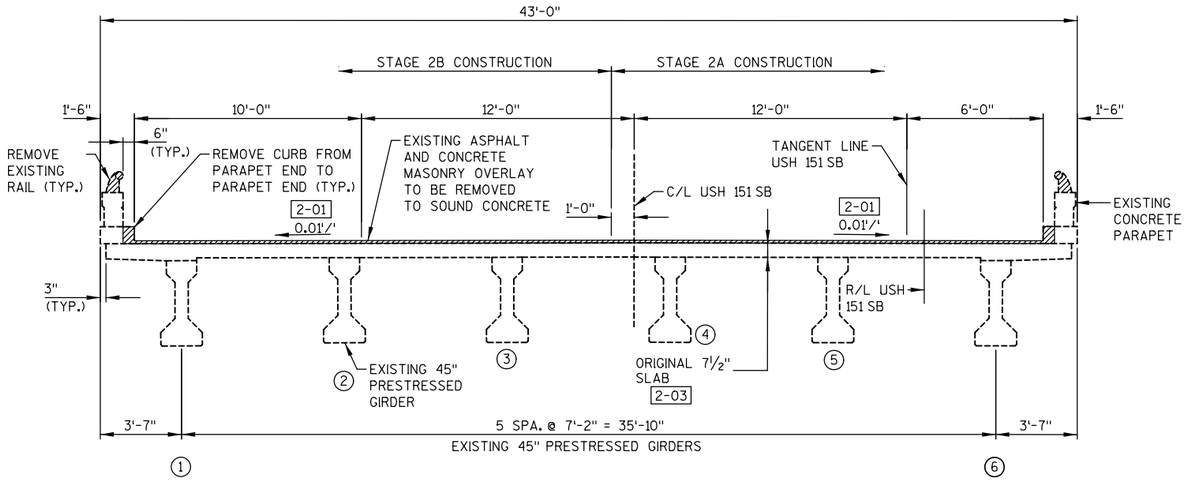
STATE PROJECT NUMBER

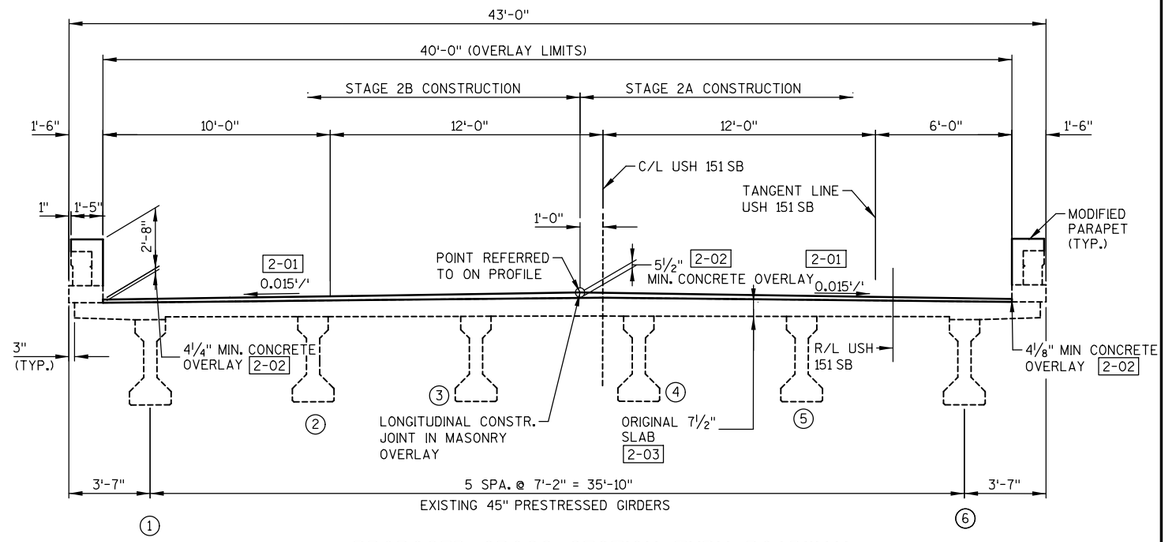
1111-02-78




## EXISTING CROSS SECTION THRU ROADWAY

USH 151 SB

(LOOKING EAST)




## PROPOSED CROSS SECTION THRU ROADWAY

USH 151 SB

(LOOKING EAST)

**BENCH MARK**

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 4 | 677+03/34'RT | BRASS DISK, SW CORNER TOP OF CURB B-13-272 | 1013.05 |

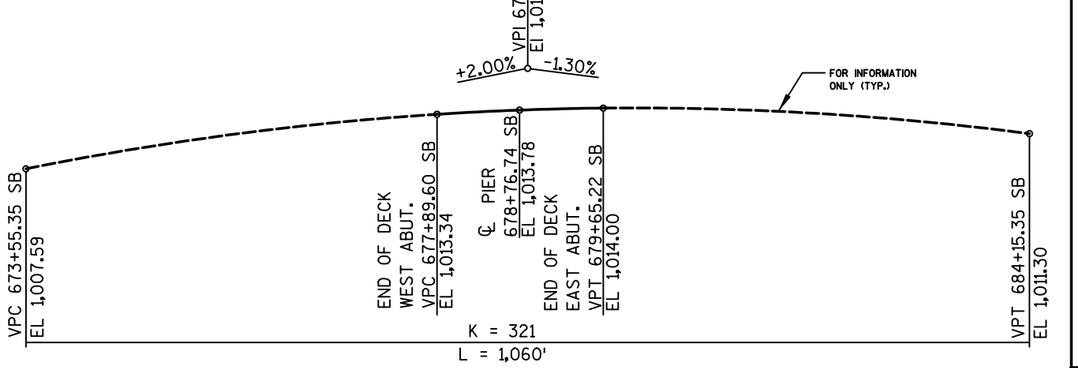
ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88)

## TOTAL ESTIMATED QUANTITIES

| | NO. | BID ITEM | UNIT | WEST ABUT. | PIER | EAST ABUT. | SUPERS. | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.06 | REMOVING OLD STRUCTURE STA. 678+76.74 | LS | | | | | 1 |
| | 203.0210.S.06 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-13-273 | LS | | | | | 1 |
| | 203.0225.S.06 | DEBRIS CONTAINMENT B-13-273 | LS | | | | | 1 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | | | | 44 | 44 |
| | 502.3100.06 | EXPANSION DEVICE B-13-273 | LS | | | | | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | | | | 787 | 787 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | | | | 198 | 198 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | | | | 448 | 448 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 53 | | 53 | 448 | 554 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 425 | | 425 | 8675 | 9525 |
| | 505.0904 | BAR COUPLERS NO. 4 | EACH | | | | 4 | 4 |
| | 505.0905 | BAR COUPLERS NO. 5 | EACH | 3 | | 3 | | 6 |
| | 505.0906 | BAR COUPLERS NO. 6 | EACH | | | | 14 | 14 |
| | 505.0907 | BAR COUPLERS NO. 7 | EACH | | | | 12 | 12 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | | | | 300 | 300 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | | | | 120 | 120 |
| | 509.1000 | JOINT REPAIR | SY | | | | 40 | 40 |
| 2-05 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 12 | | 6 | 1 | 19 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | | | | 15 | 15 |
| 2-04 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | | | | 160 | 160 |
| | 509.9005.S.06 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-273 | SY | | | | 736 | 736 |
| | 509.9010.S.06 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-273 | SY | | | | 736 | 736 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | | | | 4 | 4 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | | | | 416 | 416 |
| | SPV.0165.01 | PPC BEAM SURFACE REPAIR | SF | | | | 8 | 8 |

ALL ITEMS ARE CATEGORY 0080.

*ENGINEER SHALL FIELD VERIFY ALL CONCRETE SURFACE REPAIR AREAS.




## PROFILE GRADE LINE (PGL)

(STATIONS ALONG ℄, ELEVATIONS AT PGL, LOCATED 13' LEFT OF ℄)

**LEGEND**

2-01 EXISTING CROSS SLOPE IS 0.01'/' AND WILL BE CHANGED TO 0.015'/'.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM AN APPROXIMATE 4¼" AT THE NORTH PARAPET, 5½" AT THE CROWN AND 4⅛" AT THE SOUTH PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATIONS. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE (WEIGHTED) OVERLAY THICKNESS IS 5⅜" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS IN THE DECK THICKNESS.

2-03 ORIGINAL SLAB DEPTH SHOWN. ASSUMED TO BE REDUCED BY 1" DURING PLACEMENT OF PREVIOUS CONCRETE OVERLAY AS PART OF THE PREVIOUS DECK CLEARING PROCEDURE.

2-04 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1". "PREPARATIONS DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-05 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(*) DENOTES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

DRAWN BY BSC | PLANS CK'D. DJW

CROSS SECTIONS & QUANTITIES

SHEET 2 OF 12
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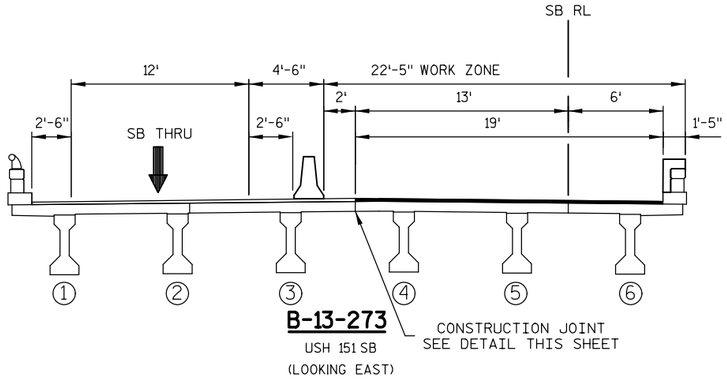
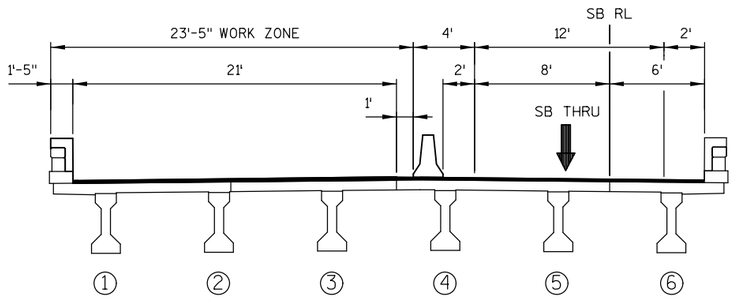
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## STAGE 2A - STRUCTURES

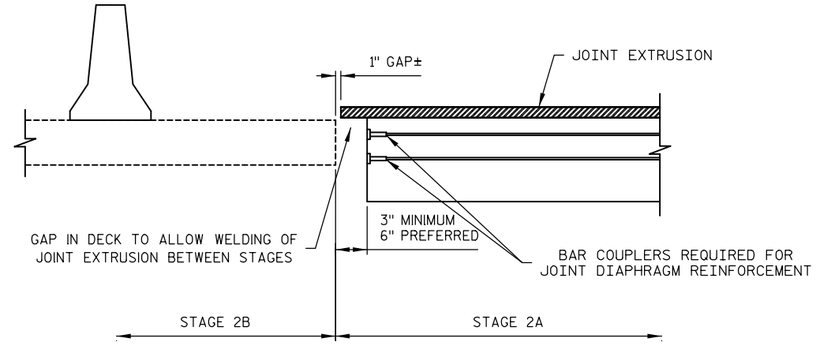
SB PERMANENT LANE CLOSURES
(SB CONSTRUCTION)




**B-13-273**
USH 151 SB
(LOOKING EAST)

## STAGE 2B - STRUCTURES

SB PERMANENT LANE CLOSURES
(SB CONSTRUCTION)




## JOINT DETAIL

## LEGEND

(#) DENOTES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

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MAINTANENCE OF TRAFFIC

SHEET 3 OF 12
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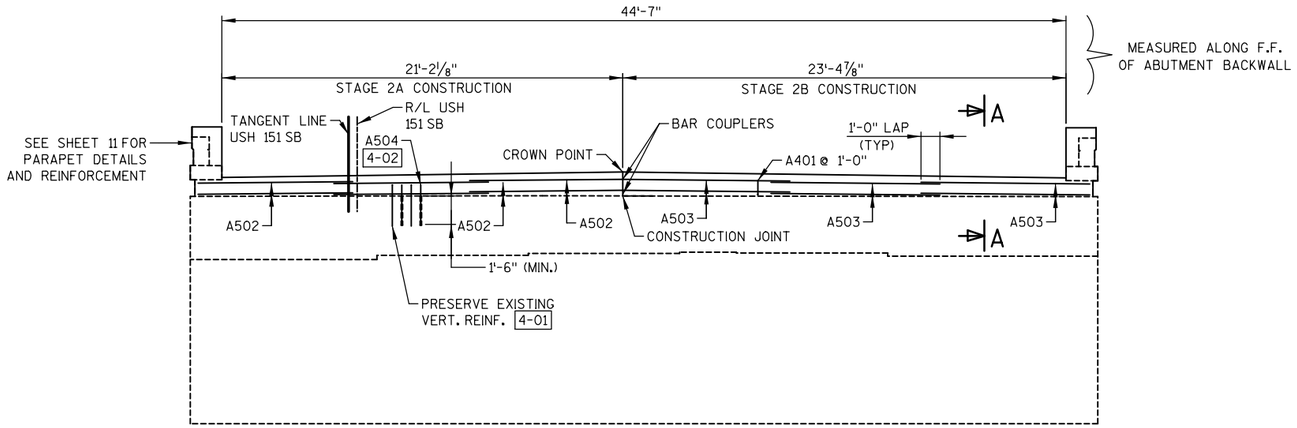
8

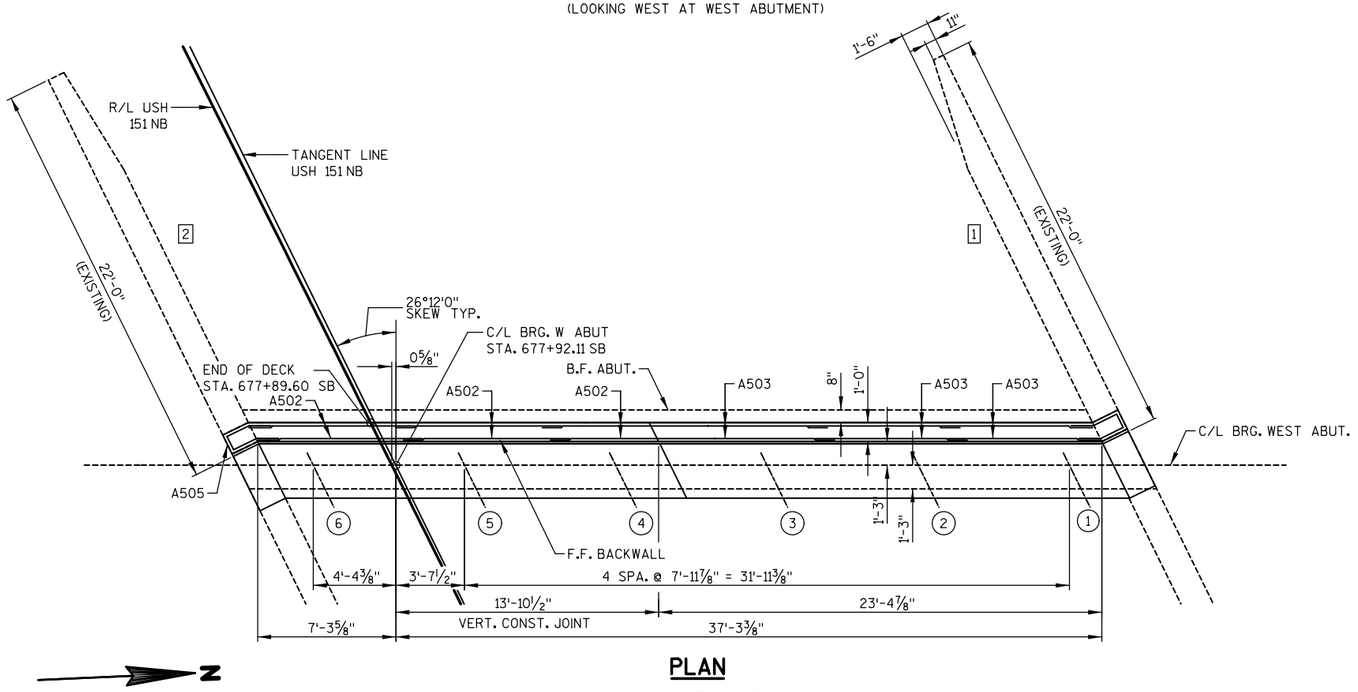
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## ELEVATION

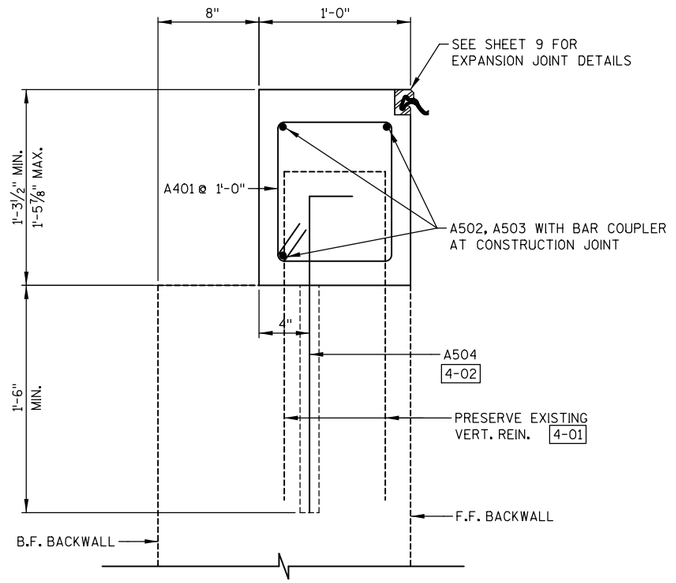
(LOOKING WEST AT WEST ABUTMENT)




## PLAN

### LEGEND

| | |
|---|---|
| 4-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 4-02. |
| 4-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 4-03 | BAR COUPLER REQUIRED |
| (#) | INDICATES GIRDER NUMBER |
| [#] | DENOTES WINGWALL NUMBER |



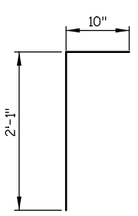

## SECTION A-A

## BILL OF BARS
## EAST ABUTMENT

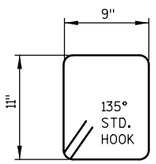
**TOTAL COATED: 425 LBS.**

| | MARK | NO. REQ. 2A | NO. REQ. 2B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | A401 | 21 | 24 | 45 | 3'-10" | X | X | PAVING BLOCK - VERTICAL |
| 4-03 | A502 | 9 | 0 | 9 | 7'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 4-03 | A503 | 0 | 9 | 9 | 8'-6" | | X | PAVING BLOCK - HORIZONTAL |
| 4-02 | A504 | 21 | 24 | 45 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | A505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

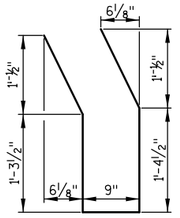
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




A504




A401




A505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

DRAWN BY: BSC | PLANS CK'D.: DJW

WEST ABUTMENT

SHEET 4 OF 12
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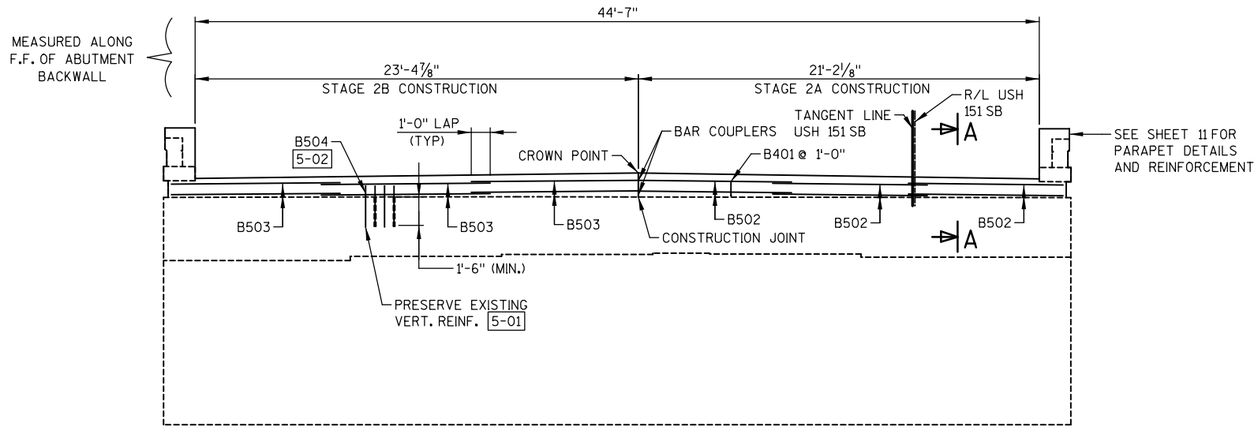
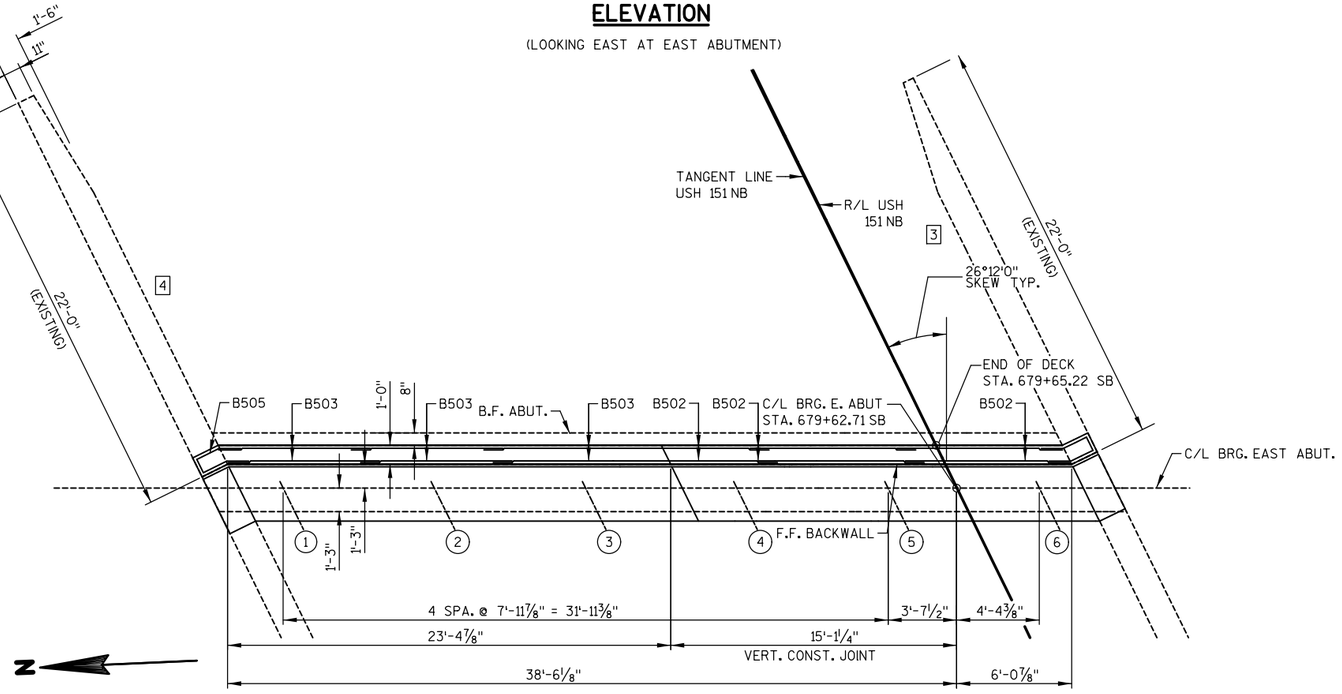
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

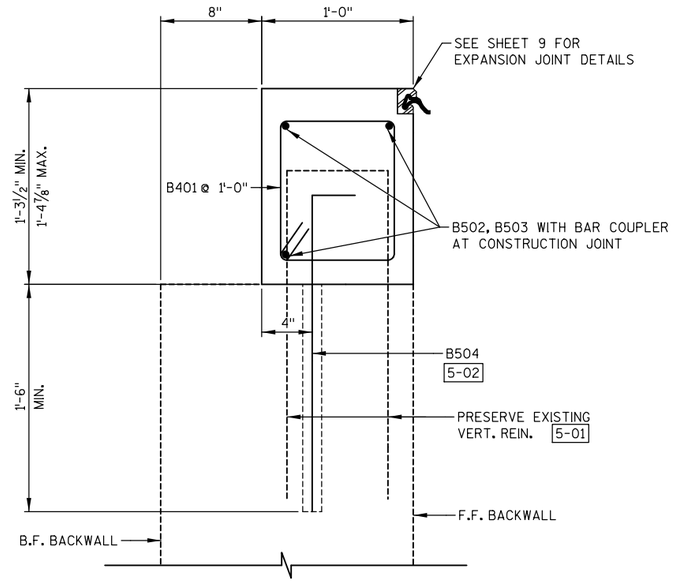



## ELEVATION

(LOOKING EAST AT EAST ABUTMENT)




## PLAN




## SECTION A-A

## LEGEND

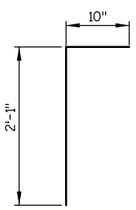
| | |
|---|---|
| 5-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 5-02. |
| 5-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 5-03 | BAR COUPLER REQUIRED |
| (#) | INDICATES GIRDER NUMBER |
| [#] | DENOTES WINGWALL NUMBER |

## BILL OF BARS
## EAST ABUTMENT

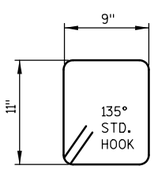
**TOTAL COATED: 425 LBS.**

| | MARK | NO. REQ. 2A | NO. REQ. 2B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | B401 | 21 | 24 | 45 | 3'-10" | X | X | PAVING BLOCK - VERTICAL |
| 5-03 | B502 | 9 | 0 | 9 | 7'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 5-03 | B503 | 0 | 9 | 9 | 8'-6" | | X | PAVING BLOCK - HORIZONTAL |
| 5-02 | B504 | 21 | 24 | 45 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | B505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

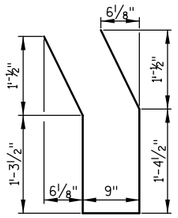
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




B504




B401




B505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
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STRUCTURE B-13-273

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EAST ABUTMENT

SHEET 5 OF 12
411

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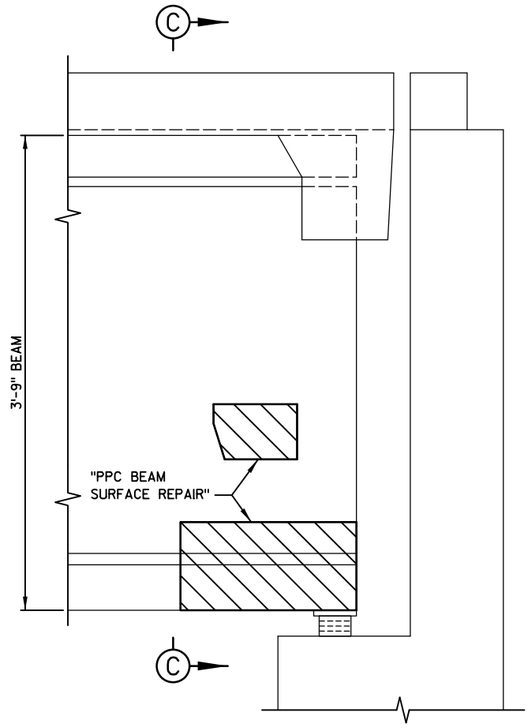
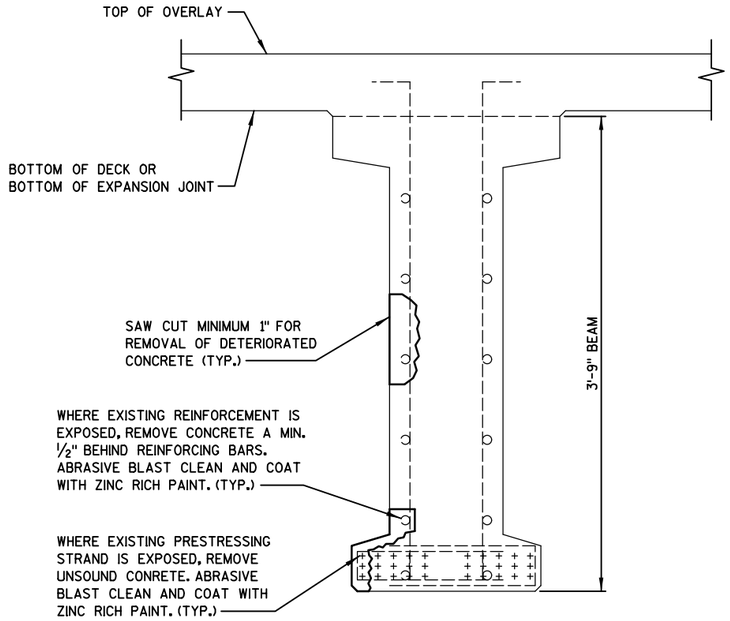
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## PPC BEAM SURFACE REPAIR

SEE SHEET 1 FOR LOCATIONS




## SECTION C-C

## BAR COUPLER NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

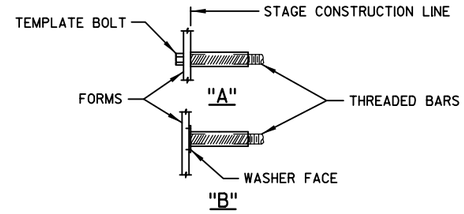
DOWEL BAR SPLICERS (COUPLERS) SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

SPLICER (COUPLER) ASSEMBLIES SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENTS:

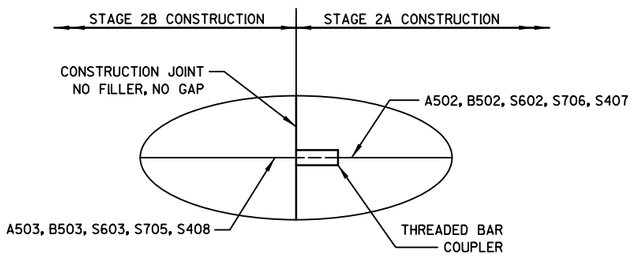
(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.




## BAR COUPLER INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## BAR COUPLER DETAIL

BAR LENGTHS HAVE BEEN COMPUTED TO ℄ OF CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS.

8

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## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | END OF DECK W. ABUT. | C/L OF BRG. W. ABUT. | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF PIER #1 | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF BRG. E. ABUT. | END OF DECK E. ABUT. |
| LEFT FLOW LINE | 1013.13 | 1013.14 | 1013.19 | 1013.24 | 1013.28 | 1013.32 | 1013.36 | 1013.40 | 1013.44 | 1013.47 | 1013.50 | 1013.53 | 1013.56 | 1013.58 | 1013.60 | 1013.62 | 1013.64 | 1013.66 | 1013.67 | 1013.68 | 1013.69 | 1013.69 | 1013.70 |
| CROWN LINE | 1013.38 | 1013.40 | 1013.45 | 1013.50 | 1013.54 | 1013.59 | 1013.63 | 1013.67 | 1013.71 | 1013.74 | 1013.78 | 1013.81 | 1013.84 | 1013.87 | 1013.89 | 1013.91 | 1013.93 | 1013.95 | 1013.97 | 1013.98 | 1013.99 | 1014.00 | 1014.00 |
| RIGHT FLOW LINE | 1013.03 | 1013.05 | 1013.10 | 1013.16 | 1013.21 | 1013.25 | 1013.30 | 1013.34 | 1013.38 | 1013.42 | 1013.46 | 1013.49 | 1013.52 | 1013.55 | 1013.58 | 1013.60 | 1013.63 | 1013.65 | 1013.67 | 1013.68 | 1013.70 | 1013.71 | 1013.71 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.
END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

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MISC. DETAILS & OVERLAY ELEVATIONS

SHEET 6 OF 12
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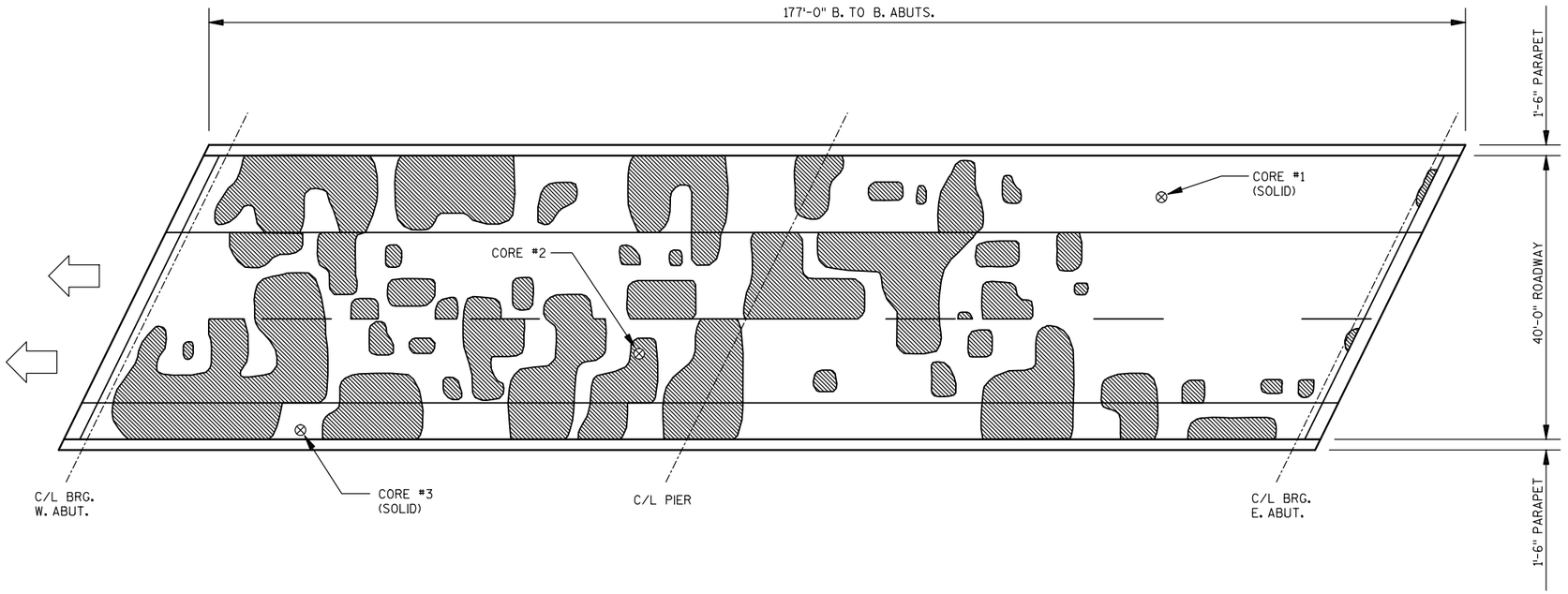
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-273\sa_B-13-273_06_det.dgn

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




## PLAN B-13-273

## NOTES

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY.
DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER.
THE QUANTITIES FOR PREPARATION OF DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.

SCALE 0' 5' 10' 20'

## DECK INSPECTION RESULTS

| FIELD OBSERVATIONS SUMMARY | | S.N. B-13-273 | |
|---|---|---|---|
| ITEM | UNIT | QUANT. | % |
| TOTAL AREA | $ft^2$ | 7016 | |
| SHADE/DEBRIS | $ft^2$ | 0 | |
| DELAMINATION | $ft^2$ | 2563 | 36.5 |
| SPALL | $ft^2$ | 0 | 0 |
| DEBOND | $ft^2$ | 0 | 0 |
| ASPHALT PATCH | $ft^2$ | 0 | 0 |
| CONCRETE PATCH | $ft^2$ | 0 | 0 |

LEGEND
DELAMINATION
SPALL
DEBOND
ASPHALT PATCH
CONCRETE PATCH
SHADE/DEBRIS

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/6/12

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

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DECK INSPECTION RESULTS

SHEET 7 OF 12
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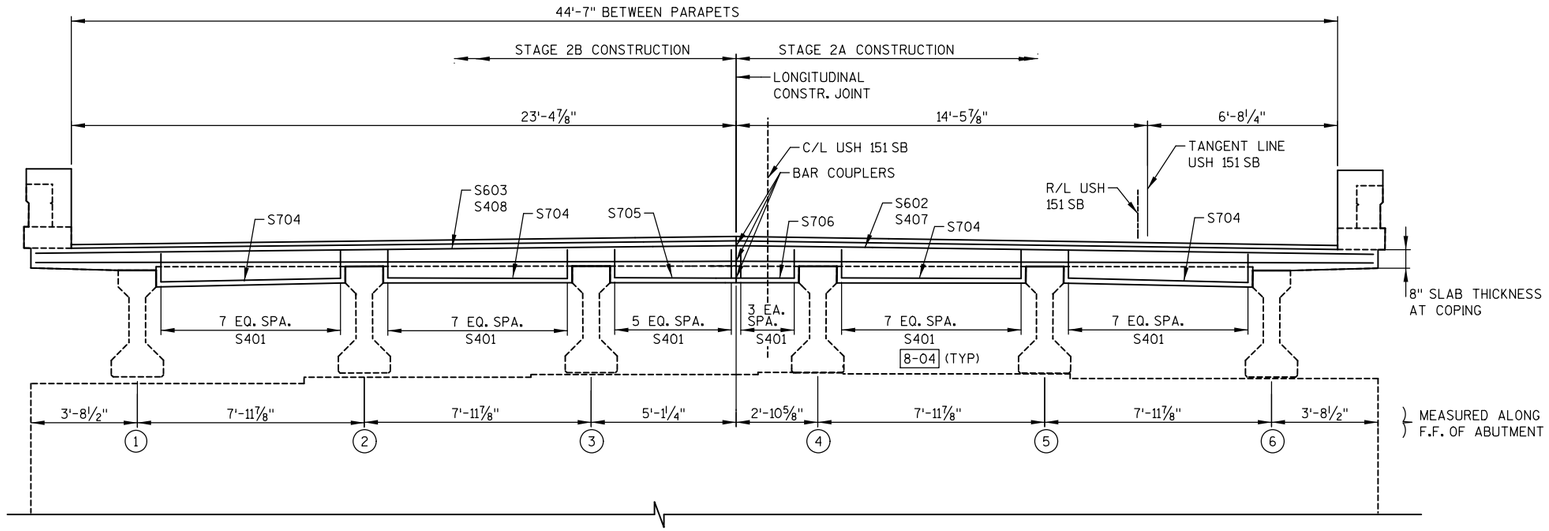
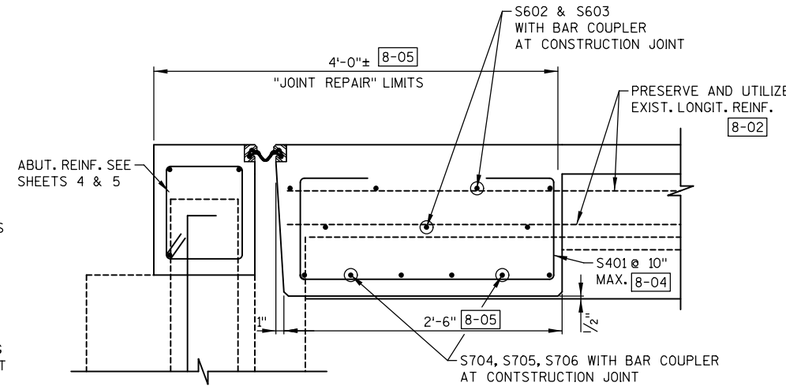
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |



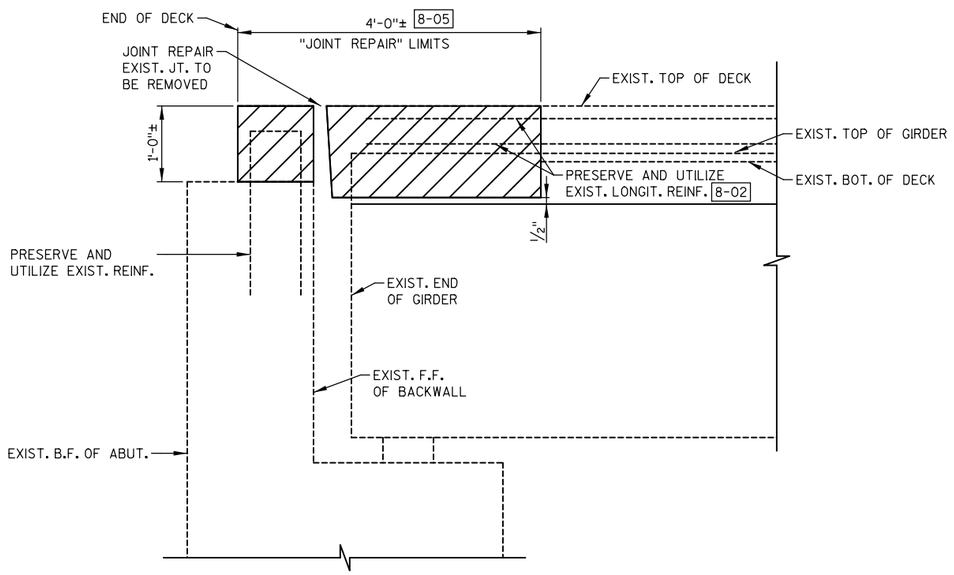

## ELEVATION

EAST ABUTMENT SHOWN
(WEST ABUTMENT MIRROR IMAGE)




## SECTION THRU JOINT AT ABUTMENTS

NORMAL TO SUBSTRUCTURE




## REMOVAL SECTION THRU JOINT AT ABUTMENTS

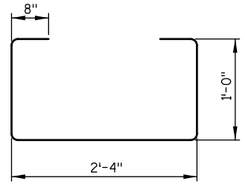
NORMAL TO SUBSTRUCTURE

## BILL OF BARS
## DECK JOINTS

**COATED: 2,185 LBS.**

| | MARK | NO. REQ. 2A | NO. REQ. 2B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | S401 | 40 | 44 | 84 | 5'-4" | X | X | SLAB - JOINT AT ABUT. - VERTICAL |
| 8-01 8-03 | S602 | 14 | 0 | 14 | 22'-3" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-01 8-03 | S603 | 0 | 14 | 14 | 24'-7" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| | S704 | 24 | 24 | 48 | 6'-2" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 8-01 | S705 | 0 | 12 | 12 | 4'-2" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 8-01 | S706 | 12 | 0 | 12 | 2'-0" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 | S407 | 12 | 0 | 12 | 8'-8" | | X | SLAB - EXPANSION DEVICE - TRANSVERSE |
| 8-03 | S408 | 0 | 12 | 12 | 9'-5" | | X | SLAB - EXPANSION DEVICE - TRANSVERSE |

NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




S401

## LEGEND

8-01 ADJUST BAR LENGTHS AS NECESSARY TO ACCOMMODATE BAR COUPLER MANUFACTURER RECOMMENDATIONS, IF BARS ARE FIELD CUT, APPLY EPOXY COATING TO BAR ENDS.

8-02 PRESERVE AND UTILIZE EXISTING LONGITUDINAL REINFORCING. SAVE AND INCORPORATE 1'-6" MIN. OF TRANSVERSE DECK REINFORCING BARS THAT RUN NORMAL TO THE GIRDERS.

8-03 BAR COUPLER REQUIRED

8-04 BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C/L OF GIRDERS.

8-05 DIMENSIONS GIVEN ARE NORMAL TO C/L OF SUBSTRUCTURE UNIT.

(#) INDICATES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

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REPLACEMENT JOINT DETAILS 1



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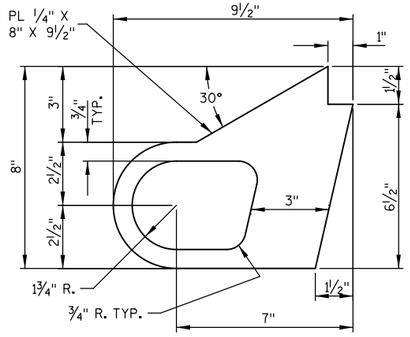
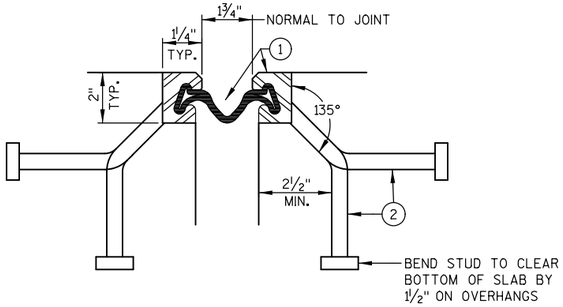
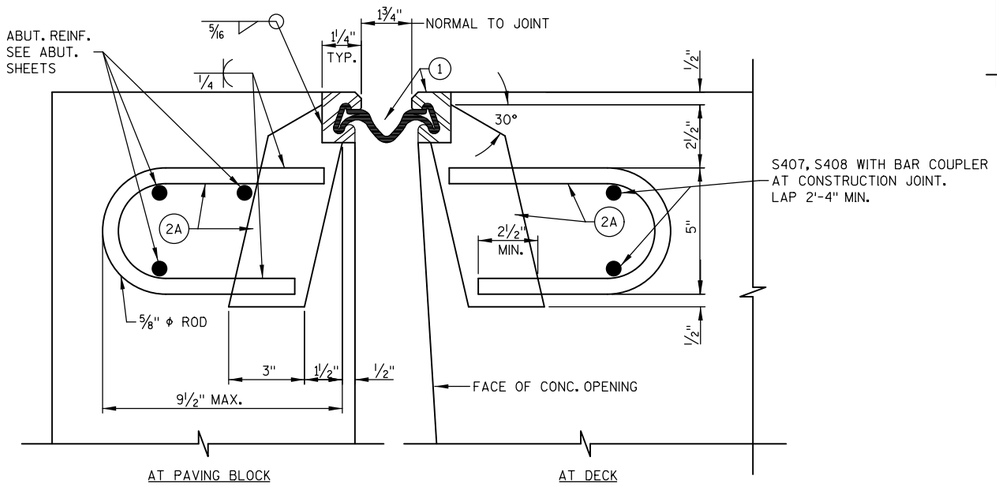



## ALTERNATE STRIP SEAL ANCHOR



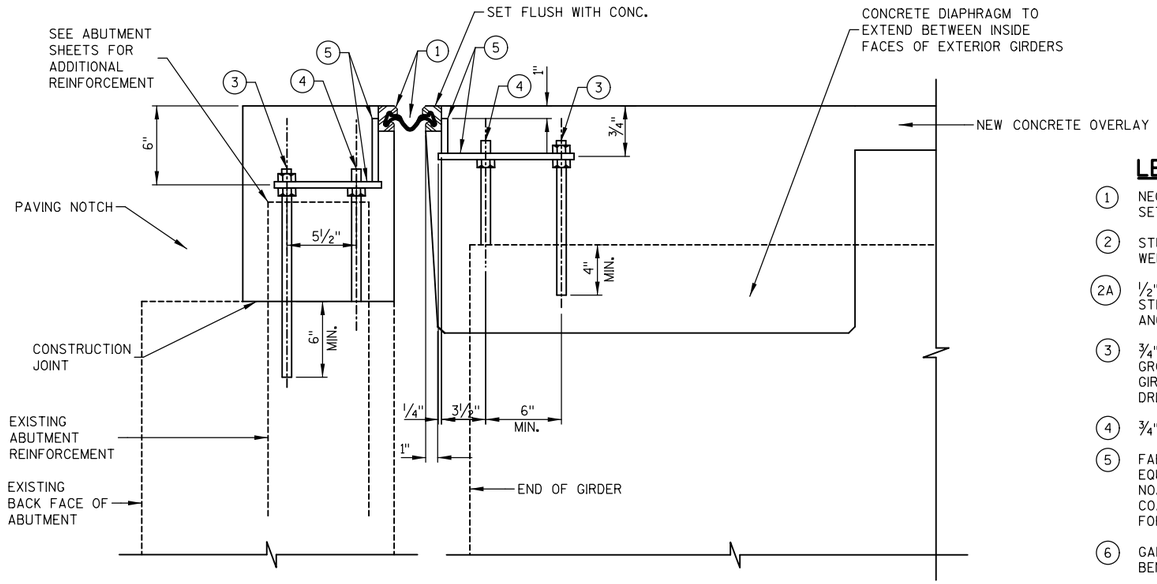

## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS



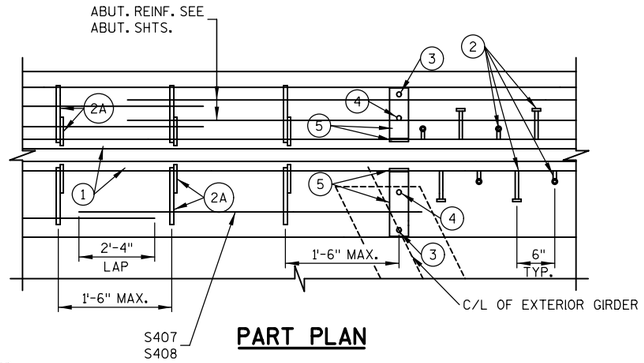

## SECTION THRU JOINT AT ABUTMENTS

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS




## TYPICAL SECTION THRU JOINT AT ABUTMENTS

NORMAL TO C/L OF SUBSTRUCTURE




## PART PLAN

## LEGEND

1. NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1 3/4".
2. STUDS 5/8"ϕ 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"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.2 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. 3/4"ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. 3/4"ϕ 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 OF FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2"ϕ HOLE FOR NO. 2 AND 1"ϕ HOLE FOR NO. 4.
6. GALVANIZED PLATE 3/8" X 10" X 2'-2" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.
7. 3/4"ϕ X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. 3/4"ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. 3/4"ϕ X 2 1/4" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

## GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION. 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.

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 AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-13-273".

BAR COUPLERS REQUIRED

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

| DRAWN BY | BSC | PLANS CK'D. | DJW |
|---|---|---|---|

REPLACEMENT JOINT DETAILS 2

SHEET 9 OF 12
415

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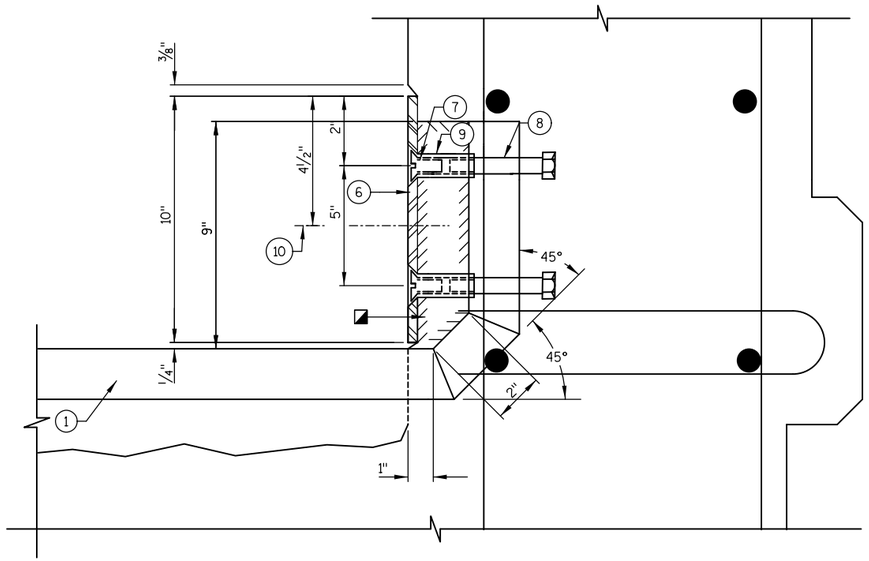
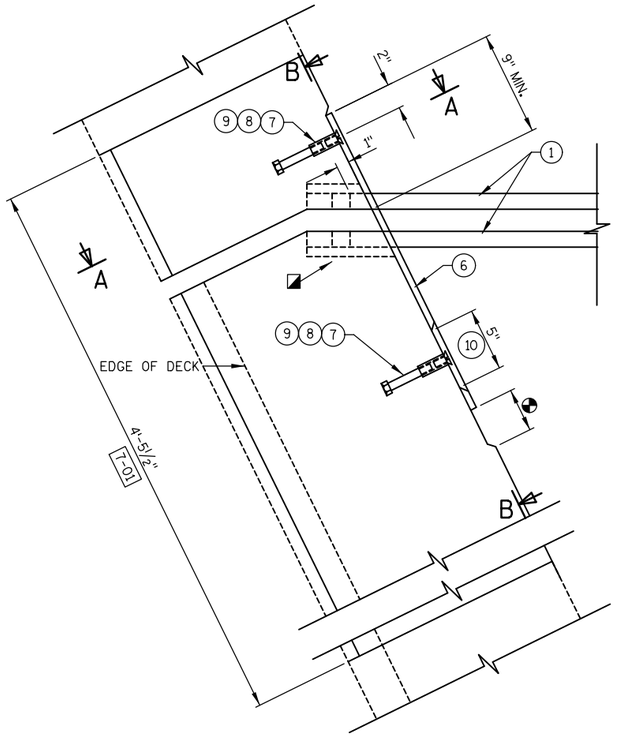
STATE PROJECT NUMBER

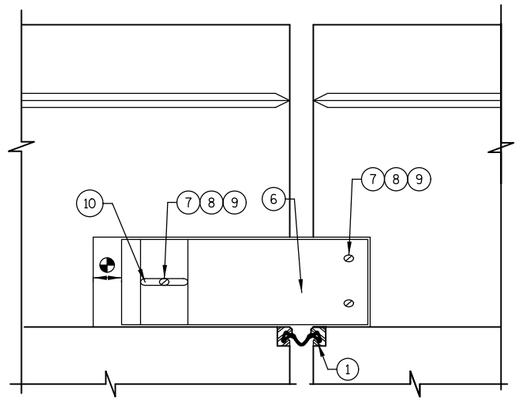
1111-02-78

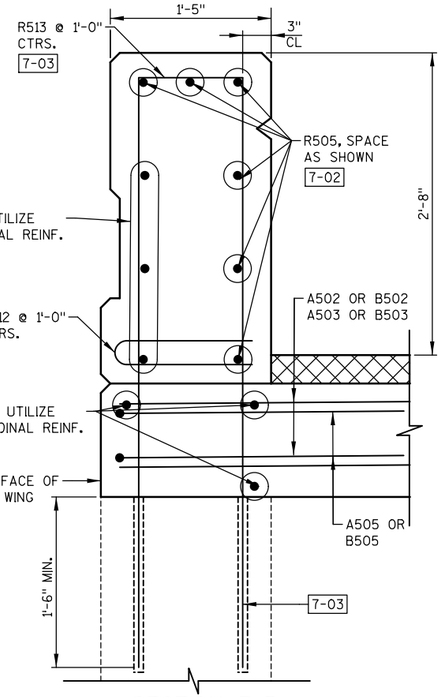



## SECTION A-A

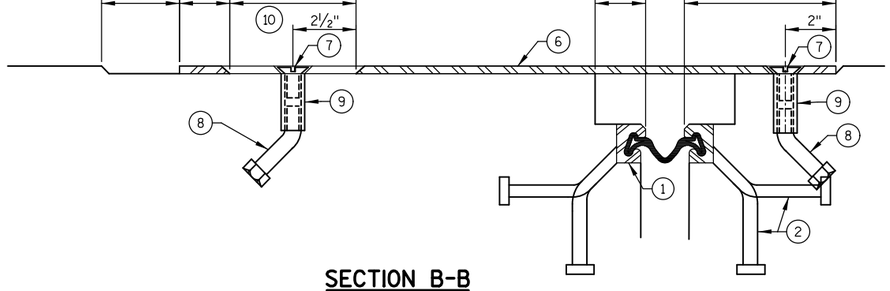



## PLAN AT PARAPET

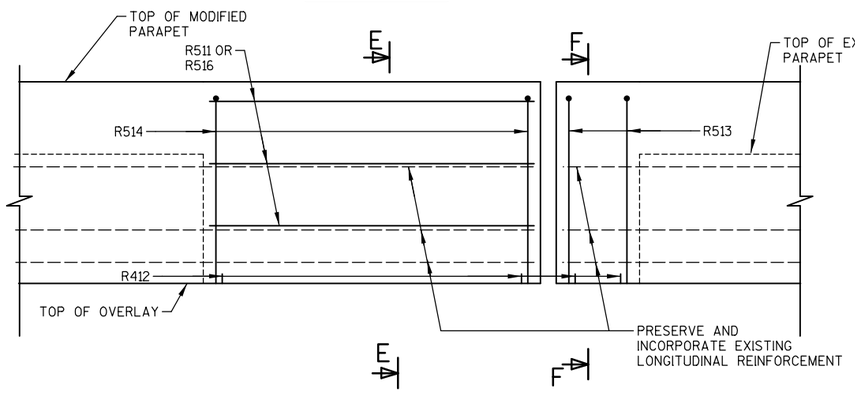




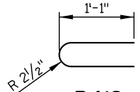

## SECTION F-F



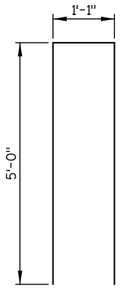

## SECTION B-B



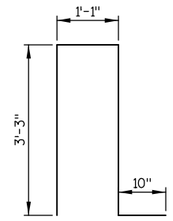

## VIEW OF PARAPET REPLACEMENT FROM ROADWAY



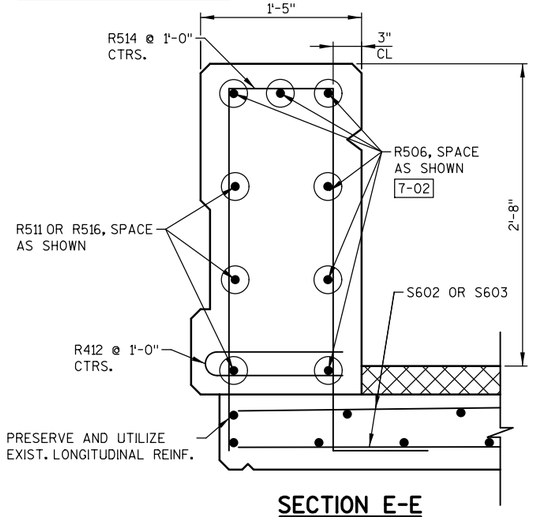

## R412




## R513




## R514




## SECTION E-E

## LEGEND

- JOINT OPENING DIMENSION ALONG SKEW PLUS ½".
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- (X) SEE SHEET 9 FOR DESCRIPTION
- 7-01 JOINT REPAIR LIMITS, REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.
- 7-02 SEE SHEET 12 FOR R505 AND R506 REINFORCEMENT DETAILS.
- 7-03 "ADHESIVE ANCHORS NO.5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

DRAWN BY BSC | PLANS CK'D. DJW

REPLACEMENT JOINT DETAILS 3

SHEET 10 OF 12
416

8

8

STATE PROJECT NUMBER

1111-02-78

## LEGEND

CONCRETE MASONRY OVERLAY DECKS.

11-01 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

11-02 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL".

11-03 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE PARAPET.

11-04 EPOXY ANCHORED.

11-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

11-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

11-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

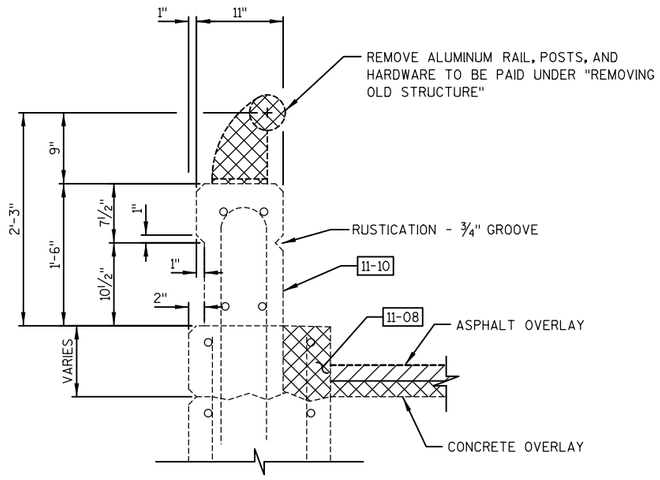
11-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

11-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

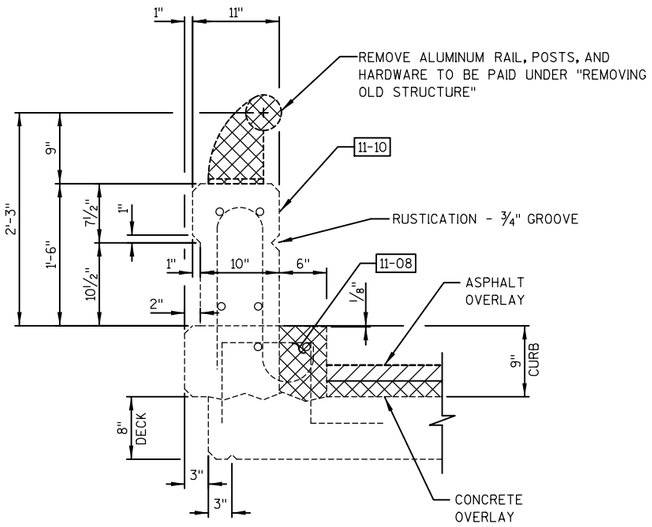
11-10 DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER. SALVAGE EXISTING REINFORING STEEL. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

11-11 IN WINGS 1 AND 3 ONLY. LAP 2'-7" MIN. WITH R505 BARS.

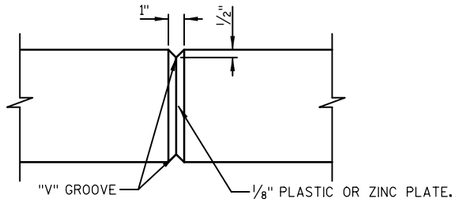
11-12 LAP 2'-7" MIN. WITH R502 OR R503 BARS.



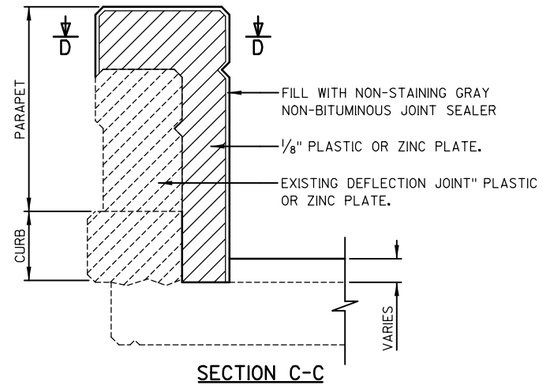

EXISTING SECTION THRU WING




EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

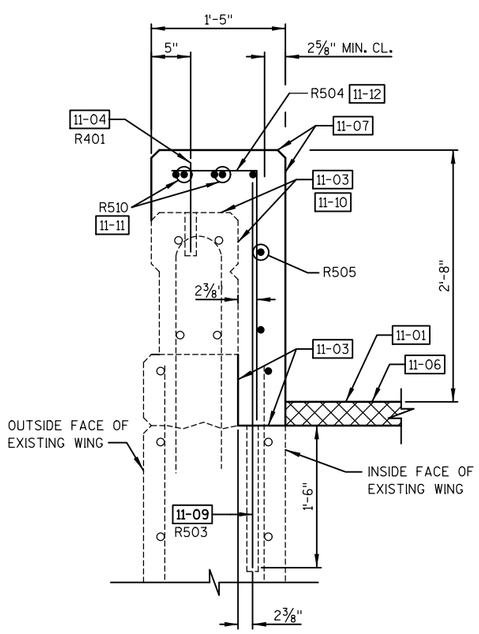



SECTION D-D

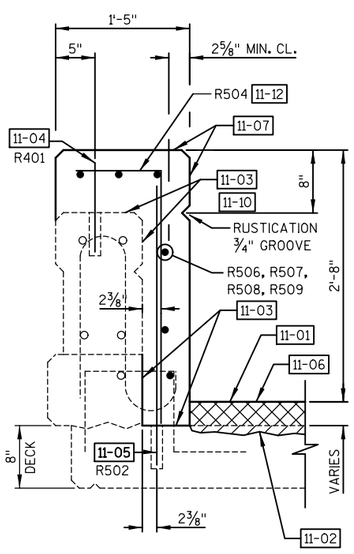



SECTION C-C

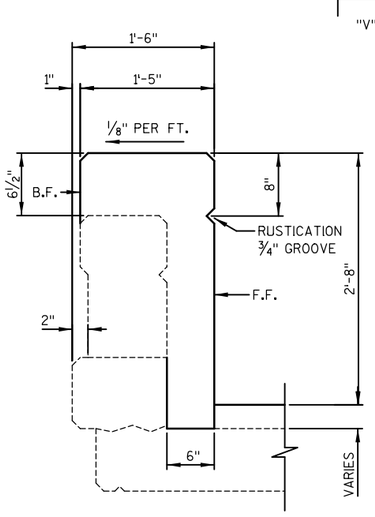
(SHOWING DEFLECTION JOINT IN PARAPET.)



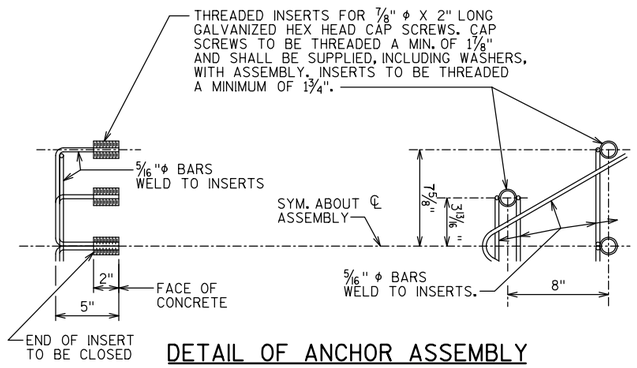

SECTION A-A THRU WINGS




SECTION B-B THRU PARAPET & CURB ON BRIDGE



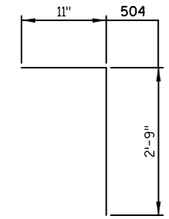

MODIFIED PARAPET SHAPE




DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.




504

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

DRAWN BY BSC | PLANS CK'D. DJW

PARAPET DETAILS 1

SHEET 11 OF 12

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FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-273\sa_B-13-273_11_par.dgn

STATE PROJECT NUMBER

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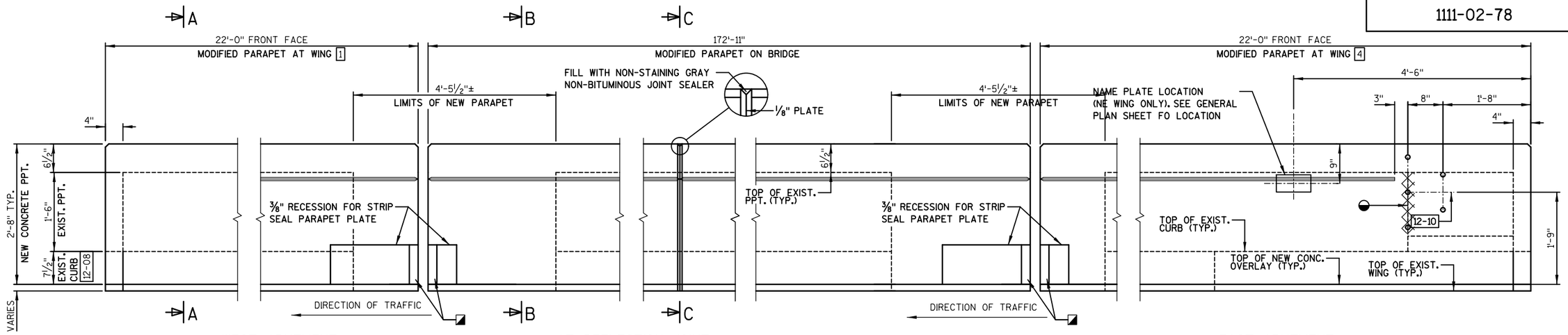
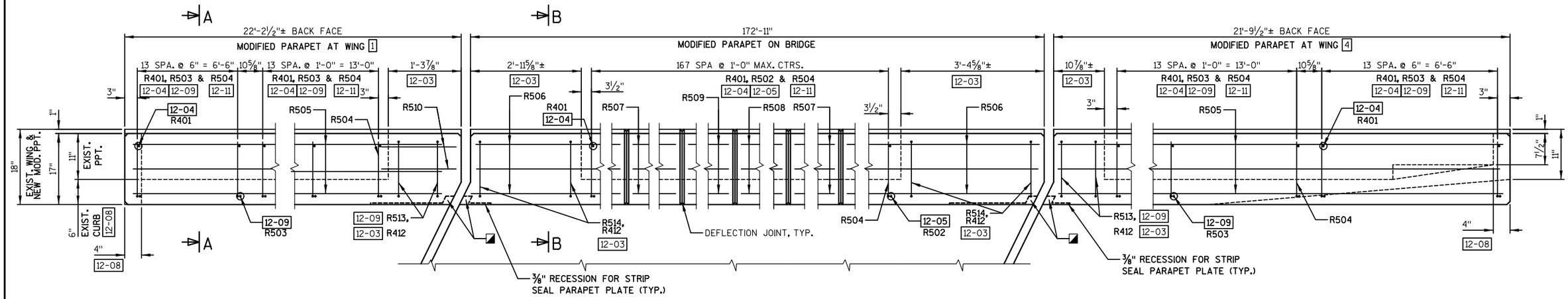



WEST ABUTMENT

AT DEFLECTION JOINT

EAST ABUTMENT

## INSIDE ELEVATION VIEW - NORTH PARAPET SHOWN




## PLAN VIEW - NORTH PARAPET SHOWN

### NOTES

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS ARE USED AT DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS OMITTED.

12-03 SEE SHEET 10 FOR CONCRETE AND REINFORCEMENT DETAILS WITHIN LIMITS OF THE NEW PARAPET.

12-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO TOP OF EXISTING CONCRETE PARAPET. EPOXY ANCHORED.

12-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

12-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

12-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

12-10 CENTERLINE OF ANCHOR ASSEMBLY FOR THRIE BEAM, SEE "GENERAL PLAN" SHEET FOR GUARDRAIL LOCATION.

12-11 LAP 2'-7" MIN. WITH R502 OR R503 BARS.

SEE SHEET 11 FOR SECTIONS A, B, & C

### BILL OF BARS - BOTH RAILS

COATED: 6,490 LBS.

| | BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| 12-04 | R401 | X | 448 | 0'-9" | | | PARAPET - VERT. - ALL WINGS AND BRIDGE - B.F. |
| 12-05 | R502 | X | 336 | 3'-2" | | | PARAPET - VERT. - BRIDGE - F.F. |
| 12-09 | R503 | X | 112 | 4'-3" | | | PARAPET - VERT. - ALL WINGS - F.F. |
| | R504 | X | 448 | 3'-7" | X | | PARAPET - VERT. - ALL WINGS AND BRIDGE - F.F. |
| | R505 | X | 24 | 21'-4" | | | PARAPET - HORIZ. - ALL WINGS - F.F. AND TOP |
| | R506 | X | 24 | 29'-0" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R507 | X | 24 | 33'-11" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R508 | X | 12 | 21'-8" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R509 | X | 12 | 23'-2" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R510 | X | 4 | 3'-0" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP - LAP BAR |
| | R511 | X | 6 | 2'-7" | | | PARAPET - AT JOINT - DECK - SE AND NW CORNERS |
| | R412 | X | 24 | 2'-5" | X | | PARAPET - HORIZONTAL |
| 12-09 | R513 | X | 8 | 10'-10" | X | | PARAPET - AT JOINT - ABUTMENT SIDE |
| | R514 | X | 16 | 8'-1" | X | | PARAPET - AT JOINT - DECK SIDE |
| | R516 | X | 6 | 3'-0" | | | PARAPET - AT JOINT - DECK - SW AND NE CORNERS |

### LEGEND

- REMOVE EXIST. PPT. AS NEEDED FOR PROPER INSTALLATION OF THRIE BEAM ANCHOR ASSEMBLY.
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- [*] DENOTES WINGWALL NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-273

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PARAPET DETAILS 2

SHEET 12 OF 12
418

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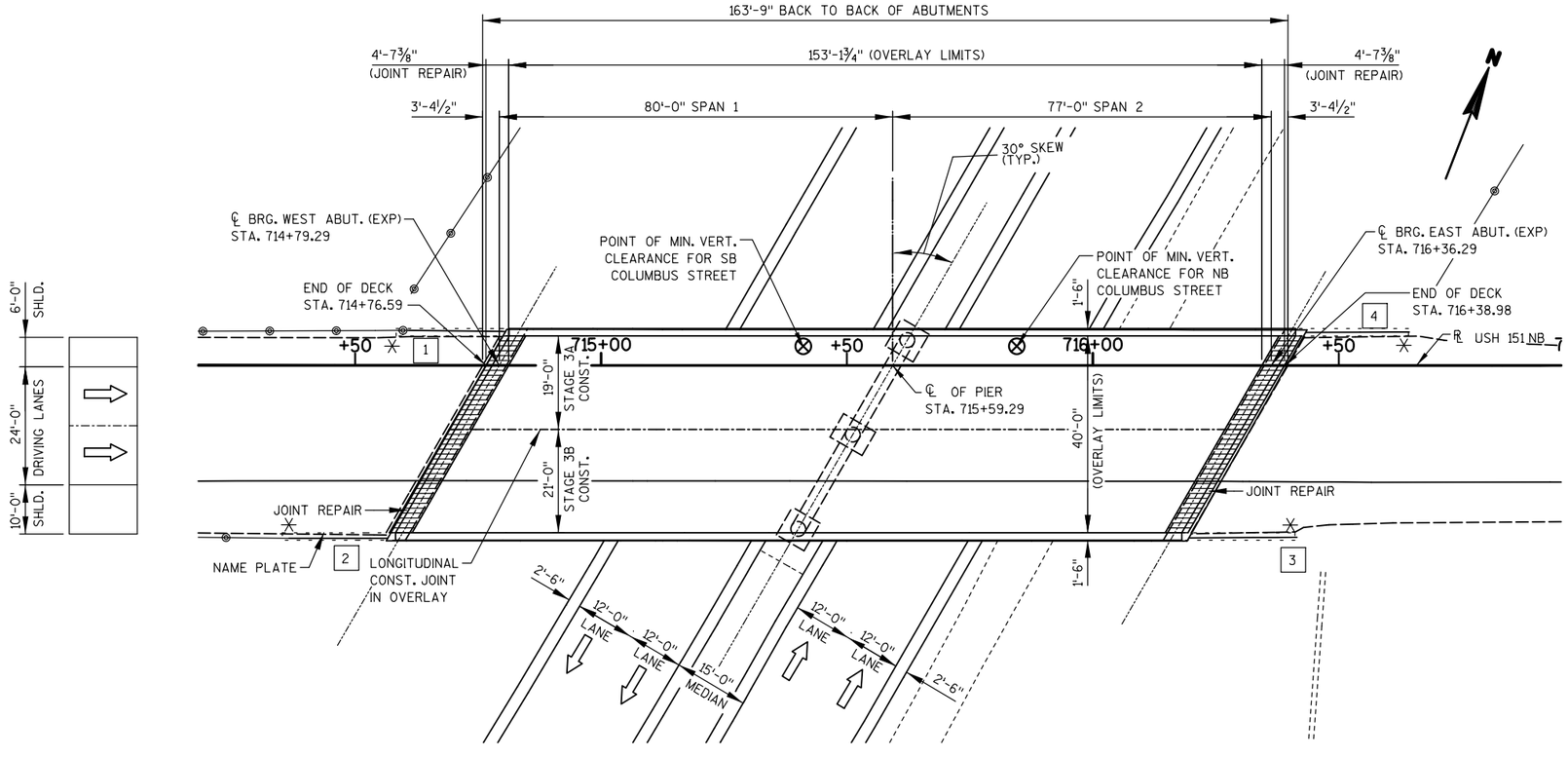
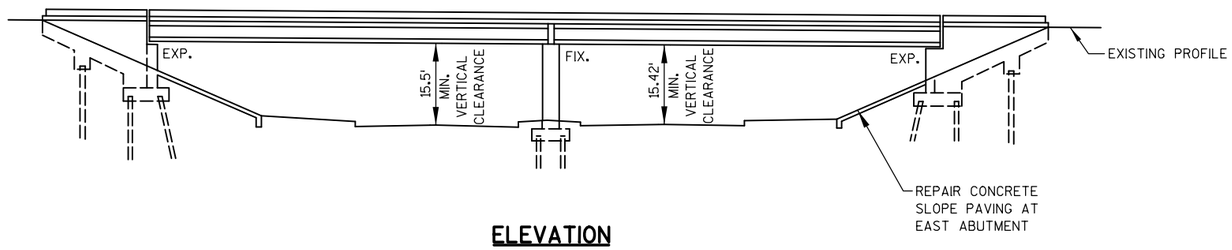
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-273\sa_B-13-273_12_par.dgn

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## PLAN

CONCRETE OVERLAY-2 SPAN, 45" PRESTRESSED GIRDERS




## ELEVATION

PARALLEL TO USH 151 NB
(LOOKING NORTH)

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, SLOPE PAVING REPAIR, CONCRETE SURFACE REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWING SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGIT OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-275".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1970.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

## LEGEND

⊁ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.

[X] DENOTES WINGWALL NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 16,000 VPD
R.D.S = 70 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING ——— HS-21
OPERATING RATING ——— HS-37
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) ——— 240 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c ——— 4,000 PSI
CONCRETE MASONRY BRIDGES f'c ——— 4,000 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy ——— 60,000 PSI

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC
4. WEST ABUTMENT
5. EAST ABUTMENT
6. MISC. DETAILS & OVERLAY ELEVATIONS
7. DECK INSPECTION RESULTS
8. REPLACEMENT JOINT DETAILS 1
9. REPLACEMENT JOINT DETAILS 2
10. REPLACEMENT JOINT DETAILS 3
11. PARAPET DETAILS 1
12. PARAPET DETAILS 2

SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONTACT:
DAVID WALKER, P.E. (608) 251-4843


| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


STRAND ASSOCIATES®
910 WEST WINGRA DRIVE
MADISON, WISCONSIN 53715
(608)-251-4843
(608) 251-8655 FAX
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-13-275

USH 151 NB OVER COLUMBUS STREET

| COUNTY | TOWN/CITY/VILLAGE |
|---|---|
| DANE | SUN PRAIRIE |

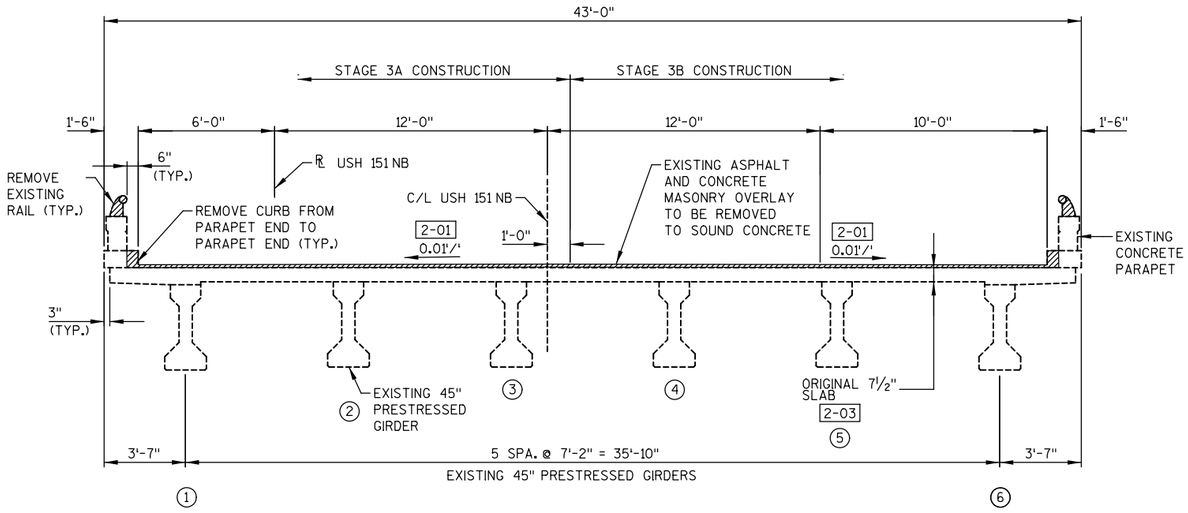
DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| DEB | DJW | BSC | DJW |

GENERAL PLAN

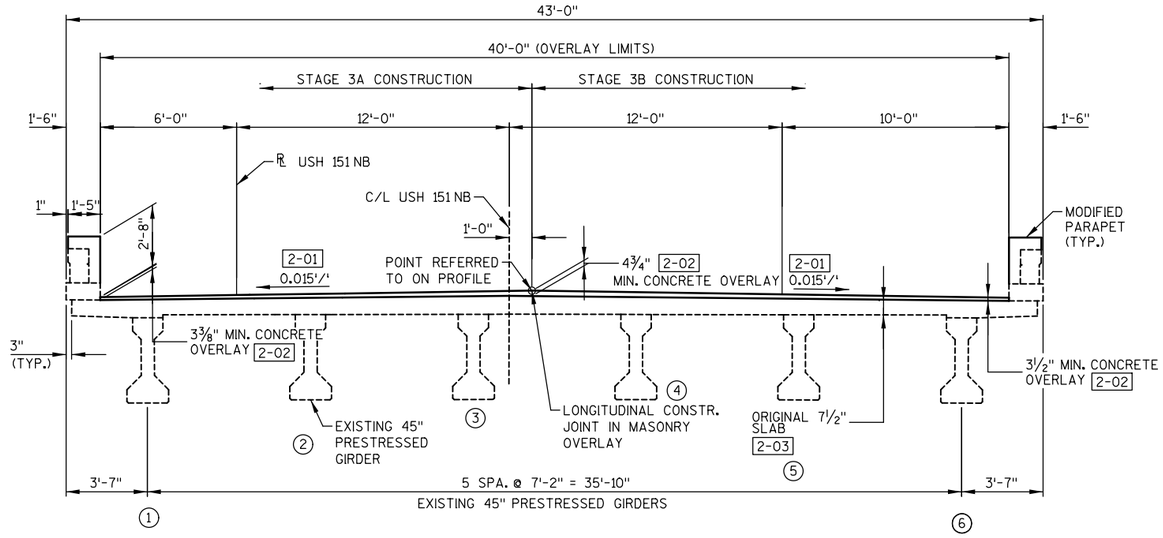
SHEET 1 OF 12
419

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## EXISTING CROSS SECTION THRU ROADWAY

USH 151 NB
(LOOKING EAST)




## PROPOSED CROSS SECTION THRU ROADWAY

USH 151 NB
(LOOKING EAST)

**BENCH MARK**

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 5 | 714+42/34'RT | BRASS DISK, SW CORNER TOP OF CURB B-13-275 | 1004.42 |

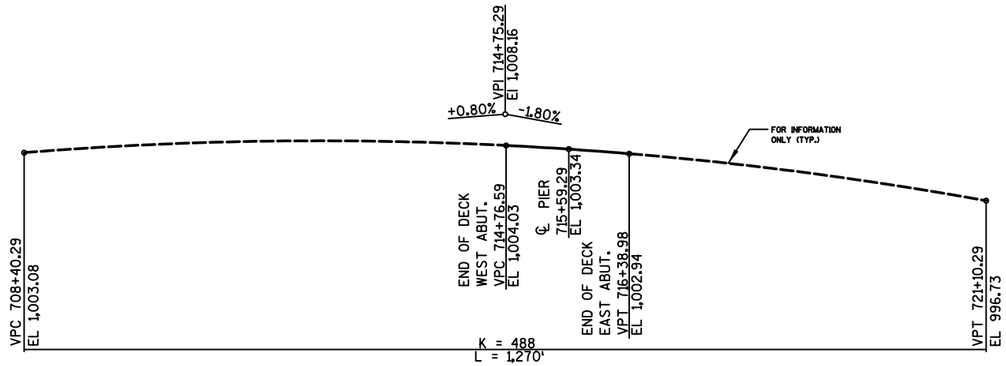
ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88)

## TOTAL ESTIMATED QUANTITIES

| | NO. | BID ITEM | UNIT | WEST ABUT. | PIER | EAST ABUT. | SUPERS. | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.07 | REMOVING OLD STRUCTURE STA. 715+44.00 | LS | | | | | 1 |
| | 203.0210.S.07 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-13-275 | LS | | | | | 1 |
| | 203.0225.S.07 | DEBRIS CONTAINMENT B-13-275 | LS | | | | | 1 |
| | 204.0175 | REMOVING CONCRETE SLOPE PAVING | SY | | | 55 | | 55 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | | | | 40 | 40 |
| | 502.3100.07 | EXPANSION DEVICE B-13-275 | LS | | | | | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | | | | 728 | 728 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | | | | 186 | 186 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | | | | 424 | 424 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 55 | | 55 | 424 | 534 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 440 | | 440 | 8420 | 9300 |
| | 505.0904 | BAR COUPLERS NO. 4 | EACH | | | | 4 | 4 |
| | 505.0905 | BAR COUPLERS NO. 5 | EACH | 3 | | 3 | | 6 |
| | 505.0906 | BAR COUPLERS NO. 6 | EACH | | | | 14 | 14 |
| | 505.0907 | BAR COUPLERS NO. 7 | EACH | | | | 12 | 12 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | | | | 220 | 220 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | | | | 90 | 90 |
| | 509.1000 | JOINT REPAIR | SY | | | | 41 | 41 |
| 2-05 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 4 | | 6 | 1 | 11 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | | | | 15 | 15 |
| 2-04 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | | | | 131 | 131 |
| | 509.9005.S.07 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-275 | SY | | | | 728 | 728 |
| | 509.9010.S.07 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-275 | SY | | | | 728 | 728 |
| | 604.0400 | SLOPE PAVING CONCRETE | SY | | | 55 | | 55 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | | | | 4 | 4 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | | | | 392 | 392 |

ALL ITEMS ARE CATEGORY 0090.

*ENGINEER SHALL FIELD VERIFY ALL CONCRETE SURFACE REPAIR AREAS.




## PROFILE GRADE LINE (PGL)

(STATIONS ALONG ℄, ELEVATIONS AT PGL, LOCATED 13' RIGHT OF ℄)

**LEGEND**

2-01 EXISTING CROSS SLOPE IS 0.01'/' AND WILL BE CHANGED TO 0.015'/'.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM AN APPROXIMATE 3⅜" AT THE NORTH PARAPET, 4¾" AT THE CROWN AND 3½" AT THE SOUTH PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATIONS. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE (WEIGHTED) OVERLAY THICKNESS IS 4⅝" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS IN THE DECK THICKNESS.

2-03 ORIGINAL SLAB DEPTH SHOWN. ASSUMED TO BE REDUCED BY 1" DURING PLACEMENT OF PREVIOUS CONCRETE OVERLAY AS PART OF THE PREVIOUS DECK CLEARING PROCEDURE.

2-04 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1". "PREPARATIONS DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-05 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

(#) DENOTES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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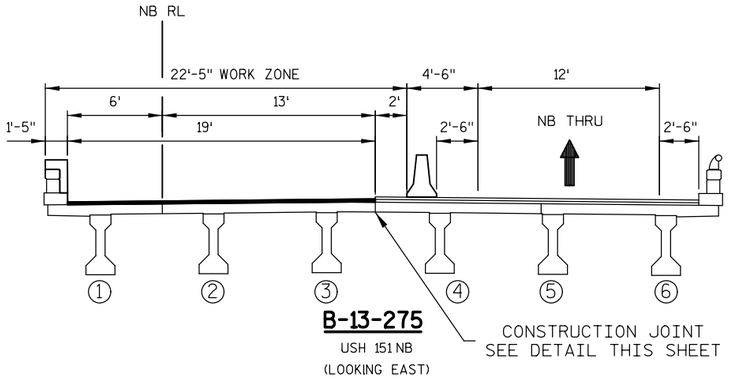
CROSS SECTIONS & QUANTITIES

SHEET 2 OF 12
420

8

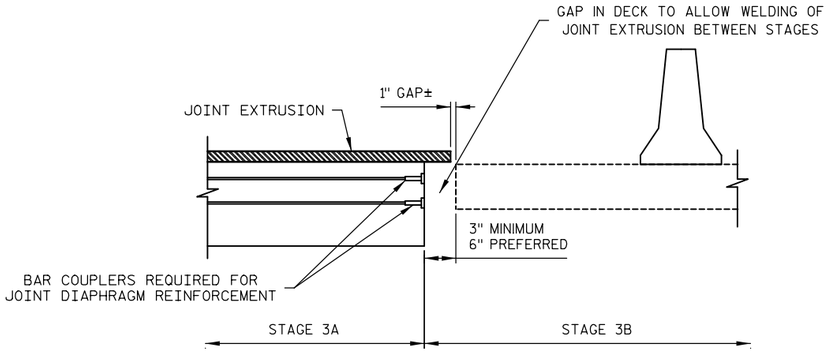
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

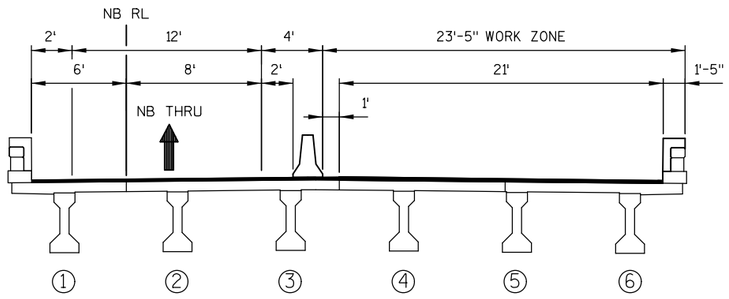



## STAGE 3A - STRUCTURES

NB PERMANENT LANE CLOSURES
(NB CONSTRUCTION)




## JOINT DETAIL




**B-13-275**
USH 151 NB
(LOOKING EAST)

## STAGE 3B - STRUCTURES

NB PERMANENT LANE CLOSURES
(NB CONSTRUCTION)

## LEGEND

(*) DENOTES GIRDER NUMBER

8

8

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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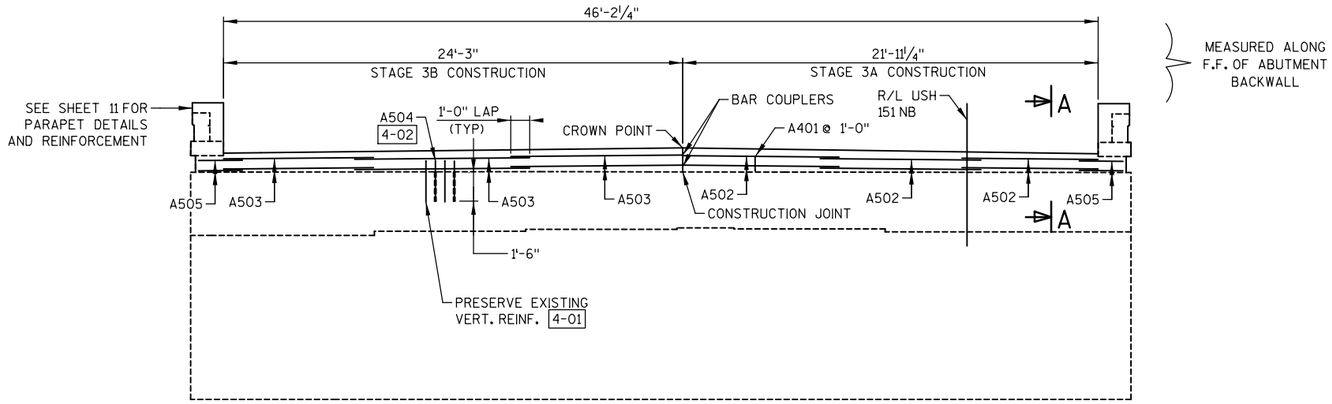
MAINTANENCE OF TRAFFIC

SHEET 3 OF 12
421

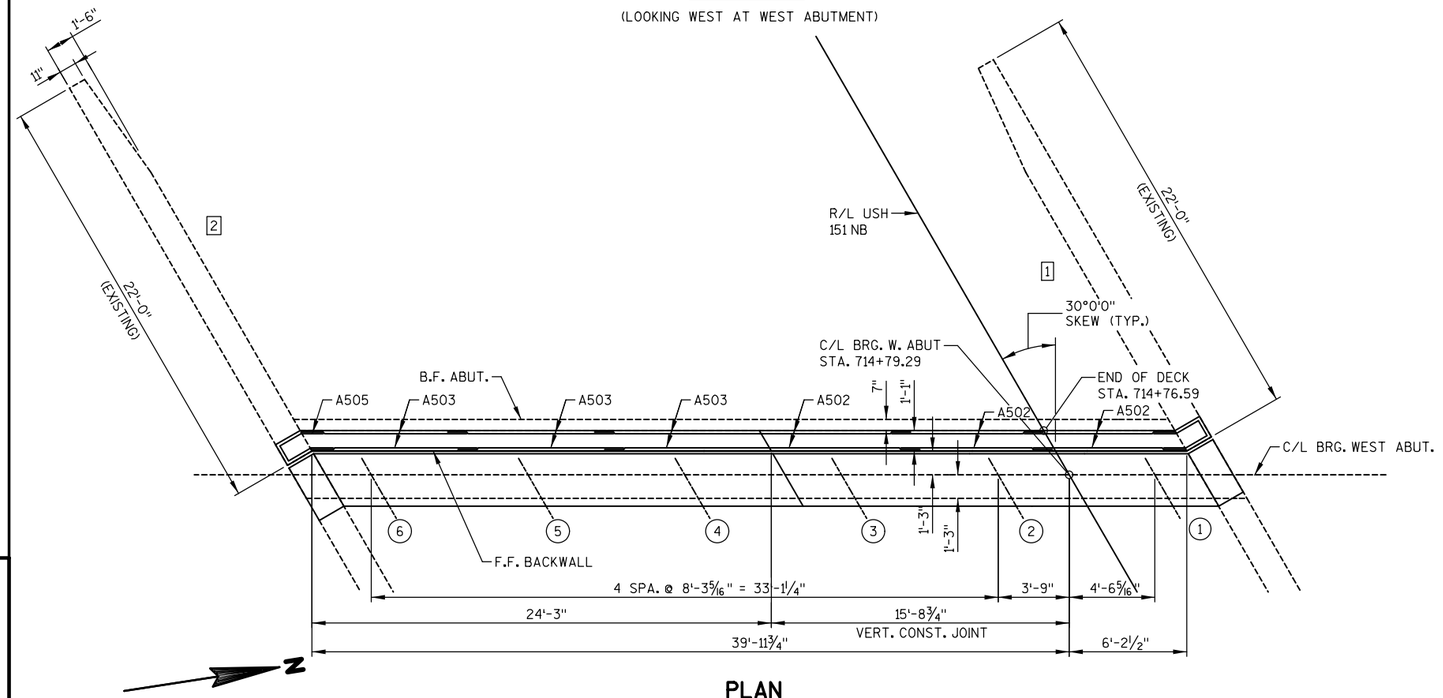
STATE PROJECT NUMBER

1111-02-78

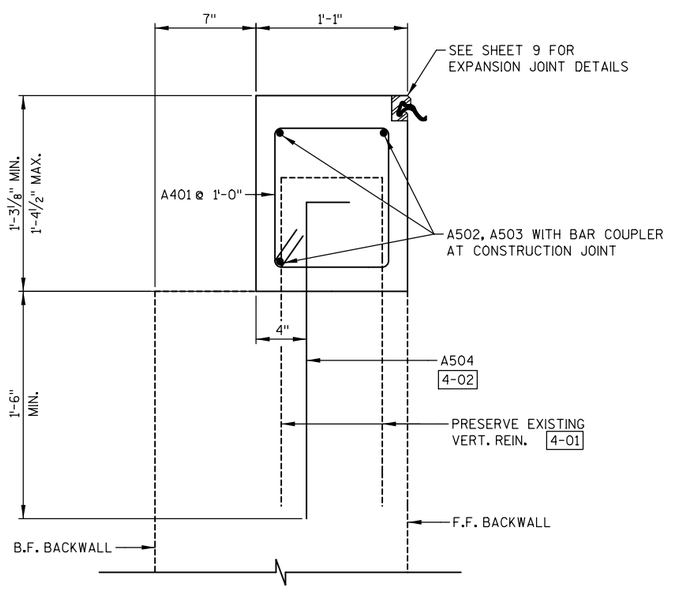



## ELEVATION

(LOOKING WEST AT WEST ABUTMENT)




## PLAN




## SECTION A-A

## LEGEND

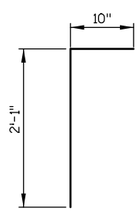
| | |
|---|---|
| 4-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 4-02. |
| 4-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 4-03 | BAR COUPLER REQUIRED |
| (#) | INDICATES GIRDER NUMBER |
| [#] | DENOTES WINGWALL NUMBER |

## BILL OF BARS
## WEST ABUTMENT

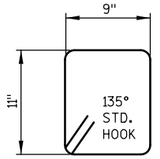
TOTAL COATED: 440 LBS.

| | MARK | NO. REQ. 3A | NO. REQ. 3B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | A401 | 22 | 25 | 47 | 3'-10" | X | X | PAVING BLOCK - VERTICAL |
| 4-03 | A502 | 9 | 0 | 9 | 8'-0" | | X | PAVING BLOCK - HORIZONTAL |
| 4-03 | A503 | 0 | 9 | 9 | 8'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 4-02 | A504 | 22 | 25 | 47 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | A505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

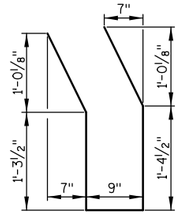
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




A504




A401




A505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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WEST ABUTMENT

SHEET 4 OF 12
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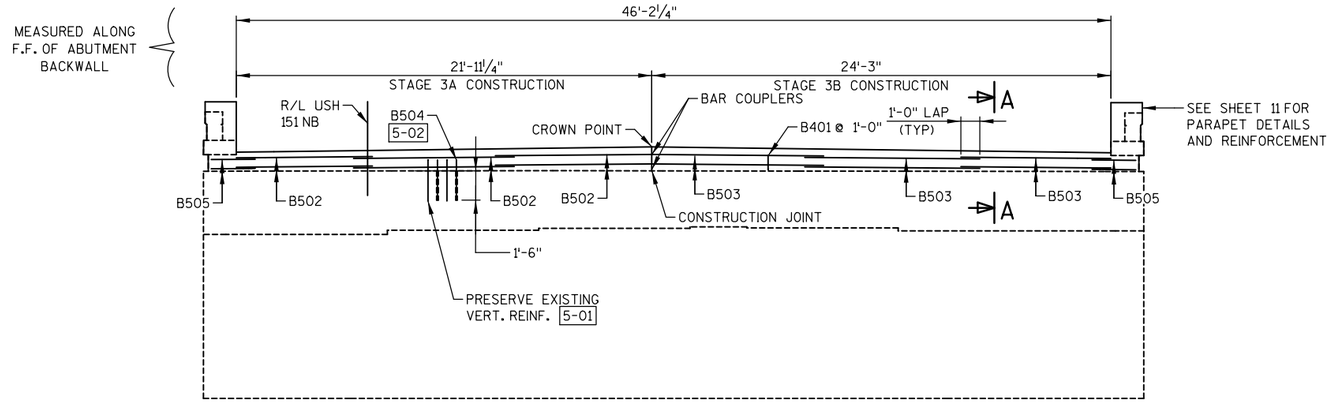
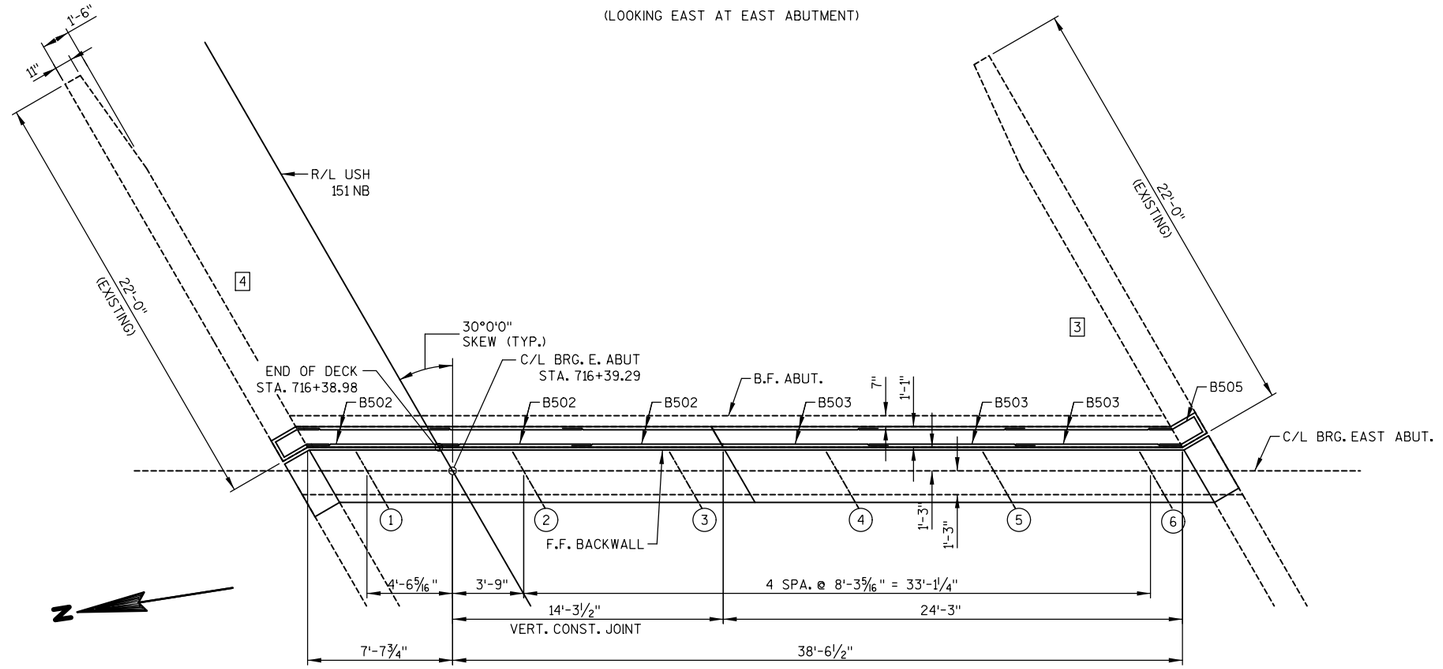
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## ELEVATION

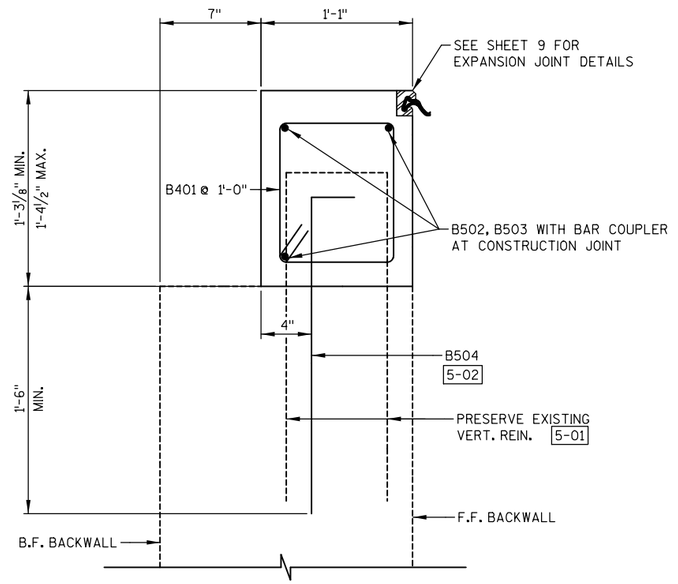
(LOOKING EAST AT EAST ABUTMENT)




## PLAN

### LEGEND

| | |
|---|---|
| 5-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 5-02. |
| 5-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 5-03 | BAR COUPLER REQUIRED |
| (#) | INDICATES GIRDER NUMBER |
| [#] | DENOTES WINGWALL NUMBER |



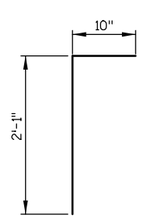

## SECTION A-A

## BILL OF BARS
## EAST ABUTMENT

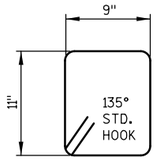
**TOTAL COATED: 440 LBS.**

| | MARK | NO. REQ. 3A | NO. REQ. 3B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | B401 | 22 | 25 | 47 | 3'-10" | X | X | PAVING BLOCK - VERTICAL |
| 5-03 | B502 | 9 | 0 | 9 | 8'-0" | | X | PAVING BLOCK - HORIZONTAL |
| 5-03 | B503 | 0 | 9 | 9 | 8'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 5-02 | B504 | 22 | 25 | 47 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | B505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

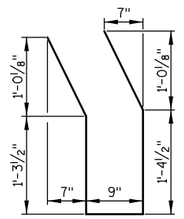
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




B504




B401




B505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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EAST ABUTMENT

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|---|
| 1111-02-78 |

## BAR COUPLER NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

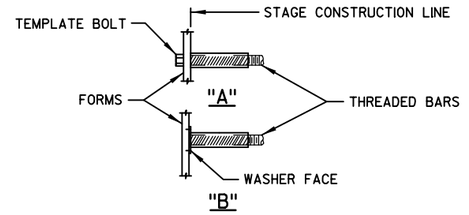
DOWEL BAR SPLICERS (COUPLERS) SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

SPLICER (COUPLER) ASSEMBLIES SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENTS:

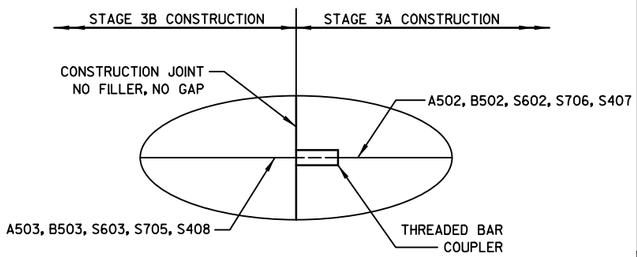
(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.




## BAR COUPLER INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## BAR COUPLER DETAIL

BAR LENGTHS HAVE BEEN COMPUTED TO ℄ OF CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS.

8

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | END OF DECK W. ABUT. | C/L OF BRG. W. ABUT. | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF PIER #1 | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF BRG. E. ABUT. | END OF DECK E. ABUT. |
| LEFT FLOW LINE | 1003.72 | 1003.71 | 1003.67 | 1003.62 | 1003.58 | 1003.53 | 1003.49 | 1003.44 | 1003.39 | 1003.34 | 1003.29 | 1003.23 | 1003.18 | 1003.12 | 1003.07 | 1003.01 | 1002.96 | 1002.90 | 1002.84 | 1002.77 | 1002.71 | 1002.65 | 1002.63 |
| CROWN LINE | 1004.06 | 1004.05 | 1004.01 | 1003.97 | 1003.93 | 1003.88 | 1003.84 | 1003.79 | 1003.74 | 1003.69 | 1003.64 | 1003.59 | 1003.54 | 1003.49 | 1003.43 | 1003.38 | 1003.32 | 1003.26 | 1003.21 | 1003.15 | 1003.09 | 1003.02 | 1003.00 |
| RIGHT FLOW LINE | 1003.81 | 1003.79 | 1003.76 | 1003.72 | 1003.68 | 1003.63 | 1003.59 | 1003.55 | 1003.50 | 1003.45 | 1003.40 | 1003.35 | 1003.30 | 1003.25 | 1003.20 | 1003.15 | 1003.09 | 1003.04 | 1002.98 | 1002.93 | 1002.87 | 1002.81 | 1002.78 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.

8

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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MISC. DETAILS & OVERLAY ELEVATIONS

SHEET 6 OF 12
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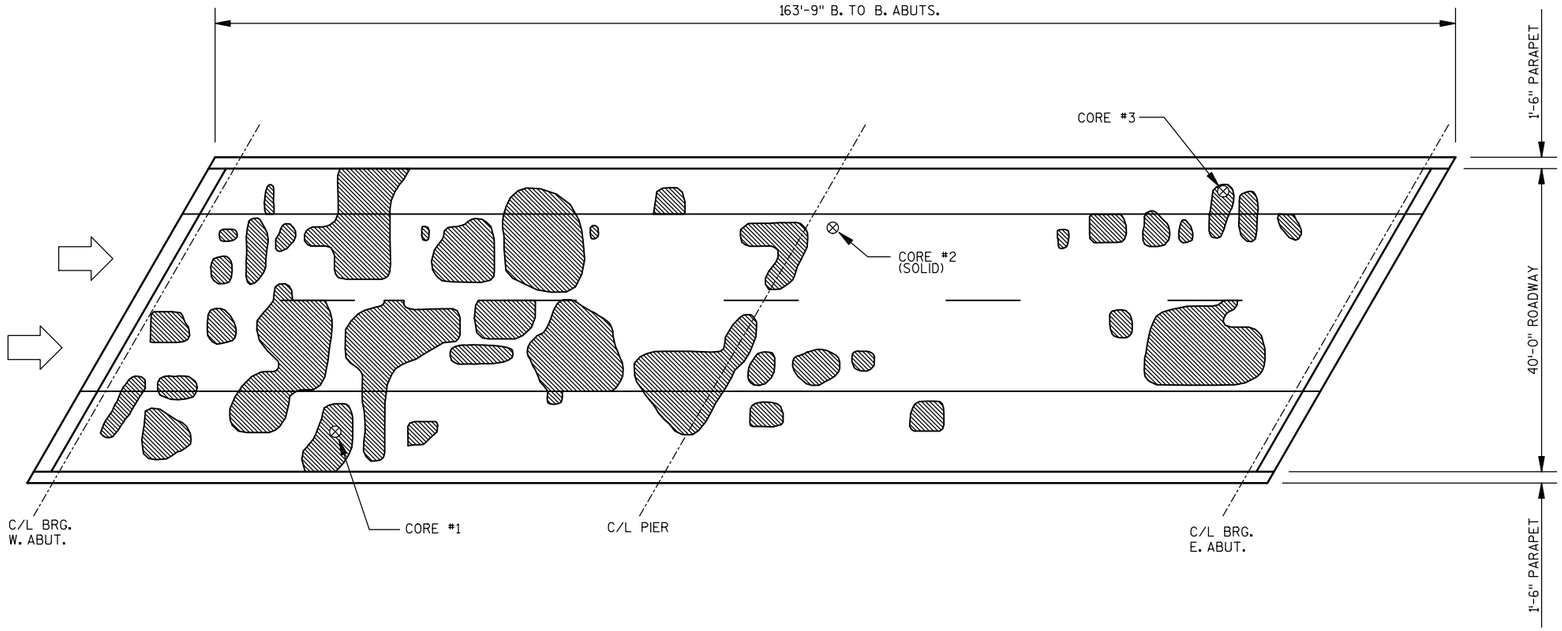
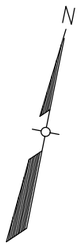
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-275\sa_B-13-275_06_det.dgn

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

FOR REFERENCE ONLY




## PLAN B-13-275




INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

## DECK INSPECTION RESULTS

| FIELD OBSERVATIONS SUMMARY | | S.N. B-13-275 | |
|---|---|---|---|
| ITEM | UNIT | QUANT. | % |
| TOTAL AREA | $ft^2$ | 6492 | |
| SHADE/DEBRIS | $ft^2$ | 0 | |
| DELAMINATION | $ft^2$ | 1423 | 21.9 |
| SPALL | $ft^2$ | 0 | 0 |
| DEBOND | $ft^2$ | 0 | 0 |
| ASPHALT PATCH | $ft^2$ | 0 | 0 |
| CONCRETE PATCH | $ft^2$ | 0 | 0 |

LEGEND

DELAMINATION

SPALL

DEBOND

ASPHALT PATCH

CONCRETE PATCH

SHADE/DEBRIS

## NOTES

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY.
DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER.
THE QUANTITIES FOR PREPARATION OF DECKS AND FULL-DEPTH
DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS
SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH
AND VARIABILITY.

SCALE 10' 20'

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/6/12

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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DECK INSPECTION RESULTS



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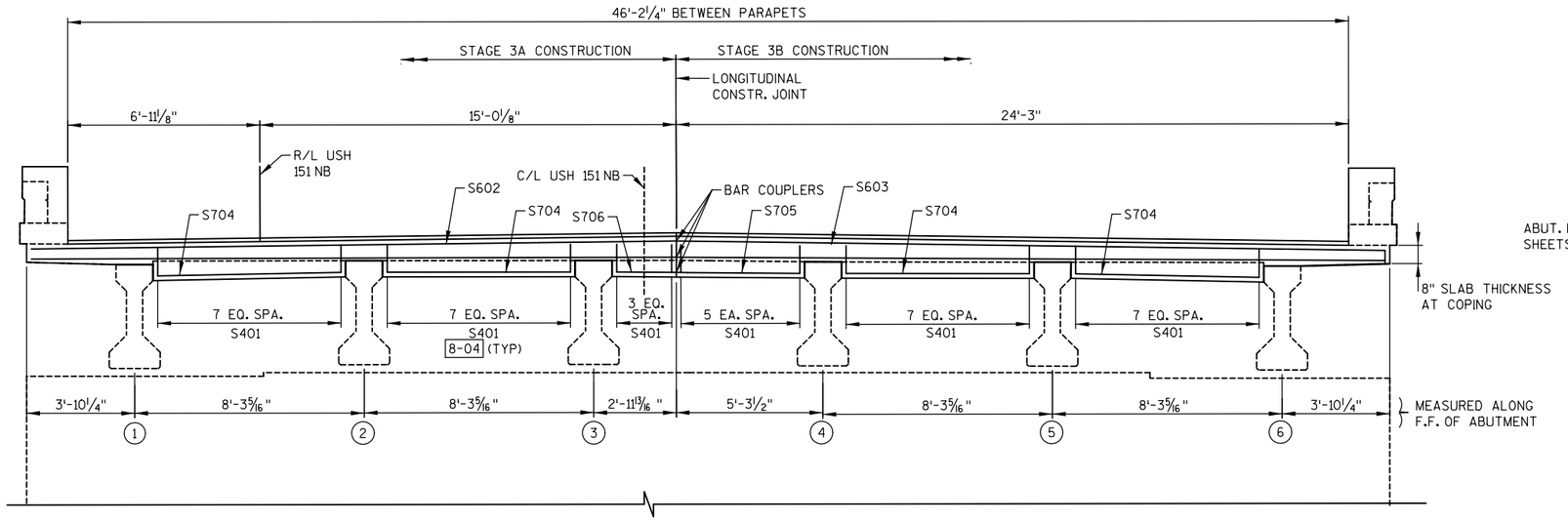
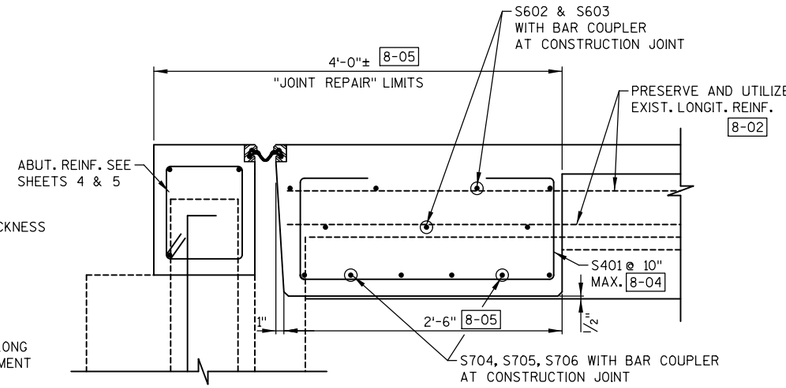
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |



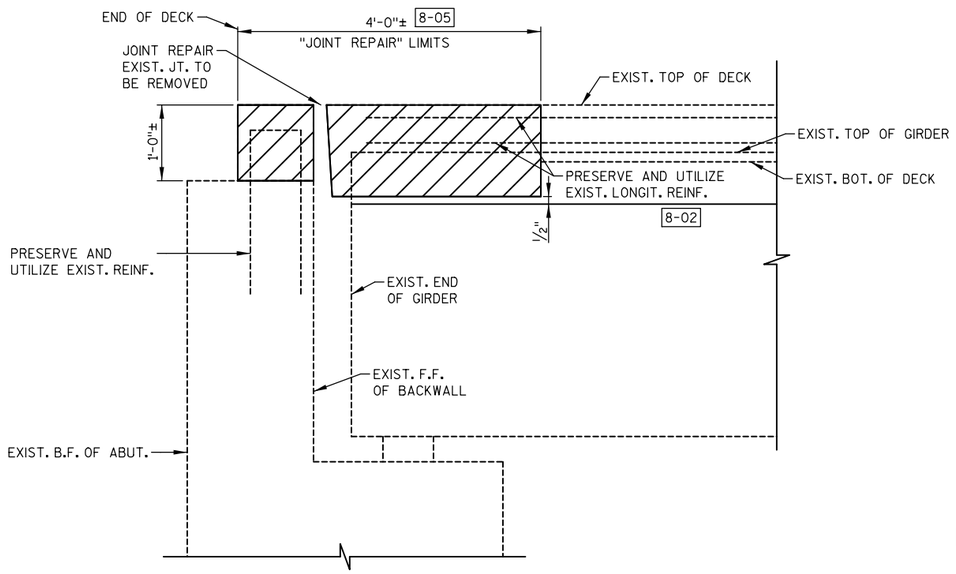

## ELEVATION

EAST ABUTMENT SHOWN
(WEST ABUTMENT MIRROR IMAGE)




## SECTION THRU JOINT AT ABUTMENTS

NORMAL TO SUBSTRUCTURE




## REMOVAL SECTION THRU JOINT AT ABUTMENTS

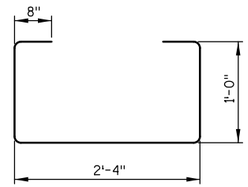
NORMAL TO SUBSTRUCTURE

## BILL OF BARS
## DECK JOINTS

**COATED: 2,250 LBS.**

| | MARK | NO. REQ. 3A | NO. REQ. 3B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | S401 | 40 | 44 | 84 | 5'-4" | X | X | SLAB - JOINT AT ABUT. - VERTICAL |
| 8-01 8-03 | S602 | 14 | 0 | 14 | 23'-2" | | X | SLAB - JOINT AT ABUT. - HORIZONTAL |
| 8-01 8-03 | S603 | 0 | 14 | 14 | 25'-6" | | X | SLAB - JOINT AT ABUT. - HORIZONTAL |
| | S704 | 24 | 24 | 48 | 6'-4" | | X | SLAB - JOINT AT ABUT. - HORIZONTAL |
| 8-03 8-01 | S705 | 0 | 12 | 12 | 4'-4" | | X | SLAB - JOINT AT ABUT. - HORIZONTAL |
| 8-03 8-01 | S706 | 12 | 0 | 12 | 2'-0" | | X | SLAB - JOINT AT ABUT. - HORIZONTAL |
| 8-03 | S407 | 12 | 0 | 12 | 9'-0" | | X | SLAB - EXPANSION DEVICE - HORIZONTAL |
| 8-03 | S408 | 0 | 12 | 12 | 9'-7" | | X | SLAB - EXPANSION DEVICE - HORIZONTAL |

NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




S401

## LEGEND

8-01 ADJUST BAR LENGTHS AS NECESSARY TO ACCOMMODATE BAR COUPLER MANUFACTURER RECOMMENDATIONS. IF BARS ARE FIELD CUT, APPLY EPOXY COATING TO BAR ENDS.

8-02 PRESERVE AND UTILIZE EXISTING LONGITUDINAL REINFORCING. SAVE AND INCORPORATE 1'-6" MIN. OF TRANSVERSE DECK REINFORCING BARS THAT RUN NORMAL TO THE GIRDERS.

8-03 BAR COUPLER REQUIRED

8-04 BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C/L OF GIRDERS.

8-05 DIMENSIONS GIVEN ARE NORMAL TO C/L OF SUBSTRUCTURE UNIT.

(#) INDICATES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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REPLACEMENT JOINT DETAILS 1

SHEET 8 OF 12
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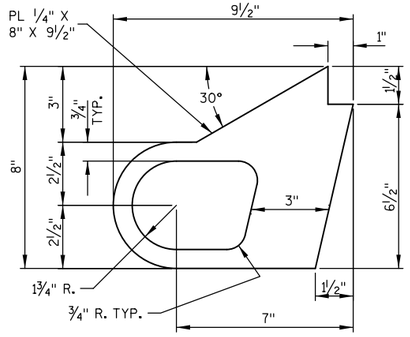
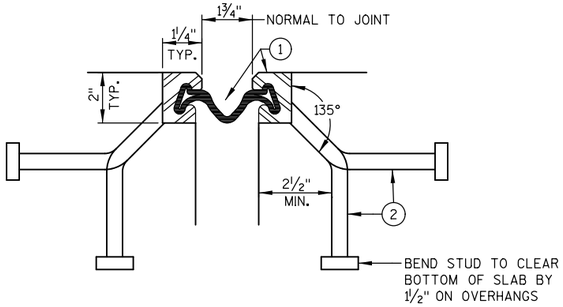
STATE PROJECT NUMBER

1111-02-78

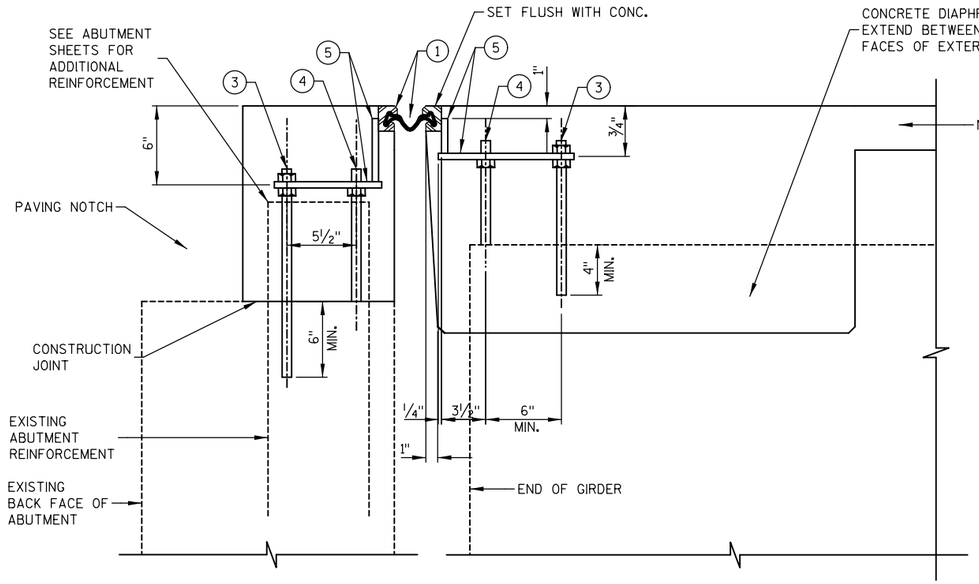



## ALTERNATE STRIP SEAL ANCHOR



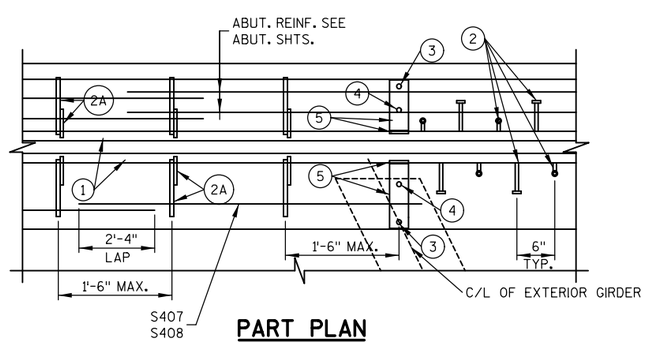

## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS

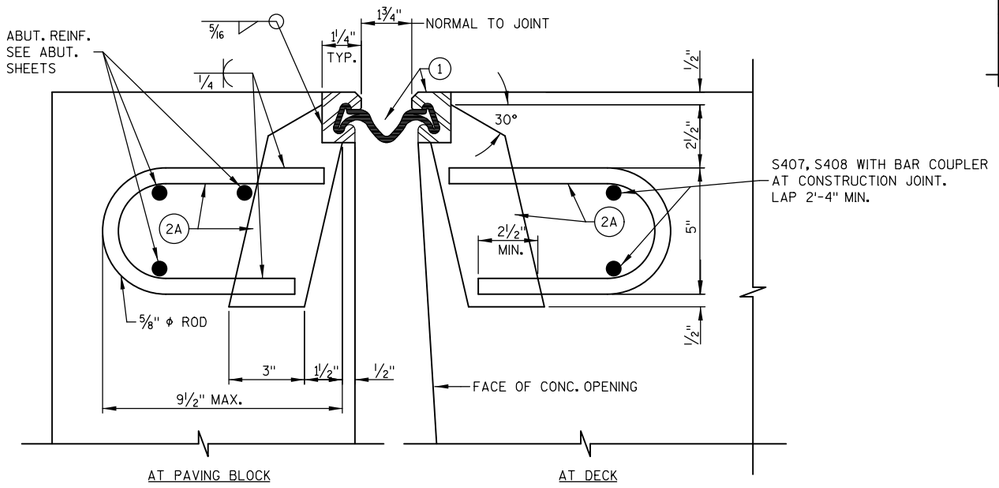



## TYPICAL SECTION THRU JOINT AT ABUTMENTS

NORMAL TO C/L OF SUBSTRUCTURE




## PART PLAN




## SECTION THRU JOINT AT ABUTMENTS

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS

## LEGEND

(1) NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1 3/4".

(2) STUDS 5/8"ϕ 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"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.2 AT 1'-6" CENTERS BETWEEN GIRDERS.

(3) 3/4"ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.

(4) 3/4"ϕ 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 OF FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2"ϕ HOLE FOR NO. 2 AND 1"ϕ HOLE FOR NO. 4.

(6) GALVANIZED PLATE 3/8" X 10" X 2'-2" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.

(7) 3/4"ϕ X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

(8) 3/4"ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.

(9) 3/4"ϕ X 2 1/4" GALVANIZED THREADED COUPLING.

(10) 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

## GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION. 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.

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 AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-13-275".

BAR COUPLERS REQUIRED

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

| DRAWN BY | BSC | PLANS CK'D. | DJW |
|---|---|---|---|

REPLACEMENT JOINT DETAILS 2

SHEET 9 OF 12

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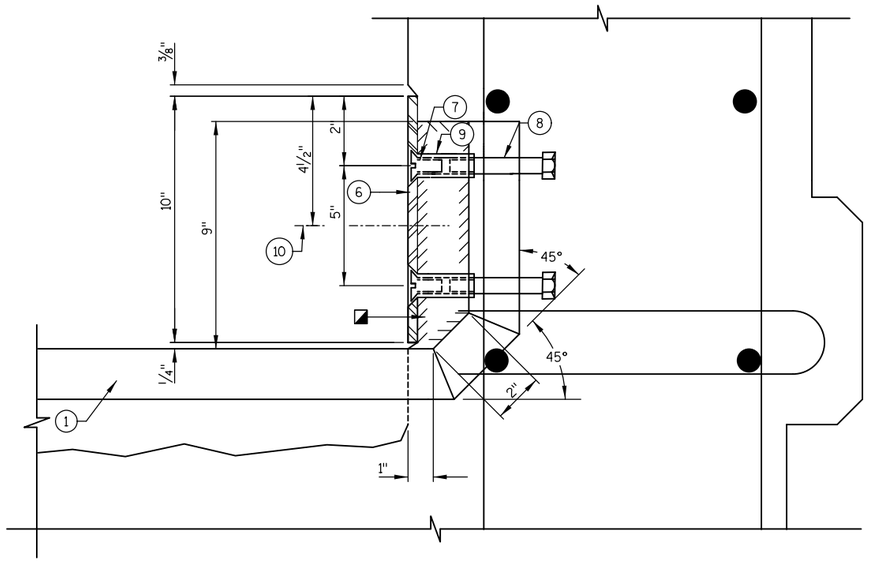
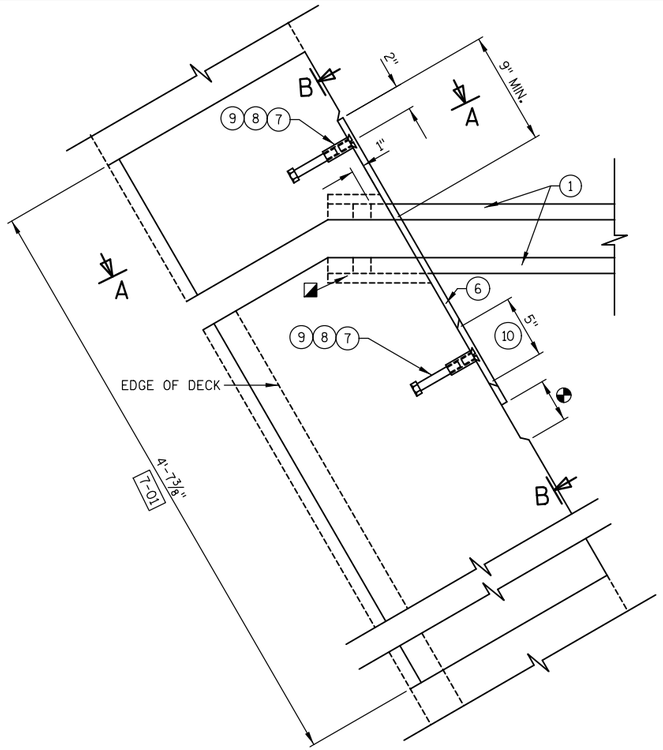
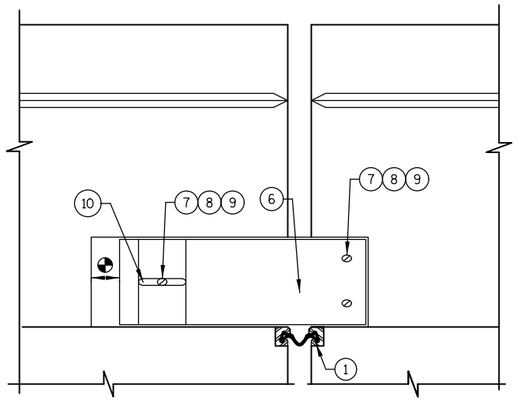


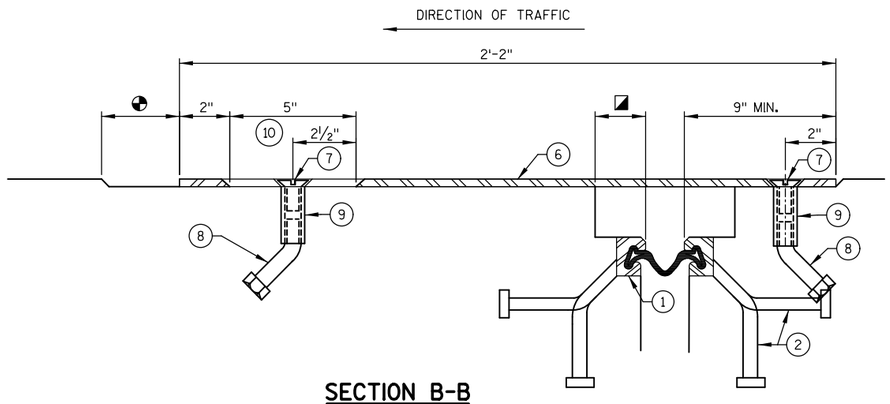

## SECTION A-A



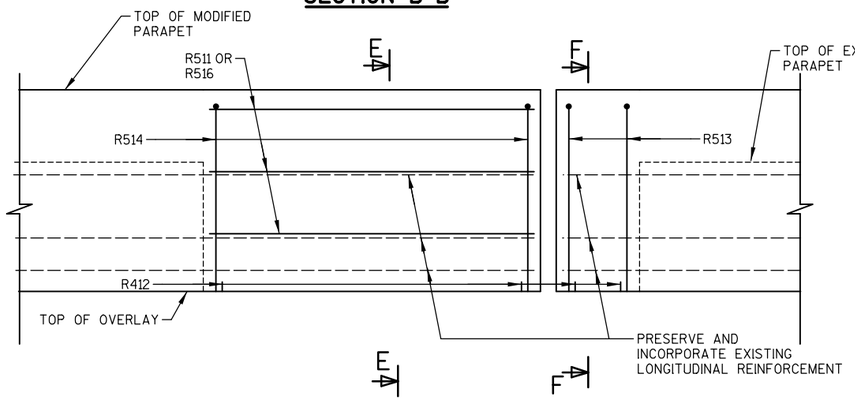

## PLAN AT PARAPET



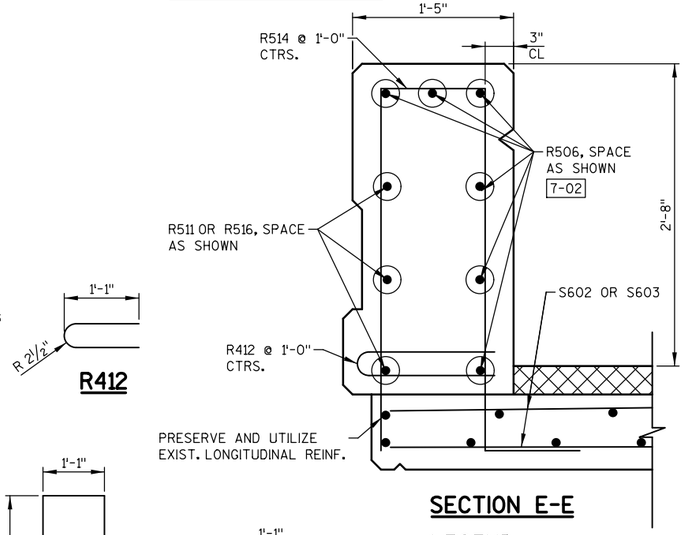
## VIEW OF PARAPET PLATE FROM ROADWAY



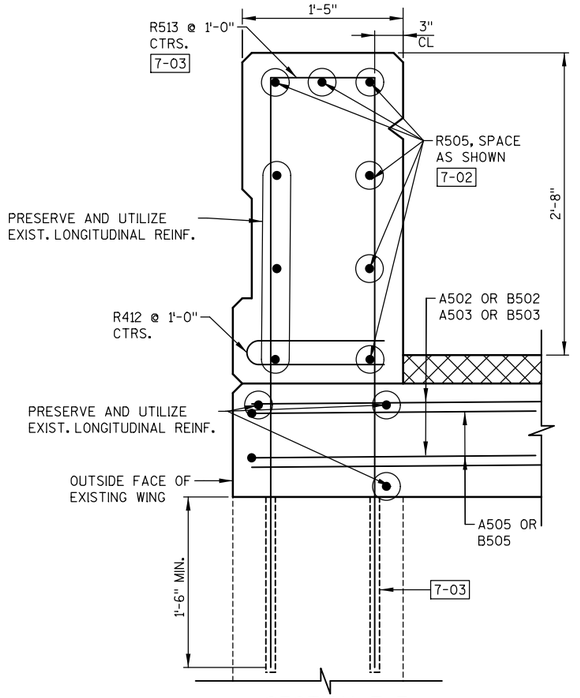

## SECTION B-B




## VIEW OF PARAPET REPLACEMENT FROM ROADWAY



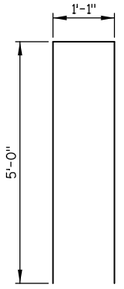

## SECTION E-E



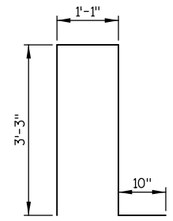

## SECTION F-F




## R412




## R513




## R514

## LEGEND

- JOINT OPENING DIMENSION ALONG SKEW PLUS ½".
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- (X) SEE SHEET 9 FOR DESCRIPTION
- 7-01 JOINT REPAIR LIMITS, REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.
- 7-02 SEE SHEET 12 FOR R505 AND R506 REINFORCEMENT DETAILS.
- 7-03 "ADHESIVE ANCHORS NO.5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE.

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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REPLACEMENT JOINT DETAILS 3

SHEET 10 OF 12
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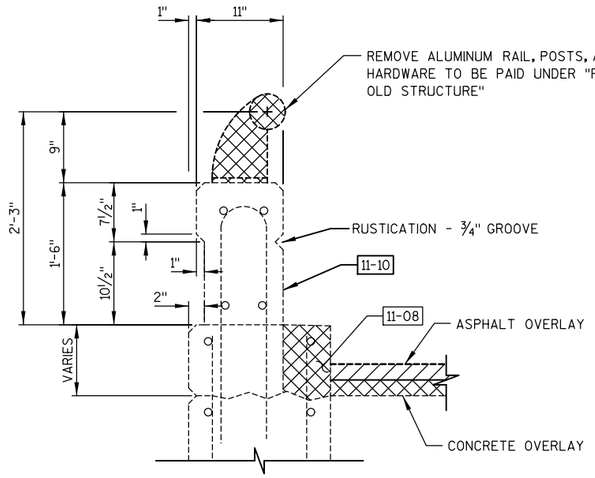
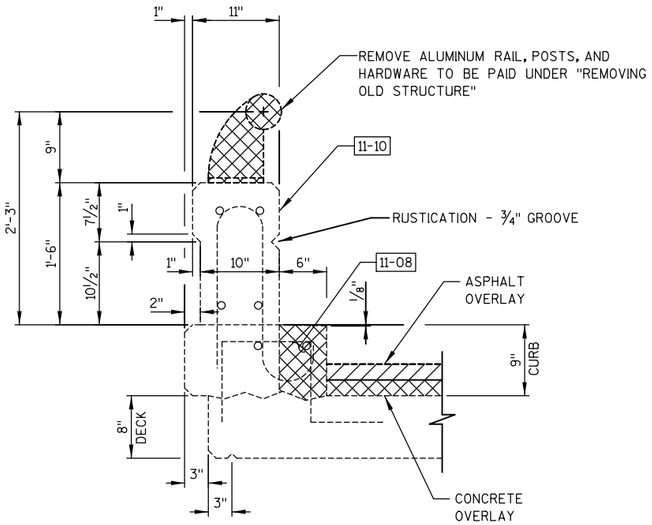



EXISTING SECTION THRU WING




EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

## LEGEND

CONCRETE MASONRY OVERLAY DECKS.

11-01 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

11-02 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL".

11-03 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE PARAPET.
11-04 EPOXY ANCHORED.

11-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

11-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

11-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

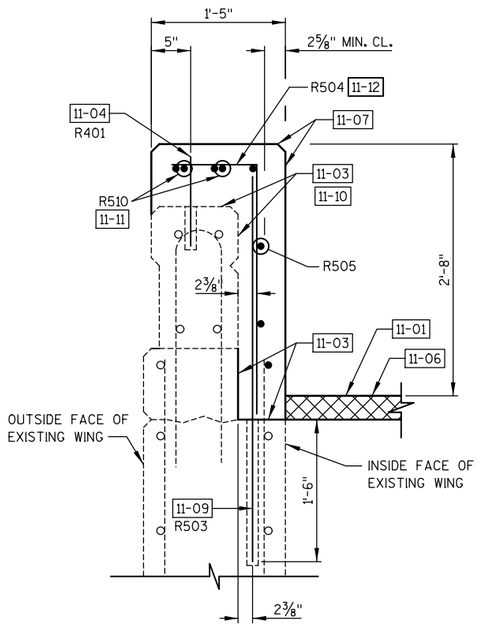
11-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

11-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

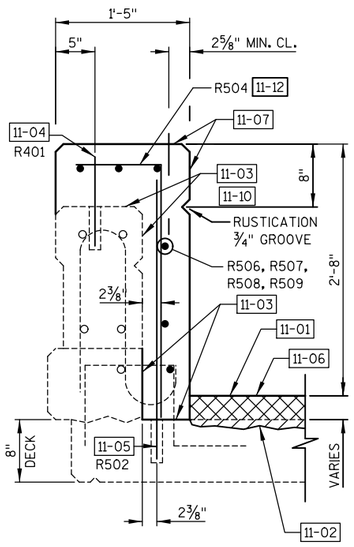
11-10 DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER. SALVAGE EXISTING REINFORING STEEL. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

11-11 IN WINGS 1 AND 3 ONLY. LAP 2'-7" MIN. WITH R505 BARS.

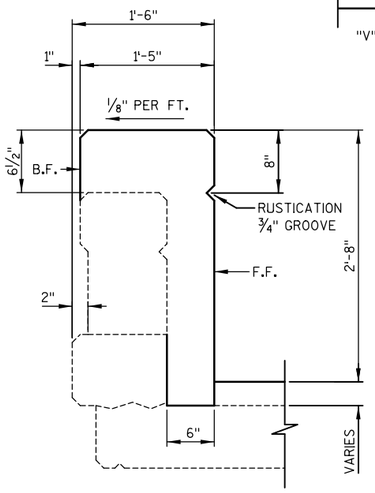
11-12 LAP 2'-7" MIN. WITH R502 OR R503 BAR.



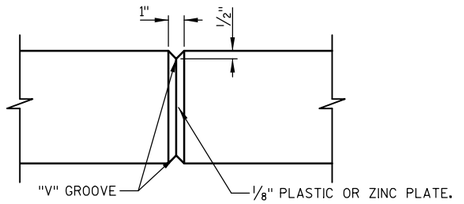

SECTION A-A THRU WINGS



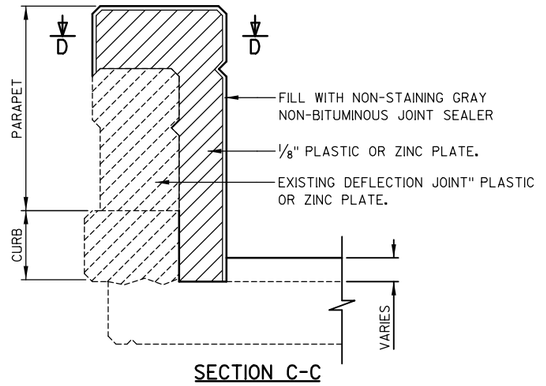

SECTION B-B THRU PARAPET & CURB ON BRIDGE



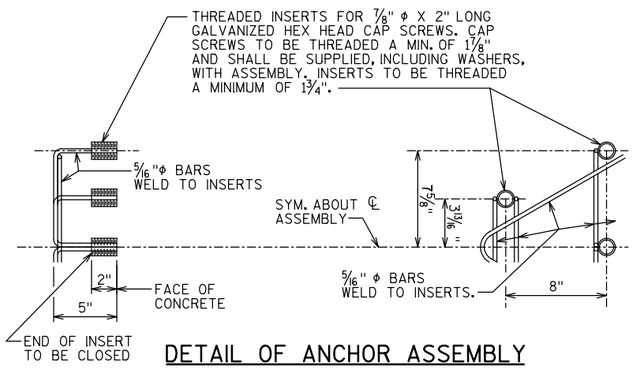

MODIFIED PARAPET SHAPE




SECTION D-D



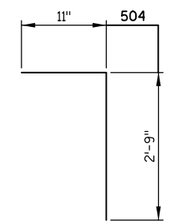

SECTION C-C
(SHOWING DEFLECTION JOINT IN PARAPET.)




DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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PARAPET DETAILS 1

SHEET 11 OF 12
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FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-275\sa_B-13-275_11_par.dgn

STATE PROJECT NUMBER

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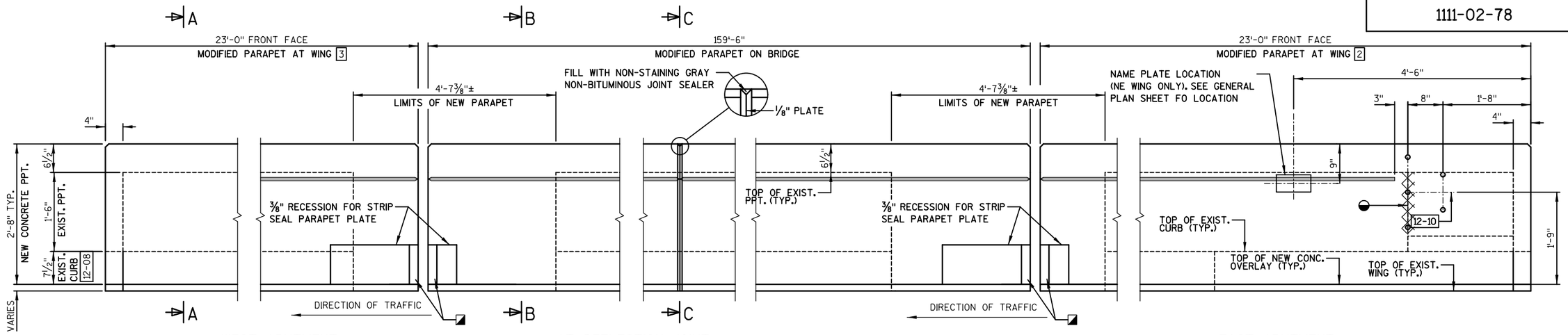
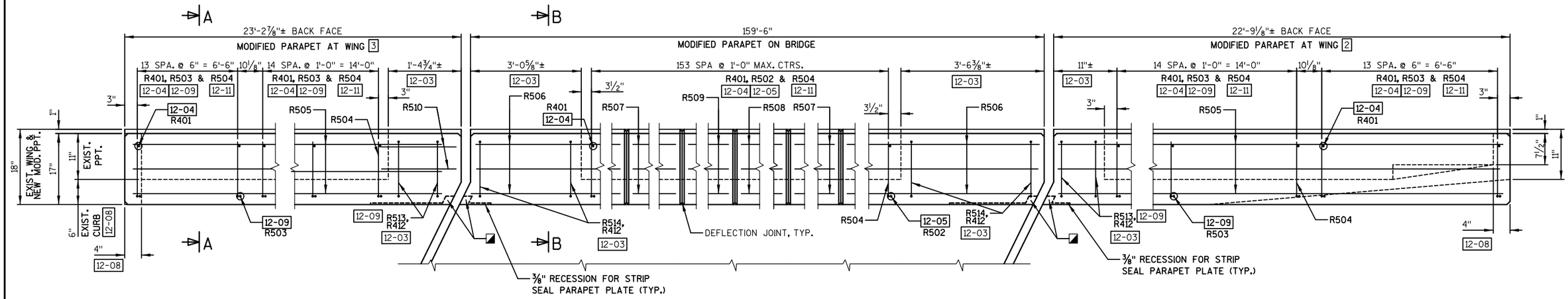



## INSIDE ELEVATION VIEW - SOUTH PARAPET SHOWN




## PLAN VIEW - SOUTH PARAPET SHOWN

## NOTES

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS ARE USED AT DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS OMITTED.

12-03 SEE SHEET 10 FOR CONCRETE AND REINFORCEMENT DETAILS WITHIN LIMITS OF THE NEW PARAPET.

12-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO TOP OF EXISTING CONCRETE PARAPET. EPOXY ANCHORED.

12-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

12-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

12-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

12-10 CENTERLINE OF ANCHOR ASSEMBLY FOR THRIE BEAM, SEE "GENERAL PLAN" SHEET FOR GUARDRAIL LOCATION.

12-11 LAP 2'-7" MIN. WITH R502 OR R503 BAR.

SEE SHEET 11 FOR SECTIONS A, B, & C

## BILL OF BARS - BOTH RAILS

COATED: 6,170 LBS.

| | BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| 12-04 | R401 | X | 424 | 0'-9" | | | PARAPET - VERT. - ALL WINGS AND BRIDGE - B.F. |
| 12-05 | R502 | X | 308 | 3'-2" | | | PARAPET - VERT. - BRIDGE - F.F. |
| 12-09 | R503 | X | 116 | 4'-3" | | | PARAPET - VERT. - ALL WINGS - F.F. |
| | R504 | X | 424 | 3'-7" | X | | PARAPET - VERT. - ALL WINGS AND BRIDGE - F.F. |
| | R505 | X | 24 | 22'-4" | | | PARAPET - HORIZ. - ALL WINGS - F.F. AND TOP |
| | R506 | X | 24 | 26'-9" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R507 | X | 24 | 31'-2" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R508 | X | 12 | 19'-3" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R509 | X | 12 | 22'-3" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R510 | X | 4 | 3'-0" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP - LAP BAR |
| | R511 | X | 6 | 2'-8" | | | PARAPET - AT JOINT - DECK - SE AND NW CORNERS |
| | R412 | X | 24 | 2'-5" | X | | PARAPET - HORIZONTAL |
| 12-09 | R513 | X | 8 | 10'-10" | X | | PARAPET - AT JOINT - ABUTMENT SIDE |
| | R514 | X | 16 | 8'-1" | X | | PARAPET - AT JOINT - DECK SIDE |
| | R516 | X | 6 | 3'-2" | | | PARAPET - AT JOINT - DECK - SW AND NE CORNERS |

## LEGEND

- REMOVE EXIST. PPT. AS NEEDED FOR PROPER INSTALLATION OF THRIE BEAM ANCHOR ASSEMBLY.
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- [#] DENOTES WINGWALL NUMBER

| NO. | DATE | REVISION | BY |
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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE B-13-275

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PARAPET DETAILS 2

SHEET 12 OF 12
430

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-275\sa_B-13-275_12_par.dgn

STATE PROJECT NUMBER

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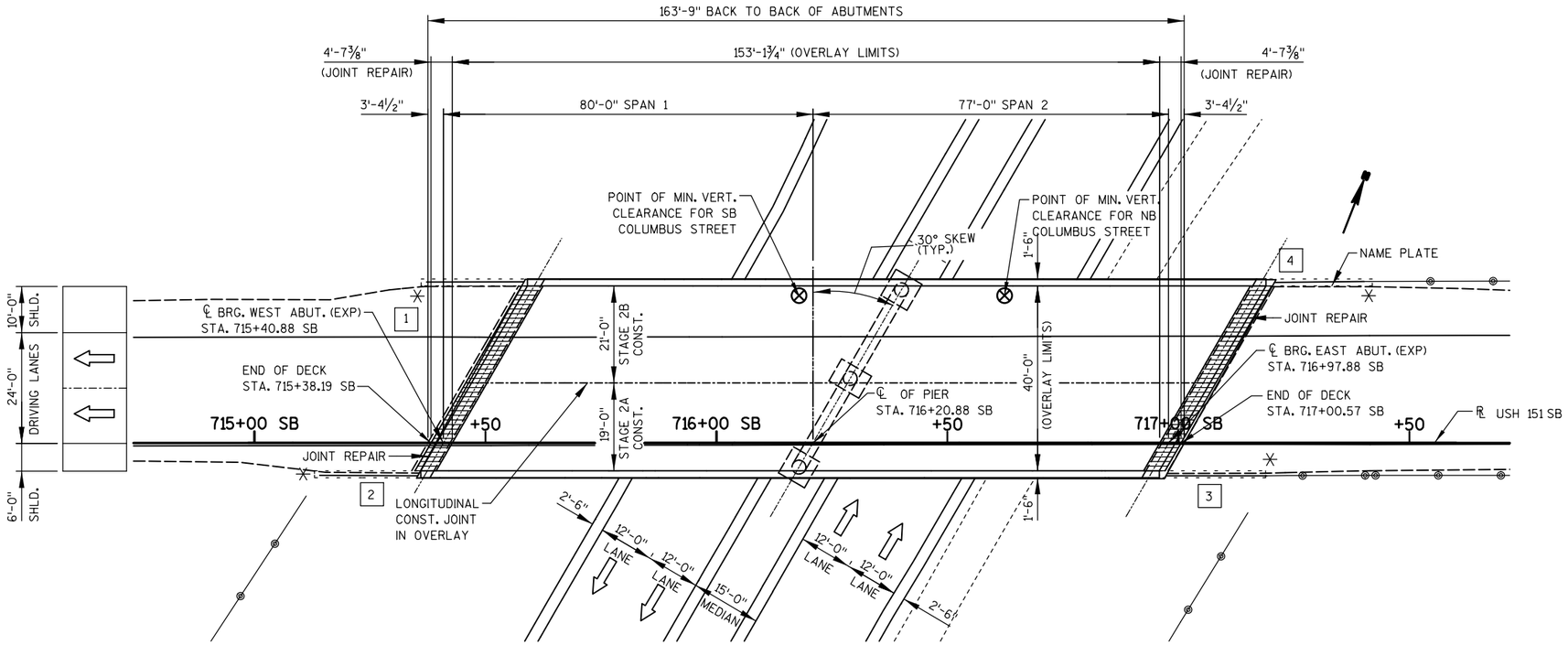
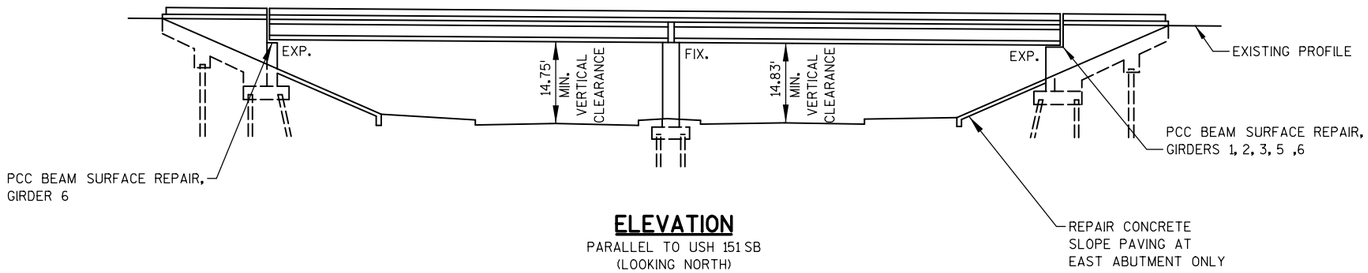



## PLAN

CONCRETE OVERLAY-2 SPAN, 45" PRESTRESSED GIRDERS




## ELEVATION

PARALLEL TO USH 151 SB
(LOOKING NORTH)

## GENERAL NOTES

THE PROPOSED WORK INCLUDES PLACEMENT OF A CONCRETE OVERLAY, JOINT REPAIR, CLEANING AND PAINTING BEARINGS, SLOPE PAVING REPAIR, CONCRETE SURFACE REPAIR, PRESTRESSED GIRDER END REPAIR, AND REFACING THE EXISTING PARAPETS.

DRAWING SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE EXISTING ASPHALTIC CONCRETE AND CONCRETE MASONRY OVERLAY SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER THE BID ITEMS "REMOVING ASPHALTIC CONCRETE DECK OVERLAY" AND "REMOVING CONCRETE MASONRY DECK OVERLAY" RESPECTIVELY.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY OR THE PAVING BLOCKS AT THE ABUTMENTS IS INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

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

CRACKS AND JOINTS IN THE OVERLAY SHALL BE SEALED WITH A LOW-VISCOCITY CRACK SEALER (SEE STANDARD SPECIFICATIONS SECTION 502.2.11 CRACK SEALER). COST IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY OVERLAY DECKS."

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGIT OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN, AND EXTEND EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW CONSTRUCTION WHERE APPLICABLE.

ALL CONCRETE REMOVAL NOT COVERED WITH A CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

"PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2", "FULL-DEPTH DECK REPAIR", AND "CONCRETE SURFACE REPAIR" QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE THE FIELD IDENTIFICATION AND DETERMINATION OF ALL REPAIR LOCATIONS WITH THE ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

ALL PREVIOUS PATCHES SHALL BE REMOVED UNDER THE BID ITEM FOR "PREPARATION DECKS TYPE 1" AND "PREPARATION DECKS TYPE 2".

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-13-276".

MATERIALS, EQUIPMENT, ETC. SHALL NOT BE STOCKPILED/STORED ON THE BRIDGE DECK WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

THE CONTRACTOR SHALL SUPPLY THE NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1970.

THE ENTIRE EXPOSED TOP AND INSIDE FACES OF THE EXISTING PARAPET SURFACES SHALL BE BLAST CLEANED AND ANY EXPOSED STEEL SHALL BE BRUSH CLEANED PRIOR TO THE PARAPET BEING BUILT UP (MODIFIED). ALL WORK DESCRIBED ABOVE SHALL BE INCLUDED AND/OR CONSIDERED INCIDENTAL TO THE BID ITEM "CLEANING PARAPETS SPECIAL".

JOINT REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

## LEGEND

⚹ LOCATION OF ANCHOR ASSEMBLIES FOR THRIE BEAM ATTACHMENT.

[X] DENOTES WINGWALL NUMBER

## TRAFFIC DATA

USH 151
A.D.T. (2037) = 16,000 VPD
R.D.S = 70 MPH

## DESIGN DATA

LIVE LOAD:
INVENTORY RATING — HS-21
OPERATING RATING — HS-38
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV) — 250 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY f'c — 4,000 PSI
CONCRETE MASONRY BRIDGES f'c — 4,000 PSI
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy — 60,000 PSI

## LIST OF DRAWINGS


1. GENERAL PLAN
2. CROSS SECTIONS & QUANTITIES
3. MAINTENANCE OF TRAFFIC
4. WEST ABUTMENT
5. EAST ABUTMENT
6. MISC. DETAILS & OVERLAY ELEVATIONS
7. DECK INSPECTION RESULTS
8. REPLACEMENT JOINT DETAILS 1
9. REPLACEMENT JOINT DETAILS 2
10. REPLACEMENT JOINT DETAILS 3
11. PARAPET DETAILS 1
12. PARAPET DETAILS 2


WISCONSIN — DAVID J. WALKER — E-32409 — PROFESSIONAL ENGINEER — 8-1-2016


SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONTACT:
DAVID WALKER, P.E. (608) 251-4843


| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |


STRAND ASSOCIATES®
910 WEST WINGRA DRIVE
MADISON, WISCONSIN 53715
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

# STRUCTURE B-13-276

USH 151 SB OVER COLUMBUS STREET

| COUNTY | TOWN/CITY/VILLAGE |
|---|---|
| DANE | SUN PRAIRIE |

DESIGN SPEC. REHABILITATION N/A

| DESIGNED BY | DESIGN CK'D. | DRAWN BY | PLANS CK'D. |
|---|---|---|---|
| DEB | DJW | BSC | DJW |

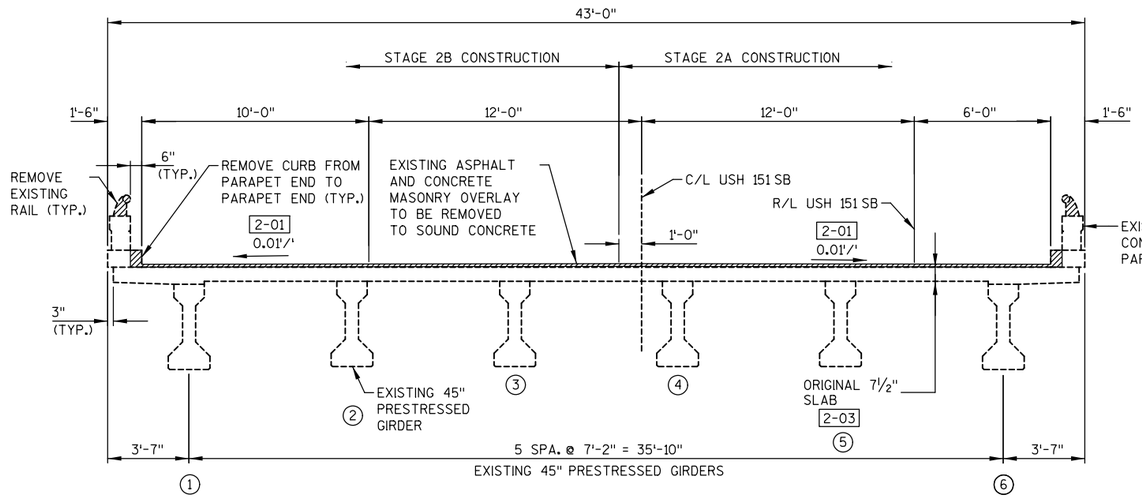
GENERAL PLAN

SHEET 1 OF 12
431

8

8

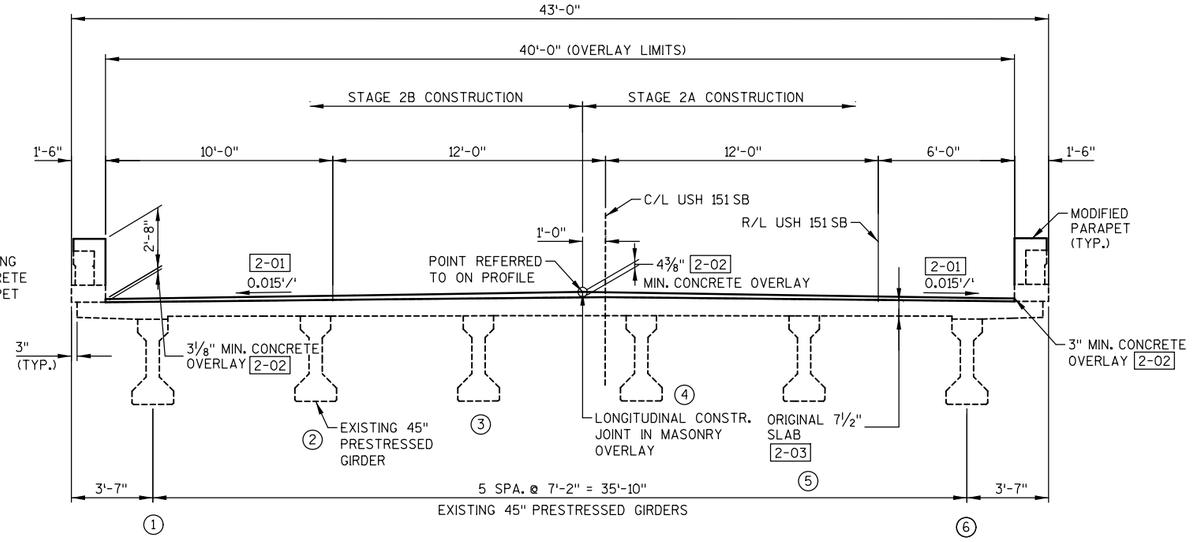
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## EXISTING CROSS SECTION THRU ROADWAY

USH 151 SB

(LOOKING EAST)




## PROPOSED CROSS SECTION THRU ROADWAY

USH 151 SB

(LOOKING EAST)

### BENCH MARK

| NO. | STATION | DESCRIPTION | ELEV. |
|---|---|---|---|
| 5 | 714+42/34' RT | BRASS DISK, SW CORNER TOP OF CURB B-13-275 | 1004.42 |

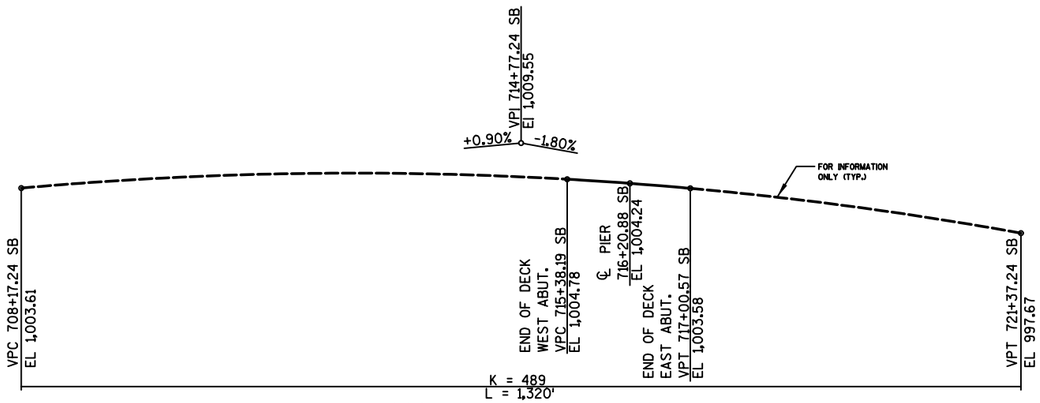
ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1988 (NAVD88)

## TOTAL ESTIMATED QUANTITIES

| | NO. | BID ITEM | UNIT | WEST ABUT. | PIER | EAST ABUT. | SUPERS. | TOTAL |
|---|---|---|---|---|---|---|---|---|
| | 203.0200.08 | REMOVING OLD STRUCTURE STA. 715+78.64 | LS | | | | | 1 |
| | 203.0210.S.08 | ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-13-276 | LS | | | | | 1 |
| | 203.0225.S.08 | DEBRIS CONTAINMENT B-13-276 | LS | | | | | 1 |
| | 204.0175 | REMOVING CONCRETE SLOPE PAVING | SY | | | 55 | | 55 |
| | 502.0100 | CONCRETE MASONRY BRIDGES | CY | | | | 40 | 40 |
| | 502.3100.08 | EXPANSION DEVICE B-13-276 | LS | | | | | 1 |
| | 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | | | | 728 | 728 |
| | 502.3210 | PIGMENTED SURFACE SEALER | SY | | | | 188 | 188 |
| | 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | | | | 424 | 424 |
| | 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 55 | | 55 | 424 | 534 |
| | 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 430 | | 430 | 8420 | 9280 |
| | 505.0904 | BAR COUPLERS NO. 4 | EACH | | | | 4 | 4 |
| | 505.0905 | BAR COUPLERS NO. 5 | EACH | 3 | | 3 | | 6 |
| | 505.0906 | BAR COUPLERS NO. 6 | EACH | | | | 14 | 14 |
| | 505.0907 | BAR COUPLERS NO. 7 | EACH | | | | 12 | 12 |
| | 509.0301 | PREPARATION DECKS TYPE 1 | SY | | | | 300 | 300 |
| | 509.0302 | PREPARATION DECKS TYPE 2 | SY | | | | 120 | 120 |
| | 509.1000 | JOINT REPAIR | SY | | | | 41 | 41 |
| 2-05 | 509.1500 | CONCRETE SURFACE REPAIR | SF | 3 | | 10 | 8 | 21 |
| | 509.2000 | FULL-DEPTH DECK REPAIR | SY | | | | 15 | 15 |
| 2-04 | 509.2500 | CONCRETE MASONRY OVERLAY DECKS | CY | | | | 128 | 128 |
| | 509.9005.S.08 | REMOVING CONCRETE MASONRY DECK OVERLAY B-13-276 | SY | | | | 728 | 728 |
| | 509.9010.S.08 | REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-13-276 | SY | | | | 728 | 728 |
| | 604.0400 | SLOPE PAVING CONCRETE | SY | | | 55 | | 55 |
| | 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | | | | 4 | 4 |
| 2-06 | SPV.0060.01 | CLEANING AND PAINTING BEARINGS | EACH | | | | 6 | 6 |
| | SPV.0090.02 | CLEANING PARAPETS SPECIAL | LF | | | | 392 | 392 |
| | SPV.0165.01 | PCC BEAM SURFACE REPAIR | SF | 12 | | 57 | | 69 |

ALL ITEMS ARE CATEGORY 0100.

*ENGINEER SHALL FIELD VERIFY ALL CONCRETE SURFACE REPAIR AREAS.




## PROFILE GRADE LINE (PGL)

(STATIONS ALONG ℞, ELEVATIONS AT PGL, LOCATED 13' LEFT OF ℄)

### LEGEND

2-01 EXISTING CROSS SLOPE IS 0.01'/' AND WILL BE CHANGED TO 0.015'/'.

2-02 THE PROPOSED OVERLAY THICKNESS WILL VARY FROM AN APPROXIMATE 3⅛" AT THE NORTH PARAPET, 4⅜" AT THE CROWN AND 3" AT THE SOUTH PARAPET. THE OVERLAY THICKNESSES INCLUDE 1" DEPTH ASSUMED TO HAVE BEEN REMOVED AS PART OF THE PREVIOUS CONCRETE OVERLAY PROJECT DECK CLEANING OPERATIONS. FOR QUANTITY COMPUTATION PURPOSES, THE AVERAGE (WEIGHTED) OVERLAY THICKNESS IS 4¼" WHICH INCLUDES AN ADDITIONAL ½" TO ACCOUNT FOR VARIATIONS IN THE DECK THICKNESS.

2-03 ORIGINAL SLAB DEPTH SHOWN. ASSUMED TO BE REDUCED BY 1" DURING PLACEMENT OF PREVIOUS CONCRETE OVERLAY AS PART OF THE PREVIOUS DECK CLEARING PROCEDURE.

2-04 BID ITEM INCLUDES CONCRETE FOR: "PREPARATION DECKS TYPE 1", "PREPARATIONS DECKS TYPE 2", "FULL-DEPTH DECK REPAIR" AND "JOINT REPAIR".

2-05 CONCRETE SURFACE REPAIR IS ANTICIPATED AT THE PIER AND ABUTMENTS. LOCATIONS TO BE DETERMINED BY ENGINEER.

2-06 "CLEANING AND PAINTING BEARINGS" IS ANTICIPATED AT GIRDERS 1, 2, 3, 4, 5, AND 6 ON THE WEST ABUTMENT.

(#) DENOTES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

DRAWN BY BSC | PLANS CK'D. DJW

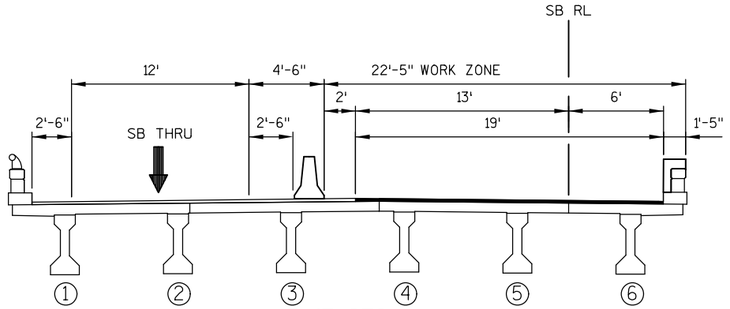
CROSS SECTIONS & QUANTITIES

SHEET 2 OF 12
432

8

8

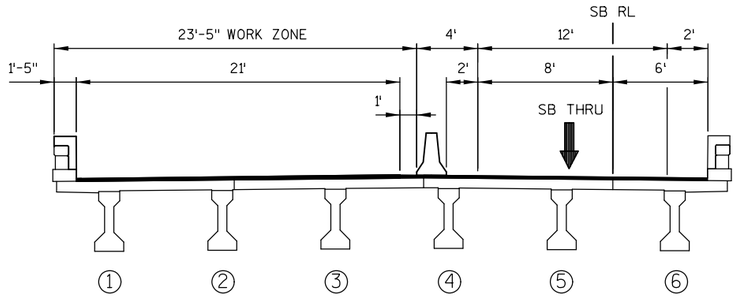
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




**B-13-276**
USH 151 SB
(LOOKING EAST)

## STAGE 2A - STRUCTURES

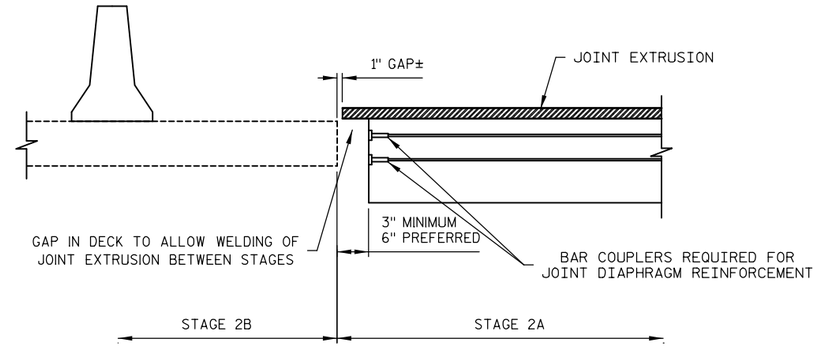
SB PERMANENT LANE CLOSURES
(SB CONSTRUCTION)




**B-13-276**
USH 151 SB
(LOOKING EAST)

## STAGE 2B - STRUCTURES

SB PERMANENT LANE CLOSURES
(SB CONSTRUCTION)




## JOINT DETAIL

## LEGEND

(#) DENOTES GIRDER NUMBER

8

8

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

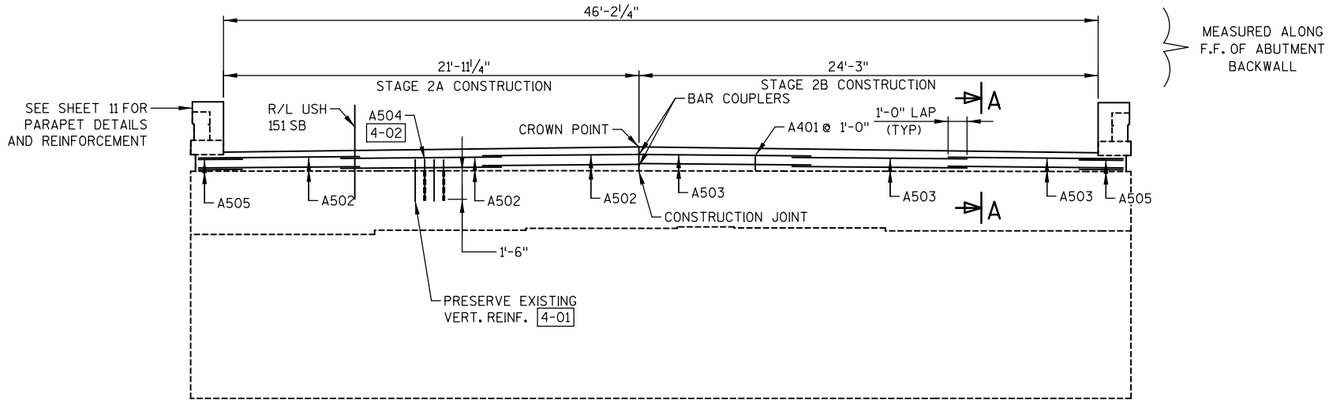
STRUCTURE B-13-276

DRAWN BY BSC | PLANS CK'D. DJW

MAINTANENCE OF TRAFFIC

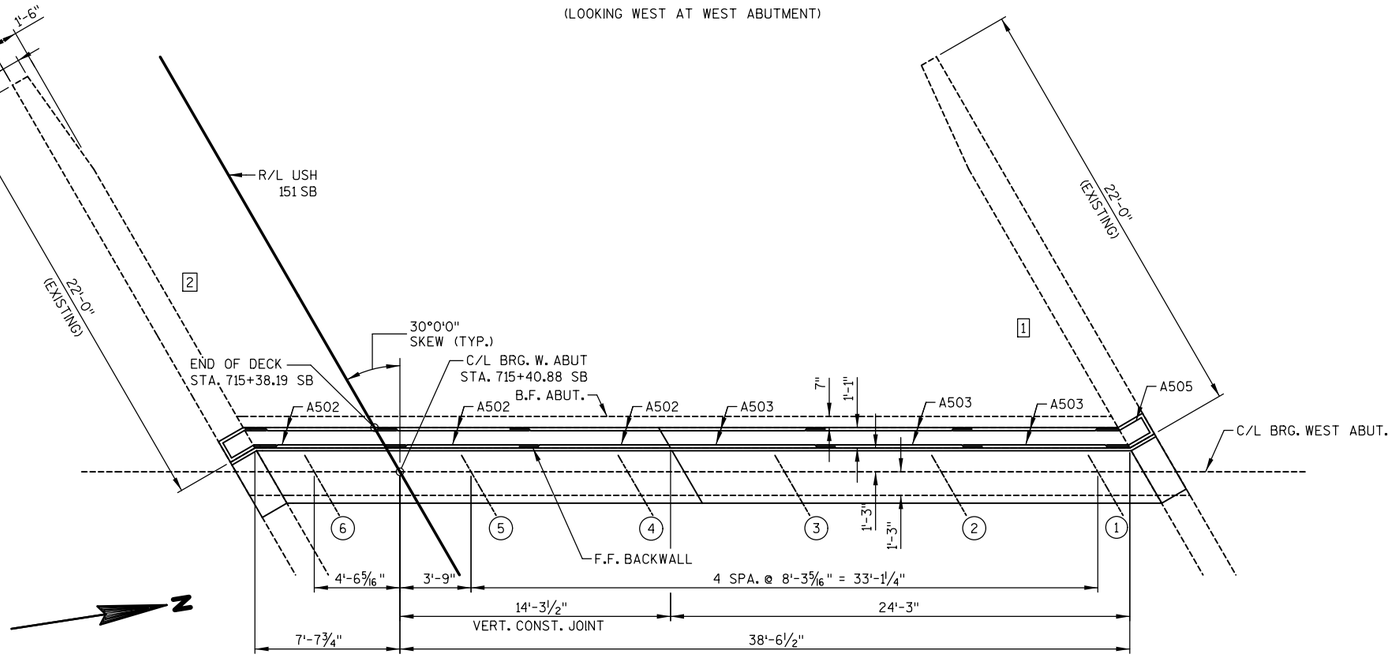
SHEET 3 OF 12
433

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

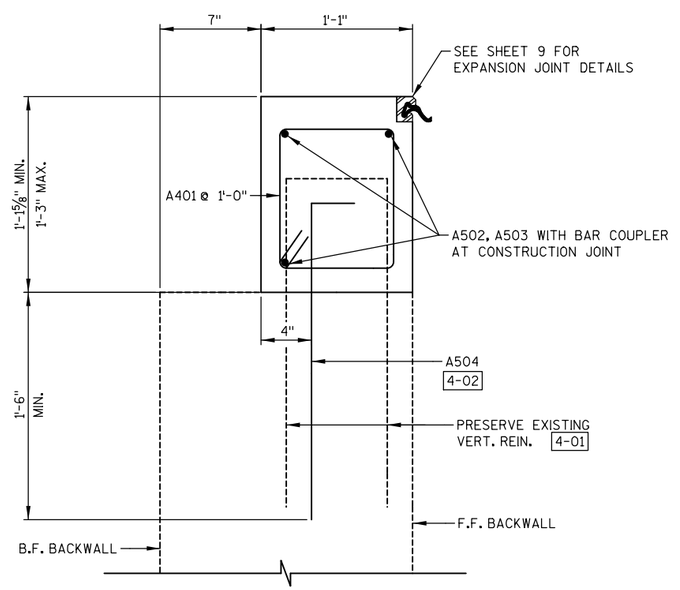



## ELEVATION

(LOOKING WEST AT WEST ABUTMENT)




## PLAN




## SECTION A-A

## LEGEND

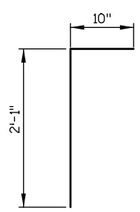
| | |
|---|---|
| 4-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS 4NDICATED BY 4-02 . |
| 4-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 4-03 | BAR COUPLER REQUIRED |
| (#) | INDICATES GIRDER NUMBER |
| [#] | DENOTES WINGWALL NUMBER |

## BILL OF BARS
## WEST ABUTMENT

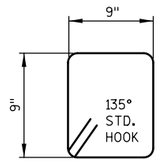
**TOTAL COATED: 430 LBS.**

| | MARK | NO. REQ. 2A | NO. REQ. 2B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| | A401 | 22 | 25 | 47 | 3'-6" | X | X | PAVING BLOCK - VERTICAL |
| 4-03 | A502 | 9 | 0 | 9 | 8'-0" | | X | PAVING BLOCK - HORIZONTAL |
| 4-03 | A503 | 0 | 9 | 9 | 8'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 4-02 | A504 | 22 | 25 | 47 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | A505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

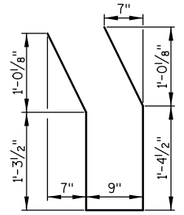
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




A504




A401




A505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

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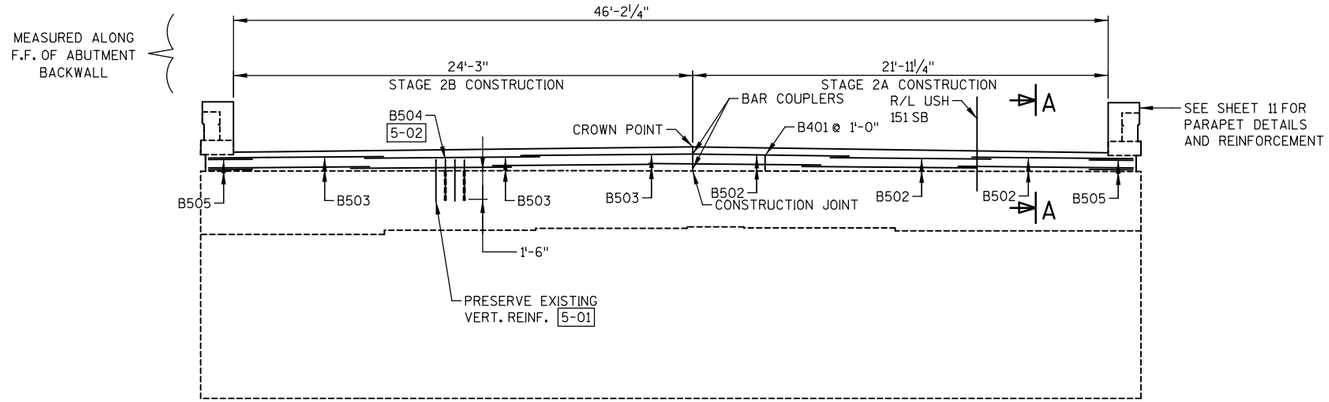
WEST ABUTMENT

SHEET 4 OF 12
434

8

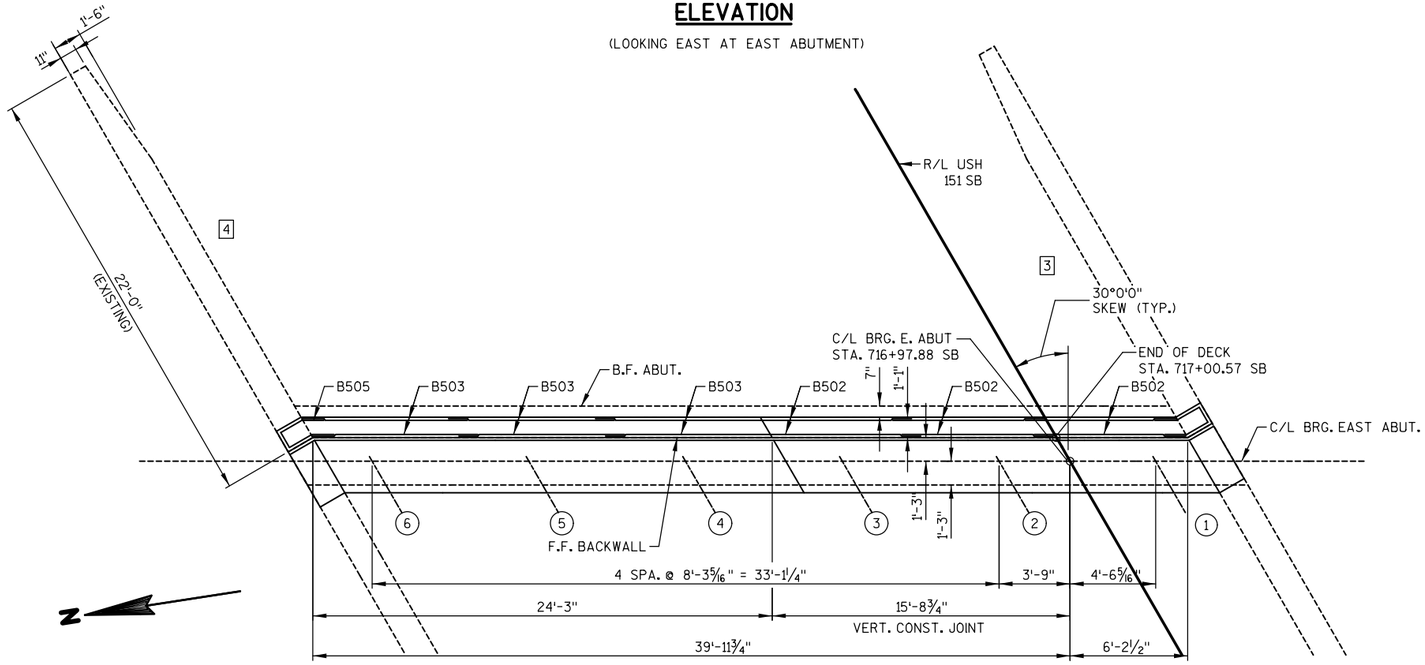
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

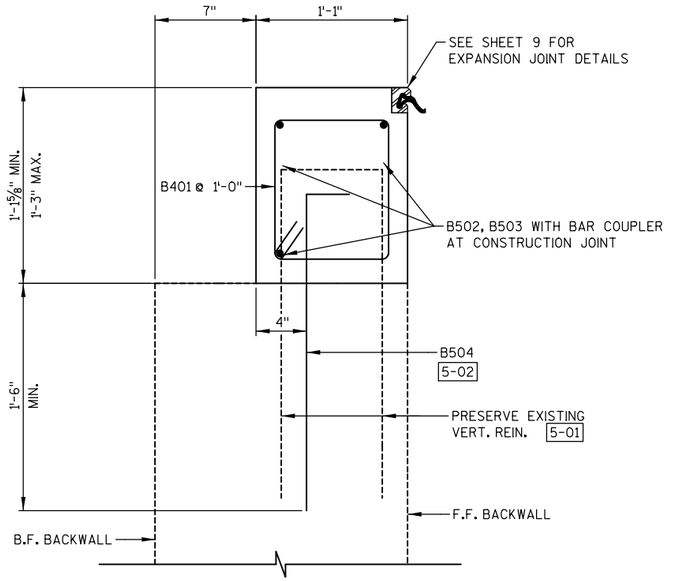



## ELEVATION

(LOOKING EAST AT EAST ABUTMENT)




## PLAN




## SECTION A-A

## LEGEND

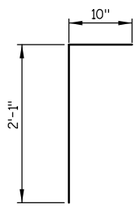
| | |
|---|---|
| 5-01 | PRESERVE AND INCORPORATE EXISTING REINFORCEMENT INTO NEW CONSTRUCTION. SUPPLEMENT WITH THE BARS INDICATED BY 5-02. |
| 5-02 | "ADHESIVE ANCHORS NO. 5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0". TURN 10" LEG AS NECESSARY TO FIT. |
| 5-03 | BAR COUPLER REQUIRED |
| (#) | INDICATES GIRDER NUMBER |
| [#] | DENOTES WINGWALL NUMBER |

## BILL OF BARS
## EAST ABUTMENT

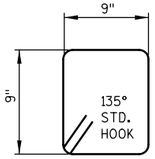
**TOTAL COATED: 430 LBS.**

| | MARK | NO. REQ. 2A | NO. REQ. 2B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|
| 5-03 | B502 | 9 | 0 | 9 | 8'-0" | | X | PAVING BLOCK - HORIZONTAL |
| 5-03 | B503 | 0 | 9 | 9 | 8'-9" | | X | PAVING BLOCK - HORIZONTAL |
| 5-02 | B504 | 22 | 25 | 47 | 2'-10" | X | X | PAVING BLOCK - VERTICAL - CONC. MASONRY ANCHORS |
| | B505 | 2 | 2 | 4 | 5'-6" | X | X | PAVING BLOCK - ENDS |

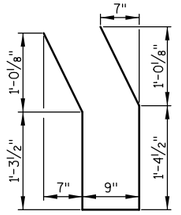
NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




B504




B401




B505

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

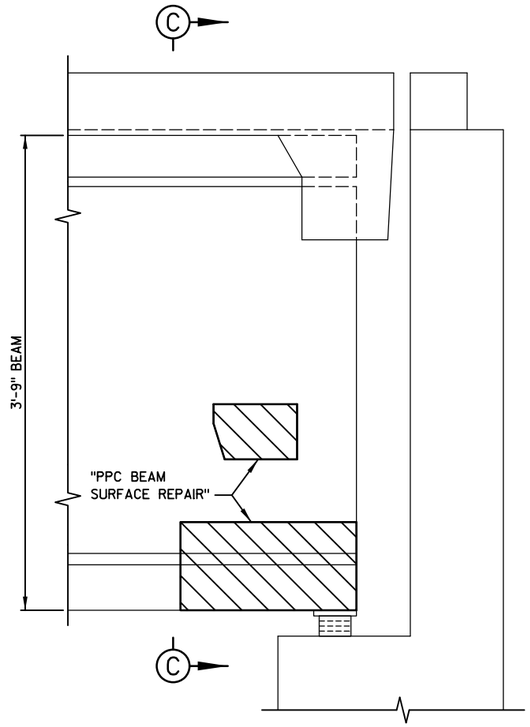
DRAWN BY BSC | PLANS CK'D. DJW

EAST ABUTMENT

SHEET 5 OF 12
435

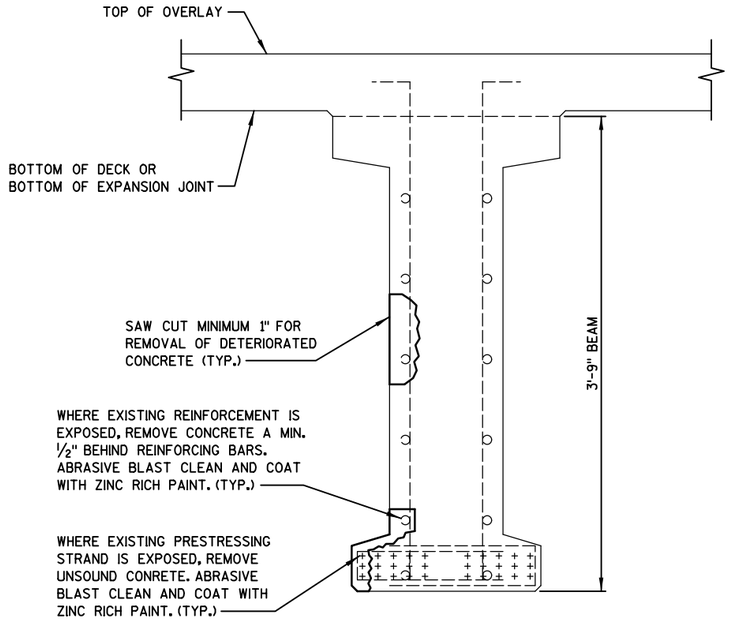
8

8




PPC BEAM SURFACE REPAIR

SEE SHEET 1 FOR LOCATIONS




SECTION C-C

STATE PROJECT NUMBER

1111-02-78

## BAR COUPLER NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

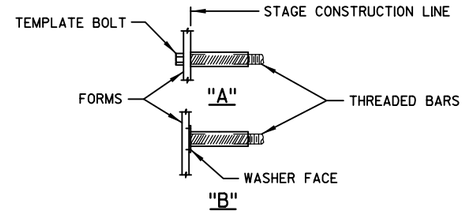
DOWEL BAR SPLICERS (COUPLERS) SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

SPLICER (COUPLER) ASSEMBLIES SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENTS:

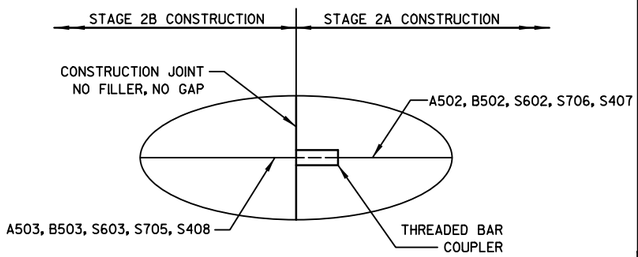
(1) MINIMUM CAPACITY = 1.25 X fy X AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.




## BAR COUPLER INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.




## BAR COUPLER DETAIL

BAR LENGTHS HAVE BEEN COMPUTED TO ℄ OF CONSTRUCTION JOINT AND SHALL BE MODIFIED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS.

## TABLE OF OVERLAY ELEVATIONS

## TABLE OF OVERLAY ELEVATIONS

| | SPAN 1 | | | | | | | | | | | | SPAN 2 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | END OF DECK W. ABUT. | C/L OF BRG. W. ABUT. | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF PIER #1 | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | C/L OF BRG. E. ABUT. | END OF DECK E. ABUT. |
| LEFT FLOW LINE | 1004.35 | 1004.33 | 1004.28 | 1004.23 | 1004.18 | 1004.13 | 1004.07 | 1004.01 | 1003.95 | 1003.90 | 1003.83 | 1003.77 | 1003.71 | 1003.65 | 1003.59 | 1003.52 | 1003.46 | 1003.39 | 1003.32 | 1003.25 | 1003.18 | 1003.11 | 1003.08 |
| CROWN LINE | 1004.74 | 1004.72 | 1004.67 | 1004.63 | 1004.57 | 1004.52 | 1004.47 | 1004.41 | 1004.36 | 1004.30 | 1004.24 | 1004.18 | 1004.12 | 1004.06 | 1004.00 | 1003.94 | 1003.87 | 1003.81 | 1003.74 | 1003.67 | 1003.61 | 1003.54 | 1003.51 |
| RIGHT FLOW LINE | 1004.52 | 1004.50 | 1004.46 | 1004.41 | 1004.36 | 1004.31 | 1004.26 | 1004.20 | 1004.15 | 1004.09 | 1004.04 | 1003.98 | 1003.92 | 1003.86 | 1003.80 | 1003.74 | 1003.68 | 1003.62 | 1003.55 | 1003.49 | 1003.42 | 1003.35 | 1003.33 |

LEFT AND RIGHT DEFINED BY LOOKING UPSTATION.
END OF DECK IS LOCATED AT END OF PAVING NOTCH, START OF PAVING BLOCK.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

DRAWN BY DTH | PLANS CK'D. ADW

MISC. DETAILS & OVERLAY ELEVATIONS

SHEET 6 OF 12
436

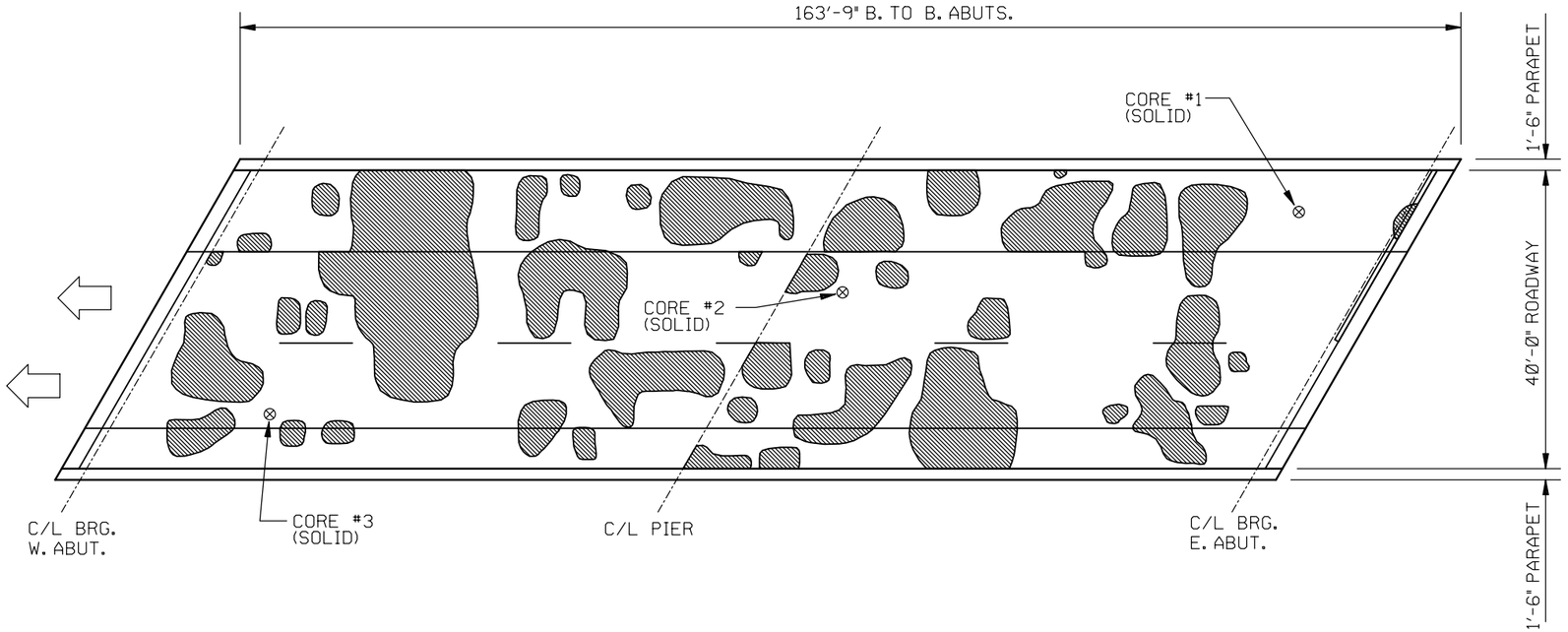
8

8

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-276\sa_B-13-276_06_det.dgn

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

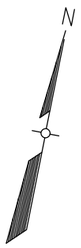
FOR REFERENCE ONLY




## PLAN B-13-276

## NOTES

DECK INSPECTION RESULTS ARE SHOWN FOR REFERENCE ONLY. DECK REPAIRS SHALL BE MADE ONLY AS DIRECTED BY THE ENGINEER. THE QUANTITIES FOR PREPARATION OF DECKS AND FULL-DEPTH DECK REPAIR ARE BASED ON THE SURVEYED AREAS SHOWN ON THIS SHEET AND WERE INCREASED ON SHEET 2 TO ACCOUNT FOR GROWTH AND VARIABILITY.




SCALE 10' 20'

## DECK INSPECTION RESULTS

| FIELD OBSERVATIONS SUMMARY | | S.N. B-13-276 | |
|---|---|---|---|
| ITEM | UNIT | QUANT. | % |
| TOTAL AREA | $ft^2$ | 6492 | |
| SHADE/DEBRIS | $ft^2$ | 0 | |
| DELAMINATION | $ft^2$ | 2068 | 31.9 |
| SPALL | $ft^2$ | 0 | 0 |
| DEBOND | $ft^2$ | 0 | 0 |
| ASPHALT PATCH | $ft^2$ | 0 | 0 |
| CONCRETE PATCH | $ft^2$ | 0 | 0 |

LEGEND

DELAMINATION
SPALL
DEBOND
ASPHALT PATCH
CONCRETE PATCH
SHADE/DEBRIS

SURFACE TYPE: BITUMINOUS OVERLAY OVER CONCRETE OVERLAY

INFRARED INSPECTION DATE: 8/6/12

INFRARED THERMOGRAPHIC SURVEY PERFORMED BY

AECOM

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

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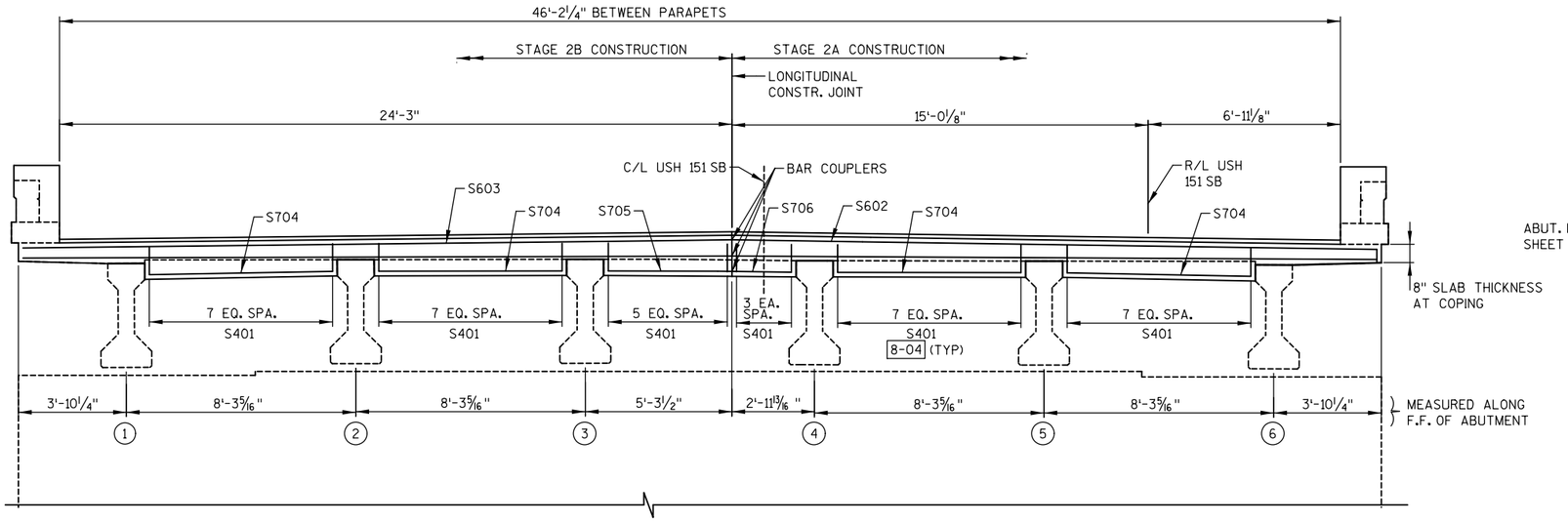
DECK INSPECTION RESULTS

SHEET 7 OF 12
437

8

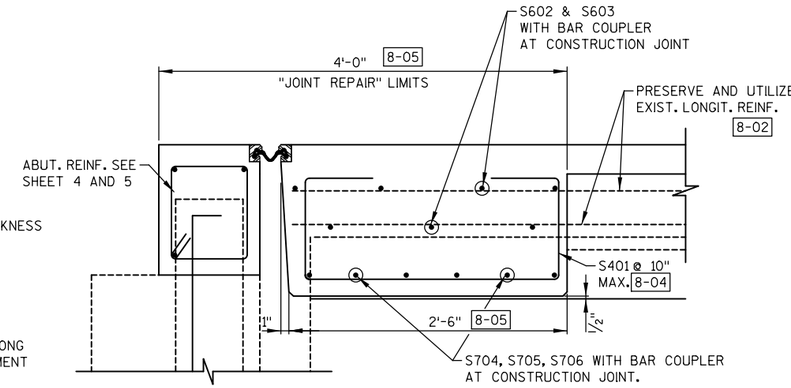
8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |



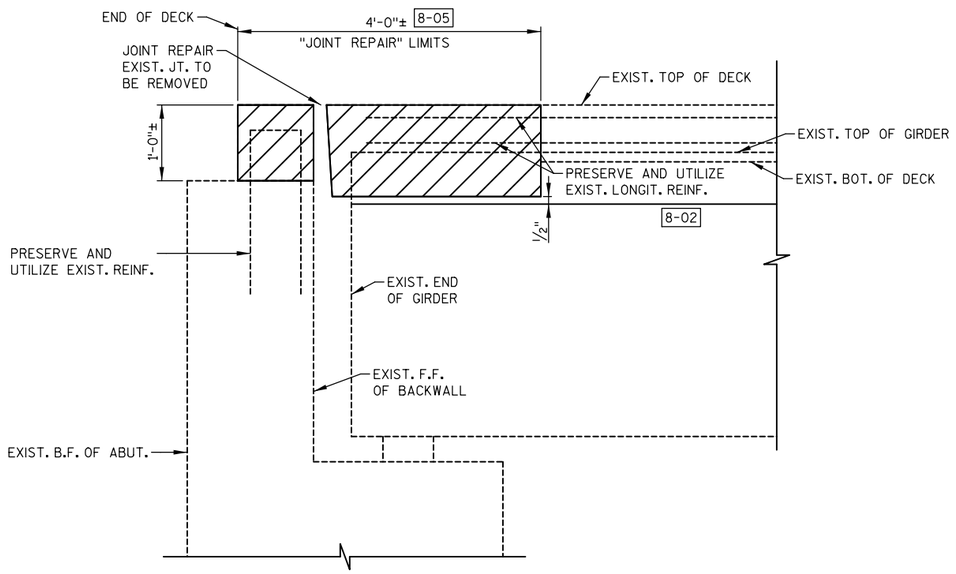

## ELEVATION

EAST ABUTMENT SHOWN
(WEST ABUTMENT MIRROR IMAGE)




## SECTION THRU JOINT AT ABUTMENTS

NORMAL TO SUBSTRUCTURE




## REMOVAL SECTION THRU JOINT AT ABUTMENTS

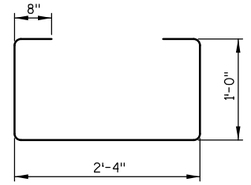
NORMAL TO SUBSTRUCTURE

## BILL OF BARS
## DECK JOINTS

**COATED: 2,250 LBS.**

| | | MARK | NO. REQ. 2A | NO. REQ. 2B | NO. REQ. TOTAL | LENGTH | BENT | COAT | LOCATION |
|---|---|---|---|---|---|---|---|---|---|
| | | S401 | 40 | 44 | 84 | 5'-4" | X | X | SLAB - JOINT AT ABUT. - VERTICAL |
| 8-01 | 8-03 | S602 | 14 | 0 | 14 | 23'-2" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-01 | 8-03 | S603 | 0 | 14 | 14 | 25'-6" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| | | S704 | 24 | 24 | 48 | 6'-4" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 | 8-01 | S705 | 0 | 12 | 12 | 4'-4" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| 8-03 | 8-01 | S706 | 12 | 0 | 12 | 2'-0" | | X | SLAB - JOINT AT ABUT. - TRANSVERSE |
| | 8-03 | S407 | 12 | 0 | 12 | 9'-0" | | X | SLAB - EXPANSION DEVICE - TRANSVERSE |
| | 8-03 | S408 | 0 | 12 | 12 | 9'-7" | | X | SLAB - EXPANSION DEVICE - TRANSVERSE |

NOTE: THE FIRST ONE OR TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE.
DIMENSIONS FOR BENDING ARE OUT TO OUT OF BAR.




S401

## LEGEND

8-01 ADJUST BAR LENGTHS AS NECESSARY TO ACCOMMODATE BAR COUPLER MANUFACTURER RECOMMENDATIONS, IF BARS ARE FIELD CUT, APPLY EPOXY COATING TO BAR ENDS.

8-02 PRESERVE AND UTILIZE EXISTING LONGITUDINAL REINFORCING. SAVE AND INCORPORATE 1'-6" MIN. OF TRANSVERSE DECK REINFORCING BARS THAT RUN NORMAL TO THE GIRDERS.

8-03 BAR COUPLER REQUIRED

8-04 BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO C/L OF GIRDERS.

8-05 DIMENSIONS GIVEN ARE NORMAL TO C/L OF SUBSTRUCTURE UNIT.

(*) INDICATES GIRDER NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

DRAWN BY BSC | PLANS CK'D. DJW

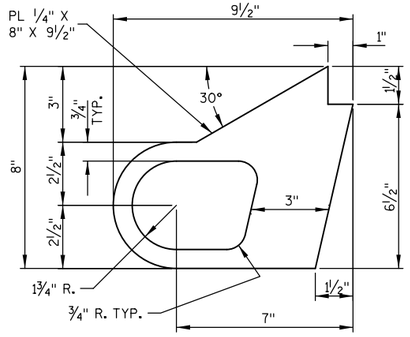
REPLACEMENT JOINT DETAILS 1



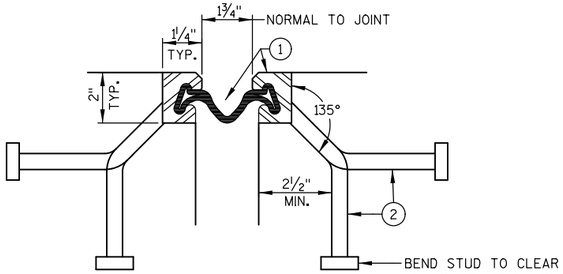
8

8

| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |

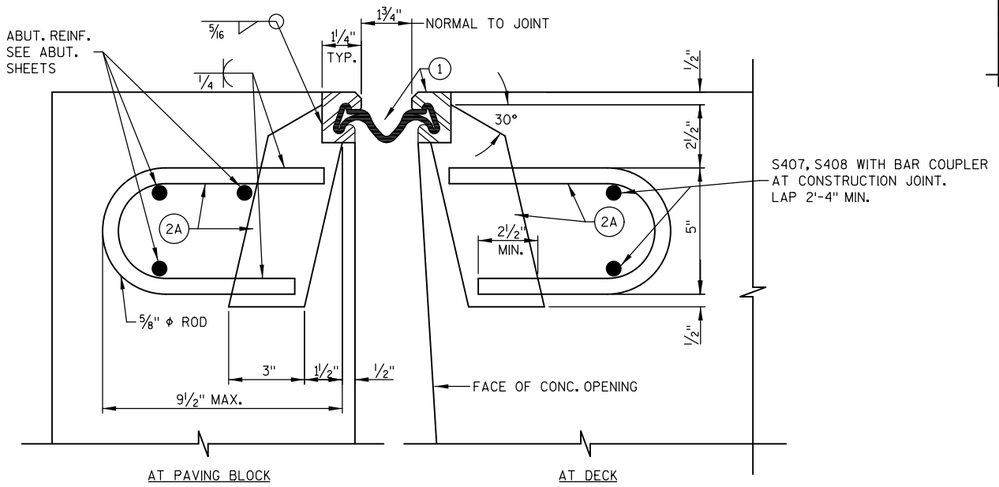



## ALTERNATE STRIP SEAL ANCHOR



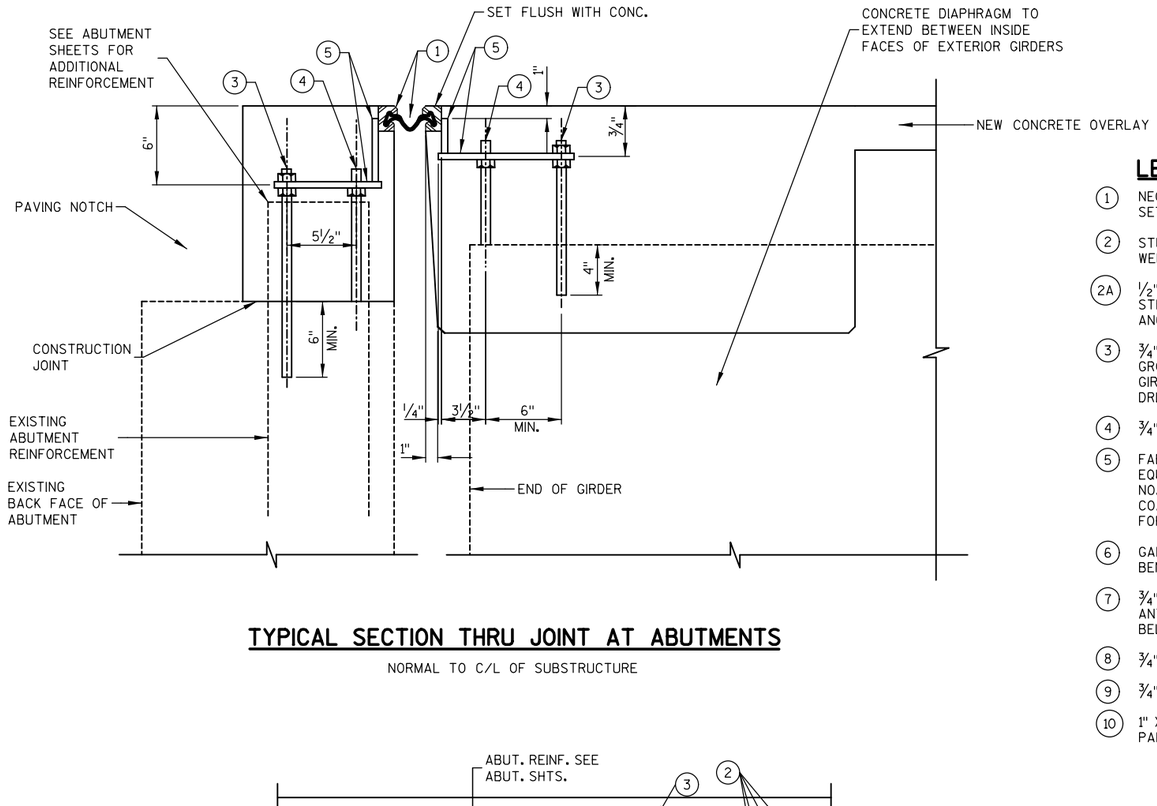

## SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS



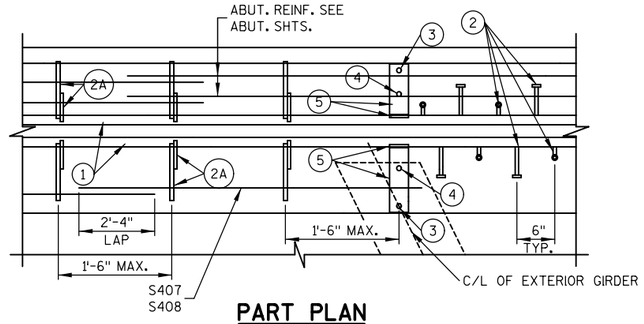

## SECTION THRU JOINT AT ABUTMENTS

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS




## TYPICAL SECTION THRU JOINT AT ABUTMENTS

NORMAL TO C/L OF SUBSTRUCTURE




## PART PLAN

## LEGEND

1. NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1 3/4".
2. STUDS 5/8"ϕ 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"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO.2 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. 3/4"ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON C/L OF GIRDER. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. 3/4"ϕ 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 OF FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2"ϕ HOLE FOR NO. 2 AND 1"ϕ HOLE FOR NO. 4.
6. GALVANIZED PLATE 3/8" X 10" X 2'-2" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.
7. 3/4"ϕ X 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. 3/4"ϕ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. 3/4"ϕ X 2 1/4" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

## GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION. 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.

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 AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-13-276".

BAR COUPLERS REQUIRED

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

| DRAWN BY | BSC | PLANS CK'D. | DJW |
|---|---|---|---|

REPLACEMENT JOINT DETAILS 2

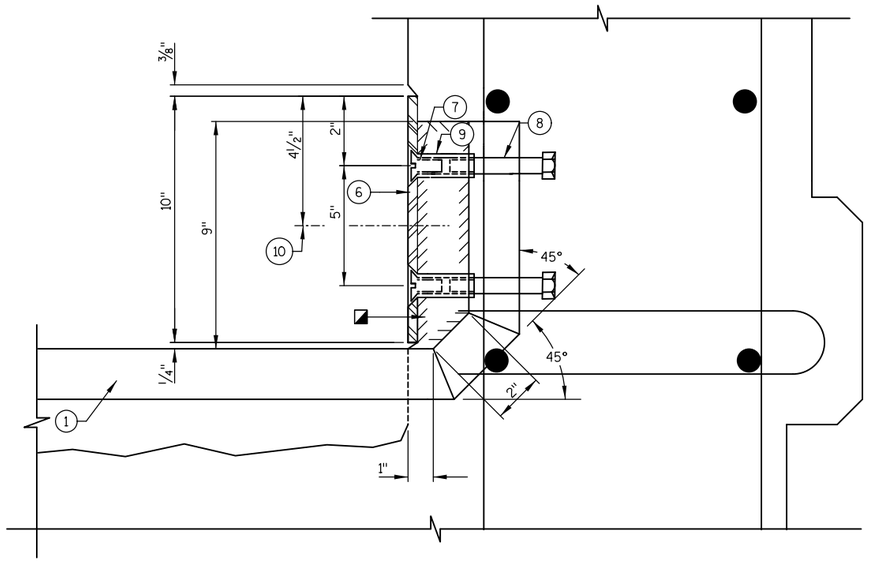
SHEET 9 OF 12
439

8

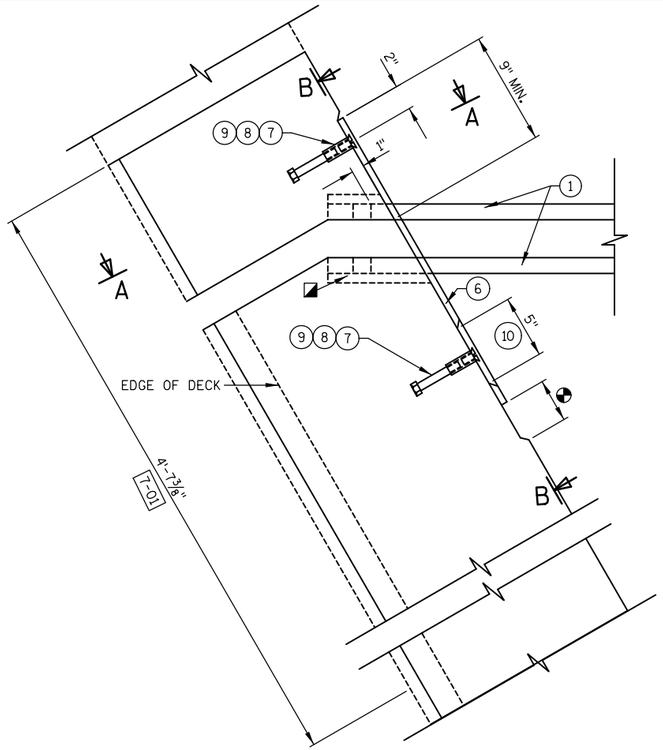
8

STATE PROJECT NUMBER

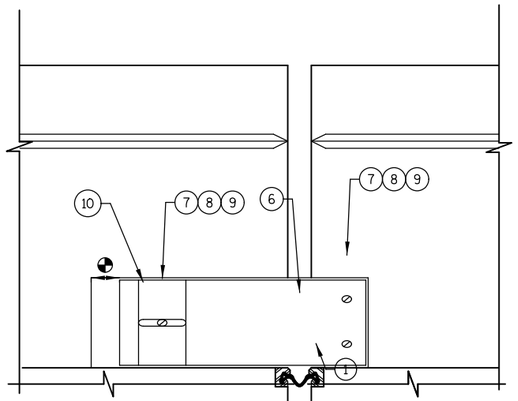
1111-02-78



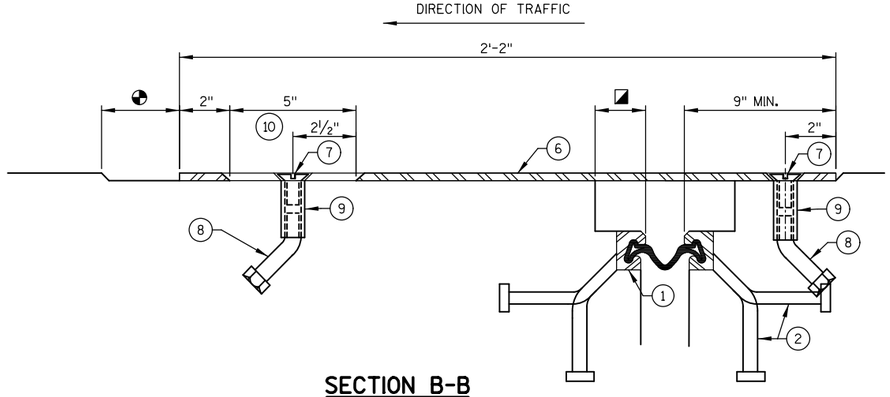

## SECTION A-A



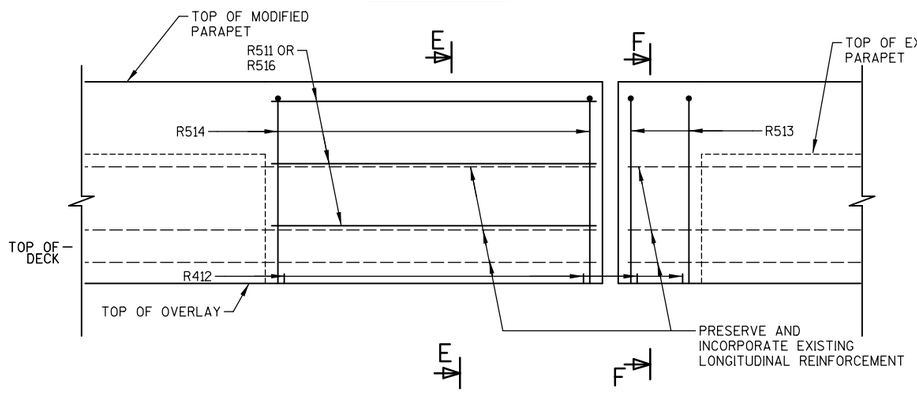

## PLAN AT PARAPET



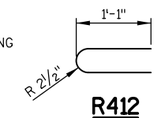
## VIEW OF PARAPET PLATE FROM ROADWAY



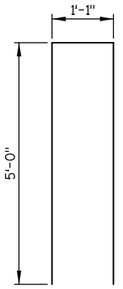

## SECTION B-B



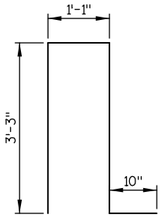

## VIEW OF PARAPET REPLACEMENT FROM ROADWAY




## R412




## R513

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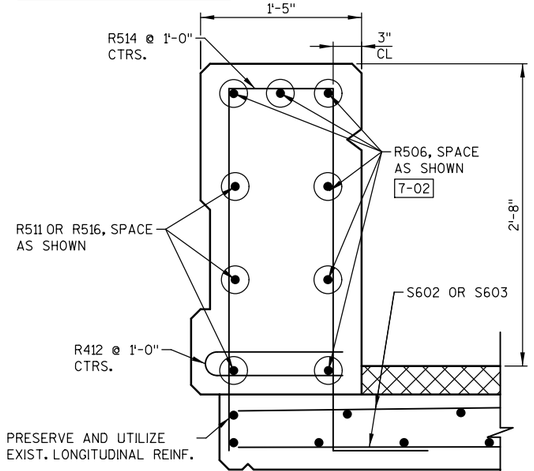



## SECTION E-E




## SECTION F-F

## LEGEND

- JOINT OPENING DIMENSION ALONG SKEW PLUS ½".
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- (X) SEE SHEET 9 FOR DESCRIPTION
- [7-01] JOINT REPAIR LIMITS, REBUILD TOP OF WING/ABUTMENT, DECK AND ENTIRE PARAPET IN THIS AREA. ENSURE DECK SIDE OF JOINT IS FREE TO MOVE AND NOT CONNECTED TO ABUTMENT.
- [7-02] SEE SHEET 12 FOR R505 AND R506 REINFORCEMENT DETAILS.
- [7-03] "ADHESIVE ANCHORS NO.5 BARS." EMBED A MINIMUM OF 1'-6" INTO CONCRETE.

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

DRAWN BY: BSC | PLANS CK'D.: DJW

REPLACEMENT JOINT DETAILS 3

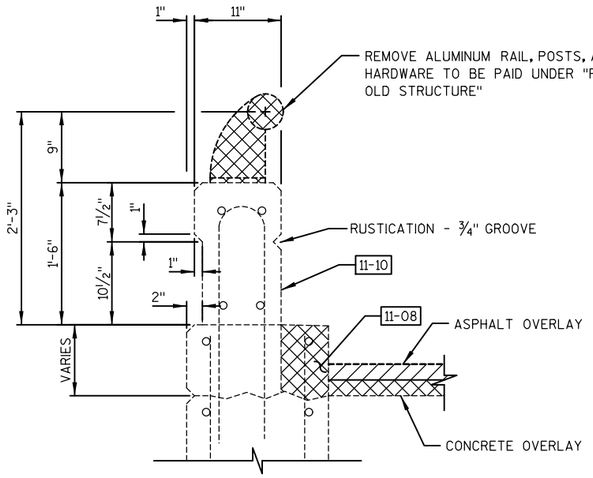
SHEET 10 OF 12
440

8

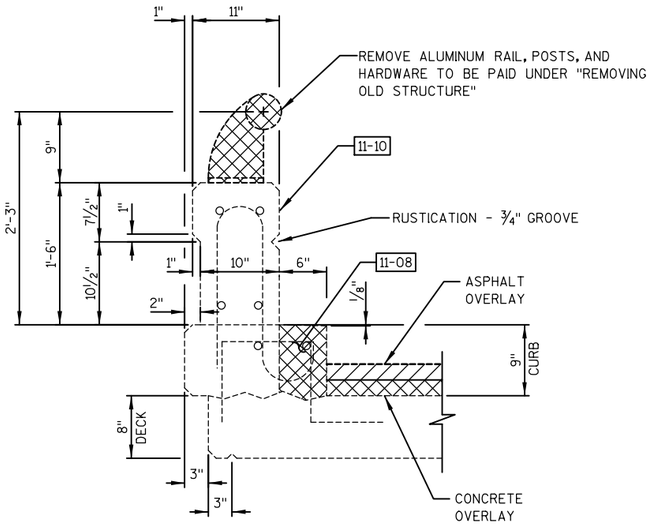
8

STATE PROJECT NUMBER

1111-02-78




EXISTING SECTION THRU WING




EXISTING SECTION THRU PARAPET & CURB ON BRIDGE

## LEGEND

CONCRETE MASONRY OVERLAY DECKS.

11-01 PREPARATION DECKS TYPE 1 AND TYPE 2 WHERE REQUIRED.

11-02 SOUND CONCRETE SURFACES TO RECEIVE "CLEANING PARAPETS SPECIAL".

11-03 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO EXISTING CONCRETE PARAPET.
11-04 EPOXY ANCHORED.

11-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CLEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

11-06 PROTECTIVE SURFACE TREATMENT APPLIED TO ENTIRE TOP SURFACE OF THE NEW CONCRETE OVERLAY.

11-07 PIGMENTED SURFACE SEALER APPLIED TO THE FRONT FACE AND TOP OF THE PARAPET.

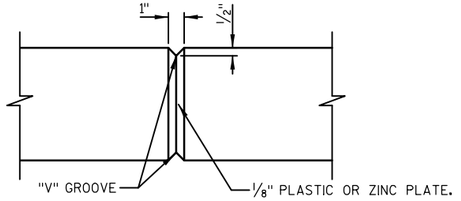
11-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

11-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

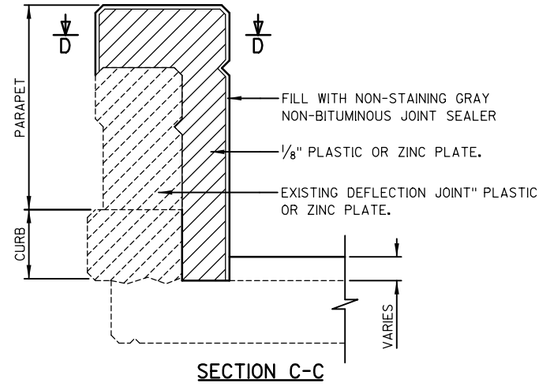
11-10 DETERIORATED CONCRETE SURFACES TO BE REMOVED TO SOUND CONCRETE OR TO ONE INCH BEHIND EXISTING REINFORCING STEEL, WHICHEVER DEPTH IS GREATER. SALVAGE EXISTING REINFORING STEEL. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

11-11 IN WINGS [1] AND [3] ONLY. LAP 2'-7" MIN. WITH R505 BARS.

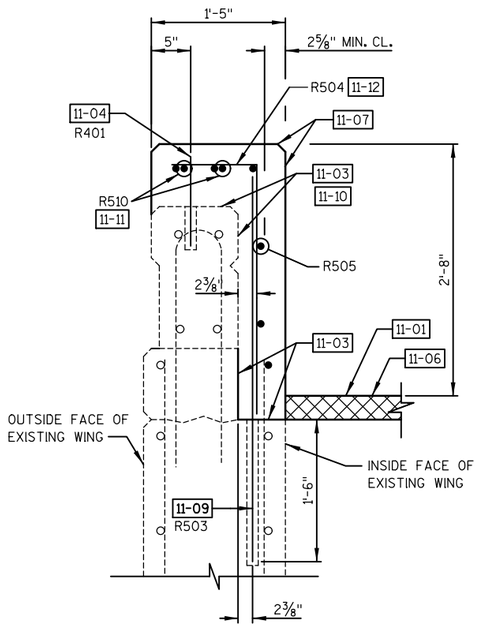
11-12 LAP 2'-7" MIN. WITH R502 OR R503 BARS.



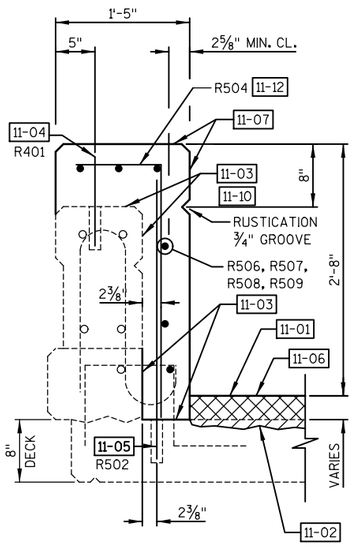

SECTION D-D



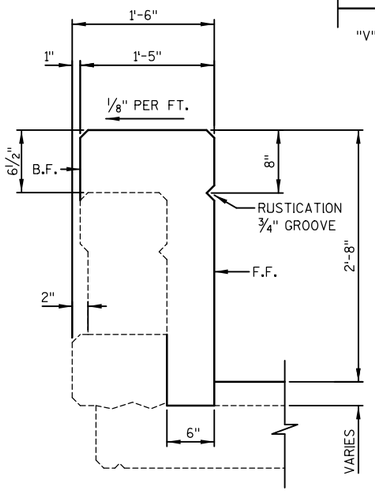

SECTION C-C
(SHOWING DEFLECTION JOINT IN PARAPET.)



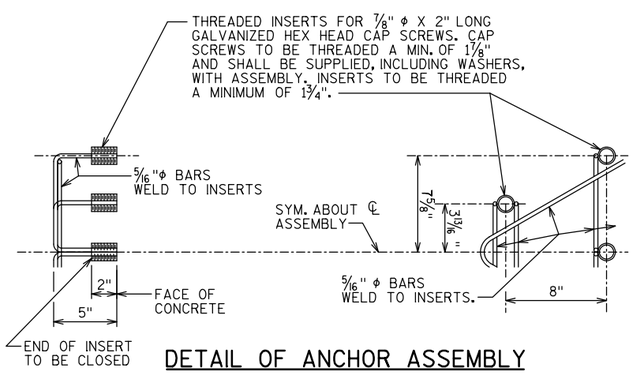

SECTION A-A THRU WINGS




SECTION B-B THRU PARAPET & CURB ON BRIDGE



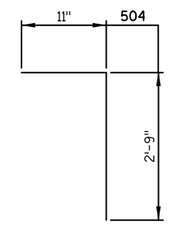

MODIFIED PARAPET SHAPE




DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.




504

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

DRAWN BY BSC | PLANS CK'D. DJW

PARAPET DETAILS 1

SHEET 11 OF 12
441

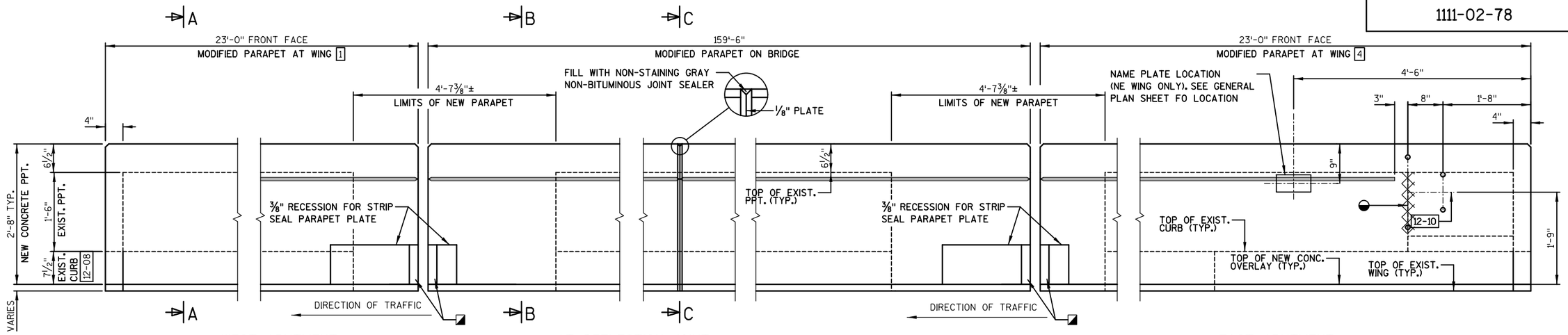
8

8

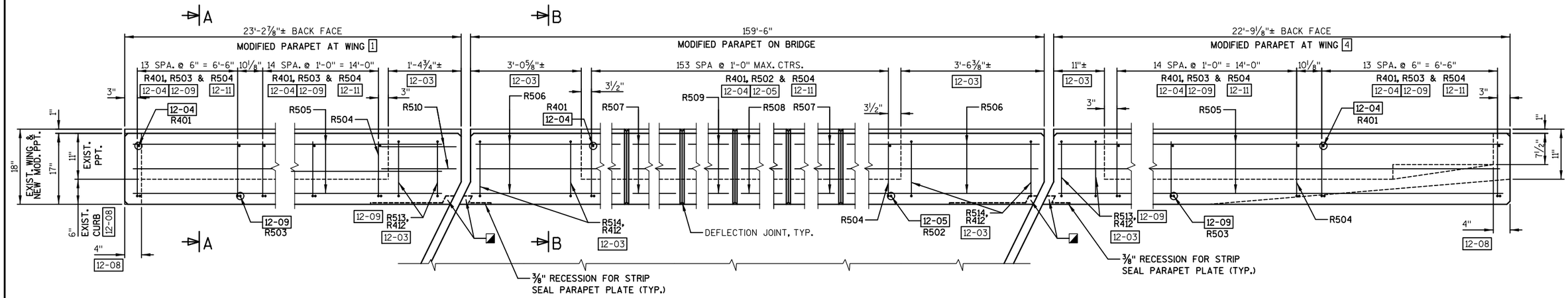
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-276\sa_B-13-276_11_par.dgn

STATE PROJECT NUMBER

1111-02-78




## INSIDE ELEVATION VIEW - NORTH PARAPET SHOWN




## PLAN VIEW - NORTH PARAPET SHOWN

## NOTES

EXISTING DEFLECTION JOINT LOCATIONS SHALL BE MATCHED WITH THE PROPOSED WORK. DEFLECTION JOINTS SHALL CONSIST OF ⅛" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION C-C BY SHADED AREA. IF CONSTRUCTION JOINTS ARE USED AT DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS OMITTED.

12-03 SEE SHEET 10 FOR CONCRETE AND REINFORCEMENT DETAILS WITHIN LIMITS OF THE NEW PARAPET.

12-04 ADHESIVE ANCHORS NO. 4 BARS. EMBED 5" INTO TOP OF EXISTING CONCRETE PARAPET. EPOXY ANCHORED.

12-05 ADHESIVE ANCHORS NO. 5 BARS. EMBED 5" INTO EXISTING CONCRETE DECK. EPOXY ANCHORED. MAINTAIN 3" CEARANCE FROM BOTTOM OF DRILLED HOLE TO BOTTOM OF DECK.

12-08 REMOVE CURB ALONG THE ENTIRE LENGTH OF PARAPET, OVER ALL WINGS, AT ALL PAPAPET ENDS, AND OVER THE BRIDGE. EXISTING REINFORCING STEEL TO BE CLEANED AND STRAIGHTENED. THIS WORK IS TO BE PAID UNDER "REMOVING OLD STRUCTURE".

12-09 ADHESIVE ANCHORS NO. 5 BARS. EMBED 1'-6" INTO EXISTING CONCRETE WING. EPOXY ANCHORED.

12-10 CENTERLINE OF ANCHOR ASSEMBLY FOR THRIE BEAM, SEE "GENERAL PLAN" SHEET FOR GUARDRAIL LOCATION.

12-11 LAP 2'-7" MIN. WITH R502 OR R503 BAR.

SEE SHEET 11 FOR SECTIONS A, B, & C

## BILL OF BARS - BOTH RAILS

## COATED: 6,170 LBS.

| | BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|---|---|---|---|---|---|---|---|
| 12-04 | R401 | X | 424 | 0'-9" | | | PARAPET - VERT. - ALL WINGS AND BRIDGE - B.F. |
| 12-05 | R502 | X | 308 | 3'-2" | | | PARAPET - VERT. - BRIDGE - F.F. |
| 12-09 | R503 | X | 116 | 4'-3" | | | PARAPET - VERT. - ALL WINGS - F.F. |
| | R504 | X | 424 | 3'-7" | X | | PARAPET - VERT. - ALL WINGS AND BRIDGE - F.F. |
| | R505 | X | 24 | 22'-4" | | | PARAPET - HORIZ. - ALL WINGS - F.F. AND TOP |
| | R506 | X | 24 | 26'-9" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R507 | X | 24 | 31'-2" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R508 | X | 12 | 19'-3" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R509 | X | 12 | 22'-3" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP |
| | R510 | X | 4 | 3'-0" | | | PARAPET - HORIZ. - BRIDGE - F.F. AND TOP - LAP BAR |
| | R511 | X | 6 | 2'-8" | | | PARAPET - AT JOINT - DECK - SE AND NW CORNERS |
| | R412 | X | 24 | 2'-5" | X | | PARAPET - HORIZONTAL |
| 12-09 | R513 | X | 8 | 10'-10" | X | | PARAPET - AT JOINT - ABUTMENT SIDE |
| | R514 | X | 16 | 8'-1" | X | | PARAPET - AT JOINT - DECK SIDE |
| | R516 | X | 6 | 3'-2" | | | PARAPET - AT JOINT - DECK - SW AND NE CORNERS |

## LEGEND

- REMOVE EXIST. PPT. AS NEEDED FOR PROPER INSTALLATION OF THRIE BEAM ANCHOR ASSEMBLY.
- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- [*] DENOTES WINGWALL NUMBER

| NO. | DATE | REVISION | BY |
|---|---|---|---|

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-13-276

DRAWN BY BSC | PLANS CK'D. DJW

PARAPET DETAILS 2

SHEET 12 OF 12
442

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\B-13-276\sa_B-13-276_12_par.dgn

| STATE PROJECT NUMBER |
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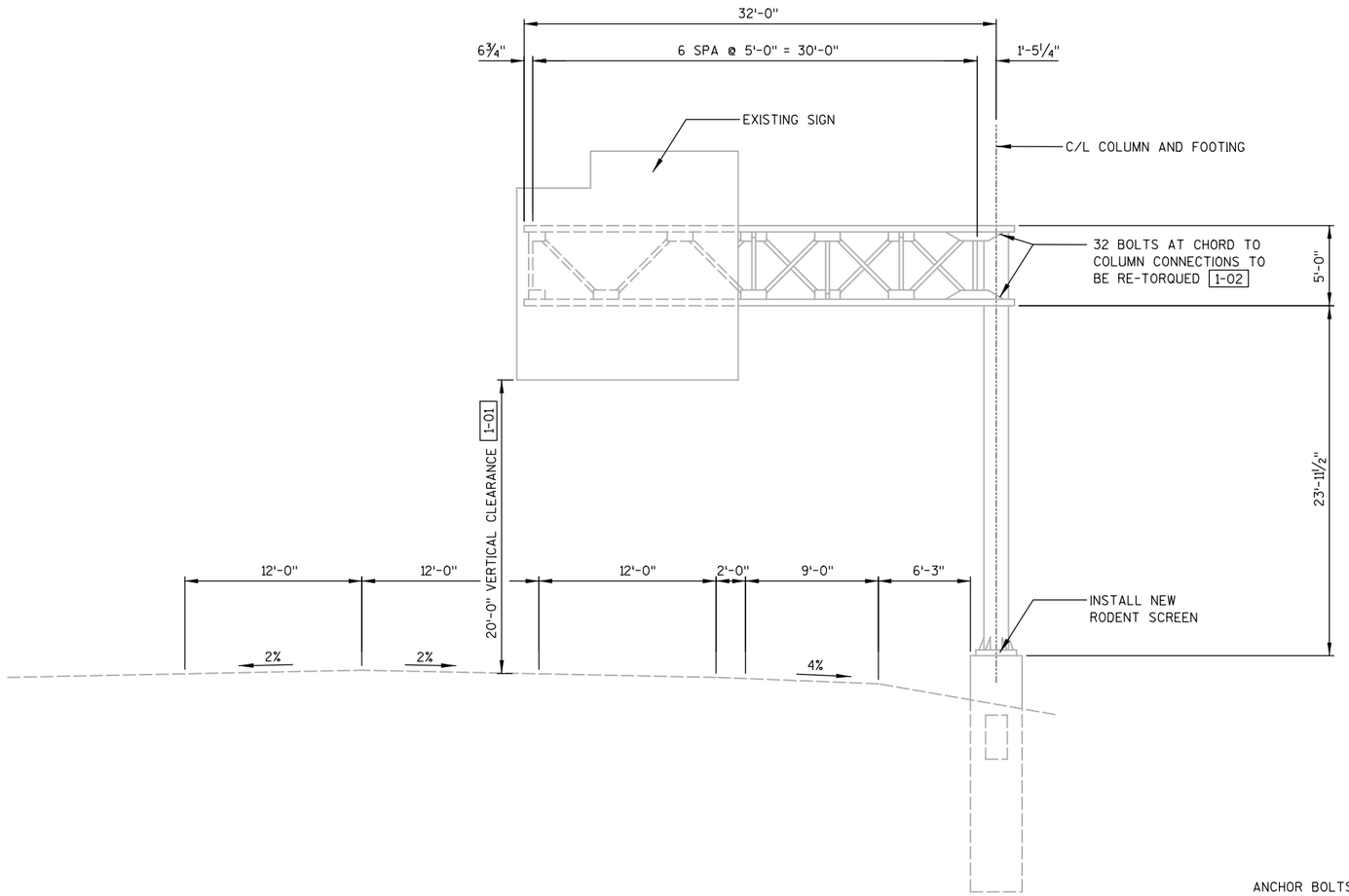
| 1111-02-78 |




## STRUCTURE S-13-215

LOCATION 0.93 MILES SOUTHWEST OF S. MAIN STREET BRIDGE B-13-268
(LOOKING NORTHEAST AT FACE OF SIGN)

## GENERAL NOTES

THE EXISTING STRUCTURE WAS ORIGINALLY CONSTRUCTED IN 2007.

THE PROPOSED WORK INCLUDES RODENT SCREEN INSTALLATION AND RE-TORQUING OF EXISTING CANTILEVER SIGN BRIDGE TRUSS CONNECTION BOLTS.

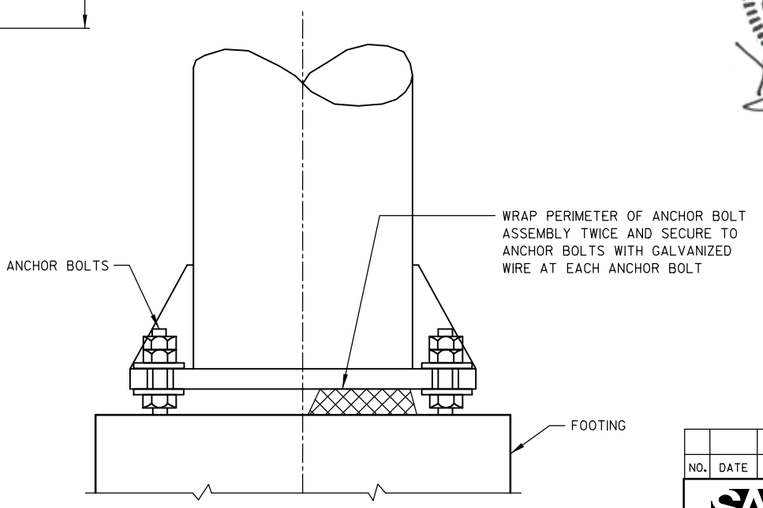
DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

## LEGEND

1-01 VERTICAL CLEARANCE PER SIGN STRUCTURE INSPECTION REPORT DATED 11/30/2011

1-02 REMOVE AND REINSTALL EACH ¾" BOLT WITH D.T.I. WASHERS IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 641.




## RODENT SCREEN

## TOTAL ESTIMATED QUANTITIES

| NO. | BID ITEM | UNIT | QUANTITY |
|---|---|---|---|
| SPV.0105.01 | MODIFY EXISTING SIGN STRUCTURE S-13-215 | LS | 1 |

## ALLOWABLE DESIGN STRESSES

| | | |
|---|---|---|
| CHORDS & COLUMN (INCLD. HANDHOLE) | API-5L-X42 | FY=42,000 PSI |
| STRUCTURAL ANGLES | A.S.T.M. A709 GRADE 36 | FY=36,000 PSI |
| PLATES & BARS | A.S.T.M. A709 GRADE 36 | FY=36,000 PSI |
| ANCHOR BOLTS | A.A.S.H.T.O. M314 | FY=55,000 PSI |
| HIGH STRENGTH BOLTS | A.S.T.M. A325 | FY=92,000 PSI |
| STRUCTURAL MEMBERS GALVANIZED | A.S.T.M. A123 | |
| HARDWARE GALVANIZED | A.S.T.M. A153 CLASS C | |

ALLOWABLE DESIGN STRESSES SHOWN ABOVE ARE BASED ON ORIGINAL STRUCTURE PLANS.

SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONTACT:
DAVID WALKER (608) 251-4843

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SCR 08/22/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE S-13-215

USH 151 NB

COUNTY: DANE — ~~TOWN~~/CITY/~~VILLAGE~~: SUN PRAIRIE

DESIGN SPEC.: AASHTO STANDARD SPECIFICATIONS

| DESIGNED BY | DJW | DESIGN CK'D. | BMO | DRAWN BY | BSC | PLANS CK'D. | BMO |
|---|---|---|---|---|---|---|---|

GENERAL PLAN

SHEET 1 OF 1
443

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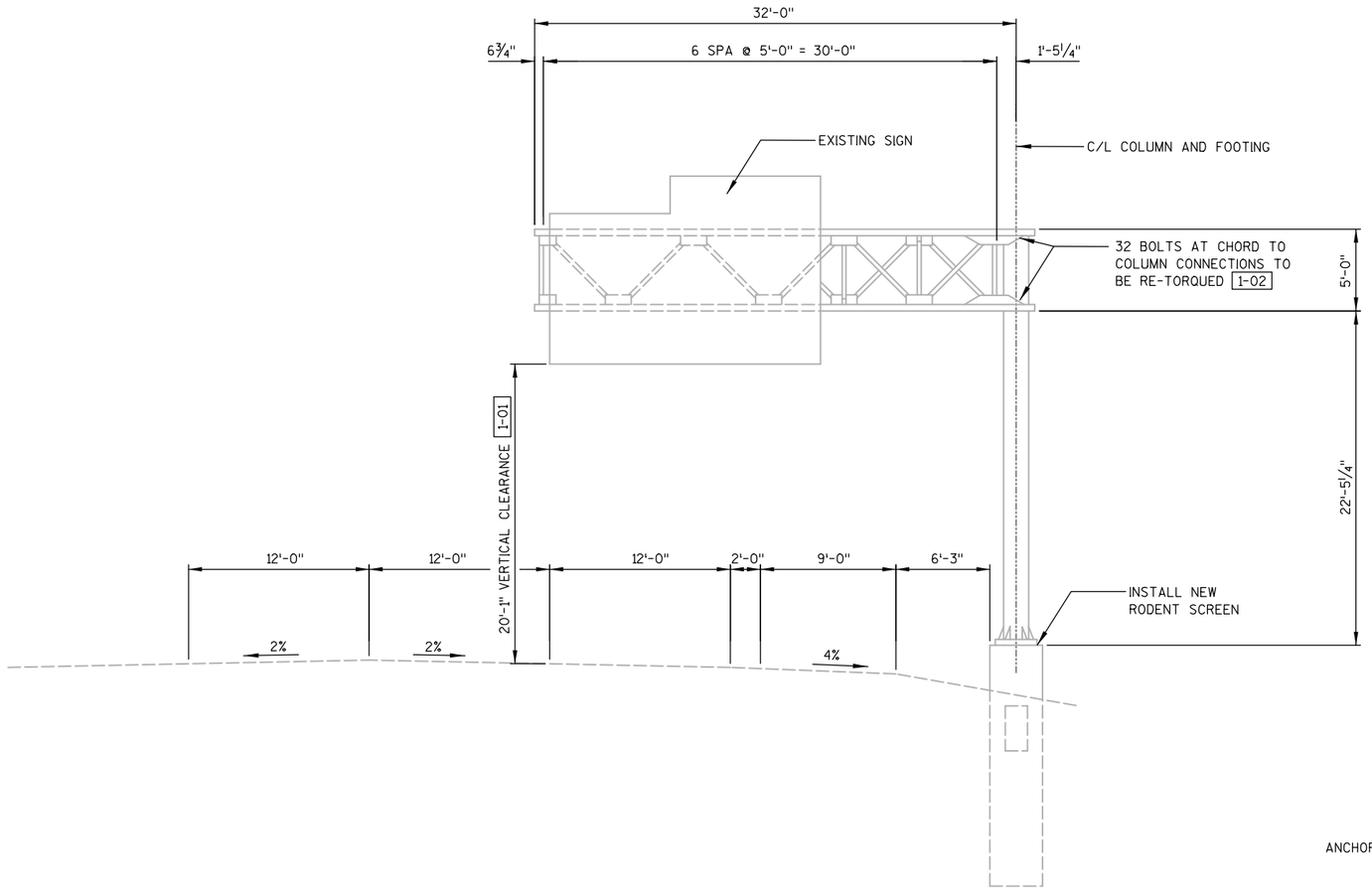
| STATE PROJECT NUMBER |
|---|
| 1111-02-78 |




## STRUCTURE S-13-216

STA. 533+65, 55'RT
(0.28 MILES SOUTHWEST OF S. MAIN STREET BRIDGE B-13-268)
(LOOKING NORTHEAST AT FACE OF SIGN)

## GENERAL NOTES

THE EXISTING STRUCTURE WAS ORIGINALLY CONSTRUCTED IN 2007.

THE PROPOSED WORK INCLUDES RODENT SCREEN INSTALLATION AND RE-TORQUING OF EXISTING CANTILEVER SIGN BRIDGE TRUSS CONNECTION BOLTS.

DRAWINGS SHALL NOT BE SCALED.

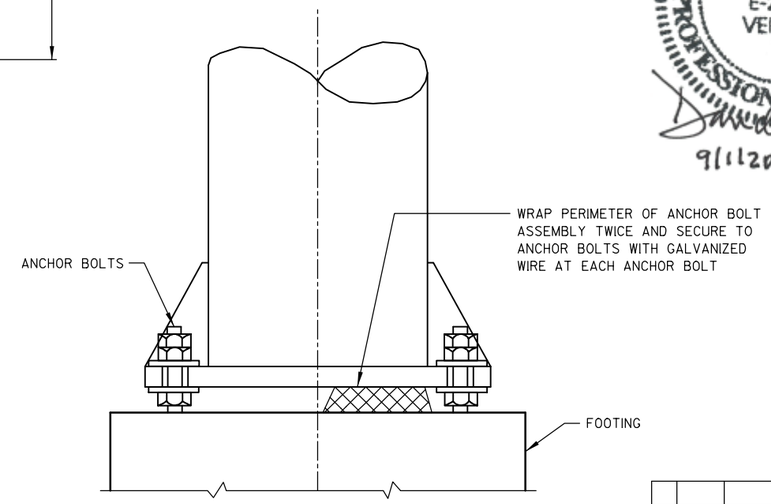
DIMENSIONS SHOWN ARE BASED ON ORIGINAL STRUCTURE PLANS.

## LEGEND

1-01 VERTICAL CLEARANCE PER SIGN STRUCTURE INSPECTION REPORT DATED 11/30/2011

1-02 REMOVE AND REINSTALL EACH ¾" BOLT WITH D.T.I. WASHERS IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 641.

WISCONSIN
DAVID J. WALKER
E-23400
VERONA
WI
PROFESSIONAL ENGINEER
9/11/2015




## RODENT SCREEN

## TOTAL ESTIMATED QUANTITIES

| NO. | BID ITEM | UNIT | QUANTITY |
|---|---|---|---|
| SPV.0105.02 | MODIFY EXISTING SIGN STRUCTURE S-13-216 | LS | 1 |

## ALLOWABLE DESIGN STRESSES

| | | |
|---|---|---|
| CHORDS & COLUMN (INCLD. HANDHOLE) | API-5L-X42 | FY=42,000 PSI |
| STRUCTURAL ANGLES | A.S.T.M. A709 GRADE 36 | FY=36,000 PSI |
| PLATES & BARS | A.S.T.M. A709 GRADE 36 | FY=36,000 PSI |
| ANCHOR BOLTS | A.A.S.H.T.O. M314 | FY=55,000 PSI |
| HIGH STRENGTH BOLTS | A.S.T.M. A325 | FY=92,000 PSI |
| STRUCTURAL MEMBERS GALVANIZED | A.S.T.M. A123 | |
| HARDWARE GALVANIZED | A.S.T.M. A153 CLASS C | |

ALLOWABLE DESIGN STRESSES SHOWN ABOVE ARE BASED ON ORIGINAL STRUCTURE PLANS.

SW REGION CONTACT:
DAVID LAYTON (608) 246-3821

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER (608) 266-8489

DESIGN CONTACT:
DAVID WALKER (608) 251-4843

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher SDR 08/22/16
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE S-13-216

USH 151 NB

COUNTY: DANE
~~TOWN/CITY/VILLAGE~~: SUN PRAIRIE

DESIGN SPEC.: AASHTO STANDARD SPECIFICATIONS

| DESIGNED BY | DJW | DESIGN CK'D. | BMO | DRAWN BY | BSC | PLANS CK'D. | BMO |
|---|---|---|---|---|---|---|---|

GENERAL PLAN

SHEET 1 OF 1
444

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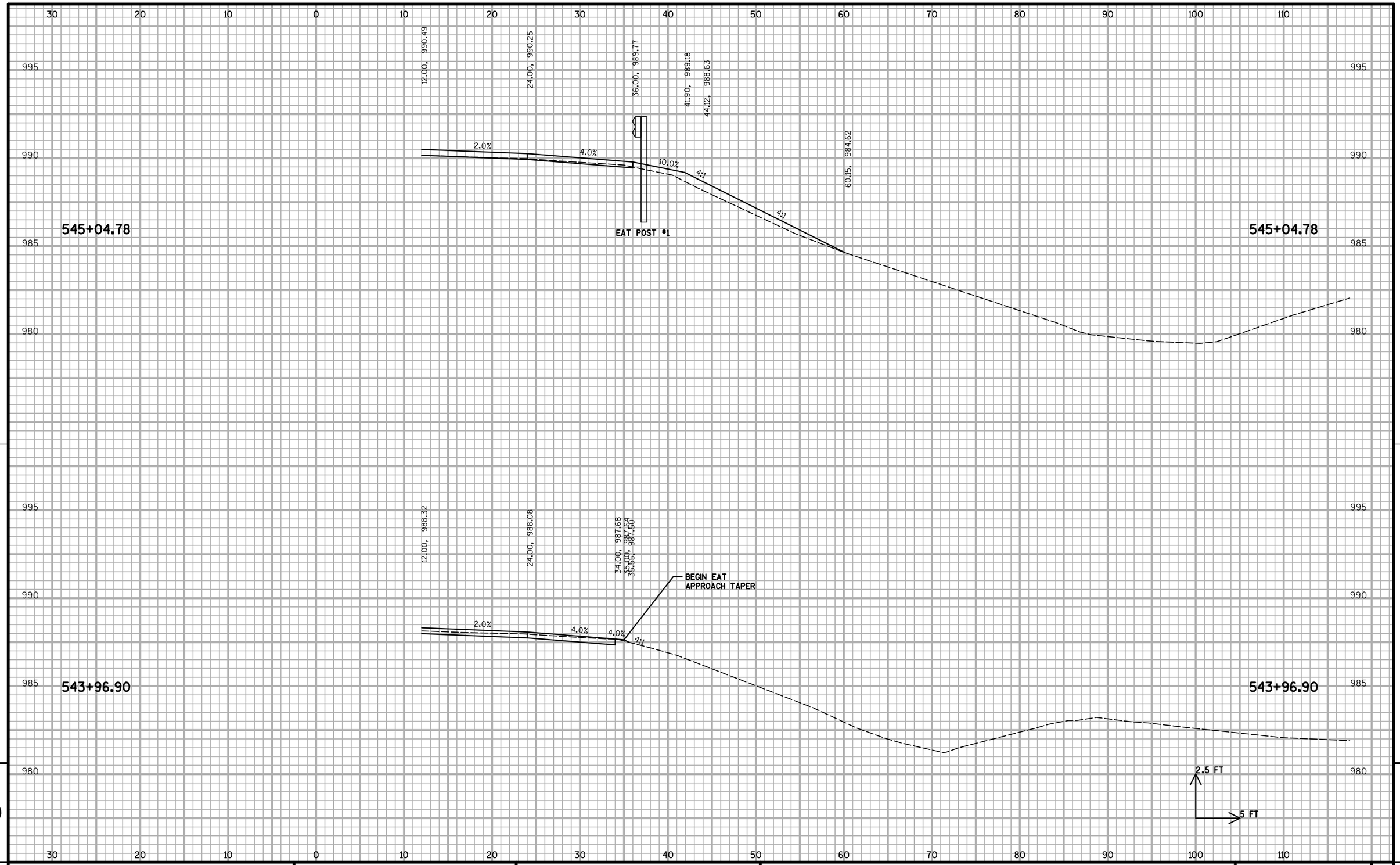
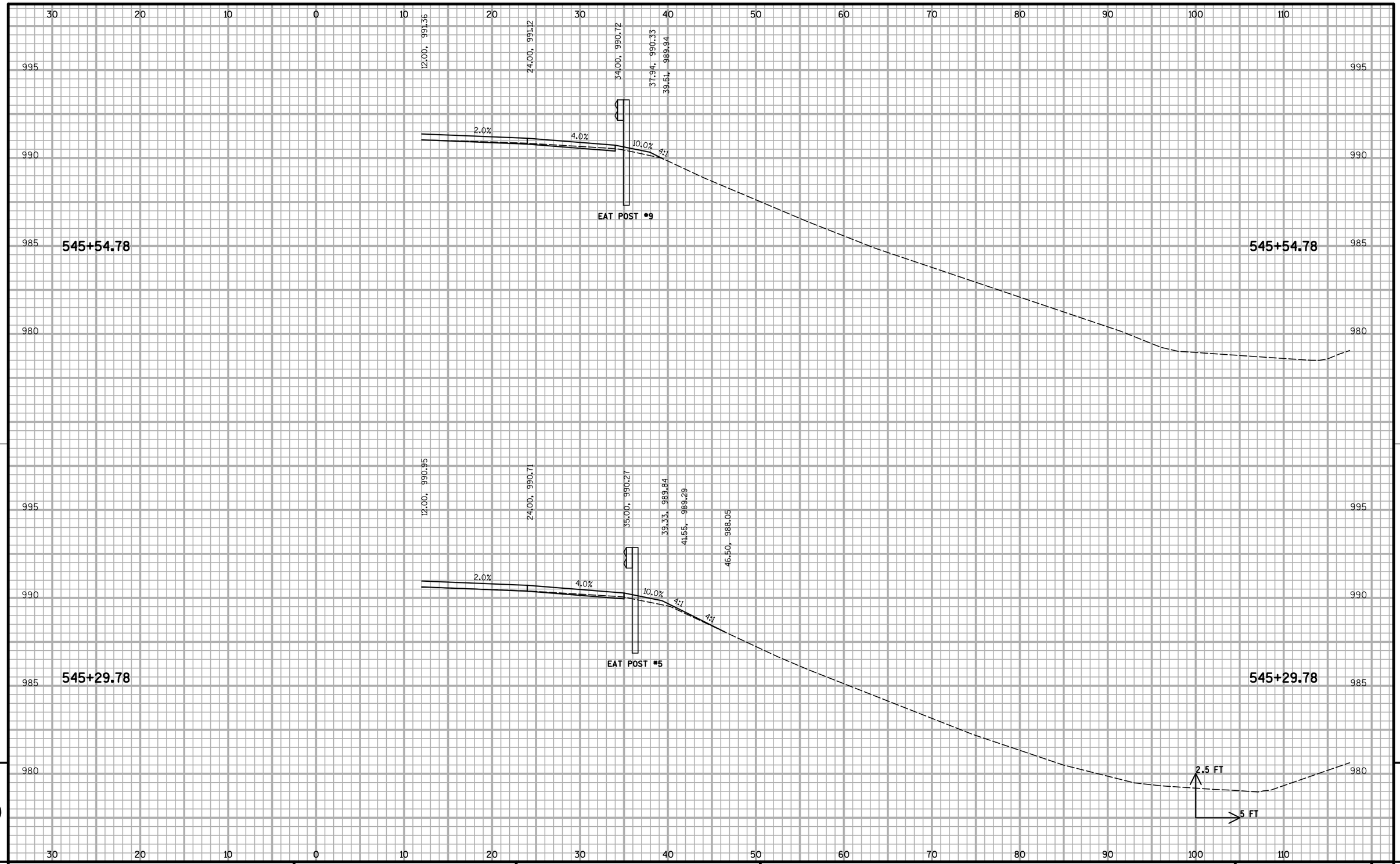



9 9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #2) | SHEET 445 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090202_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21

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| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #2) | SHEET 446 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090202_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21

90 80 70 60 50 40 30 20 10 0 10 20 30 40 50

1010

1005

**604+63.48**

EXISTING
CABLE GUARD
TO REMAIN

-14.68, 1005.01
-13.55, 1005.29
-11.33, 1005.84
-7.00, 1006.28
0.00, 1006.70
12.00, 1006.88

4:1 4:1 10.0% 6.0% 1.5%

EAT POST #5

**604+63.48**

**604+38.48**

EXISTING
CABLE GUARD
TO REMAIN

-16.33, 1004.55
-16.12, 1004.61
-13.90, 1005.16
-8.00, 1005.75
0.00, 1006.23
12.00, 1006.41

4:1 4:1 10.0% 6.0% 1.5%

EAT POST #1

**604+38.48**

**603+20.04**

EXISTING
CABLE GUARD
TO REMAIN

-6.39, 1003.46
-6.00, 1003.53
-3.00, 1003.71
0.00, 1003.89
12.00, 1004.07

BEGIN EAT
APPROACH TAPER

6:1 6.0% 6.0% 1.5%

2.5 FT
5 FT

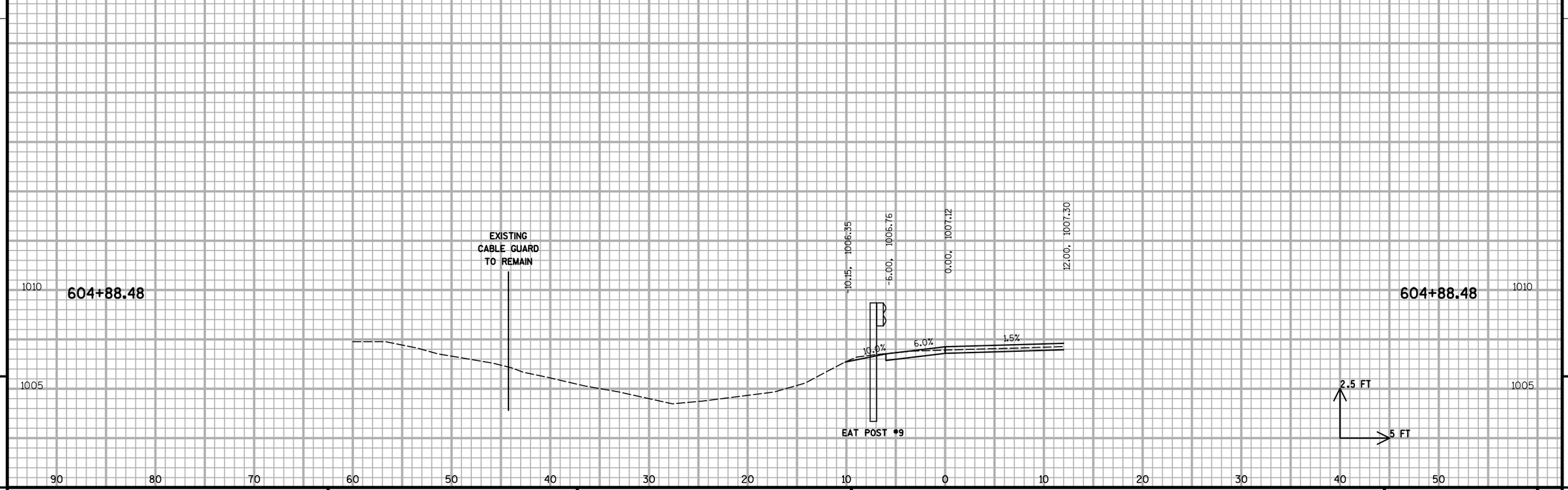
**603+20.04**

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #3) | SHEET 447 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090203_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

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| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #3) | SHEET 448 | E |
|---|---|---|---|---|---|

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30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

1010

12.00, 1005.71

24.00, 1005.53

33.00, 1005.17
34.00, 1005.13
35.04, 1004.87

BEGIN EAT
APPROACH TAPER

1.5%

4.0%

4.0%

4:1

1005

1000

604+03.54

995

604+03.54

2.5 FT

5 FT

9

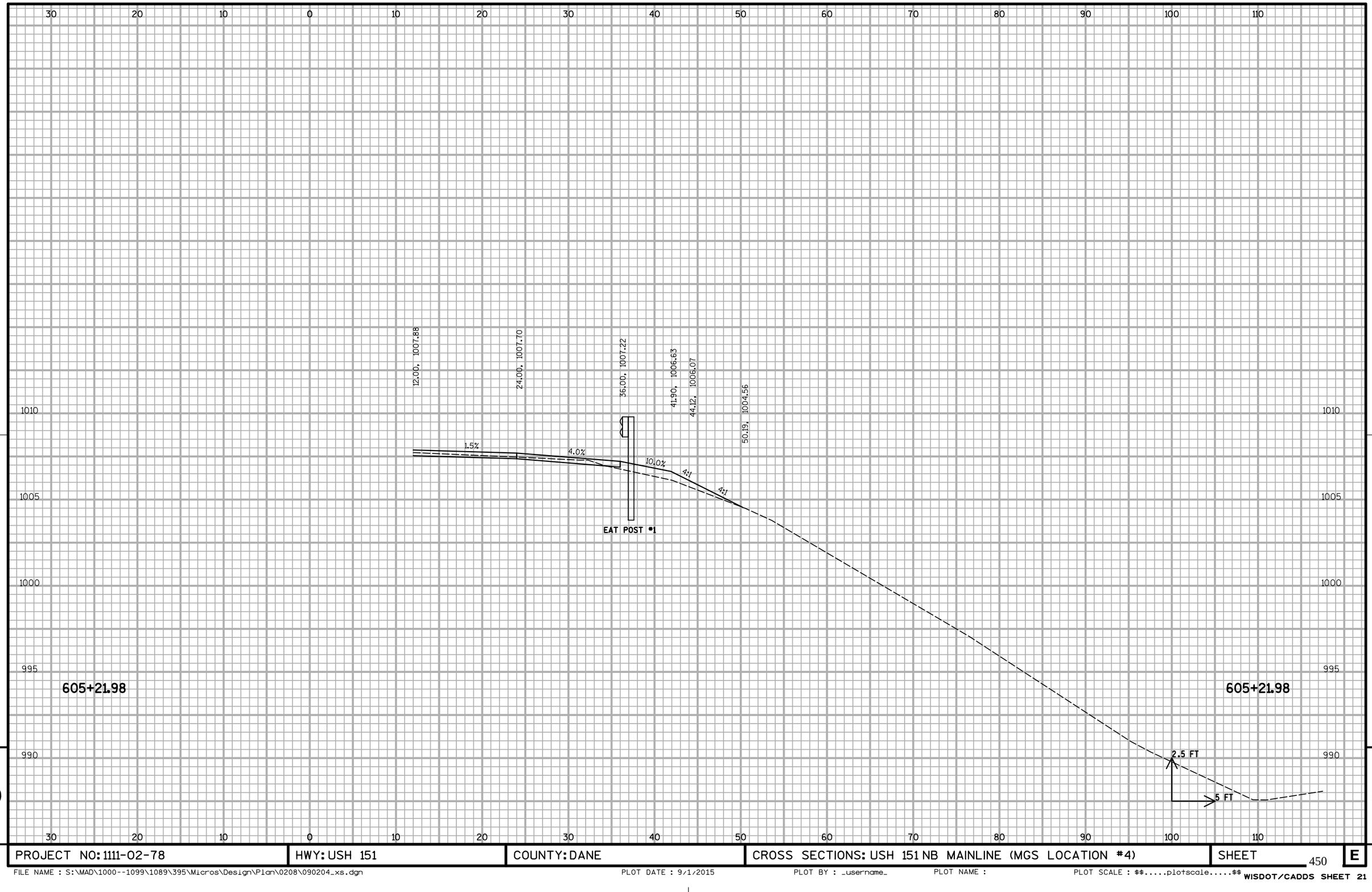
9

30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #4) | SHEET 449 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090204_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #4) | SHEET 450 | E |
|---|---|---|---|---|---|

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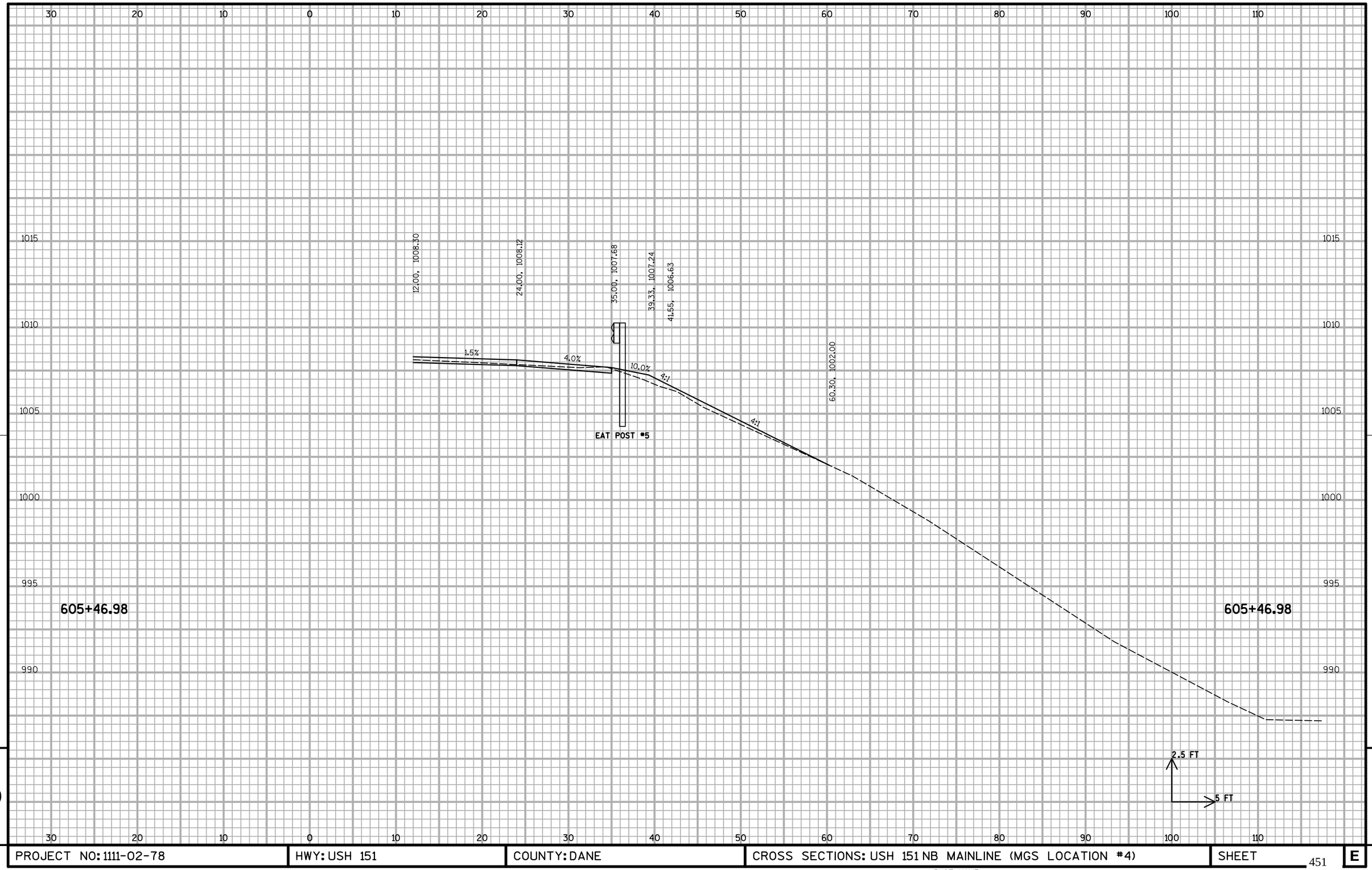
WISDOT/CADDS SHEET 21

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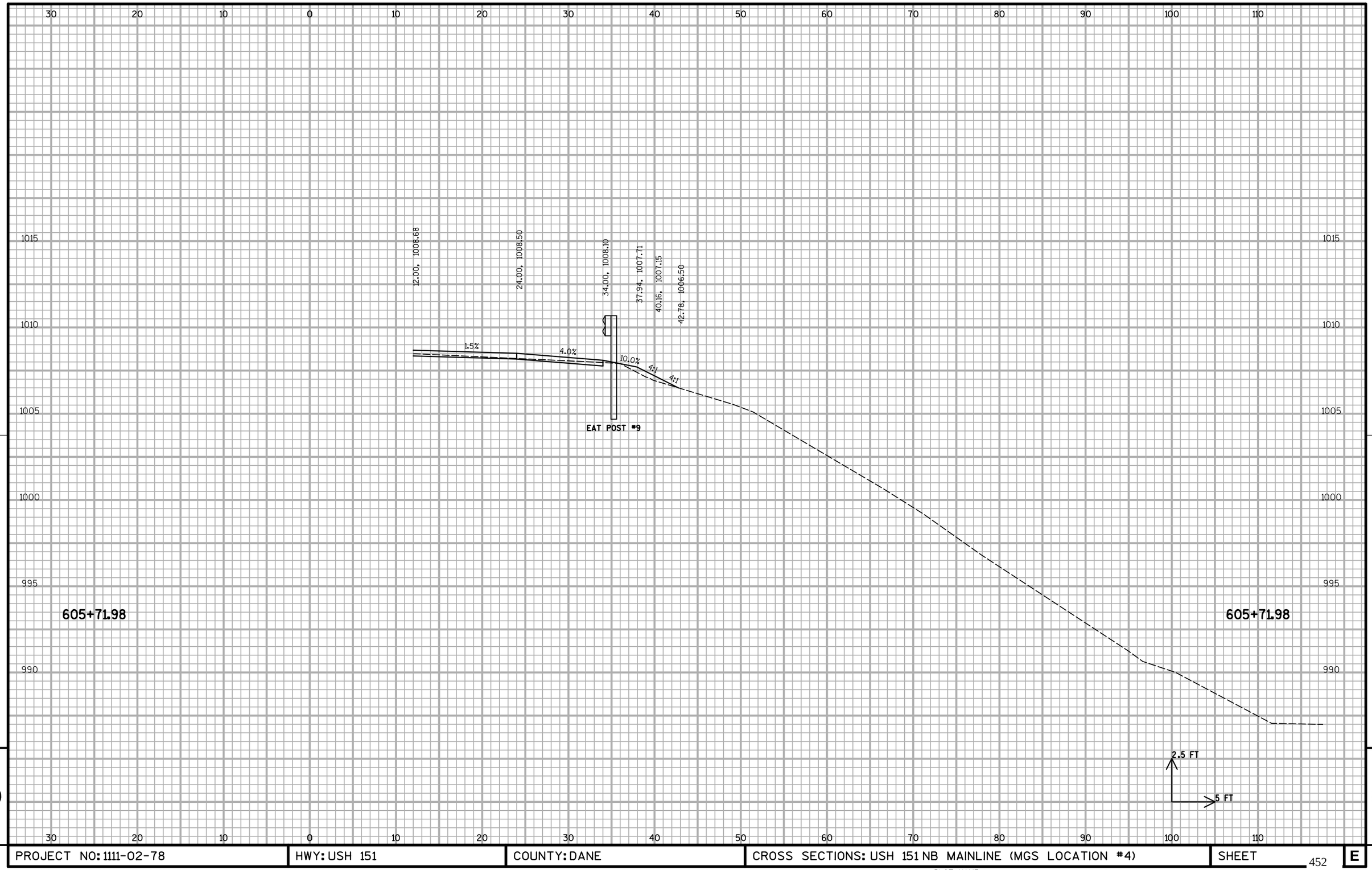
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #4) | SHEET 451 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090204_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

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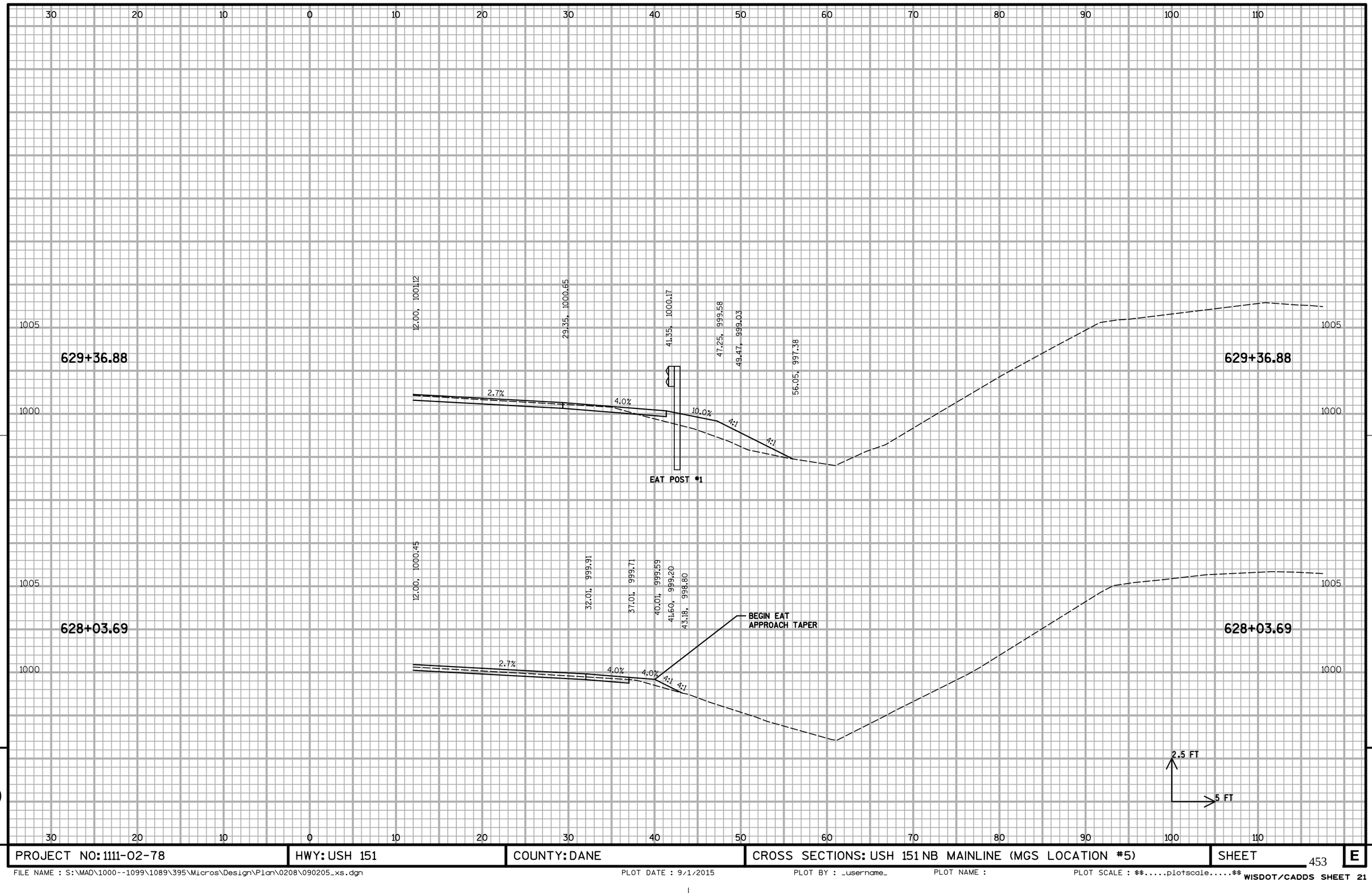
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #4) | SHEET 452 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090204_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #5) | SHEET 453 | E |
|---|---|---|---|---|---|

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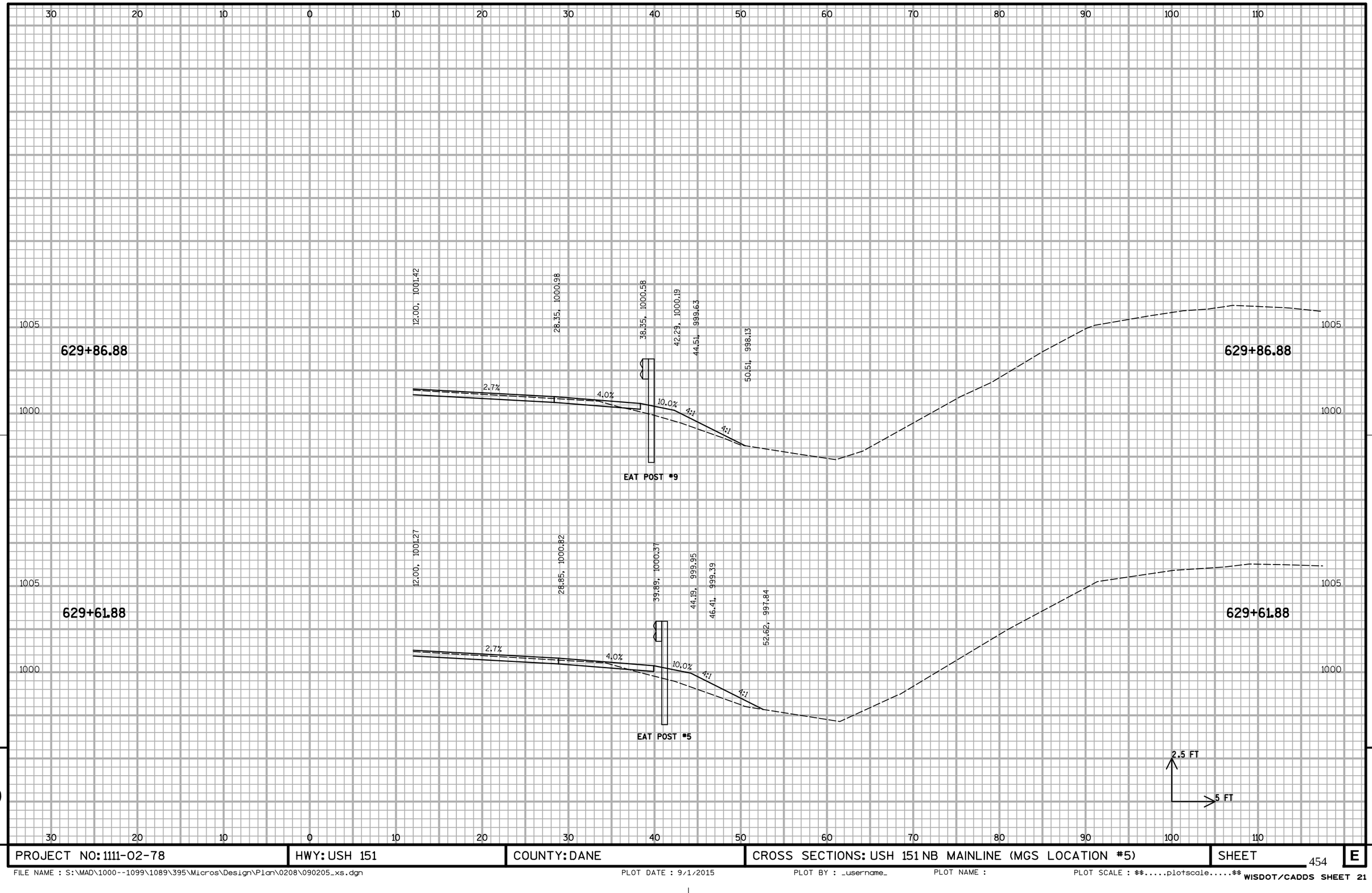


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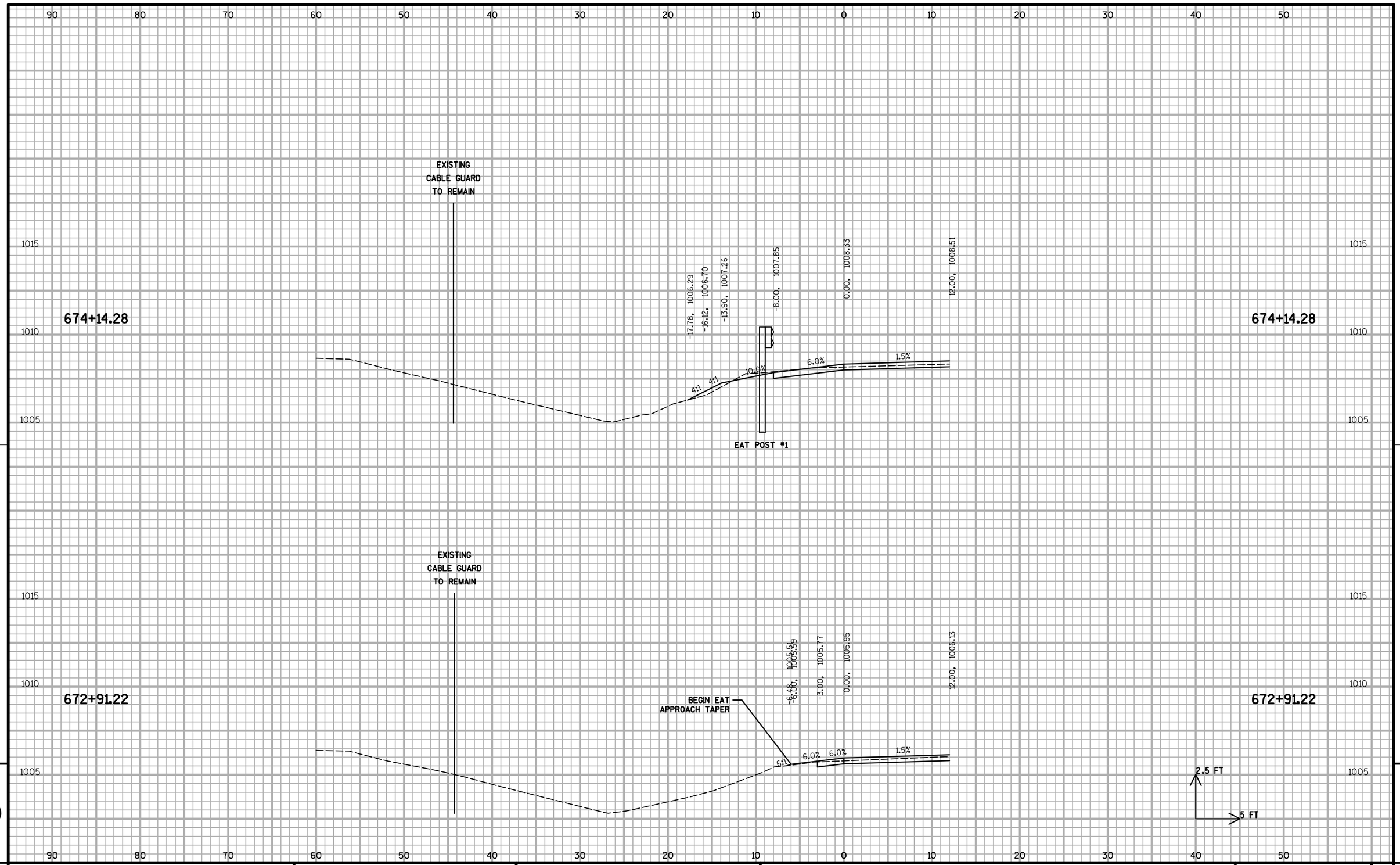
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #5) | SHEET 454 | E |
|---|---|---|---|---|---|

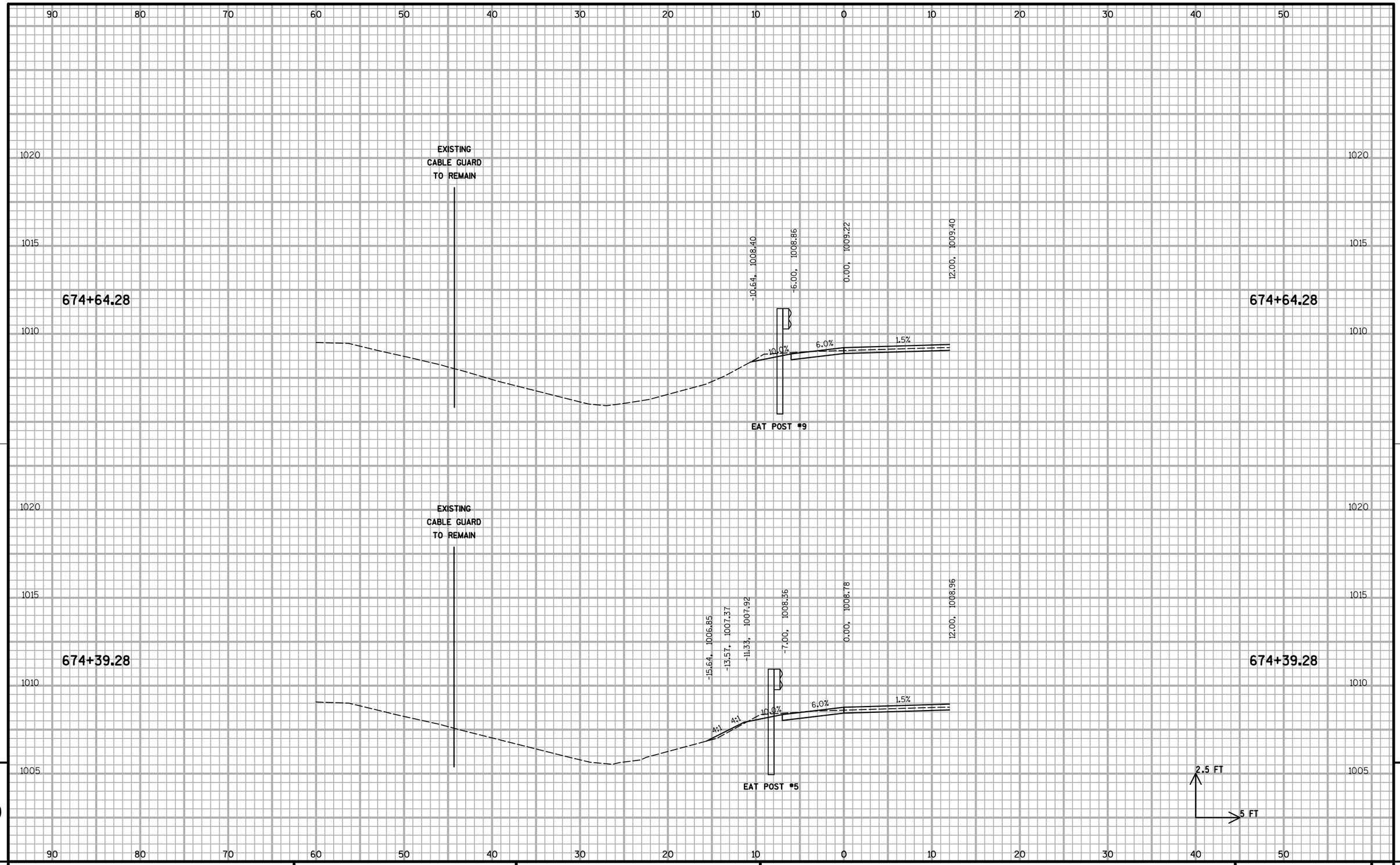
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090205_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #6) | SHEET 455 | E |
|---|---|---|---|---|---|




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #6) | SHEET 456 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090206_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

1010

12.00, 1007.72

24.00, 1007.54

33.00, 1007.18
34.00, 1007.14
35.59, 1006.74
36.44, 1006.53

BEGIN EAT
APPROACH TAPER

1.5%

4.0%

4.0%

4:1

4:1

1005

1000

995

673+72.49

673+72.49

2.5 FT

5 FT

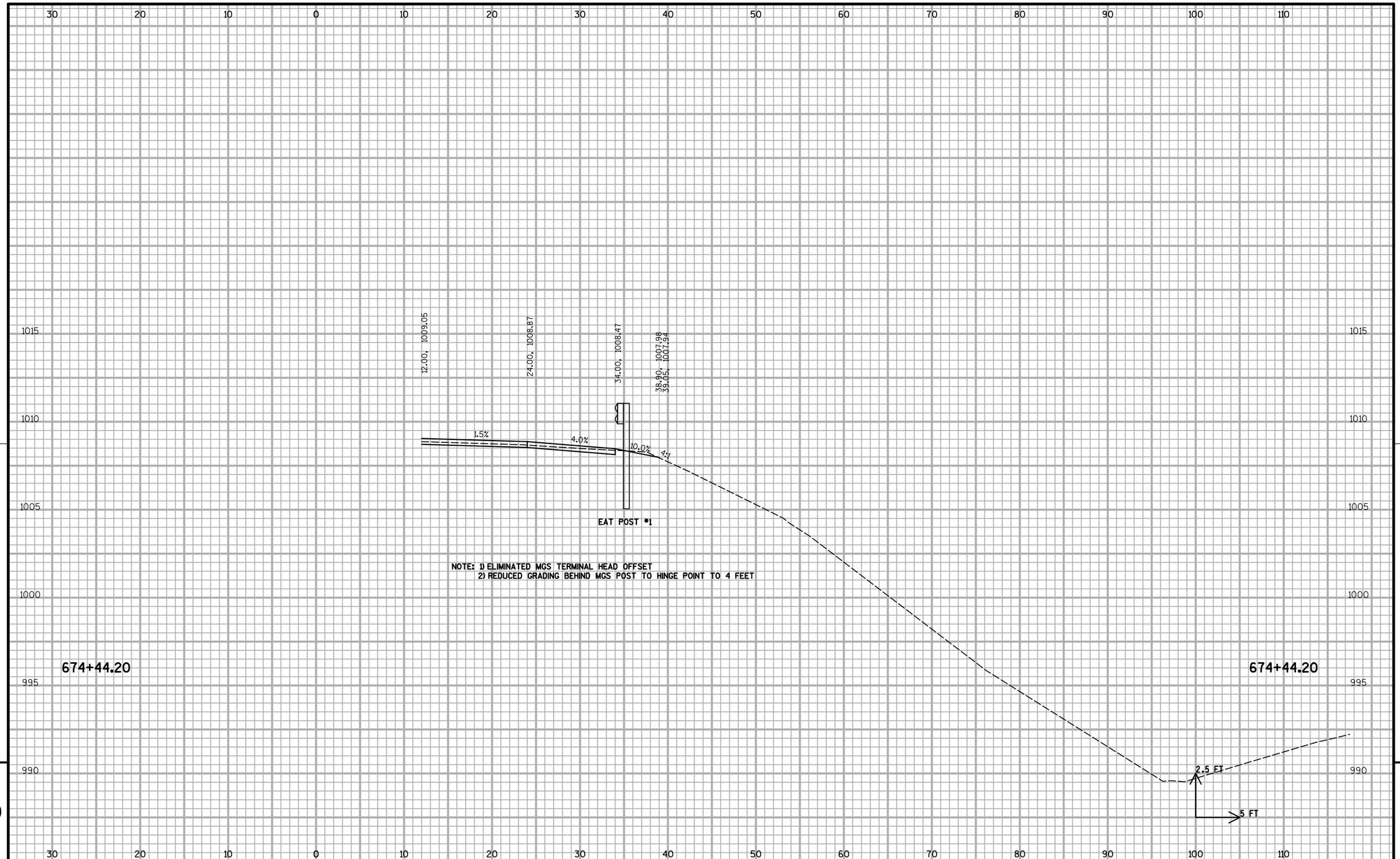
9

9

30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #7) | SHEET 457 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090207_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$



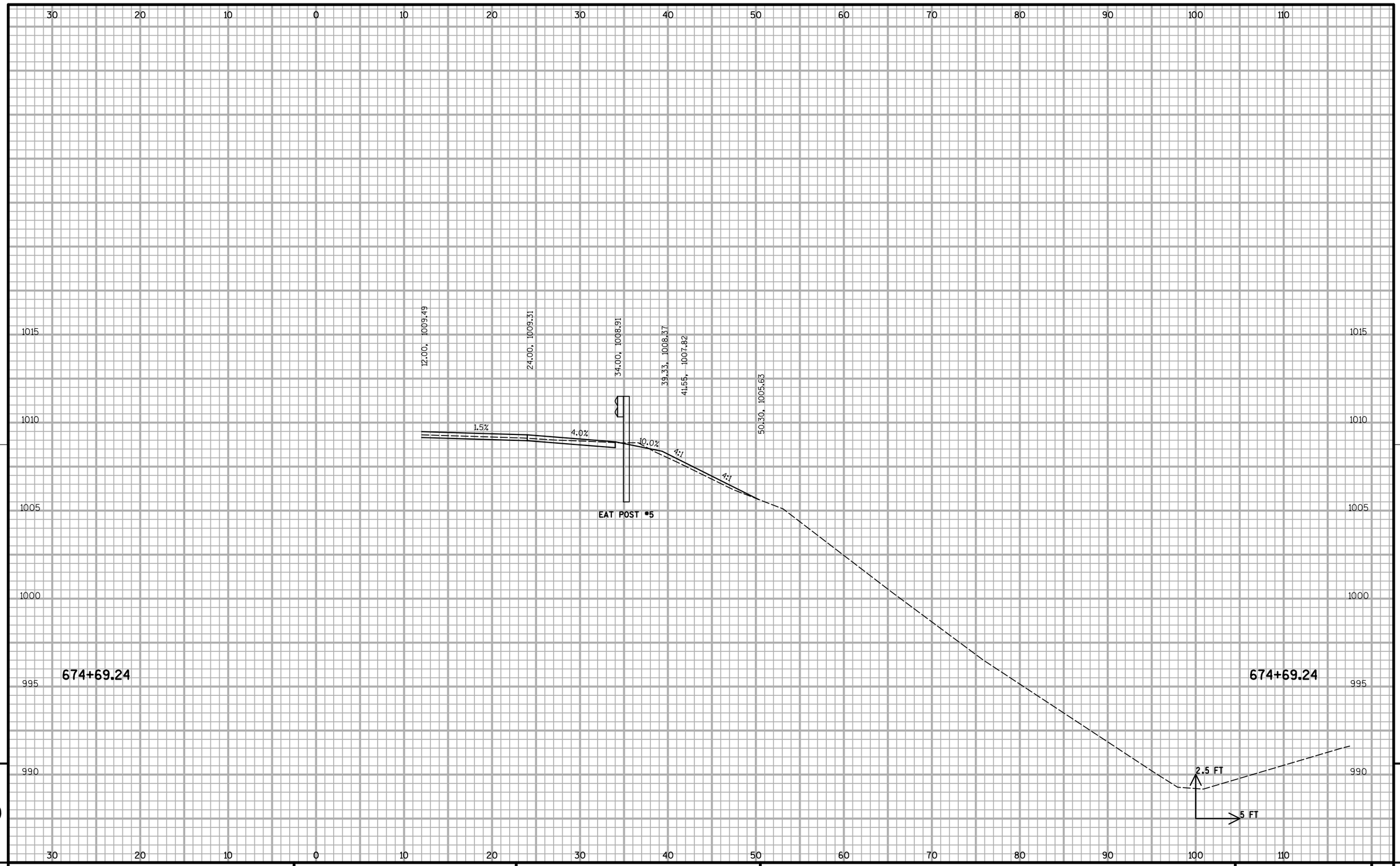

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #7) | SHEET 458 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090207_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

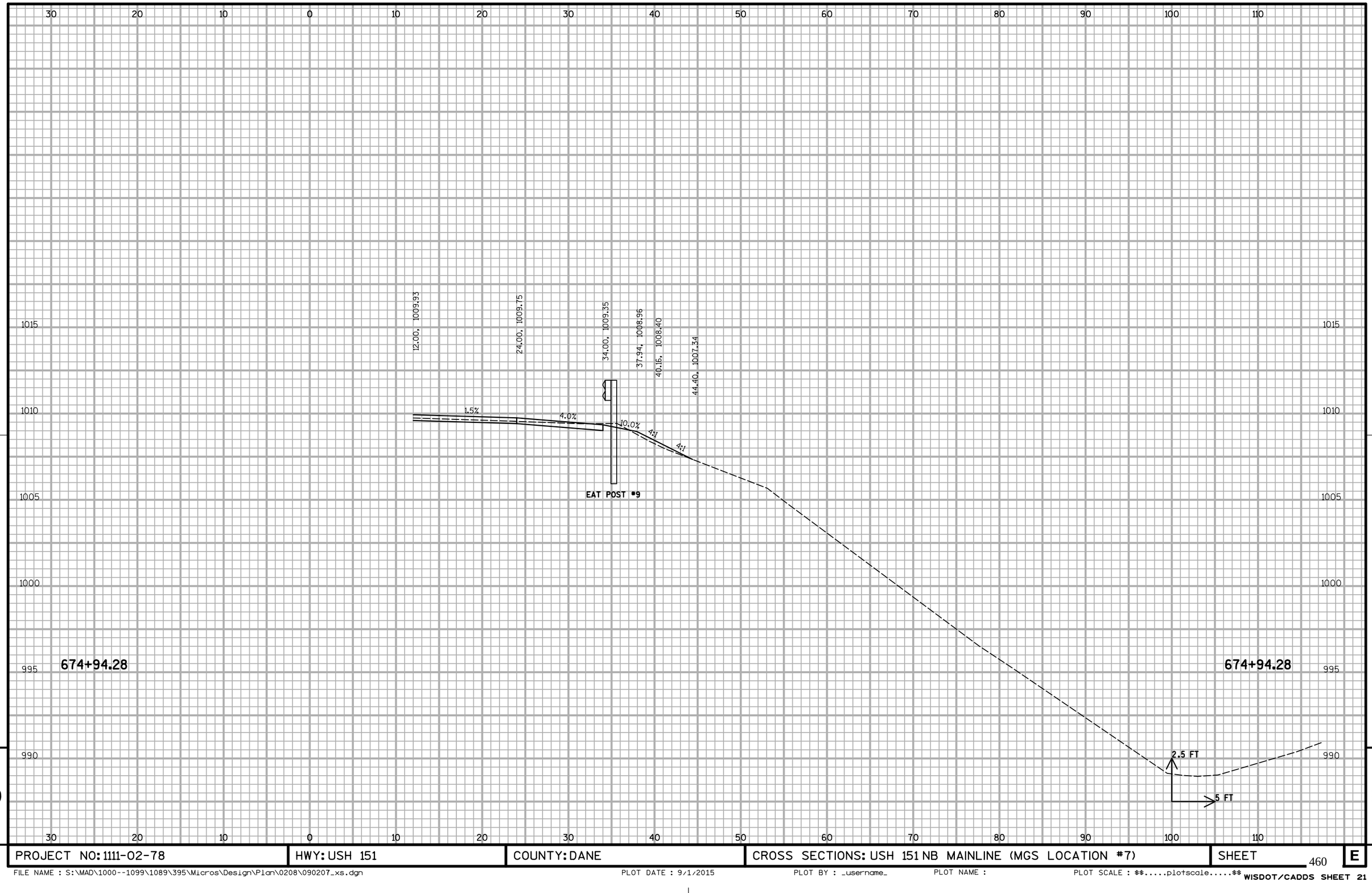
WISDOT/CADDS SHEET 21




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #7) | SHEET 459 | E |
|---|---|---|---|---|---|

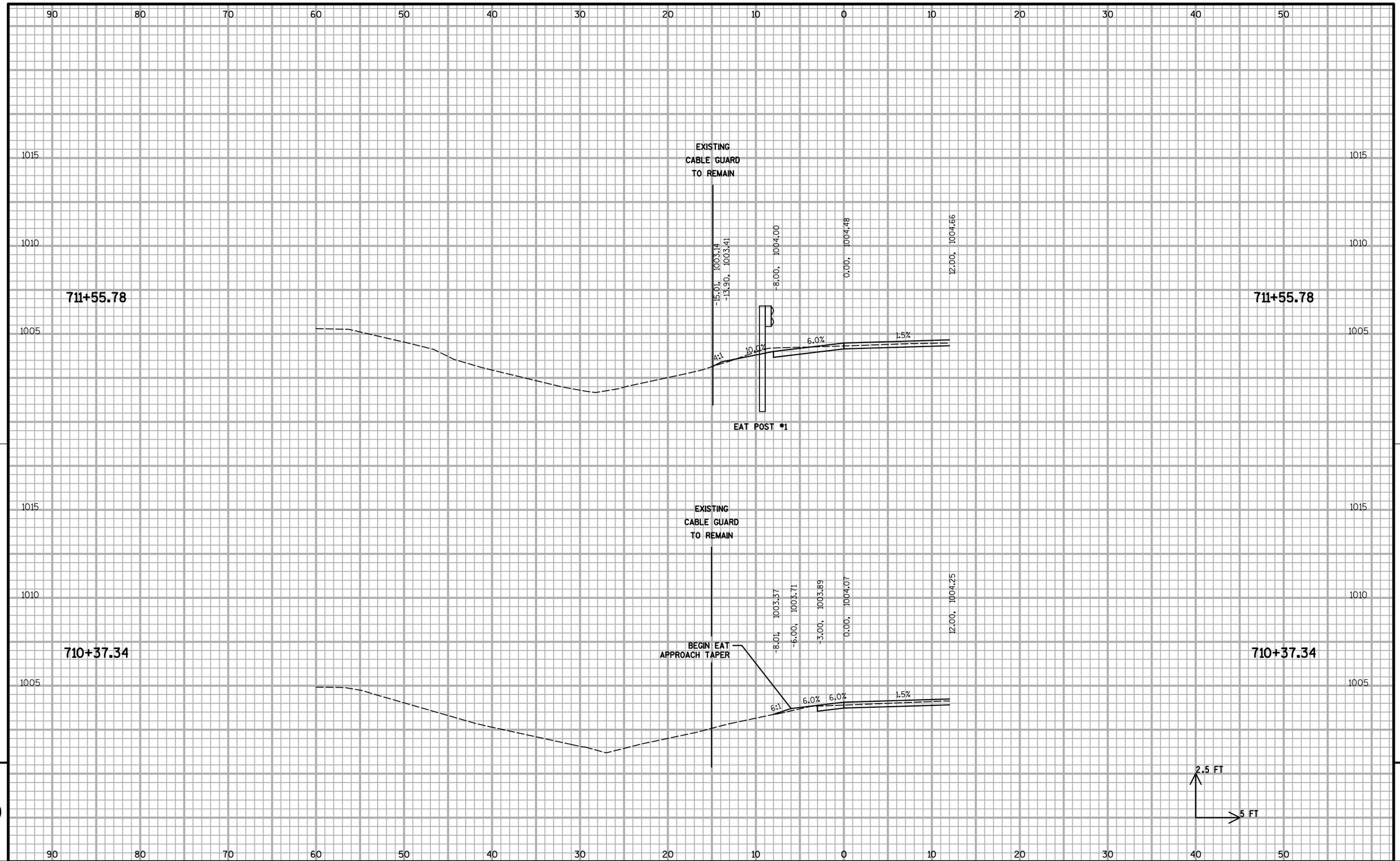



9

9

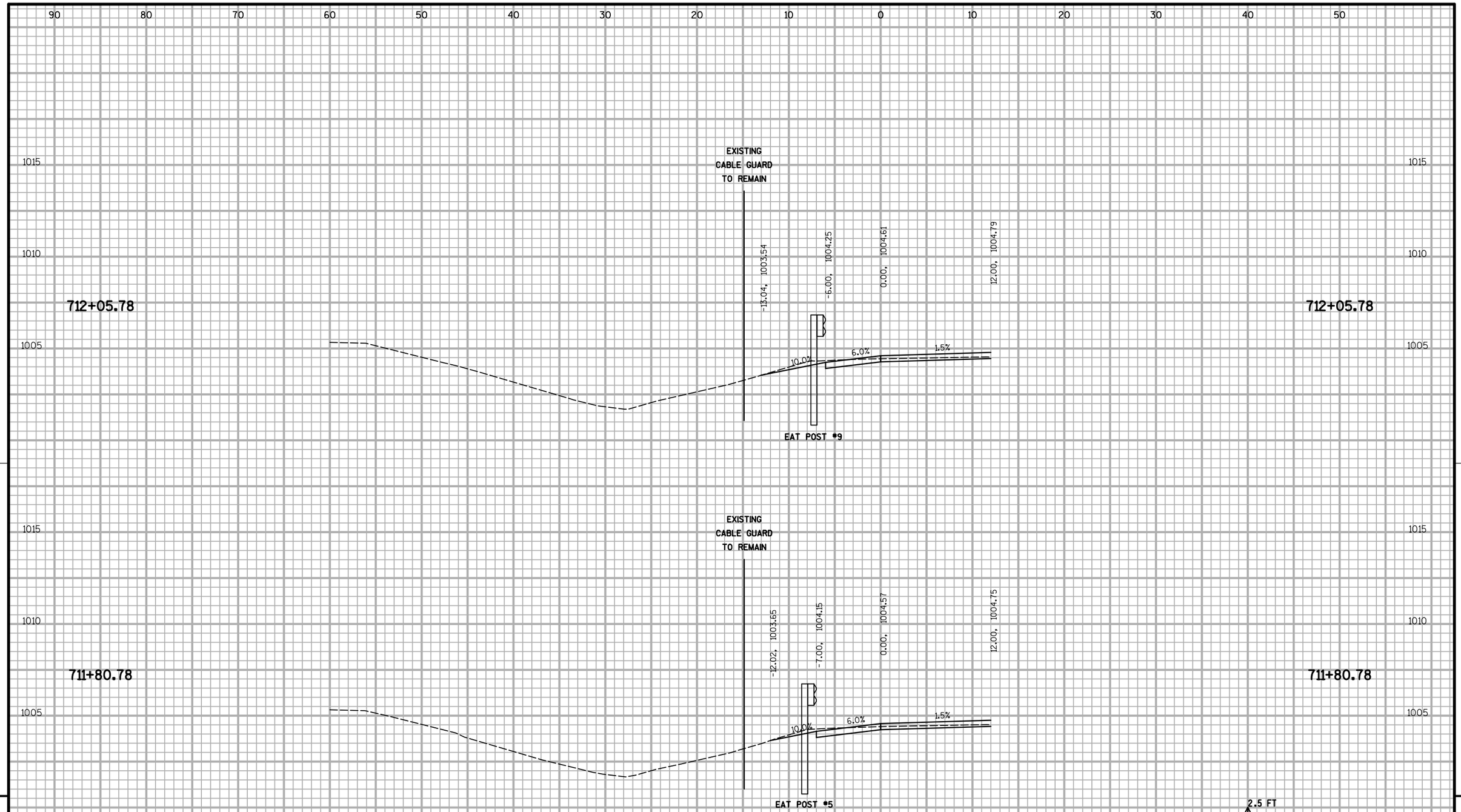
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #7) | SHEET 460 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090207_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21



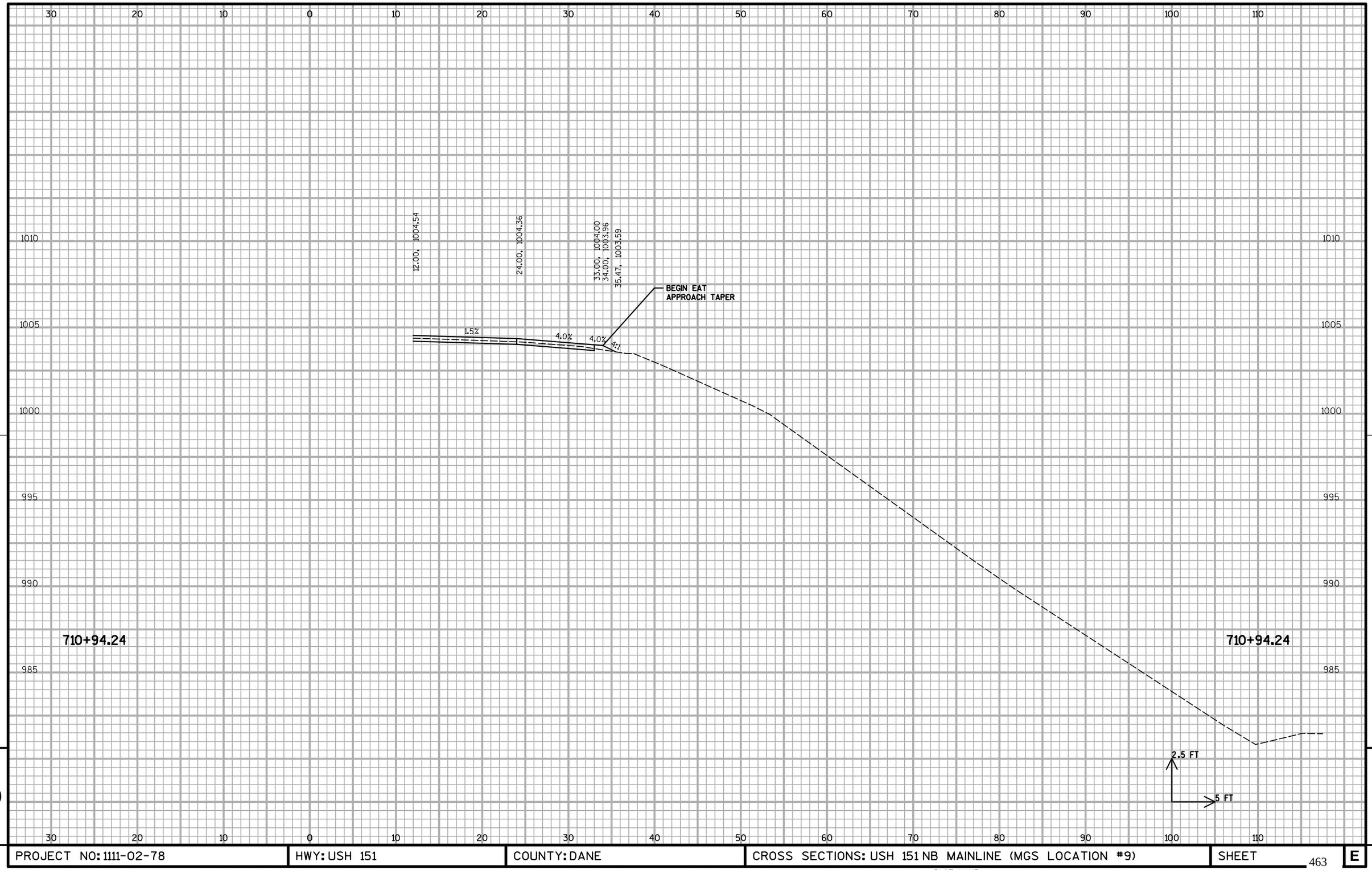

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #8) | SHEET 461 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090208_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #8) | SHEET 462 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090208_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




9

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| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #9) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090209_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

1010 1005 1000 995 990 985

12.00, 1004.76
24.00, 1004.58
34.00, 1004.18
39.90, 1003.59
42.12, 1003.03

1.5% 4.0% 10.0% 4:1

EAT POST #1

NOTE: ELIMINATED MGS TERMINAL HEAD OFFSET

711+82.68

711+82.68

2.5 FT
5 FT

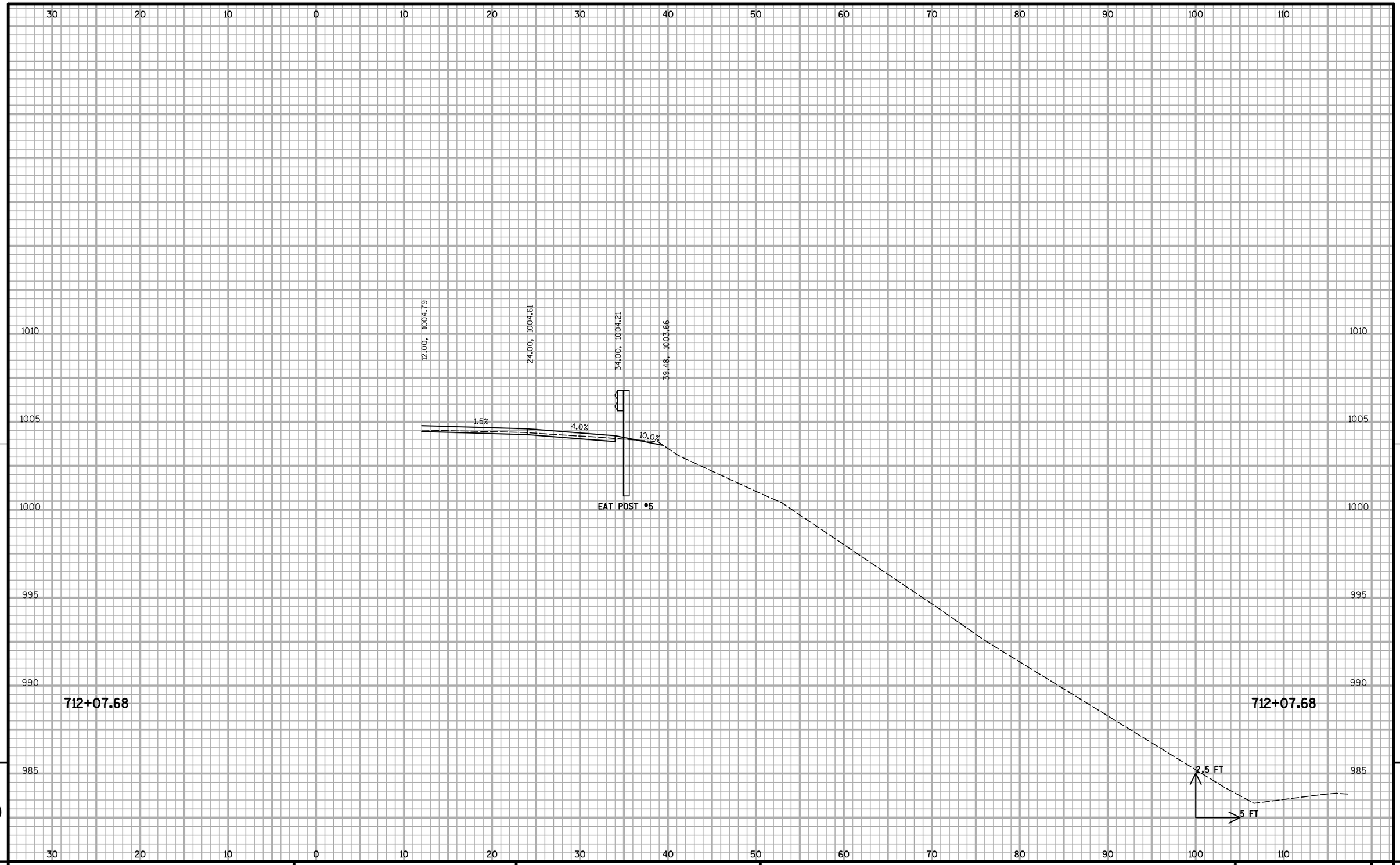
9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #9) | SHEET 464 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090209_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21



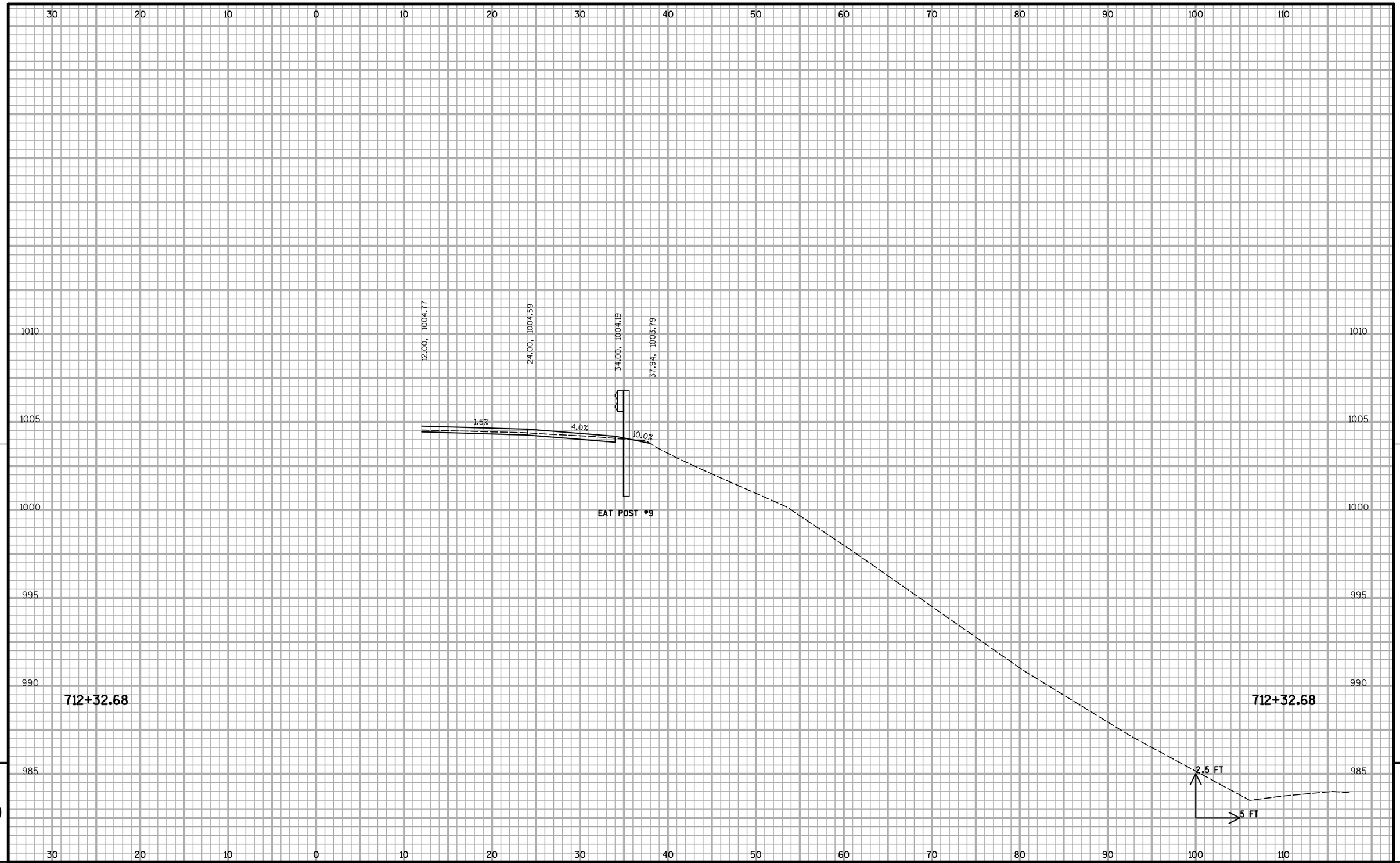

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #9) | SHEET | E |
|---|---|---|---|---|---|



FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090209_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 NB MAINLINE (MGS LOCATION #9) | SHEET 466 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090209_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1000

995

990

985

980

-39.01, 992.52
-37.94, 992.79

-34.00, 993.18

-24.00, 993.58

-12.00, 993.76

4:1

10.0%

4.0%

1.5%

EAT POST #9

551+17.83 SB

551+17.83 SB

2.5 FT

5 FT

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #12) | SHEET 467 | E |
|---|---|---|---|---|---|

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1000
995
990
985

-48.79, 990.04
-40.55, 992.10
-38.33, 992.65
-34.00, 993.09
-24.00, 993.49
-12.00, 993.67

4:1
4:1
10.0%
4.0%
1.5%

EAT POST #5

551+42.76 SB

551+42.76 SB

2.5 FT
5 FT

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #12) | SHEET 468 | E |
|---|---|---|---|---|---|

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1000
995
990
985

-40.50, 992.23
-39.90, 992.38
-34.00, 992.97
-24.00, 993.37
-12.00, 993.55

4:1
10.0%
4.0%
1.5%

551+67.76 SB

EAT POST #1

NOTE: ELIMINATED MGS TERMINAL HEAD OFFSET

2.5 FT
5 FT

551+67.76 SB

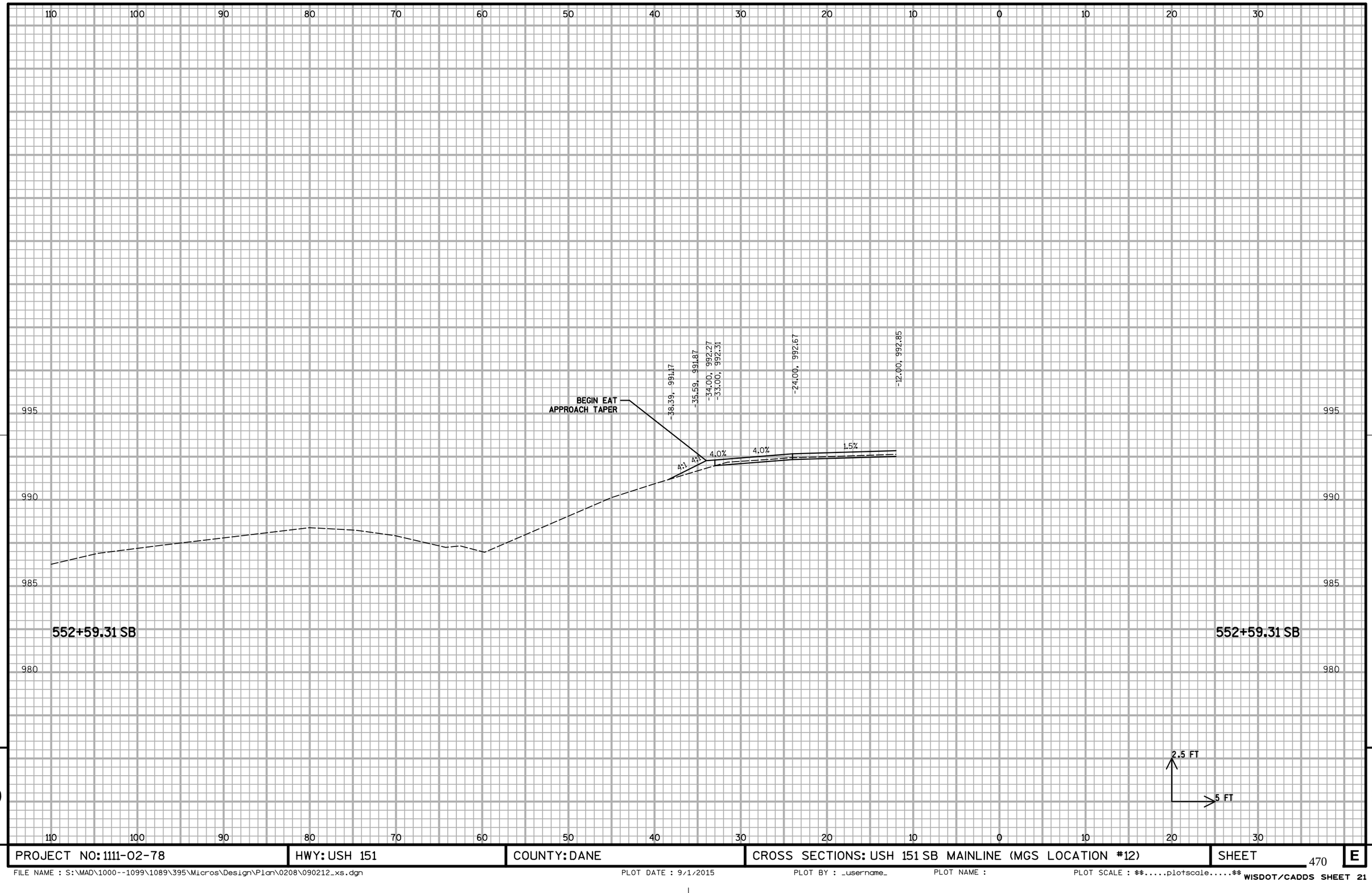
110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

9

9

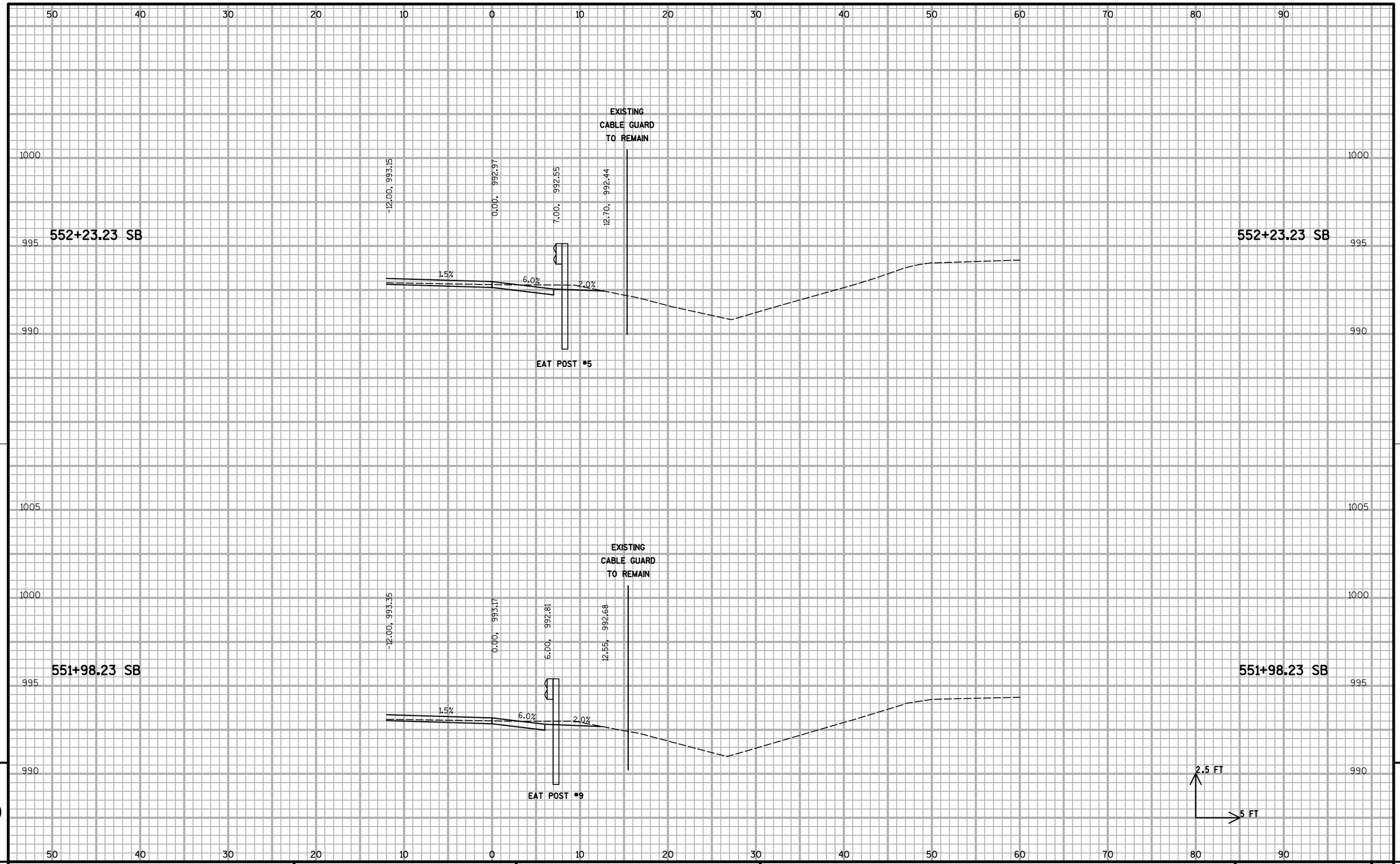
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #12) | SHEET 469 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090212_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #12) | SHEET 470 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090212_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #13) | SHEET 471 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090213_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

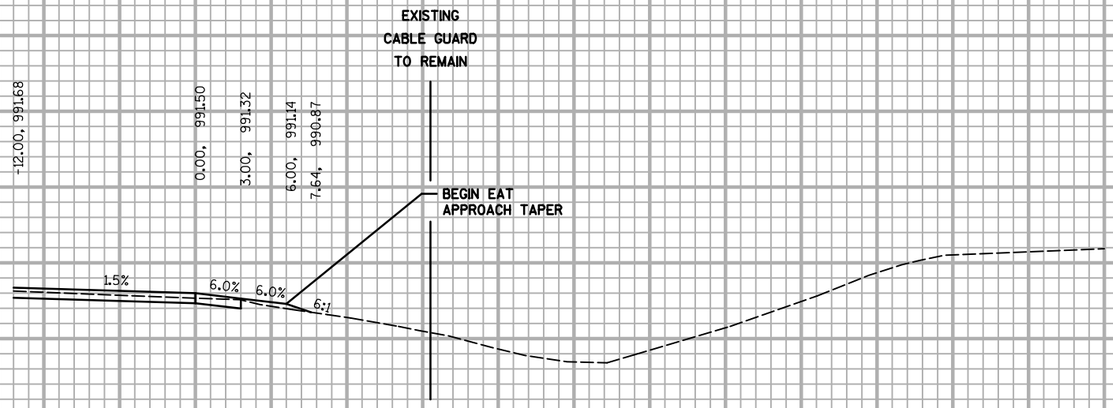
50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

1000

995

990

**553+62.72 SB**




1000

995

990

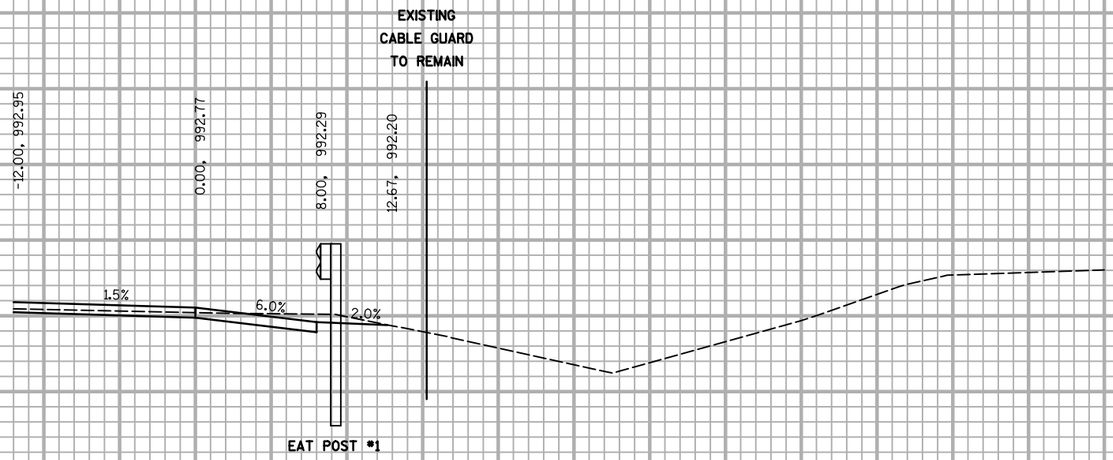
**553+62.72 SB**

1000

995

990

**552+48.23 SB**

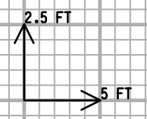



1000

995

990

**552+48.23 SB**



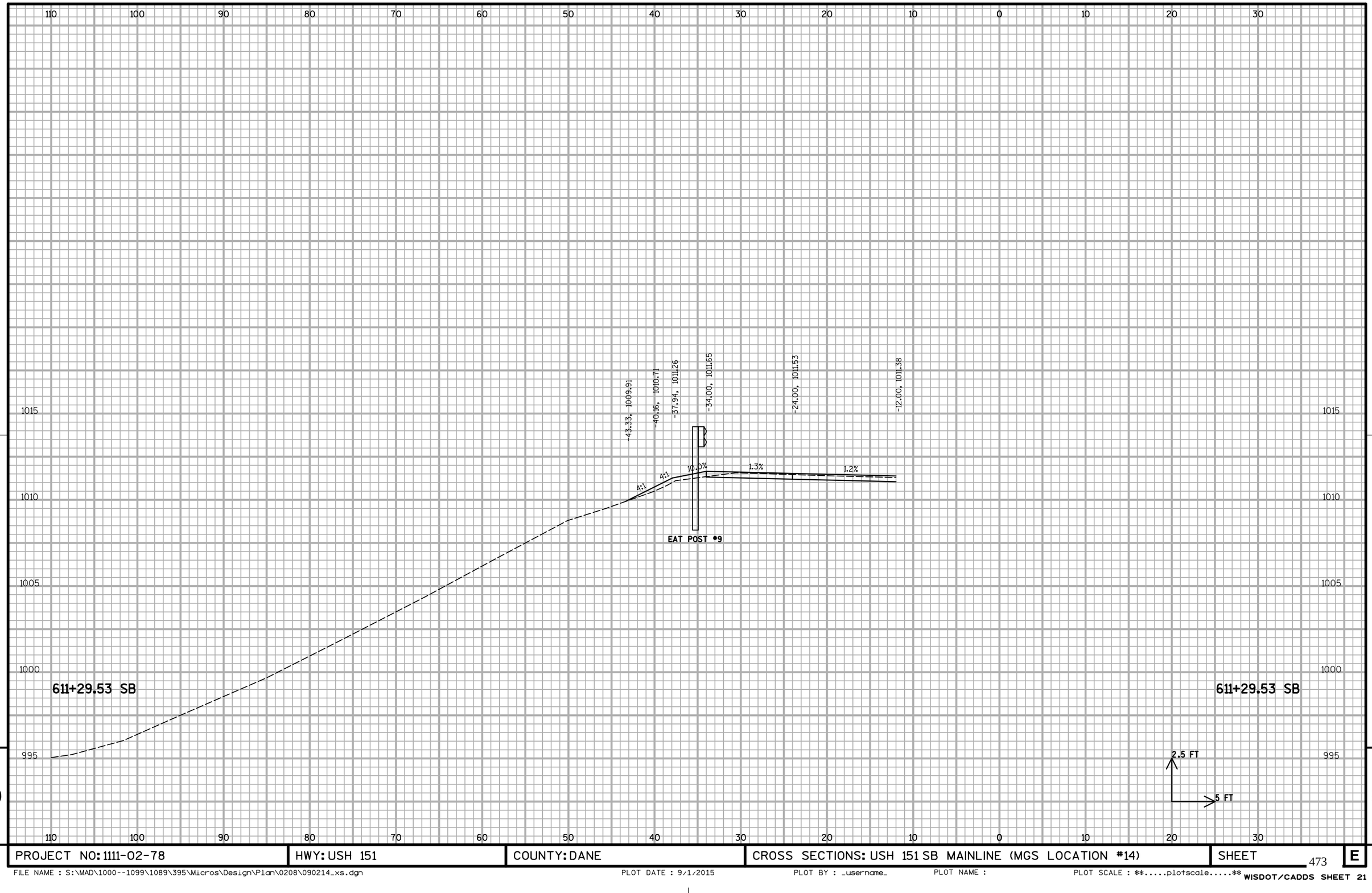

50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #13) | SHEET 472 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090213_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21



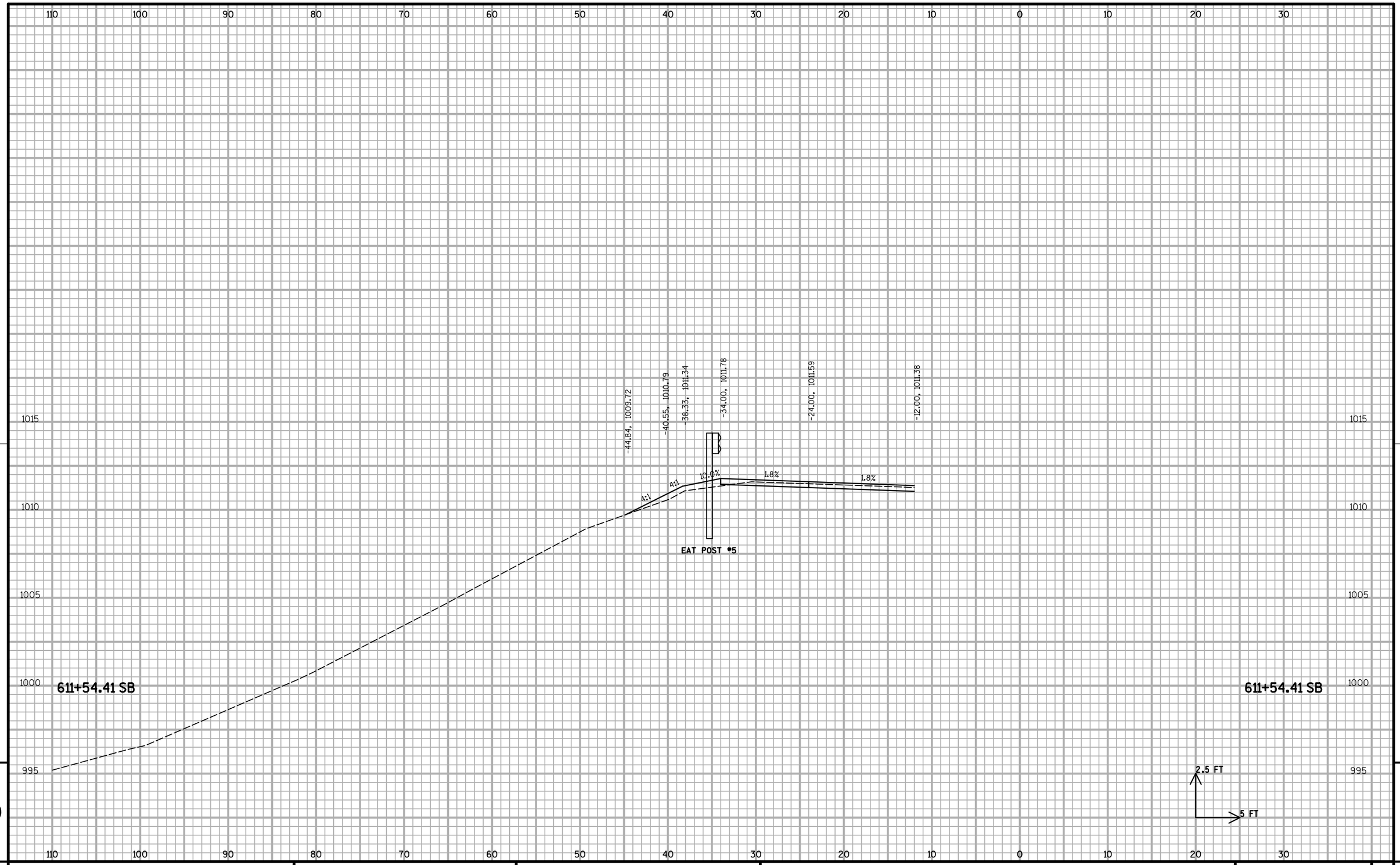

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #14) | SHEET 473 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090214_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

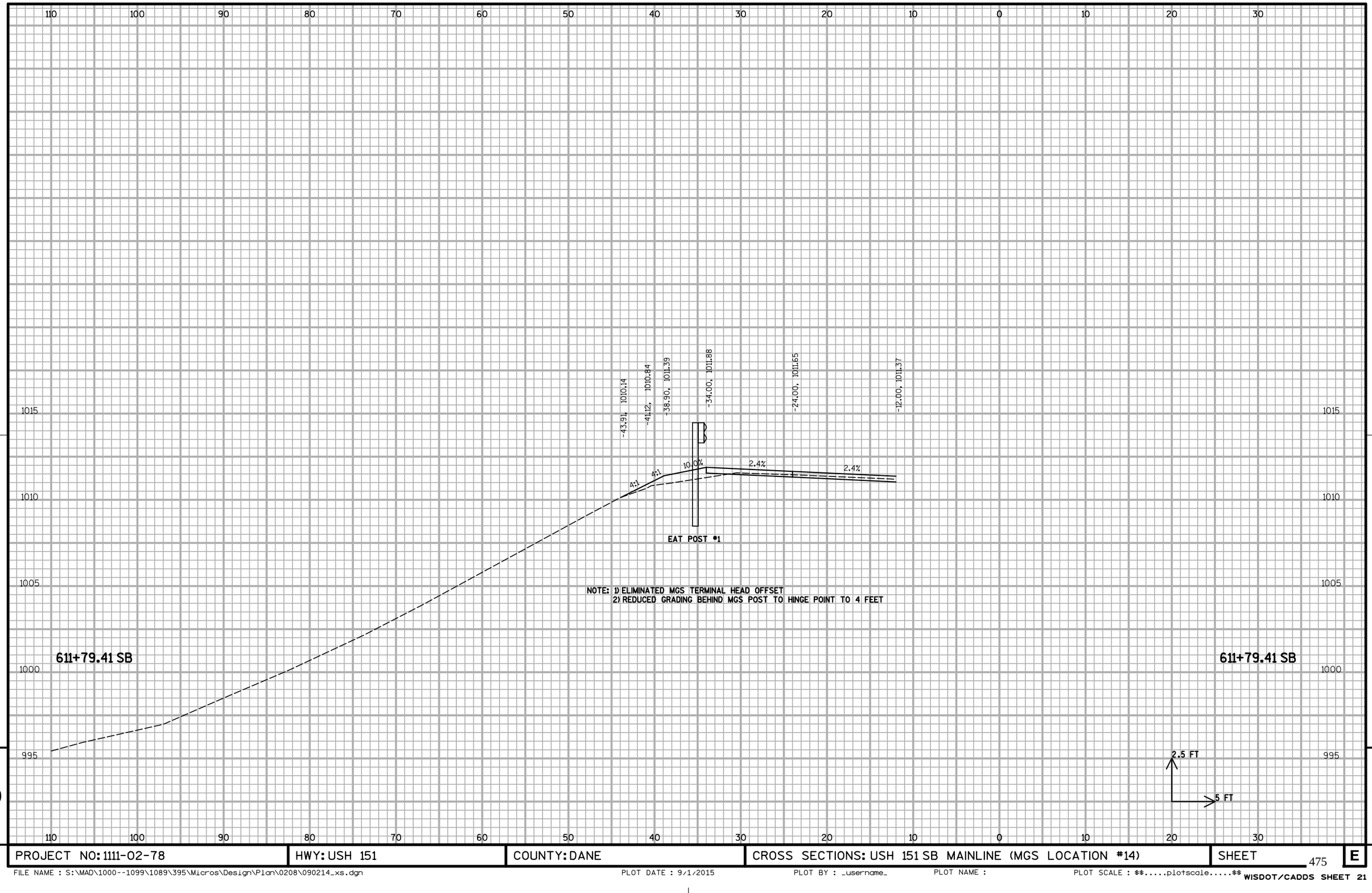
WISDOT/CADDS SHEET 21




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #14) | SHEET 474 | E |
|---|---|---|---|---|---|




9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #14) | SHEET 475 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090214_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1015

BEGIN EAT
APPROACH TAPER

-40.15, 1010.14

-35.20, 1011.37
-34.00, 1011.68
-33.00, 1011.65

-24.00, 1011.41

-12.00, 1011.08

4:1 4:1 2.7% 2.7% 2.7%

1010

1005

612+43.44 SB

1000

2.5 FT

5 FT

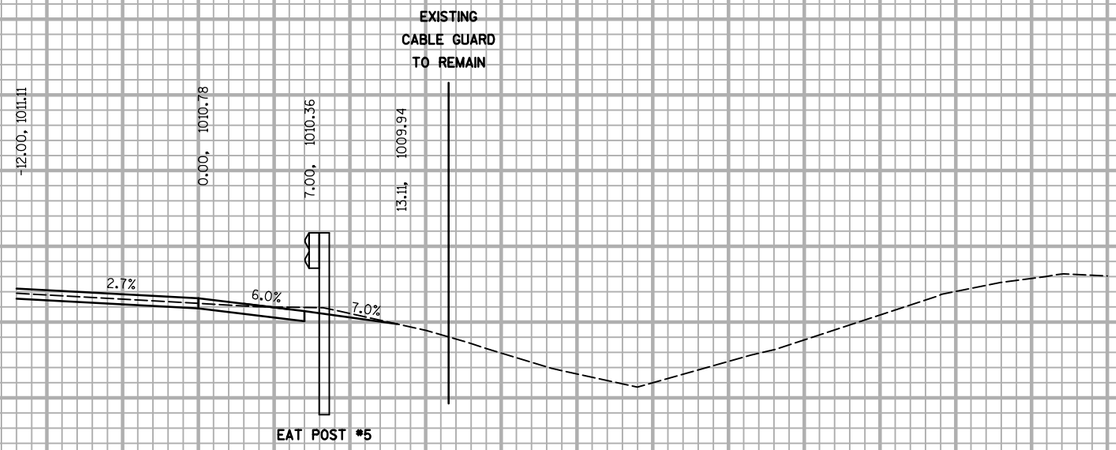
9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #14) | SHEET 476 | E |
|---|---|---|---|---|---|

50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

1020
1015
1010

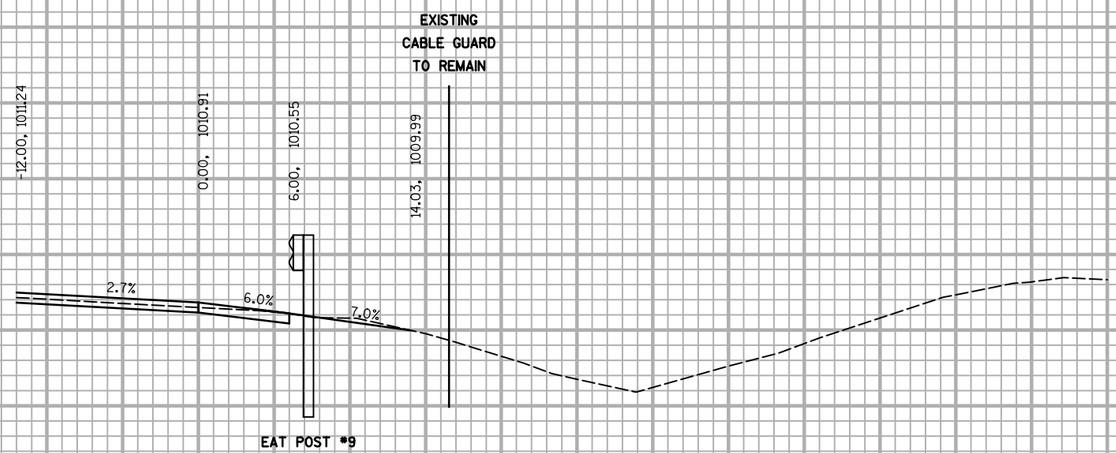
**612+38.03 SB**




612+38.03 SB

1020
1015
1010

**612+13.03 SB**




612+13.03 SB

1020
1015
1010

2.5 FT
5 FT

50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #15) | SHEET 477 | E |
|---|---|---|---|---|---|

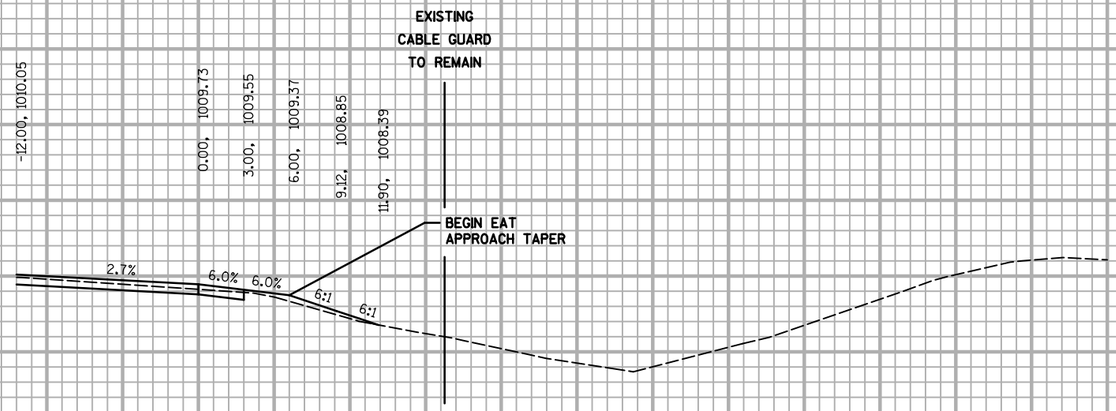
FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090215_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

1015

**613+71.11 SB**

1010




1015

**613+71.11 SB**

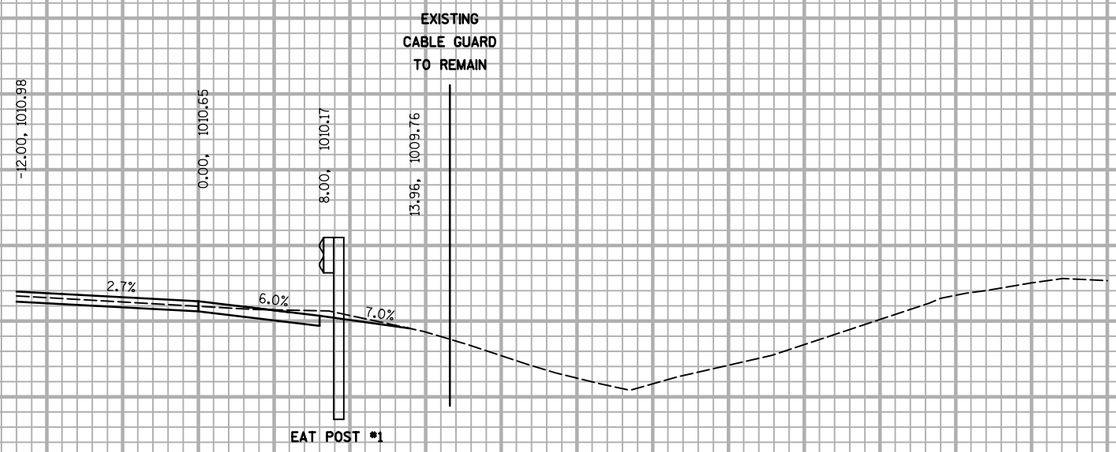
1010

1020

**612+63.03 SB**

1015

1010




1020

**612+63.03 SB**

1015

1010

2.5 FT

5 FT

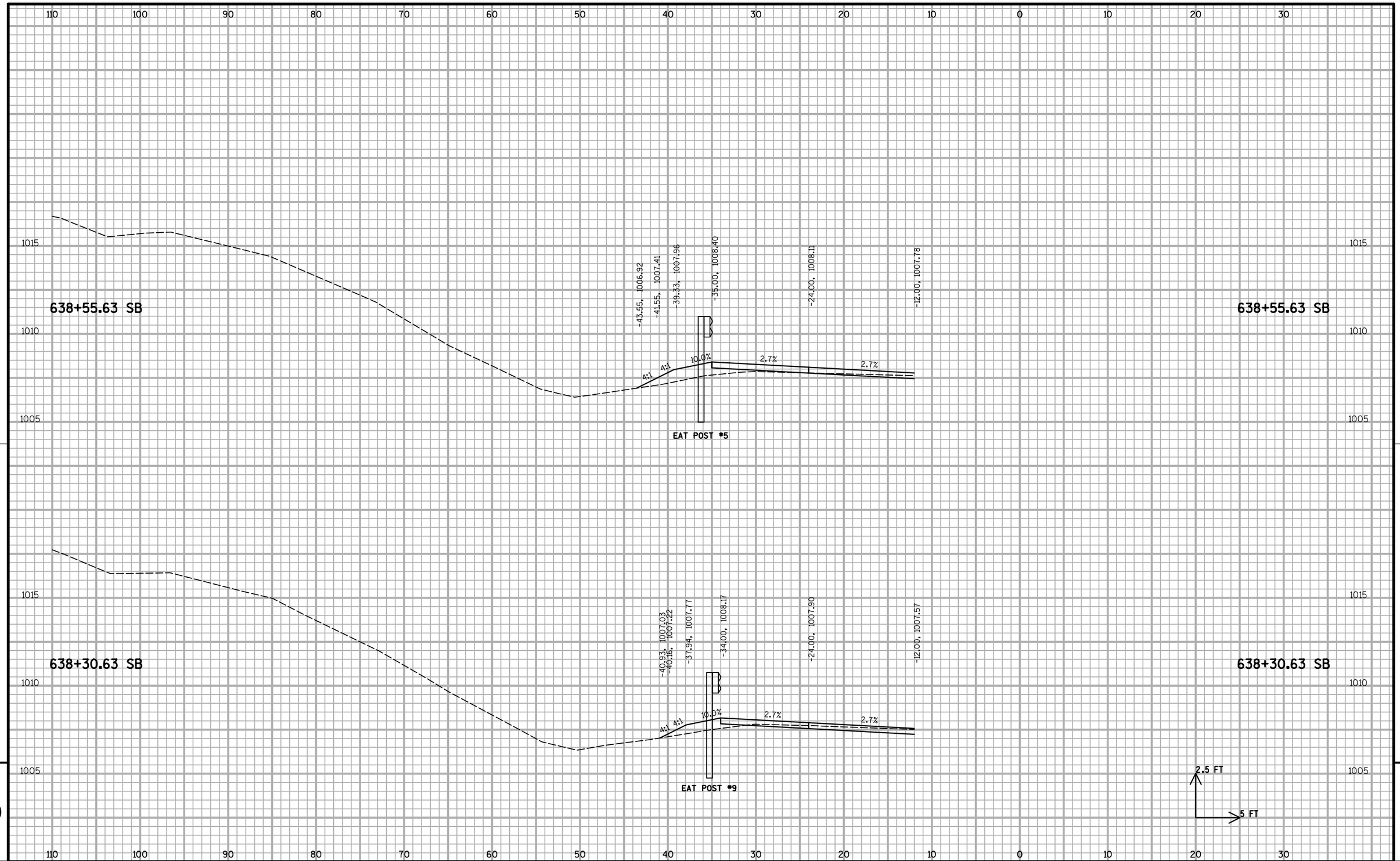
9

9

50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #15) | SHEET 478 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090215_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #16) | SHEET 479 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090216_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1015

1010

**640+06.21 SB**

-38.12, 1007.58
-35.32, 1008.28
-34.00, 1008.61
-33.00, 1008.60
-24.00, 1008.58
-12.00, 1008.54

BEGIN EAT
APPROACH TAPER

4:1
4:1
0.3%
0.3%
0.3%

640+06.21 SB

1015
1010

**638+80.63 SB**

-47.49, 1006.63
-44.12, 1007.47
-41.90, 1008.02
-36.00, 1008.61
-24.00, 1008.29
-12.00, 1007.97

4:1
4:1
10.0%
2.7%
2.7%

EAT POST #1

638+80.63 SB

2.5 FT
5 FT

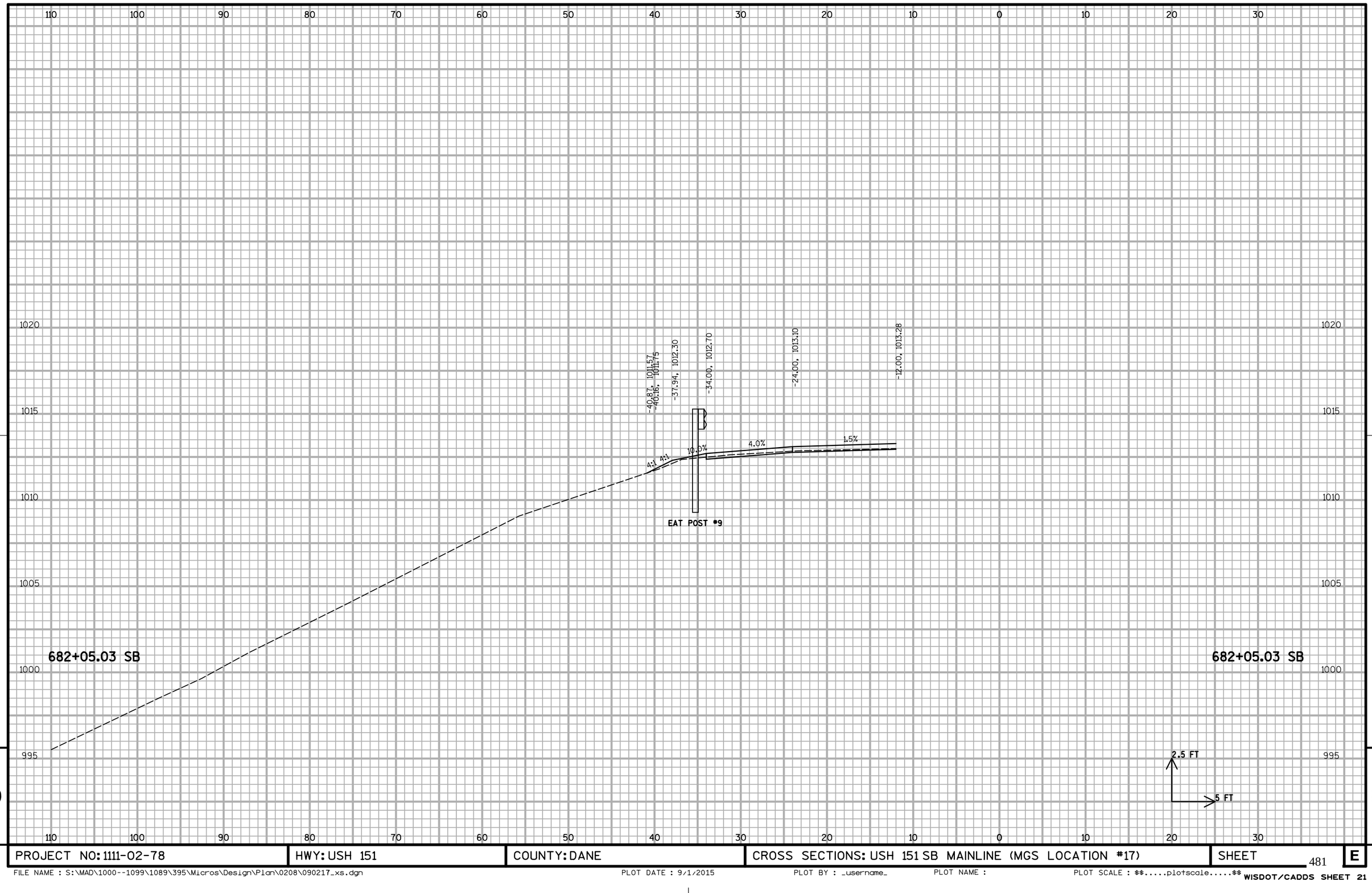
110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #16) | SHEET 480 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090216_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

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| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #17) | SHEET 481 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090217_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1015 1010 1005 1000

-41.45, 1011.52
-39.33, 1012.05
-35.00, 1012.48
-24.00, 1012.92
-12.00, 1013.10

4.1%
10.0%
4.0%
1.5%

EAT POST #5

682+30.03 SB

682+30.03 SB

2.5 FT
5 FT

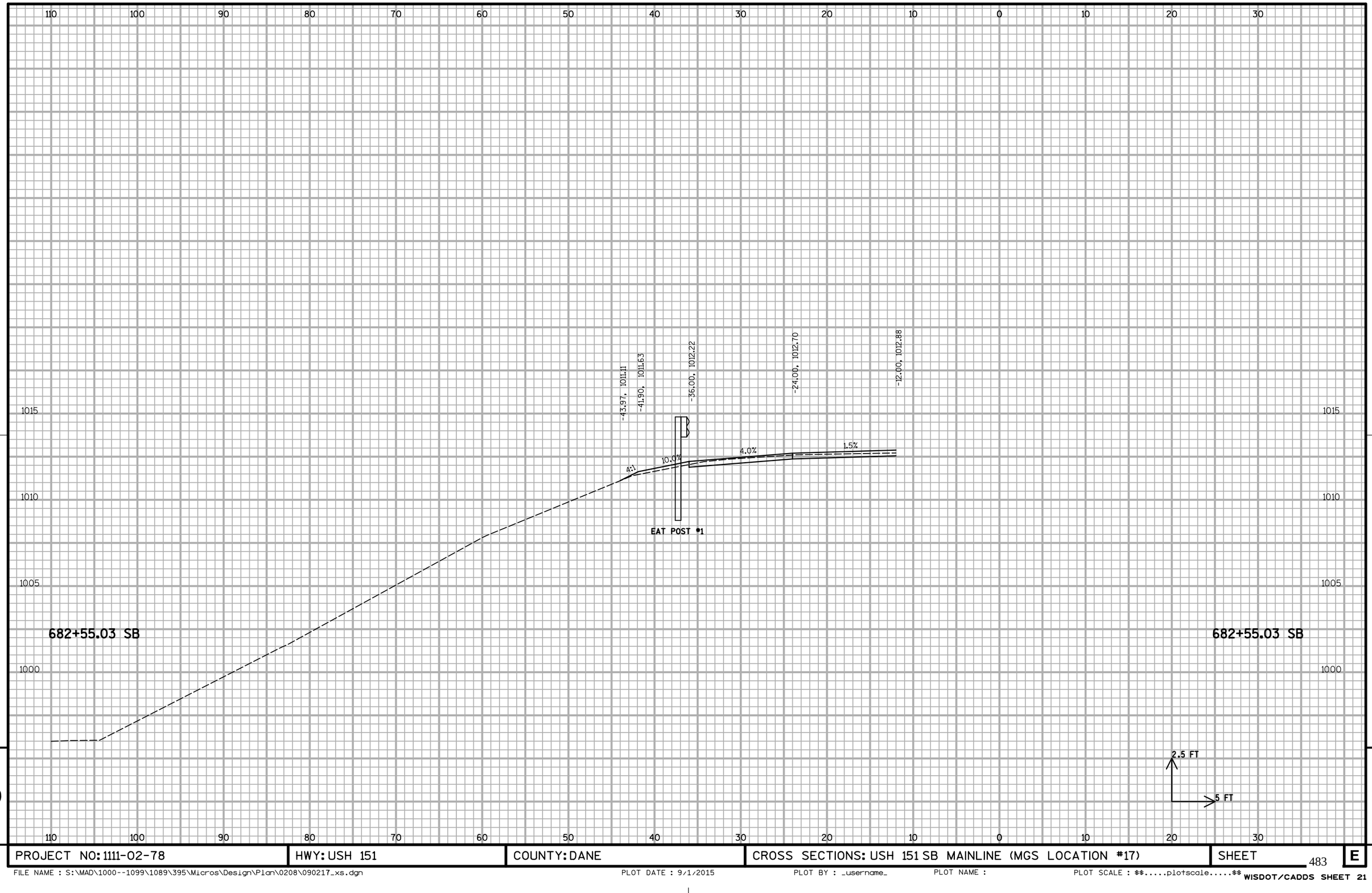
9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #17) | SHEET 482 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090217_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

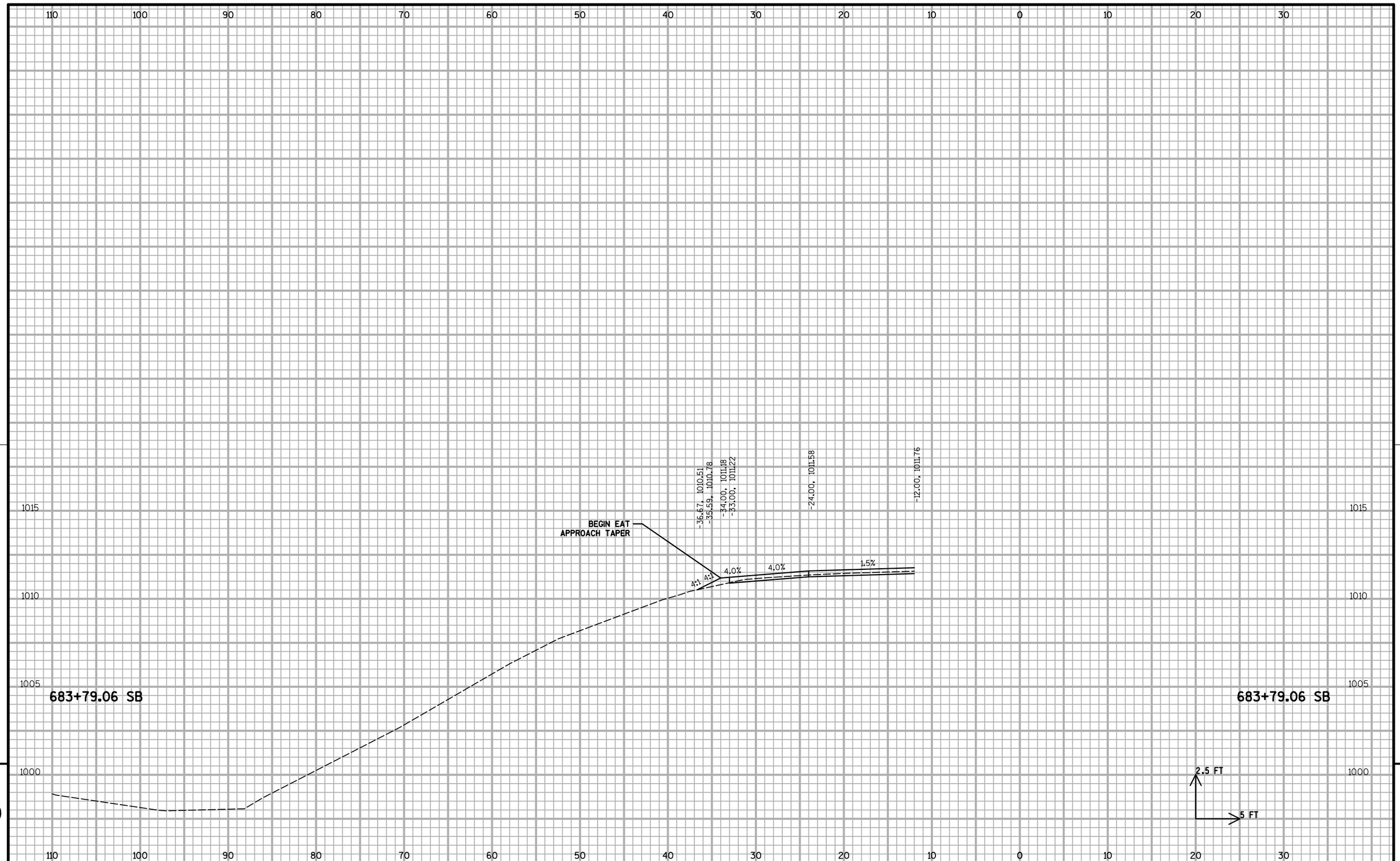
WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #17) | SHEET 483 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090217_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21




9

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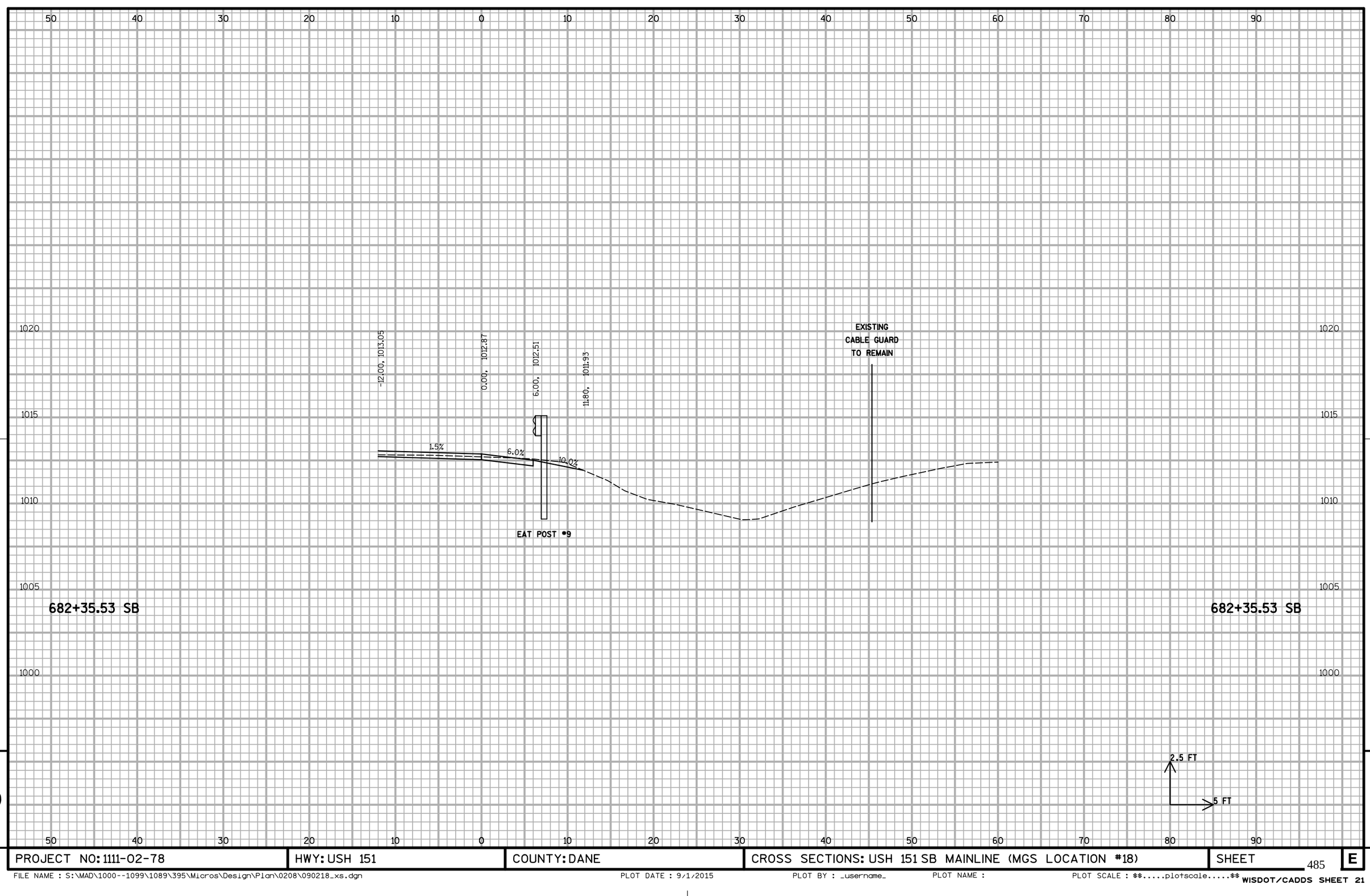
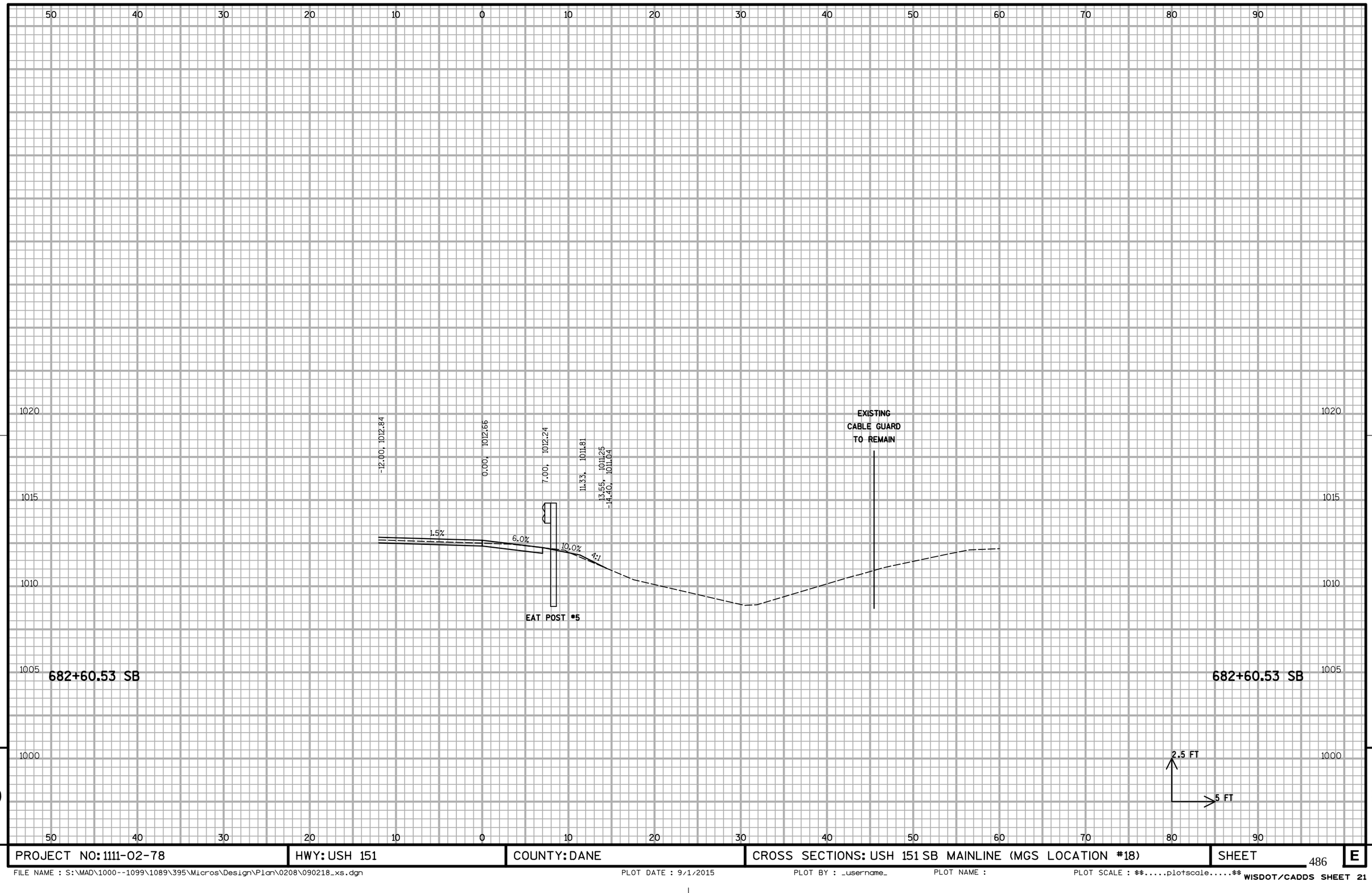
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #17) | SHEET 484 | E |
|---|---|---|---|---|---|




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #18) | SHEET 485 | E |
|---|---|---|---|---|---|




9

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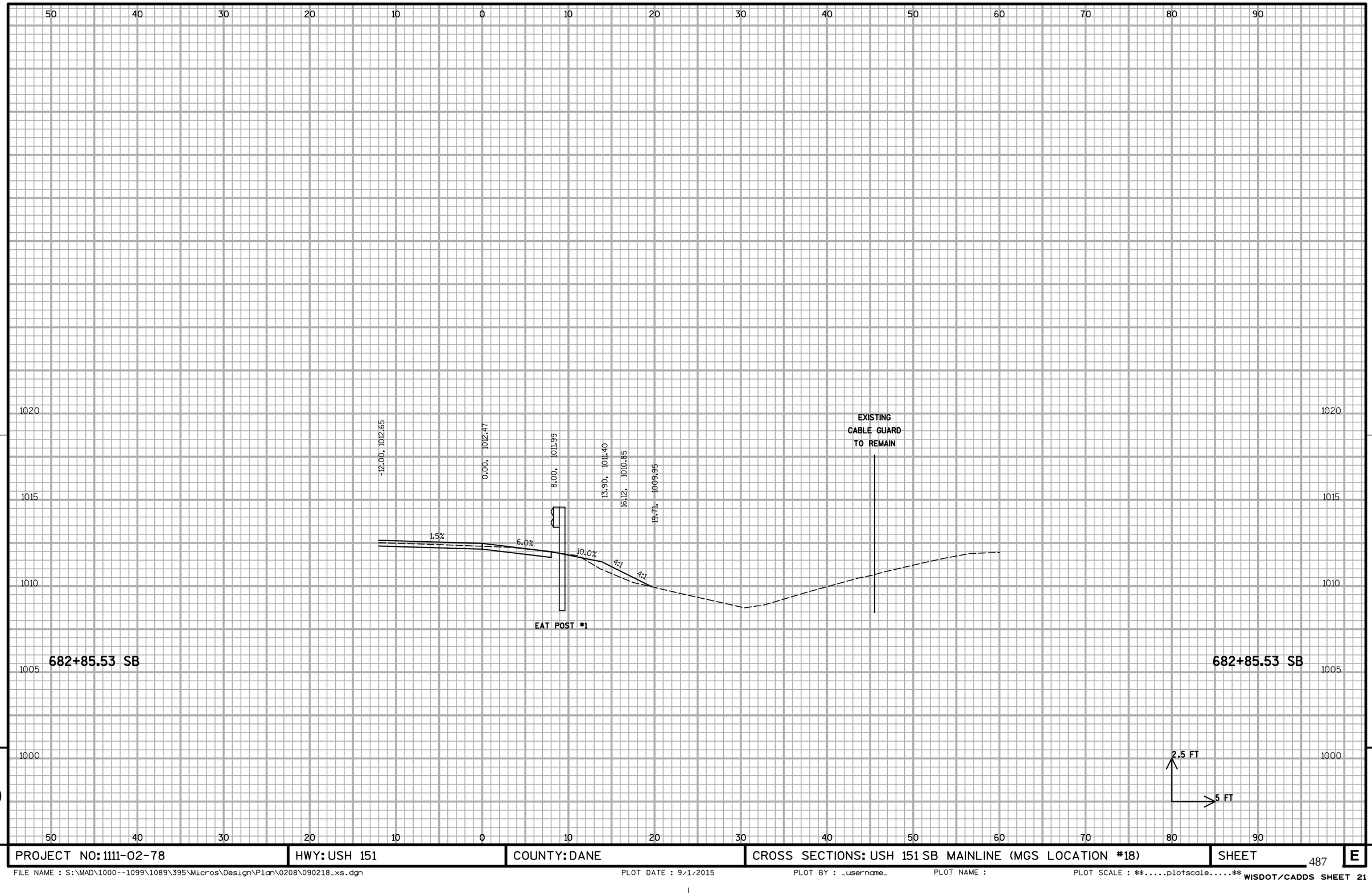
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #18) | SHEET 486 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090218_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




9

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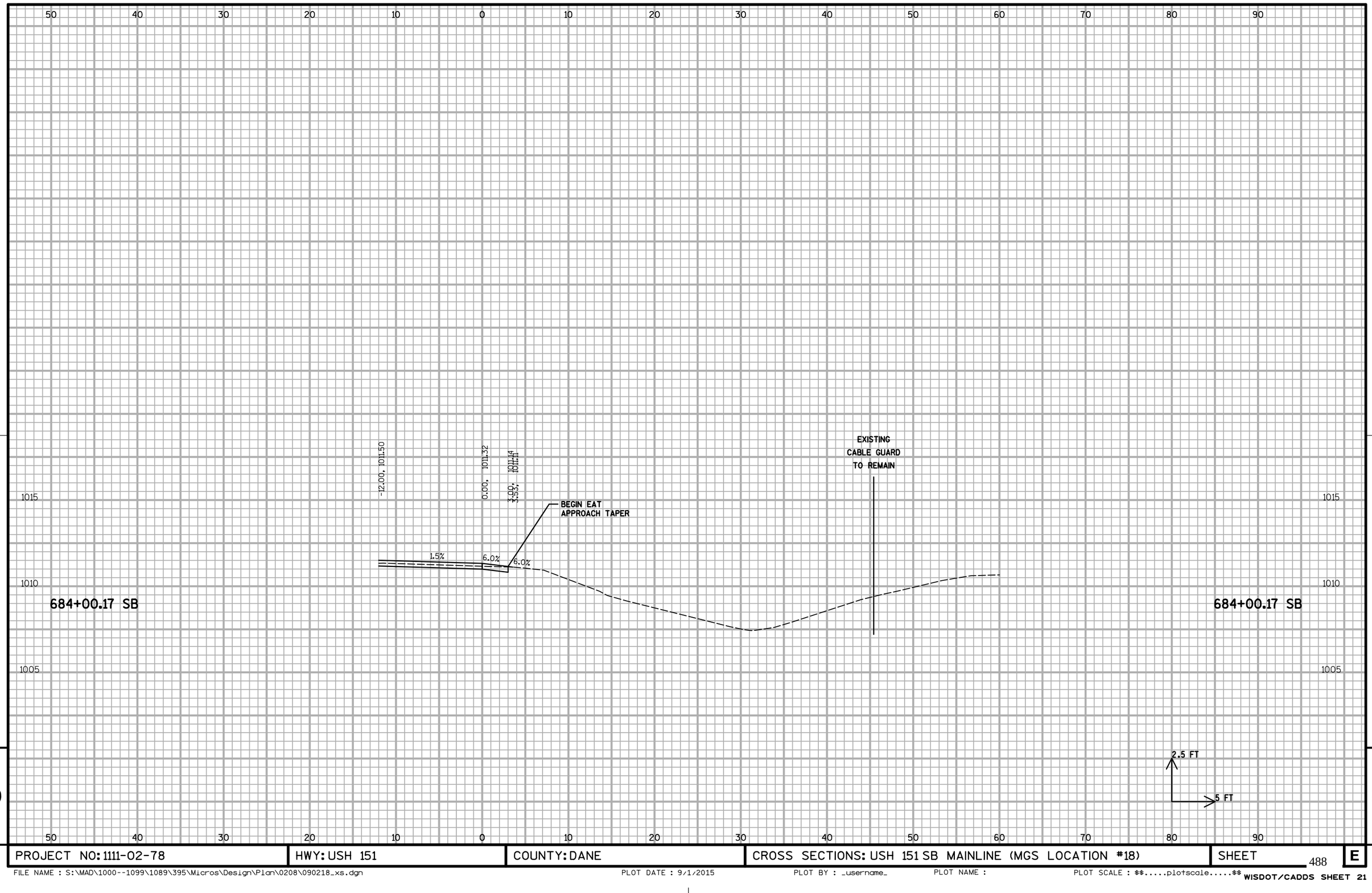
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #18) | SHEET 487 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090218_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 21




9

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| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #18) | SHEET 488 | E |
|---|---|---|---|---|---|

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1005

1000

995

990

-37.67, 999.94

-34.00, 1000.31

-24.00, 1000.71

-12.00, 1000.89

10.0%

4.0%

1.5%

EAT POST #9

719+44.53 SB

719+44.53 SB

2.5 FT

5 FT

9

9

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #19) | SHEET 489 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090219_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1005

1000

995

990

719+69.53 SB

-44.37, 998.19
-41.55, 998.89
-39.33, 999.45
-35.00, 999.88
-24.00, 1000.32
-12.00, 1000.50

4:1
4:1
10.0%
4.0%
1.5%

EAT POST #5

2.5 FT
5 FT

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #19) | SHEET 490 | E |
|---|---|---|---|---|---|

110 100 90 80 70 60 50 40 30 20 10 0 10 20 30

1005

1000

995

990

-52.72, 996.16

-44.12, 998.31

-41.90, 998.86

-36.00, 999.45

-24.00, 999.93

-12.00, 1000.11

4:1

4:1

10.0%

4.0%

1.5%

EAT POST #1

719+94.53 SB

719+94.53 SB

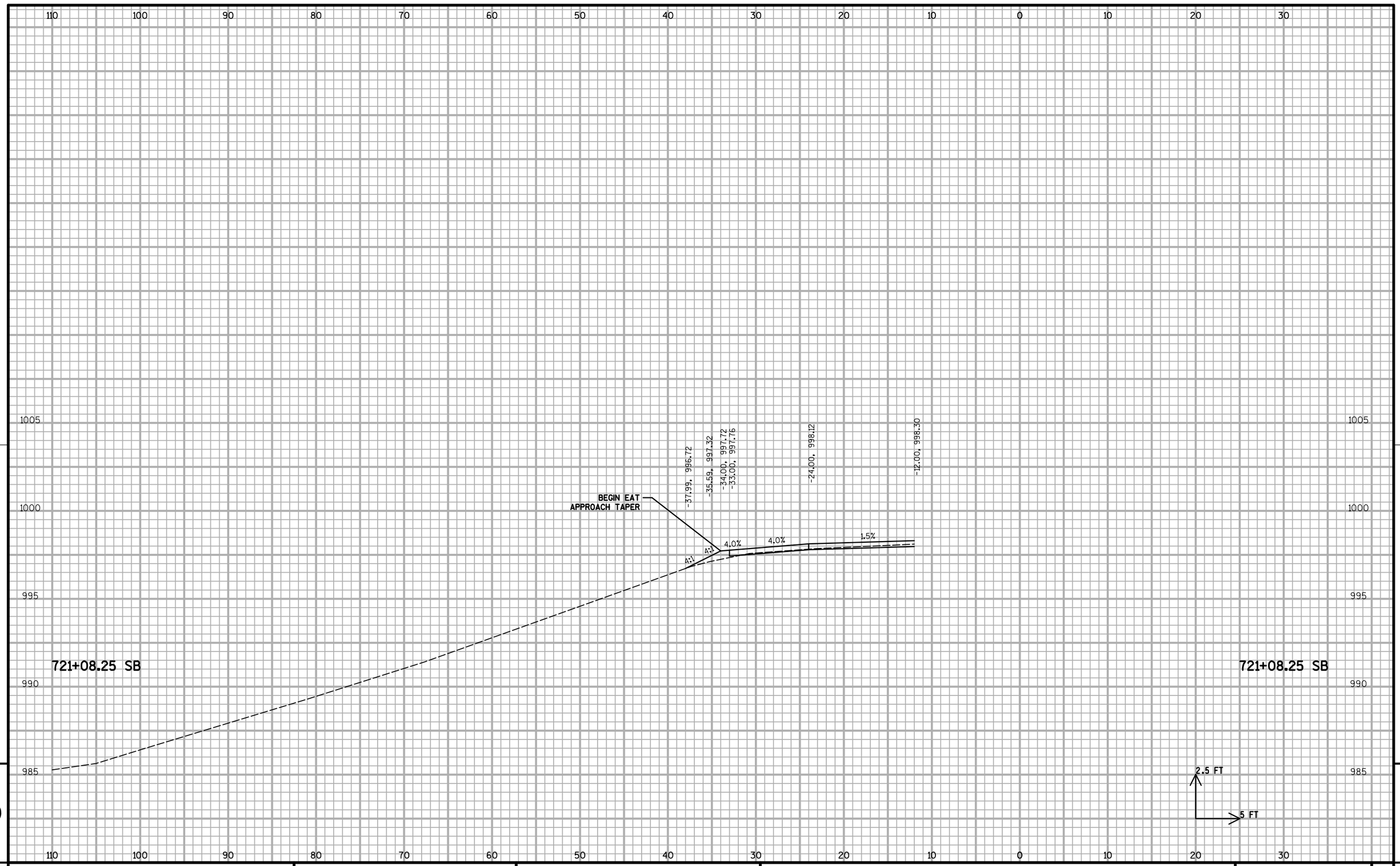
2.5 FT

5 FT

9

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #19) | SHEET 491 | E |
|---|---|---|---|---|---|

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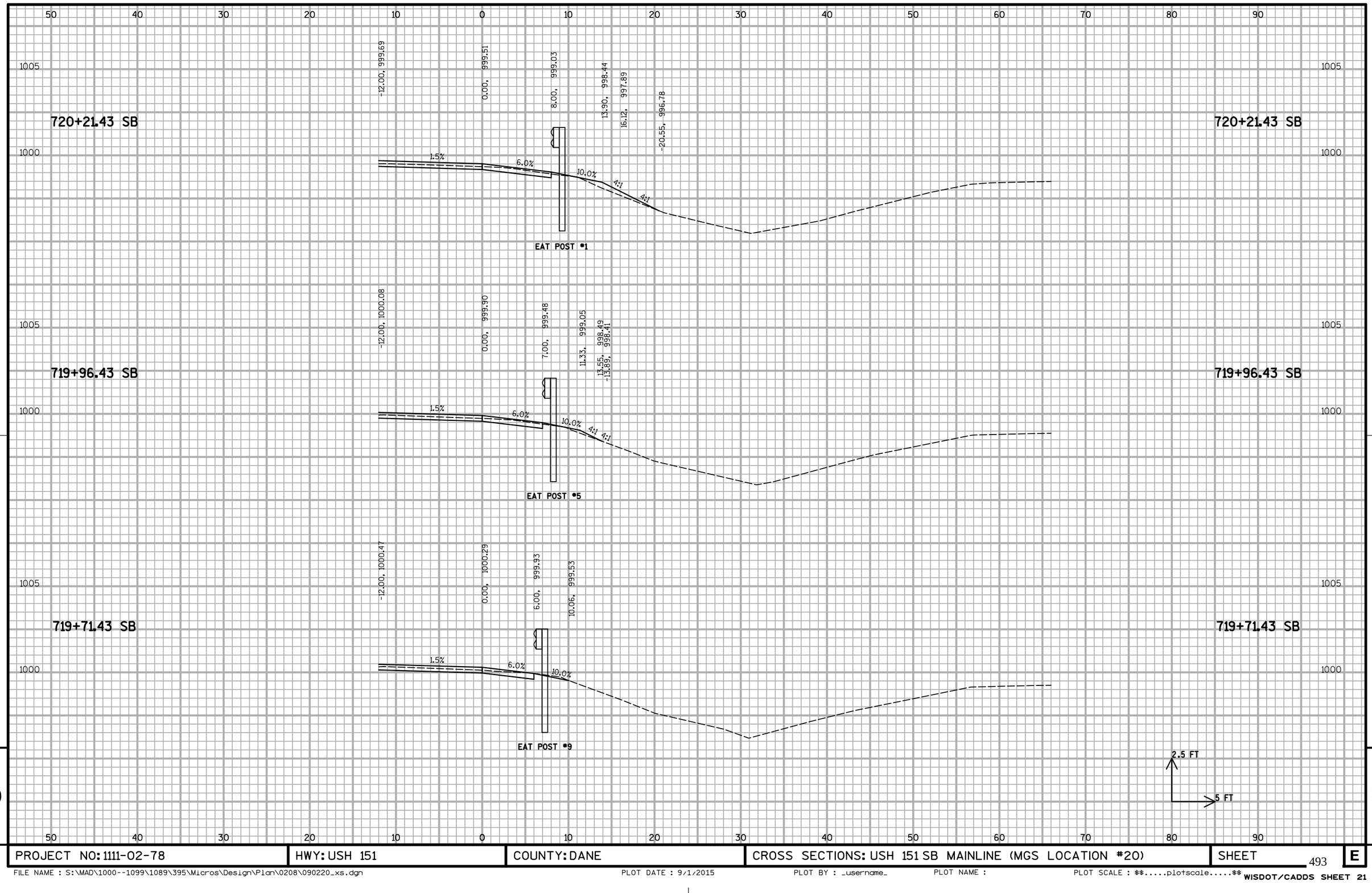
| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #19) | SHEET 492 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090219_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21




| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #20) | SHEET 493 | E |
|---|---|---|---|---|---|

FILE NAME : S:\MAD\1000--1099\1089\395\Micros\Design\Plan\0208\090220_xs.dgn PLOT DATE : 9/1/2015 PLOT BY : _username_ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 21

50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

1000

995

721+44.16 SB

-12.00, 997.69

0.00, 997.51

3.00, 997.33

6.00, 997.15

9.12, 996.63

16.09, 995.47

BEGIN EAT
APPROACH TAPER

1.5%

6.0%

6.0%

6:1

6:1

721+44.16 SB

2.5 FT

5 FT

9

| PROJECT NO: 1111-02-78 | HWY: USH 151 | COUNTY: DANE | CROSS SECTIONS: USH 151 SB MAINLINE (MGS LOCATION #20) | SHEET 494 | E |
|---|---|---|---|---|---|

Notes

**Wisconsin Department of Transportation**

Dedicated people creating transportation solutions
through innovation and exceptional service.

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