

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5845-16-86	WISC 2024369	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STOUGHTON - MADISON

LARSON BEACH RD TO VOGES ROAD

USH 51

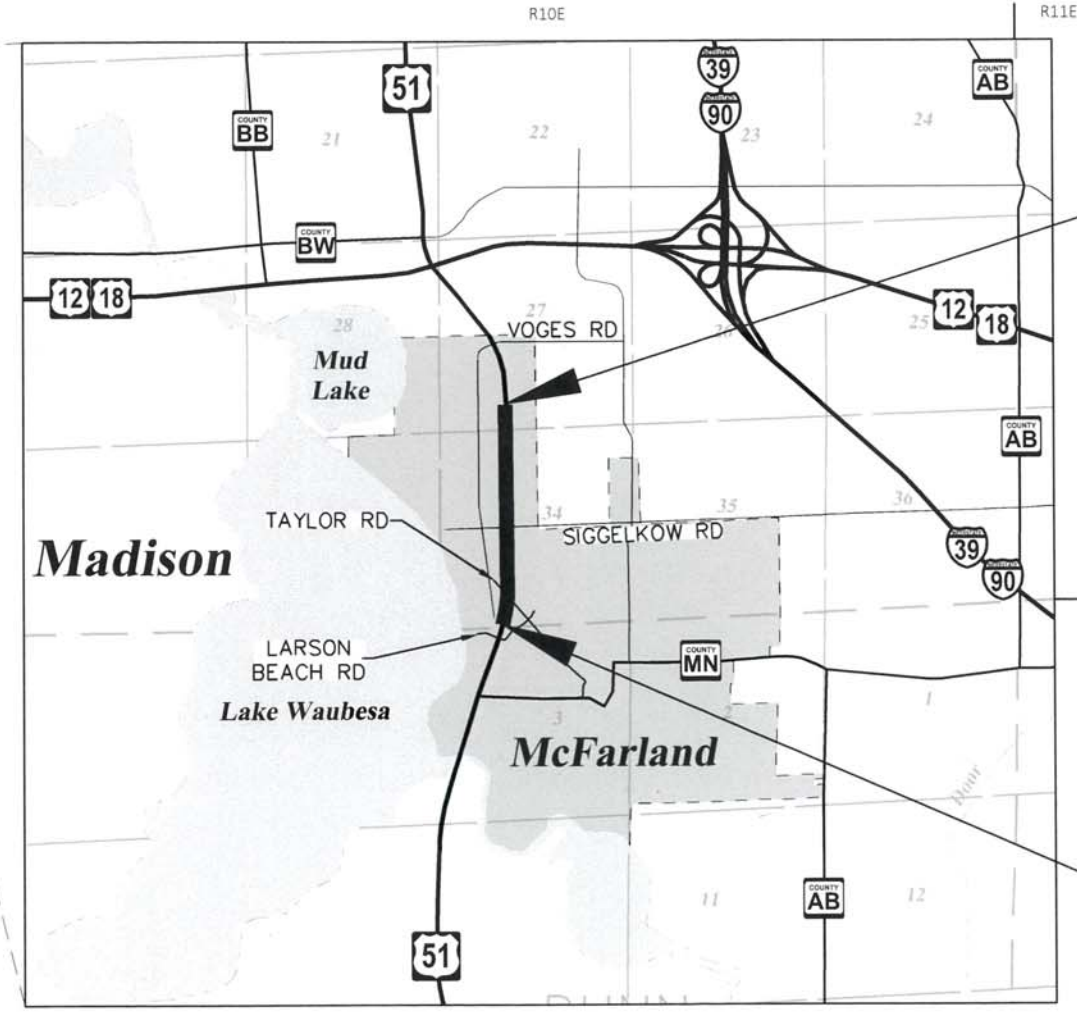
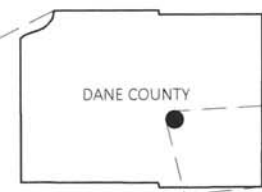
DANE COUNTY

STATE PROJECT NUMBER
5845-16-86

ORDER OF SHEETS

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

TOTAL SHEETS = 174



END PROJECT 5845-16-86
STA 957+64.39'NB'

BEGIN PROJECT 5845-16-86
STA 891+68.58'NB'
Y = 462178.122
X = 843534.836

DESIGN DESIGNATION 5845-16-06

A.A.D.T. (2026)	=	28,800
A.A.D.T. (2046)	=	31,000
D.H.V.	=	3,255
D.D.	=	67/33
T.	=	3.8%
DESIGN SPEED	=	60 mph
ESALS	=	3,200,000

CONVENTIONAL SYMBOLS

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



TOTAL NET LENGTH OF CENTERLINE = 0.000 mi.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), DANE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

ORIGINAL PLANS PREPARED BY

AYRES

1/23/2024 *[Signature]*
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	SW REGION & AYRES ASSOCIATES
Surveyor	AYRES ASSOCIATES
Designer	DAVID SCHMIDT, P.E.
Project Manager	SW REGION
Regional Examiner	JENNIFER KOBYRN, P.E.
Regional Supervisor	

APPROVED FOR THE DEPARTMENT

DATE: David Schmidt *[Signature]*
Digitally signed by David Schmidt
Date: 2024.01.23 09:54:06-06'00'

PROJECT ID: 5845-16-86

COUNTY: DANE

E

GENERAL NOTES

- NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- THE CONTRACTOR SHALL COORDINATE THEIR 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.
- WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIAL NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.
- PLACE EROSION CONTROL DEVICES IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER. EROSION CONTROL FEATURES ARE SHOWN AT APPROXIMATE LOCATIONS, WITH EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
- DO NOT USE FERTILIZER WITHIN 20 FEET OF NAVIGABLE WATERWAYS OR WETLANDS.
- PLACE SALVAGED TOPSOIL IN ALL GRADED AREAS AS DESIGNATED BY THE ENGINEER IMMEDIATELY AFTER GRADING HAS BEEN COMPLETED. SEED, INSTALL EROSION MAT, AND FERTILIZE ALL AREAS 5 DAYS AFTER PLACEMENT OF SALVAGED TOPSOIL.
- STATIONING, DISTANCES, AND OFFSETS FOR SIGNS AND TRAFFIC CONTROL DEVICES SHOWN IN THE PLANS ARE APPROXIMATE. EXACT LOCATIONS ARE DETERMINED BY THE ENGINEER.

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES AND CONTACTS
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- CLEARING PLAN
- PLAN DETAILS
- EROSION CONTROL
- STORM SEWER PLAN
- PAVEMENT MARKING PLAN
- CONSTRUCTION STAGING
- ALIGNMENT DIAGRAM

HMA PAVEMENT

PAVEMENT COMPOSITION	DESIGNATOR (SEE PLAN DETAILS)
5-INCH = 2.75" LOWER LAYER (4 MT 58-28 S) 2.25" UPPER LAYER (4 MT 58-28 S)	AP07
4.5-INCH = 2.25" LOWER LAYER (4 MT 58-28 S) 2.25" UPPER LAYER (4 MT 58-28 S)	AP06

STANDARD ABBREVIATIONS

A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
BM	BENCHMARK
CBTP	CONCRETE BARRIER TEMPORARY PRECAST
C/L	CENTERLINE
COMM	COMMUNICATION
CONST	CONSTRUCTION
CP	CONTROL POINT
CWT	HUNDRED WEIGHT
D.D.	DIRECTIONAL DISTRIBUTION
D.H.V.	DESIGN HOURLY VOLUME
EB	EASTBOUND
ELEC	ELECTRIC
ESALS	EQUIVALENT SINGLE AXLE LOADS
EX	EXISTING
GAL	GALLON
GPS	GLOBAL POSITIONING SYSTEM
HMA	HOT MIX ASPHALT
IN.	INCH
INL	INLET
ITS	INTELLIGENT TRAFFIC SYSTEM
LB	POUND
LF	LINEAR FOOT
LT	LEFT
LS	LUMP SUM
MAX	MAXIMUM
MGAL	MEGA GALLON (1000 GALLONS)
MI.	MILE
MIN	MINIMUM
MPH	MILES PER HOUR
MH	MANHOLE
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NB	NORTHBOUND
NO.	NUMBER
NOR	NORMAL
PC	POINT OF CURVATURE
PCC	POINT OF COMMON CURVATURE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PI	POINT OF INTERSECTION
PPOL	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
QTY.	QUANTITY
R/L	REFERENCE LINE
REQ'D	REQUIRED
RT	RIGHT
SB	SOUTHBOUND
SEG	SEGMENT
SSP	STORM SEWER PIPE
STA	STATION
SW	SOUTHWEST
SY	SQUARE YARD
T.	PERCENT TRUCKS
TYP	TYPICAL
VAR	VARIABLE
WB	WESTBOUND
WT.	WEIGHT

PROJECT CONTACTS

WisDOT PROJECT MANAGER
 DAVID SCHMIDT, P.E. | PROJECT MANAGER
 SOUTHWEST REGION MADISON OFFICE
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WisDOT - SIGNALS
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DNR AREA LIAISON
 ERIC HEGGELUND
 WISCONSIN DEPARTMENT OF NATURAL RESOURCES
 3911 FISH HATCHERY RD
 FITCHBURG, WI 53711-5397
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 EMAIL: ERIC.HEGGELUND@WISCONSIN.GOV

DANE COUNTY
 DANE COUNTY HIGHWAY DEPARTMENT
 PAM DUNPHY
 2302 FISH HATCHERY ROAD
 MADISON, WI 53713
 PHONE: (608) 266-4036
 EMAIL: DUNPHY@COUNTYOFDANE.COM

UTILITY CONTACTS

ALLIANT ENERGY - ELECTRICITY
 NICHOLAS DACHNIWSKYJ
 935 WBR TOWNLINE RD
 BELOIT, WI 53511
 PHONE: (608) 364-6566
 EMAIL: NICHOLASDACHNIWSKYJ@ALLIANTENERGY.COM

ALLIANT ENERGY - GAS/PETROLEUM
 NICHOLAS DACHNIWSKYJ
 935 WBR TOWNLINE RD
 BELOIT, WI 53511
 PHONE: (608) 364-6566
 EMAIL: NICHOLASDACHNIWSKYJ@ALLIANTENERGY.COM

FRONTIER COMMUNICATIONS OF WI LLC - COMMUNICATION LINE
 CHRIS BLUMER
 451 BROADWAY DR
 SUN PRAIRIE, WI 53590
 PHONE: (608) 622-3807
 EMAIL: CHRISTOPHER.BLUMER@FTR.COM

KOCH PIPELINE COMPANY L.P./FLINT HILLS RESOURCES (FHR) - GAS/PETROLEUM
 TIM KAROW
 N 4240 HWY 26
 WAUPUN, WI 53963
 PHONE: (920) 296-8899
 EMAIL: TIM.KAROW@FHR.COM

MADISON GAS AND ELECTRIC COMPANY - ELECTRICITY
 MARK BOHM
 623 RAILROAD ST
 MADISON, WI 53703
 PHONE: (608) 252-4730
 EMAIL: MBOHM@MGE.COM

MADISON GAS AND ELECTRIC COMPANY - GAS/PETROLEUM
 ROGER AHLES
 623 RAILROAD ST
 MADISON, WI 53703
 PHONE: (608) 252-5682
 EMAIL: RAHLES@MGE.COM

MADISON METROPOLITAN SEWERAGE DISTRICT - SEWER
 AARON MCFARLIN
 1610 MOORLAND RD
 MADISON, WI 53713
 PHONE: (608) 471-3005
 EMAIL: AARONM@MADSEWER.ORG

SPECTRUM COMMUNICATIONS - COMMUNICATION LINE
 BRAD WAGNER
 2701 DANIELS ST
 MADISON, WI 53718
 PHONE: (608) 826-1318
 EMAIL: BRAD.WAGNER@CHARTER.COM

TDS METROCOM LLC - COMMUNICATION LINE
 CHASE STEBBINS
 525 JUNCTION RD
 MADISON, WI 53717
 PHONE: (608) 664-0017
 EMAIL: CHASE.STEBBINS@TDSTELECOM.COM

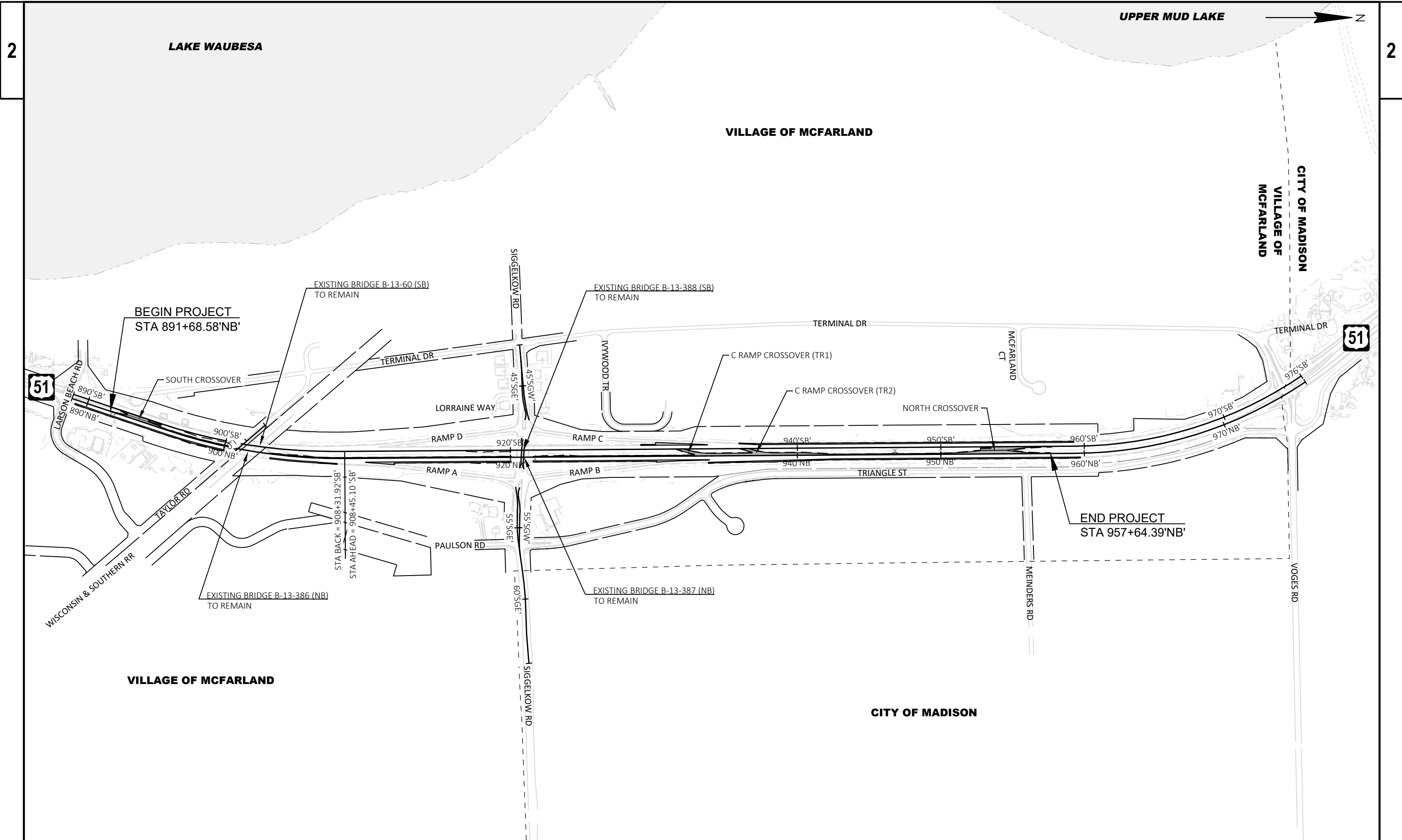
WEST SHORE PIPELINE COMPANY - GAS/PETROLEUM
 KEVIN CARR
 8581 SUNSET DR
 BYRON, IL 61010
 PHONE: (815) 621-9413
 EMAIL: KCARR@BUCKEYE.COM

WINDSTREAM KDL, LLC - COMMUNICATION LINE
 LORI KETTER
 969 WAUBE LANE
 GREEN BAY, WI 54304
 PHONE: (920) 410-6902
 EMAIL: LORI.KETTER@WINDSTREAM.COM

VILLAGE OF MCFARLAND - SEWER
 LEE IGL
 5115 TERMINAL DR
 MCFARLAND, WI 53558
 PHONE: (608) 838-7287
 EMAIL: LEE.IGL@MCFARLAND.WI.US

VILLAGE OF MCFARLAND - WATER
 LEE IGL
 5115 TERMINAL DR
 MCFARLAND, WI 53558
 PHONE: (608) 838-7287
 EMAIL: LEE.IGL@MCFARLAND.WI.US

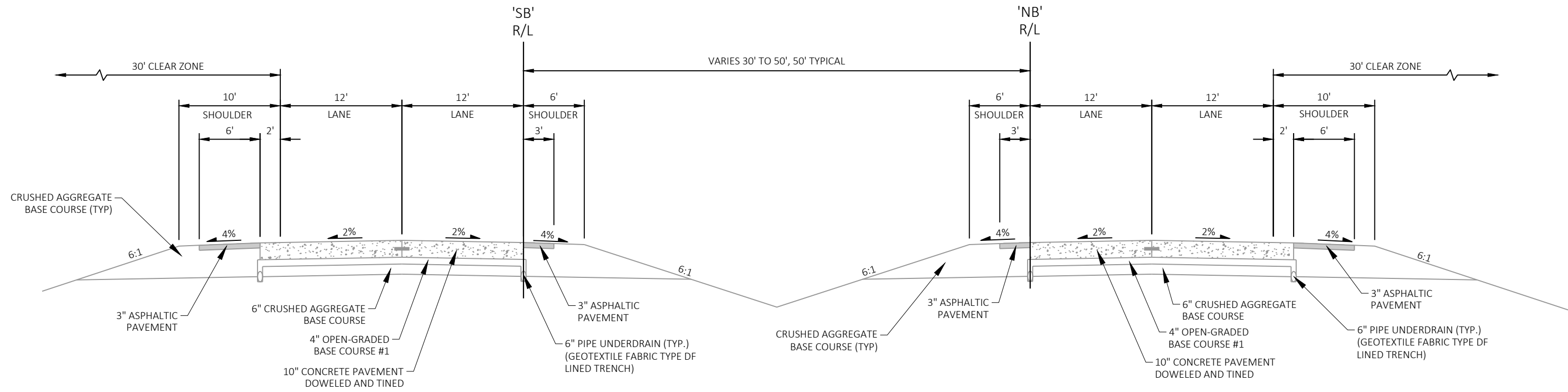




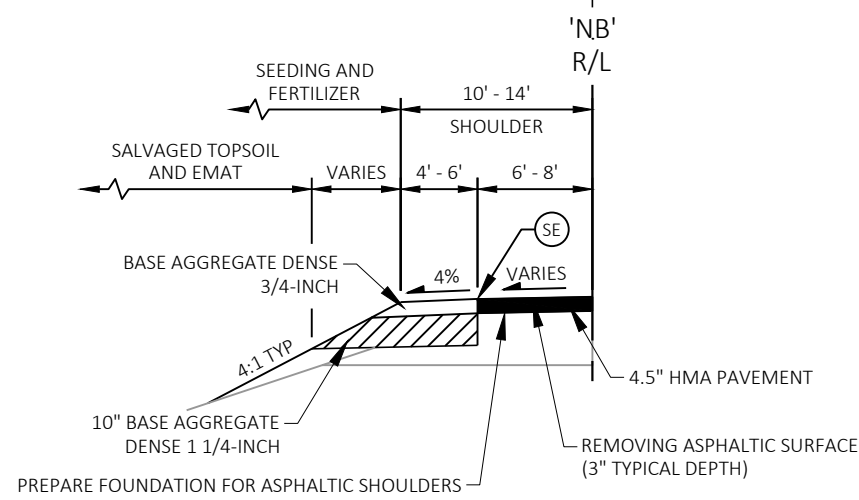
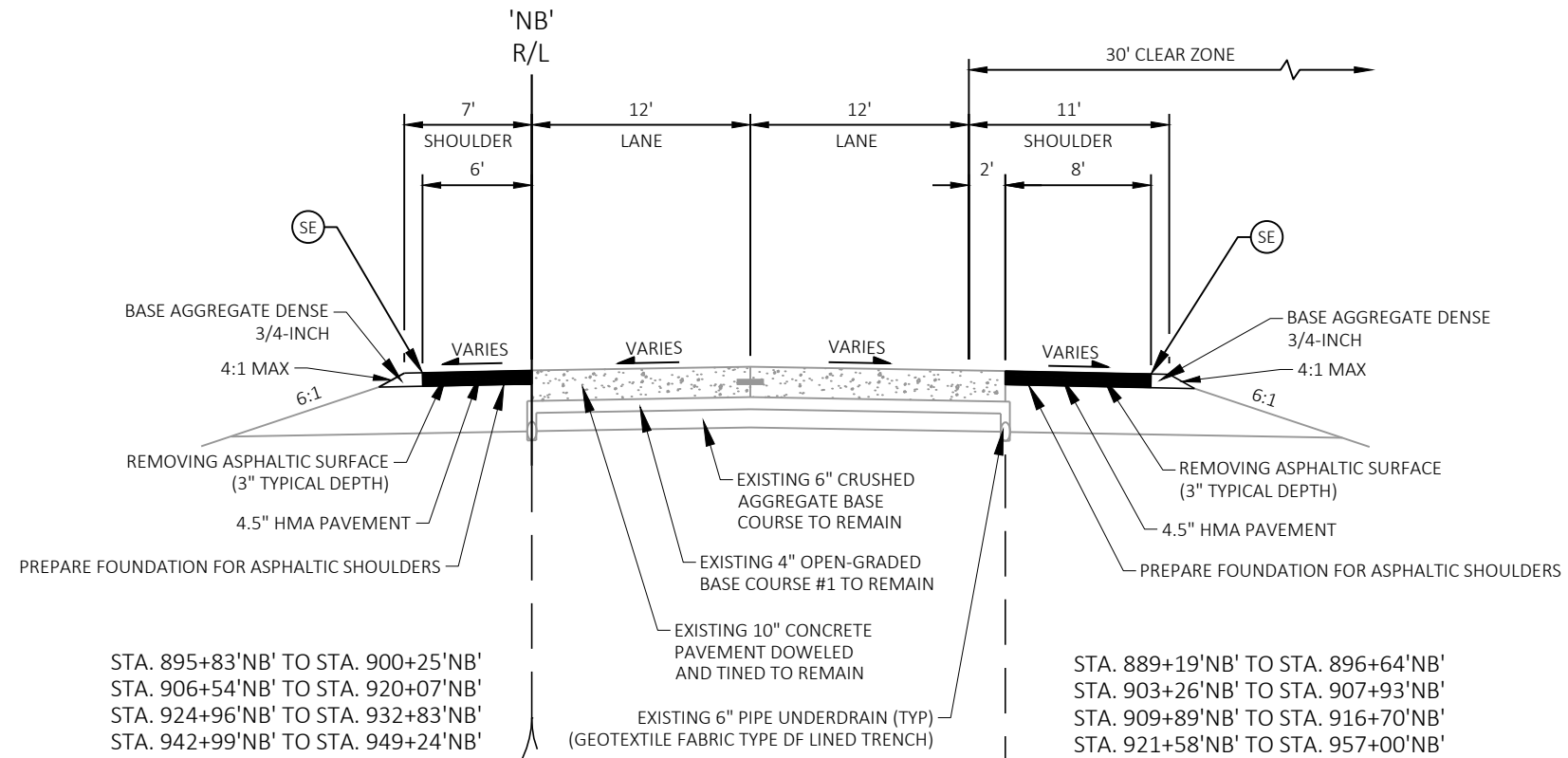
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PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	PROJECT OVERVIEW	SHEET	E
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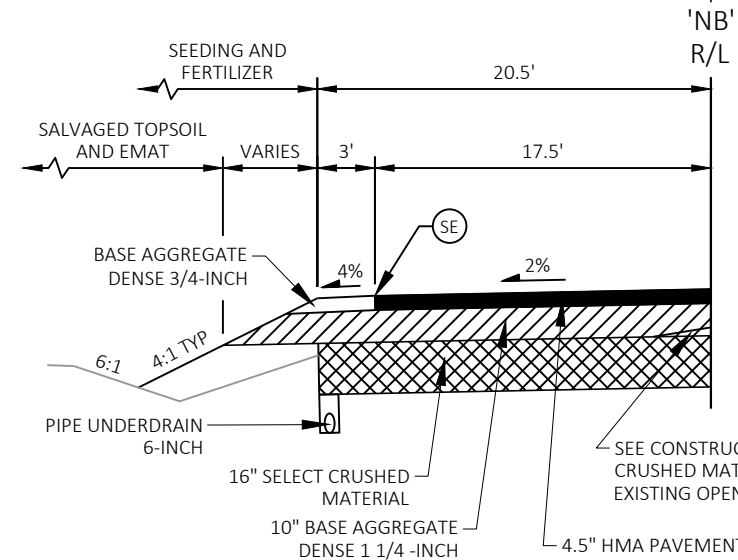


TYPICAL EXISTING SECTION - USH 51
 STA. 889+19'NB' TO STA. 959+34'NB'



LEFT SHOULDER SECTION (FUTURE GUARDRAIL)

STA. 903+20'NB' TO STA. 906+54'NB'
STA. 921+60'NB' TO STA. 924+96'NB'



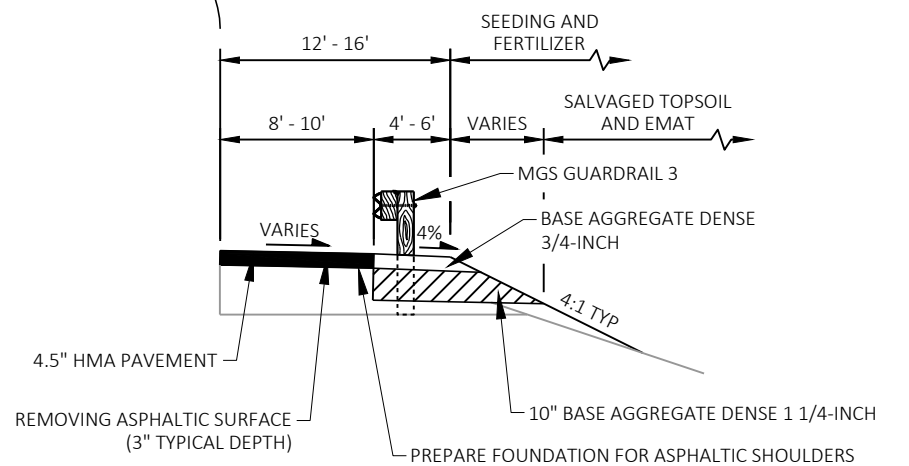
LEFT SHOULDER SECTION (RAMP CROSSOVER)

STA. 932+83'NB' TO STA. 942+99'NB'

TYPICAL FINISHED SECTION - USH 51 NORTHBOUND

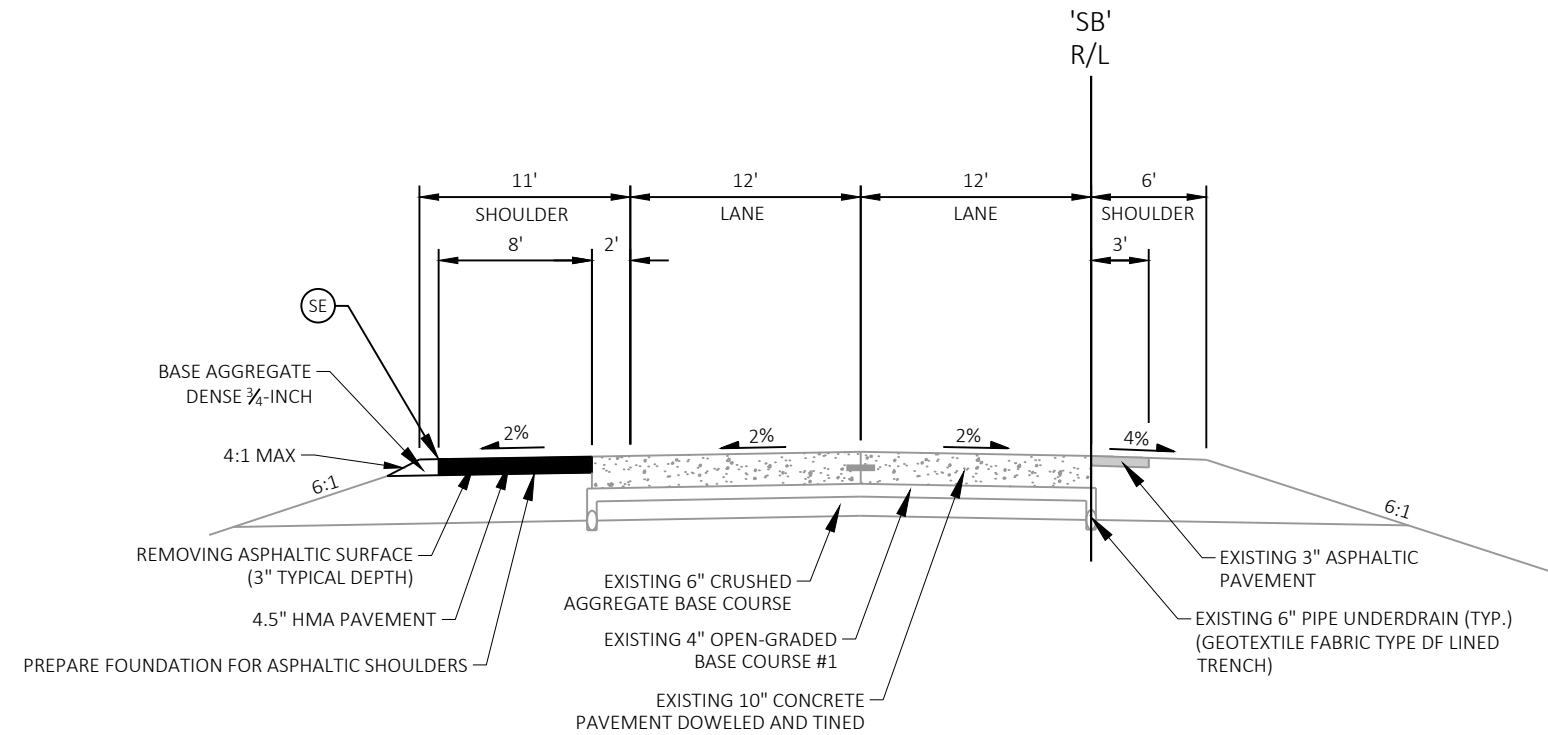
STA. 889+19'NB' TO STA. 957+00'NB'

⊙ = SAFETY EDGE (INCIDENTAL)



RIGHT SHOULDER SECTION (GUARDRAIL)

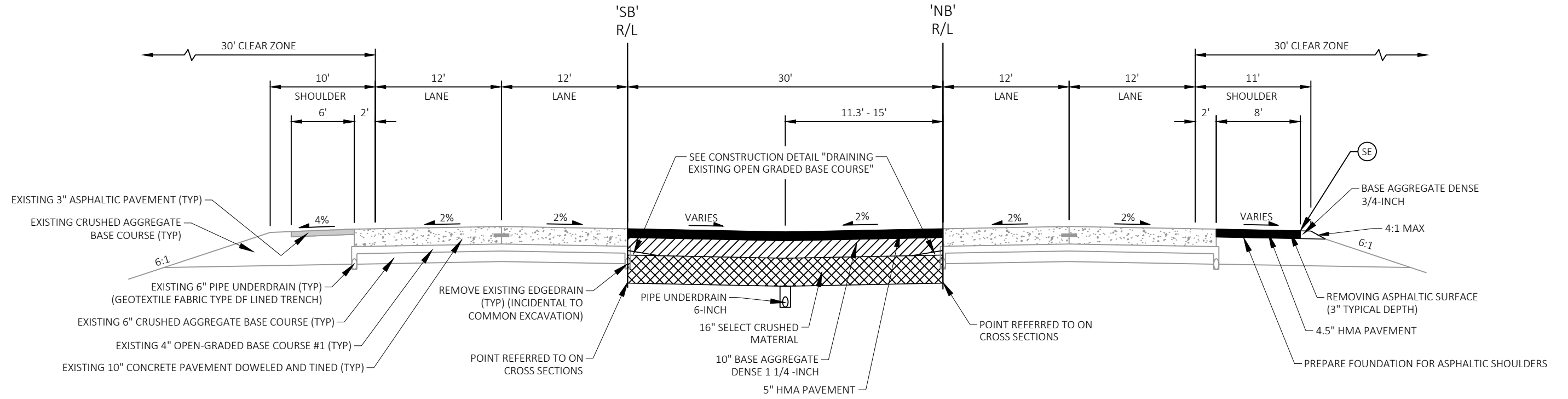
STA. 896+64'NB' TO STA. 900+06'NB'
STA. 916+70'NB' TO STA. 920+05'NB'



TYPICAL FINISHED SECTION - USH 51 SOUTHBOUND LEFT SHOULDER

STA. 929+08'SB' TO STA. 933+75'SB'
 STA. 935+93'SB' TO STA. 959+28'SB'

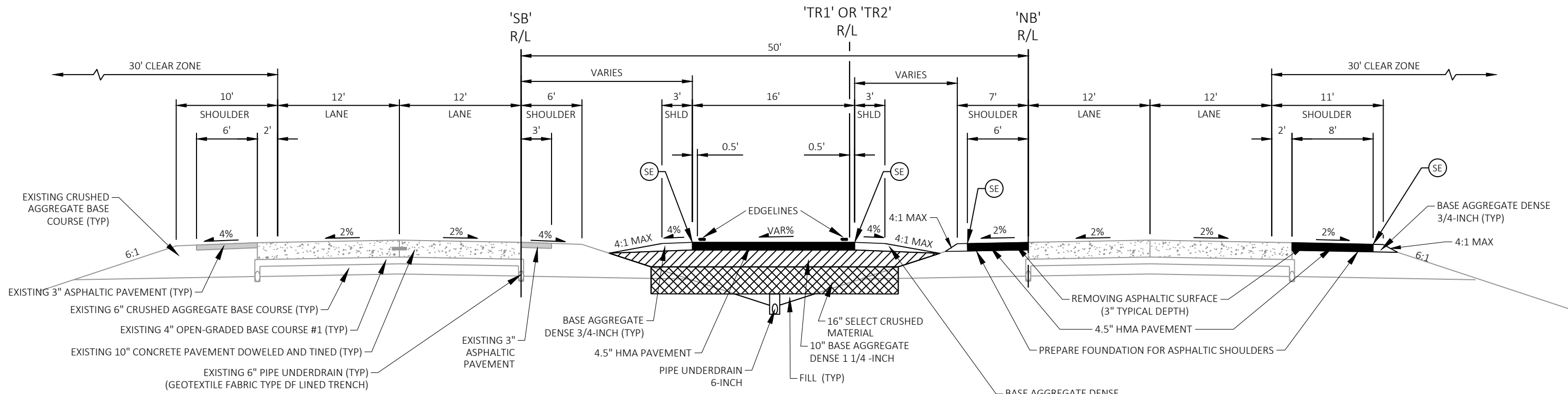
(SE) = SAFETY EDGE (INCIDENTAL)



TYPICAL FINISHED SECTION - SOUTH CROSSOVER

STA. 891+69'NB' TO STA. 895+83'NB'

SE = SAFETY EDGE (INCIDENTAL)

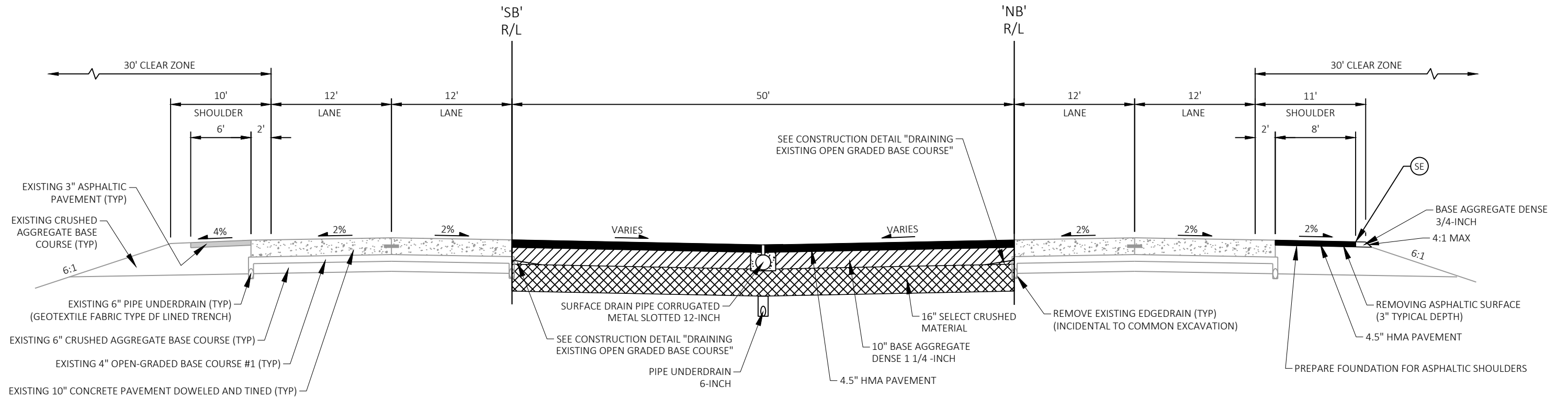


TYPICAL FINISHED SECTION - RAMP CROSSOVER

STA. 31+53'TR1' TO STA. 33+95'TR1'

STA. 35+99'TR2' TO STA. 38+46'TR2'

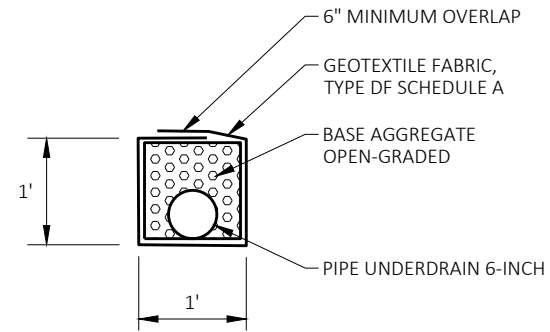
SE = SAFETY EDGE (INCIDENTAL)



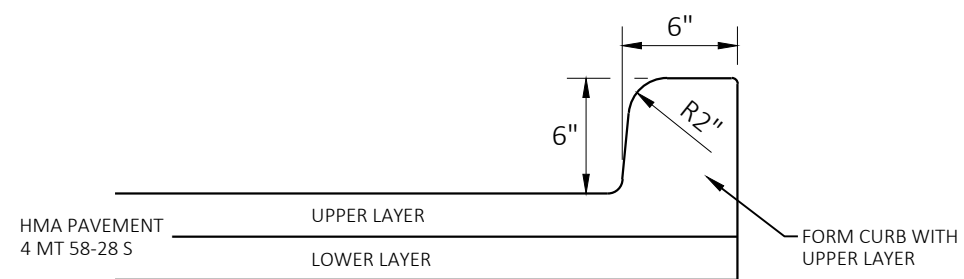
TYPICAL FINISHED SECTION - NORTH CROSSOVER

STA. 949+24'NB' TO STA. 957+77'NB'

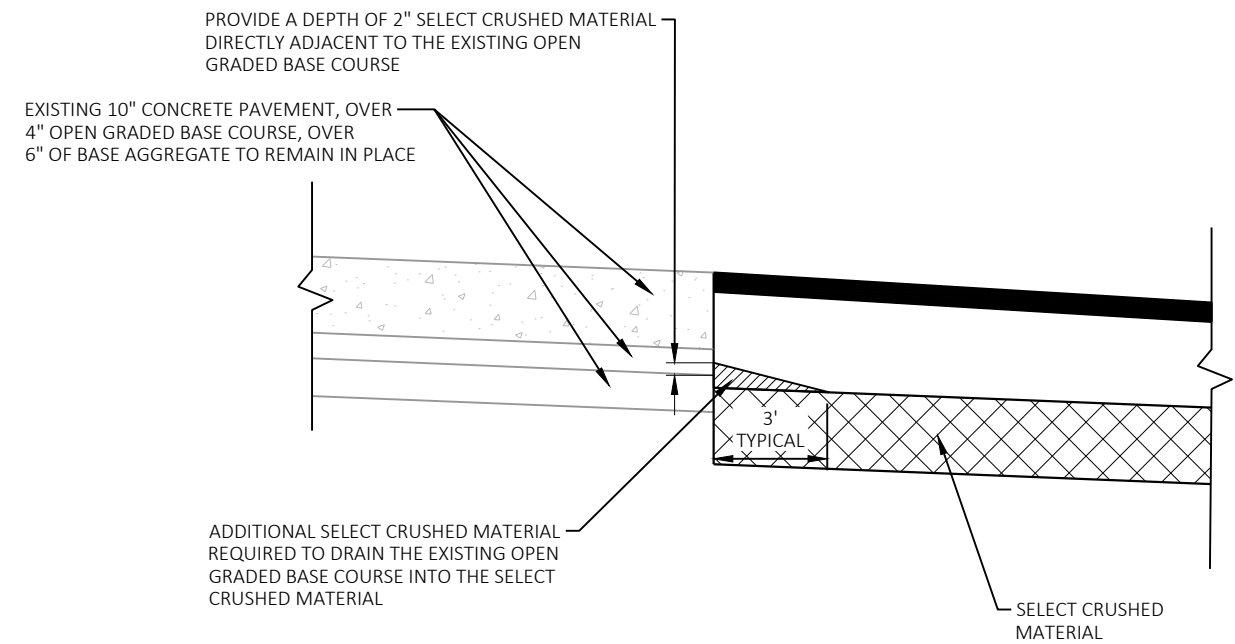
Ⓢⓔ = SAFETY EDGE (INCIDENTAL)



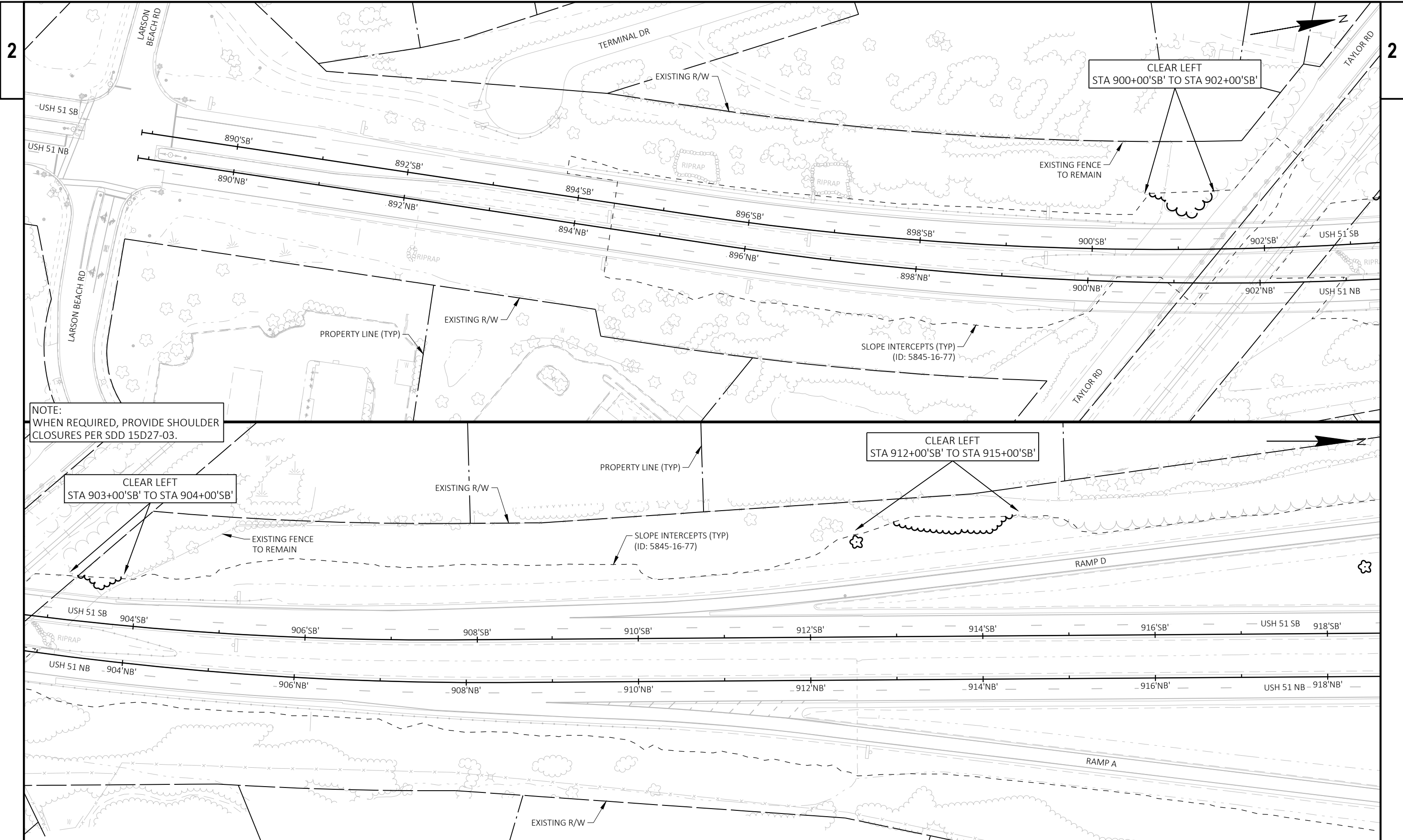
PIPE UNDERDRAIN 6-INCH



ASPHALTIC CURB DETAIL



DRAINING EXISTING OPEN GRADED BASE COURSE

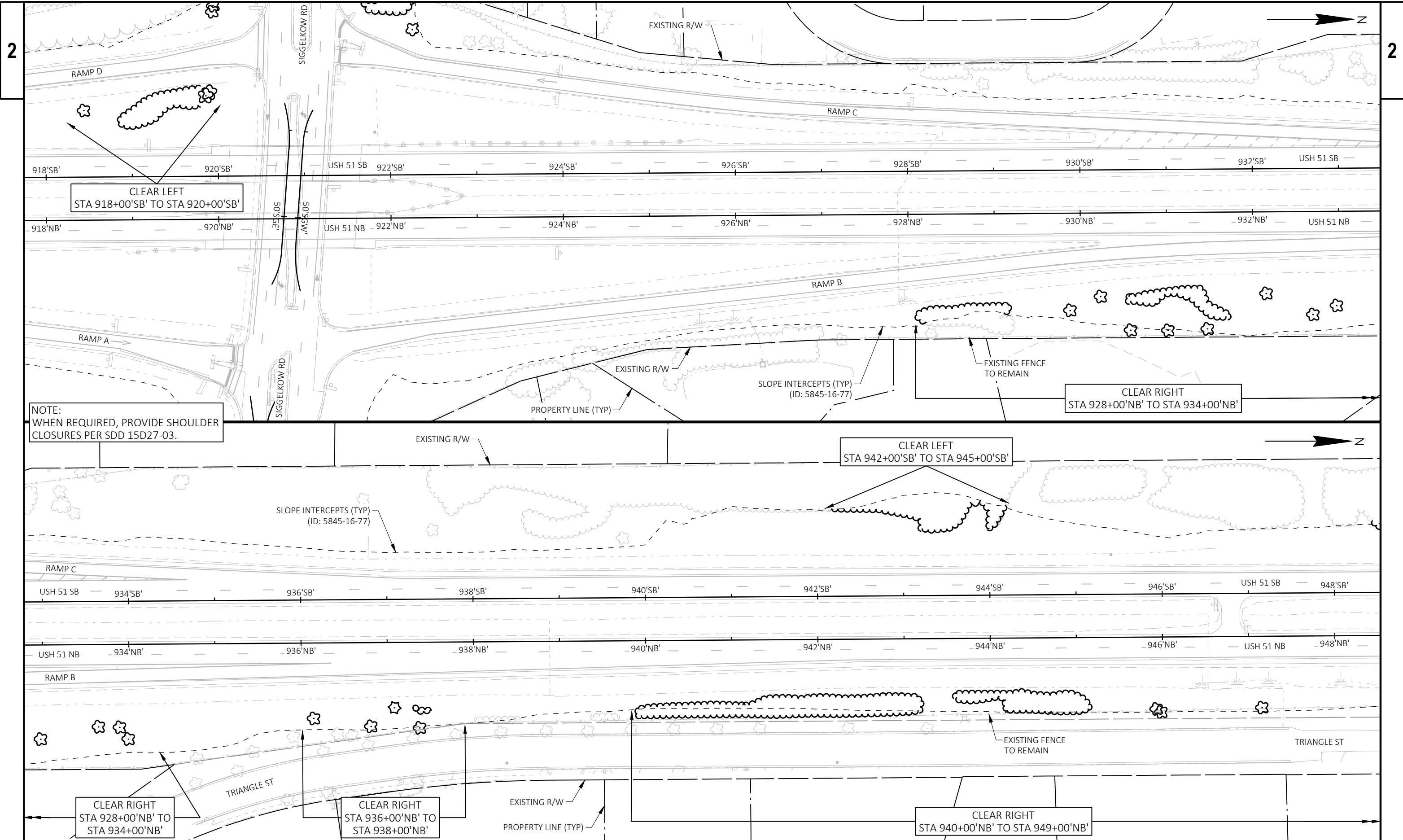


NOTE:
WHEN REQUIRED, PROVIDE SHOULDER
CLOSURES PER SDD 15D27-03.

CLEAR LEFT
STA 903+00'SB' TO STA 904+00'SB'

CLEAR LEFT
STA 912+00'SB' TO STA 915+00'SB'

PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CLEARING PLAN	SHEET	E
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PROJECT NO: 5845-16-86

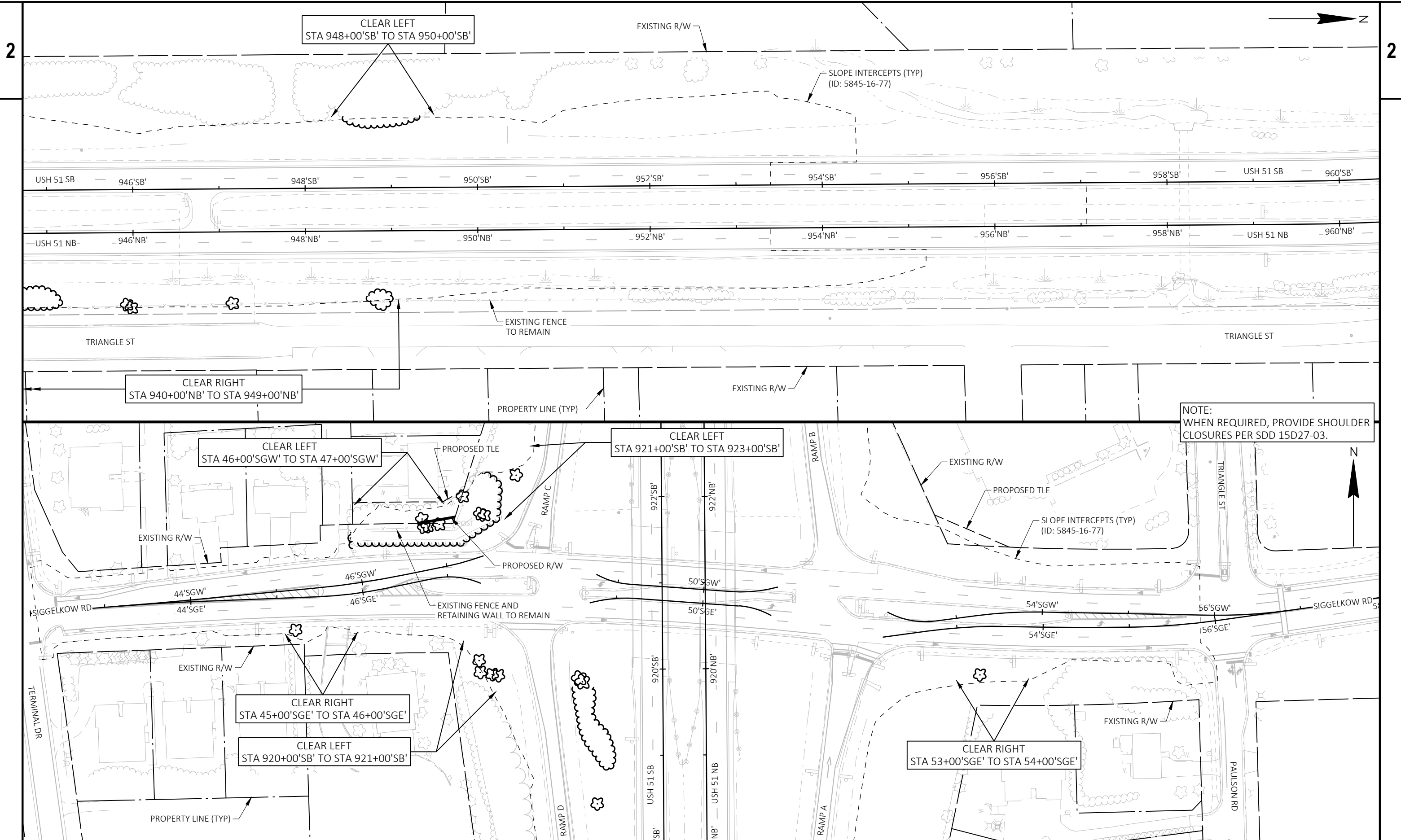
HWY: USH 51

COUNTY: DANE

CLEARING PLAN

SHEET

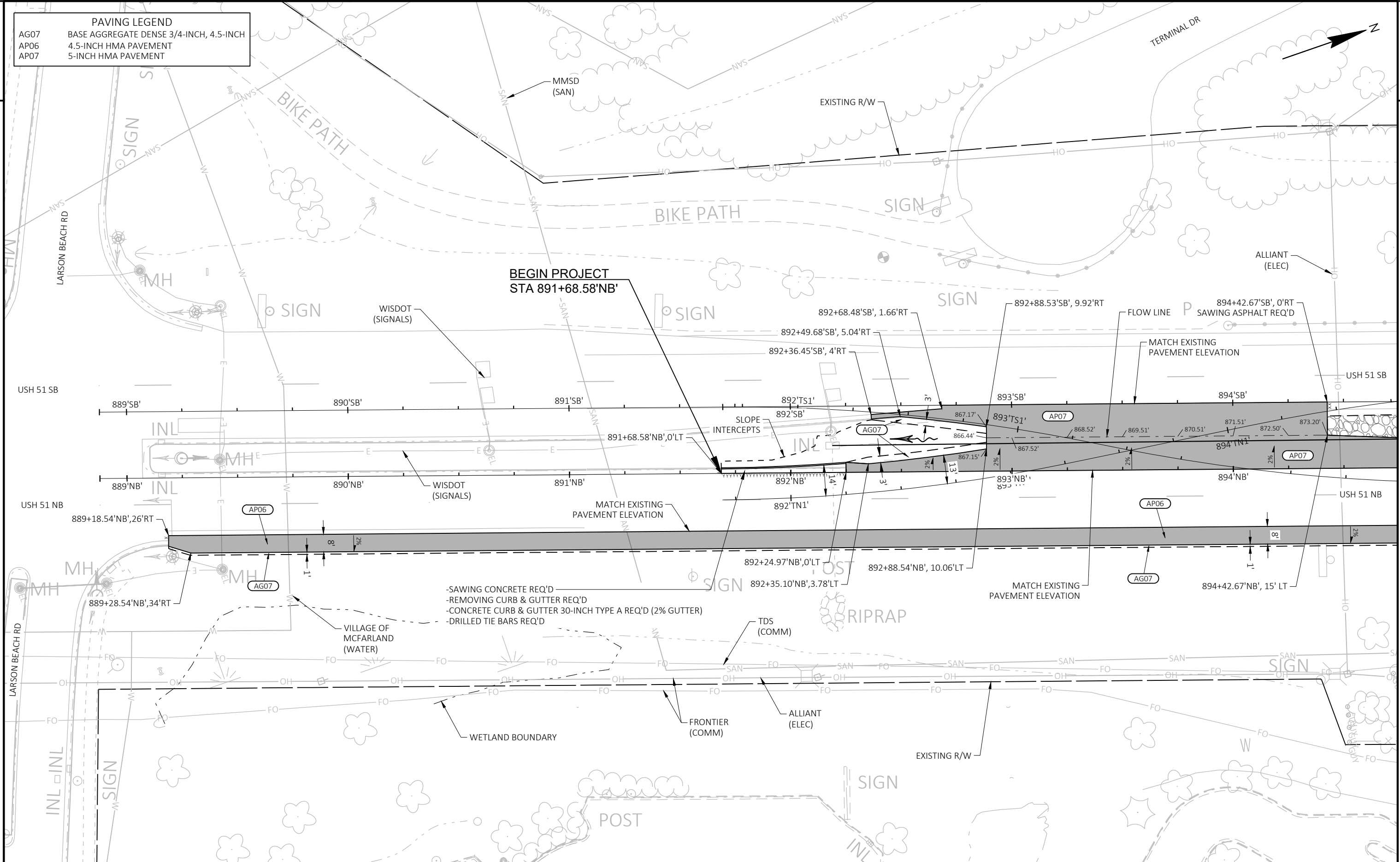
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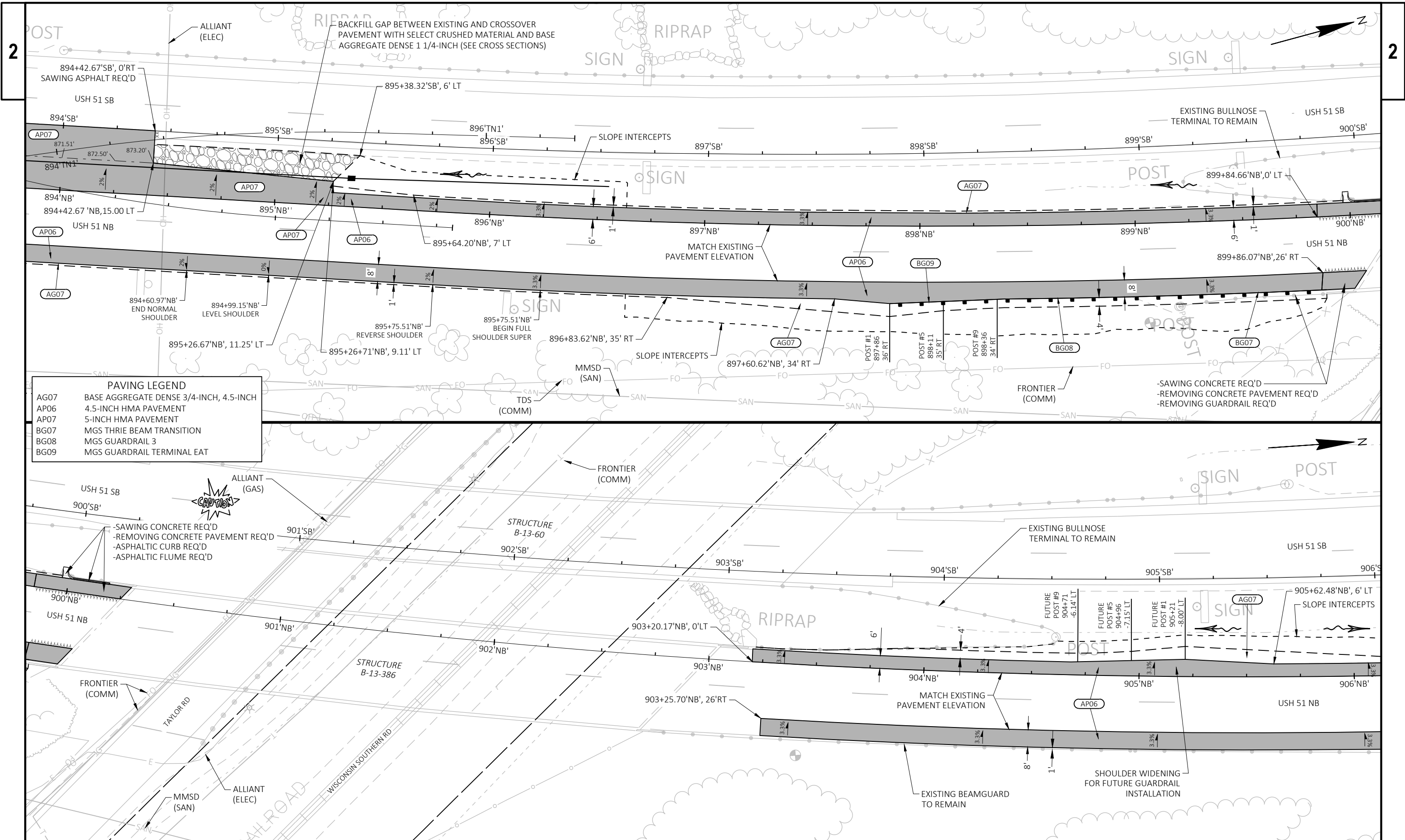
NOTE:
WHEN REQUIRED, PROVIDE SHOULDER
CLOSURES PER SDD 15D27-03.

PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CLEARING PLAN	SHEET	E
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PAVING LEGEND	
AG07	BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
AP06	4.5-INCH HMA PAVEMENT
AP07	5-INCH HMA PAVEMENT



PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	PLAN DETAILS	SHEET	E
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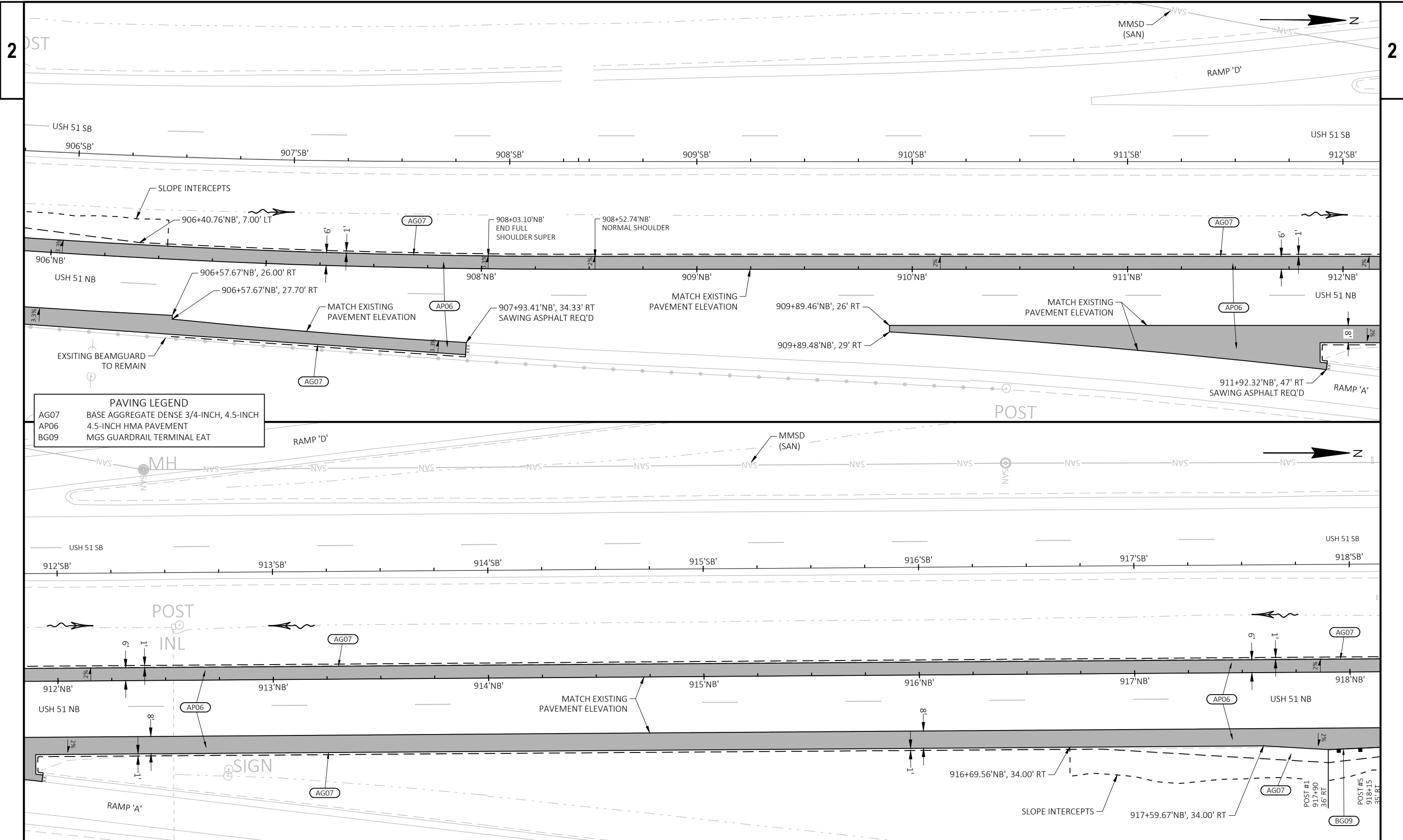


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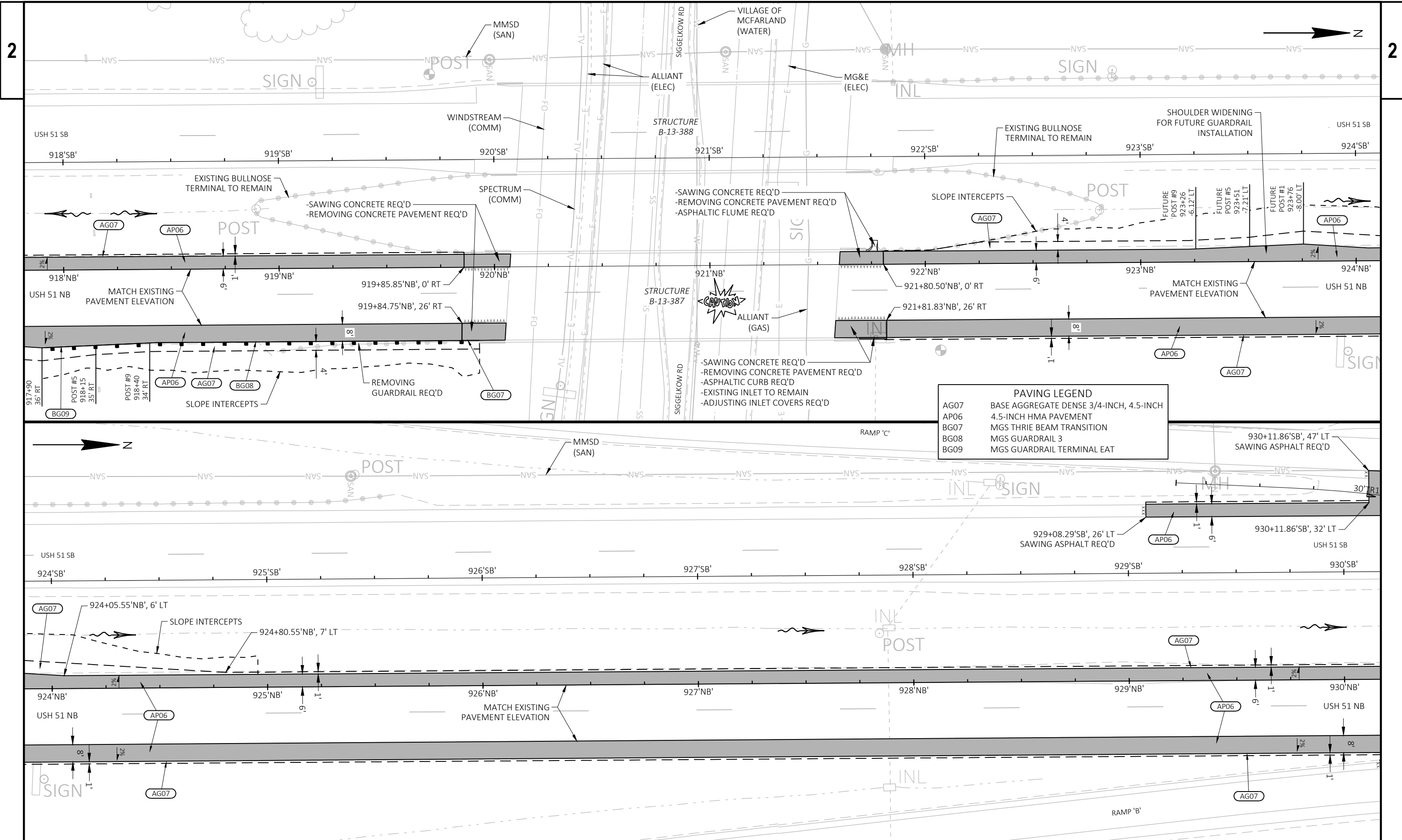
AG07	BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
AP06	4.5-INCH HMA PAVEMENT
AP07	5-INCH HMA PAVEMENT
BG07	MGS THRIE BEAM TRANSITION
BG08	MGS GUARDRAIL 3
BG09	MGS GUARDRAIL TERMINAL EAT

PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE PLAN DETAILS SHEET E

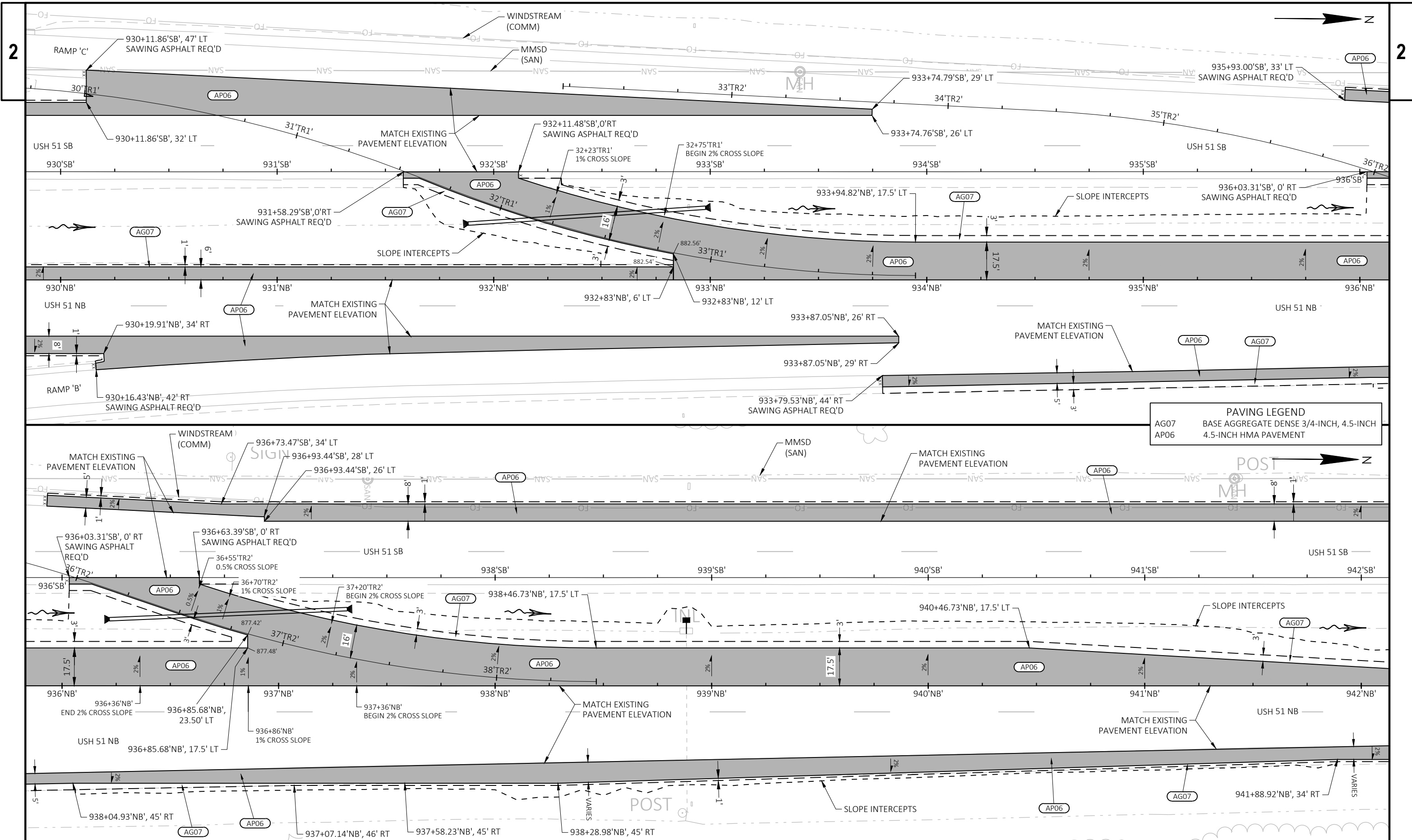
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PAVING LEGEND	
AG07	BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
AP06	4.5-INCH HMA PAVEMENT
BG09	MGS GUARDRAIL TERMINAL EAT



PAVING LEGEND	
AG07	BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
AP06	4.5-INCH HMA PAVEMENT
BG07	MGS THRIE BEAM TRANSITION
BG08	MGS GUARDRAIL 3
BG09	MGS GUARDRAIL TERMINAL EAT



PAVING LEGEND	
AG07	BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
AP06	4.5-INCH HMA PAVEMENT

PROJECT NO: 5845-16-86

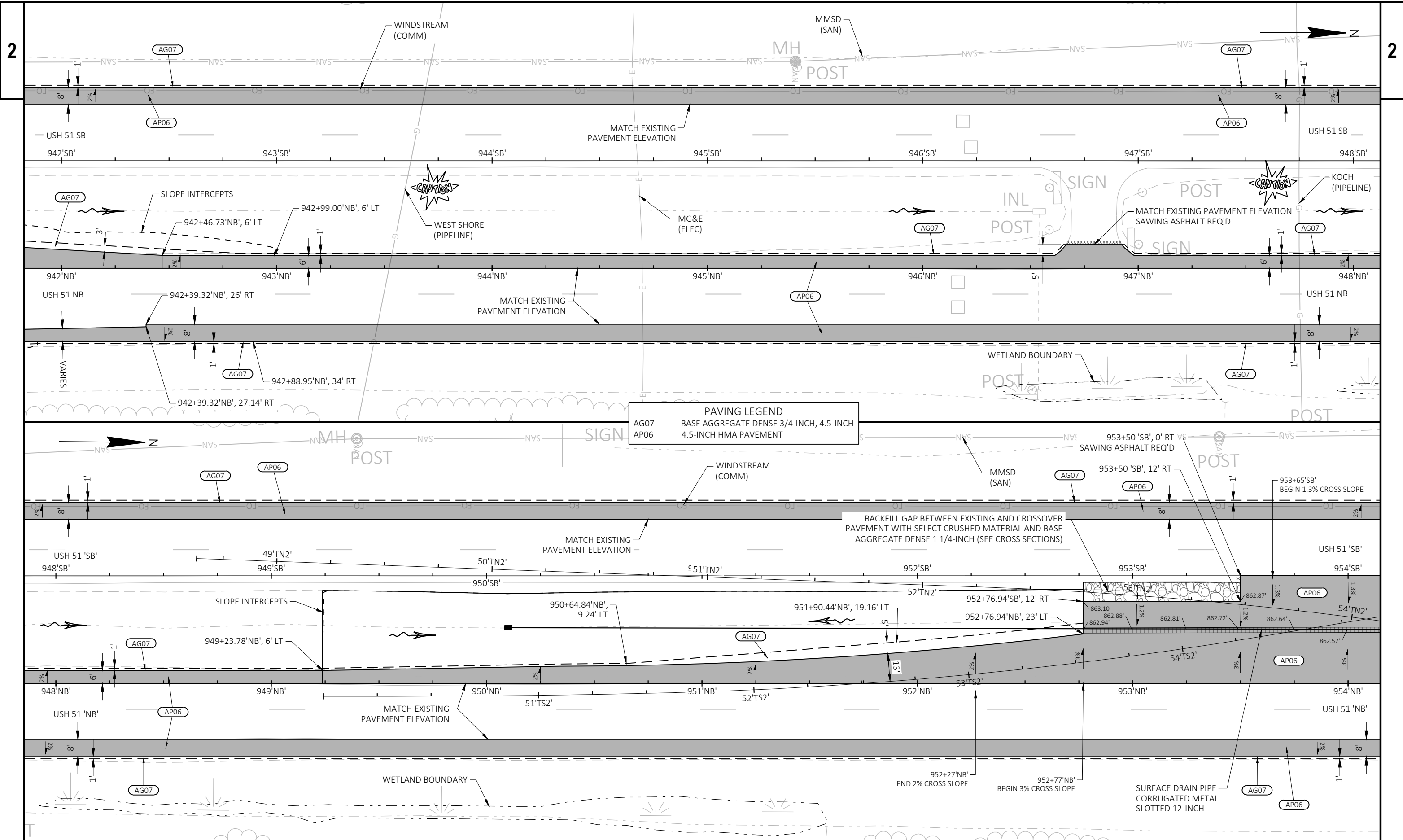
HWY: USH 51

COUNTY: DANE

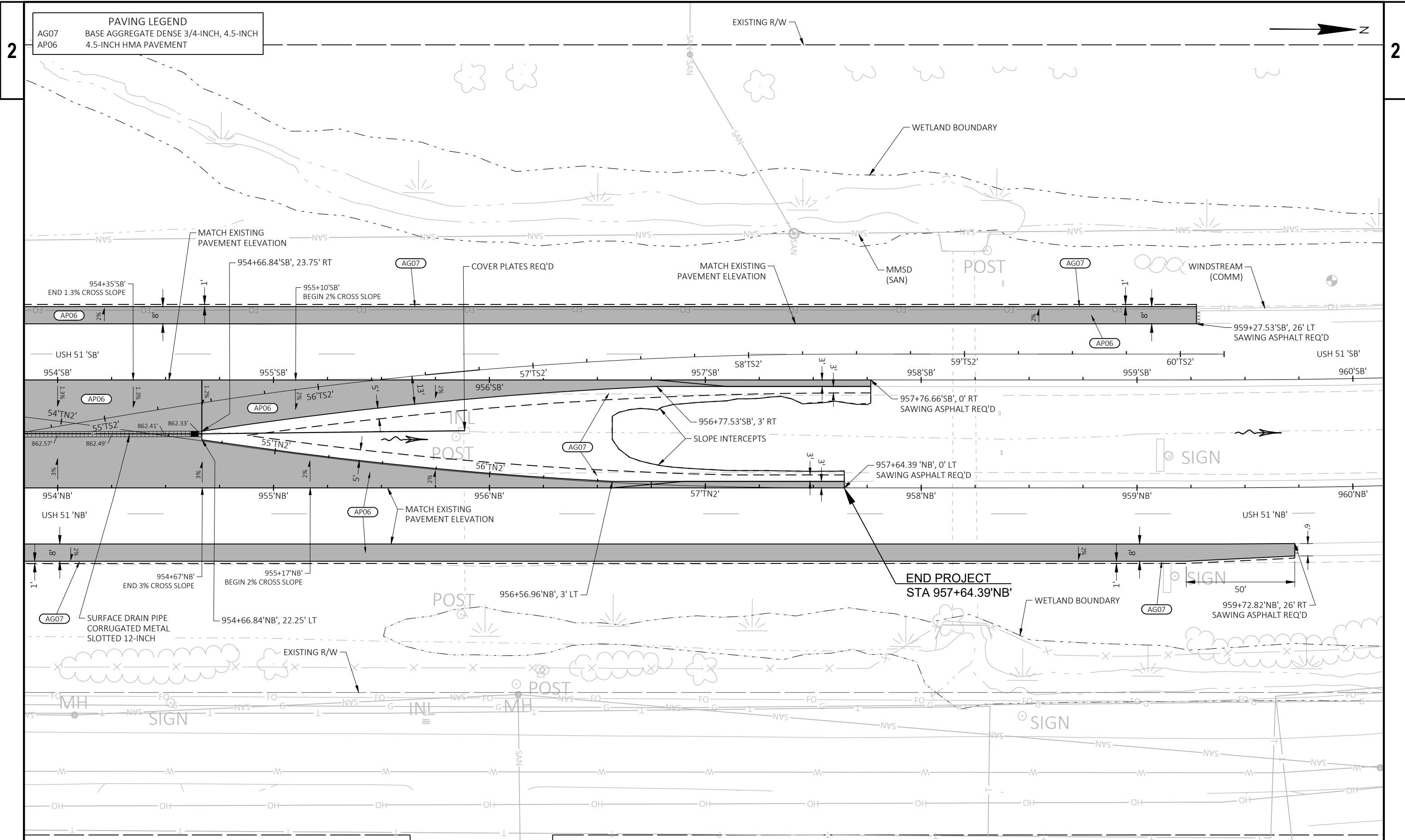
PLAN DETAILS

SHEET

E



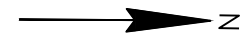
PAVING LEGEND
 AG07 BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
 AP06 4.5-INCH HMA PAVEMENT



PAVING LEGEND
 AG07 BASE AGGREGATE DENSE 3/4-INCH, 4.5-INCH
 AP06 4.5-INCH HMA PAVEMENT

2

2

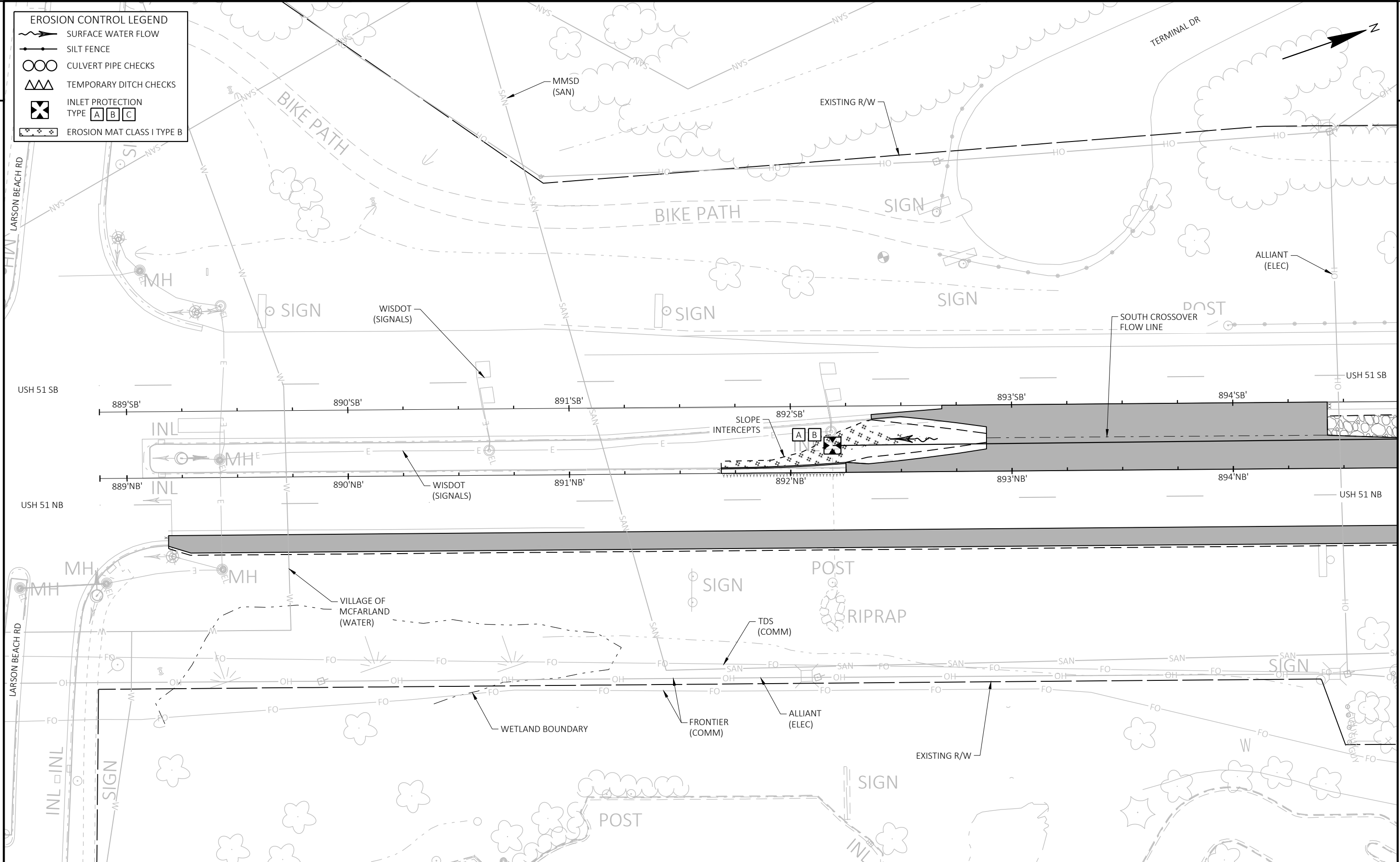


PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	PLAN DETAILS
SHEET			E

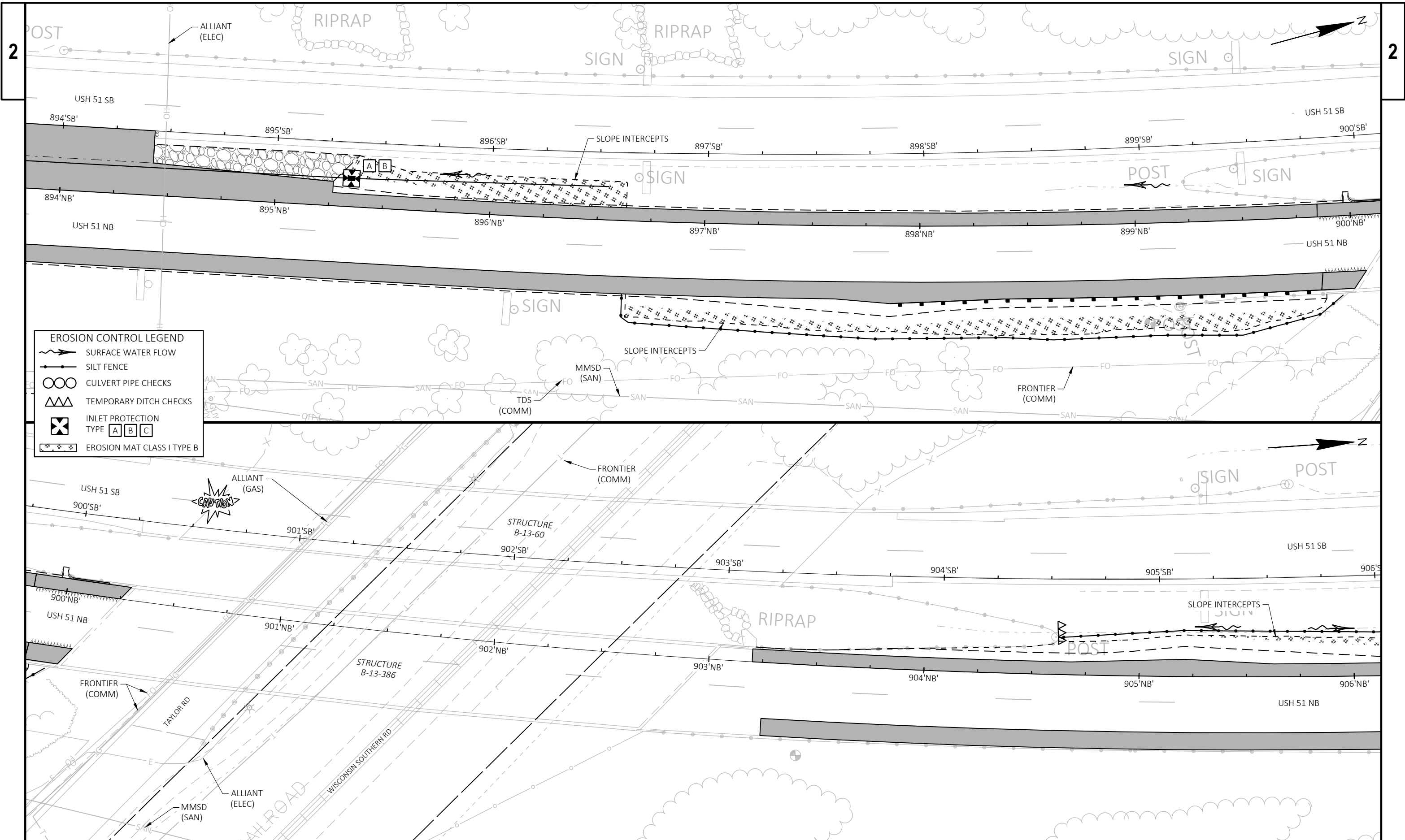
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EROSION CONTROL LEGEND

- SURFACE WATER FLOW
- SILT FENCE
- CULVERT PIPE CHECKS
- TEMPORARY DITCH CHECKS
- INLET PROTECTION TYPE A B C
- EROSION MAT CLASS I TYPE B

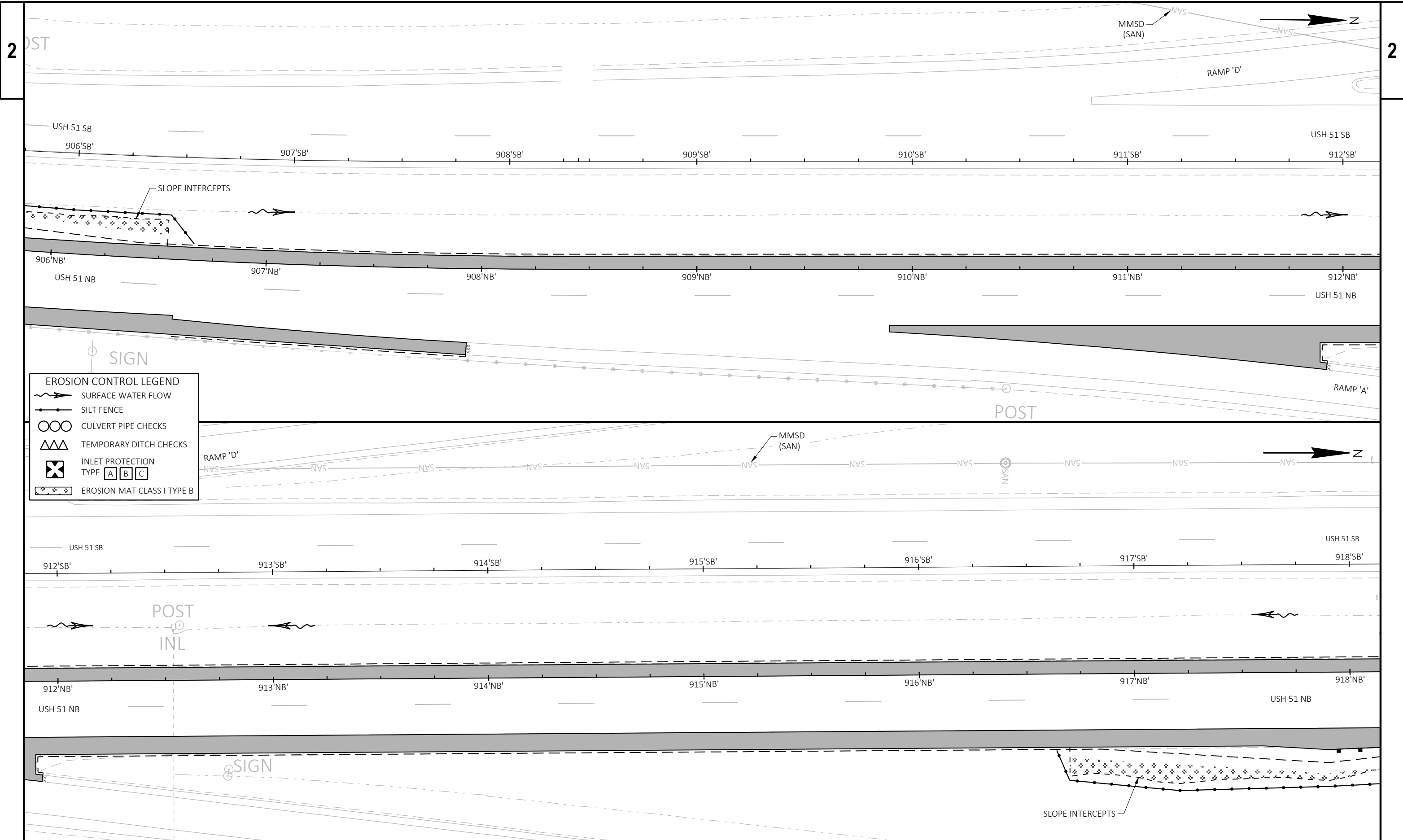


PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	EROSION CONTROL
SHEET			E



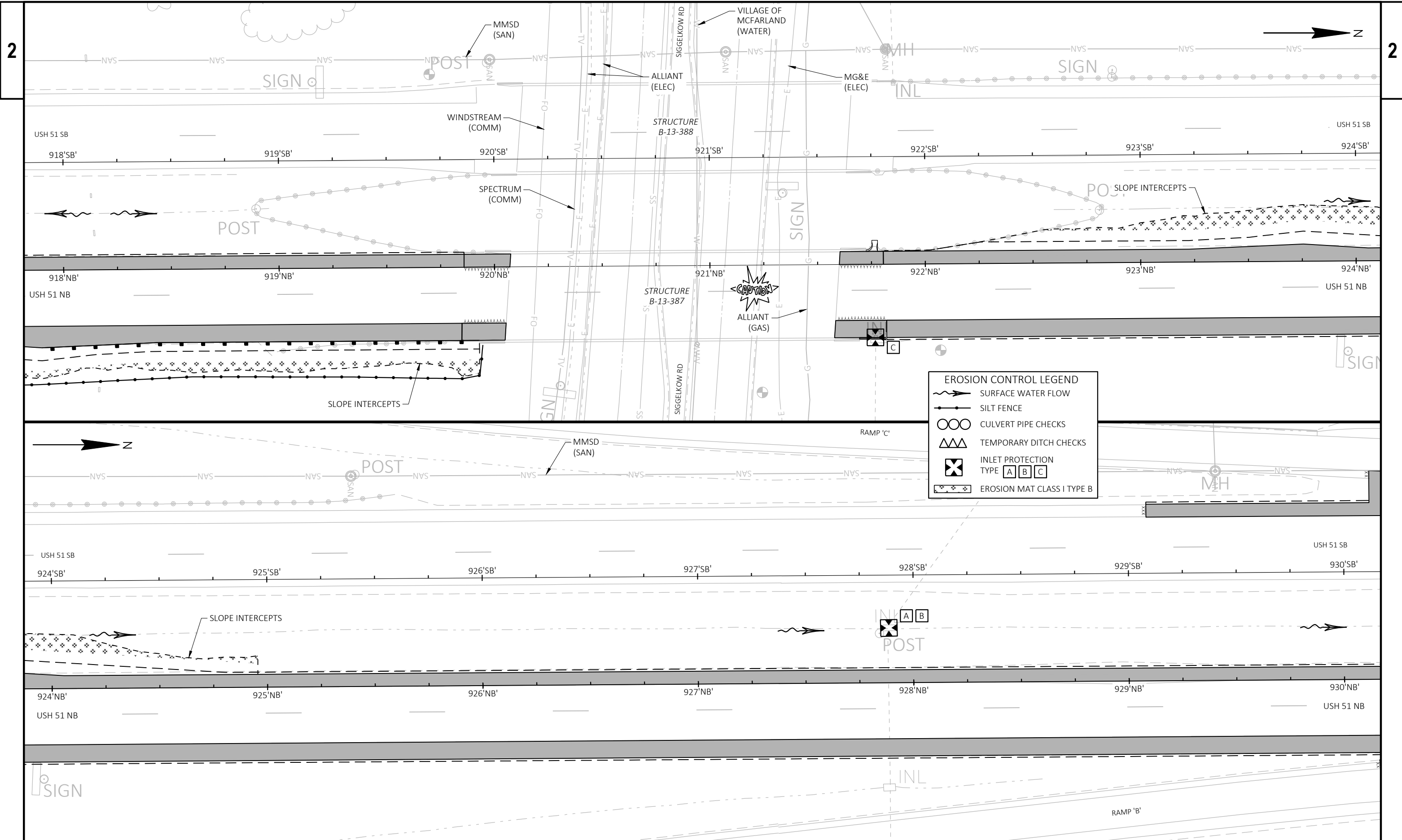
EROSION CONTROL LEGEND

	SURFACE WATER FLOW
	SILT FENCE
	CULVERT PIPE CHECKS
	TEMPORARY DITCH CHECKS
	INLET PROTECTION TYPE A B C
	EROSION MAT CLASS I TYPE B



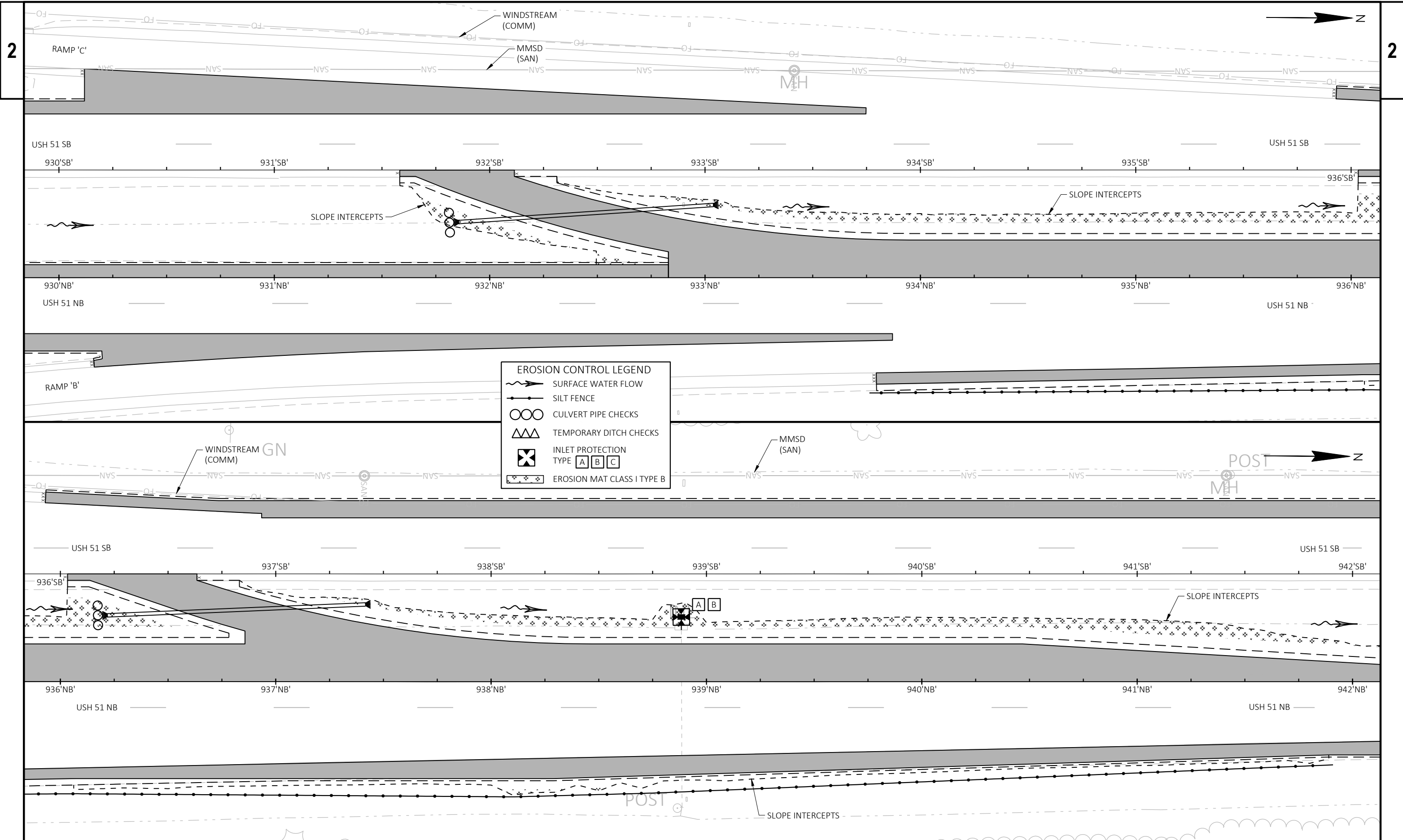
EROSION CONTROL LEGEND

	SURFACE WATER FLOW
	SILT FENCE
	CULVERT PIPE CHECKS
	TEMPORARY DITCH CHECKS
	INLET PROTECTION TYPE A B C
	EROSION MAT CLASS I TYPE B

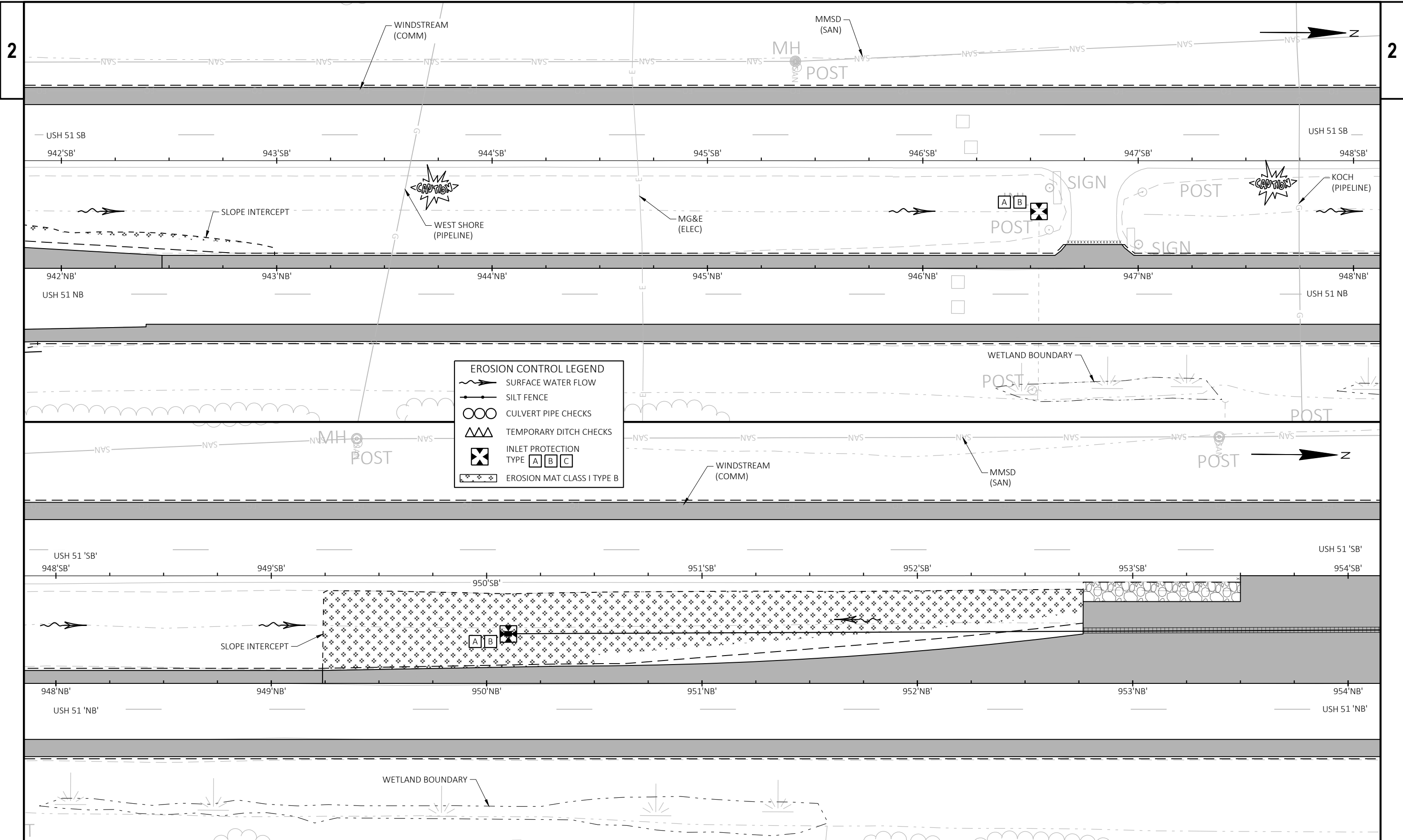


EROSION CONTROL LEGEND

	SURFACE WATER FLOW
	SILT FENCE
	CULVERT PIPE CHECKS
	TEMPORARY DITCH CHECKS
	INLET PROTECTION TYPE [A] [B] [C]
	EROSION MAT CLASS I TYPE B



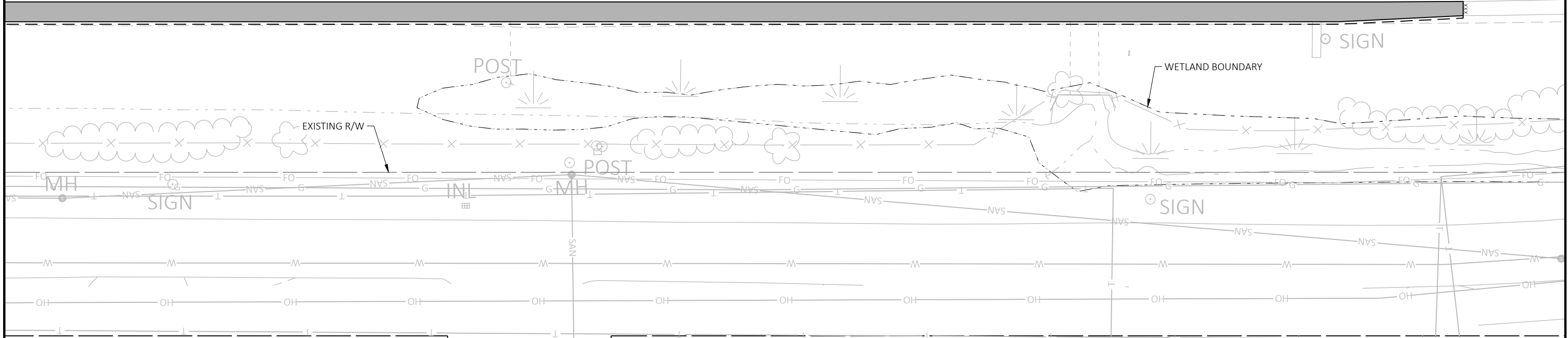
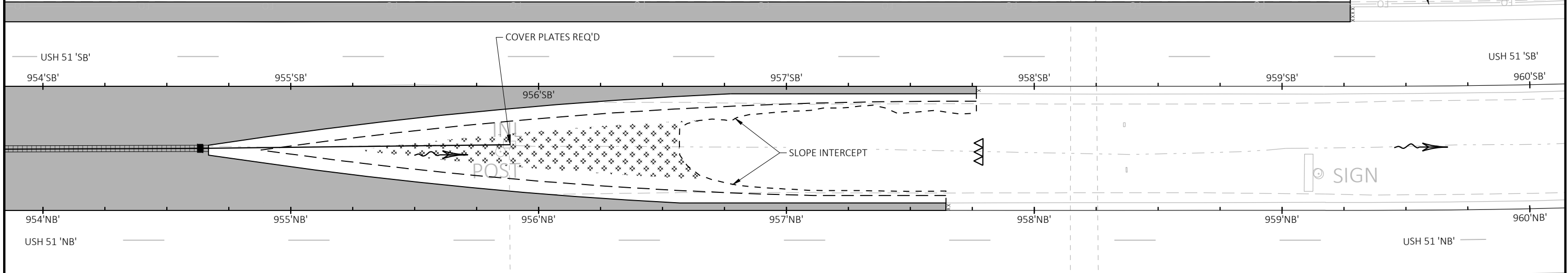
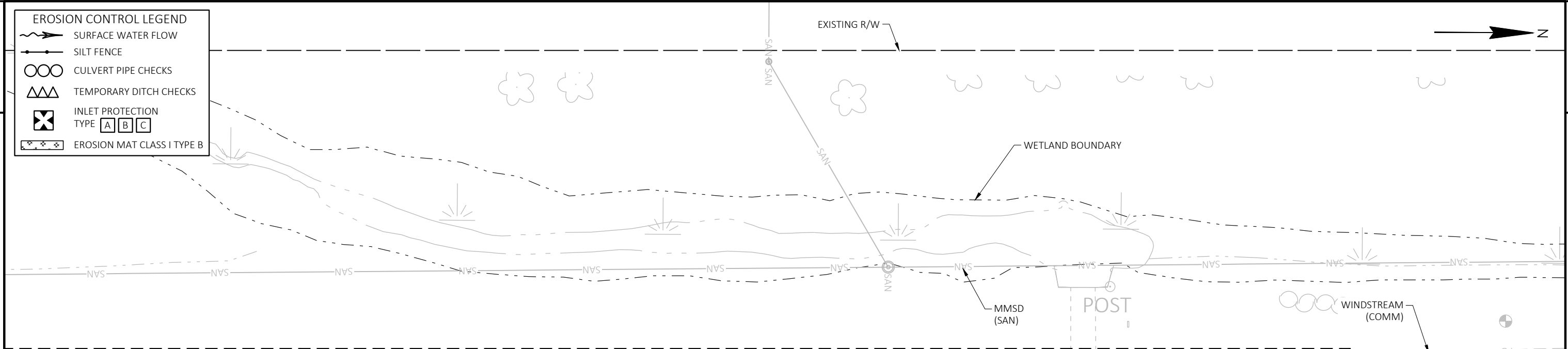
PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE EROSION CONTROL SHEET E



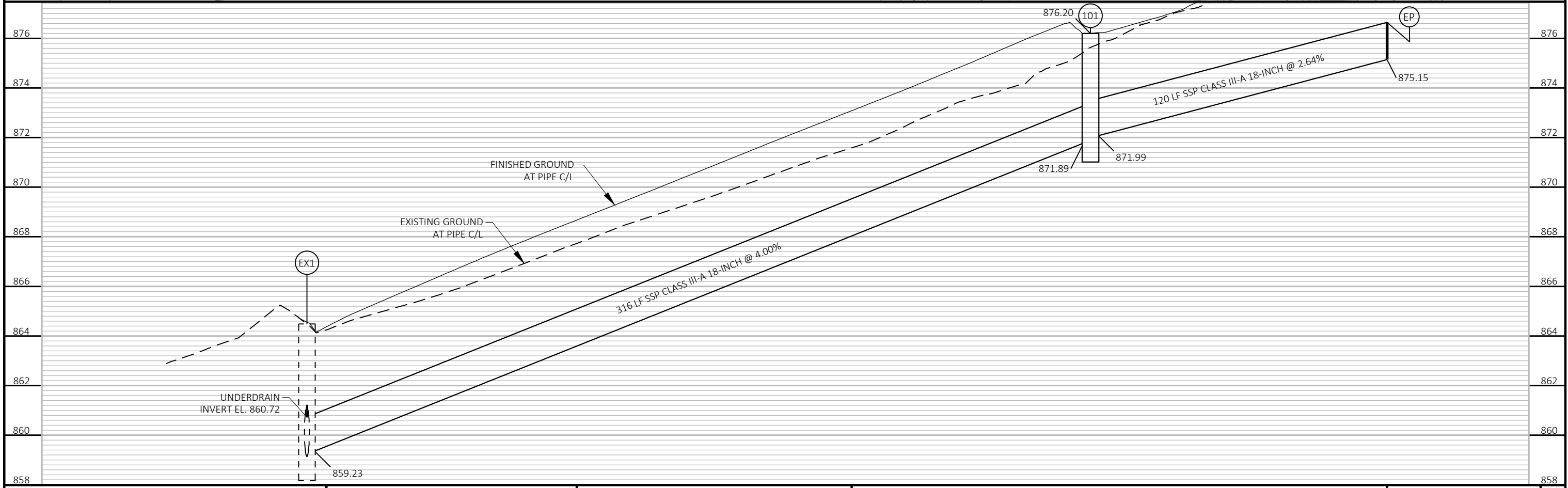
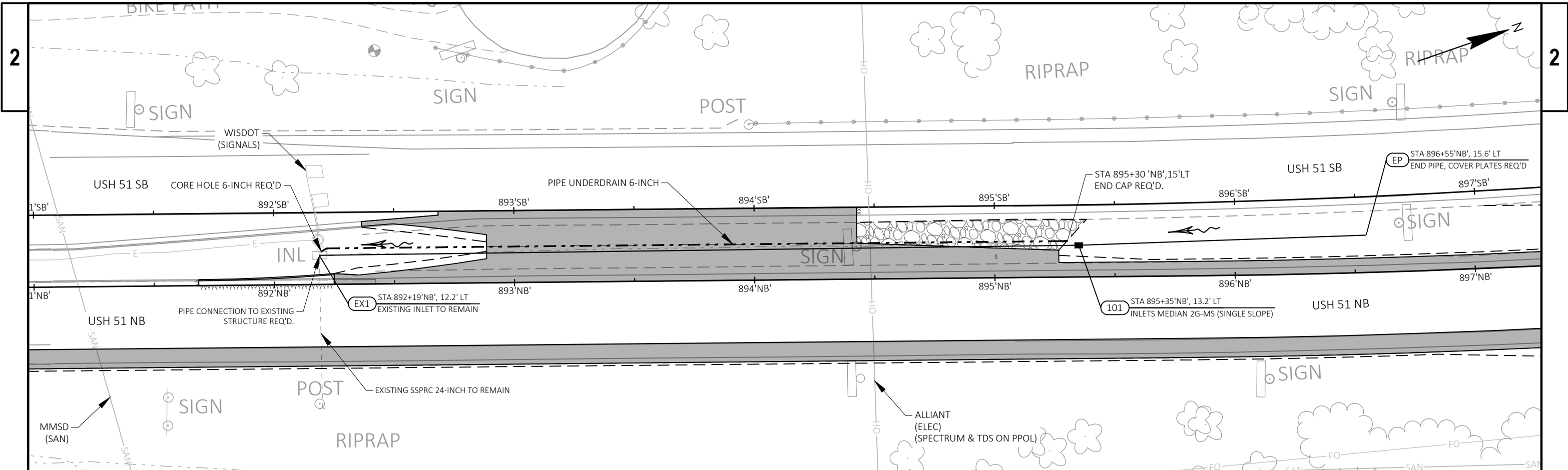
PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE EROSION CONTROL SHEET E

EROSION CONTROL LEGEND

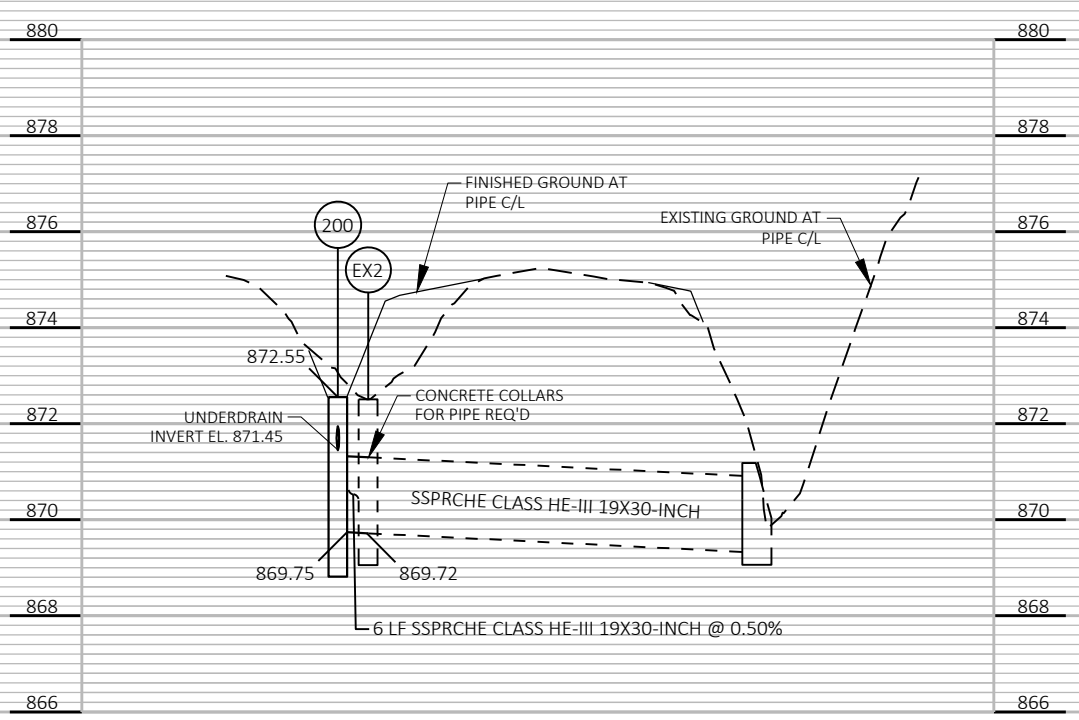
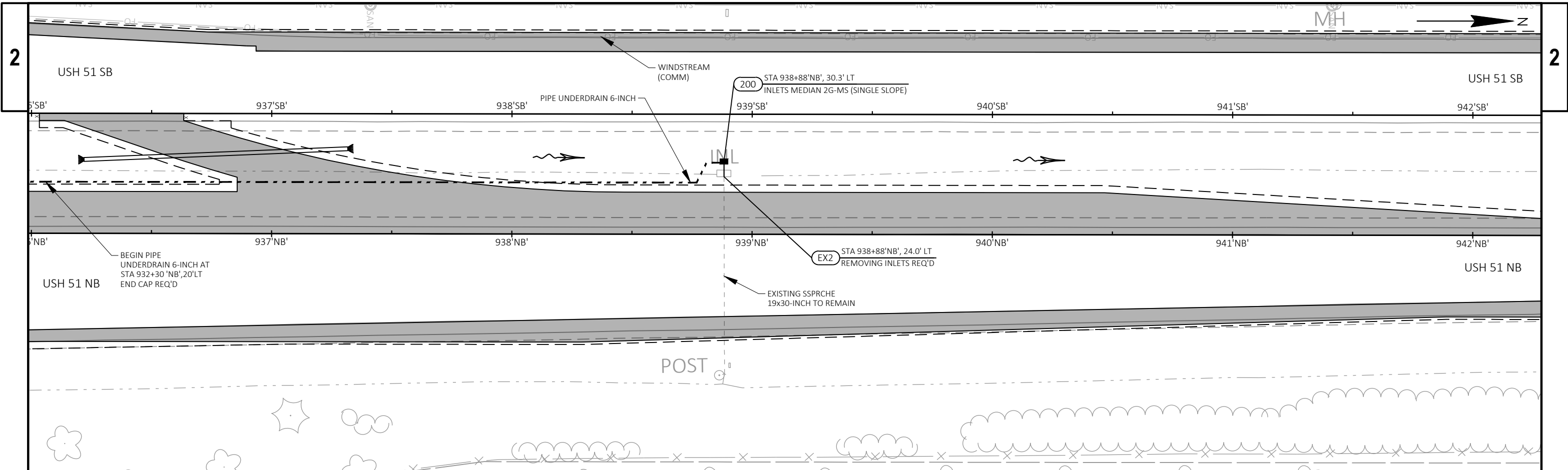
- SURFACE WATER FLOW
- SILT FENCE
- CULVERT PIPE CHECKS
- TEMPORARY DITCH CHECKS
- INLET PROTECTION TYPE [A] [B] [C]
- EROSION MAT CLASS I TYPE B



PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	EROSION CONTROL	SHEET E
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PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	STORM SEWER PLAN	SHEET	E
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PROJECT NO: 5845-16-86

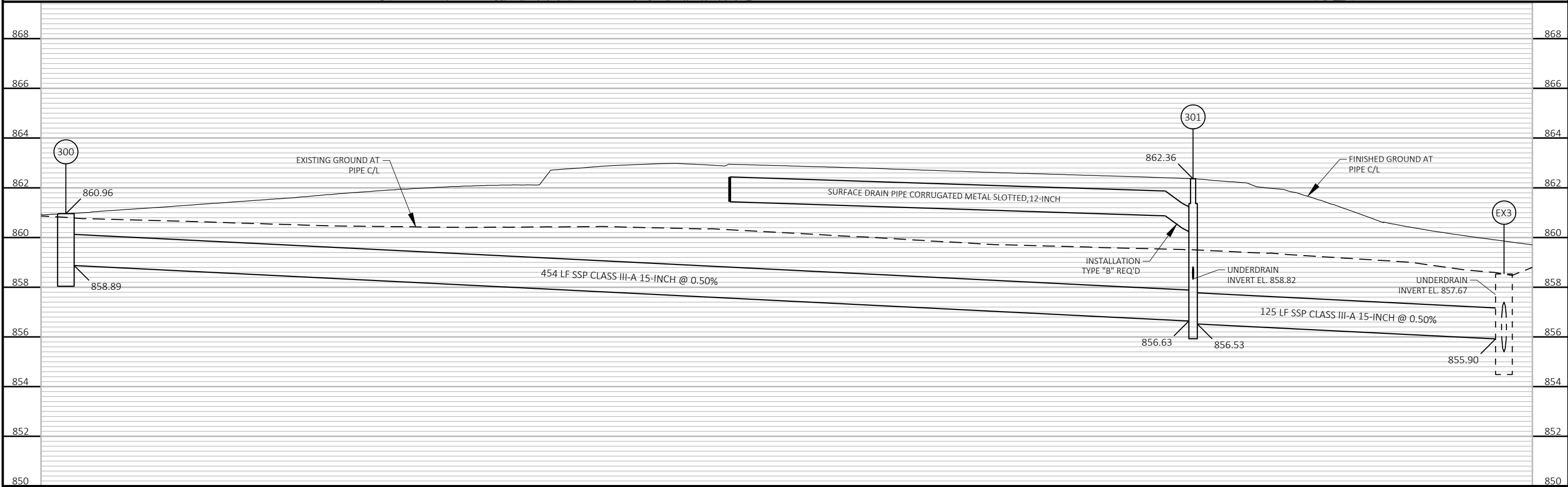
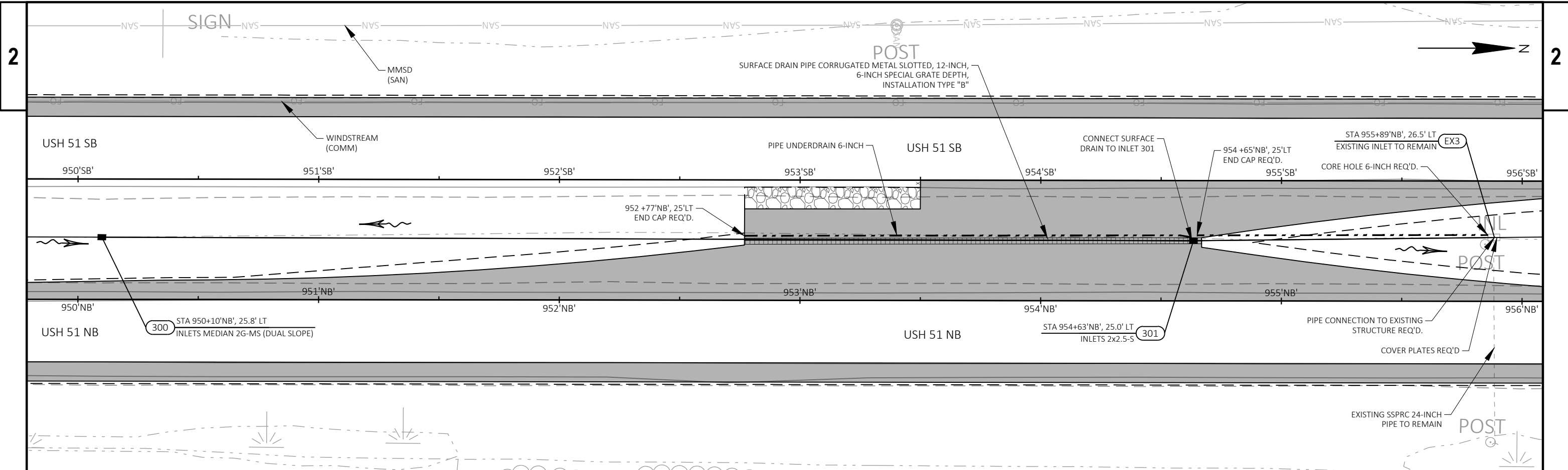
HWY: USH 51

COUNTY: DANE

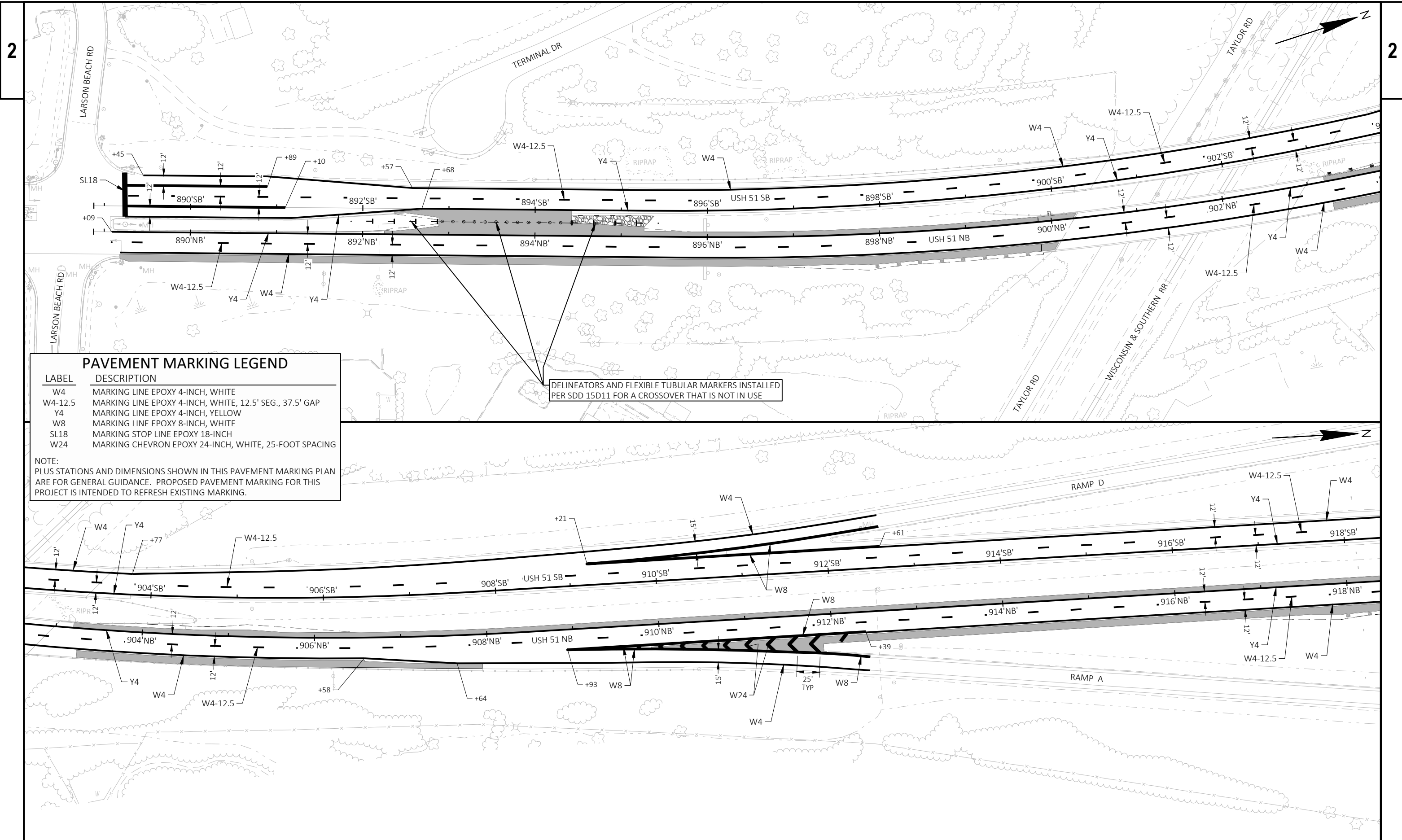
STORM SEWER PLAN

SHEET

E



PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	STORM SEWER PLAN	SHEET	E
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PROJECT NO: 5845-16-86

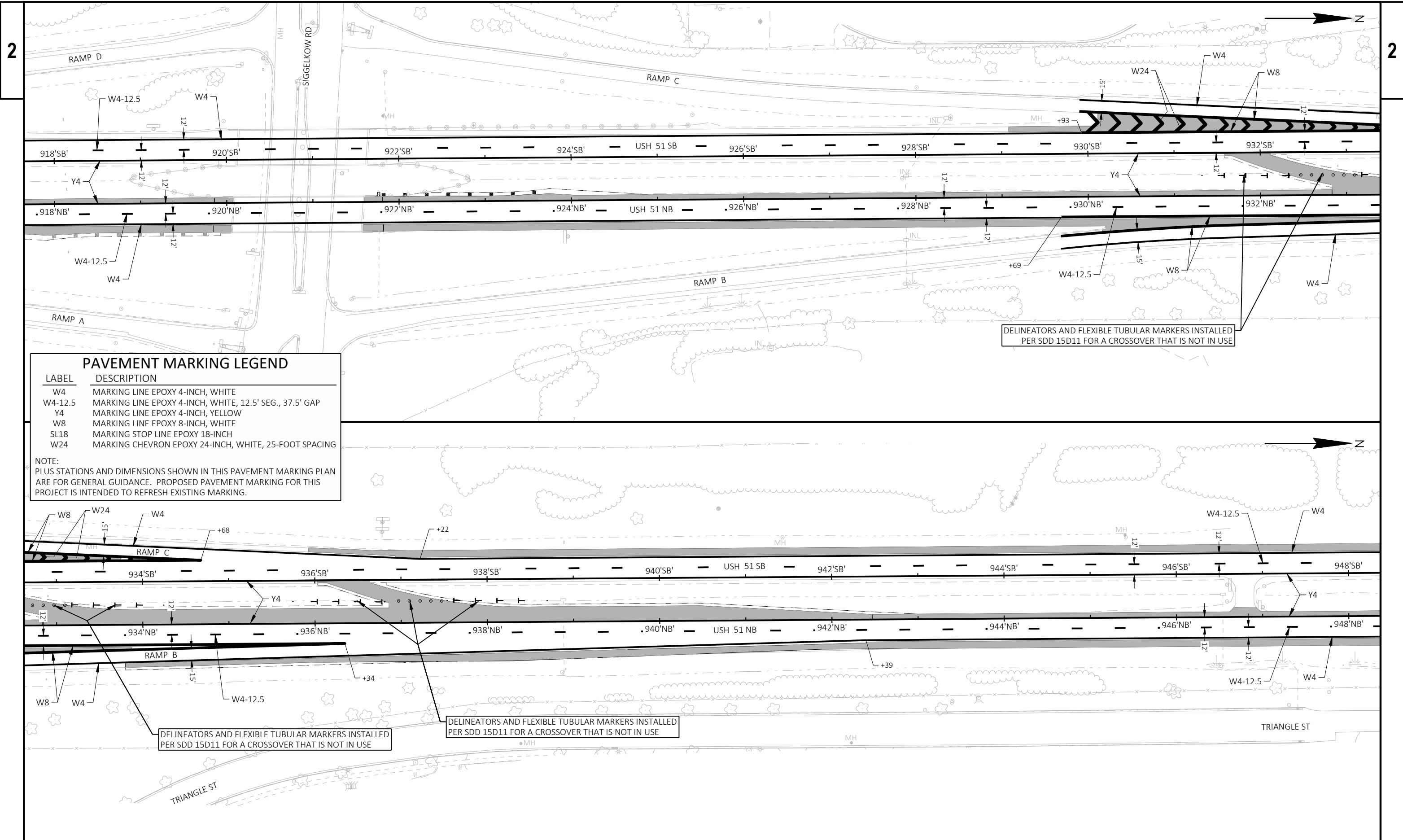
HWY: USH 51

COUNTY: DANE

PAVEMENT MARKING PLAN

SHEET

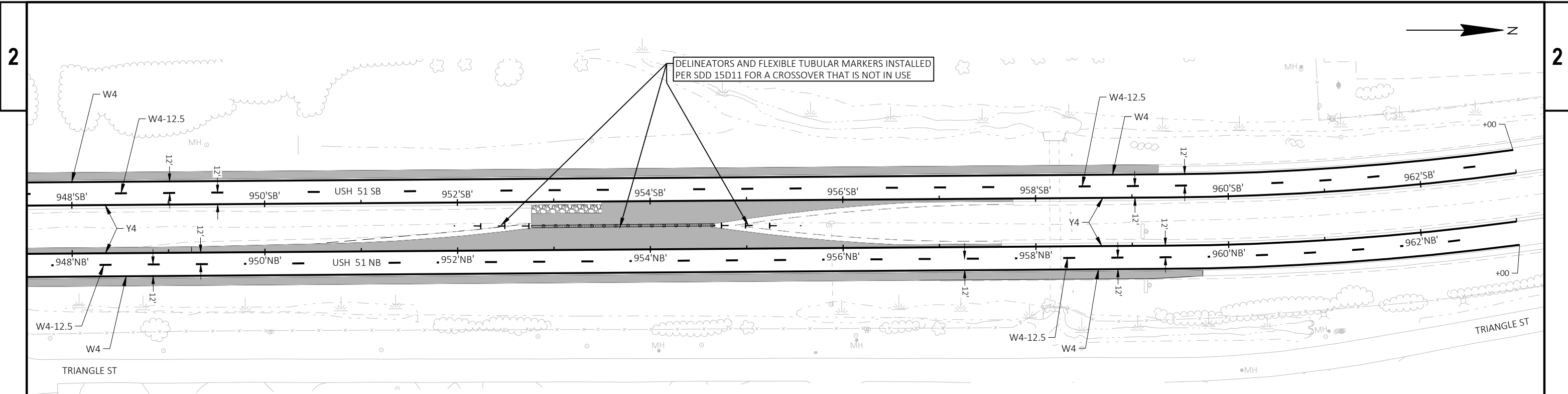
E



PAVEMENT MARKING LEGEND

LABEL	DESCRIPTION
W4	MARKING LINE EPOXY 4-INCH, WHITE
W4-12.5	MARKING LINE EPOXY 4-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE EPOXY 4-INCH, YELLOW
W8	MARKING LINE EPOXY 8-INCH, WHITE
SL18	MARKING STOP LINE EPOXY 18-INCH
W24	MARKING CHEVRON EPOXY 24-INCH, WHITE, 25-FOOT SPACING

NOTE:
PLUS STATIONS AND DIMENSIONS SHOWN IN THIS PAVEMENT MARKING PLAN ARE FOR GENERAL GUIDANCE. PROPOSED PAVEMENT MARKING FOR THIS PROJECT IS INTENDED TO REFRESH EXISTING MARKING.



PAVEMENT MARKING LEGEND

LABEL	DESCRIPTION
W4	MARKING LINE EPOXY 4-INCH, WHITE
W4-12.5	MARKING LINE EPOXY 4-INCH, WHITE, 12.5' SEG., 37.5' GAP
Y4	MARKING LINE EPOXY 4-INCH, YELLOW
W8	MARKING LINE EPOXY 8-INCH, WHITE
SL18	MARKING STOP LINE EPOXY 18-INCH
W24	MARKING CHEVRON EPOXY 24-INCH, WHITE, 25-FOOT SPACING

NOTE:
 PLUS STATIONS AND DIMENSIONS SHOWN IN THIS PAVEMENT MARKING PLAN
 ARE FOR GENERAL GUIDANCE. PROPOSED PAVEMENT MARKING FOR THIS
 PROJECT IS INTENDED TO REFRESH EXISTING MARKING.

STAGE 1 NOTES:

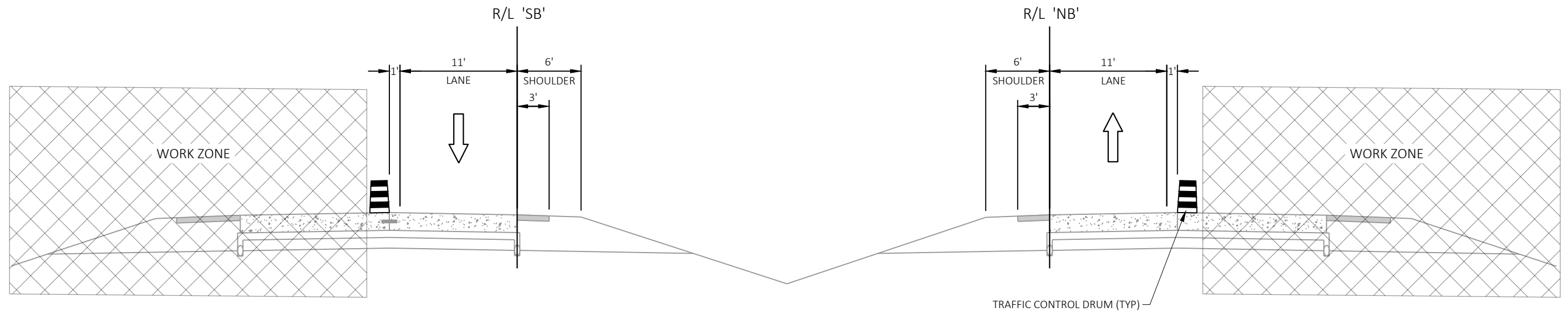
CONSTRUCTION STAGING PLAN SHEETS DEPICT USH 51 OFF-PEAK SINGLE LANE CLOSURES. WHEN REQUIRED, PROVIDE SHOULDER CLOSURES PER SDD 15D27-03.

TRAFFIC:

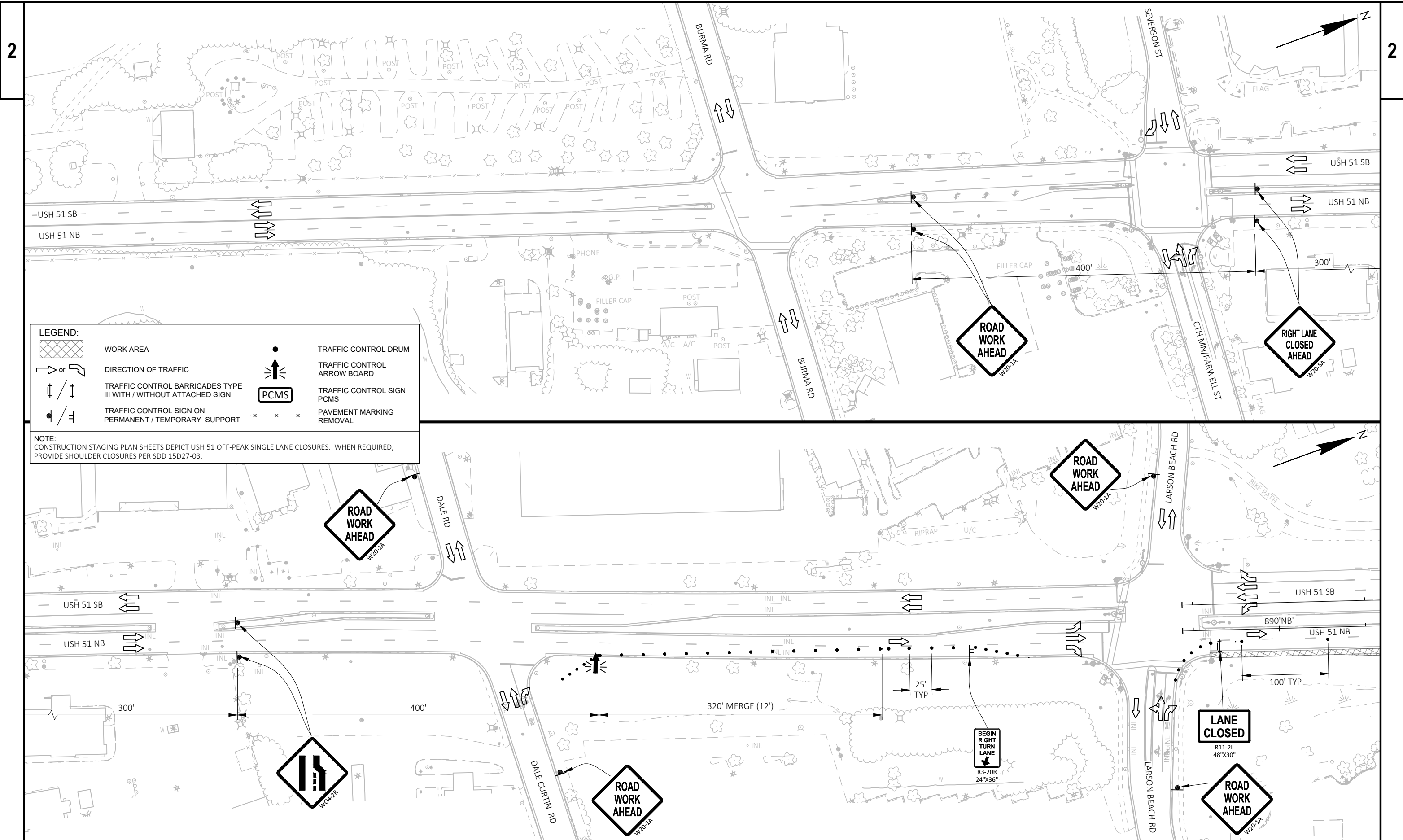
USH 51 SB OPEN TO TRAFFIC ON EXISTING MEDIAN LANE.
USH 51 NB OPEN TO TRAFFIC ON EXISTING MEDIAN LANE.
USH 51 RAMPS OPEN AT SIGGELKOW ROAD.
- NB RAMPS CAN BE CLOSED DURING OFF-PEAK HOURS FOR UP TO ONE DAY EACH.
- SB OFF-RAMP CAN BE CLOSED DURING OFF-PEAK HOURS FOR UP TO ONE DAY.
ALL SIDE ROADS OPEN TO NORMAL TRAFFIC PATTERNS.
USH 51 SINGLE-LANE CLOSURES ONLY DURING OFF-PEAK HOURS.

CONSTRUCTION:

CONSTRUCT USH 51 NB AND SB OUTSIDE SHOULDER WIDENING.
CONSTRUCT USH 51 NB ON-RAMP PARALLEL LANE.
CONSTRUCT GUARDRAIL ALONG USH 51 NB OUTSIDE SHOULDER.

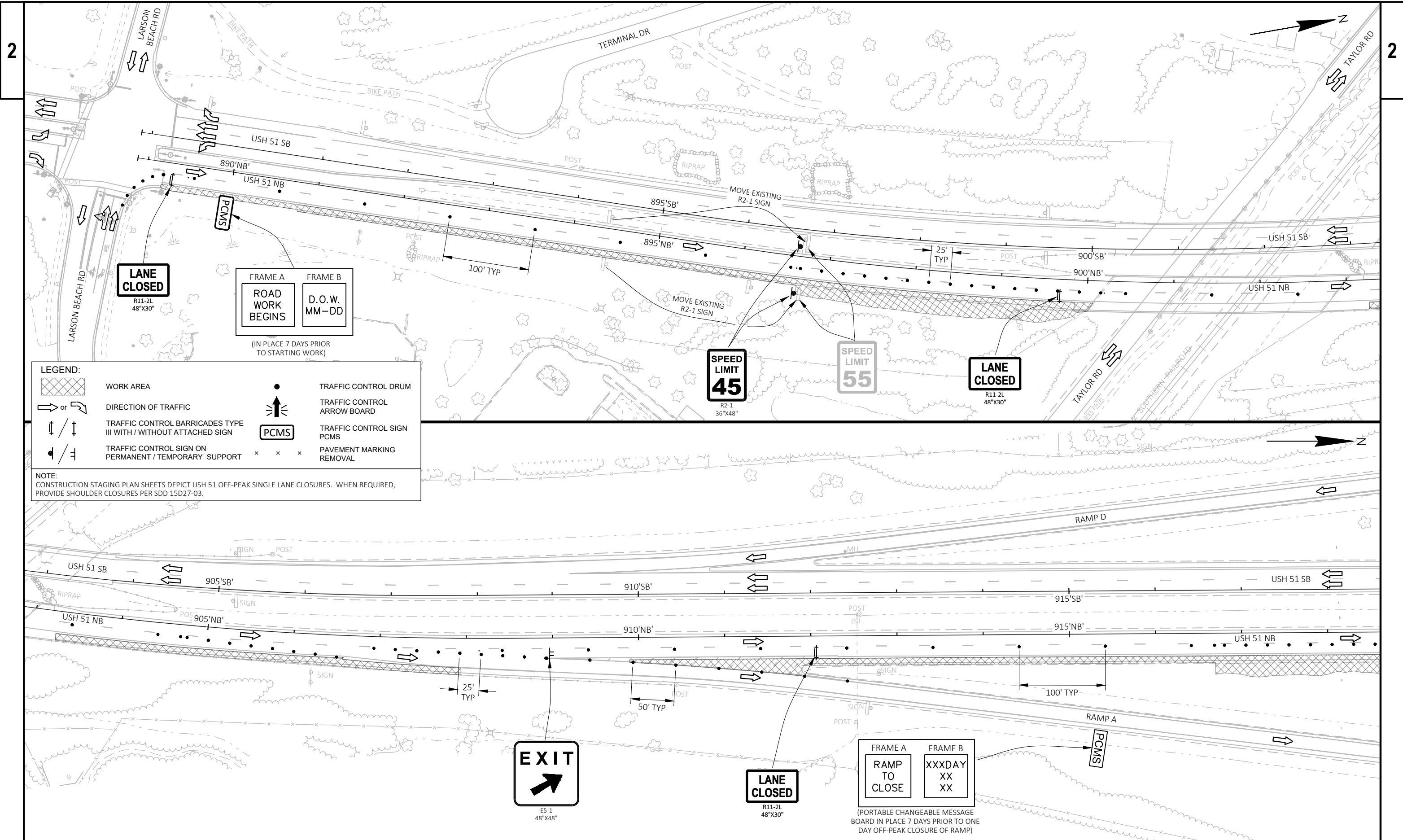


TYPICAL SECTION - USH 51
STAGE 1



LEGEND:	
	WORK AREA
	DIRECTION OF TRAFFIC
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL SIGN PCMS
	PAVEMENT MARKING REMOVAL

NOTE:
CONSTRUCTION STAGING PLAN SHEETS DEPICT USH 51 OFF-PEAK SINGLE LANE CLOSURES. WHEN REQUIRED, PROVIDE SHOULDER CLOSURES PER SDD 15D27-03.



LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGN PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

NOTE:
CONSTRUCTION STAGING PLAN SHEETS DEPICT USH 51 OFF-PEAK SINGLE LANE CLOSURES. WHEN REQUIRED, PROVIDE SHOULDER CLOSURES PER SDD 15D27-03.

FRAME A
ROAD WORK BEGINS

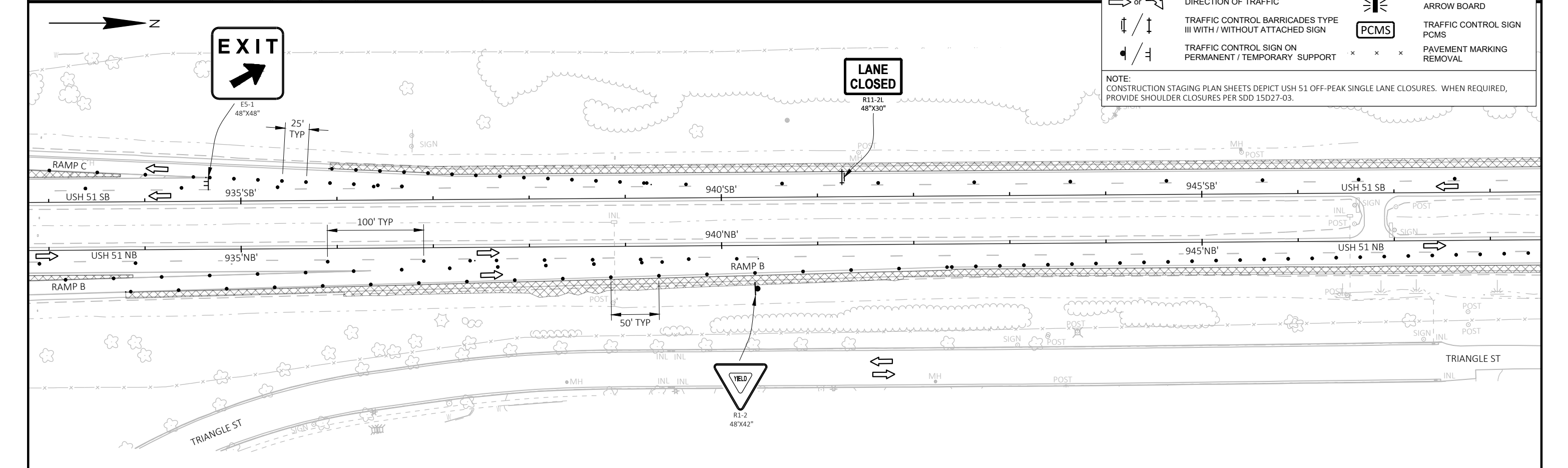
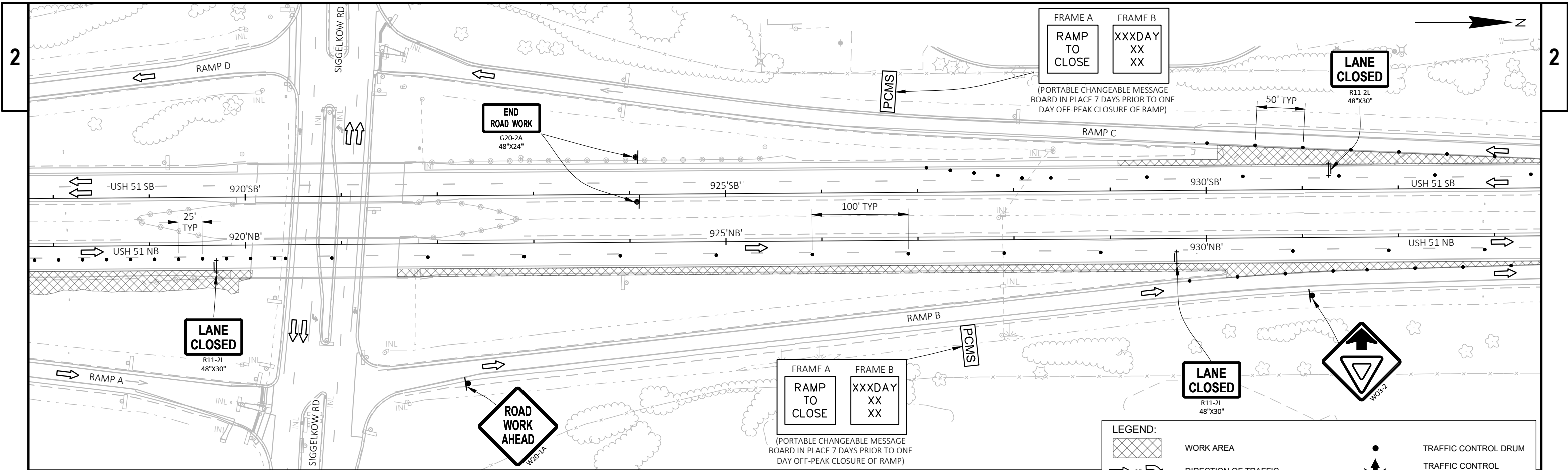
FRAME B
D.O.W. MM-DD

(IN PLACE 7 DAYS PRIOR TO STARTING WORK)

FRAME A
RAMP TO CLOSE

FRAME B
XXXXDAY XX XX

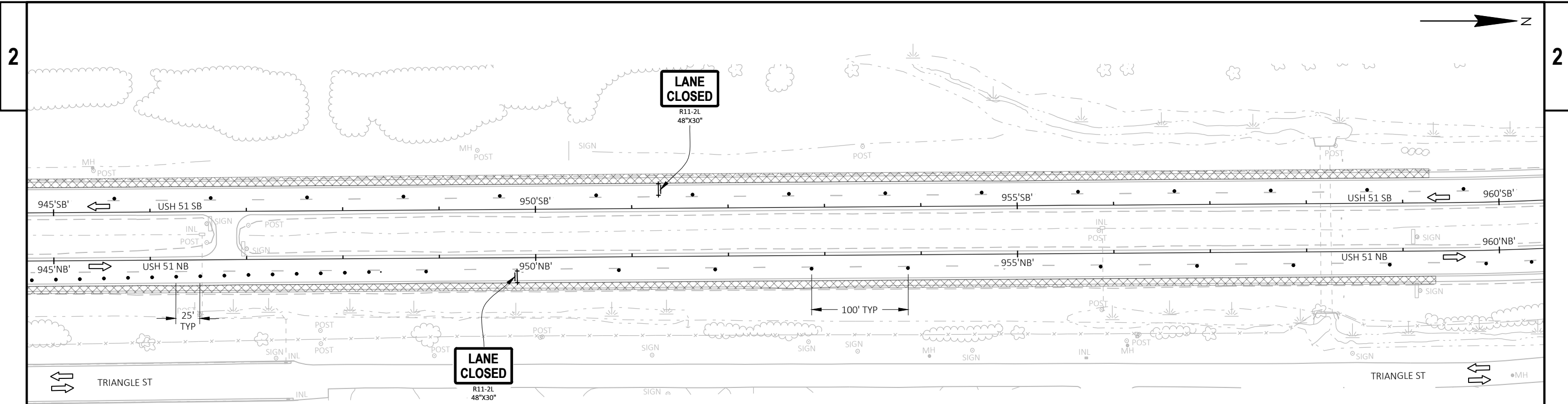
(PORTABLE CHANGEABLE MESSAGE BOARD IN PLACE 7 DAYS PRIOR TO ONE DAY OFF-PEAK CLOSURE OF RAMP)



LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGN PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

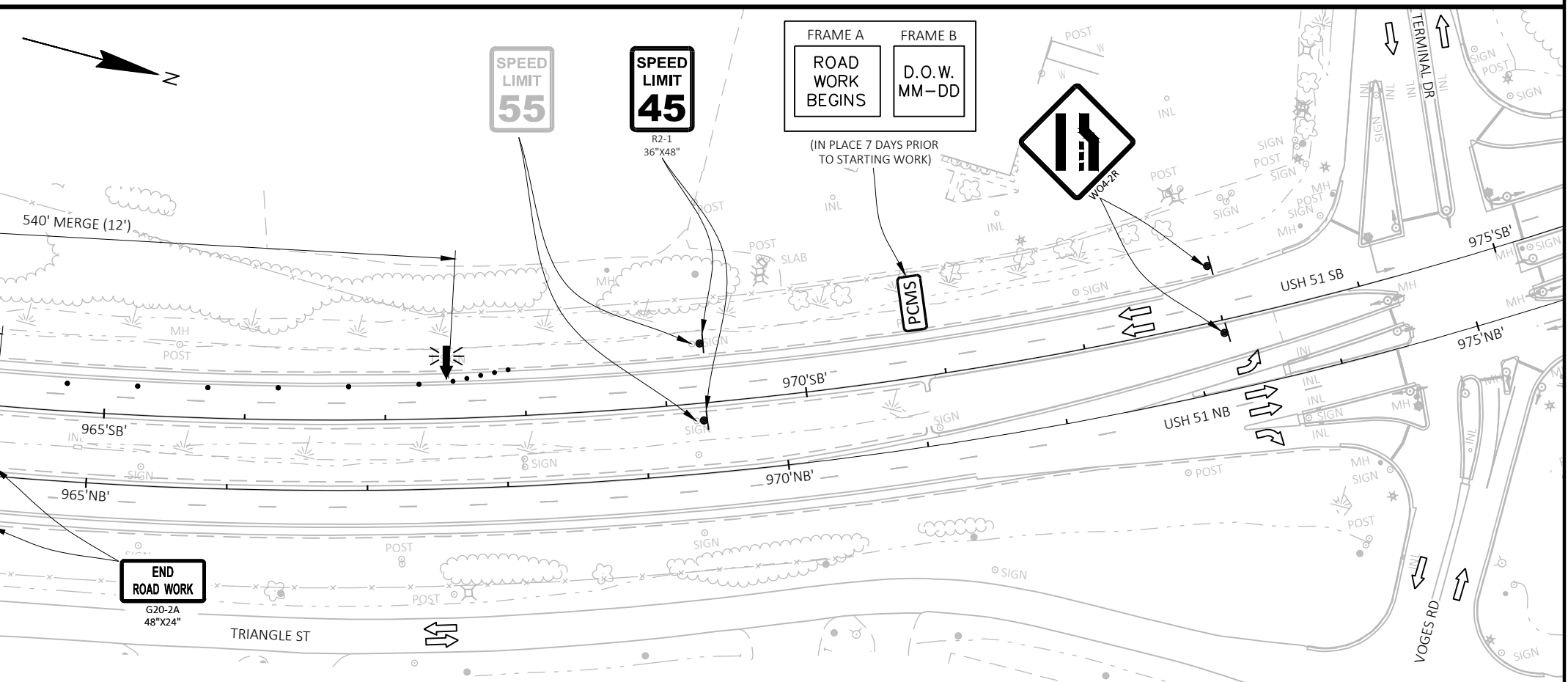
NOTE:
CONSTRUCTION STAGING PLAN SHEETS DEPICT USH 51 OFF-PEAK SINGLE LANE CLOSURES. WHEN REQUIRED, PROVIDE SHOULDER CLOSURES PER SDD 15D27-03.











LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGN PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

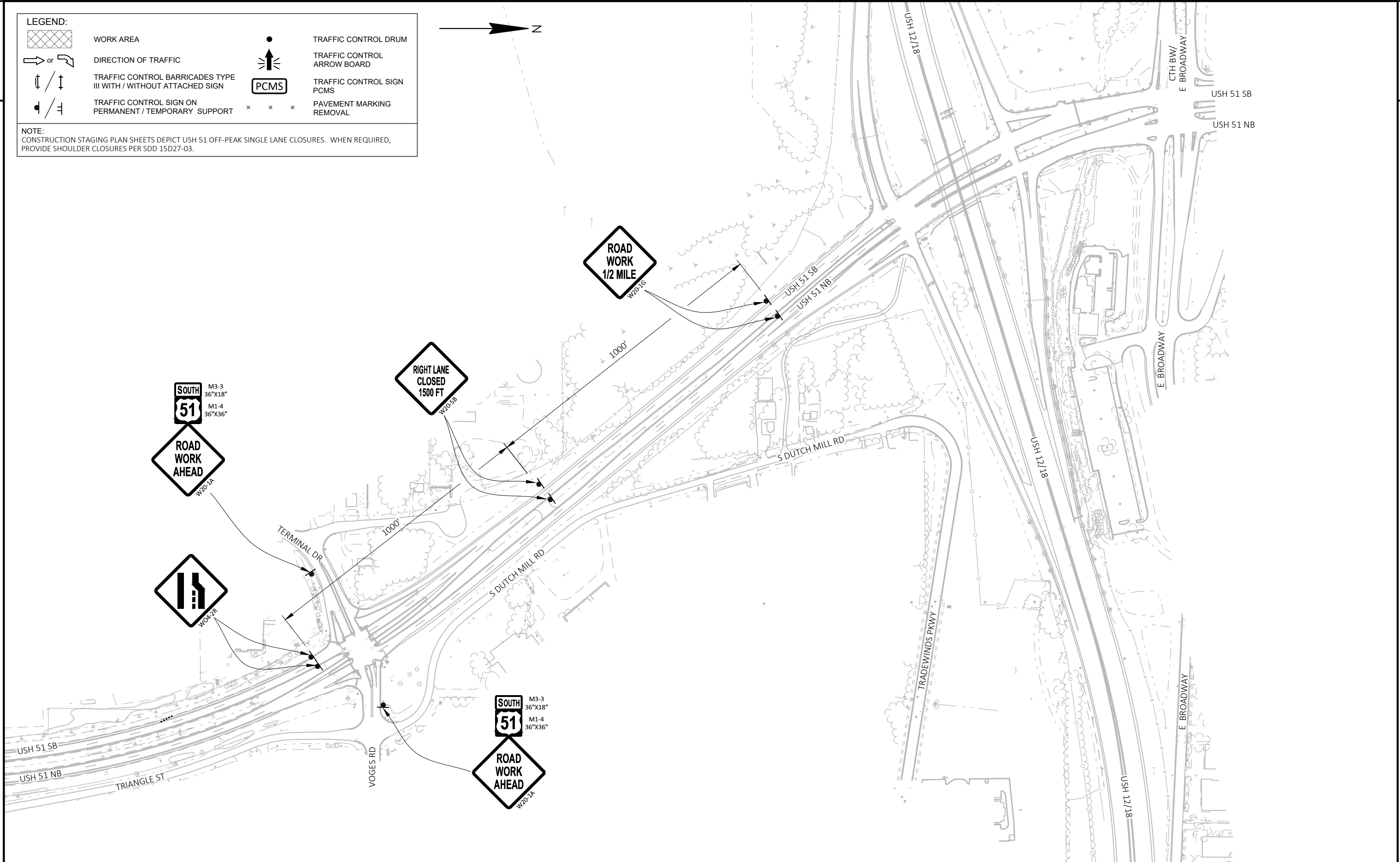
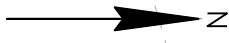
NOTE:
CONSTRUCTION STAGING PLAN SHEETS DEPICT USH 51 OFF-PEAK SINGLE LANE CLOSURES. WHEN REQUIRED, PROVIDE SHOULDER CLOSURES PER SDD 15D27-03.



LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGN PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

NOTE:
CONSTRUCTION STAGING PLAN SHEETS DEPICT USH 51 OFF-PEAK SINGLE LANE CLOSURES. WHEN REQUIRED, PROVIDE SHOULDER CLOSURES PER SDD 15D27-03.

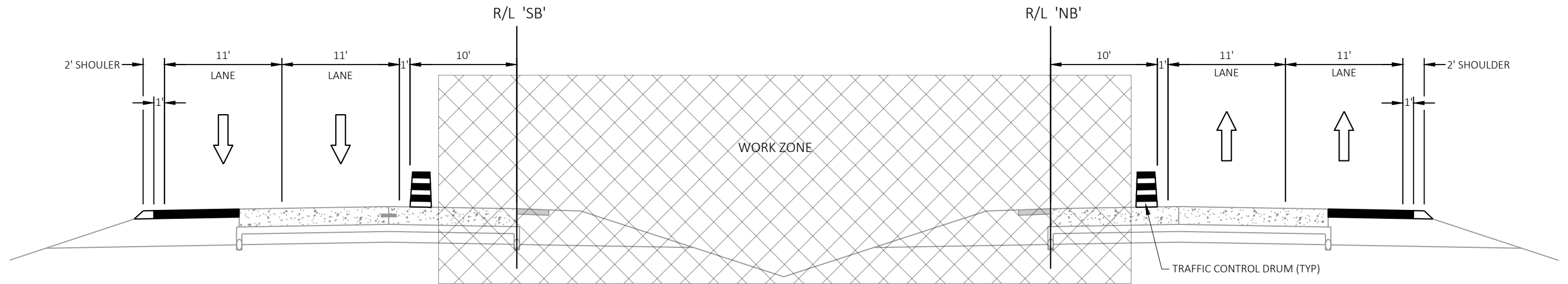


PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CONSTRUCTION STAGING - STAGE 1 - LANE CLOSURES	SHEET	E
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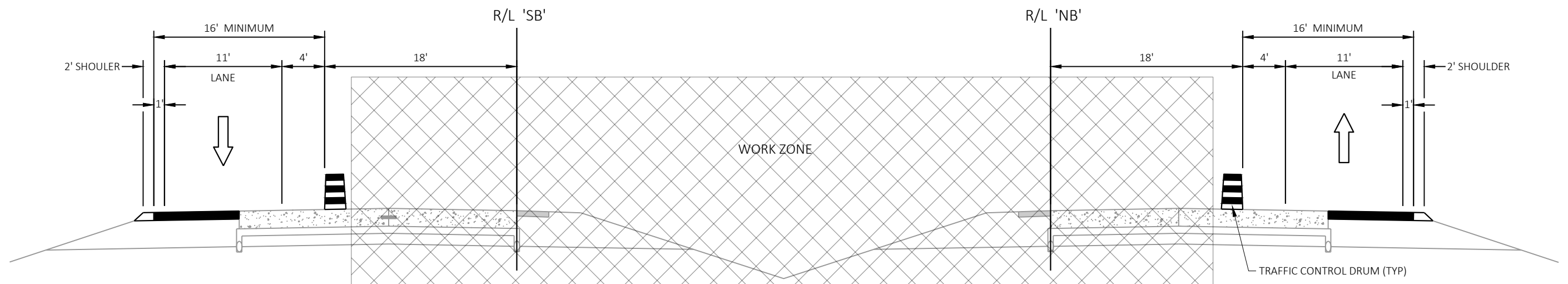
STAGE 2 NOTES:

TRAFFIC:
 USH 51 NB AND SB OPEN TO TRAFFIC SHIFTED ONTO THE OUTSIDE SHOULDERS.
 USH 51 RAMPS OPEN AT SIGGELKOW ROAD.
 ALL SIDE ROADS OPEN TO NORMAL TRAFFIC PATTERNS.
 USH 51 SINGLE-LANE CLOSURES DURING OFF-PEAK HOURS.

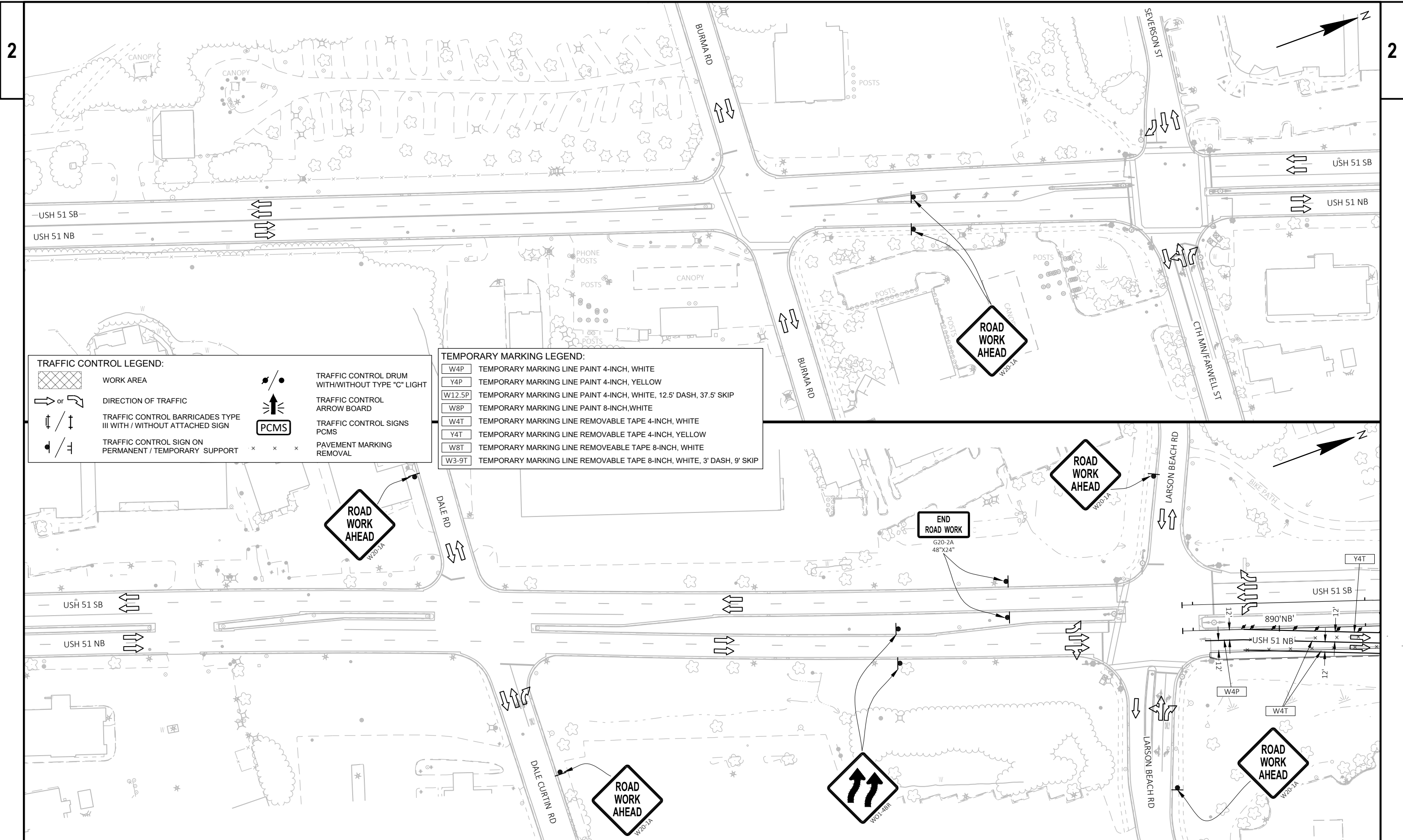
CONSTRUCTION:
 CONSTRUCT USH 51 NB MEDIAN SHOULDER WIDENING.
 CONSTRUCT TEMPORARY MEDIAN CROSSOVERS AT NORTH AND SOUTH ENDS OF PROJECT.
 CONSTRUCT RAMP C TEMPORARY MEDIAN CROSSOVERS.
 GRADE MEDIAN AT NW CORNERS OF TAYLOR ROAD AND SIGGELKOW ROAD NB USH 51 BRIDGES FOR FUTURE GUARDRAIL AND EAT INSTALLATIONS.



TYPICAL SECTION - USH 51
 STAGE 2



TYPICAL SECTION - USH 51
 STAGE 2 - LANE CLOSURES
 (OFF-PEAK HOURS)

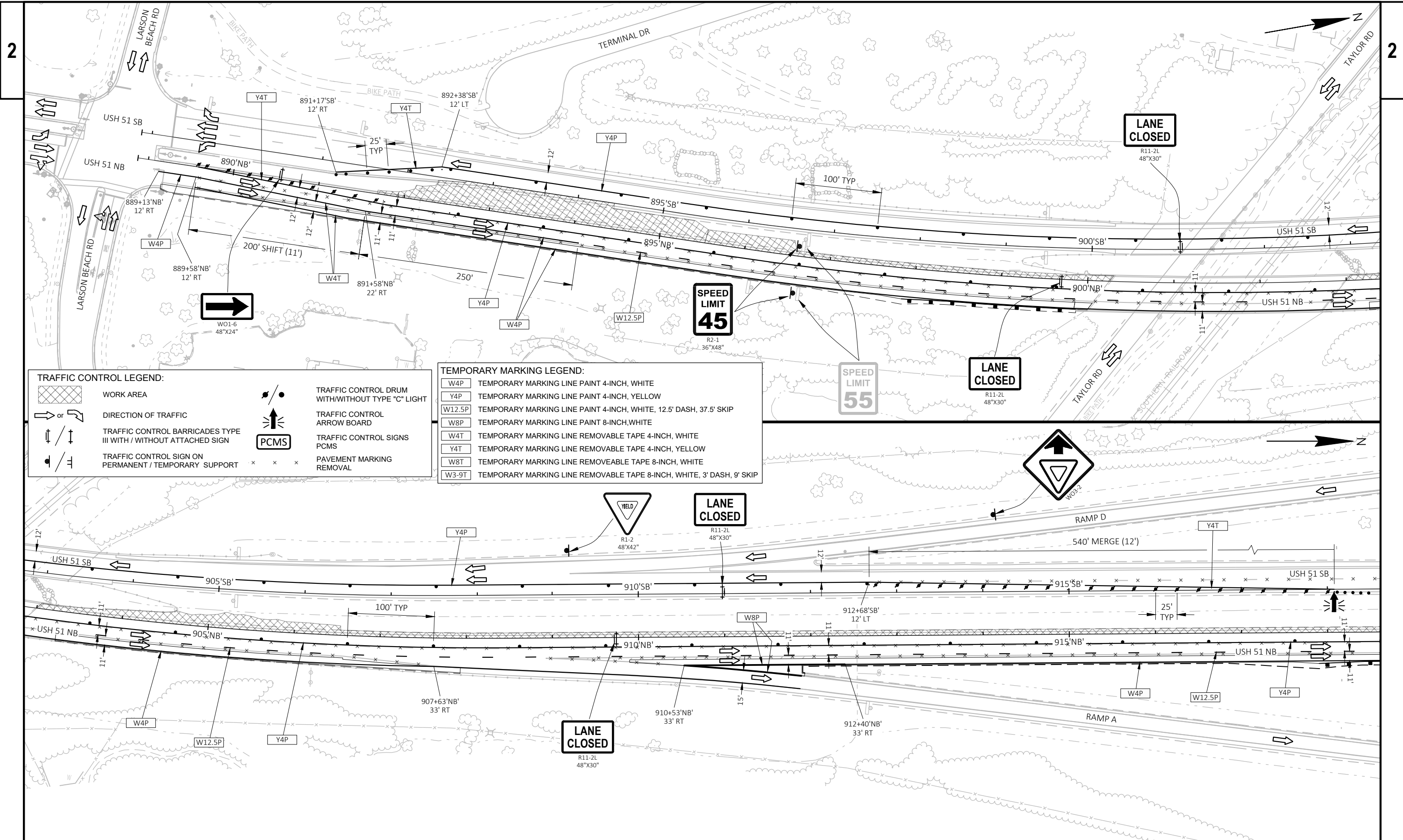


TRAFFIC CONTROL LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

TEMPORARY MARKING LEGEND:

W4P	TEMPORARY MARKING LINE PAINT 4-INCH, WHITE
Y4P	TEMPORARY MARKING LINE PAINT 4-INCH, YELLOW
W12.5P	TEMPORARY MARKING LINE PAINT 4-INCH, WHITE, 12.5' DASH, 37.5' SKIP
W8P	TEMPORARY MARKING LINE PAINT 8-INCH, WHITE
W4T	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, WHITE
Y4T	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, YELLOW
W8T	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE
W3-9T	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE, 3' DASH, 9' SKIP



TRAFFIC CONTROL LEGEND:

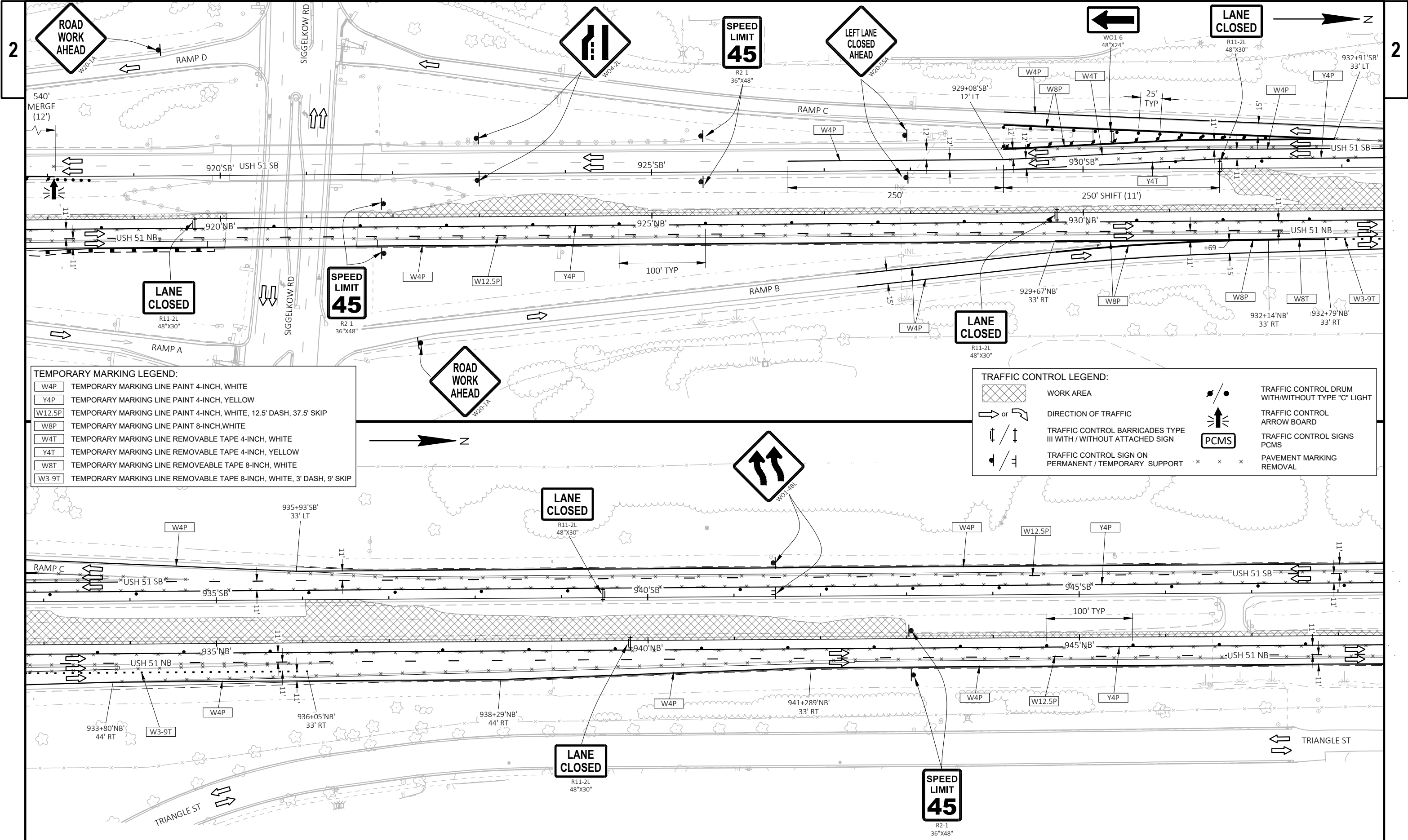
	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

TEMPORARY MARKING LEGEND:

W4P	TEMPORARY MARKING LINE PAINT 4-INCH, WHITE
Y4P	TEMPORARY MARKING LINE PAINT 4-INCH, YELLOW
W12.5P	TEMPORARY MARKING LINE PAINT 4-INCH, WHITE, 12.5' DASH, 37.5' SKIP
W8P	TEMPORARY MARKING LINE PAINT 8-INCH, WHITE
W4T	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, WHITE
Y4T	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, YELLOW
W8T	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE
W3-9T	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE, 3' DASH, 9' SKIP

PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CONSTRUCTION STAGING - STAGE 2 SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_026200_S2.DWG PLOT DATE: 1/18/2024 10:20 AM PLOT BY: MUENCH, DOUGLAS PLOT NAME: PLOT SCALE: 1 IN:100 FT WISDOT/CADD SHEET 42



TEMPORARY MARKING LEGEND:

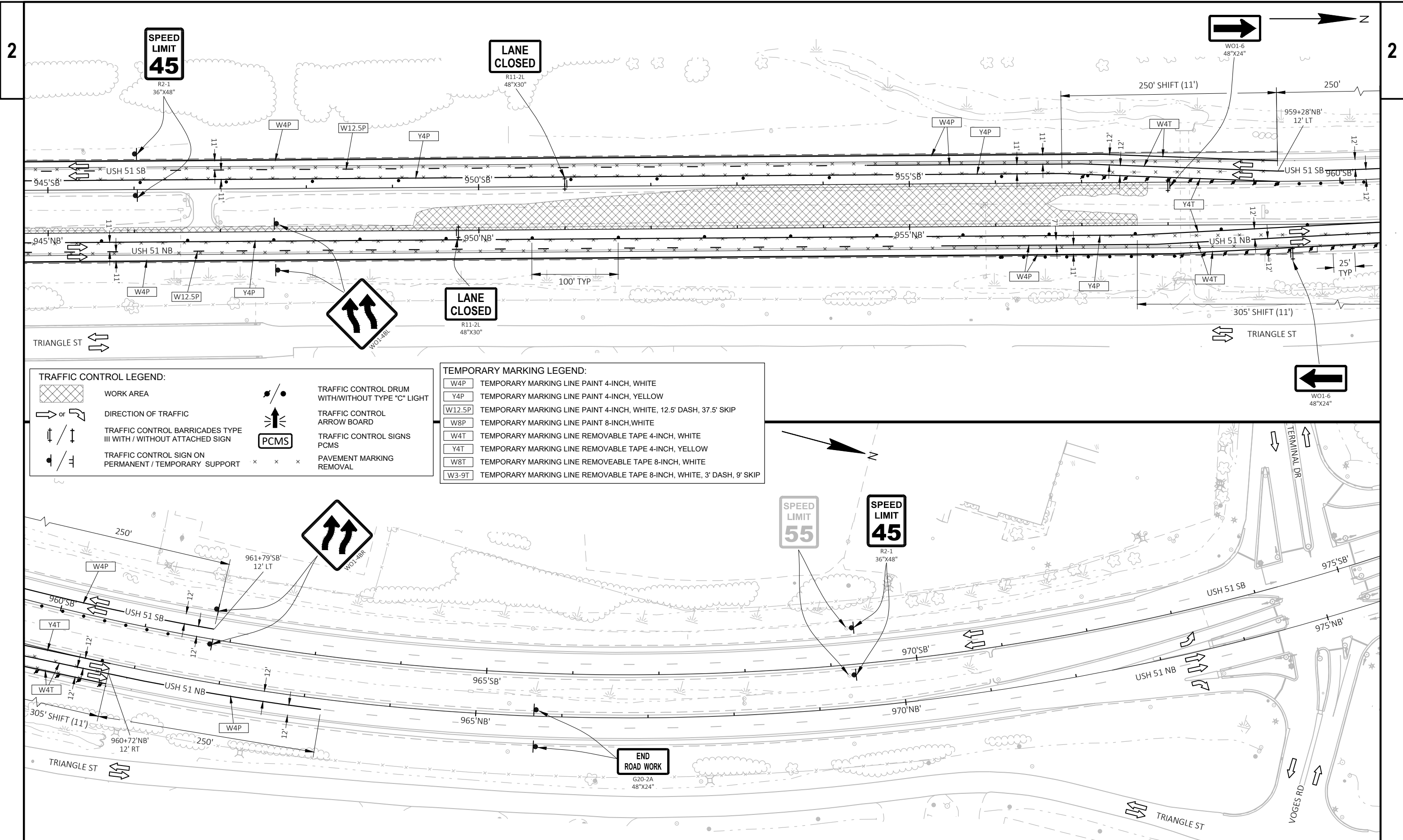
W4P	TEMPORARY MARKING LINE PAINT 4-INCH, WHITE
Y4P	TEMPORARY MARKING LINE PAINT 4-INCH, YELLOW
W12.5P	TEMPORARY MARKING LINE PAINT 4-INCH, WHITE, 12.5' DASH, 37.5' SKIP
W8P	TEMPORARY MARKING LINE PAINT 8-INCH, WHITE
W4T	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, WHITE
Y4T	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, YELLOW
W8T	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE
W3-9T	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE, 3' DASH, 9' SKIP

TRAFFIC CONTROL LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CONSTRUCTION STAGING - STAGE 2 SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_026200_S2.DWG PLOT DATE: 1/18/2024 10:20 AM PLOT BY: MUENCH, DOUGLAS PLOT NAME: PLOT SCALE: 1 IN:100 FT WISDOT/CADD SHEET 42



TRAFFIC CONTROL LEGEND:

- WORK AREA
- or DIRECTION OF TRAFFIC
- TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN
- TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
- TRAFFIC CONTROL ARROW BOARD
- TRAFFIC CONTROL SIGNS PCMS
- PAVEMENT MARKING REMOVAL

TEMPORARY MARKING LEGEND:

- W4P TEMPORARY MARKING LINE PAINT 4-INCH, WHITE
- Y4P TEMPORARY MARKING LINE PAINT 4-INCH, YELLOW
- W12.5P TEMPORARY MARKING LINE PAINT 4-INCH, WHITE, 12.5' DASH, 37.5' SKIP
- W8P TEMPORARY MARKING LINE PAINT 8-INCH, WHITE
- W4T TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, WHITE
- Y4T TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH, YELLOW
- W8T TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE
- W3-9T TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH, WHITE, 3' DASH, 9' SKIP

PROJECT NO: 5845-16-86


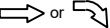

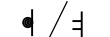




HWY: USH 51

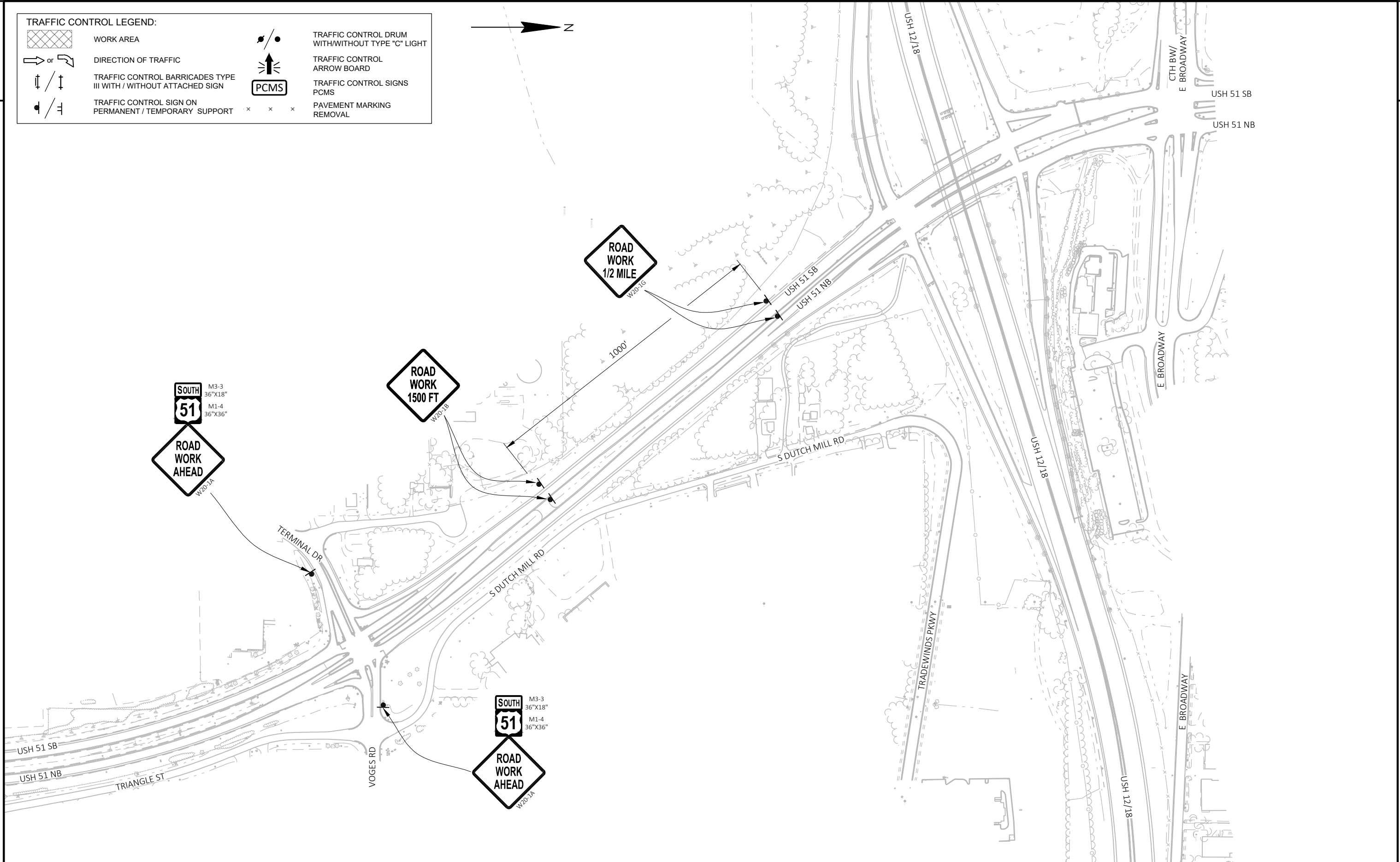
COUNTY: DANE

CONSTRUCTION STAGING - STAGE 2

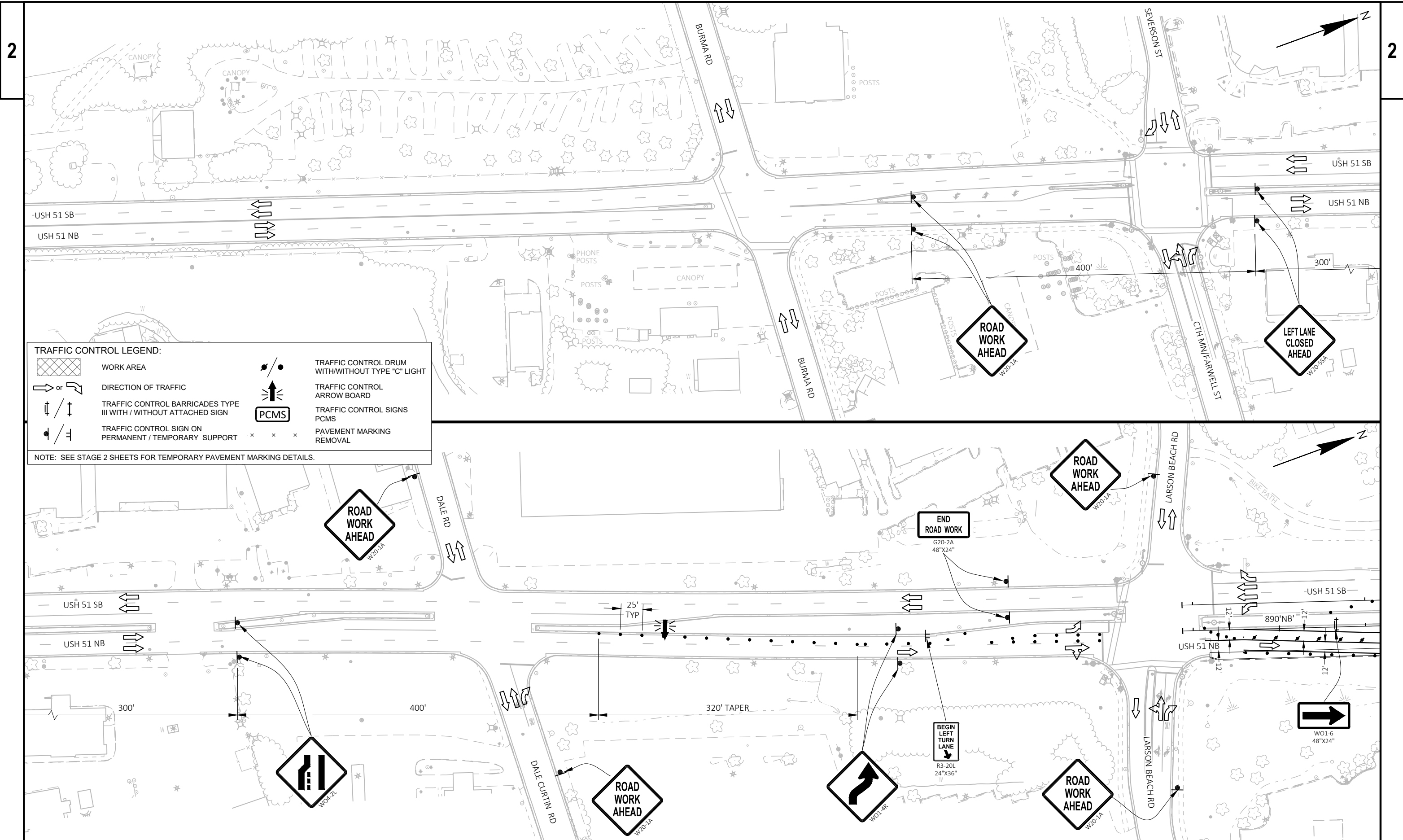
SHEET

E

TRAFFIC CONTROL LEGEND:	
	WORK AREA
	DIRECTION OF TRAFFIC
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT
	TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL SIGNS PCMS
	PAVEMENT MARKING REMOVAL



PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CONSTRUCTION STAGING - STAGE 2	SHEET	E
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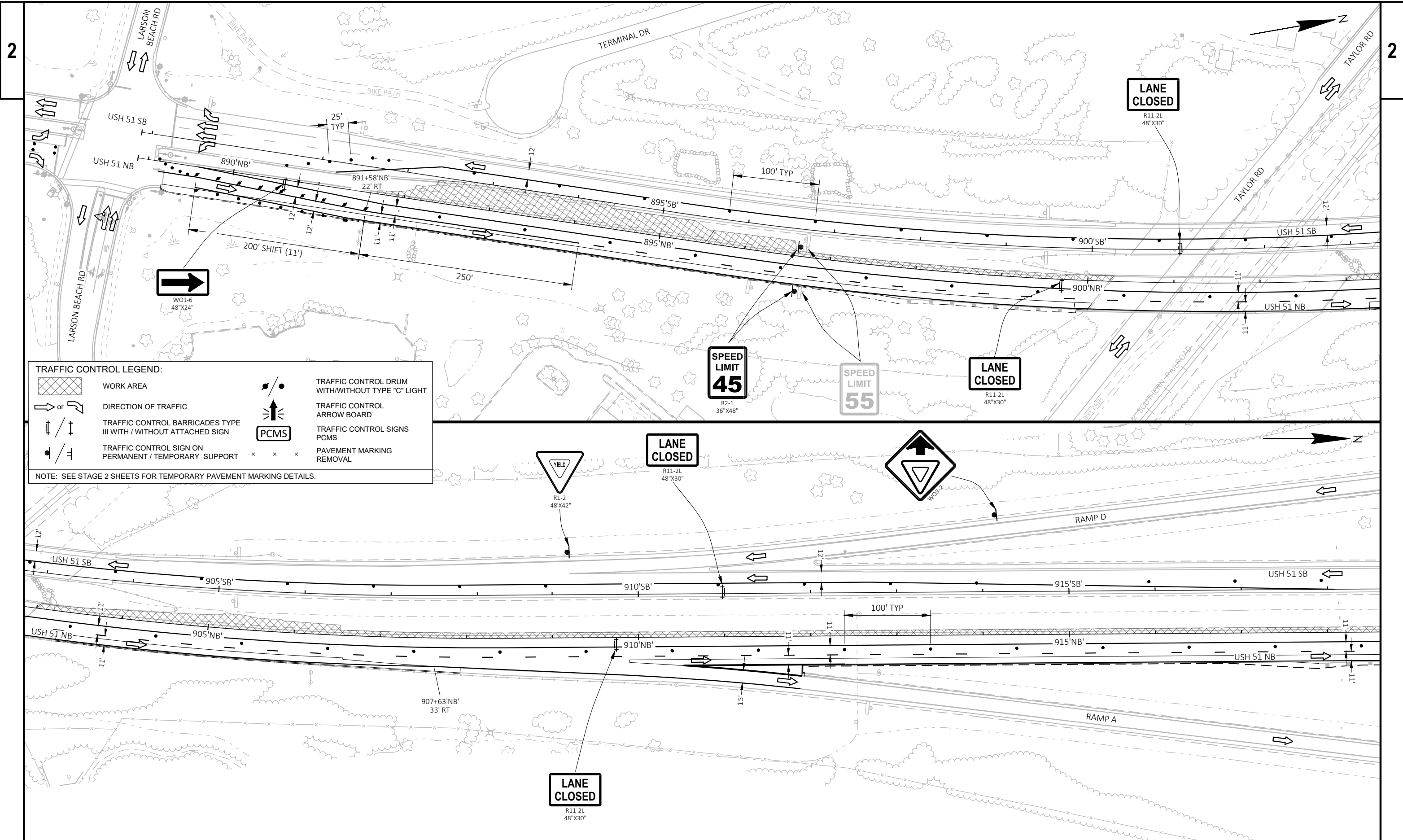


TRAFFIC CONTROL LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

NOTE: SEE STAGE 2 SHEETS FOR TEMPORARY PAVEMENT MARKING DETAILS.

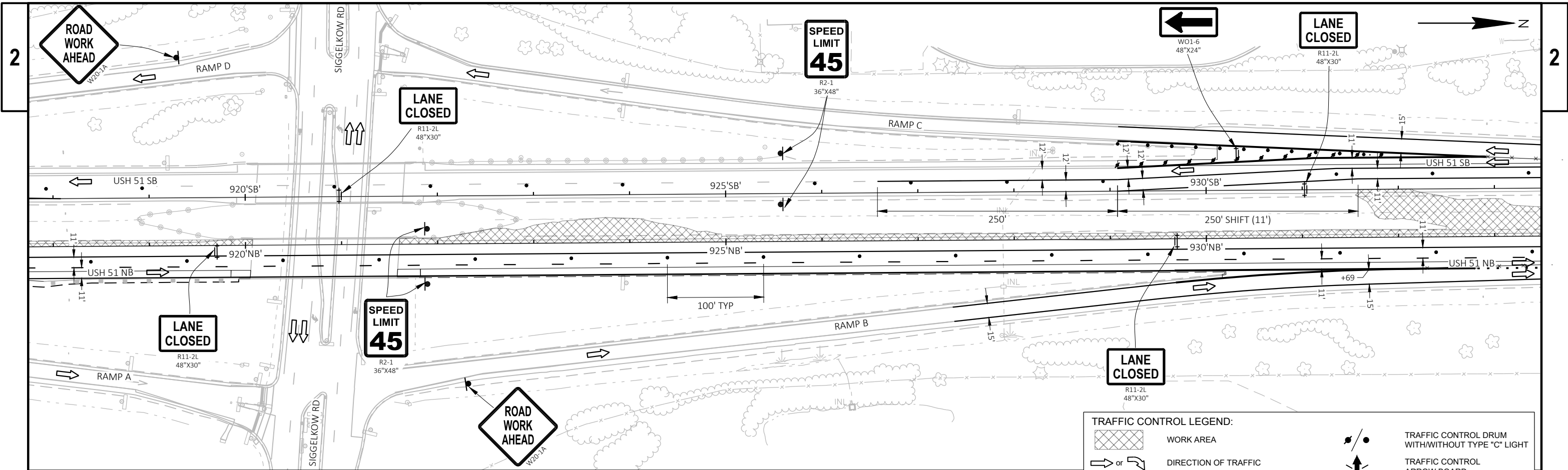
PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CONSTRUCTION STAGING - STAGE 2 - LANE CLOSURES SHEET E



TRAFFIC CONTROL LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

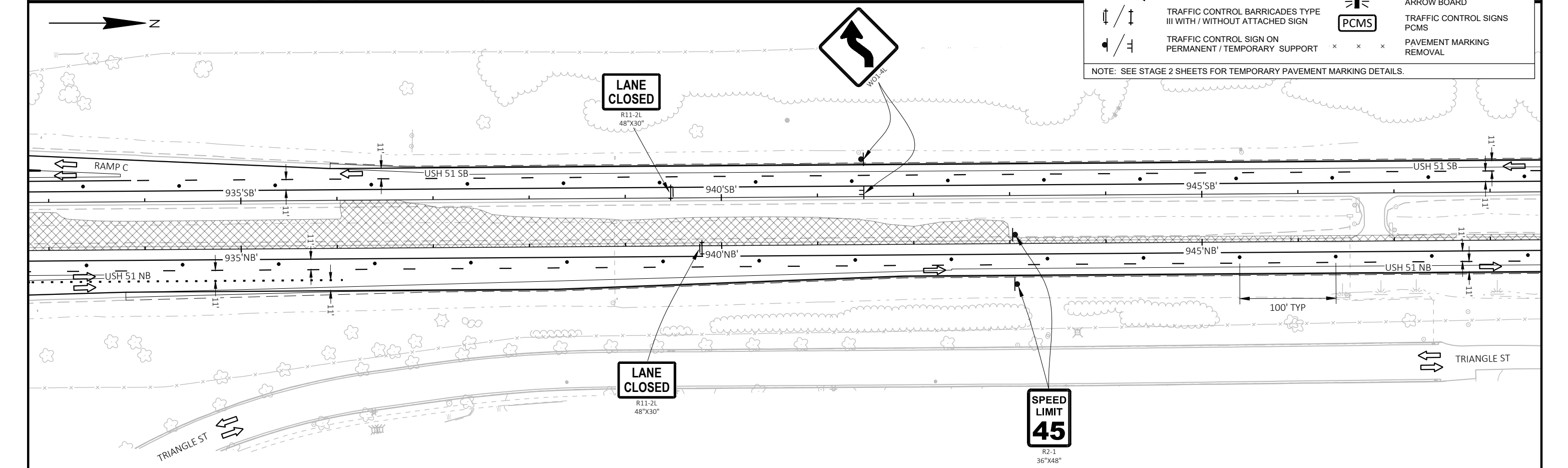
NOTE: SEE STAGE 2 SHEETS FOR TEMPORARY PAVEMENT MARKING DETAILS.



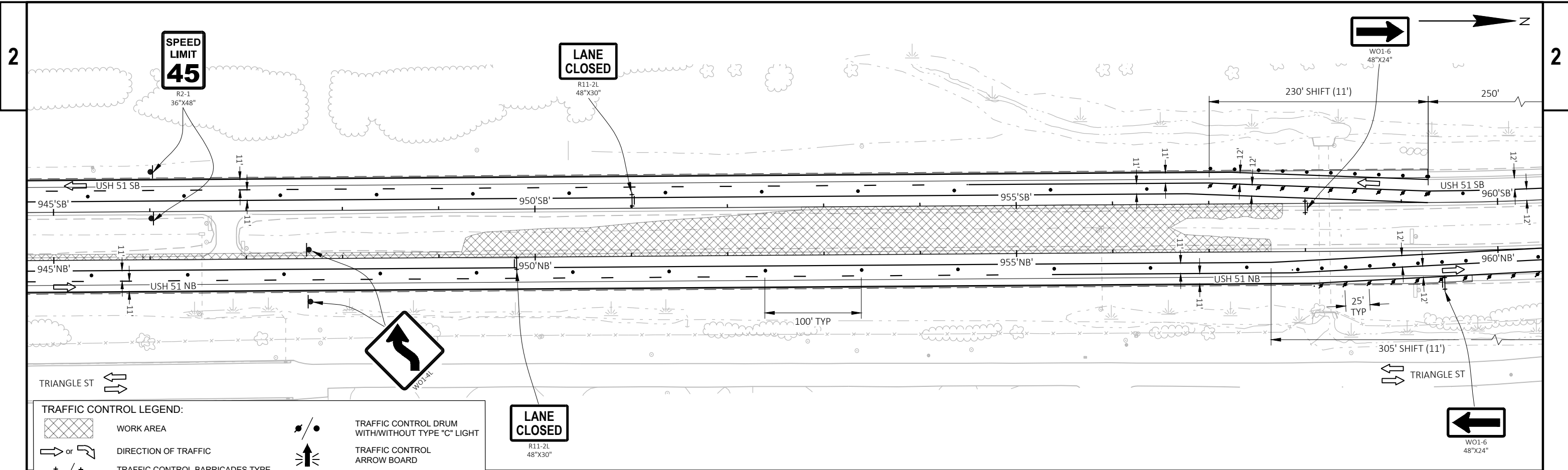
TRAFFIC CONTROL LEGEND:

	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

NOTE: SEE STAGE 2 SHEETS FOR TEMPORARY PAVEMENT MARKING DETAILS.



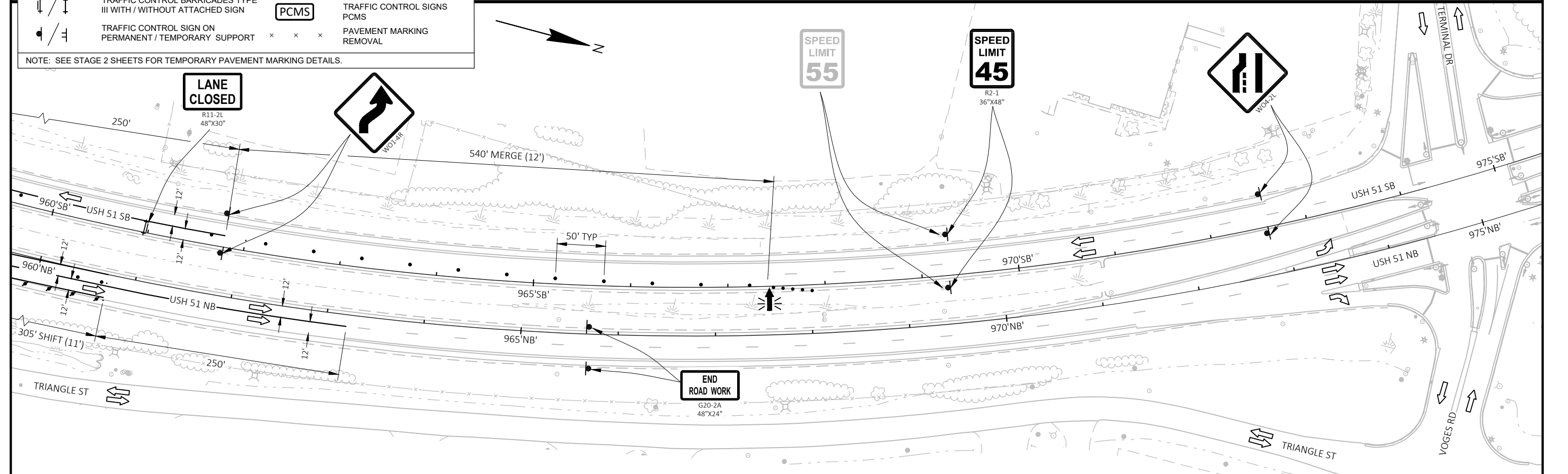
PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CONSTRUCTION STAGING - STAGE 2 - LANE CLOSURES	SHEET	E
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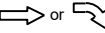



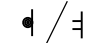



TRAFFIC CONTROL LEGEND:

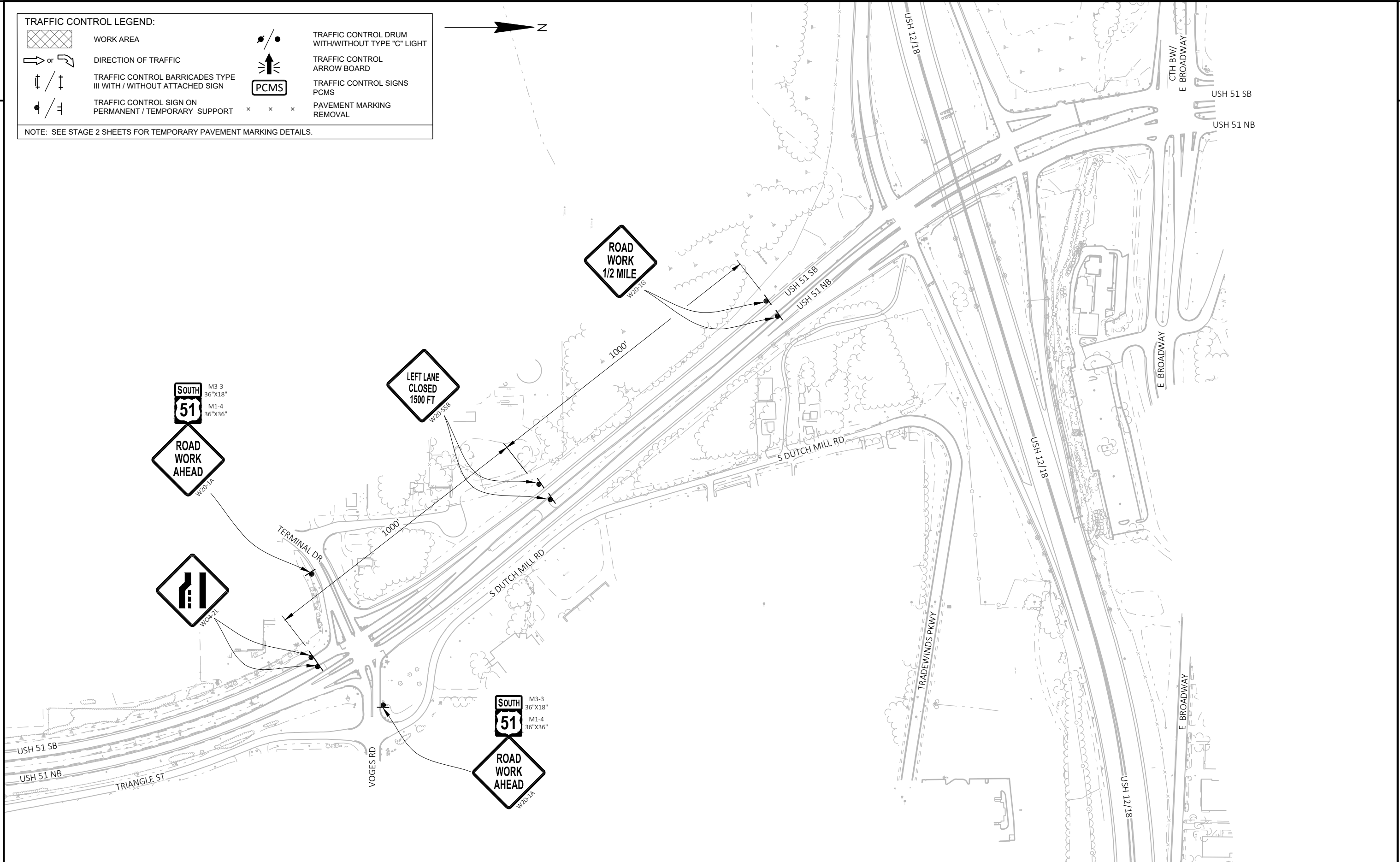
	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

NOTE: SEE STAGE 2 SHEETS FOR TEMPORARY PAVEMENT MARKING DETAILS.

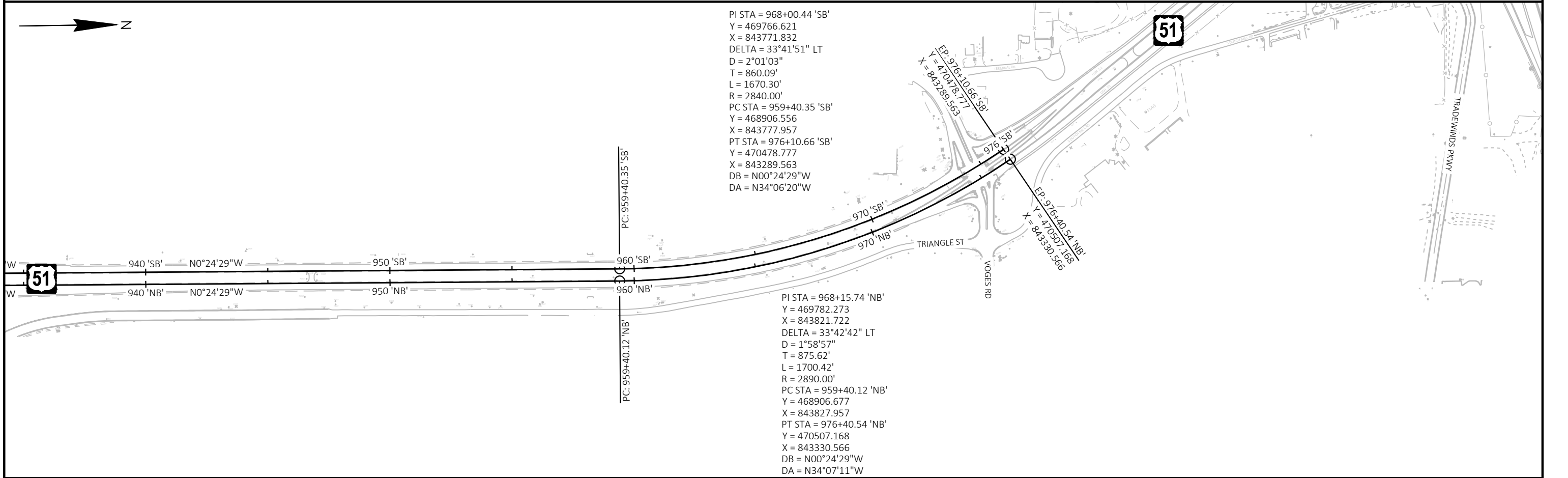
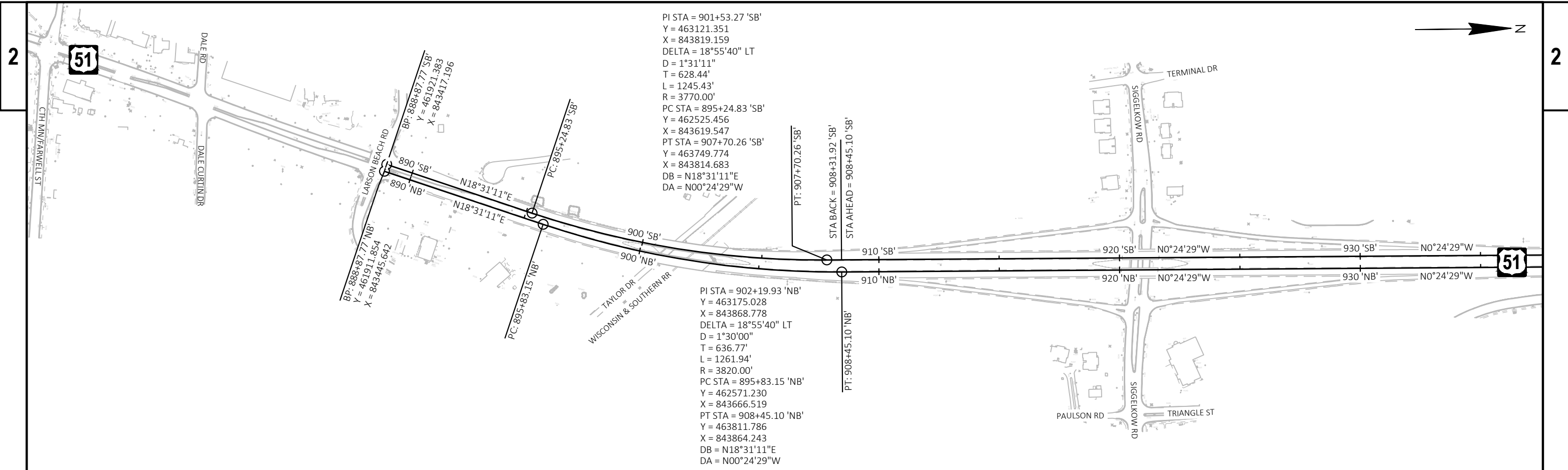


TRAFFIC CONTROL LEGEND:			
	WORK AREA		TRAFFIC CONTROL DRUM WITH/WITHOUT TYPE "C" LIGHT
	DIRECTION OF TRAFFIC		TRAFFIC CONTROL ARROW BOARD
	TRAFFIC CONTROL BARRICADES TYPE III WITH / WITHOUT ATTACHED SIGN		TRAFFIC CONTROL SIGNS PCMS
	TRAFFIC CONTROL SIGN ON PERMANENT / TEMPORARY SUPPORT		PAVEMENT MARKING REMOVAL

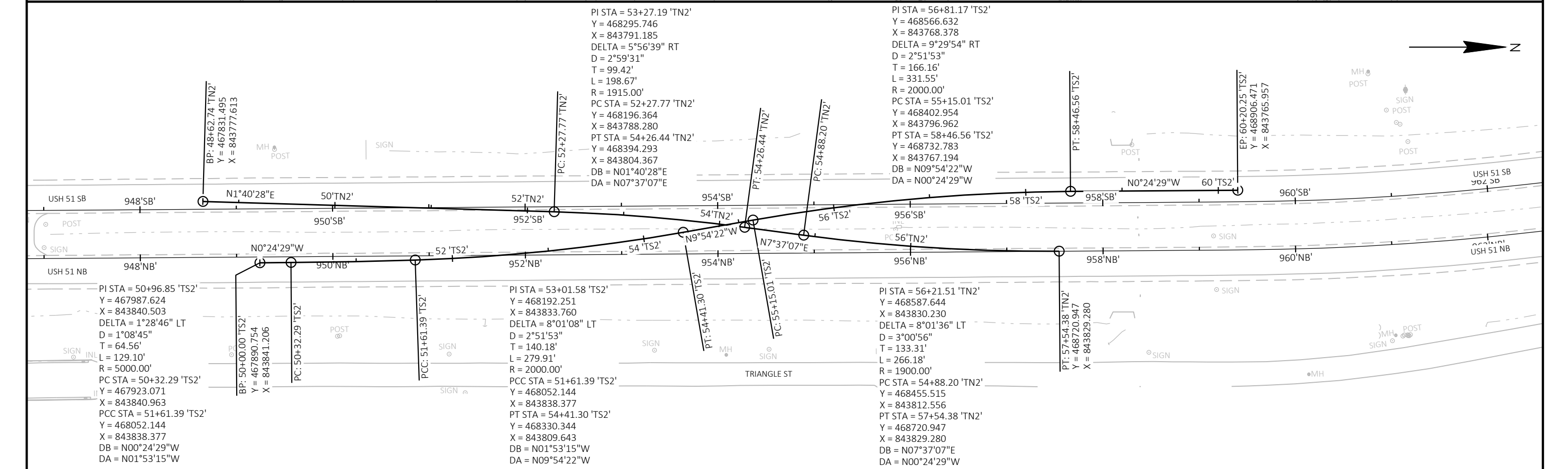
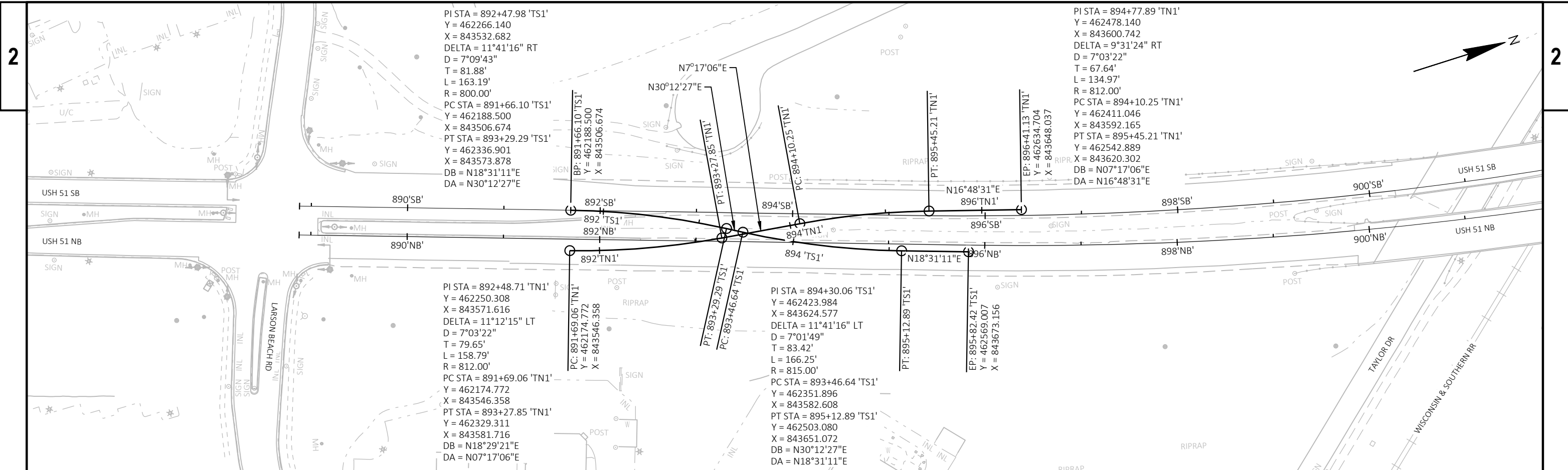
NOTE: SEE STAGE 2 SHEETS FOR TEMPORARY PAVEMENT MARKING DETAILS.



PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CONSTRUCTION STAGING - STAGE 2 - LANE CLOSURES	SHEET	E
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PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	ALIGNMENT DIAGRAM	SHEET	E
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PROJECT NO: 5845-16-86

HWY: USH 51

COUNTY: DANE

ALIGNMENT DIAGRAM

SHEET

E



PI STA = 30+64.07 'TR1'
 Y = 466041.209
 X = 843764.346
 DELTA = 19°03'42" RT
 D = 9°32'57"
 T = 100.74'
 L = 199.61'
 R = 600.00'
 PC STA = 29+63.33 'TR1'
 Y = 465940.570
 X = 843759.904
 PT STA = 31+62.94 'TR1'
 Y = 466134.879
 X = 843801.411
 DB = N02°31'38"E
 DA = N21°35'19"E

PI STA = 35+26.63 'TR2'
 Y = 466502.394
 X = 843771.187
 DELTA = 15°52'35" RT
 D = 9°32'57"
 T = 83.66'
 L = 166.26'
 R = 600.00'
 PC STA = 34+42.96 'TR2'
 Y = 466418.810
 X = 843767.498
 PT STA = 36+09.22 'TR2'
 Y = 466581.780
 X = 843797.601
 DB = N02°31'38"E
 DA = N18°24'13"E

STA 31+52.81 'TR1' =
 STA 931+59.16 'SB'
 Y = 466,125.429
 X = 843,797.764

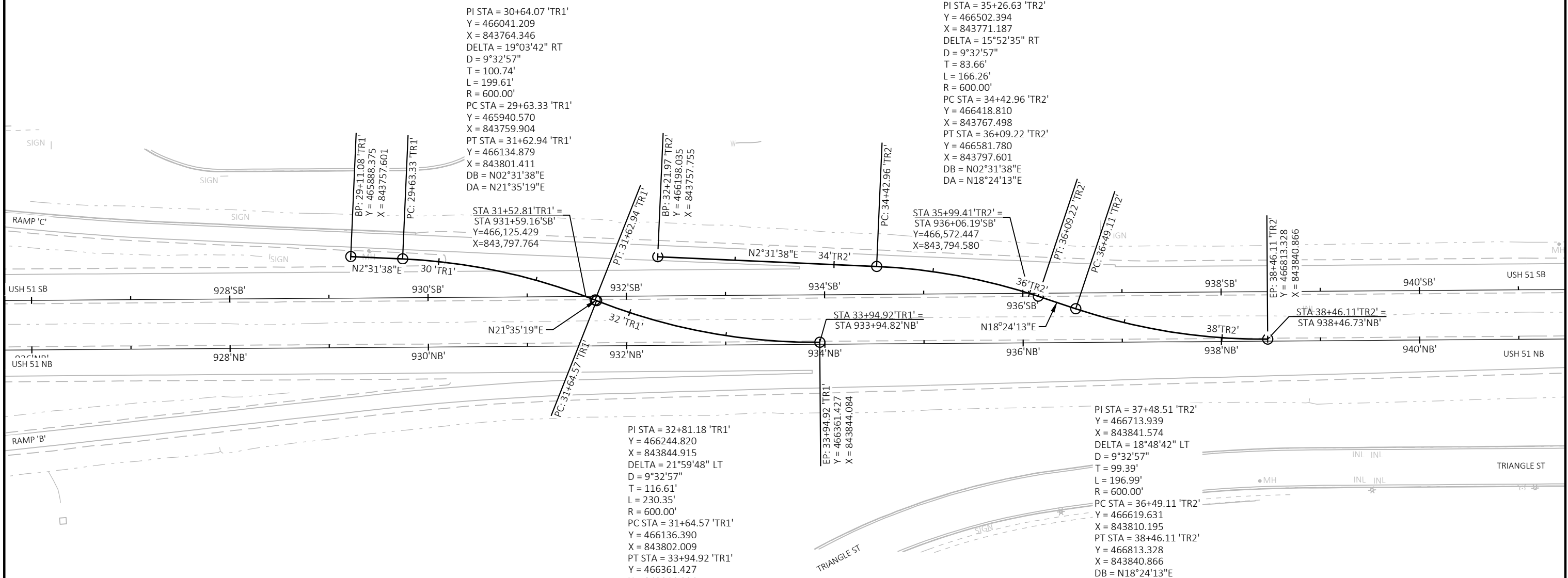
STA 35+99.41 'TR2' =
 STA 936+06.19 'SB'
 Y = 466,572.447
 X = 843,794.580

STA 33+94.92 'TR1' =
 STA 933+94.82 'NB'
 Y = 466,361.427
 X = 843,844.084

STA 38+46.11 'TR2' =
 STA 938+46.73 'NB'
 Y = 466,813.328
 X = 843,840.866

PI STA = 32+81.18 'TR1'
 Y = 466244.820
 X = 843844.915
 DELTA = 21°59'48" LT
 D = 9°32'57"
 T = 116.61'
 L = 230.35'
 R = 600.00'
 PC STA = 31+64.57 'TR1'
 Y = 466136.390
 X = 843802.009
 PT STA = 33+94.92 'TR1'
 Y = 466361.427
 X = 843844.084
 DB = N21°35'19"E
 DA = N00°24'29"W

PI STA = 37+48.51 'TR2'
 Y = 466713.939
 X = 843841.574
 DELTA = 18°48'42" LT
 D = 9°32'57"
 T = 99.39'
 L = 196.99'
 R = 600.00'
 PC STA = 36+49.11 'TR2'
 Y = 466619.631
 X = 843810.195
 PT STA = 38+46.11 'TR2'
 Y = 466813.328
 X = 843840.866
 DB = N18°24'13"E
 DA = N00°24'29"W





PI STA = 43+69.23 'SGW'
 Y = 465043.547
 X = 843227.709
 DELTA = 0°45'20" LT
 D = 2°51'53"
 T = 13.19'
 L = 26.38'
 R = 2000.00'
 PC STA = 43+56.04 'SGW'
 Y = 465042.470
 X = 843214.565
 PT STA = 43+82.41 'SGW'
 Y = 465044.797
 X = 843240.837
 DB = N85°19'00"E
 DA = N84°33'40"E

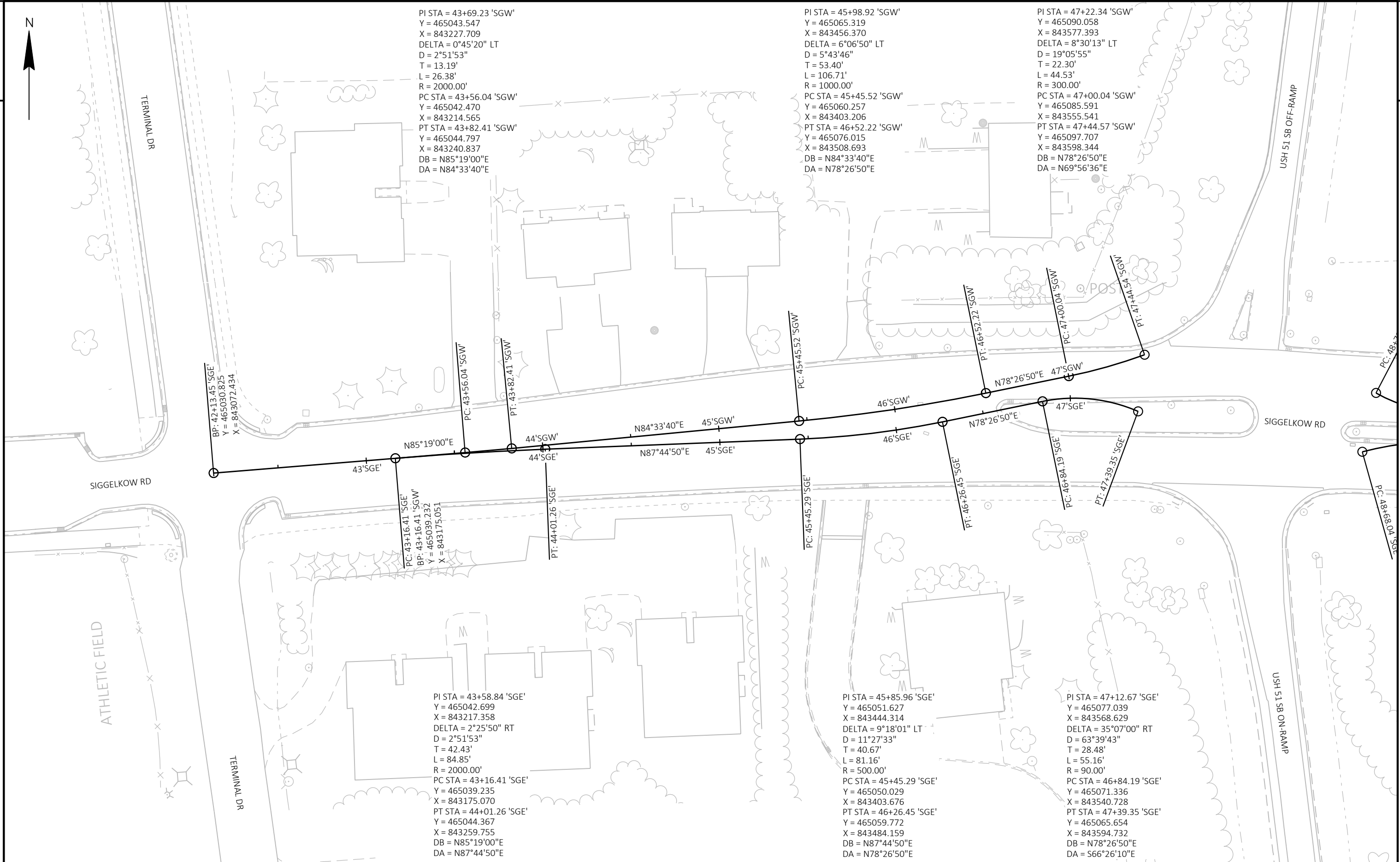
PI STA = 45+98.92 'SGW'
 Y = 465065.319
 X = 843456.370
 DELTA = 6°06'50" LT
 D = 5°43'46"
 T = 53.40'
 L = 106.71'
 R = 1000.00'
 PC STA = 45+45.52 'SGW'
 Y = 465060.257
 X = 843403.206
 PT STA = 46+52.22 'SGW'
 Y = 465076.015
 X = 843508.693
 DB = N84°33'40"E
 DA = N78°26'50"E

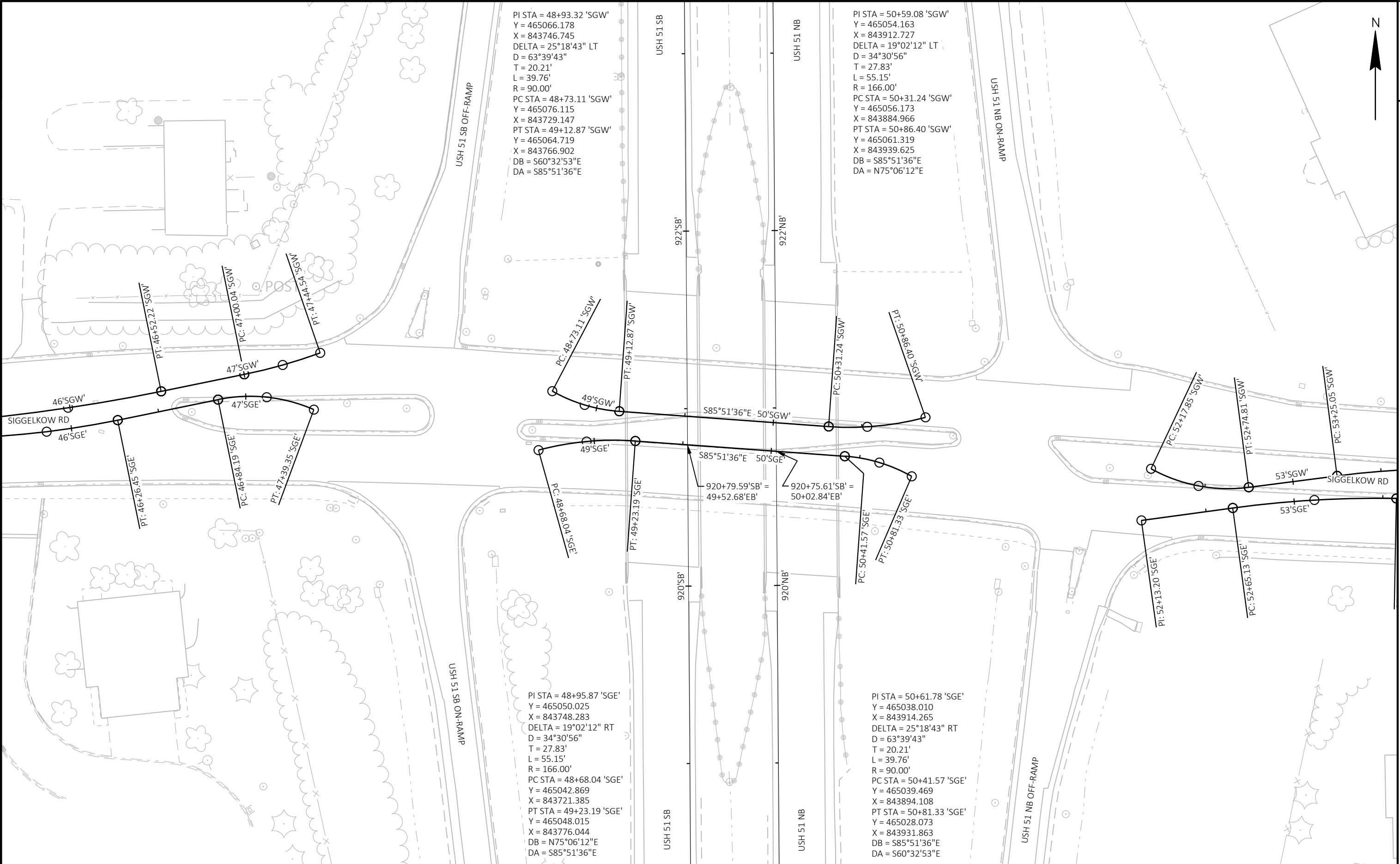
PI STA = 47+22.34 'SGW'
 Y = 465090.058
 X = 843577.393
 DELTA = 8°30'13" LT
 D = 19°05'55"
 T = 22.30'
 L = 44.53'
 R = 300.00'
 PC STA = 47+00.04 'SGW'
 Y = 465085.591
 X = 843555.541
 PT STA = 47+44.57 'SGW'
 Y = 465097.707
 X = 843598.344
 DB = N78°26'50"E
 DA = N69°56'36"E

PI STA = 43+58.84 'SGE'
 Y = 465042.699
 X = 843217.358
 DELTA = 2°25'50" RT
 D = 2°51'53"
 T = 42.43'
 L = 84.85'
 R = 2000.00'
 PC STA = 43+16.41 'SGE'
 Y = 465039.235
 X = 843175.070
 PT STA = 44+01.26 'SGE'
 Y = 465044.367
 X = 843259.755
 DB = N85°19'00"E
 DA = N87°44'50"E

PI STA = 45+85.96 'SGE'
 Y = 465051.627
 X = 843444.314
 DELTA = 9°18'01" LT
 D = 11°27'33"
 T = 40.67'
 L = 81.16'
 R = 500.00'
 PC STA = 45+45.29 'SGE'
 Y = 465050.029
 X = 843403.676
 PT STA = 46+26.45 'SGE'
 Y = 465059.772
 X = 843484.159
 DB = N87°44'50"E
 DA = N78°26'50"E

PI STA = 47+12.67 'SGE'
 Y = 465077.039
 X = 843568.629
 DELTA = 35°07'00" RT
 D = 63°39'43"
 T = 28.48'
 L = 55.16'
 R = 90.00'
 PC STA = 46+84.19 'SGE'
 Y = 465071.336
 X = 843540.728
 PT STA = 47+39.35 'SGE'
 Y = 465065.654
 X = 843594.732
 DB = N78°26'50"E
 DA = S66°26'10"E





PI STA = 48+93.32 'SGW'
 Y = 465066.178
 X = 843746.745
 DELTA = 25°18'43" LT
 D = 63°39'43"
 T = 20.21'
 L = 39.76'
 R = 90.00'
 PC STA = 48+73.11 'SGW'
 Y = 465076.115
 X = 843729.147
 PT STA = 49+12.87 'SGW'
 Y = 465064.719
 X = 843766.902
 DB = S60°32'53"E
 DA = S85°51'36"E

PI STA = 50+59.08 'SGW'
 Y = 465054.163
 X = 843912.727
 DELTA = 19°02'12" LT
 D = 34°30'56"
 T = 27.83'
 L = 55.15'
 R = 166.00'
 PC STA = 50+31.24 'SGW'
 Y = 465056.173
 X = 843884.966
 PT STA = 50+86.40 'SGW'
 Y = 465061.319
 X = 843939.625
 DB = S85°51'36"E
 DA = N75°06'12"E

PI STA = 48+95.87 'SGE'
 Y = 465050.025
 X = 843748.283
 DELTA = 19°02'12" RT
 D = 34°30'56"
 T = 27.83'
 L = 55.15'
 R = 166.00'
 PC STA = 48+68.04 'SGE'
 Y = 465042.869
 X = 843721.385
 PT STA = 49+23.19 'SGE'
 Y = 465048.015
 X = 843776.044
 DB = N75°06'12"E
 DA = S85°51'36"E

PI STA = 50+61.78 'SGE'
 Y = 465038.010
 X = 843914.265
 DELTA = 25°18'43" RT
 D = 63°39'43"
 T = 20.21'
 L = 39.76'
 R = 90.00'
 PC STA = 50+41.57 'SGE'
 Y = 465039.469
 X = 843894.108
 PT STA = 50+81.33 'SGE'
 Y = 465028.073
 X = 843931.863
 DB = S85°51'36"E
 DA = S60°32'53"E



PI STA = 52+47.32 'SGW'
 Y = 465018.096
 X = 844092.606
 DELTA = 36°15'47" LT
 D = 63°39'43"
 T = 29.47'
 L = 56.96'
 R = 90.00'
 PC STA = 52+17.85 'SGW'
 Y = 465032.320
 X = 844066.794
 PT STA = 52+74.81 'SGW'
 Y = 465021.895
 X = 844121.831
 DB = S61°08'32"E
 DA = N82°35'41"E

PI STA = 53+62.11 'SGW'
 Y = 465033.146
 X = 844208.397
 DELTA = 8°28'35" RT
 D = 11°27'33"
 T = 37.05'
 L = 73.97'
 R = 500.00'
 PC STA = 53+25.05 'SGW'
 Y = 465028.370
 X = 844171.653
 PT STA = 53+99.02 'SGW'
 Y = 465032.453
 X = 844245.444
 DB = N82°35'41"E
 DA = S88°55'43"E

PI STA = 56+41.15 'SGW'
 Y = 465027.926
 X = 844487.525
 DELTA = 9°03'30" LT
 D = 9°32'57"
 T = 47.53'
 L = 94.86'
 R = 600.00'
 PC STA = 55+93.62 'SGW'
 Y = 465028.815
 X = 844440.005
 PT STA = 56+88.48 'SGW'
 Y = 465034.530
 X = 844534.593
 DB = S88°55'43"E
 DA = N82°00'47"E

PC: 52+17.85 'SGW'

PT: 52+74.81 'SGW'

PC: 53+25.05 'SGW'

PT: 53+99.02 'SGW'

PC: 55+93.62 'SGW'

EP: 56+88.48 'SGW'
 Y = 465034.527
 X = 844534.574

PI: 52+13.20 'SGE'
 Y = 465003.243
 X = 844061.358

PC: 52+65.13 'SGE'

PT: 53+57.62 'SGE'

PC: 53+96.61 'SGE'

PCC: 55+06.26 'SGE'

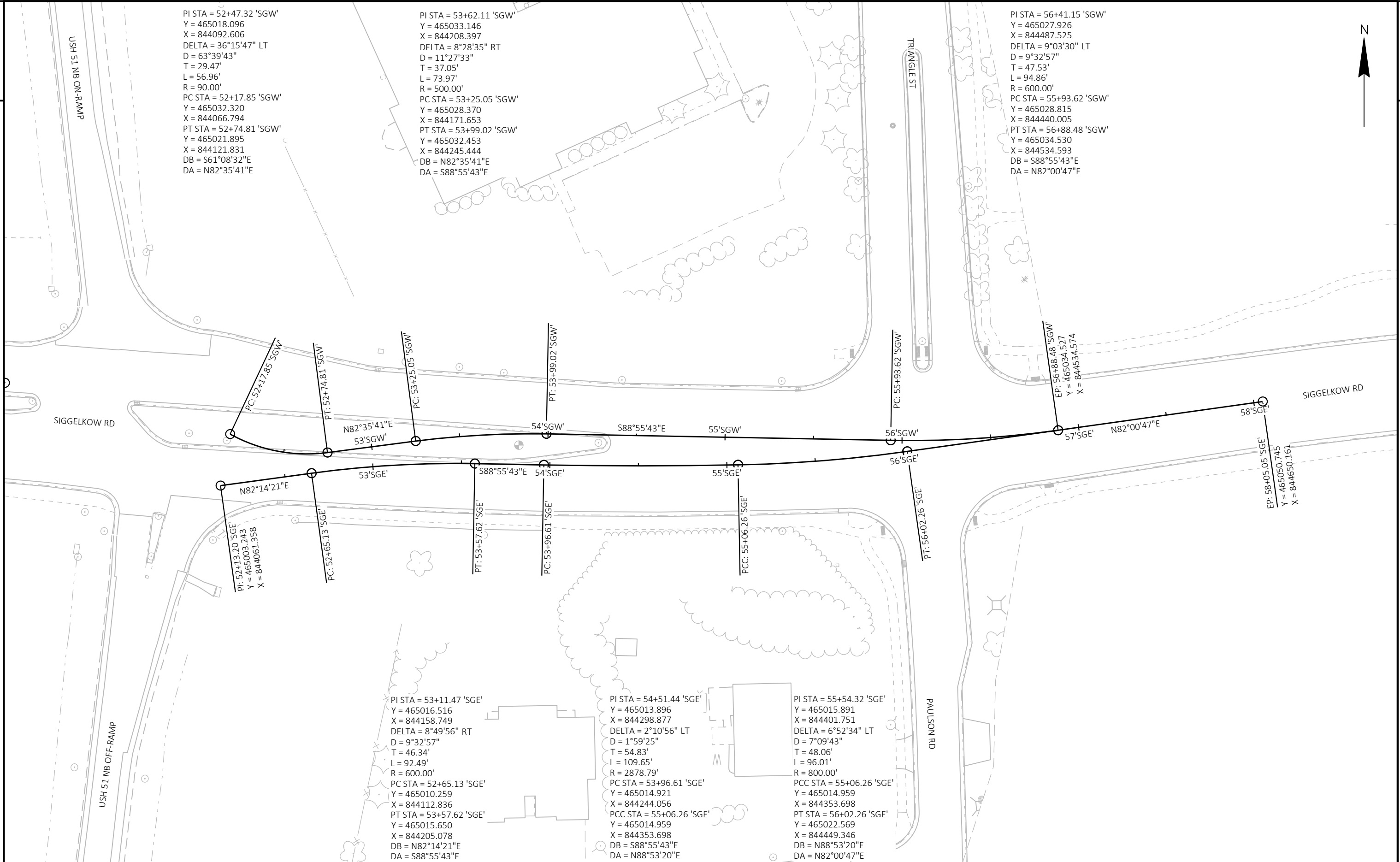
PT: 56+02.26 'SGE'

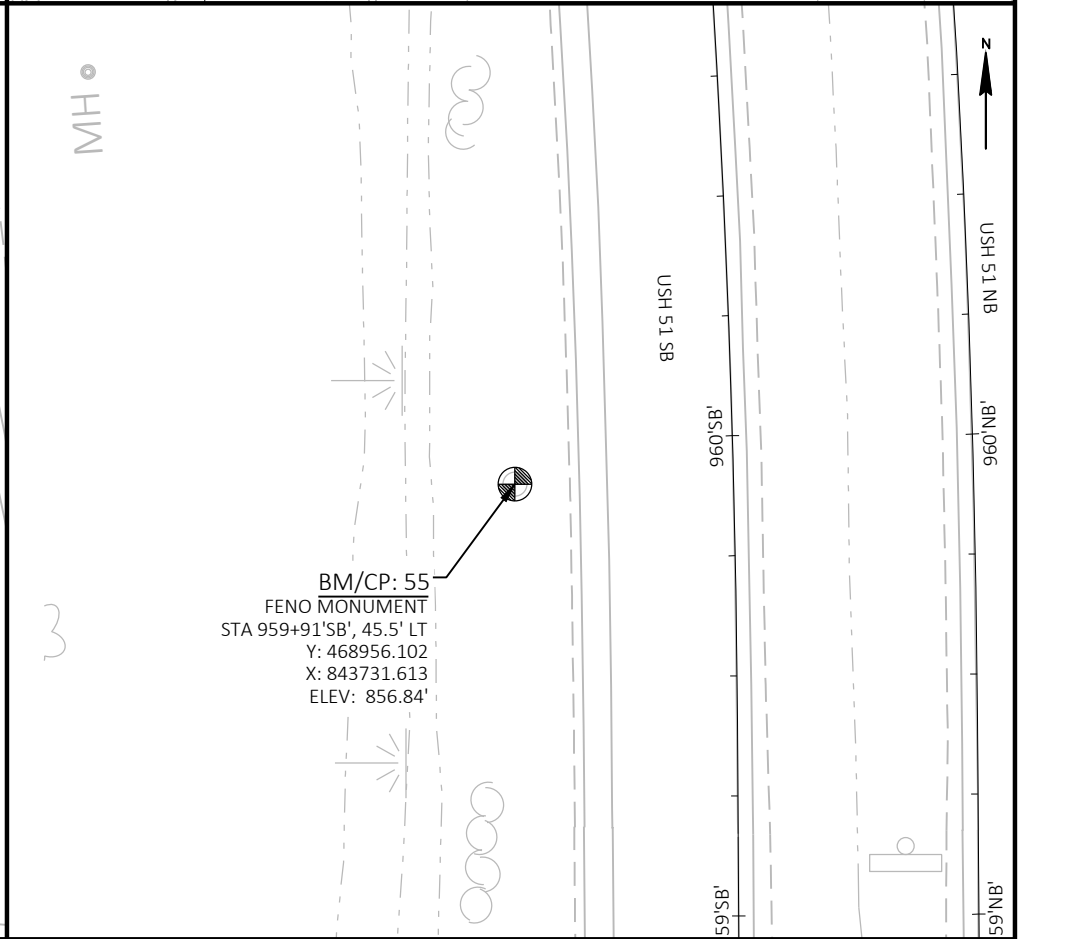
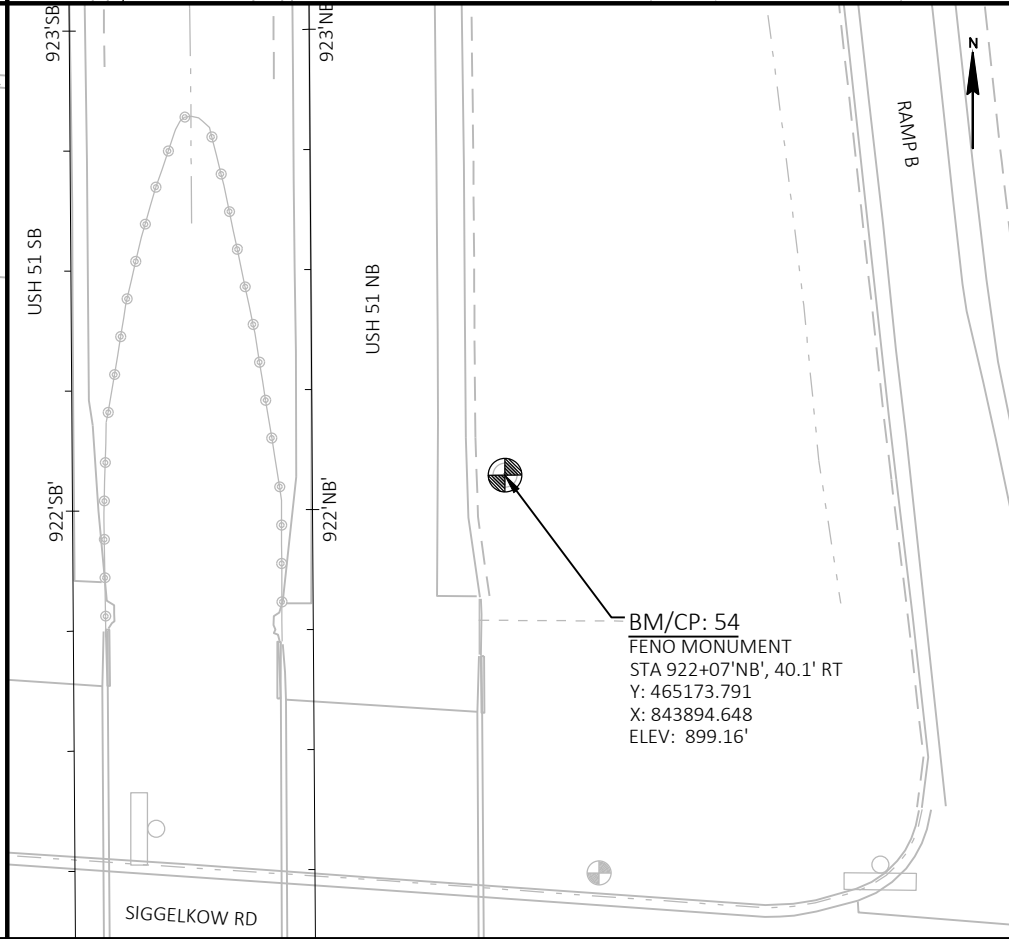
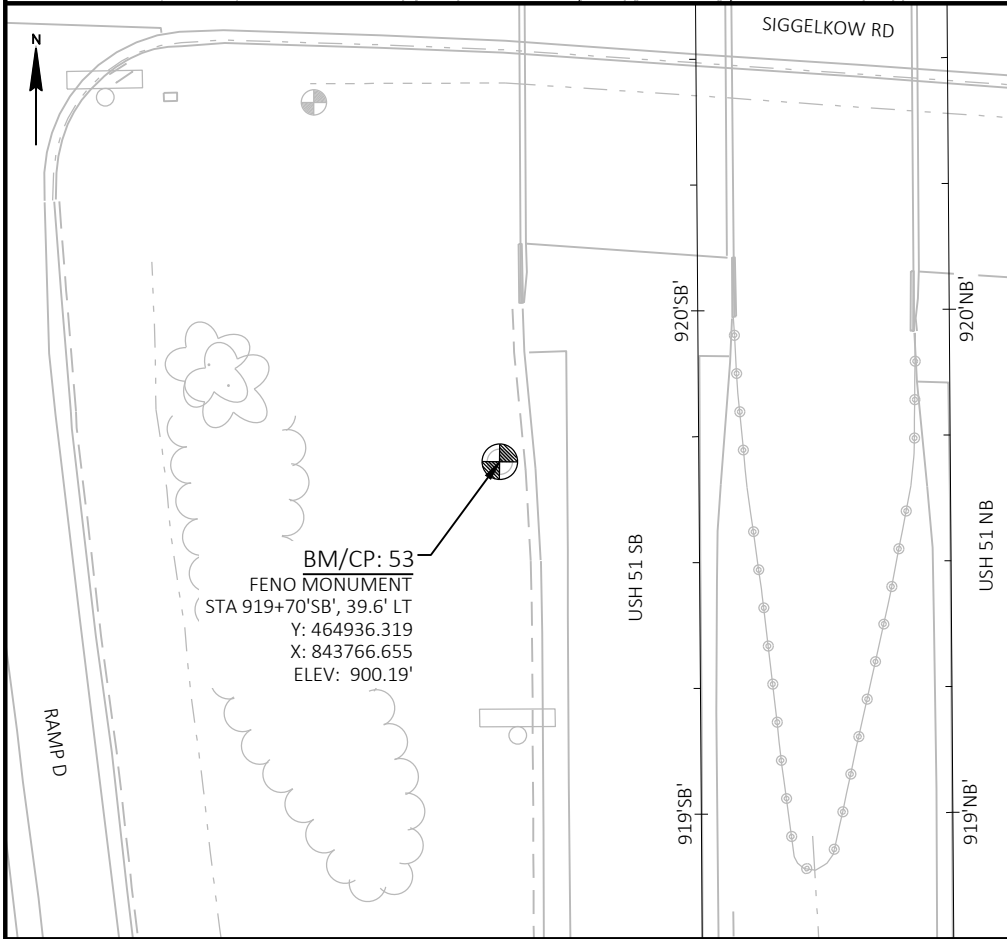
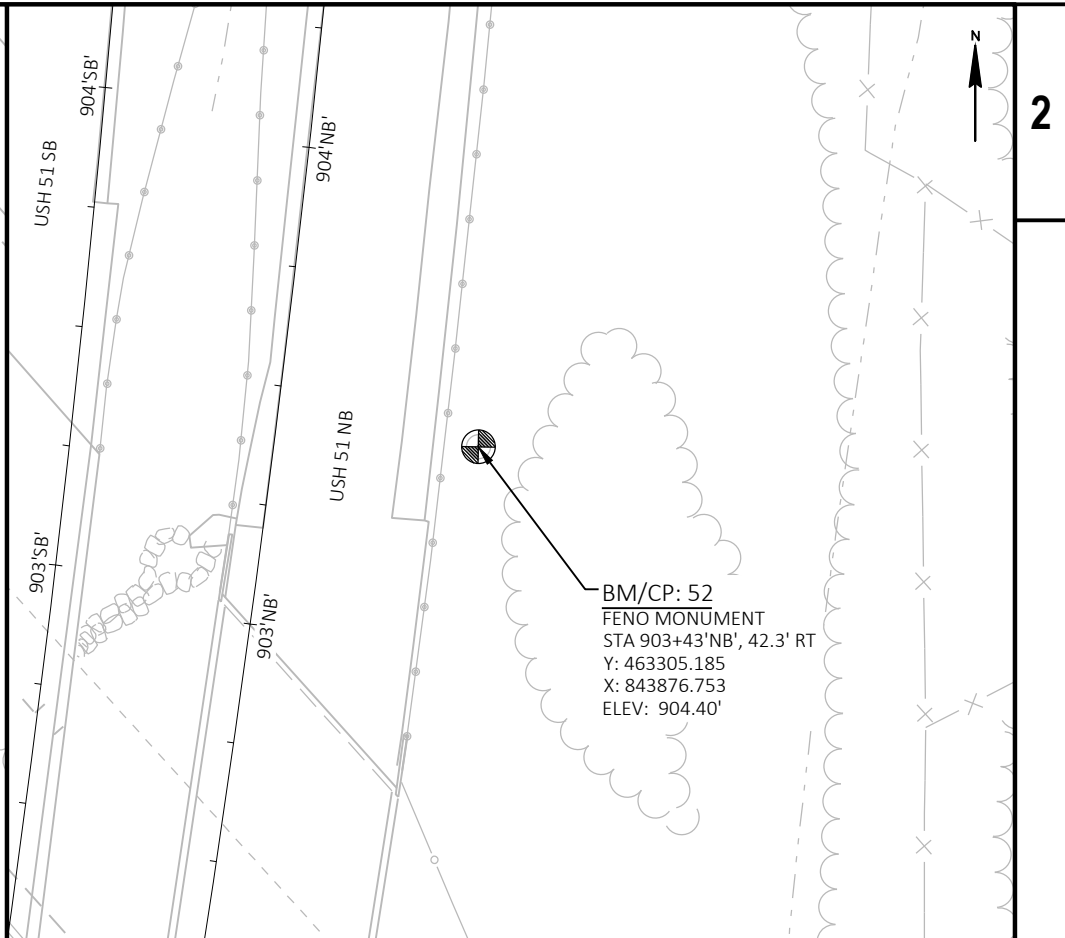
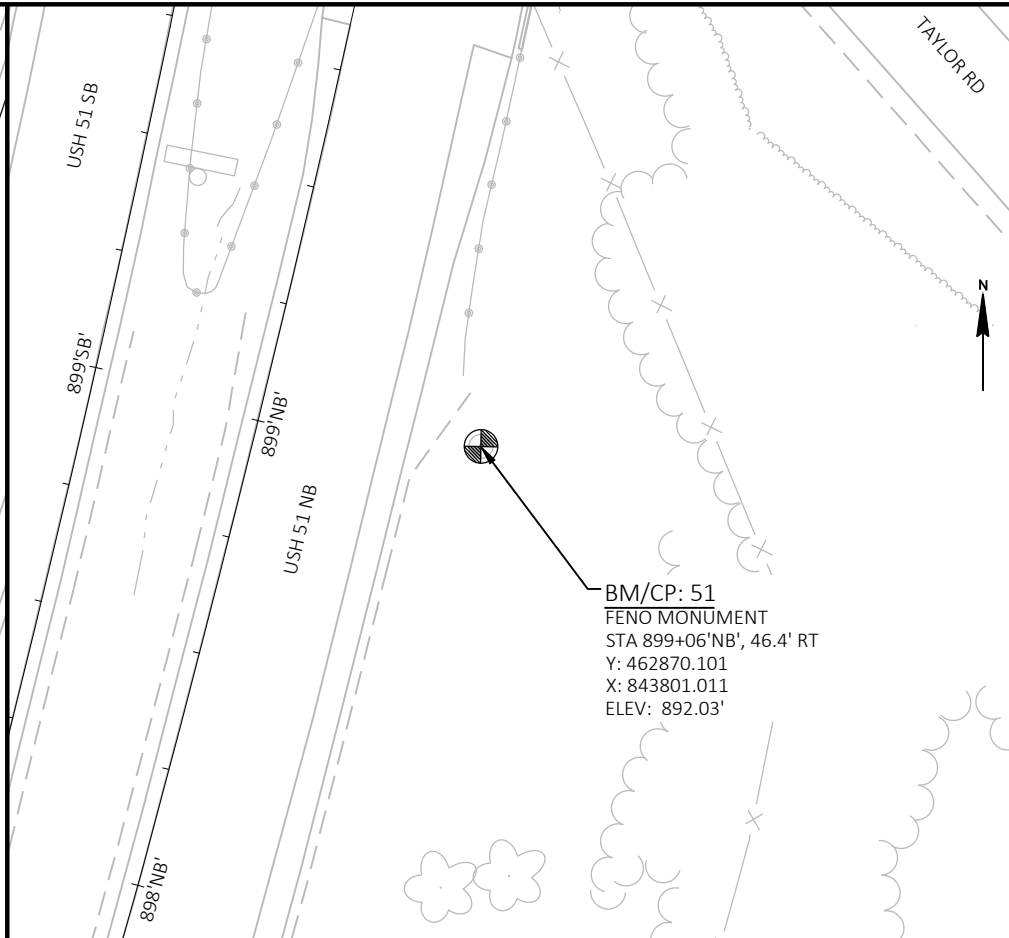
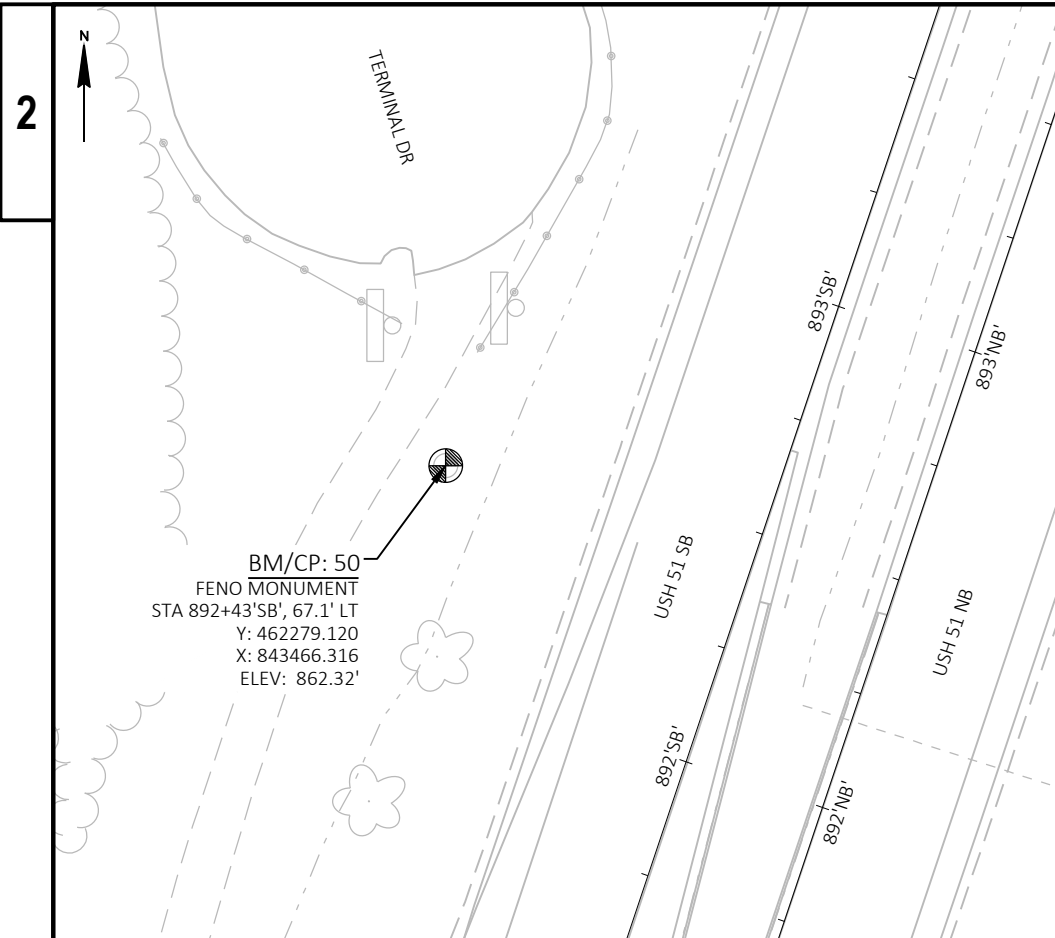
EP: 58+05.05 'SGE'
 Y = 465050.745
 X = 844650.161

PI STA = 53+11.47 'SGE'
 Y = 465016.516
 X = 844158.749
 DELTA = 8°49'56" RT
 D = 9°32'57"
 T = 46.34'
 L = 92.49'
 R = 600.00'
 PC STA = 52+65.13 'SGE'
 Y = 465010.259
 X = 844112.836
 PT STA = 53+57.62 'SGE'
 Y = 465015.650
 X = 844205.078
 DB = N82°14'21"E
 DA = S88°55'43"E

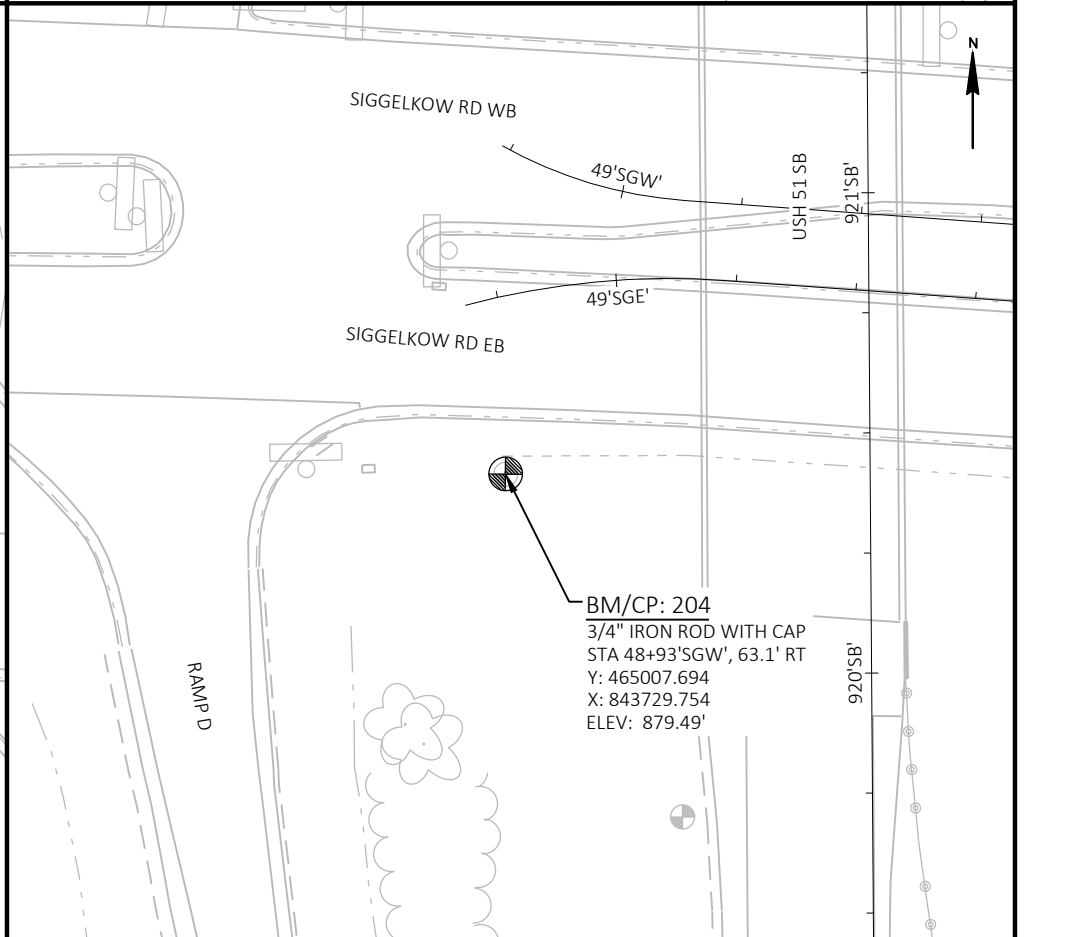
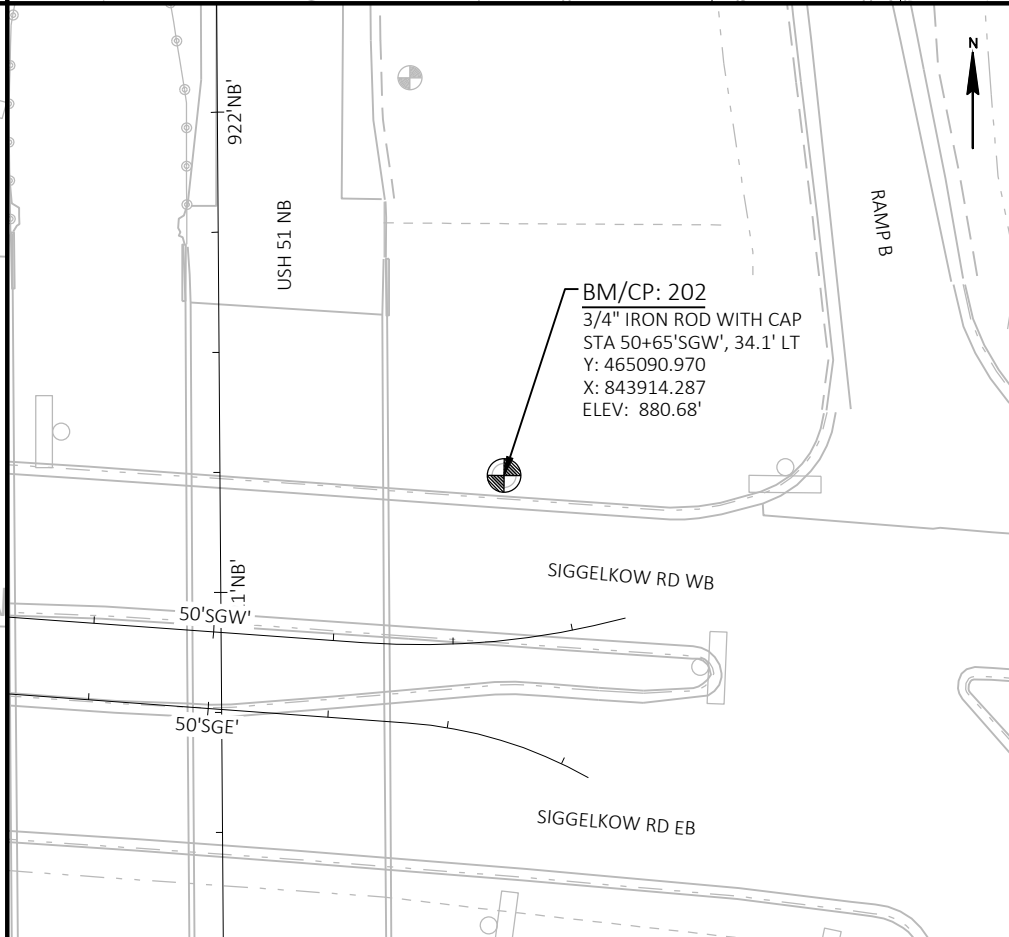
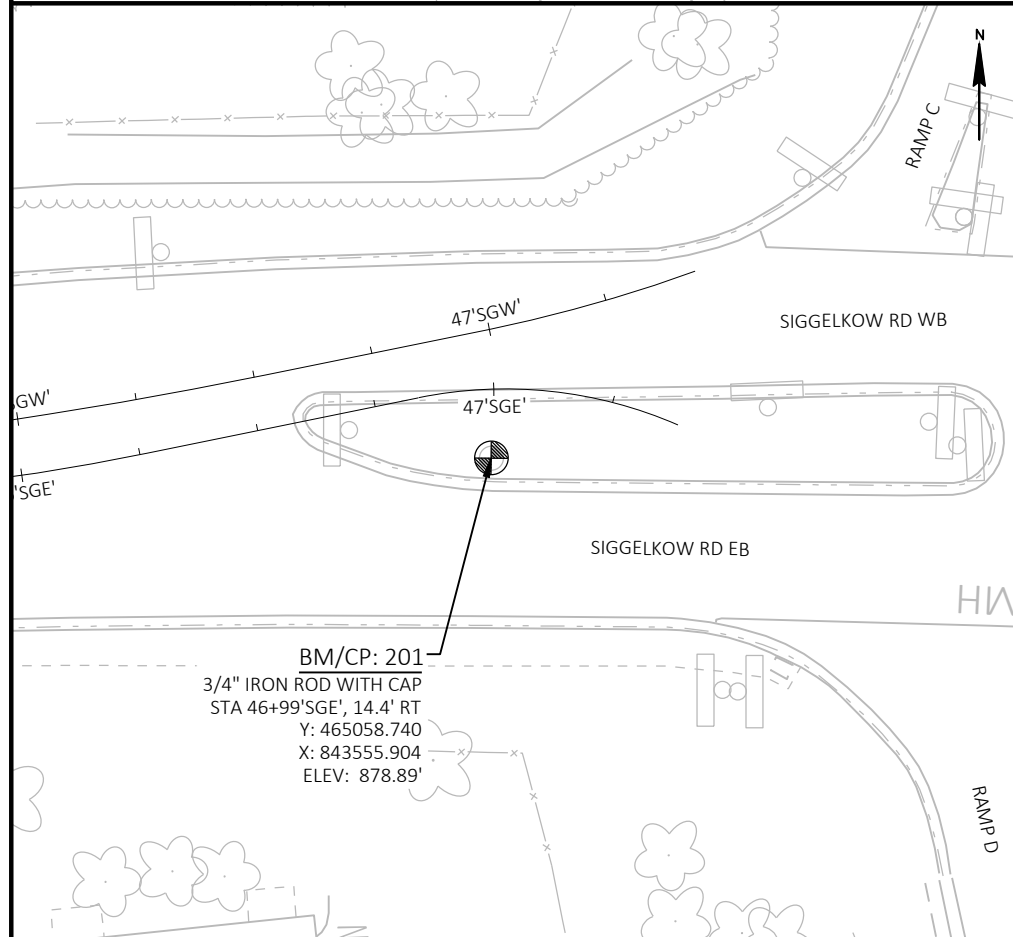
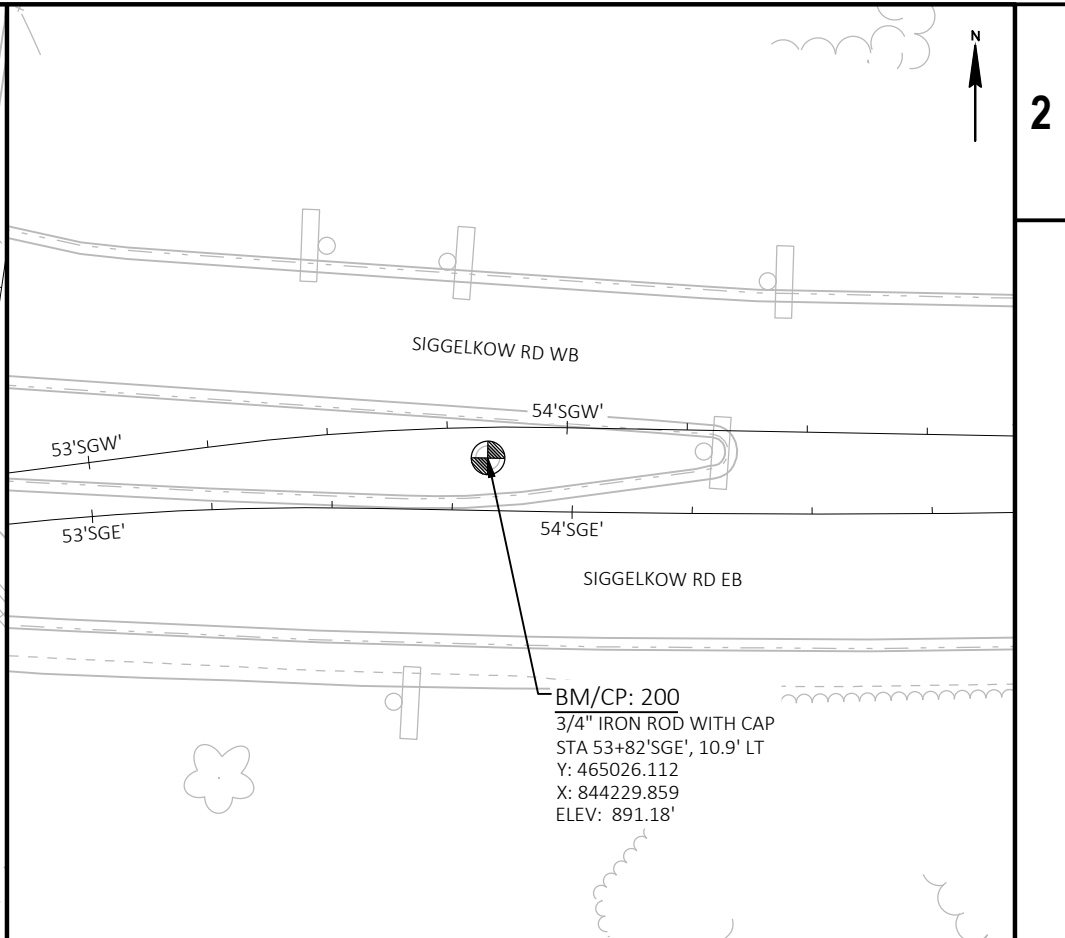
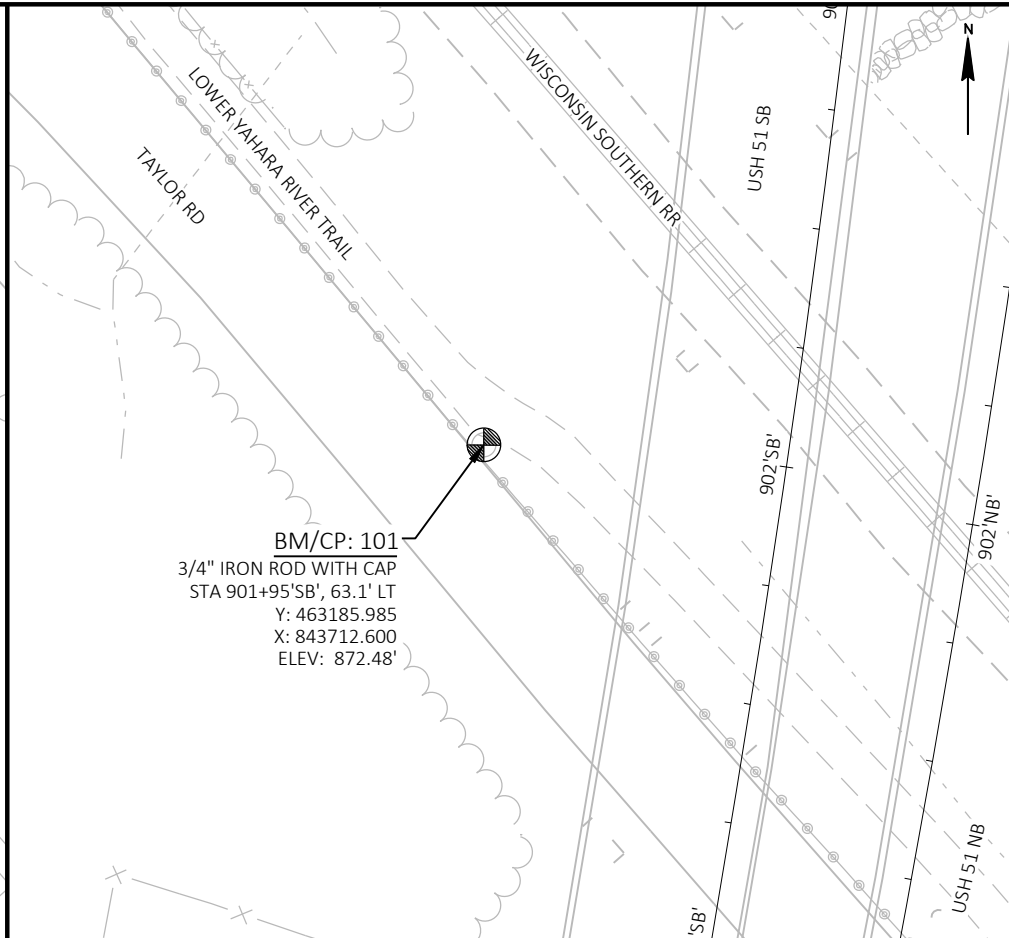
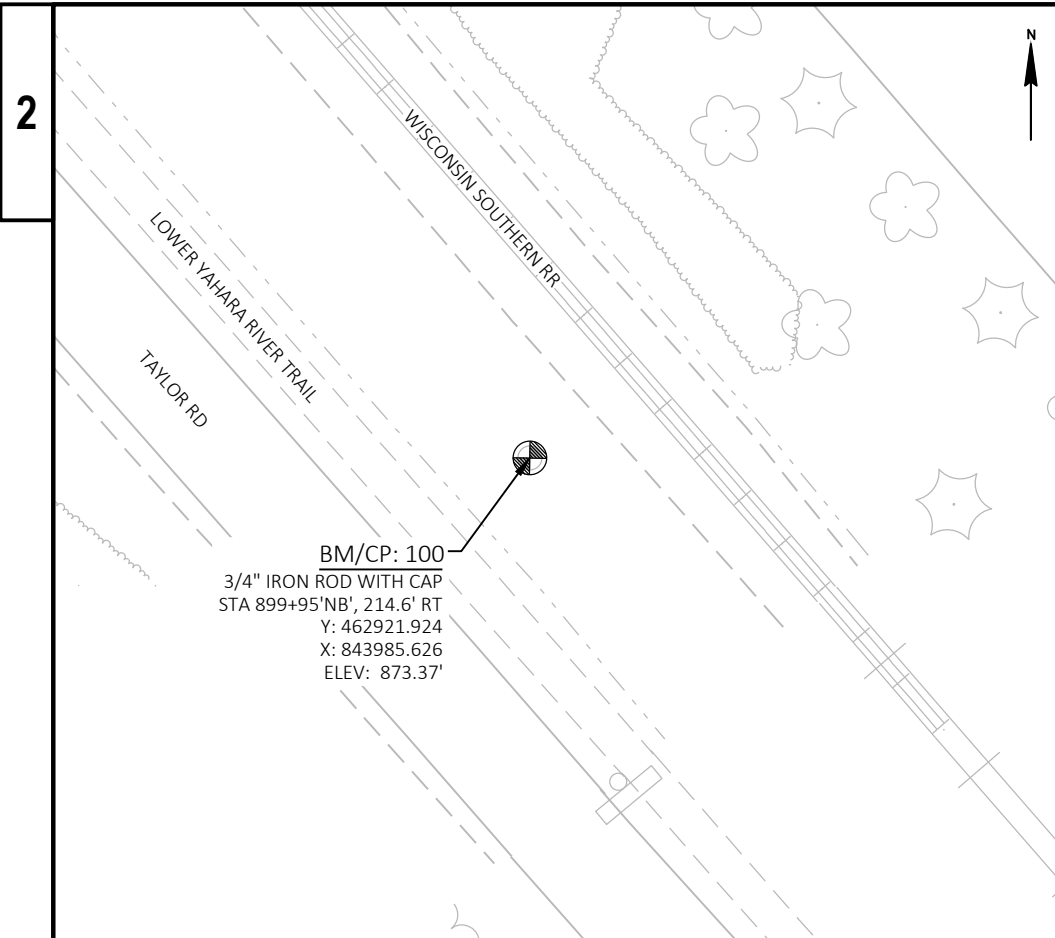
PI STA = 54+51.44 'SGE'
 Y = 465013.896
 X = 844298.877
 DELTA = 2°10'56" LT
 D = 1°59'25"
 T = 54.83'
 L = 109.65'
 R = 2878.79'
 PC STA = 53+96.61 'SGE'
 Y = 465014.921
 X = 844244.056
 PCC STA = 55+06.26 'SGE'
 Y = 465014.959
 X = 844353.698
 DB = S88°55'43"E
 DA = N88°53'20"E

PI STA = 55+54.32 'SGE'
 Y = 465015.891
 X = 844401.751
 DELTA = 6°52'34" LT
 D = 7°09'43"
 T = 48.06'
 L = 96.01'
 R = 800.00'
 PCC STA = 55+06.26 'SGE'
 Y = 465014.959
 X = 844353.698
 PT STA = 56+02.26 'SGE'
 Y = 465022.569
 X = 844449.346
 DB = N88°53'20"E
 DA = N82°00'47"E





PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE ALIGNMENT LAYOUT SURVEY CONTROL SHEET E



Estimate Of Quantities

5845-16-86

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	36.000	36.000
0004	204.0100	Removing Concrete Pavement	SY	121.000	121.000
0006	204.0110	Removing Asphaltic Surface	SY	7,080.000	7,080.000
0008	204.0150	Removing Curb & Gutter	LF	74.000	74.000
0010	204.0165	Removing Guardrail	LF	167.000	167.000
0012	204.0220	Removing Inlets	EACH	1.000	1.000
0014	205.0100	Excavation Common	CY	3,388.000	3,388.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	126.000	126.000
0018	213.0100	Finishing Roadway (project) 01. 5845-16-86	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,044.000	1,044.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	4,260.000	4,260.000
0024	310.0110	Base Aggregate Open-Graded	TON	92.000	92.000
0026	312.0110	Select Crushed Material	TON	4,800.000	4,800.000
0028	416.0610	Drilled Tie Bars	EACH	23.000	23.000
0030	455.0605	Tack Coat	GAL	790.000	790.000
0032	460.2000	Incentive Density HMA Pavement	DOL	2,560.000	2,560.000
0034	460.6224	HMA Pavement 4 MT 58-28 S	TON	4,128.000	4,128.000
0036	465.0310	Asphaltic Curb	LF	30.000	30.000
0038	465.0315	Asphaltic Flumes	SY	8.000	8.000
0040	465.0510	Asphaltic Rumble Strips, Shoulder Divided Roadway	LF	2,239.000	2,239.000
0042	520.1015	Apron Endwalls for Culvert Pipe 15-Inch	EACH	4.000	4.000
0044	520.4115	Culvert Pipe Class IV 15-Inch	LF	220.000	220.000
0046	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0048	521.2005.S	Surface Drain Pipe Corrugated Metal Slotted (inch) 01. 12-Inch	LF	184.000	184.000
0050	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	57.000	57.000
0052	608.2319	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 19x30-Inch	LF	6.000	6.000
0054	608.3015	Storm Sewer Pipe Class III-A 15-Inch	LF	579.000	579.000
0056	608.3018	Storm Sewer Pipe Class III-A 18-Inch	LF	436.000	436.000
0058	611.0642	Inlet Covers Type MS	EACH	6.000	6.000
0060	611.0651	Inlet Covers Type S	EACH	1.000	1.000
0062	611.3225	Inlets 2x2.5-FT	EACH	1.000	1.000
0064	611.3902	Inlets Median 2 Grate	EACH	3.000	3.000
0066	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0068	612.0106	Pipe Underdrain 6-Inch	LF	1,292.000	1,292.000
0070	614.2300	MGS Guardrail 3	LF	225.000	225.000
0072	614.2500	MGS Thrie Beam Transition	LF	78.800	78.800
0074	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0076	618.0100	Maintenance and Repair of Haul Roads (project) 01. 5845-16-86	EACH	1.000	1.000
0078	619.1000	Mobilization	EACH	1.000	1.000
0080	624.0100	Water	MGAL	100.000	100.000
0082	625.0500	Salvaged Topsoil	SY	3,030.000	3,030.000
0084	628.1504	Silt Fence	LF	2,170.000	2,170.000
0086	628.1520	Silt Fence Maintenance	LF	2,170.000	2,170.000
0088	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0090	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0092	628.2004	Erosion Mat Class I Type B	SY	3,030.000	3,030.000
0094	628.7005	Inlet Protection Type A	EACH	7.000	7.000
0096	628.7010	Inlet Protection Type B	EACH	7.000	7.000
0098	628.7015	Inlet Protection Type C	EACH	2.000	2.000
0100	628.7504	Temporary Ditch Checks	LF	25.000	25.000

Estimate Of Quantities

5845-16-86

Line	Item	Item Description	Unit	Total	Qty
0102	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0104	629.0210	Fertilizer Type B	CWT	3.400	3.400
0106	630.0130	Seeding Mixture No. 30	LB	97.000	97.000
0108	630.0200	Seeding Temporary	LB	146.000	146.000
0110	630.0500	Seed Water	MGAL	121.000	121.000
0112	633.0100	Delineator Posts Steel	EACH	45.000	45.000
0114	633.0500	Delineator Reflectors	EACH	90.000	90.000
0116	633.5350	Markers Permanent Flexible	EACH	99.000	99.000
0118	638.2102	Moving Signs Type II	EACH	2.000	2.000
0120	638.4000	Moving Small Sign Supports	EACH	2.000	2.000
0122	642.5201	Field Office Type C	EACH	1.000	1.000
0124	643.0300	Traffic Control Drums	DAY	15,143.000	15,143.000
0126	643.0420	Traffic Control Barricades Type III	DAY	816.000	816.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	1,398.000	1,398.000
0130	643.0715	Traffic Control Warning Lights Type C	DAY	2,310.000	2,310.000
0132	643.0800	Traffic Control Arrow Boards	DAY	108.000	108.000
0134	643.0900	Traffic Control Signs	DAY	3,639.000	3,639.000
0136	643.1050	Traffic Control Signs PCMS	DAY	35.000	35.000
0138	643.3105	Temporary Marking Line Paint 4-Inch	LF	24,878.000	24,878.000
0140	643.3150	Temporary Marking Line Removable Tape 4-Inch	LF	3,281.000	3,281.000
0142	643.3205	Temporary Marking Line Paint 8-Inch	LF	1,616.000	1,616.000
0144	643.3250	Temporary Marking Line Removable Tape 8-Inch	LF	139.000	139.000
0146	643.5000	Traffic Control	EACH	1.000	1.000
0148	645.0111	Geotextile Type DF Schedule A	SY	646.000	646.000
0150	646.1020	Marking Line Epoxy 4-Inch	LF	33,176.000	33,176.000
0152	646.3020	Marking Line Epoxy 8-Inch	LF	4,016.000	4,016.000
0154	646.6120	Marking Stop Line Epoxy 18-Inch	LF	51.000	51.000
0156	646.7220	Marking Chevron Epoxy 24-Inch	LF	500.000	500.000
0158	646.9000	Marking Removal Line 4-Inch	LF	11,335.000	11,335.000
0160	646.9100	Marking Removal Line 8-Inch	LF	2,238.000	2,238.000
0162	646.9200	Marking Removal Line Wide	LF	45.000	45.000
0164	650.4000	Construction Staking Storm Sewer	EACH	4.000	4.000
0166	650.4500	Construction Staking Subgrade	LF	4,077.000	4,077.000
0168	650.5000	Construction Staking Base	LF	4,077.000	4,077.000
0170	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0172	650.9911	Construction Staking Supplemental Control (project) 01. 5845-16-86	EACH	1.000	1.000
0174	650.9920	Construction Staking Slope Stakes	LF	7,689.000	7,689.000
0176	690.0150	Sawing Asphalt	LF	97.000	97.000
0178	690.0250	Sawing Concrete	LF	204.000	204.000
0180	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	325.000	325.000
0182	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	225.000	225.000
0184	SPV.0060	Special 01. Pipe Connection to Existing Structure	EACH	2.000	2.000
0186	SPV.0060	Special 02. Cover Plates	EACH	2.000	2.000
0188	SPV.0060	Special 03. Core Hole 6-Inch	EACH	2.000	2.000

CLEARING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA
0010	900+00 'SB'	-	902+00 'SB'	USH 51 SB LT	2
	903+00 'SB'	-	904+00 'SB'	USH 51 SB LT	1
	912+00 'SB'	-	915+00 'SB'	USH 51 SB LT	3
	918+00 'SB'	-	920+00 'SB'	USH 51 SB LT	2
	920+00 'SB'	-	921+00 'SB'	USH 51 SB LT	1
	921+00 'SB'	-	923+00 'SB'	USH 51 SB LT	2
	928+00 'NB'	-	934+00 'NB'	USH 51 NB RT	6
	936+00 'NB'	-	938+00 'NB'	USH 51 NB RT	2
	940+00 'NB'	-	949+00 'NB'	USH 51 NB RT	9
	942+00 'SB'	-	945+00 'SB'	USH 51 SB LT	3
	948+00 'SB'	-	950+00 'SB'	USH 51 SB LT	2
	45+00 'SGE'	-	46+00 'SGE'	SIGGELKOW RD RT	1
	46+00 'SGW'	-	47+00 'SGW'	SIGGELKOW RD LT	1
	53+00 'SGW'	-	54+00 'SGW'	SIGGELKOW RD RT	1
TOTAL 0010					36

REMOVAL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0150 REMOVING CURB & GUTTER LF	204.0165 REMOVING GUARDRAIL LF	204.0220 REMOVING INLETS EACH
0010	889+18 'NB'	-	959+73 'NB'	USH 51 NB, RT	57	3,785	-	167	-
	895+27 'NB'	-	957+77 'NB'	USH 51 NB, LT	64	1,275	74	-	-
	929+08 'SB'	-	959+28 'SB'	USH 51 SB, LT	-	2,020	-	-	-
			938+88 'NB'	USH 51 NB, 25' LT	-	-	-	-	1
TOTAL 0010					121	7,080	74	167	1

EARTHWORK SUMMARY

CATEGORY 0010

SUBSTAGE	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE (15)	COMMENT
			CUT (2)				FACTOR 1.25			
STAGE 1	896+64 'NB' - 899+85 'NB' 916+69 'NB' - 919+85 'NB'	USH 51 NB RT USH 51 NB RT	145 93	0 0	145 93	0 3	0 4	145 89	145 89	
STAGE 1 SUBTOTALS			238	0	238	3	4	234	234	
STAGE 2	891+68 'NB' - 896+60 'NB' 903+20 'NB' - 906+54 'NB' 921+80 'NB' - 924+96 'NB' 933+95 'NB' - 942+47 'NB' 31+75 'TR1' - 33+95 'TR1' 36+07 'TR2' - 38+46 'TR2' 949+24 'NB' - 957+76 'NB'	SOUTH CROSSOVER USH 51 NB LT USH 51 NB LT USH 51 NB LT RAMP 'TR1' CROSSOVER RAMP 'TR2' CROSSOVER NORTH CROSSOVER	585 87 48 938 197 144 1,151	13 0 0 27 2 2 33	572 87 48 911 195 142 1,118	14 0 24 202 88 92 283	18 0 30 253 110 115 354	555 87 18 659 85 27 764	555 87 18 659 85 27 764	
STAGE 2 SUBTOTALS			3,150	77	3,073	703	879	2,194	2,194	
GRAND TOTAL			3,388	77	3,311	706	883	2,429	2,429	

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100

(2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

(13) EXPANDED FILL FACTOR = 1.25

EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR

(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

3

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

BASE AGGREGATE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	211.0400
					PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
0010	889+18 'NB'	-	896+64 'NB'	USH 51 NB, RT	8
	895+27 'NB'	-	899+85 'NB'	USH 51 NB, LT	5
	906+54 'NB'	-	919+86 'NB'	USH 51 NB, LT	14
	903+26 'NB'	-	907+93 'NB'	USH 51 NB, RT	5
	909+89 'NB'	-	916+70 'NB'	USH 51 NB, RT	7
	924+96 'NB'	-	932+83 'NB'	USH 51 NB, LT	11
	921+81 'NB'	-	933+87 'NB'	USH 51 NB, RT	12
	933+80 'NB'	-	959+73 'NB'	USH 51 NB, RT	26
	942+47 'NB'	-	949+24 'NB'	USH 51 NB, LT	7
	956+57 'NB'	-	957+64 'NB'	USH 51 NB, LT	1
	929+08 'SB'	-	933+75 'SB'	USH 51 SB, LT	5
	935+93 'SB'	-	959+28 'SB'	USH 51 SB, LT	24
	956+78 'SB'	-	957+77 'SB'	USH 51 SB, RT	1
TOTAL 0010					126

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	312.0110	624.0100
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	SELECT CRUSHED MATERIAL TON	WATER MGAL
0010	899+19 'NB'	-	900+06 'NB'	USH 51 NB, RT	85	150	-	2
	892+25 'NB'	-	900+25 'NB'	USH 51 NB, LT	42	500	690	12
	903+20 'NB'	-	920+07 'NB'	USH 51 NB, LT	110	150	-	3
	903+26 'NB'	-	920+05 'NB'	USH 51 NB, RT	87	150	-	2
	921+58 'NB'	-	957+64 'NB'	USH 51 NB, LT	390	3,310	4,110	78
	921+60 'NB'	-	959+73 'NB'	USH 51 NB, RT	200	-	-	2
	929+08 'SB'	-	959+28 'SB'	USH 51 SB, LT	130	-	-	1
TOTAL 0010					1,044	4,260	4,800	100

ASPHALTIC ITEMS

ASPHALTIC RUMBLE STRIPS

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.6224	465.0310	465.0315
					TACK COAT GAL	HMA PAVEMENT 4 MT 58-28 S TON	ASPHALTIC CURB LF	ASPHALTIC FLUMES SY
0010	889+19 'NB'	-	900+06 'NB'	USH 51 NB, RT	49	255	-	-
	892+25 'NB'	-	900+30 'NB'	USH 51 NB, LT	52	288	17	4
	903+20 'NB'	-	919+86 'NB'	USH 51 NB, LT	57	302	-	-
	903+26 'NB'	-	919+85 'NB'	USH 51 NB, RT	68	355	-	-
	921+60 'NB'	-	957+77 'NB'	USH 51 NB, LT	271	1,400	-	4
	921+58 'NB'	-	959+73 'NB'	USH 51 NB, RT	163	852	13	-
	929+08 'SB'	-	959+28 'SB'	USH 51 SB, LT	130	676	-	-
TOTAL 0010					790	4,128	30	8

CATEGORY	STATION	TO	STATION	LOCATION	465.0510
					ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY LF
0010	929+08 'SB'	-	930+12 'SB'	USH 51 SB, LT	104
	937+93 'SB'	-	959+28 'SB'	USH 51 SB, LT	2,135
TOTAL 0010					2,239

NOTES:
TACK COAT APPLICATION RATE = 0.05 GAL/SY
ASSUMED ASPHALT UNIT WEIGHT = 112 LB/SY/IN

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CULVERT PIPE ITEMS

CATEGORY	**INLET			**OUTLET			SLOPE (%)	PIPE THICKNESS (IN)	LOCATION	520.1015	520.4115	650.6000
	STATION	OFFSET	ELEV. (FT)	STATION	OFFSET	ELEV. (FT)				APRON ENDWALLS FOR CULVERT PIPE 15-INCH EACH	CULVERT PIPE CLASS IV 15-INCH LF	CONSTRUCTION STAKING PIPE CULVERTS EACH
0010	931+88 'NB'	26.0' LT	880.79	932+98 'NB'	33.3' LT	880.44	0.32%	0.064	USH 51 NB, LT	2	110	1
	936+22 'NB'	30.8' LT	876.00	937+32 'NB'	35.4' LT	874.90	1.00%	0.064	USH 51 NB, LT	2	110	1
TOTAL 0010										4	220	2

** PIPE INVERT AT END OF PIPE & STATION/OFFSET TO CENTER OF STRUCTURE

SURFACE DRAIN PIPE CORRUGATED METAL SLOTTED 12-INCH

CONCRETE CURB & GUTTER

CATEGORY	STATION	TO	STATION	LOCATION	521.2005.S.01 SURFACE DRAIN PIPE CORRUGATED METAL SLOTTED (INCH) (01. 12-INCH) LF
0010	952+79 'NB'	-	954+63 'NB'	USH 51 NB, LT	184
TOTAL 0010					184

CATEGORY	STATION	TO	STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A LF
0010	891+69 'NB'	-	892+25 'NB'	USH 51 NB, LT	23	57
TOTAL 0010					23	57

STORM SEWER PIPE ITEMS

CATEGORY	FROM	TO	520.8000	608.2319	608.3015	608.3018	SPV.0060.01	* SPV.0060.02	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	
			CONCRETE COLLARS FOR PIPE EACH	HORIZONTAL ELLIPTICAL CLASS HE-III 19X30-INCH LF	STORM SEWER PIPE CLASS III-A 15-INCH LF	STORM SEWER PIPE CLASS III-A 18-INCH LF	SPECIAL (01. PIPE CONNECTION TO EXISTING STRUCTURE) EACH	SPECIAL (02. COVER PLATES) EACH				
0010	EX1	-	101	-	-	-	316	1	-	871.89	859.23	0.0400
	101	-	EP	-	-	-	120	-	1	875.15	871.99	0.0264
	200	-	EX2	1	6	-	-	-	-	869.75	869.72	0.0050
	300	-	301	-	-	454	-	-	-	858.89	856.63	0.0050
	301	-	EX3	-	-	125	-	1	-	856.53	855.90	0.0050
TOTAL 0010			1	6	579	436	2	1				

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLANS

ADJUSTING INLET COVERS

STORM SEWER STRUCTURE ITEMS

CATEGORY	STATION	LOCATION	611.8115	CATEGORY	STRUCTURE	**STATION	**OFFSET	611.0642	611.0651	611.3225	611.3902	650.4000	SPV.0060.02	RIM ELEVATION	INVERT ELEVATION	DEPTH FT	
			ADJUSTING INLET COVERS EACH					INLET COVERS TYPE MS EACH	INLET COVERS TYPE S EACH	INLETS 2X2.5-FT EACH	INLETS MEDIAN 2 GRATE EACH	CONSTRUCTION STAKING STORM SEWER EACH	SPECIAL (02. COVER PLATES) EACH				
0010	921+77 'NB'	USH 51, RT	1	0010	101	895+35 'NB'	13.2' LT	2	-	-	1	1	-	876.20	871.68	*** 4.52	
					200	938+88 'NB'	30.3' LT	2	-	-	1	1	-	872.55	869.48	*** 3.07	
		TOTAL 0010	1		300	950+10 'NB'	25.8' LT	2	-	-	1	1	-	860.96	858.70	*** 2.26	
					301	954+63 'NB'	25.0' LT	-	1	1	-	1	-	862.37	856.34	**** 5.03	
					EX3	955+89 'NB'	26.5' LT	-	-	-	-	-	1	-	-	-	
TOTAL 0010								6	1	1	3	4	1				

* ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLANS
 ** STATION & OFFSET ARE TO CENTER OF STRUCTURE
 *** DEPTH = RIM ELEV - STR INVERT
 **** DEPTH = RIM ELEV - STR INVERT - COVER HT - 6 IN ADJ RING HT

PIPE UNDERDRAIN

CATEGORY	STATION	OFFSET	ELEV.	STRUCTURE NO.	STATION	OFFSET	ELEV.	STRUCTURE NO.	LOCATION	310.0110	612.0106	645.0111	SPV.0060.03
										BASE AGGREGATE OPEN-GRADED TON	PIPE UNDERDRAIN 6-INCH LF	GEOTEXTILE TYPE DF SCHEDULE A SY	SPECIAL (03. CORE HOLE 6-INCH) EACH
0010	895+30 'NB'	15.0' LT	873.19	END CAP REQ'D	892+19 'NB'	12.2' LT	860.72	EX1	SOUTH CROSSOVER	22	314	157	1
	932+33 'NB'	20.5' LT	879.93	END CAP REQ'D	938+88 'NB'	30.3' LT	871.45	200	RAMP CROSSOVERS	47	662	331	-
	952+77 'NB'	25.0' LT	858.90	END CAP REQ'D	954+63 'NB'	25.0' LT	858.82	301	NORTH CROSSOVER	14	192	96	-
	954+65 'NB'	25.0' LT	858.28	END CAP REQ'D	955+89 'NB'	26.5' LT	857.67	EX3	NORTH CROSSOVER	9	124	62	1
TOTAL 0010										92	1,292	646	2

MGS GUARDRAIL

CATEGORY	STATION	TO	STATION	LOCATION	614.2300	614.2500	614.2610
					MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH
0010	897+86 'NB'	-	899+89 'NB'	USH 51 NB, RT	112.5	39.4	1
	917+90 'NB'	-	919+95 'NB'	USH 51 NB, RT	112.5	39.4	1
TOTAL 0010					225	78.8	2

3

3

EROSION CONTROL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2004 EROSION MAT CLASS I TYPE B SY	628.7005 INLET PROTECTION TYPE A EACH	628.7010 INLET PROTECTION TYPE B EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
0010	889+19 'NB'	-	902+00 'NB'	USH 51 'NB' LT & RT	360	360	420	2	2	-	-	-
	902+00 'NB'	-	921+00 'NB'	USH 51 'NB' LT & RT	560	560	210	-	-	-	10	-
	921+00 'NB'	-	957+64 'NB'	USH 51 'NB' LT & RT	820	820	1,790	4	4	1	10	4
				UNDISTRIBUTED (25%)	430	430	610	1	1	1	5	1
TOTAL 0010					2,170	2,170	3,030	7	7	2	25	5

EROSION CONTROL MOBILIZATION

CATEGORY	STAGE	LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	1	USH 51	2	2
	2	USH 51	2	2
TOTAL 0010			4	4

FINISHING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL
0010	889+19 'NB'	-	902+00 'NB'	USH 51 'NB' LT & RT	420	0.4	12	18	15
	902+00 'NB'	-	921+00 'NB'	USH 51 'NB' LT & RT	210	0.3	9	14	11
	921+00 'NB'	-	957+64 'NB'	USH 51 'NB' LT & RT	1,790	2.0	57	85	71
				UNDISTRIBUTED (25%)	610	0.7	19	29	24
TOTAL 0010					3,030	3.4	97	146	121

DELINEATORS

CATEGORY	STATION	TO	STATION	LOCATION	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS EACH	633.5350 MARKERS PERMANENT FLEXIBLE EACH
0010	892+22 'NB'	-	895+30 'NB'	SOUTH CROSSOVER	21	42	31
	932+04 'NB'	-	933+31 'NB'	RAMP 'TR1' CROSSOVER	8	16	16
	936+61 'NB'	-	937+73 'NB'	RAMP 'TR2' CROSSOVER	8	16	14
	952+57 'NB'	-	954+87 'NB'	NORTH CROSSOVER	8	16	38
TOTAL 0010					45	90	99

MOVING SIGNS ITEMS

CATEGORY	SIGN MESSAGE	LOCATION	638.2102 MOVING SIGNS TYPE II EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH
0010	SPEED LIMIT 55 MPH	USH 51 NB, LT & RT	2	2
TOTAL 0010			2	2

PCMS

CATEGORY	STAGE	LOCATION	QTY.	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY
0010	1	USH 51 NB & SB PROJECT LIMITS	2	14
		USH 51 NB & SB RAMPS	3	21
TOTAL 0010				35

TRAFFIC CONTROL ITEMS

CATEGORY	STAGE	LOCATION	APPROX. SERVICE PERIOD DAYS	QTY.	643.0300 TRAFFIC CONTROL DRUMS DAY	QTY.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	QTY.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	QTY.	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	QTY.	643.0800 TRAFFIC CONTROL ARROW BOARDS DAY	QTY.	643.0900 TRAFFIC CONTROL SIGNS DAY
0010	1	USH 51 NB & SB	6	145	870	0	0	0	0	0	0	2	12	31	186
		LANE CLOSURE	12	279	3,348	9	108	0	0	0	0	2	24	45	540
		USH 51 NB ON RAMP CLOSURE	1	12	12	11	11	8	8	0	0	0	0	26	26
		USH 51 NB & SB OFF RAMP CLOSURE	2	0	0	4	8	6	12	0	0	0	0	6	12
	2	USH 51 NB & SB	21	227	4,767	15	315	30	630	66	1,386	1	21	63	1,323
		LANE CLOSURE	22	273	6,006	17	374	34	748	42	924	2	44	68	1,496
	3	USH 51	7	20	140	0	0	0	0	0	0	1	7	8	56
TOTAL 0010					15,143	816	1,398	2,310	108	3,639					

TEMPORARY MAKRING LINE

CATEGORY	STATION	TO	STATION	LOCATION	643.3105 TEMPORARY MARKING LINE PAINT 4-INCH (SOLID WHITE) LF	(SKIP WHITE) LF	(SOLID YELLOW) LF	643.3150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (SOLID WHITE) LF	(SOLID YELLOW) LF	643.3205 TEMPORARY MARKING LINE PAINT 8-INCH (SOLID WHITE) LF	(SKIP WHITE) LF	643.3250 TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH (SOLID WHITE) LF
0010	889+13 'NB'	-	902+00 'NB'	USH 51 'NB'	1,363	199	1,024	380	220	-	-	-
	902+00 'NB'	-	921+00 'NB'	USH 51 'NB'	1,854	476	1,902	-	-	325	-	-
	921+00 'NB'	-	963+21 'NB'	USH 51 'NB'	4,674	859	3,664	550	308	524	89	50
	881+17 'SB'	-	902+00 'SB'	USH 51 'SB'	-	-	960	-	123	-	-	-
	902+00 'SB'	-	921+00 'SB'	USH 51 'SB'	-	-	1,053	-	540	-	-	-
	921+00 'SB'	-	961+79 'SB'	USH 51 'SB'	3,815	516	2,519	660	500	767	-	-
SUBTOTALS					11,706	2,050	11,122	1,590	1,691	1,616	89	50
TOTAL 0010					24,878		3,281	1,616	139			

PERMANENT PAVEMENT MARKING

CATEGORY	STATION	TO	STATION	LOCATION	646.1020		646.3020		646.6120	646.7220
					MARKING LINE EPOXY 4-INCH		MARKING LINE EPOXY 8-INCH		MARKING STOP LINE EPOXY 18-INCH	MARKING CHEVRON EPOXY 24-INCH
					(SOLID WHITE)	(SKIP WHITE)	(SOLID YELLOW)	(SOLID WHITE)	(SOLID WHITE)	(SOLID WHITE)
					LF	LF	LF	LF	LF	
0010	889+09 'NB'	-	902+00 'NB'	USH 51 'NB'	1,286	323	1,291	-	-	-
	902+00 'NB'	-	921+00 'NB'	USH 51 'NB'	1,909	476	1,900	698	-	173
	921+00 'NB'	-	963+00 'NB'	USH 51 'NB'	4,204	1,051	4,200	1,333	-	-
	889+24 'SB'	-	902+00 'SB'	USH 51 'SB'	1,251	319	1,276	351	51	-
	902+00 'SB'	-	921+00 'SB'	USH 51 'SB'	1,882	471	1,887	681	-	-
	921+00 'SB'	-	963+00 'SB'	USH 51 'SB'	4,200	1,050	4,200	953	-	327
SUBTOTALS					14,732	3,690	14,754	4,016	51	500
TOTAL 0010						33,176		4,016	51	500

MARKING REMOVAL LINE

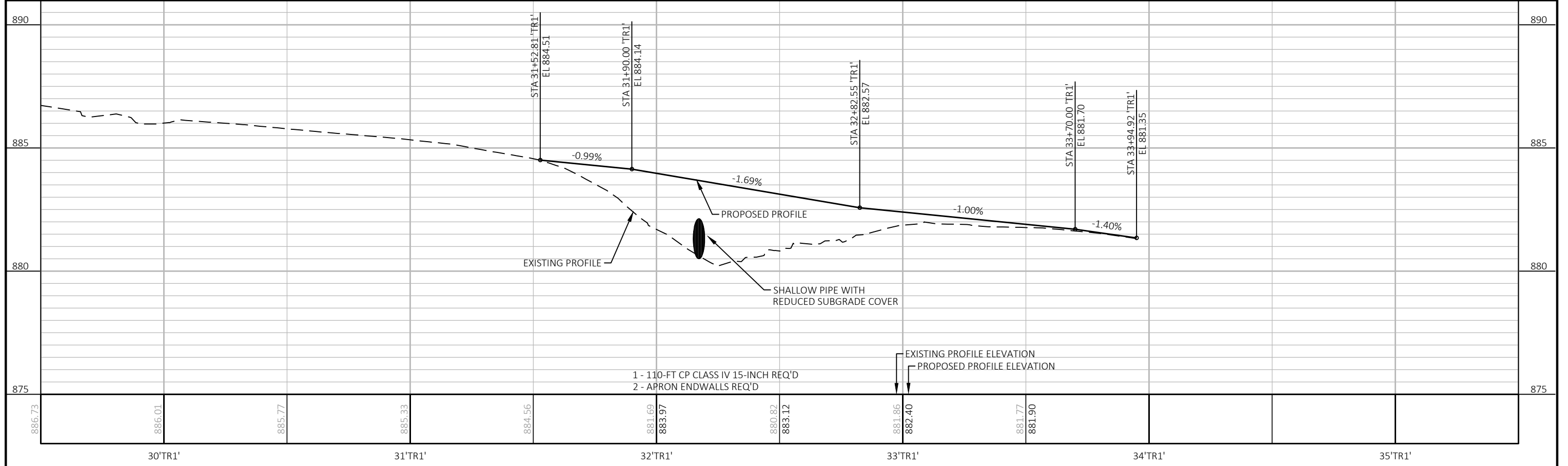
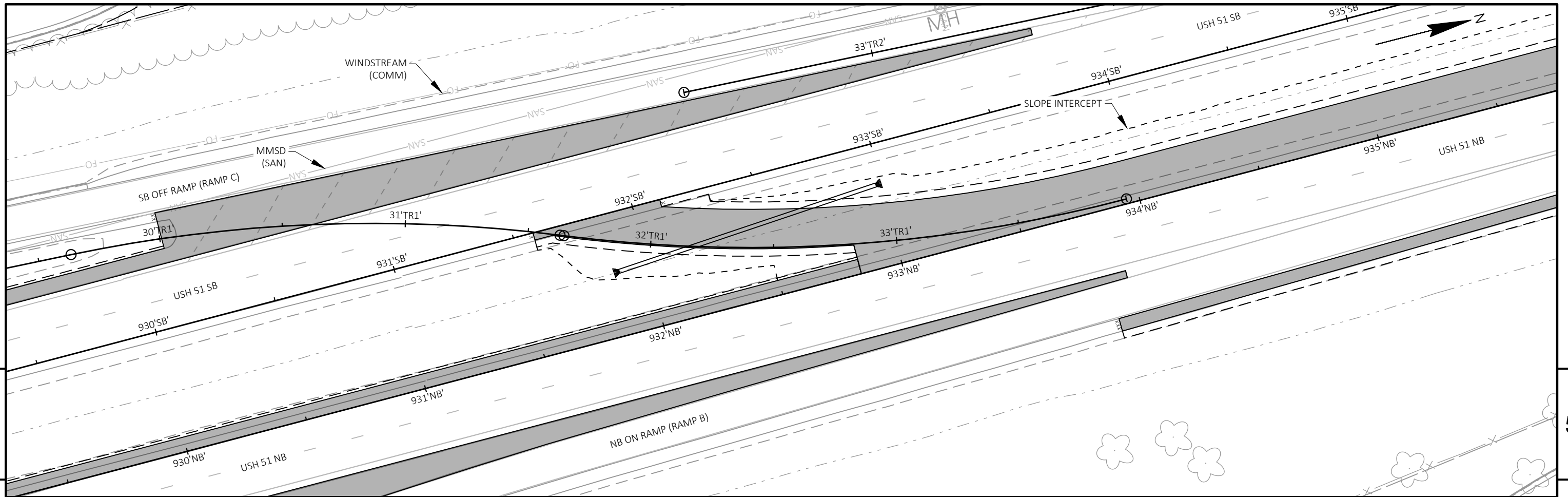
SAWING

CATEGORY	STATION	TO	STATION	LOCATION	646.9000		646.9100	646.9200
					MARKING REMOVAL LINE 4-INCH		MARKING REMOVAL LINE 8-INCH	MARKING REMOVAL LINE WIDE
					LF	LF	LF	LF
0010	889+09 'NB'	-	902+00 'NB'	USH 51 'NB'	1,557	-	-	-
	902+00 'NB'	-	921+00 'NB'	USH 51 'NB'	1,913	500	45	-
	921+00 'NB'	-	963+00 'NB'	USH 51 'NB'	4,555	1,086	-	-
	889+24 'SB'	-	902+00 'SB'	USH 51 'SB'	-	-	-	-
	902+00 'SB'	-	921+00 'SB'	USH 51 'SB'	135	-	-	-
	921+00 'SB'	-	963+00 'SB'	USH 51 'SB'	3,175	652	-	-
TOTAL 0010					11,335	2,238	45	

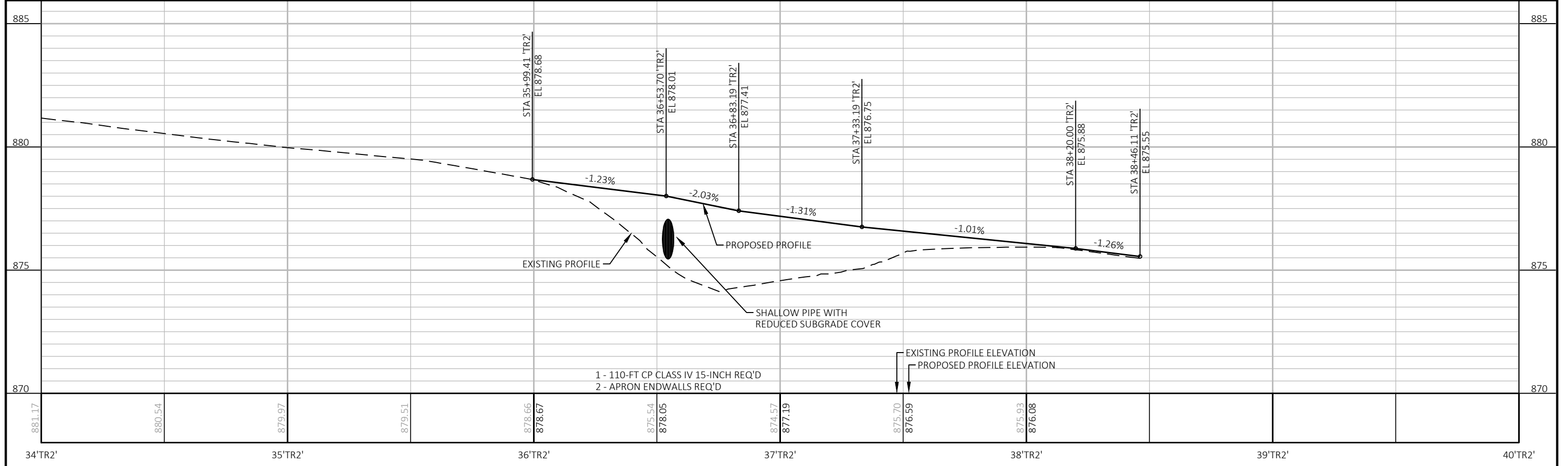
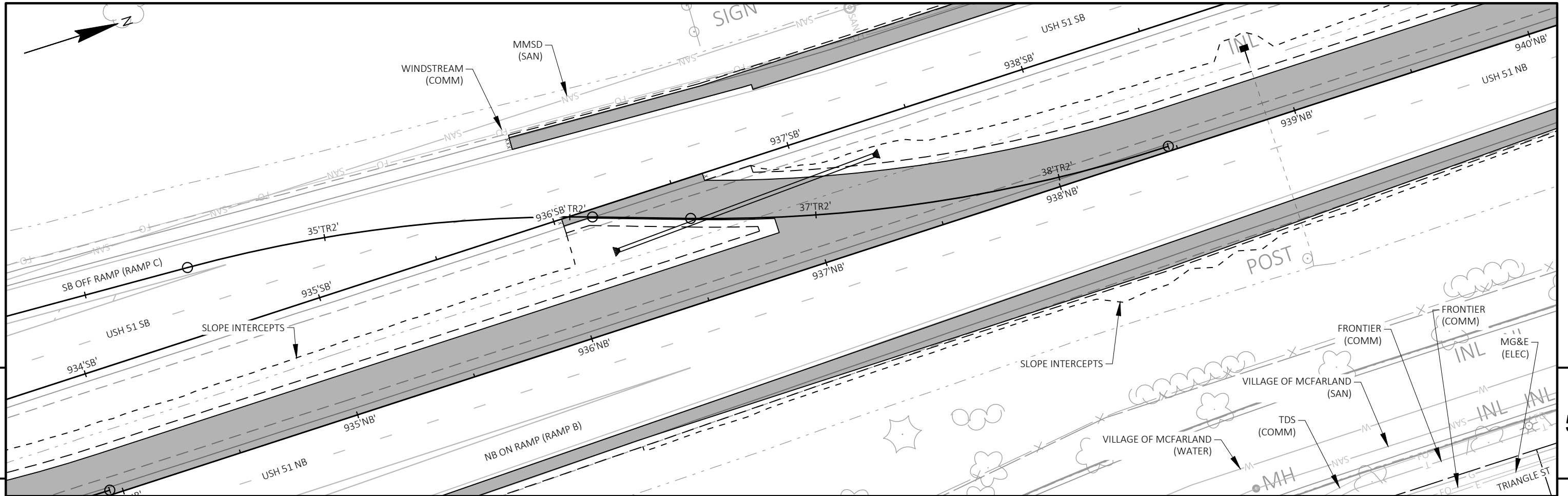
CATEGORY	STATION	TO	STATION	LOCATION	690.0150	690.0250
					SAWING ASPHALT	SAWING CONCRETE
					LF	LF
0010	899+19 'NB'	-	900+06 'NB'	USH 51 NB, RT	3	20
	891+69 'NB'	-	900+25 'NB'	USH 51 NB, LT	-	99
	903+20 'NB'	-	920+07 'NB'	USH 51 NB, LT	-	21
	903+26 'NB'	-	920+05 'NB'	USH 51 NB, RT	9	20
	921+58 'NB'	-	957+64 'NB'	USH 51 NB, LT	29	20
	921+60 'NB'	-	959+73 'NB'	USH 51 NB, RT	14	24
	892+36 'SB'	-	894+43 'SB'	USH 51 SB, RT	3	-
	931+58 'SB'	-	957+77 'SB'	USH 51 SB, RT	18	-
	929+08 'SB'	-	959+28 'SB'	USH 51 SB, LT	21	-
TOTAL 0010					97	204

ADDITIONAL CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500	650.5000	650.9911.01	650.9920	REMARKS
					CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 5845-16-86)	CONSTRUCTION STAKING SLOPE	
					LF	LF	EACH	LF	
0010	889+19 'NB'	-	900+06 'NB'	USH 51 NB, RT	322	322	-	322	
	891+69 'NB'	-	900+30 'NB'	USH 51 NB, LT	302	302	-	256	
	903+20 'NB'	-	920+08 'NB'	USH 51 NB, LT	334	334	-	334	
	903+26 'NB'	-	920+05 'NB'	USH 51 NB, RT	315	315	-	315	
	921+58 'NB'	-	959+73 'NB'	USH 51 NB, RT	583	583	-	583	
	921+60 'NB'	-	957+64 'NB'	USH 51 NB, LT	2,221	2,221	-	2,279	
	899+19 'NB'	-	957+64 'NB'	USH 51	-	-	1	-	
	899+19 'NB'	-	957+64 'NB'	USH 51 & SIGGELKOW RD	-	-	-	3,600	SLOPE INTERCEPTS FOR CLEARING LIMITS
TOTAL 0010					4,077	4,077	1	7,689	



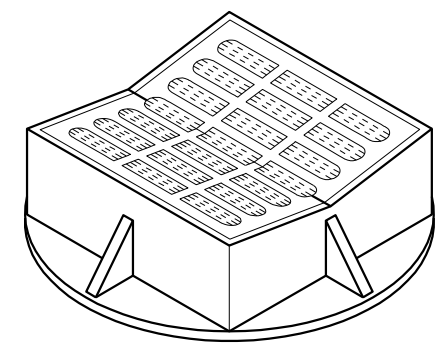
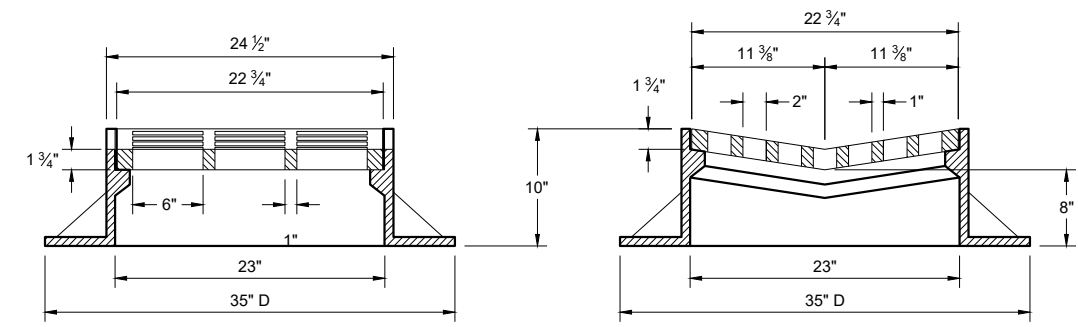
PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE PLAN AND PROFILE: RAMP C CROSSOVER - TR1 SHEET: 5



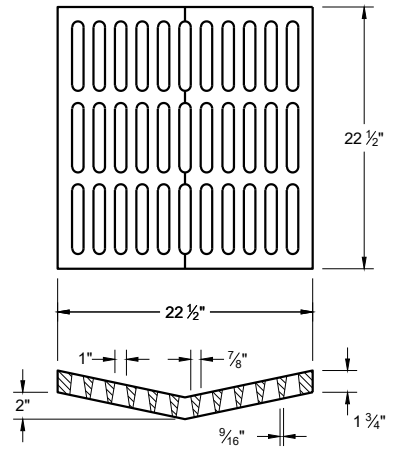
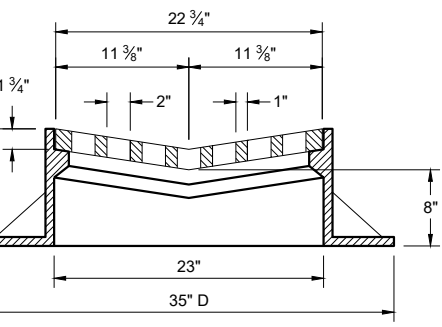
PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	PLAN AND PROFILE: RAMP C CROSSOVER - TR2	SHEET	E
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Standard Detail Drawing List

08A05-20B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-20C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D13-02	SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A05-06A	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A05-06B	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A04-07C	DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A04-07D	CHANNELIZING DEVICES, PERMANENT FLEXIBLE TUBULAR MARKER POST
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09G	TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C31-06A	PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP
15C31-06C	PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP
15D11-09	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D12-12A	TRAFFIC CONTROL, LANE CLOSURE, WITH TEMPORARY RUMBLE STRIPS
15D15-07A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-07B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-07D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-06	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D40-05A	TRAFFIC CONTROL, FULL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D40-05C	TRAFFIC CONTROL, PARTIAL LANE SHIFT NON-FREEWAY/EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
15D41-04A	TRAFFIC CONTROL, MULTIPLE LANE SHIFT, MULTILANE DIVIDED ROAD

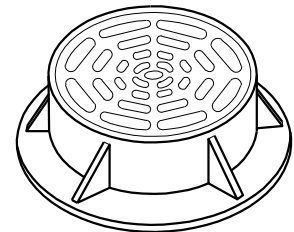
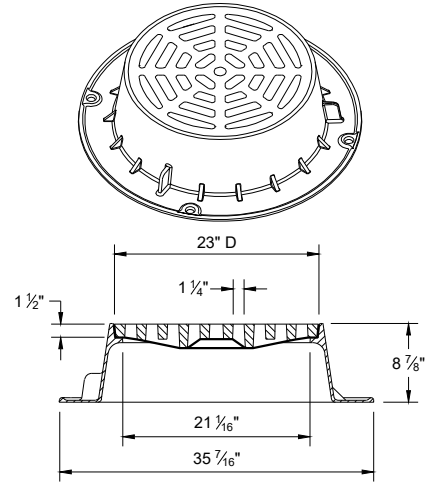


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE
NOTED AS TYPE B - A ON THE DRAINAGE TABLE



TYPE "C"

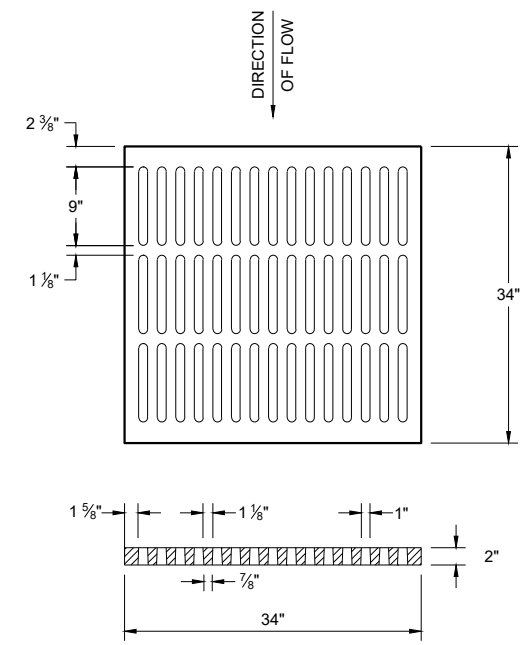
NOTE: EITHER CASTING IS ACCEPTABLE

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.

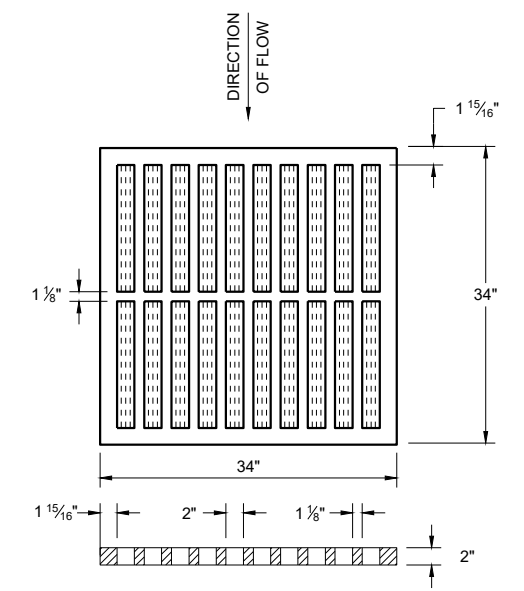
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



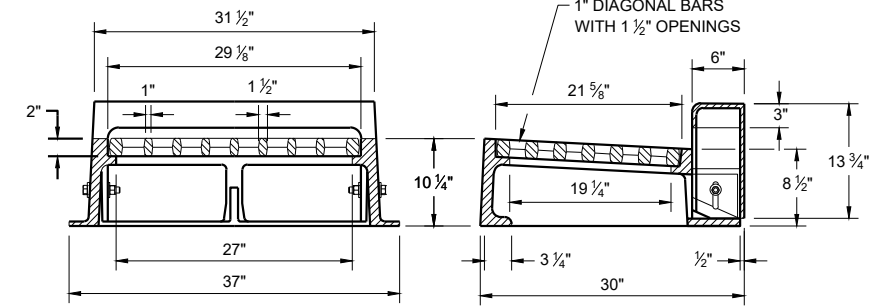
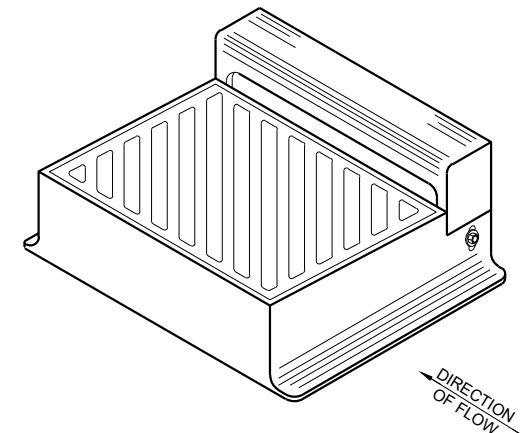
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON THE DRAINAGE TABLE



TYPE "WM"

NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

DIAGONAL SLOTS SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.

6

6

SDD 08A05-20b

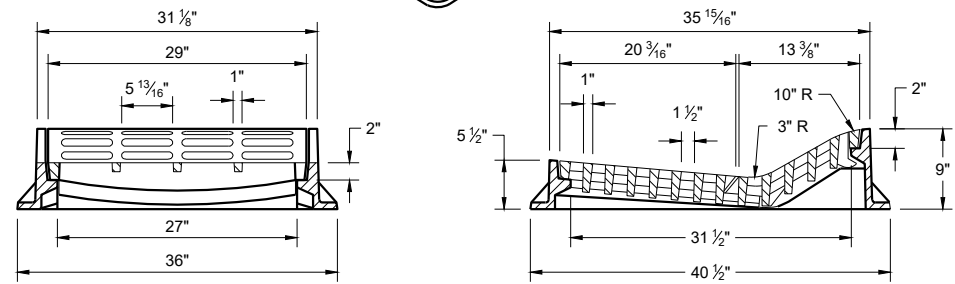
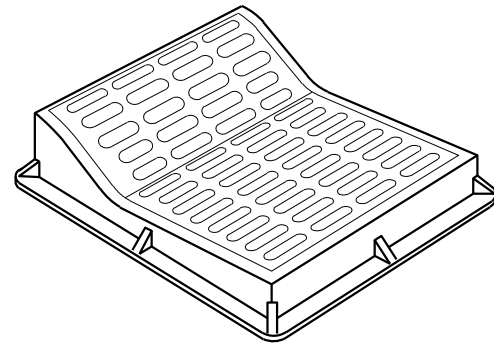
SDD 08A05-20b

INLET COVERS TYPES B, B-A, C, MS, MS-A AND WM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 2023 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

GENERAL NOTES

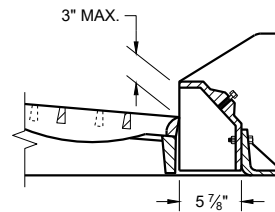
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



TYPE "F"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

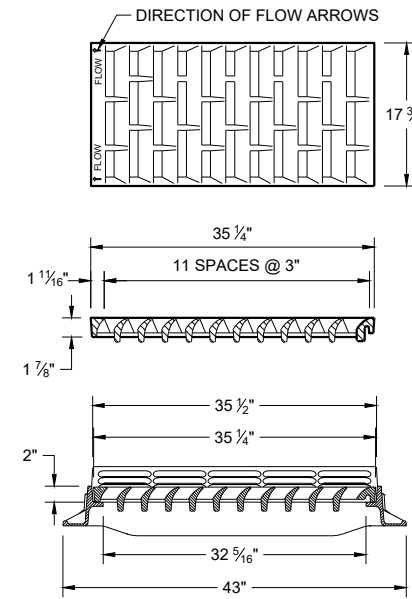


ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

USE WITH TYPES "G" AND "J" CONCRETE CURB AND GUTTER, 30 INCH NOTED AS TYP "HM-GJ" ON DRAINAGE TABLE

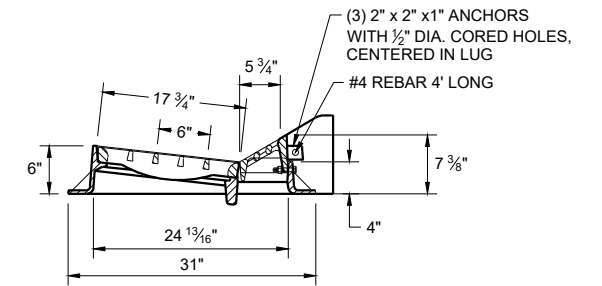
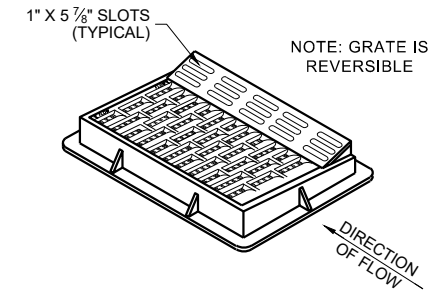
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.



TYPE "HM"

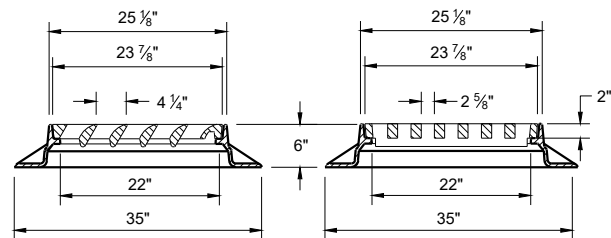
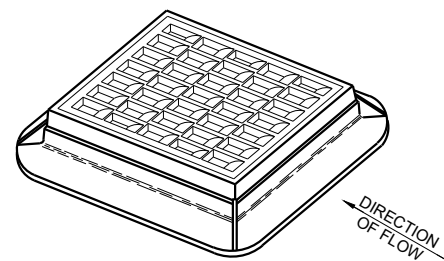
USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"



NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

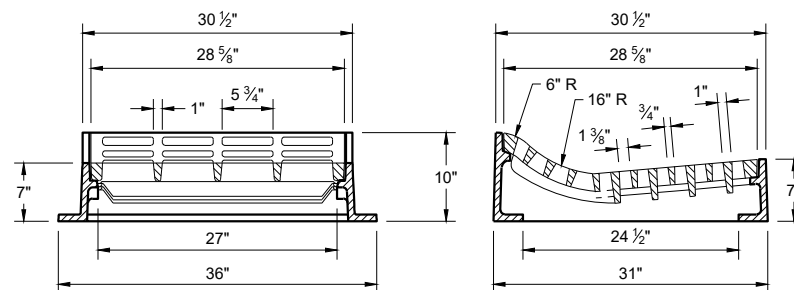
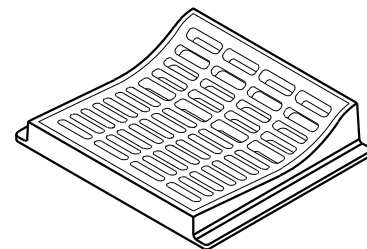
NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.

6



TYPE "S"

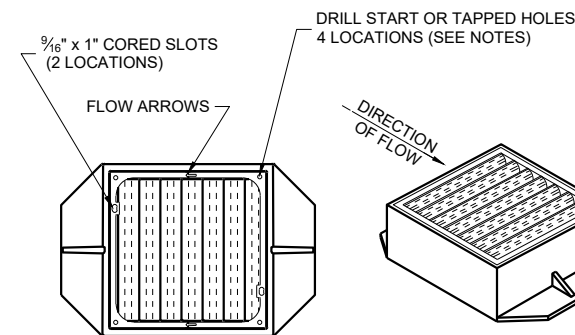
SDD 08A05-20C



TYPE "T"

USE WITH TYPES "R" AND "T" CONCRETE CURB AND GUTTER, 36"

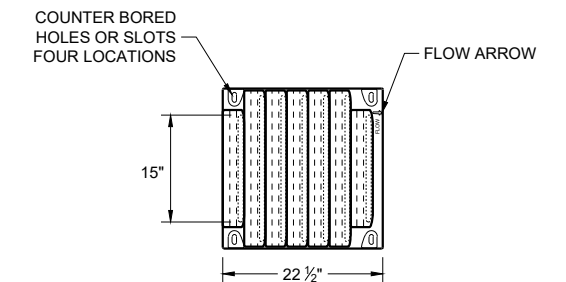
6



TYPE "V"

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

TYPE V
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A
3/8" DIA. X 1/16" DRILL START IN 4 LOCATIONS
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



BOLT DOWN GRATE FOR TYPE "V" COVER

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER NOTED AS TYPE "V-B" ON DRAINAGE TABLE

TAP 1/2" -13 HOLES IN FOUR LOCATIONS IN FRAME TO BOLT GRATE FRAME - CAST GRAY IRON ASTM A48 CLASS 40A

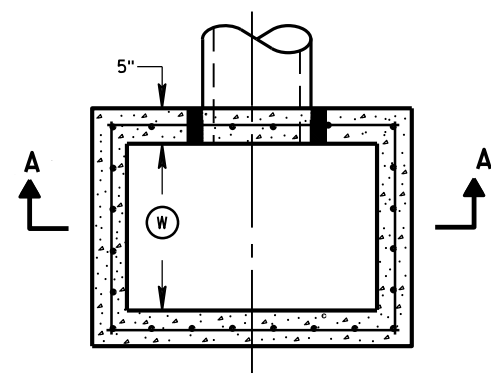
GRATE - CAST DUCTILE IRON ASTM A536, 55+KSI YIELD BOLTS - 1/2" -13 STAINLESS STEEL BOLTS WITH WASHERS TORQUE BOLTS TO MANUFACTURER SPECIFICATION DO NOT OVERTIGHTEN.

**INLET COVERS
TYPES F, HM, HM-S, S, T, V,
HM-GJ AND HM-GJ-S**

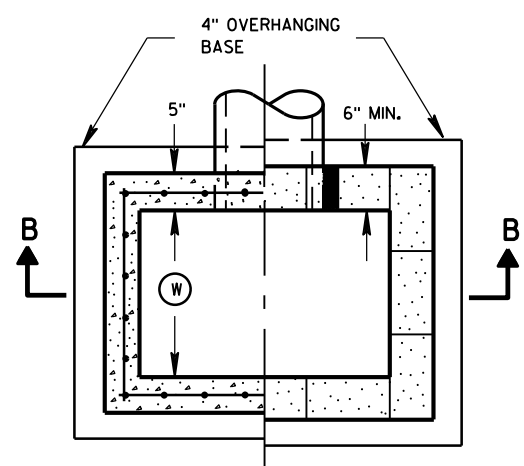
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

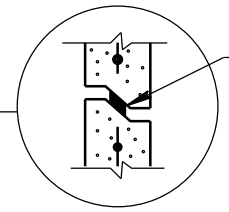
SDD 08A05-20C



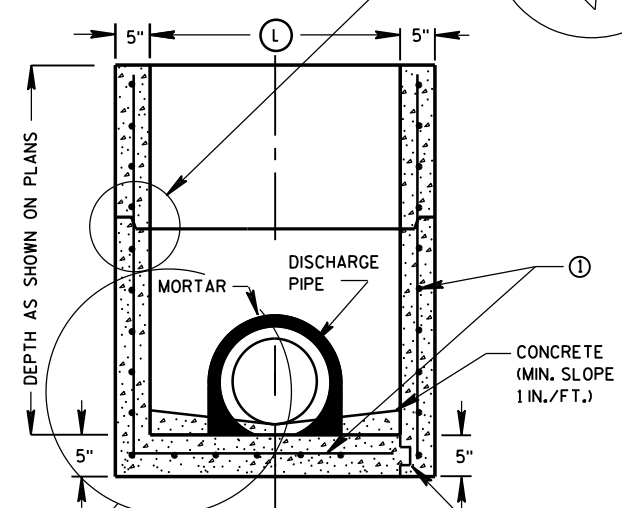
PLAN VIEW



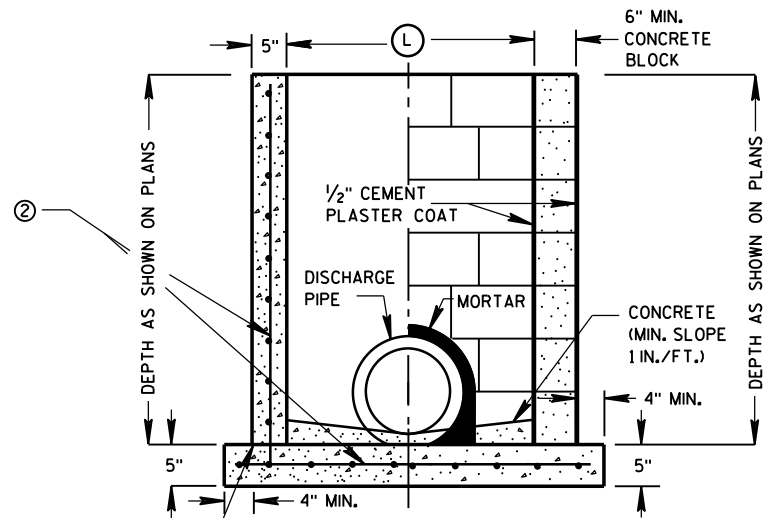
PLAN VIEW



RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



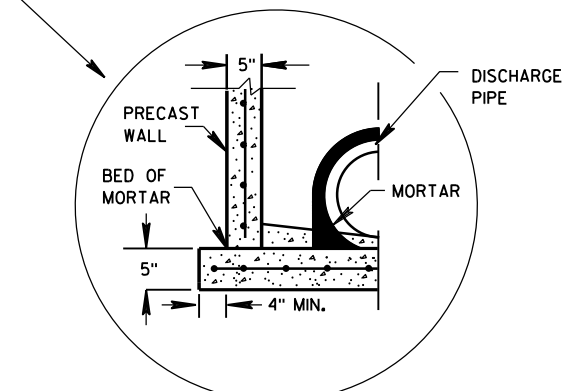
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE
 KEYWAY

CAST-IN-PLACE REINFORCED CONCRETE
 CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ①



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

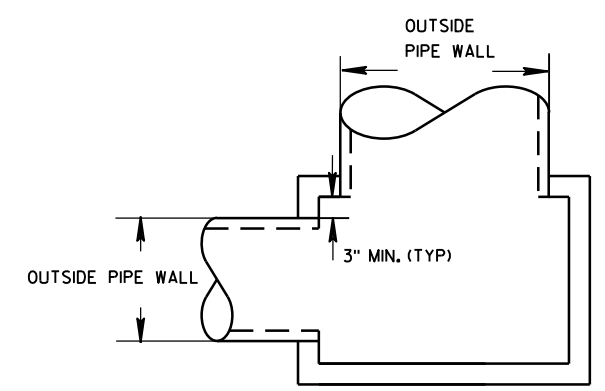
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	INLET COVER TYPE		ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



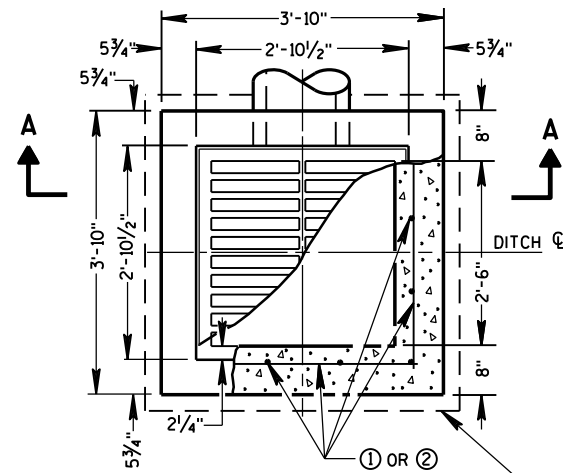
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

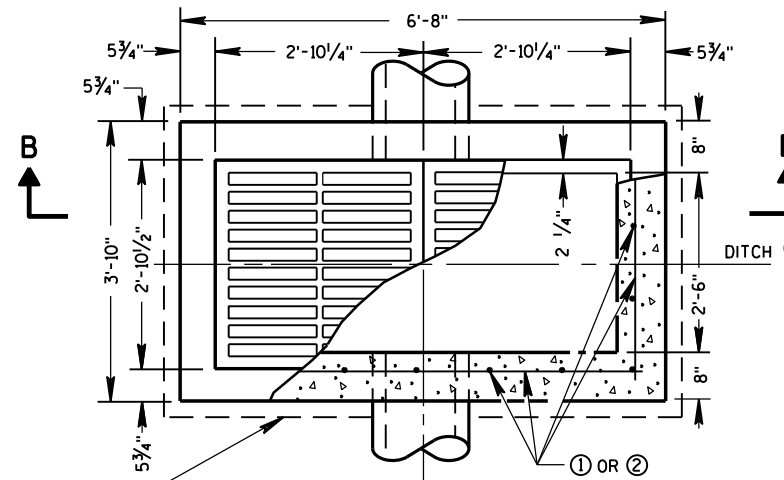
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 Sept., 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR

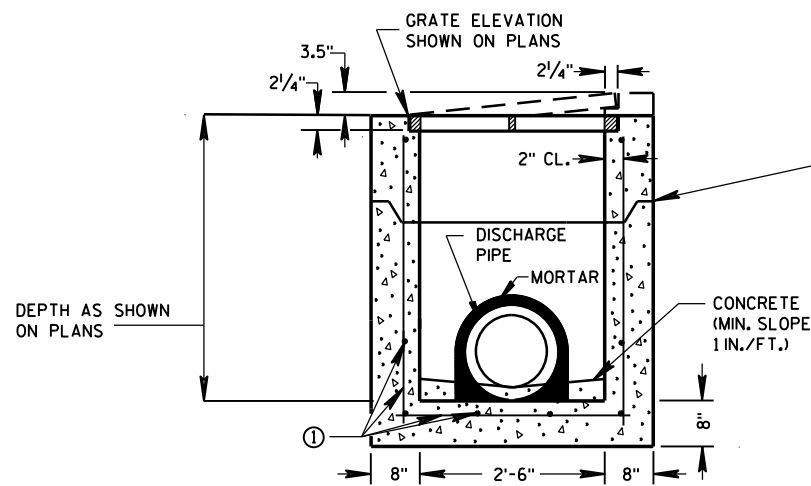


PLAN VIEW

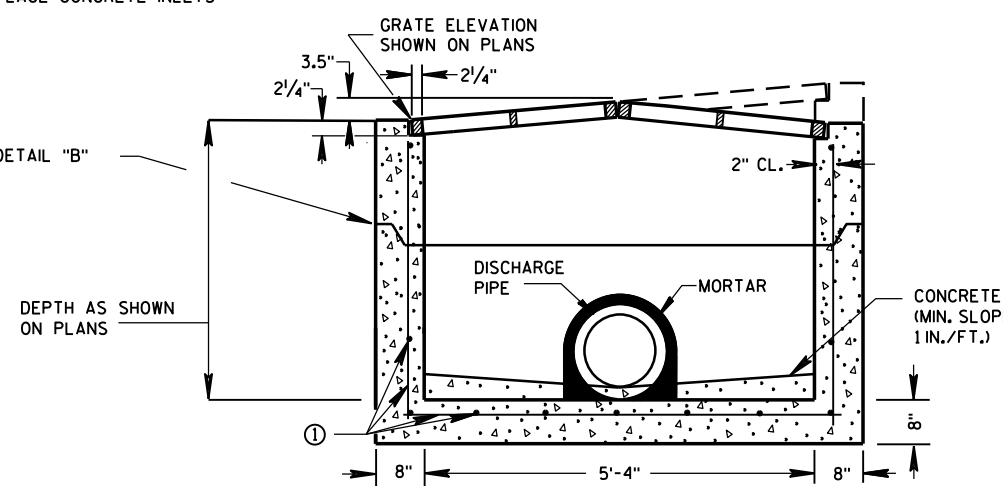


PLAN VIEW

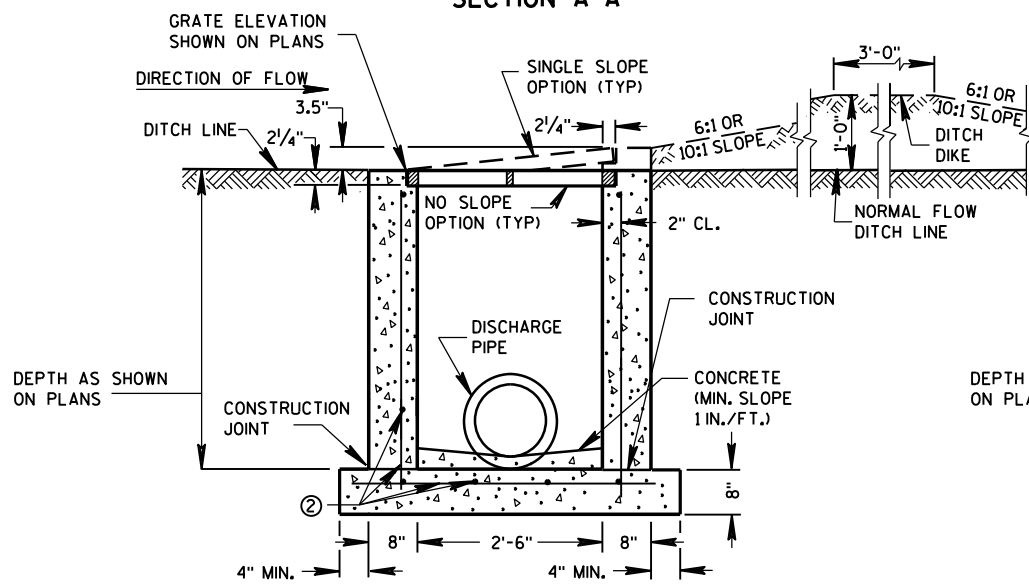
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



PRECAST REINFORCED CONCRETE SECTION A-A

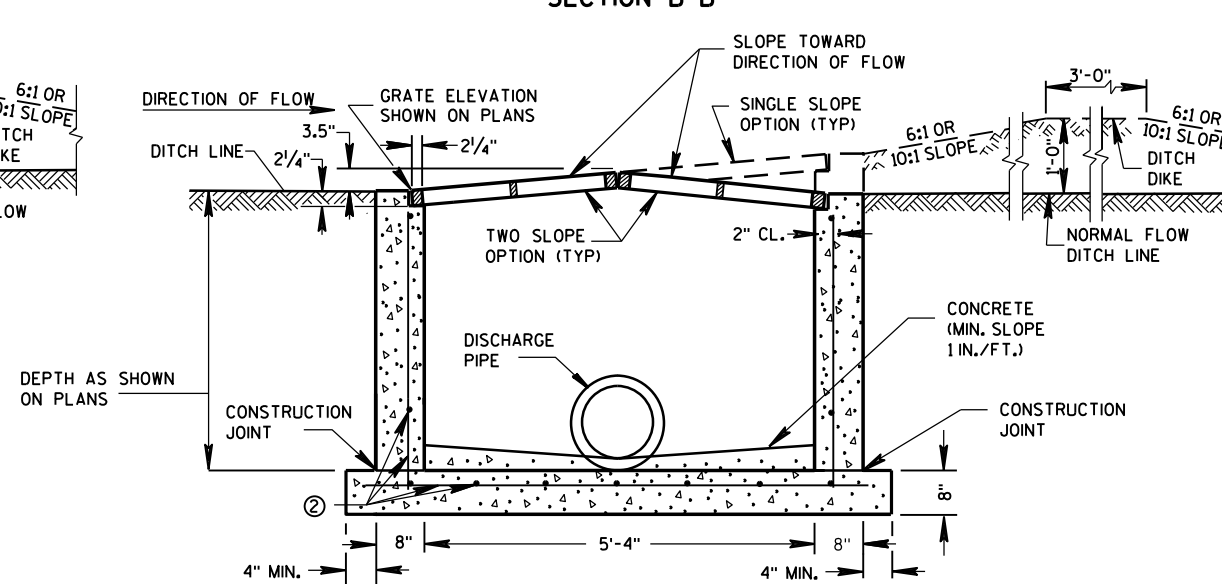


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT. BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

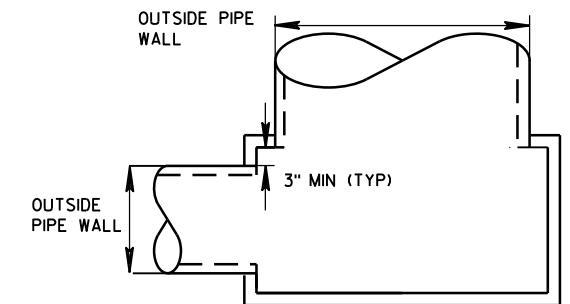
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

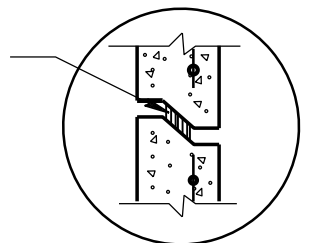
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)

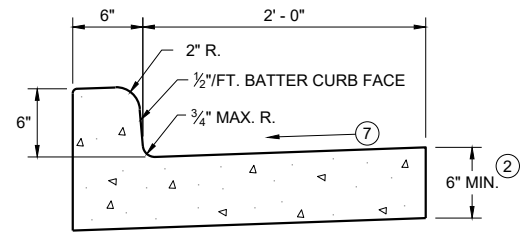


DETAIL "B"

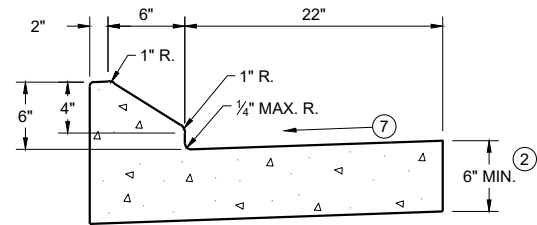
INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

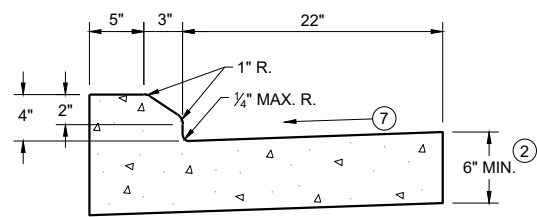
APPROVED
Sept., 2016 /S/ Rodney Taylor
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FHWA UNIT SUPERVISOR



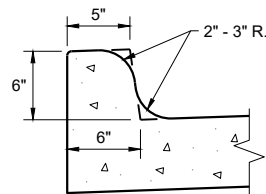
TYPES A^① & D



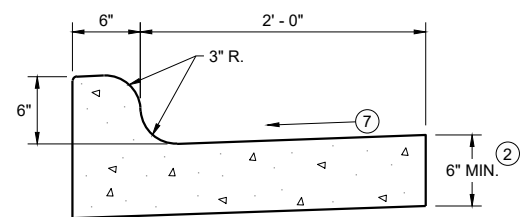
6" SLOPED CURB TYPES G^① & J



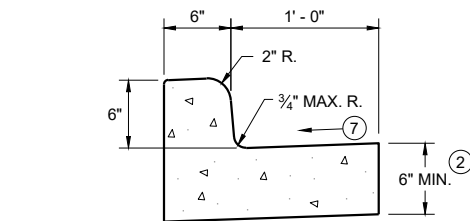
4" SLOPED CURB TYPES G^① & J



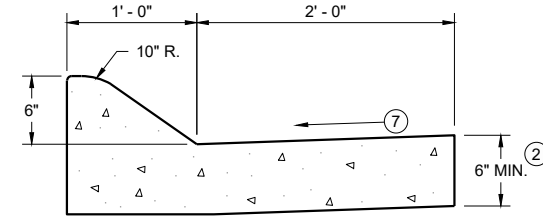
TYPES K^① & L
(OPTIONAL CURB SHAPE)



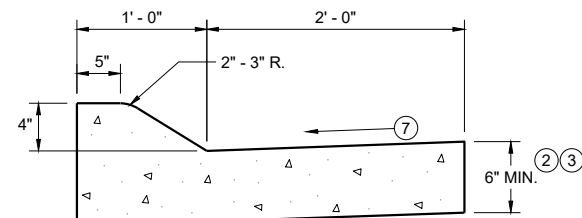
TYPES K^① & L
CONCRETE CURB AND GUTTER 30"



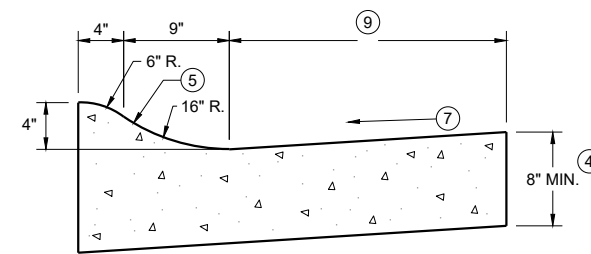
TYPES A^① & D
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D

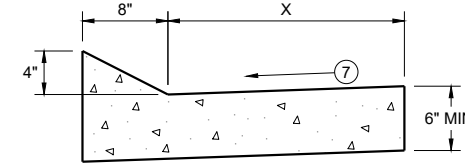


4" SLOPED CURB TYPES A^① & D
CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

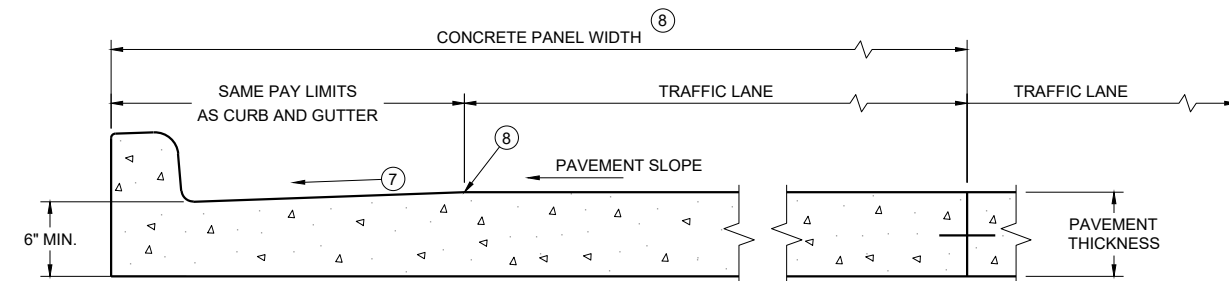
TBT & TBTT	X
30"	22"
36"	28"



TYPES TBT & TBTT^①
CONCRETE CURB AND GUTTER

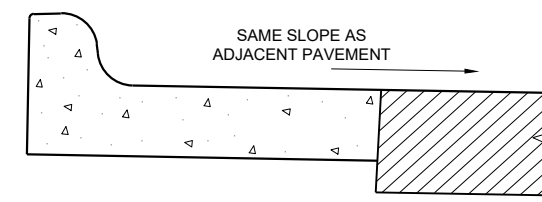
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

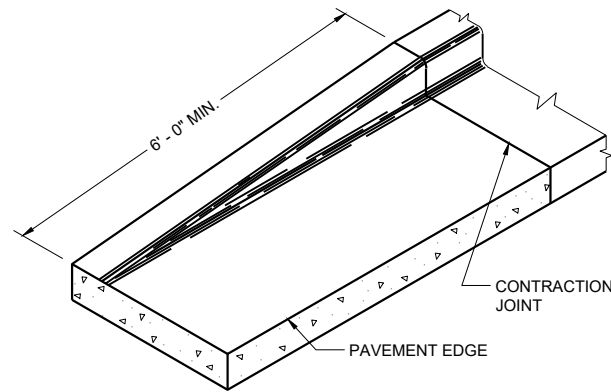
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

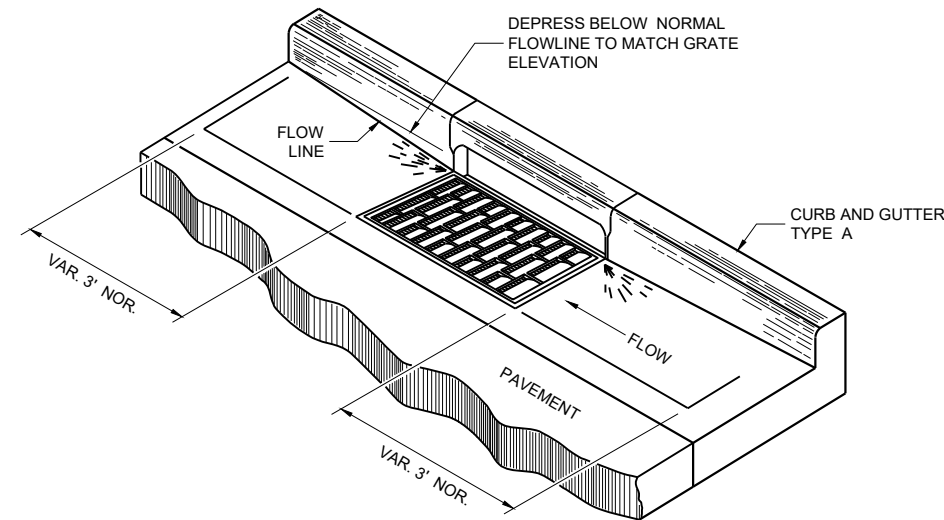
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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 GUTTERS 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 UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES 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.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

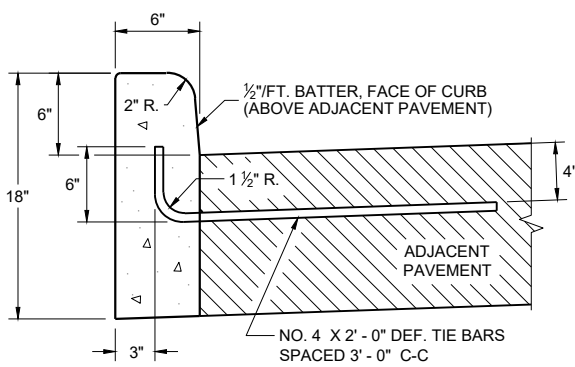


END SECTION CURB AND GUTTER

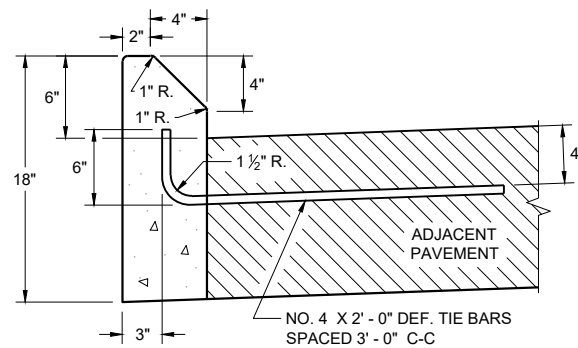


DETAIL OF CURB AND GUTTER AT INLETS

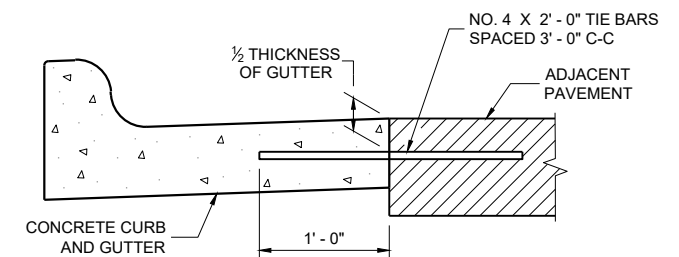
(TYPICAL H INLET COVER SHOWN)



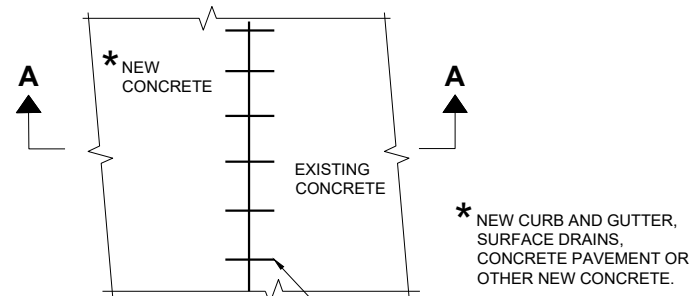
TYPES A^① & D



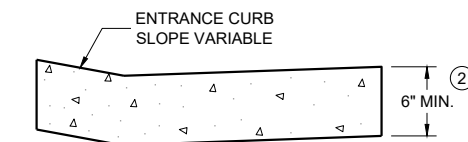
**TYPES G^① & J
CONCRETE CURB**



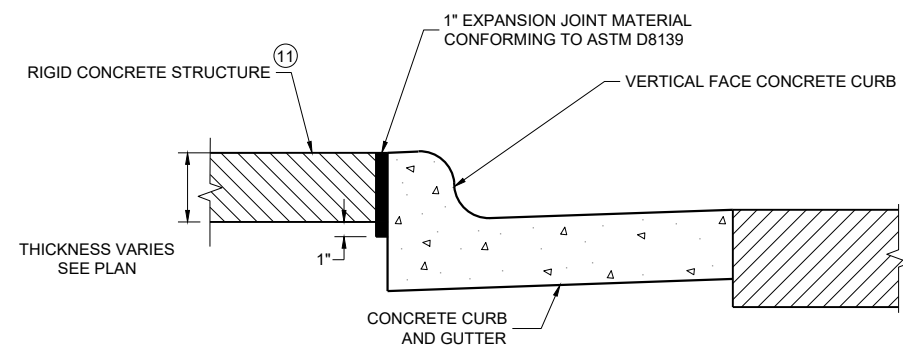
TYPICAL TIE BAR LOCATION^①



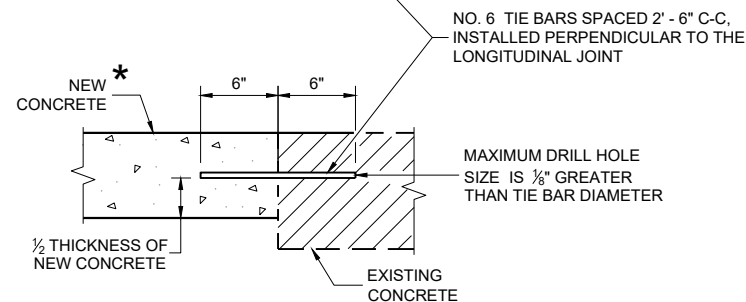
PLAN VIEW



**DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)**



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT

GENERAL NOTES

DETAILS OF CONSTRUCTION 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.

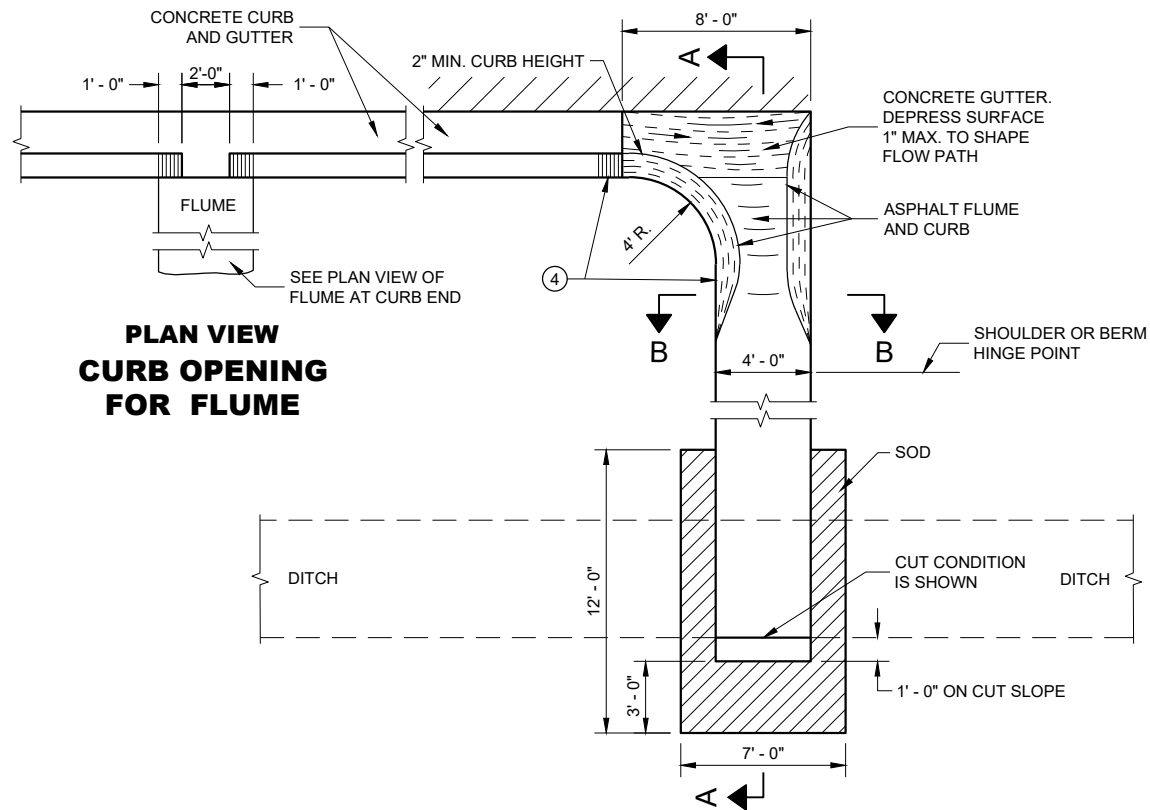
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS 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.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



**PLAN VIEW
CURB OPENING
FOR FLUME**

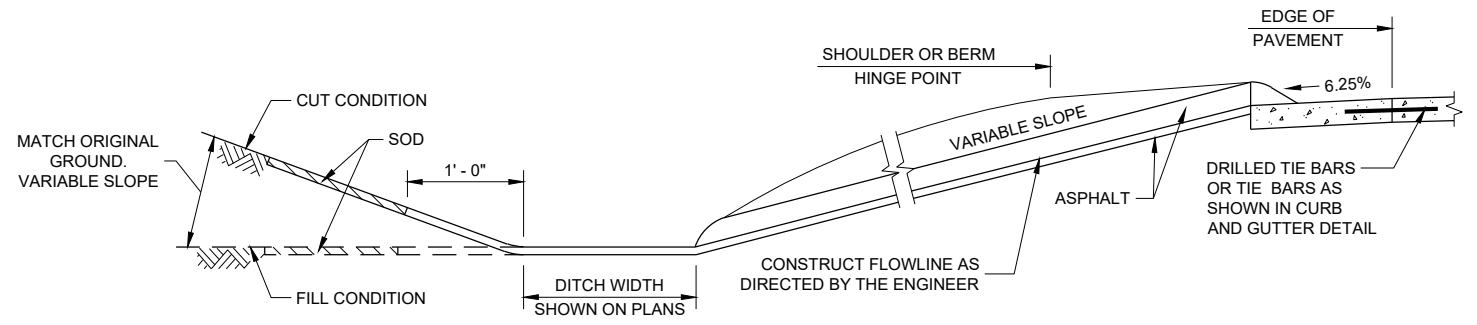
**PLAN VIEW
FLUME AT CURB END**

GENERAL NOTES

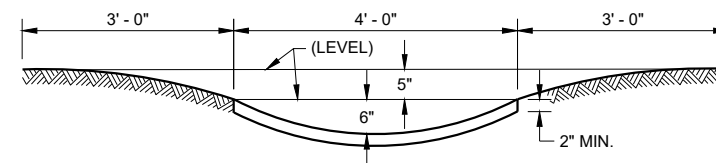
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

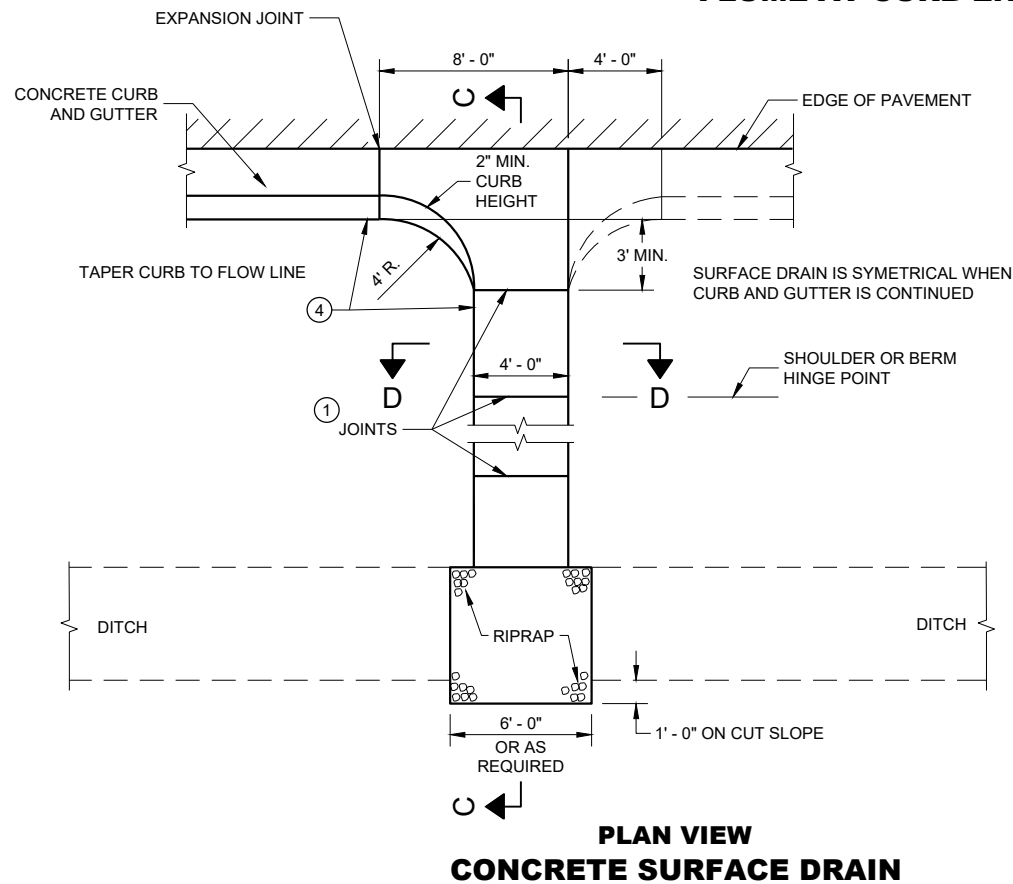
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ④ ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



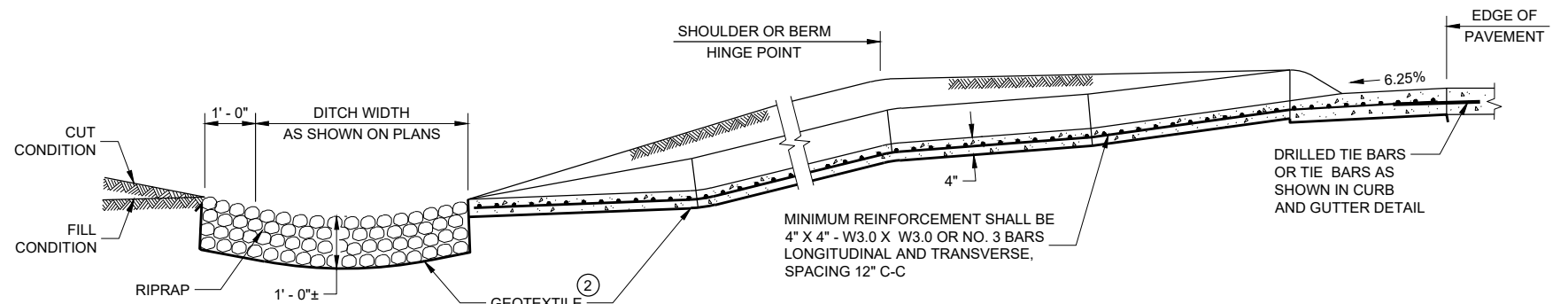
SECTION A - A



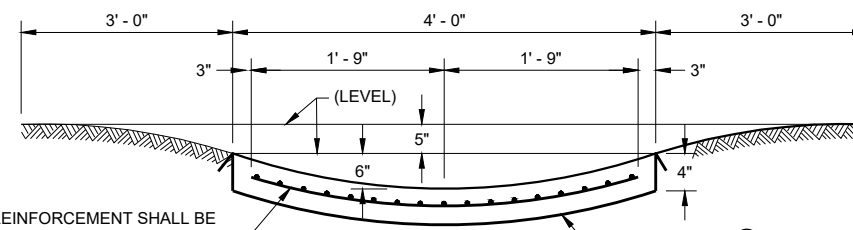
SECTION B - B



**PLAN VIEW
CONCRETE SURFACE DRAIN**



SECTION C - C



SECTION D - D

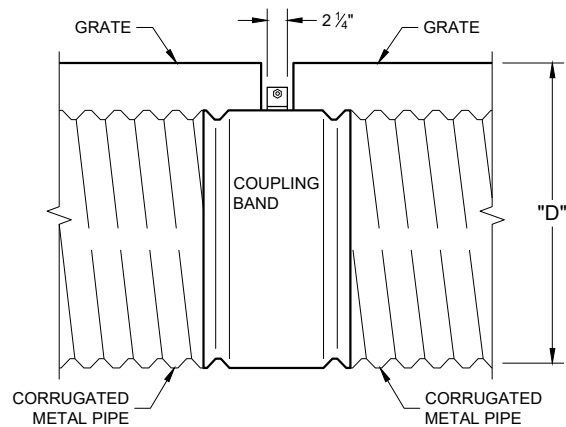
MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE, SPACING 12" C-C

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

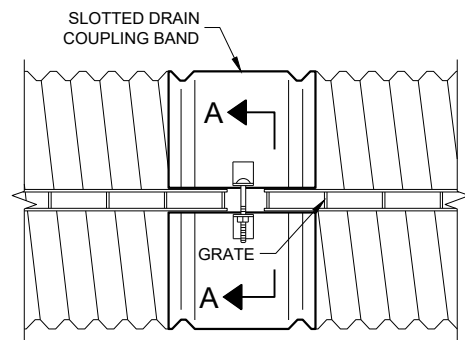
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



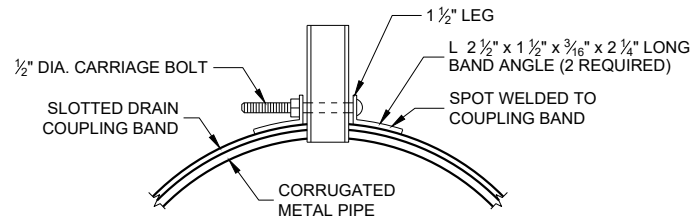
SIDE VIEW



PLAN VIEW

TYPICAL COUPLING BAND FOR SLOTTED DRAIN

(ALTERNATES PERMITTED AS APPROVED BY THE ENGINEER)



SECTION A - A

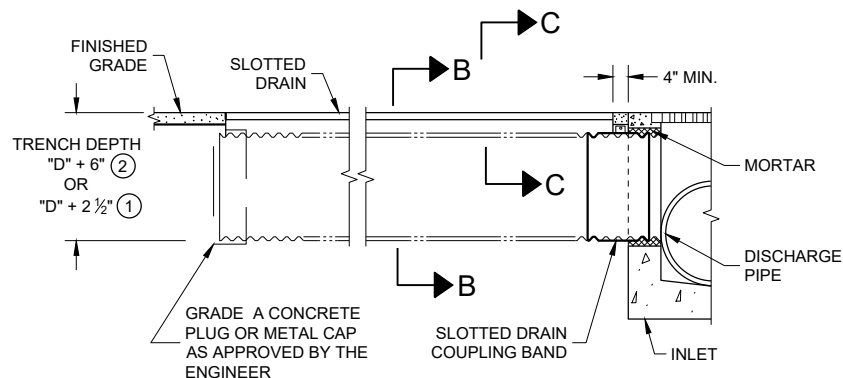
GENERAL NOTES

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.

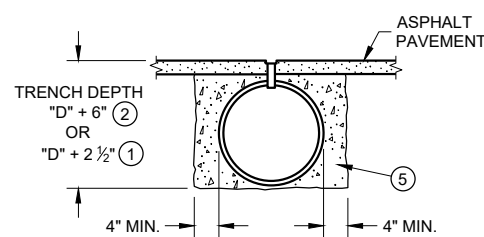
THE PIPE FOR THE SLOTTED DRAIN SHALL MEET AASHTO DESIGNATION M-36, AND THE GRATE ASSEMBLIES SHALL BE MADE FROM STRUCTURAL STEEL SUITABLY WELDED TO FORM THE OPEN SLOT AND HOT-DIP GALVANIZED TO MEET THE PROVISIONS OF AASHTO DESIGNATION M-111.

NORMAL PIPE SIZES ARE 12-INCH THROUGH 24-INCH DIAMETER IN 0.064 INCH THICKNESS, AND 30-INCH DIAMETER PIPE IN 0.079 INCH THICKNESS.

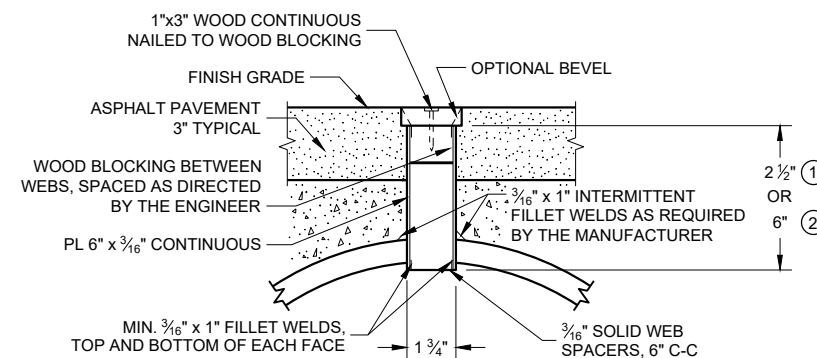
- ① 2 1/2" NORMAL GRATE DEPTH
- ② 6" SPECIAL GRATE DEPTH, WHEN SPECIFIED ON THE PLANS.
- ③ FOR SCREEDING DIRECTLY OVER THE SLOTTED DRAIN WITH ASPHALT PAVER. FOR CONCRETE SURFACE USE 3" WIDE TAPE OVER THE SLOT TO KEEP MATERIAL OUT OF THE PIPE.
- ④ WHEN THE SURFACE IS CONCRETE PAVEMENT THE GRADE AS SHOWN ON THE PLANS WILL BE FLUSH WITH THE TOP OF THE SLOTTED DRAIN.
- ⑤ ENCASE CORRUGATED METAL PIPE SURFACE DRAIN IN GRADE "A" CONCRETE CONFORMING TO STANDARD SPECIFICATION 501 AS MODIFIED IN STANDARD SPECIFICATION 716. PROVIDE QMP FOR CLASS III ANCILLARY CONCRETE PER STANDARD SPECIFICATION 716. UTILIZING EARLY STRENGTH (HES) CONCRETE CONFORMING TO STANDARD SPECIFICATION 710.4(5) IS ALLOWED AND MAY BE REQUIRED BY THE PLANS OR AS DIRECTED BY THE ENGINEER.



SLOTTED DRAIN INSTALLATION TYPE "A"

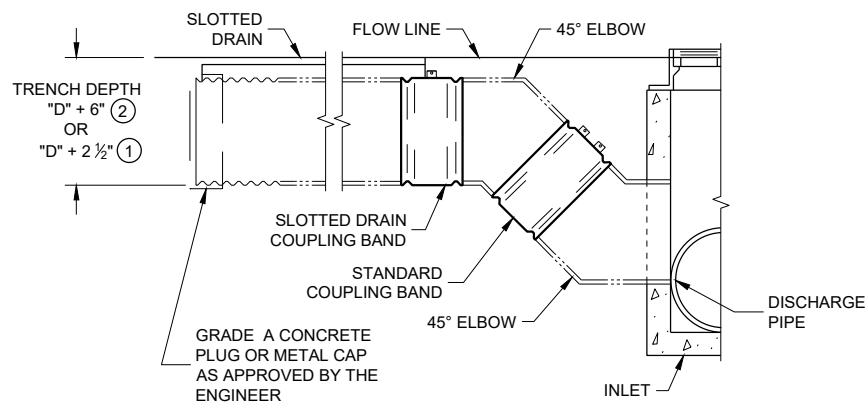


SECTION B - B

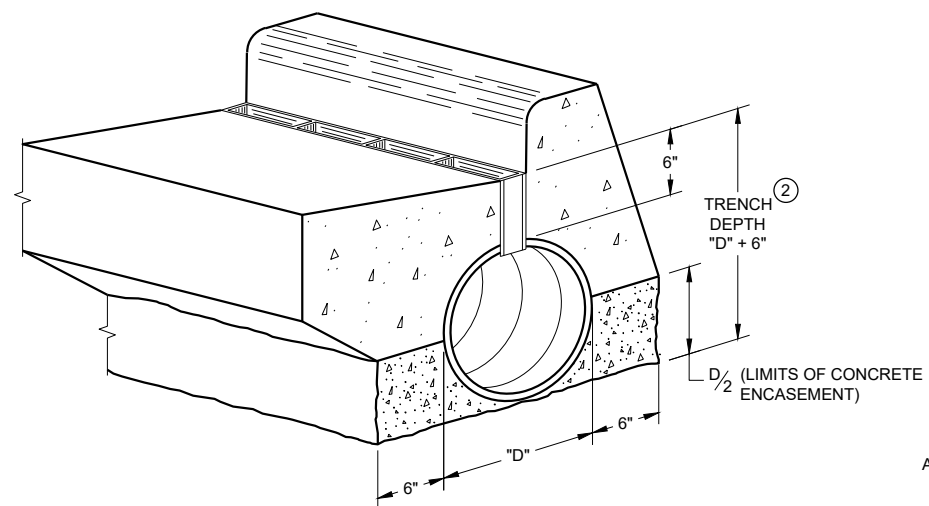


SECTION C - C GRATE SLOT DETAIL

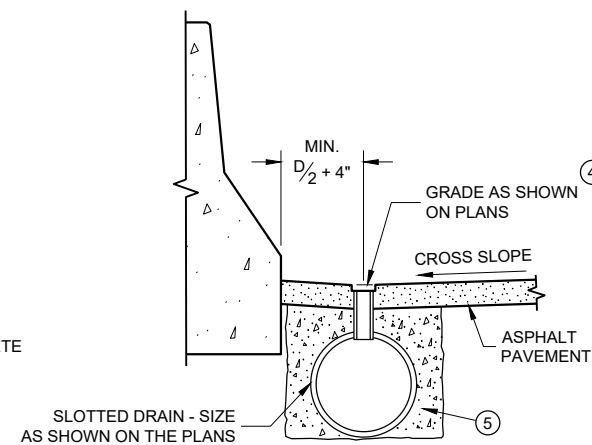
NOTE:
TO PREVENT "FLOATING" OF THE SLOTTED DRAIN DURING BACKFILL OPERATIONS, PROVIDE ADEQUATE WEDGES OR POUR THE LEAN GROUT ON TOP OF THE PLUGGED SLOT ALLOWING IT TO SLOUGH TO THE SIDES OF THE PIPE. THIS WILL PROVIDE ENOUGH WEIGHT ON TOP TO KEEP THE PIPE FROM FLOATING



SLOTTED DRAIN INSTALLATION TYPE "B"



SLOTTED DRAIN INSTALLATION IN FLOW LINE OF CURB AND GUTTER TYPE "C"



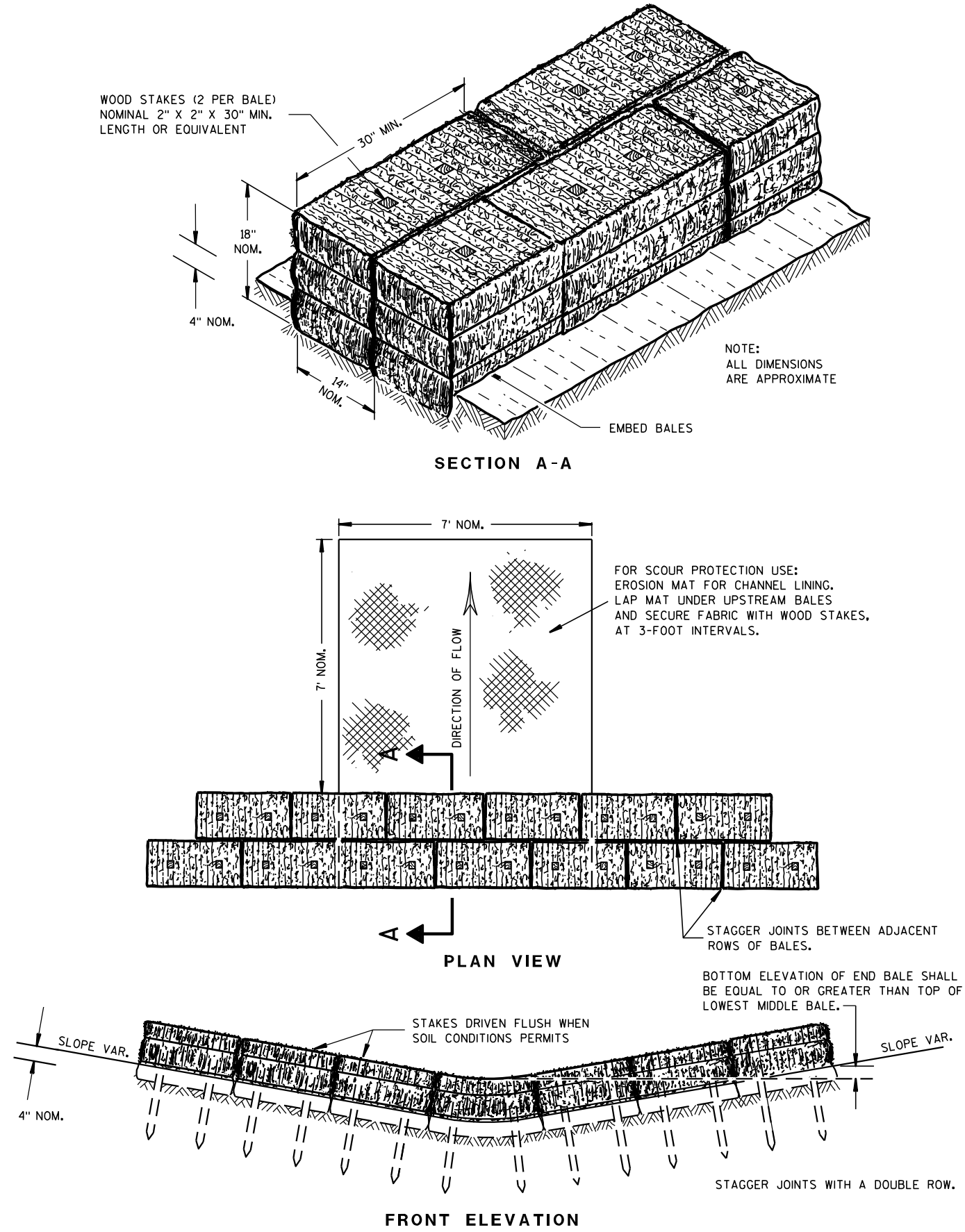
SLOTTED DRAIN INSTALLATION AT MEDIAN BARRIER TYPE "D"

SLOTTED CORRUGATED METAL PIPE SURFACE DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE May 2022 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

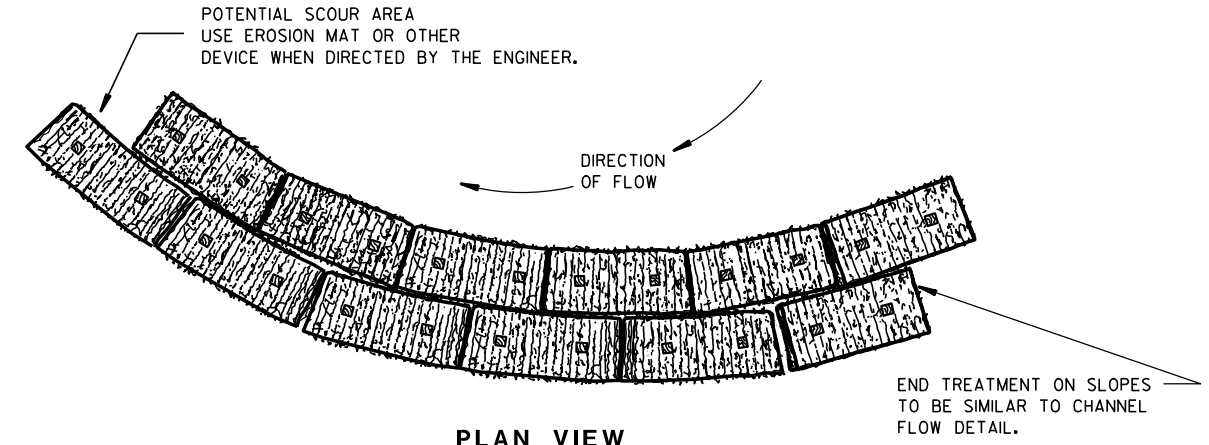


TEMPORARY DITCH CHECK USING EROSION BALES ①

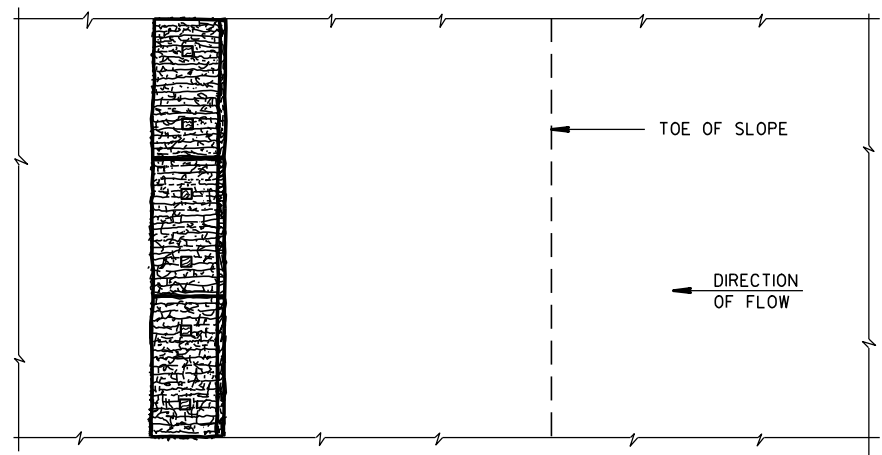
GENERAL NOTES

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.

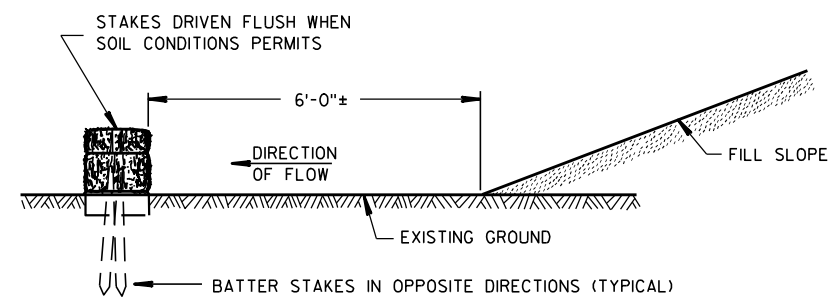
- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.



PLAN VIEW WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



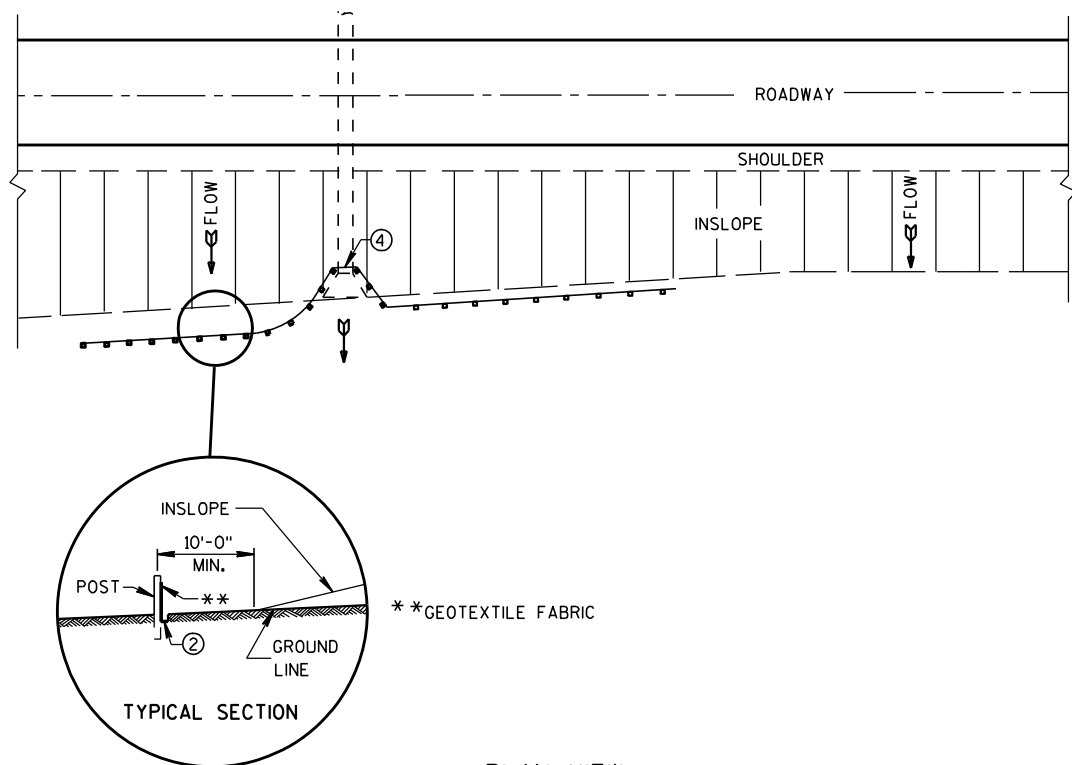
FRONT ELEVATION WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

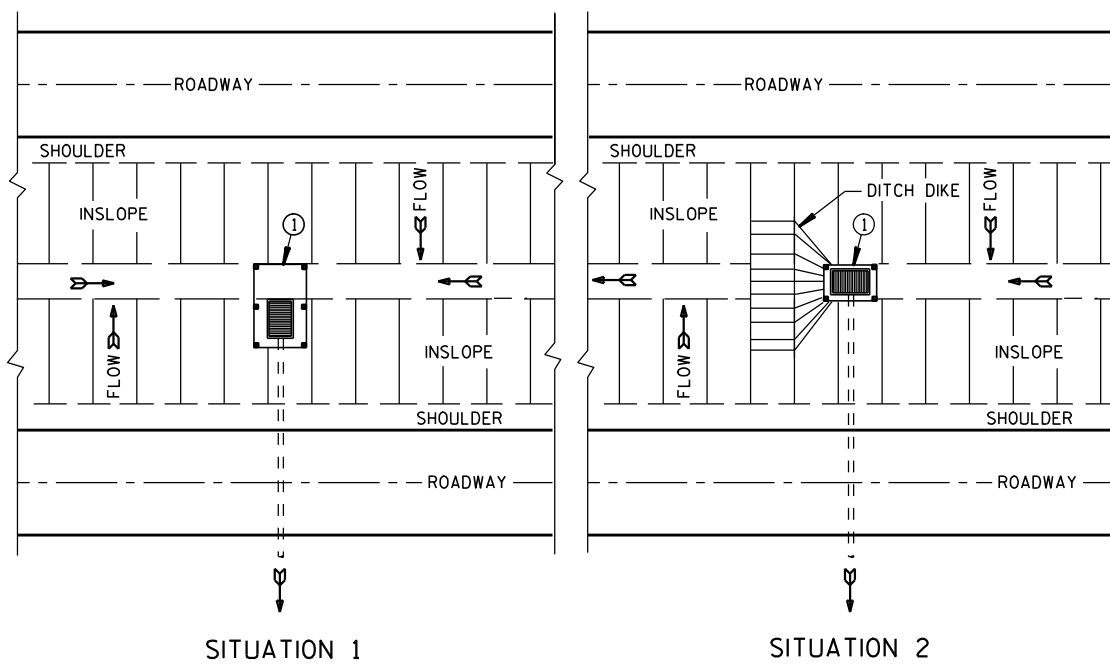
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

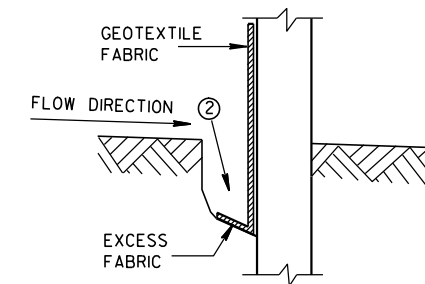


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

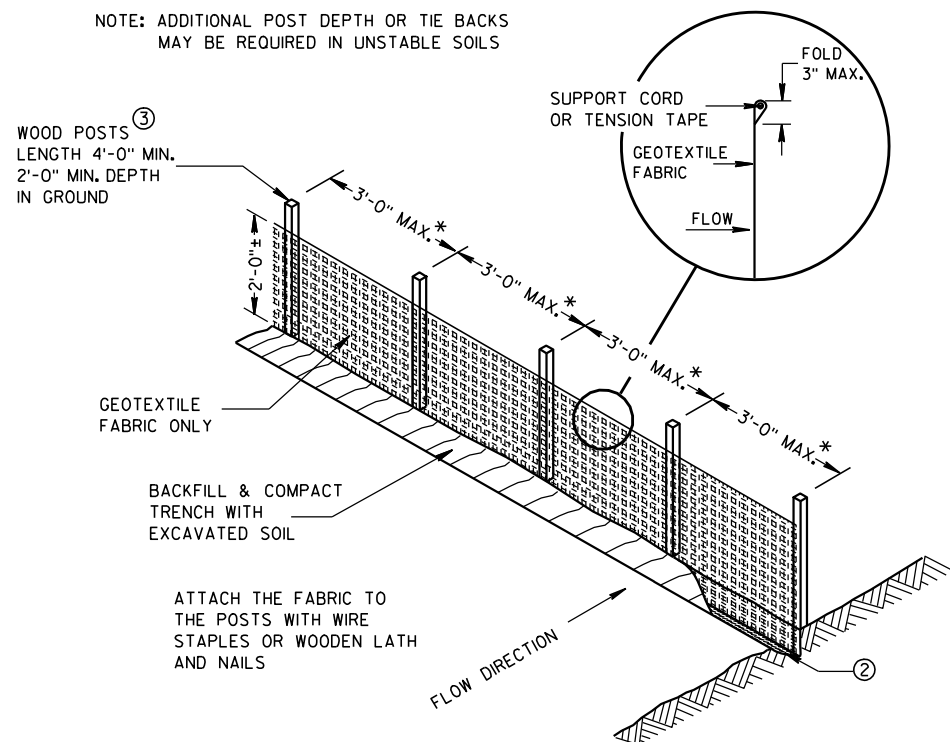
GENERAL NOTES

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 1 1/8" X 1 1/8" 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.

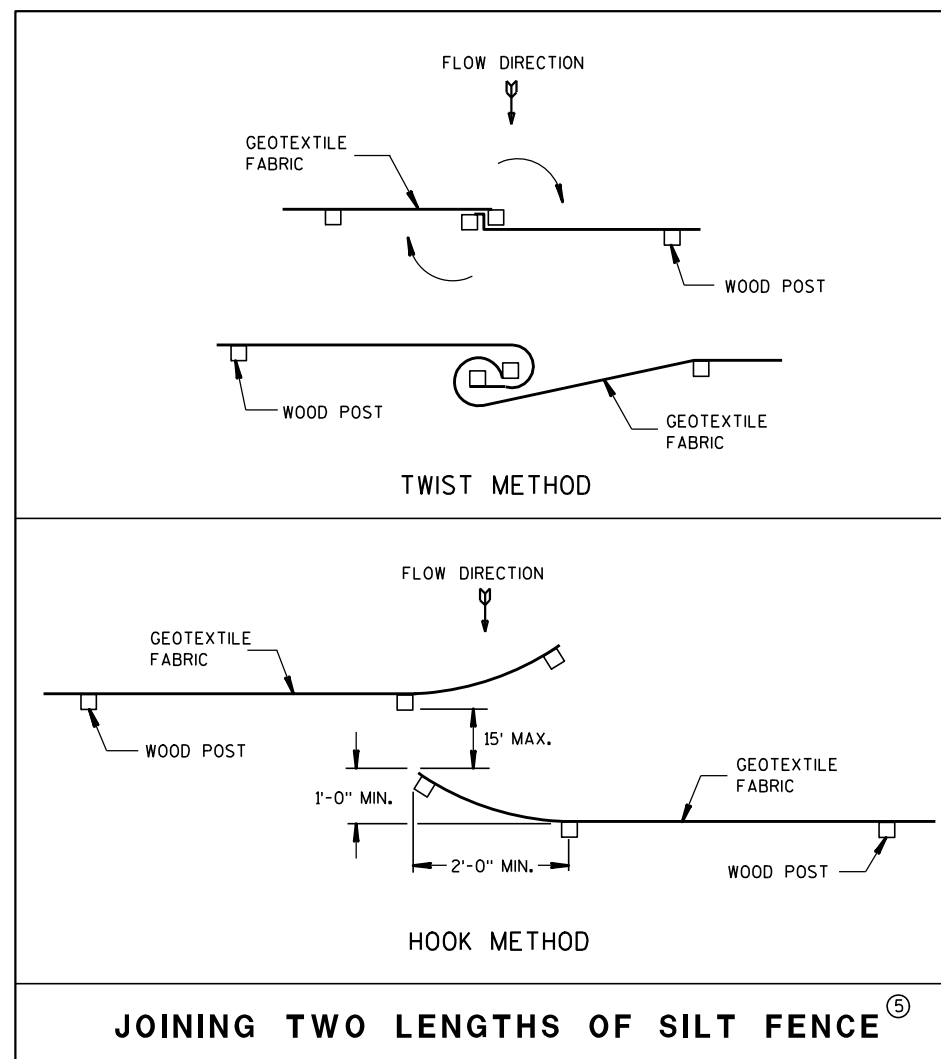


TRENCH DETAIL

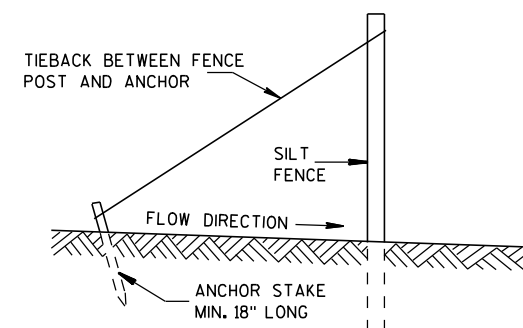


SILT FENCE

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

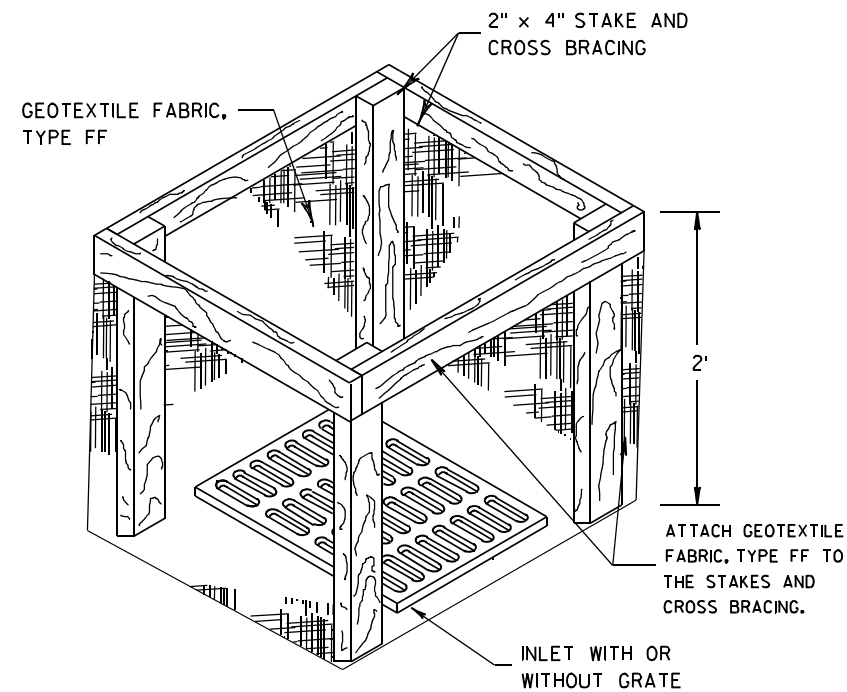
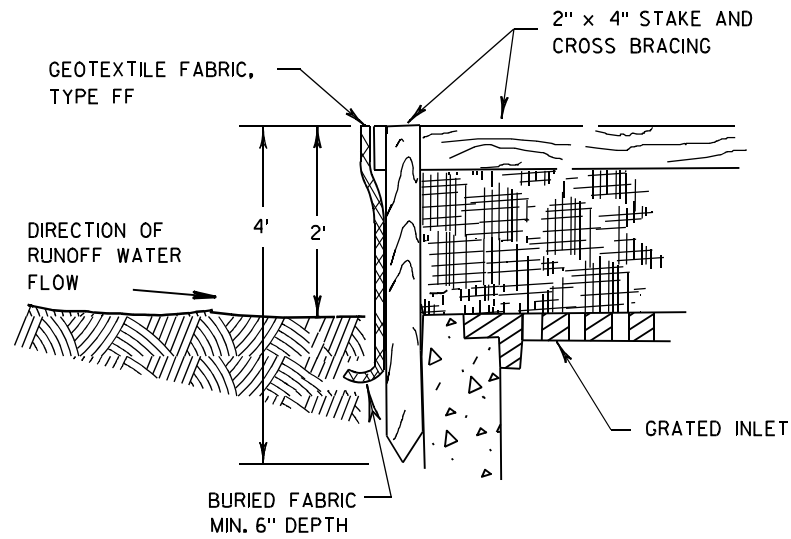


JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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



INLET PROTECTION, TYPE A

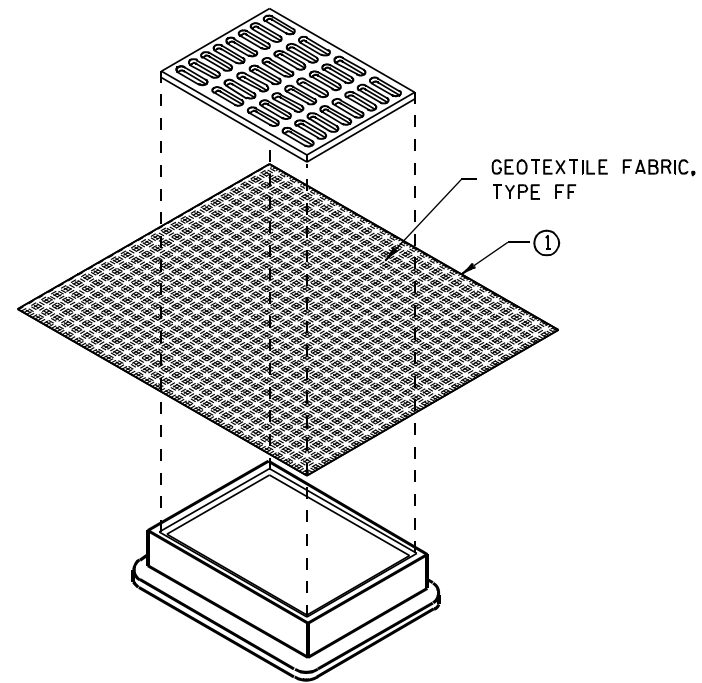
GENERAL NOTES

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.

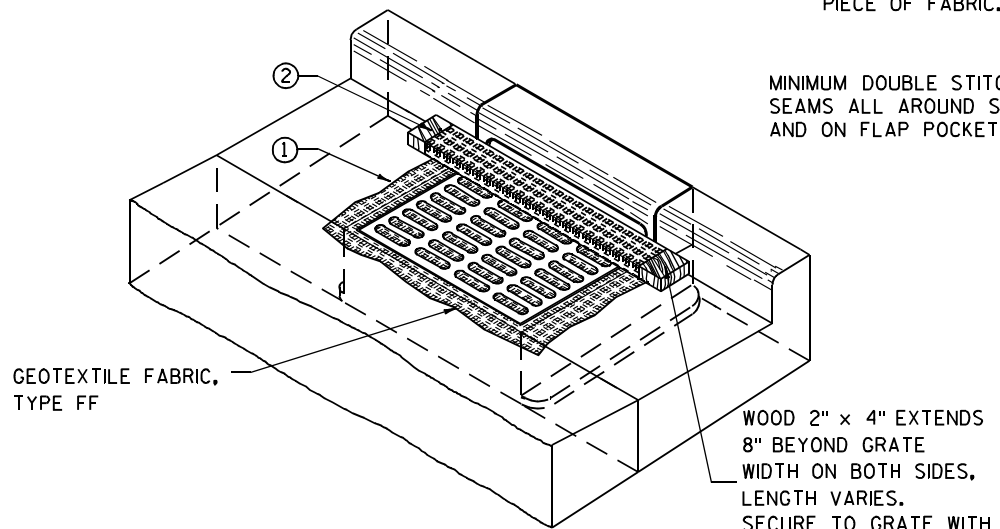
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.



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

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

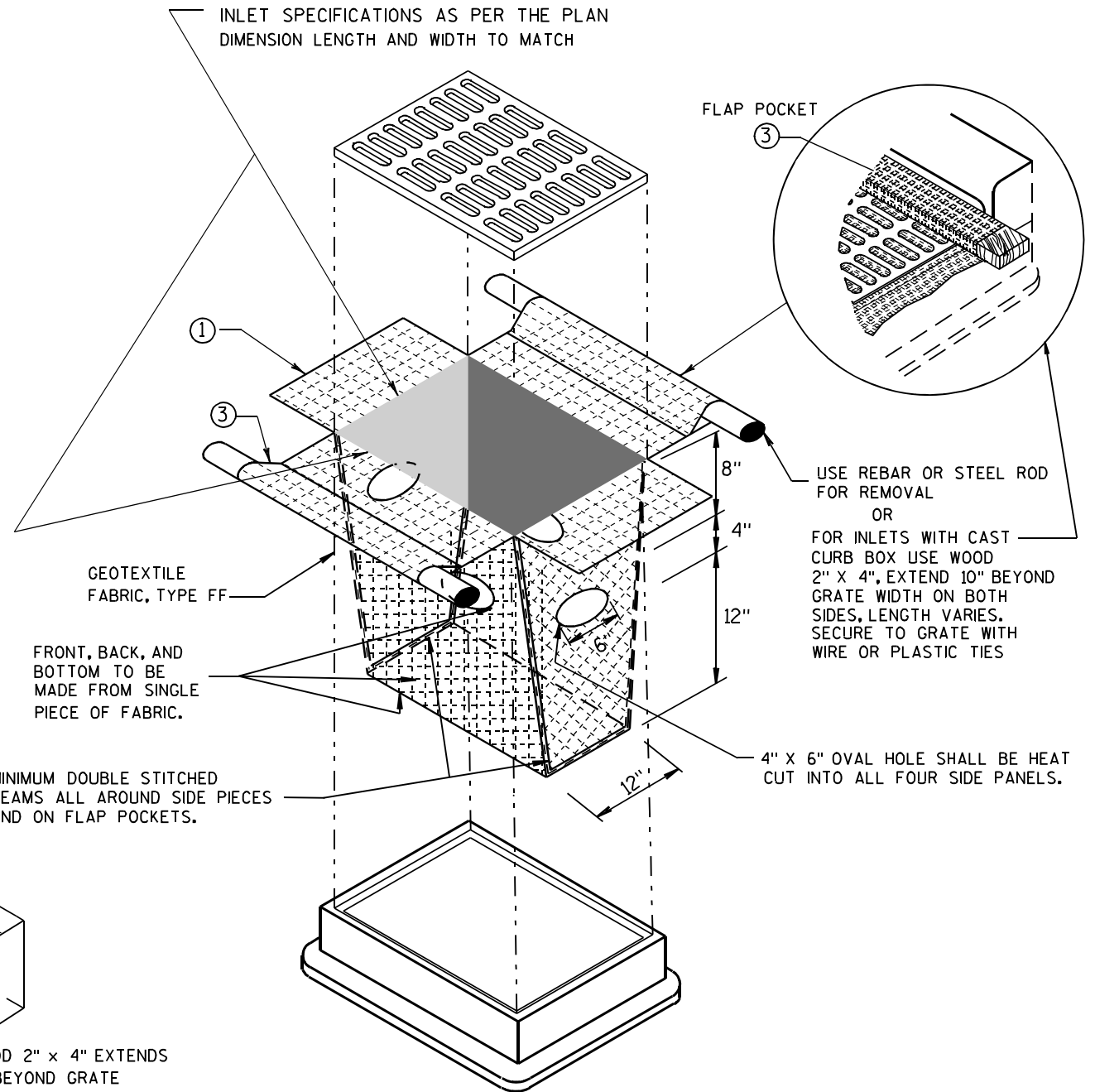
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



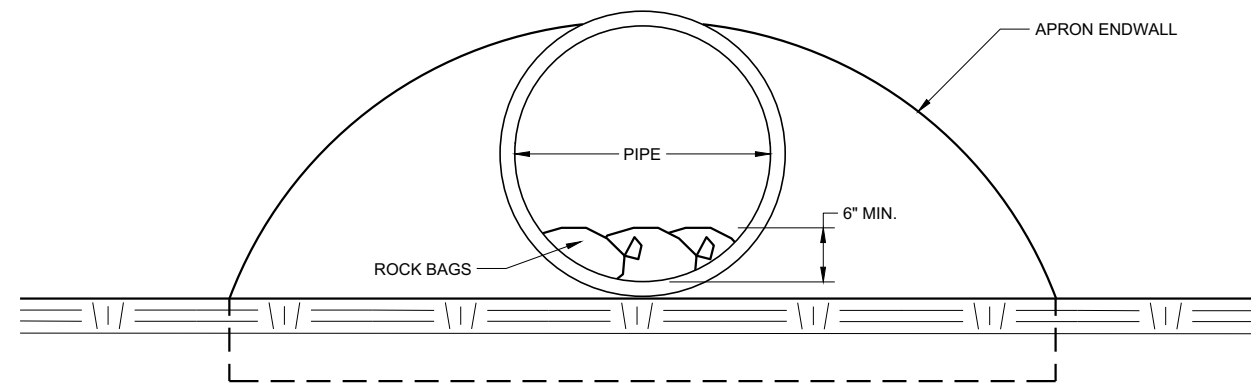
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

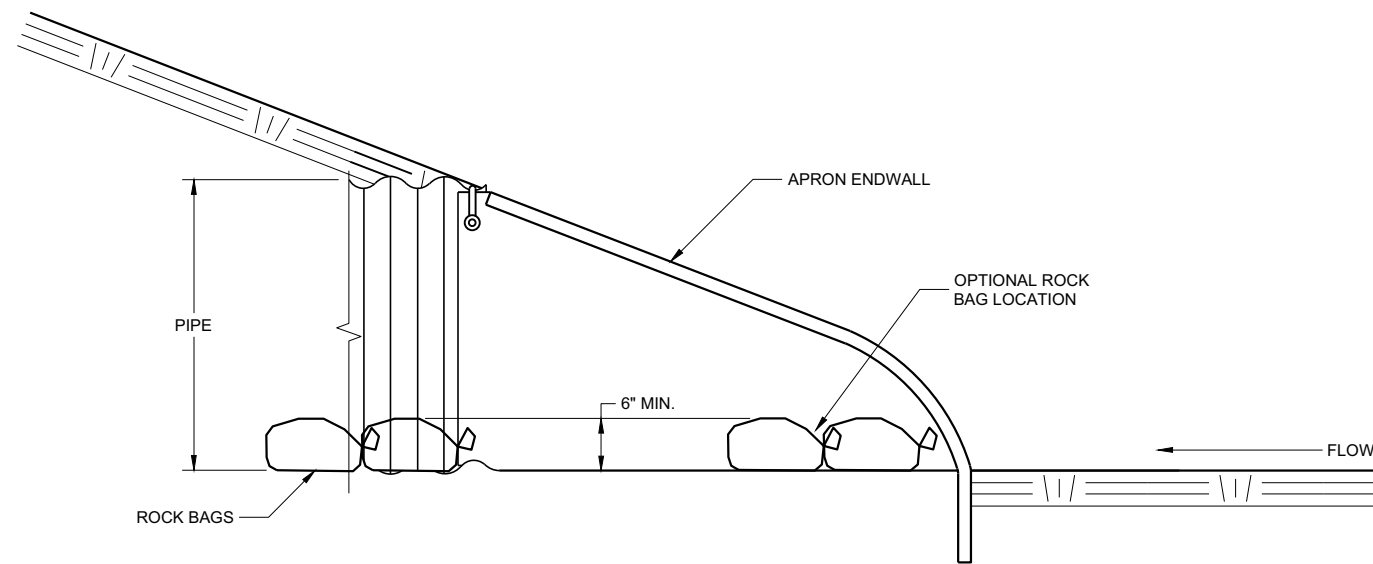
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connestra
DATE
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



END VIEW



SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Daniel Schave
DATE EROSION CONTROL ENGINEER

FHWA

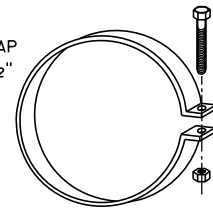
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1	L2	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	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	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	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)							APPROX. SLOPE	
	T	A	B	C	D	E	G		
12	2	4	24	48 1/8	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 1/2 to 1	
60	6	30-35	60	39	99	96	5	2 to 1	
66	6 1/2	30-35	72-78	21-27	99	102	5 1/2	2 to 1	
72	7	30-35	78	21	99	108	6	2 to 1	
78	7 1/2	30-35	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	

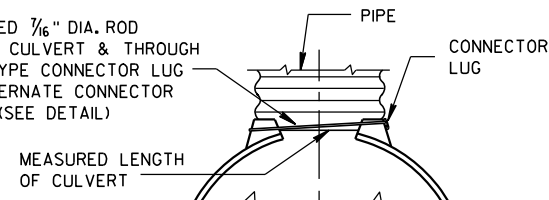
* MINIMUM
** MAXIMUM

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



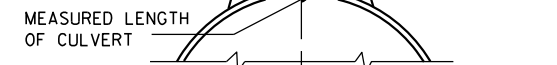
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

THREADED 3/16" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)



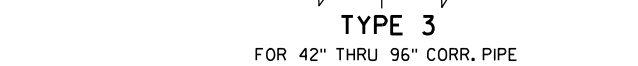
TYPE 1
FOR 12" THRU 24" CORR. PIPE

THREADED 3/16" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



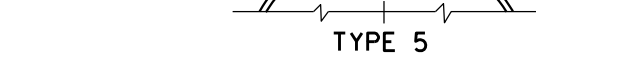
TYPE 2
FOR 30" THRU 96" CORR. PIPE

CONNECTOR SECTION TO BE PAID FOR AS PART OF END SECTION



TYPE 3
FOR 42" THRU 96" CORR. PIPE

RIVETED OR BOLTED AT DIMPLES (6" C-C FOR CORRUGATED BAND)



ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

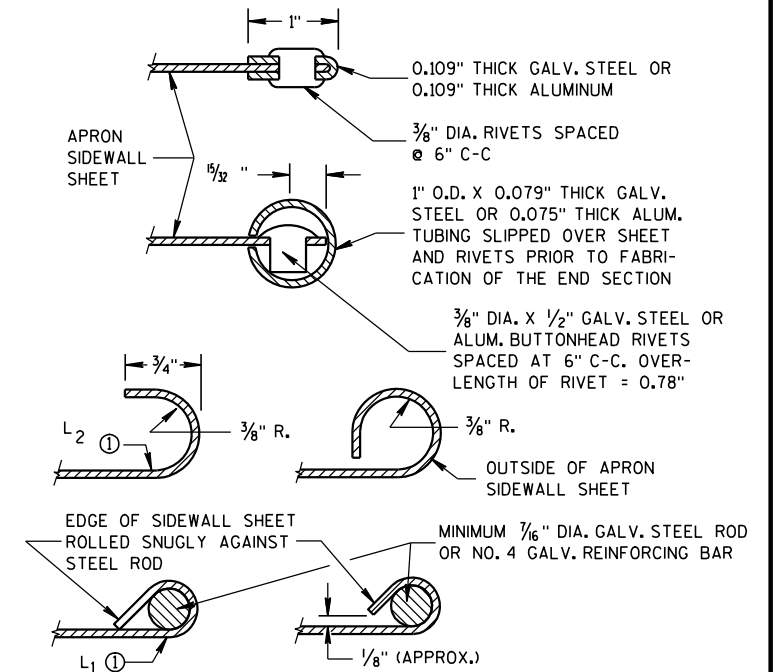
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

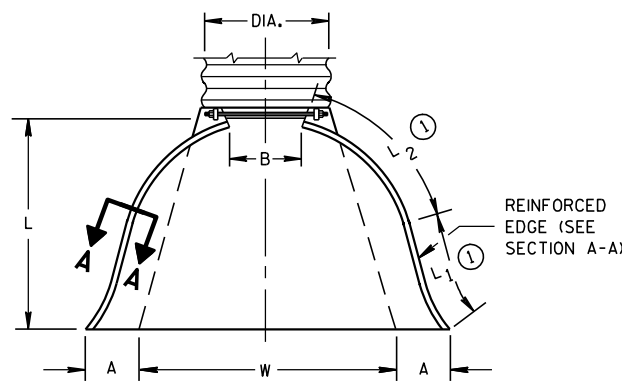
FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS

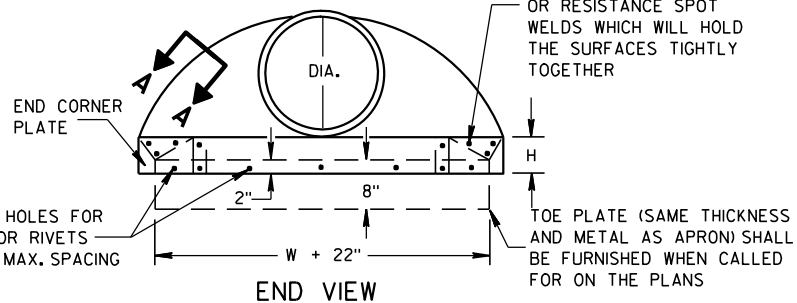


SECTION A-A

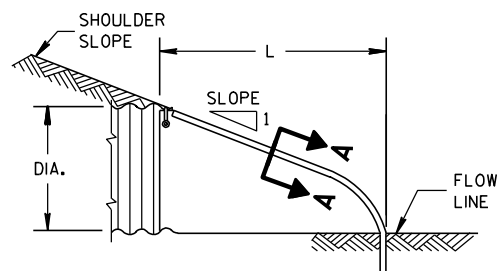


PLAN VIEW

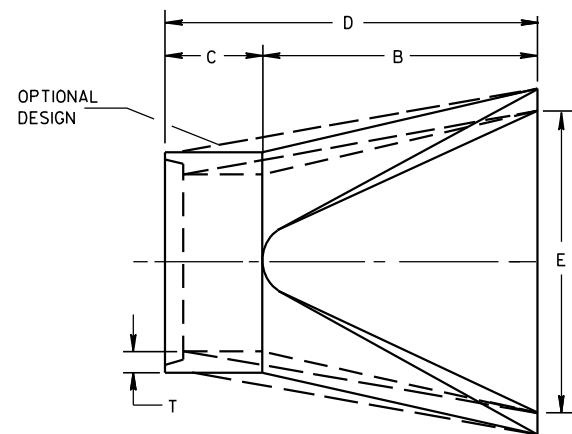
REINFORCED EDGE (SEE SECTION A-A)
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



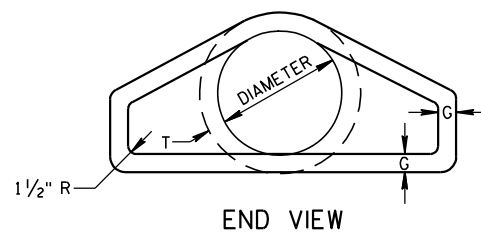
END VIEW



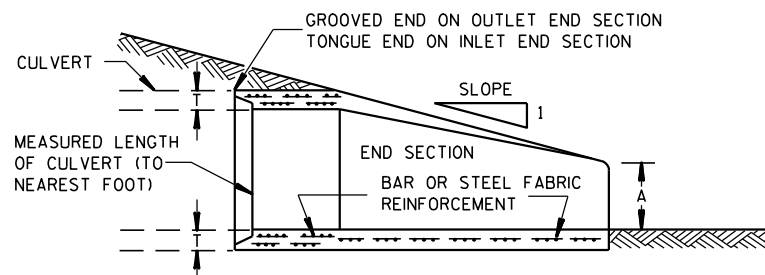
SIDE ELEVATION
METAL ENDWALLS



PLAN



END VIEW



LONGITUDINAL SECTION
CONCRETE ENDWALLS

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 VICE 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.

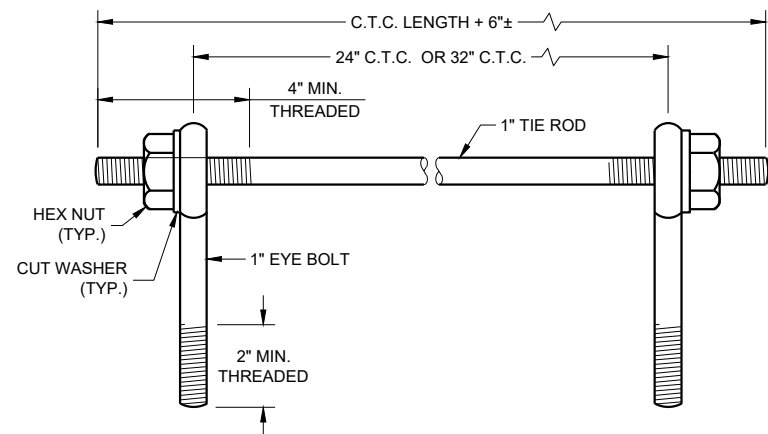
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

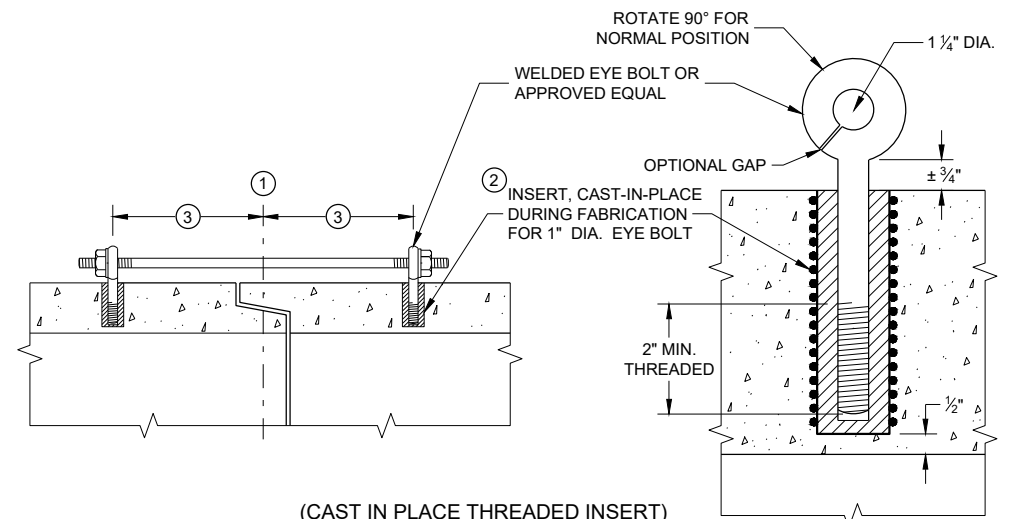
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

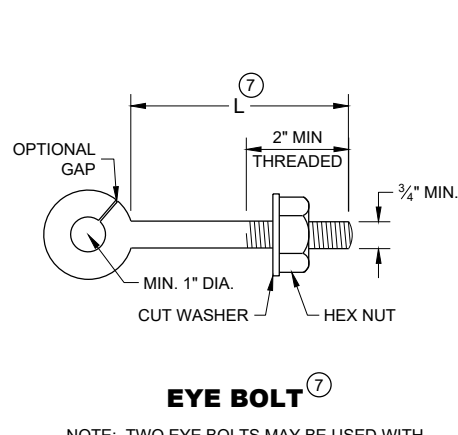
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

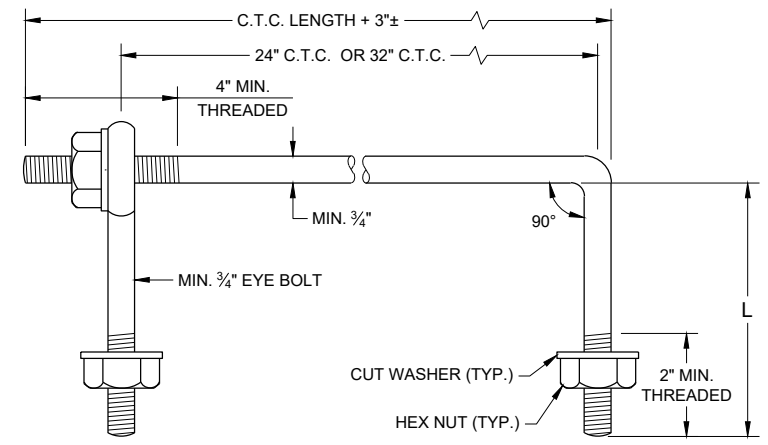
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① CENTER LINE 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 PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 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.
- ⑦ EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

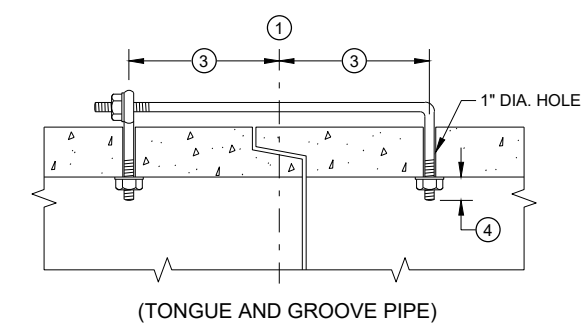


EYE BOLT ⑦

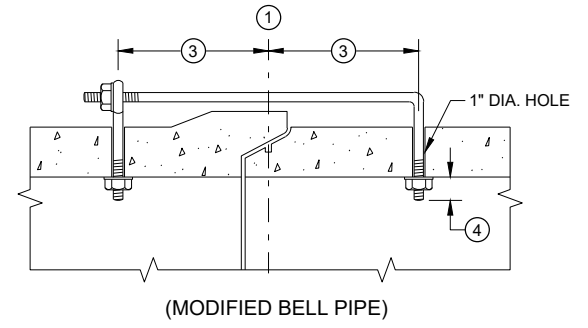
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30\"/>



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

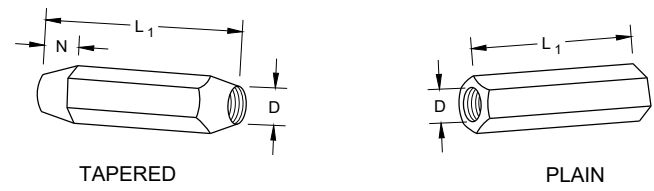
LONGITUDINAL SECTION
(JOINT TIES FOR 18\"/>

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

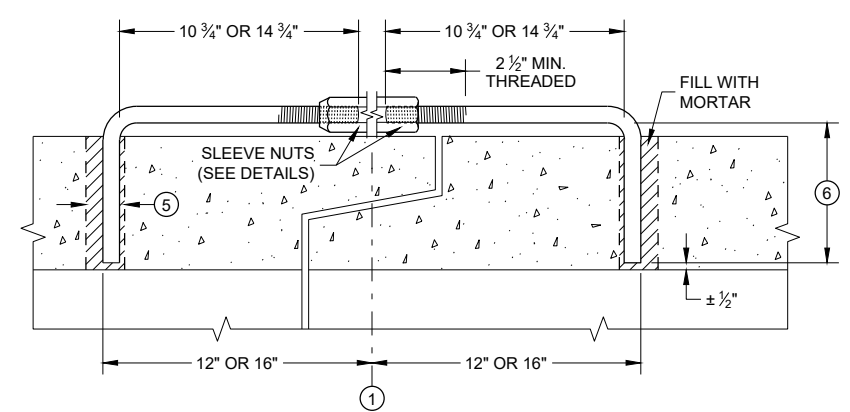
ADJUSTABLE TIE ROD TABLE

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 - 144	1	1	7	1 1/16

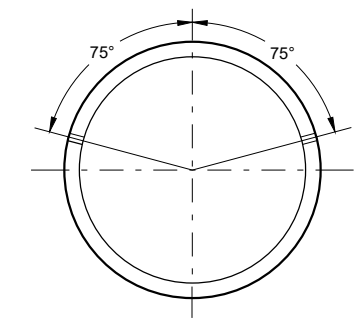
DIMENSIONS SHOWN ARE IN INCHES



RIGHT AND LEFT THREADS SLEEVE NUTS

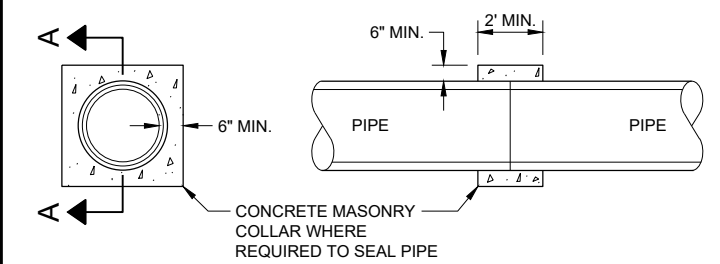


LONGITUDINAL SECTION
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

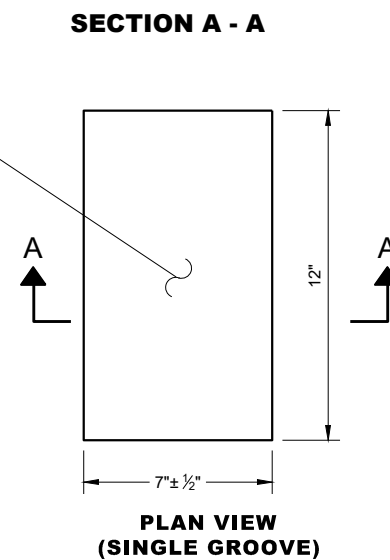
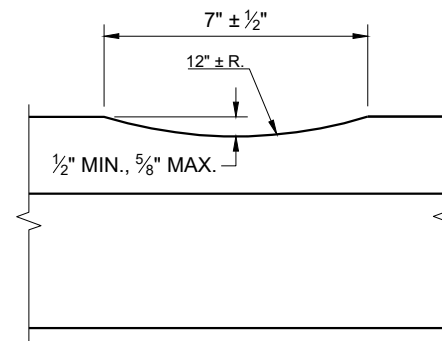
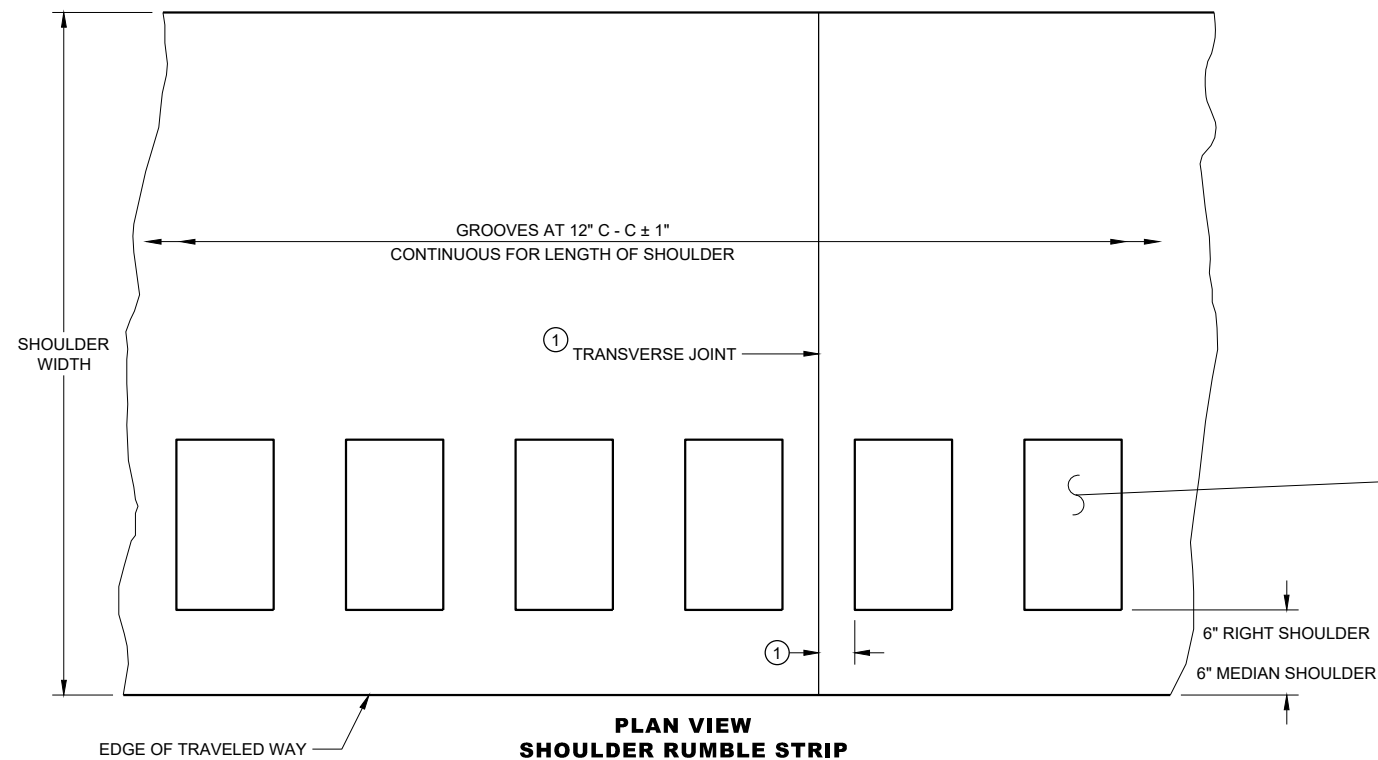
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

SDD 08F04 - 08

SDD 08F04 - 08

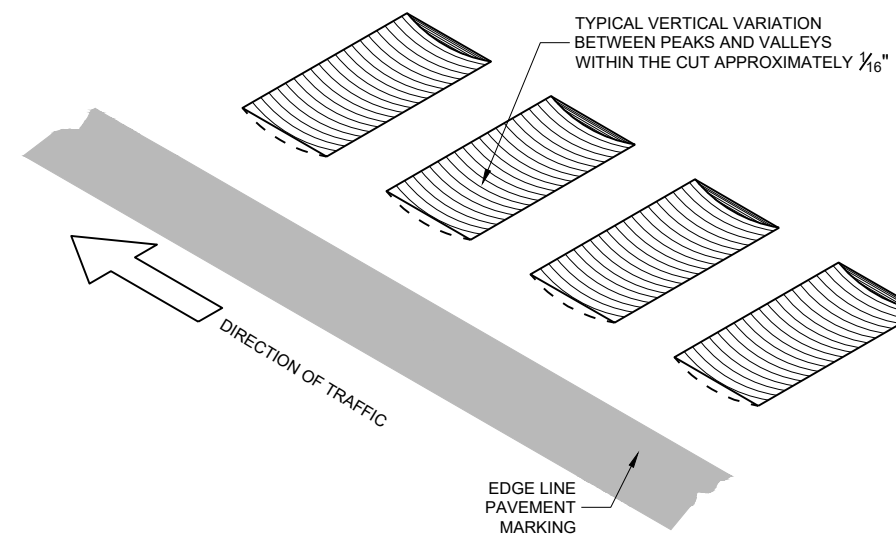


GENERAL NOTES

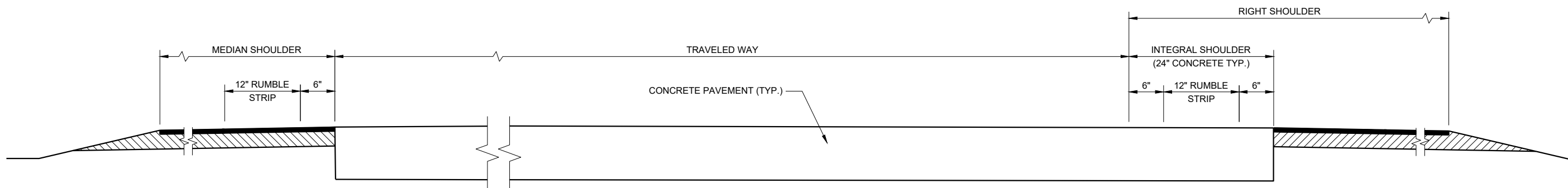
SDD 13A5, SHEET "b" SHOWS THE LOCATION OF THE RUMBLE STRIPS AT RAMP AND GORE LOCATIONS.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

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



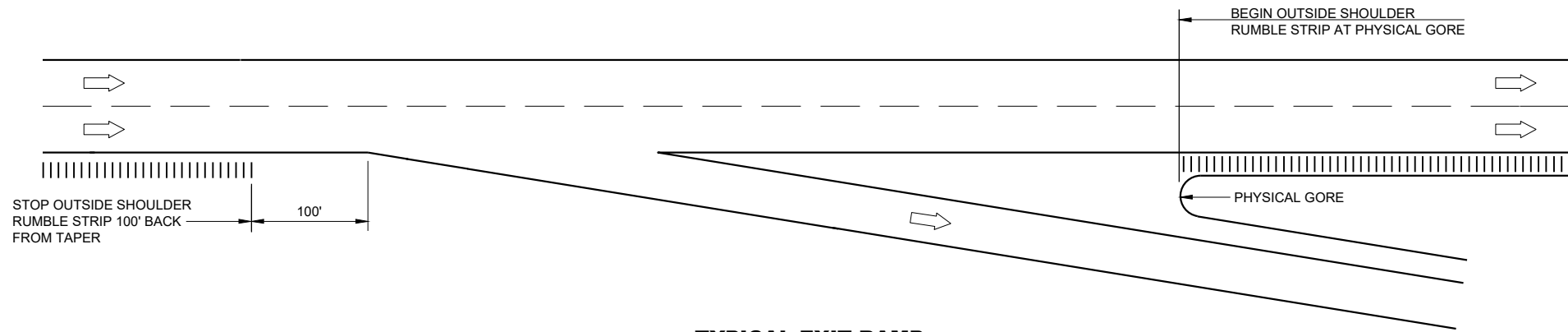
PLACEMENT DETAIL FOR RUMBLE STRIP



**TYPICAL SHOULDER RUMBLE STRIPS
(ONE ROADWAY IS SHOWN)**

**SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TYPICAL EXIT RAMP

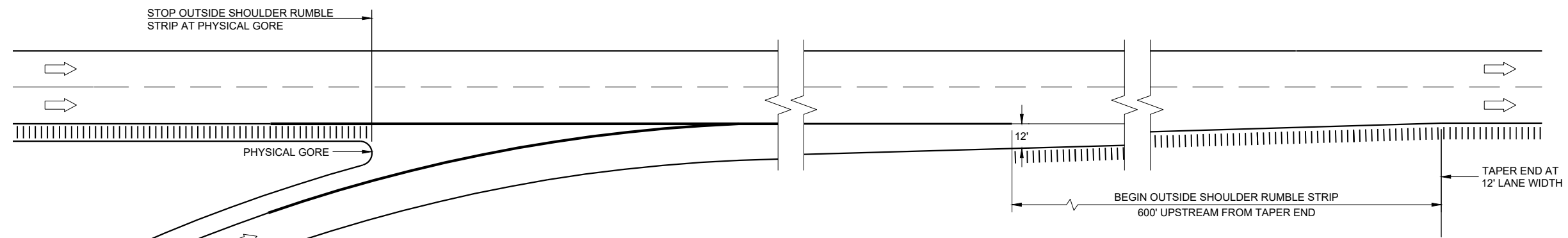
GENERAL NOTES

NO RUMBLE STRIP ON EXIT, DIRECTIONAL OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

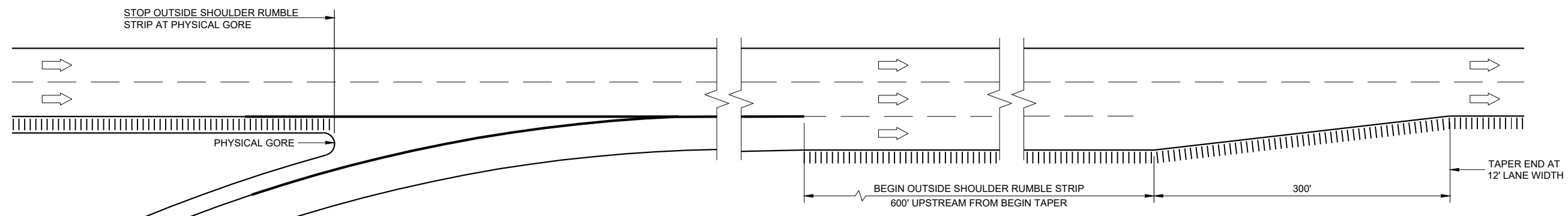
RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

LEGEND

➡ DIRECTION OF TRAFFIC



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS**



**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS**

6

6

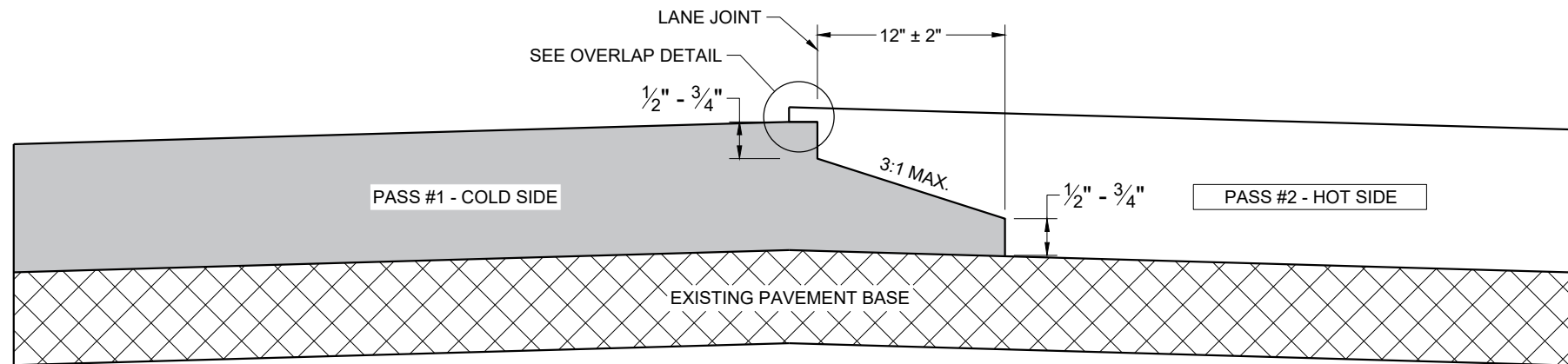
SDD 13A05-06b

SDD 13A05-06b

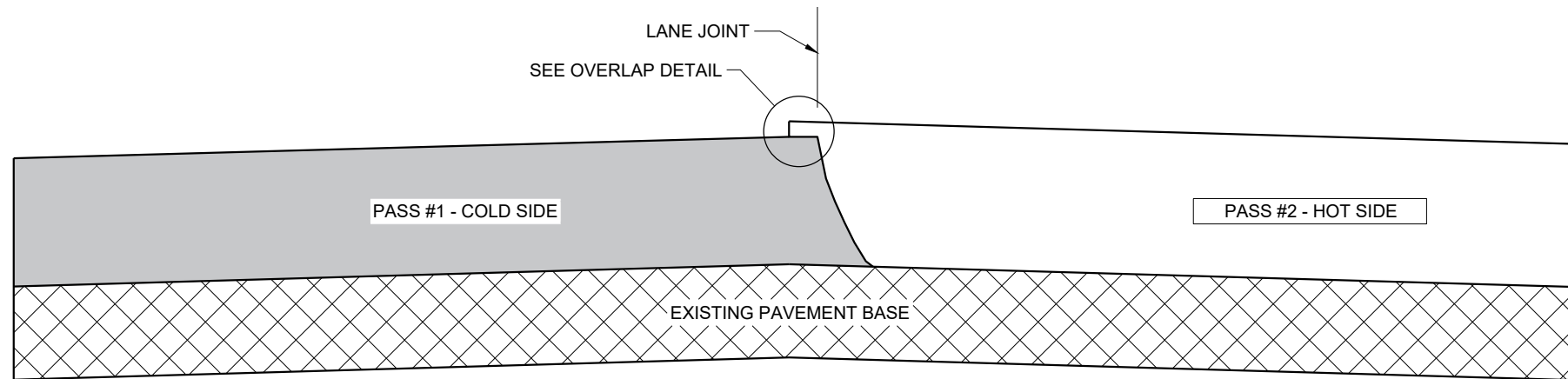
**SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

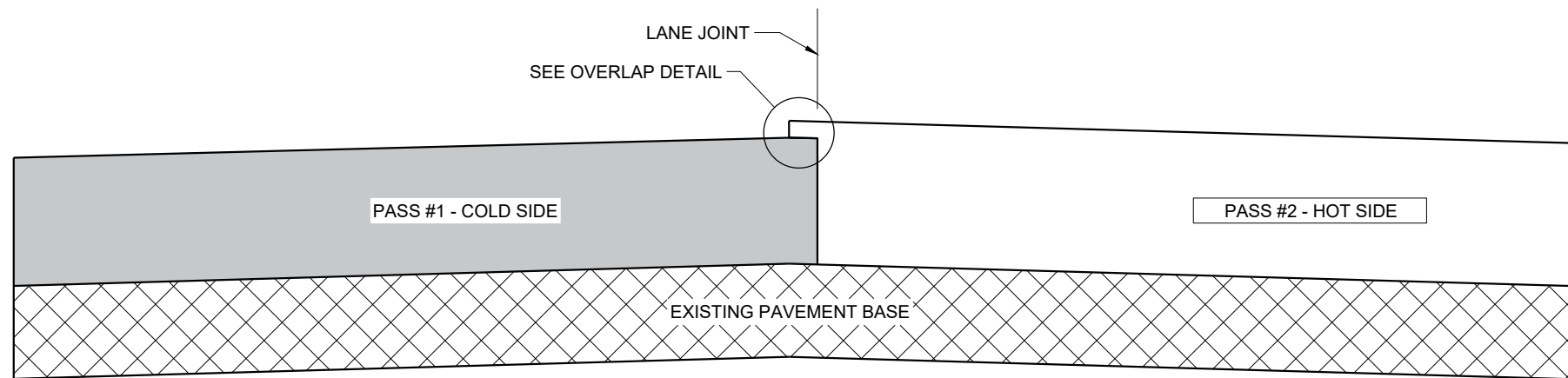
APPROVED
DATE: May 2023 /S/ Rodney Taylor
UNIT SUPERVISOR
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

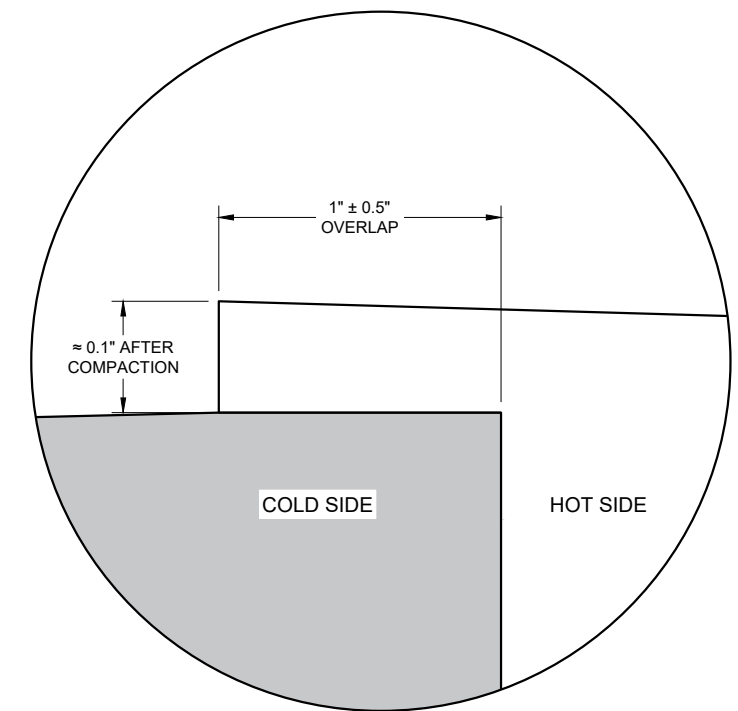
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO $2"$ FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

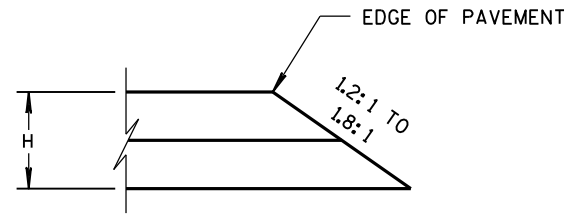
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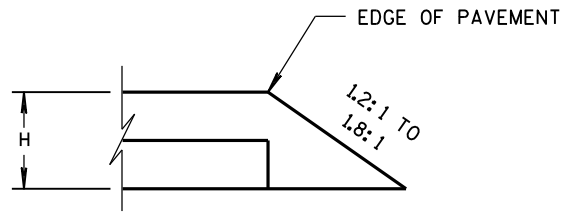
SDD 13C19 - 03

SDD 13C19 - 03

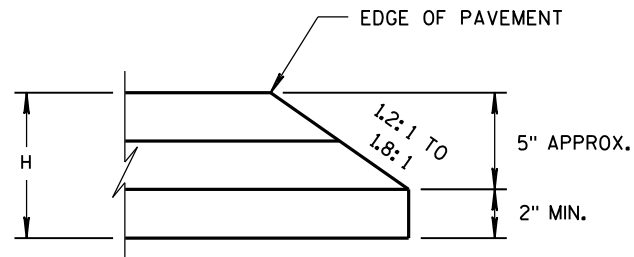
HMA LONGITUDINAL JOINTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	



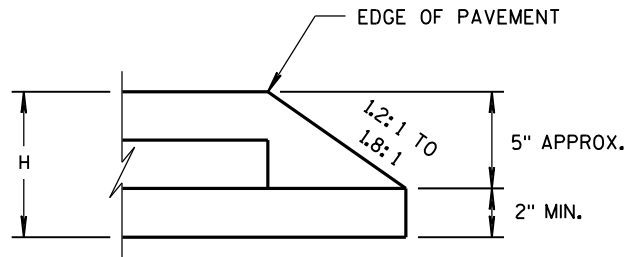
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

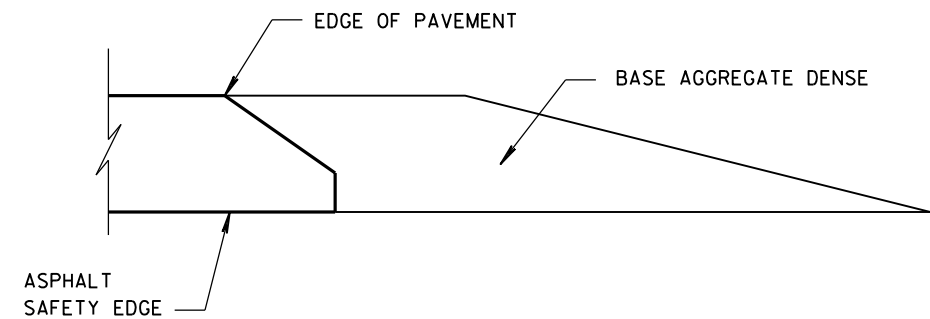


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

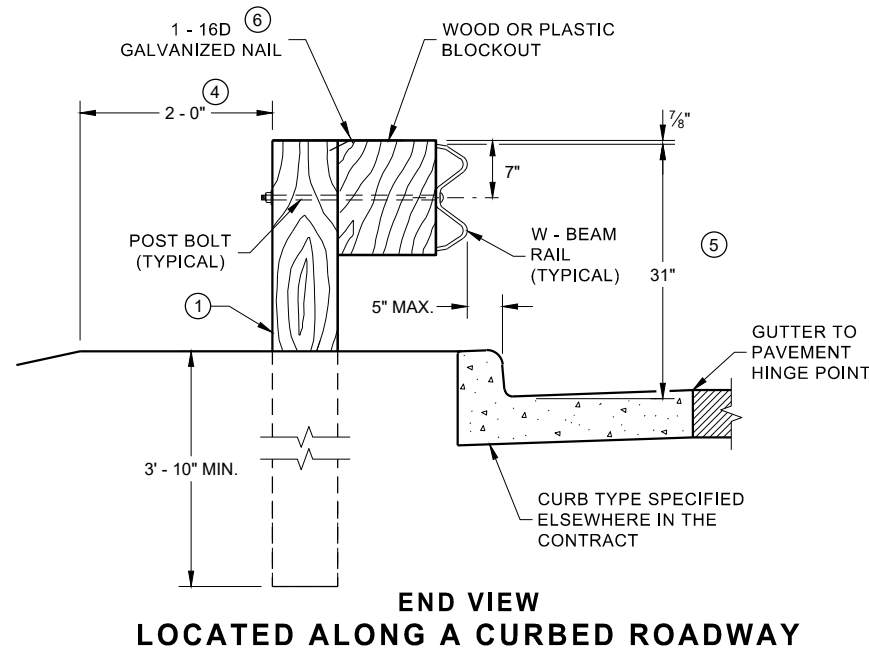
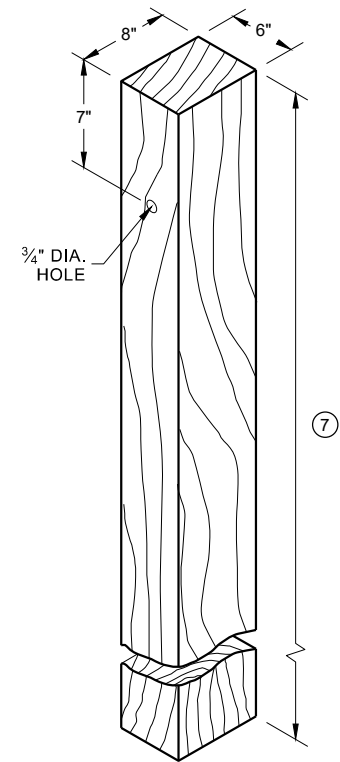
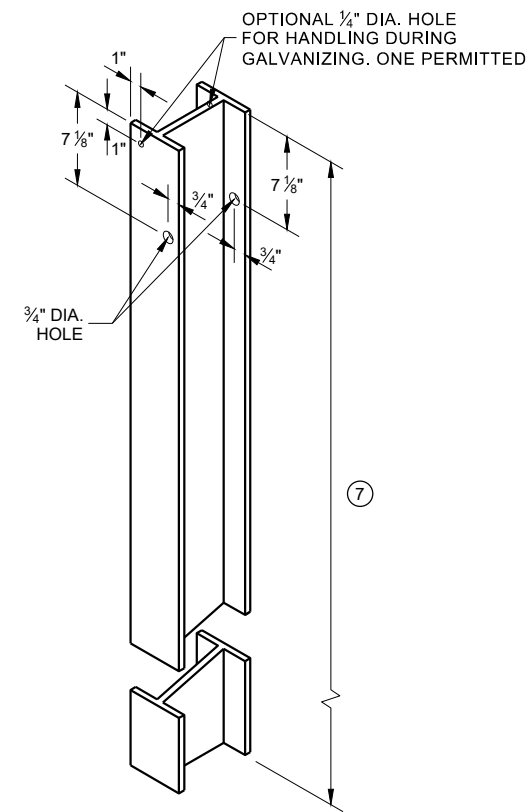
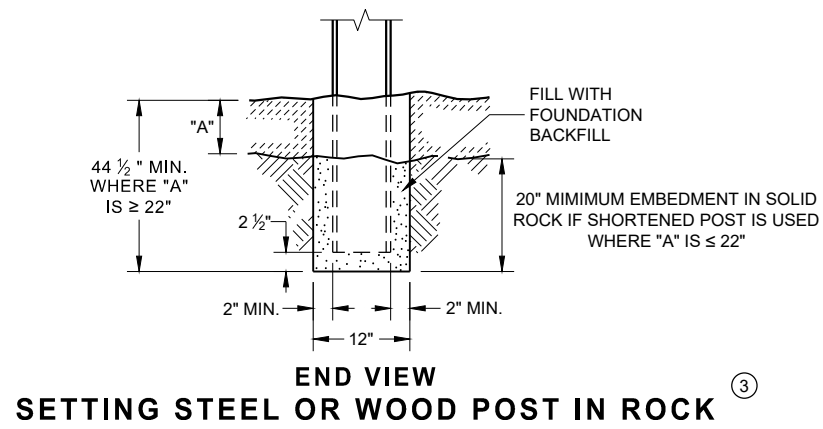
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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

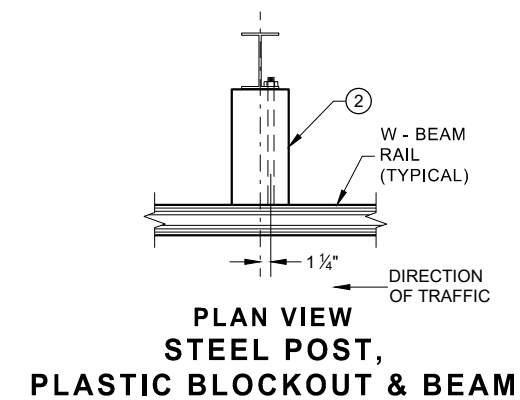
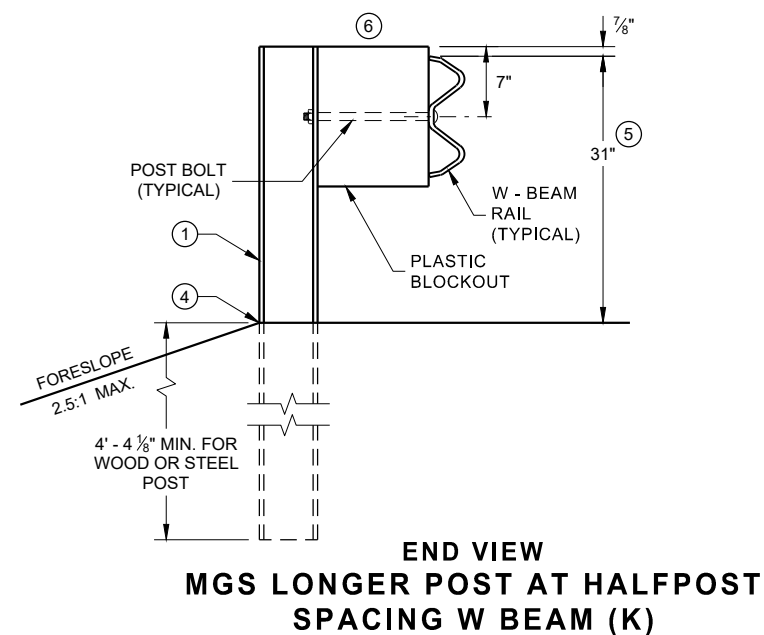
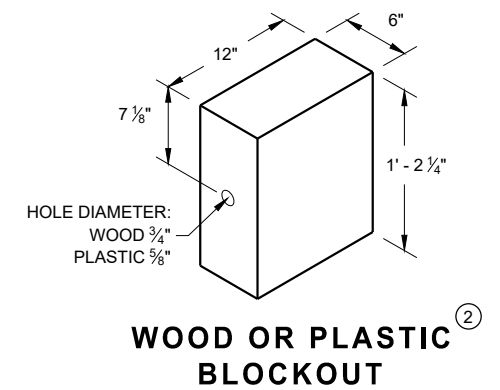
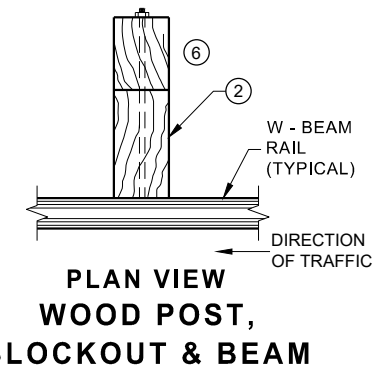
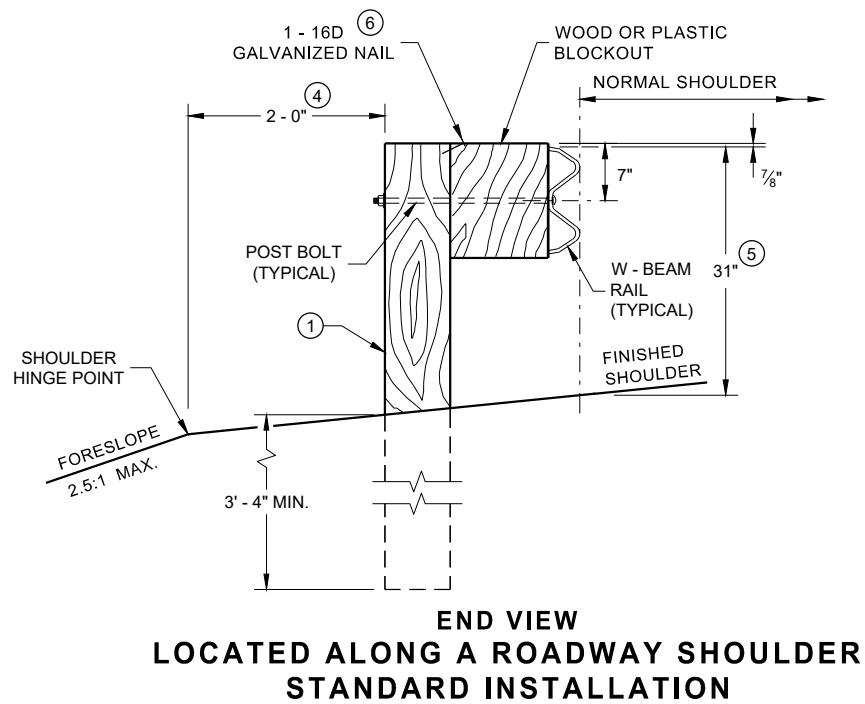
SAFETY EDGE _{SM}	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

- 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 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND 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 $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" 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.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



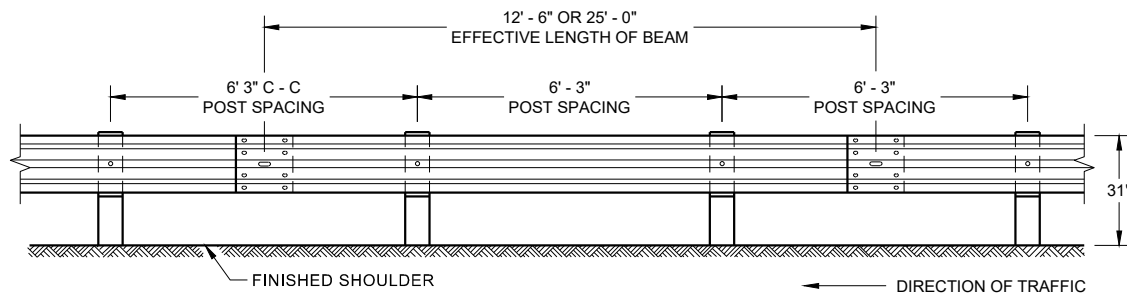
**STEEL POST & HOLE PUNCHING DETAIL
(W 6 X 9)** ①

**WOOD POST
(6" X 8") NOMINAL** ①

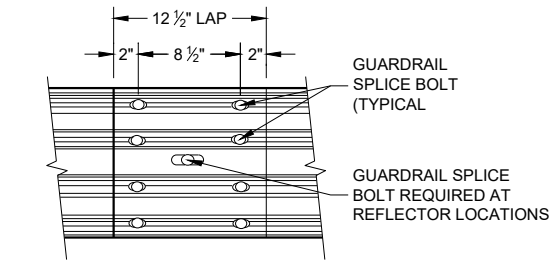


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



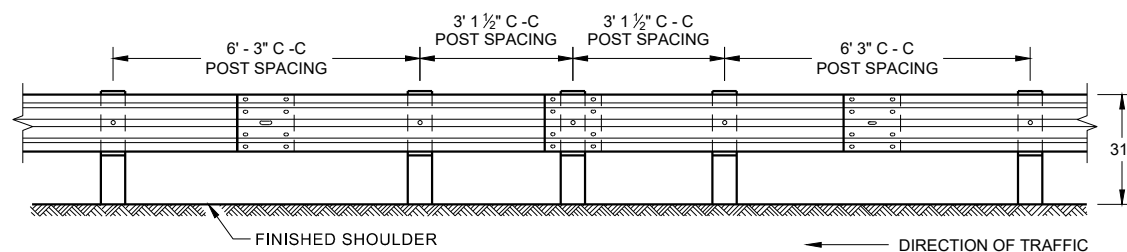
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



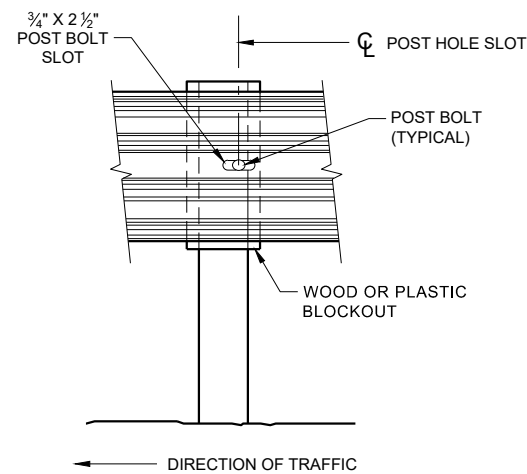
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

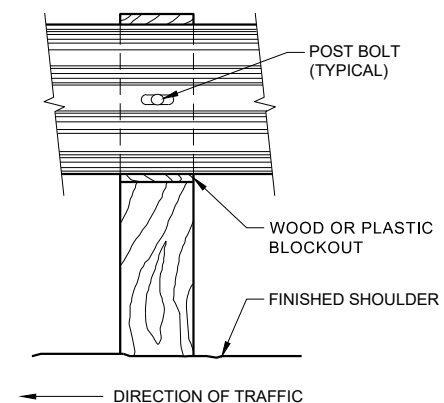
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



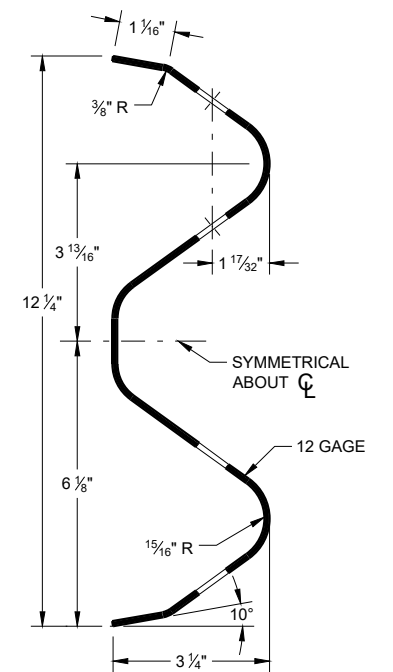
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



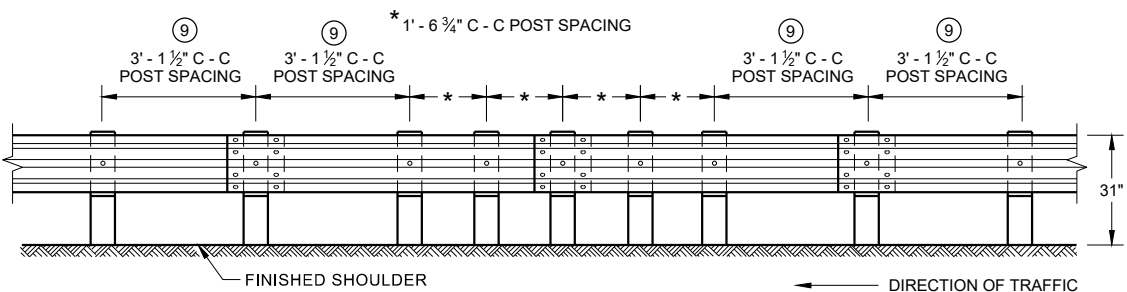
FRONT VIEW AT STEEL POST



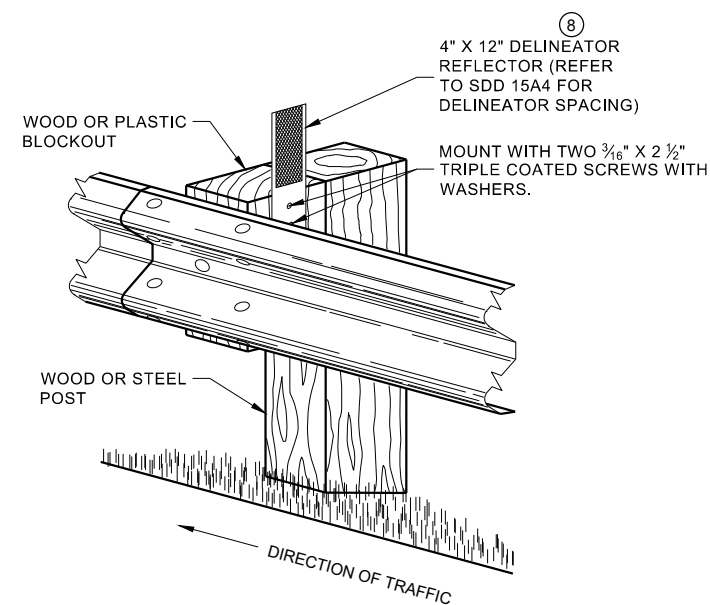
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**FRONT VIEW
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

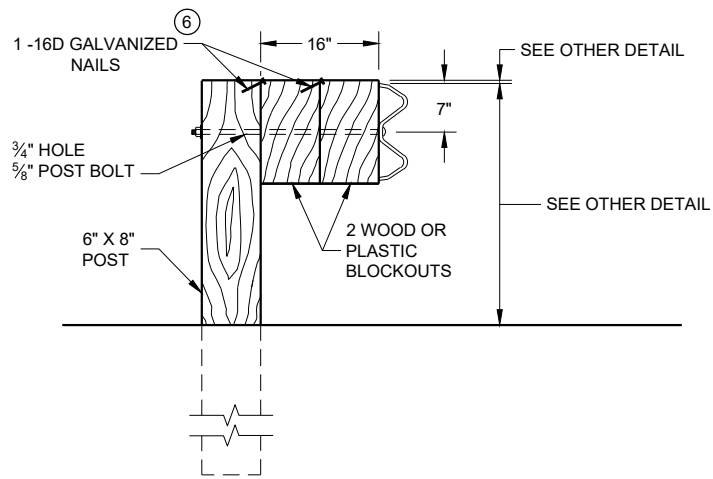
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

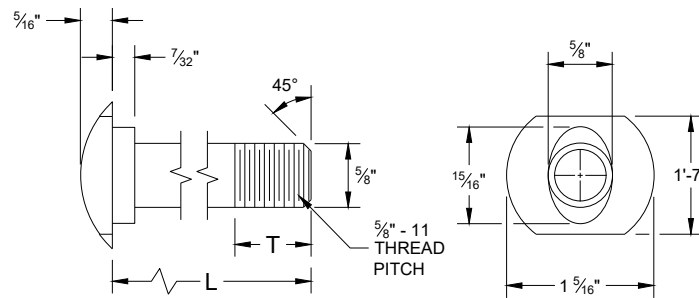


DETAIL FOR 16" BLOCKOUT DEPTH

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.

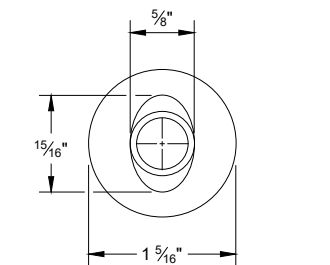
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

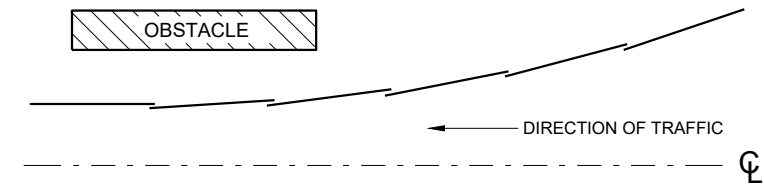


POST BOLT TABLE

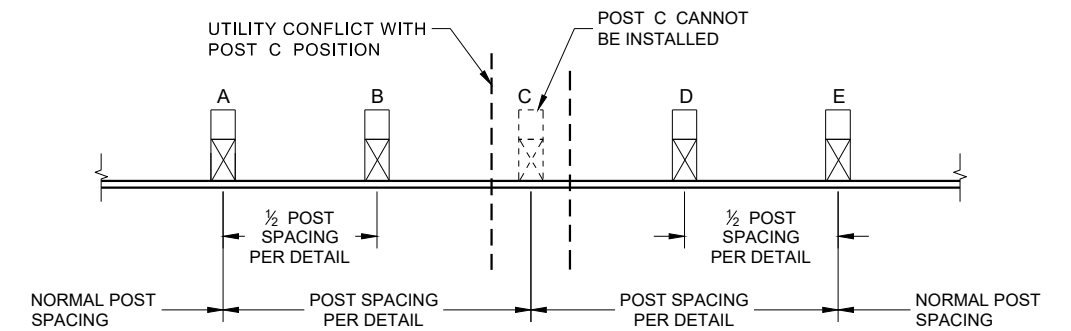
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



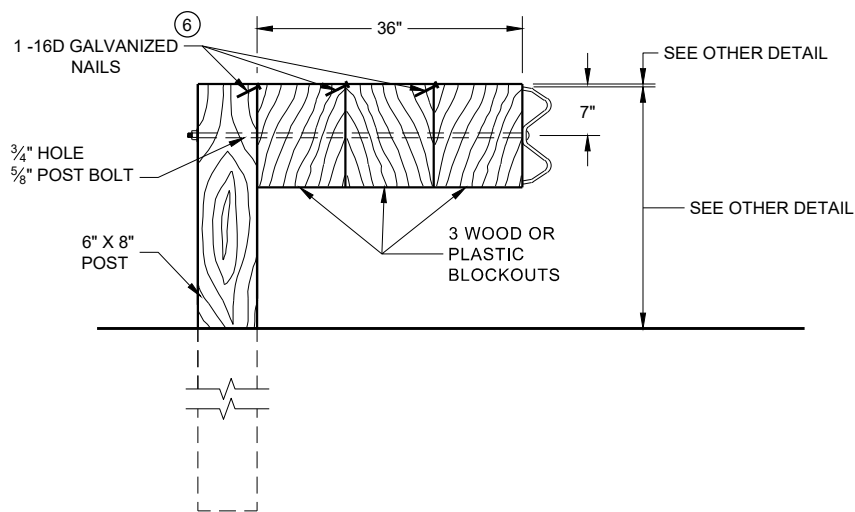
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

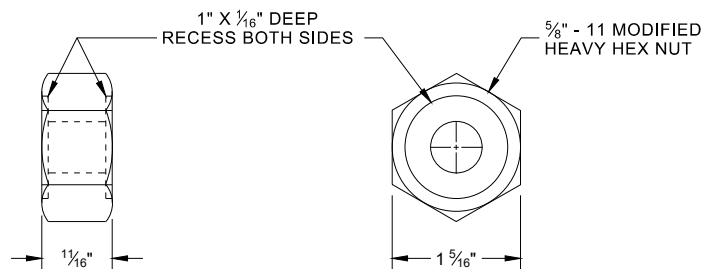


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

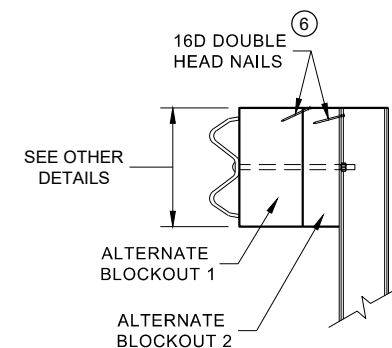


DETAIL FOR 36" BLOCKOUT DEPTH

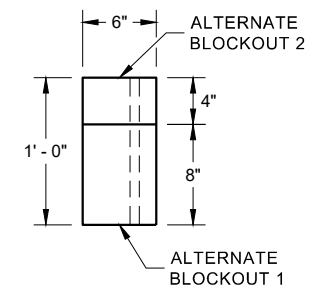
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



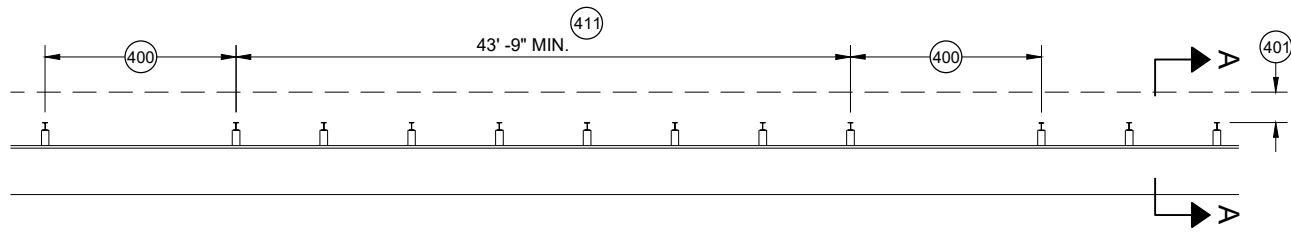
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

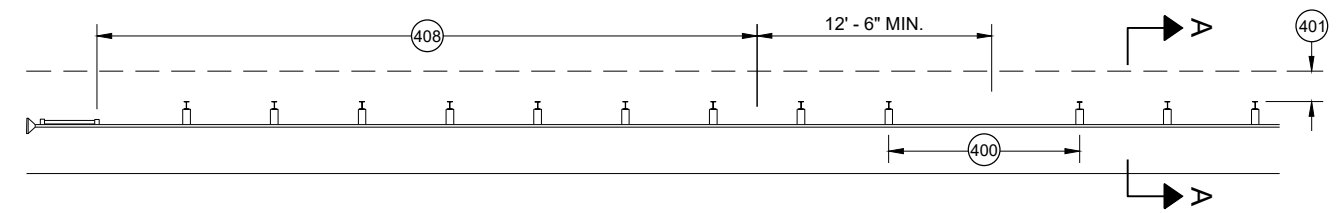
⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

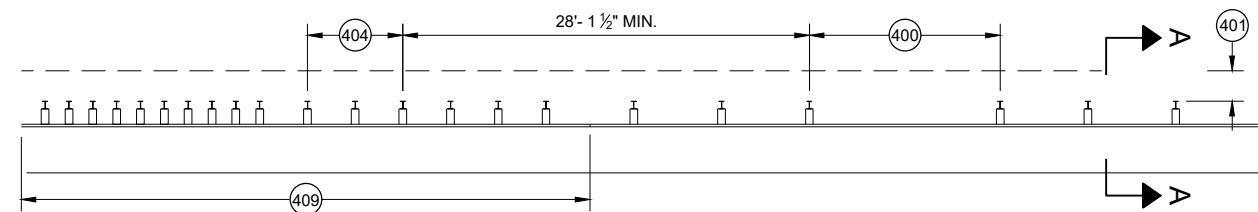
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



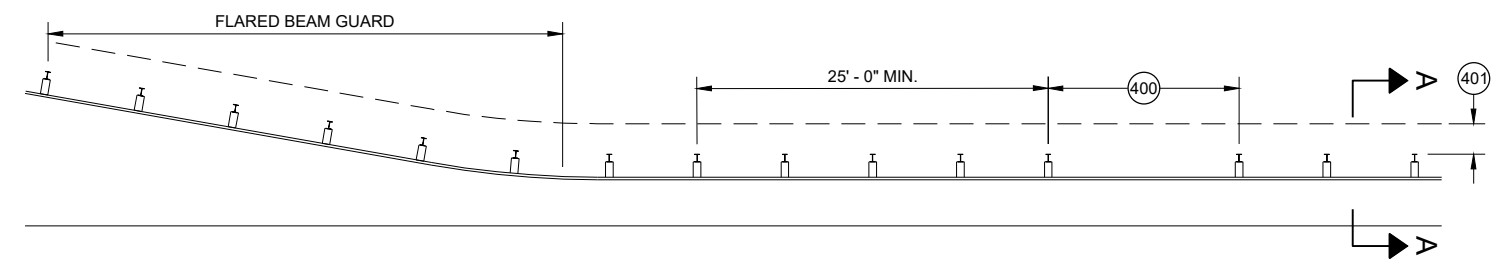
MISSING POST IN MGS GUARDRAIL



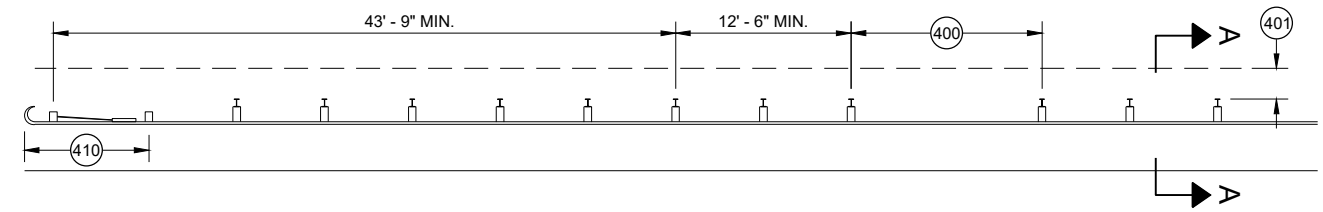
MISSING POST IN MGS GUARDRAIL NEAR EAT



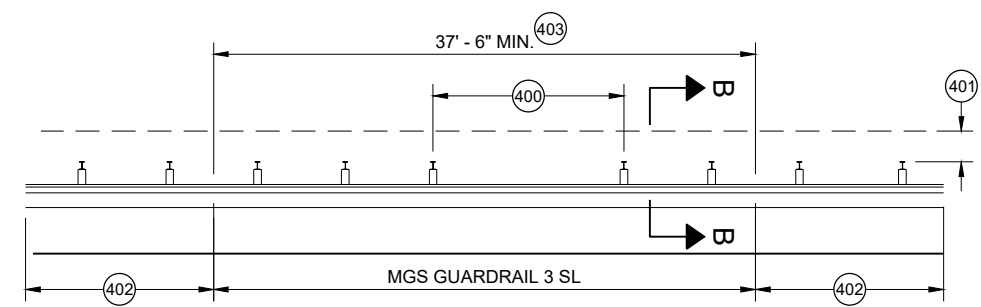
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

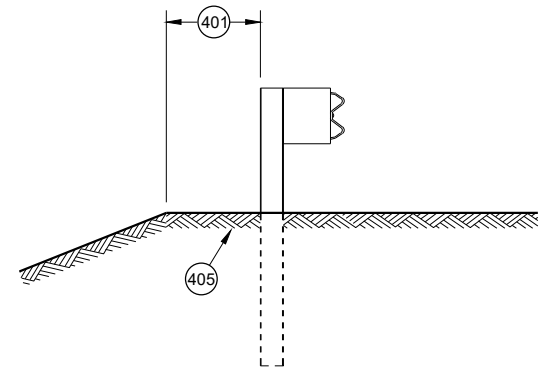


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

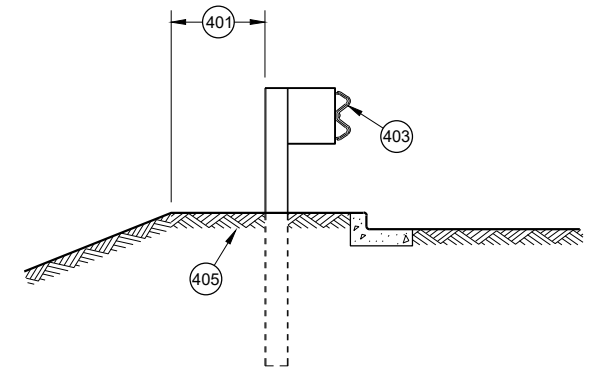


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 400 MAX SPAN 12' - 6"
- 401 2' MIN.
- 402 MGS GUARDRAIL 3
- 403 NESTING BEAM GUARD
- 404 ASYMMETRIC TRANSITION
- 405 SOIL WELL DRAINED AND COMPACTED
- 406 SEE OTHER DRAWINGS IN THIS SDD
- 407 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- 408 SEE SDD 14B44
- 409 SEE SDD 14B45
- 410 SEE SDD 14B47
- 411 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE 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 MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
 - (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
 - (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

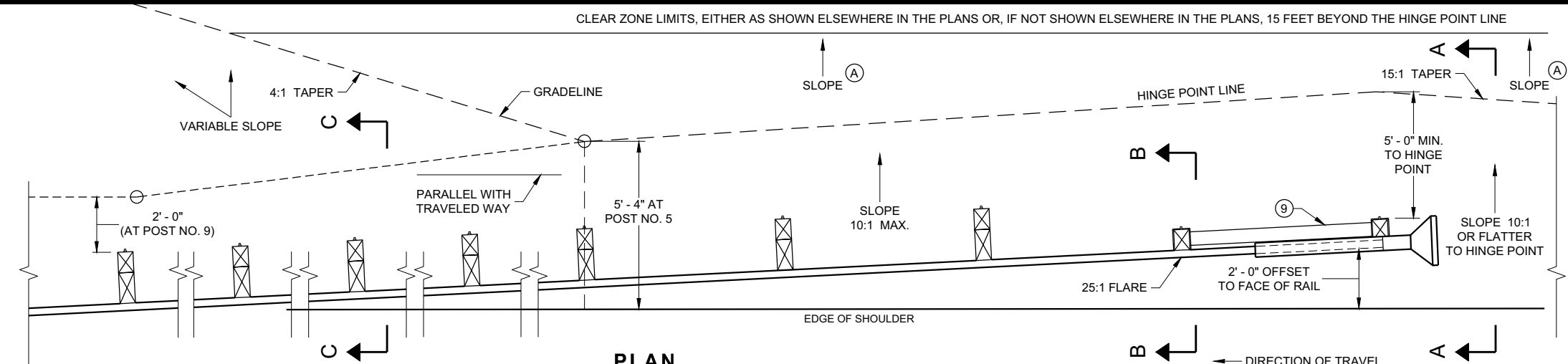
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

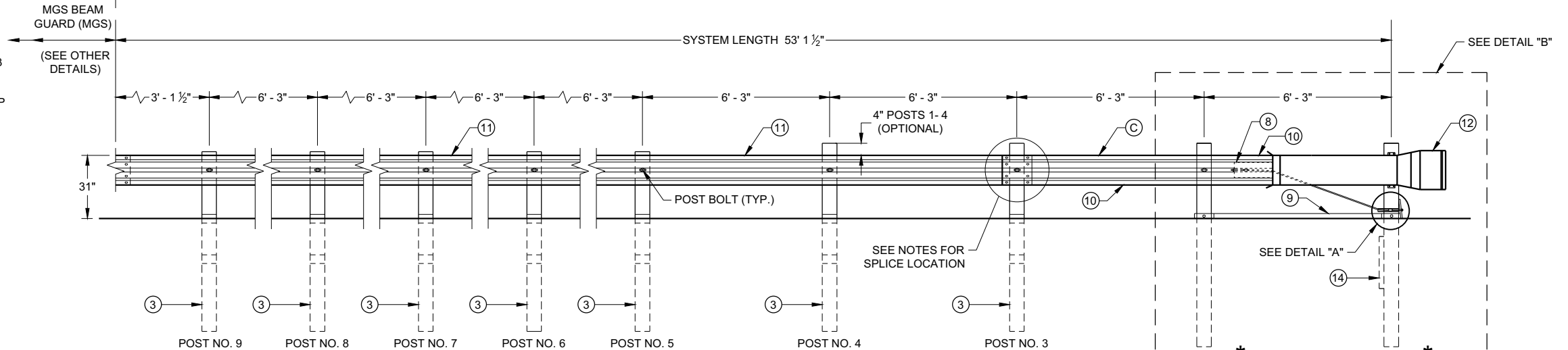
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

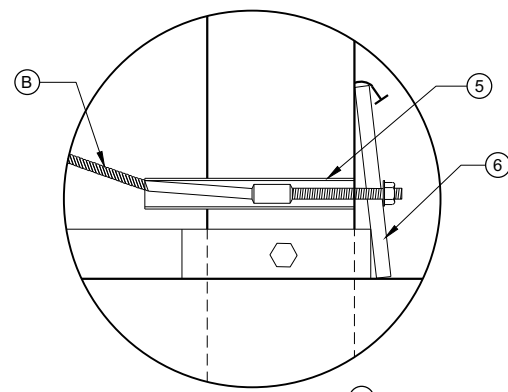
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



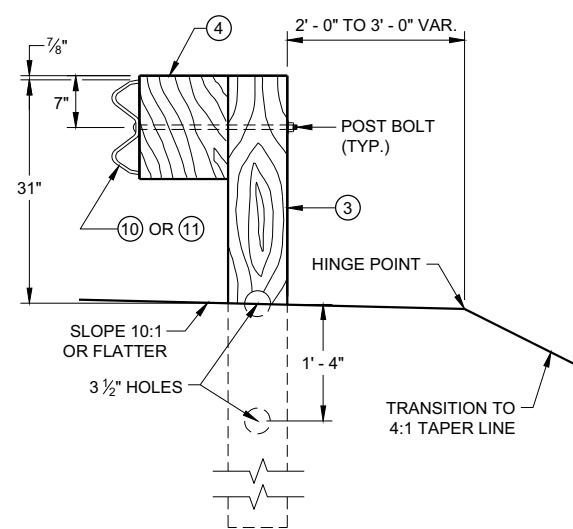
PLAN



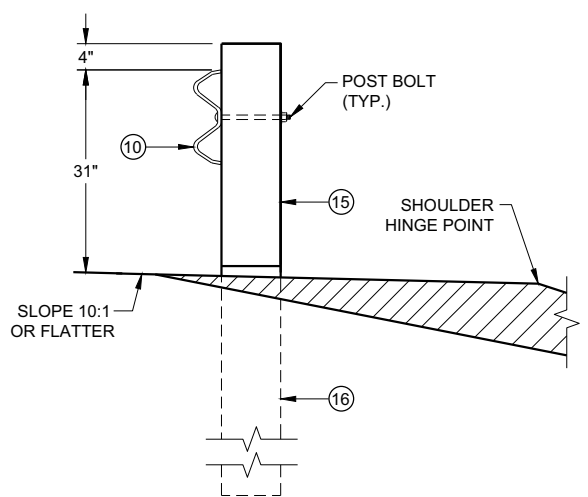
ELEVATION



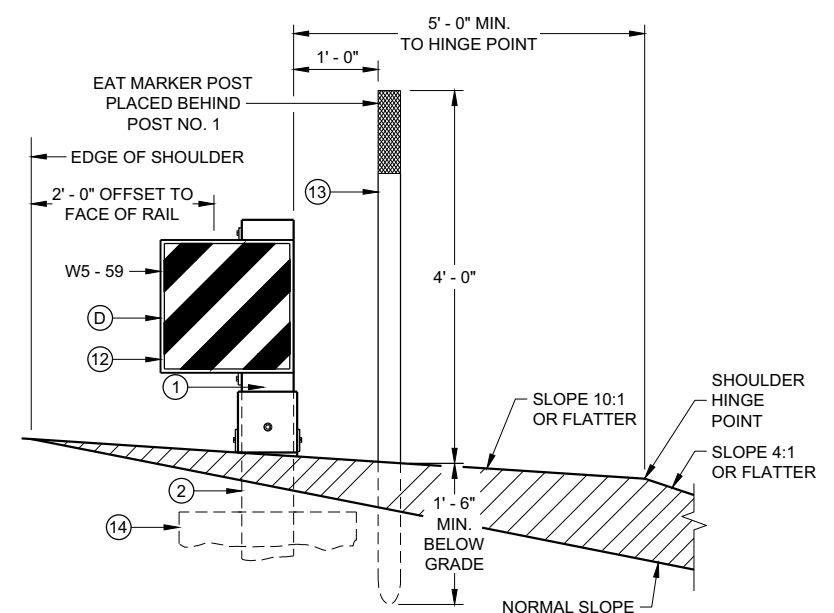
DETAIL "A"



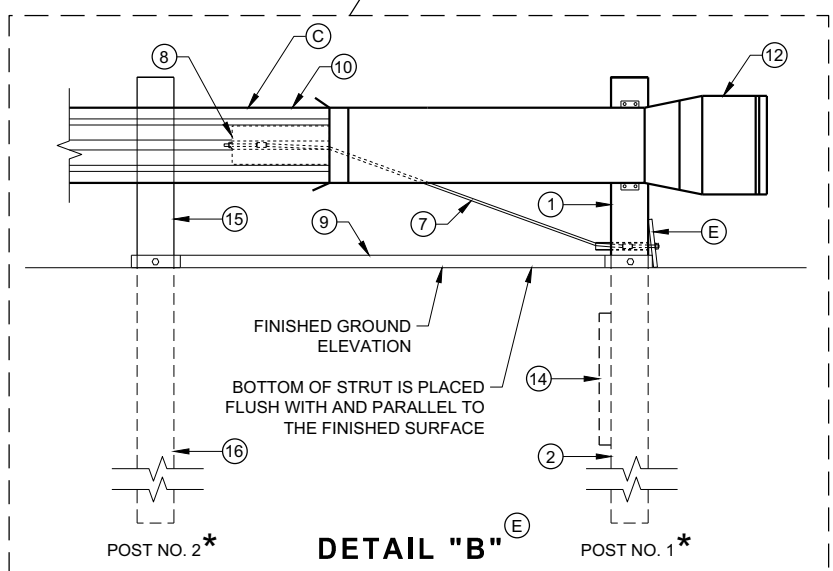
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

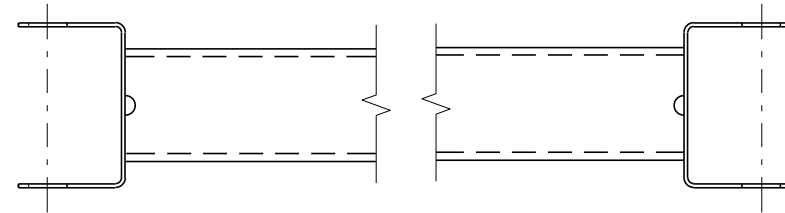
6

SDD 14B44 - 04a

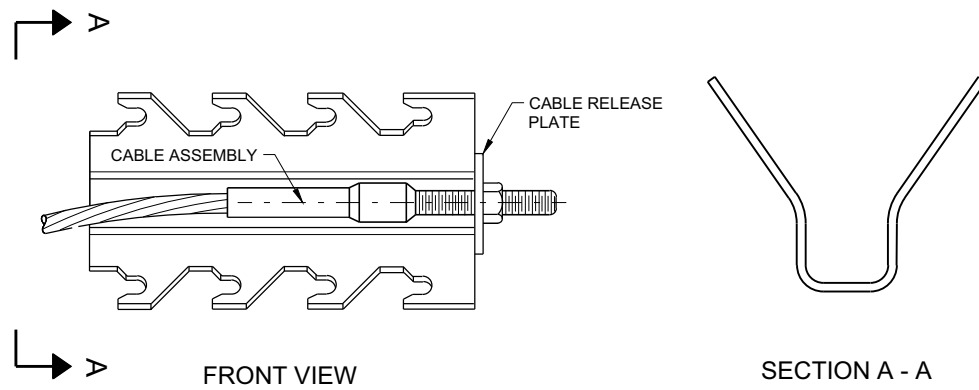
SDD 14B44 - 04a

BILL OF MATERIALS

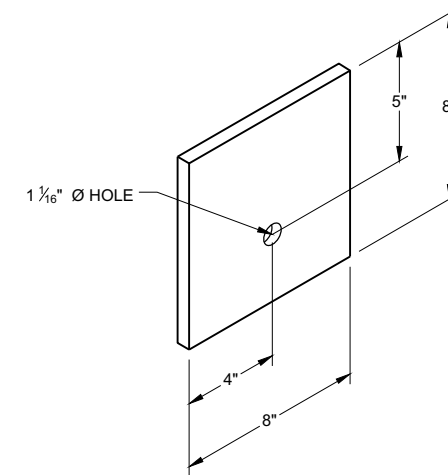
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



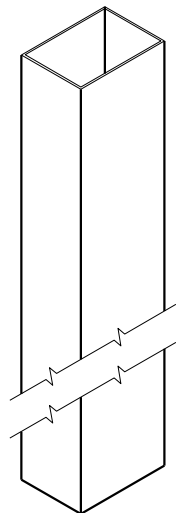
GENERIC GROUND STRUT ⑨ ⑤



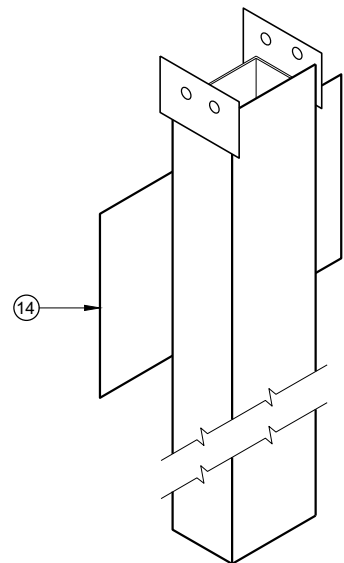
GENERIC ANCHOR CABLE BOX ⑨ ⑤



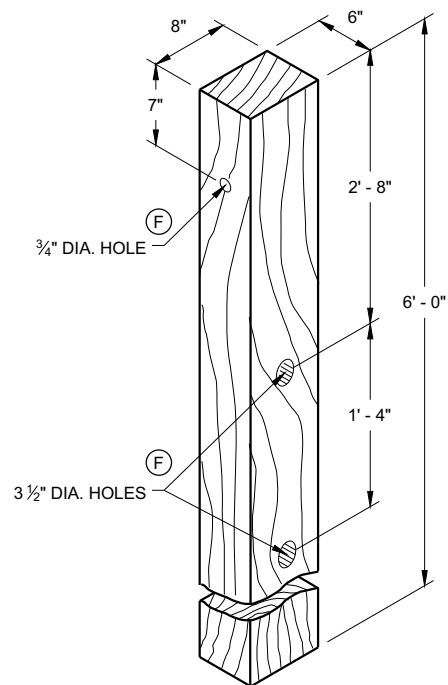
BEARING PLATE ⑥ ⑤



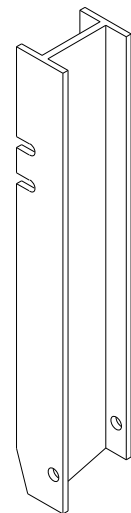
UPPER POST NO. 1 ⁽¹⁾ (E)



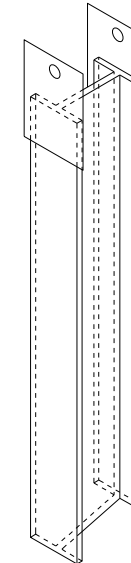
LOWER POST NO. 1 ⁽²⁾ (E)



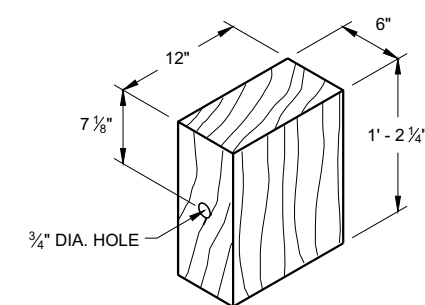
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

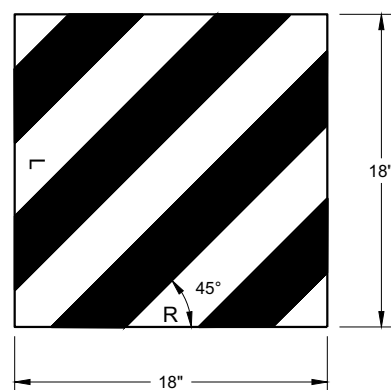


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

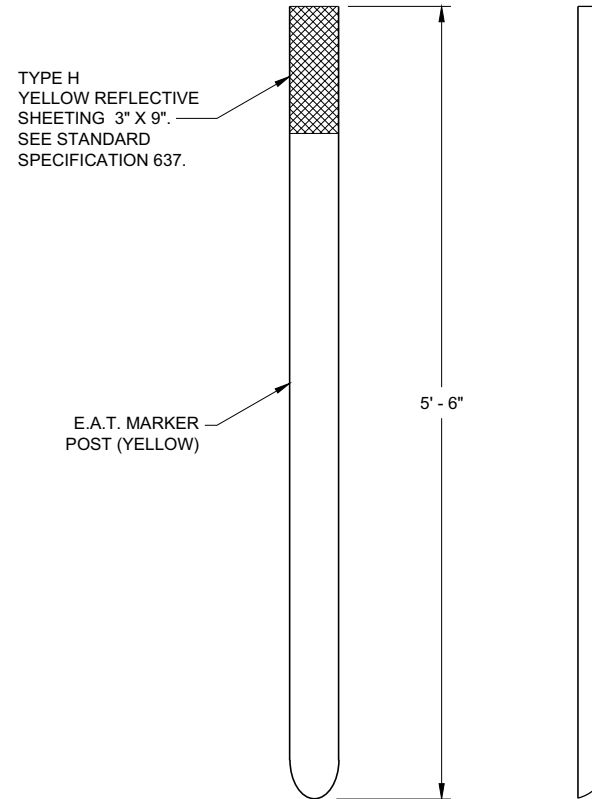


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

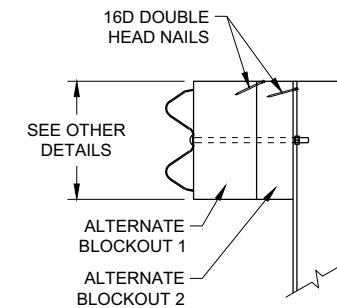
6



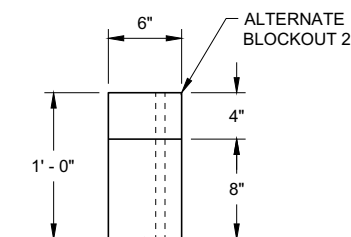
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

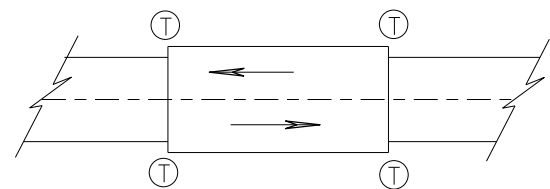
SDD 14B44 - 04c

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

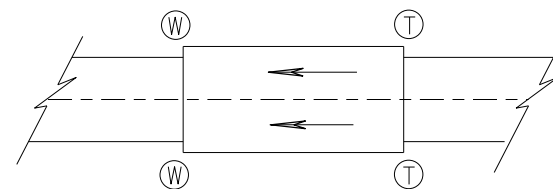
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

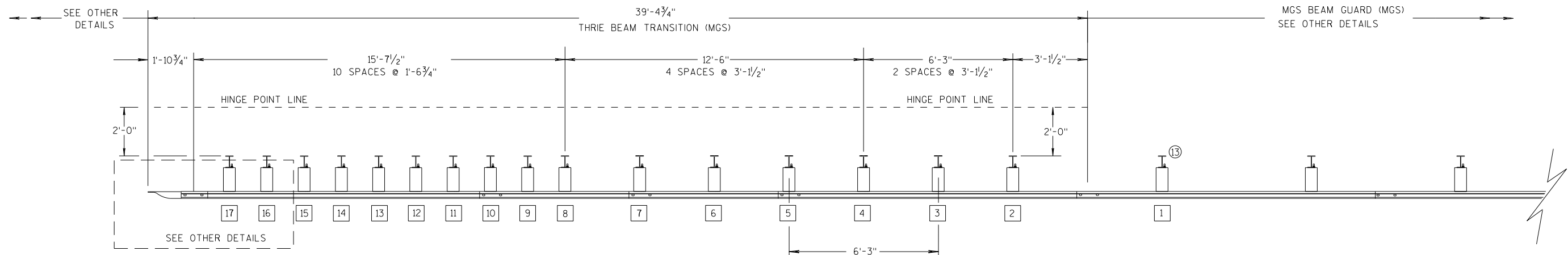
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

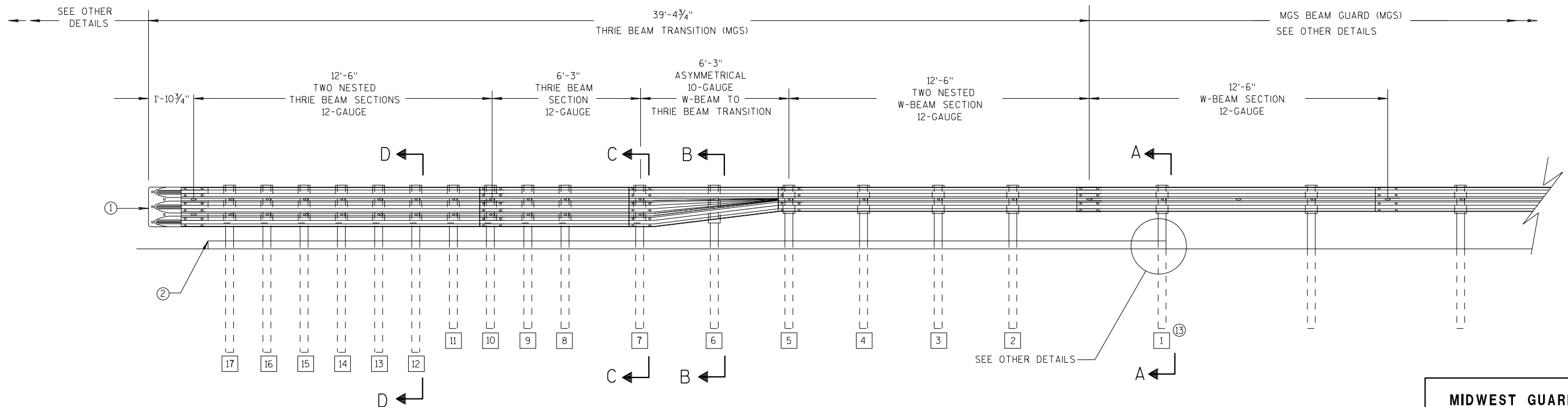
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

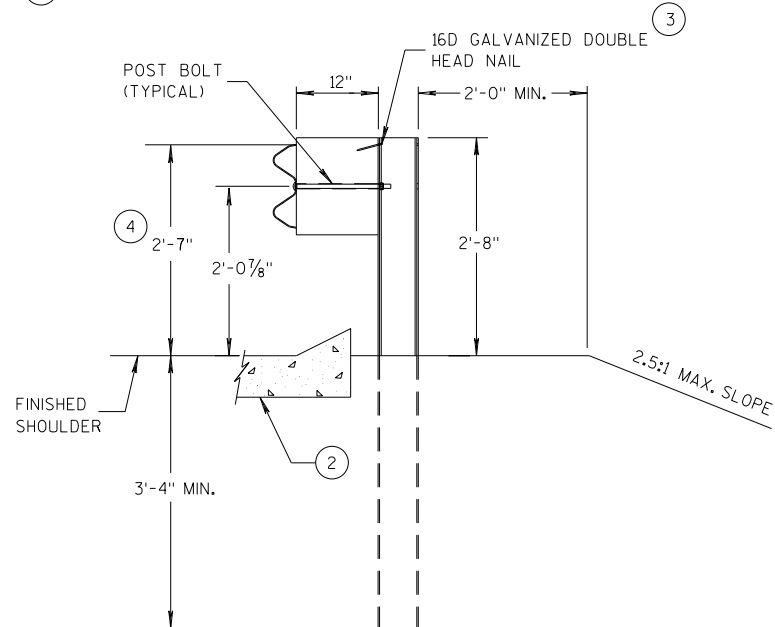
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

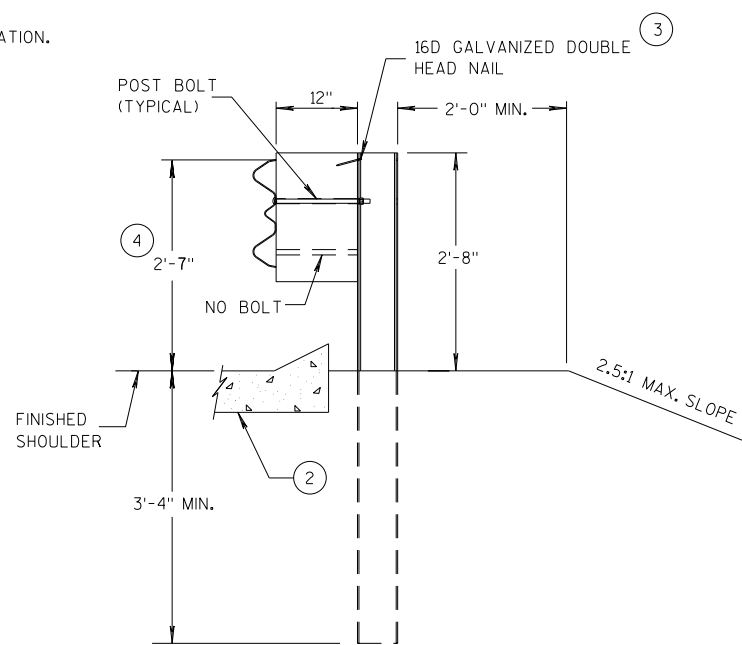
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

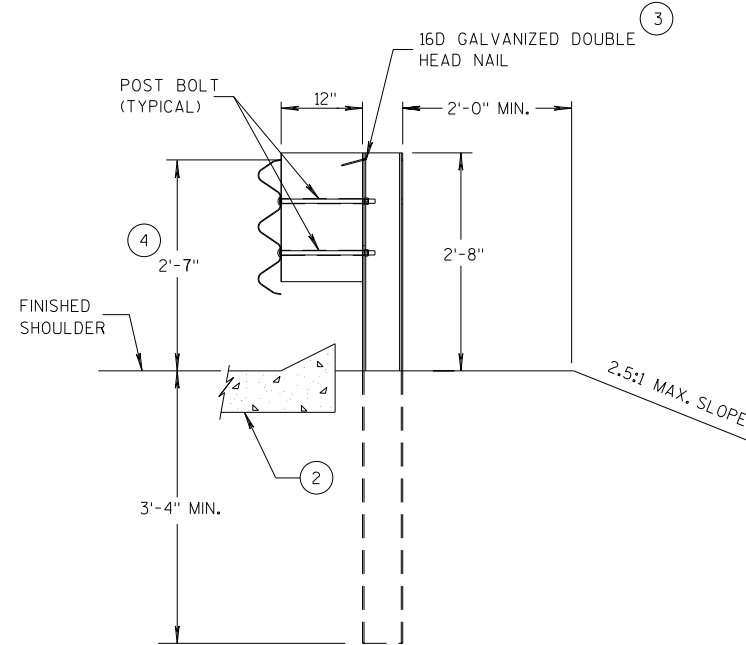
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

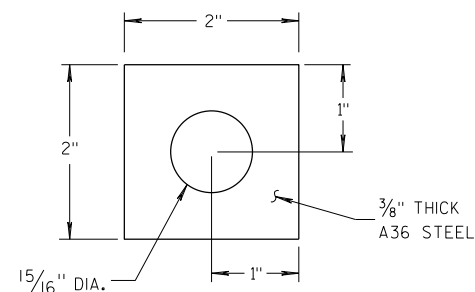
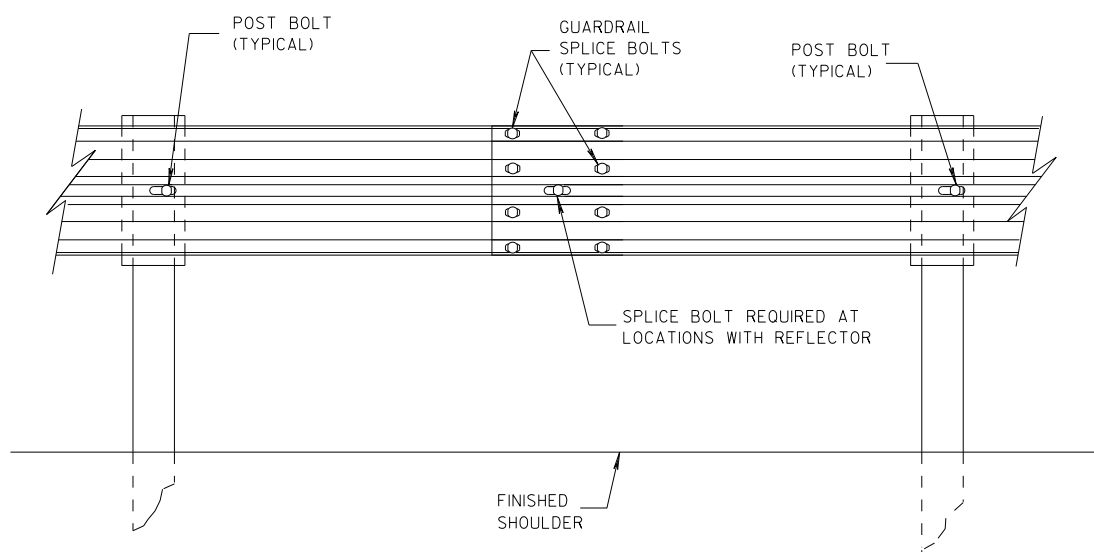
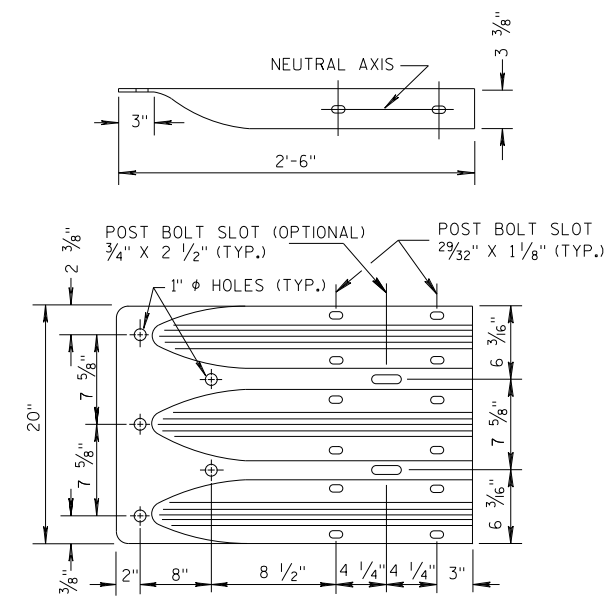


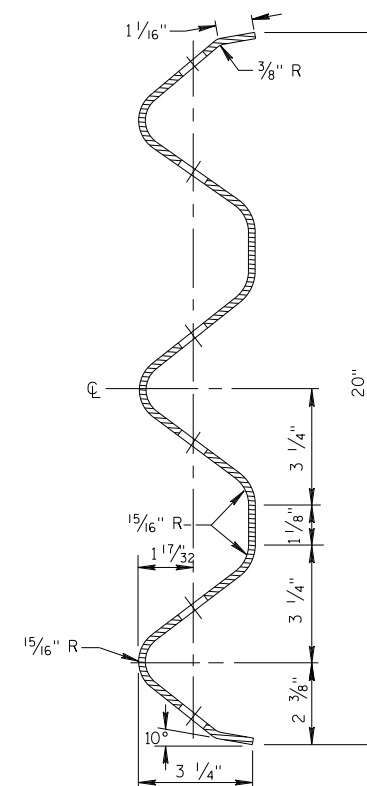
PLATE WASHER DETAIL



SPLICE DETAIL



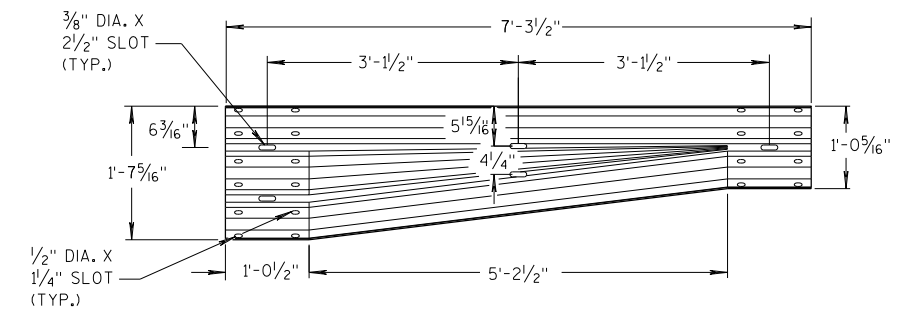
**THRIE BEAM
TERMINAL CONNECTOR**



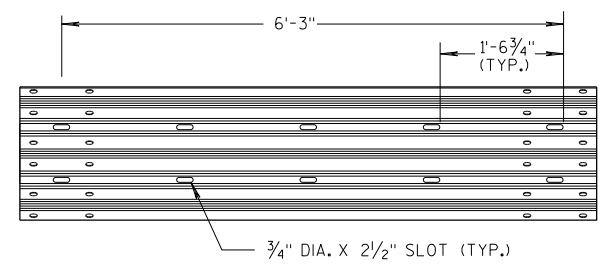
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

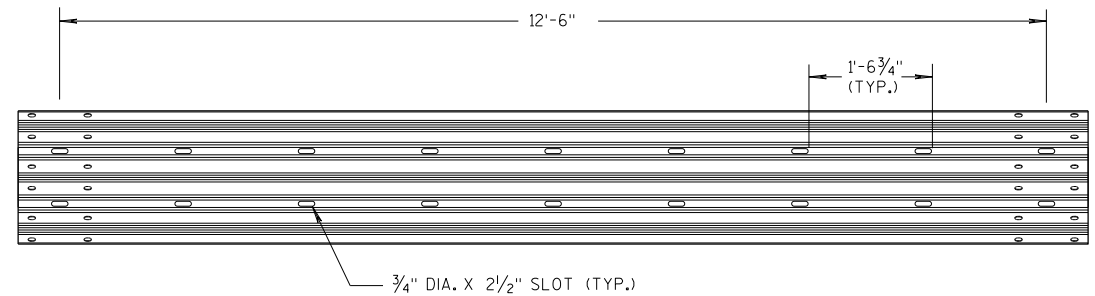
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



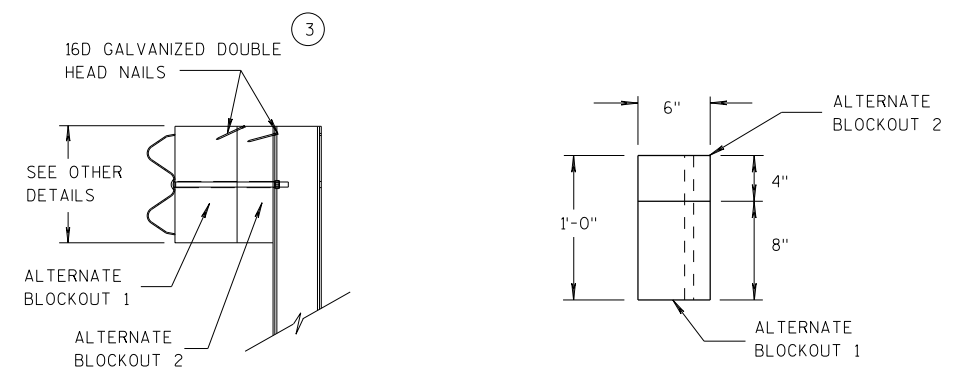
W-BEAM TO THRIE BEAM TRANSITION SECTION



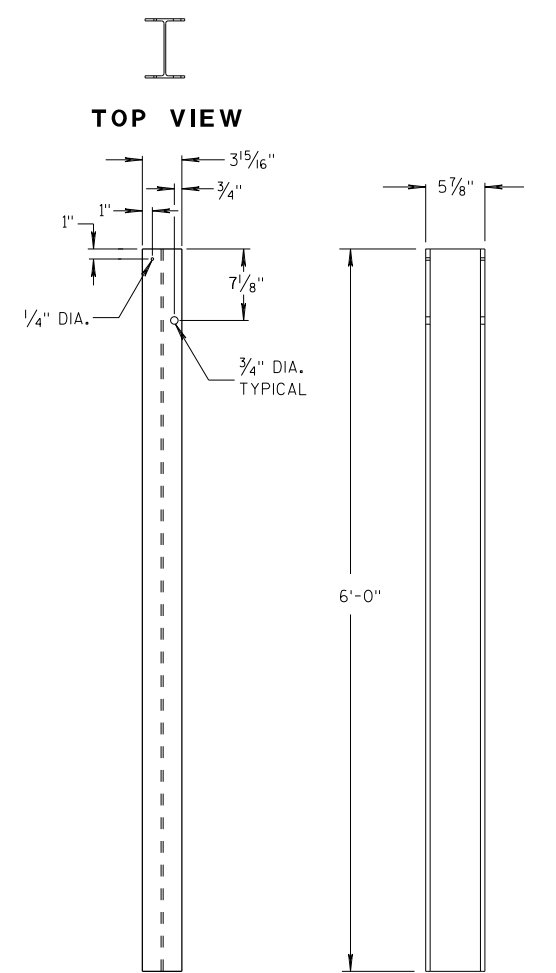
6'-3\"/>



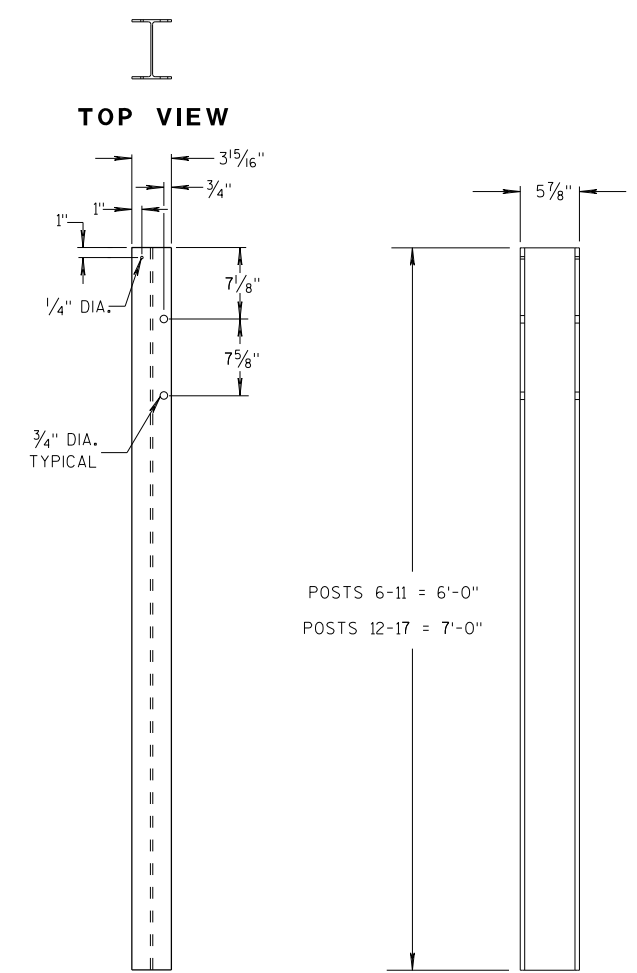
12'-6\"/>



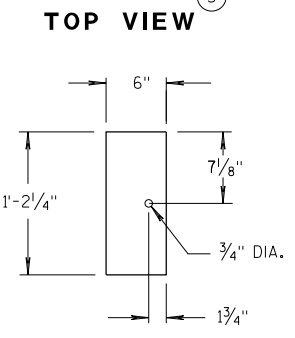
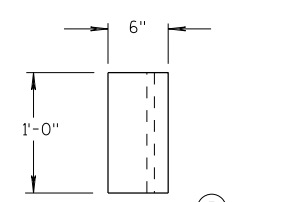
ALTERNATE WOOD BLOCKOUT DETAIL



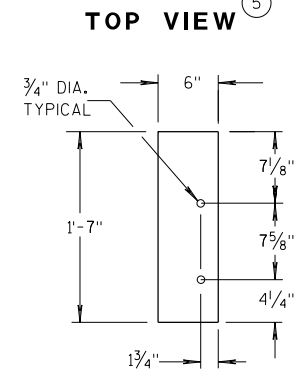
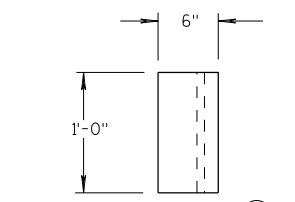
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



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.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

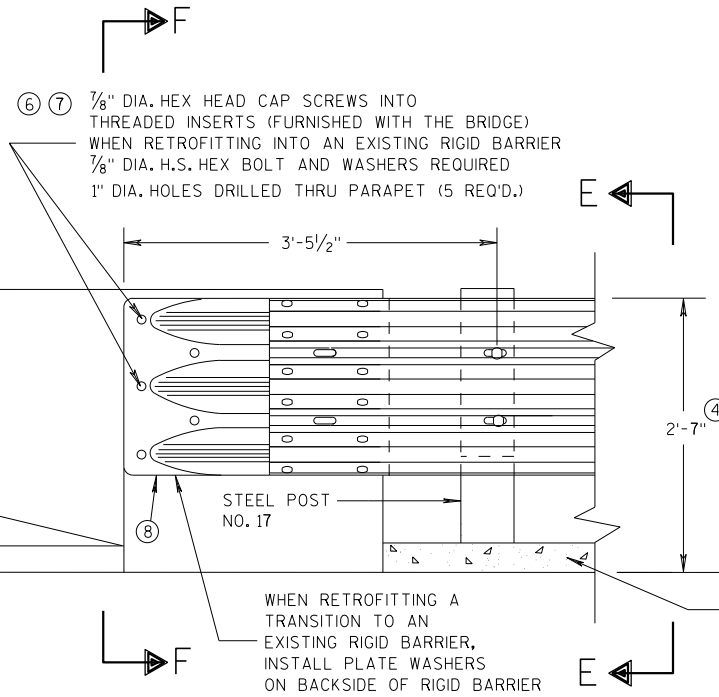
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

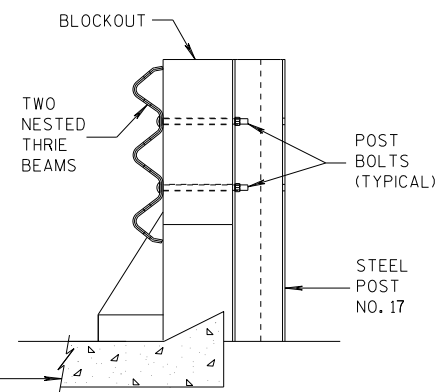
S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



FRONT VIEW

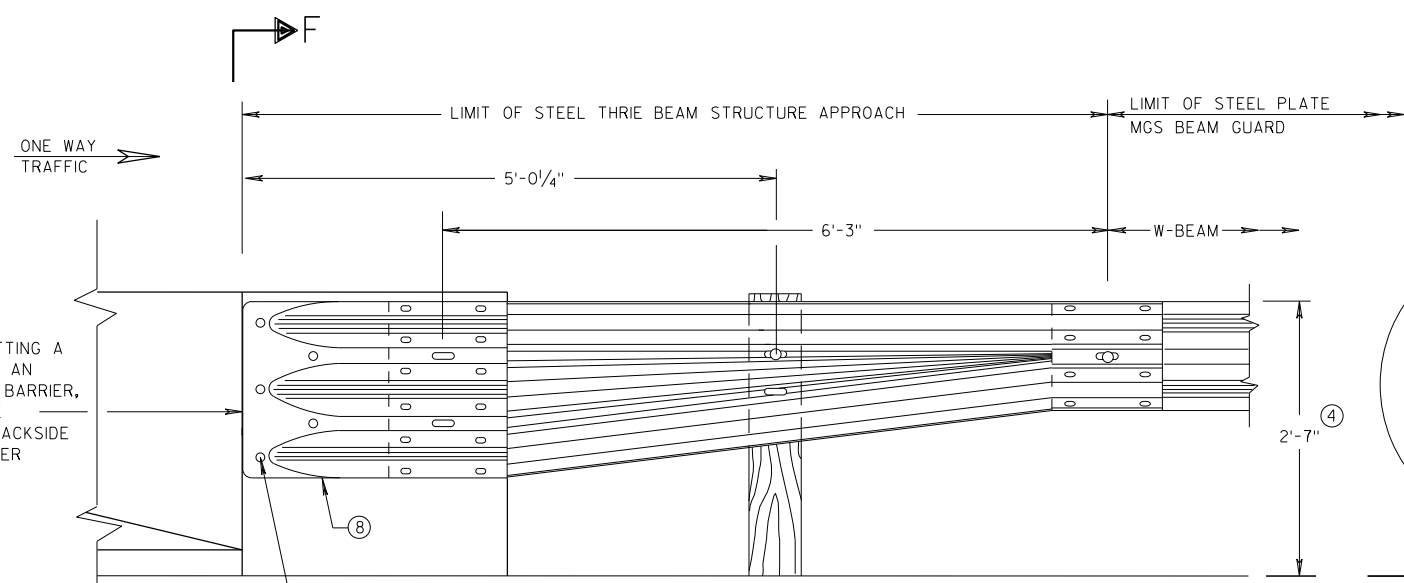
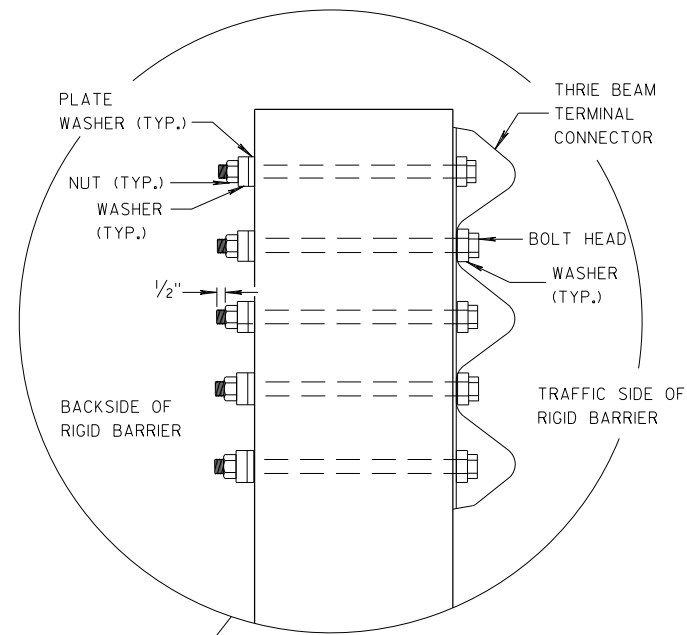
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



SECTION E-E

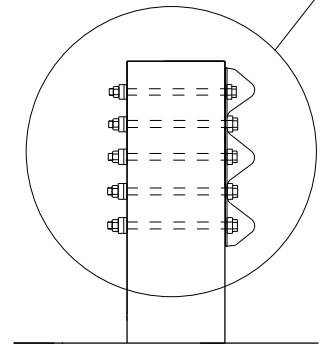
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION 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 $\pm 1"$.
- (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 5/32" 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".

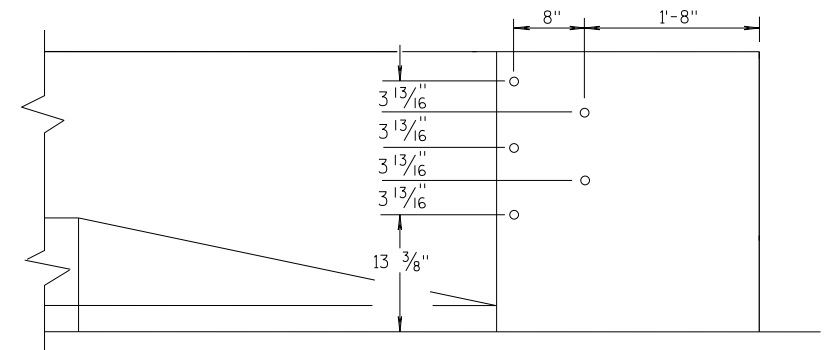


FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION F-F



DRILL HOLE LOCATION

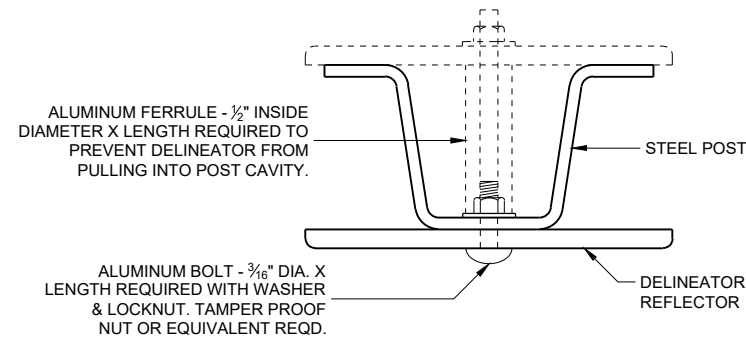
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

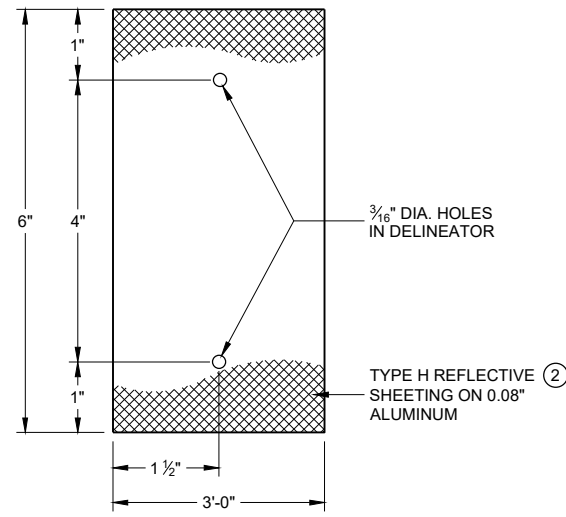
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S.D.D. 14 B 45-5d

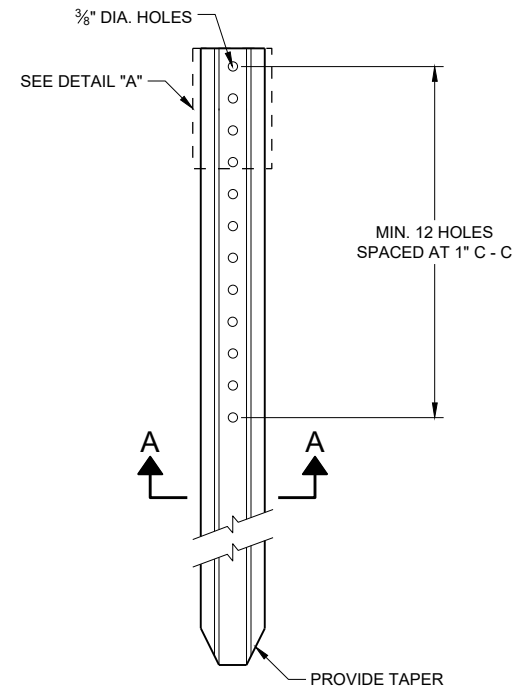
S.D.D. 14 B 45-5d



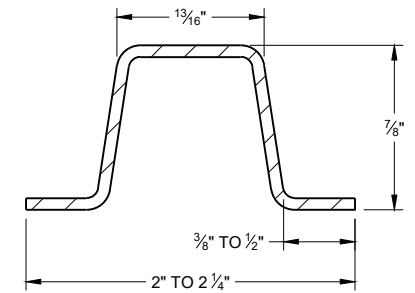
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



DETAIL "A" 3" X 6" DELINEATOR REFLECTOR



DELINEATOR POST



SECTION A - A
WEIGHT 1.12 LBS PER FT. \ 0.1 LB.

REFLECTOR SPACING TABLE

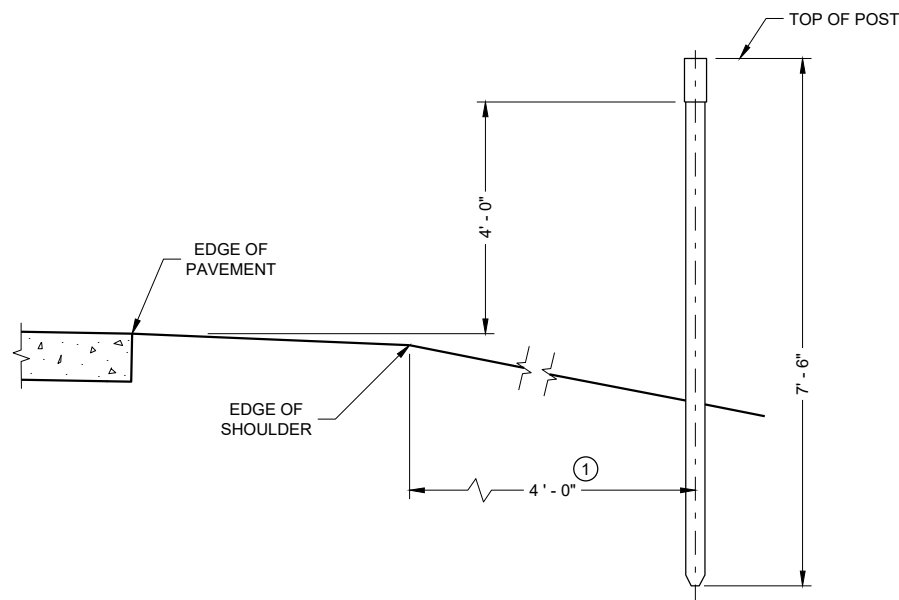
REFLECTOR SPACING	LOCATION
* 100' C-C	RAMPS
400' C-C	MAINLINE

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

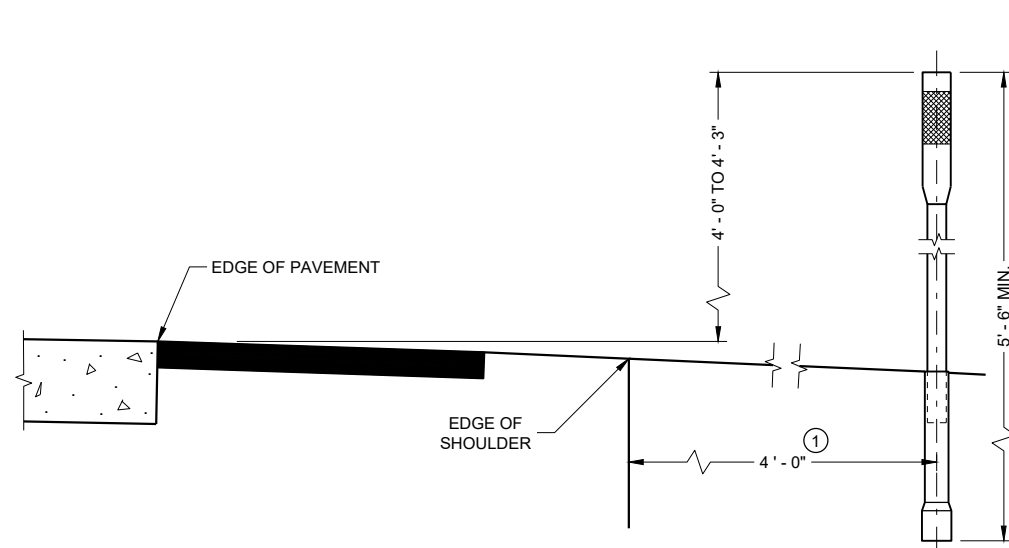
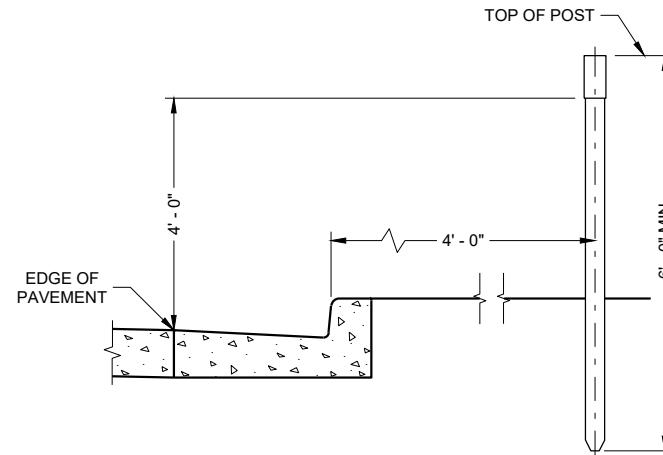
GENERAL NOTES

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

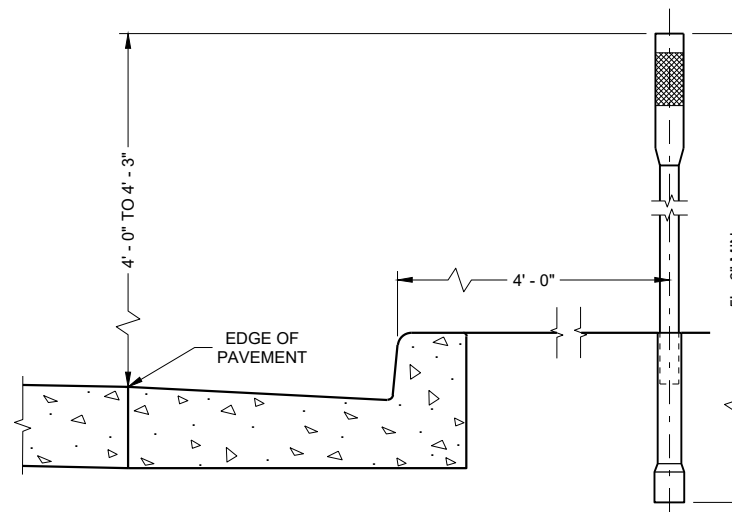
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.
- ② FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS

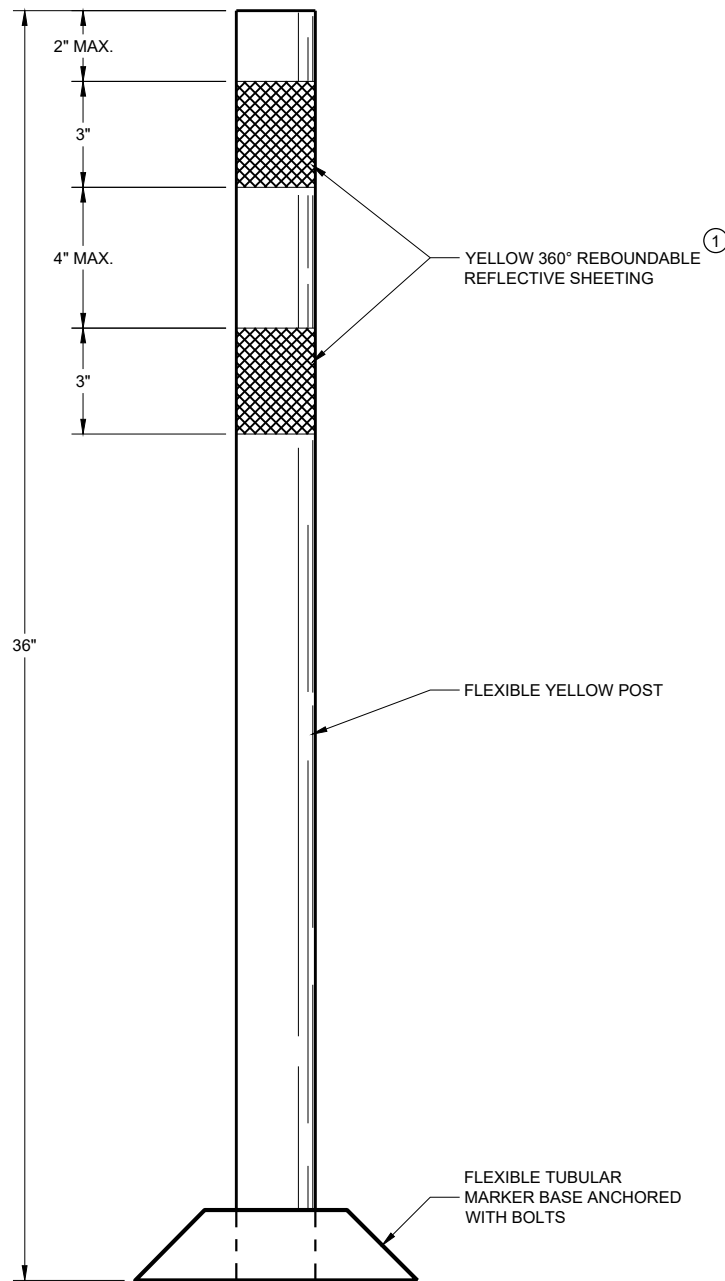


DELINEATOR POST WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING ENGINEER

FHWA



PERMANENT FLEXIBLE TUBULAR MARKER POST

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.

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

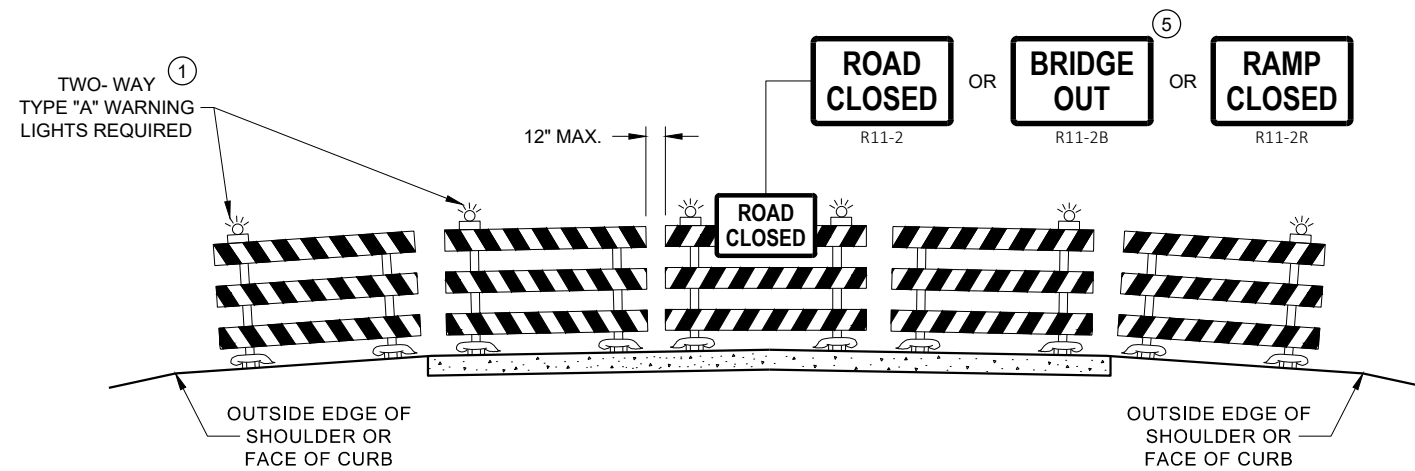
① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

**CHANNELIZING DEVICES
PERMANENT FLEXIBLE
TUBULAR MARKER POST**

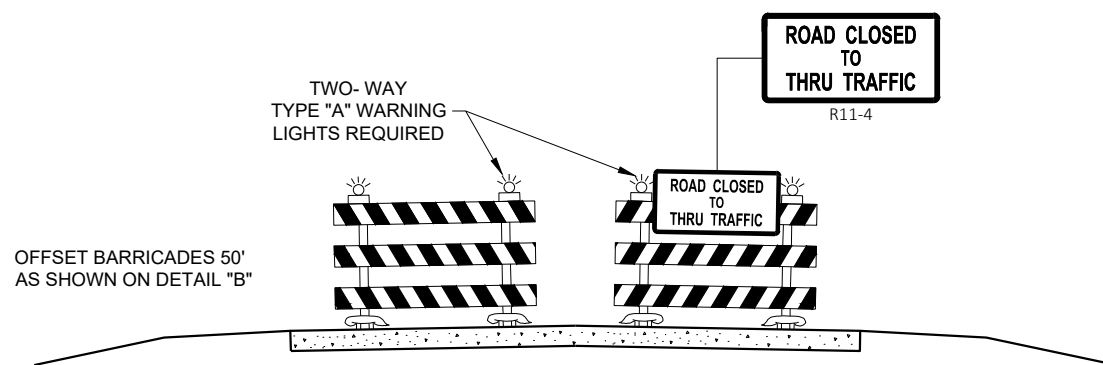
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER

FHWA



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

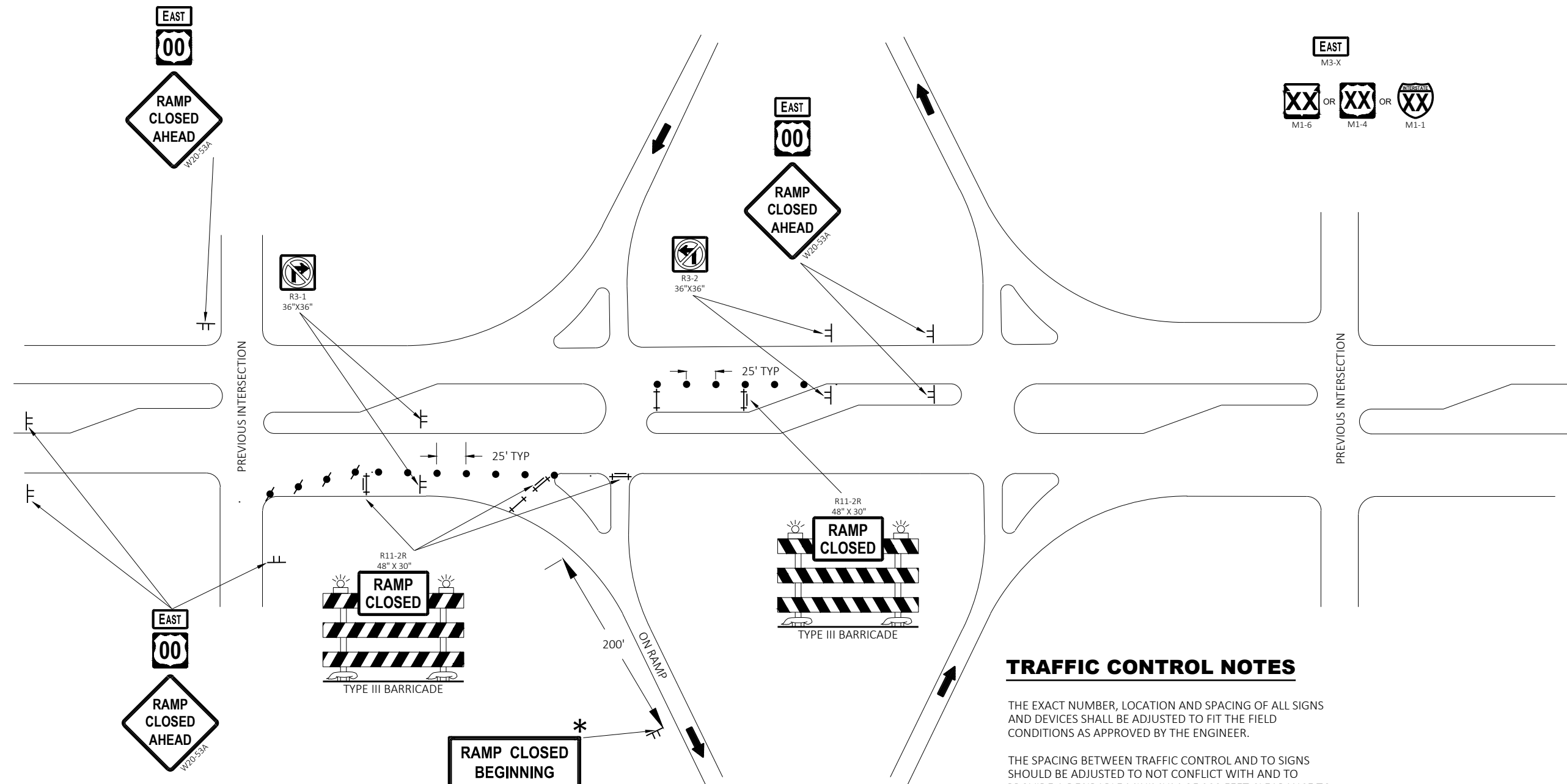
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER



LEGEND

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

**RAMP CLOSED BEGINNING
XXX-XX**

G20-58
OR
PCMS MESSAGING

FRAME 1	FRAME 2
RAMP TO CLOSE	XXX DAY XX XX XX

TRAFFIC CONTROL NOTES

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT THE FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL AND TO 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 THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- SIGN SIZES SHALL BE AS FOLLOWS:
 - M3-X SHALL BE 24"x24" (36" x18" IF NEEDED TO MATCH EXISTING SIGNS)
 - M1-1, M1-4, AND M1-6 SHALL BE 24"x24" (36"x36" IF NEEDED TO MATCH EXISTING SIGNS)
 - W20-53A SHALL BE 48"x48"

* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.




TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

GENERAL NOTES

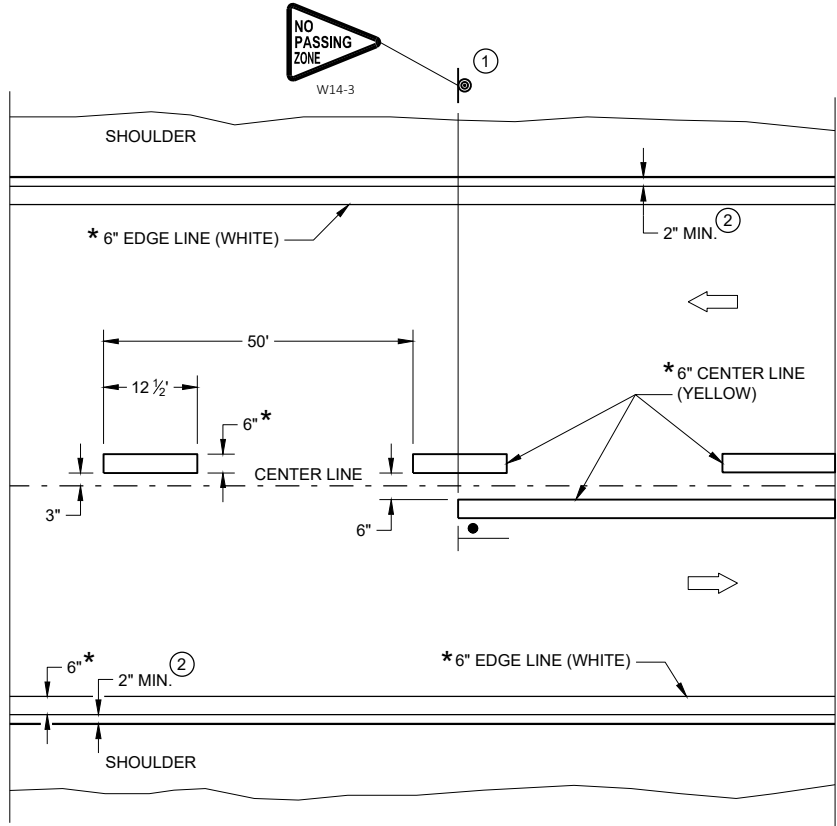
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

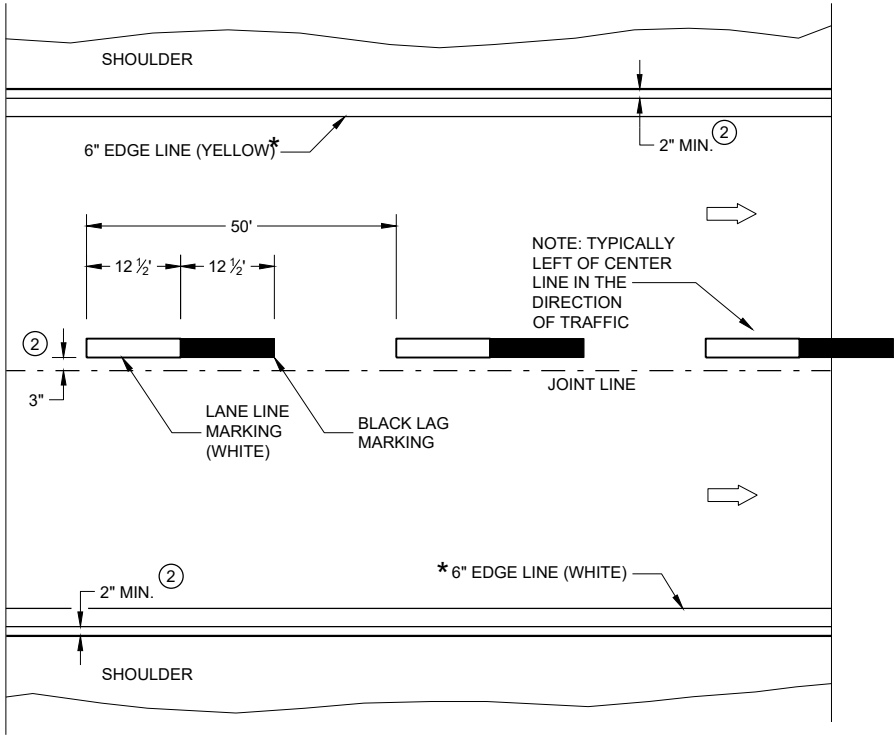
LEGEND

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

6

6

SDD 15C08-23a

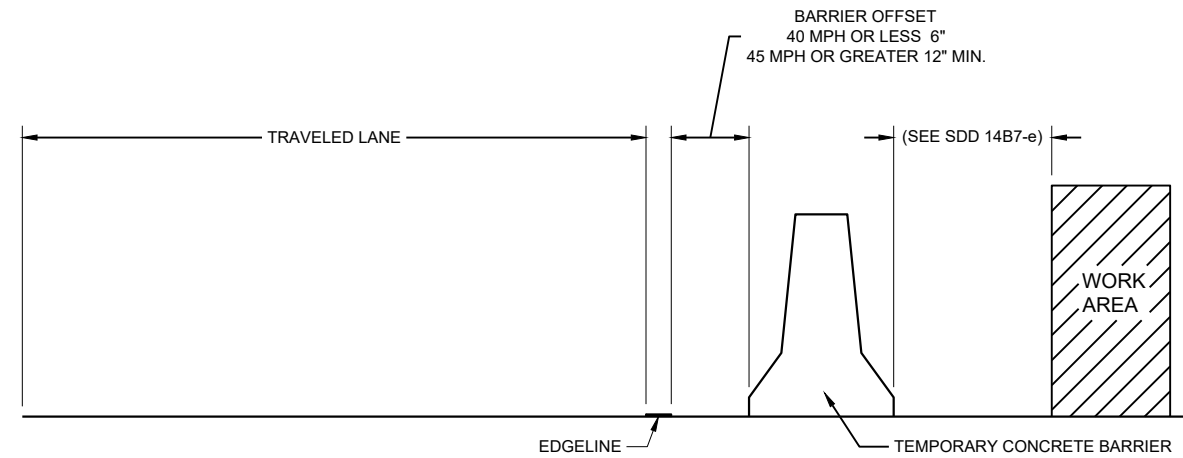
SDD 15C08-23a

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Jeannie Silver
DATE STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



TEMPORARY BARRIER OFFSET FROM EDGELINE

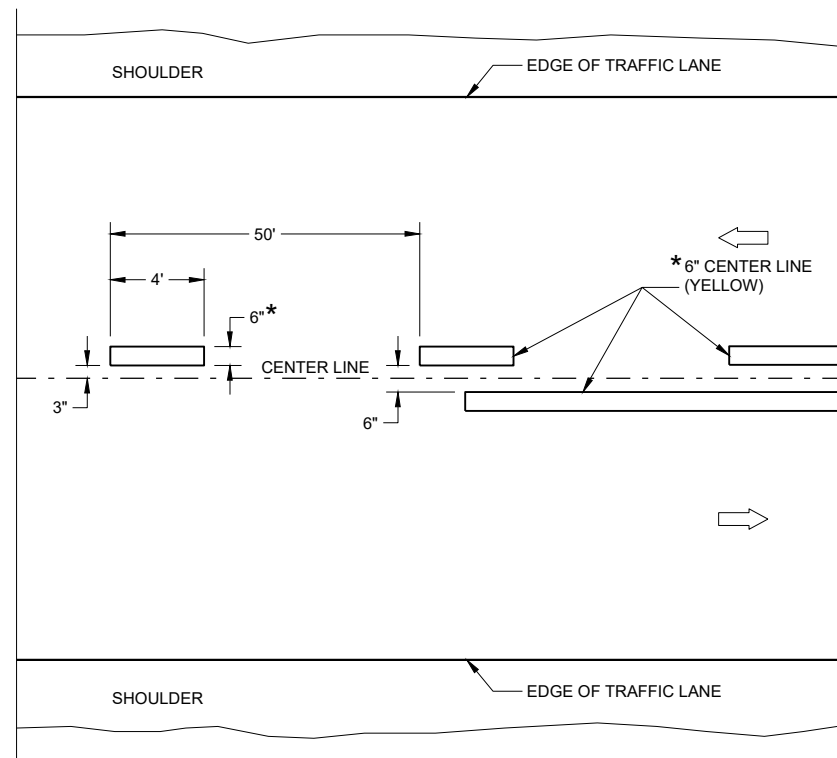
GENERAL NOTES

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

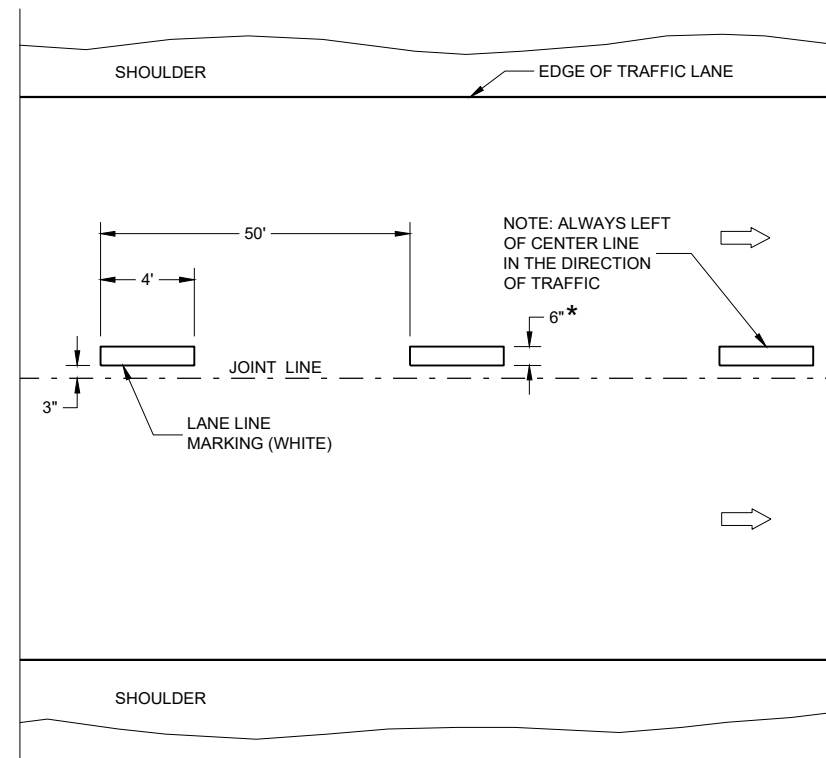
LEGEND

➔ DIRECTION OF TRAFFIC

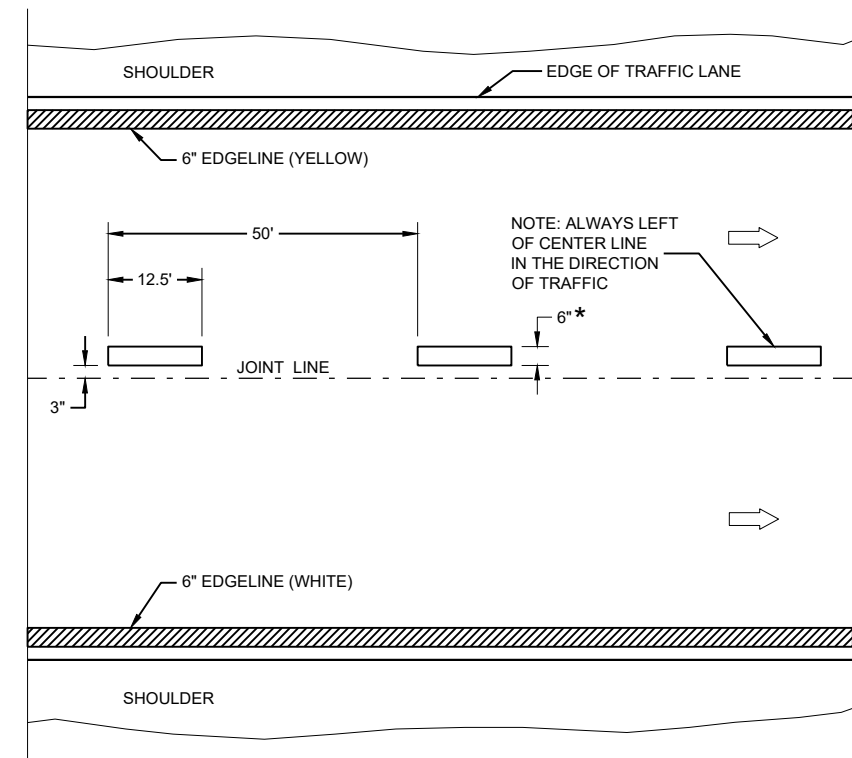
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

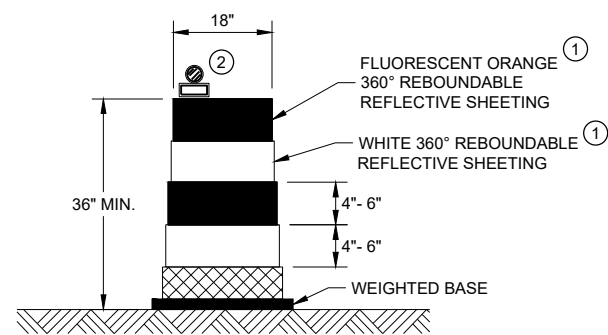
TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

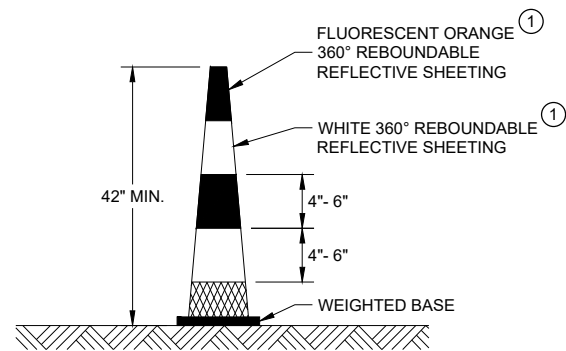
APPROVED
May 2023 /S/ Jeannie Silver
DATE STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



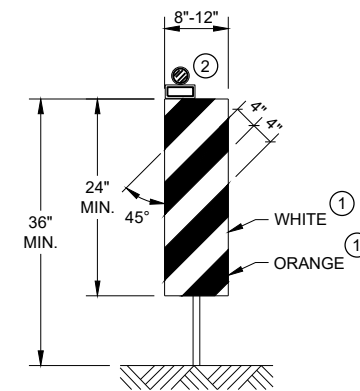
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"

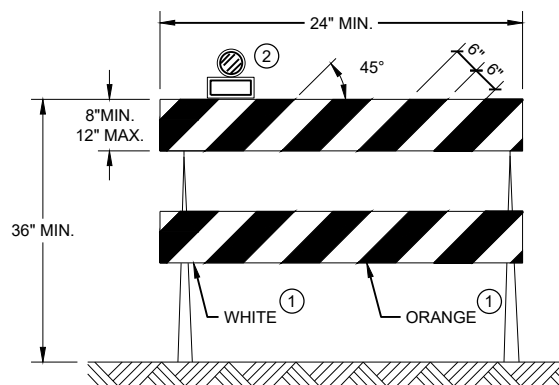


VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.

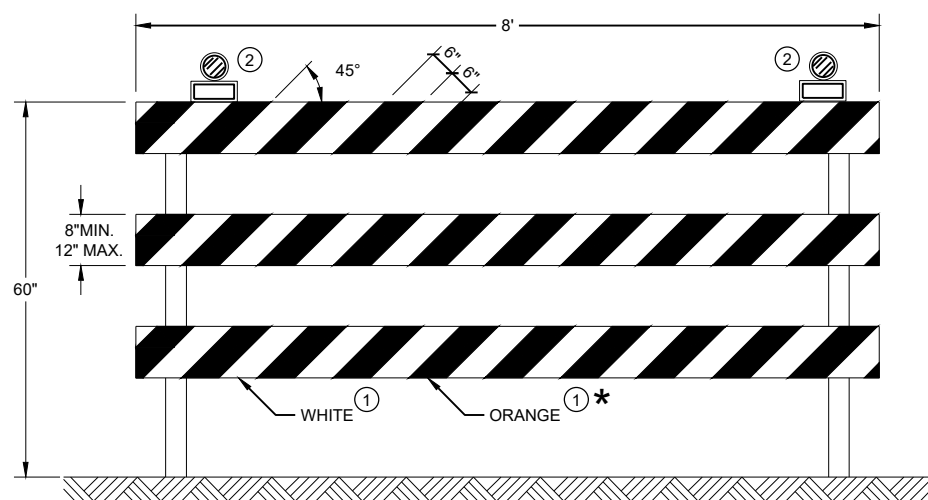
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.



* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

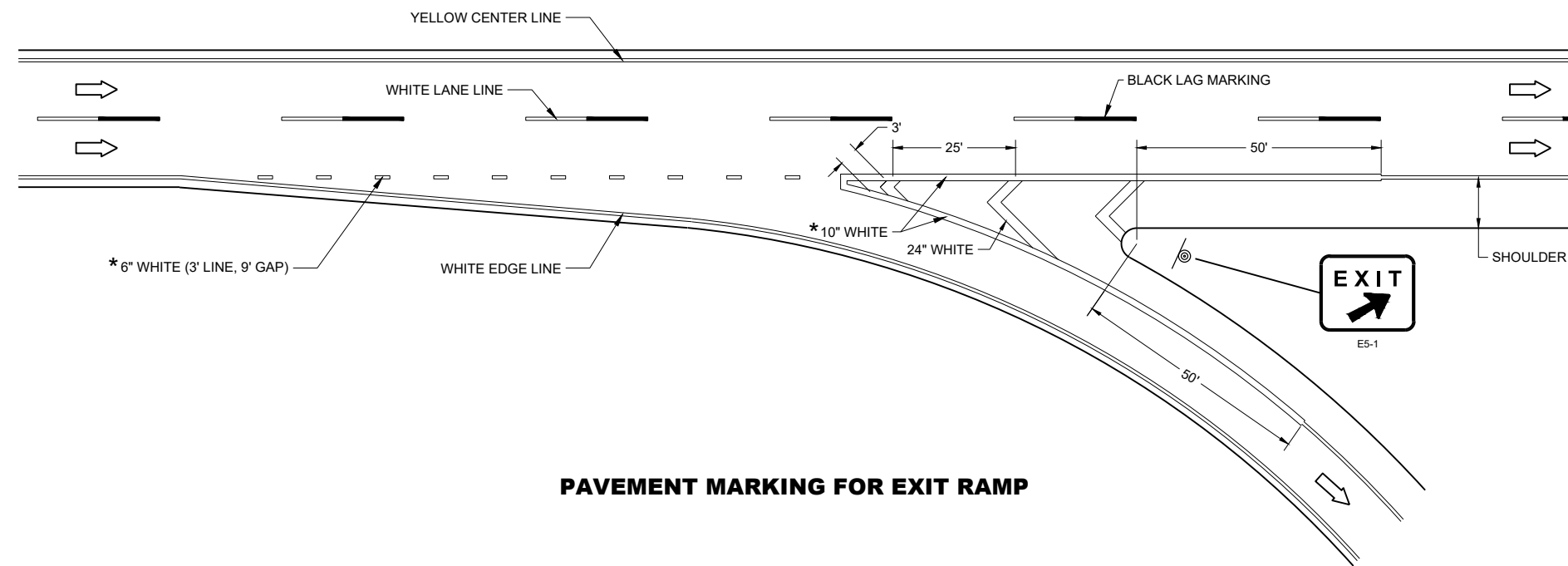
GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

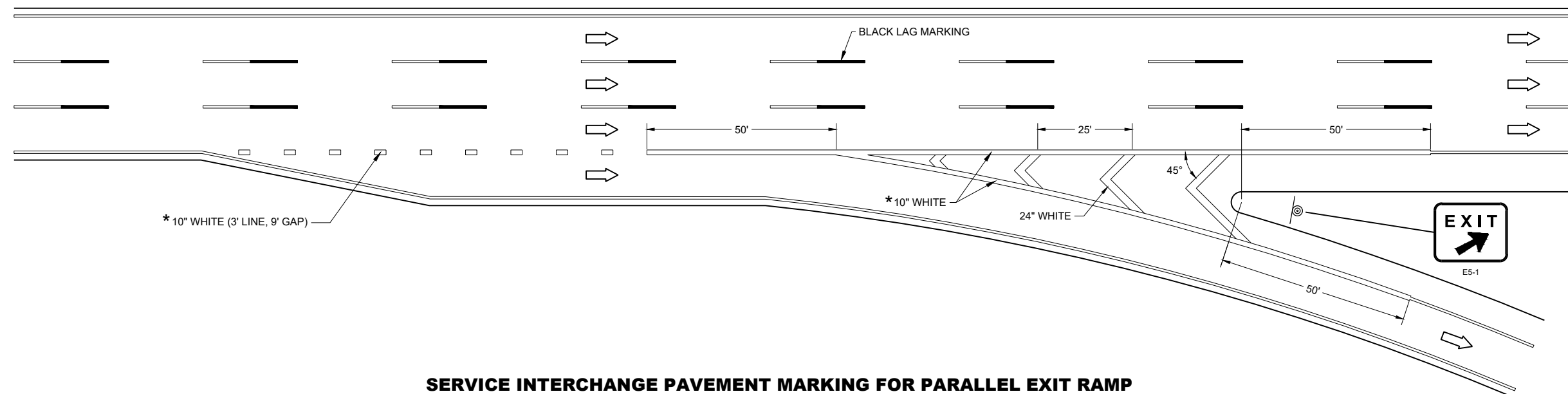
LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAVEL

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



PAVEMENT MARKING FOR EXIT RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT RAMP

**PAVEMENT MARKING,
EXIT RAMP AND
PARALLEL EXIT RAMP**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

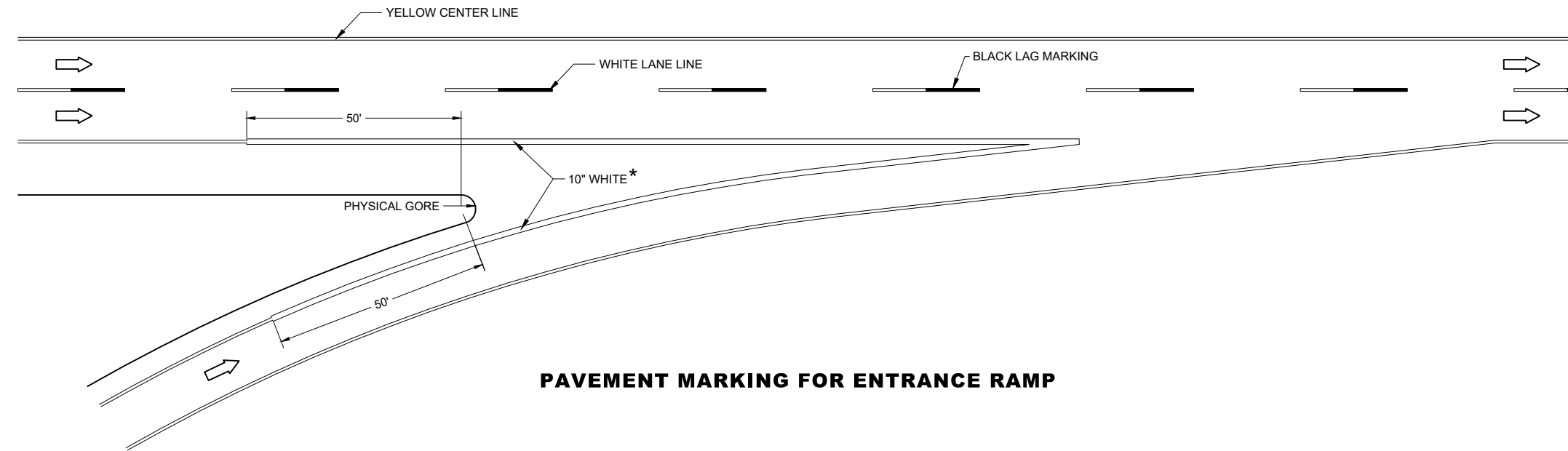
PLACE GROOVE 3 INCHES LEFT OF JOINT.

① ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

LEGEND

➡ DIRECTION OF TRAVEL

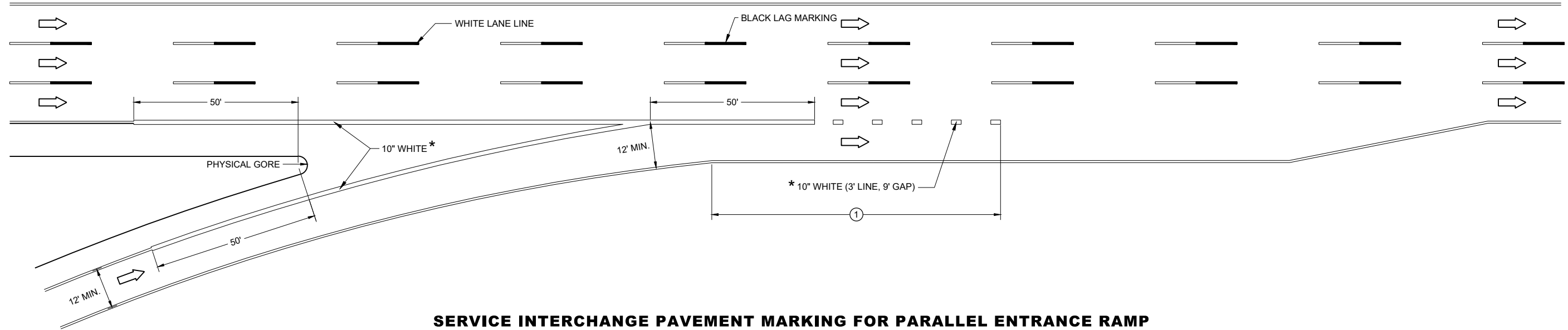
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



PAVEMENT MARKING FOR ENTRANCE RAMP

6

6



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP













SDD 15C31-06c

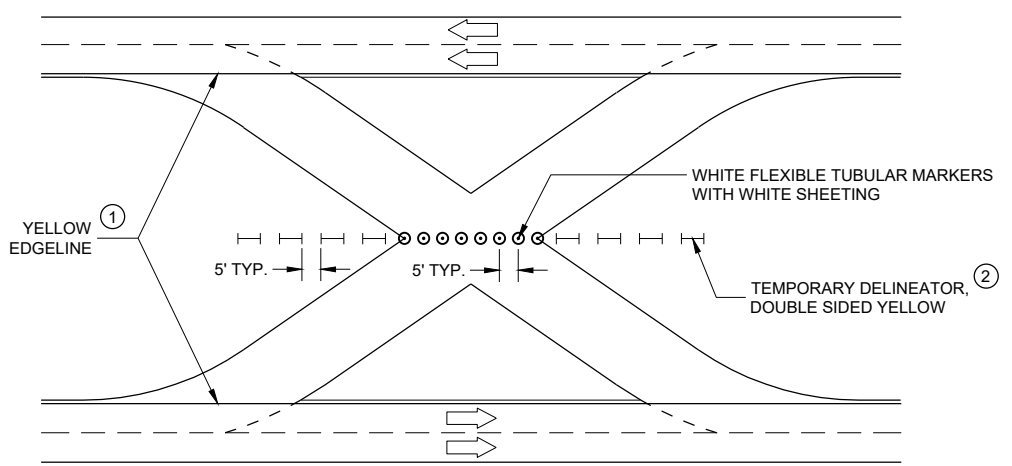
SDD 15C31-06c

**PAVEMENT MARKING,
ENTRANCE RAMP AND
PARALLEL ENTRANCE RAMP**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

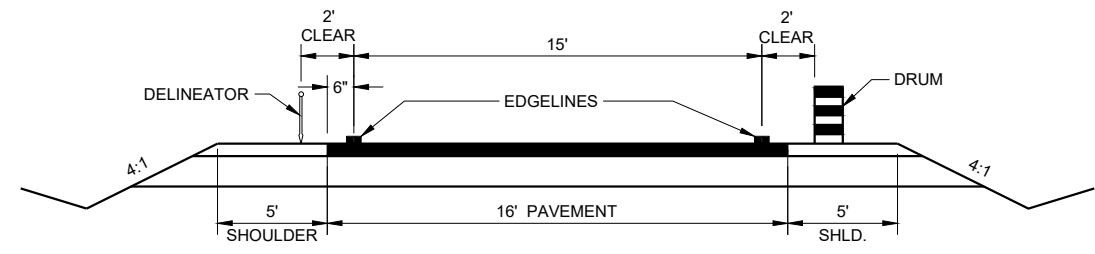
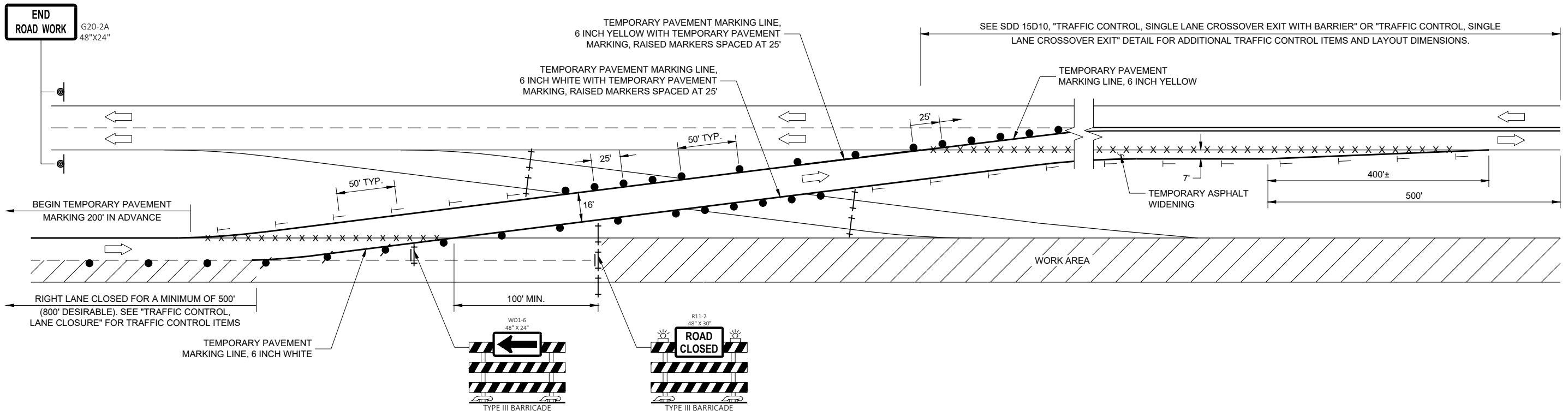
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  DELINEATOR FLEXIBLE / TUBULAR MARKER
-  TEMPORARY DELINEATOR (STEEL POST WITH SINGLE DELINEATOR)
COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE
EDGE LINE MARKING
-  TEMPORARY DELINEATOR (DOUBLE SIDED)
-  TYPE "A" WARNING LIGHT (FLASHING)
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  DIRECTION OF TRAFFIC
-  REMOVE PAVEMENT MARKINGS
-  WORK AREA



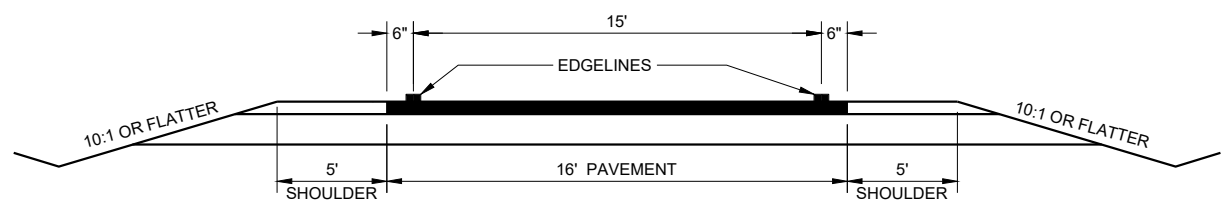
TRAFFIC CONTROL FOR CROSSOVER THAT IS NOT IN USE

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
 - "WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.
 - ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE 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.
 - 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 PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS.
 - REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.
- ① FOR PERMANENT CROSSOVER, PAVEMENT MARKING SHOULD CONFORM TO SECTION 646 OF THE STANDARD SPECIFICATIONS.
- ② FOR PERMANENT CROSSOVER, INSTALL PERMANENT DELINEATORS ACCORDING TO SECTION 633 OF THE STANDARD SPECIFICATIONS.



TYPICAL TEMPORARY CROSSOVER ROADWAY DIMENSIONS
(SEE PLAN FOR ROADWAY DESIGN ELEMENTS)



TYPICAL CROSSOVER TO REMAIN IN PLACE ROADWAY DIMENSIONS
(SEE PLAN FOR ROADWAY DESIGN ELEMENTS)

TRAFFIC CONTROL, SINGLE LANE CROSSOVER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

6

6

SDD 15D11-09

SDD 15D11-09

GENERAL NOTES

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

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

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

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

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

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

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 AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.










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

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

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

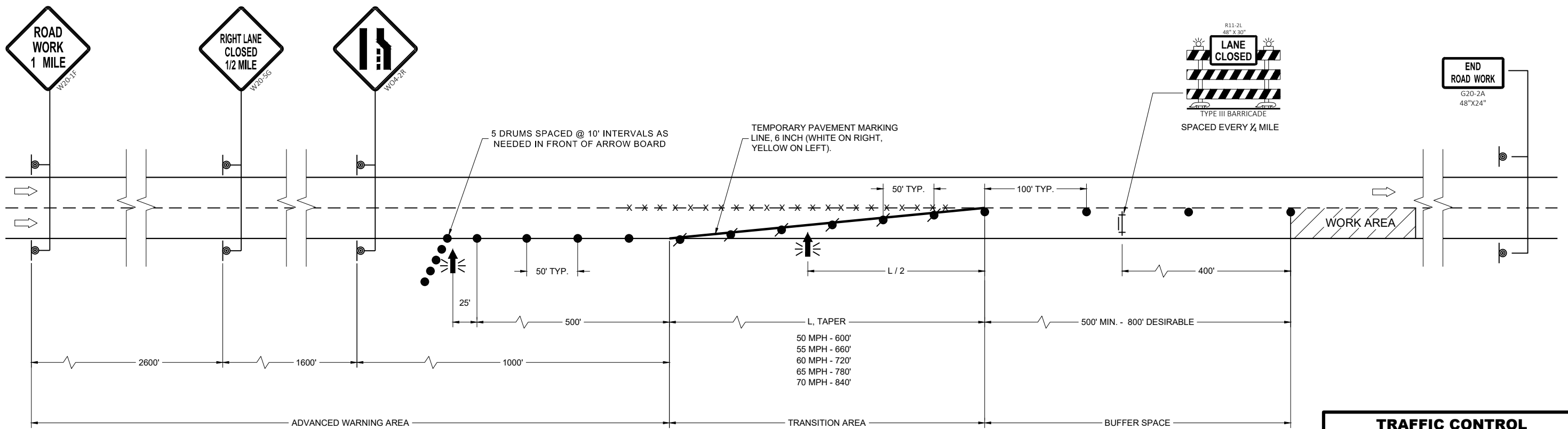
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

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

6

SDD 15D12-12a



6

SDD 15D12-12a

TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED September 2023 DATE	/s/ Andrew Heidtke ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

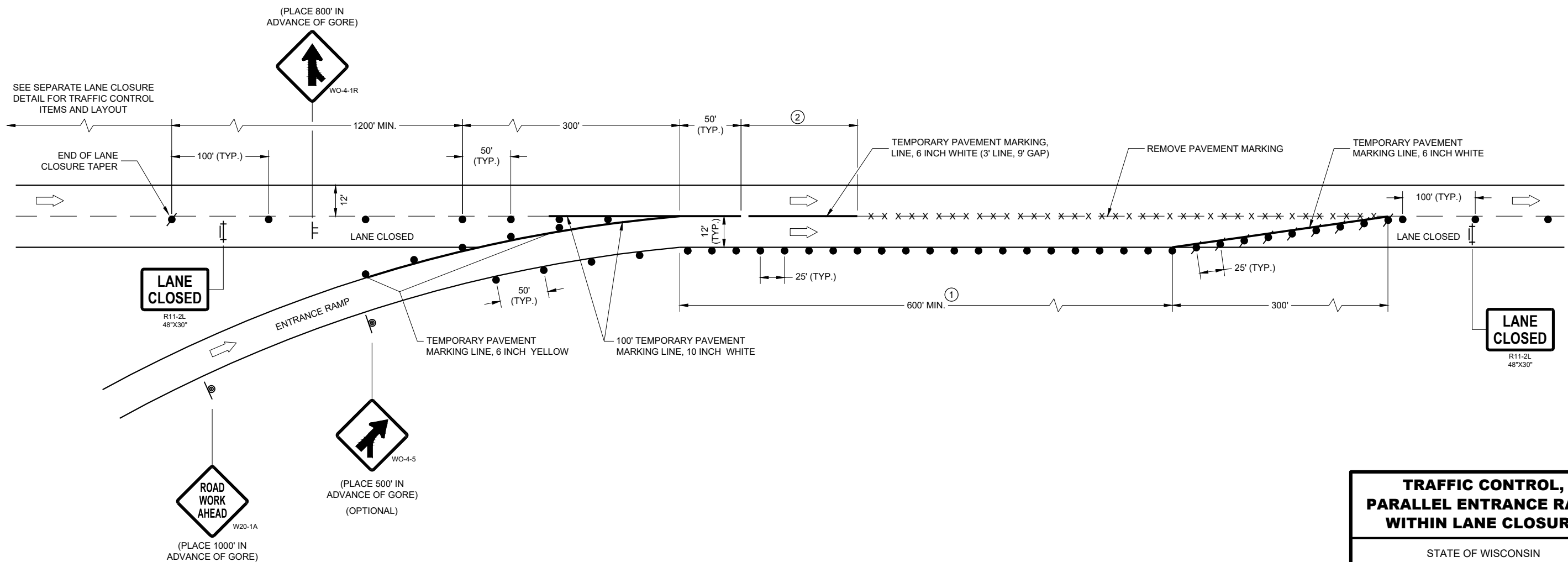
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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 LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

- ① EXTEND THE LENGTH OF THE MERGE ARE IF THE ENTERING (DESIGN) SPEED IS LESS THAN 50MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY PAVEMENT MARKING LINE AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.



6








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SDD 15D15-07a

SDD 15D15-07a

TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

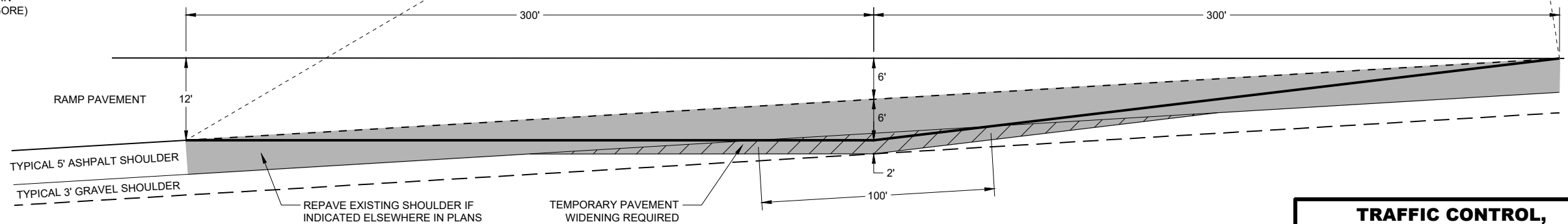
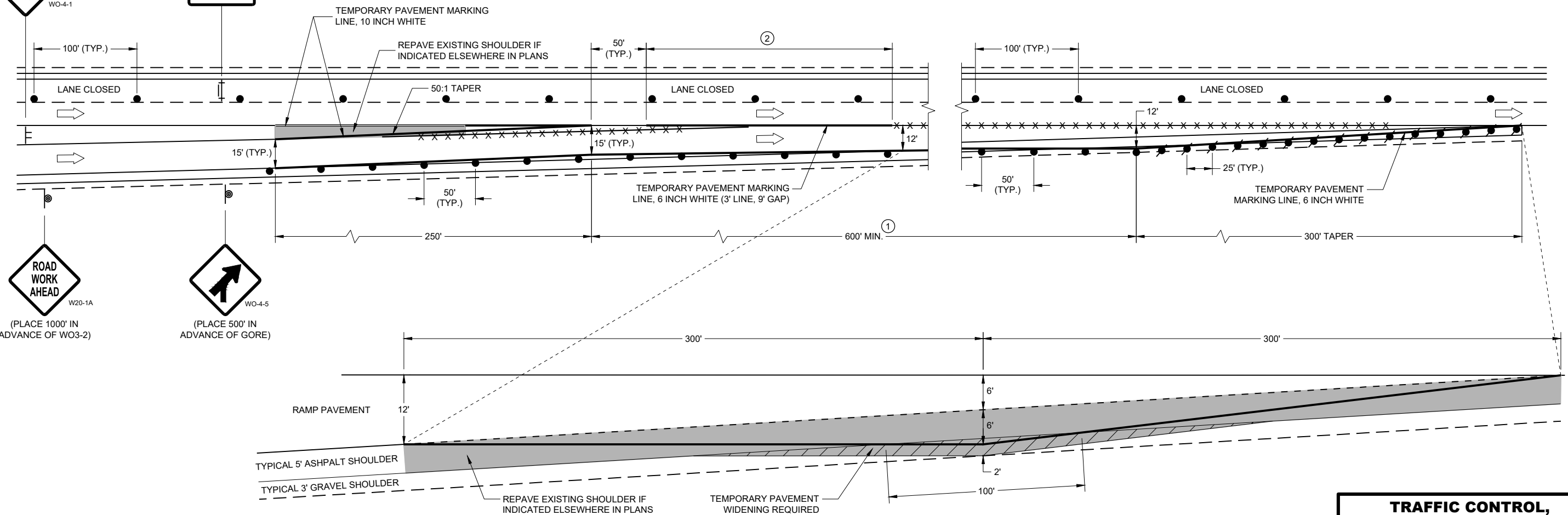
- ① EXTEND THE LENGTH OF THE MERGE AREA IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY PAVEMENT MARKING LINE AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.

(PLACE 800' IN ADVANCE OF GORE)



(PLACE 1000' IN ADVANCE OF WO3-2)

(PLACE 500' IN ADVANCE OF GORE)



TEMPORARY PAVEMENT DETAIL
(EXISTING RAMP DIMENSIONS MAY VARY, ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION








APPROVED
DATE: May 2023 /S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15D15-07b

SDD 15D15-07b

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
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

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

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

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.

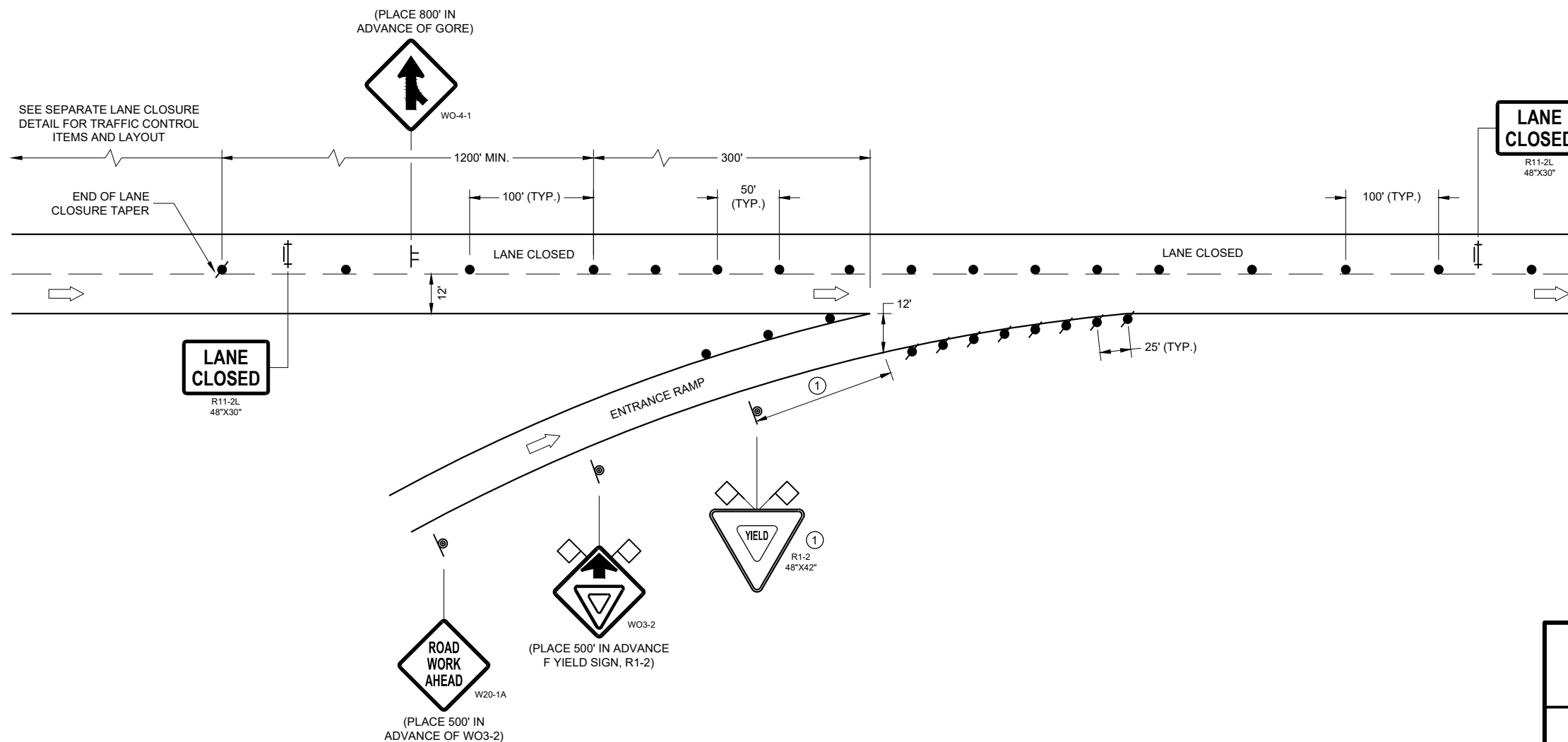
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

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.

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

- ① PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.



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SDD 15D15-07d

SDD 15D15-07d

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

- † TYPE III BARRICADE
- †† TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ⚡ TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC

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.

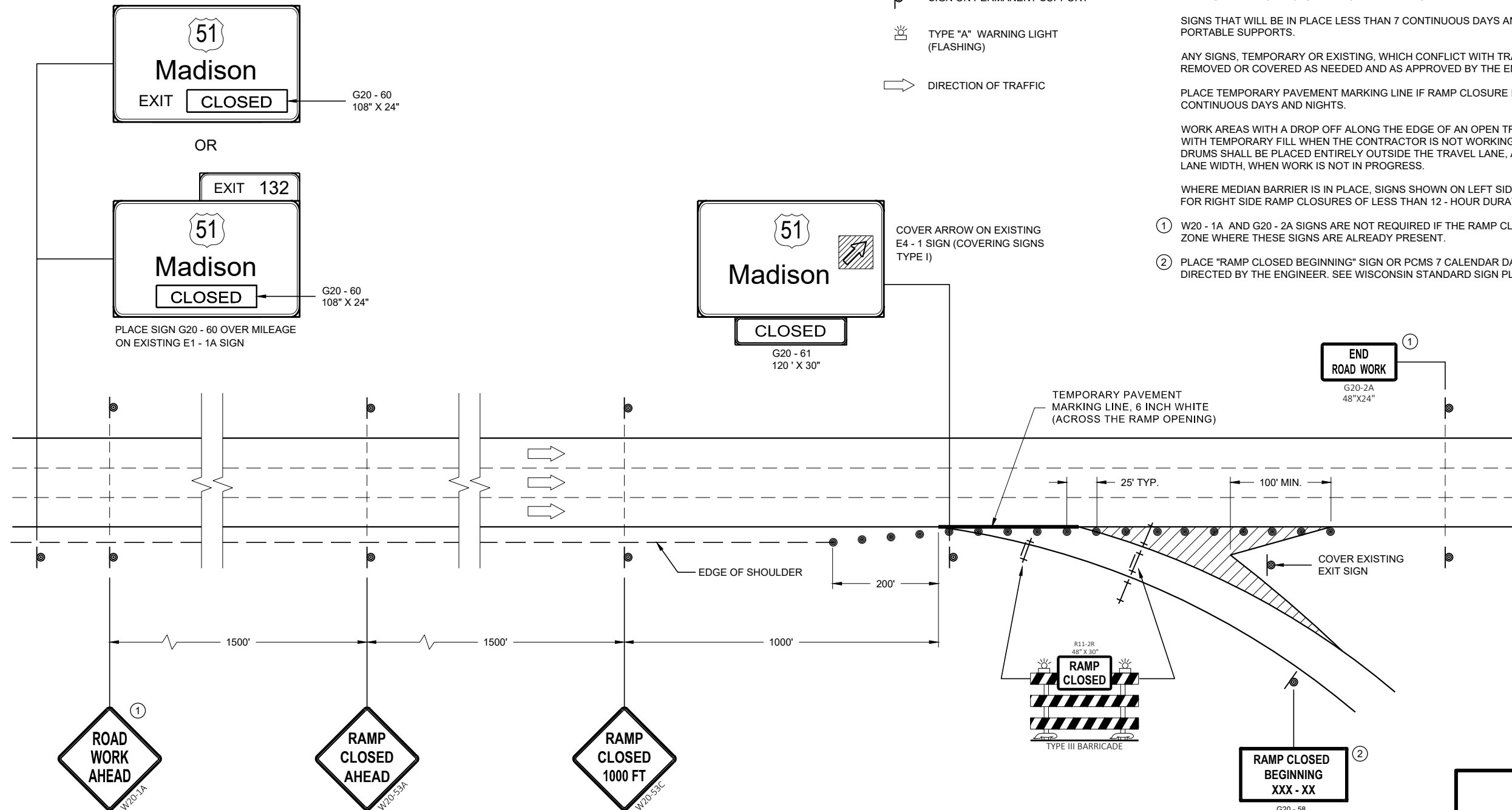
PLACE TEMPORARY PAVEMENT MARKING LINE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF 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 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.

① W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

② PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

**TRAFFIC CONTROL,
EXIT RAMP CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE May 2023 /S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

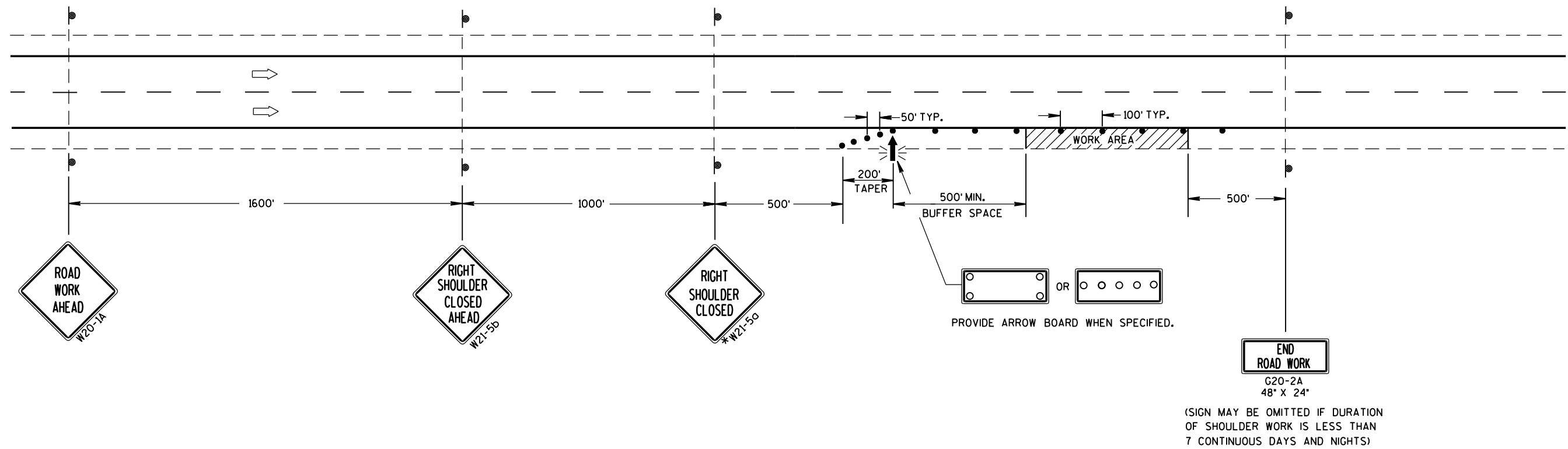
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

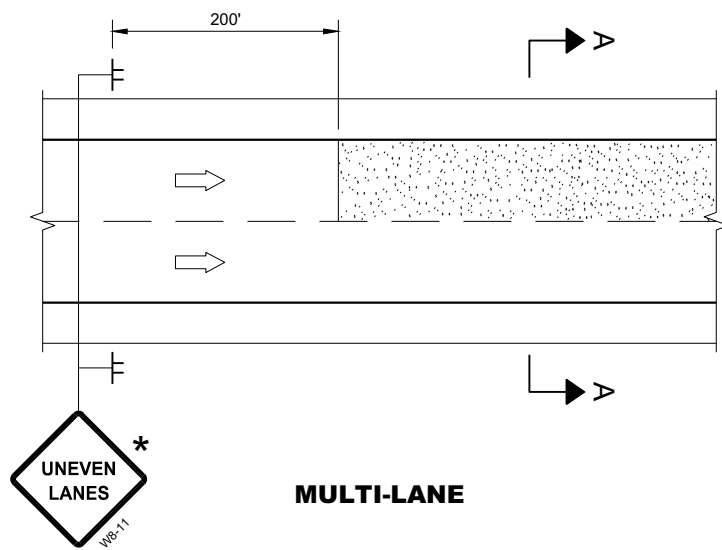
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.

LEGEND

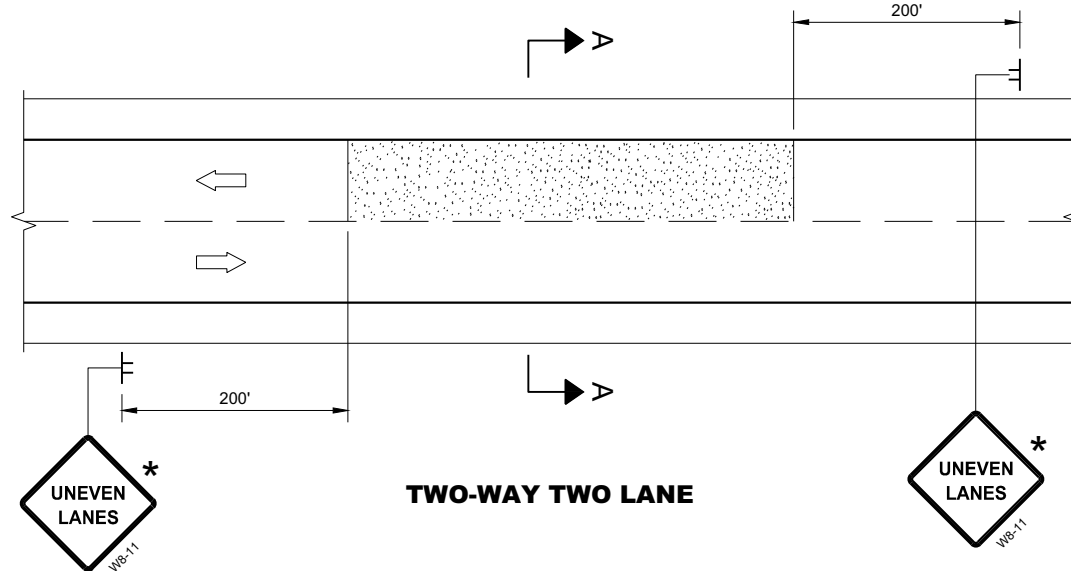
- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ FLASHING ARROW BOARD
- ▨ WORK AREA



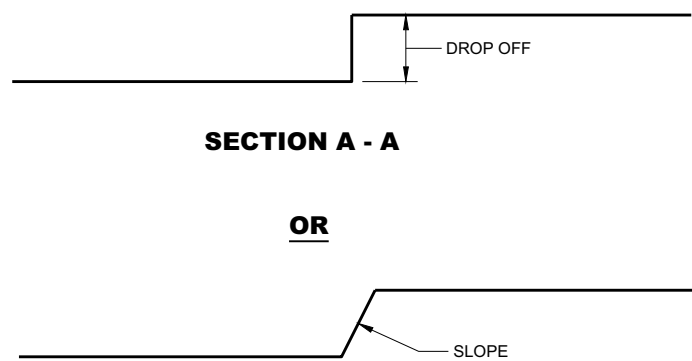
TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



MULTI-LANE



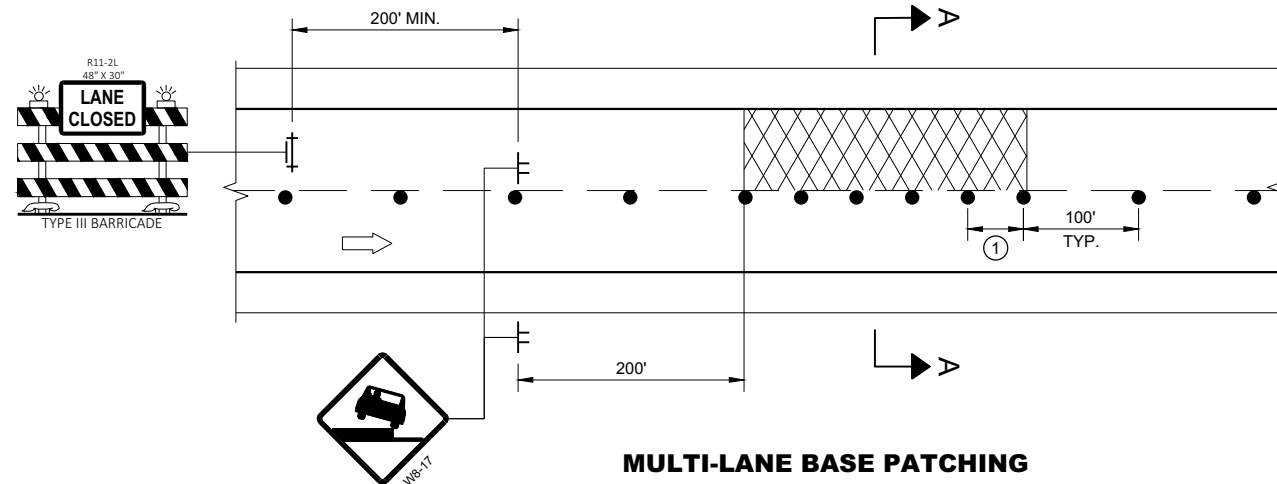
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

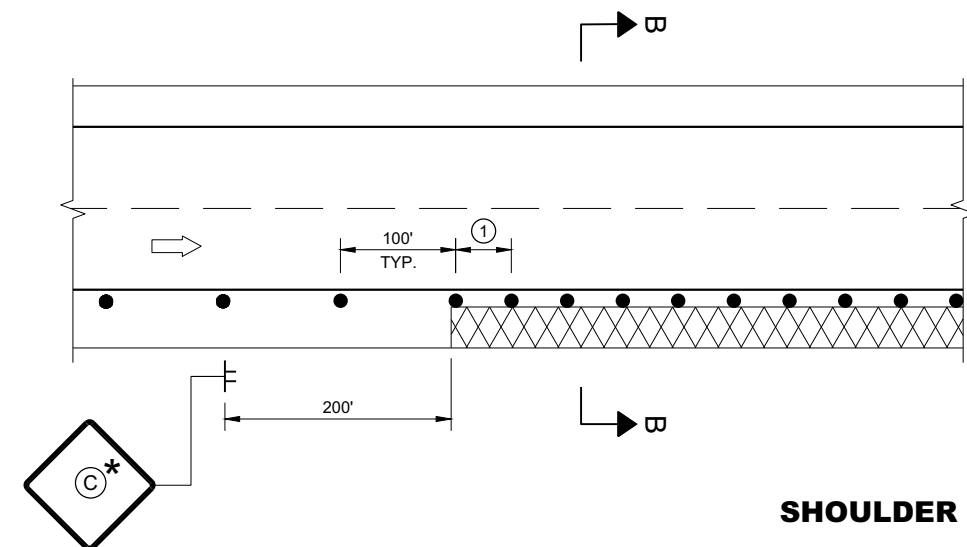
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- * IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

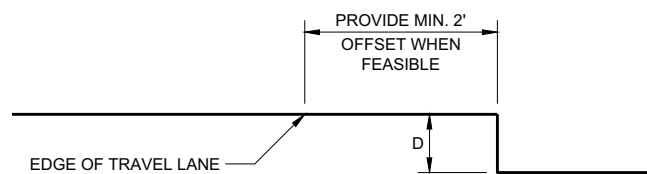
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

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SHOULDER DROP-OFFS



SECTION B - B

D	SIGN C
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

SDD 15D39 - 02

SDD 15D39 - 02









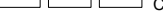
**TRAFFIC CONTROL,
DROP-OFF SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT RIGHT - REVERSE FOR SHIFTING LEFT.

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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS 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 AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

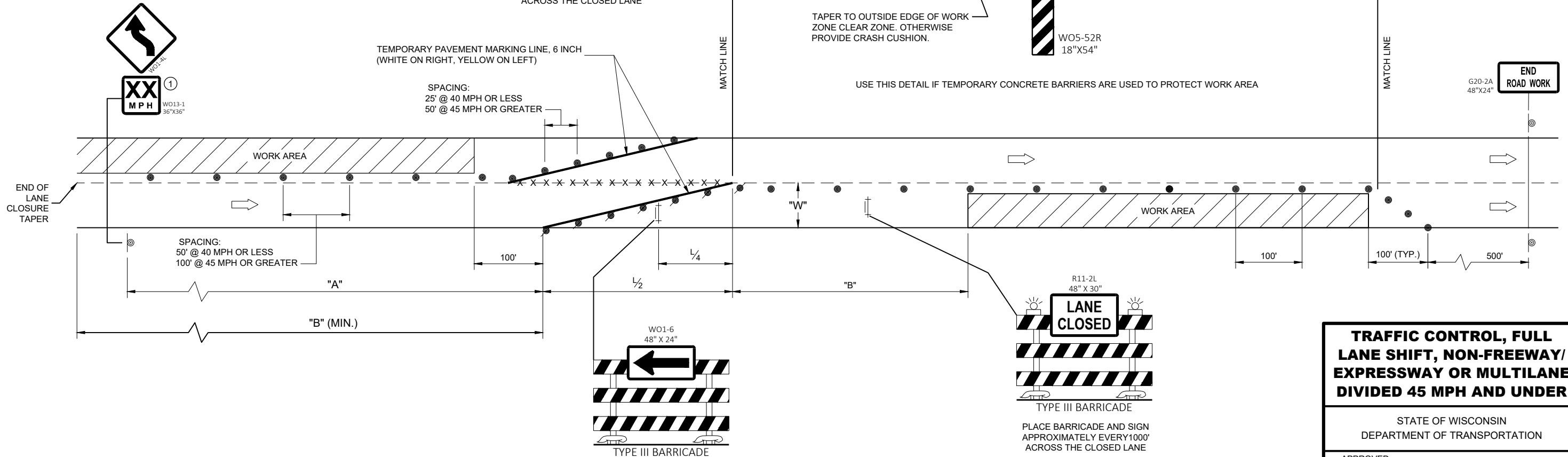
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

① USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

② BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS
8:1 @ 45 MPH OR GREATER

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER $\frac{L}{2}$					BUFFER SPACE (B) FEET
		W, LATERAL OFFSET (FT)	10	11	12	13	
25	200	52	57	63	68	73	55
30	200	75	83	90	98	105	85
35	350	102	112	123	133	143	120
40	350	133	147	160	173	187	170
45	500	225	248	270	293	315	220



TRAFFIC CONTROL, FULL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE May 2023 /S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA










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SDD 15D40-05a

SDD 15D40-05a

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS 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 AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

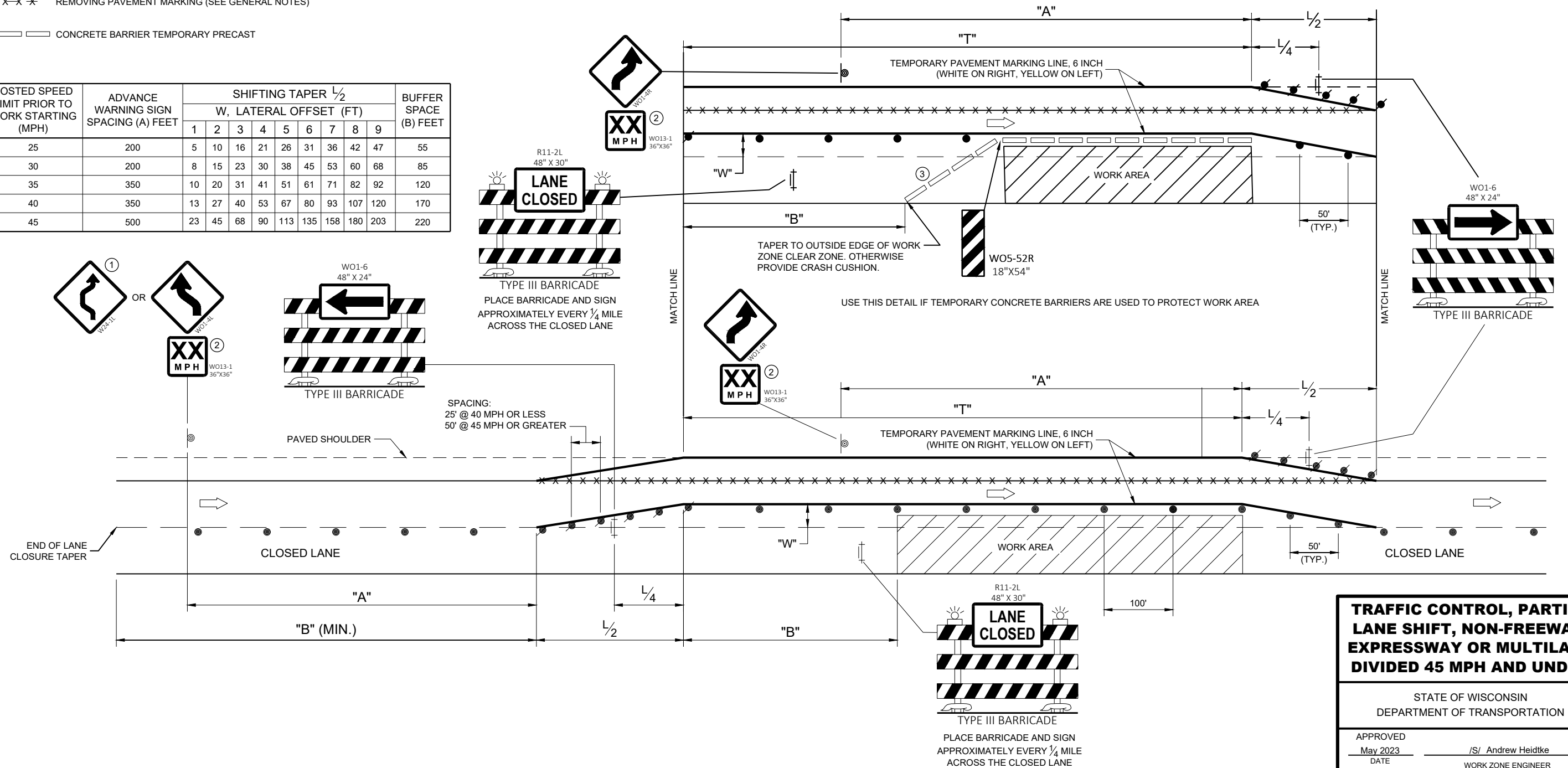
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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 SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

- ① USE ONLY WHEN T < 600', OMIT WO1-4R.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
- ③ BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS
8:1 @ 45 MPH OR GREATER

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER 1/2 W, LATERAL OFFSET (FT)									BUFFER SPACE (B) FEET
		1	2	3	4	5	6	7	8	9	
25	200	5	10	16	21	26	31	36	42	47	55
30	200	8	15	23	30	38	45	53	60	68	85
35	350	10	20	31	41	51	61	71	82	92	120
40	350	13	27	40	53	67	80	93	107	120	170
45	500	23	45	68	90	113	135	158	180	203	220



TRAFFIC CONTROL, PARTIAL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION








APPROVED
DATE: May 2023 /S/ Andrew Heidtke
WORK ZONE ENGINEER

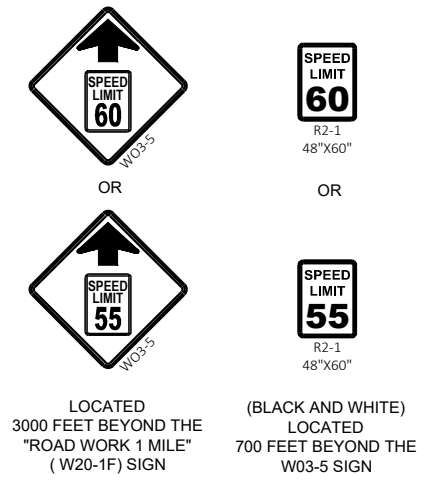
FHWA

SDD 15D40-05C

SDD 15D40-05C

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  CONCRETE BARRIER TEMPORARY PRECAST
-  TYPE "A" WARNING LIGHT (FLASHING)
-  WORK AREA

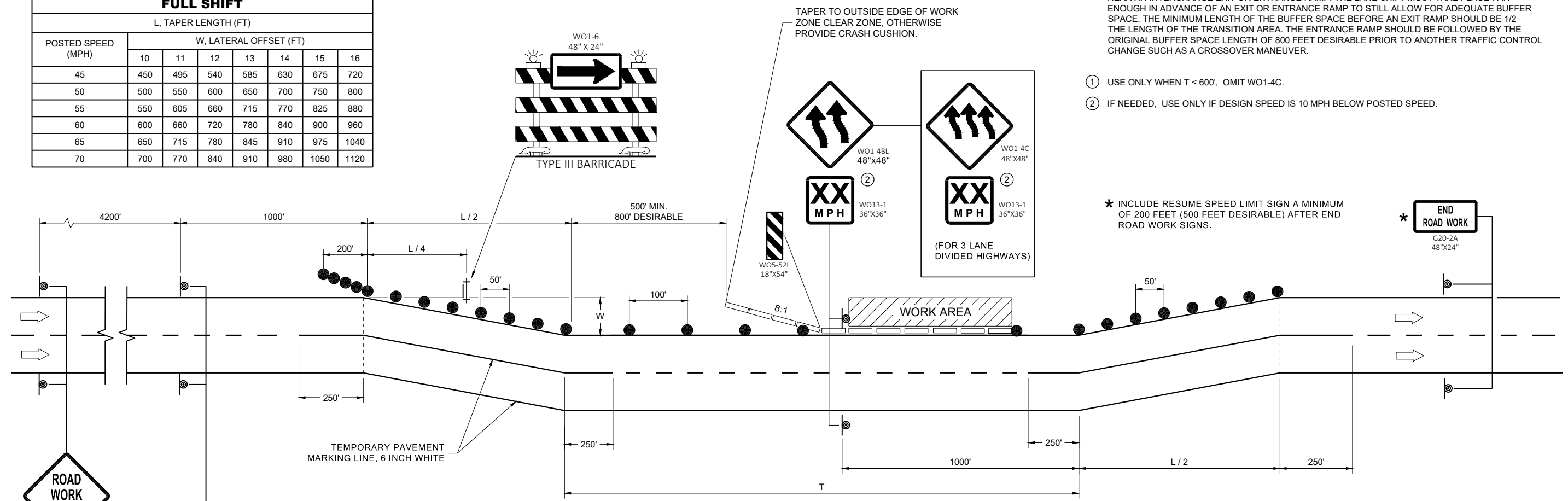


IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 3 MILES.

GENERAL NOTES

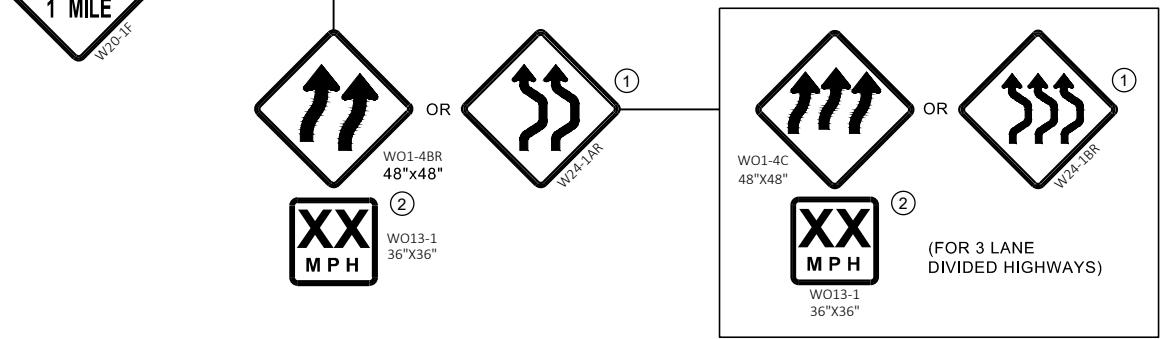
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.
- THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT RIGHT - REVERSE FOR SHIFTING LEFT.
- 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 AND AS APPROVED BY THE ENGINEER.
- FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES 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 SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

FULL SHIFT							
L, TAPER LENGTH (FT)							
POSTED SPEED (MPH)	W, LATERAL OFFSET (FT)						
	10	11	12	13	14	15	16
45	450	495	540	585	630	675	720
50	500	550	600	650	700	750	800
55	550	605	660	715	770	825	880
60	600	660	720	780	840	900	960
65	650	715	780	845	910	975	1040
70	700	770	840	910	980	1050	1120



- ① USE ONLY WHEN T < 600', OMIT W01-4C.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

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



POSTED SPEED PRIOR TO WORK STARTING (MPH)	PARTIAL SHIFT								
	SHIFTING TAPER L/2								
	W, LATERAL OFFSET (FT)								
	1	2	3	4	5	6	7	8	9
45	23	45	68	90	113	135	158	180	203
50	25	50	75	100	125	150	175	200	225
55	28	55	83	110	138	165	193	220	248
60	30	60	90	120	150	180	210	240	270
65	33	65	98	130	163	195	228	260	293
70	35	70	105	140	175	210	245	280	315

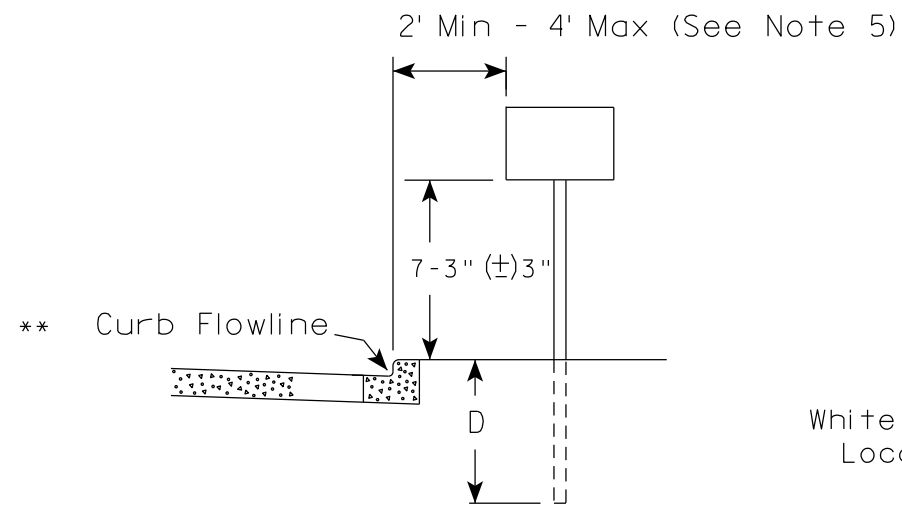
**TRAFFIC CONTROL
MULTIPLE LANE SHIFT
MULTILANE DIVIDED ROAD**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2023 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

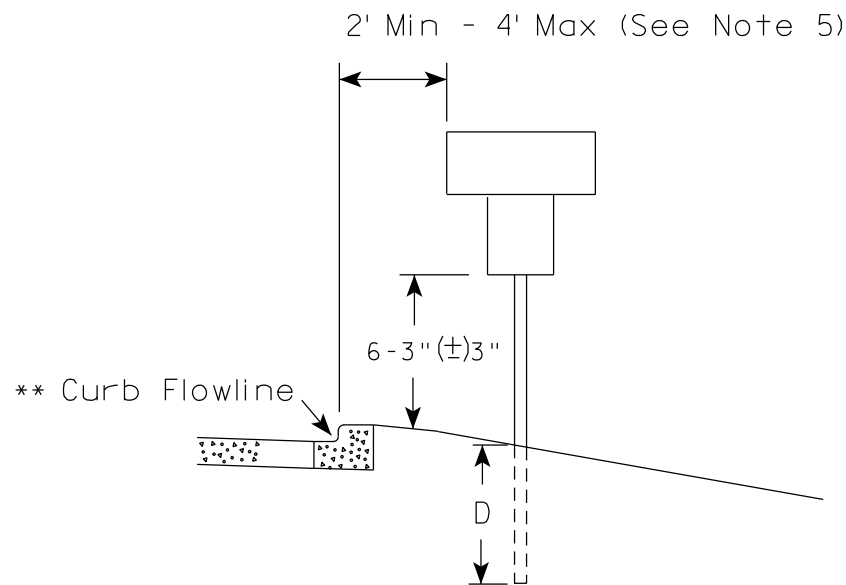
URBAN AREA

RURAL AREA (See Note 2)



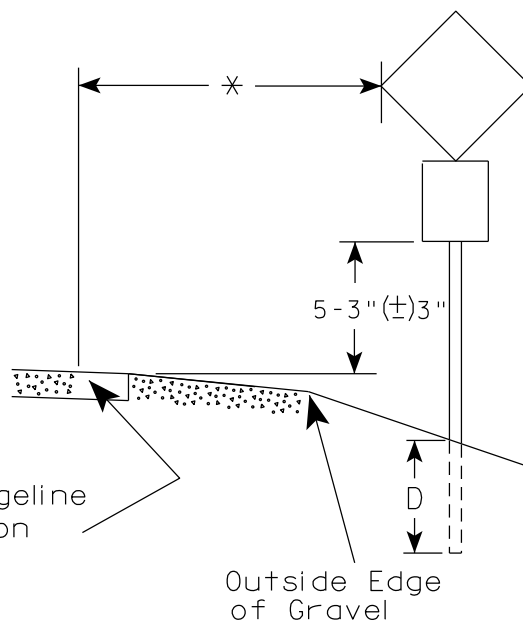
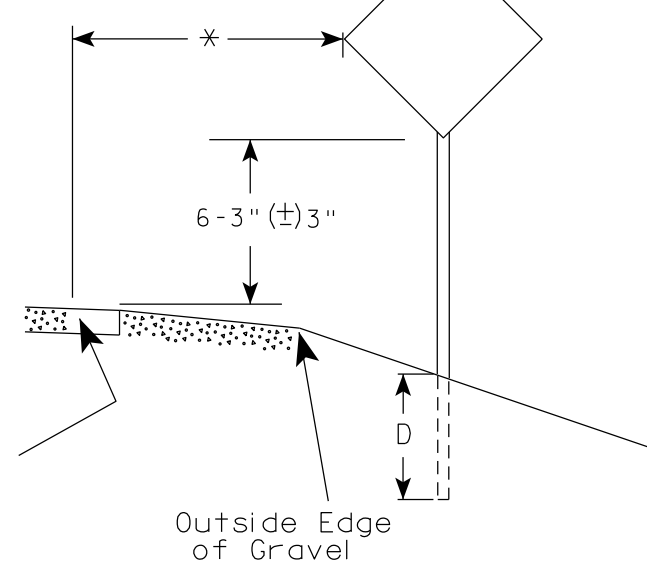
White Edgeline Location

Outside Edge of Gravel



White Edgeline Location

Outside Edge of Gravel



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 or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the 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.

* 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.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

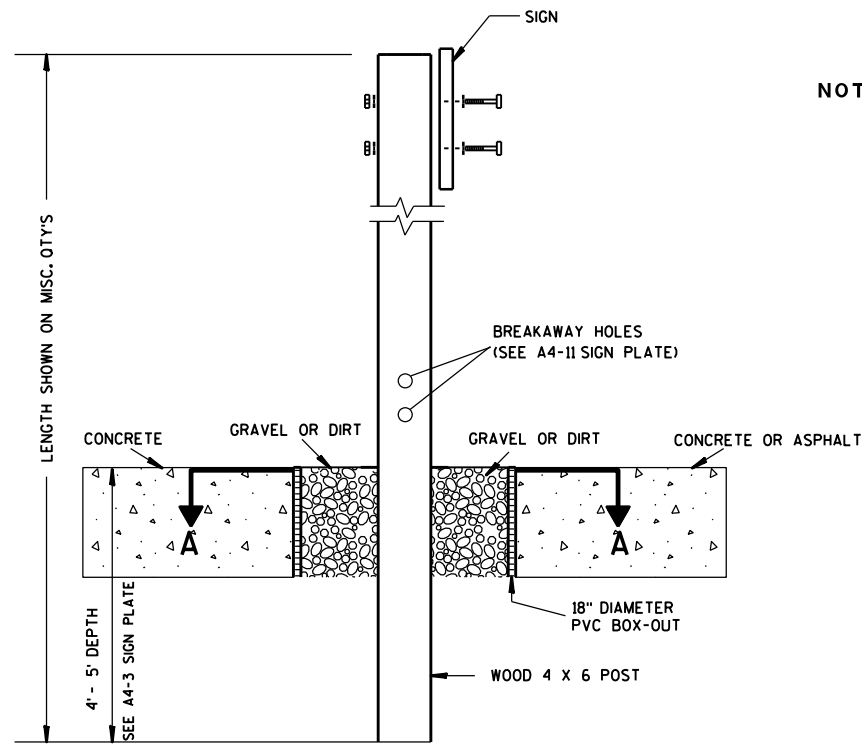
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Raub
for State Traffic Engineer

DATE 12/6/23

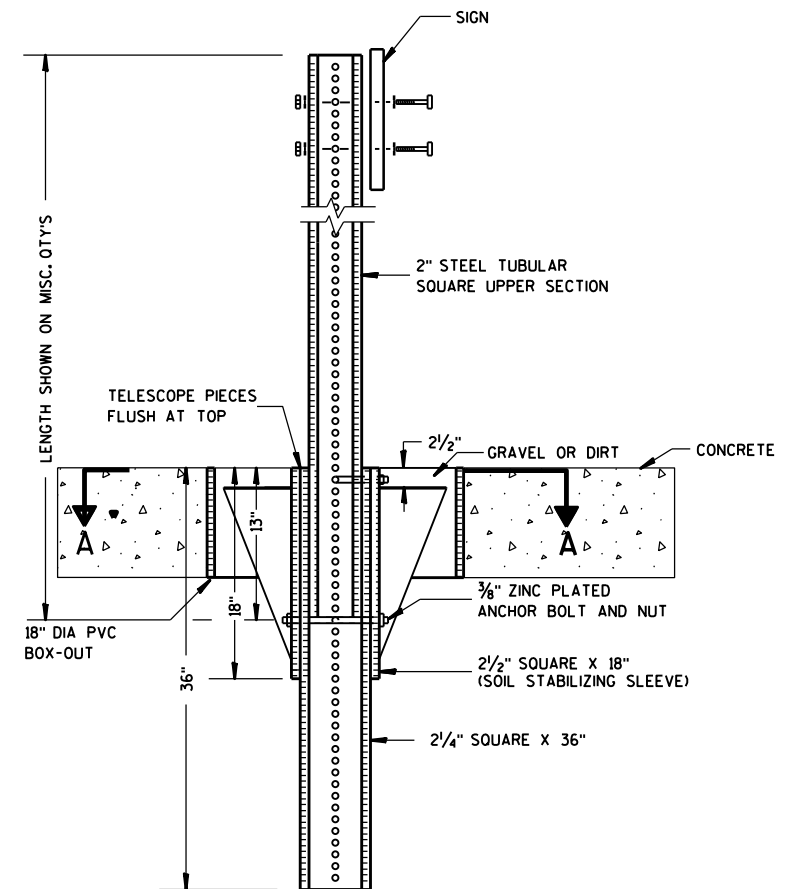
PLATE NO. A4-3.23



ELEVATION VIEW

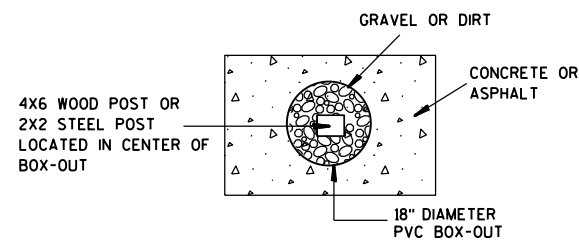
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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	
<small>WISCONSIN DEPT OF TRANSPORTATION</small>	
APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small>	
<small>DATE 1/27/14</small>	<small>PLATE NO. A4-3B.1</small>

GENERAL NOTES

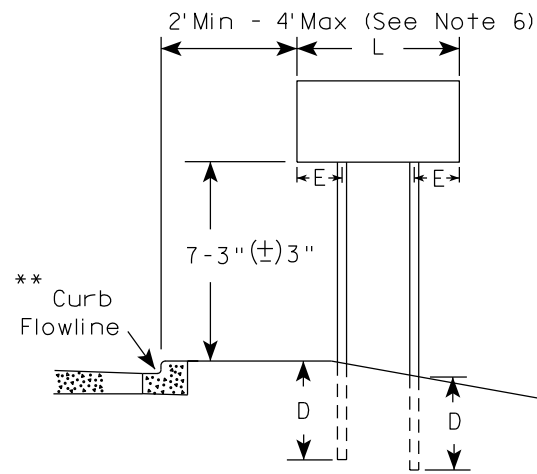
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 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.

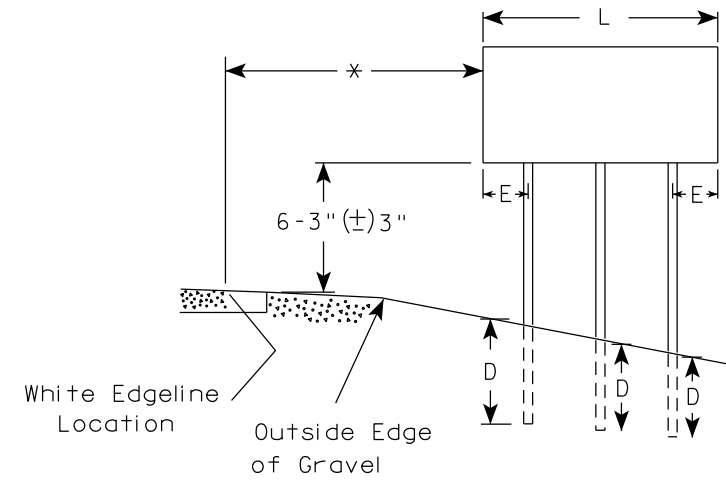
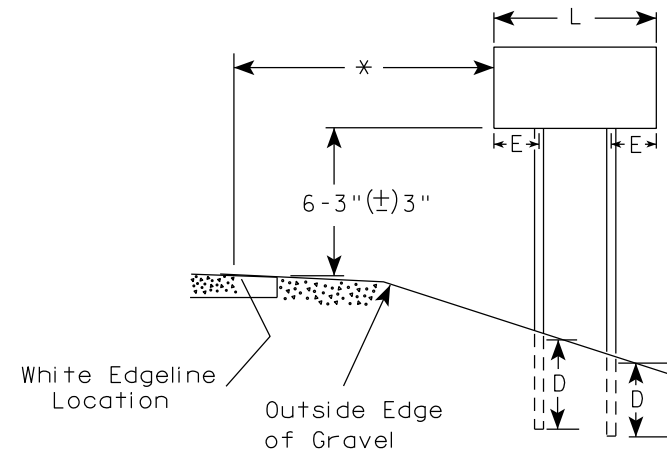
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs 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.

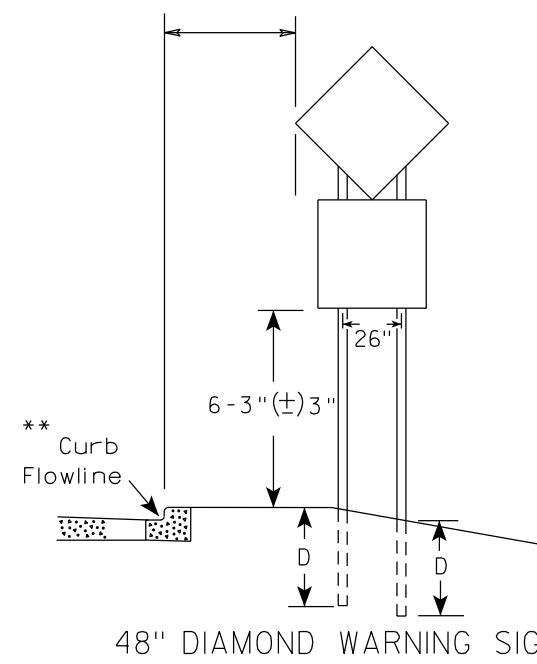
URBAN AREA



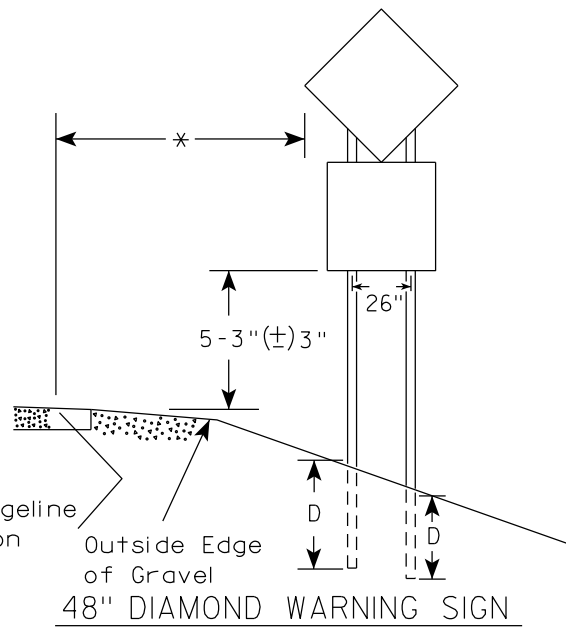
RURAL AREA (See Note 3)



URBAN AREA



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 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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 12/6/23 PLATE NO. A4-4.16

PROJECT NO:

HWY:

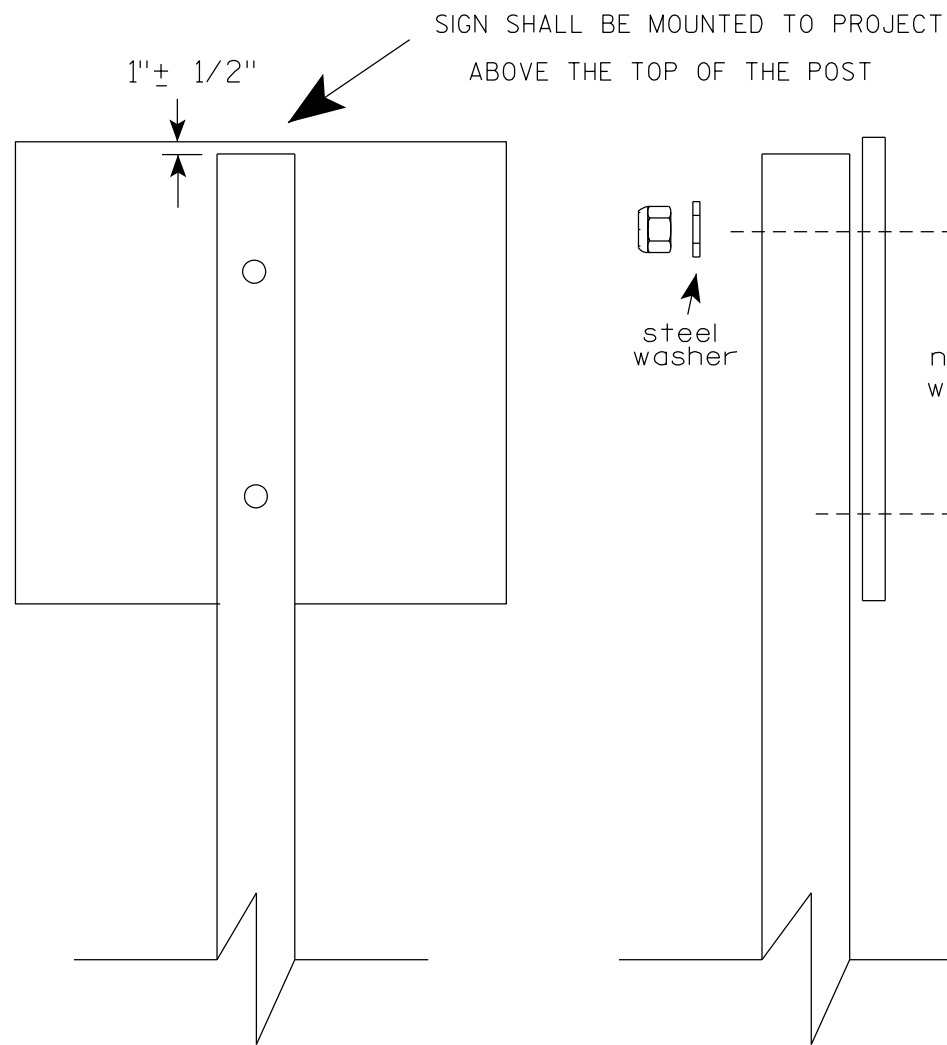
COUNTY:

SHEET NO:

E

7

7



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- 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.

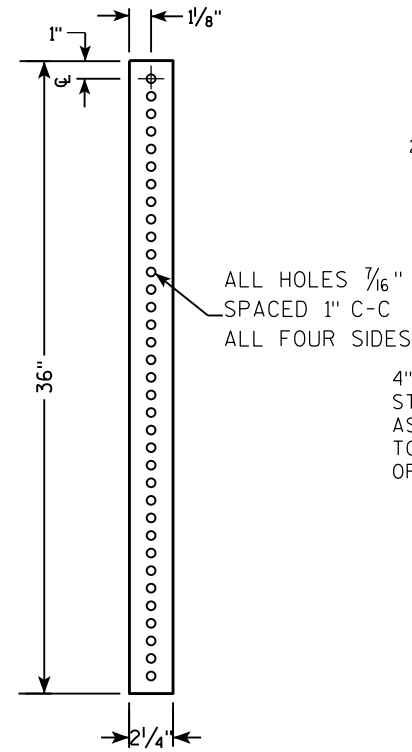
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
- 1-1/4" O.D. X $\frac{3}{8}$ " 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.

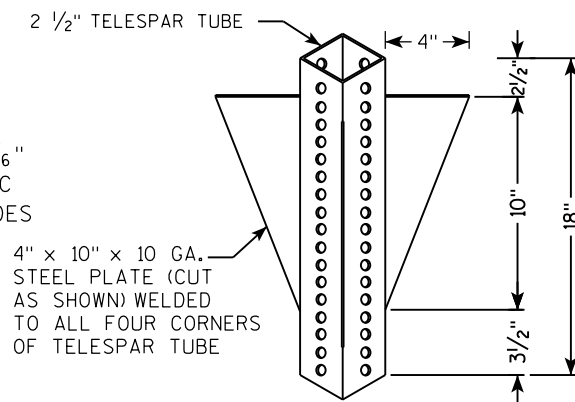
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

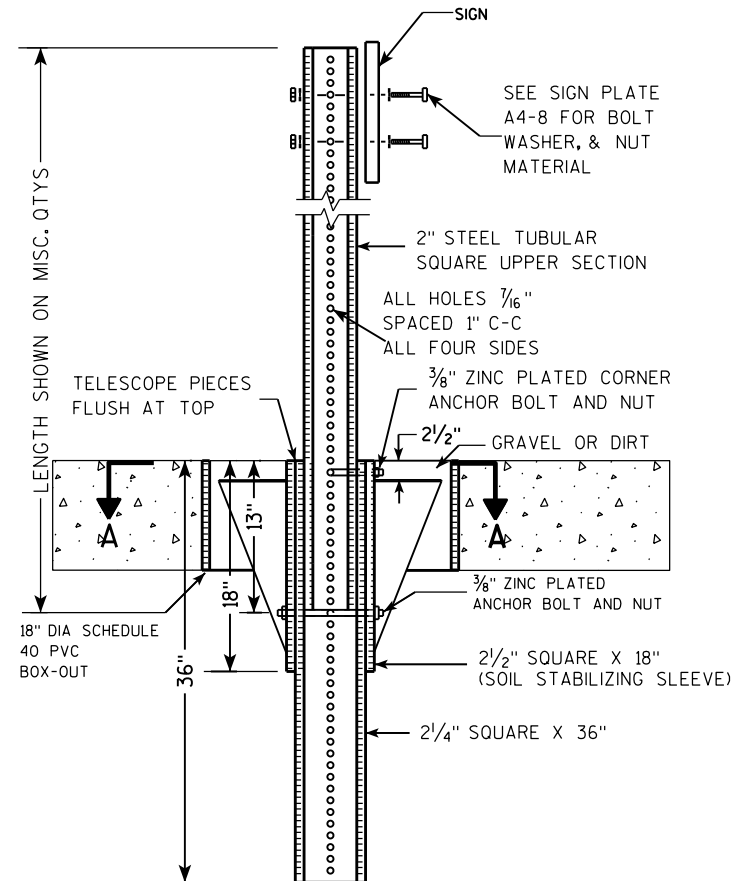
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



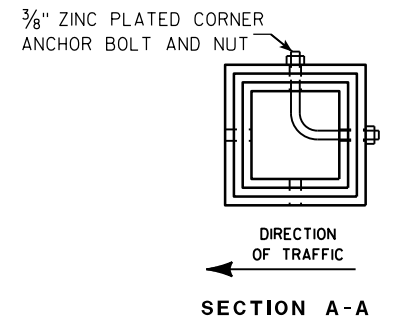
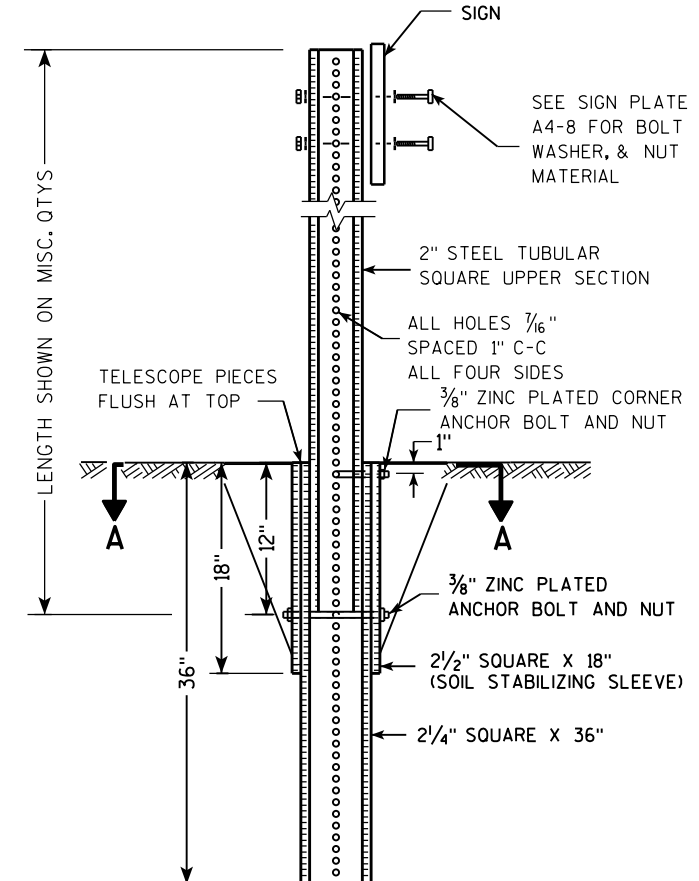
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**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)**



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 NO. A4-9.9

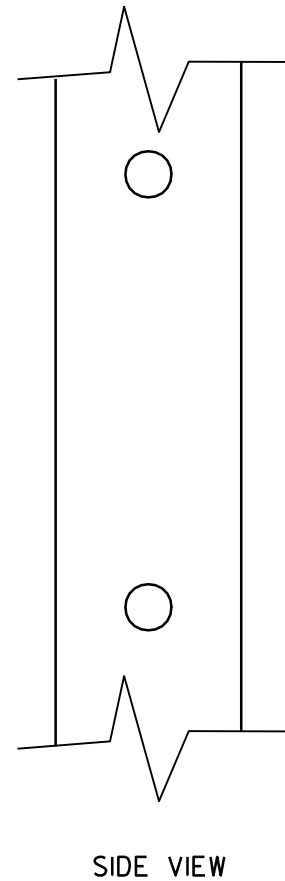
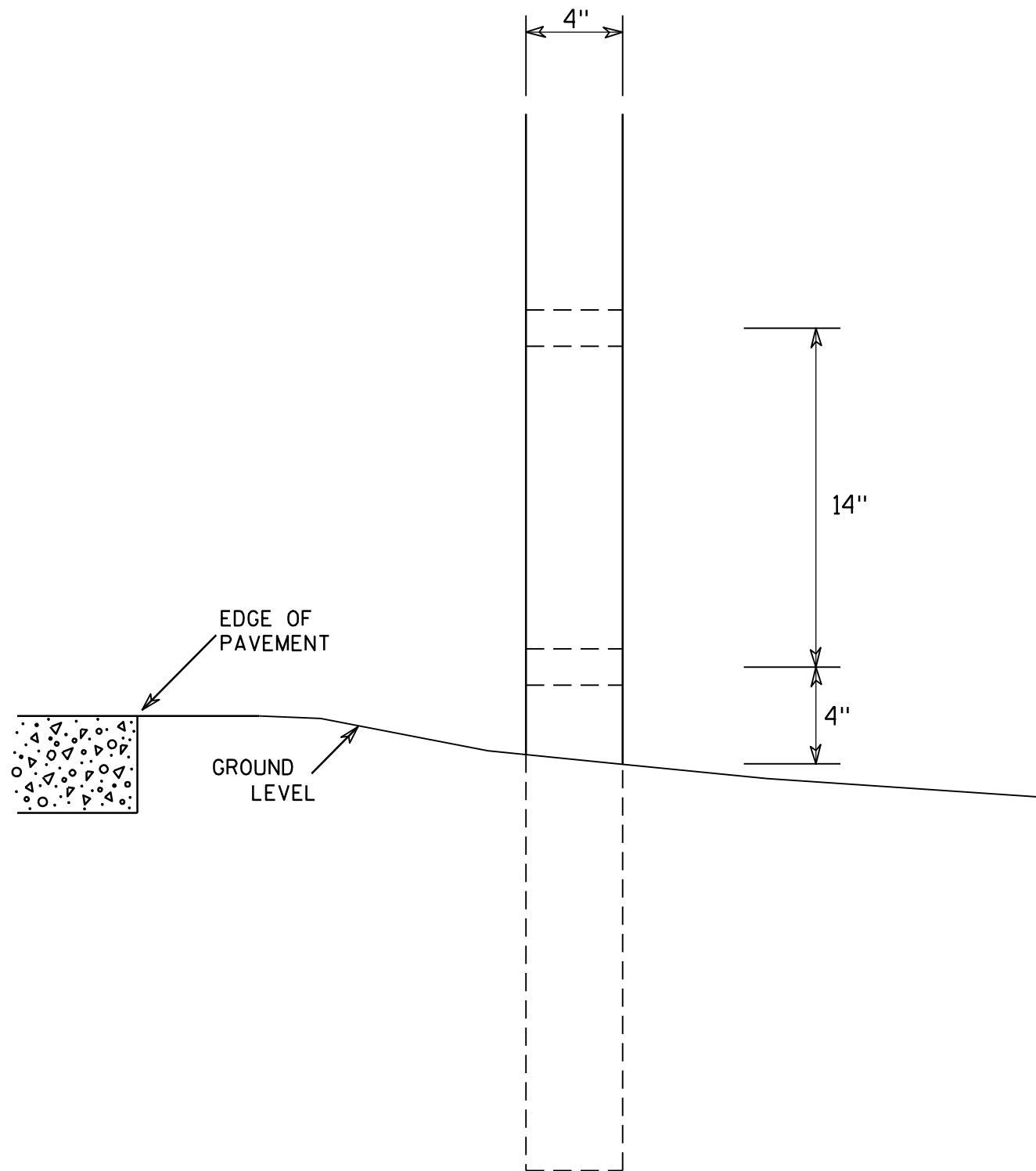
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E




GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

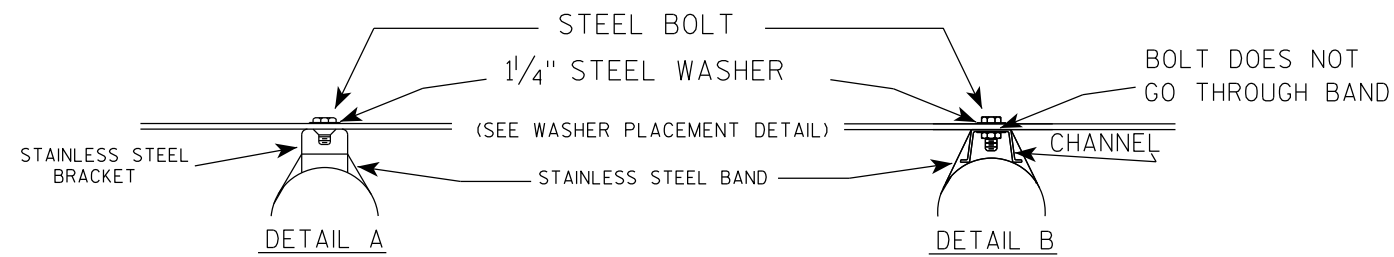
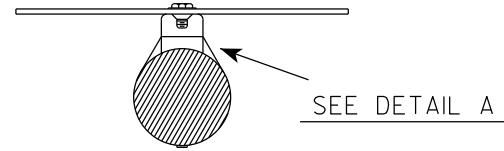
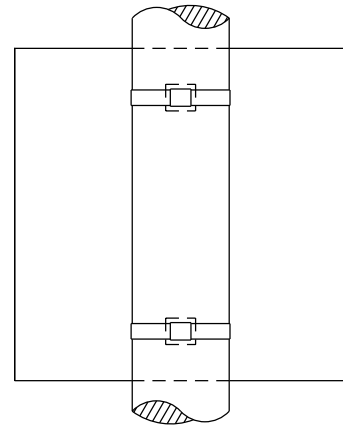
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	 <small>for State Traffic Engineer</small>
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

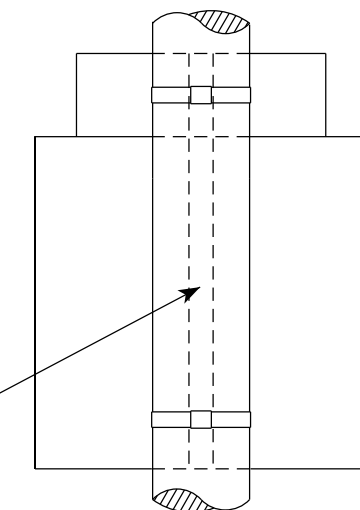
SINGLE SIGN



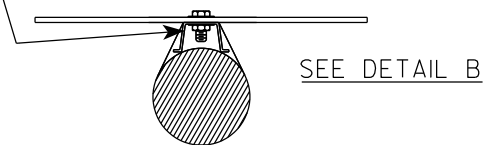
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

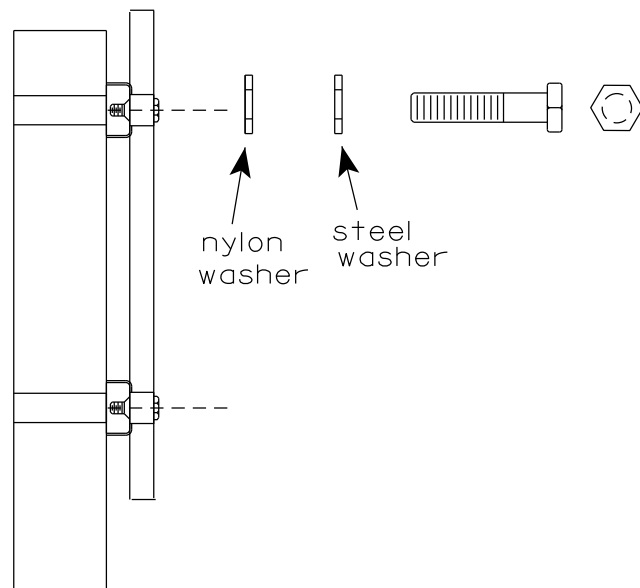
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



WASHER PLACEMENT



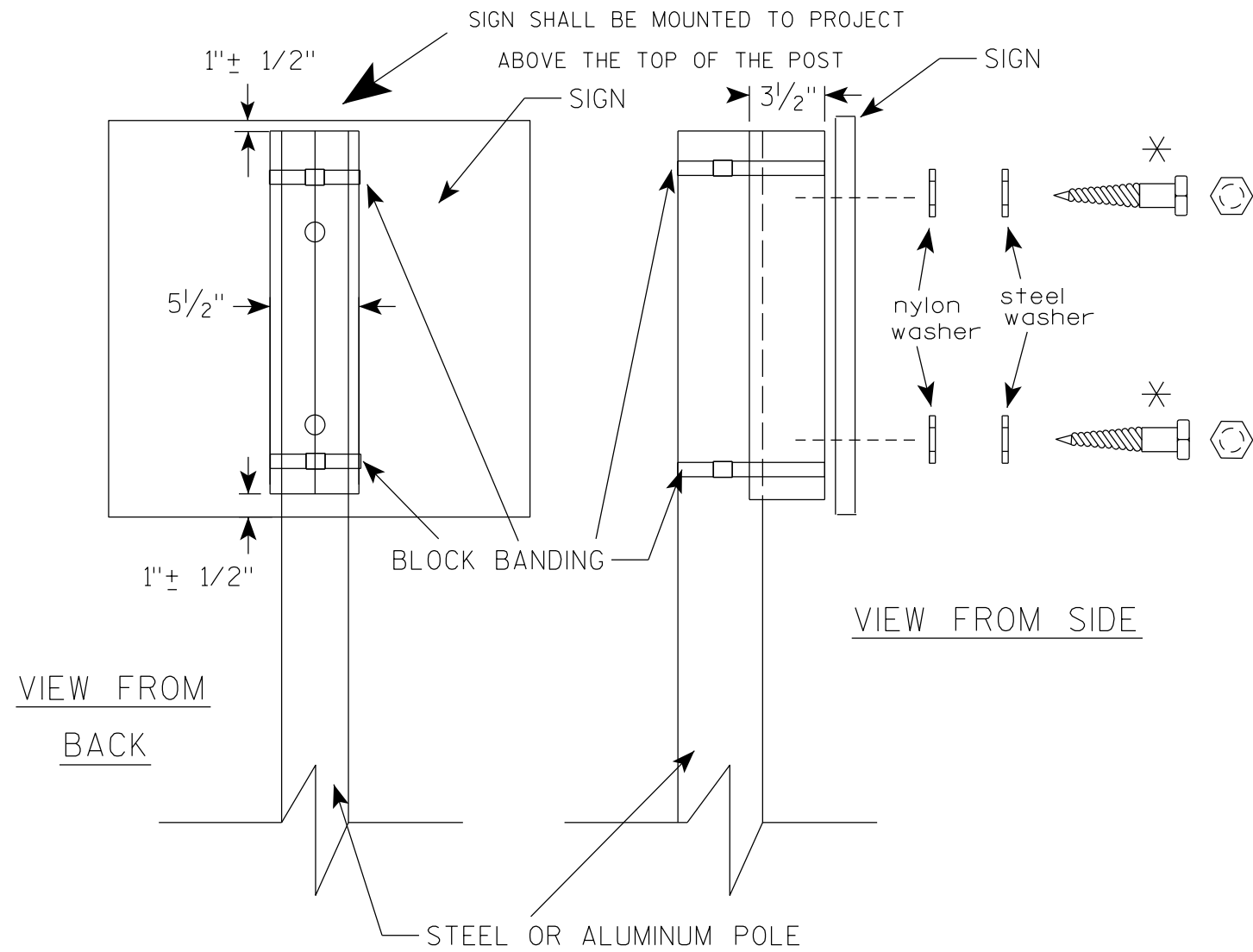
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

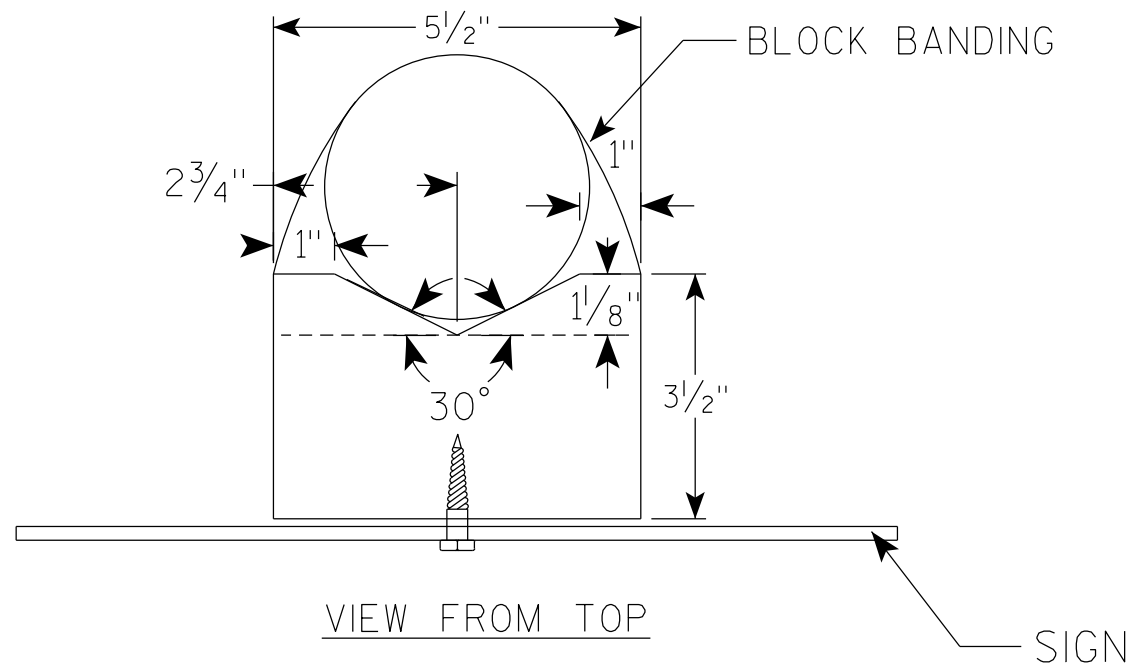
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

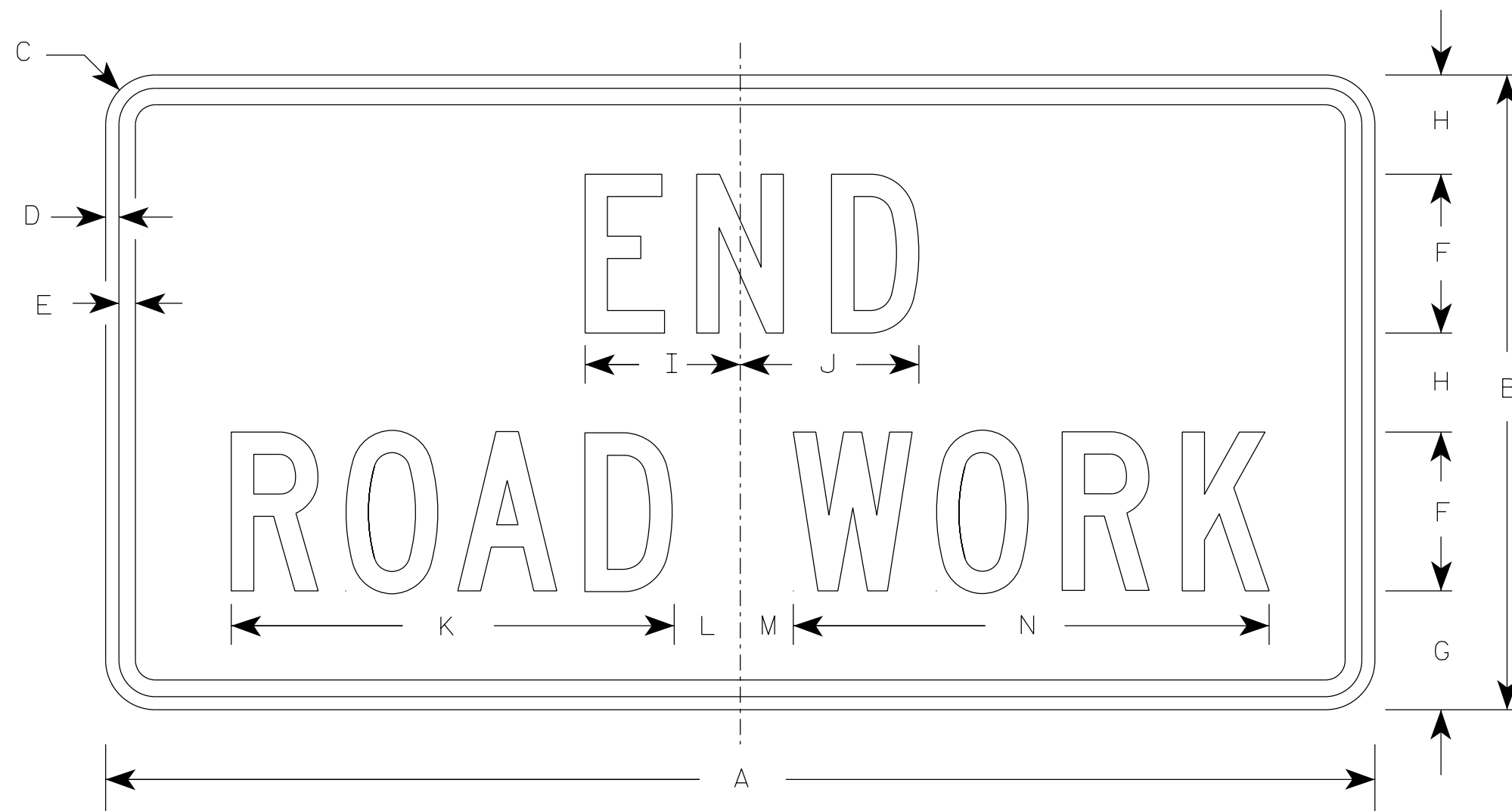
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3

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.



G20-2A

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	18	1 1/2	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
2	48	24	1 7/8	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
2M	48	24	1 7/8	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
3	48	24	1 7/8	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
4	48	24	1 7/8	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
5	48	24	1 7/8	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

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

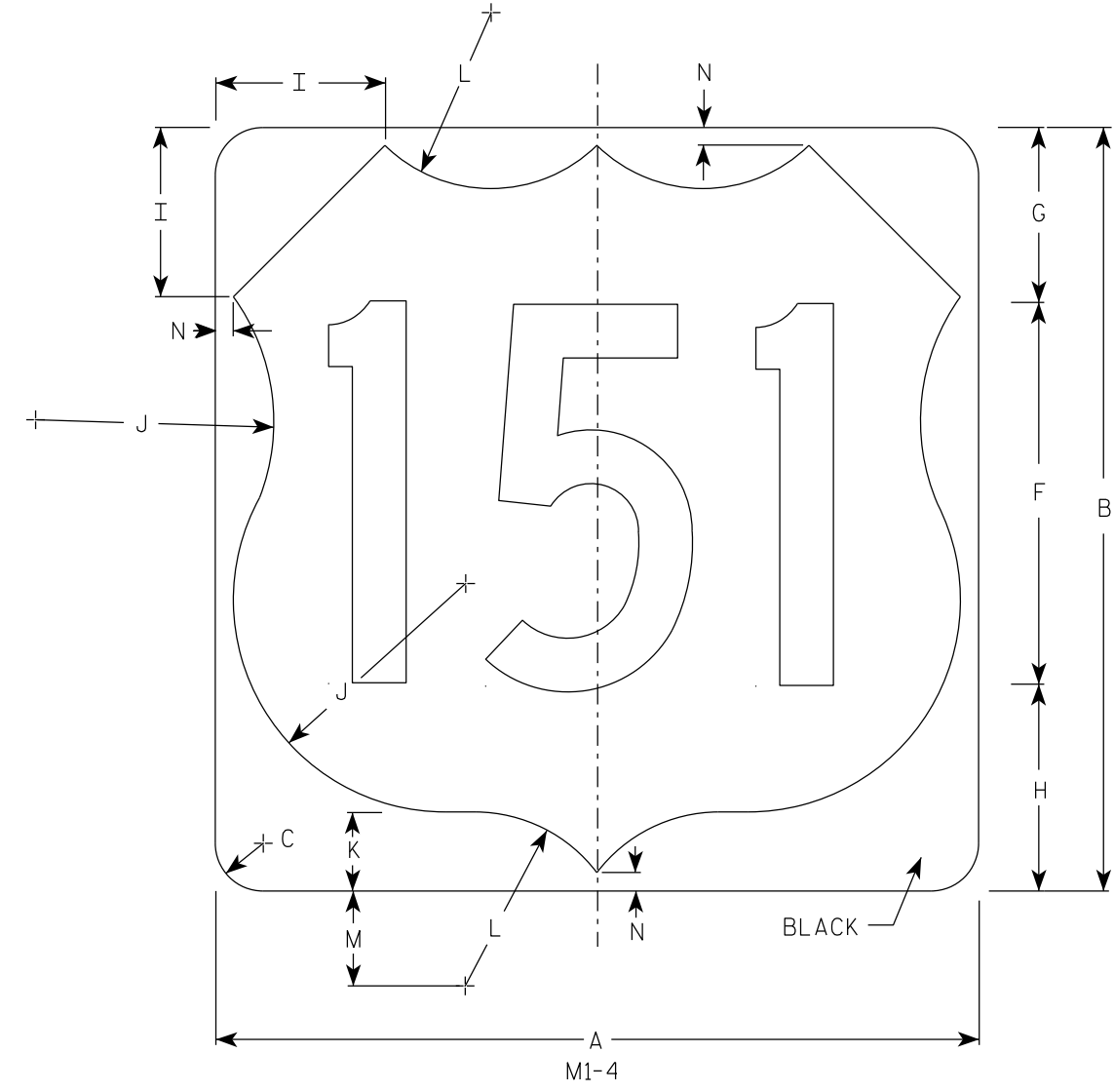
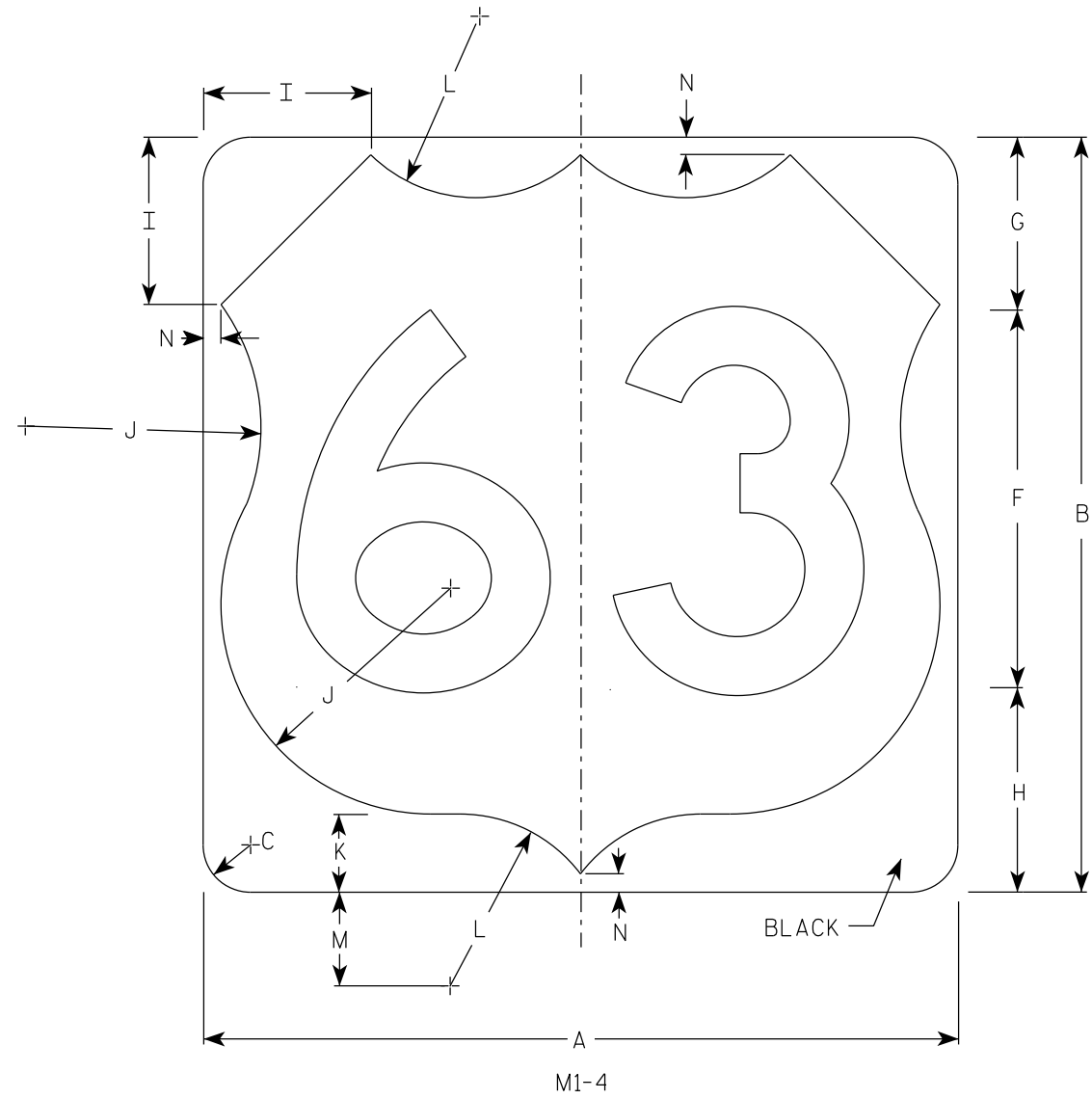
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-2A.10

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C



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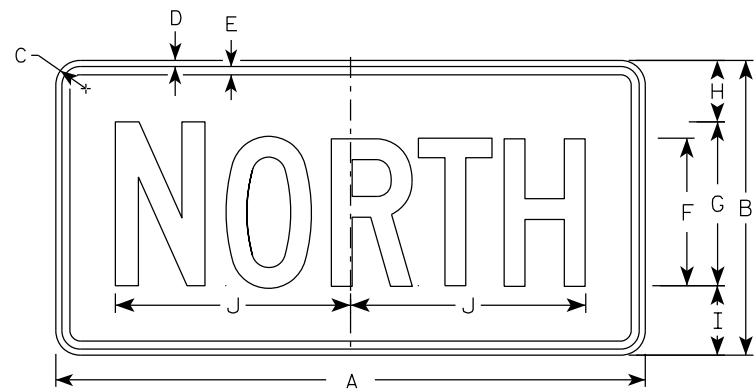
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
2M	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

USH MARKER
M1-4 FOR ASSEMBLIES

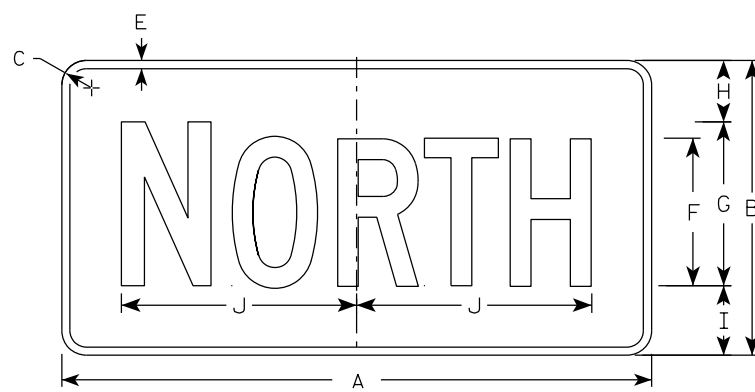
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

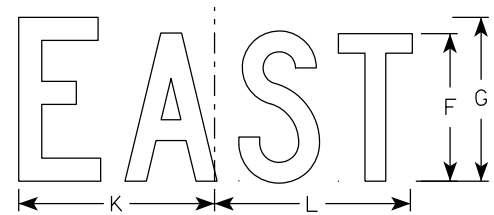
DATE 12/20/22 PLATE NO. M1-4.11



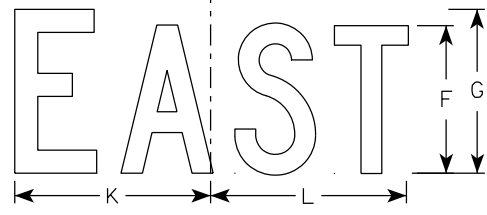
M3-1
MM3-1
MP3-1



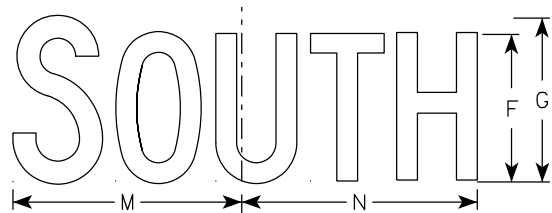
MB3-1
MK3-1
MN3-1



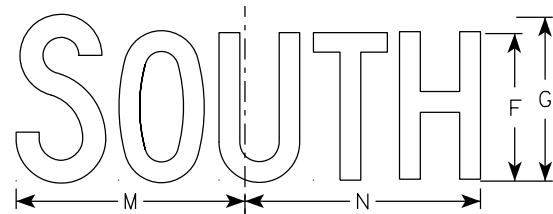
M3-2
MM3-2
MP3-2



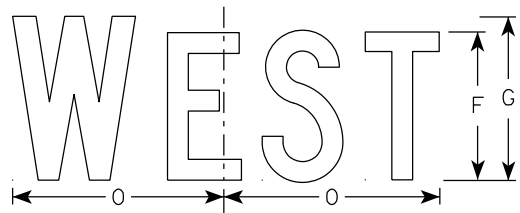
MB3-2
MK3-2
MN3-2



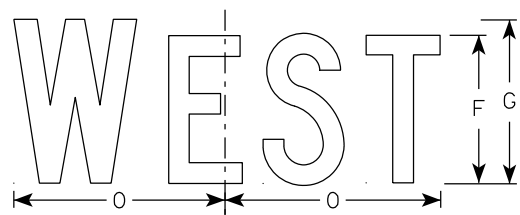
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

- All Signs Type II - Type H Reflective
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- 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.
- 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
- Note the first letter of each direction is larger than the remainder of the message.

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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 1/2	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												2.00
2M	24	12	1 1/2	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												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

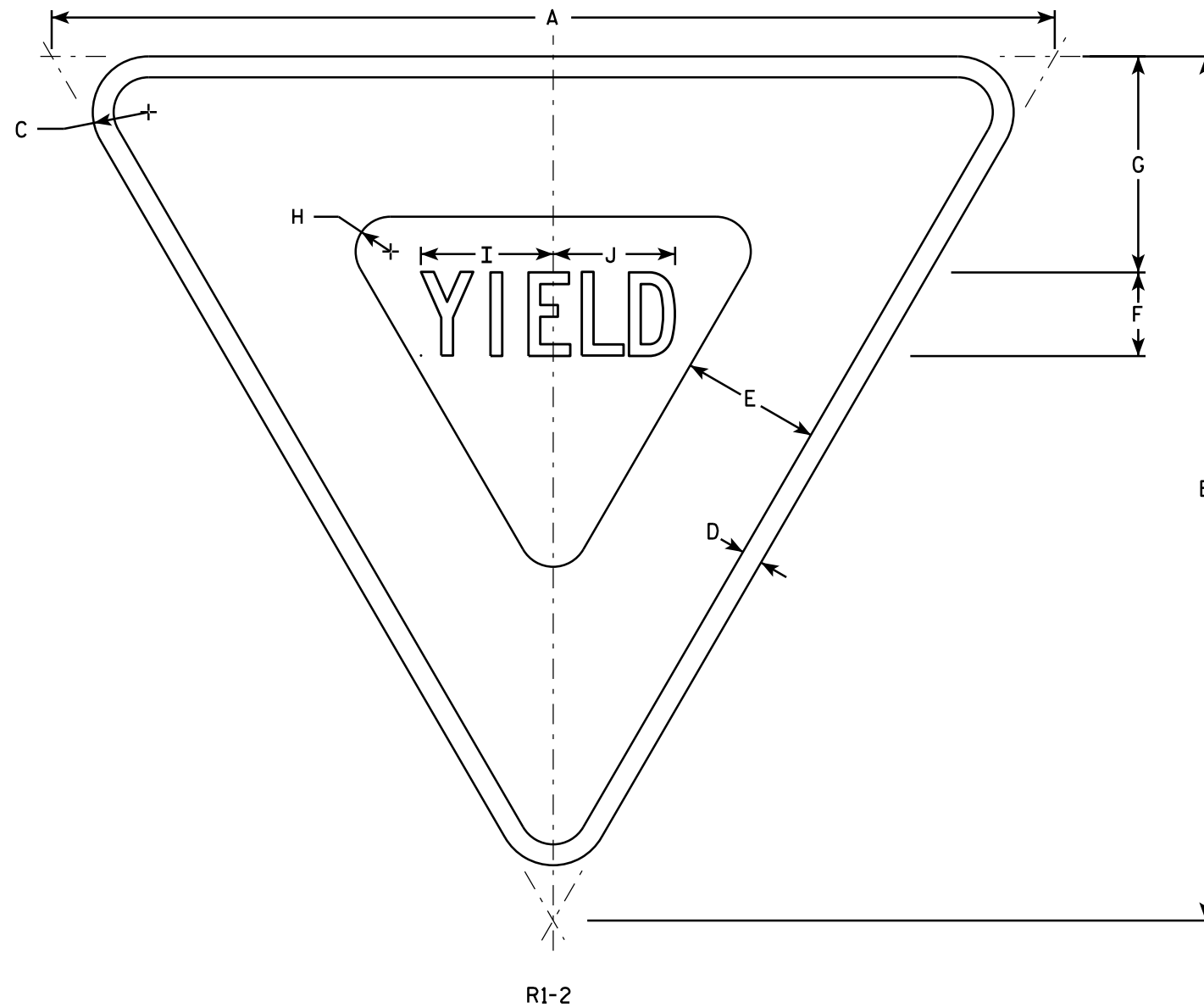
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/8/2023 PLATE NO. M3-1.15

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **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 - 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.



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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

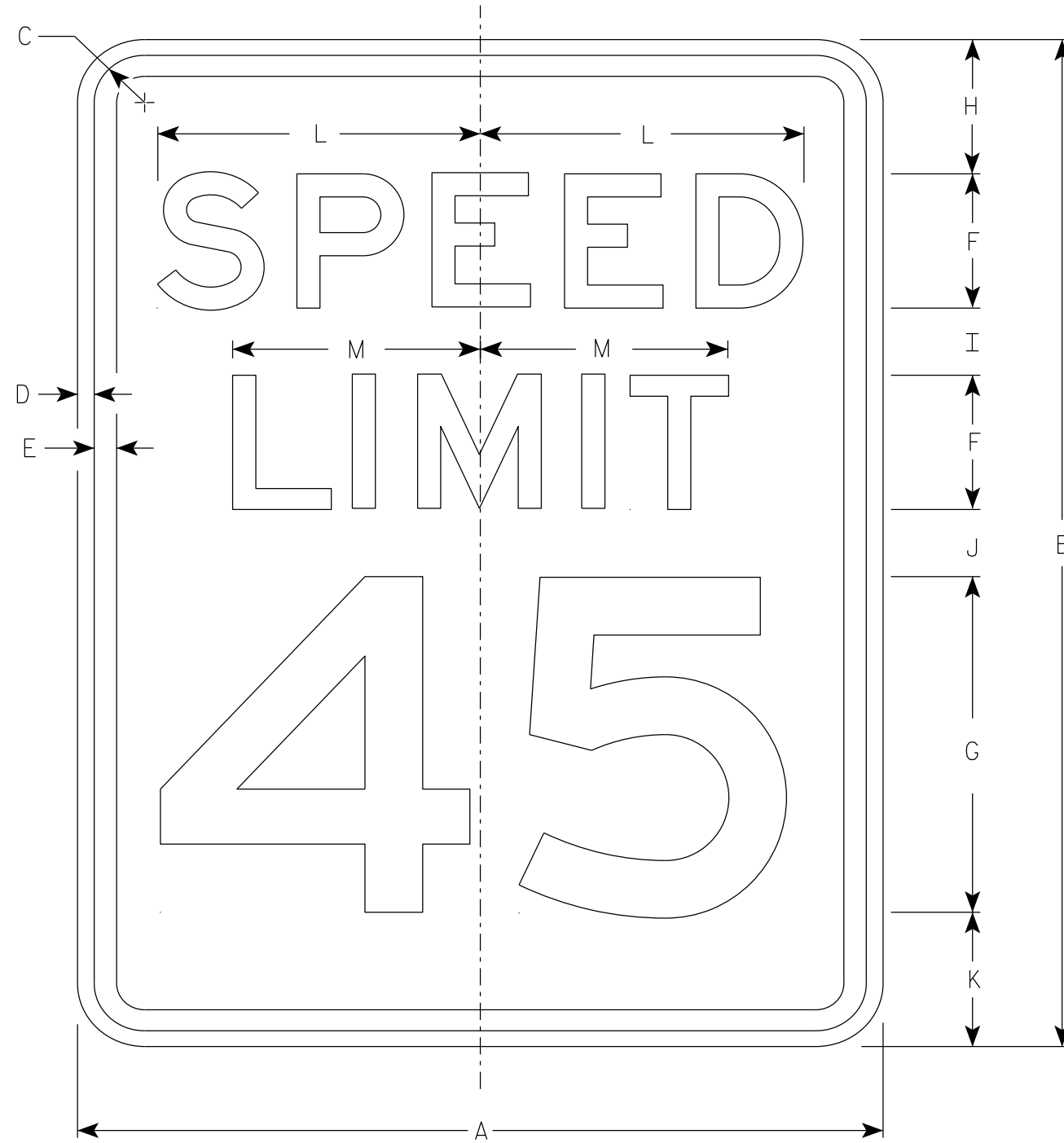
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE NO. R1-2.12

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.



R2-1

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 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	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 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	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

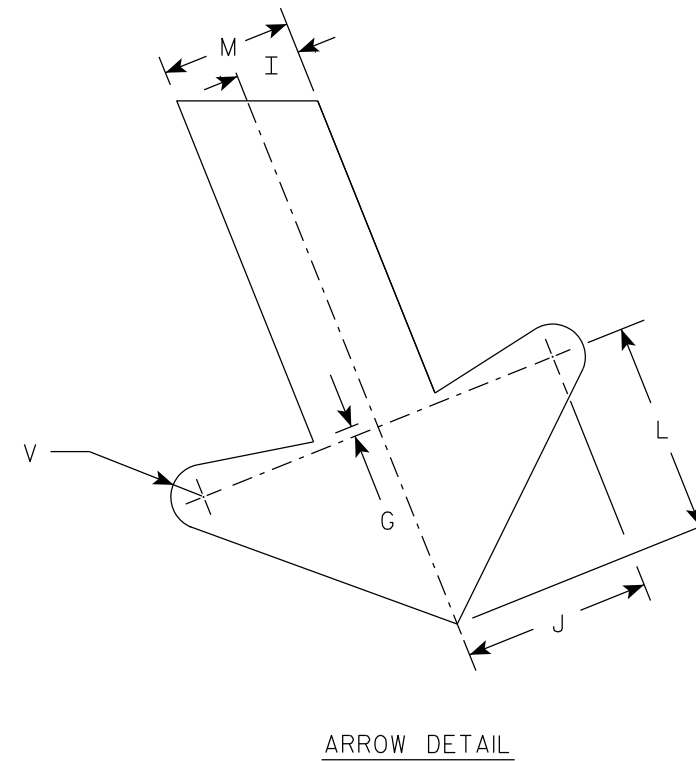
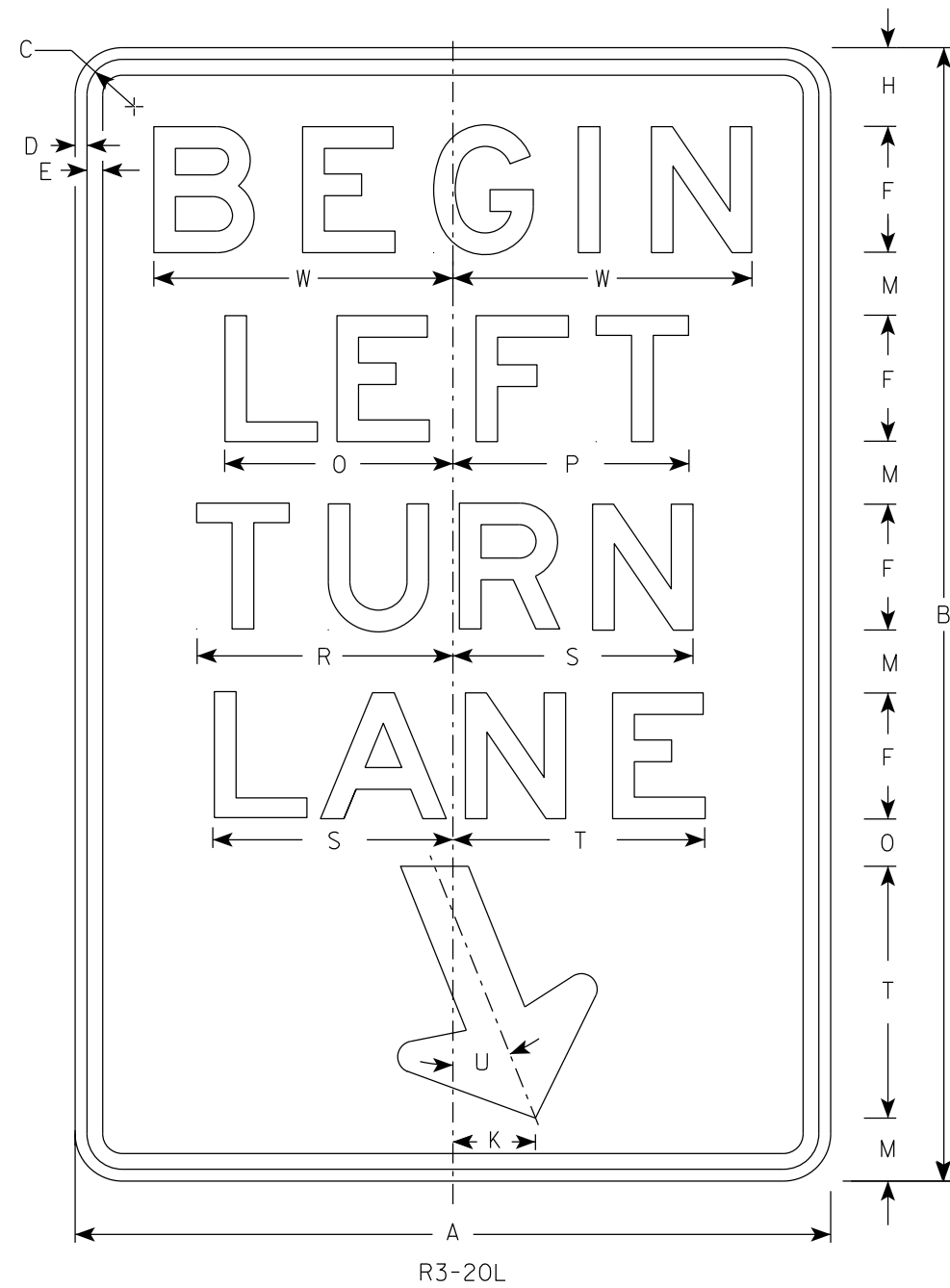
DATE 2/1/23 PLATE NO. R2-1.14

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NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E



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 1/2	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 1/2	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 7/8	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 2/23/23 PLATE NO. R3-20L.8

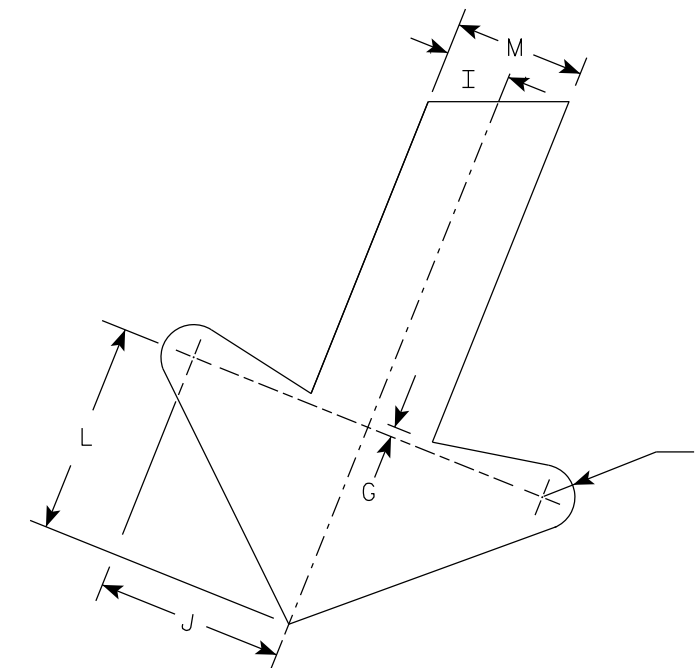
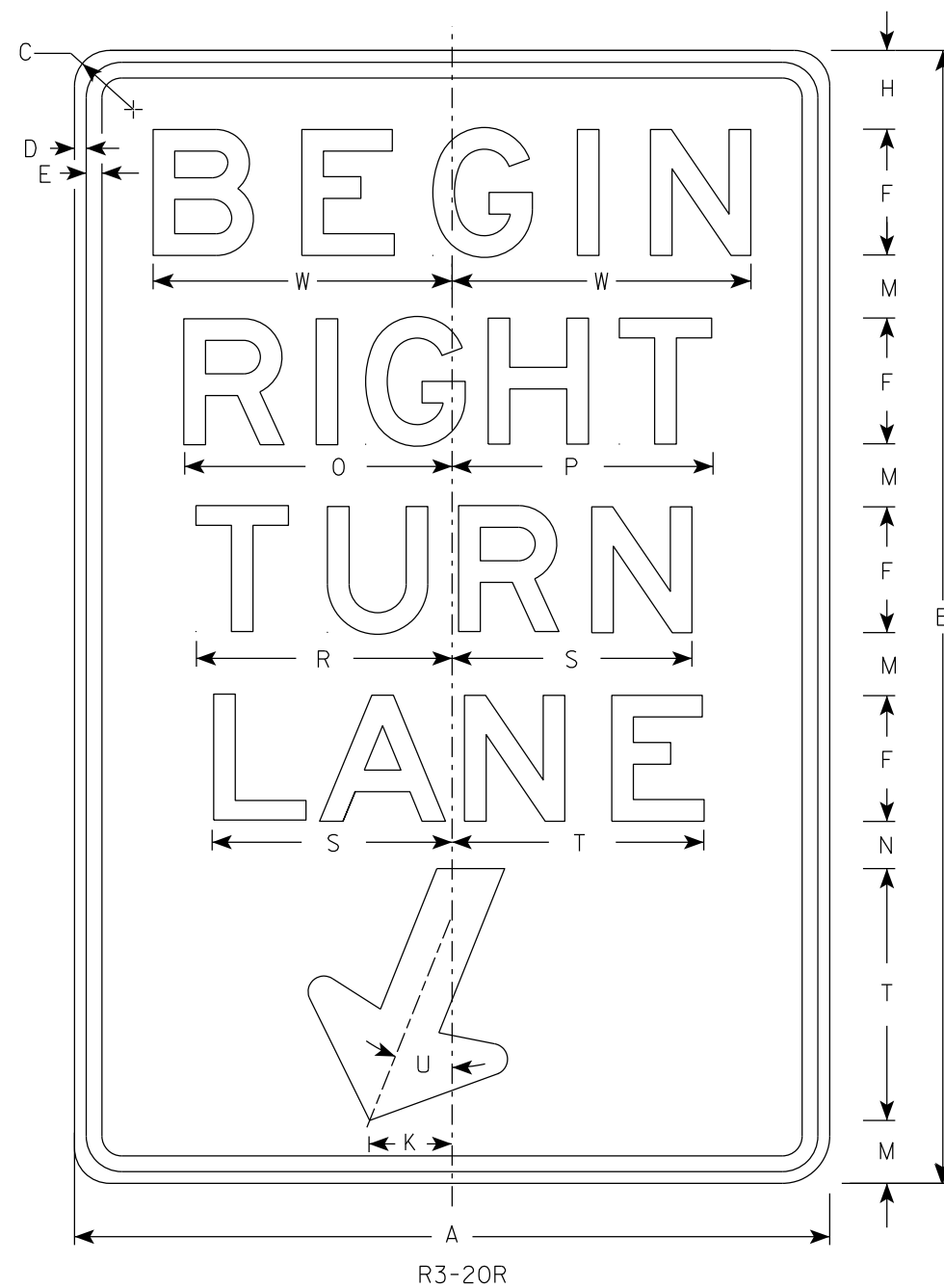
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

7

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NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - E



ARROW DETAIL

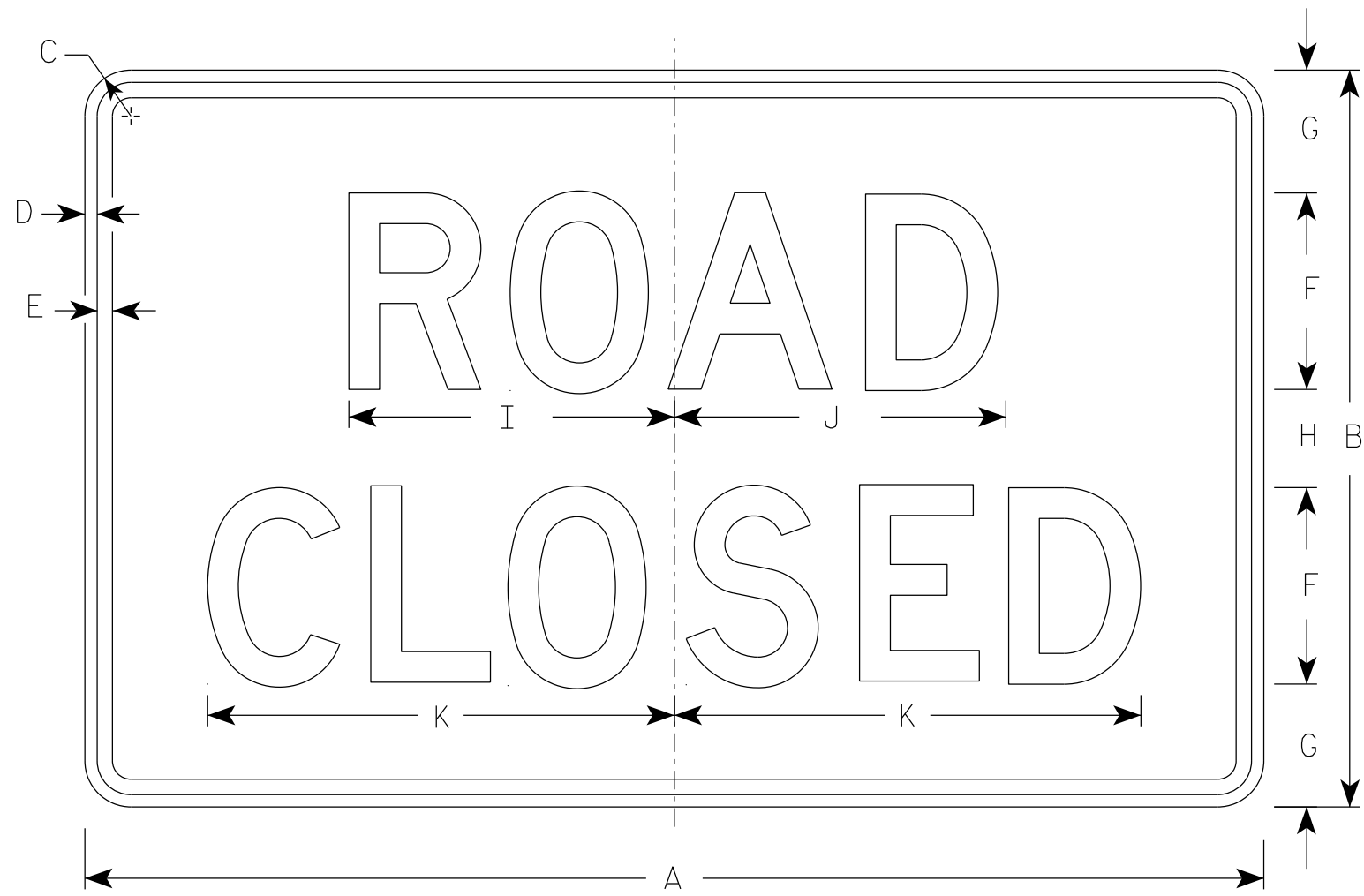
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/2	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/2	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 7/8	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

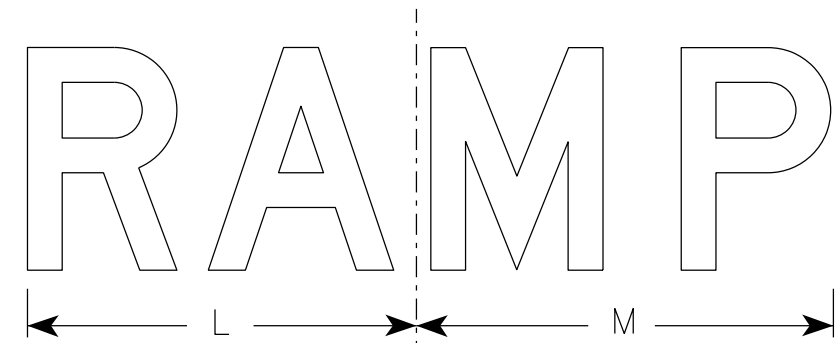
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

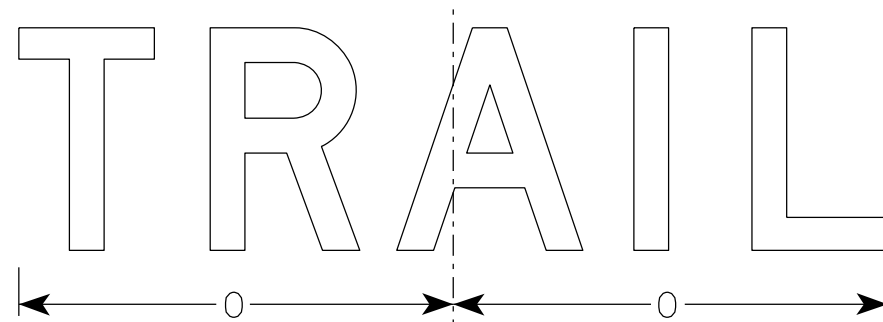
DATE 2/23/23 PLATE NO. R3-20R.7



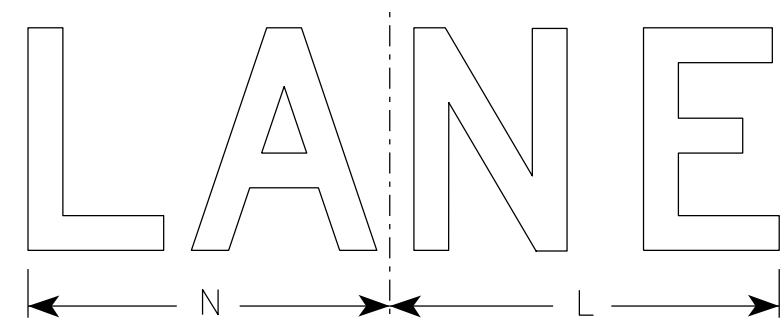
R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
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.

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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 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

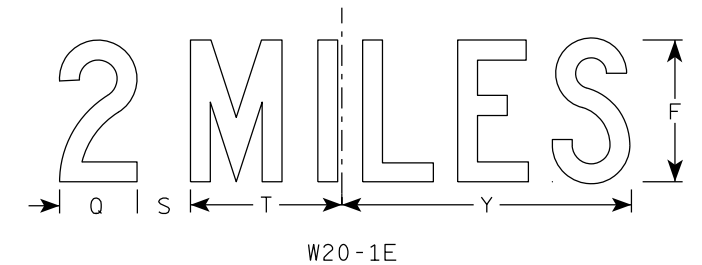
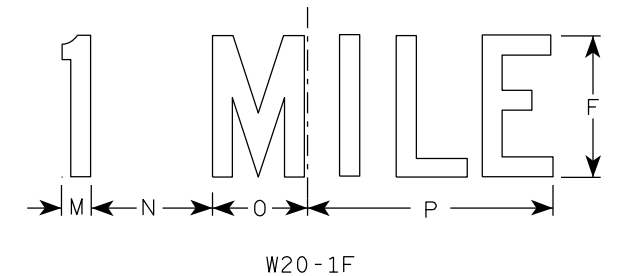
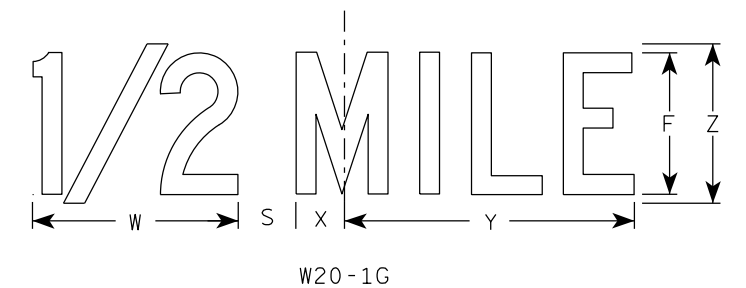
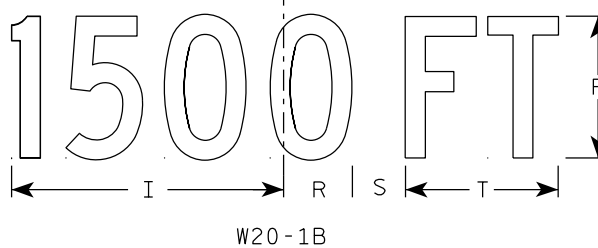
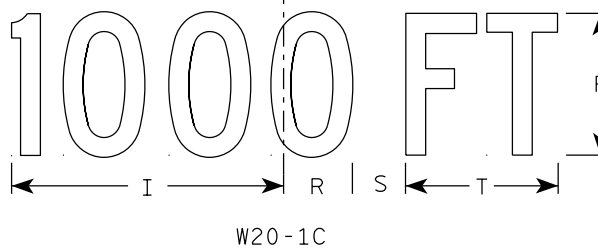
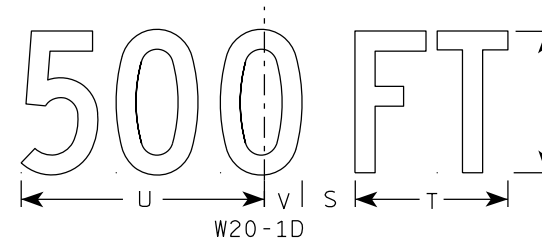
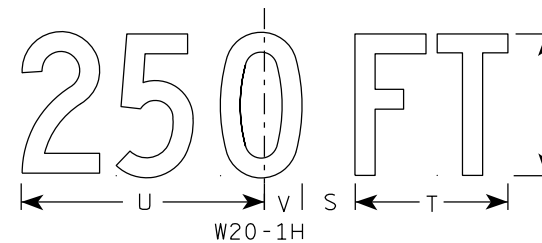
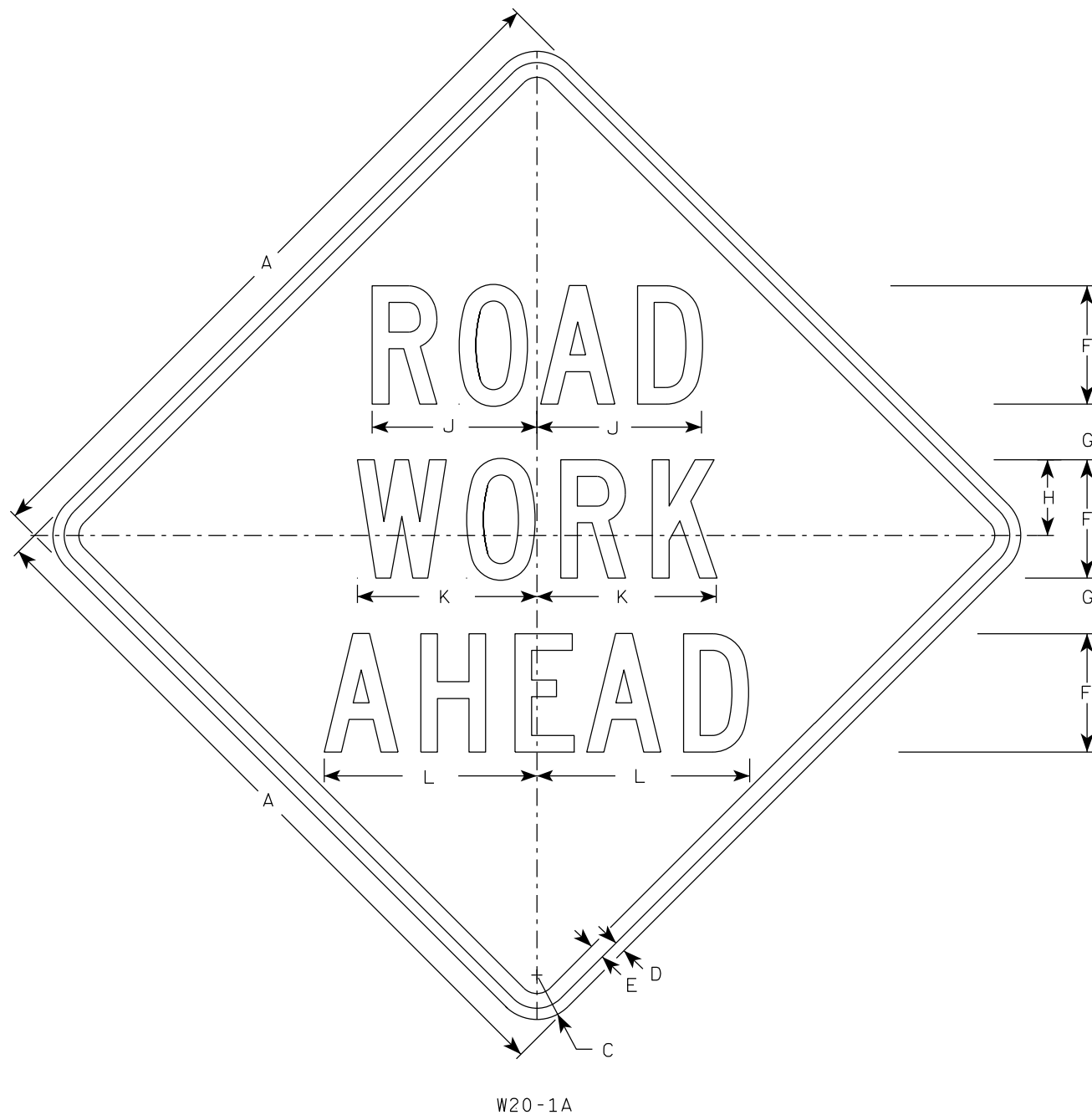
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-2.12

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

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.



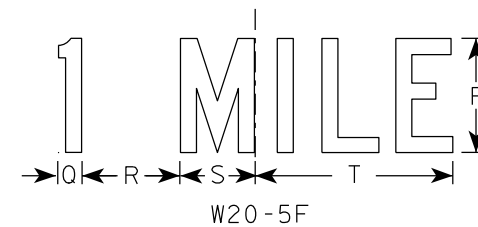
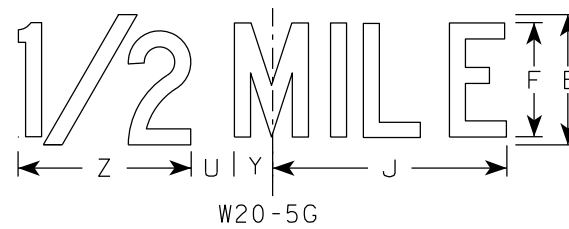
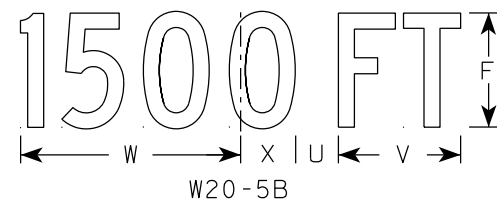
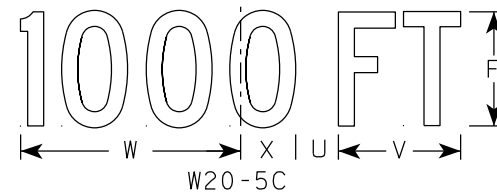
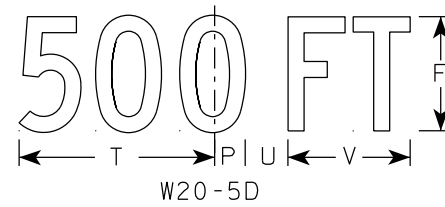
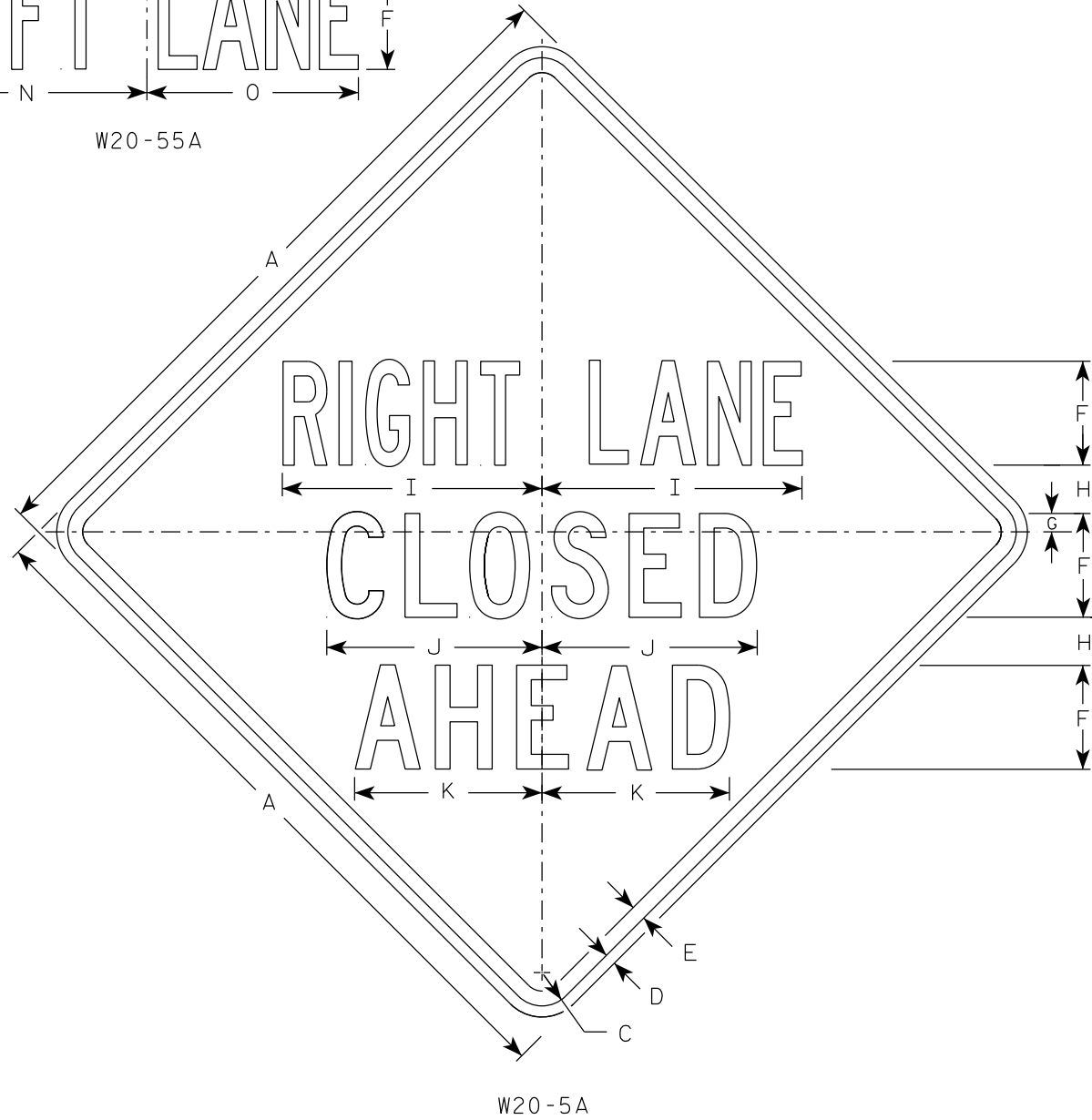
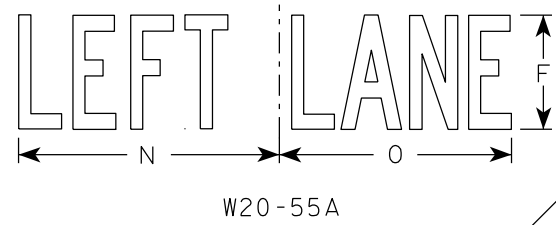
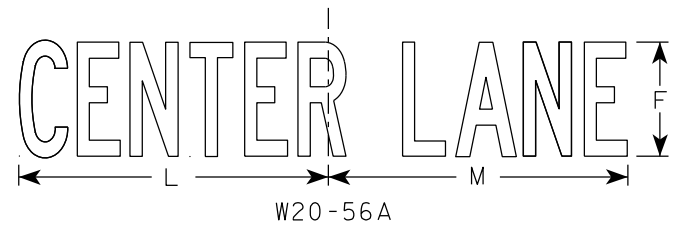
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	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		3	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		3	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		3	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, E, F, G & H

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-1.12



NOTES

1. Sign is Type II - Type F Reflective
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. " _____ LANE" is Series B.
All other copy is Series C.

7

7

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	6	2 1/4	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

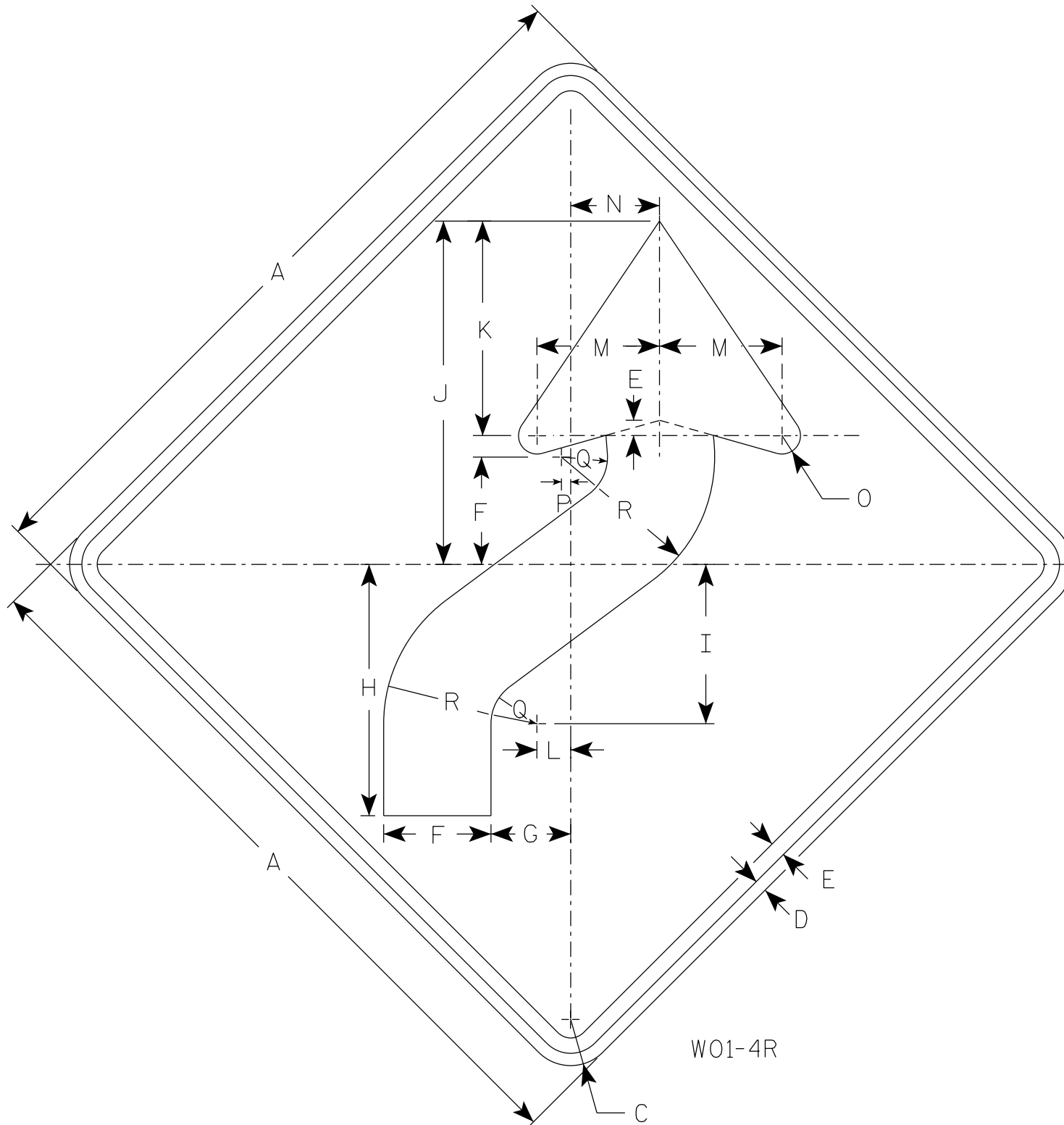
STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/27/24 PLATE NO. W20-5.12

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type F Reflective
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. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

7

7

W01-4R

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		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

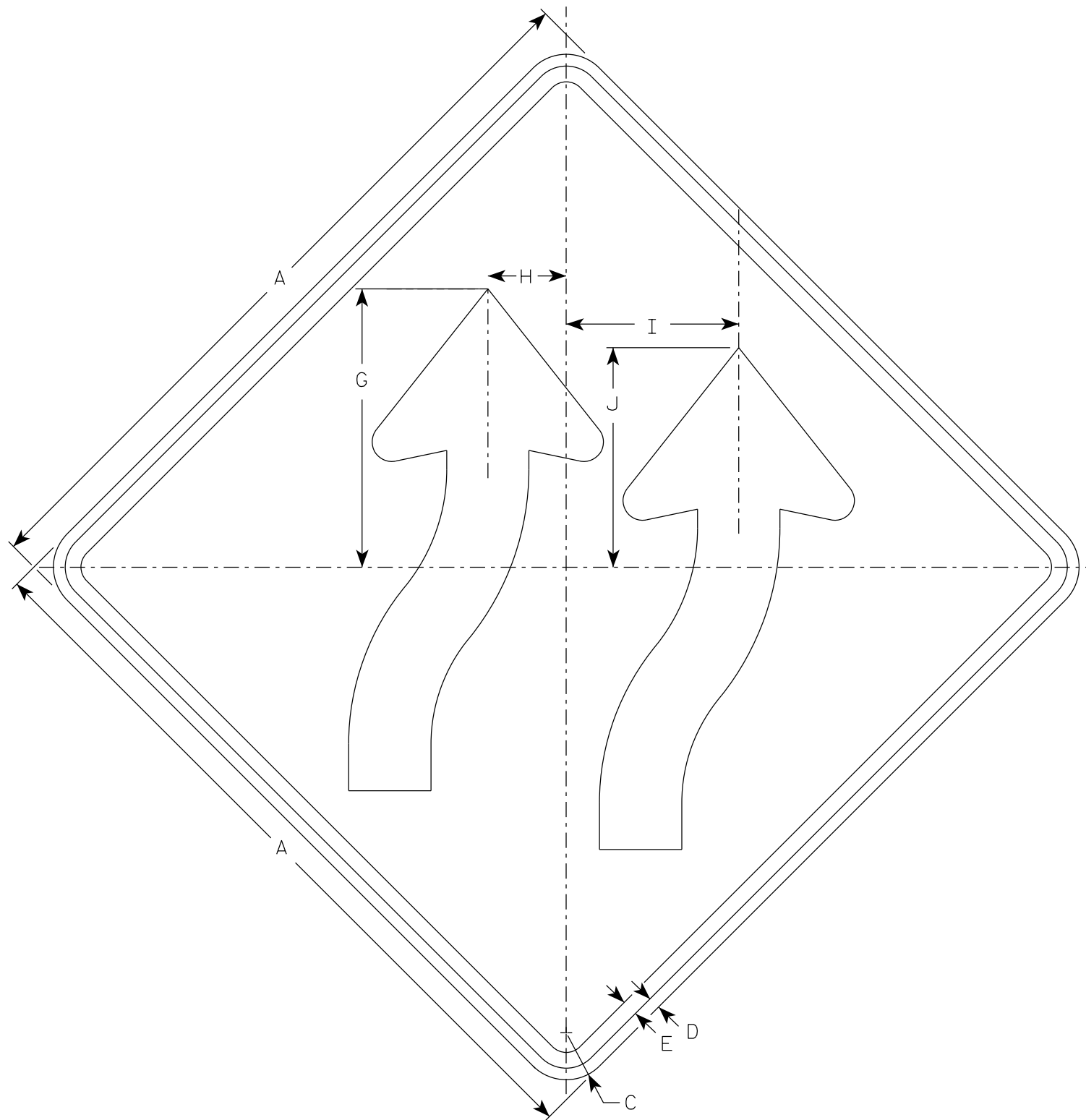
STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4.2

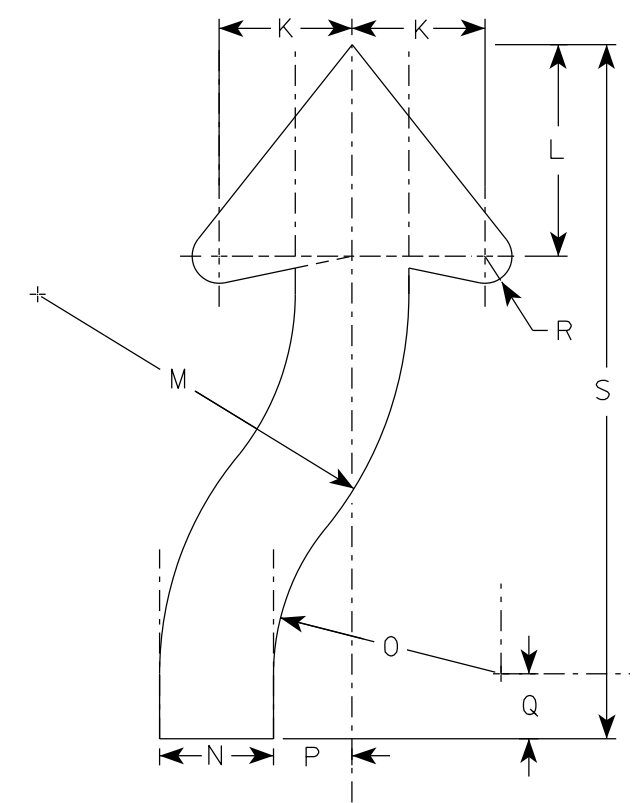
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W01-4BR

NOTES

1. Sign is Type II - Type F Reflective
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. W01-4BL is the same as W014-BR except arrows are 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		2 1/4	5/8	3/4		13 3/8	3 3/4	8 1/4	10 1/2	4 5/8	7 3/8	12 7/8	3 7/8	7 7/8	2 3/4	2 1/4	7/8	24								9.0
2S	48		3	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
2M	48		3	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
3	48		3	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
4	48		3	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
5	48		3	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0

STANDARD SIGN
W01-4B

WISCONSIN DEPT OF TRANSPORTATION

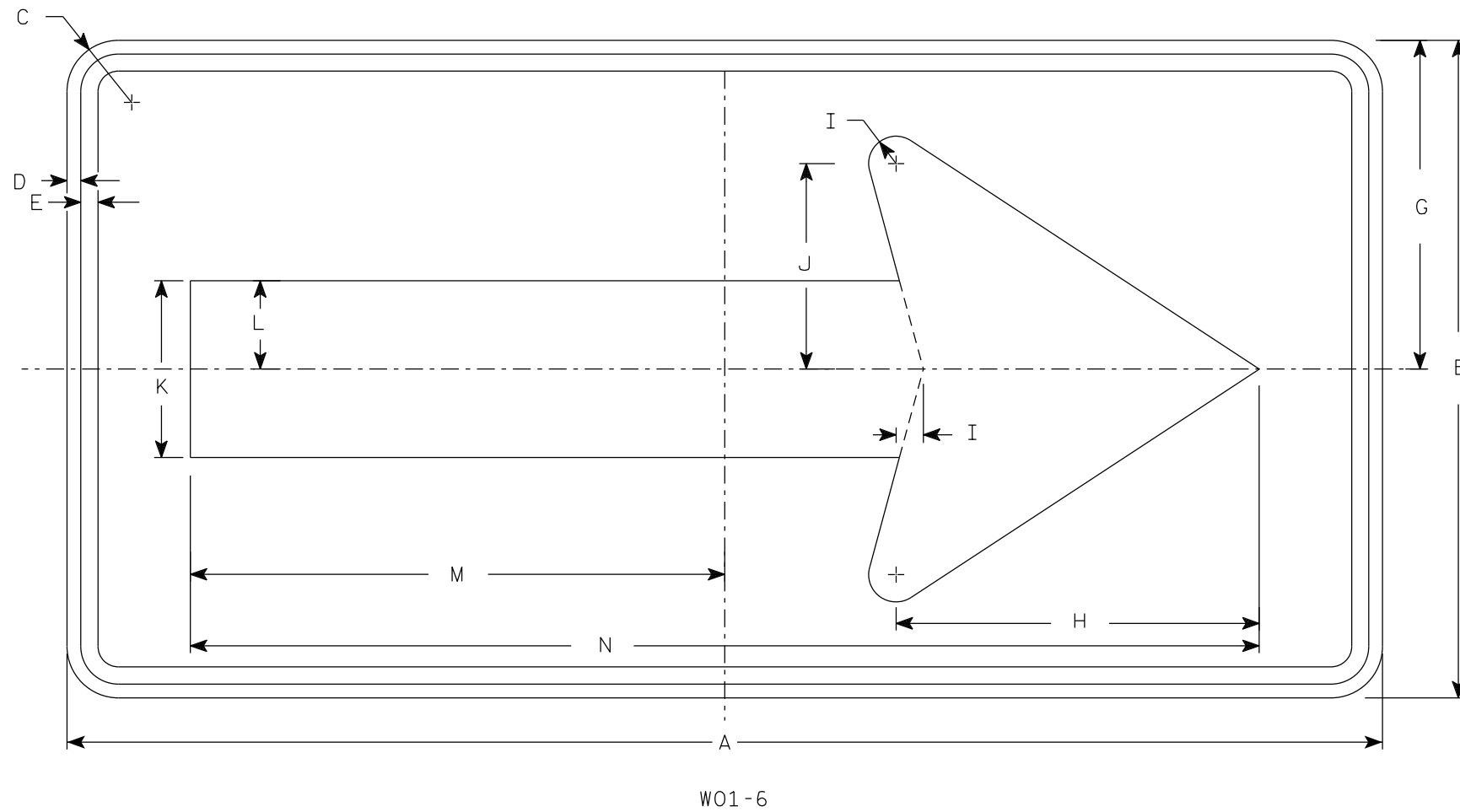
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4B.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

1. Sign is Type II - Type F Reflective
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.



7

7

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 7/8	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 7/8	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 7/8	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 7/8	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 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

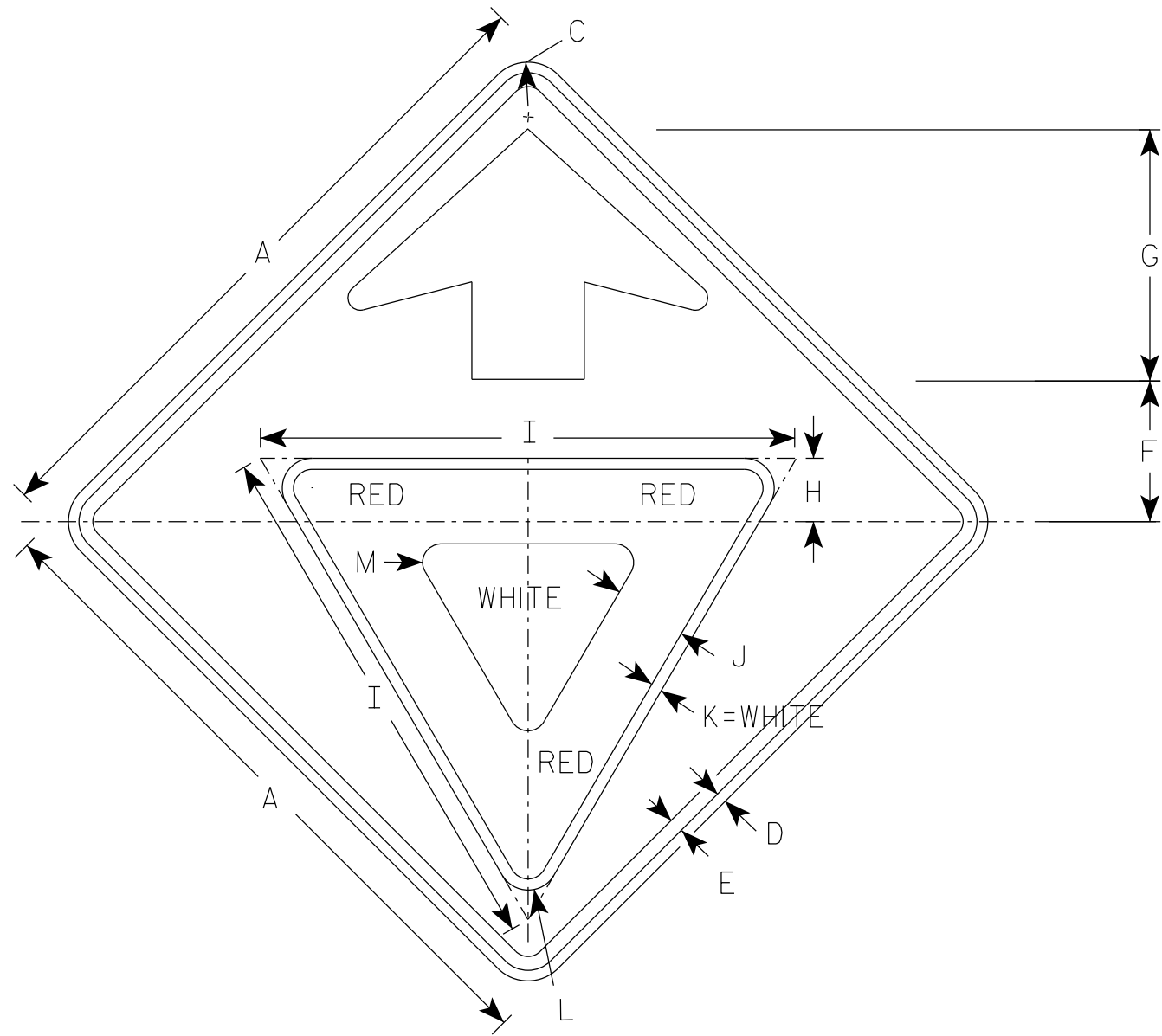
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-6.2

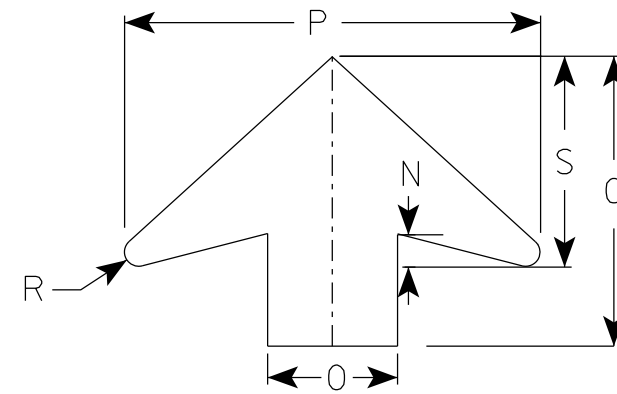
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W03-2

NOTES

1. All Signs Type II - Type F Reflective
2. Color:
 - Background - ORANGE
 - Arrow & Border - BLACK
 - Yield 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	36		2 1/4	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2S	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
2M	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
3	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
4	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		3	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

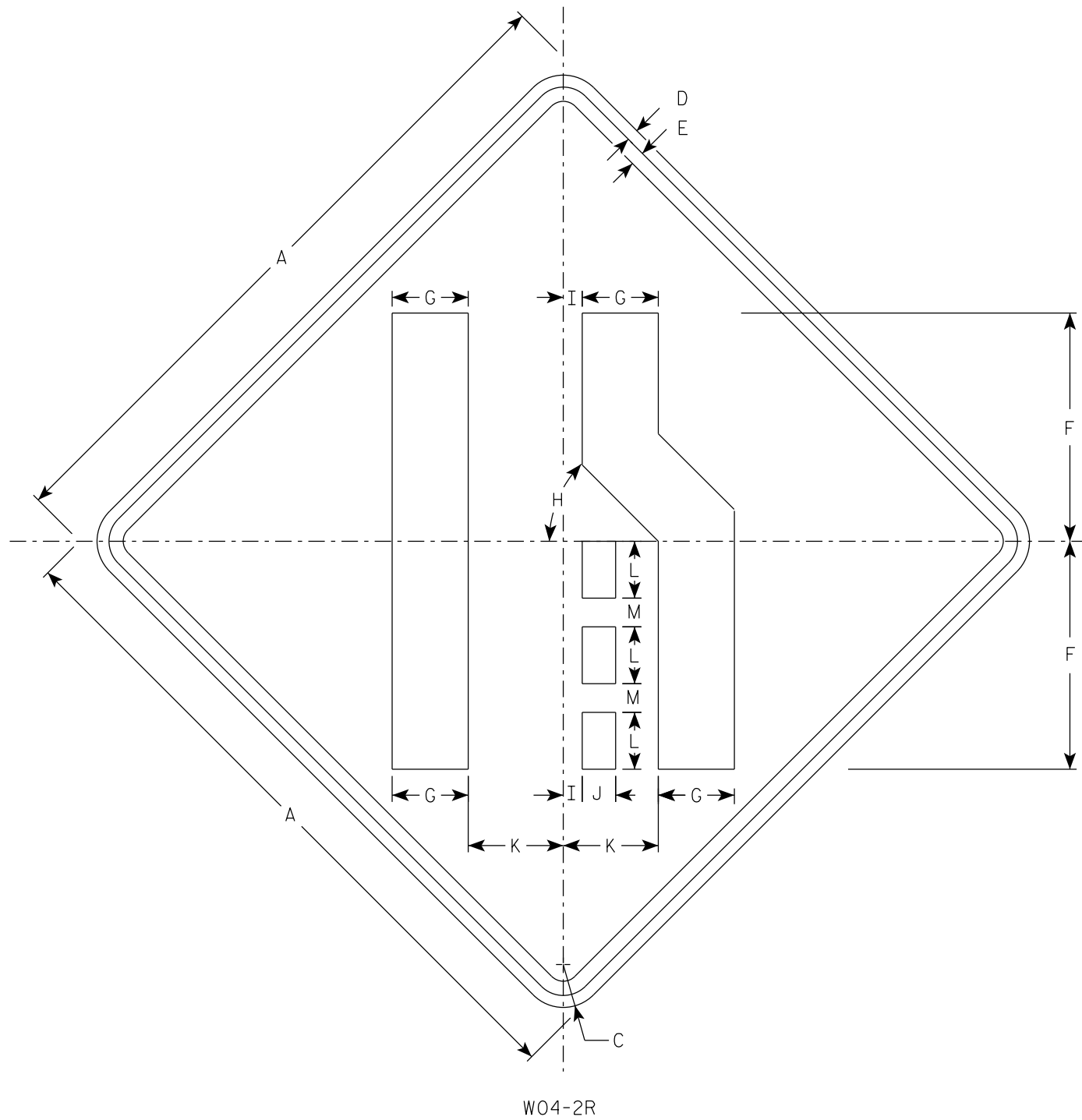
PROJECT NO:

SHEET NO:

E

7

7



NOTES

1. Sign is Type II - Type F Reflective
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. W04-2L is the same as W04-2R except the symbols are reversed along the vertical centerline.

7

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W04-2R

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		2 1/4	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/25/2024 PLATE NO. W04-2.2

PROJECT NO: _____ SHEET NO: **E**

USH 51 NB RT_01 (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	1	896+64.41	89664.41	0.00	6.82	0.00	0.00	0	0	0	0	0	0
		897+00	89700.00	35.59	8.30	0.00	0.00	10	0	0	10	0	10
		897+50	89750.00	50.00	10.82	0.00	0.00	18	0	0	28	0	28
		897+86.12	89786.12	36.12	8.58	0.00	0.00	13	0	0	41	0	41
		898+00	89800.00	13.88	10.19	0.00	0.00	5	0	0	46	0	46
		898+10.87	89810.87	10.87	11.72	0.00	0.00	4	0	0	50	0	50
		898+36	89836.00	25.13	14.60	0.00	0.00	12	0	0	62	0	62
		898+50	89850.00	14.00	15.16	0.00	0.00	8	0	0	70	0	70
		899+00	89900.00	50.00	16.73	0.00	0.00	30	0	0	100	0	100
		899+50	89950.00	50.00	16.73	0.00	0.00	31	0	0	131	0	131
		899+85	89985.00	35.00	5.17	0.00	0.03	14	0	0	145	0	145
SUBTOTALS CATEGORY 0010							145	0	0				

USH 51 NB RT_02 (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	1	916+69.67	91669.67	0.00	6.51	0.00	0.00	0	0	0	0	0	0
		917+00	91700.00	30.33	6.40	0.00	0.00	7	0	0	7	0	7
		917+50	91750.00	50.00	7.29	0.00	0.00	13	0	0	20	0	20
		917+89.67	91789.67	39.67	5.93	0.00	0.00	10	0	0	30	0	30
		918+00	91800.00	10.33	5.08	0.00	0.00	2	0	0	32	0	32
		918+14.65	91814.65	14.65	4.62	0.00	0.00	3	0	0	35	0	35
		918+39.63	91839.63	24.98	9.04	0.00	0.00	6	0	0	41	0	41
		918+50	91850.00	10.37	9.79	0.00	0.00	4	0	0	45	0	45
		919+00	91900.00	50.00	11.78	0.00	0.00	20	0	0	65	0	65
		919+50	91950.00	50.00	8.84	0.00	0.00	19	0	0	84	0	84
		919+85	91985.00	35.00	4.79	0.00	4.16	9	0	3	93	4	89
SUBTOTALS CATEGORY 0010							93	0	3				

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]

9

9

SOUTH CROSSOVER (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	2	891+68.58	89168.58	0.00	0.00	0.00	0.19	0	0	0	0	0	0
		891+75	89175.00	6.42	0.00	0.00	0.18	0	0	0	0	0	0
		892+00	89200.00	25.00	0.36	0.00	0.04	0	0	0	0	0	0
		892+18.99	89218.99	18.99	3.50	0.00	0.57	1	0	0	1	0	1
		892+25	89225.00	6.01	16.23	0.00	0.42	2	0	0	3	0	3
		892+36.62	89236.62	11.62	24.75	0.00	1.02	9	0	0	12	0	12
		892+50	89250.00	13.38	36.33	0.00	2.25	15	0	1	27	1	26
		892+75	89275.00	25.00	56.02	0.00	3.22	43	0	3	70	5	65
		893+00	89300.00	25.00	70.46	0.00	0.00	59	0	1	129	6	123
		893+25	89325.00	25.00	68.94	0.00	0.00	65	0	0	194	6	188
		893+50	89350.00	25.00	67.75	0.00	0.00	63	0	0	257	6	251
		893+75	89375.00	25.00	64.72	0.00	0.00	61	0	0	318	6	312
		894+00	89400.00	25.00	63.23	0.00	0.00	59	0	0	377	6	371
		894+25	89425.00	25.00	63.07	0.00	0.00	58	0	0	435	6	429
		894+42.67	89442.67	17.67	46.06	0.00	0.54	36	0	0	471	6	465
		894+50	89450.00	7.33	37.37	0.00	0.56	11	0	0	482	6	476
		894+75	89475.00	25.00	37.07	0.00	0.63	34	0	1	516	8	509
		895+00	89500.00	25.00	35.00	0.00	0.71	33	0	1	549	9	540
		895+25	89525.00	25.00	26.93	0.00	0.55	29	0	1	578	10	568
		895+35	89535.00	10.00	0.22	0.00	3.22	5	0	1	583	11	572
		895+50	89550.00	15.00	0.87	0.00	0.59	0	0	1	583	13	571
895+75	89575.00	25.00	0.38	0.00	0.50	1	0	1	584	14	570		
896+00	89600.00	25.00	0.04	0.00	1.21	0	0	1	584	15	569		
896+25	89625.00	25.00	0.74	0.00	1.48	0	0	1	584	16	568		
896+50	89650.00	25.00	0.89	0.00	0.95	1	0	1	585	18	568		
896+60	89660.00	10.00	1.21	0.00	0.65	0	13	0	585	18	555		
SUBTOTALS CATEGORY 0010								585	13	14			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]

9

9

USH 51 NB LT_01 (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	2	903+20.17	90320.17	0.00	3.22	0.00	0.36	0	0	0	0	0	0
		903+50	90350.00	29.83	6.87	0.00	0.00	6	0	0	6	0	6
		904+00	90400.00	50.00	6.88	0.00	0.00	13	0	0	19	0	19
		904+50	90450.00	50.00	4.76	0.00	0.00	11	0	0	30	0	30
		904+71.34	90471.34	21.34	5.94	0.00	0.00	4	0	0	34	0	34
		904+96.36	90496.36	25.02	7.44	0.00	0.00	6	0	0	40	0	40
		905+00	90500.00	3.64	7.45	0.00	0.00	1	0	0	41	0	41
		905+21.44	90521.44	21.44	7.93	0.00	0.00	6	0	0	47	0	47
		905+50	90550.00	28.56	7.98	0.00	0.00	8	0	0	55	0	55
		906+00	90600.00	50.00	8.74	0.00	0.00	15	0	0	70	0	70
		906+50	90650.00	50.00	8.69	0.00	0.00	16	0	0	86	0	86
		906+53.90	90653.90	3.90	8.52	0.00	0.00	1	0	0	87	0	87
		SUBTOTALS CATEGORY 0010							87	0	0		

USH 51 NB LT_02 (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)			
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE	
														NOTE 1
0010	2	921+80.50	92180.50	0.00	5.07	0.00	0.00	0	0	0	0	0	0	
		922+00	92200.00	19.50	5.60	0.00	0.00	4	0	0	4	0	4	
		922+50	92250.00	50.00	5.62	0.00	0.00	10	0	0	14	0	14	
		923+00	92300.00	50.00	4.36	0.00	0.57	9	0	1	23	1	22	
		923+25.57	92325.57	25.57	2.95	0.00	3.73	3	0	2	26	4	22	
		923+50	92350.00	24.43	2.31	0.00	4.93	2	0	4	28	9	19	
		923+50.57	92350.57	0.57	2.29	0.00	4.95	0	0	0	28	9	19	
		923+75.55	92375.55	24.98	1.73	0.00	8.28	2	0	6	30	16	14	
		924+00	92400.00	24.45	3.66	0.00	4.96	2	0	6	32	24	8	
		924+50	92450.00	50.00	4.52	0.00	0.20	8	0	5	40	30	10	
		924+95.55	92495.55	45.55	4.65	0.00	0.00	8	0	0	48	30	18	
		SUBTOTALS CATEGORY 0010							48	0	24			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]

USH 51 NB LT_03 (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	2	933+94.82	93394.82	0.00	32.17	0.00	11.19	0	0	0	0	0	0
		934+00	93400.00	5.18	32.74	0.00	11.01	6	0	2	6	3	4
		934+50	93450.00	50.00	35.29	0.00	10.35	63	0	20	69	28	42
		935+00	93500.00	50.00	35.50	0.00	11.21	66	0	20	135	53	83
		935+50	93550.00	50.00	35.94	0.00	10.55	66	0	20	201	78	124
		936+00	93600.00	50.00	34.07	0.00	12.46	65	0	21	266	104	162
		936+50	93650.00	50.00	31.14	0.00	10.96	60	0	22	326	131	195
		936+85.67	93685.67	35.67	28.01	0.00	5.93	39	0	11	365	145	220
		937+00	93700.00	14.33	27.36	0.00	0.10	15	0	2	380	148	233
		937+50	93750.00	50.00	21.51	0.00	0.00	45	0	0	425	148	278
		938+00	93800.00	50.00	9.53	0.00	0.00	29	0	0	454	148	307
		938+46.72	93846.72	46.72	5.01	0.00	0.00	13	0	0	467	148	320
		938+50	93850.00	3.28	31.13	0.00	9.17	2	0	1	469	149	320
		938+88.29	93888.29	38.29	36.91	0.00	4.65	48	0	10	517	161	356
		939+00	93900.00	11.71	33.39	0.00	3.87	15	0	2	532	164	368
		939+50	93950.00	50.00	30.25	0.00	8.38	59	0	11	591	178	414
		940+00	94000.00	50.00	33.32	0.00	9.75	59	0	17	650	199	451
		940+50	94050.00	50.00	37.09	0.00	7.47	65	0	16	715	219	496
		941+00	94100.00	50.00	33.43	0.00	8.35	65	0	15	780	238	543
		941+50	94150.00	50.00	31.21	0.00	1.97	60	0	10	840	250	590
		942+00	94200.00	50.00	27.50	0.00	0.03	54	0	2	894	253	642
		942+46.73	94246.73	46.73	23.03	0.00	0.00	44	27	0	938	253	659
SUBTOTALS CATEGORY 0010								938	27	202			

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]

9

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RAMP 'TR1' CROSSOVER (ALI-XO-RAMP C_S2B)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	2	31+75	3175.00	0.00	24.92	0.00	7.86	0	0	0	0	0	0
		31+88.54	3188.54	13.54	28.54	0.00	16.23	13	0	6	13	8	6
		32+00	3200.00	11.46	15.95	0.00	16.82	9	0	7	22	16	6
		32+25	3225.00	25.00	14.79	0.00	13.76	14	0	14	36	34	2
		32+50	3250.00	25.00	7.70	0.00	6.15	10	0	9	46	45	1
		32+75	3275.00	25.00	11.98	0.00	5.60	9	0	5	55	51	4
		32+82.45	3282.45	7.45	12.06	0.00	5.43	3	0	2	58	54	4
		32+93.44	3293.44	10.98	36.49	0.00	7.13	10	0	3	68	58	11
		33+00	3300.00	6.56	36.47	0.00	7.64	9	0	2	77	60	17
		33+25	3325.00	25.00	35.20	0.00	10.30	33	0	8	110	70	40
		33+50	3350.00	25.00	33.86	0.00	12.67	32	0	11	142	84	58
		33+75	3375.00	25.00	33.22	0.00	13.68	31	0	12	173	99	74
		33+94.92	3394.92	19.92	32.17	0.00	11.19	24	2	9	197	110	85
SUBTOTALS CATEGORY 0010							197	2	88				

RAMP 'TR2' CROSSOVER (ALI-XO-RAMP C_S2A)

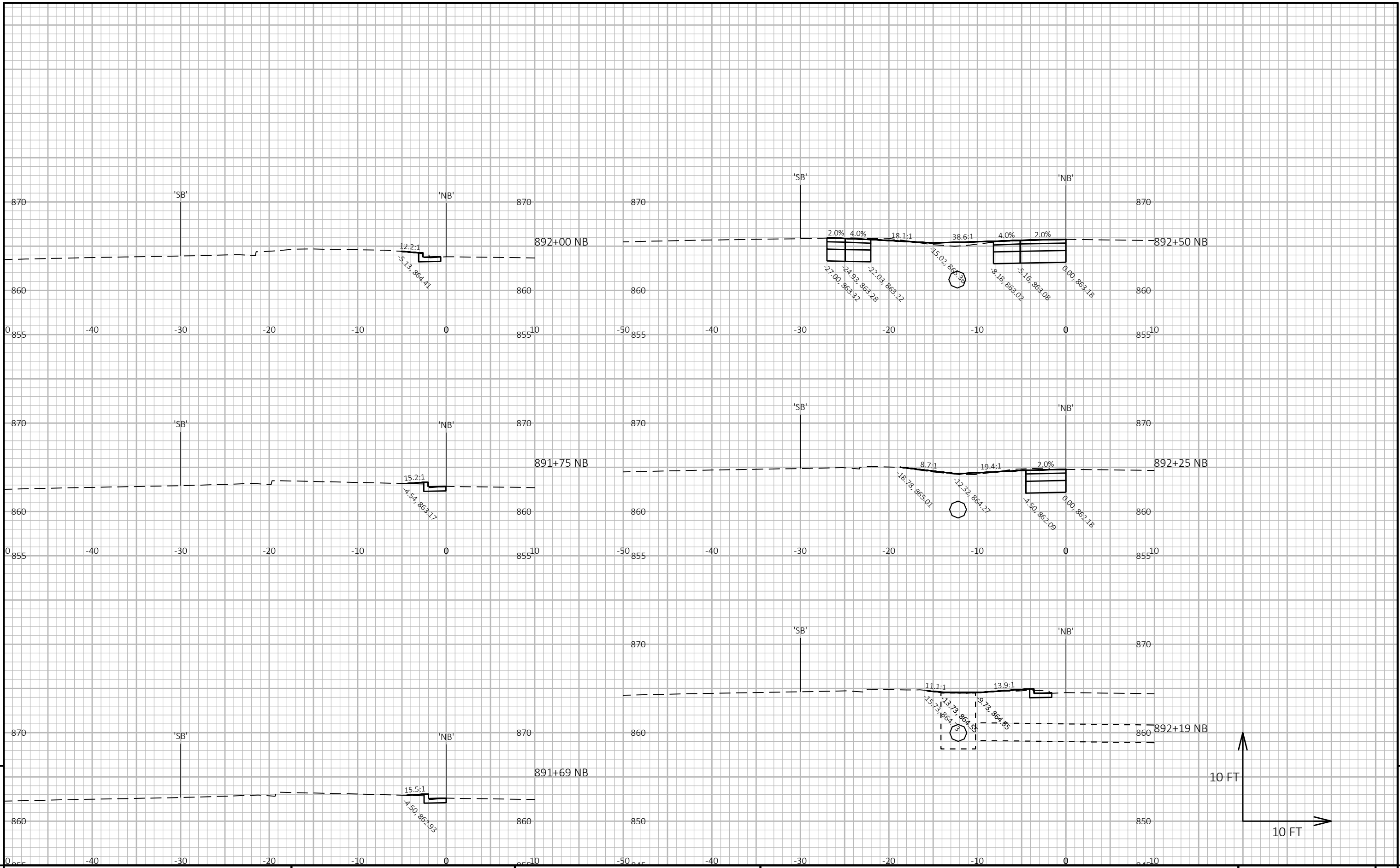
CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	2	36+07.47	3607.47	0.00	14.74	0.00	1.99	0	0	0	0	0	0
		36+20.67	3620.67	13.20	22.63	0.00	9.66	9	0	3	9	4	5
		36+25	3625.00	4.33	24.59	0.00	10.96	4	0	2	13	6	7
		36+50	3650.00	25.00	26.80	0.00	15.72	24	0	12	37	21	16
		36+75	3675.00	25.00	14.49	0.00	9.70	19	0	12	56	36	20
		37+00	3700.00	25.00	4.41	0.00	5.07	9	0	7	65	45	20
		37+25	3725.00	25.00	2.72	0.00	6.96	3	0	6	68	53	16
		37+50	3750.00	25.00	8.29	0.00	9.56	5	0	8	73	63	11
		37+75	3775.00	25.00	15.99	0.00	11.86	11	0	10	84	75	9
		38+00	3800.00	25.00	21.95	0.00	12.74	18	0	11	102	89	13
		38+25	3825.00	25.00	24.03	0.00	12.70	21	0	12	123	104	19
		38+46.10	3846.10	21.10	30.97	0.00	9.21	21	2	9	144	115	27
SUBTOTALS CATEGORY 0010							144	2	92				

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]

NORTH CROSSOVER (ALI-NB 51)

CATEGORY	STAGE	STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
					CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
0010	2	949+23.79	94923.79	0.00	19.83	0.00	0.03	0	0	0	0	0	0
		949+50	94950.00	26.21	20.82	0.00	0.00	20	0	0	20	0	20
		950+00	95000.00	50.00	18.38	0.00	1.82	36	0	2	56	2	54
		950+10	95010.00	10.00	19.80	0.00	0.88	7	0	0	63	2	61
		950+50	95050.00	40.00	19.73	0.00	8.40	29	0	7	92	9	83
		951+00	95100.00	50.00	25.40	0.00	16.97	42	0	23	134	32	102
		951+50	95150.00	50.00	30.06	0.00	22.70	51	0	37	185	69	116
		952+00	95200.00	50.00	33.07	0.00	23.55	58	0	43	243	112	131
		952+50	95250.00	50.00	36.20	0.00	24.41	64	0	44	307	156	151
		952+76.94	95276.94	26.94	43.31	0.00	4.38	40	0	14	347	170	177
		953+00	95300.00	23.06	41.89	0.00	6.25	36	0	5	383	175	208
		953+50	95350.00	50.00	40.39	0.00	6.55	76	0	12	459	187	272
		954+00	95400.00	50.00	65.19	0.00	2.09	98	0	8	557	195	362
		954+50	95450.00	50.00	64.74	0.00	1.78	120	0	4	677	199	478
		954+63.46	95463.46	13.46	65.21	0.00	1.46	32	0	1	709	200	509
		954+66.84	95466.84	3.38	65.42	0.00	1.38	8	0	0	717	200	517
		955+00	95500.00	33.16	66.51	0.00	4.37	81	0	4	798	204	594
		955+50	95550.00	50.00	62.17	0.00	18.30	119	0	21	917	225	692
		955+88.52	95588.52	38.52	54.60	0.00	20.86	83	0	28	1,000	253	747
		956+00	95600.00	11.48	52.43	0.00	16.89	23	0	8	1,023	261	762
		956+50	95650.00	50.00	43.12	0.00	3.30	88	0	19	1,111	280	831
		957+00	95700.00	50.00	0.00	0.00	0.47	40	0	3	1,151	283	868
		957+50	95750.00	50.00	0.23	0.00	0.03	0	0	0	1,151	283	868
		957+64.39	95764.39	14.39	0.40	0.00	0.04	0	0	0	1,151	283	868
		957+76.45	95776.45	12.06	0.48	0.00	0.00	0	33	0	1,151	283	835
SUBTOTALS CATEGORY 0010								1,151	33	283			

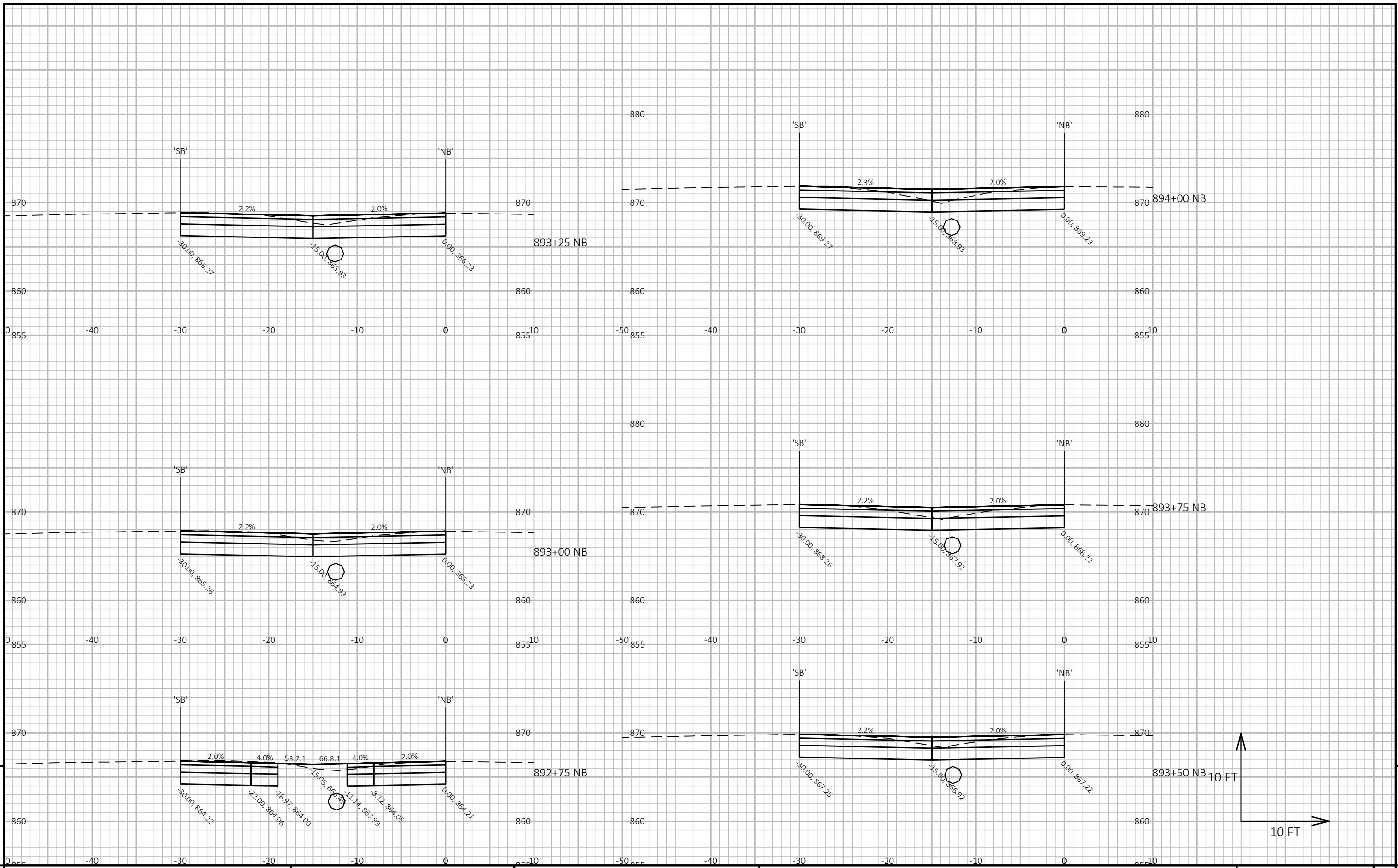
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL. MINUS INDICATES A SHORTAGE OF MATERIAL: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]



PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: SOUTH CROSSOVER SHEET 9

FILE NAME : I:\47\470384 US 51\C3D\SHEETS\PLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:17 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 1_SXO



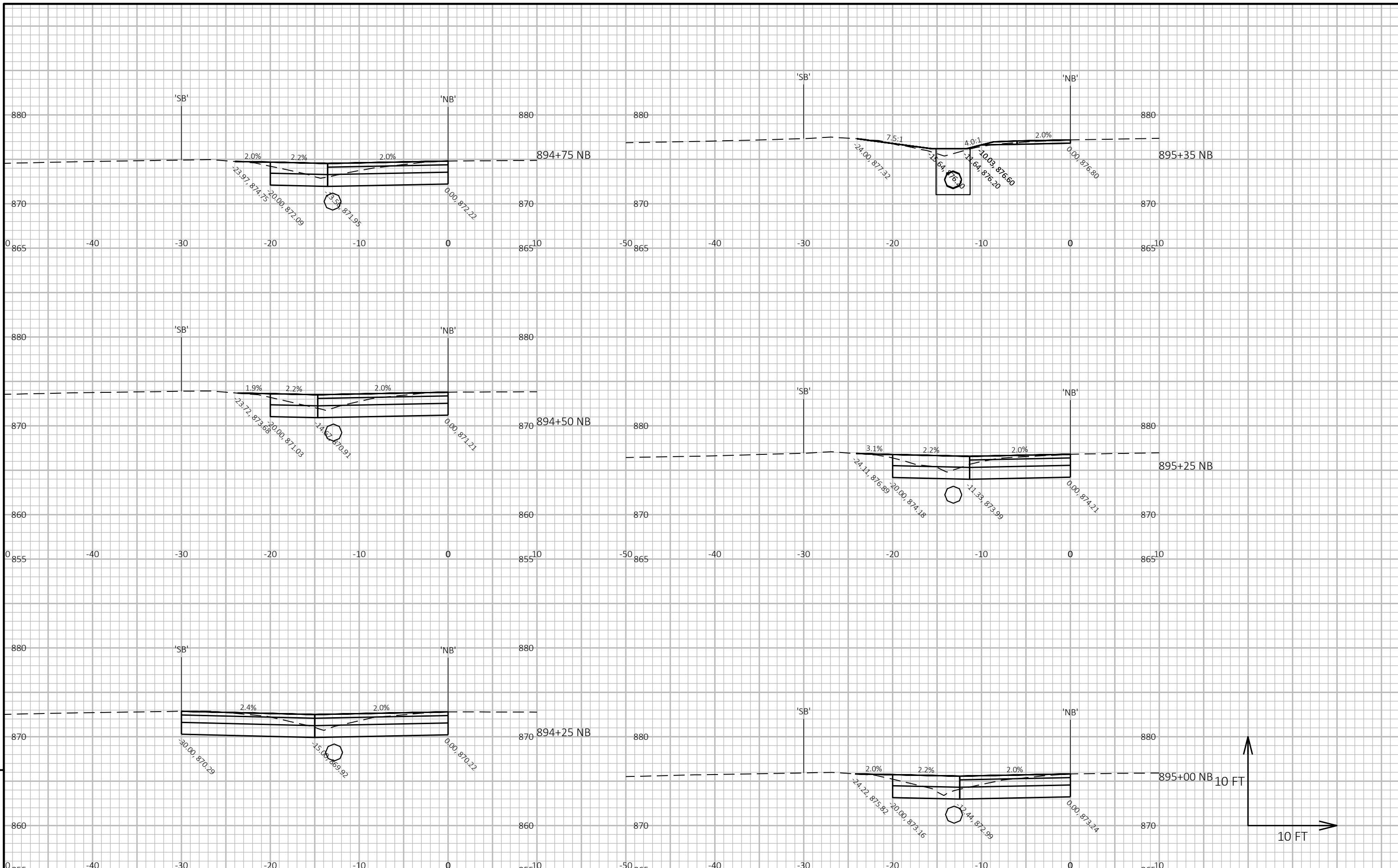
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: SOUTH CROSSOVER SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE: 1/30/2024 4:17 PM PLOT BY: BUTTERIS, BRADLEY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 2_SXO



PROJECT NO: 5845-16-86

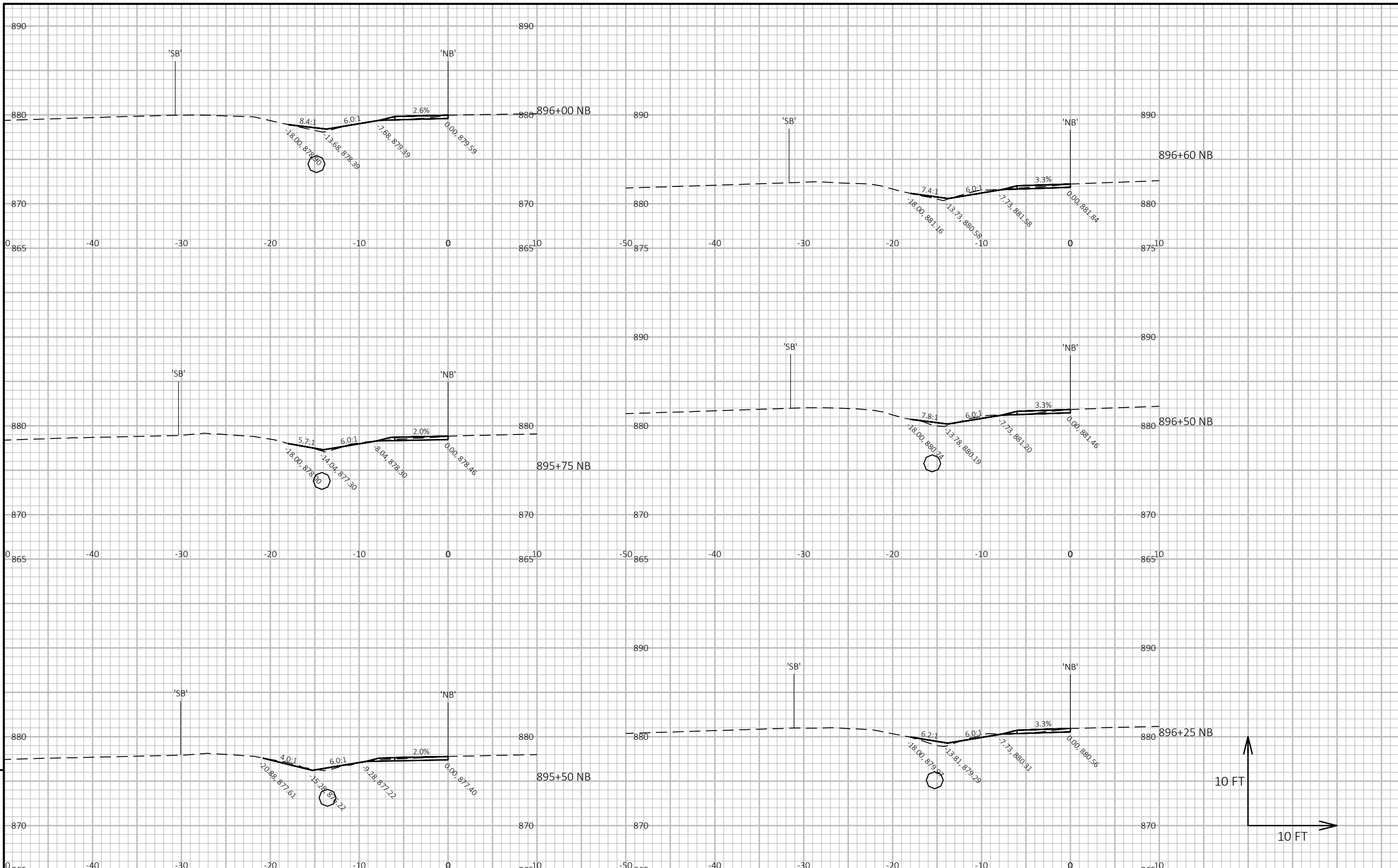
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: SOUTH CROSSOVER

SHEET

E



PROJECT NO: 5845-16-86

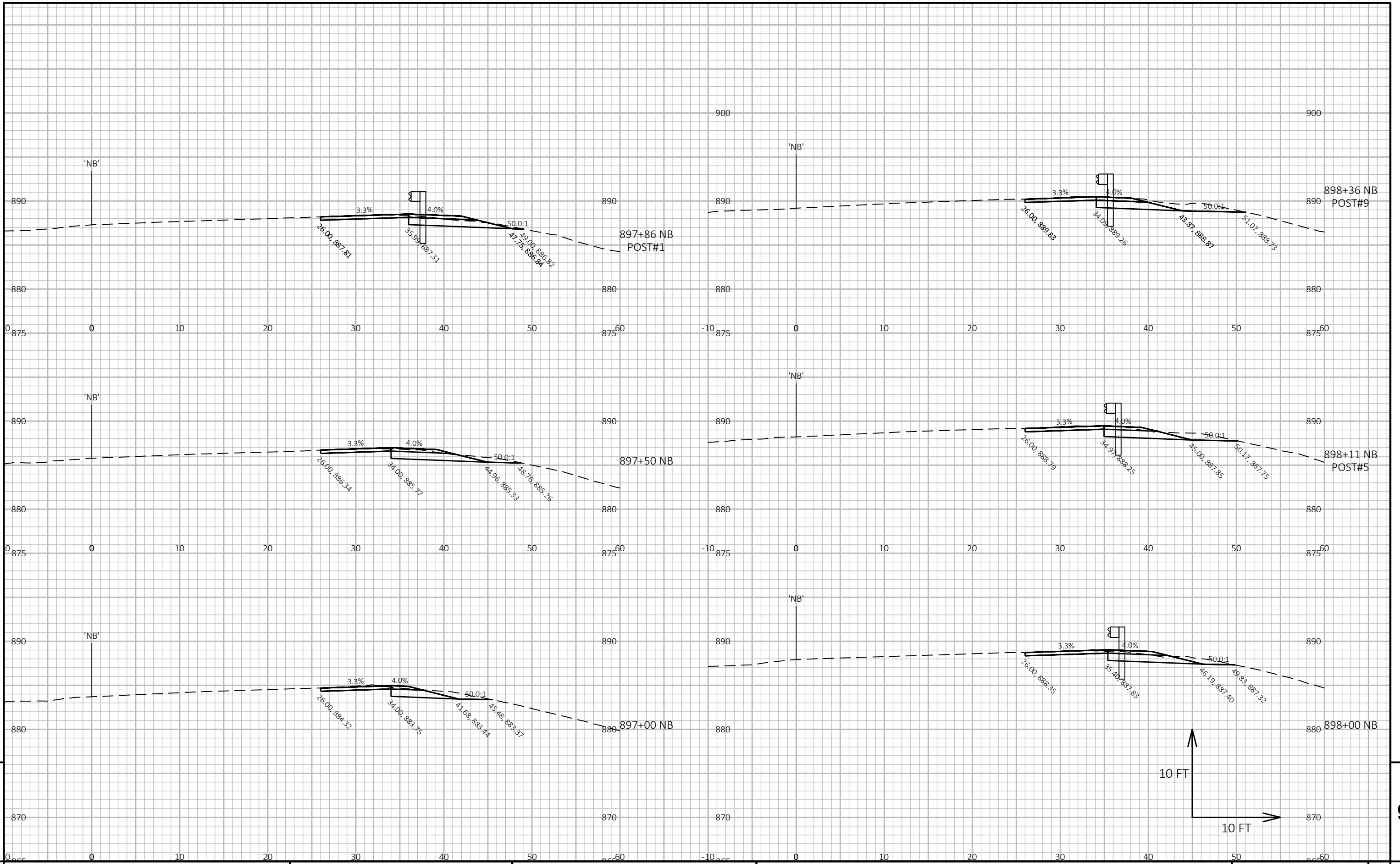
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: SOUTH CROSSOVER

SHEET

E



PROJECT NO: 5845-16-86

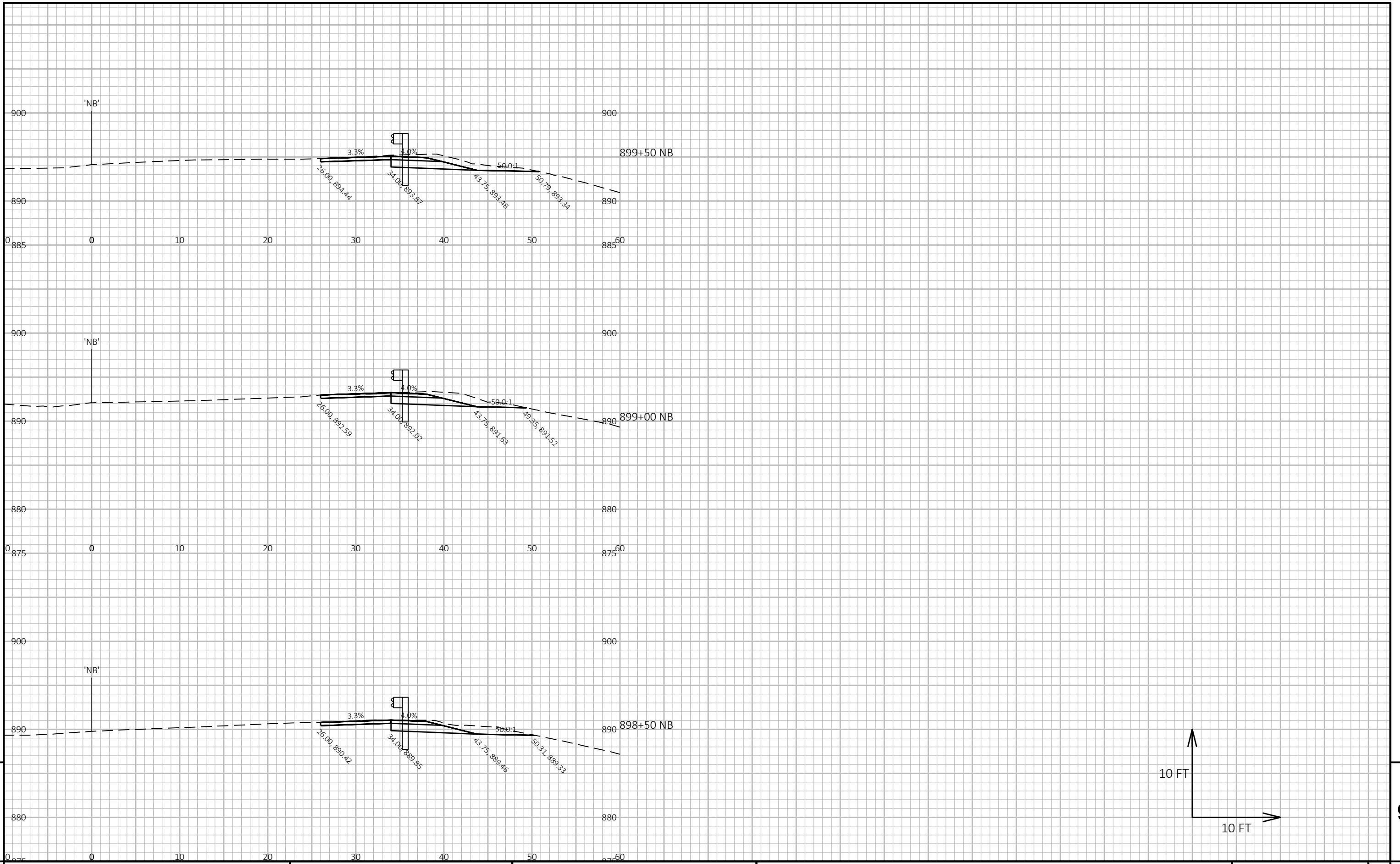
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: GUARDRAIL RIGHT

SHEET

E



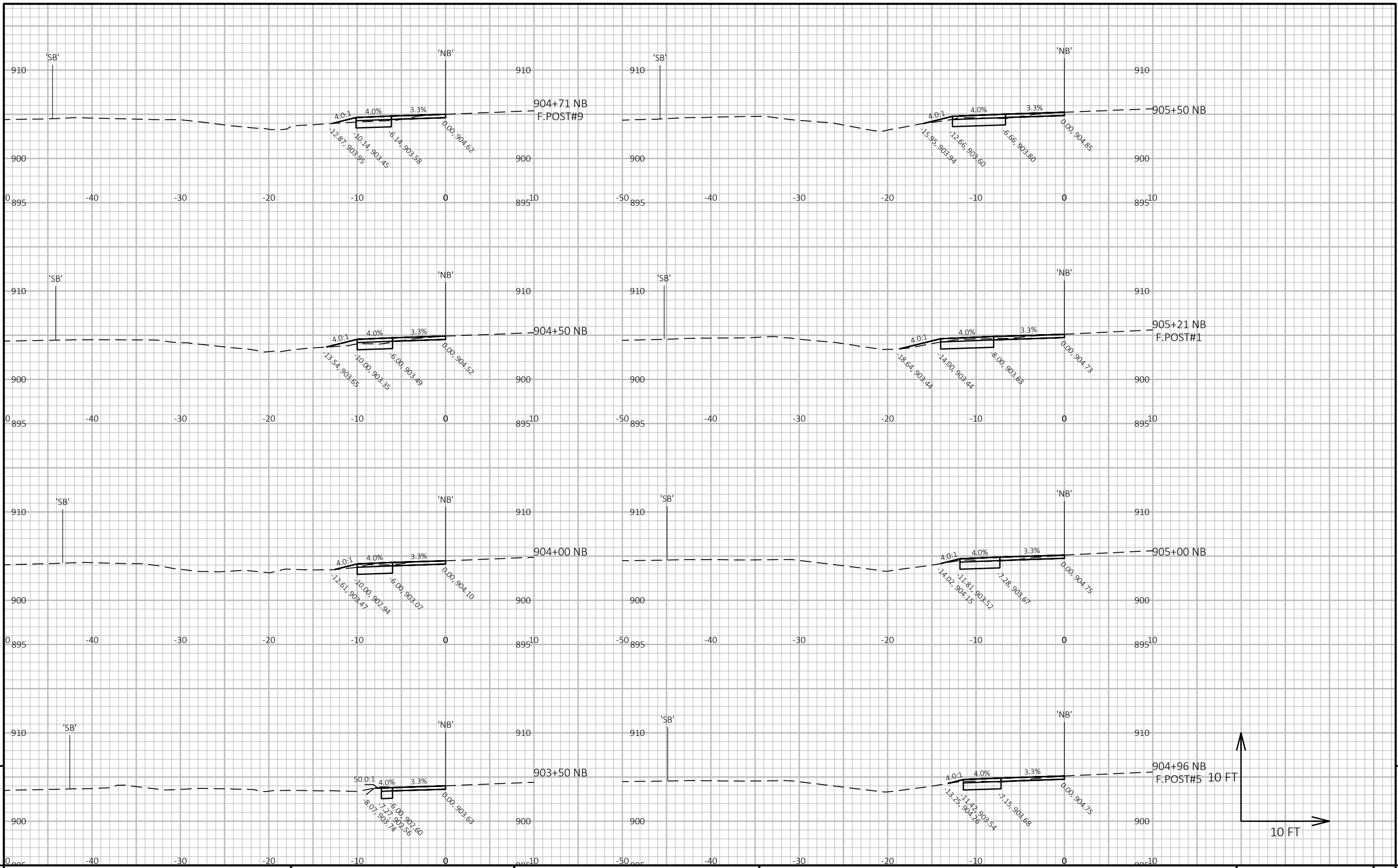
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: GUARDRAIL RIGHT SHEET E

FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 2_BG01



PROJECT NO: 5845-16-86

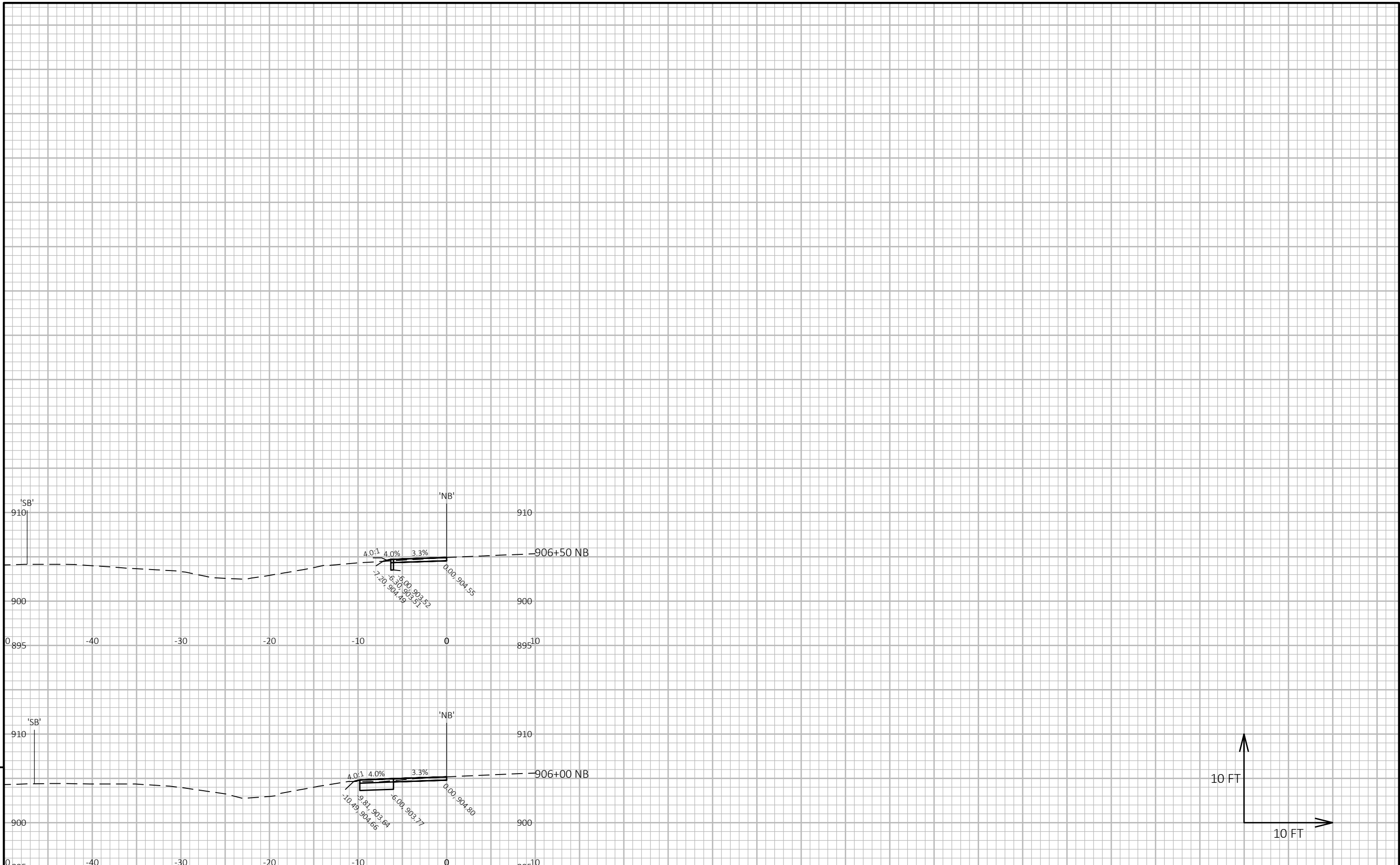
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: GUARDRAIL LEFT

SHEET

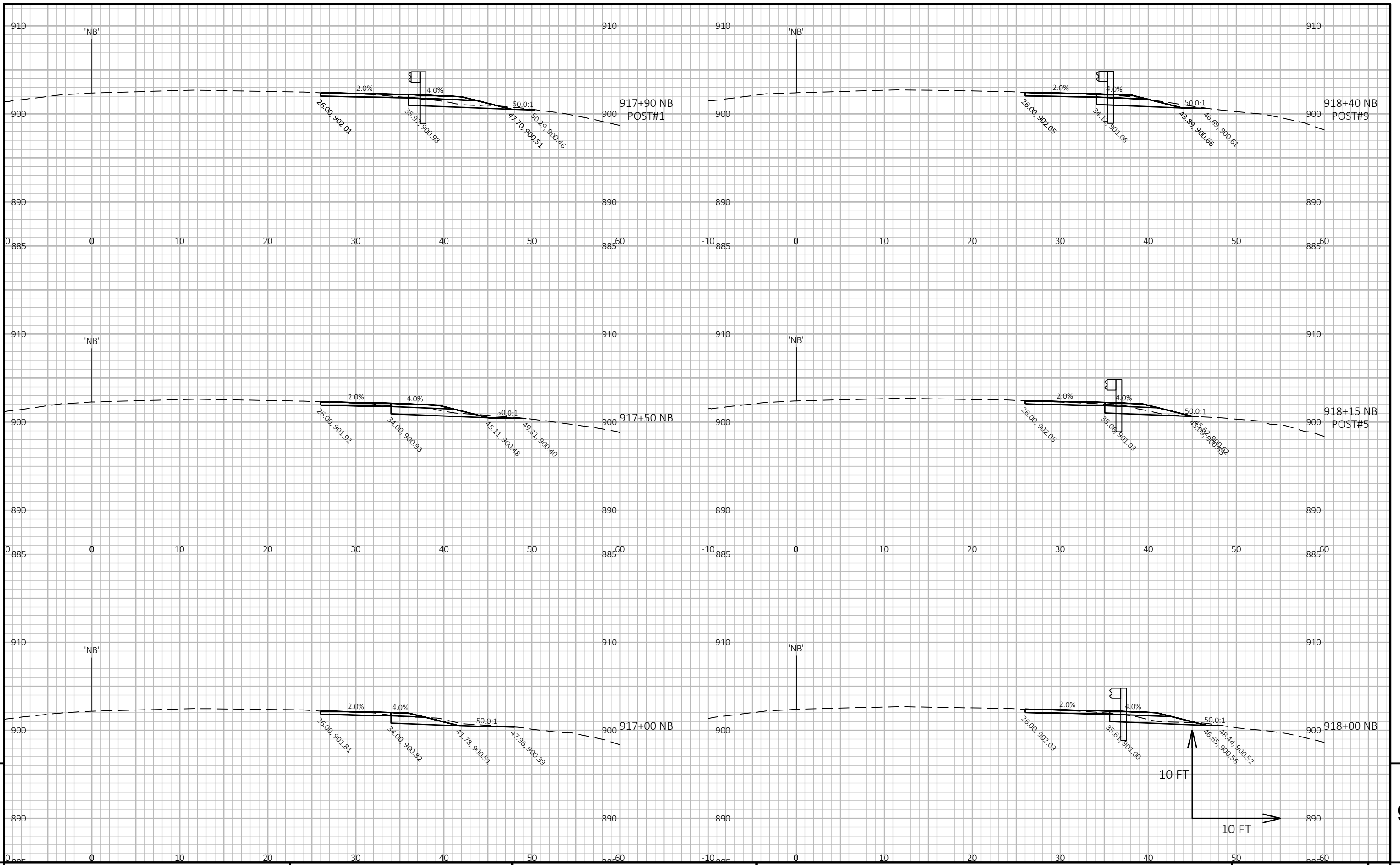
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PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CROSS SECTIONS: GUARDRAIL LEFT	SHEET	E
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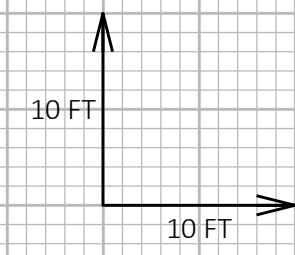
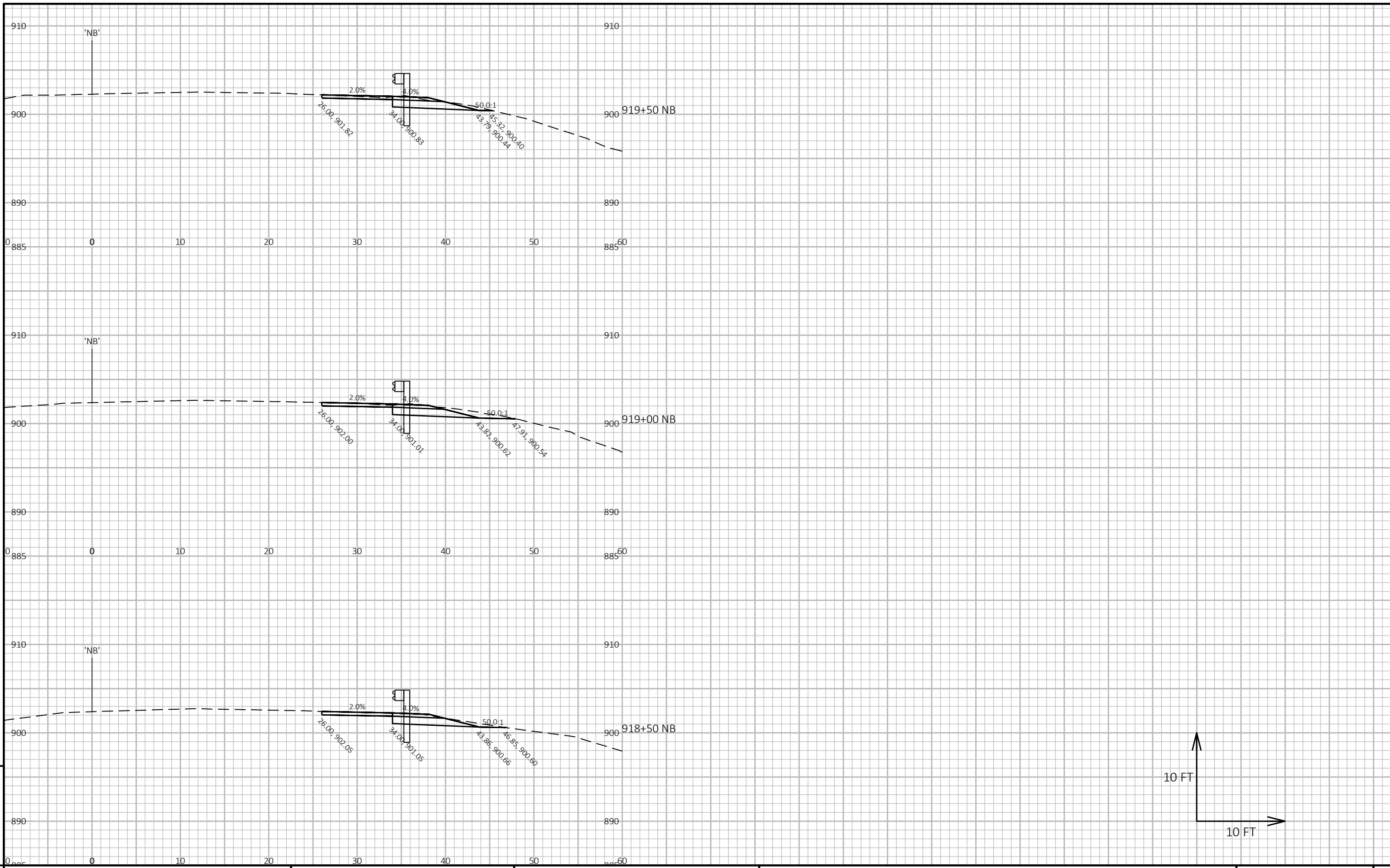
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: GUARDRAIL RIGHT SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE: 1/30/2024 4:18 PM PLOT BY: BUTTERIS, BRADLEY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 1_BG03



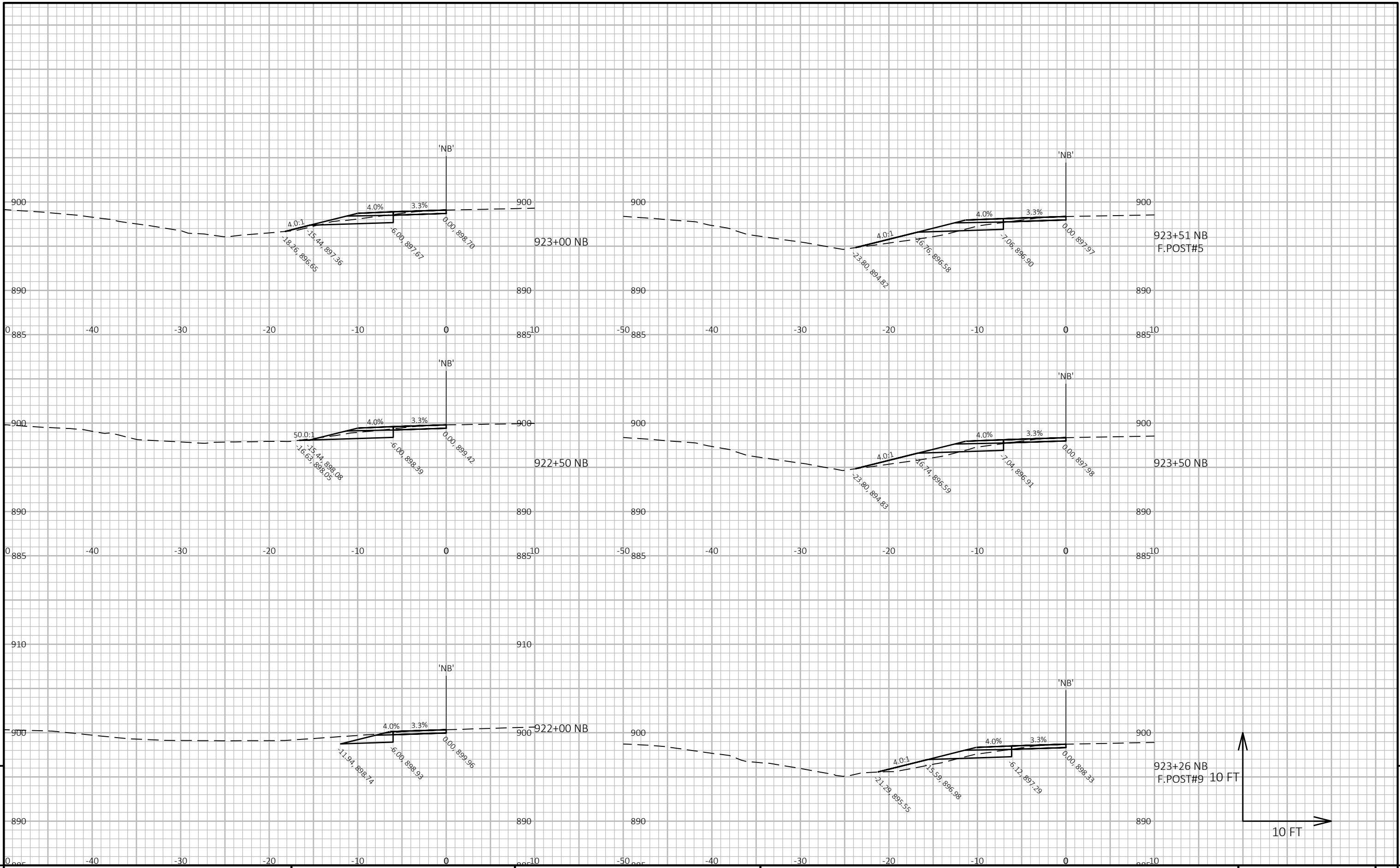
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: GUARDRAIL RIGHT SHEET E

FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 2_BG03



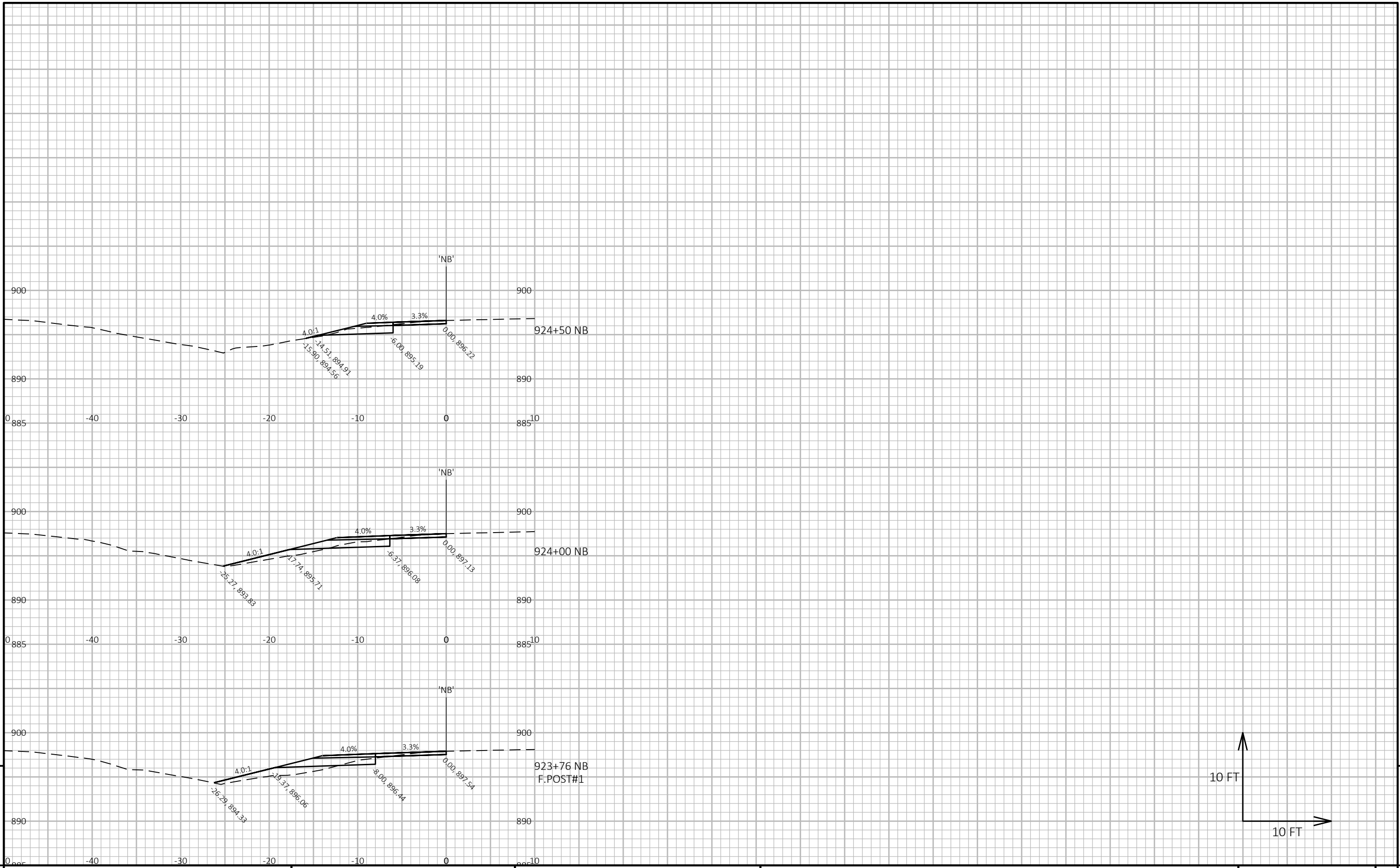
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: GUARDRAIL LEFT SHEET E

FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 1_BG04



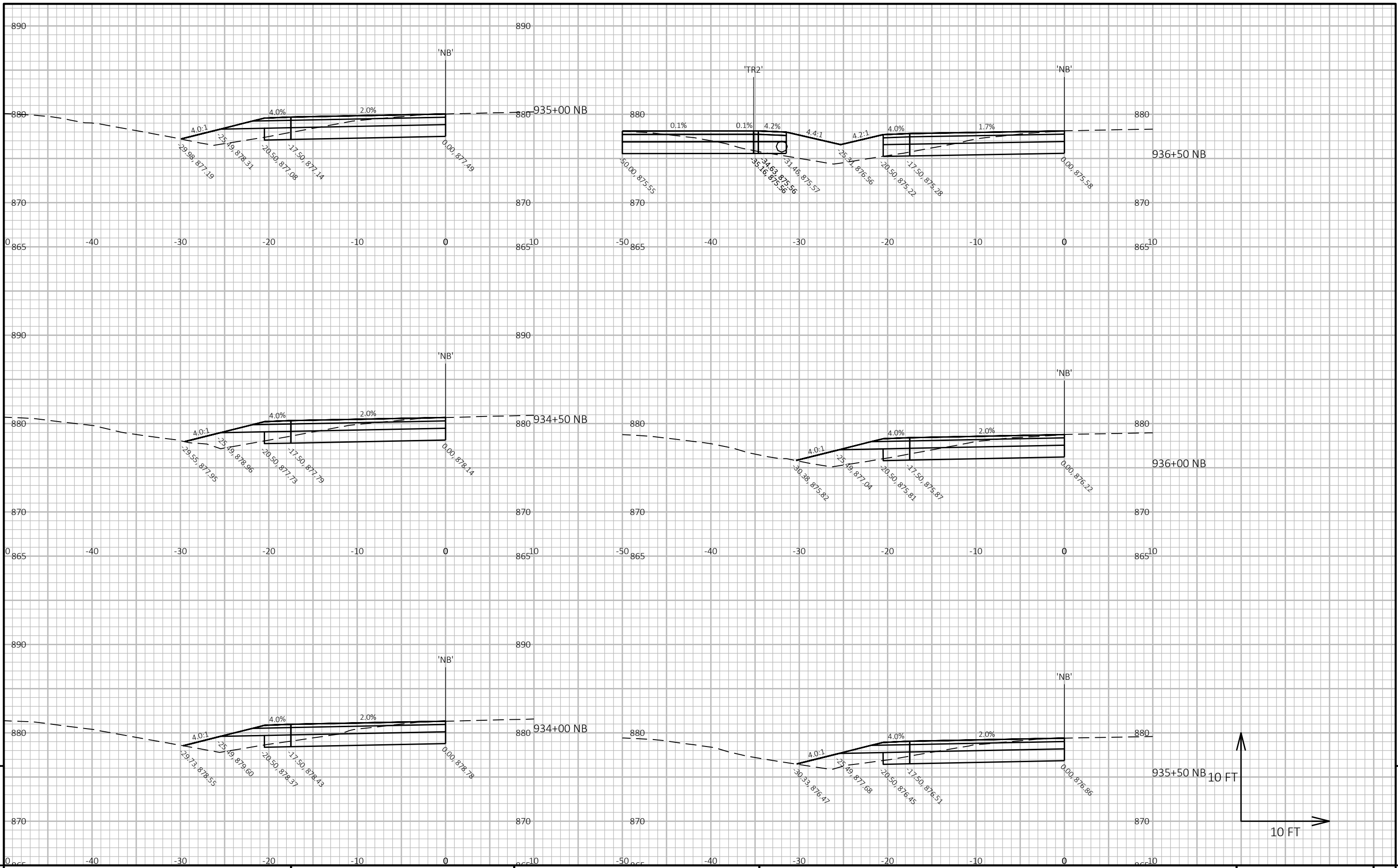
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: GUARDRAIL LEFT SHEET E

FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 2_BG04

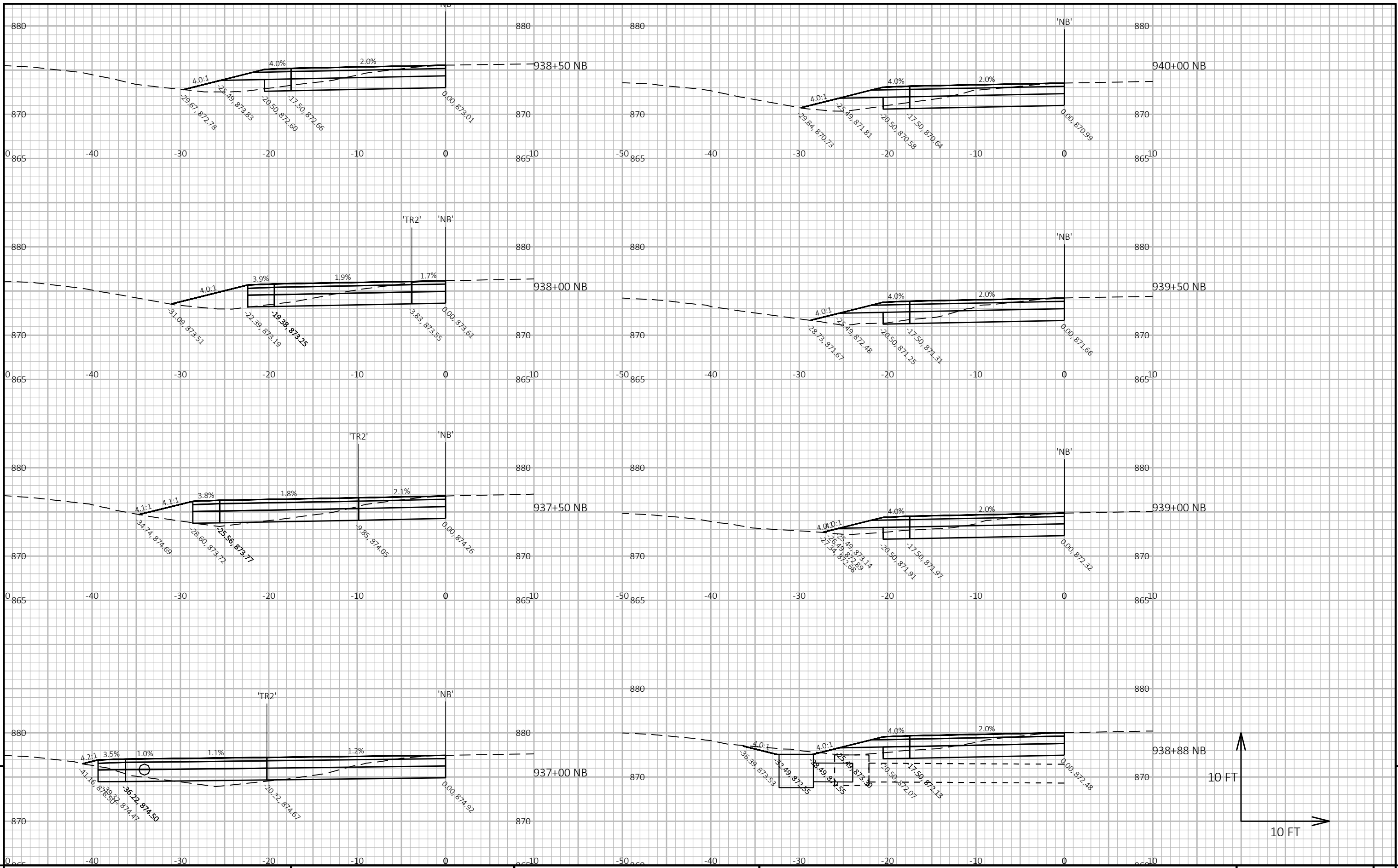


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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: RAMP CROSSOVER - NB SHEET E

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PROJECT NO: 5845-16-86

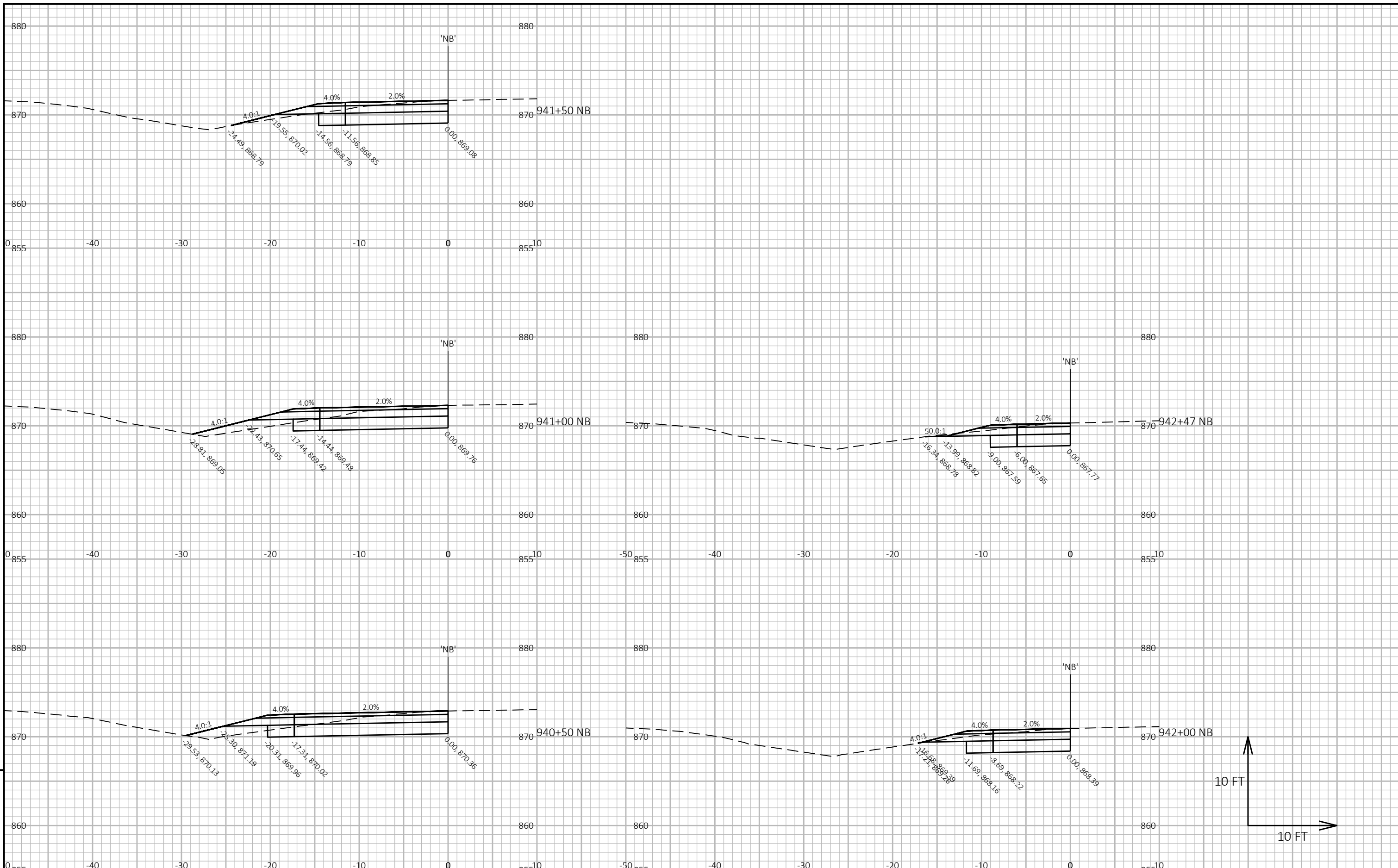
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: RAMP CROSSOVER - NB

SHEET

E



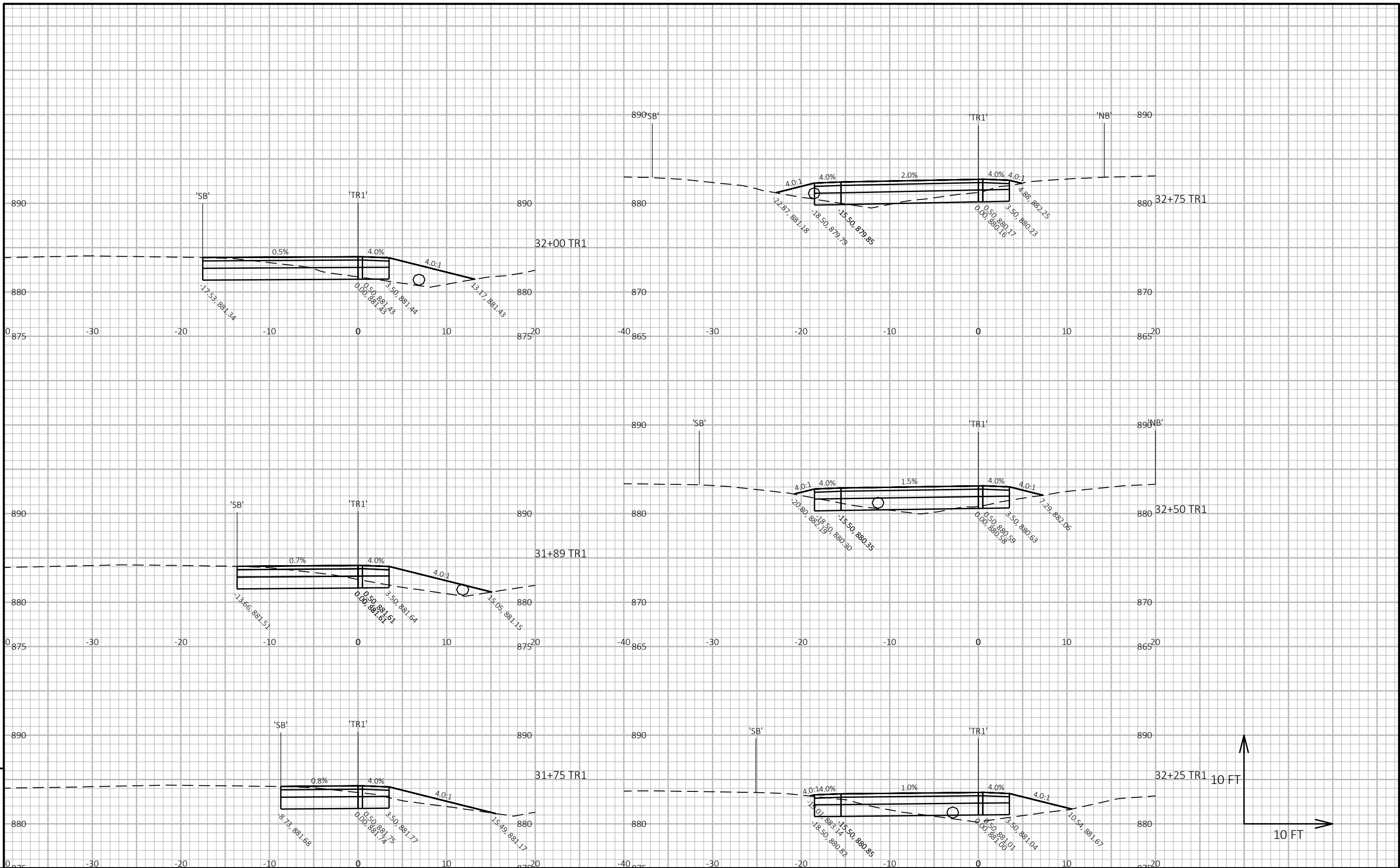
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: RAMP CROSSOVER - NB SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE: 1/30/2024 4:18 PM PLOT BY: BUTTERIS, BRADLEY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 3_RXO



PROJECT NO: 5845-16-86

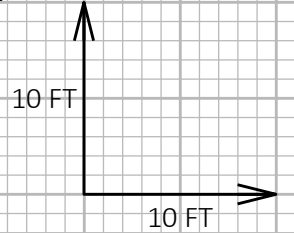
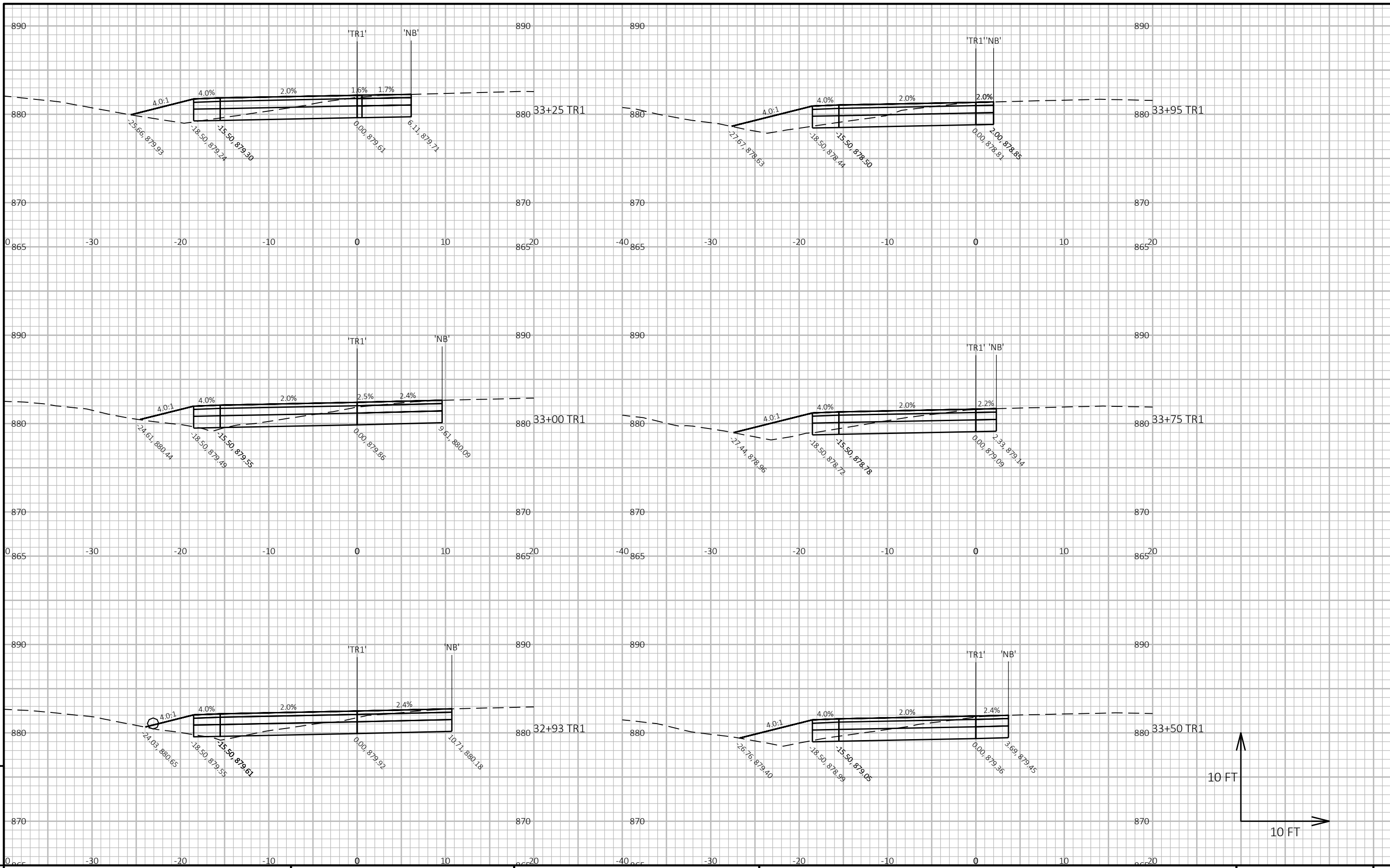
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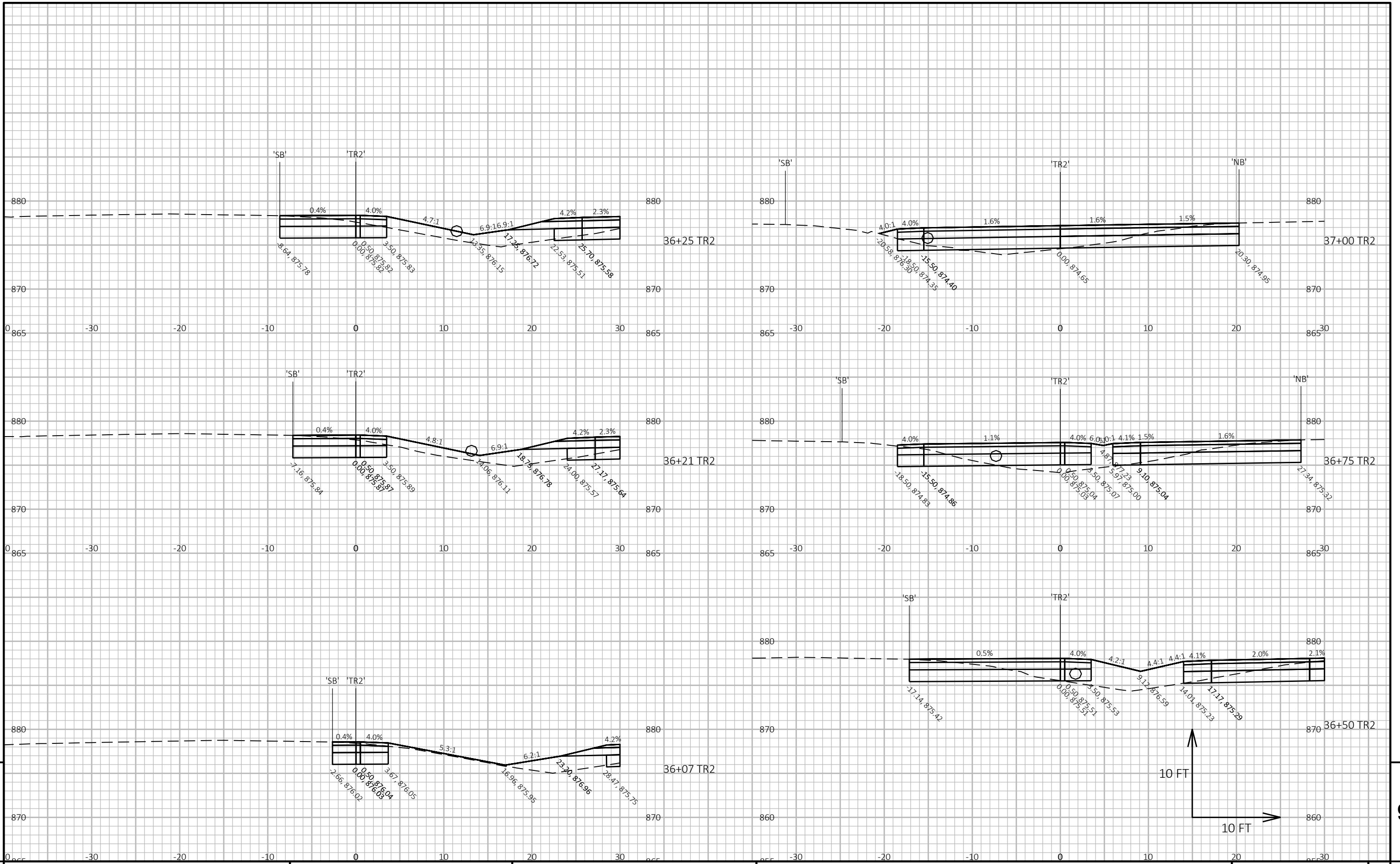
COUNTY: DANE

CROSS SECTIONS: RAMP CROSSOVER - TR1

SHEET

9





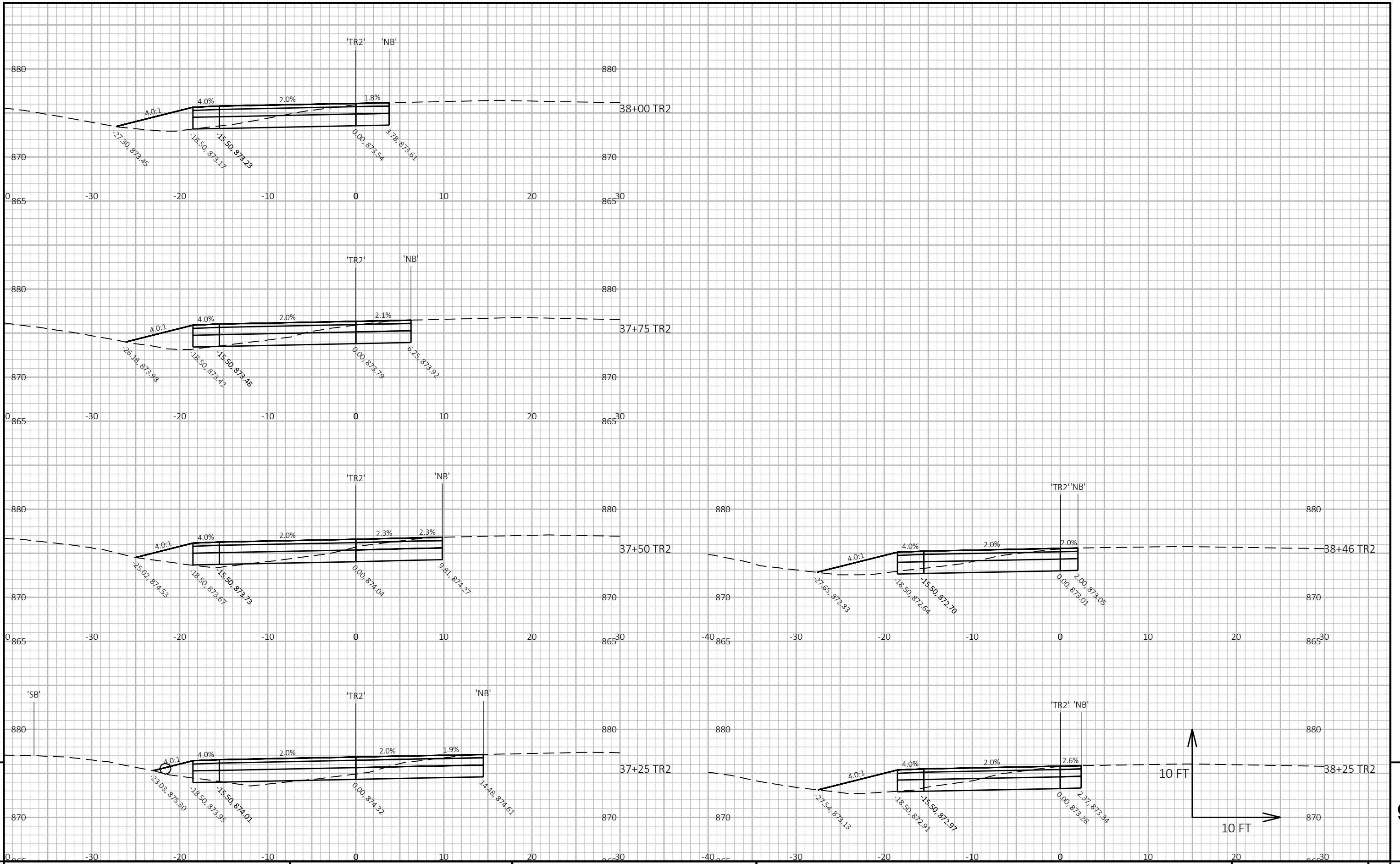
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: RAMP CROSSOVER - TR2 SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETS\PLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE: 1/30/2024 4:18 PM PLOT BY: BUTTERIS, BRADLEY PLOT NAME: SHEET E PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 1_TR2



PROJECT NO: 5845-16-86

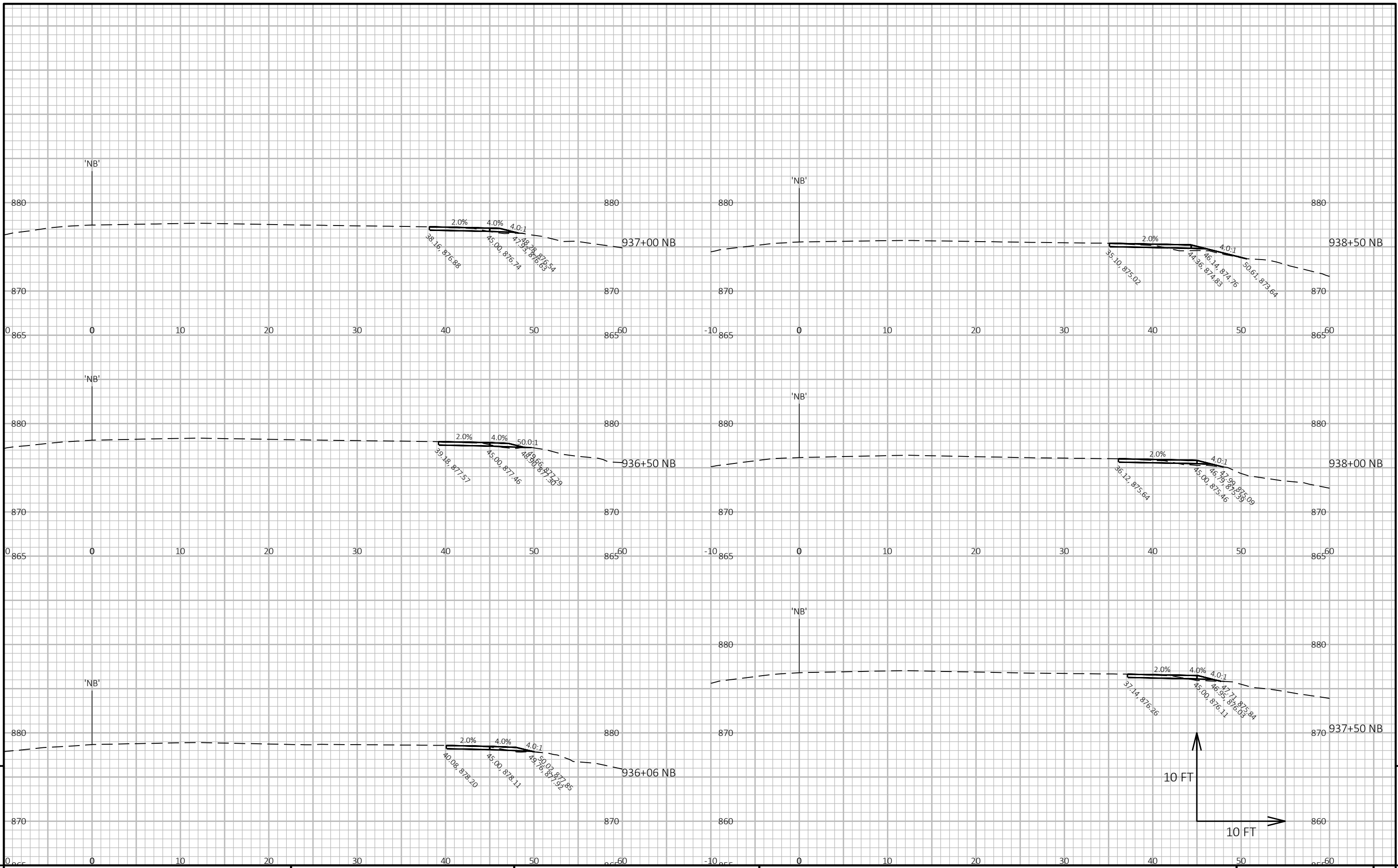
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: RAMP CROSSOVER - TR2

SHEET

9



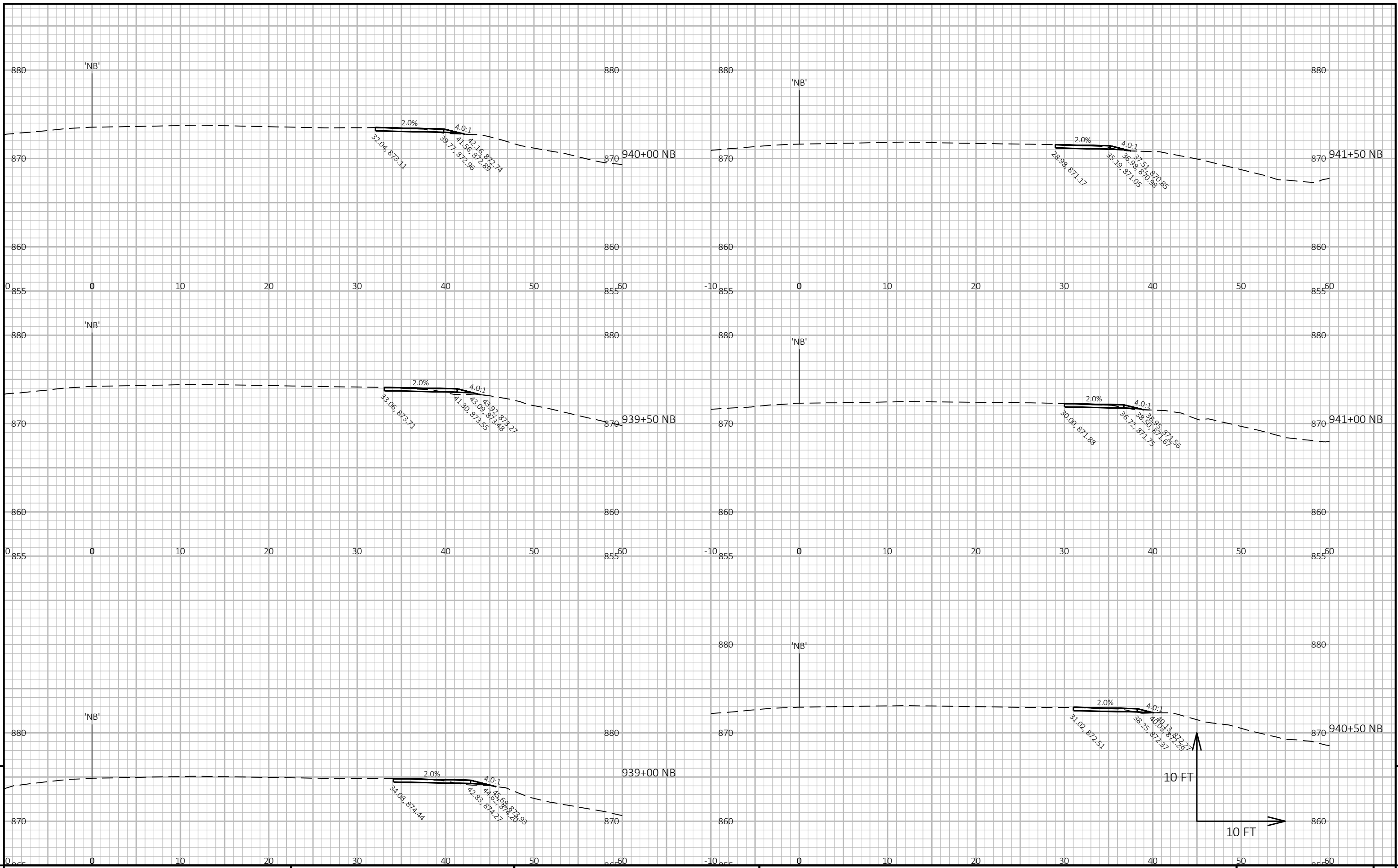
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: NB ON RAMP SHEET E

FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN=10 FT HORZ. / 1 IN=10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 1_NB ON



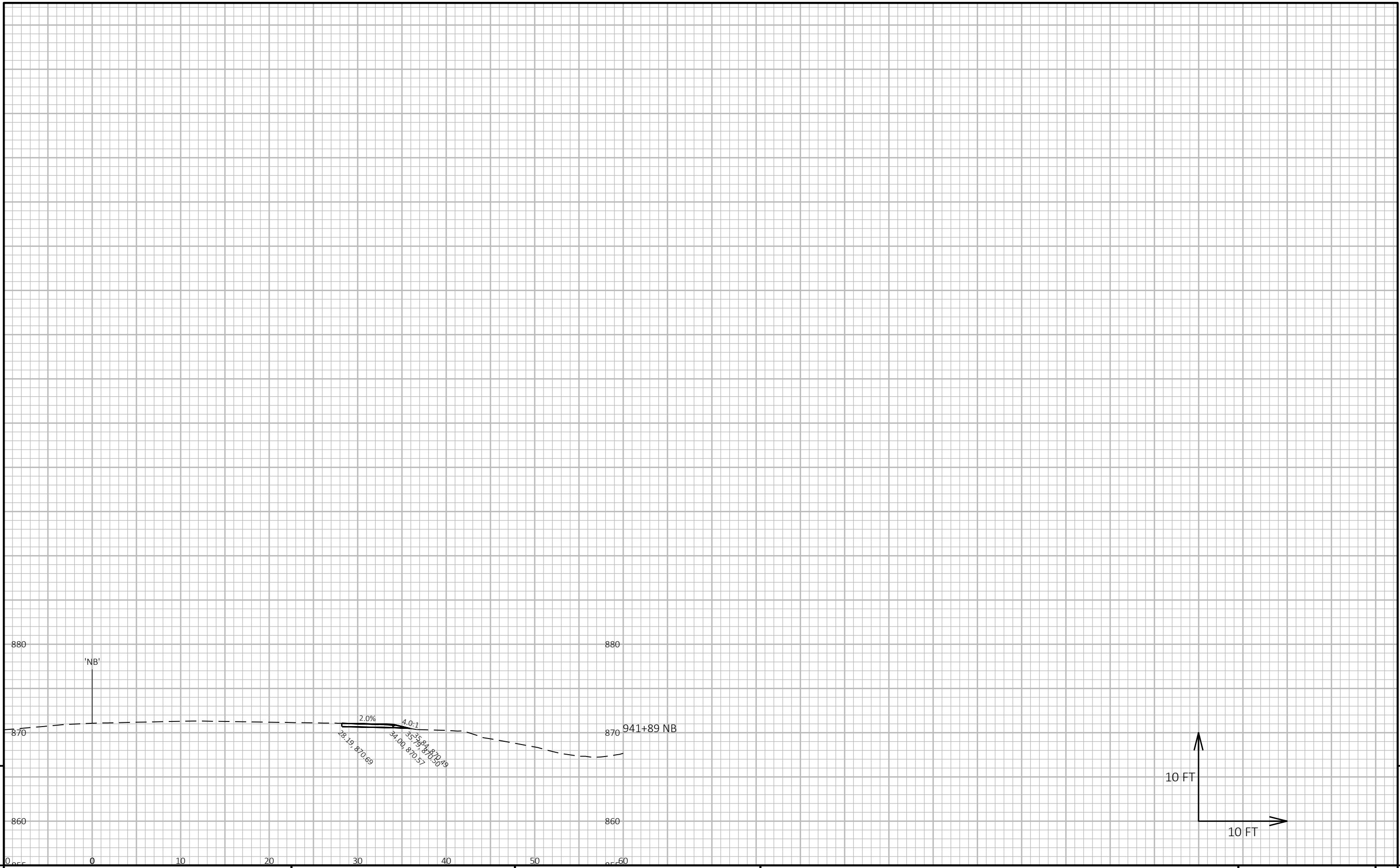
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: NB ON RAMP SHEET E

FILE NAME: I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE: 1/30/2024 4:18 PM PLOT BY: BUTTERIS, BRADLEY PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 2_NB ON



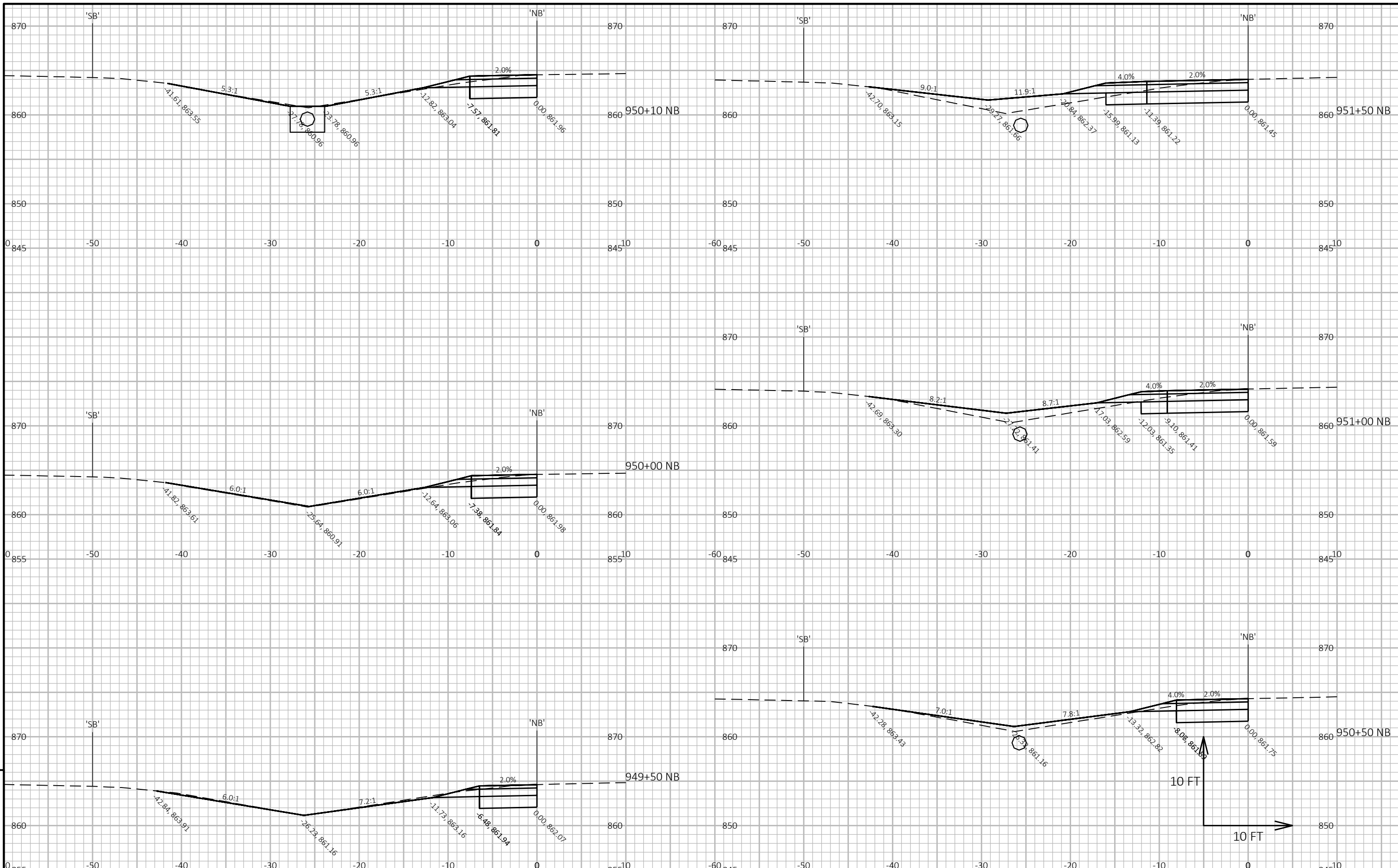
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PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CROSS SECTIONS: NB ON RAMP	SHEET	E
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FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 3_NB ON



PROJECT NO: 5845-16-86

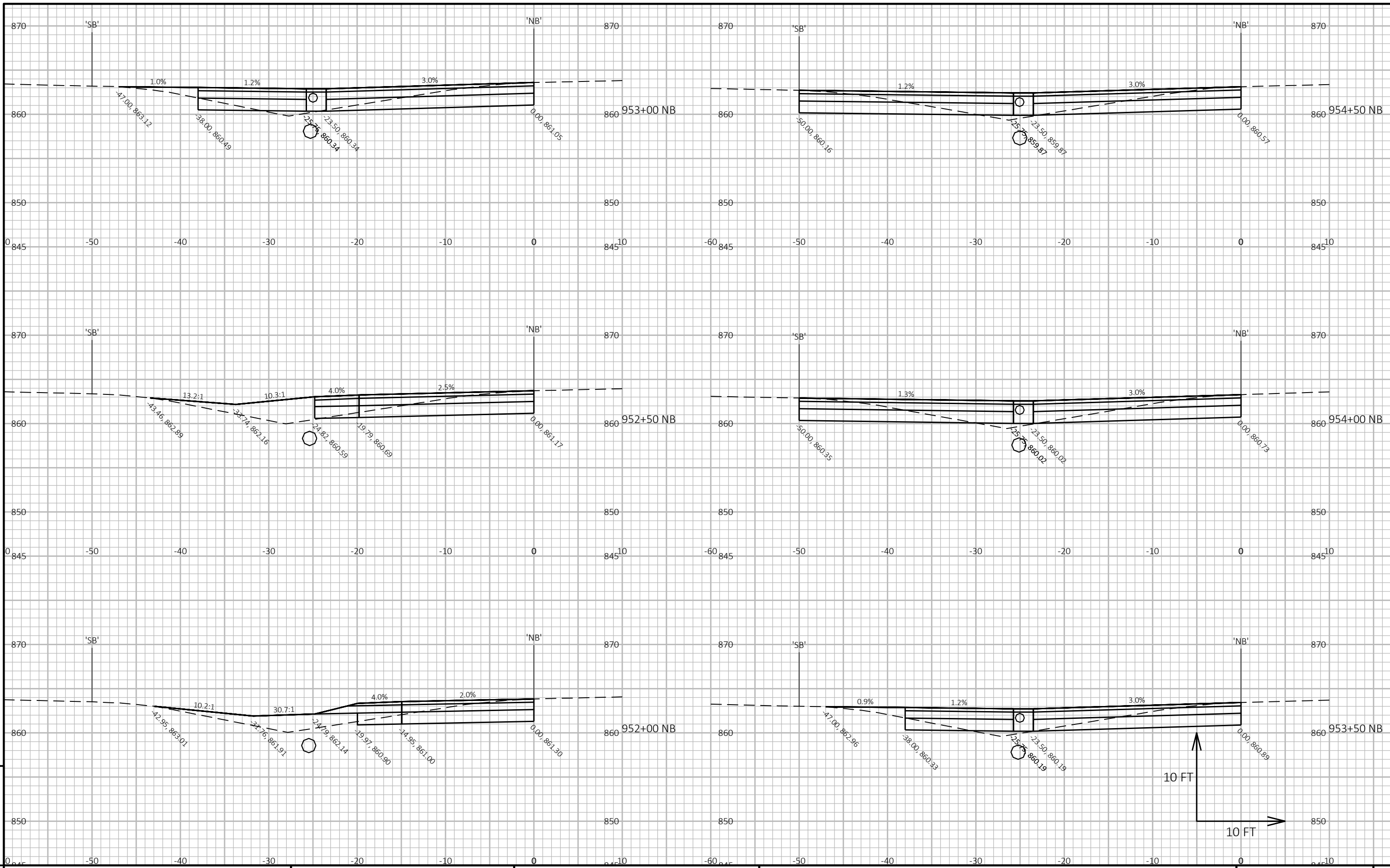
HWY: USH 51

COUNTY: DANE

CROSS SECTIONS: NORTH CROSSOVER

SHEET

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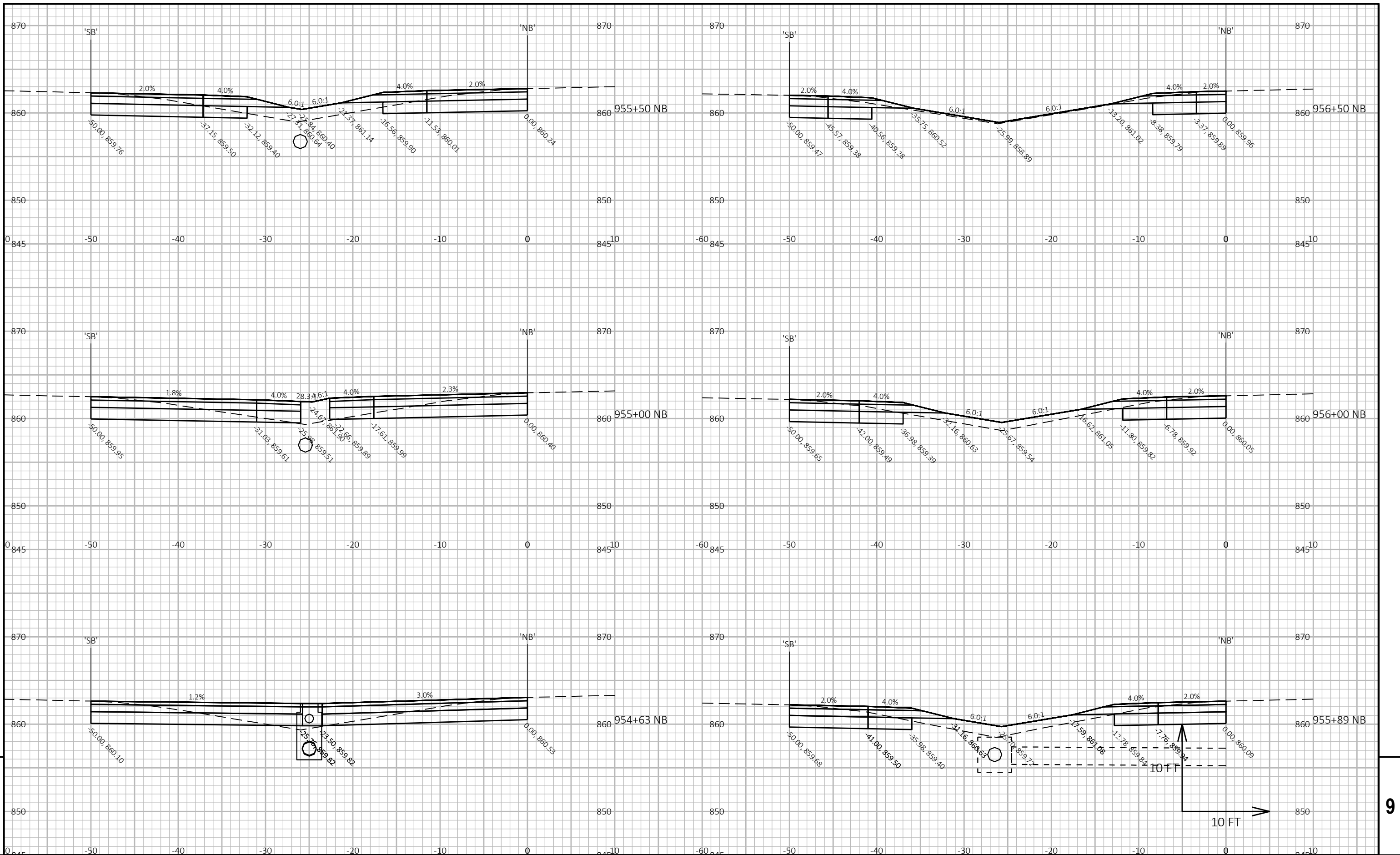
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: NORTH CROSSOVER SHEET E

FILE NAME : I:\47470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

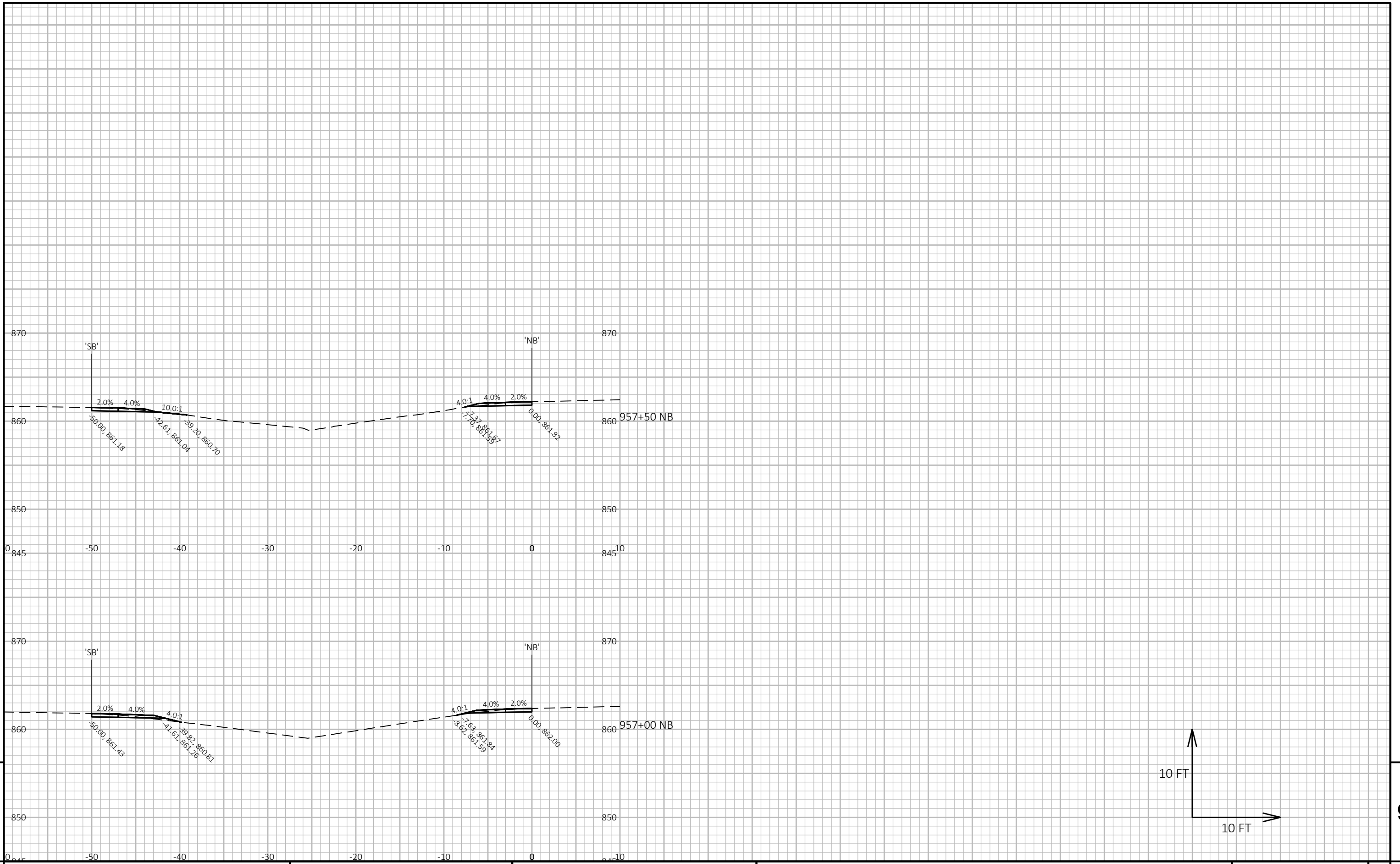
LAYOUT NAME - 2_NX0



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PROJECT NO: 5845-16-86	HWY: USH 51	COUNTY: DANE	CROSS SECTIONS: NORTH CROSSOVER	SHEET	E
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PROJECT NO: 5845-16-86 HWY: USH 51 COUNTY: DANE CROSS SECTIONS: NORTH CROSSOVER SHEET E

FILE NAME : I:\47\470384 US 51\C3D\SHEETSPLAN\5845-16-86 (X-OVERS)\5845-16-86_090201_XS.DWG PLOT DATE : 1/30/2024 4:18 PM PLOT BY : BUTTERIS, BRADLEY PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 4_NXO



Wisconsin Department of Transportation

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