MAD

JANUARY 2022

PROJECT ID: 1370-02-82

WITH: N/A

COUNTY: DODGE

03

ORDER OF SHEETS

TOTAL SHEETS = 120

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1370-02-82	———	—

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

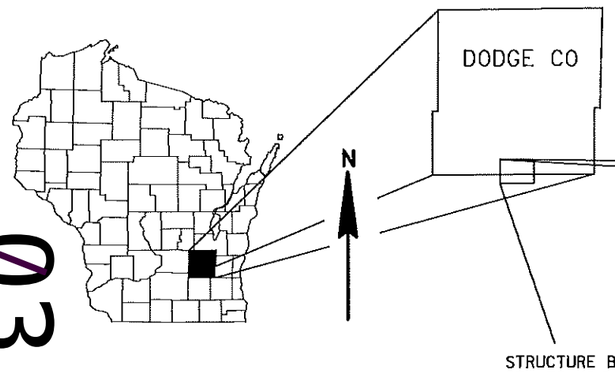
WATERTOWN - WAUKESHA

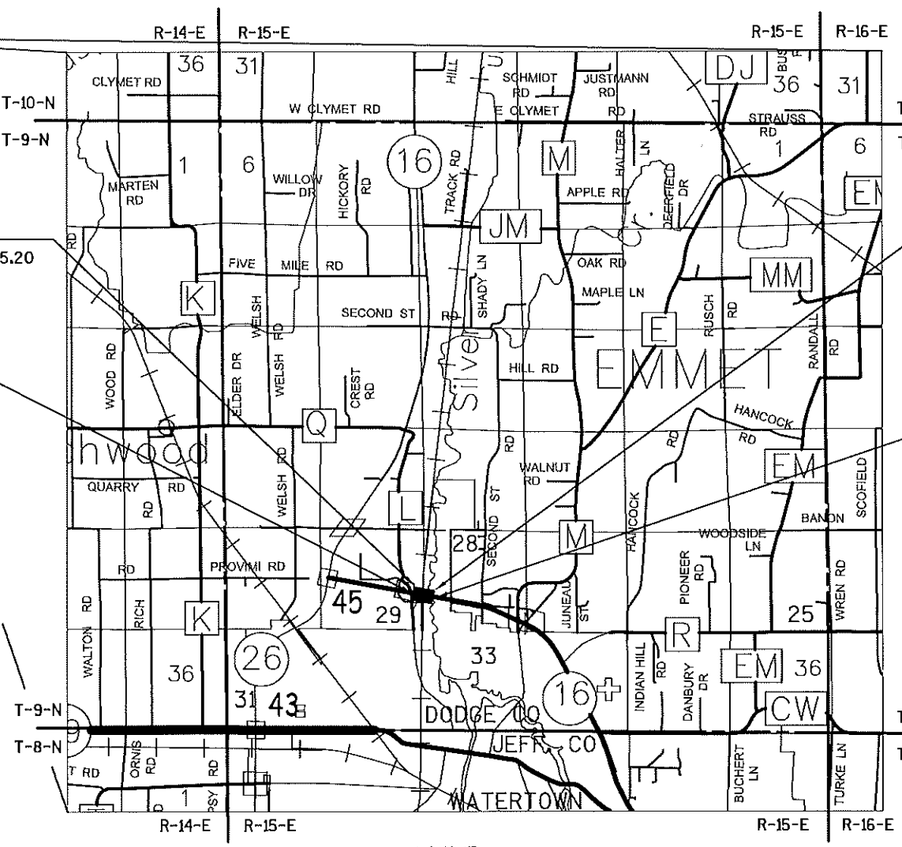
UP RR STRUCTURE B-14-0041, -0042

STH 16

DODGE COUNTY

STATE PROJECT NUMBER
1370-02-82





LAYOUT
SCALE 0 1.5 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.148 MILES

VERTICAL DATUM: NAVD88 (2012) GEOID 12A

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

DESIGN DESIGNATION

A.A.D.T.	2019	= 5000
A.A.D.T.	2039	= 5800
D.H.V.		= 13.0%
D.D.		= 59/41
T.		= 15.1%
DESIGN SPEED		= 50 MPH
ESALS		= 1,900,000

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'E)
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

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

UTILITIES
- ELECTRIC — E
- OVERHEAD UTILITY — OH
- FIBER OPTIC — FO
- GAS — G
- SANITARY SEWER — SAN
- STORM SEWER — SS
- TELEPHONE — T
- WATER — W
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	MSA
Designer	MATTHEW KENNEY P.E.
Project Manager	MATTHEW LAMB, P.E.
Regional Examiner	SOUTHWEST REGION
Regional Supervisor	JAMES OETTINGER, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 7/30/2021 (Signature)

E

2

STANDARD ABBREVIATIONS

A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
A.D.T.	AVERAGE DAILY TRAFFIC
AE, AEW	APRON ENDWALL
AGG	AGGREGATE
ASPH.	ASPHALTIC
BM	BENCHMARK
B.F.	BACK FACE
CABC	CRUSHED AGGREGATE BASE COURSE
C.E.	COMMERCIAL ENTRANCE
C/L	CENTER LINE
CMCP	CORRUGATED METAL CULVERT PIPE
CMP	CORRUGATED METAL PIPE
CY	CUBIC YARD
CWT	HUNDRED WEIGHT
D.H.V.	DESIGN HOURLY VOLUME
EL., ELEV.	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC.	EXCAVATION
F.E.	FIELD ENTRANCE
F/L, F.L.	FLOW LINE
H.S.	HIGH STRENGTH
INL	INLET
INTER.	INTERSECTION
JT.	JOINT
L.	LENGTH OF CURVE
LS	LUMP SUM
MGAL	1000 GALLONS
M.P.	MARKER POST
NOR	NORMAL
PAV'T	PAVEMENT
PCC	PORTLAND CEMENT CONCRETE
P.E.	PRIVATE ENTRANCE
P.L.	PROPERTY LINE
P.L.E.	PERMANENT LIMITED EASEMENT
R	RADIUS OR RANGE
R/L	REFERENCE LINE
R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
R/W	RIGHT OF WAY
SDD	STANDARD DETAIL DRAWING(S)
SHLD.	SHOULDER(S)
S/L	SURVEY LINE
SW	SIDEWALK
T.	PERCENT TRUCKS
TEL.	TELEPHONE
TEMP.	TEMPORARY
TER.	TERRACE
T.L.E.	TEMPORARY LIMITED EASEMENT
T.O.C.	TOP OF CURB
TYP	TYPICAL
U.G.	UNDERGROUND (CABLE)
VAR	VARIABLE
V.C.	VERTICAL CURVE
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
Wt.	WEIGHT

GENERAL NOTES

- ASPHALTIC SURFACE PAVMENT WEIGHT CALCULATIONS ARE BASED ON 112 LBS/SY/IN.
- PLACE 3.5-INCH ASPHALTIC SURFACE SHOULDERS IN ONE LIFT.
- EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS, BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. THE EXACT LOCATIONS FOR EBS WILL BE DETERMINED BY THE FIELD ENGINEER. USE GEOTEXTILE FABRIC AT EACH EBS LOCATION.
- AT EBS LOCATIONS USE 3/4-INCH OR 1 1/4-INCH BAD MATERIAL TO BACKFILL LOCATIONS RATHER THAN SELECT CRUSHED MATERIAL. AVOID CREATING BATH TUB THAT CANNOT DRAIN WITH EBS OPERATIONS.
- SAWCUTS , AS SHOWN ON PLANS, ARE APPROXIMATE LOCATIONS AND MAY BE ADJUSTED BY THE FIELD ENGINEER BASED ON FIELD CONDITIONS.
- SIGN LOCATIONS ON THE PLAN ARE APPOXIMATE, AND SHALL BE ADJUSTED BY THE FIELD ENGINEER AS NEEDED TO FIT CONDITIONS.
- EROSION CONTROL ITEMS ON THE PLAN ARE APPROXIMATE AND MAY BE ADJUSTED BY THE FIELD ENGINEER TO FIT FIELD CONDITIONS.
- 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 CONSRUCTION ACTIVITIES WITH A CALL TO DIGGER'S HOTLINE AND/OR DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGER'S HOTLINE.
- TRACK WINDOWS ARE REQUIRED FOR ALL OPERATIONS WITHIN THE CONSTRUCTION CLEARANCE ENVELOPE. UPRR STRUCTURES DOES NOT HAVE THE AUTHORITY TO APPROVE TRACK WINDOWS. ALL TRACK WINDOWS SHALL BE COORDINATED WITH AND APPROVED BY THE LOCAL SERVICE UNIT RESPONSIBLE FOR PROVIDING TRACK PROTECTION AND FLAGGING THROUGHOUT THE DURATION OF THE PROJECT. ALL BRIDGE ELEMENTS SHALL BE BRACED AND STABLE PRIOR TO PASSAGE OF TRAINS.

ORDER OF SECTION 2 SHEETS

DNR LIAISON

ERIC HEGLEUND
ENVIRONMENTAL ANALYSIS & SUSTAINABLITY
WDNR - SOUTH CENTRAL REGION
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
608-275-3301

DESIGN CONTACTS

MATTHEW LAMB, P.E.
PROJECT MANAGER
WISDOT SW REGION
2101 WRIGHT ST.
MADISON, WI 53704
608-246-5638
matthew.lamb@dot.wi.gov

JONATHON RESHESKE (B-14-0041)
WISDOT BOS - STRUCTURES DESIGNER
4822 MADISON YARDS WAY
P.O. BOX 7910
MADISON, WI 53707
608-266-8491
jonathon.resheske@dot.wi.gov

JOEL MASS (B-14-0042)
WISDOT BOS - STRUCTURES DESIGNER
4822 MADISON YARDS WAY
P.O. BOX 7910
MADISON, WI 53707
608-267-0273
joel.mass@dot.wi.gov

UTILITY CONTACTS

AT&T LEGACY - COMMUNICATION LINE
WILLIAM KOENIG - JMC ENGINEERS
128 W SUNSET AVE
APPLETON, WI 54911
608-628-0575
wekoenig@att.com

AT&T FIELD TECH
CHARLES CONELY
608-338-3015

WE ENERGIES - ELECTIC
ALEX DANTINNE
500 S 116TH STREET
WEST ALLIS, WI 53214
920-621-6903
Alex.Dantinne@we-energies.com

2

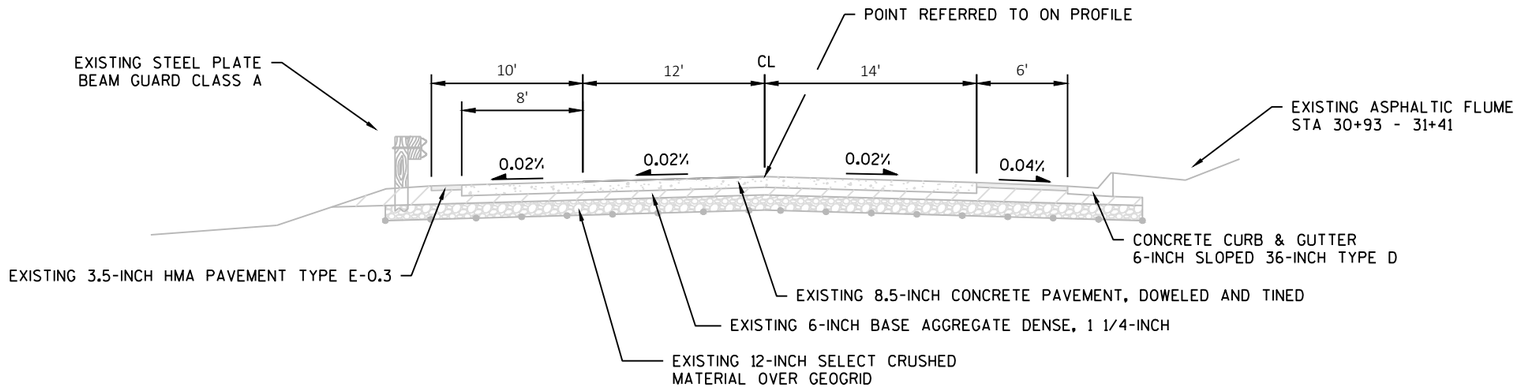
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PROJECT OVERVIEW	SHEET 3	E

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PROJECT HORIZONTAL & VERTICAL CONTROLS	SHEET 4	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0201_GN - GEN NOTES\020102_GN - PROJECT CONTROL.DWG
LAYOUT NAME - 020102_gn - PROJ CNTRLS

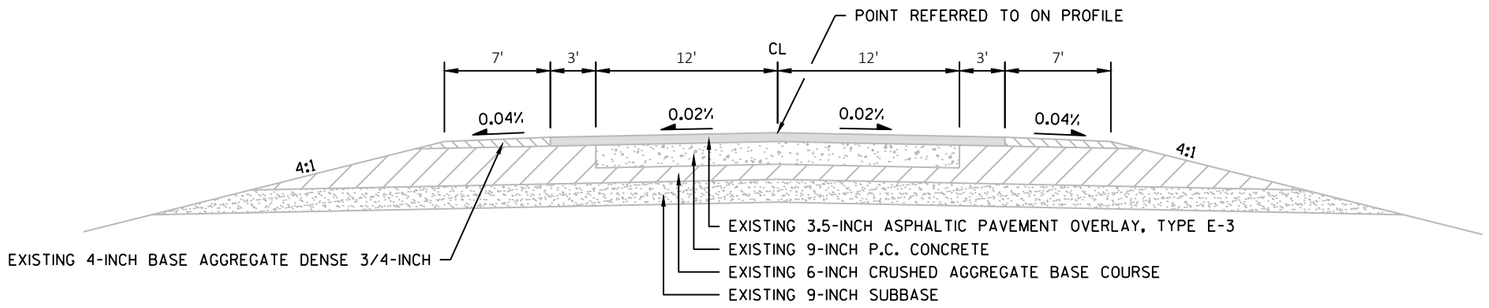
PLOT DATE : 5/23/2017 11:56 AM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 42



EXISTING TYPICAL SECTION AT CONCRETE HEADER

STA 30+93



EXISTING TYPICAL SECTION

LT - STA 30+93 TO STA 33+59/34+53 RT - STA 30+93 TO STA 33+77/34+53

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	EXISTING TYPICAL SECTIONS	SHEET 5	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0203_TS - TYP SECS\0203_TS - TYPS.DWG
LAYOUT NAME - 020301_ts - TYPs
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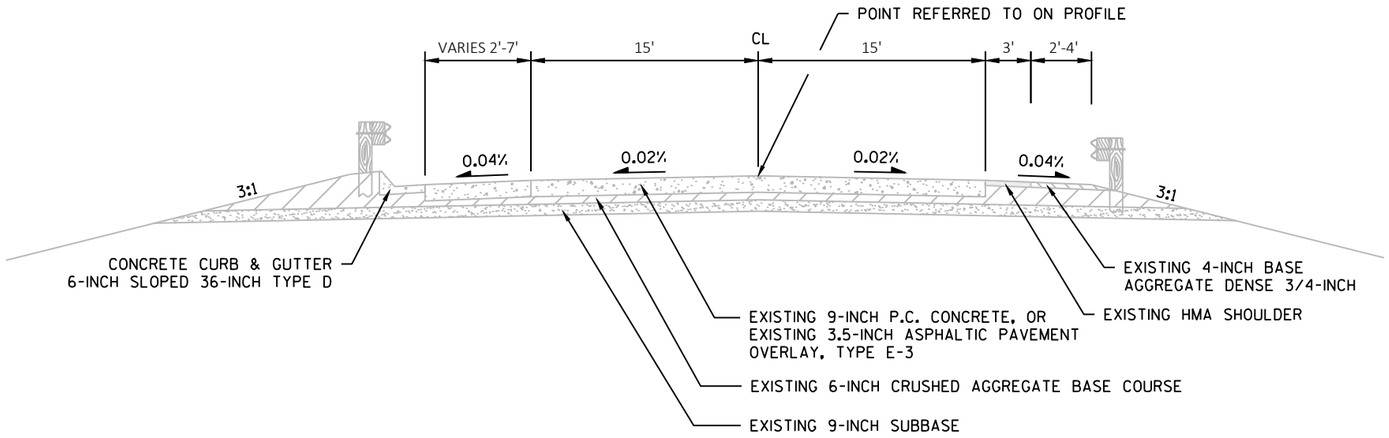
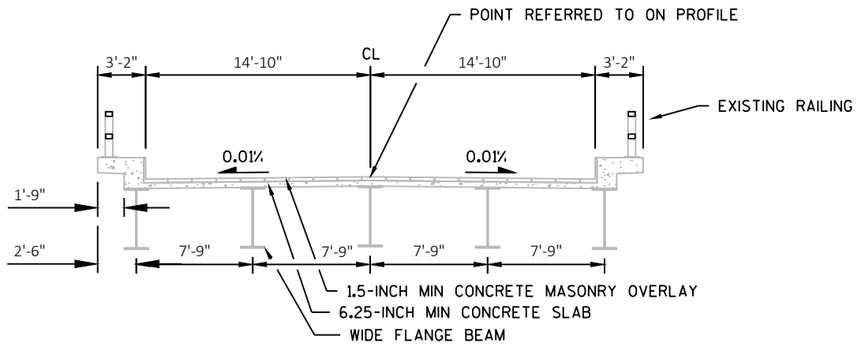
WISDOT/CADDS SHEET 42

2



EXISTING TYPICAL SECTION

LT - STA 33+59/34+53 TO STA 35+47 RT - STA 33+77/34+53 TO STA 35+52

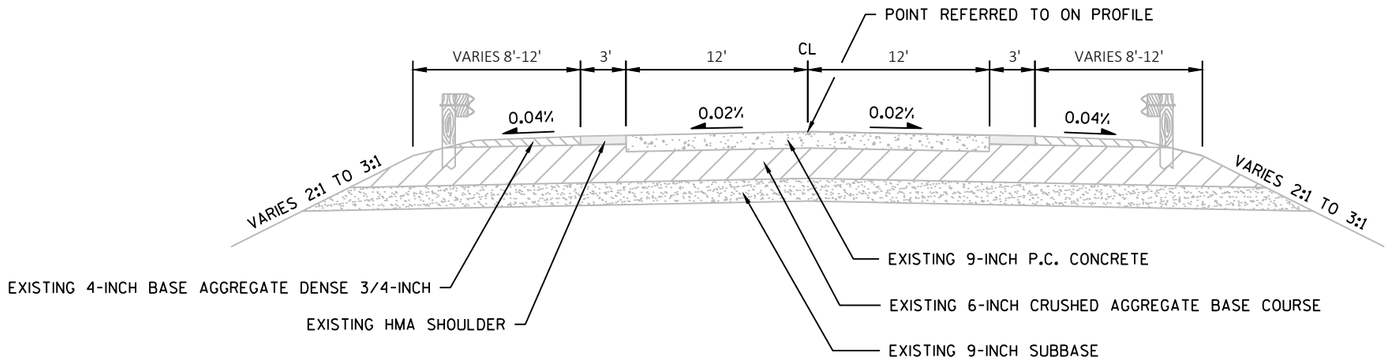


EXISTING TYPICAL SECTION OF BRIDGE B-14-41

STA 35+49 TO STA 36+85

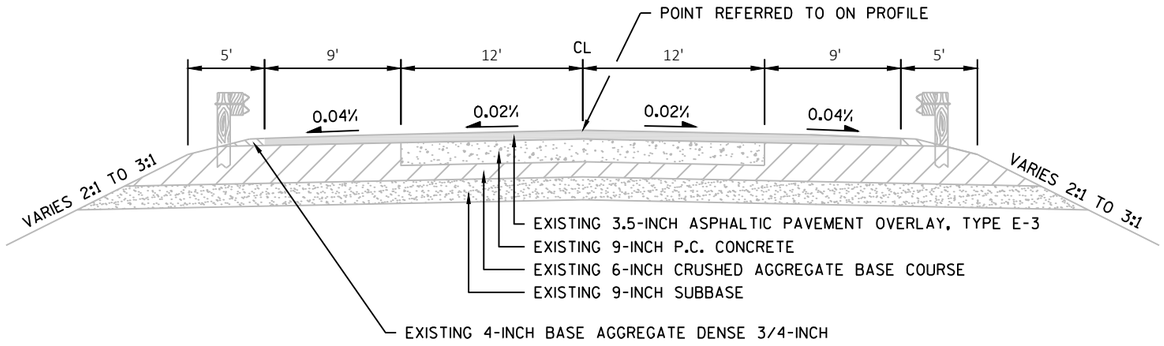
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	EXISTING TYPICAL SECTIONS	SHEET 6	E

2



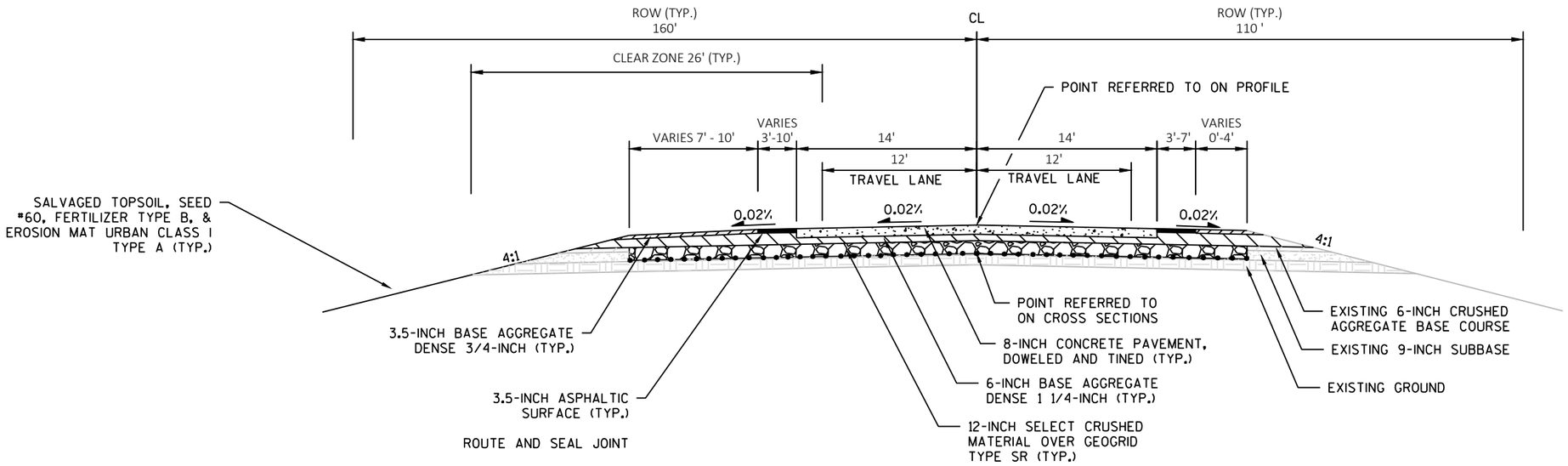
EXISTING TYPICAL SECTION

STA 36+85 TO STA 37+88



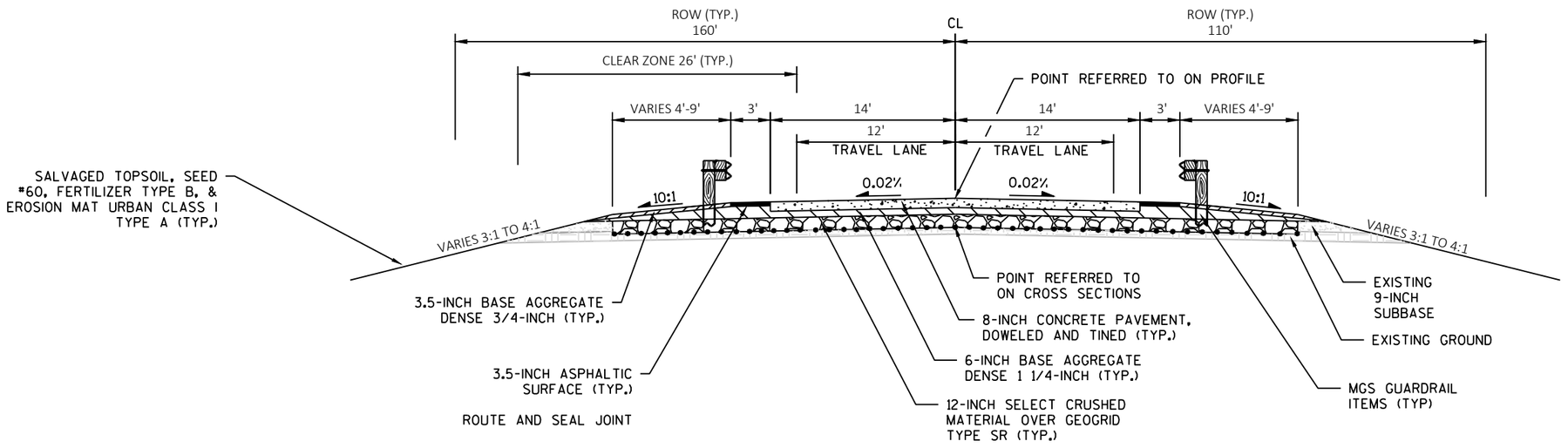
EXISTING TYPICAL SECTION

STA 37+88 TO STA 38+75



FINISHED TYPICAL SECTION

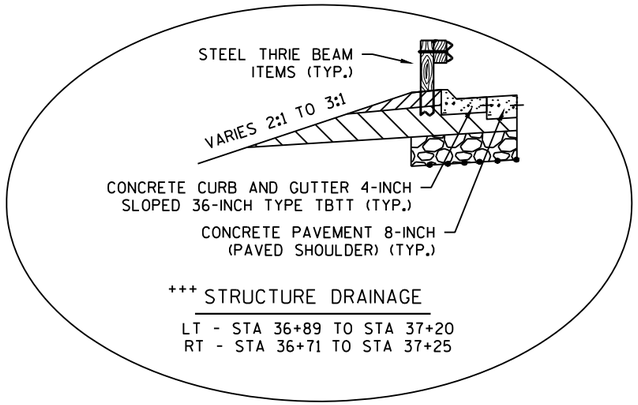
LT - STA 30+93 TO STA 33+59 RT - STA 30+93 TO STA 33+77



FINISHED TYPICAL SECTION

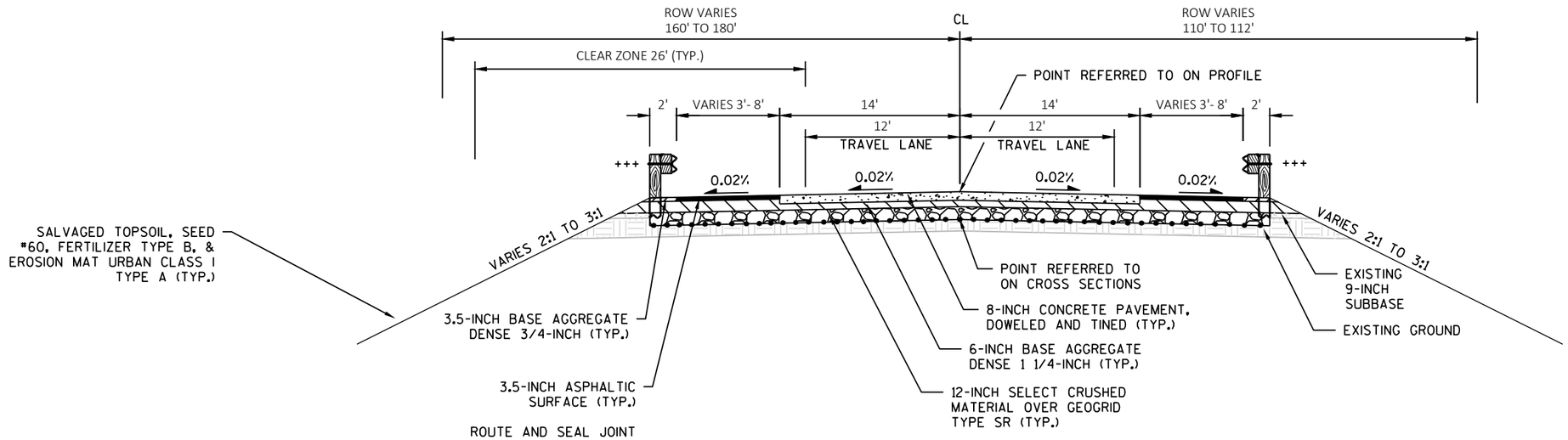
LT - STA 33+59 TO STA 35+32 RT - STA 33+77 TO STA 35+32

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	FINISHED TYPICAL SECTIONS	SHEET 8	E



+++ STRUCTURE DRAINAGE

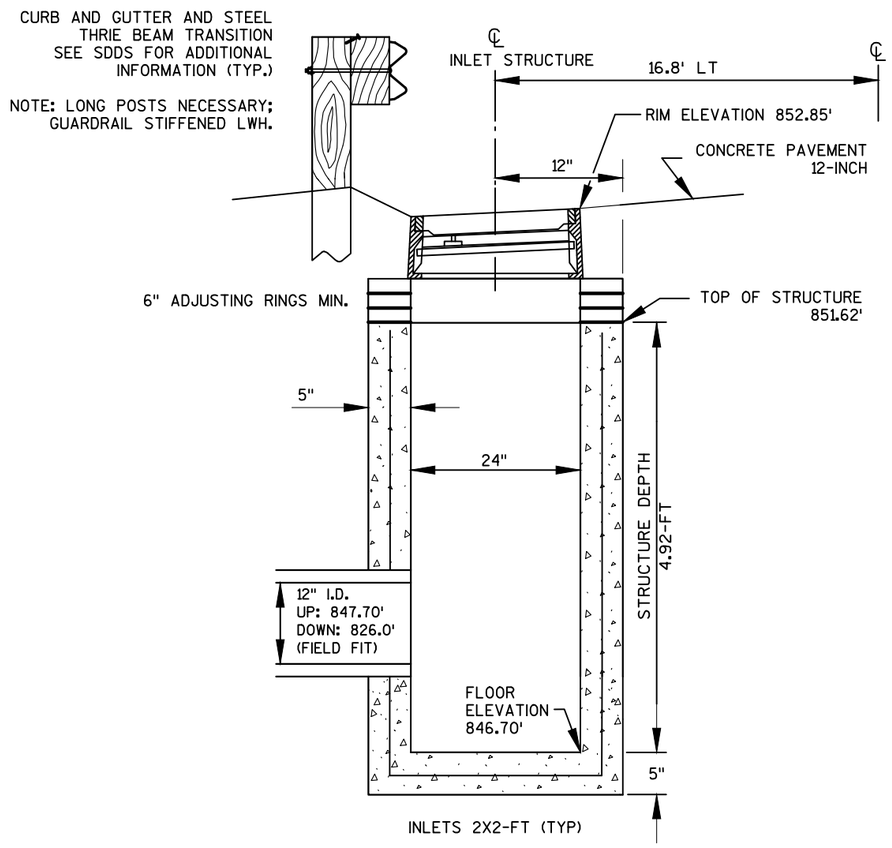
LT - STA 36+89 TO STA 37+20
RT - STA 36+71 TO STA 37+25



FINISHED TYPICAL SECTION

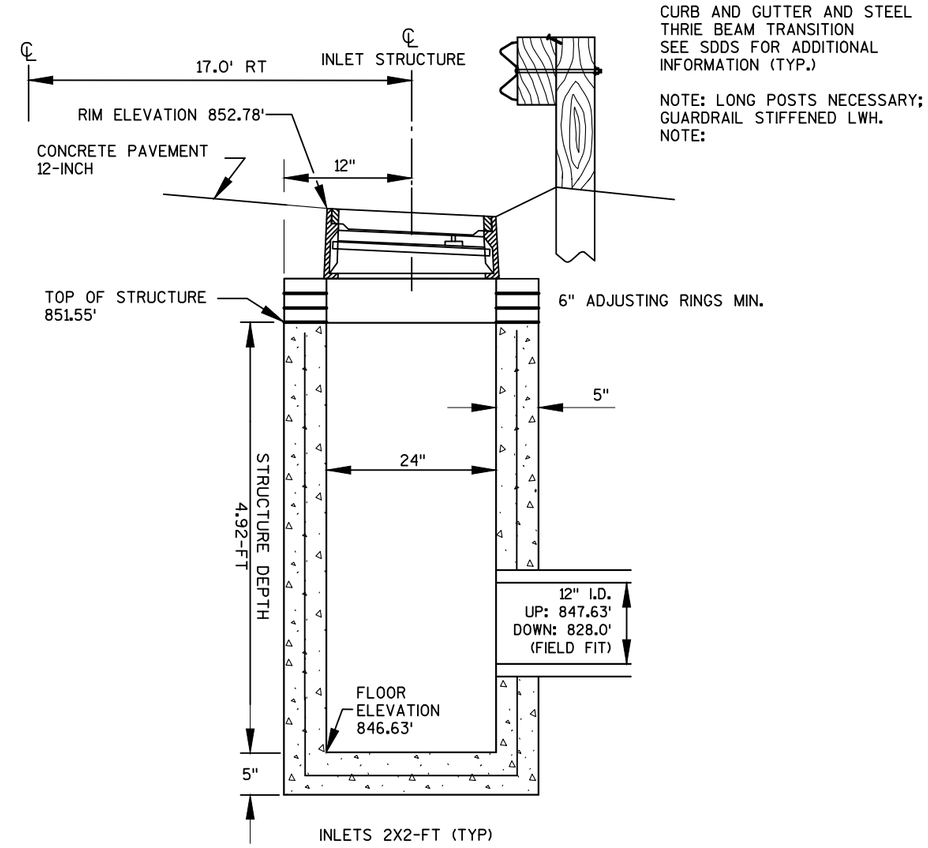
LT - STA 37+20 TO STA 38+75* RT - STA 37+25 TO STA 38+75*

*ROUTE AND SEAL AT PROJECT HEADER. SEE CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION.



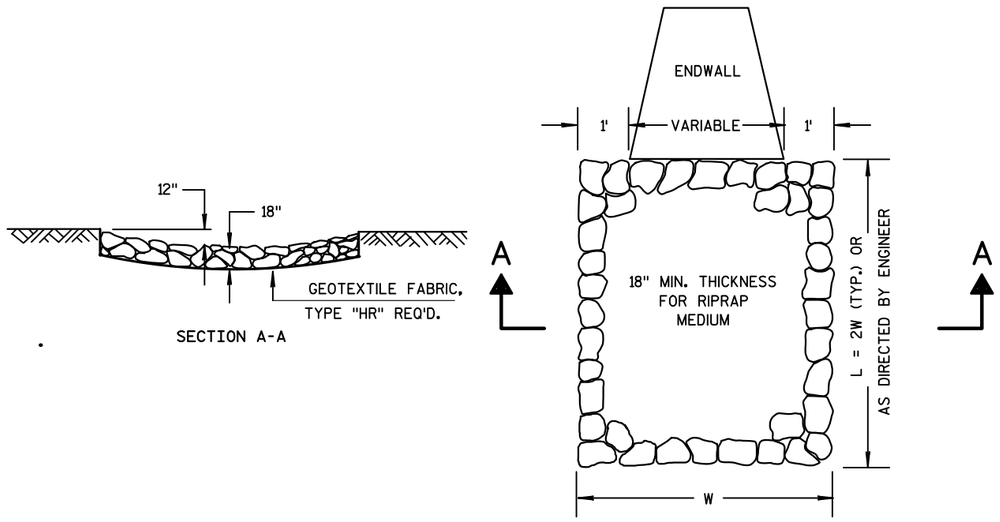
STRUCTURE DRAINAGE DROP STRUCTURE CROSS SECTION

STA 37+13.3 LT
SEE SDD 8C7-2 FOR ADDITIONAL INFORMATION

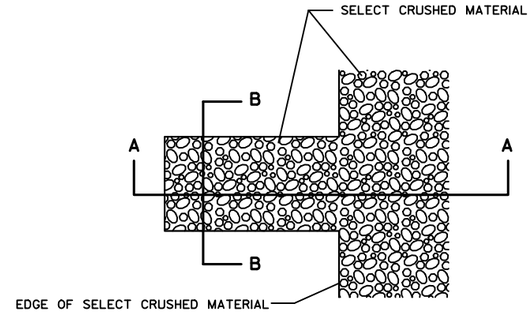


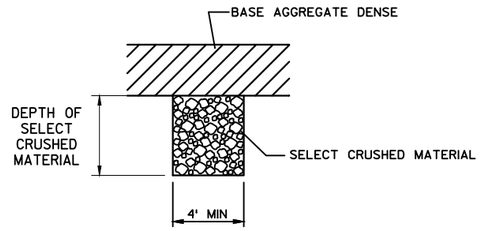
STRUCTURE DRAINAGE DROP STRUCTURE CROSS SECTION

STA 37+19.2 RT
SEE SDD 8C7-2 FOR ADDITIONAL INFORMATION

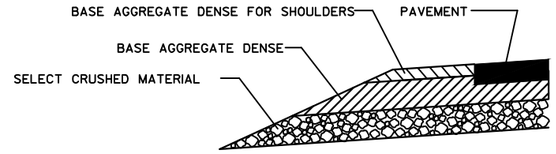


RIPRAP MEDIUM TREATMENT AT ENDWALLS





SECTION B-B



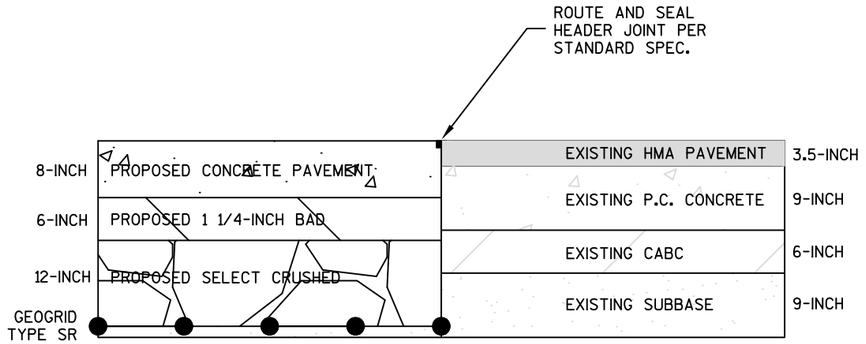
SECTION A-A

DETAIL FOR FRENCH DRAINS/WEEP

DRAINS ARE TO BE CONSTRUCTED AT LEAST EVERY 250'
OR AT ANY LOW POINT TO SUFFICENTLY DRAIN SELECT CRUSHED MATERIAL
(OR AS OTHERWISE DIRECTED BY THE FIELD ENGINEER)

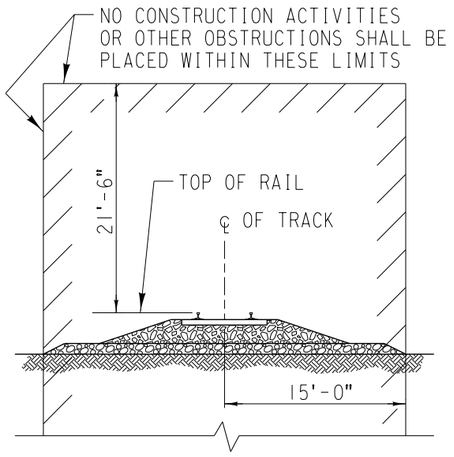
EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS/WEEPS SHALL
BE CONSIDERED INCIDENTAL TO THE ITEM, SELECT CRUSHED MATERIAL.

DO NOT COVER FORESLOPE SELECT CRUSHED MATERIAL WITH TOPSOIL



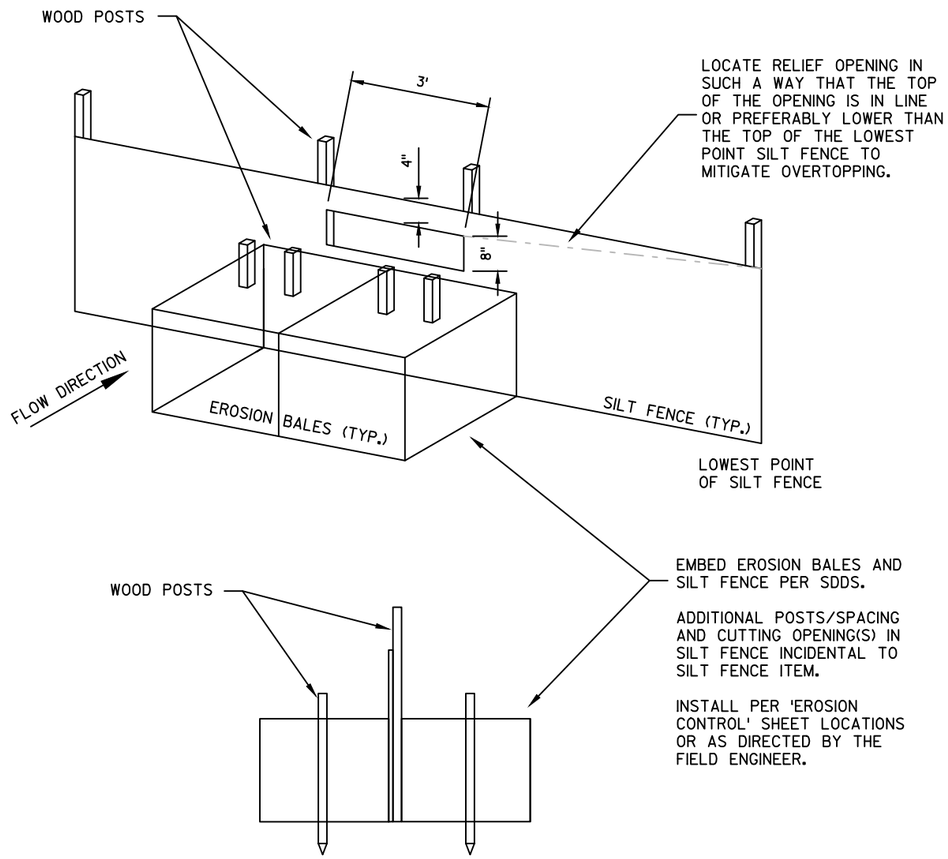
CONSTRUCTION DETAIL

ROUTE AND SEAL AT HEADER
STA 38+75



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)



BALE & SILT FENCE RELIEF DETAIL

SEE 'EROSION CONTROL' SHEETS FOR LOCATIONS

2

WE ENERGIES

DAWN DINICOLA
5066 HORIZON CT
WEST BEND, WI 53095

N

WISDOT ROW

BEGIN PROJECT
STA 30+93
MATCH EXISTING
SAW CUT REQ'D
DRILLED DOWEL BARS REQ'D

EXISTING SIGN
TO REMAIN

CONCRETE

SI

31+00
PI: 30+93.08

ASPHALT

32+00

CAUTION

33+00

STH 16

34+00

CONCRETE

35+00

ASPHALT

B-14-41

PI: 35+49.03

36+00

UNION PACIFIC RR

REMOVE EXISTING CONCRETE FLUME AND CULVERT PIPE (STEEL). REMOVING CULVERT MARKER INCIDENTAL TO REMOVING CULVERT PIPE BID ITEM (TYP.).

REMOVE AND
REPLACE EXISTING
ASPHALT FLUME (TYP.)

EXISTING CULVERT
PIPE AND ENDWALL
TO REMAIN

WISDOT ROW

REMOVE EXISTING
CONCRETE FLUME AND
CULVERT PIPE (STEEL).

CONCRETE PAVEMENT
APPROACH SLAB (TYP.)
SEE SDD 13B 2-9A FOR
DETAILS

AT&T LEGACY

GRABOW REVOCABLE TRUST
SUSAN MORRONE
308 JAMES ST
WATERTOWN, WI 53098

EXISTING CULVERT
PIPE AND ENDWALLS
TO REMAIN

AT&T LEGACY

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PLAN DETAILS	SHEET 13	E

2

N

WILLIAM EHLING
DANIEL RULLMAN
PO BOX 50
WATERTOWN, WI 53094

UNION PACIFIC RR

EXISTING WETLANDS

EXISTING WETLANDS

SILVER CREEK

REMOVE EXISTING CONCRETE FLUME AND CULVERT PIPE (STEEL).

CONCRETE PAVEMENT APPROACH SLAB (TYP.) SEE SDD 13B 2-9A FOR DETAILS

SEE STRUCTURE DRAINAGE CONSTRUCTION DETAIL FOR DROP INLET AND FLUME DETAILS (TYP.)

STRUCTURE B-14-42
WINGWALL REPLACEMENT
STA 40+58 LT
SEE STRUCTURE PLAN

SI

END PROJECT
STA 38+75
MATCH EXISTING
SAW CUT REQ'D

36+00

37+00

PI: 36+85.00

B-14-41

CONCRETE

ASPHALT

PI: 37+63.15

38+00

ASPHALT

PI: 38+72.48

39+00

STH 16

40+00

41+00

42+00

EXISTING RIPRAP LIMITS

REMOVE EXISTING CONCRETE FLUME AND CULVERT PIPE (STEEL). REMOVING CULVERT MARKER INCIDENTAL TO REMOVING CULVERT PIPE BID ITEM (TYP.).

SEE STRUCTURE DRAINAGE CONSTRUCTION DETAIL FOR DROP INLET AND FLUME DETAILS (TYP.)

SI

AT&T LEGACY

AT&T LEGACY

WILLIAM EHLING
DANIEL RULLMAN
PO BOX 50
WATERTOWN, WI 53094

SILVER CREEK

ASPHALT

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PLAN DETAILS	SHEET 14	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0212_PD - PLAN DETAILS\0212_PD - PLAN DETAILS.DWG
LAYOUT NAME - 021202_pd
PLOT DATE : 9/3/2020 4:05 PM
PLOT BY : LAMB, MATTHEW R
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

N

855.96 855.93 855.83 855.72 855.62 855.51 855.41 855.30 855.20 855.10 854.99 854.89 854.78

-2.0% (TYP.)

856.24 856.21 856.11 856.00 855.90 855.79 855.69 855.58 855.48 855.38 855.27 855.17 855.06

PI: 30+93.08

31+00

32+00

STH 16

33+00

-2.0% (TYP.)

-2.0% (TYP.)

-2.0% (TYP.)

855.96 855.93 855.83 855.72 855.62 855.51 855.41 855.30 855.20 855.10 854.99 854.89 854.78

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PAVING GRADES	SHEET 15	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0212_PD - PLAN DETAILS\021202_PD - PLAN DETAILS - PAVING GRADES 2.DWG
LAYOUT NAME - 021203_pd
PLOT DATE : 9/4/2020 3:23 PM
PLOT BY : LAMB, MATTHEW R
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

N

CONCRETE PAVEMENT APPROACH SLAB (TYP.)
SEE SDD 13B 2-9A FOR DETAILS

BASE AGGREGATE DENSE 1 1/4-INCH (TYP.) CARRY PAST END OF STRUCTURE PARAPETS OVER TOP RIPRAP MEDIUM - SEE EC SHEETS FOR ADDITIONAL INFORMATION.

+32.1, 16.8' LT

854.89 854.78 854.68 854.57 854.47 854.36 854.26 854.15 854.07 853.99

+32.1, 14' LT 854.13 854.04

+46.8, 16.75' LT

+47.1, 14' LT

-2.0% (TYP.)

855.17 855.06 854.96 854.85 854.75 854.64 854.54 854.43 854.41 854.31

STH 16 34+00 35+00 36+00

+49, AT C/L

+32.1, AT C/L

PI: 35+49.03

854.89 854.78 854.68 854.57 854.47 854.36 854.26 +32.1, 14' LT 854.13 854.02

854.15

+51.6, 14' RT

+52.1, 16.75' RT

B-14-0041

854.07 853.96

+32.1, 16.9' LT

CONCRETE PAVEMENT 12-INCH (TYP.)

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PAVING GRADES	SHEET 16	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0212_PD - PLAN DETAILS\021202_PD - PLAN DETAILS - PAVING GRADES 2.DWG
LAYOUT NAME - 021204_pd
PLOT DATE : 9/4/2020 3:23 PM PLOT BY : LAMB, MATTHEW R PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

N

DEPRESS INLET FLOW LINE
2-INCHES. SEE SDD 8D3-8 FOR
MORE INFORMATION (TYP.).

RIM ELEVATION WITH 2-INCH
DEPRESSION: 852.85'

SEE 'CONSTRUCTION DETAIL
- STRUCTURE DRAINAGE' FOR
DROP INLET AND FLUME
DETAILS (TYP.)

TAPER CURB & GUTTER MIN 5-FT AT ENDS (TYP.)

CUT TRANSVERSE JOINTS IN CONCRETE PAVEMENT
12-INCH AS DIRECTED BY THE FIELD ENGINEER, BUT
DO NOT INSTALL A LONGITUDINAL JOINT.

TIE CONCRETE PAVEMENT 12-INCH TO CONCRETE
PAVEMENT APPROACH SLAB PER SDDS FOR
CONCRETE PAVEMENT (TYP.). TIE BARS
INCIDENTAL TO CONCRETE PAVEMENT ITEM.

CONCRETE CURB
& GUTTER 4-INCH
SLOPED 36-INCH
TYPE TBTT (TYP.)

+13.3, 15.8' LT
+19.5, 17.5' LT
852.92
853.23
+82.1, 16.72' LT
+82.5, 14' LT
853.29
853.18
853.19
853.06
+01.9, 14' LT
852.99
+19.5, 14' LT
852.93
852.67
852.53
852.40
852.13
851.87
851.60
851.34
-2.0% (TYP.)
-2.0% (TYP.)
-2.0% (TYP.)
+84.8, AT C/L
853.55
853.47
853.46
853.21
852.95
852.81
852.68
852.41
852.15
851.88
851.62
36+00
37+00
38+00
39+00
STH 16
PI: 36+85.00
PI: 37+63.15
PI: 38+72.48
+01.9, AT C/L
CONCRETE PAVEMENT APPROACH SLAB (TYP.)
SEE SDD 13B 2-9A FOR DETAILS
B-14-0041
+19.2, 14' RT
853.26
853.19
+01.9, 14' RT
853.18
852.99
14' RT
852.93
852.67
852.52
852.40
852.13
851.87
851.60
851.34
+87.1, 14' RT
+87.5, 16.78' RT
853.20
852.85
17.8' RT
+19.2, 16' RT
CONCRETE PAVEMENT 12-INCH (TYP.)
DEPRESS INLET FLOW LINE
2-INCHES. SEE SDD 8D3-8 FOR
MORE INFORMATION (TYP.).

RIM ELEVATION WITH 2-INCH
DEPRESSION: 852.78'

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PAVING GRADES	SHEET 17	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0212_PD - PLAN DETAILS\021202_PD - PLAN DETAILS - PAVING GRADES 2.DWG
LAYOUT NAME - 021205_pd
PLOT DATE : 7/20/2021 12:28 PM PLOT BY : LAMERE, BAILEY J PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

2

NOTES

1. DISTURBED SLOPES SHALL BE RESTORED WITH SALVAGED TOPSOIL, SEED MIXTURE No. 60, FERTILIZER TYPE B, AND EROSION MAT URBAN CLASS I TYPE A.
2. SILT FENCE SHALL BE INSTALLED 5' OFF THE SLOPE INTERCEPT LINE, OR AS OTHERWISE DIRECTED BY THE ENGINEER
3. FOR SILT FENCE RELIEF, USE EROSION BALES (TYP). SEE SDD 8E8-3 FOR INSTALLATION INSTRUCTIONS; BALES SHALL BE EMBEDDED INTO EXISTING GROUND THE MINIMUM 4-INCHES AS SHOWN IN THE SDD.
4. DO NOT STORE EQUIPMENT OR MATERIALS WITHIN THE DELINEATED WETLAND AREAS.

N

WE ENERGIES

OH

31+00

32+00

33+00

34+00

35+00

36+00

SEE CONSTRUCTION DETAIL FOR ADDITIONAL INFORMATION (TYP.)

PLACE RIPRAP MEDIUM PRIOR TO PLACING 3/4-INCH BAD SHOULDER MATERIAL. FILL VOIDS WITH BAD MATERIAL THEN TOP WITH SHOULDER MATERIAL PAST END OF PARAPETS (TYP.).

ESTIMATE DIMENSIONS ARE APPROXIMATELY 4'W X 8'L X 2'D. INSTALL AS DIRECTED BY THE FIELD ENGINEER.

AT&T LEGACY

FO

LEGEND

- SURFACE AND RIVER WATER FLOW
- EXISTING WETLANDS
- TEMPORARY DITCH CHECK
- EROSION MAT URBAN CLASS I TYPE A
- SILT FENCE
- EROSION BALES
- RIP RAP (MEDIUM)

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	EROSION CONTROL	SHEET 18	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0220_EC - EROSION CONTROL\022001_EC.DWG
LAYOUT NAME - 022001_ec

PLOT DATE : 3/12/2019 9:37 AM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

RIPRAP MEDIUM
6'X6' MIN
OR AS DIRECTED BY
THE FIELD ENGINEER

36+00

37+00

38+00

39+00

40+00

41+00

42+00

INSTALL EROSION BALES
ALONG TOE OF SLOPE ONCE
SILT FENCE HAS BEEN
REMOVED, OR AS DIRECTED
BY THE FIELD ENGINEER.

RIPRAP MEDIUM
10W' X 25L' MIN
OR AS DIRECTED BY
THE FIELD ENGINEER

RIPRAP MEDIUM
6'X6' MIN
OR AS DIRECTED BY
THE FIELD ENGINEER

AT&T LEGACY

LEGEND

- SURFACE AND RIVER WATER FLOW
- EXISTING WETLANDS
- TEMPORARY DITCH CHECK
- EROSION MAT URBAN CLASS I TYPE A
- SILT FENCE
- EROSION BALES
- RIP RAP (MEDIUM)

NOTES

1. DISTURBED SLOPES SHALL BE RESTORED WITH SALVAGED TOPSOIL, SEED MIXTURE No. 60, FERTILIZER TYPE B, AND EROSION MAT URBAN CLASS I TYPE A.
2. SILT FENCE SHALL BE INSTALLED 5' OFF THE SLOPE INTERCEPT LINE, OR AS OTHERWISE DIRECTED BY THE ENGINEER
3. FOR SILT FENCE RELIEF, USE EROSION BALES (TYP). SEE SDD 8E8-3 FOR INSTALLATION INSTRUCTIONS; BALES SHALL BE EMBEDDED INTO EXISTING GROUND THE MINIMUM 4-INCHES AS SHOWN IN THE SDD.
4. DO NOT STORE EQUIPMENT OR MATERIALS WITHIN THE DELINEATED WETLAND AREAS.

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	EROSION CONTROL	SHEET 19	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0220_EC - EROSION CONTROL\022001_EC.DWG
LAYOUT NAME - 022002_ec
PLOT DATE : 3/12/2019 9:37 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

EXISTING SIGN TO REMAIN

SW

YS

SW

31+00

32+00

33+00

34+00

35+00

36+00

N

M1-03

W5-52L

M1-01

EAST 16

EAST 16

M1-02

W5-52R

M2-05

W5-52R

36+00

37+00

38+00

39+00

SW

YS

SW

M2-04

W5-52L

40+00

41+00

42+00

EXISTING SIGN TO REMAIN

LEGEND

YS - MARKING LINE EPOXY 4-INCH (SOLID YELLOW/SKIPS)

SW - MARKING LINE EPOXY 4-INCH (SOLID WHITE)

- EXISTING SIGN TO BE MOVED, UNLESS OTHERWISE STATED IN PLANS

- NEW LOCATION OF MOVED SIGN

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PAVEMENT MARKING & PERMANENT SIGNING	SHEET 20	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0245_PM - PVMT MRK\0245_PM - PVMT MRK.DWG
LAYOUT NAME - 024501_pm

PLOT DATE : 9/3/2020 10:39 AM PLOT BY : LAMB, MATTHEW R PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

STH 26

HUSTISFORD

STH 16/60

BLOW UP #4

BLOW UP #3

BLOW UP #5

STH 60

STH 60

NEOSHO

BLOW UP #6

STH 26/16

BLOW UP #2

STH 67

BLOW UP #7

PROJECT LOCATION
B-14-41 & B-14-42

SEE 'TRAFFIC CONTROL PROJECT LIMITS' SHEETS FOR ADDITIONAL INFORMATION

BLOW UP # 1

STH 19

PCMS

PLACE PCMS BOARDS ON EITHER SIDE OF B-14-41 AT LEAST 7 DAYS PRIOR TO INSTALLING DETOUR.

WATERTOWN

BLOW UP #8

ASHIPPUN

IXONIA

BLOW UP #9

OCONOMOWOC

STH 26

MESSAGE

BRIDGE CLOSED	STARTING (DATE)

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.

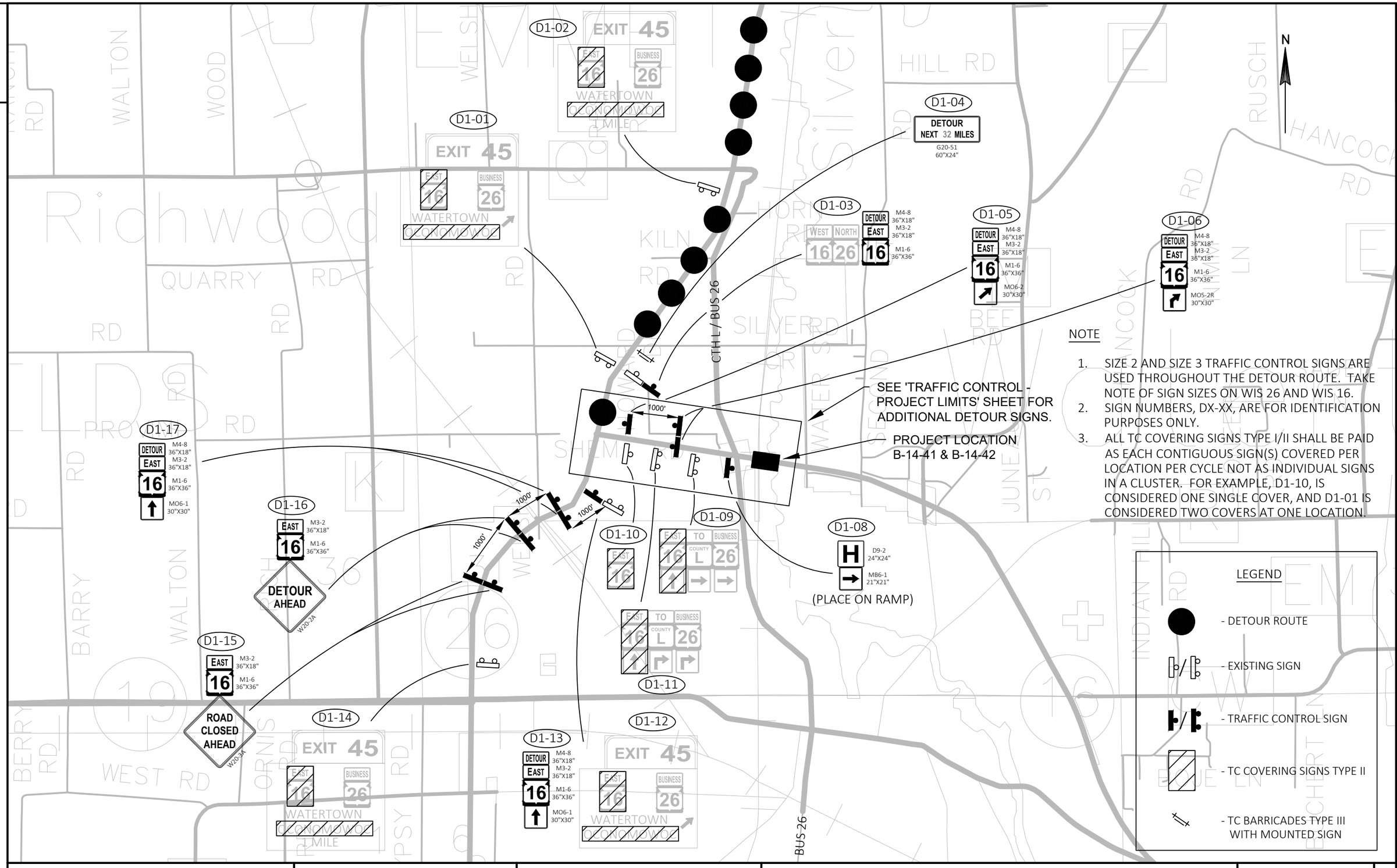
LEGEND

- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR ROUTE - OVERVIEW	SHEET	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027001_dt
PLOT DATE : 3/12/2019 9:54 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

2



NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.

LEGEND

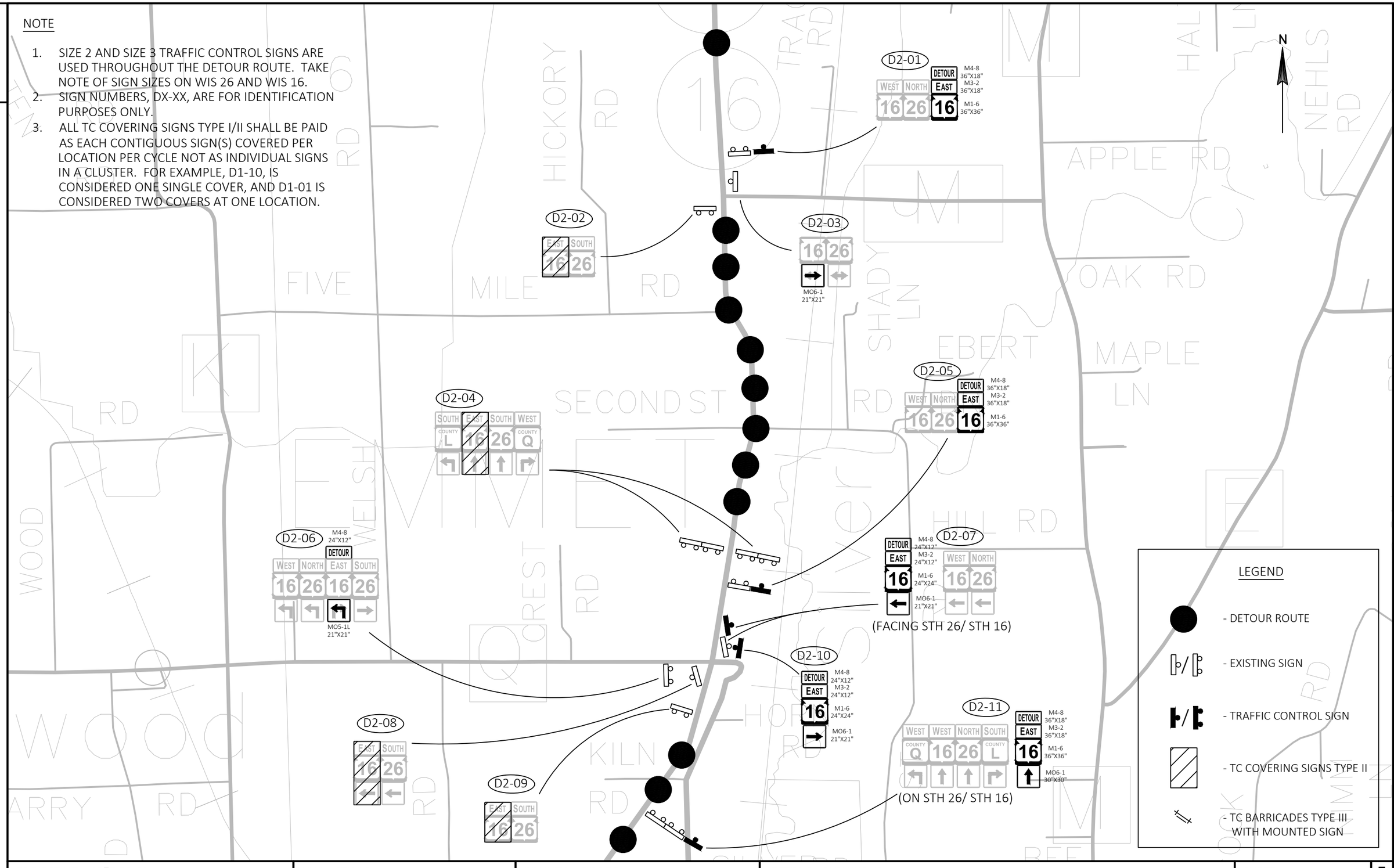
- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #1	SHEET 22	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027002_dt
PLOT DATE : 3/12/2019 9:54 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.



PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #2	SHEET	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027003_dt
PLOT DATE : 3/12/2019 9:54 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.

N

D3-01
DETOUR WEST 60 16 — M4-8 24"X12", M3-4 24"X12", M1-6 24"X24"

D3-02
EAST 16 — M3-2 24"X12", M1-6 24"X24"
DETOUR AHEAD W20-2A

D3-03
DETOUR EAST 16 — M4-8 24"X12", M3-2 24"X12", M1-6 24"X24", MO6-2 21"X21"
EXIT 52 — 16 60 — COLUMBUS HUSTISFORD

D3-04
DETOUR EAST 16 — M4-8 24"X12", M3-2 24"X12", M1-6 24"X24", MO5-2R 21"X21"

D3-05
WEST 60 16 EAST — M4-8 24"X12", M3-2 24"X12", M1-6 24"X24"

D3-06
DETOUR EAST 16 — M4-8 36"X18", M3-2 36"X18", M1-6 36"X36", MO6-2 30"X30"
EXIT 52 — 16 60 — COLUMBUS HUSTISFORD

D3-07
EAST 16 — M3-2 24"X12", M1-6 24"X24"
DETOUR AHEAD W20-2A

D3-08
EAST 16 SOUTH 26

D3-09
DETOUR EAST 16 — M4-8 36"X18", M3-2 36"X18", M1-6 36"X36", MO5-2R 30"X30"

D3-10
WEST 16 NORTH 26 EAST DETOUR 16 — M4-8 36"X18", M3-2 36"X18", M1-6 36"X36"

D3-11
16 26 — MO6-1 21"X21"

D3-12
EAST 16 SOUTH 26

D3-13
16 26 — MO6-1 21"X21"

STH 60

1000'

BLOW UP #4

STH 26 / STH 16

TERRITORIAL RD

LEGEND

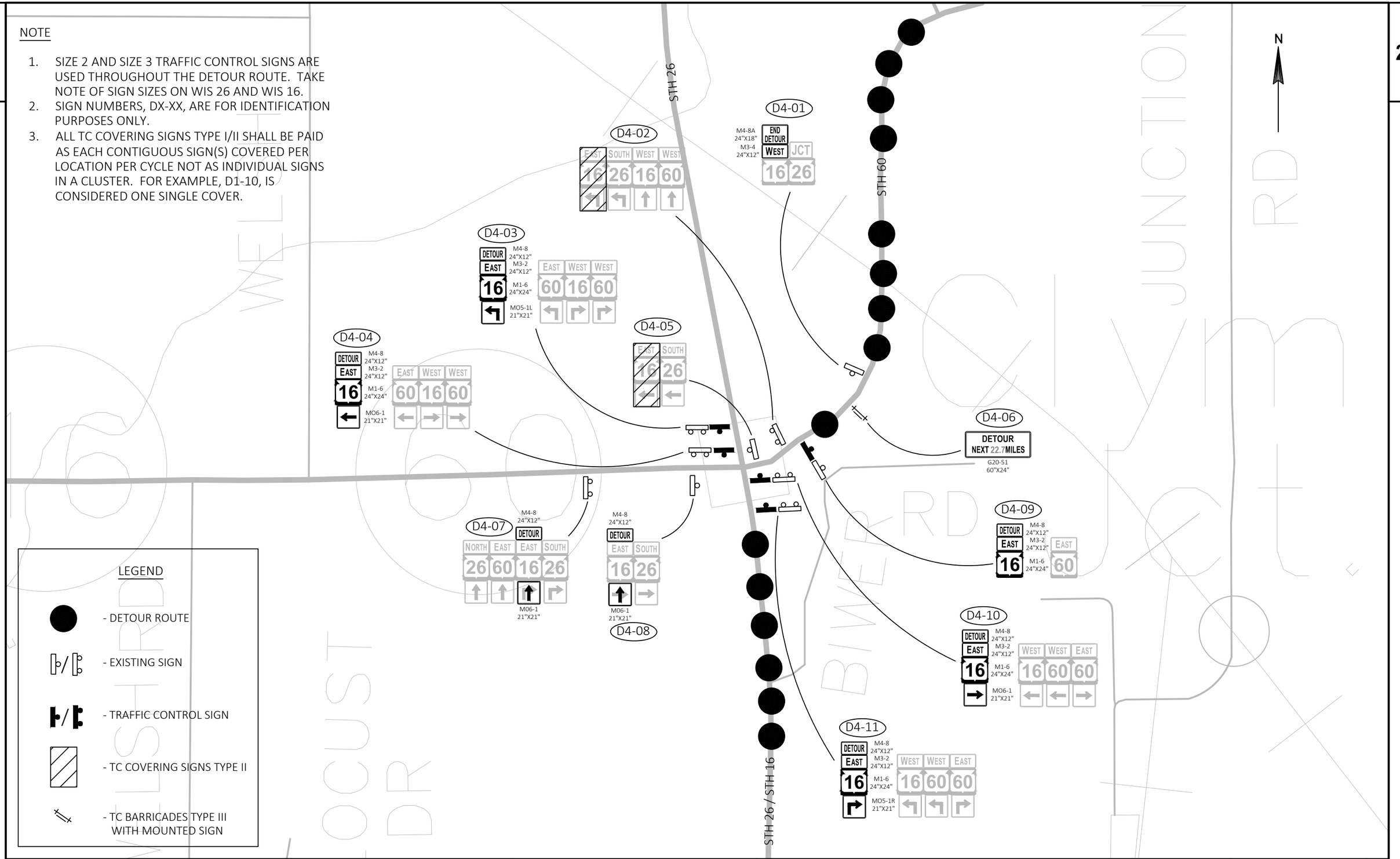
- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOW UP #3	SHEET 24	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027004_dt
PLOT DATE : 3/12/2019 9:54 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER.



PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #4	SHEET 25	E

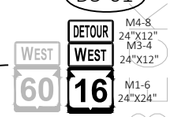
FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027005_dt
PLOT DATE : 3/12/2019 9:54 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

LEGEND

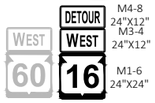
- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

N

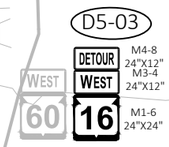
D5-01



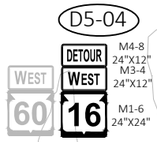
D5-02



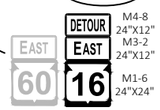
D5-03



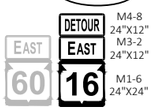
D5-04



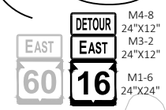
D5-05



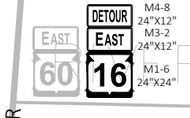
D5-06



D5-07



D5-08



NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #5	SHEET 26	E

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.

N

D6-01
DETOUR WEST 16
WEST 60
M4-8 24"X12"
M3-4 24"X12"
M1-6 24"X24"

D6-02
DETOUR EAST 16
EAST 60
M4-8 24"X12"
M3-2 24"X12"
M1-6 24"X24"

D6-03
DETOUR WEST 16
WEST 60
M4-8 24"X12"
M3-4 24"X12"
M1-6 24"X24"

D6-04
DETOUR EAST 16
NORTH 67 EAST 60 SOUTH 67
M4-8 24"X12"
M3-2 24"X12"
M1-6 24"X24"
M05-1R 21"X21"

D6-05
DETOUR WEST 16
WEST 60 EAST 60
M4-8 24"X12"
M3-4 24"X12"
M1-6 24"X24"
M06-1 21"X21"

D6-06
DETOUR EAST 16
NORTH 67 SOUTH 67
M4-8 24"X12"
M3-2 24"X12"
M1-6 24"X24"
M06-1 21"X21"

D6-07
DETOUR EAST 16
SOUTH 67
M4-8 24"X12"
M3-2 24"X12"
M1-6 24"X24"

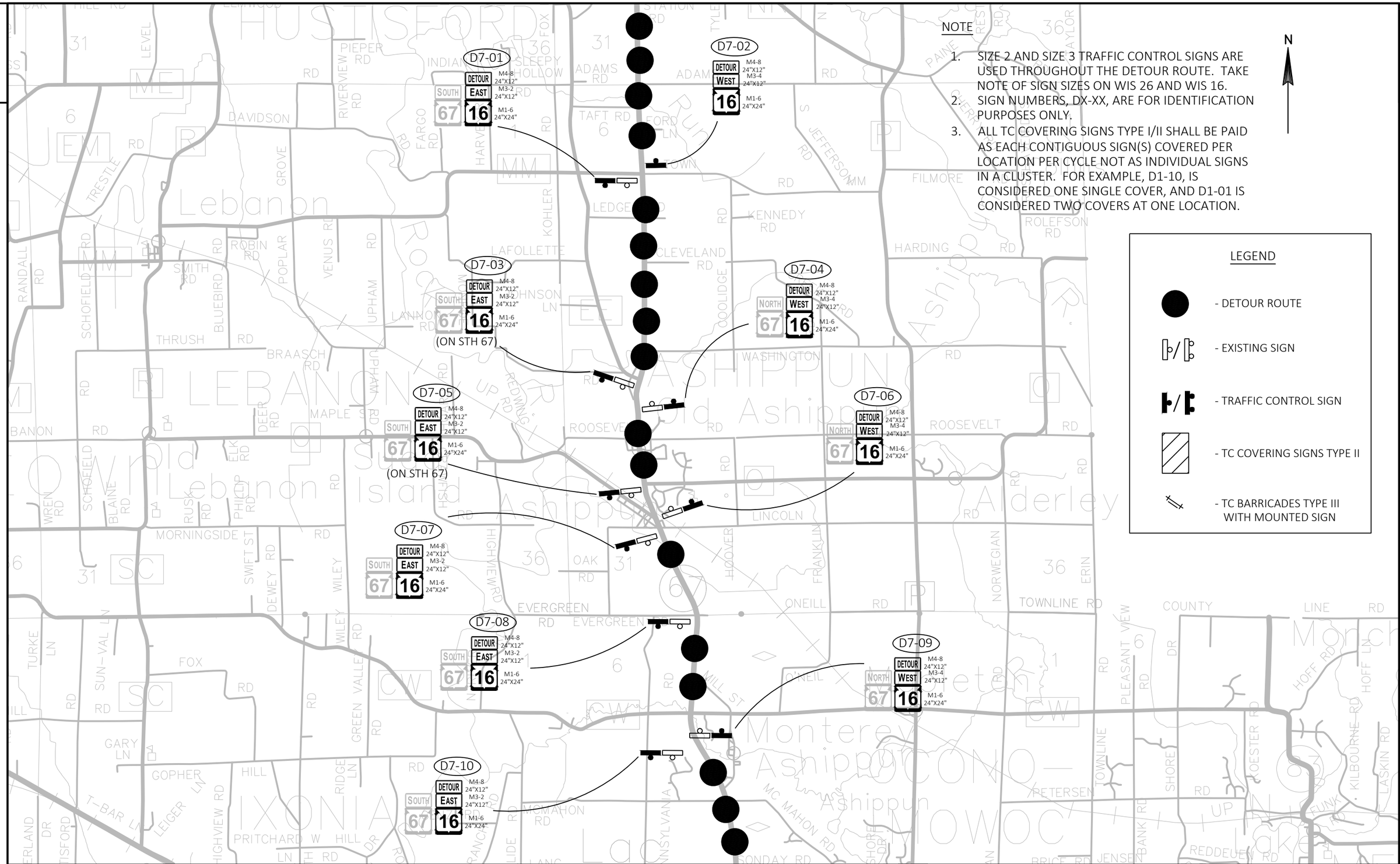
D6-08
DETOUR WEST 16
WEST 60 NORTH 67 EAST 60
M4-8 24"X12"
M3-4 24"X12"
M1-6 24"X24"
M05-1L 21"X21"

LEGEND

- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #6	SHEET 27	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027007_dt
PLOT DATE : 3/12/2019 9:55 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44



PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #7	SHEET 28	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027008_dt

PLOT DATE : 3/12/2019 9:55 AM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : ##########

WISDOT/CADDS SHEET 44

LEGEND

- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

PENNSYLVANIA ST

COTTONWOOD CT

PARK ST

LANG RD

SONDAY RD

1000'

500'

N

D8-01
DETOUR M4-8 24"X12"
WEST
16
MO6-1 21"X21"

D8-02
DETOUR M4-8 24"X12"
WEST
16
MO6-1 21"X21"

D8-03
WEST
16

D8-04
EAST | SOUTH | WEST
16 | 67 | 16

D8-05
END DETOUR M4-8A 24"X18"
EAST M3-2 24"X12"
16

D8-06
DETOUR
NEXT 24 1/ MILES
G20-51 60"X24"

D8-07
DETOUR M4-8 24"X12"
WEST M3-4 24"X12"
16 M1-6 24"X24"
NORTH
67

D8-08
DETOUR M4-8 24"X12"
WEST M3-4 24"X12"
16 M1-6 24"X24"
MO6-1 21"X21"
NORTH
67

D8-09
DETOUR M4-8 24"X12"
WEST M3-4 24"X12"
16 M1-6 24"X24"
MO5-1R 21"X21"
NORTH
67

D8-10
DETOUR M4-8 36"X18"
WEST M3-4 36"X18"
16 M1-6 36"X36"
MO6-2 30"X30"
67 NORTH
OCONOMOWOC
MAYVILLE

D8-11
DETOUR M4-8 36"X18"
WEST M3-4 36"X18"
16 M1-6 36"X36"
MO5-2R 30"X30"

D8-12
WEST M3-4 36"X18"
16 M1-6 36"X36"
DETOUR AHEAD W20-2A

D8-13
DETOUR M4-8 36"X18"
WEST M3-4 36"X18"
16 M1-6 36"X36"
MO5-2R 30"X30"

D8-14
DETOUR M4-8 36"X18"
WEST M3-4 36"X18"
16 M1-6 36"X36"
MO6-2 30"X30"
67 NORTH
OCONOMOWOC
MAYVILLE

D8-15
DETOUR M4-8 24"X12"
WEST M3-4 24"X12"
16 M1-6 24"X24"
MO5-1L 21"X21"
NORTH
67

D8-16
DETOUR M4-8 24"X12"
WEST M3-4 24"X12"
16 M1-6 24"X24"
MO6-1 21"X21"
NORTH
67

D8-17
WEST M3-4 36"X18"
16 M1-6 36"X36"
DETOUR AHEAD W20-2A

D8-18
DETOUR M4-8 24"X12"
NORTH | WEST | EAST | SOUTH
67 | 16 | 16 | 67
MO6-1 21"X21"

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.

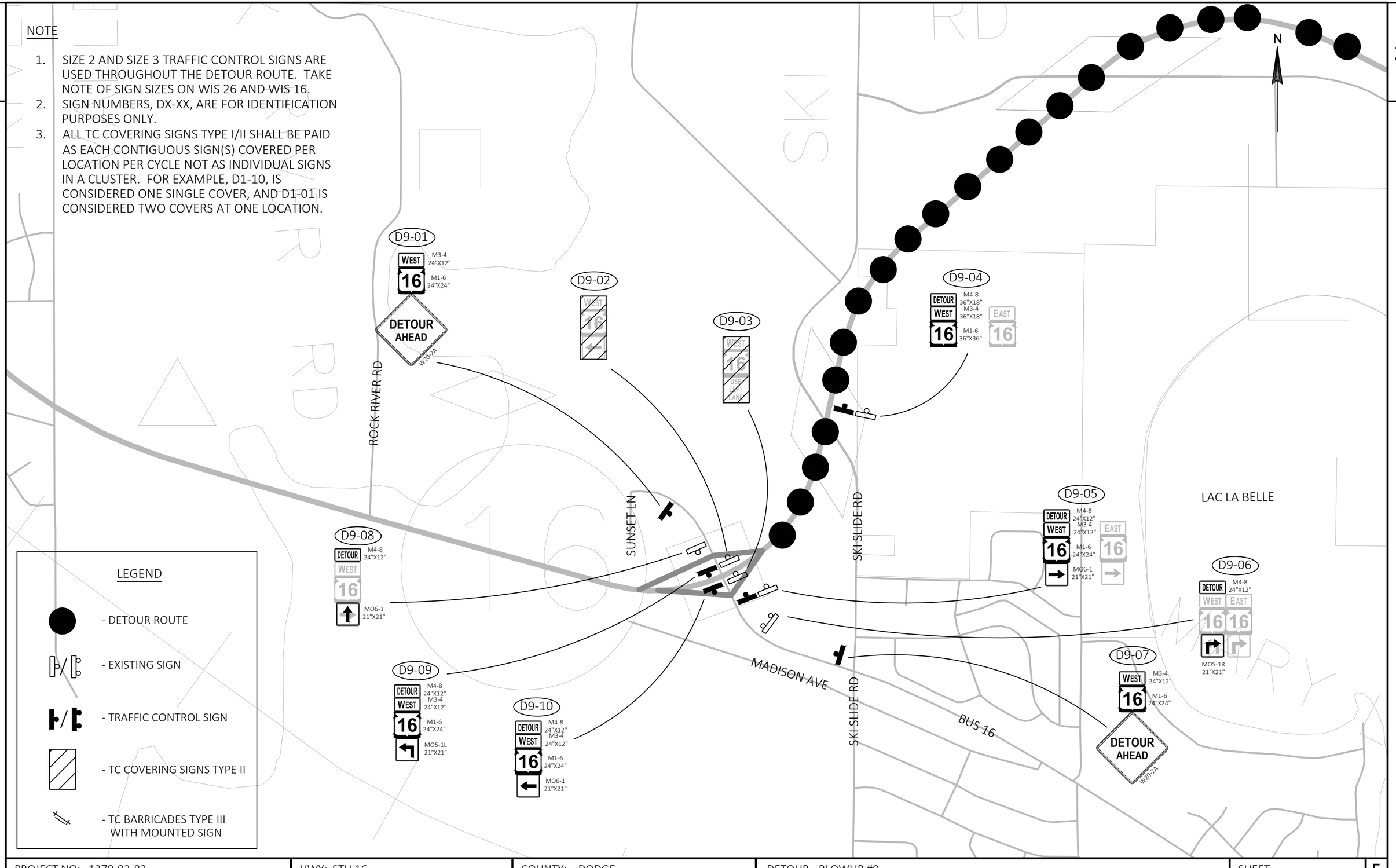
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #8	SHEET	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027009_dt

PLOT DATE : 3/12/2019 9:55 AM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : ##########

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, DX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
3. ALL TC COVERING SIGNS TYPE I/II SHALL BE PAID AS EACH CONTIGUOUS SIGN(S) COVERED PER LOCATION PER CYCLE NOT AS INDIVIDUAL SIGNS IN A CLUSTER. FOR EXAMPLE, D1-10, IS CONSIDERED ONE SINGLE COVER, AND D1-01 IS CONSIDERED TWO COVERS AT ONE LOCATION.



PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	DETOUR - BLOWUP #9	SHEET 30	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027010_dt
PLOT DATE : 3/12/2019 9:55 AM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : ##########

N

NOTE:
SEE SDD 'BARRICADES AND SIGNS FOR MAINLINE CLOSURES, AND TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY' FOR ADDITIONAL TRAFFIC CONTROL SIGN SPACING.

LEGEND
- DETOUR ROUTE
- EXISTING SIGN
- TRAFFIC CONTROL SIGN
- TC COVERING SIGNS TYPE II
- TC BARRICADES TYPE III WITH MOUNTED SIGN

TC1-01
WEST 16 TO 26
EAST 16 BUSINESS 26 COUNTY L
PROVINI RD DEAD END

TC1-02
EAST 16
M3-2 24"X12"
M1-6 24"X24"
ROAD CLOSED AHEAD W20-3A

TC1-03
BRIDGE OUT R11-2B 48"X30"

TC1-04
EAST 16 WEST 16 COUNTY L

TC1-05
ROAD WORK AHEAD W20-1A

TC1-06
ROAD WORK AHEAD W20-1A

TC1-07
EAST 16

TC1-08
EAST 16 BUSINESS 26 COUNTY L

TC1-09
ROAD CLOSED 500 FT W20-3D

TC1-10
ROAD CLOSED 1000 FT W20-3C

TC1-11
LEFT LANE CLOSED AHEAD W20-5SA

TC1-12
LEFT LANE CLOSED AHEAD W20-5SA

TC1-13
LEFT LANE CLOSED AHEAD W20-5SA

TC1-14
ROAD WORK AHEAD W20-1A

TC1-15
BUSINESS 26
EAST 16

TC1-16
WATERTOWN
JEFFERSON
OCONOMOWOC

TC1-17
EAST 16

TC1-18
EAST 16
M3-2 24"X12"
M1-6 24"X24"
ROAD CLOSED AHEAD W20-3A

TC1-19
EAST 16 WEST 16 COUNTY L

TC1-20
COLUMBUS
OSHKOSH
OCONOMOWOC

TC1-21
WEST 16 BUSINESS 26 COUNTY L
EAST 16

TC1-22
BRIDGE OUT 1 MILES AHEAD R11-3C 60"X24"

TC1-23
ROAD CLOSED AHEAD W20-3A

SEE TC PROJECT LIMITS - SHEET #2

PROJECT LOCATION

STH 26
CTH L / BUS 26
N WATER ST
SECOND STREET RD
CTH M
BOULDER RD
STH 16
BUS 26
500'
500'
500'

NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, TCX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
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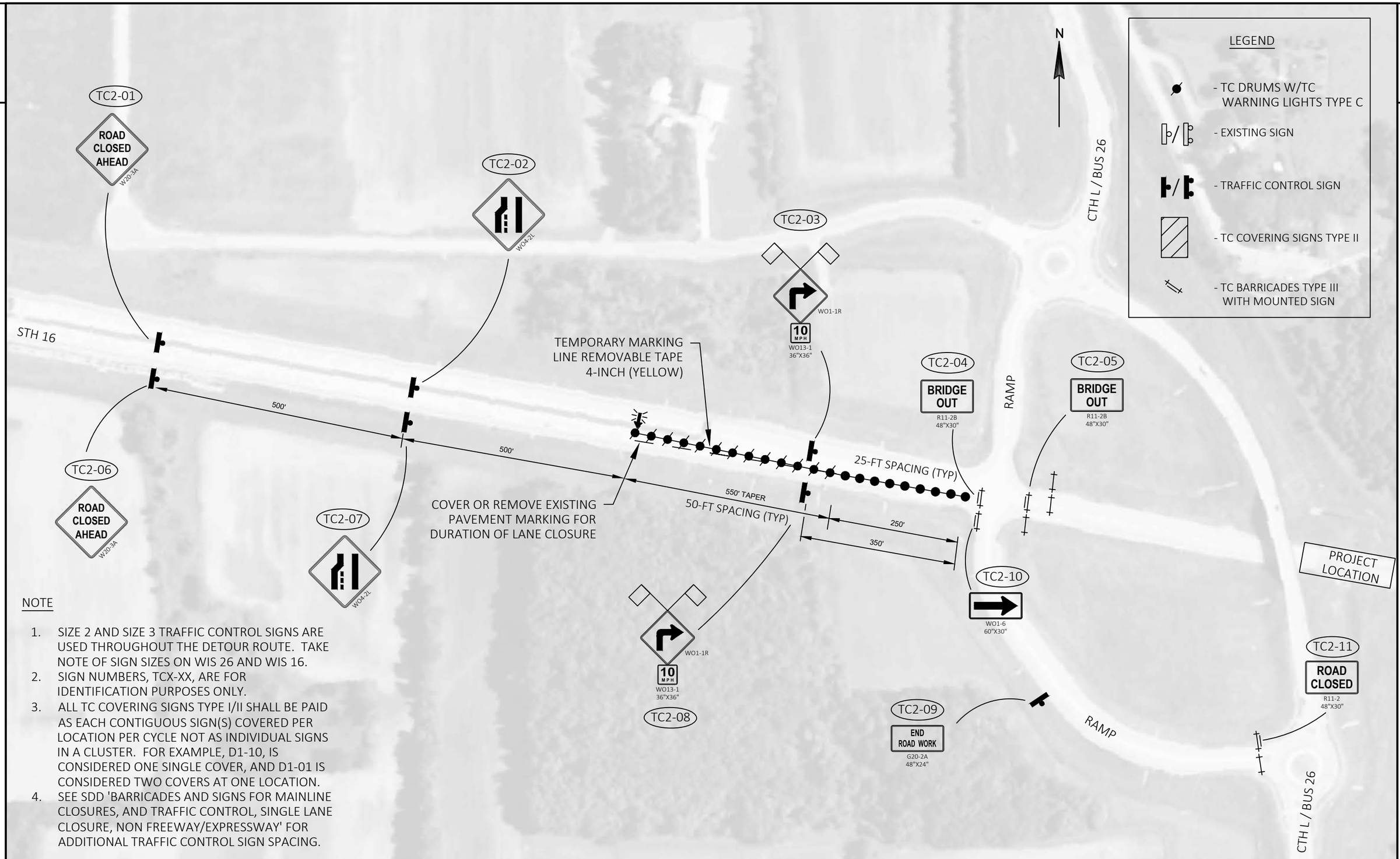
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	TRAFFIC CONTROL PROJECT LIMITS - SHEET #1	SHEET E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027011_dt
PLOT DATE : 3/12/2019 9:55 AM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

2



NOTE

1. SIZE 2 AND SIZE 3 TRAFFIC CONTROL SIGNS ARE USED THROUGHOUT THE DETOUR ROUTE. TAKE NOTE OF SIGN SIZES ON WIS 26 AND WIS 16.
2. SIGN NUMBERS, TCX-XX, ARE FOR IDENTIFICATION PURPOSES ONLY.
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4. SEE SDD 'BARRICADES AND SIGNS FOR MAINLINE CLOSURES, AND TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY' FOR ADDITIONAL TRAFFIC CONTROL SIGN SPACING.

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	TRAFFIC CONTROL PROJECT LIMITS - SHEET #2	SHEET 32	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0270_DT - DETOUR\0270_DT - DETOUR.DWG
LAYOUT NAME - 027012_dt
PLOT DATE : 3/12/2019 9:55 AM
PLOT BY : KENNEY, MATTHEW D
PLOT NAME :
PLOT SCALE : ##########
WISDOT/CADDS SHEET 44

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE COUNTY	ALIGNMENT OVERVIEW	SHEET 33	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0272_AD - ALI\0272_AD - ALIGNMENT.DWG
LAYOUT NAME - 027201_ad

PLOT DATE : 5/22/2019 12:00 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 44

Estimate Of Quantities

1370-02-82

Line	Item	Item Description	Unit	Total	Qty
0002	201.0120	Clearing	ID	50.000	50.000
0004	201.0220	Grubbing	ID	50.000	50.000
0006	203.0100	Removing Small Pipe Culverts	EACH	4.000	4.000
0008	203.0220	Removing Structure (structure) 01. B-14-0041	EACH	1.000	1.000
0010	203.0220	Removing Structure (structure) 02. B-14-0042	EACH	1.000	1.000
0012	203.0330	Debris Containment (structure) 01. B-14-0041	EACH	1.000	1.000
0014	204.0100	Removing Concrete Pavement	SY	1,621.000	1,621.000
0016	204.0110	Removing Asphaltic Surface	SY	630.000	630.000
0018	204.0165	Removing Guardrail	LF	642.000	642.000
0020	204.0190	Removing Surface Drains	EACH	4.000	4.000
0022	205.0100	Excavation Common	CY	2,317.000	2,317.000
0024	206.1000	Excavation for Structures Bridges (structure) 01. B-14-0041	LS	1.000	1.000
0026	206.2000	Excavation for Structures Culverts (structure) 01. B-14-0042	LS	1.000	1.000
0028	206.5000	Cofferdams (structure) 01. B-14-0042	LS	1.000	1.000
0030	210.1100	Backfill Structure Type A	CY	78.000	78.000
0032	210.2500	Backfill Structure Type B	TON	44.000	44.000
0034	213.0100	Finishing Roadway (project) 01. 1370-02-82	EACH	1.000	1.000
0036	305.0110	Base Aggregate Dense 3/4-Inch	TON	157.000	157.000
0038	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,842.000	1,842.000
0040	311.0115	Breaker Run	CY	6.000	6.000
0042	312.0110	Select Crushed Material	TON	2,273.000	2,273.000
0044	415.0080	Concrete Pavement 8-Inch	SY	1,907.000	1,907.000
0046	415.0120	Concrete Pavement 12-Inch	SY	36.000	36.000
0048	415.0410	Concrete Pavement Approach Slab	SY	98.000	98.000
0050	415.6000.S	Rout and Seal	LF	1,269.000	1,269.000
0052	416.0610	Drilled Tie Bars	EACH	28.000	28.000
0054	416.0620	Drilled Dowel Bars	EACH	18.000	18.000
0056	465.0105	Asphaltic Surface	TON	124.000	124.000
0058	465.0315	Asphaltic Flumes	SY	34.000	34.000
0060	502.0100	Concrete Masonry Bridges	CY	203.000	203.000
0062	502.3200	Protective Surface Treatment	SY	529.000	529.000
0064	502.3210	Pigmented Surface Sealer	SY	150.000	150.000
0066	502.4204	Adhesive Anchors No. 4 Bar	EACH	96.000	96.000
0068	502.4205	Adhesive Anchors No. 5 Bar	EACH	32.000	32.000
0070	504.0100	Concrete Masonry Culverts	CY	10.000	10.000
0072	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	48,720.000	48,720.000
0074	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	10.000	10.000
0076	506.5000	Bearing Assemblies Fixed (structure) 01. B-14-0041	EACH	10.000	10.000
0078	506.7050.S	Removing Bearings (structure) 01. B-14-0041	EACH	20.000	20.000
0080	509.1500	Concrete Surface Repair	SF	40.000	40.000
0082	509.9020.S	Epoxy Crack Sealing	LF	30.000	30.000
0084	511.1200	Temporary Shoring (structure) 01. B-14-0042	SF	121.000	121.000
0086	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0088	517.0901.S	Preparation and Coating of Top Flanges (structure) 01. B-14-0041	EACH	1.000	1.000
0090	517.3001.S	Structure Overcoating Cleaning and Priming (structure) 01. B-14-0041	EACH	1.000	1.000
0092	517.4001.S	Containment and Collection of Waste Materials (structure) 01. B-14-0041	EACH	1.000	1.000
0094	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0096	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0098	530.0112	Culvert Pipe Corrugated Polyethylene 12-Inch	LF	150.000	150.000

1370-02-82

Line	Item	Item Description	Unit	Total	Qty
0100	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	56.000	56.000
0102	606.0200	Riprap Medium	CY	153.000	153.000
0104	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0106	611.3220	Inlets 2x2-FT	EACH	2.000	2.000
0108	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	160.000	160.000
0110	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0112	614.0200	Steel Thrie Beam Structure Approach	LF	41.300	41.300
0114	614.0515	Guardrail Stifened LHW	LF	326.000	326.000
0116	614.2300	MGS Guardrail 3	LF	162.200	162.200
0118	614.2500	MGS Thrie Beam Transition	LF	78.800	78.800
0120	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0122	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1370-02-82	EACH	1.000	1.000
0124	619.1000	Mobilization	EACH	1.000	1.000
0126	624.0100	Water	MGAL	19.000	19.000
0128	625.0500	Salvaged Topsoil	SY	1,590.000	1,590.000
0130	628.1104	Erosion Bales	EACH	55.000	55.000
0132	628.1504	Silt Fence	LF	1,407.000	1,407.000
0134	628.1520	Silt Fence Maintenance	LF	1,407.000	1,407.000
0136	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0138	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0140	628.2006	Erosion Mat Urban Class I Type A	SY	1,637.000	1,637.000
0142	628.7010	Inlet Protection Type B	EACH	2.000	2.000
0144	628.7504	Temporary Ditch Checks	LF	180.000	180.000
0146	629.0210	Fertilizer Type B	CWT	0.900	0.900
0148	630.0160	Seeding Mixture No. 60	LB	22.000	22.000
0150	630.0500	Seed Water	MGAL	10.000	10.000
0152	633.0200	Delineators Flexible	EACH	2.000	2.000
0154	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0156	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	1.000	1.000
0158	638.2102	Moving Signs Type II	EACH	5.000	5.000
0160	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0162	642.5201	Field Office Type C	EACH	1.000	1.000
0164	643.0300	Traffic Control Drums	DAY	3,600.000	3,600.000
0166	643.0420	Traffic Control Barricades Type III	DAY	3,000.000	3,000.000
0168	643.0705	Traffic Control Warning Lights Type A	DAY	6,000.000	6,000.000
0170	643.0715	Traffic Control Warning Lights Type C	DAY	3,600.000	3,600.000
0172	643.0800	Traffic Control Arrow Boards	DAY	150.000	150.000
0174	643.0900	Traffic Control Signs	DAY	48,300.000	48,300.000
0176	643.0920	Traffic Control Covering Signs Type II	EACH	36.000	36.000
0178	643.1000	Traffic Control Signs Fixed Message	SF	41.000	41.000
0180	643.1050	Traffic Control Signs PCMS	DAY	20.000	20.000
0182	643.5000	Traffic Control	EACH	1.000	1.000
0184	645.0105	Geotextile Type C	SY	20.000	20.000
0186	645.0120	Geotextile Type HR	SY	43.000	43.000
0188	645.0220	Geogrid Type SR	SY	3,257.000	3,257.000
0190	646.1020	Marking Line Epoxy 4-Inch	LF	3,936.000	3,936.000
0192	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	900.000	900.000
0194	650.4500	Construction Staking Subgrade	LF	646.000	646.000
0196	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	56.000	56.000

Estimate Of Quantities

1370-02-82

Line	Item	Item Description	Unit	Total	Qty
0198	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0200	650.7000	Construction Staking Concrete Pavement	LF	612.000	612.000
0202	650.9910	Construction Staking Supplemental Control (project) 01. 1370-02-82	LS	1.000	1.000
0204	650.9920	Construction Staking Slope Stakes	LF	646.000	646.000
0206	690.0150	Sawing Asphalt	LF	28.000	28.000
0208	690.0250	Sawing Concrete	LF	54.000	54.000
0210	715.0502	Incentive Strength Concrete Structures	DOL	2,040.000	2,040.000
0212	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	954.000	954.000
0214	801.0117	Railroad Flagging Reimbursement	DOL	15,750.000	15,750.000
0216	SPV.0060	Special 01. B-14-0042 Wingwall Construction Access	EACH	1.000	1.000

3

CLEARING & GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0120 CLEARING ID	201.0220 GRUBBING ID	REMARKS
0010	30+93	-	40+58	PROJECT LIMITS	50	50	UNDISTRIBUTED
				TOTAL 0010	50	50	

REMOVING SMALL PIPE CULVERTS

CATEGORY	STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS (STEEL) EACH	REMARKS
0010	34+45	LT	1	12-INCH SURFACE DRAIN (APPROX. 63 LF)
0010	35+33	RT	1	12-INCH SURFACE DRAIN (APPROX. 58 LF)
0010	36+95	LT	1	12-INCH SURFACE DRAIN (APPROX. 70 LF)
0010	37+02	RT	1	12-INCH SURFACE DRAIN (APPROX. 54 LF)
		TOTAL 0010	4	

REMOVALS

CATEGORY	STATION	TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0165 REMOVING GUARDRAIL LF	204.0190 REMOVING SURFACE DRAINS EACH	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
0010	30+93	-	35+49	LT/RT	1344	394	-	-	8	30	MAINLINE/SHOULDERS
0010	36+85	-	38+75	LT/RT	277	236	-	-	20	24	MAINLINE/SHOULDERS
0010	34+69	-	35+49	LT	-	-	79	-	-	-	NW QUAD
0010	33+72	-	35+53	RT	-	-	182	-	-	-	SW QUAD
0010	36+83	-	38+75	LT	-	-	192	-	-	-	NE QUAD
0010	36+86	-	38+75	RT	-	-	189	-	-	-	SE QUAD
0010		34+45		LT	-	-	-	1	-	-	CONCRETE FLUME
0010		35+33		RT	-	-	-	1	-	-	CONCRETE FLUME
0010		36+95		LT	-	-	-	1	-	-	CONCRETE FLUME
0010		37+02		RT	-	-	-	1	-	-	CONCRETE FLUME
				TOTAL 0010	1621	630	642	4	28	54	

From/To Station	Location	205.0100 (CY) Common Excavation (1)		Salvaged/Reusable Pavement Material (4) (CY)	Available Fill Material (5) (CY)	Reduced EBS in Fill (6) (CY)	Expanded EBS Backfill (7) (CY)	Mass Ordinate +/- (8)	Waste (CY)	Remarks
		Cut (2)	EBS Excavation (3)			Factor 0.80	Factor 1.20			
30+98 - 35+32	STH 16	1623	0	38	1585	0	0	1585	1585	CONDITION OF EXISTING CONCRETE PAVEMENT AND CABC UNKNOWN
37+01 - 38+75	STH 16	584	0	23	561	0	0	561	561	CONDITION OF EXISTING CONCRETE PAVEMENT AND CABC UNKNOWN
EBS (5%)	Undistributed	-	110	-	-	88	132	-	-	ASSUME 2.3 TONS/CY OF BAD MATERIAL FOR EBS BACKFILL
Subtotal		2207	110	61	2146	88	132	2146	2146	
Total Common Excavation		2317								

1. Common Excavation is the sum of the Cut and EBS Excavation Columns. Item number 205.0100.
2. Salvaged/Reusable Pavement Material is included in Cut (HMA Pavement)
3. EBS Excavation to be backfilled with BAD Material or other material approved by the field engineer.
4. Salvaged/Reusable Pavement Material (HMA Pavement)
5. Available Material (CABC & Concrete Pavement) = Cut - Salvaged/Reusable Pavement Material (HMA Pavement)
6. Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor is 0.80.
7. Expanded EBS Backfill is to be filled with BAD Material. EBS Backfill Factor = 1.20.
8. Mass ordinate +/- quantity calculated for the entire project. + Quantity = excess material, and - Quantity = shortage of material.

BASE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON	624.0100 WATER MGAL	645.0220 GEOGRID TYPE SR SY	REMARKS
0010	30+93	-	35+52	LT/RT	110	1233	1573	6	2265	MAINLINE
0010	36+82	-	38+75	LT/RT	33	473	592	3	836	MAINLINE
0010	30+93	-	38+75	PROJECT LIMITS	14	137	108	10	155	UNDISTRIBUTED
				TOTAL 0010	157	1842	2273	19	3257	

3

MAINLINE PAVEMENT

CATEGORY	STATION	TO	STATION	LOCATION	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	415.6000.S ROUT & SEAL LF	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	465.0105 ASPHALTIC SURFACE TON	REMARKS
0010	30+93	-	35+32	LT/RT	1366	-	878	-	-	84	WEST OF BRIDGE
0010	37+02	-	38+75	LT/RT	541	-	346	-	-	40	EAST OF BRIDGE
0010	35+32	-	35+49	LT/RT	-	53	-	14	-	-	
0010	36+85	-	37+02	LT/RT	-	45	-	14	-	-	
0010		30+93		LT/RT	-	-	-	-	18	-	BEGIN PROJECT
0010		38+75		LT/RT	-	-	45	-	-	-	END PROJECT
				TOTAL 0010	1907	98	1269	28	18	124	

STUCTURE DRAINAGE

CATEGORY	STATION	TO	STATION	LOCATION	415.0120 CONCRETE PAVEMENT 12-INCH SY	465.0315 ASPHALTIC FLUMES SY	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	530.0112 CULVERT PIPE CORRUGATED POLYETHYLENE 12-INCH LF	601.0590 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT LF	606.0200 RIPRAP MEDIUM CY	611.0654 INLET COVERS TYPE V EACH	611.3220 INLETS 2X2-FT EACH	628.7010 INLET PROTECTION TYPE B EACH	633.0200 DELINEATORS FLEXIBLE EACH	645.0120 GEOTEXTILE TYPE HR SY	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH
0010	30+98	-	31+41	RT	-	34	-	-	-	-	-	-	-	-	-	-	-
0010	35+32	-	35+47	LT	5	-	-	-	-	64	-	-	-	-	4	-	-
0010	35+32	-	35+52	RT	7	-	-	-	-	64	-	-	-	-	4	-	-
0010	36+82	-	37+15	LT	12	-	-	-	28	-	-	-	-	-	-	28	-
0010	36+87	-	37+20	RT	12	-	-	-	28	-	-	-	-	-	-	28	-
0010		37+13		LT	-	-	1	75	-	3	1	1	1	1	4	-	1
0010		37+19		RT	-	-	1	75	-	3	1	1	1	1	4	-	1
0010	40+50	-	41+00	LT	-	-	-	-	-	19	-	-	-	-	28	-	-
				TOTAL 0010	36	34	2	150	56	153	2	2	2	2	43	56	2

3

GUARDRAIL & STEEL PLATE

CATEGORY	STATION	TO	STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0515 GUARDRAIL STIFFENED LHW LF	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	33+59	-	35+39	LT	-	-	87.6	39.4	1
0010	33+77	-	35+44	RT	-	-	74.6	39.4	1
0010	36+90	-	38+75	LT	20.7	163	-	-	-
0010	36+96	-	38+75	RT	20.7	163	-	-	-
				TOTAL 0010	41.3	326	162.2	78.8	2

RESTORATION ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	629.0210 FERTILIZER TYPE B CWT	630.0160 SEEDING MIXTURE NO. 60 LB	630.0500 SEED WATER MGAL	REMARKS
0010	31+20	-	35+32	LT	366	366	0.2	5	2	MAINLINE
0010	31+16	-	35+42	RT	379	379	0.2	5	2	MAINLINE
0010	36+90	-	38+75	LT	372	372	0.1	5	1	MAINLINE
0010	36+96	-	38+75	RT	367	367	0.1	5	1	MAINLINE
0010	40+63	-	40+90	LT	75	75	0.1	1	1	WING WALL
0010	30+93	-	40+58	LT/RT	31	78	0.1	1	3	UNDISTRIBUTED
				TOTAL 0010	1590	1637	0.9	22	10	

EROSION CONTROL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7504 TEMPORARY DITCH CHECKS LF	REMARKS
0010	30+93	-	36+00	LT	9	380	380	-	-	36	WEST OF BRIDGE
0010	30+93	-	36+00	RT	9	430	430	-	-	36	WEST OF BRIDGE
0010	36+50	-	38+75	LT	9	235	235	-	-	24	EAST OF BRIDGE
0010	36+50	-	38+75	RT	9	235	235	-	-	24	EAST OF BRIDGE
0010	40+50	-	41+25	LT	10	60	60	-	-	24	WINGWALL
0010	30+93	-	38+75	PROJECT LIMITS	9	67	67	6	3	36	UNDISTRIBUTED
				TOTAL 0010	55	1407	1407	6	3	180	

PERMANENT SIGNING

CATEGORY	STATION	LOCATION	SIGN NO.	SIDE CODE	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	33+82	RT	M1-01	J4-1	-	1	1	1	EAST STH 16
0010	35+36	LT	MS1-03	W5-52L	1	-	1	1	HAZARD
0010	35+43	RT	M1-02	W5-52R	1	-	1	1	HAZARD
0010	36+92	LT	M2-05	W5-52R	1	-	1	1	HAZARD
0010	36+97	RT	M2-04	W5-52L	1	-	1	1	HAZARD
				TOTAL 0010	4	1	5	5	

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	643.0300 TRAFFIC CONTROL DRUMS NO. DEVICES	DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III NO. DEVICES	DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A NO. DEVICES	DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C NO. DEVICES	DAY	643.0800 TRAFFIC CONTROL ARROW BOARDS NO. DEVICES	DAY	643.0900 TRAFFIC CONTROL SIGNS NO. DEVICES	DAY	*** 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	643.1050 TRAFFIC CONTROL SIGNS PCMS NO. DEVICES	DAY	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH LF
0010	BLOW UP #1	-	-	1	150	2	300	-	-	-	-	41	6150	11	10	-	-	-
0010	BLOW UP #2	-	-	-	-	-	-	-	-	-	-	21	3150	5	-	-	-	-
0010	BLOW UP #3	-	-	-	-	-	-	-	-	-	-	37	5550	2	-	-	-	-
0010	BLOW UP #4	-	-	1	150	2	300	-	-	-	-	25	3750	2	10	-	-	-
0010	BLOW UP #5	-	-	-	-	-	-	-	-	-	-	24	3600	-	-	-	-	-
0010	BLOW UP #6	-	-	-	-	-	-	-	-	-	-	25	3750	-	-	-	-	-
0010	BLOW UP #7	-	-	-	-	-	-	-	-	-	-	30	4500	-	-	-	-	-
0010	BLOW UP #8	-	-	-	-	-	-	-	-	-	-	62	9300	2	10	-	-	-
0010	BLOW UP #9	-	-	-	-	-	-	-	-	-	-	25	3750	2	-	-	-	-
0010	˙C PROJECT LIMITS SHEET #	-	-	7	1050	14	2100	-	-	-	-	18	2700	10	10	-	-	-
0010	˙C PROJECT LIMITS SHEET #:	21	3150	9	1350	18	2700	21	3150	1	150	12	1800	-	-	-	-	850
0010	STH 16 - PROJECT STARTUP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	20	-
0010	UNDISTRIBUTED	3	450	2	300	4	600	3	450	-	-	2	300	2	1	-	-	50
	TOTAL 0010	-	3600	-	3000	-	6000	-	3600	-	150	-	48300	36	41	-	20	900

*** 1 CYCLE FOR ALL TRAFFIC CONTROL COVERING SIGNS TYPE II

PAVEMENT MARKING

CATEGORY	STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	YELLOW LF	REMARKS
0010	30+75	-	39+25	LT	850	-	EDGELINE
0010	30+75	-	39+25	CL	-	850	DOUBLE YELLOW - WB LANES
0010	30+76	-	37+50	CL	-	1348	DOUBLE YELLOW - EB LANES
0010	37+50	-	39+25	CL	-	38	EB LANES SKIPS
0010	30+75	-	39+25	RT	850	-	EDGELINE
				SUBTOTAL 0010	1700	2236	
				TOTAL 0010	3936		

CONSTRUCTION STAKING

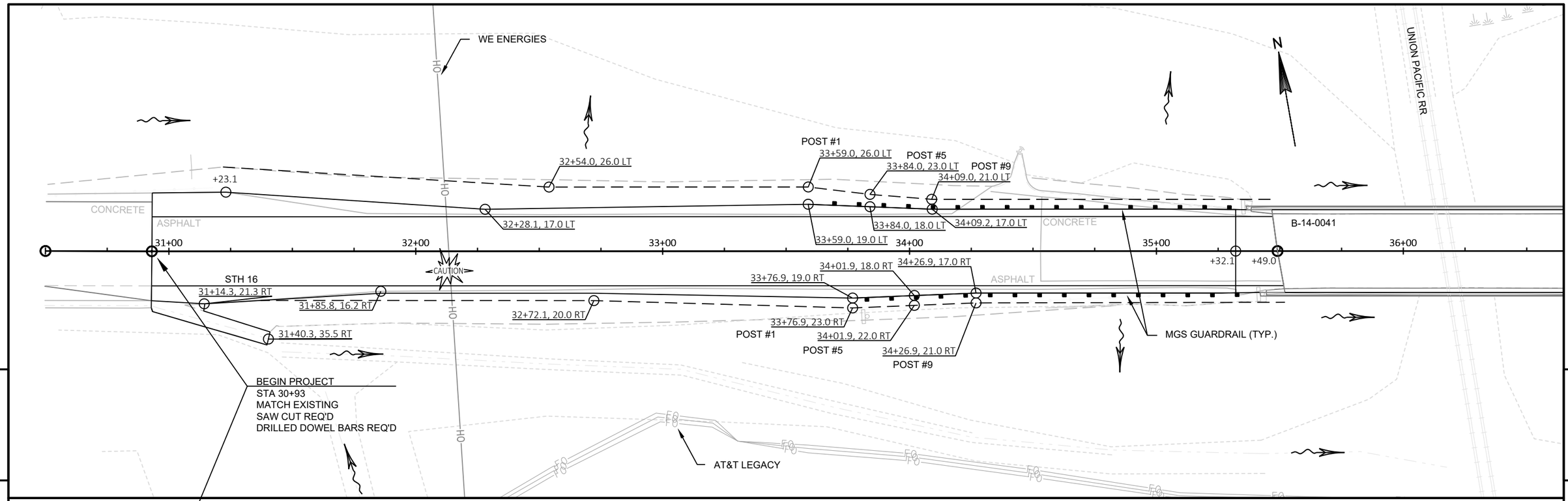
CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (1370-02-82) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
0010	30+93	-	35+49	MAINLINE	456	439	-	456
0010	36+85	-	38+75	MAINLINE	190	173		190
0010	30+93	-	38+75	PROJECT LIMITS	-	-	1	-
				TOTAL 0010	646	612	1	646

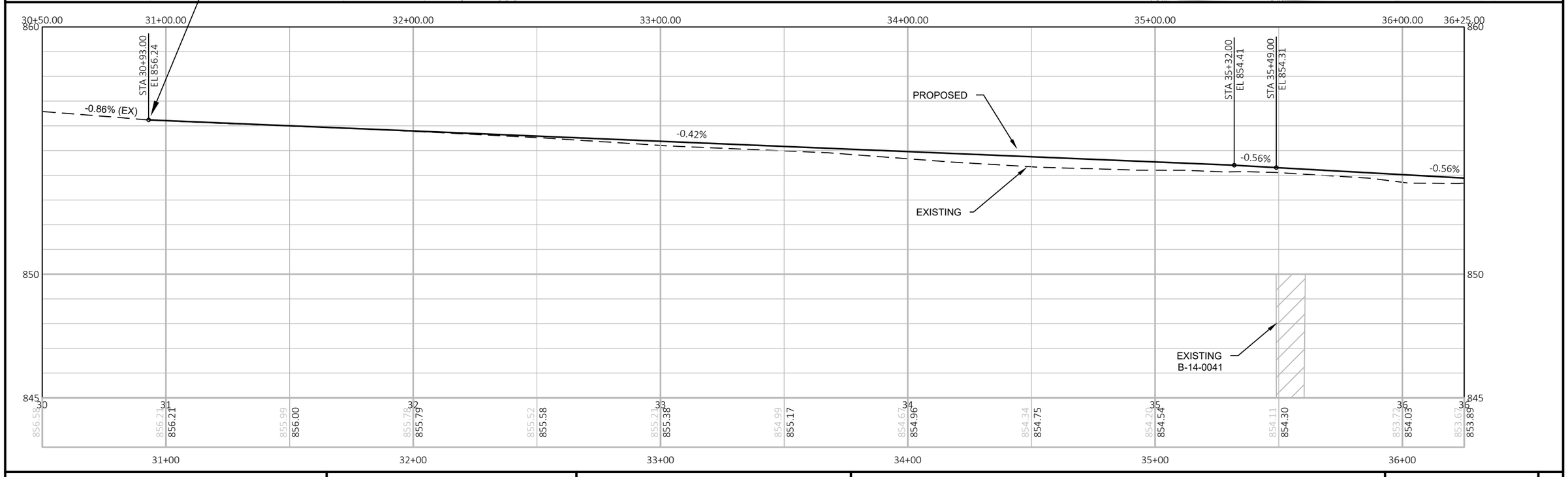
RAILROAD FLAGGING REIMBURSMENT

CATEGORY	WORK OPERATION	# OF DAYS	801.0117 RAILROAD FLAGGING REIMBURSMENT DOL
0010	B-14-41 DEMO	10	$7,500.00
0010	B-14-41 FALSEWORK	10	$7,500.00
0010	B-14-41 DECK POUR	1	$750.00
		TOTAL 0010	$15,750.00

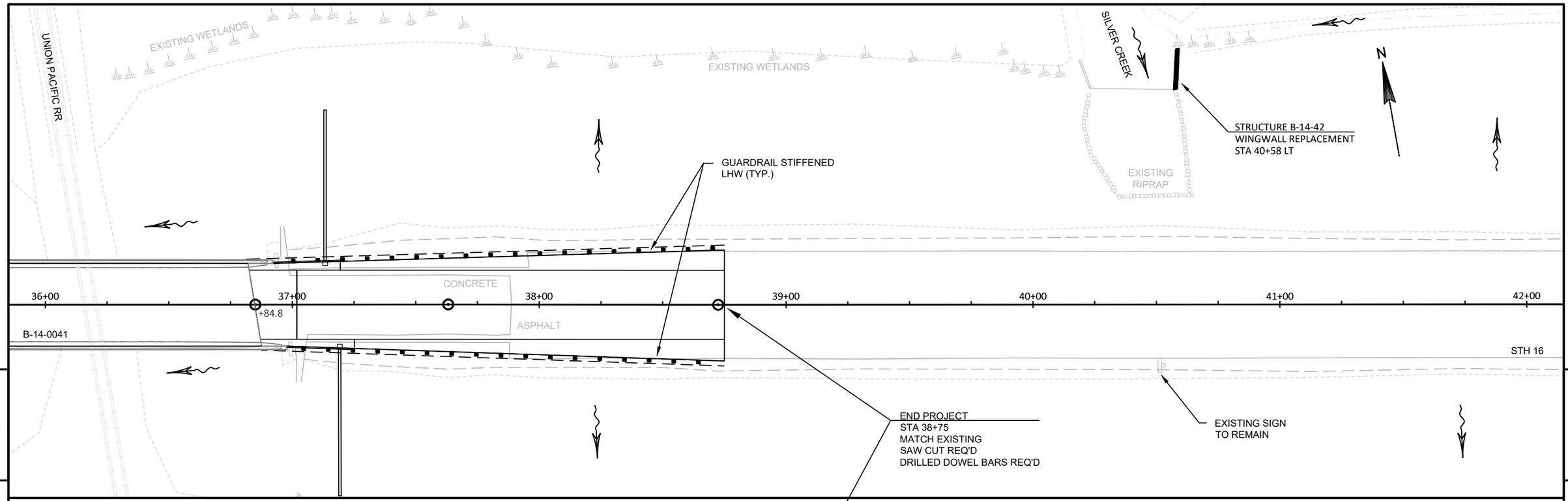
NOTE: ASSUME ALL WORK DONE DURING A 'NORMAL' WORKING 8 HOUR DAY, I.E. NO SATURDAYS, SUNDAYS, OR HOLIDAYS.

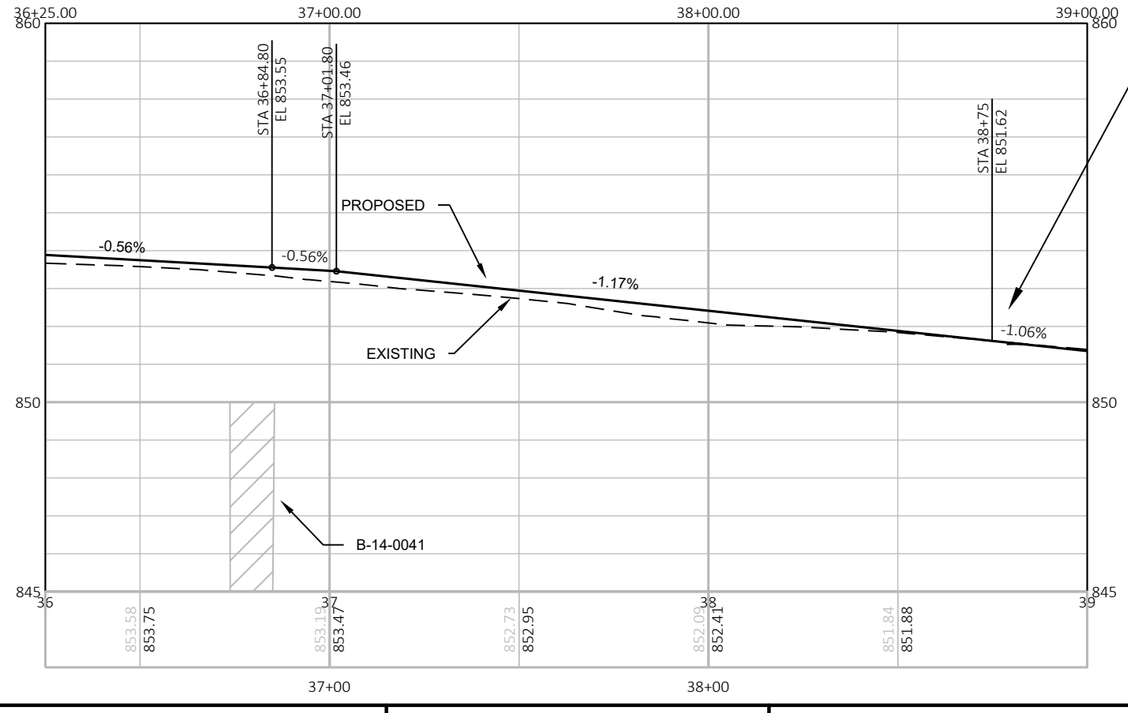
3





PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PLAN AND PROFILE: STH 16 - MAINLINE	SHEET 43	E



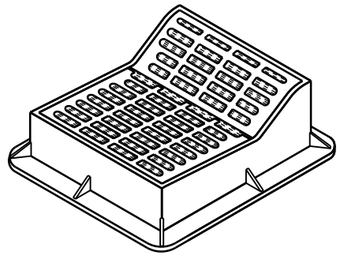


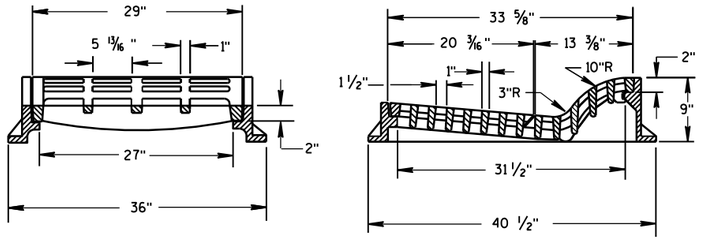
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	PLAN AND PROFILE: STH 16 - MAINLINE	SHEET 44	E

Standard Detail Drawing List

08A05-19C	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
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D03-08A	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D03-08B	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13B02-09B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-12A	RURAL DOWELED CONCRETE PAVEMENT
13C11-12B	RURAL DOWELED CONCRETE PAVEMENT
13C18-07C	CONCRETE PAVEMENT JOINT TYPES
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	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)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-09A	TRAFFIC CONTROL, LANE CLOSURE
15D12-09B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-05A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D20-05B	TRAFFIC CONTROL, SINGLE RIGHT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
15D20-05C	TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY

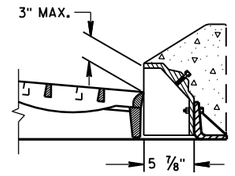
6





TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

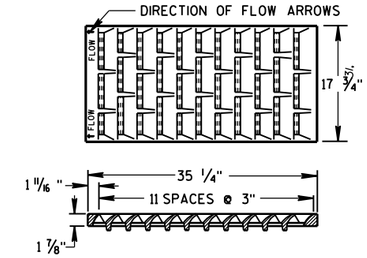
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

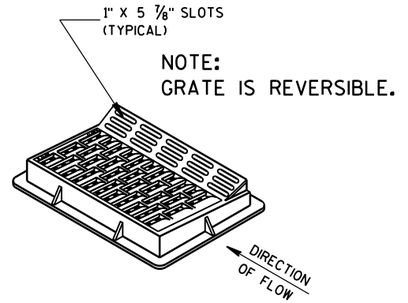
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

GENERAL NOTES

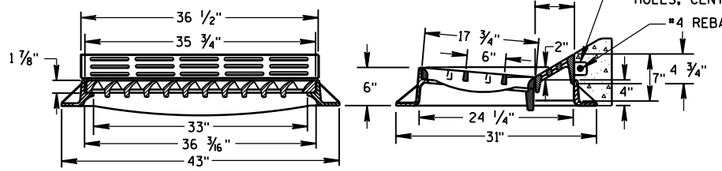
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.





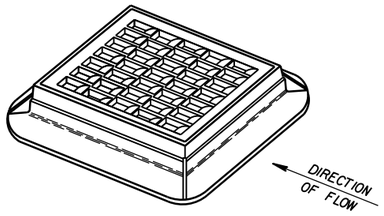
NOTE:
GRATE IS REVERSIBLE.

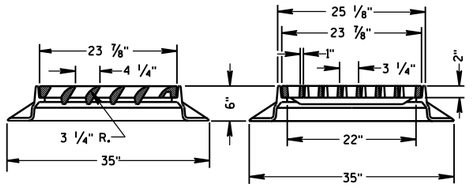


TYPE "HM"

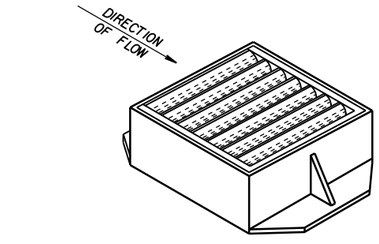
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

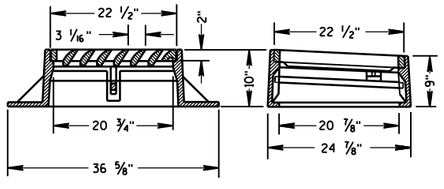
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



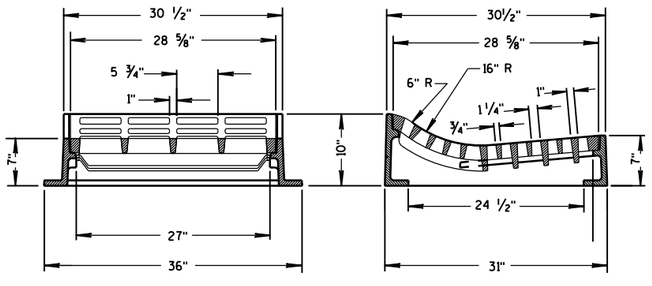


TYPE "S"



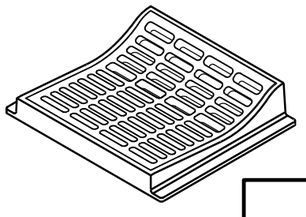


TYPE "V"



TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS
TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

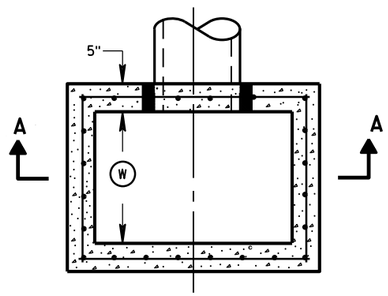
APPROVED
11/27/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

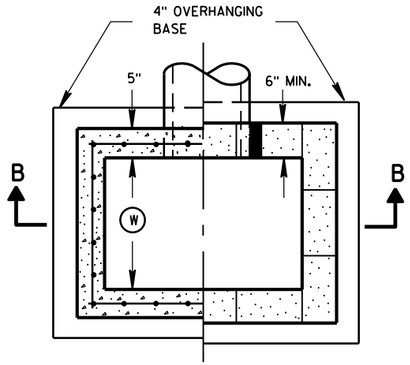
FHWA

6

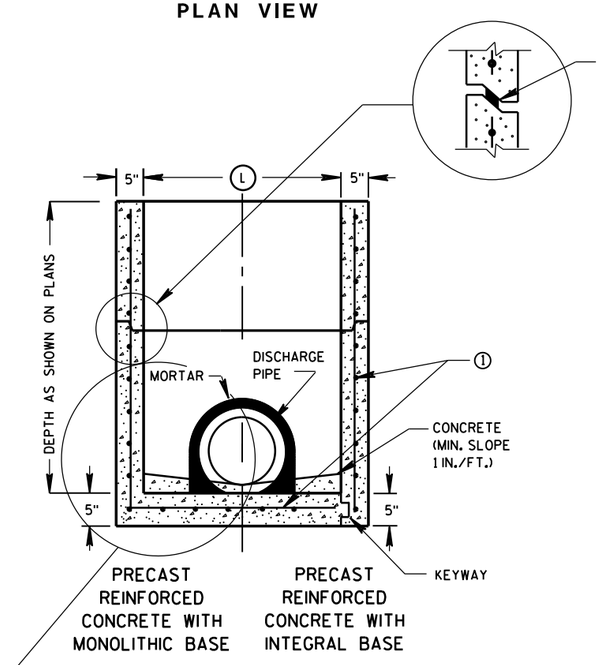
S.D.D. 8 A 5-19c



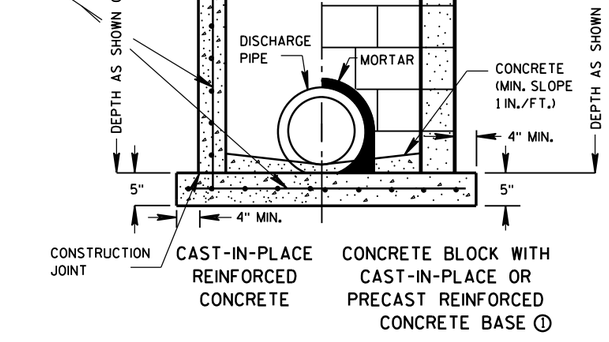
PLAN VIEW



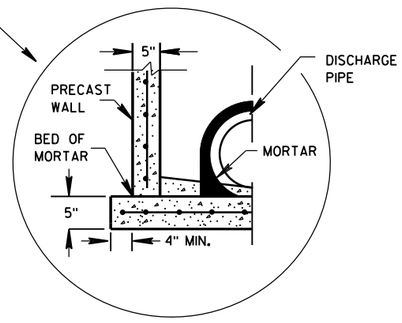
PLAN VIEW



SECTION A-A



SECTION B-B



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.

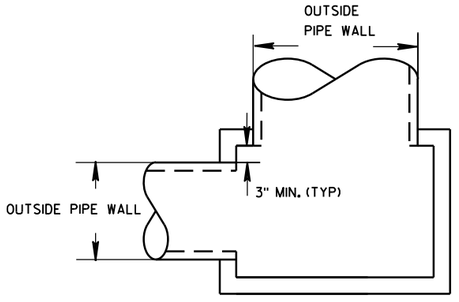
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT
UNIT SUPERVIS
FHWA

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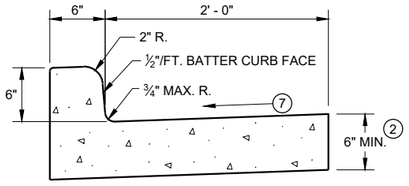
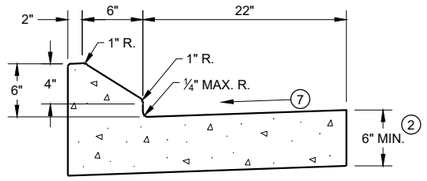
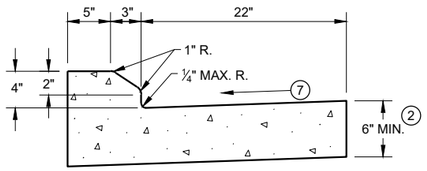
S.D.D. 8 C 7-2



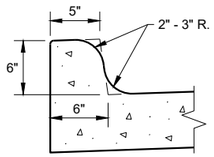
TYPES A[1] & D



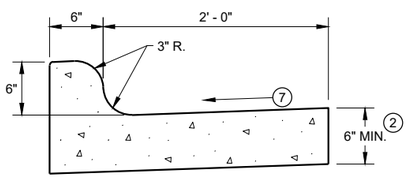
6" SLOPED CURB TYPES G[1] & J



4" SLOPED CURB TYPES G[1] & J

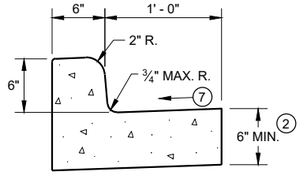


TYPES K[1] & L
(OPTIONAL CURB SHAPE)



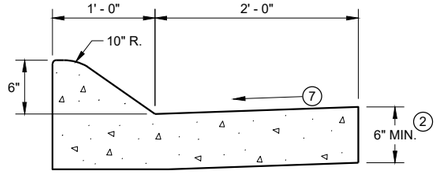
TYPES K[1] & L

CONCRETE CURB AND GUTTER 30"



TYPES A[1] & D

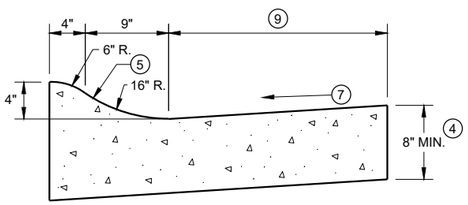
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A[1] & D

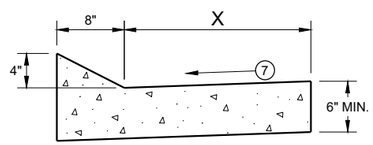
4" SLOPED CURB TYPES A[1] & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R[1] & T

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

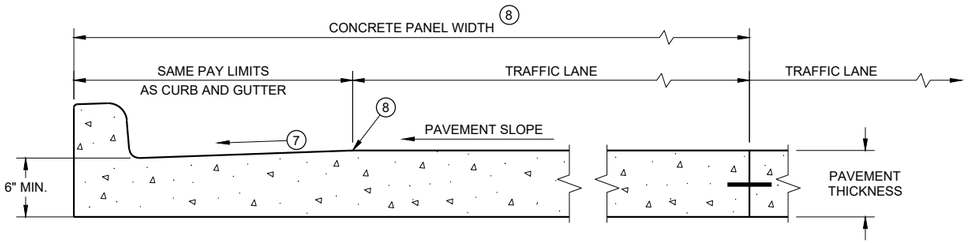


TYPES TBT & TBTT[1]

CONCRETE CURB AND GUTTER

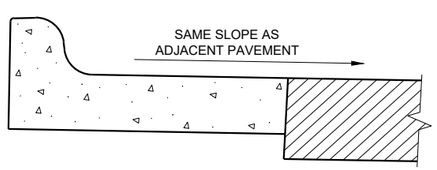
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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.

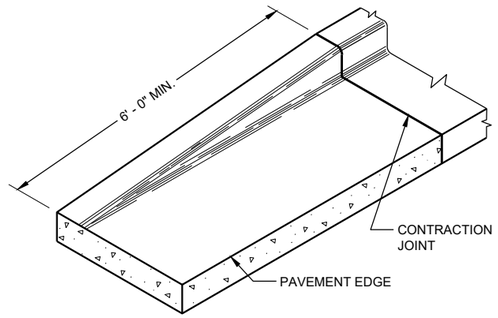
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

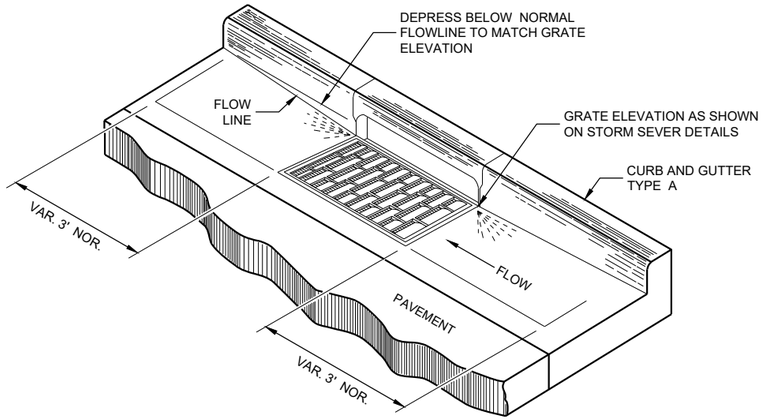
1. TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
2. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
3. USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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

CONCRETE CURB AND GUTTER

SDD 08D01 - 22a
6



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

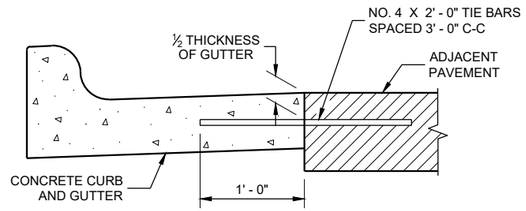
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

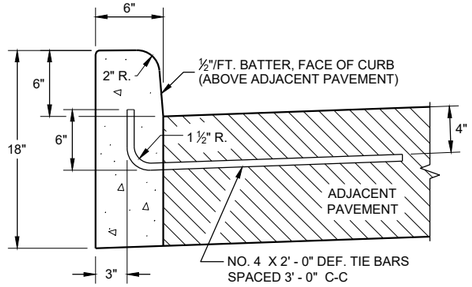
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

(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.

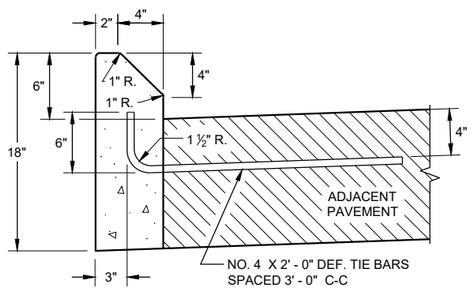
(9) REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

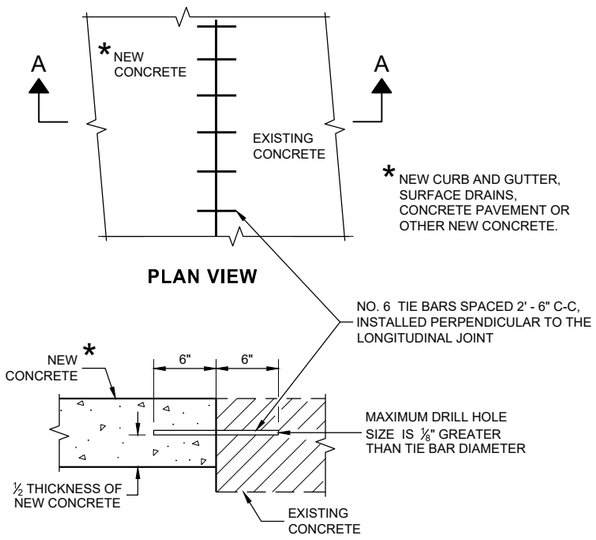


TYPES A (1) & D



TYPES G (1) & J

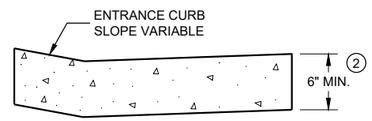
CONCRETE CURB



PLAN VIEW

SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 — DATE
/S/ Rodnery Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

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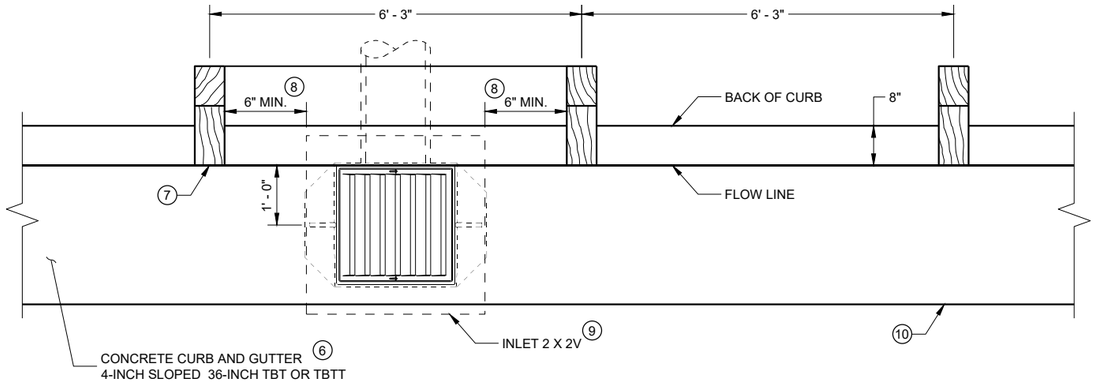
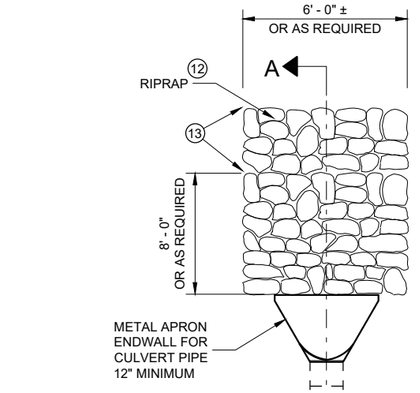
SDD08D01 - 22b



INLET PLAN VIEW

(NOTE: RAIL NOT SHOWN FOR CLARITY)

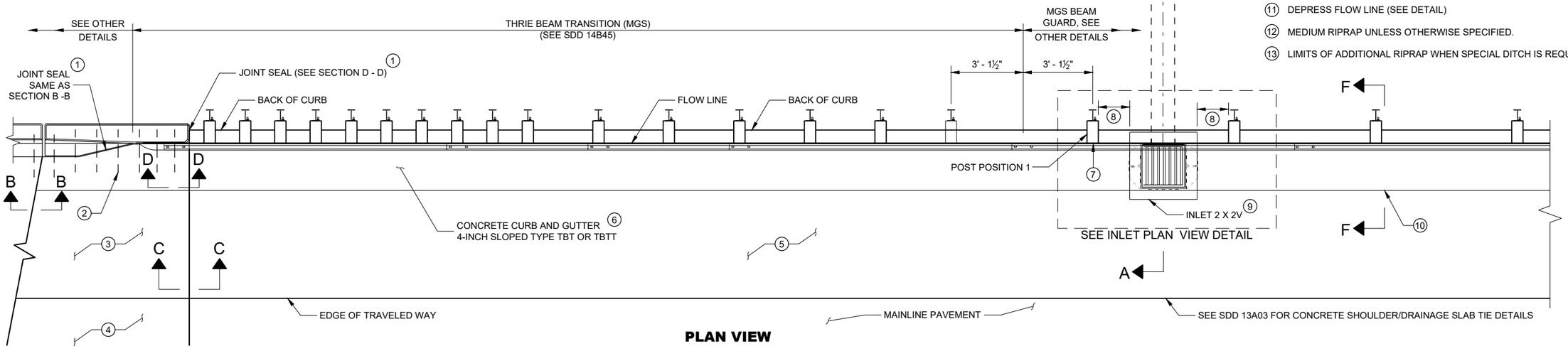


GENERAL NOTES

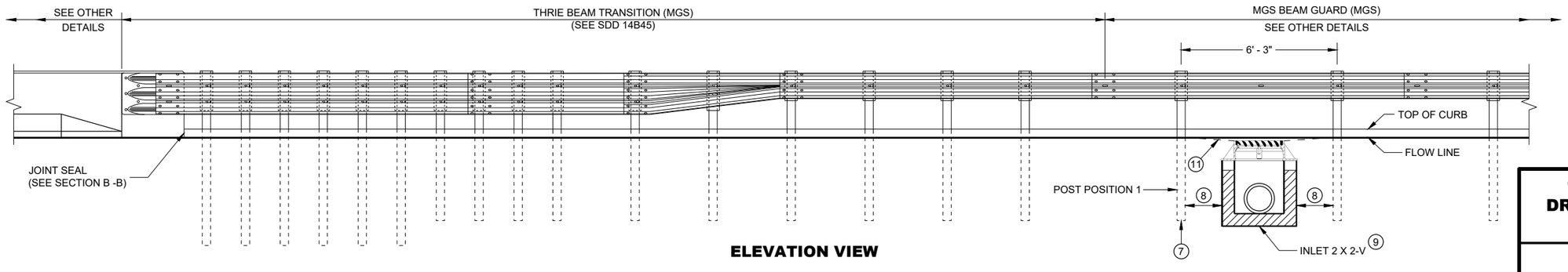
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

1. USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
2. NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
3. PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
4. CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
5. PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
6. CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
7. PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
8. CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
9. SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
10. START CURB AND GUTTER TRANSITION OR END SECTION.
11. DEPRESS FLOW LINE (SEE DETAIL)
12. MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
13. LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.



PLAN VIEW



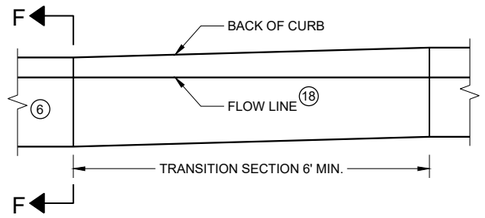
ELEVATION VIEW

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

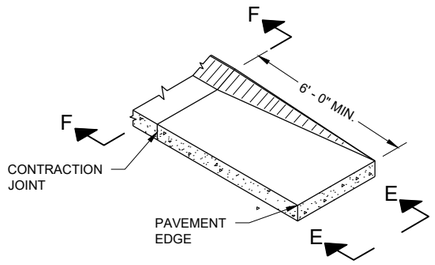
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D03 - 08a

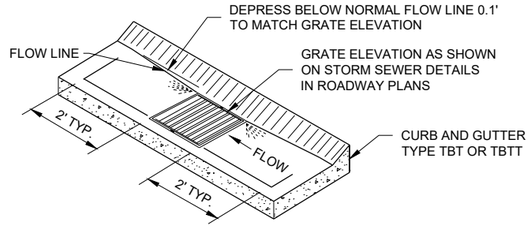
SDD 08D03 - 08a



CURB AND GUTTER TRANSITION SECTION CONCRETE CURB AND GUTTER 4-INCH SLOPED 36 INCH TYPE TBT OR TBTT



CURB AND GUTTER END SECTION CONCRETE CURB AND GUTTER 4-INCH SLOPED 36 INCH TYPE TBT OR TBTT



CURB AND GUTTER FLOW LINE DEPRESSION AT INLETS CONCRETE CURB AND GUTTER 4-INCH SLOPED 36 INCH TYPE TBT OR TBTT

GENERAL NOTES

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

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

(1) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

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

(3) PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.

(4) CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.

(5) PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

(6) CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' -0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

(7) PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)

(8) CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.

(9) SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.

(10) START CURB AND GUTTER TRANSITION OR END SECTION.

(11) DEPRESS FLOW LINE (SEE DETAIL)

(12) MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.

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

(14) GEOTEXTILE FABRIC TYPE HR.

(15) MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.

(16) MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.

(17) ALIGN FACE OF POST BLOCK WITH FLOW LINE.

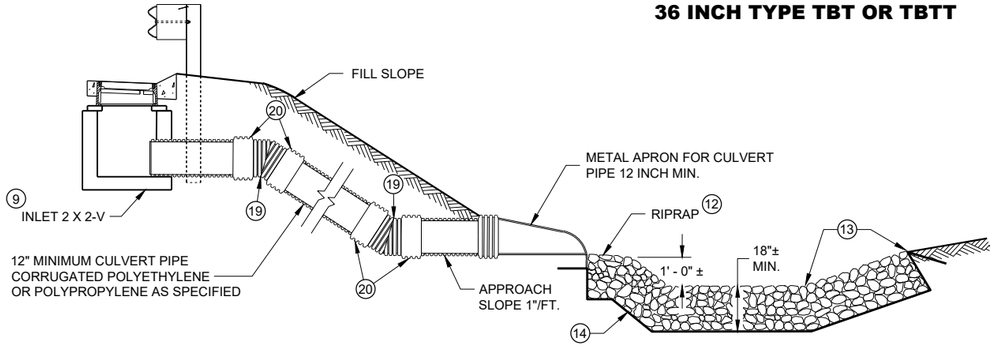
(18) MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.

(19) MANUFACTURER SUPPLIED BEND.

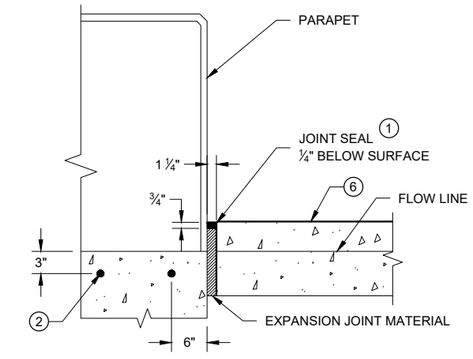
(20) MANUFACTURER SUPPLIED EXTERNAL MECHANICAL COUPLING OR A MANUFACTURER RECOMMENDED COUPLING WITH A MASTIC IMPREGNATED GEOTEXTILE WRAP AND MECHANICAL FASTENING BANDS.

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

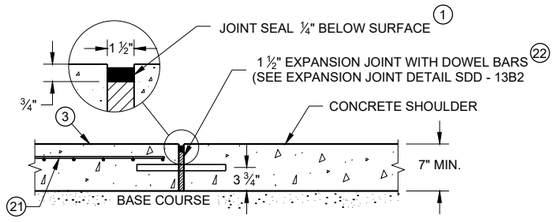
(22) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



SECTION A - A

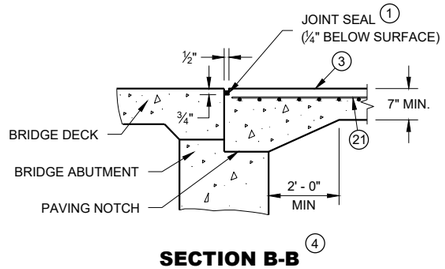


SECTION D - D

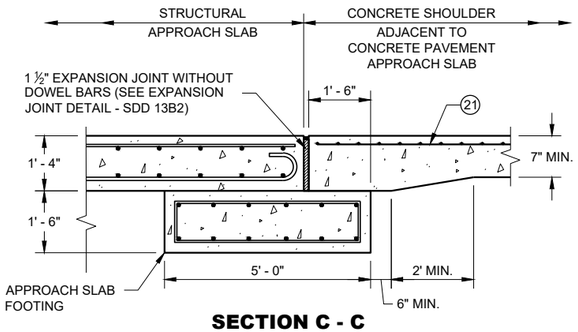


SECTION C - C

JOINT DETAIL FOR BRIDGE APPROACH WITH CONCRETE SHOULDERS

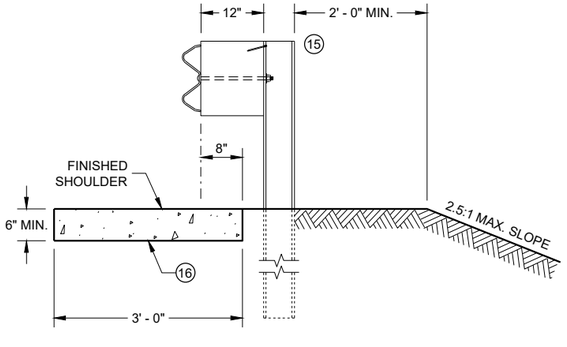


SECTION B-B (4)

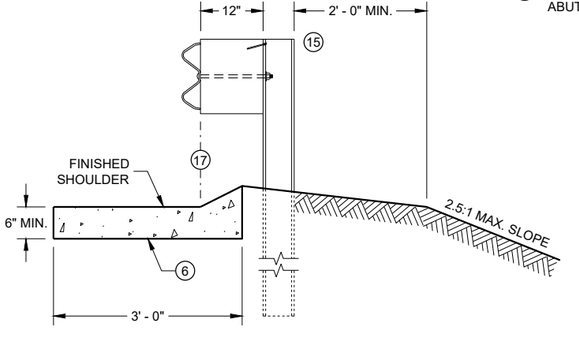


SECTION C - C

JOINT DETAIL FOR BRIDGE WITH STRUCTURAL APPROACH SLAB AND CONCRETE APPROACH SLAB



SECTION E - E



SECTION F - F

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

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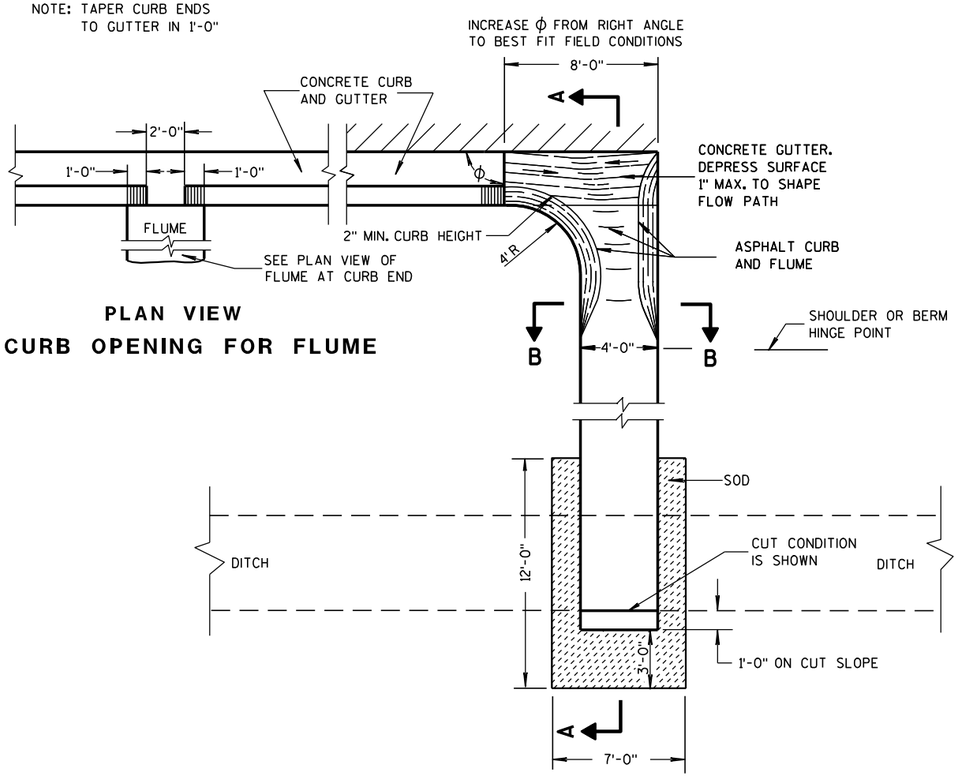
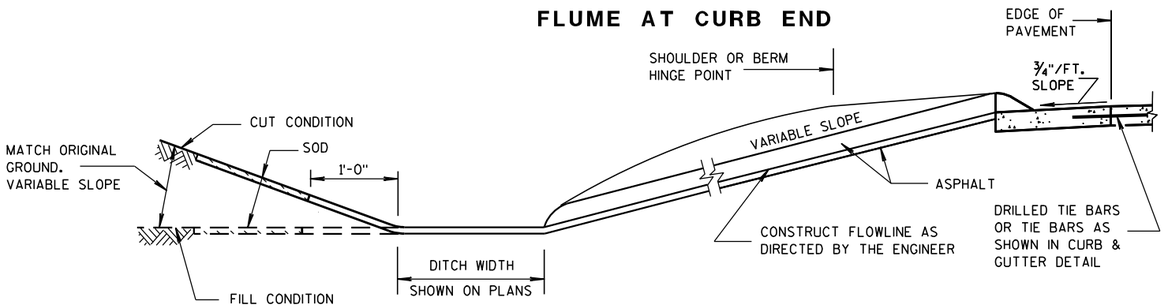
SDD 08D03 - 08b

ASPHALTIC FLUME

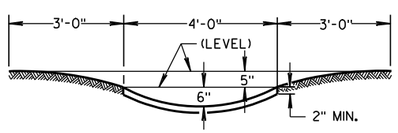


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

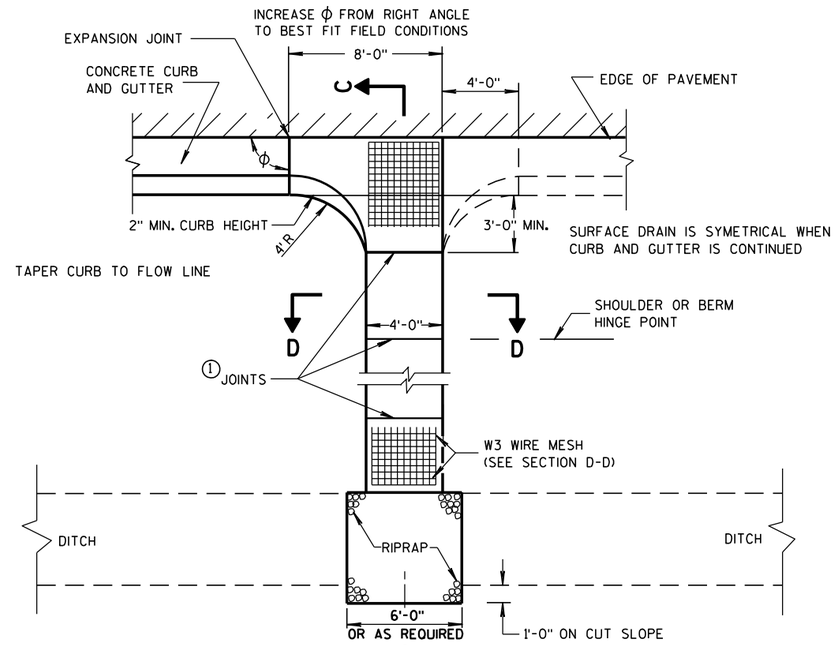
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

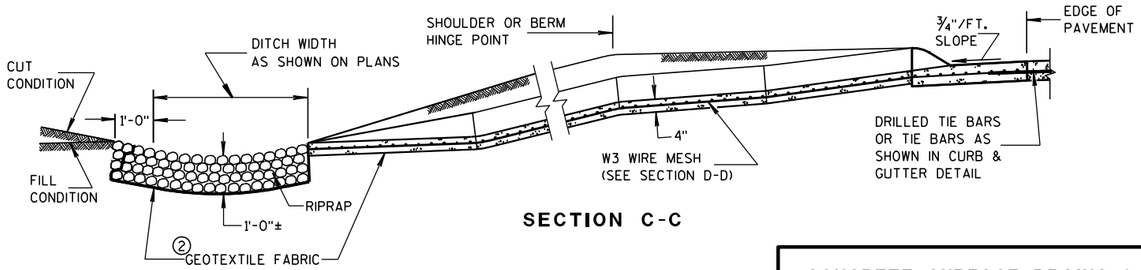
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

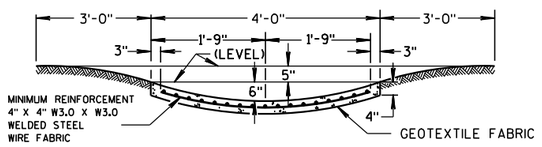
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
52
MENT
FHWA

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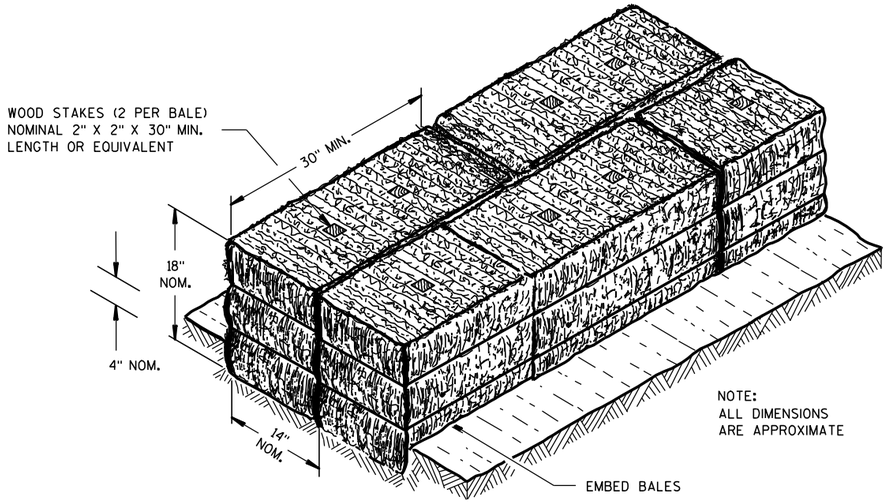
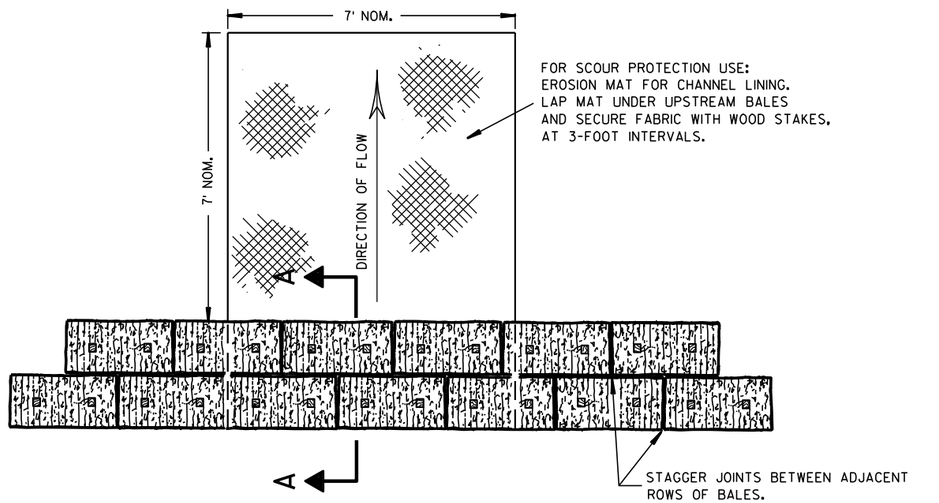
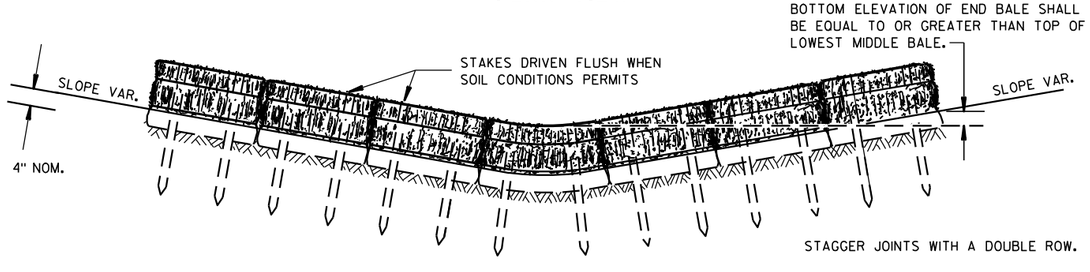


SECTION A-A



PLAN VIEW



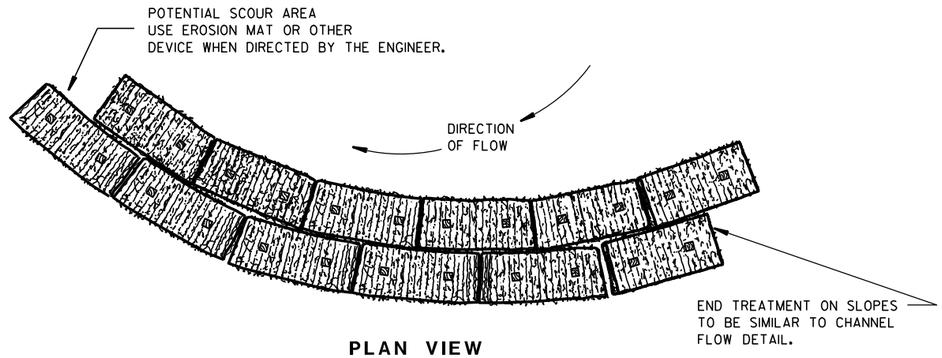
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

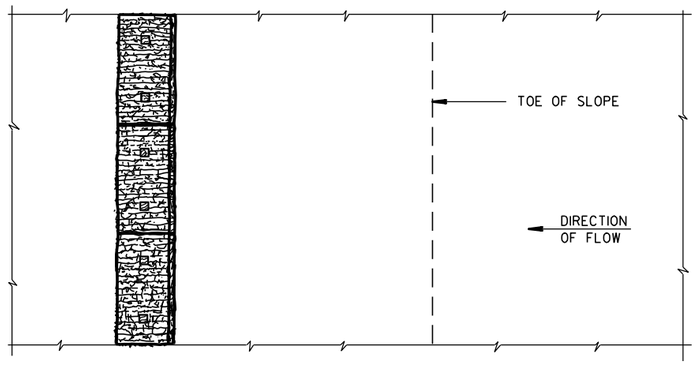
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

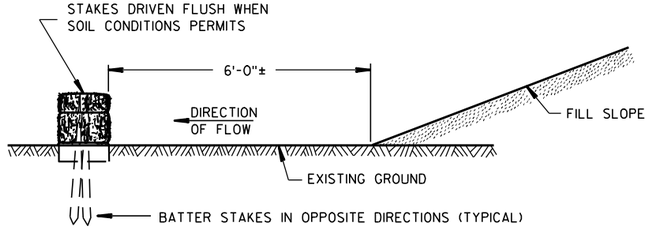


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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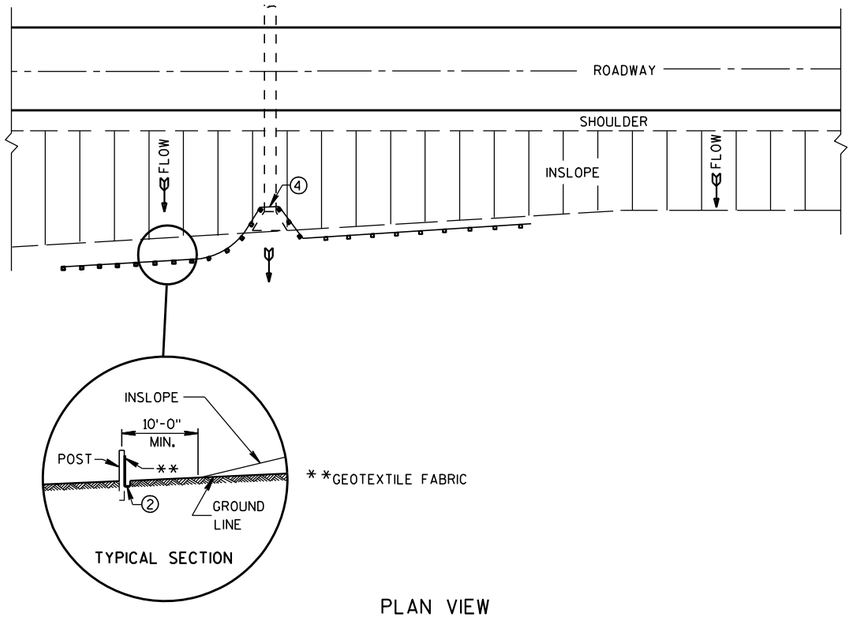
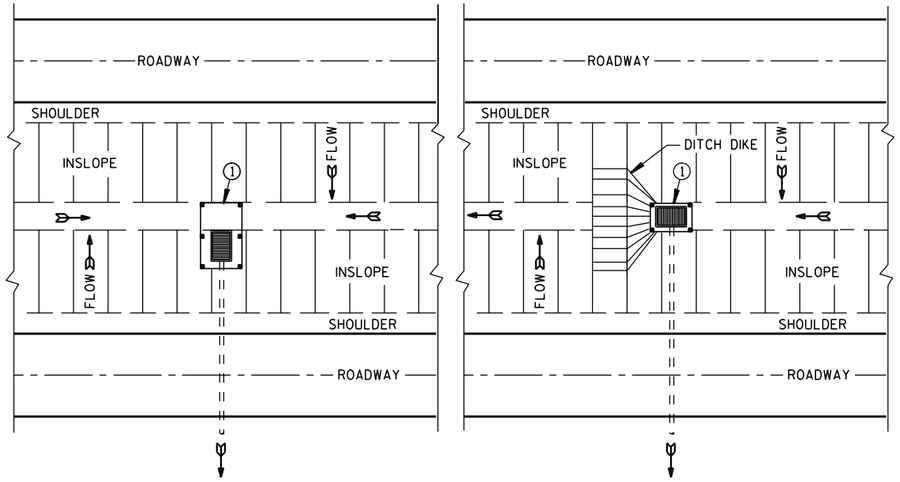


PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



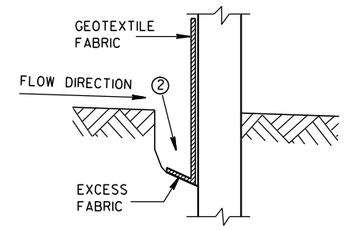
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

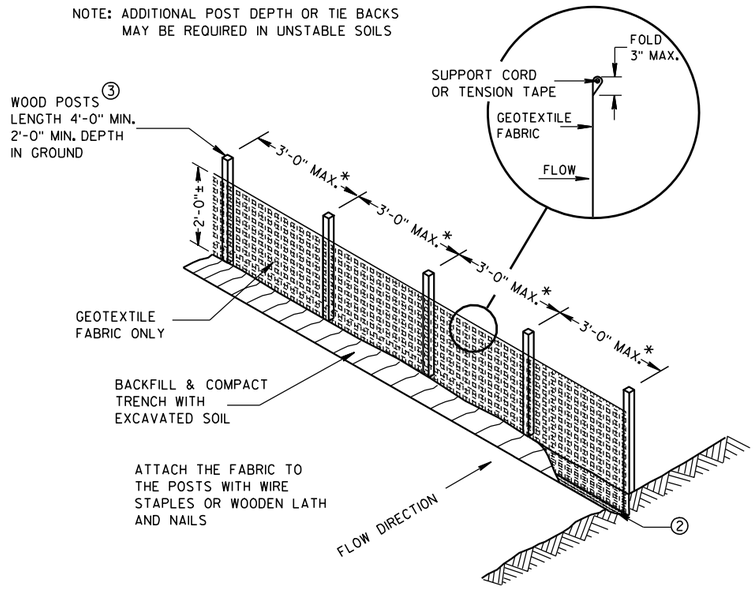
GENERAL NOTES

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

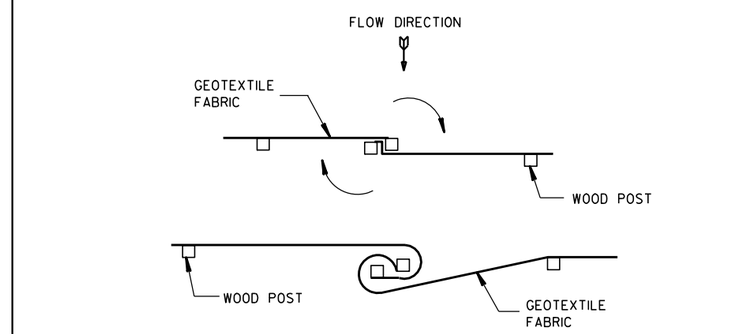
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



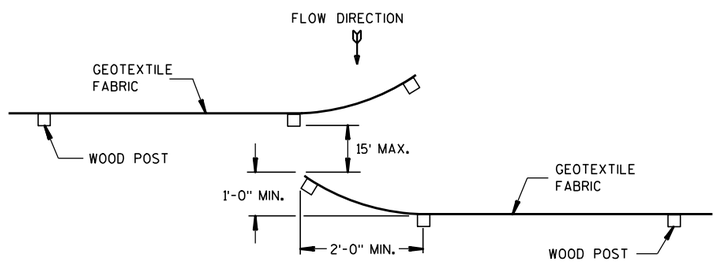
TRENCH DETAIL



SILT FENCE

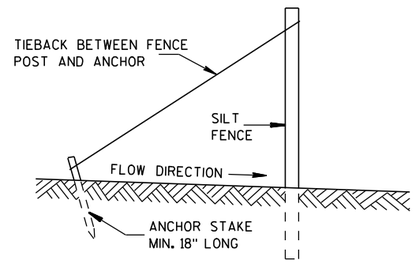


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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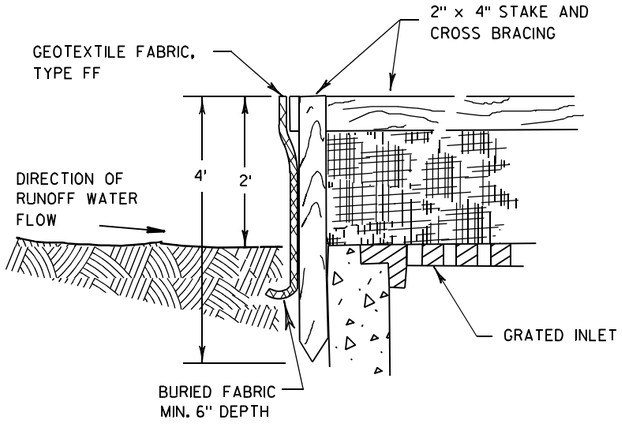
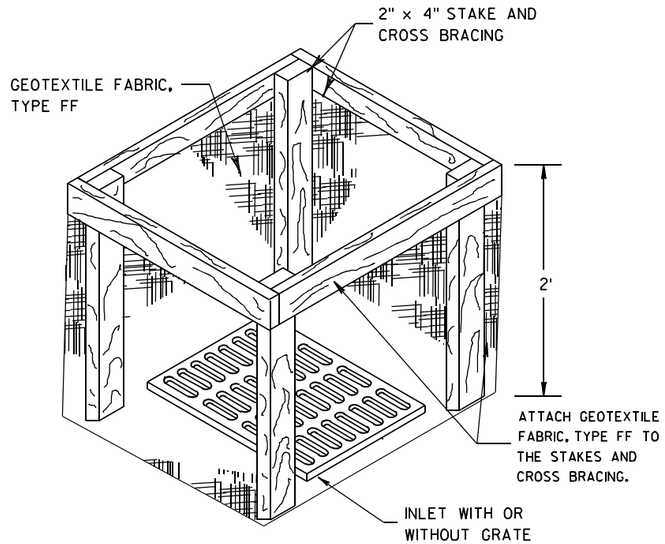
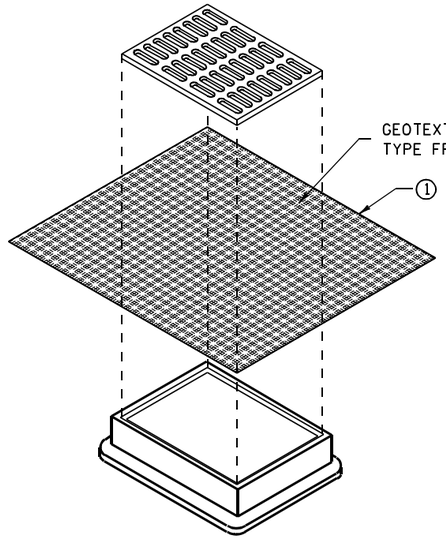


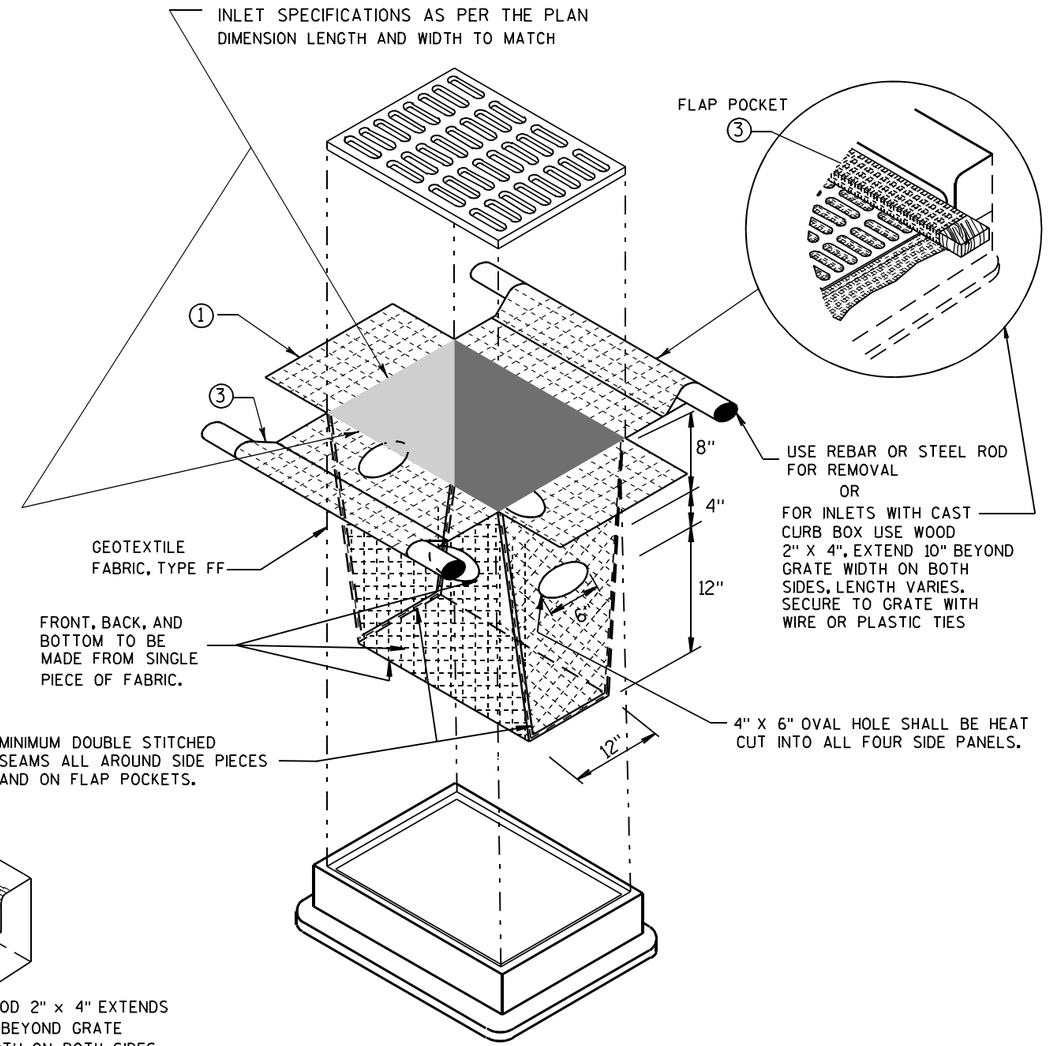


INLET PROTECTION, TYPE A



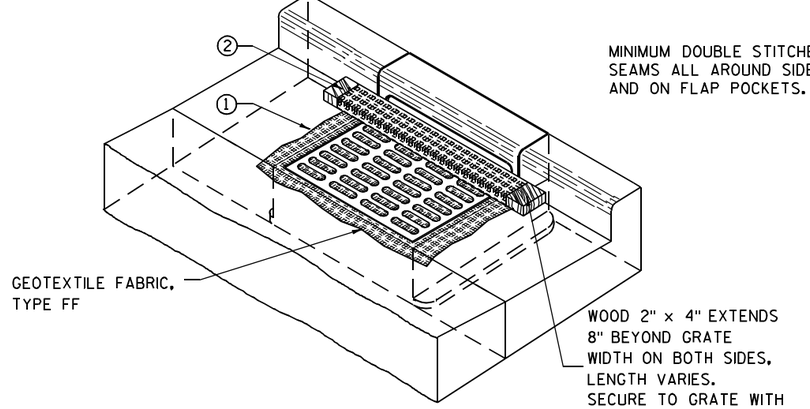
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

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

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

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

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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S.D.D. 8 E 10-2

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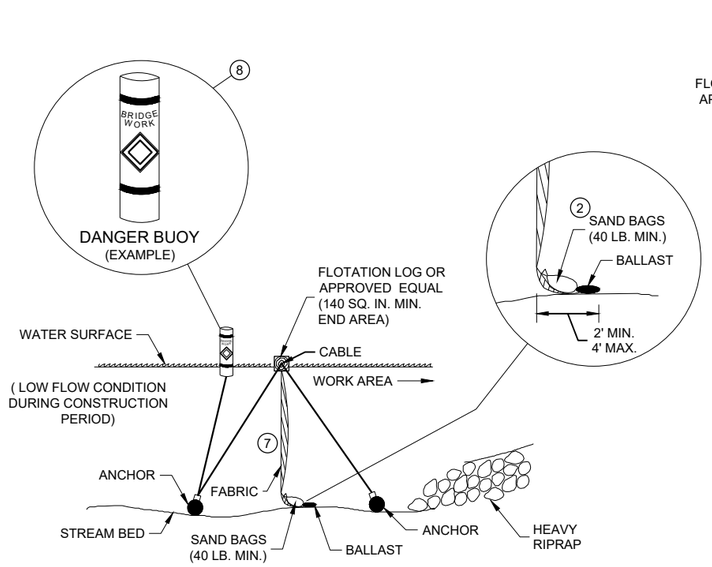
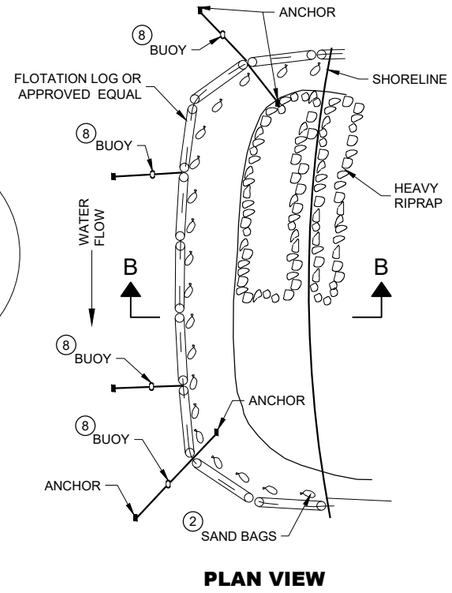
S.D.D. 8 E 10-2

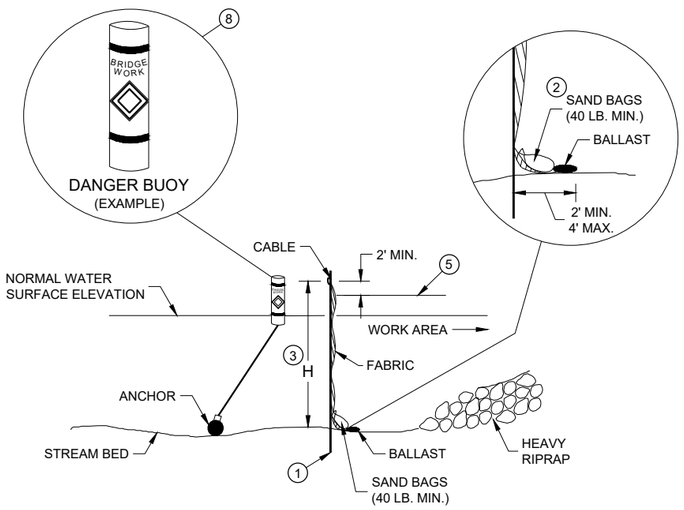


SECTION B - B

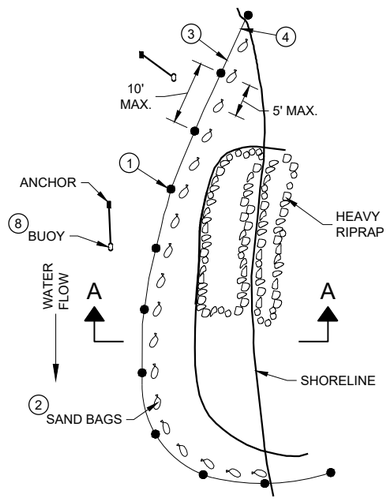


PLAN VIEW

TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A - A



PLAN VIEW

TURBIDITY BARRIER - STANDARD POST INSTALLATION

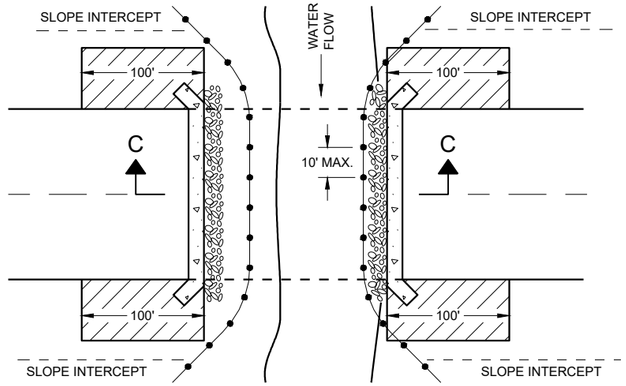
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

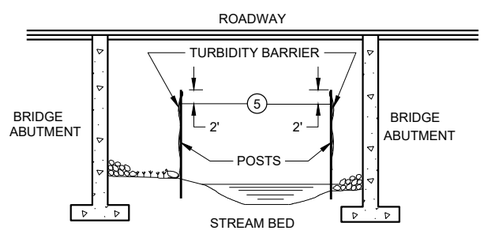
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
3. WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
4. IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
5. ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
6. FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
7. ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
8. USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C - C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOI
ENGINEER

FHWA

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SDD 08E11 - 02

METAL APRON ENDWALLS

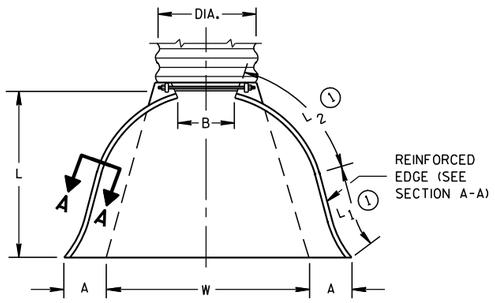
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

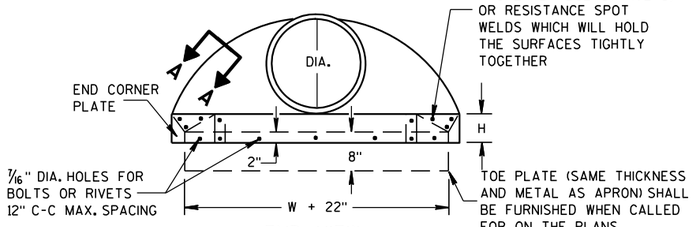
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

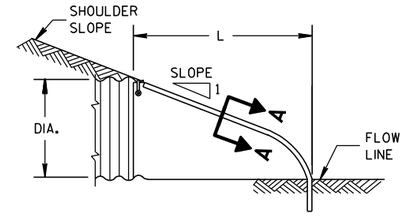
*MINIMUM
**MAXIMUM



PLAN VIEW

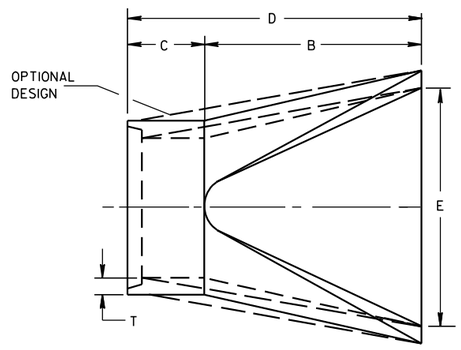


END VIEW

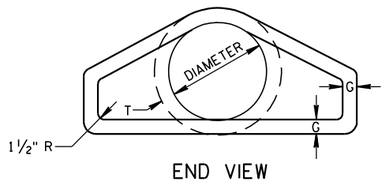


SIDE ELEVATION

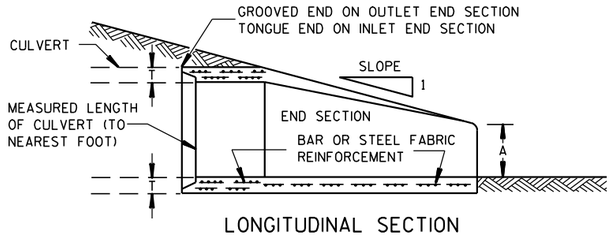
METAL ENDWALLS



PLAN

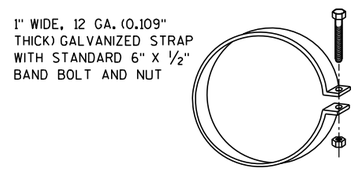


END VIEW



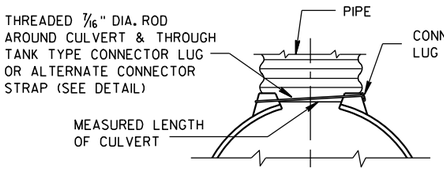
LONGITUDINAL SECTION

CONCRETE ENDWALLS

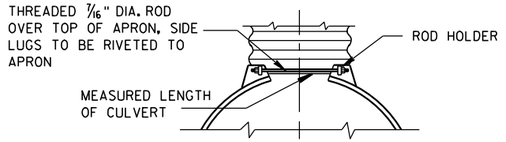


ALTERNATE FOR TYPE 1 CONNECTION

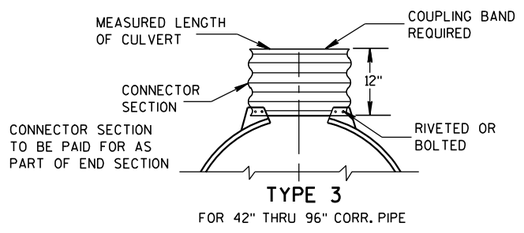
END SECTION CONNECTOR STRAP



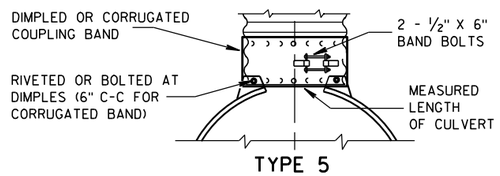
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

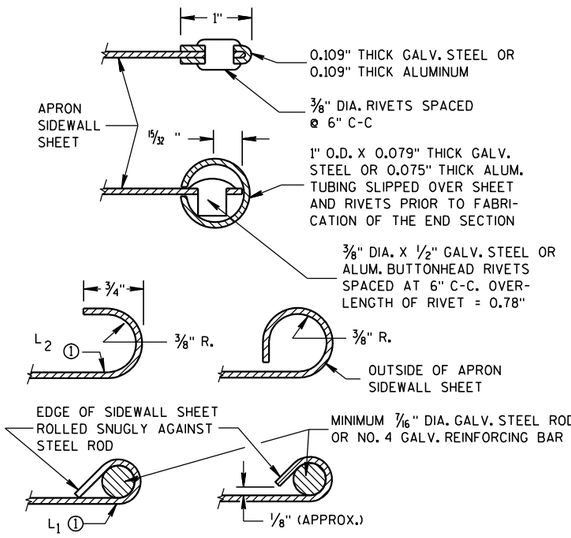
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

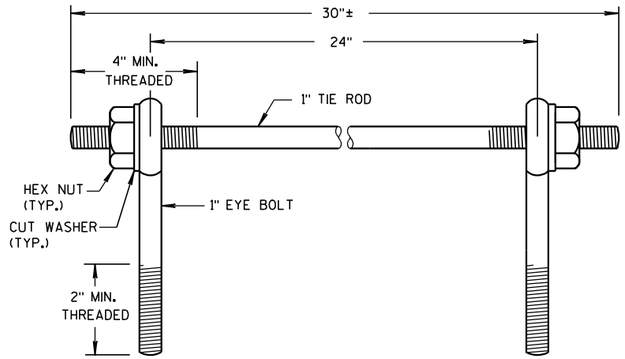
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

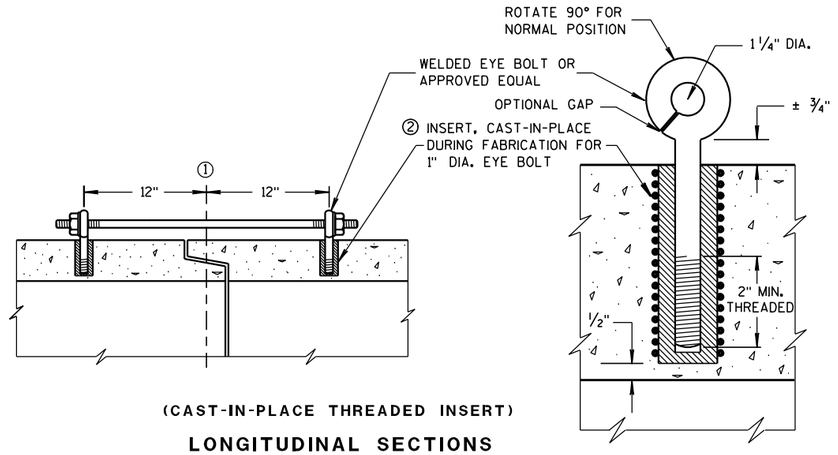
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

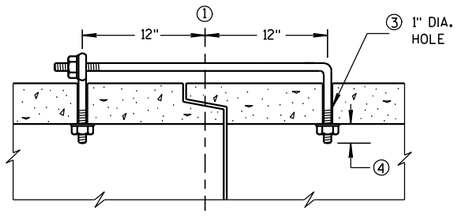
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

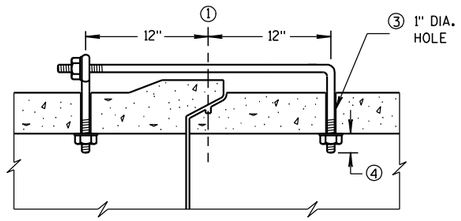
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

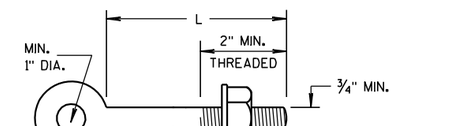


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

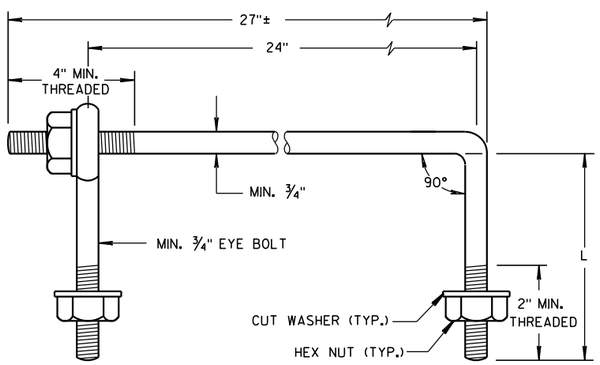
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

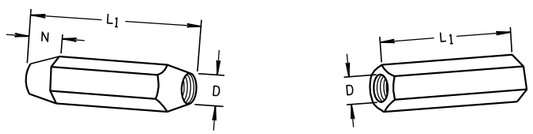
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

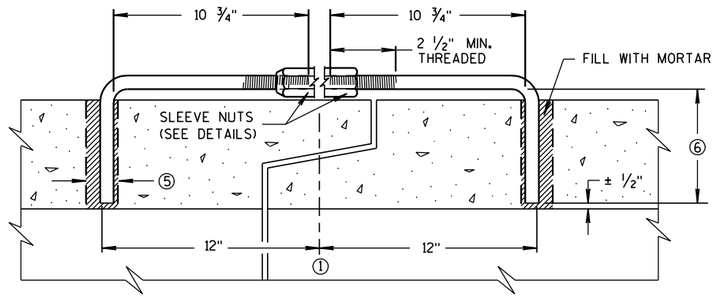
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

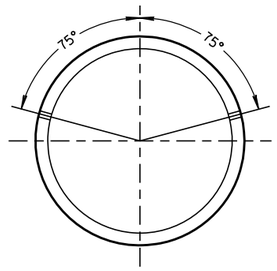
SLEEVE NUTS



LONGITUDINAL SECTION

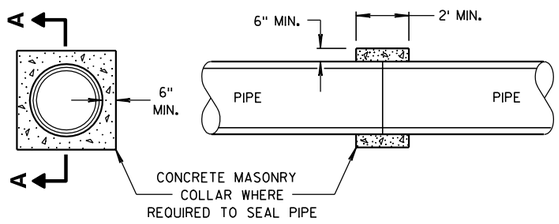
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
58
FHWA

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S.D.D. 8 F 4-7

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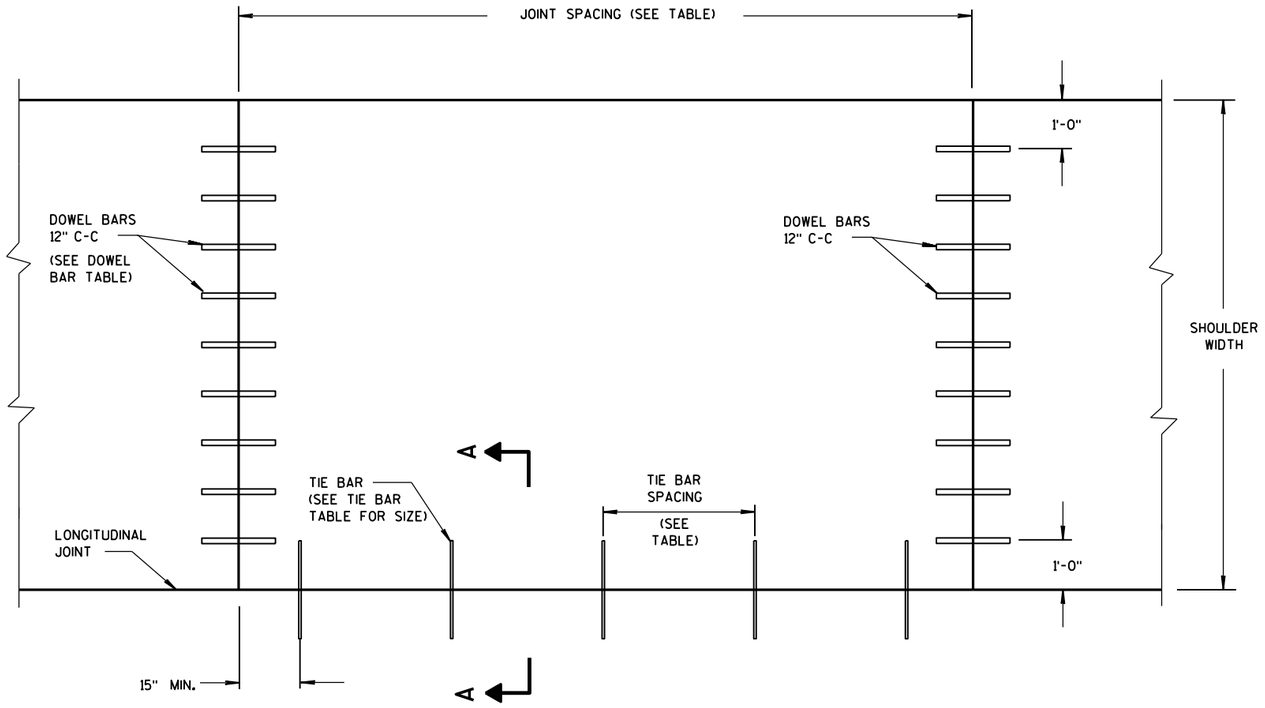
S.D.D. 8 F 4-7



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

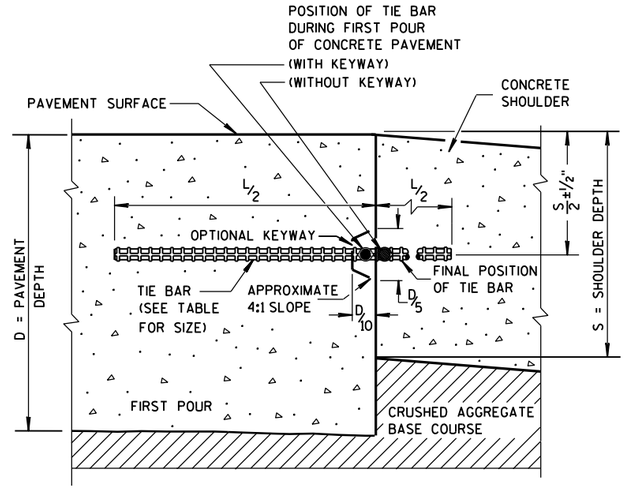
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER ***	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPERV
FHWA

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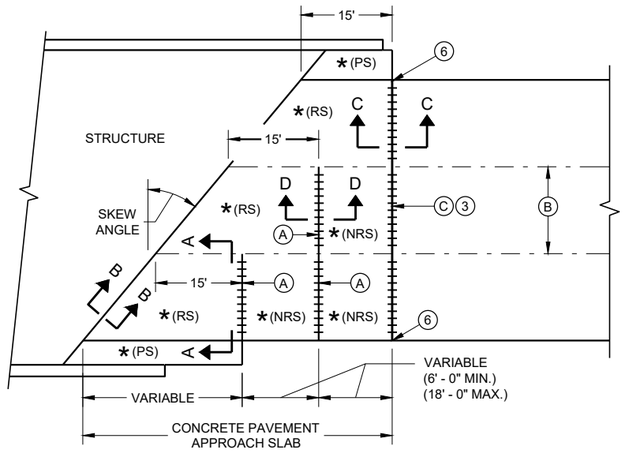
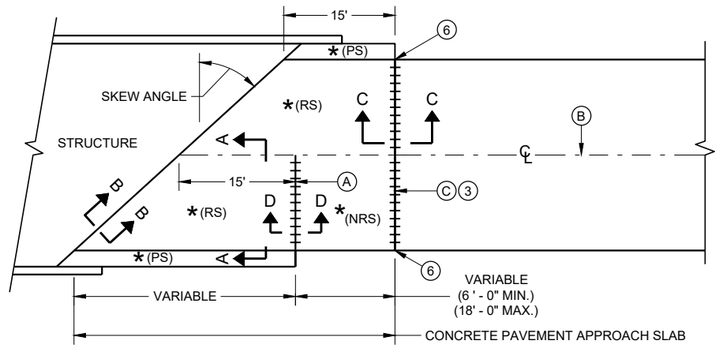
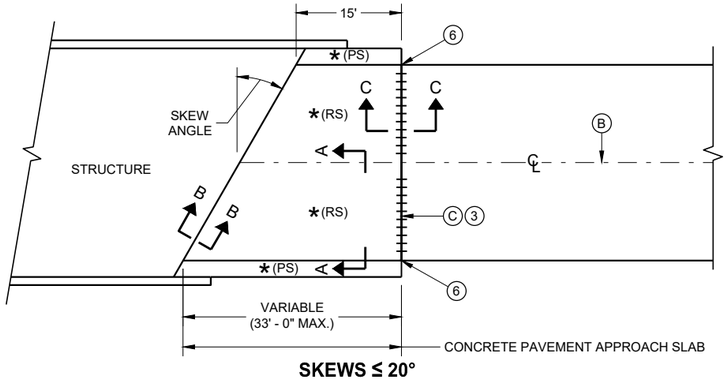
S.D.D. 13 A 3-6



SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

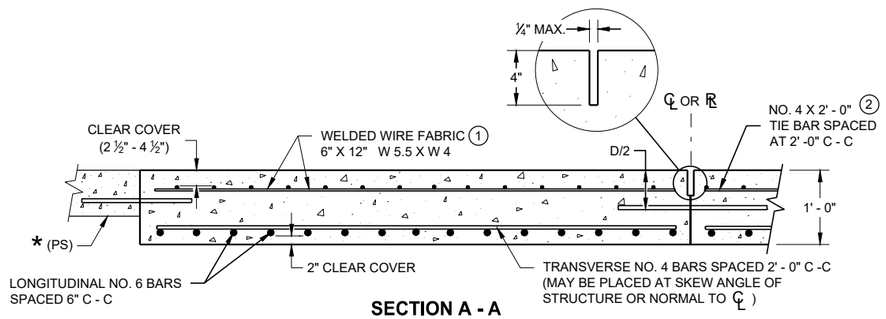
APPROACH SLAB AND ADJACENT PAVEMENT

* (RS) = REINFORCED CONCRETE SLAB

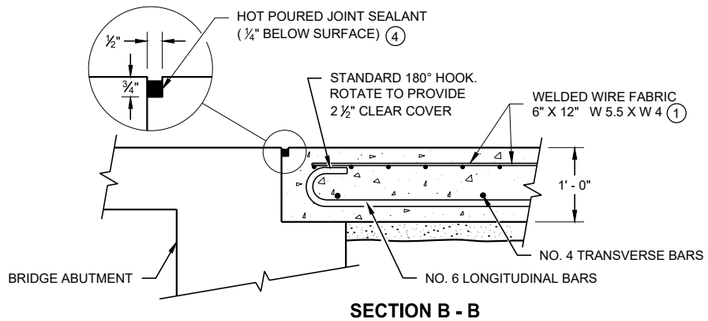
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

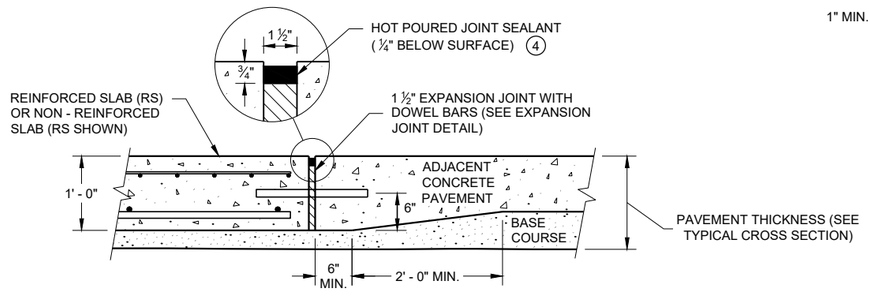
*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL



SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0 " C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.

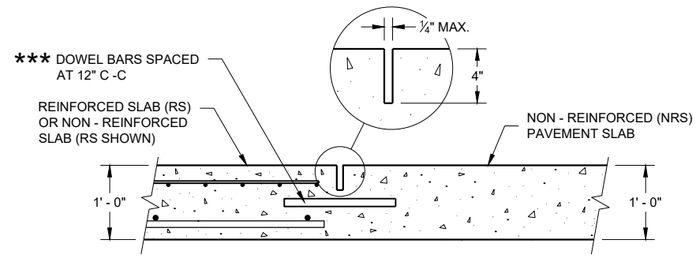
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

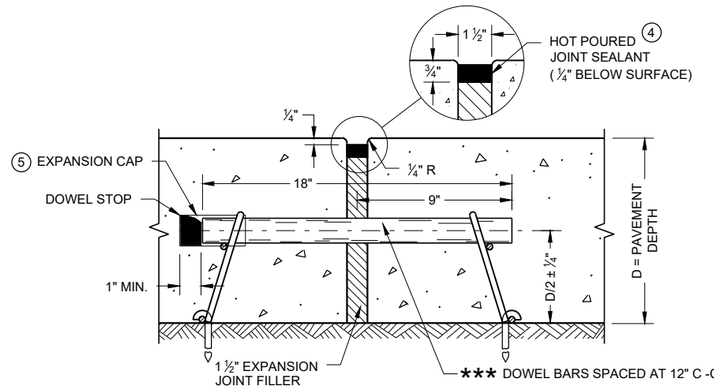
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞ .



SECTION D - D
CONTRACTION JOINT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPERVISOR

FHWA

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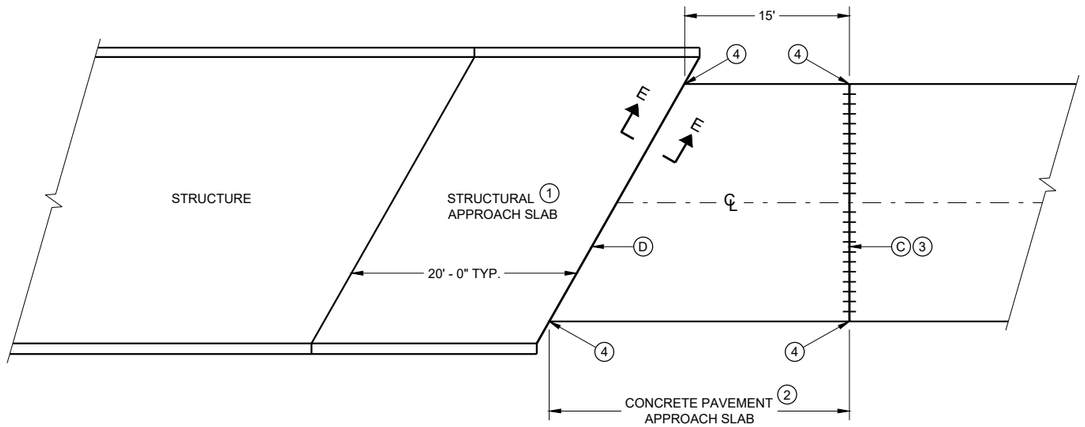
SDD 13B02 - 09a



BRIDGE APPROACHES

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

(1) SEE BRIDGE PLAN.

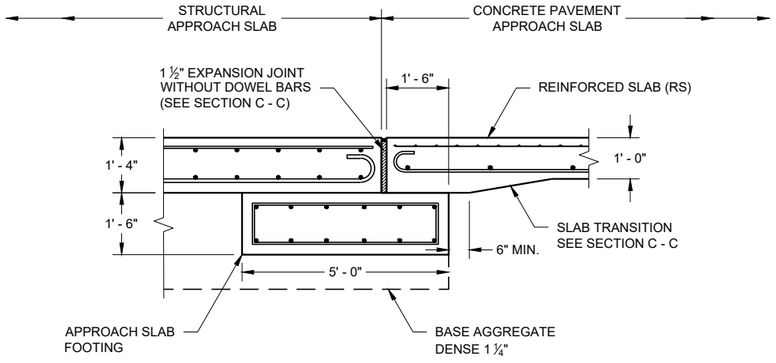
(2) CONFORM TO SDD 13B02 SHEET A FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞.

(D) 1 ½" EXPANSION JOINT (NO DOWELS)



SECTION E - E
FOOTING DETAIL
STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

FHWA

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SDD 13B02 - 09b

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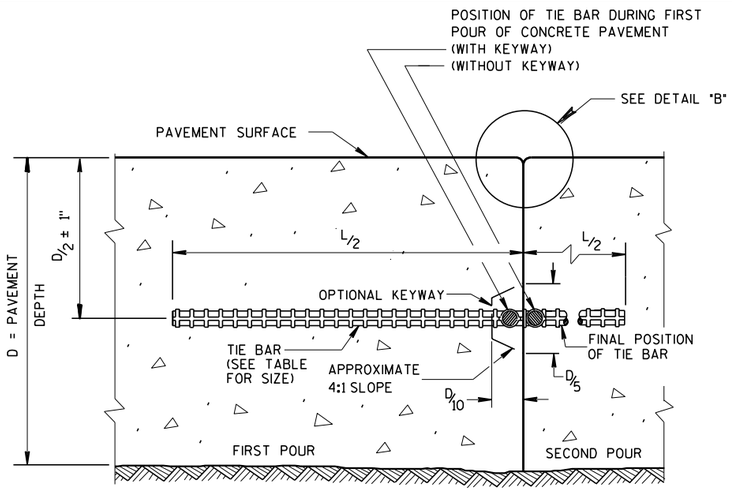
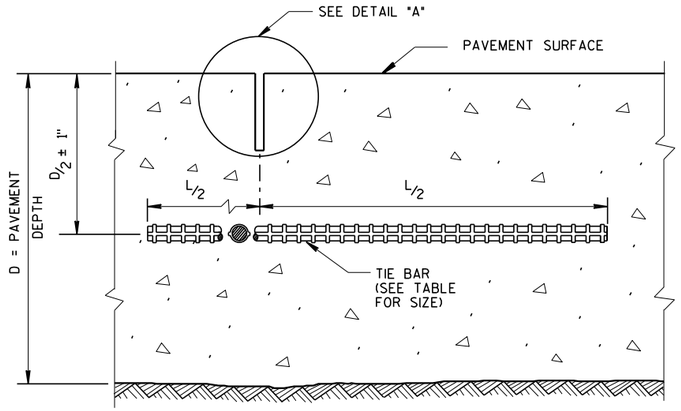
SDD 13B02 - 09b



CONSTRUCTION JOINT



SAWED JOINT

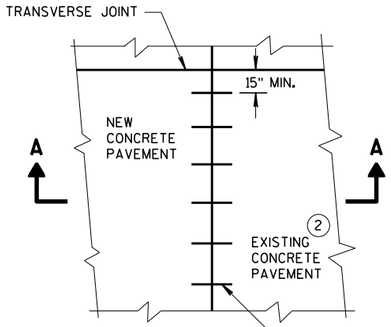
GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

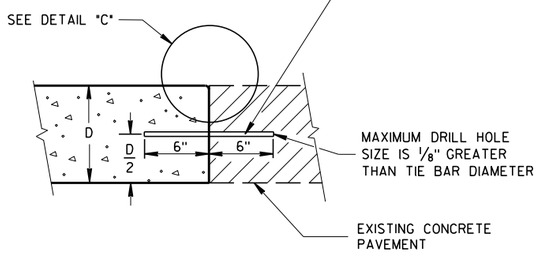
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

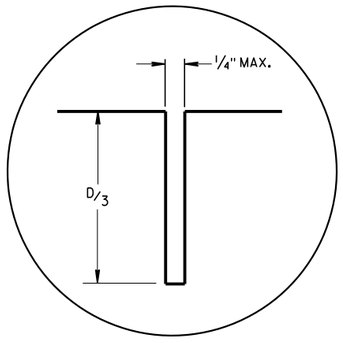


PLAN VIEW

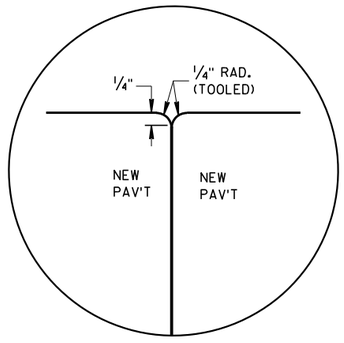


SECTION A-A

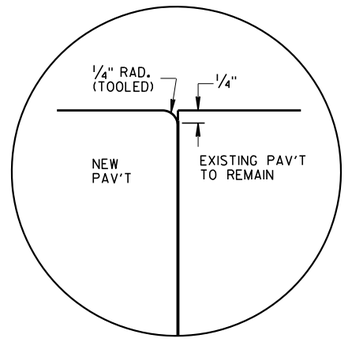
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



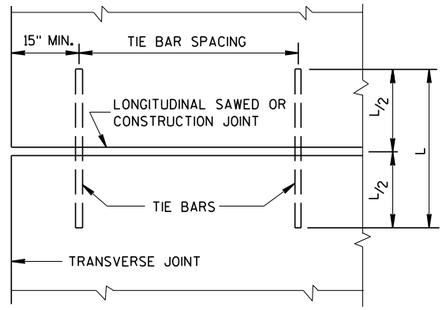
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter Kemp P.E. — PAVEMENT SUPE
FHWA

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S.D.D. 13 C 1-19

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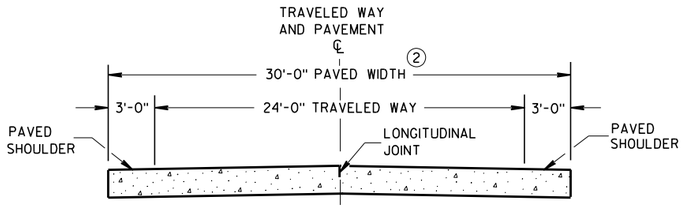
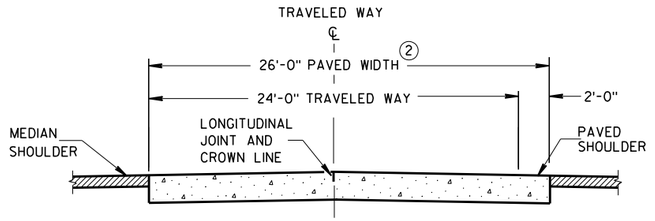
S.D.D. 13 C 1-19

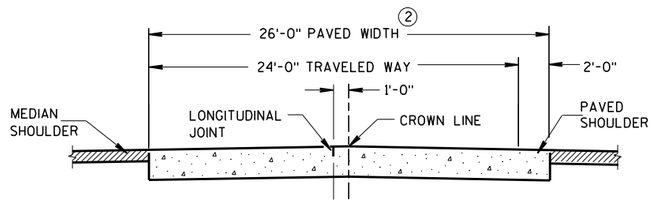


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B

①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

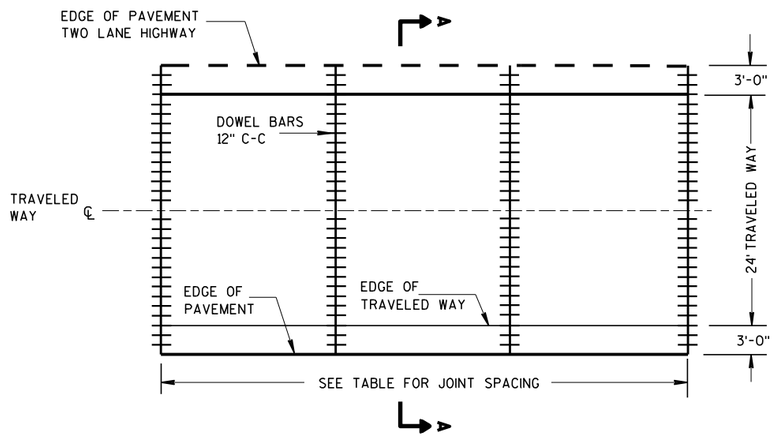
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

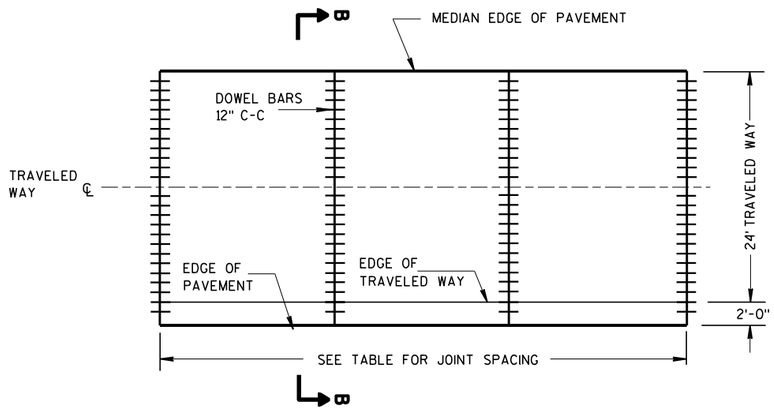
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



CONTRACTION JOINT LAYOUT FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT FOR DIVIDED HIGHWAY

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 13 C 11-12a

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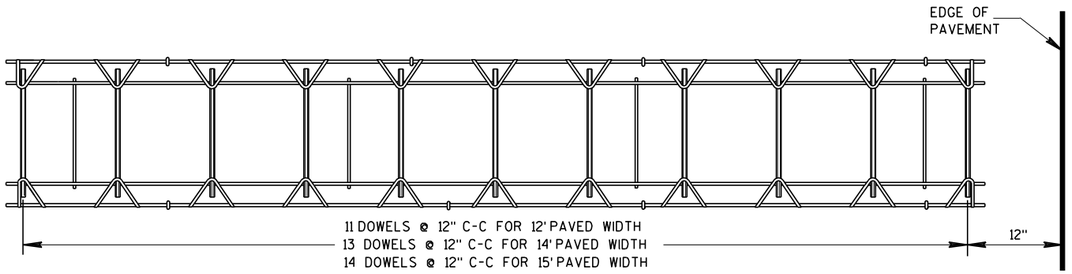
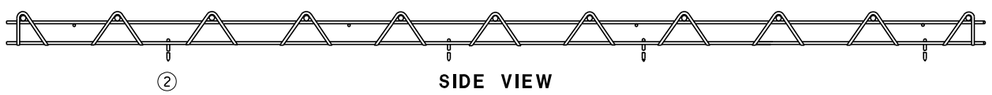
S.D.D. 13 C 11-12a



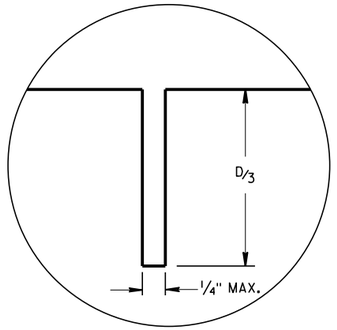
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

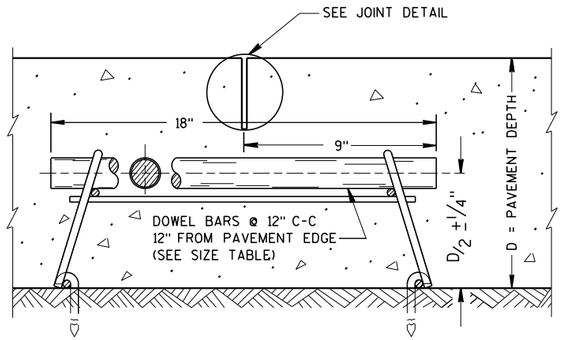
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

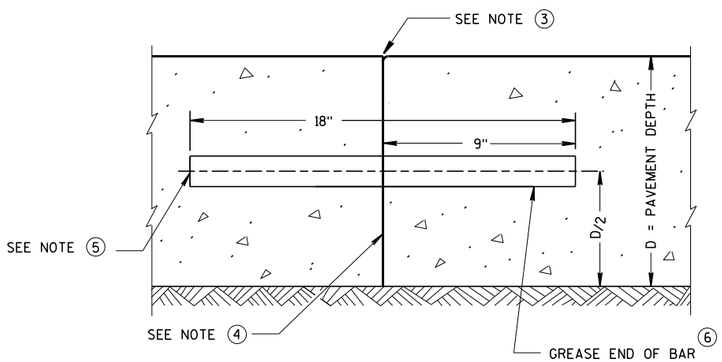
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

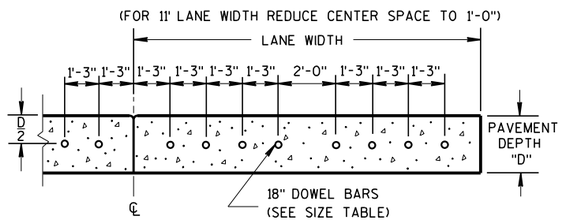
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2018 DATE	/S/ Peter Kemp P.E. PAVEMENT SUP
FHWA	

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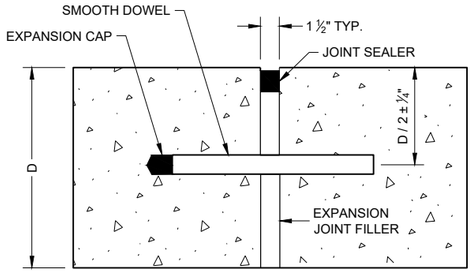
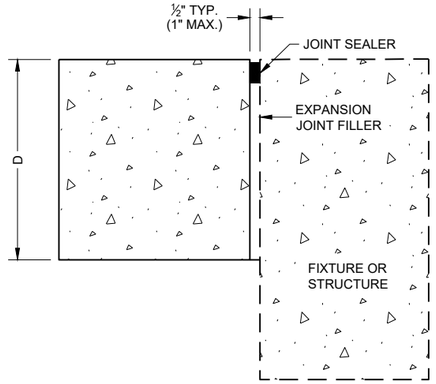
S.D.D. 13 C 11-12b



DOWELED TRANSVERSE (1)



UNTIED - LONGITUDINAL

EXPANSION JOINTS

TIE BAR TABLE

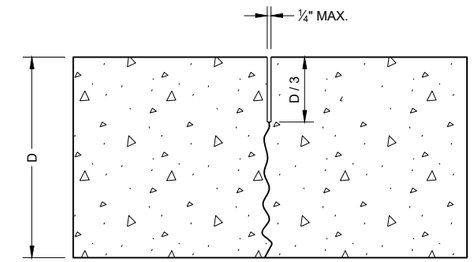
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

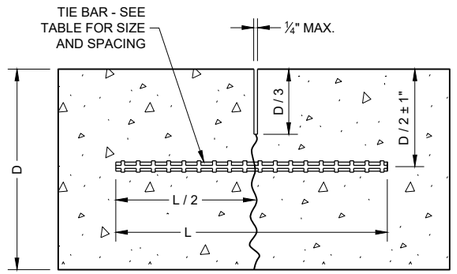
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

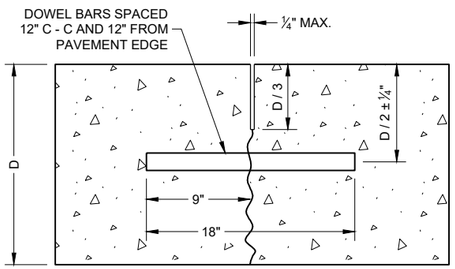
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATETHE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A ¼" RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



UNDOWELED TRANSVERSE

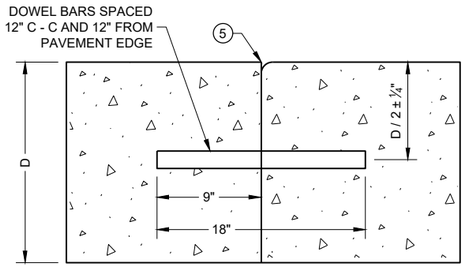


TIED LONGITUDINAL

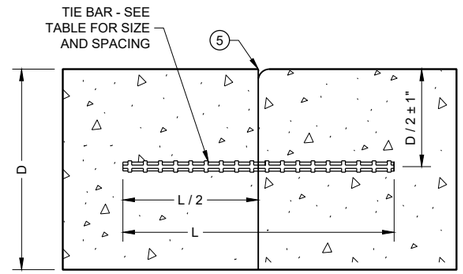


DOWELED TRANSVERSE

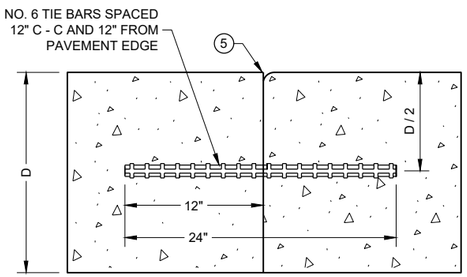
CONTRACTION JOINTS (2)



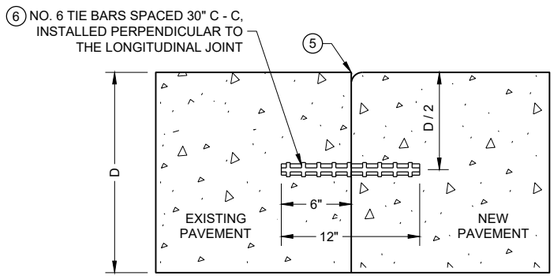
DOWELED TRANSVERSE (3)



TIED LONGITUDINAL



TIED TRANSVERSE (3)
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS (4)

CONCRETE PAVEMENT JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
SDD 13C18 - 07c

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

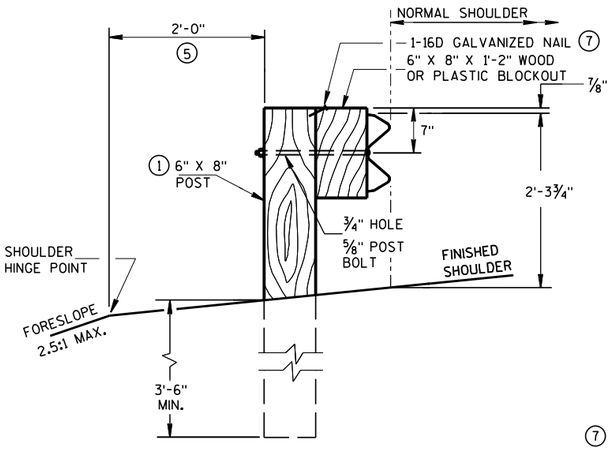
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

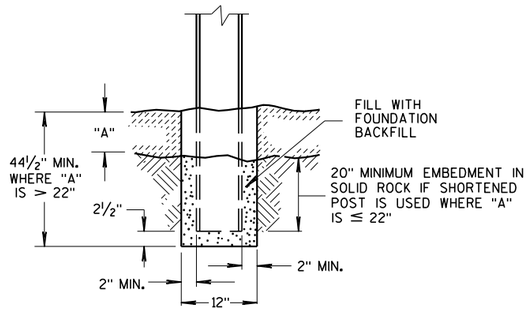
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

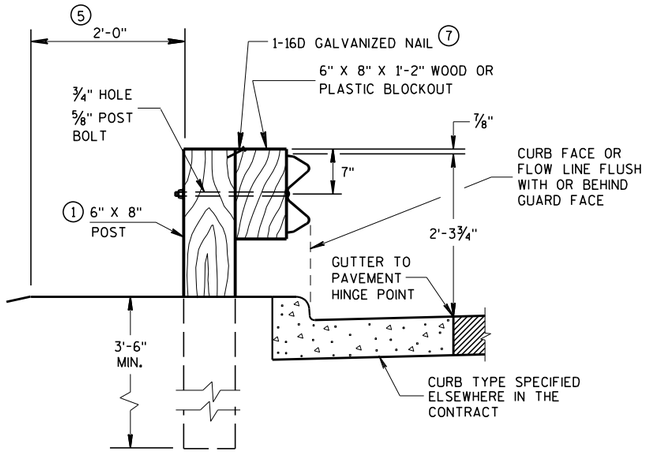
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



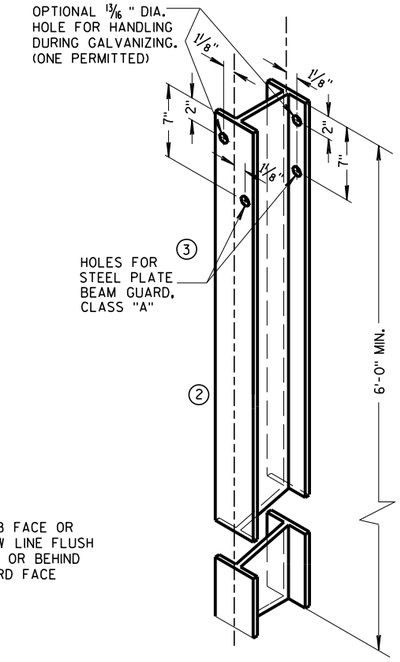
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

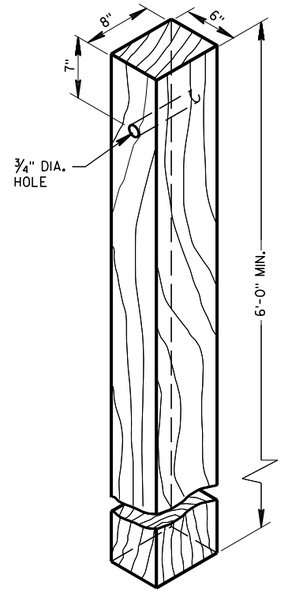


END VIEW
LOCATED ALONG A CURBED ROADWAY

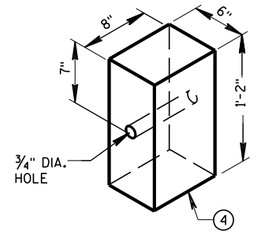


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

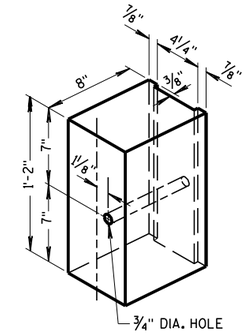
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



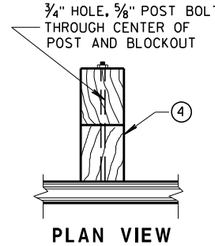
WOOD POST
(6"X8") NOMINAL



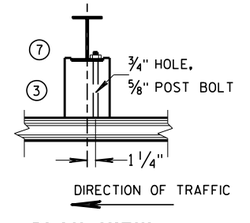
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



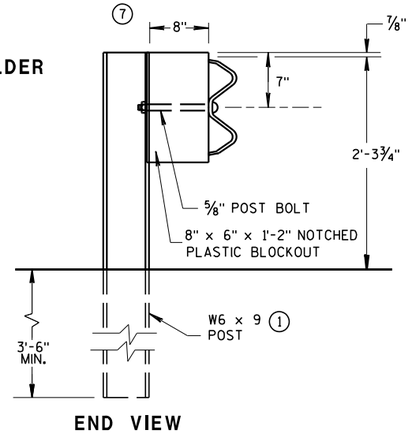
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



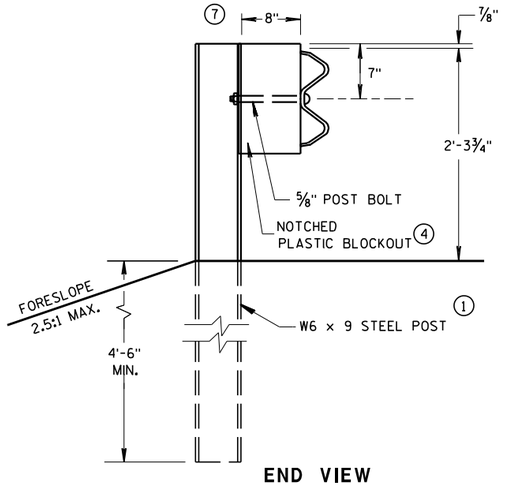
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



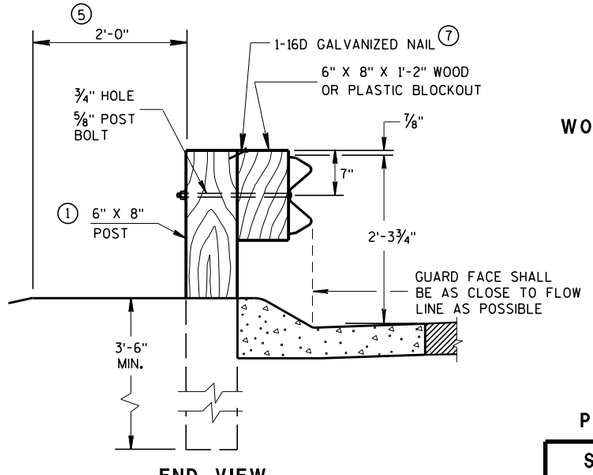
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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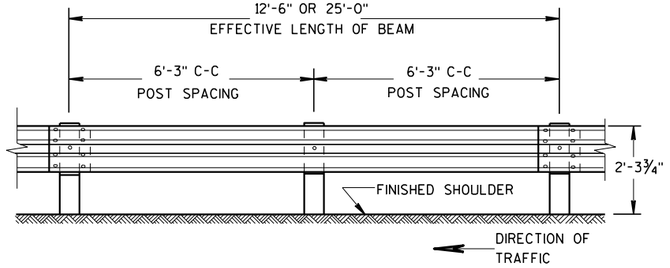
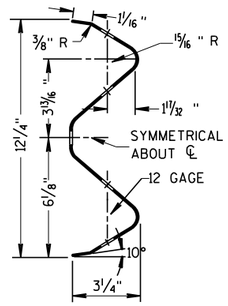
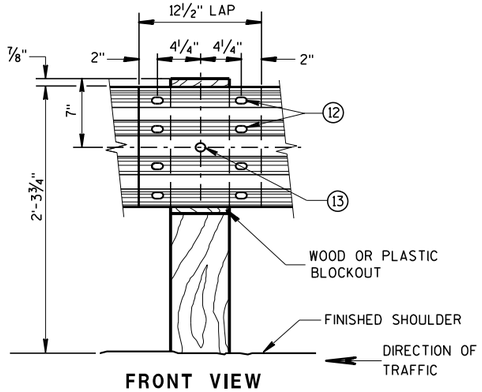


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

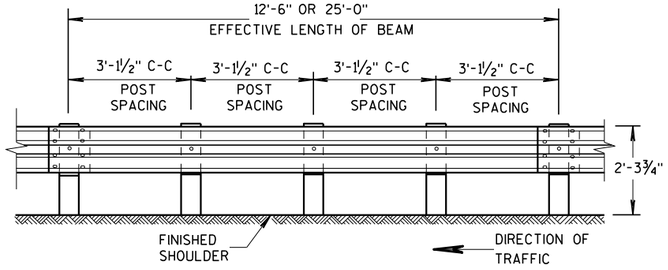
GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

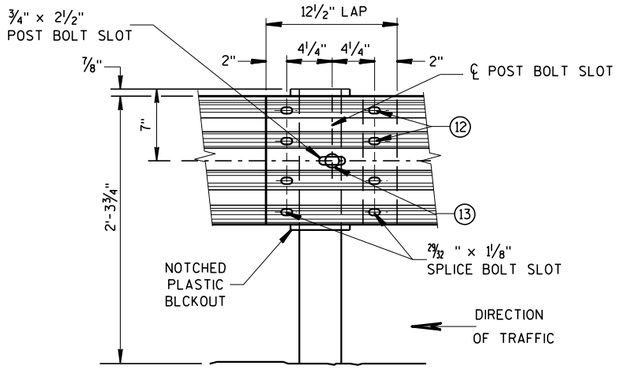
(12) 8 -5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

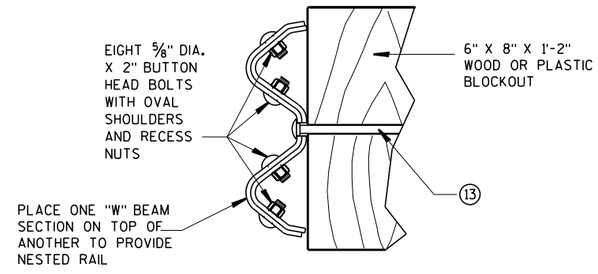
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

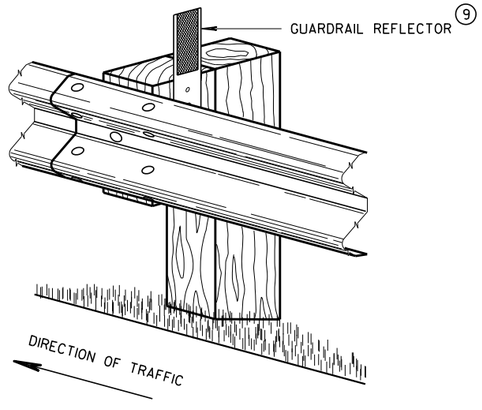
TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



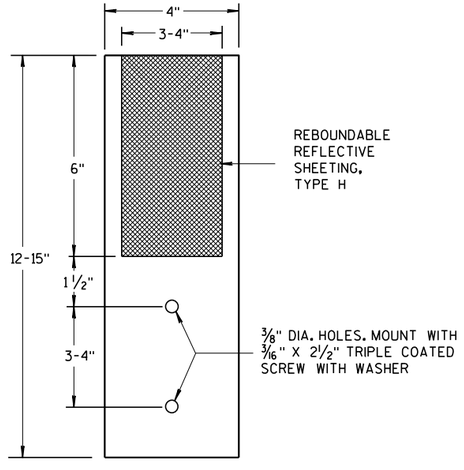
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCO 67
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6

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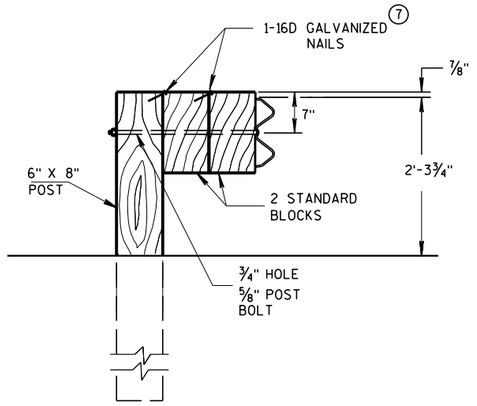
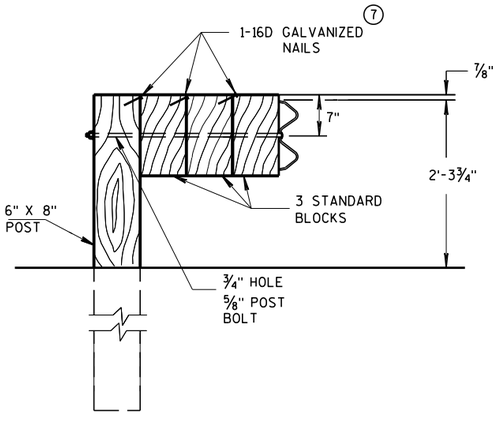


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

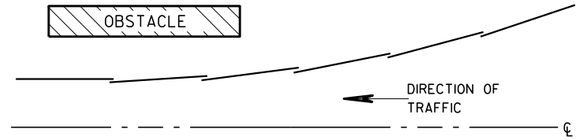


DETAIL FOR TRIPLE BLOCKS

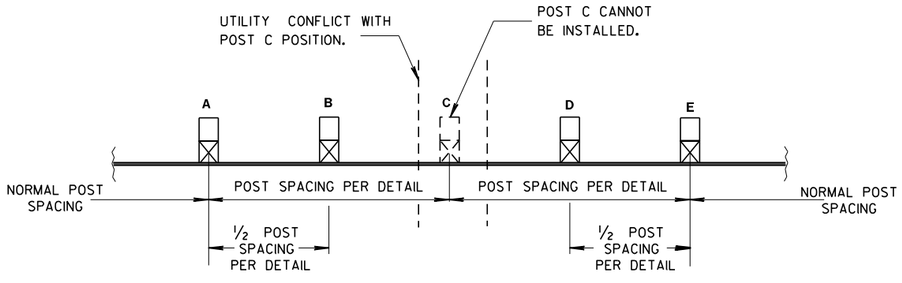
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

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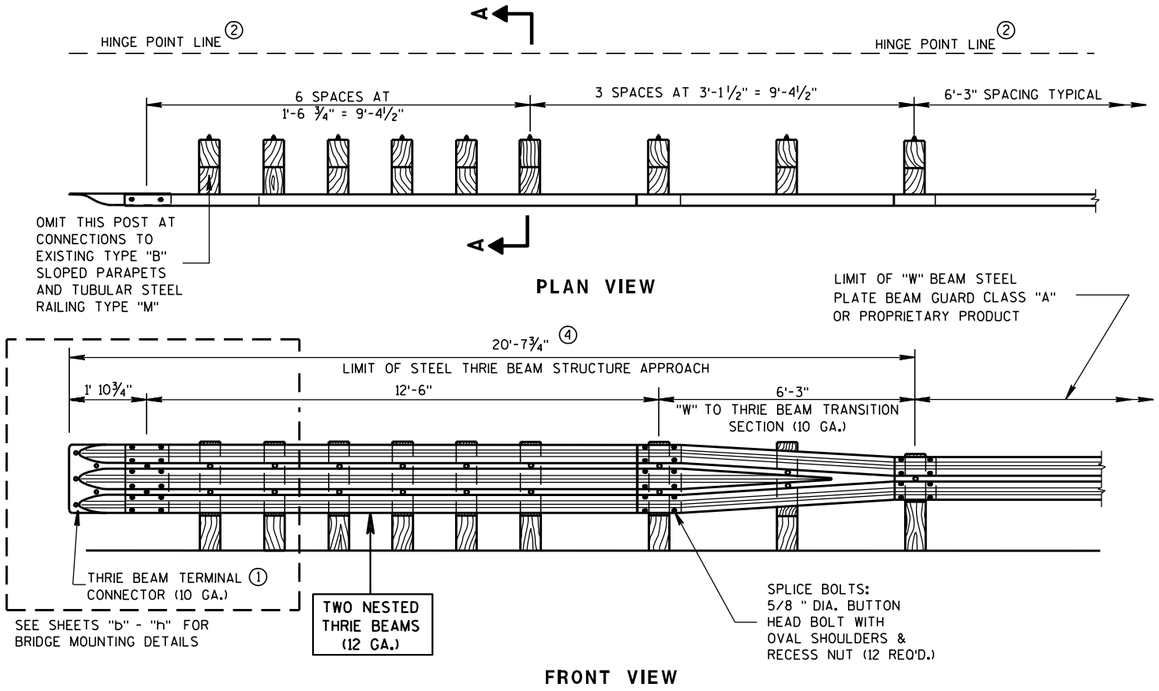
S.D.D. 14 B 15-11c



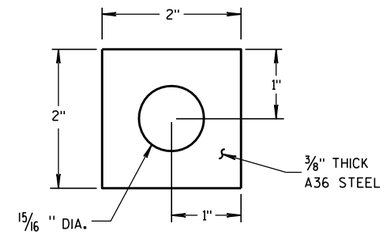


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

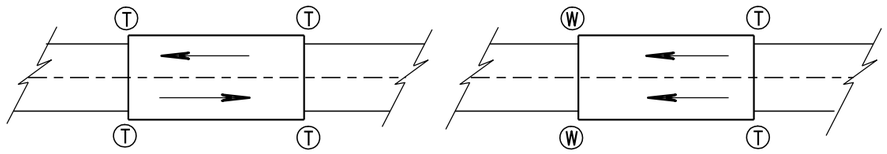
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



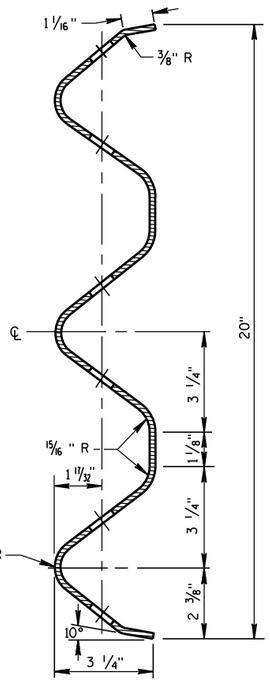
TWO WAY TRAFFIC

ONE WAY TRAFFIC

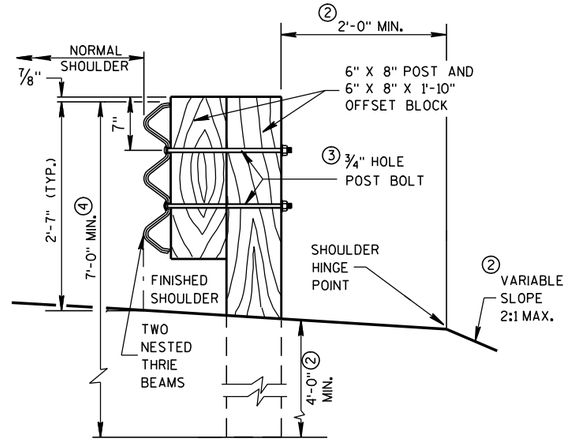
Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

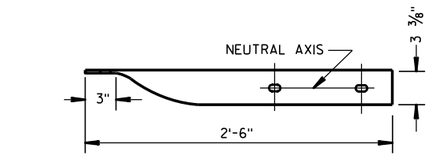
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

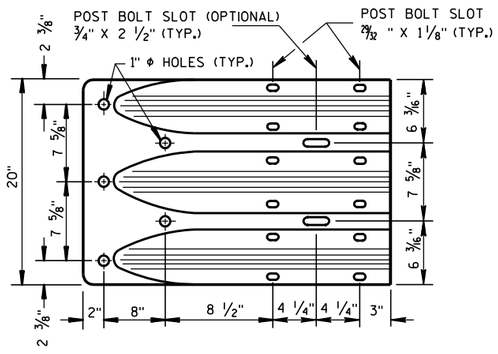


SECTION THRU THRIE BEAM RAIL ELEMENT

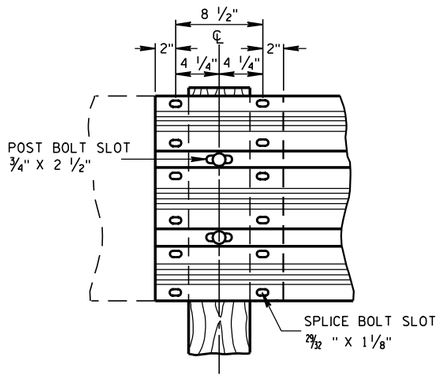


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



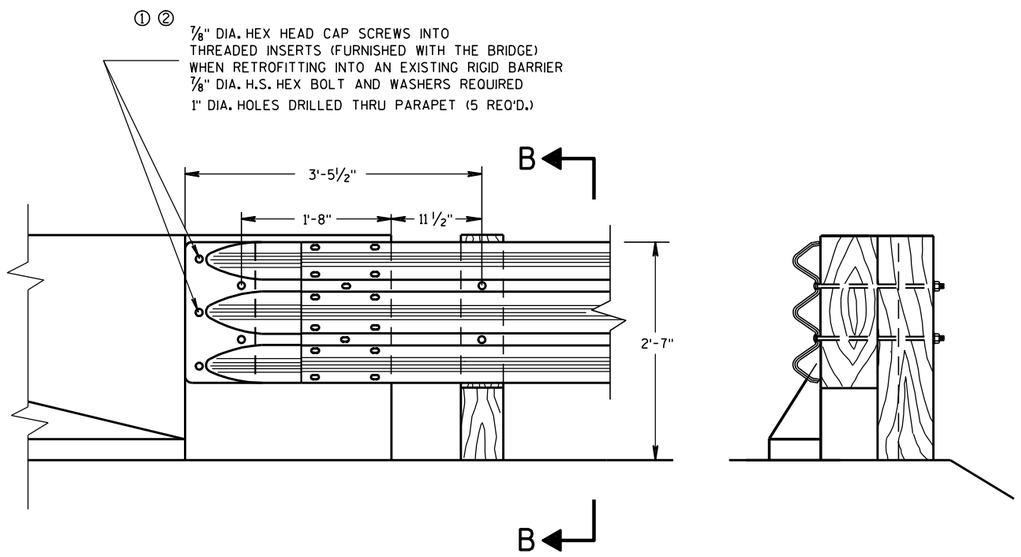
THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

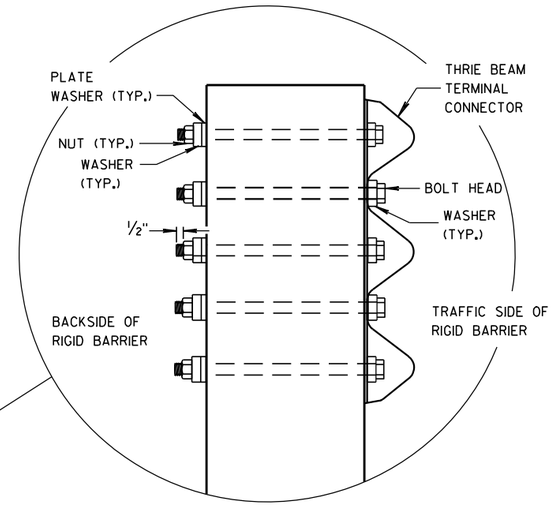
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

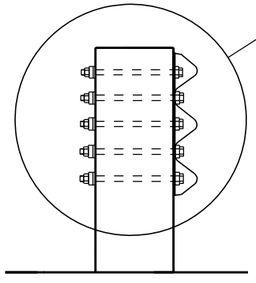
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ 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 ½".

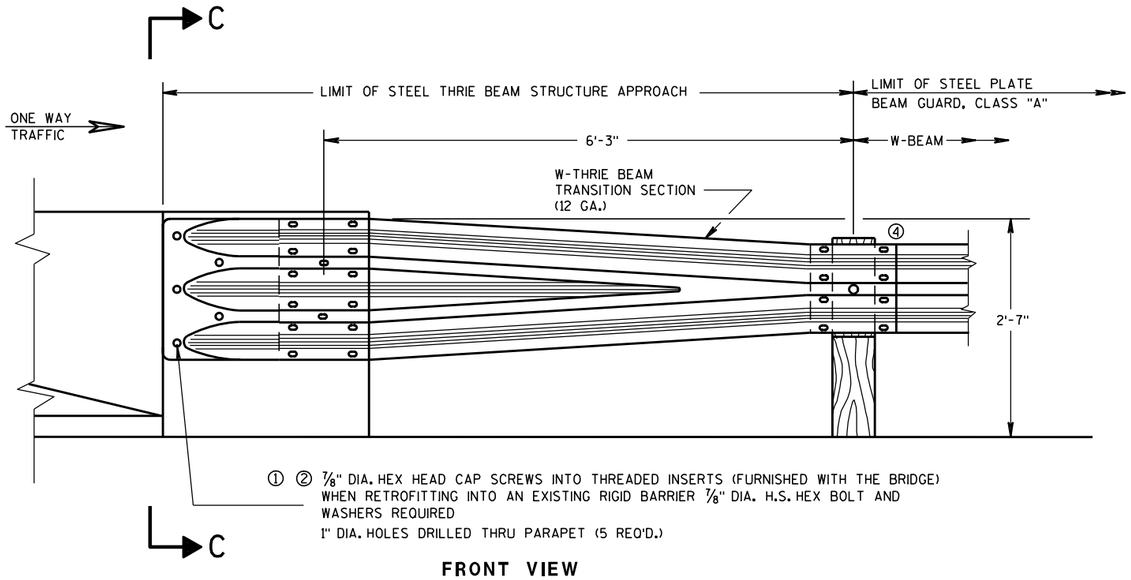
④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





SECTION C-C



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zaa
ROADWAY STANDARDS [70
ENGINEER

FHWA

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S.D.D. 14 B 20-11b

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S.D.D. 14 B 20-11b

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

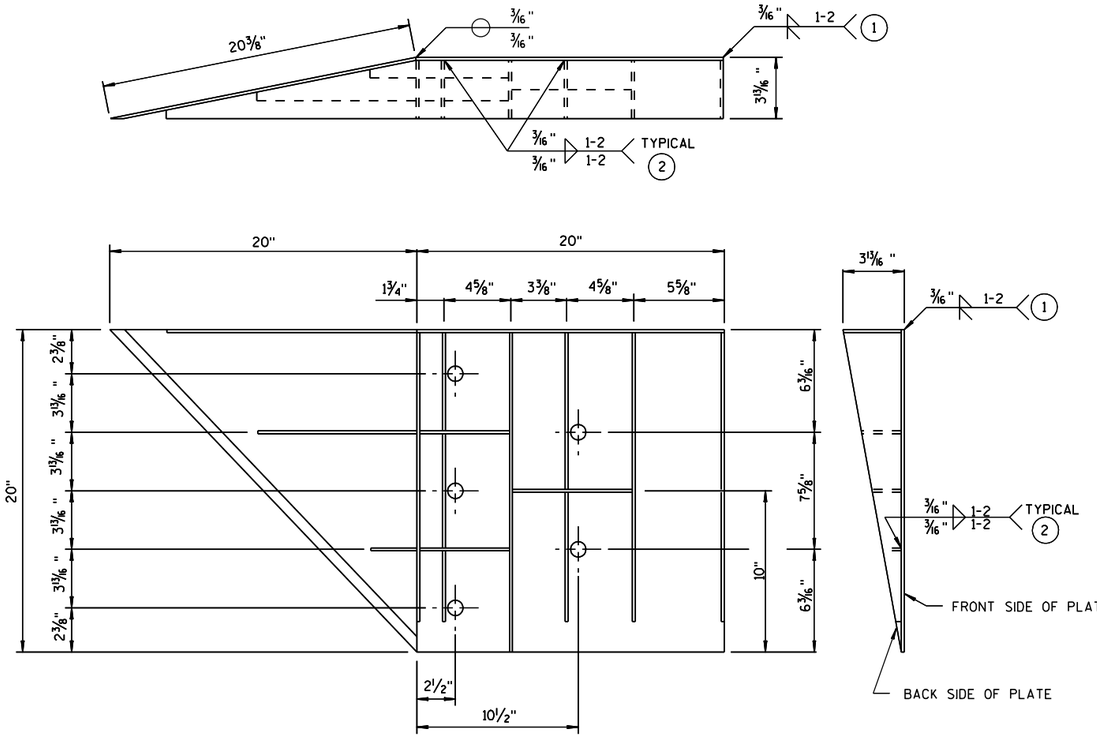
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

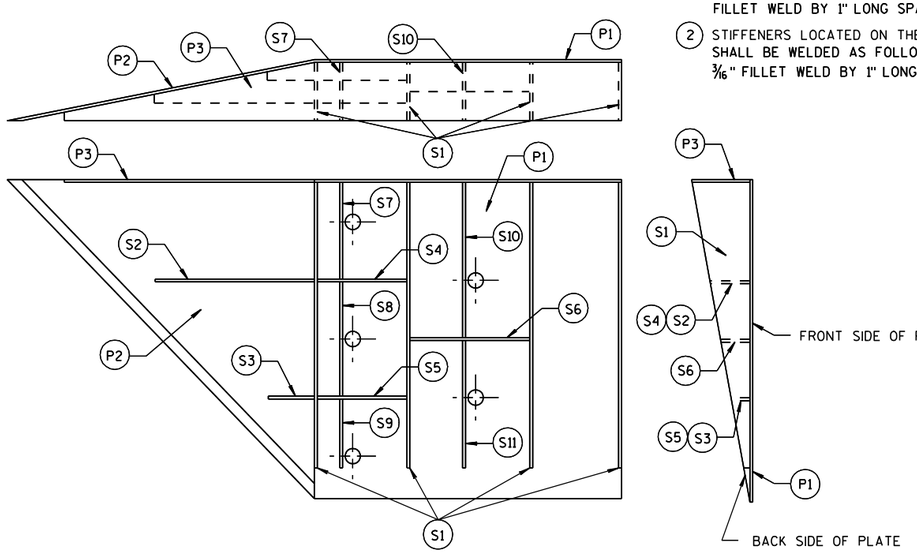


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

S.D.D. 14 B 20-11g
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(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.

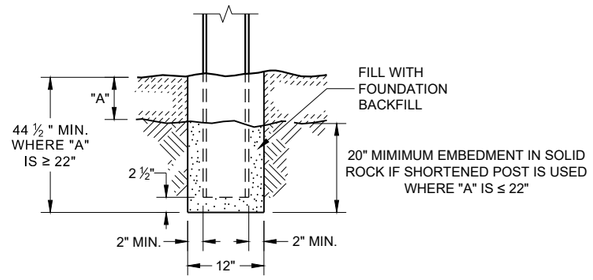
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

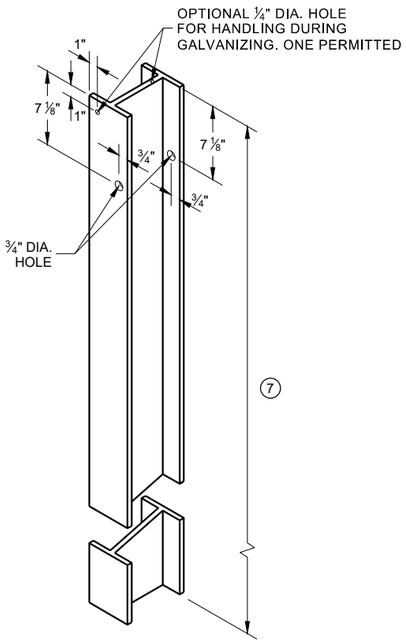
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(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.

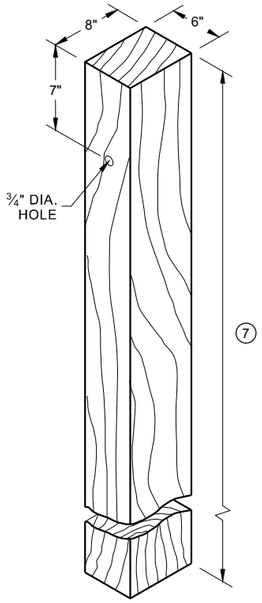
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



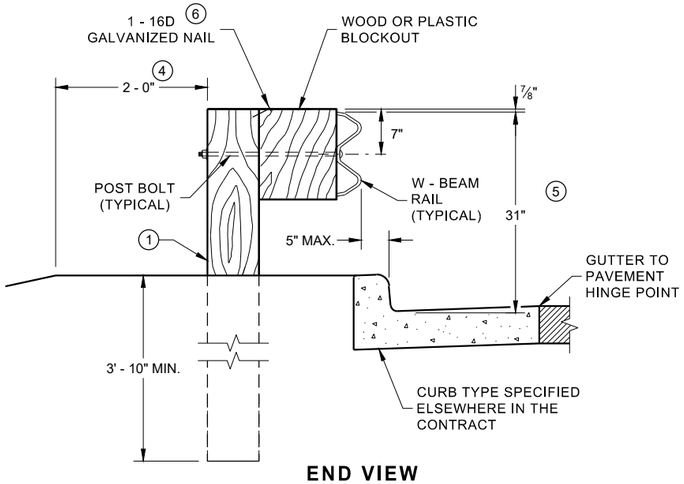
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



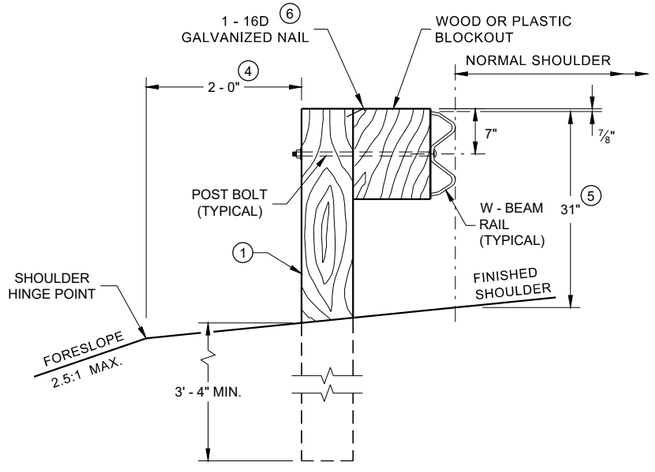
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



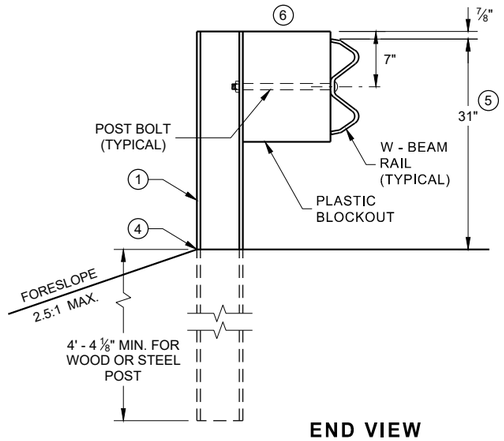
WOOD POST (6" X 8") NOMINAL (1)



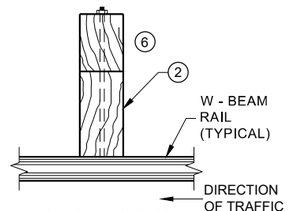
END VIEW
LOCATED ALONG A CURBED ROADWAY



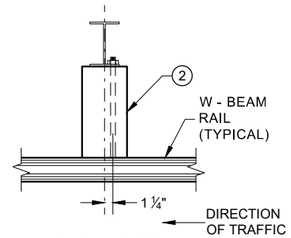
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



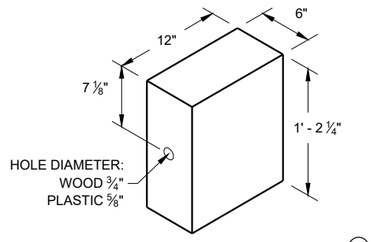
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 07a

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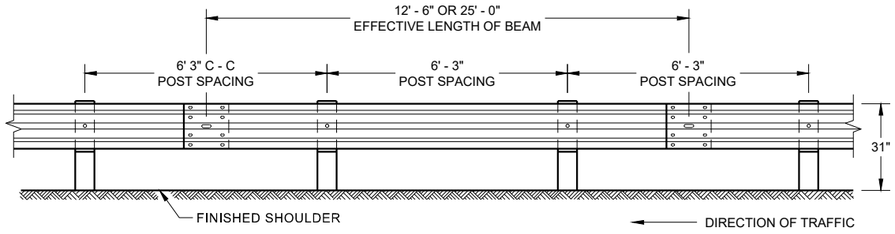
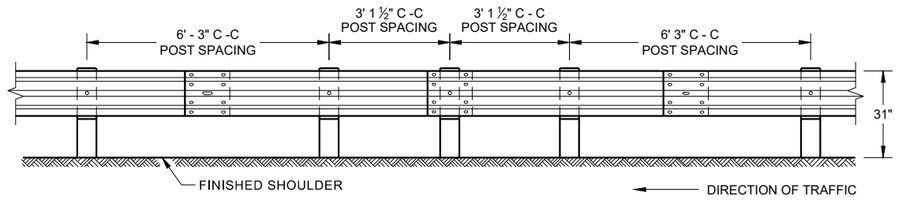
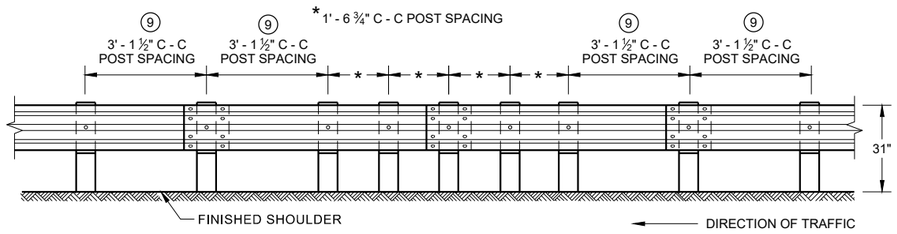


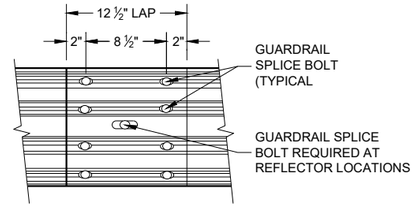
FRONT VIEW
POST SPACING STANDARD INSTALLATION



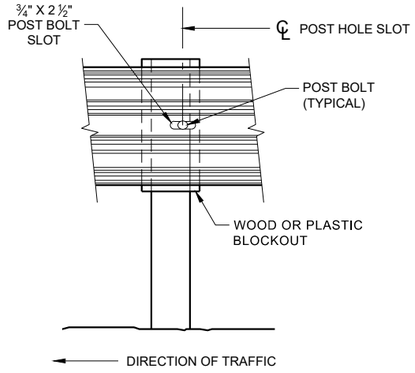
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



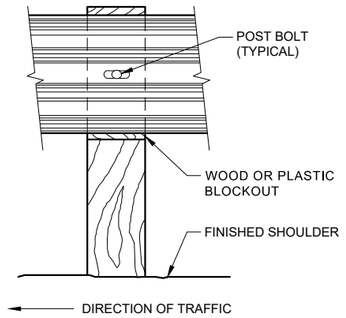
FRONT VIEW
QUARTER POST SPACING (QS)



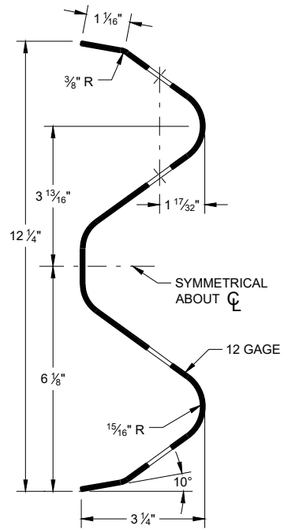
FRONT VIEW
MID-SPAN BEAM SPLICE



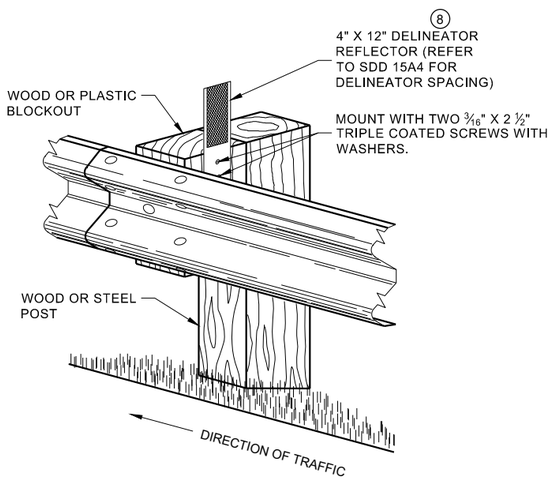
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

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 ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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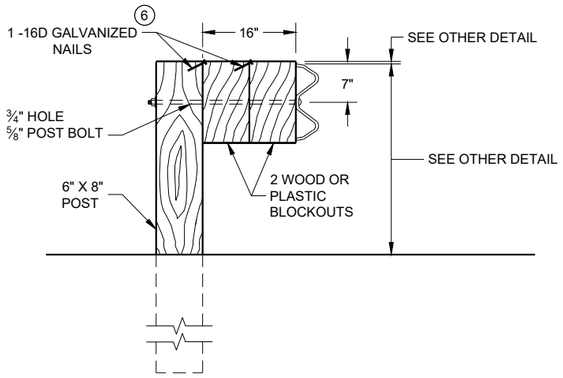
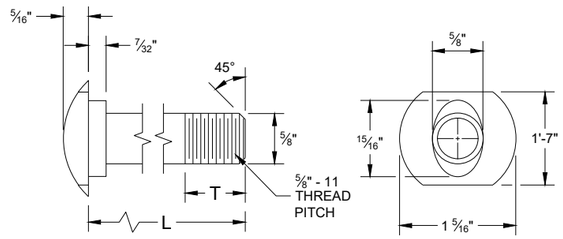


DETAIL FOR 16" BLOCKOUT DEPTH

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.

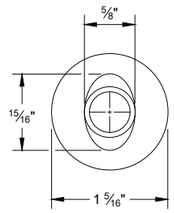
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

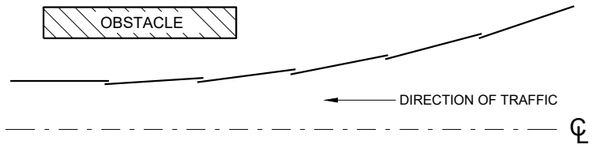


POST BOLT TABLE

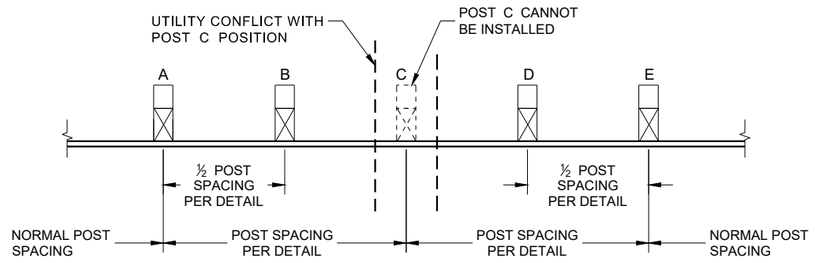
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



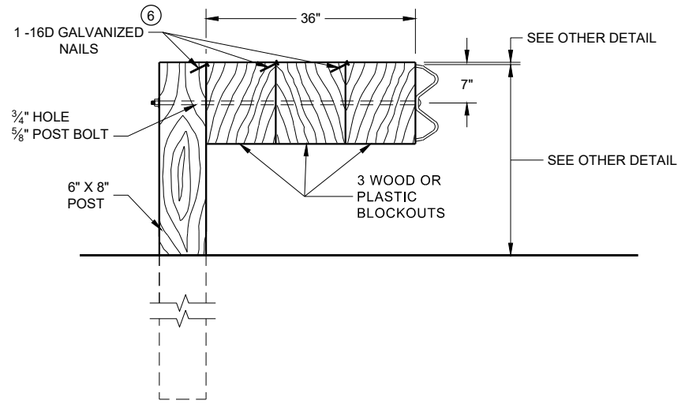
ALTERNATE BOLT HEAD



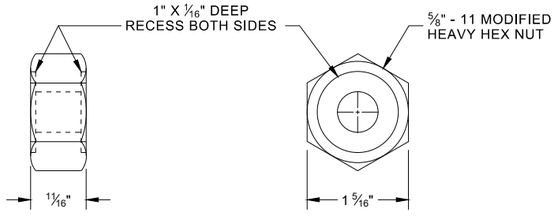
PLAN VIEW
BEAM LAPPING DETAIL



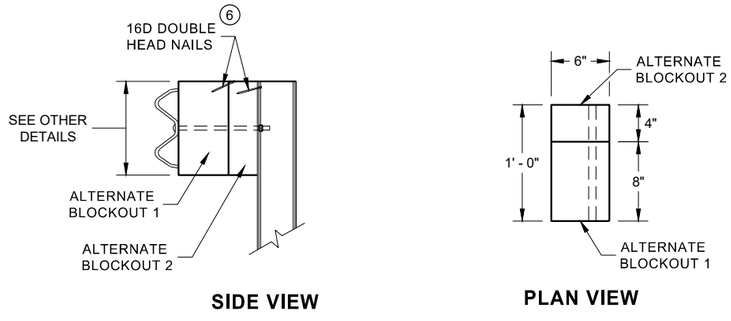
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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.

(6) WHEN USING STEEL POST AD 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.

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MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B42 - 07c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT 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.

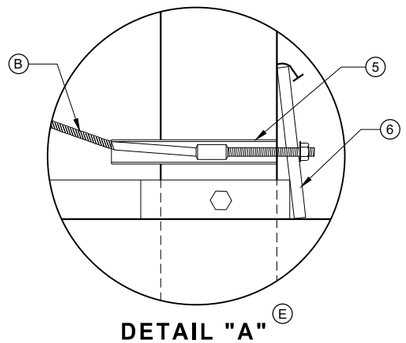
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

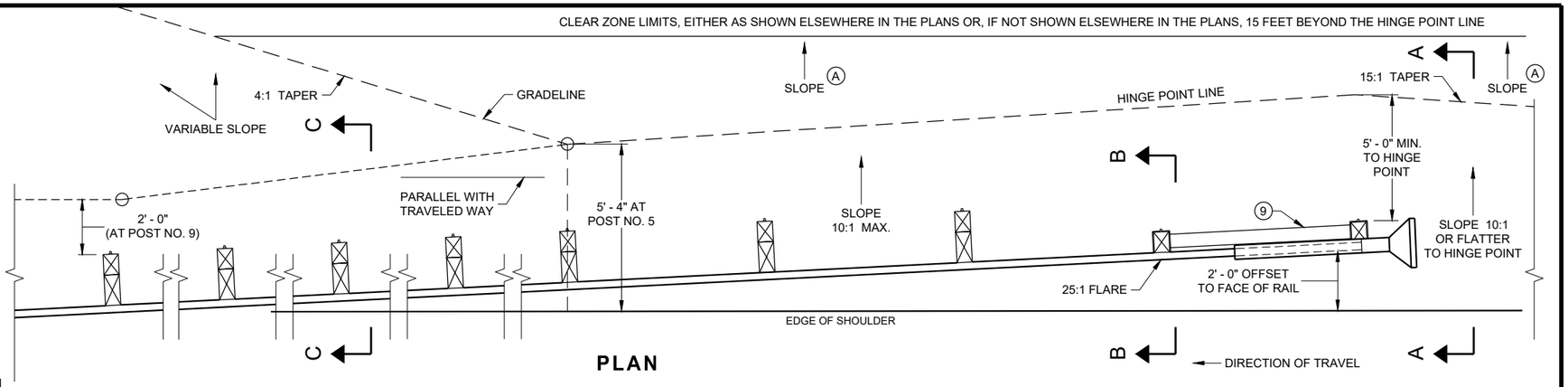
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

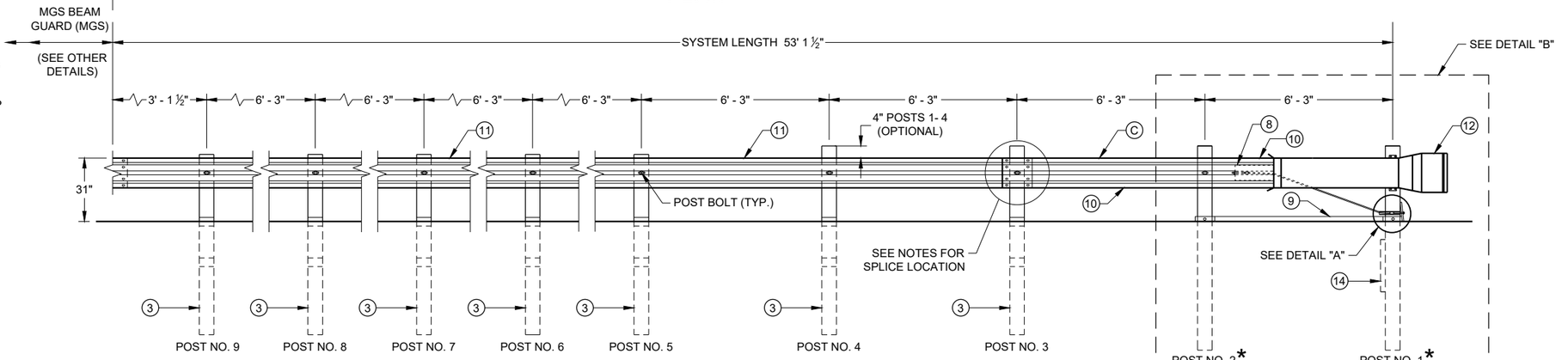
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



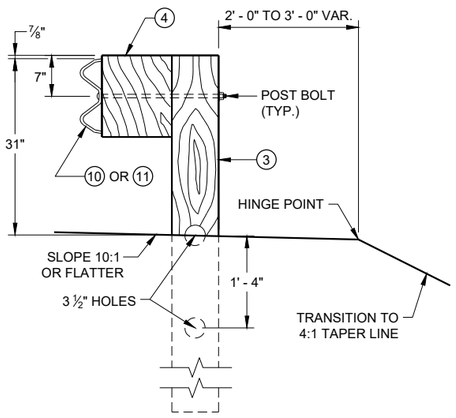
DETAIL "A" (E)



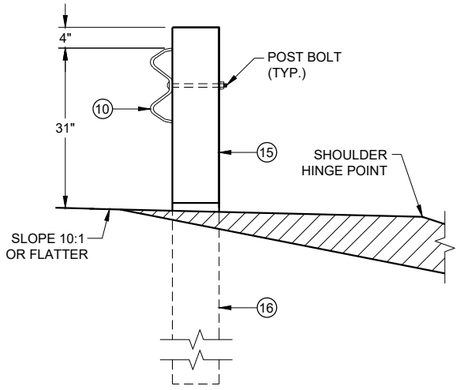
PLAN



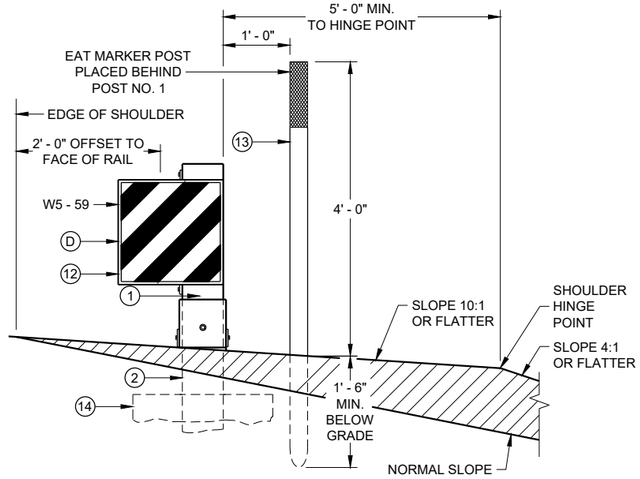
ELEVATION



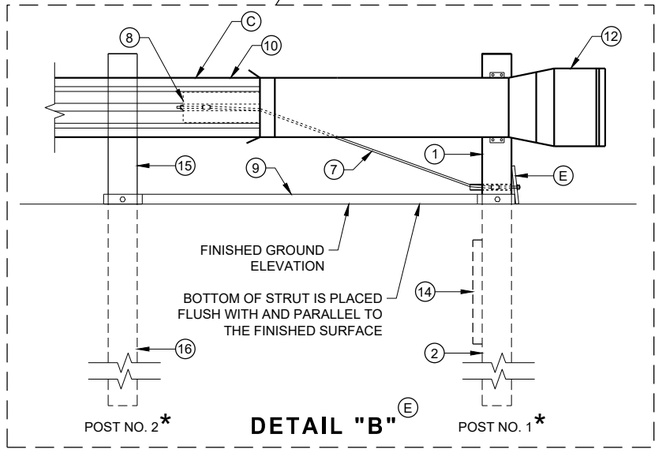
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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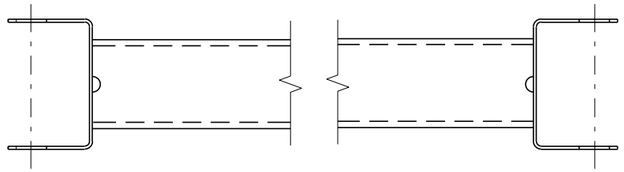
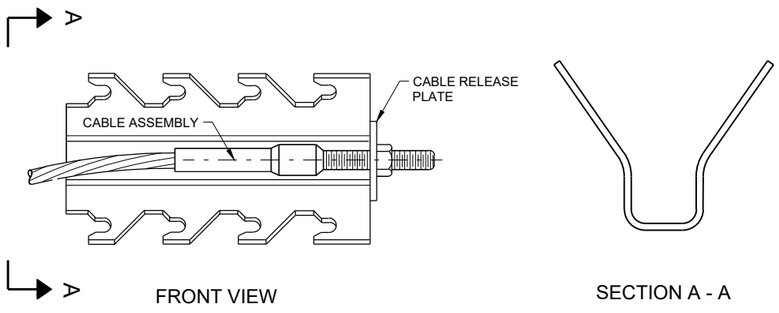
SDD 14B44 - 04a



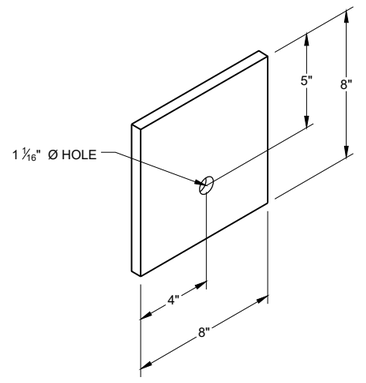
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'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 ANCHOR CABLE BOX ⑨ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

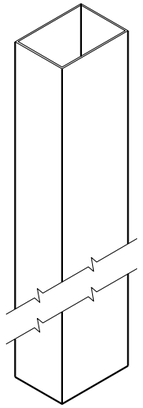
6

SDD 14B44 - 04b

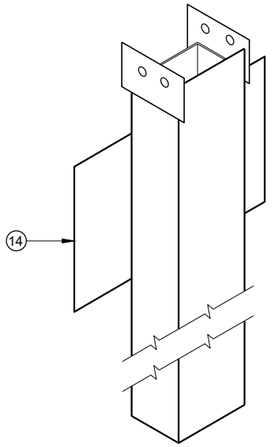
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

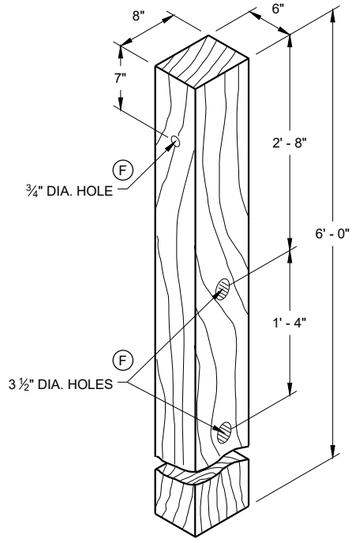
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



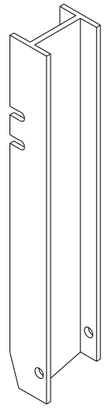
UPPER POST NO. 1 (1) (E)



LOWER POST NO. 1 (2) (E)



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



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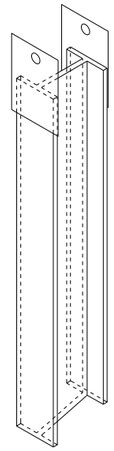

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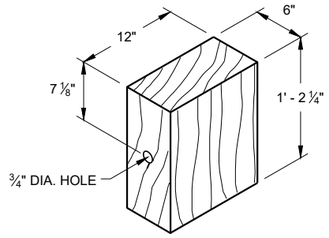
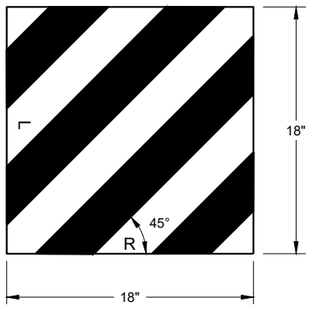
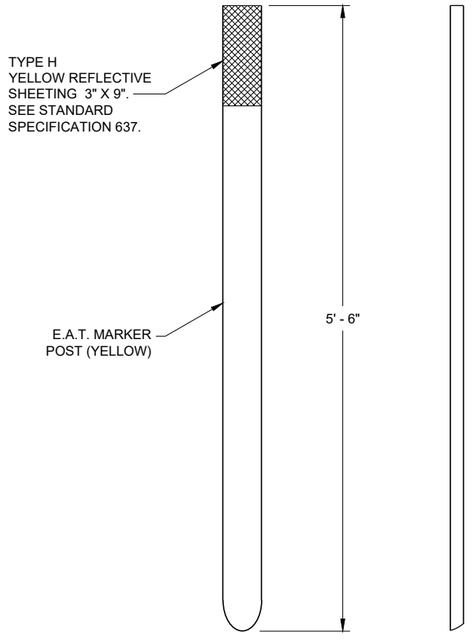


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



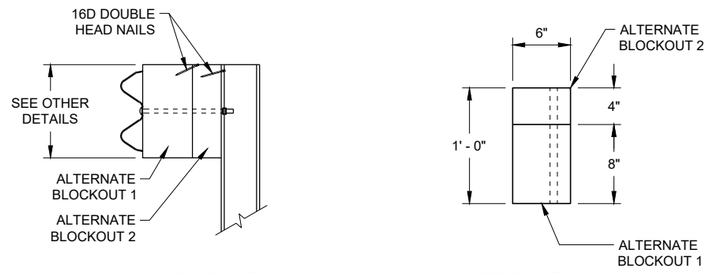
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

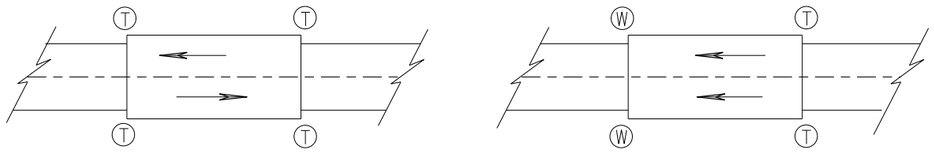
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



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 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

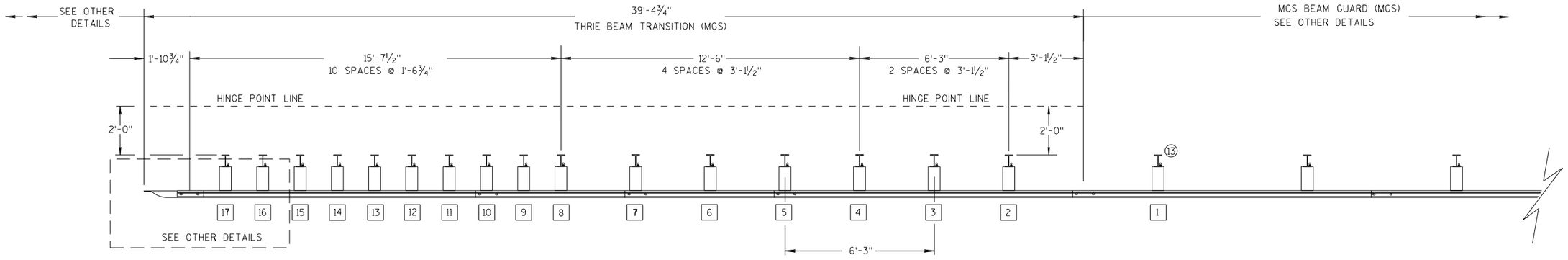
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

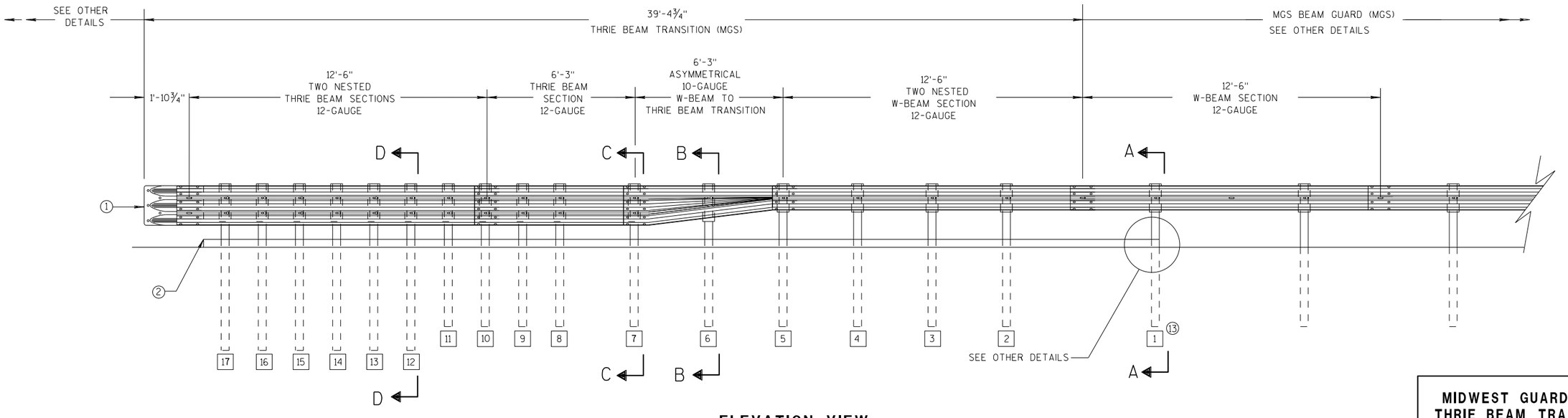
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(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 TRANSPOR

6

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

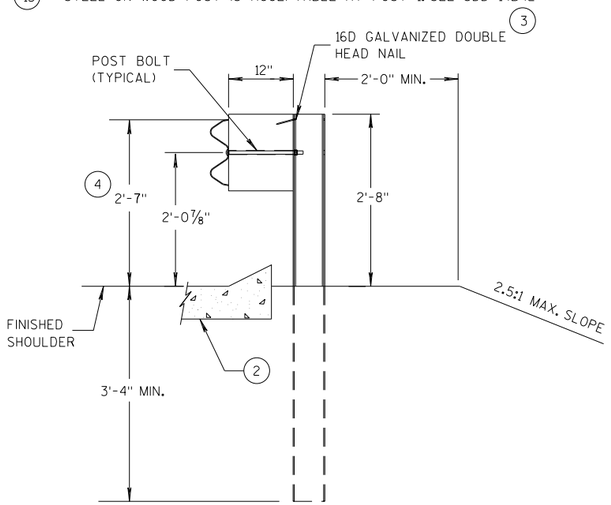
GENERAL NOTES

(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.

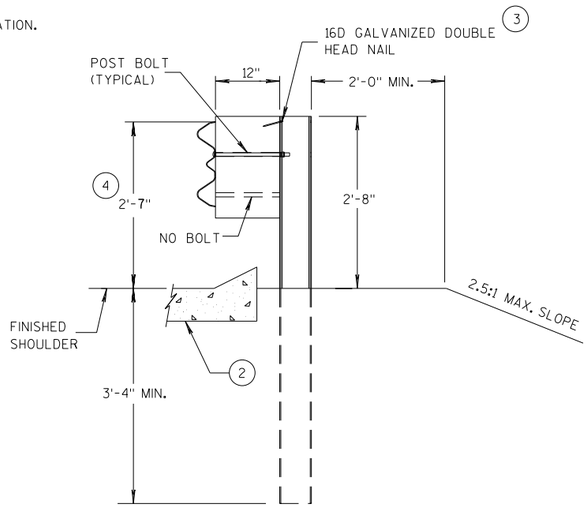
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

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



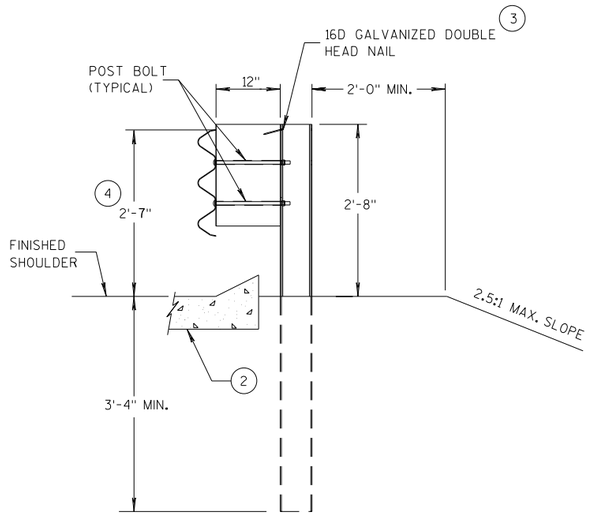
SECTION A-A (13)

POSTS 1-5



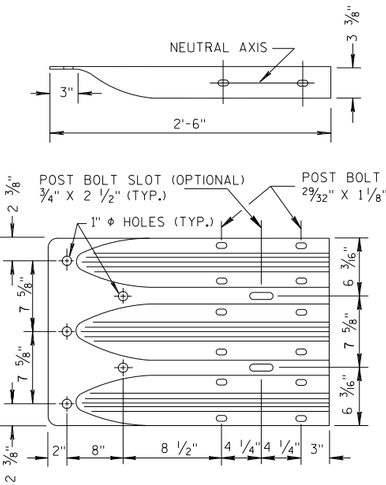
SECTION B-B

POST 6

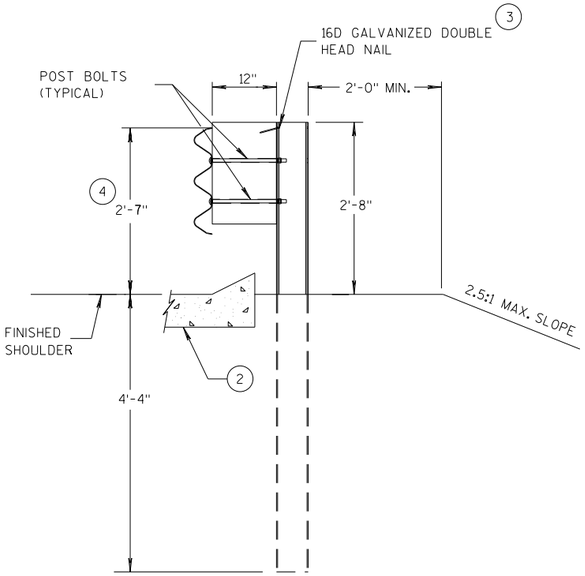


SECTION C-C

POSTS 7-11

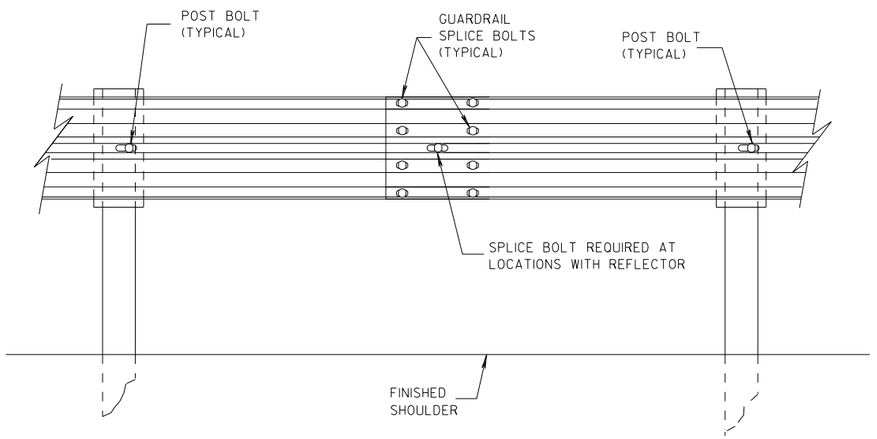


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

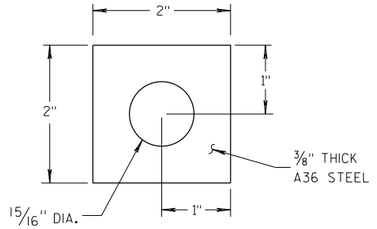
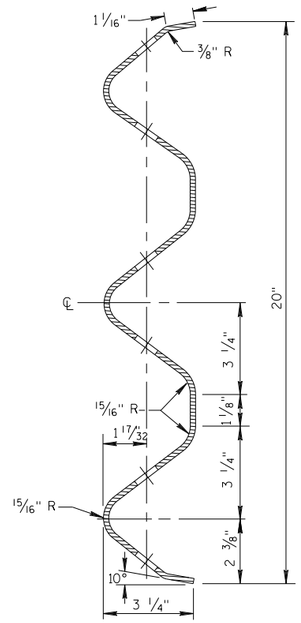


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

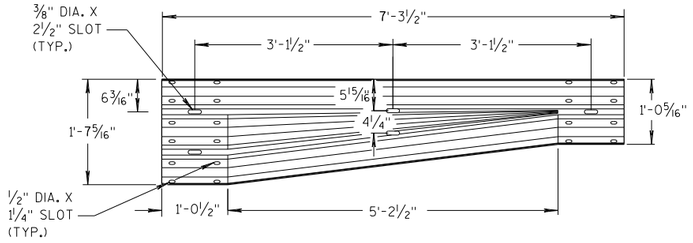
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 79

6

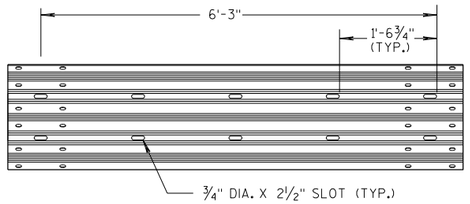
S.D.D. 14 B 45-5b

6

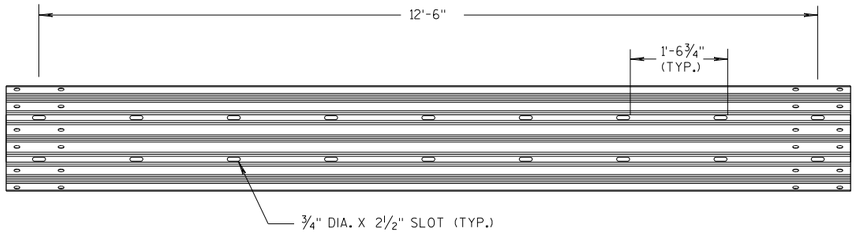
S.D.D. 14 B 45-5b



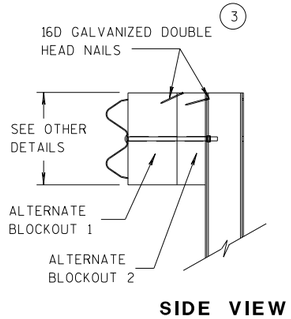
W-BEAM TO THRIE BEAM TRANSITION SECTION



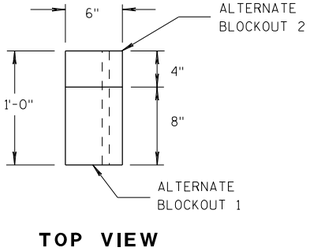
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

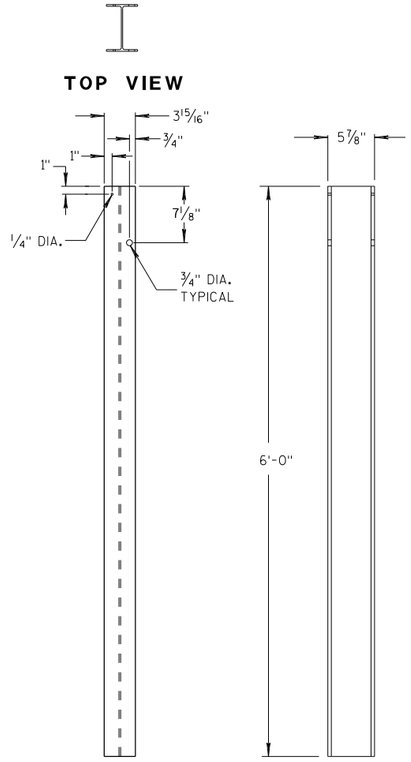


SIDE VIEW



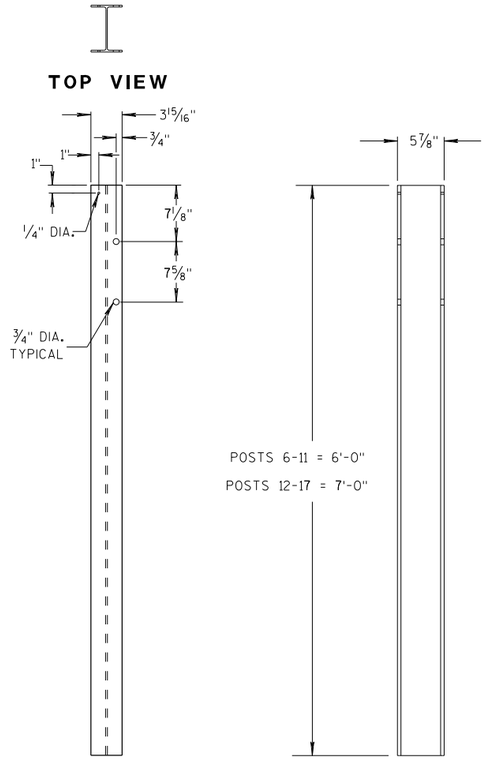
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



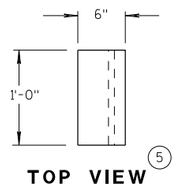
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

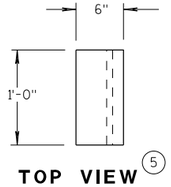


FRONT VIEW SIDE VIEW

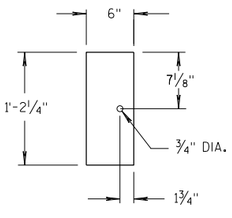
STEEL POSTS 6-17



TOP VIEW (5)

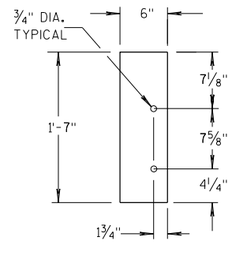


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

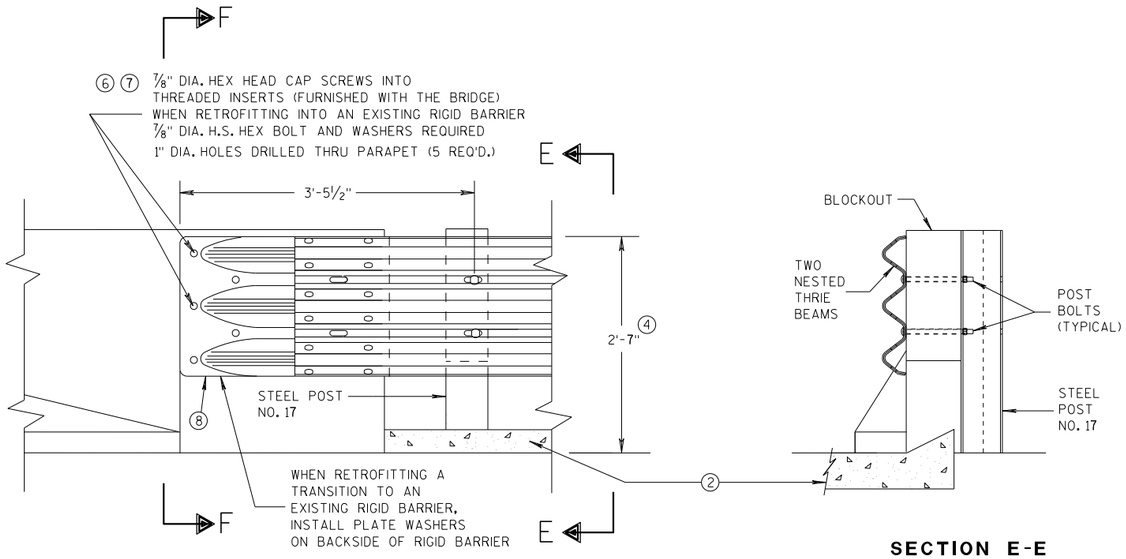
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

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



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

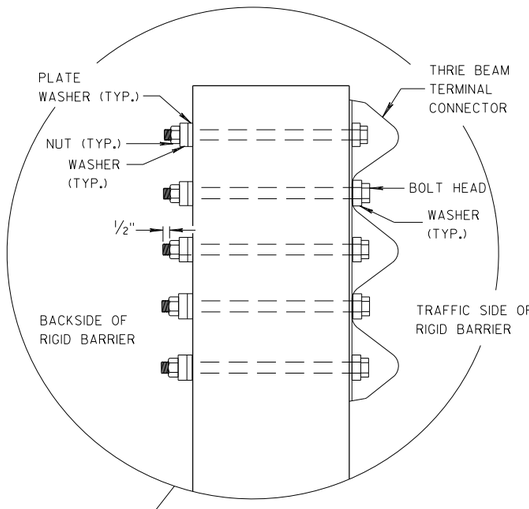
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

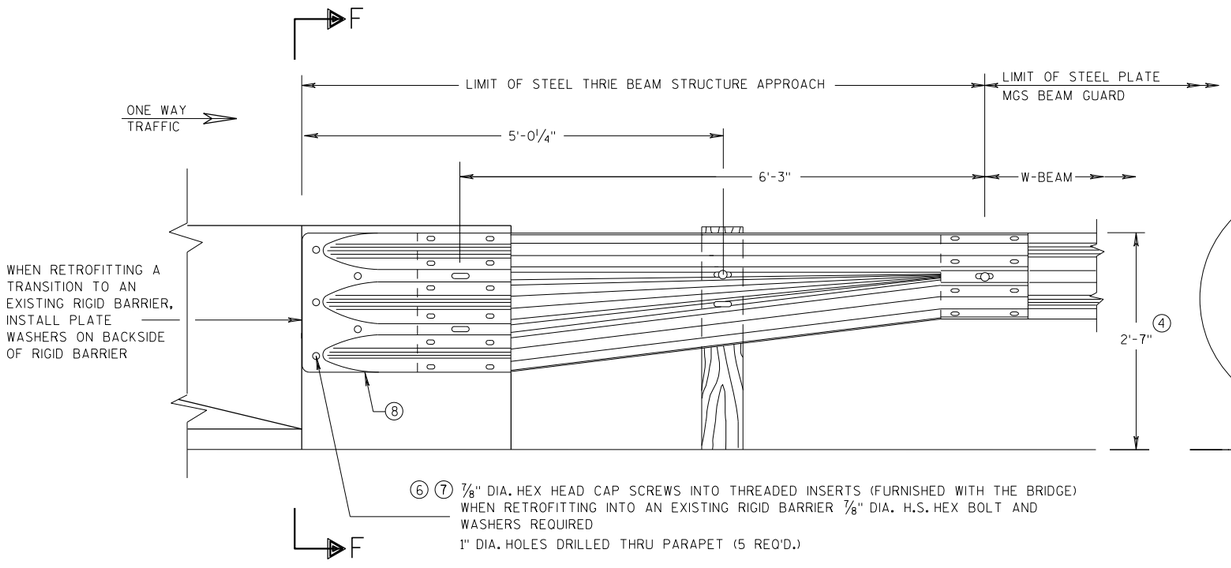
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

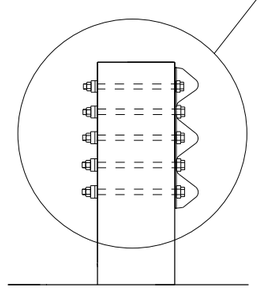
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" 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".

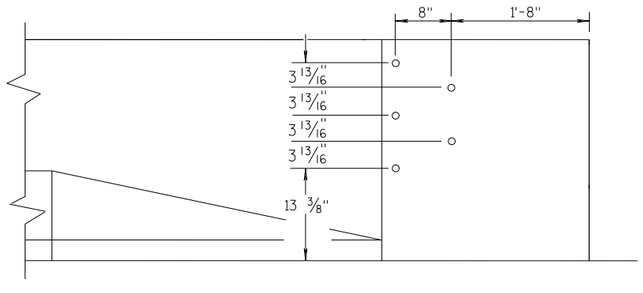




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI
NT
FHWA

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

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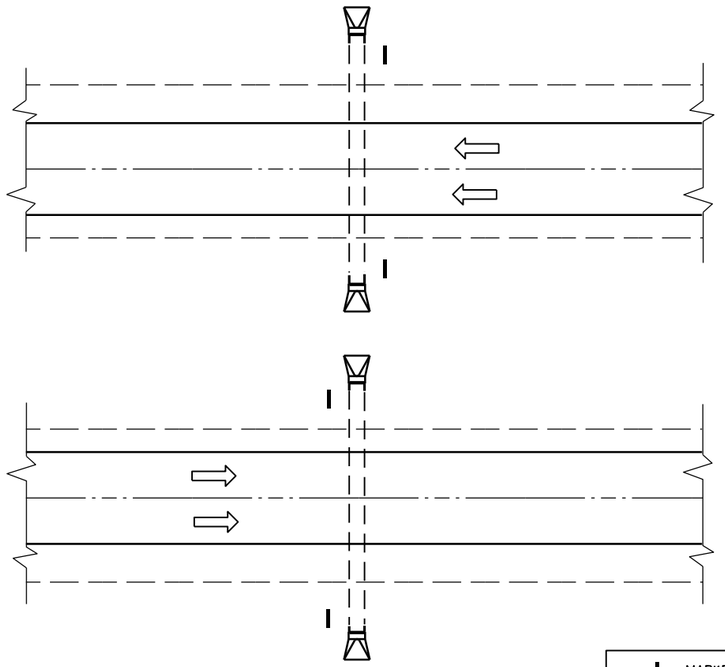
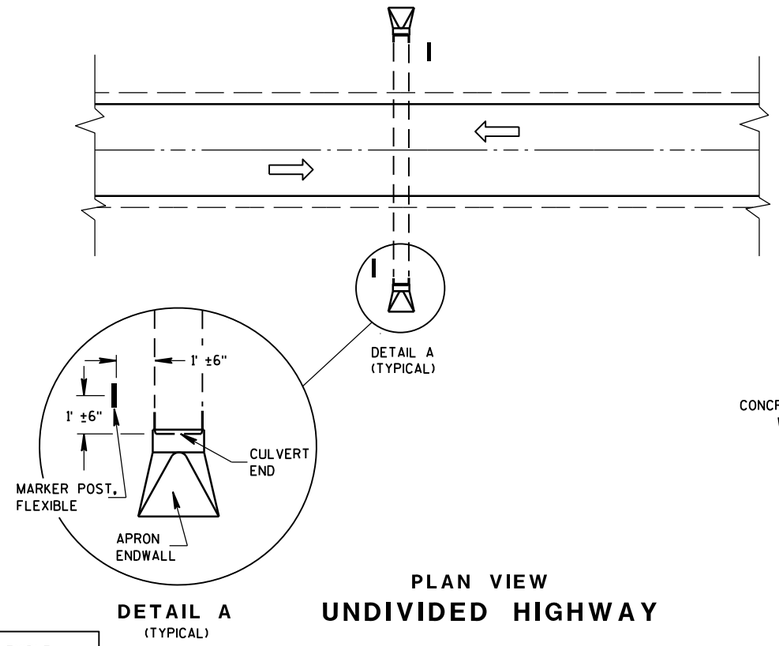
S.D.D. 14 B 45-5d



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

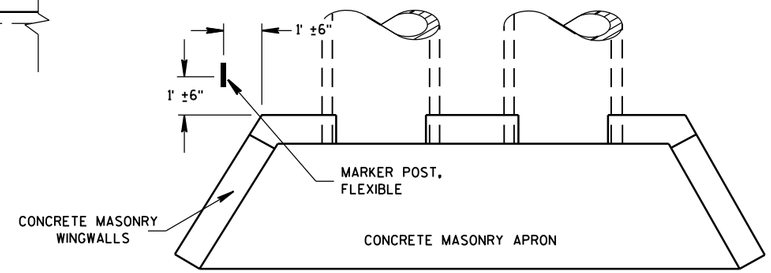
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

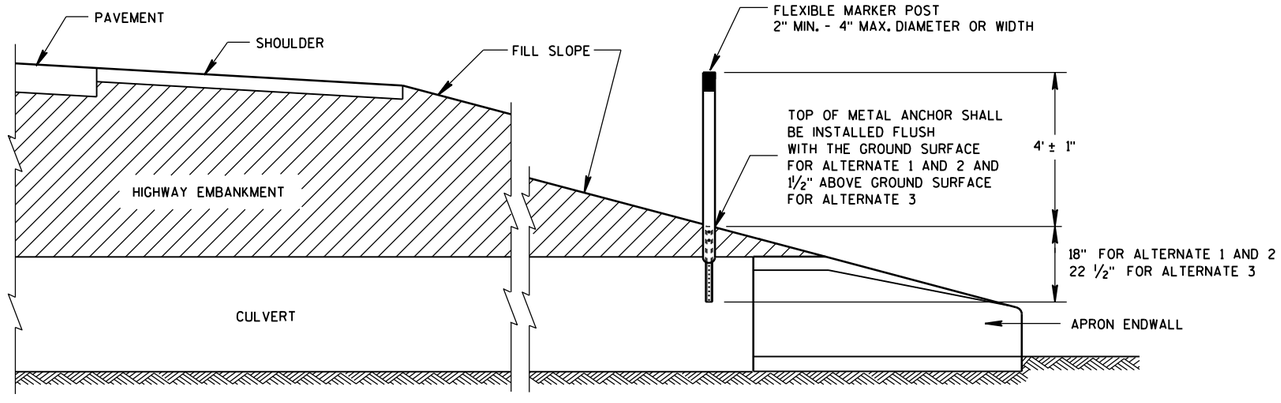
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

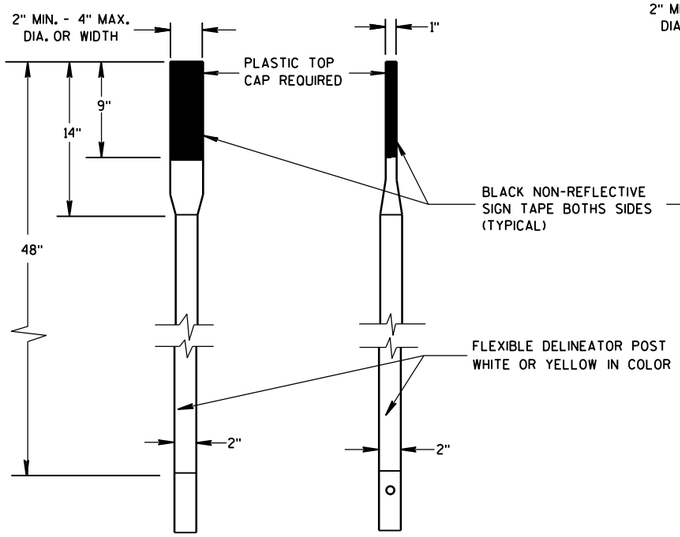
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

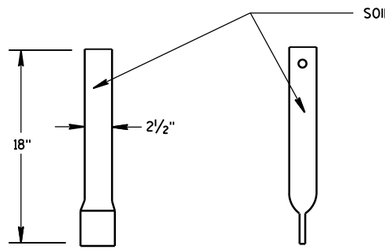
6

S.D.D. 15 A 3-2a

6

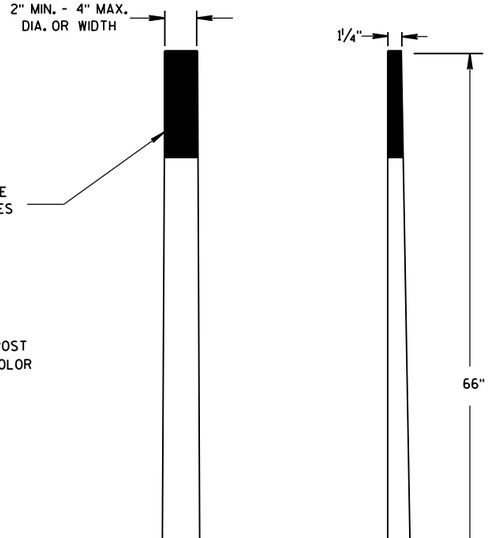
S.D.D. 15 A 3-2a





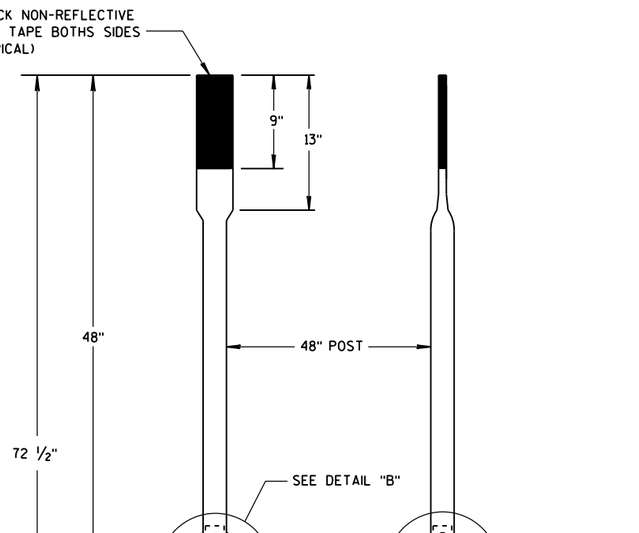
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

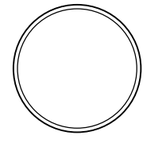
ALTERNATE 2



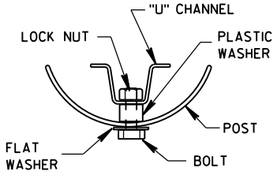
FRONT VIEW SIDE VIEW

ALTERNATE 3

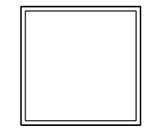
FLEXIBLE MARKER POSTS



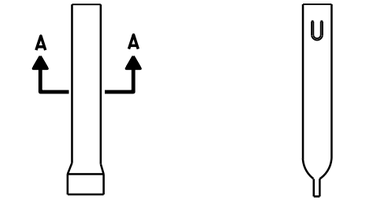
SECTION A-A



SECTION B-B

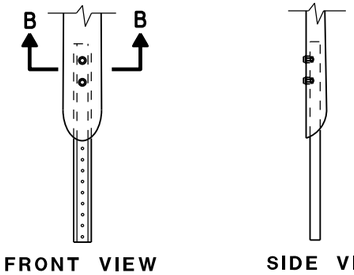


SECTION C-C



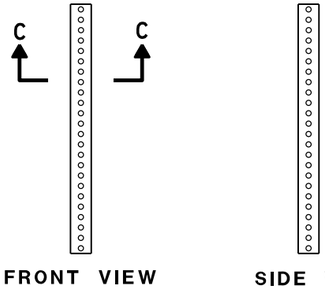
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

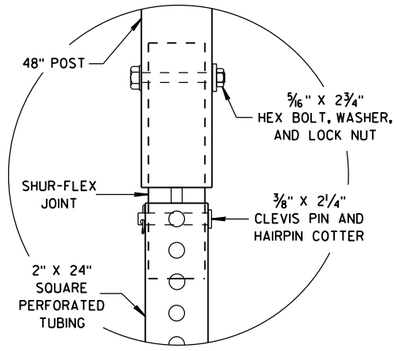
ALTERNATE 2



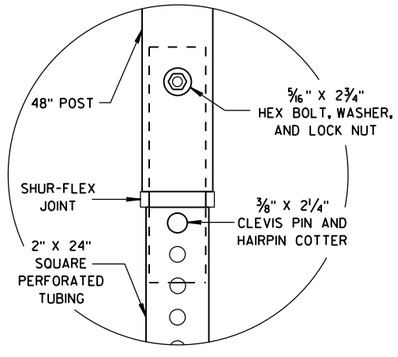
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

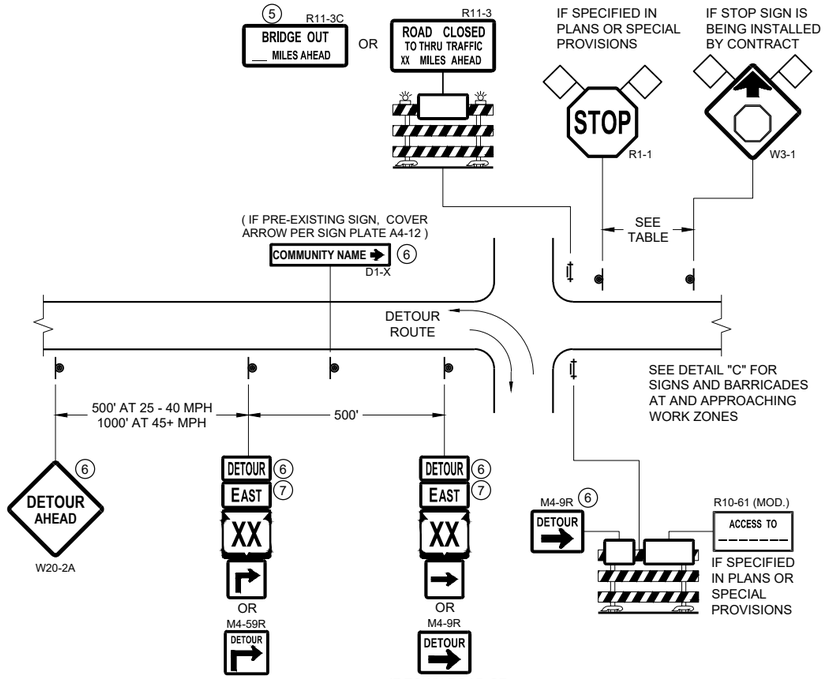
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

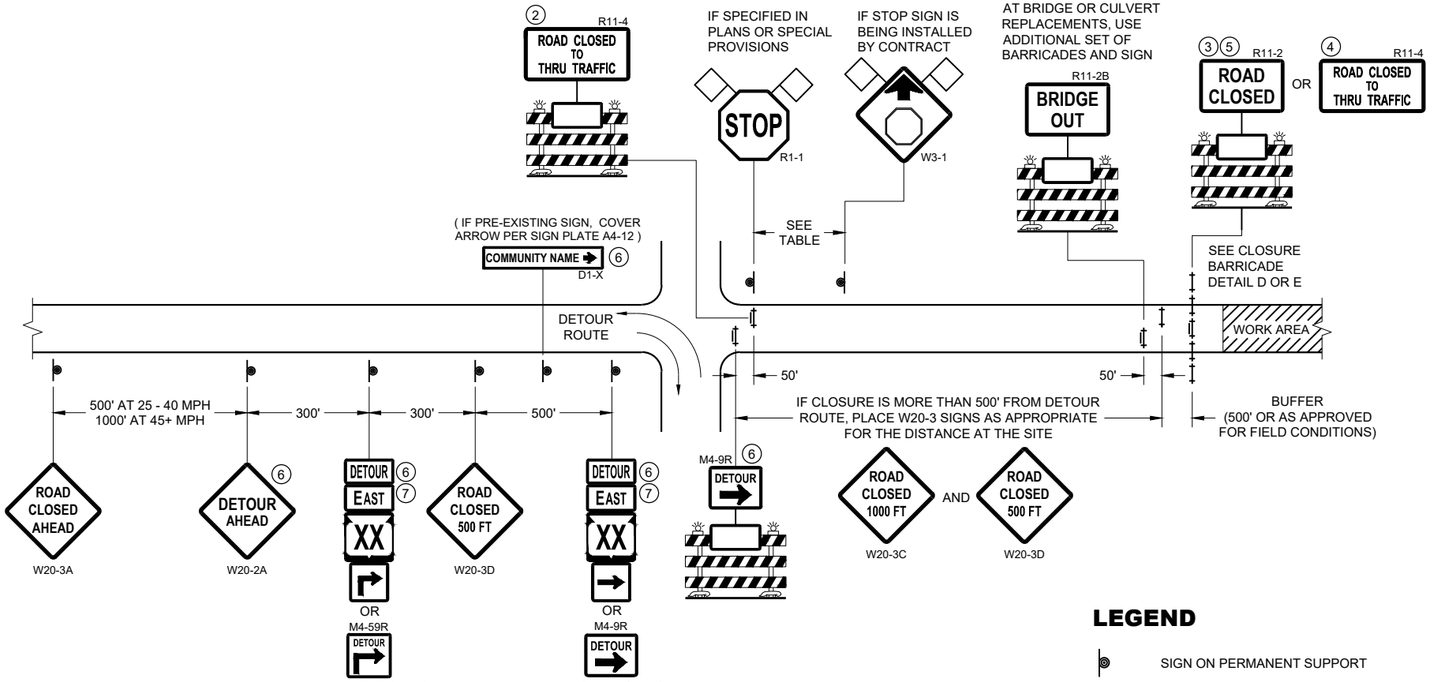
6

S.D.D. 15 A 3-2b

6

S.D.D. 15 A 3-2b



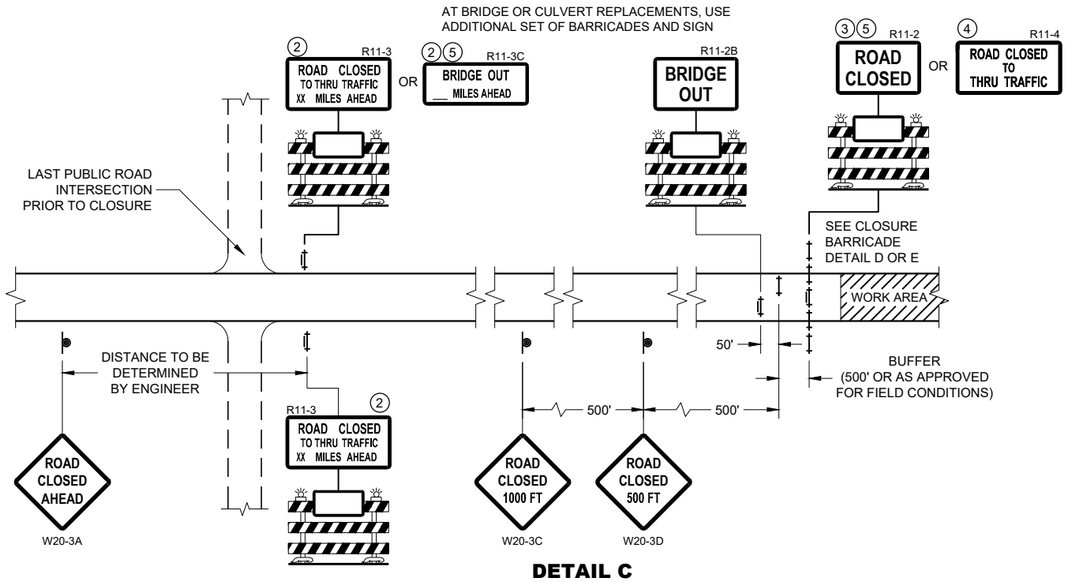


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR — M4 - 8
- EAST — M3 - X
- XX — M1 - 4 OR XX — M1 - 6 OR COUNTY X — M1 - 5A
- M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

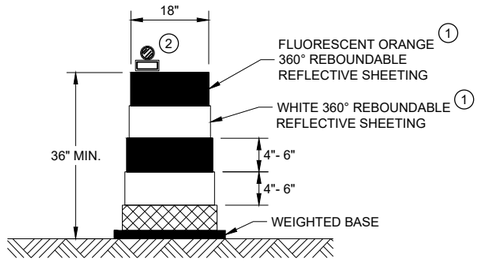
FHWA

6

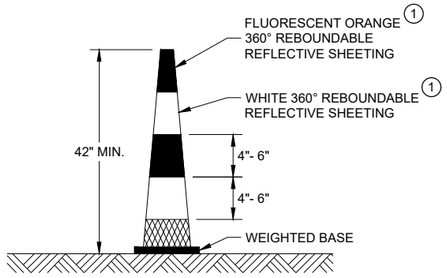
SDD 15C02 - 08a

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.

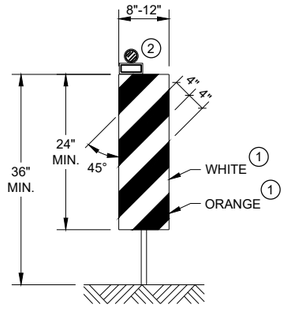


DRUM



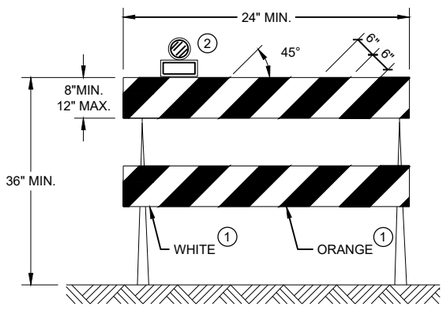
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



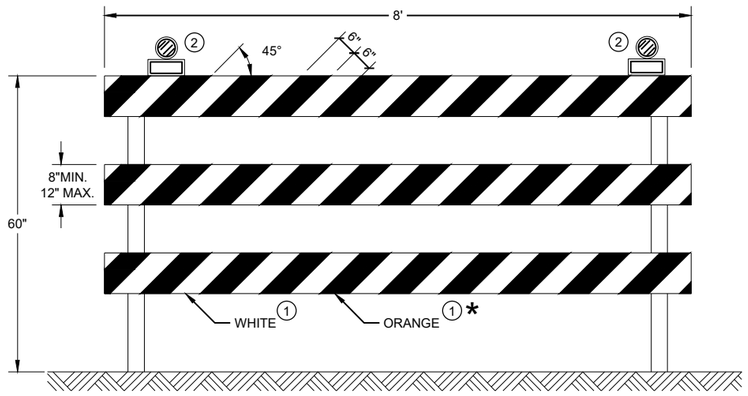
VERTICAL PANEL

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



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
May 2021
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

SDD 15C11 - 09b

6

SDD 15C11 - 09b

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 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.

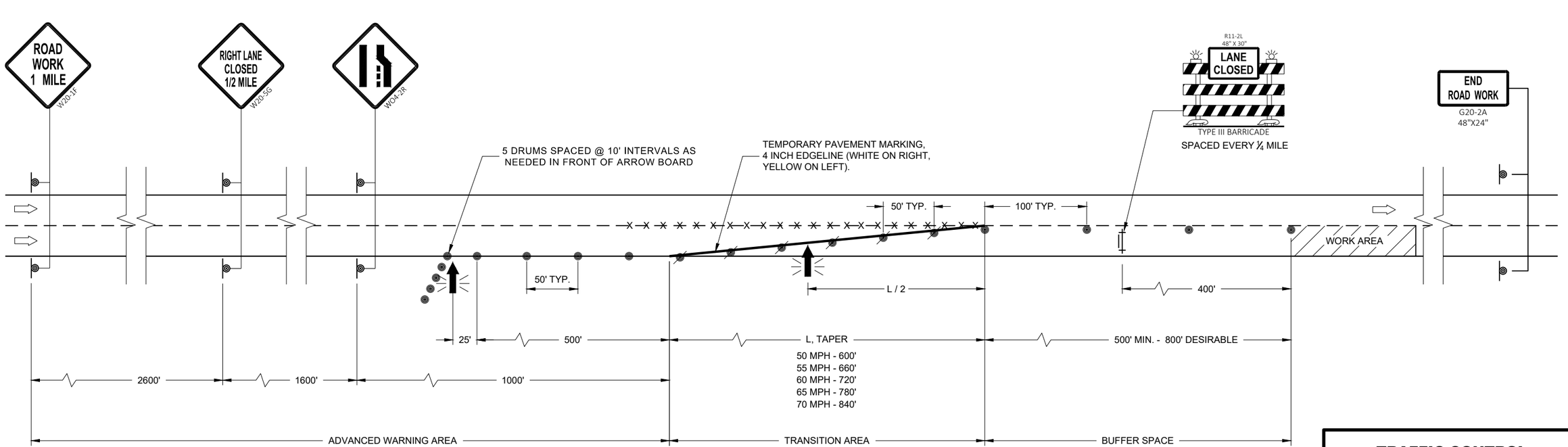
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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



TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

6

SDD 15D12 - 09a

6

SDD 15D12 - 09a

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

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

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

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

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

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

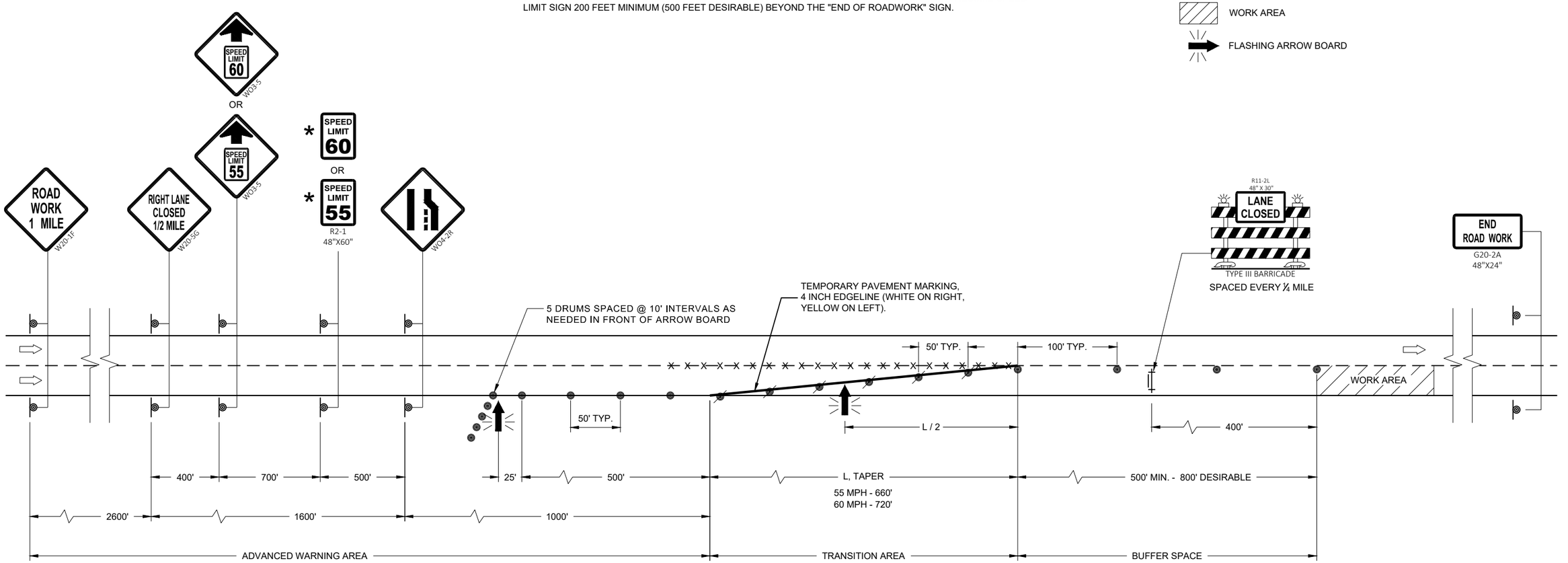
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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

LEGEND

- 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



TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD 15D12 - 09b

SDD 15D12 - 09b

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.

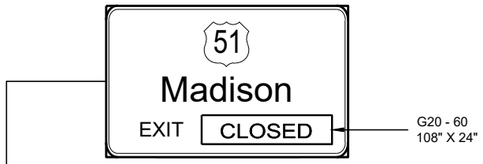
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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.

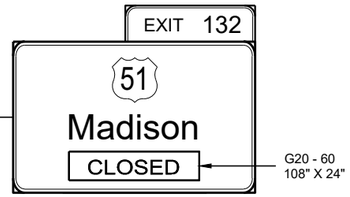
WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

* 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.

** 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.



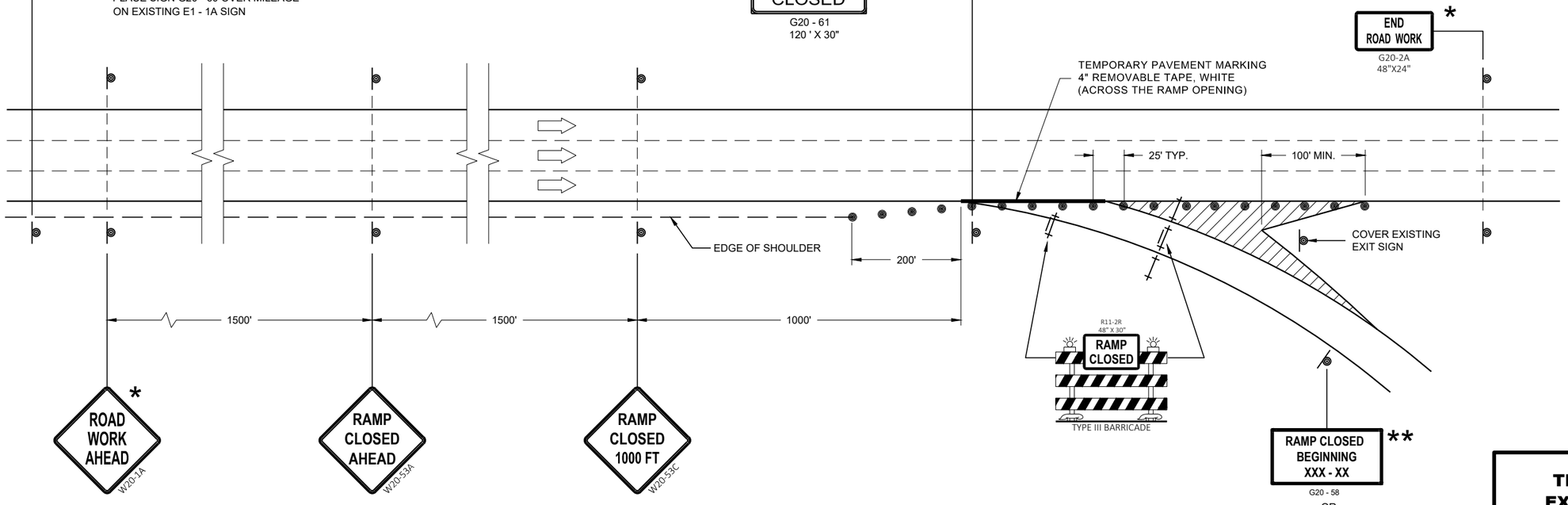
OR



PLACE SIGN G20 - 60 OVER MILEAGE ON EXISTING E1 - 1A SIGN

COVER ARROW ON EXISTING E4 - 1 SIGN (COVERING SIGNS TYPE I)

G20 - 61
120 ' X 30"



OR

PCMS MESSAGING

FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVE ENGINEER

FHWA

SDD 15D16 - 04

6

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)
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

"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.

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

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

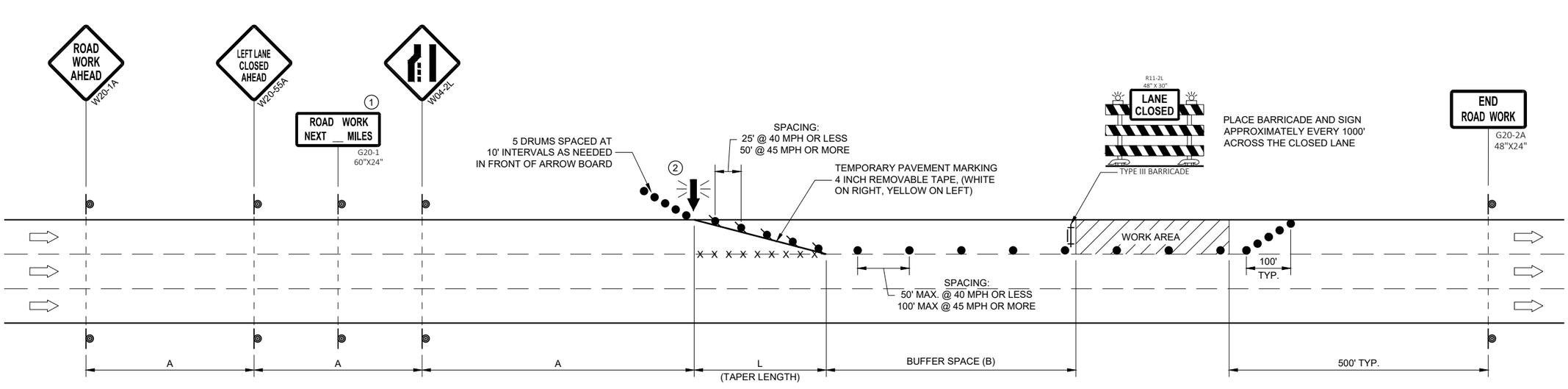
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

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

(1) OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

(2) WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'

TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE
/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

FHWA

6

SDD15D20 - 05a

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)
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

"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.

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

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

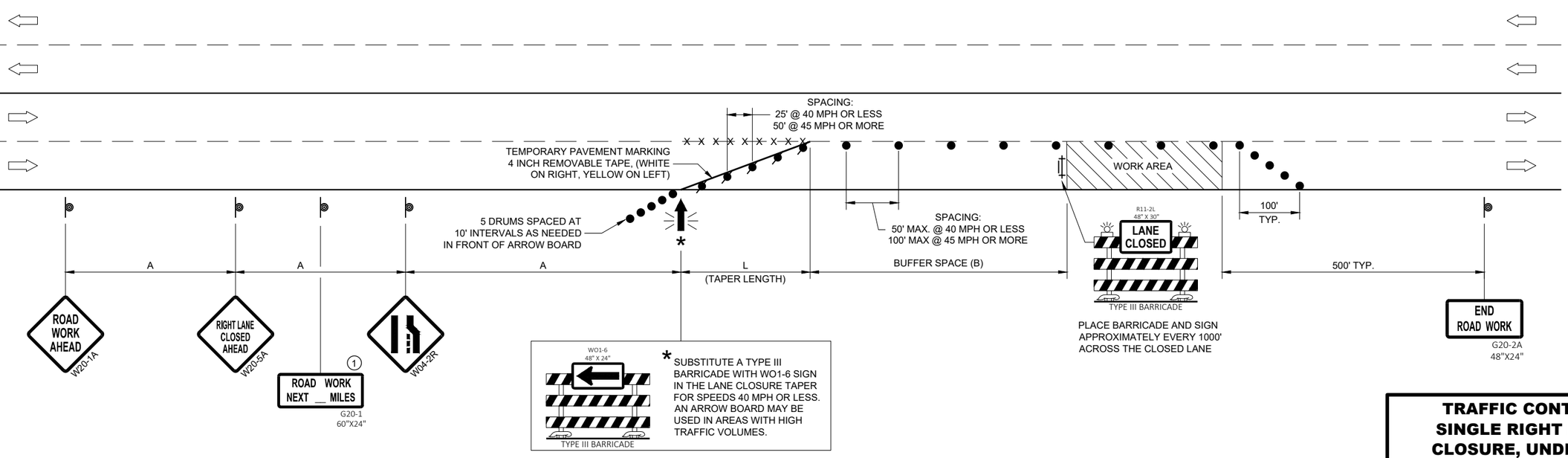
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

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

(1) OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'
50	500'	600'	280'
55	500'	660'	335'



TRAFFIC CONTROL, SINGLE RIGHT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

SDD 15D20 - 05b

SDD 15D20 - 05b

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)
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

"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.

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

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

DUE TO LACK OF SHOULDER/MEDIAN, ARROW BOARD IS PLACED AT THE THE END OF THE TAPER.

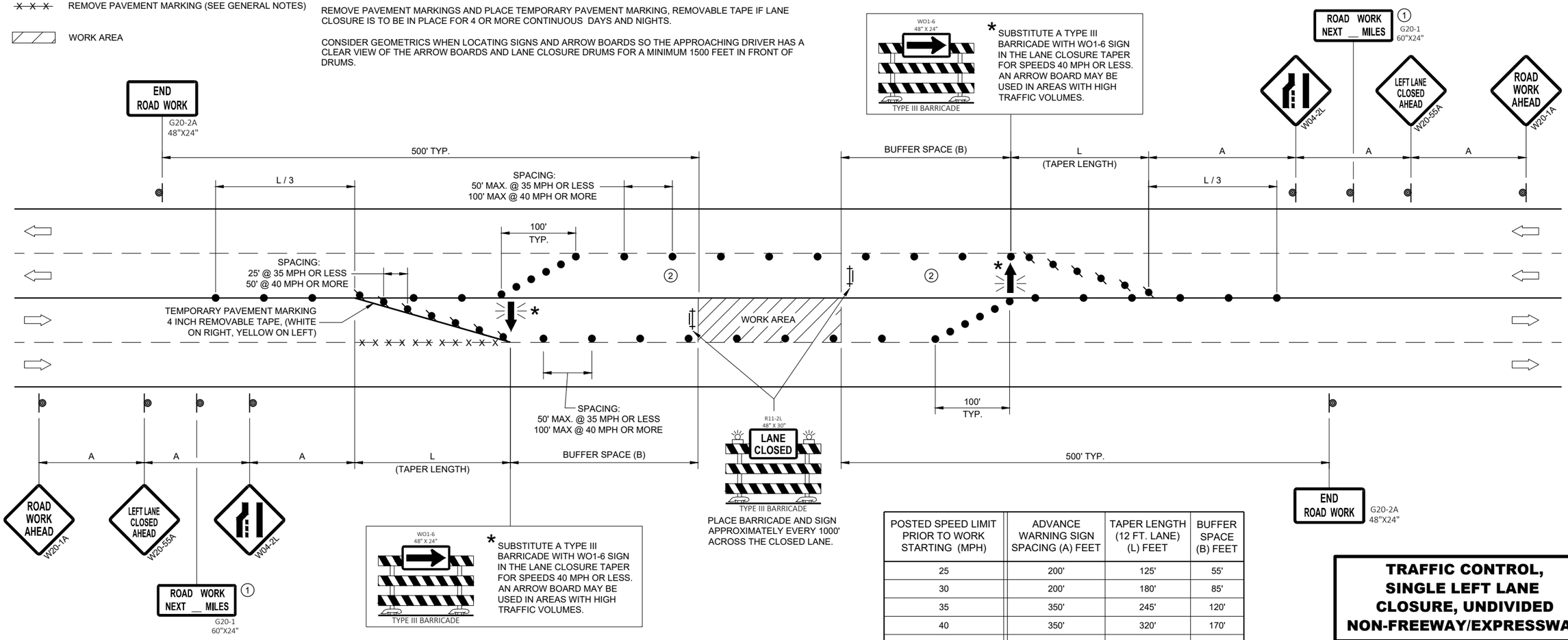
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

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

(1) OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

(2) LANE MAY BE OPENED WHEN WORKERS ARE NOT PRESENT IN THE WORK AREA.



WO1-6 48" X 24"

TYPE III BARRICADE

* SUBSTITUTE A TYPE III BARRICADE WITH WO1-6 SIGN IN THE LANE CLOSURE TAPER FOR SPEEDS 40 MPH OR LESS. AN ARROW BOARD MAY BE USED IN AREAS WITH HIGH TRAFFIC VOLUMES.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'
50	500'	600'	280'
55	500'	660'	335'

TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE T SAFETY ENGINEER

FHWA

SDD 15D20 - 05c

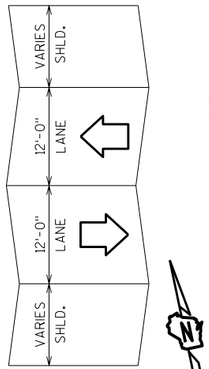
SDD 15D20 - 05c

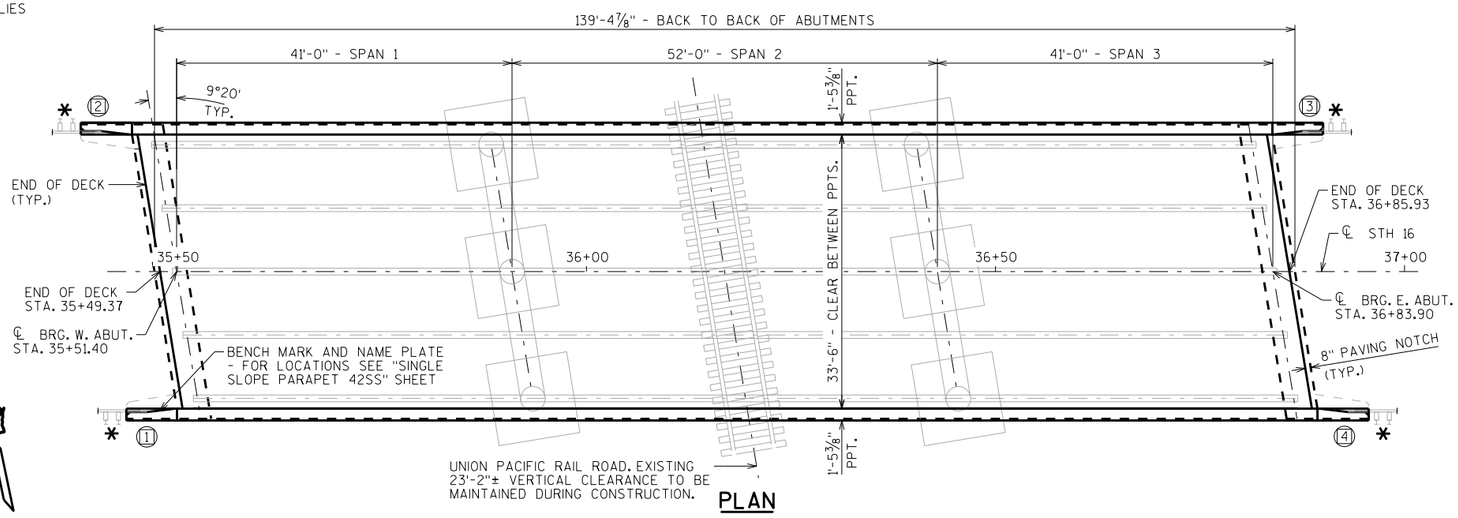
STATE PROJECT NUMBER

1370-02-82

* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

(1) INDICATES WING NUMBER

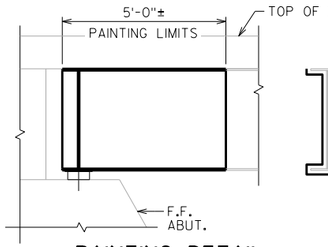




PLAN

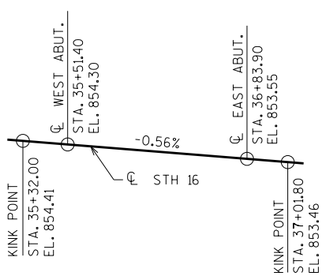
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0220	REMOVING STRUCTURE B-14-41	EACH	1
203.0330	DEBRIS CONTAINMENT B-14-41	EACH	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-14-41	LS	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	78
502.0100	CONCRETE MASONRY BRIDGES	CY	203
502.3200	PROTECTIVE SURFACE TREATMENT	SY	529
502.3210	PIGMENTED SURFACE SEALER	SY	150
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH	96
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	32
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	47,880
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	10
506.5000	BEARING ASSEMBLIES FIXED B-14-41	EACH	10
506.7050.S	REMOVING BEARINGS B-14-41	EACH	20
509.1500	CONCRETE SURFACE REPAIR	SF	25
509.9020.S	EPOXY CRACK SEALING	LF	30
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	14
517.0901.S	PREPARATION AND COATING OF TOP FLANGES B-14-41	EACH	1
517.3001.S	STRUCTURE OVERCOATING CLEANING AND PRIMING B-14-41	EACH	1
517.4001.S	CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-14-41	EACH	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	160
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4
	NON-BID ITEMS		
	FILLER	SIZE	1/2"

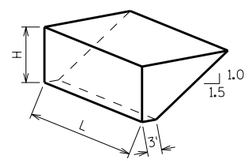


PAINTING DETAIL

(TYP. AT BOTH ABUTMENTS)



PROFILE GRADE LINE - STH 16



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE FILL HEIGHT (4.5 FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HS-20
INVENTORY RATING FACTOR: HS-16
OPERATING RATING FACTOR: HS-27
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 200 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY:
DECK & PPTS. ——— f'c = 4,000 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 ——— fy = 60,000 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "SUPERSTRUCTURE DETAILS" SHEET.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK SURFACE AND THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON ABUTMENT WINGS.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN ON THIS SHEET.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1959.

LIST OF DRAWINGS

STRUCTURE DESIGN CONTACTS:

JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION — BUREAU OF STRUCTURES

ACCEPTED LLS 10/27/21
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-14-41

STH 16 OVER THE UNION PACIFIC RAIL ROAD

COUNTY	TOWN/~~CITY/VILLAGE~~
DODGE	EMMET

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
MJL	JLR	MJL	JLR

DECK REPLACEMENT

SHEET 1 OF 8

92

I.D. 1370-02-02A DATE: MAY 2019

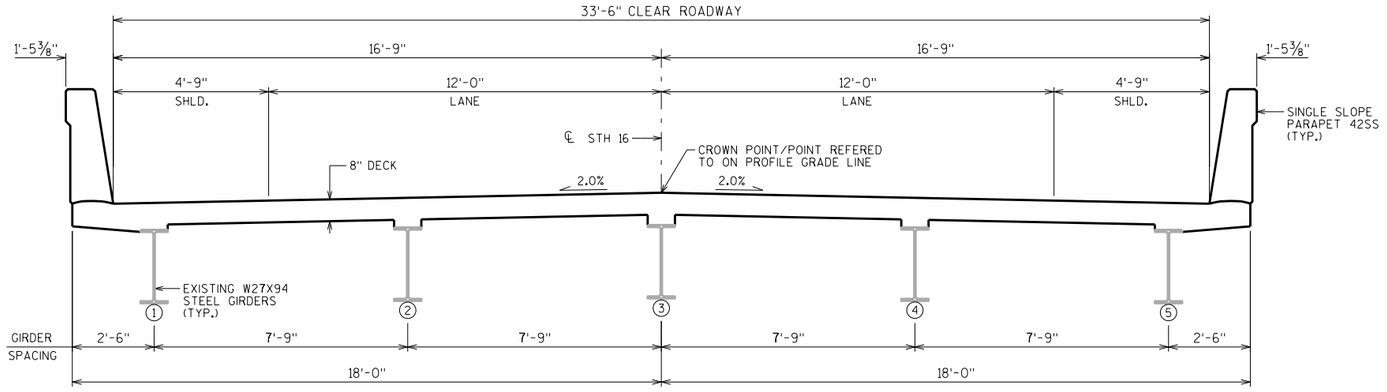
SCALE = 9.00

8

8

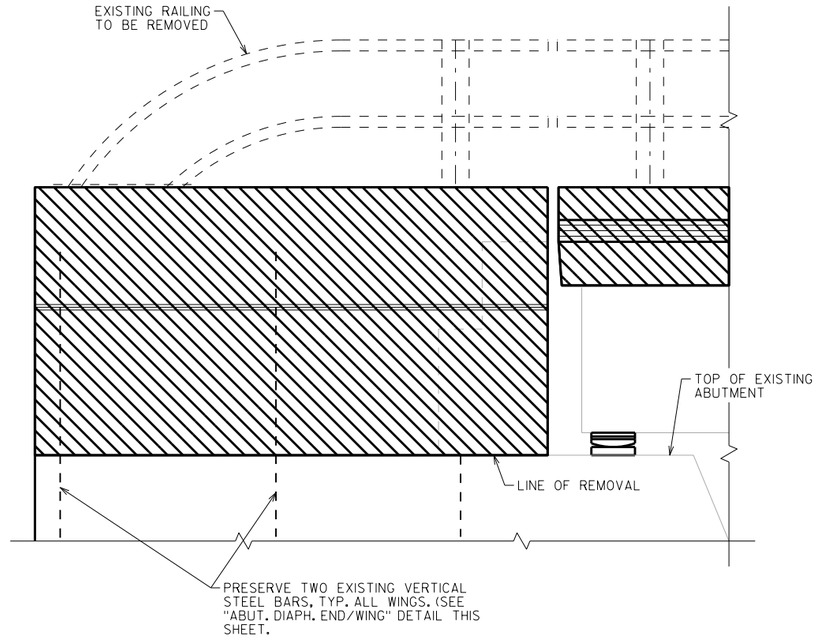
STATE PROJECT NUMBER

1370-02-82

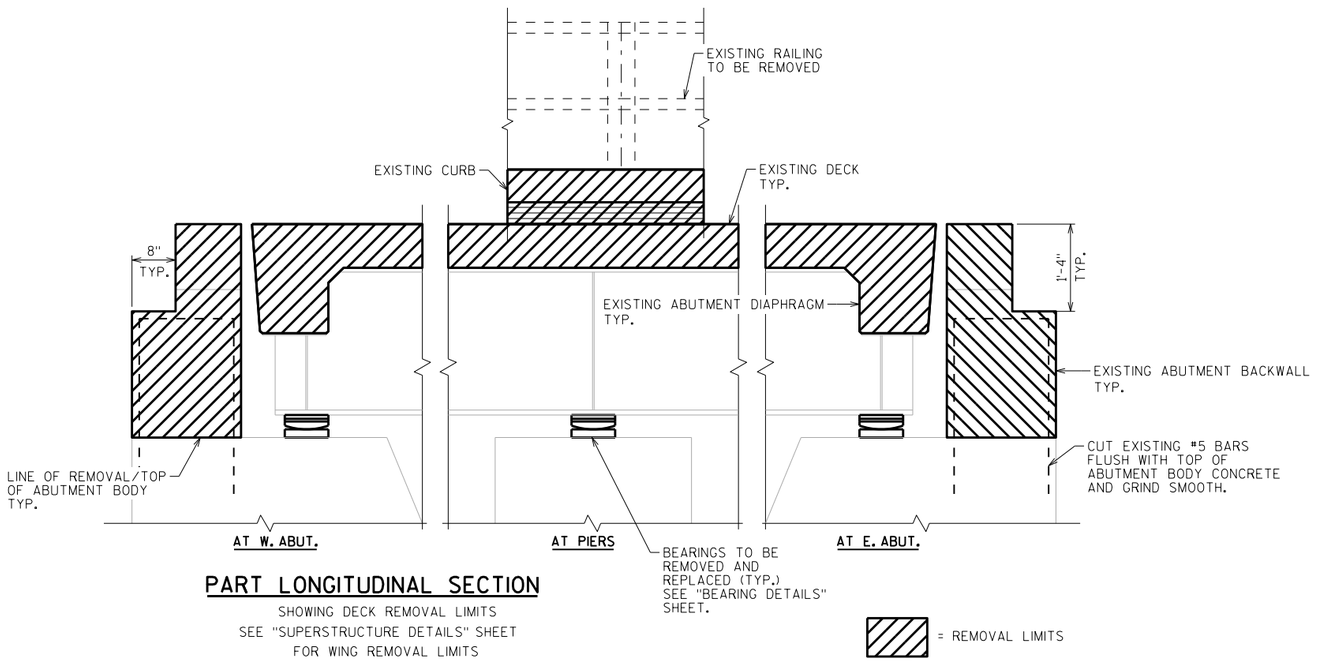


CROSS SECTION THRU ROADWAY

LOOKING UPSTATION



REMOVAL AT WINGS



PART LONGITUDINAL SECTION

SHOWING DECK REMOVAL LIMITS
SEE "SUPERSTRUCTURE DETAILS" SHEET
FOR WING REMOVAL LIMITS

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

DRAWN BY MJL | PLANS CK'D. JLR

CROSS SECTION & REMOVAL

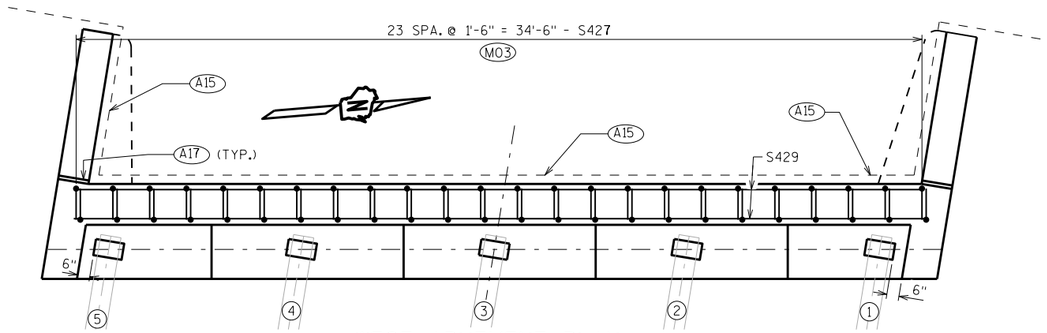
SHEET 2

93

SCALE = 4.50

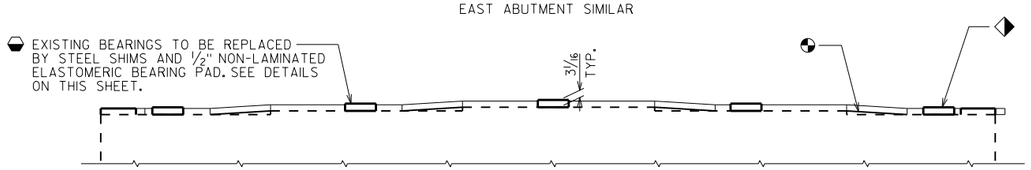
STATE PROJECT NUMBER

1370-02-82



WEST ABUTMENT PLAN

EAST ABUTMENT SIMILAR



WEST ABUTMENT ELEVATION

LOOKING WEST
(EAST ABUTMENT SIMILAR)

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

⬟ SHIM PLATES SHALL CONFORM TO ASTM A709 GRADE 50W. SHIM PLATES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING PADS ELASTOMERIC NON-LAMINATED".

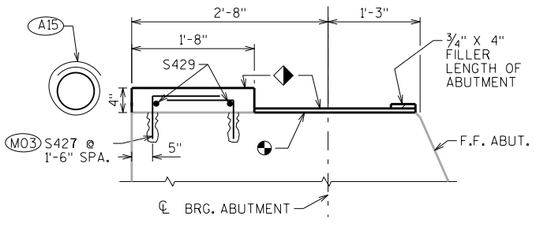
◔ PLACE A DEPARTMENT APPROVED NON-SHRINK COMMERCIAL GROUT OVER THE WIDTH OF ABUTMENT TOP BETWEEN EXISTING BEAM SEATS PRIOR TO PLACING POLYETHYLENE SHEETS. PLACE GROUT AS REQUIRED TO PRODUCE A SMOOTH SLIDING SURFACE FREE OF PROTRUSIONS. REMOVE DELAMINATED OR LOOSE CONCRETE AND CLEAN THE SURFACE PRIOR TO PLACING GROUT. ADDITIONAL SURFACE PREPARATION MAY BE REQUIRED PER THE MANUFACTURER'S INSTRUCTION. MIX, PLACE, AND CURE NON-SHRINK COMMERCIAL GROUT PER THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER. DO NOT APPLY LOADS TO THE NON-SHRINK COMMERCIAL GROUT UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,500 P.S.I. IS ACHIEVED. NON-SHRINK COMMERCIAL GROUT AND SURFACE PREPARATION IS INCLUDED IN THE BID ITEM "CONCRETE MASONRY BRIDGES".

◪ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	+ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	▲ 5/16"
OVER 1 1/2"	▲ 3/8"

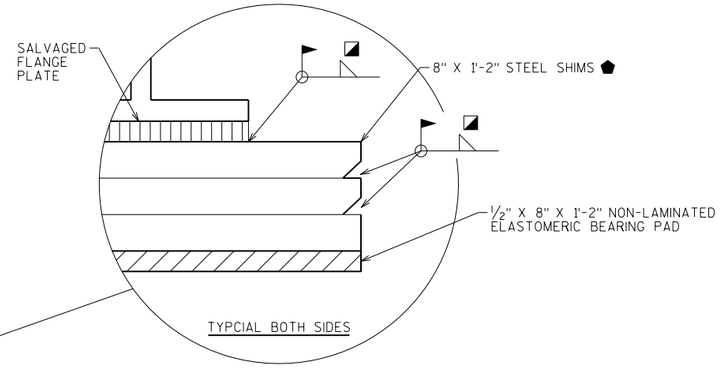
+ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

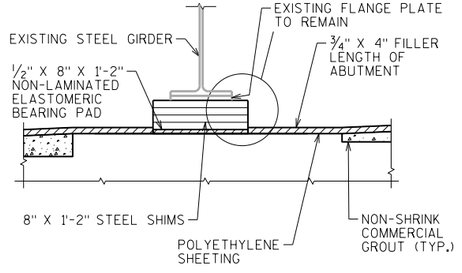
▲ MIN. PASS SIZE IS 5/16"



SECTION THRU ABUTMENT

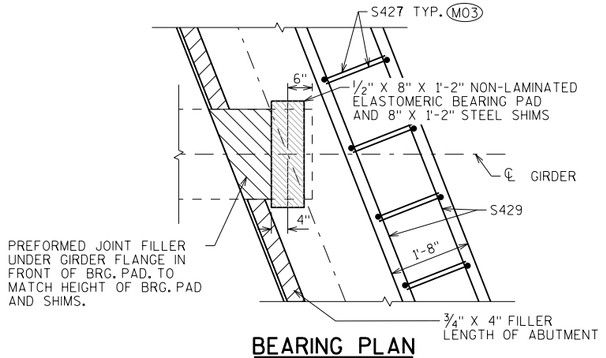
TYP. BOTH ABUTMENTS





BEARING ELEVATION

PERPENDICULAR TO GIRDER



BEARING PLAN

(M03) S427 BARS ARE ADHESIVE ANCHORED NO. 4 BARS. EMBED 6" MIN. IN CONCRETE.

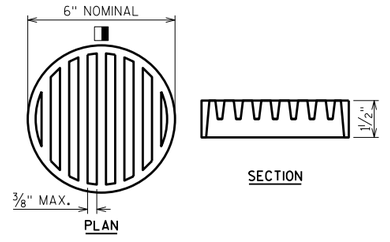
(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

⬬ BURN OFF EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE AND GRIND SMOOTH.

(1) GIRDER NUMBER

◆ PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING STEEL SHIMS AND BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



RODENT SHIELD DETAIL

◨ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

DRAWN BY MJL | PLANS CK'D. JLR

ABUTMENT BEARING DETAILS

SHEET 3

94

8

8

SCALE = 0.58

STATE PROJECT NUMBER

1370-02-82

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLTS TO BE 1¼" DIA. X 1'-5" LONG. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2¼", ABOVE TOP OF CONCRETE.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING PINTLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES FIXED B-14-41", EACH.

CHAMFER TOP OF PINTLES ⅛". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

PROVIDE ⅛" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.

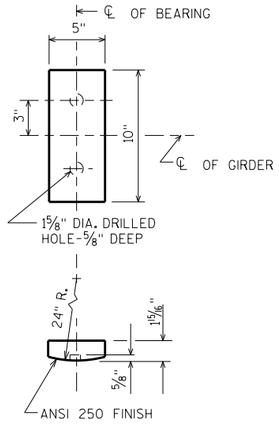
CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

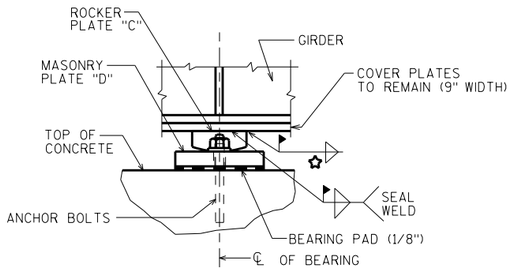
ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

ROCKER PLATE "C" SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER. MASONRY PLATE "D" SHALL BE GALVANIZED.

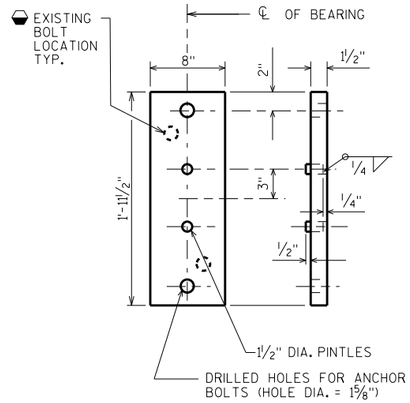
⬙ BURN OFF EXISTING ANCHOR BOLTS FLUSH WITH EXISTING CONCRETE AND GRIND SMOOTH.



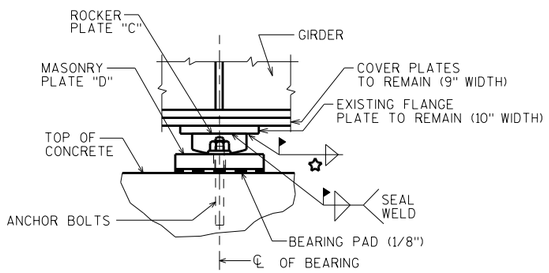
ROCKER PLATE "C"



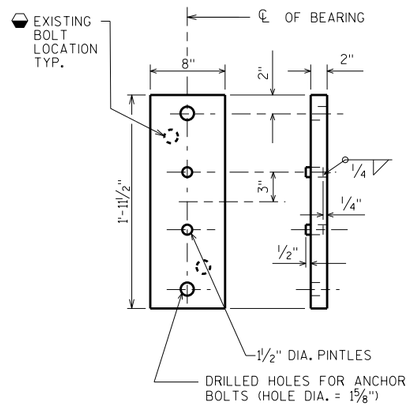
FIXED BEARING ASSEMBLY PIER 1



MASONRY PLATE "D" PIER 1



FIXED BEARING ASSEMBLY PIER 2



MASONRY PLATE "D" PIER 2

✩ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	✣ MIN. SIZE OF FILLET WELD
TO ½" INCLUSIVE	3/16"
OVER ½" TO ¾"	¼"
OVER ¾" TO 1½"	△ 5/16"
OVER 1½" TO 2¼"	△ ⅜"
OVER 2¼" TO 6"	△ ½"

✣ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

△ MIN. PASS SIZE IS 5/16"

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

DRAWN BY MJL | PLANS CK'D. JLR

PIER BEARING DETAILS

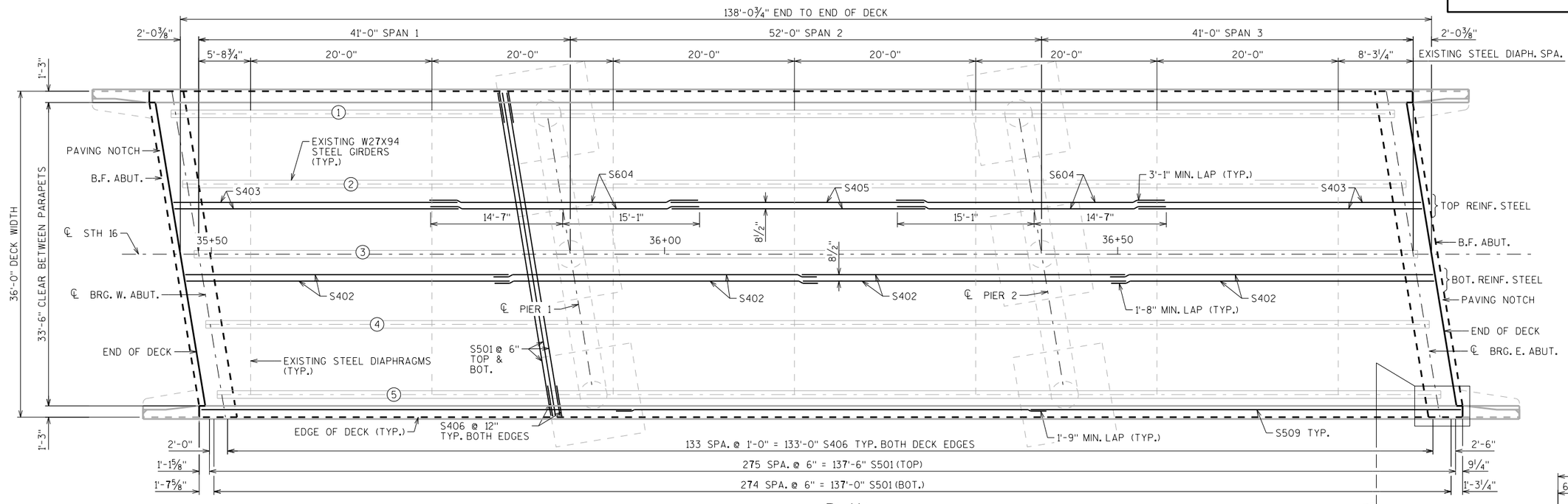
SHEET 4

95

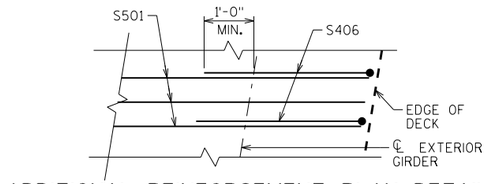
SCALE = 0.58

STATE PROJECT NUMBER

1370-02-82

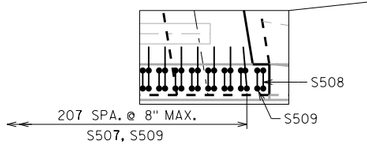


PLAN



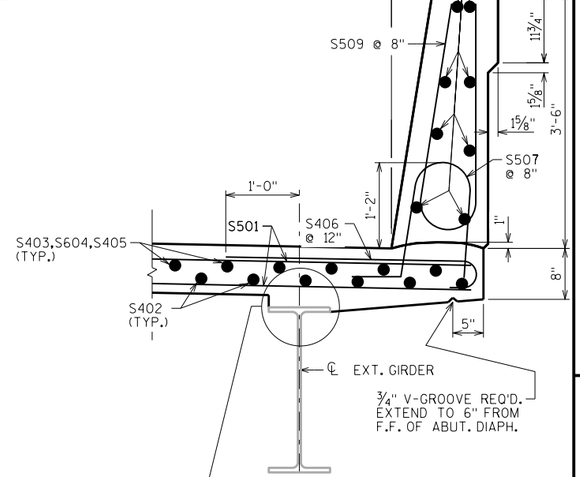
ADDITIONAL REINFORCEMENT PLAN DETAIL

TYPICAL BOTH ENDS OF DECK

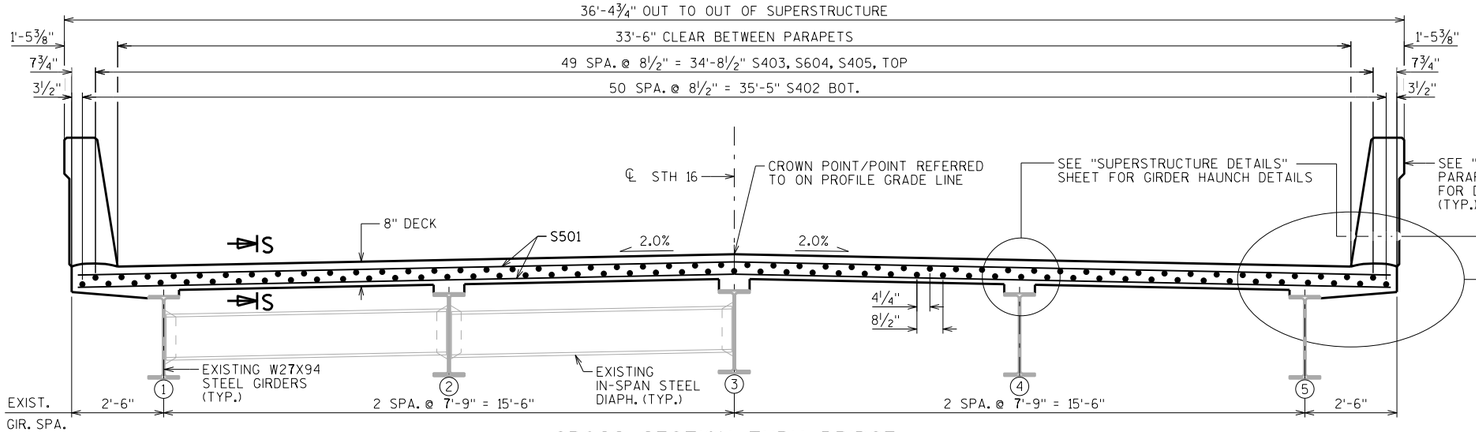


CORNER DETAIL

SE CORNER SHOWN
OTHERS SIMILAR



DETAIL A



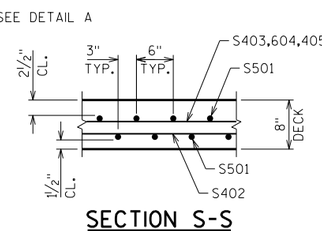
IN SPAN

CROSS SECTION THRU BRIDGE

(LOOKING EAST)

◯ INDICATES GIRDER NUMBER

AT PIER



SECTION S-S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

DRAWN BY MJL | PLANS CK'D. JLR

SUPERSTRUCTURE

SHEET 5

96

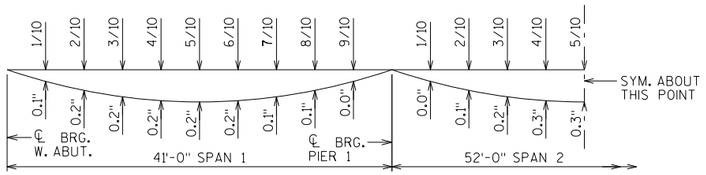
8

8

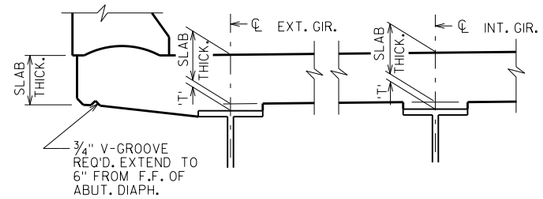
SCALE = 6.00

STATE PROJECT NUMBER

1370-02-82



DEAD LOAD DEFLECTION DIAGRAM



DECK HAUNCH DETAIL

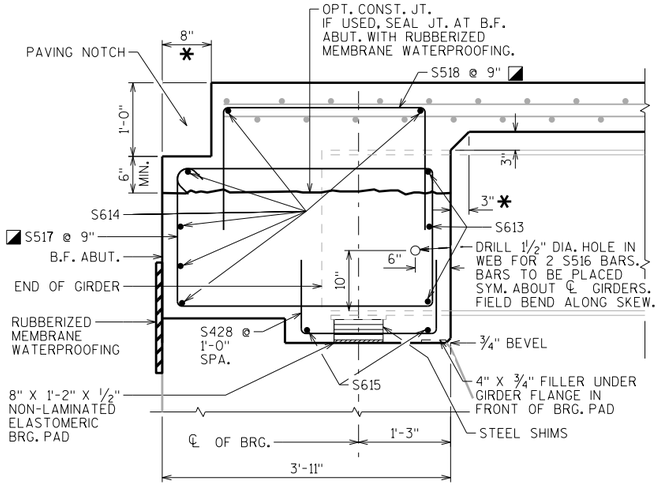
'T' = HAUNCH HEIGHT AT CENTERLINE OF GIRDER.

TO DETERMINE 'T': AFTER EXISTING CONCRETE DECK HAS BEEN REMOVED. ELEVATIONS OF THE TOP FLANGES SHALL BE TAKEN AT CENTERLINE OF BEARINGS AND AT TENTH POINTS.

TOP OF DECK ELEV. AT FINAL GRADE.
- TOP OF STEEL ELEV. AFTER CONCRETE REMOVAL
+ DEFLECTION (CONCRETE ONLY)
- SLAB THICKNESS (8")

= 'T' VALUE FOR SETTING HAUNCH.

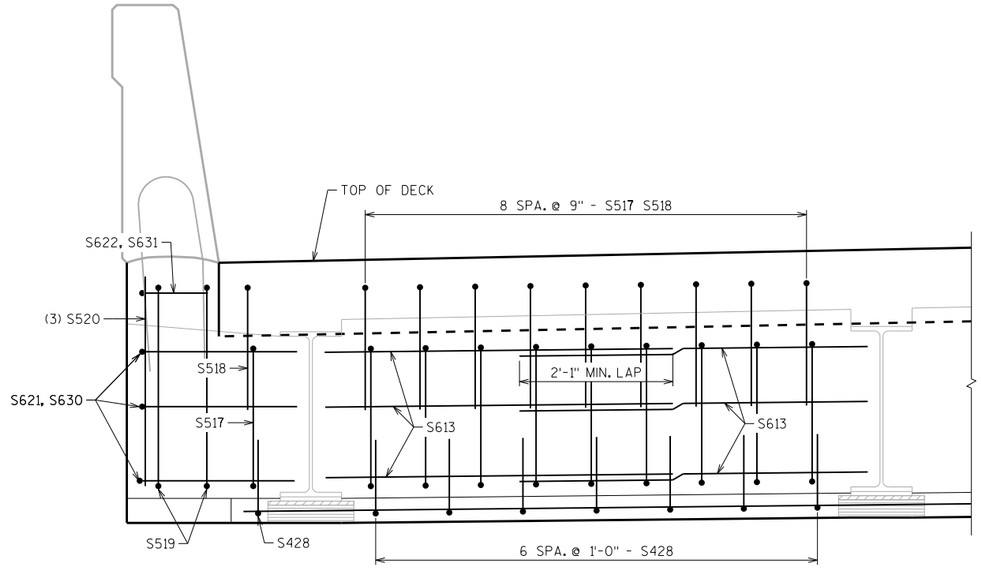
NOTE: AN AVERAGE HAUNCH ('T') OF 2⅛" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



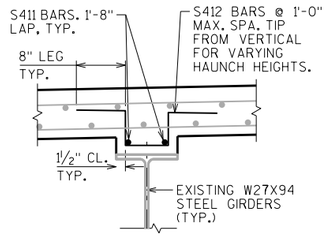
SECTION THRU ABUT. DIAPH.

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

◪ BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO ℄GIRDERS



PART TRANSVERSE SECTION AT DIAPHRAGM END



GIRDER HAUNCH DETAIL

SEE "HAT BAR LOCATION" DETAIL FOR S412 BAR LOCATIONS

TOP OF DECK ELEVATIONS

	℄ BRG. W. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. PIER 1	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. PIER 2	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	℄ BRG. E. ABUT.
NEOD	853.99	853.97	853.94	853.92	853.90	853.88	853.85	853.83	853.81	853.78	853.76	853.73	853.70	853.67	853.64	853.62	853.59	853.56	853.53	853.50	853.47	853.45	853.42	853.40	853.38	853.36	853.33	853.31	853.29	853.26	853.24
G1	854.01	853.99	853.97	853.95	853.92	853.90	853.88	853.85	853.83	853.81	853.78	853.76	853.73	853.70	853.67	853.64	853.61	853.58	853.55	853.52	853.49	853.47	853.45	853.42	853.40	853.38	853.36	853.33	853.31	853.29	853.26
G2	854.16	854.14	854.12	854.09	854.07	854.05	854.02	854.00	853.98	853.96	853.93	853.90	853.87	853.85	853.82	853.79	853.76	853.73	853.70	853.67	853.64	853.62	853.60	853.57	853.55	853.53	853.50	853.48	853.46	853.44	853.41
G3/RL	854.30	854.28	854.26	854.23	854.21	854.19	854.16	854.14	854.12	854.09	854.07	854.04	854.01	853.98	853.96	853.93	853.90	853.87	853.84	853.81	853.78	853.76	853.74	853.71	853.69	853.67	853.64	853.62	853.60	853.57	853.55
G4	854.15	854.12	854.10	854.08	854.06	854.03	854.01	853.99	853.96	853.94	853.92	853.89	853.86	853.83	853.80	853.77	853.74	853.71	853.69	853.66	853.63	853.60	853.58	853.56	853.54	853.51	853.49	853.47	853.44	853.42	853.40
G5	853.99	853.96	853.94	853.92	853.89	853.87	853.85	853.82	853.80	853.78	853.76	853.73	853.70	853.67	853.64	853.61	853.58	853.55	853.52	853.49	853.47	853.44	853.42	853.40	853.37	853.35	853.33	853.30	853.28	853.26	853.24
SEOD	853.96	853.94	853.91	853.89	853.87	853.84	853.82	853.80	853.78	853.75	853.73	853.70	853.67	853.64	853.61	853.58	853.56	853.53	853.50	853.47	853.44	853.42	853.39	853.37	853.35	853.32	853.30	853.28	853.26	853.23	853.21

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

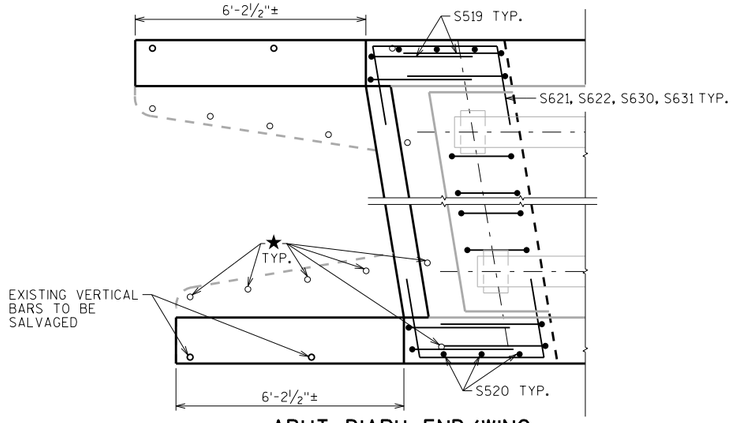
DRAWN BY MJL | PLANS CK'D. JLR

SUPERSTRUCTURE DETAILS

SHEET 6

97

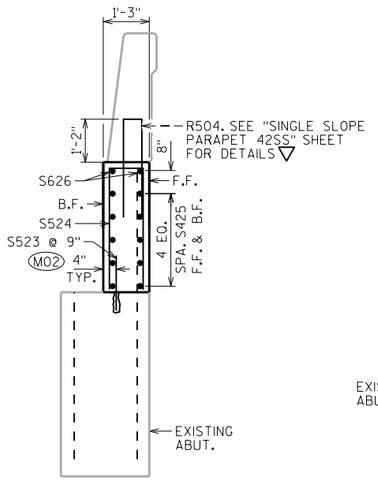
SCALE = 1.00



ABUT. DIAPH. END/WING

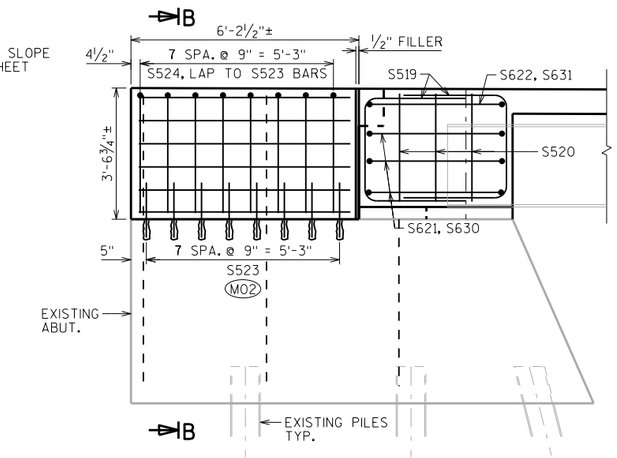
WEST ABUT. SHOWN. EAST IS SIMILAR

★ EXISTING VERTICAL BARS TO BE CUT FLUSH WITH CONCRETE AT TOP OF ABUTMENT ELEVATION



SECTION B-B

▽ R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



ABUT. DIAPH. END/WING ELEVATION

WEST ABUT. SHOWN. EAST IS SIMILAR

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
	S501	X	551	36'-1"			DECK - TRANSVERSE
	S402	X	204	35'-9"			DECK - LONGITUDINAL - BOTTOM
	S403	X	100	31'-5"			DECK - LONGITUDINAL - TOP
	S604	X	100	29'-8"			DECK - LONGITUDINAL - TOP
	S405	X	50	28'-0"			DECK - LONGITUDINAL - TOP
	S406	X	268	3'-11"	X		DECK - TRANSVERSE - OVERHANG
	S507	X	416	4'-5"	X		PARAPET/DECK - VERTICAL
	S508	X	4	5'-10"	X		PARAPET - VERTICAL AT PAVING NOTCH
	S509	X	420	6'-8"	X		PARAPET - VERTICAL
	S510	X	48	47'-7"			PARAPET - HORIZONTAL
	S411	X	40	35'-5"			GIRDER HAUNCH - HORIZONTAL
	S412	X	660	2'-7"	X		GIRDER HAUNCH - VERTICAL
	S613	X	48	4'-10"			ABUT. DIAPH. - HORIZONTAL BTWN. GIRDERS
	S614	X	12	36'-5"			ABUT. DIAPH. - HORIZONTAL
	S615	X	4	33'-2"			ABUT. DIAPH. - HORIZONTAL
	S516	X	20	6'-0"			ABUT. DIAPH. - HORIZONTAL THRU GIRDERS
	S517	X	76	11'-4"	X		ABUT. DIAPH. - VERTICAL STIRRUPS
	S518	X	76	5'-10"	X		ABUT. DIAPH. - VERTICAL
	S519	X	16	7'-9"	X		ABUT. DIAPH. END - VERTICAL
	S520	X	12	2'-8"			ABUT. DIAPH. END - VERTICAL
	S621	X	6	7'-5"	X		ABUT. DIAPH. END - HORIZONTAL - WINGS 2 & 4
	S622	X	2	6'-2"	X		ABUT. DIAPH. END - HORIZONTAL - WINGS 2 & 4
M02	S523	X	32	2'-0"			ABUT. WING ANCHORS
	S524	X	32	7'-0"	X		ABUT. WING - VERTICAL
	S425	X	40	5'-10"			ABUT. WING - HORIZONTAL
	S626	X	8	5'-10"			ABUT. WING TOP - HORIZONTAL
M03	S427	X	96	1'-7"	X		ABUT. NOTCH ANCHORS - VERTICAL
	S428	X	60	3'-8"	X		ABUT. DIAPH. - VERTICAL
	S429	X	4	34'-9"			ABUT. NOTCH - HORIZONTAL
	S630	X	6	7'-6"	X		ABUT. DIAPH. END - HORIZONTAL - WINGS 1& 3
	S631	X	2	6'-3"	X		ABUT. DIAPH. END - HORIZONTAL - WINGS 1& 3

M02 S523 BARS ARE ADHESIVE ANCHORS NO. 5 BARS. EMBED 6" MIN. IN CONCRETE.

M03 S427 BARS ARE ADHESIVE ANCHORS NO. 4 BARS. EMBED 6" MIN. IN CONCRETE.

STATE PROJECT NUMBER

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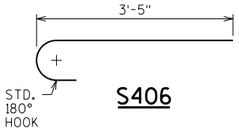
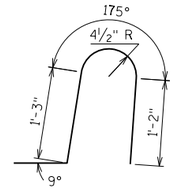
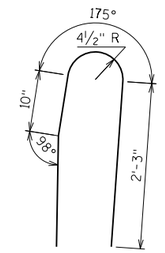


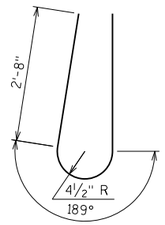
S406



S507



S508



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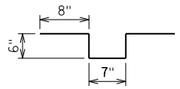
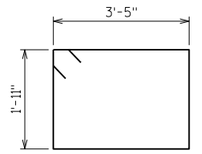
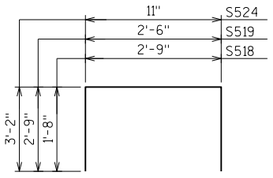


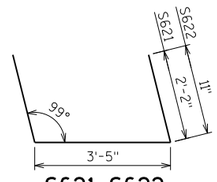
S412



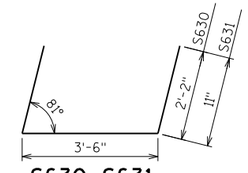
S517



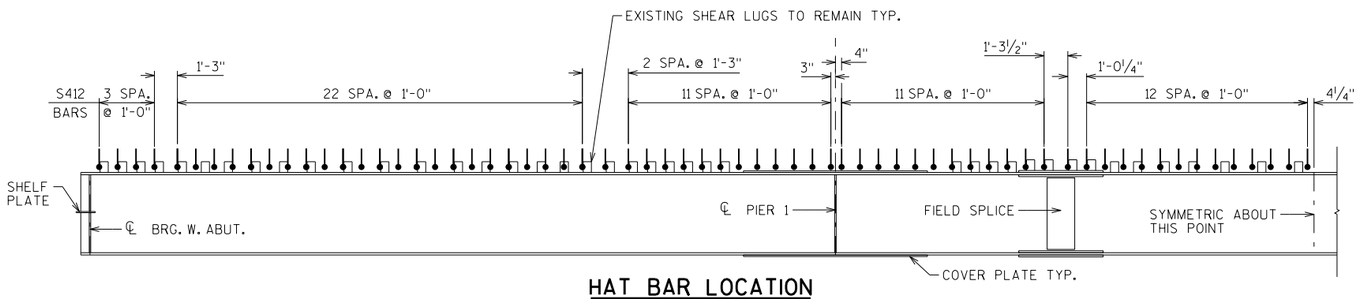
S518, S519, S524



S621, S622



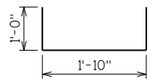
S630, S631



HAT BAR LOCATION

ADJUST SPACING OF S412 BARS AS REQUIRED TO AVOID EXISTING SHEAR LUGS

S427



S428

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

DRAWN BY MJL | PLANS CK'D. JLR

SUPERSTRUCTURE DETAILS 2

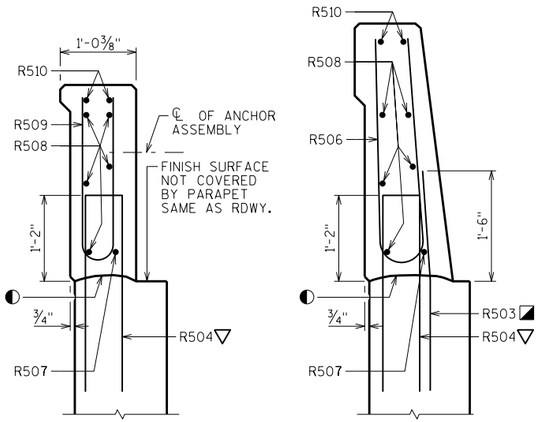
SHEET 7

98

SCALE = 1.00

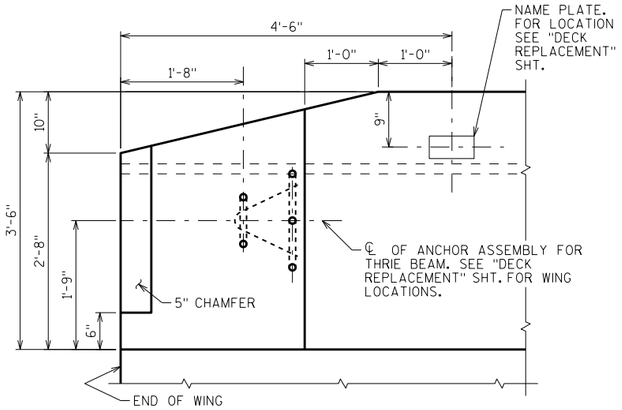
8

8



SECTION A-A

SECTION B-B



PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET

STATE PROJECT NUMBER

1370-02-82

BILL OF BARS

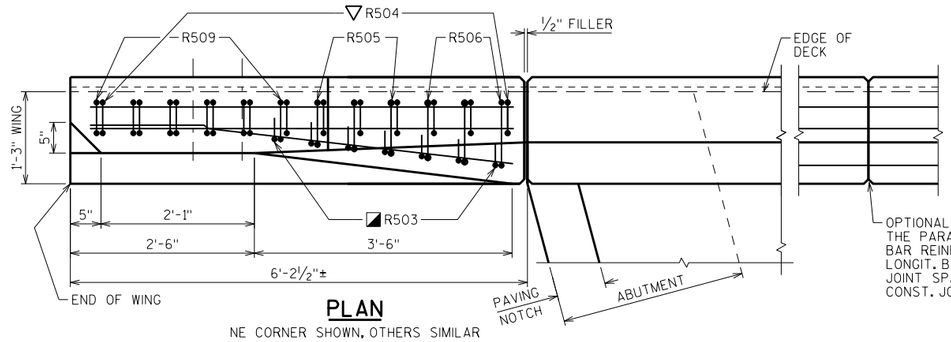
FOR ABUTMENT PARAPETS

BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501		BAR	NOT	USED			
R502		BAR	NOT	USED			
R503	X	14	14	3'-0"	X		PARAPET VERT.
R504	X	24	24	5'-7"	X		PARAPET VERT.
R505	X	6	6	6'-5"	X		PARAPET VERT.
R506	X	6	6	6'-6"	X		PARAPET VERT.
R507	X	2	2	5'-10"	X		PARAPET HORIZ.
R508	X	10	10	5'-10"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	⚠	PARAPET VERT.
R510	X	4	4	5'-10"	X		PARAPET HORIZ.

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

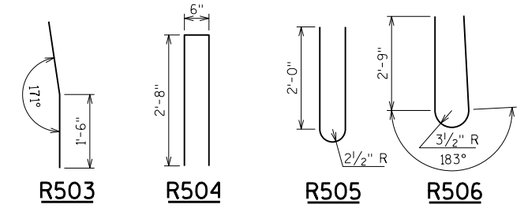
BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"



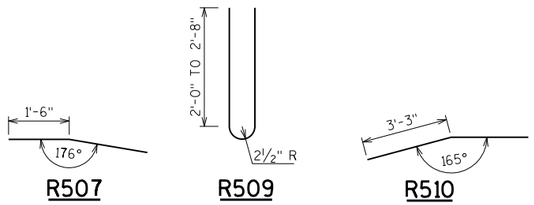
PLAN

NE CORNER SHOWN, OTHERS SIMILAR

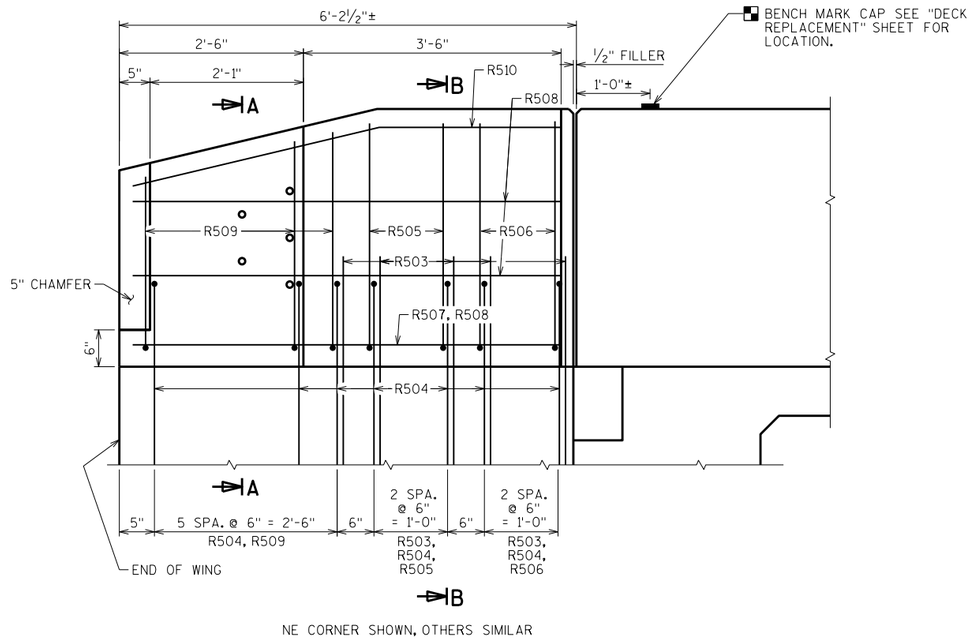
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.



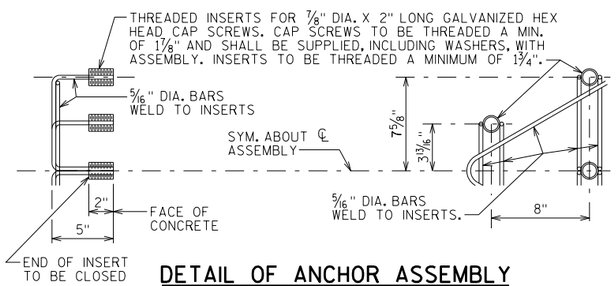
R503 R504 R505 R506



R507 R509 R510



NE CORNER SHOWN, OTHERS SIMILAR



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

◐ CONST. JOINT - STRIKE OFF AS SHOWN

◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-14-41

DRAWN BY MJL | PLANS CK'D. JLR

SINGLE SLOPE PARAPET 42SS

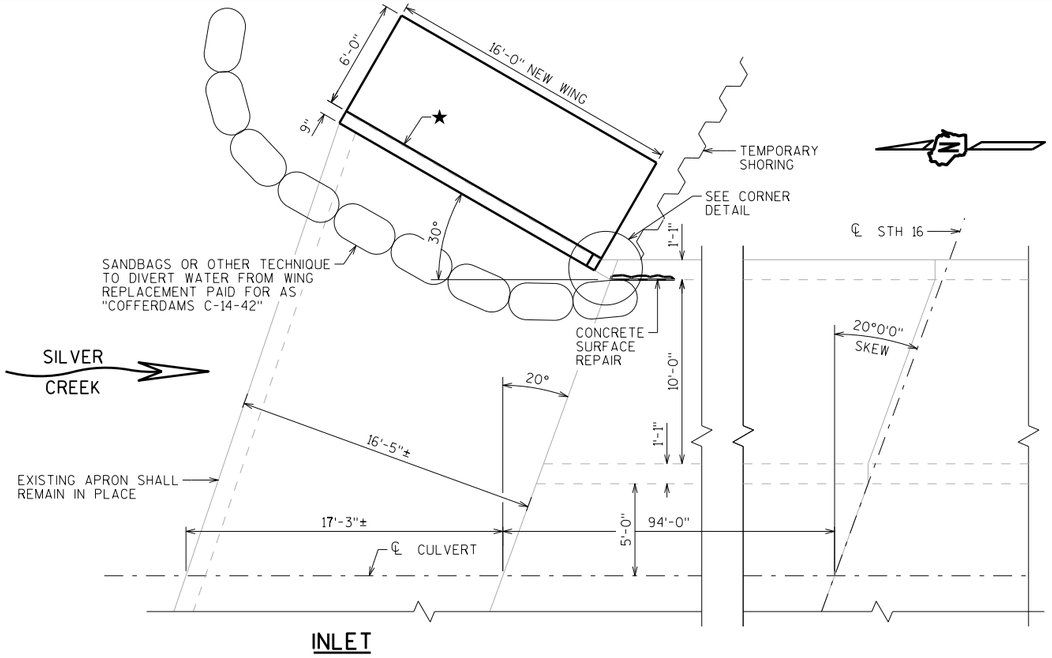
SHEET 8

99

SCALE = 1.00

8

8



INLET

PLAN OF WING REPLACEMENT

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY: ——————— f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT: ——————— fy = 60,000 P.S.I.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

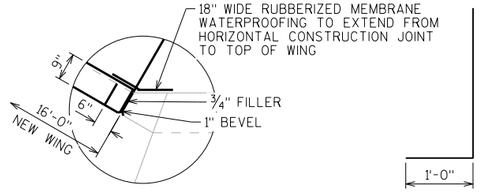
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-14-42" SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE WING.

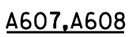
BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN ON THIS SHEET.

CONCRETE SURFACE REPAIR REQUIRED. SEE 'PLAN OF WING REPLACEMENT' DETAIL FOR APPROX. LOCATION



CORNER DETAIL



A607,A608

STATE PROJECT NUMBER

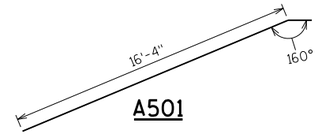
1370-02-82

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501	X	2	16'-10"	X		WING HORIZONTAL TOP
A402	X	2	4'-3"			WING HORIZONTAL
A403	X	2	8'-1"			WING HORIZONTAL
A404	X	2	11'-11"			WING HORIZONTAL
A405	X	2	15'-3"			WING HORIZONTAL
A406	X	12	4'-7"		⚠	WING VERTICAL FRONT FACE
A607	X	10	4'-3"	X	⚠	WING VERTICAL BACK FACE
A608	X	13	7'-4"	X	⚠	WING VERTICAL BACK FACE
A609	X	25	7'-3"	X		WING FOOTING TOP
A410	X	16	15'-8"			WING FOOTING
A411	X	17	6'-5"			WING FOOTING BOTTOM

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

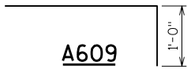


A501

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A406	1 SERIES OF 12	1'-7" TO 7'-7"
A607	1 SERIES OF 10	2'-5" TO 6'-0"
A608	1 SERIES OF 13	6'-2" TO 8'-5"

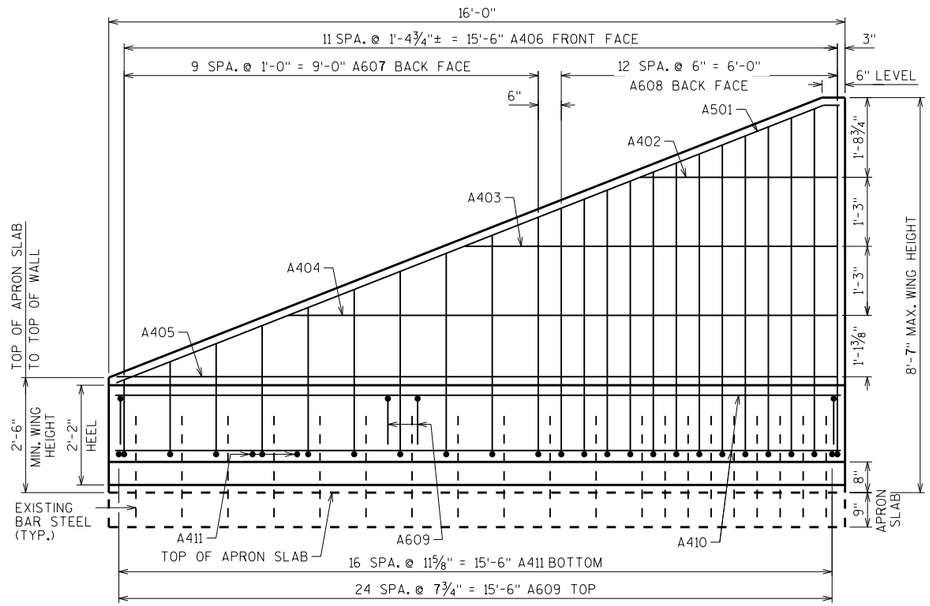
BUNDLE AND TAG EACH SERIES SEPARATELY.



A609

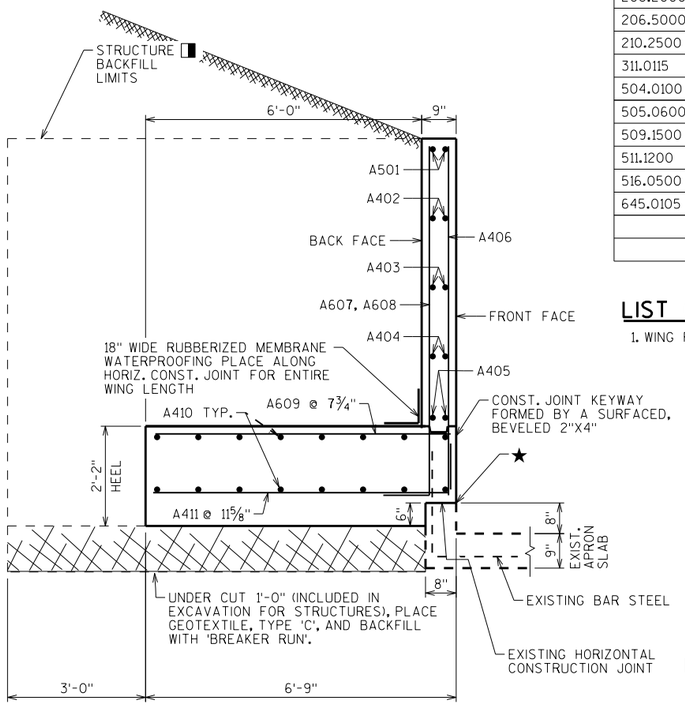
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0220	REMOVING STRUCTURE B-14-42	EACH	1
206.2000	EXCAVATION FOR STRUCTURES CULVERTS B-14-42	LS	1
206.5000	COFFERDAMS B-14-42	LS	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	44
311.0115	BREAKER RUN	CY	6
504.0100	CONCRETE MASONRY CULVERTS	CY	10
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	840
509.1500	CONCRETE SURFACE REPAIR	SF	15
511.1200	TEMPORARY SHORING B-14-42	SF	121
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	4
645.0105	GEOTEXTILE TYPE C	SY	20
	NON-BID ITEMS		
	FILLER	SIZE	¾"



WING ELEVATION

SHOWING BACK FACE REINFORCEMENT



SECTION THRU WING

LIST OF DRAWINGS

1. WING REPLACEMENT

★ REMOVE EXISTING WING DOWN TO EXISTING HORIZONTAL CONSTRUCTION JOINT. SALVAGE EXISTING VERTICAL REINFORCEMENT AND EXTEND 1'-0" MIN. INTO WORK.

◨ BACKFILL PAYLIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

STRUCTURE DESIGN CONTACTS:

JOEL MAAS (608) 267-0273
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

BUREAU OF STRUCTURES

ACCEPTED LLS 10/27/21
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-14-42

STH 16 OVER SILVER CREEK

COUNTY	TOWN/CITY/VILLAGE
DODGE	EMMET

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
MJL	JDM	MJL	JDM

WING REPLACEMENT

SHEET 1 OF 1

100

I.D. 1370-02-02B DATE: MAY 2019

SCALE = 4.00

8

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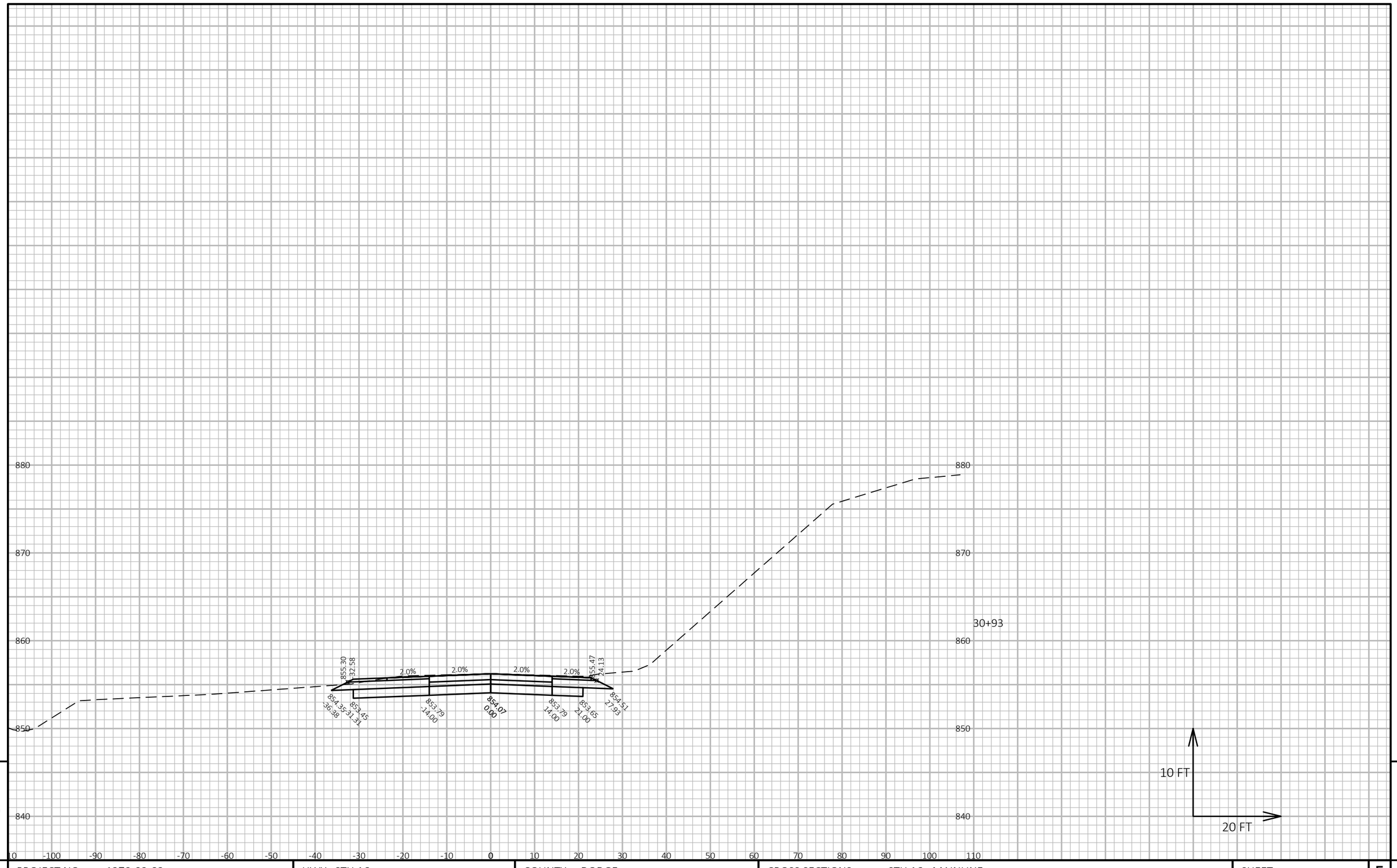
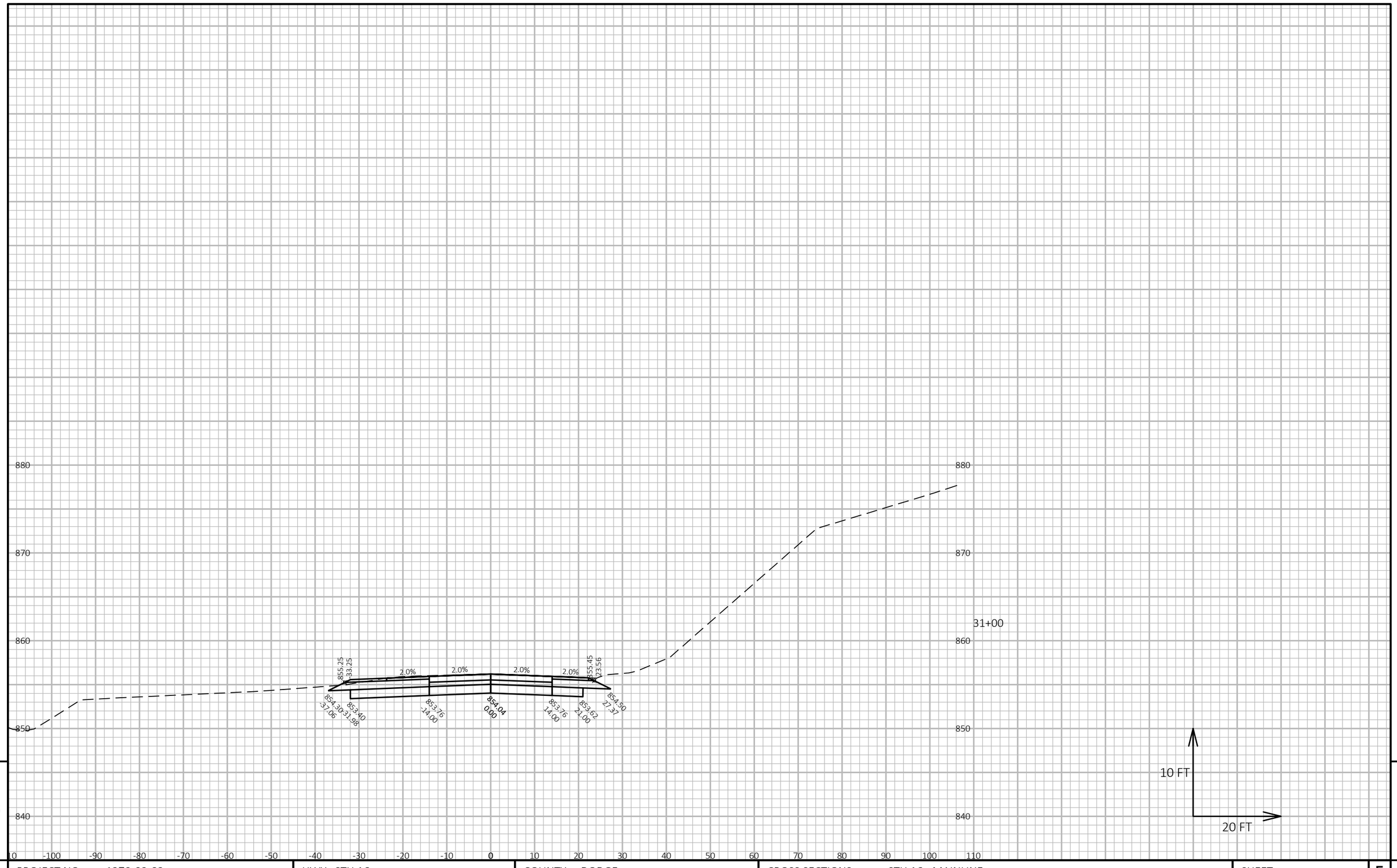


PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 101	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090201

PLOT DATE : 1/7/2019 3:25 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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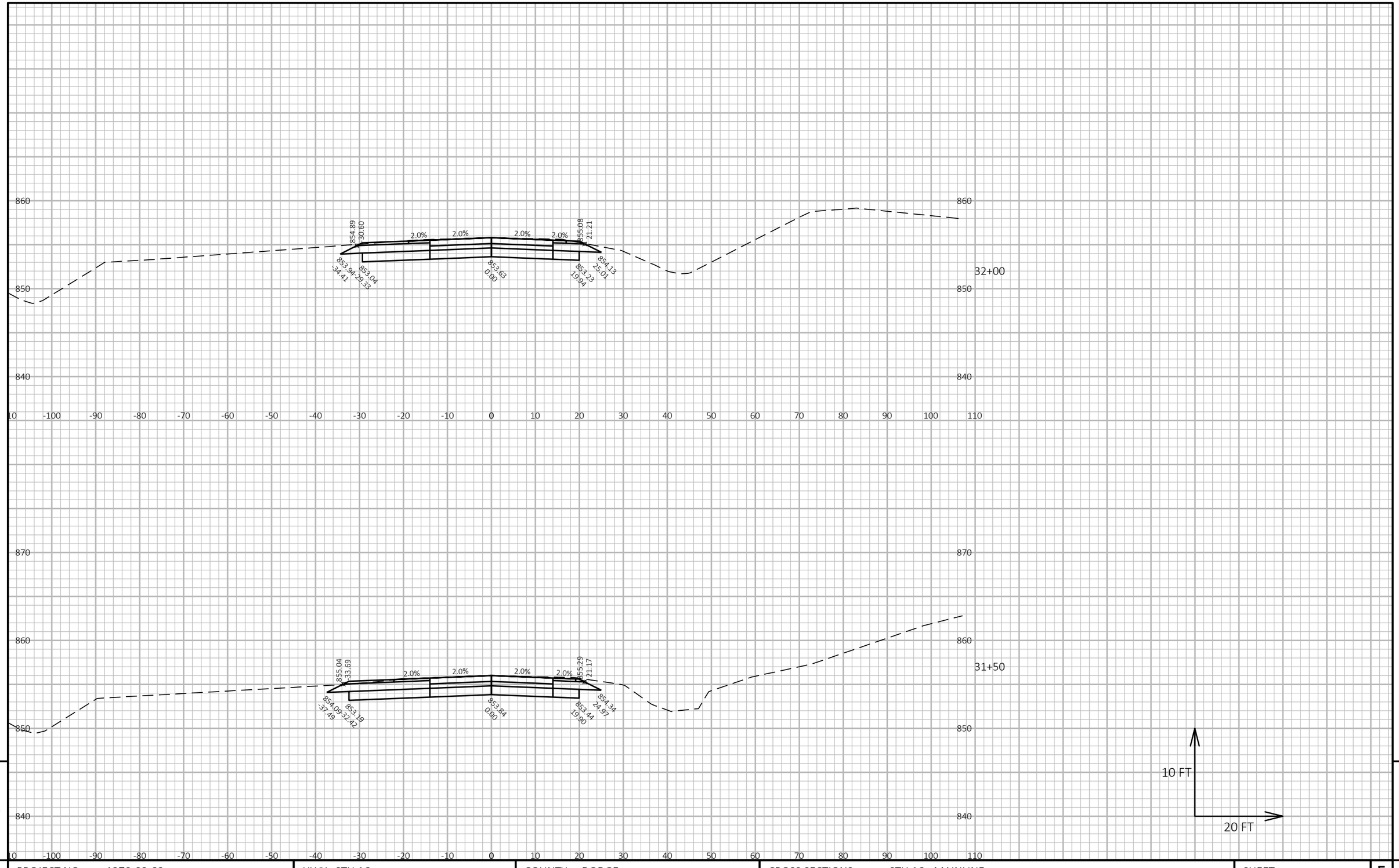
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 102	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090202

PLOT DATE : 1/7/2019 3:25 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



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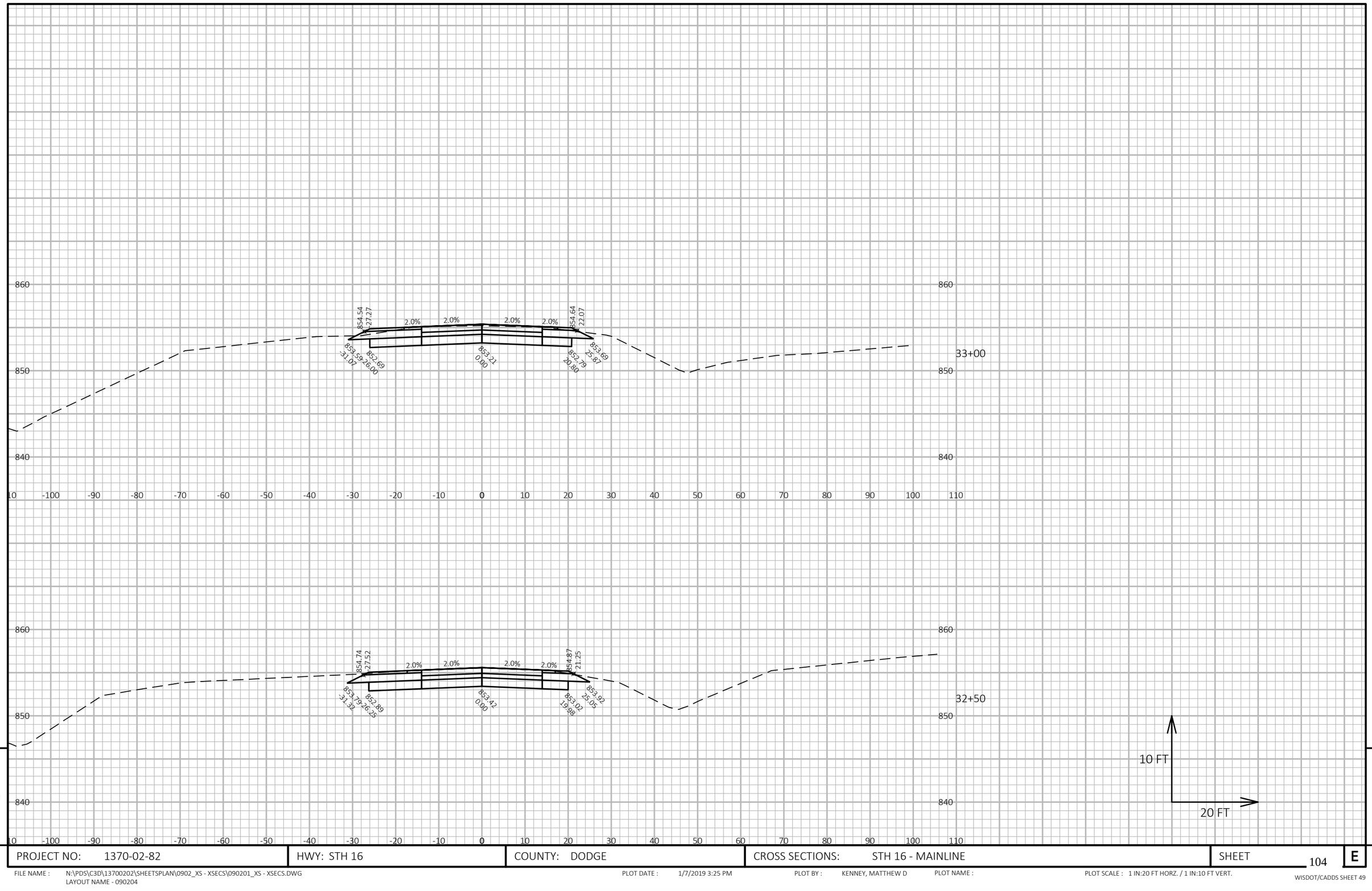
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 103	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090203

PLOT DATE : 1/7/2019 3:25 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

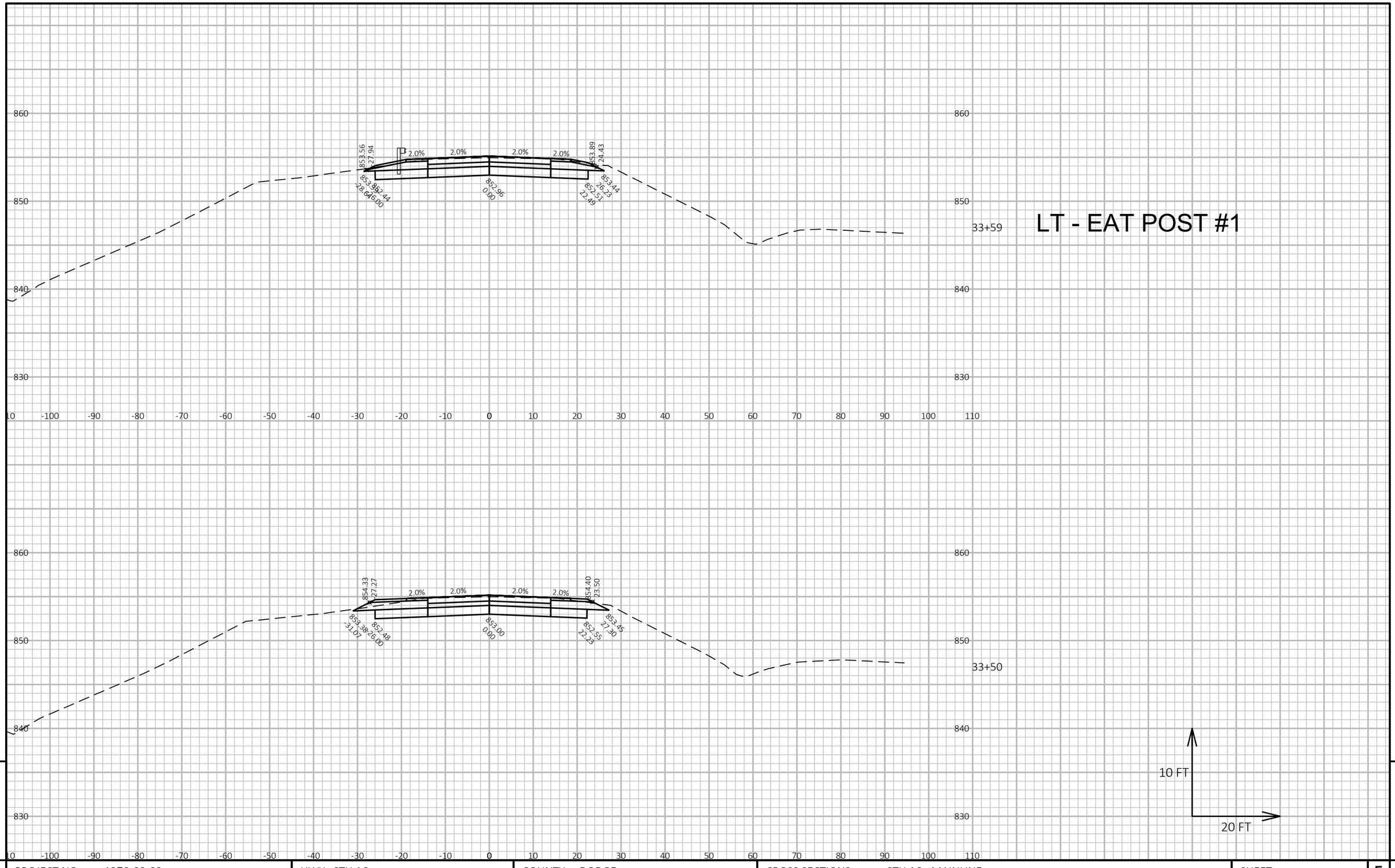


PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 104	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090204

PLOT DATE : 1/7/2019 3:25 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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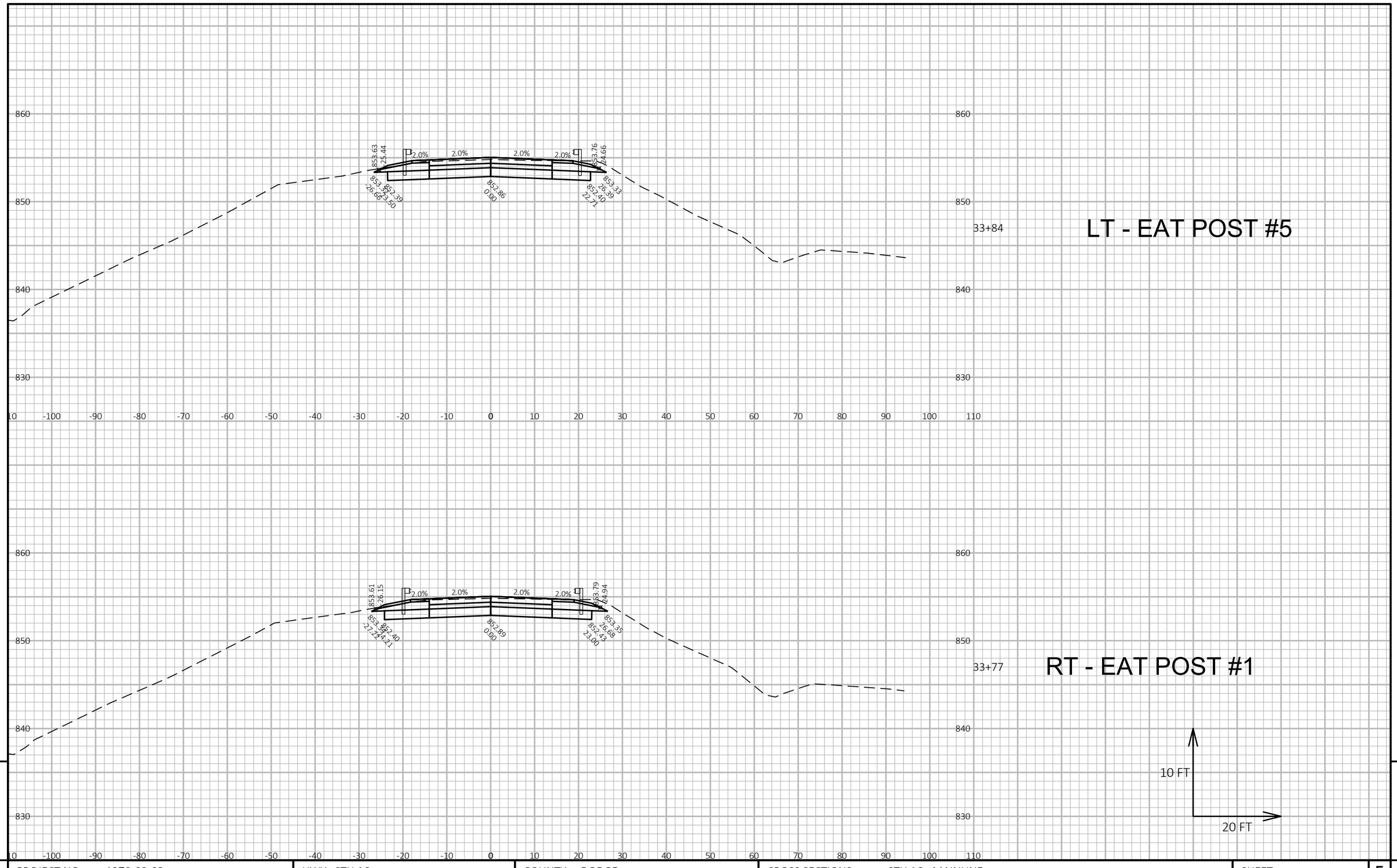
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 105	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090205

PLOT DATE : 1/7/2019 3:25 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

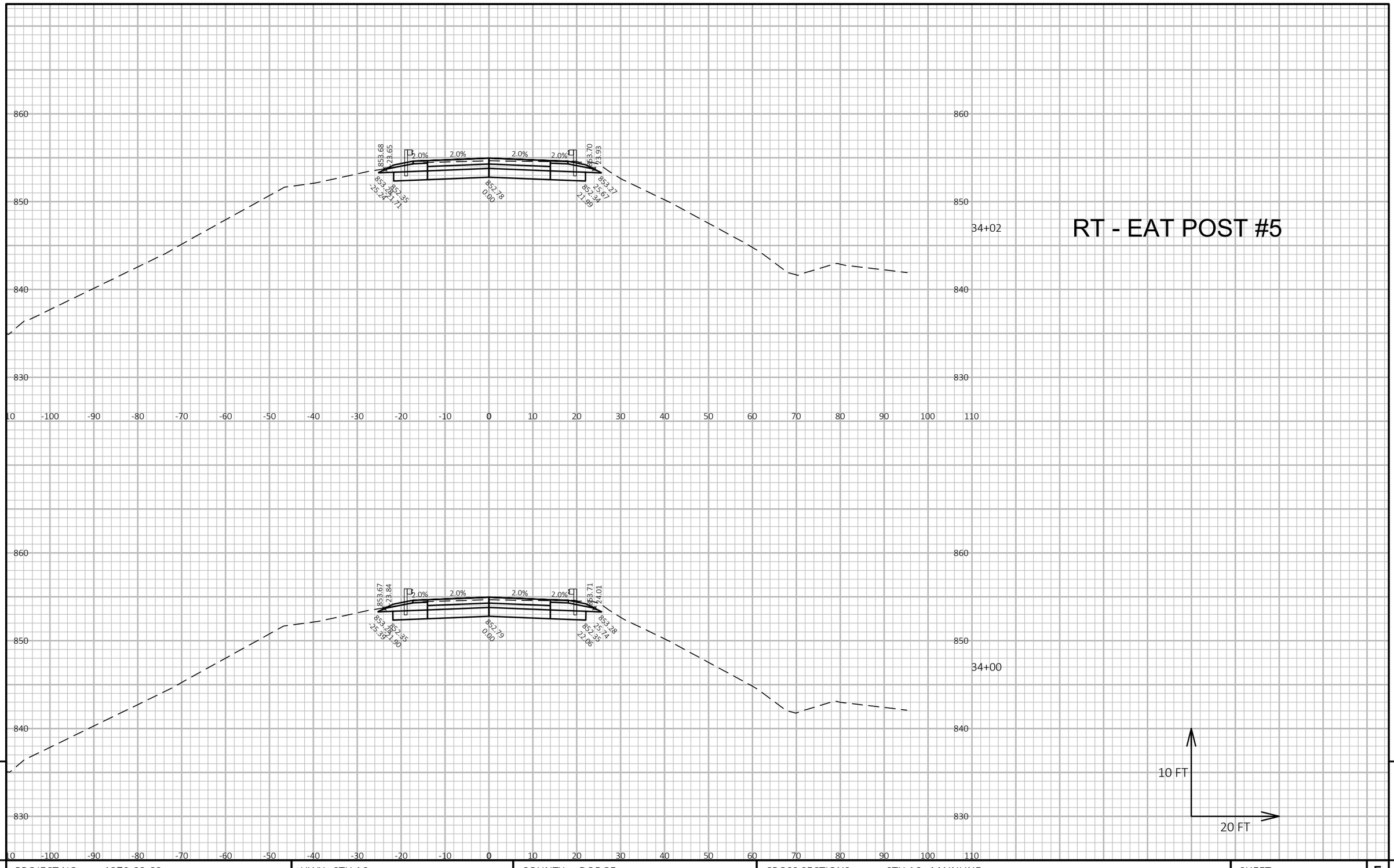


PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 106 E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090206

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

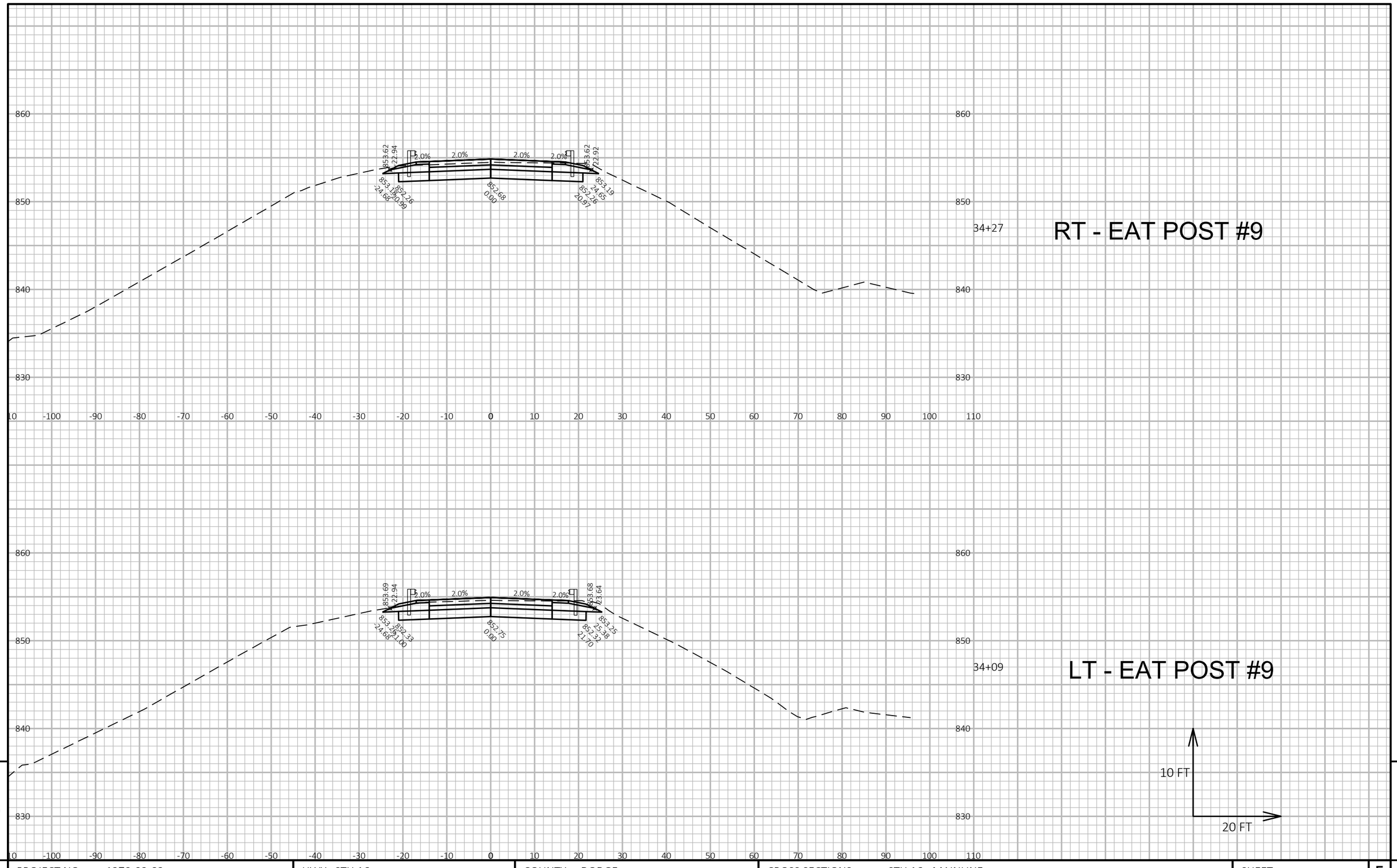


PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 107	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090207

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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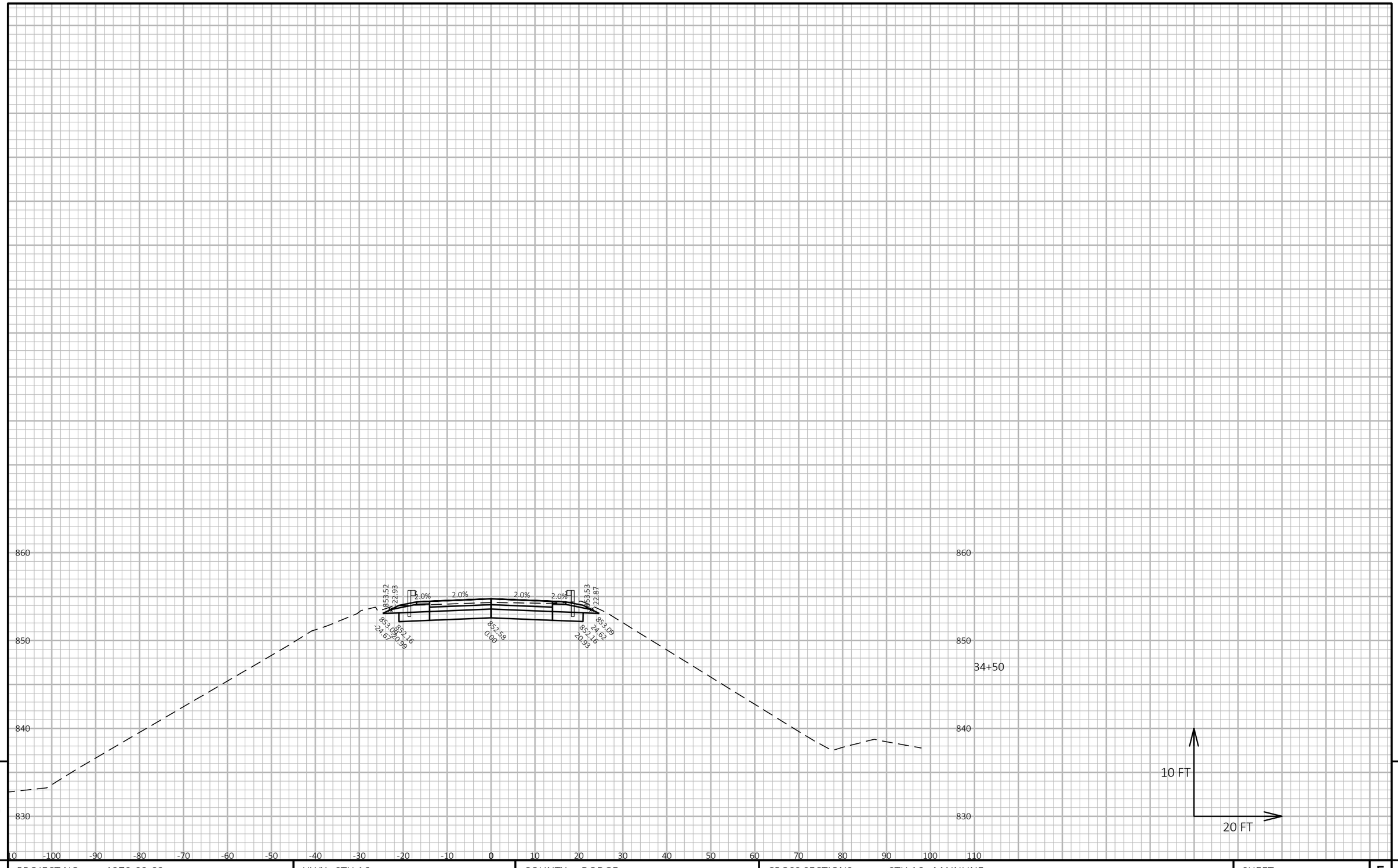
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 108	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090208

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



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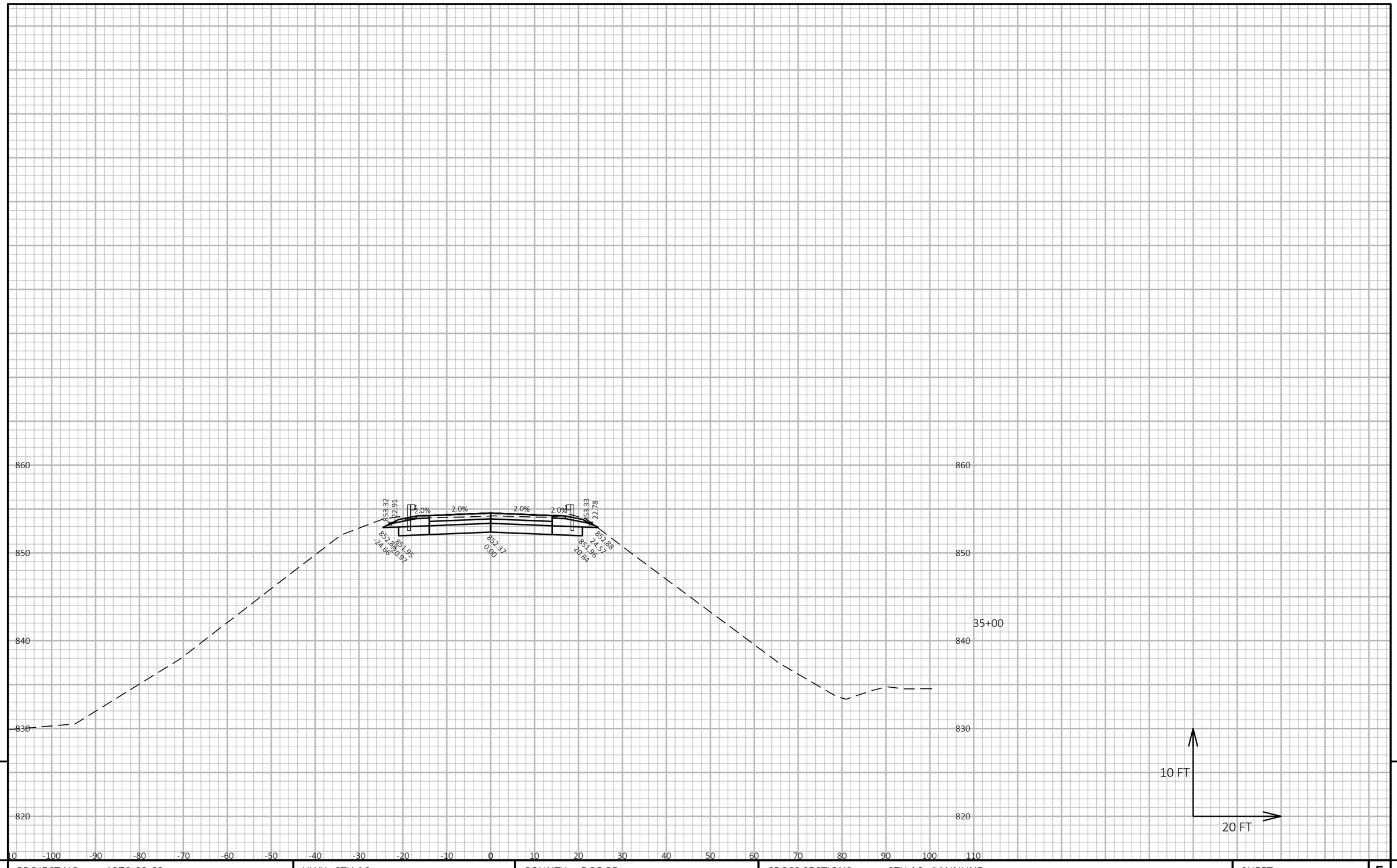
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 109	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090209

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 110	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090210

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

B-14-0041

860
850
840
830
820

36+00

10 FT
20 FT

-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110

9

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PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 111	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090211

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

B-14-0041

36+50

860
850
840
830
820

-100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110

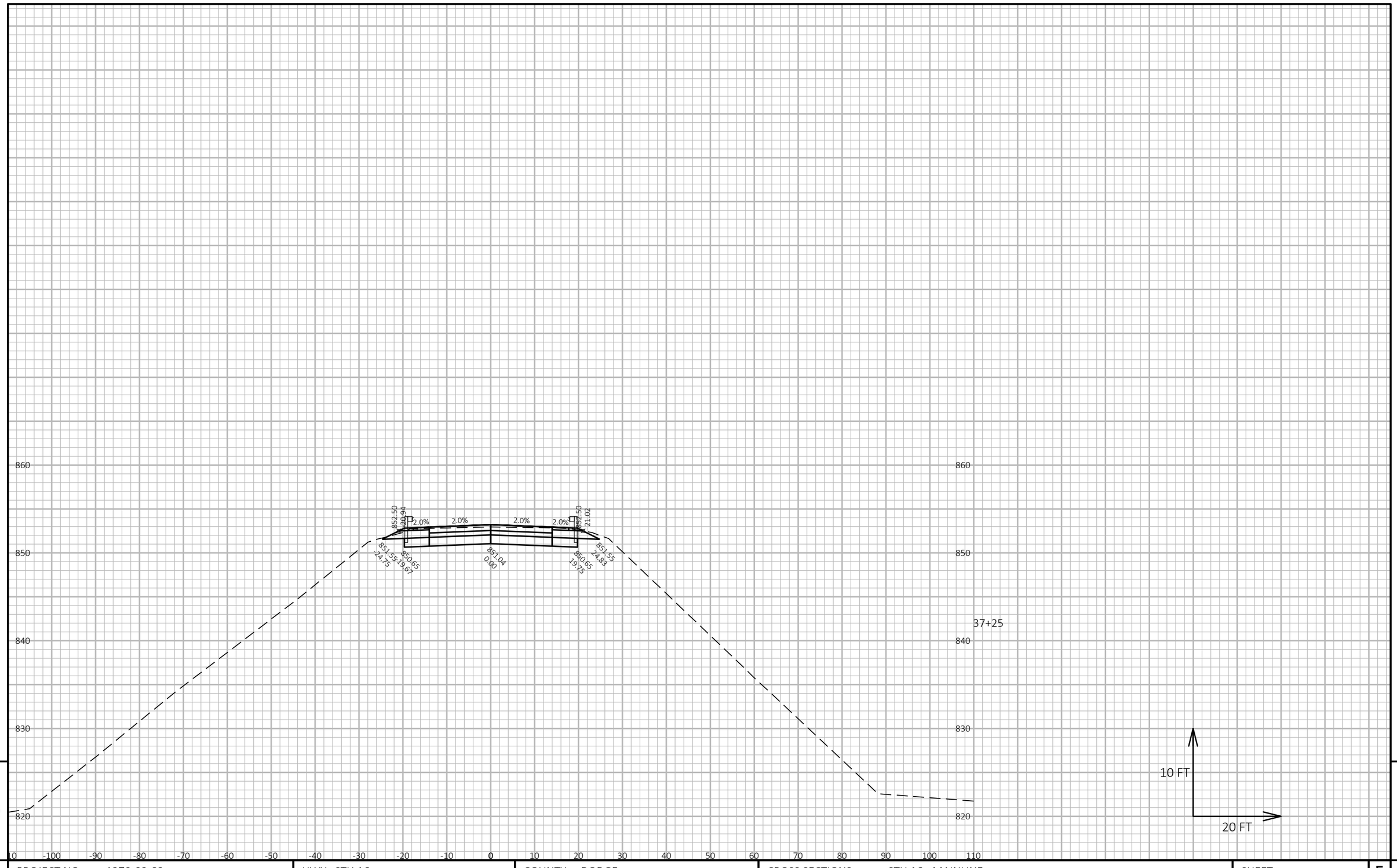
10 FT

20 FT

9

9

PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 112	E



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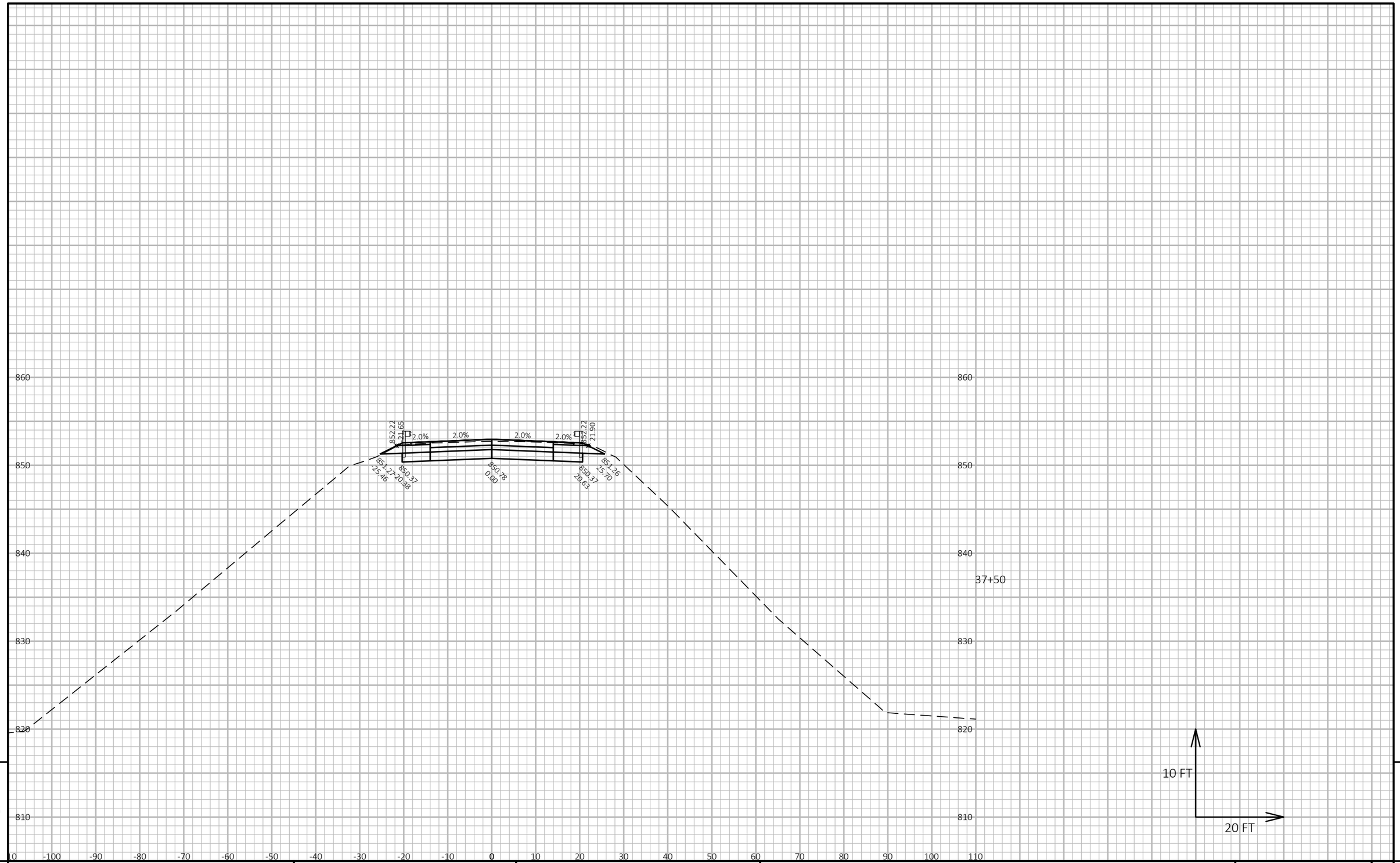
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 113	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090213

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

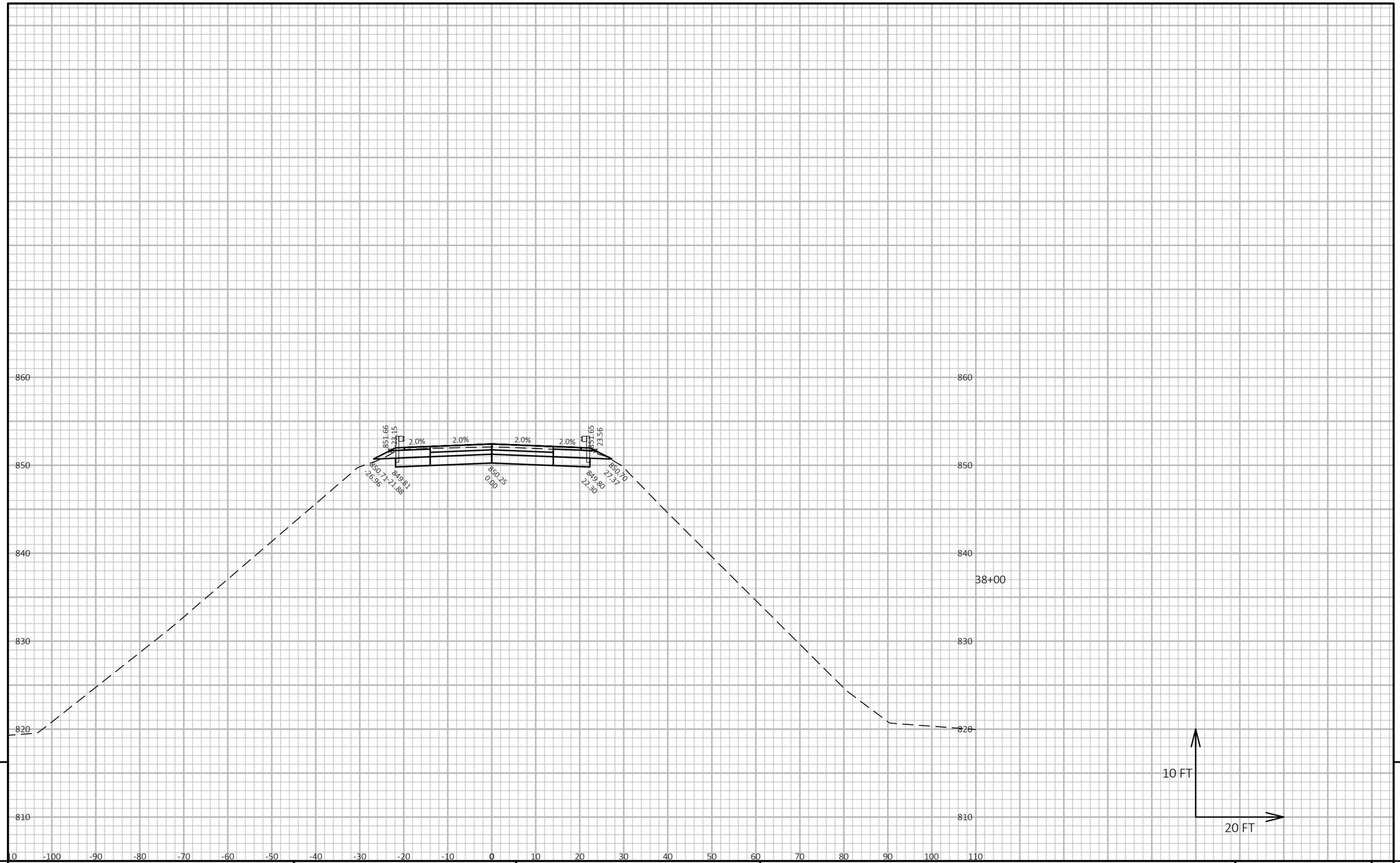


PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 114	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090214

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



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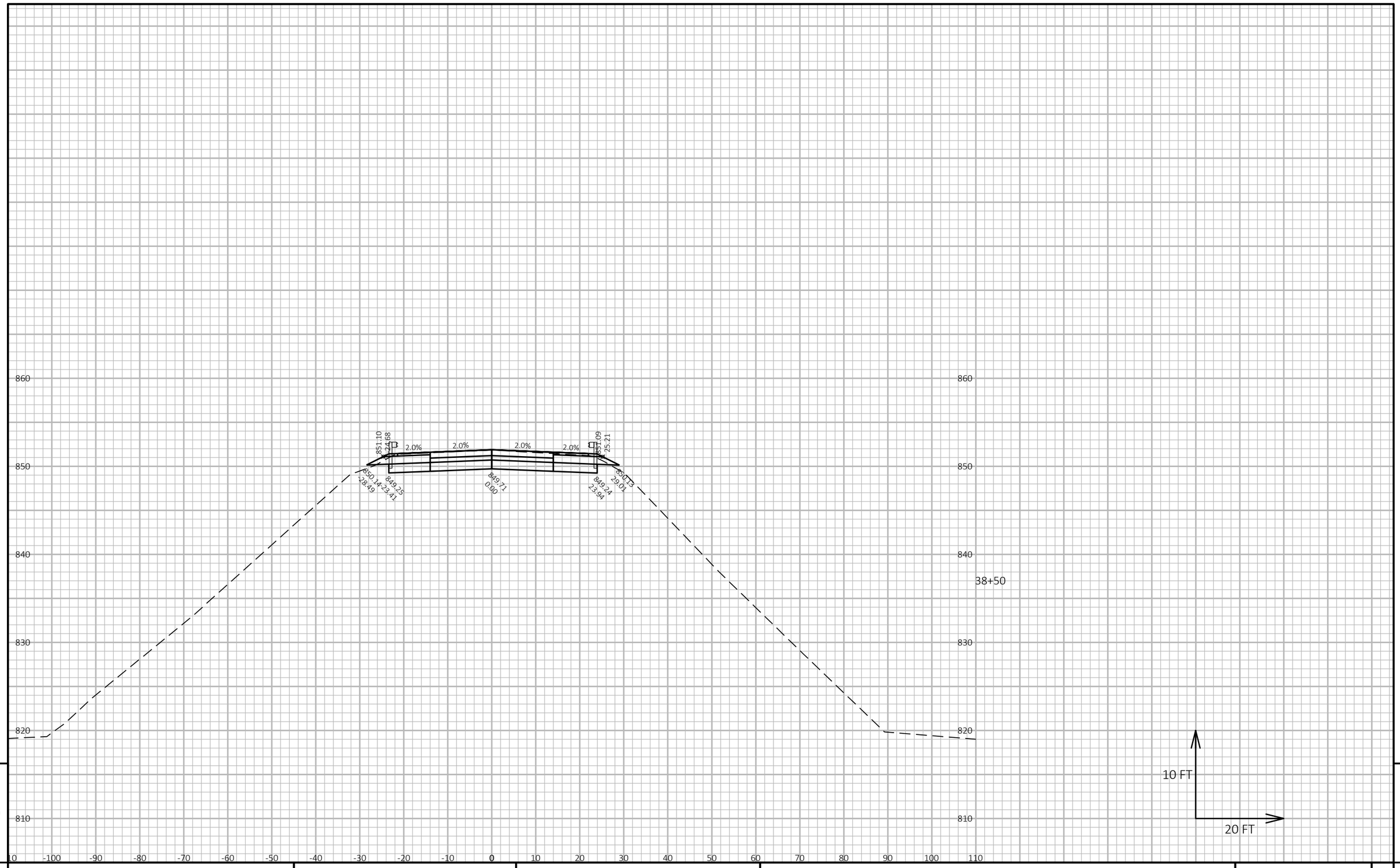
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 115	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090215

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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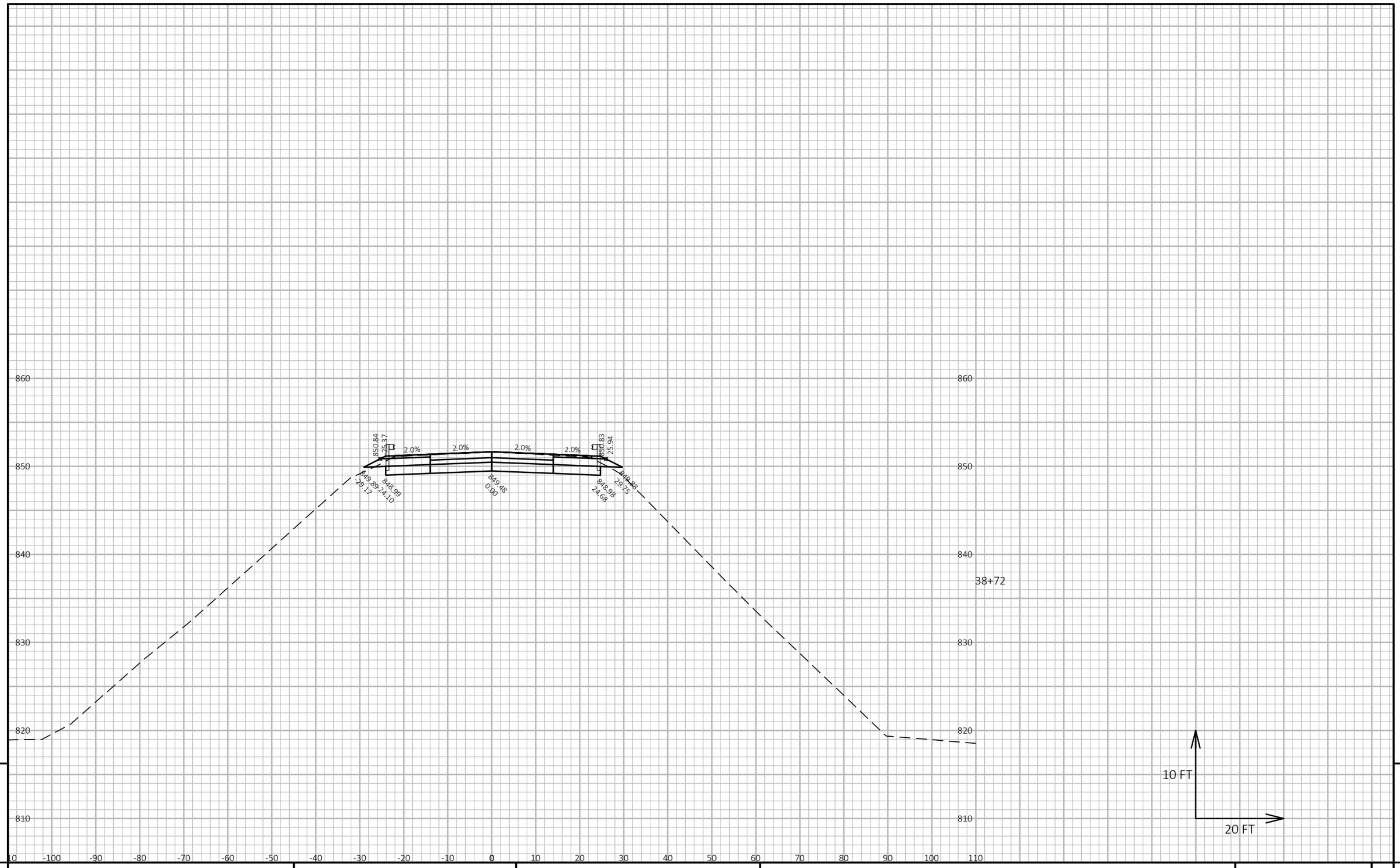
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 116	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090216

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

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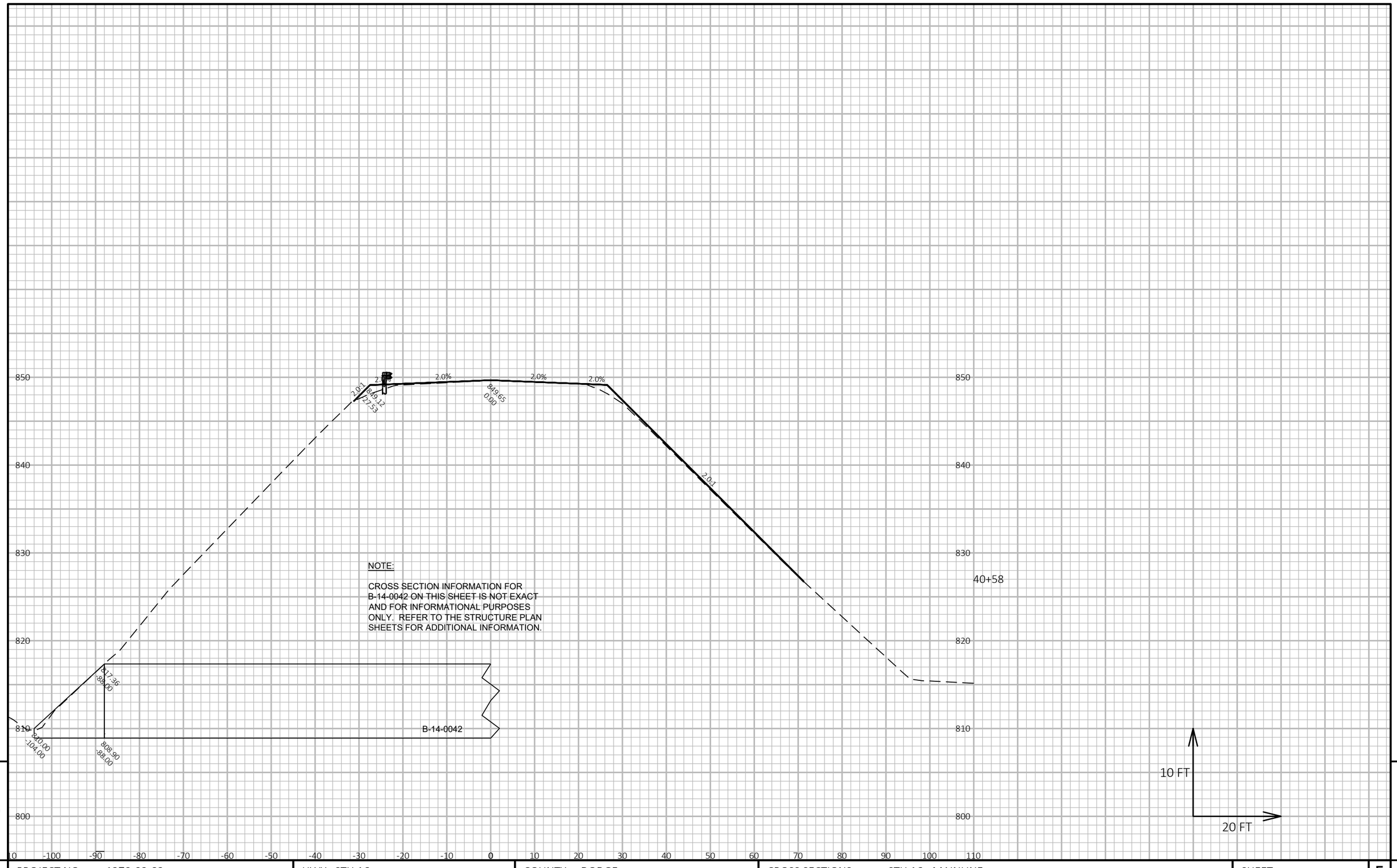
PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 117	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090217

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 1370-02-82	HWY: STH 16	COUNTY: DODGE	CROSS SECTIONS: STH 16 - MAINLINE	SHEET 118	E

FILE NAME : N:\PDS\C3D\13700202\SHEETSPLAN\0902_XS - XSECS\090201_XS - XSECS.DWG
LAYOUT NAME - 090218

PLOT DATE : 1/7/2019 3:26 PM PLOT BY : KENNEY, MATTHEW D PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

Notes

Wisconsin Department of Transportation

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