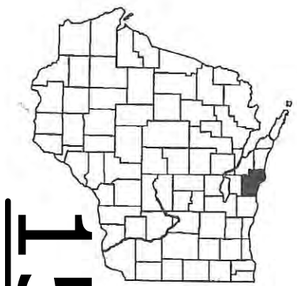
Gre Aug 2013

PROJECT ID: 1226-08-71
WITH: N/A

ORDER OF SHEETS

TOTAL SHEETS = 100



15

DESIGN DESIGNATION

A.A.D.T.	2013	= 3200
A.A.D.T.	2033	= 4300
D.H.V.	2033	= 440
D.D.		= 58/42
T.		= 14.6%
DESIGN SPEED		= 60MPH
ESALS		= 5,066,200

CONVENTIONAL SYMBOLS

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

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

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

COUNTY: MANITOWOC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MANITOWOC - GREEN BAY

(STH 147 INTERCHANGE RAMP)

IH 43

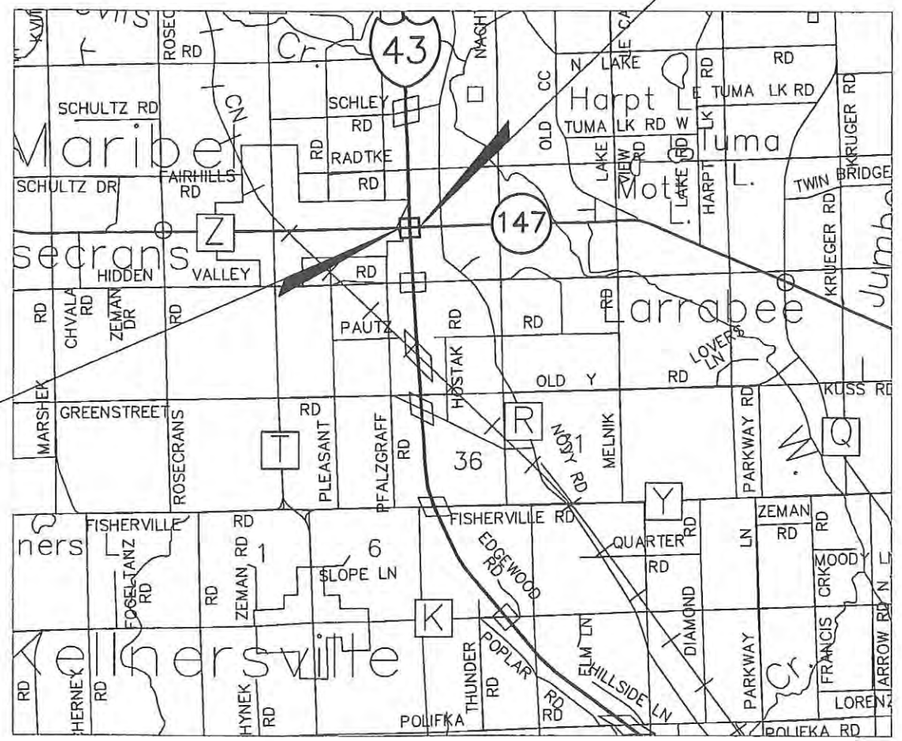
MANITOWOC COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1226-08-71		

STATE PROJECT NUMBER
1226-08-71

END PROJECT
STA 70+73.00 WB

BEGIN PROJECT
STA 60+90.00 WB
Y = 368,174.575
X = 200,770.611



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.186 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MANITOWOC COUNTY

ORIGINAL PLANS PREPARED BY
Mead & Hunt
Mead & Hunt, Inc.
1345B North Road
Green Bay, WI 54313
phone: 920-496-0500
meadhunt.com

WISCONSIN
SCOTT A. HASBURGH
E-33329
BARNEVELD, WI
PROFESSIONAL ENGINEER

MAY 1, 2013

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	MEAD & HUNT
Project Manager	MATTHEW HAEFS
Regional Examiner	
Regional Supervisor	REBECCA ROOYAKKERS
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 05/01/13 Matthew W Haefs PE
(Signature)

E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\010101_TI.DWG PLOT DATE : 9/9/2008 8:17 AM PLOT BY : DAVID YAHNKE PLOT NAME :

2

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE APPROXIMATE USGS DATUM NAD 83 (2007).

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOIL, FERTILIZED, SEEDED AND EROSION MATTED.

BEARINGS SHOWN ON THE PLANS ARE GROUND BEARINGS TO THE NEAREST SECOND.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF FLANGE UNLESS NOTED OTHERWISE.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING PAVEMENTS AT REMOVAL LIMITS.

TOP OF CASTING ELEVATIONS SHOWN FOR INLETS REFER TO THE CASTING ELEVATION AT THE FRONT EDGE OF CASTING.

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 OR ROCK EXCAVATION.

CONSTRUCT INSIDE EDGE OF MEDIAN PAVEMENT 1/4-INCH HIGHER THAN THE TOP OF CURB, WHEN THEY ARE ADJACENT TO EACH OTHER.

BASE ITS BID ON ACTUAL FIELD CONDITIONS.

STATIONS AND OFFSETS FOR APRON ENDWALLS ARE GIVEN TO THE END OF THE CULVERT PIPE SECTION.

ORDER OF SECTION 2 SHEETS

UTILITY CONTACTS

* CHARTER COMMUNICATIONS
COMMUNICATION
ATTN: MR. NICK FRASE
3315 LINCOLN AVE
TWO RIVERS, WI 54241

TELEPHONE: (920) 793-2216, EXT 30
E-MAIL: NICK.FRASE@CHARTER.COM

* WISCONSIN PUBLIC SERVICE CORPORATION
GAS
ATTN: MR. JERRY PEOT
700 N ADAMS ST
GREEN BAY, WI 54307

TELEPHONE: (920) 657-1815
EMAIL: GJPEOT@WISCONSINPUBLICSERVICE.COM

* WISCONSIN PUBLIC SERVICE CORPORATION
ELECTRIC
ATTN: MR. JEFF PELISCHEK
700 N ADAMS ST
GREEN BAY, WI 54307

TELEPHONE: (920) 657-1816
EMAIL: JSPELISCHEK@WISCONSINPUBLICSERVICE.COM

2

* DENOTES DIGGERS HOTLINE MEMBER

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

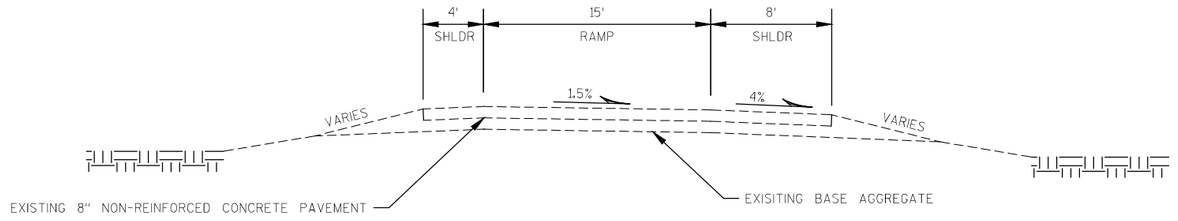
DNR LIAISON
DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGIONAL HEADQUARTERS
2984 SHAWANO AVENUE
GREEN BAY, WI 54313

ATTN: MR. MATT SCHAEVE
TELEPHONE: 920-662-5472
E-MAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	GENERAL NOTES	SHEET 2	E

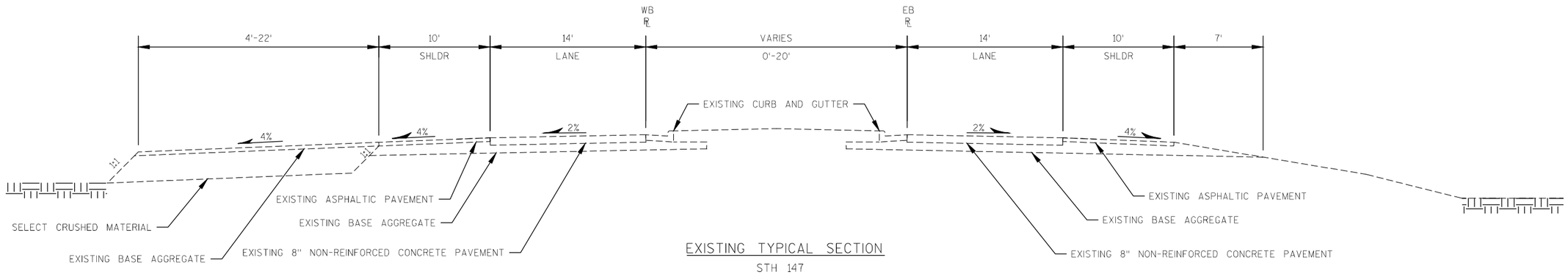
2

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	PROJECT OVERVIEW	SHEET 3	E



EXISTING TYPICAL SECTION

RAMPS

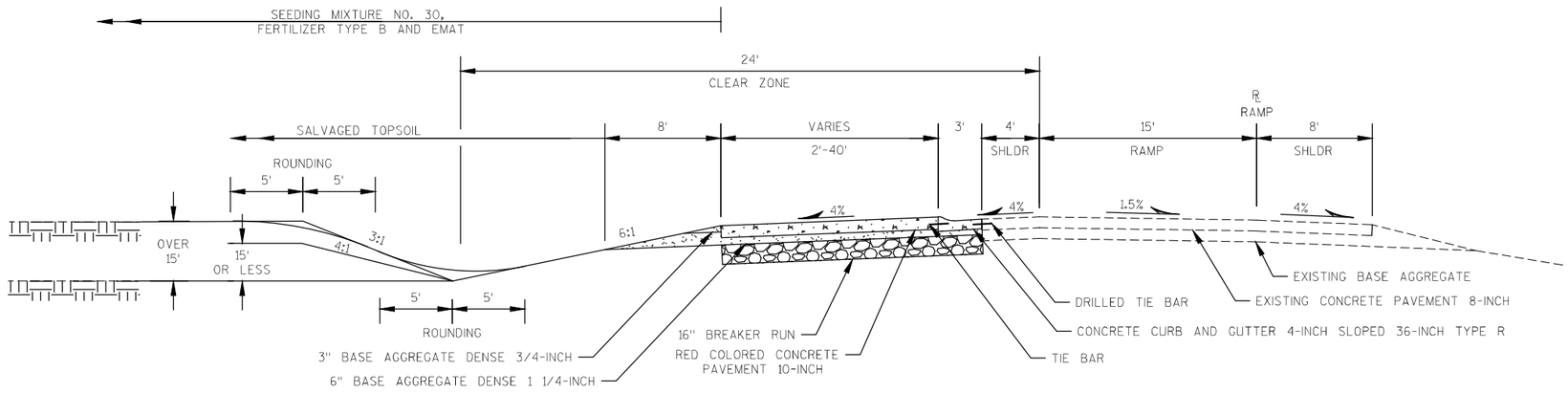


EXISTING TYPICAL SECTION

STH 147

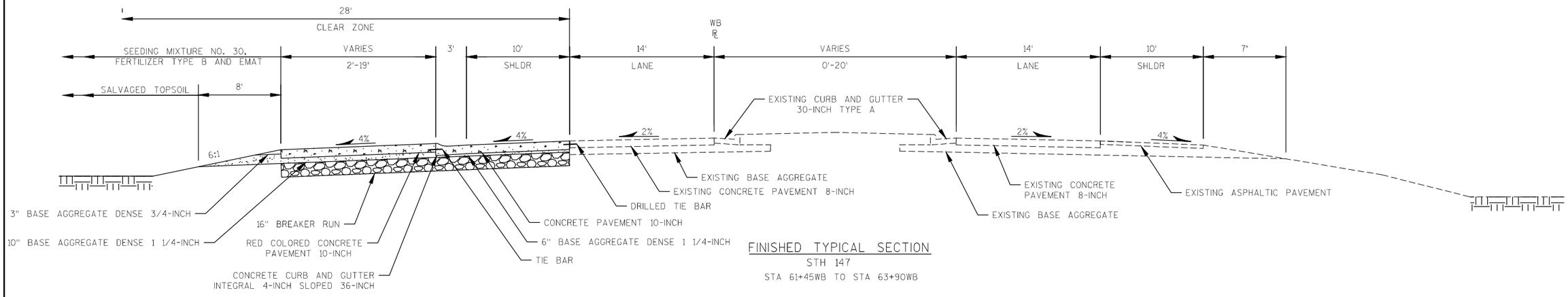
STA 61+45 LT TO ST 63+85 LT

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TYPICAL SECTION	SHEET 4	E



FINISHED TYPICAL SECTION

RAMPS



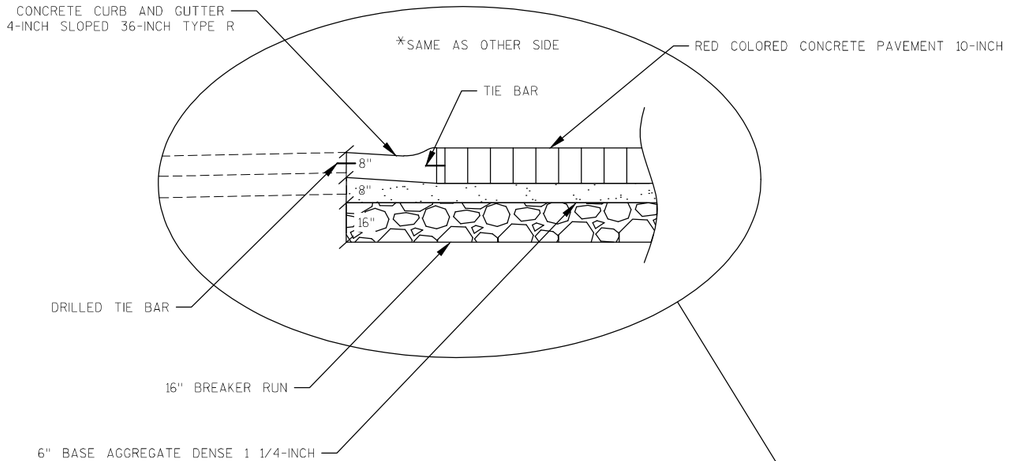
FINISHED TYPICAL SECTION

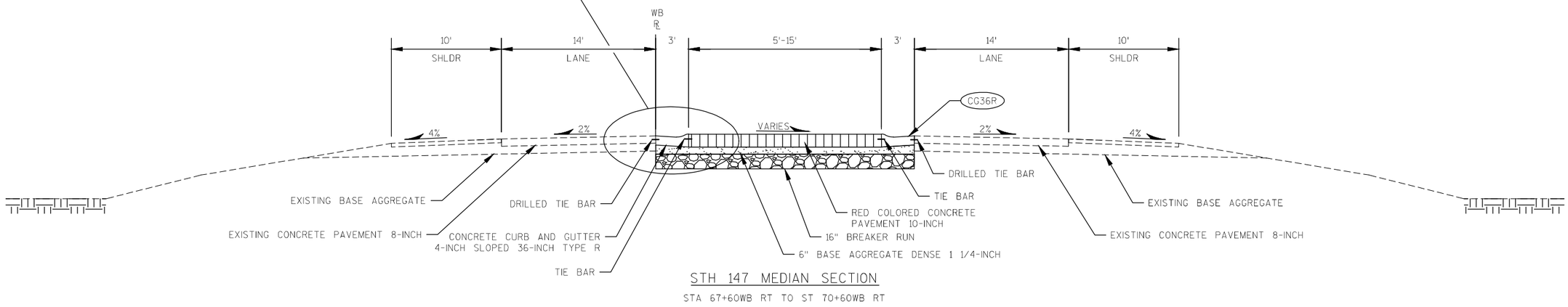
STH 147

STA 61+45WB TO STA 63+90WB

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TYPICAL SECTION	SHEET 5	E

2

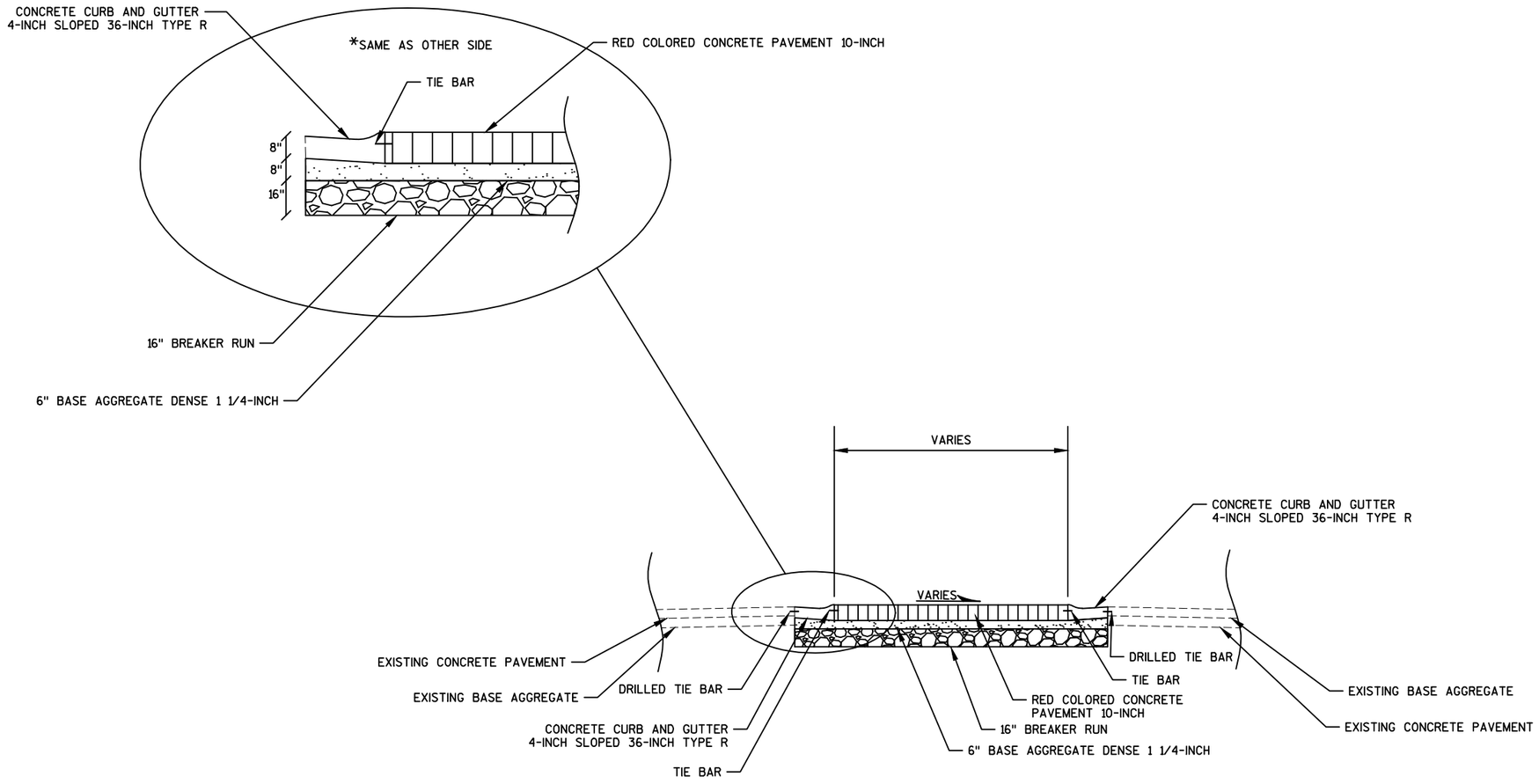




STH 147 MEDIAN SECTION

STA 67+60WB RT TO ST 70+60WB RT

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	STH 147 MEDIAN SECTION	SHEET 6	E



SPLITTER ISLAND

STA 0+80 B LT TO ST 1+30 B LT

PROJECT NO:1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 7	E

2

N

CTH Z

28'
CLEAR ZONE

STRUCTURE G-36-24

WPS
CHARTER

5' CONDUIT RIGID
NONMETALLIC SCH 40 2 INCH

PROPOSED RAMP GATE WITH TYPE 5 POLES,
CONCRETE BASES, TRANSFORMER BASES AND
2-40' RAMP GATE ASSEMBLY

75' CONDUIT SPECIAL 2 INCH

STRUCTURE G-36-25

PULL BOX

10' CONDUIT RIGID
NONMETALLIC SCH 40 2 INCH

TYPE 10 CONCRETE BASE
15' TRAFFIC STANDARD POLE
PEDESTAL BASE
SOLAR POWER SYSTEM

8' CONDUIT RIGID
NONMETALLIC SCH 40 2 INCH

OH

N

2

8' CONDUIT RIGID
NONMETALLIC SCH 40 2 INCH

TYPE 10 CONCRETE BASE
15' TRAFFIC STANDARD POLE
PEDESTAL BASE
SOLAR POWER SYSTEM

PULL BOX

10' CONDUIT RIGID
NONMETALLIC SCH 40 2 INCH

STRUCTURE G-36-15

75' CONDUIT SPECIAL 2 INCH

PROPOSED RAMP GATE WITH TYPE 5 POLES,
CONCRETE BASES, TRANSFORMER BASES AND
2-40' RAMP GATE ASSEMBLY

5' CONDUIT RIGID
NONMETALLIC SCH 40 2 INCH

STRUCTURE G-36-16

28'
CLEAR ZONE

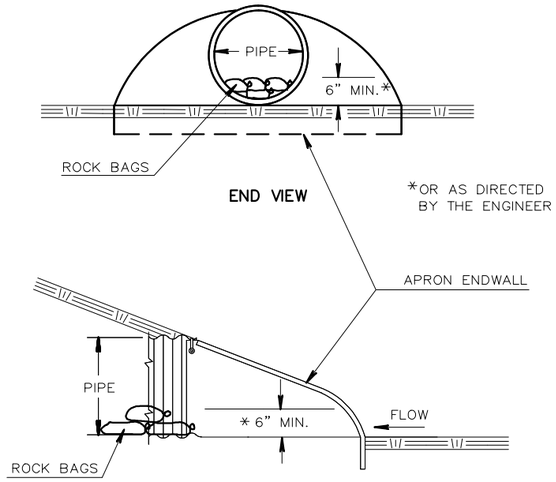
STH 147

WPS
CHARTER

OH

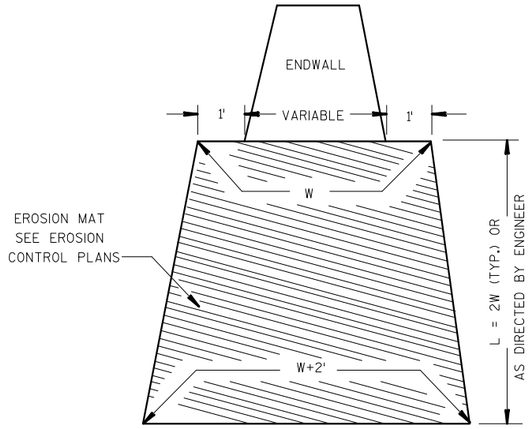
PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 8	E

2



SIDE VIEW

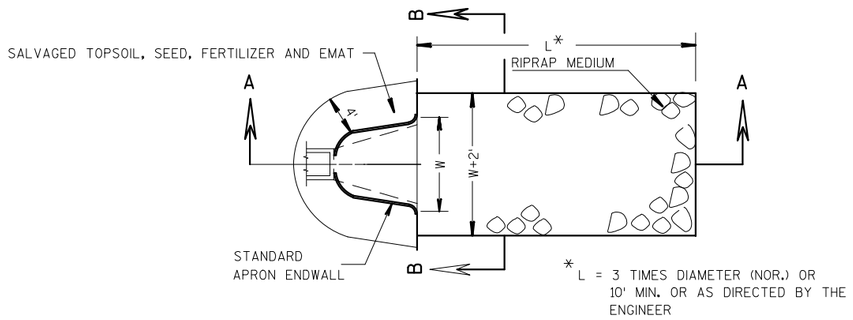
CULVERT PIPE DITCH CHECK

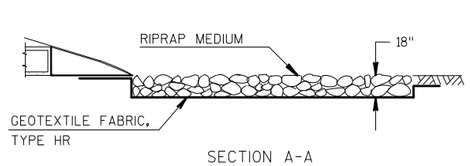


EROSION MAT TREATMENT AT CULVERTS

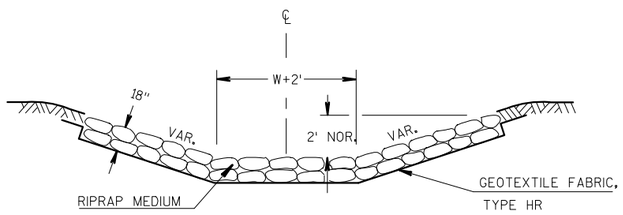
PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 9	E

2





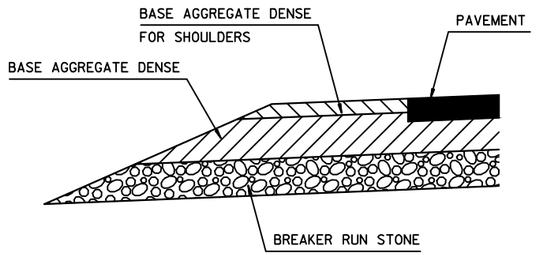
SECTION A-A



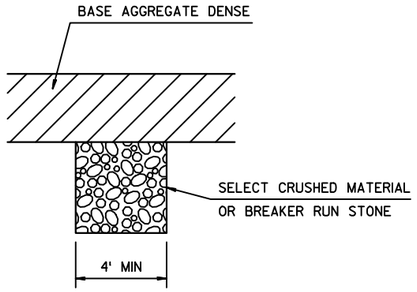
SECTION B-B

RIPRAP MEDIUM AND GEOTEXTILE FABRIC
DETAIL AT APRON ENDWALLS

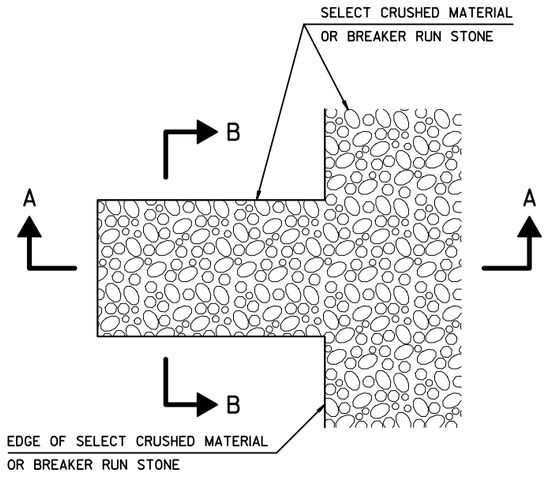
PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 10	E



SECTION A-A



SECTION B-B



DETAIL FOR FRENCH DRAINS

DRAINS ARE TO BE CONSTRUCTED AT LEAST EVERY 250'
AND AT EACH SAG VERTICAL CURVE IN THE PROFILE.

LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL
BE CONSIDERED INCIDENTAL TO THE ITEM BREAKER RUN STONE.

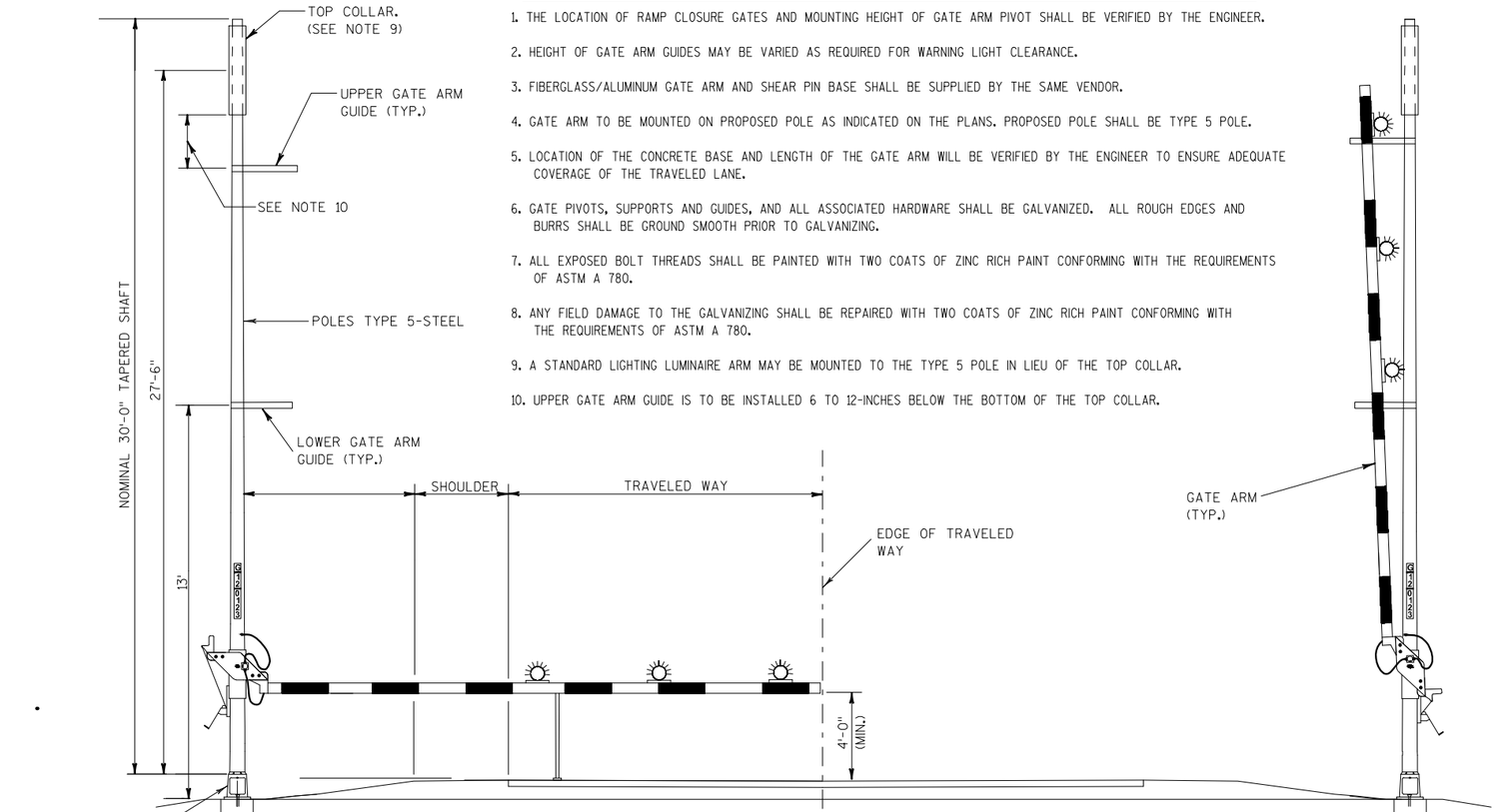
RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP- TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE- TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 2.50 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.87 ACRES

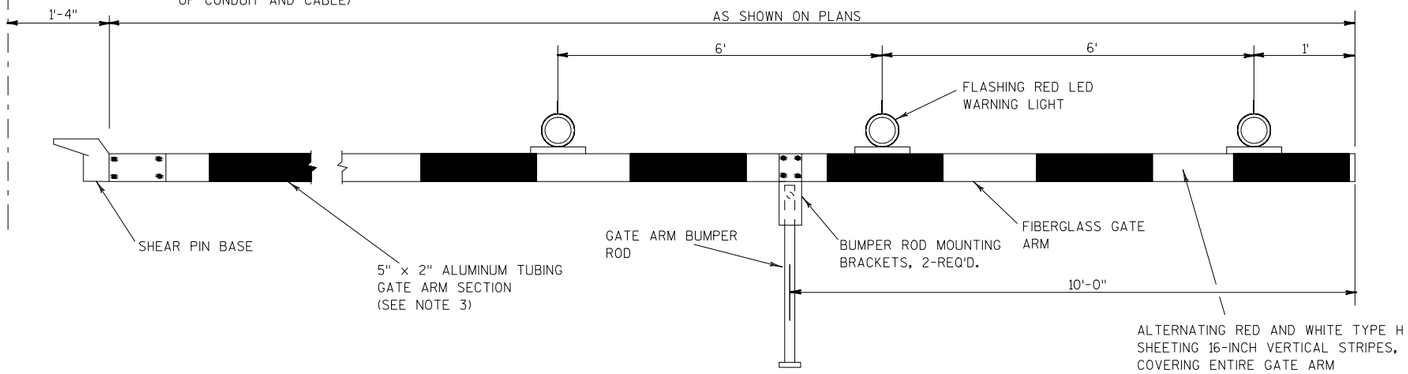
GENERAL NOTES

1. THE LOCATION OF RAMP CLOSURE GATES AND MOUNTING HEIGHT OF GATE ARM PIVOT SHALL BE VERIFIED BY THE ENGINEER.
2. HEIGHT OF GATE ARM GUIDES MAY BE VARIED AS REQUIRED FOR WARNING LIGHT CLEARANCE.
3. FIBERGLASS/ALUMINUM GATE ARM AND SHEAR PIN BASE SHALL BE SUPPLIED BY THE SAME VENDOR.
4. GATE ARM TO BE MOUNTED ON PROPOSED POLE AS INDICATED ON THE PLANS. PROPOSED POLE SHALL BE TYPE 5 POLE.
5. LOCATION OF THE CONCRETE BASE AND LENGTH OF THE GATE ARM WILL BE VERIFIED BY THE ENGINEER TO ENSURE ADEQUATE COVERAGE OF THE TRAVELED LANE.
6. GATE PIVOTS, SUPPORTS AND GUIDES, AND ALL ASSOCIATED HARDWARE SHALL BE GALVANIZED. ALL ROUGH EDGES AND BURRS SHALL BE GROUND SMOOTH PRIOR TO GALVANIZING.
7. ALL EXPOSED BOLT THREADS SHALL BE PAINTED WITH TWO COATS OF ZINC RICH PAINT CONFORMING WITH THE REQUIREMENTS OF ASTM A 780.
8. ANY FIELD DAMAGE TO THE GALVANIZING SHALL BE REPAIRED WITH TWO COATS OF ZINC RICH PAINT CONFORMING WITH THE REQUIREMENTS OF ASTM A 780.
9. A STANDARD LIGHTING LUMINAIRE ARM MAY BE MOUNTED TO THE TYPE 5 POLE IN LIEU OF THE TOP COLLAR.
10. UPPER GATE ARM GUIDE IS TO BE INSTALLED 6 TO 12-INCHES BELOW THE BOTTOM OF THE TOP COLLAR.

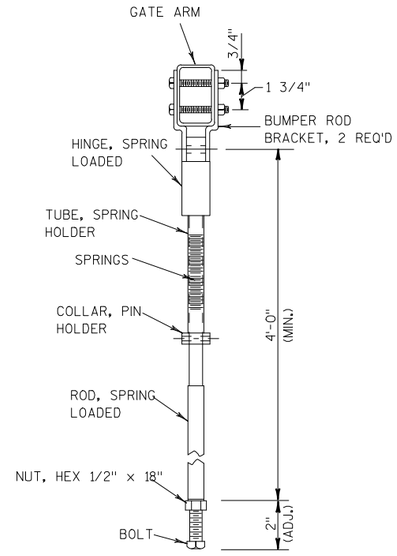


TYPICAL LOWERED POSITION
NOT TO SCALE

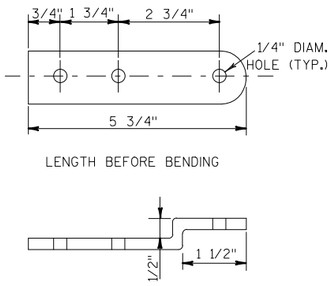
TYPICAL RAISED POSITION
NOT TO SCALE



GATE DETAIL
(SOLAR POWER OPTION)



GATE ARM BUMPER ROD DETAIL



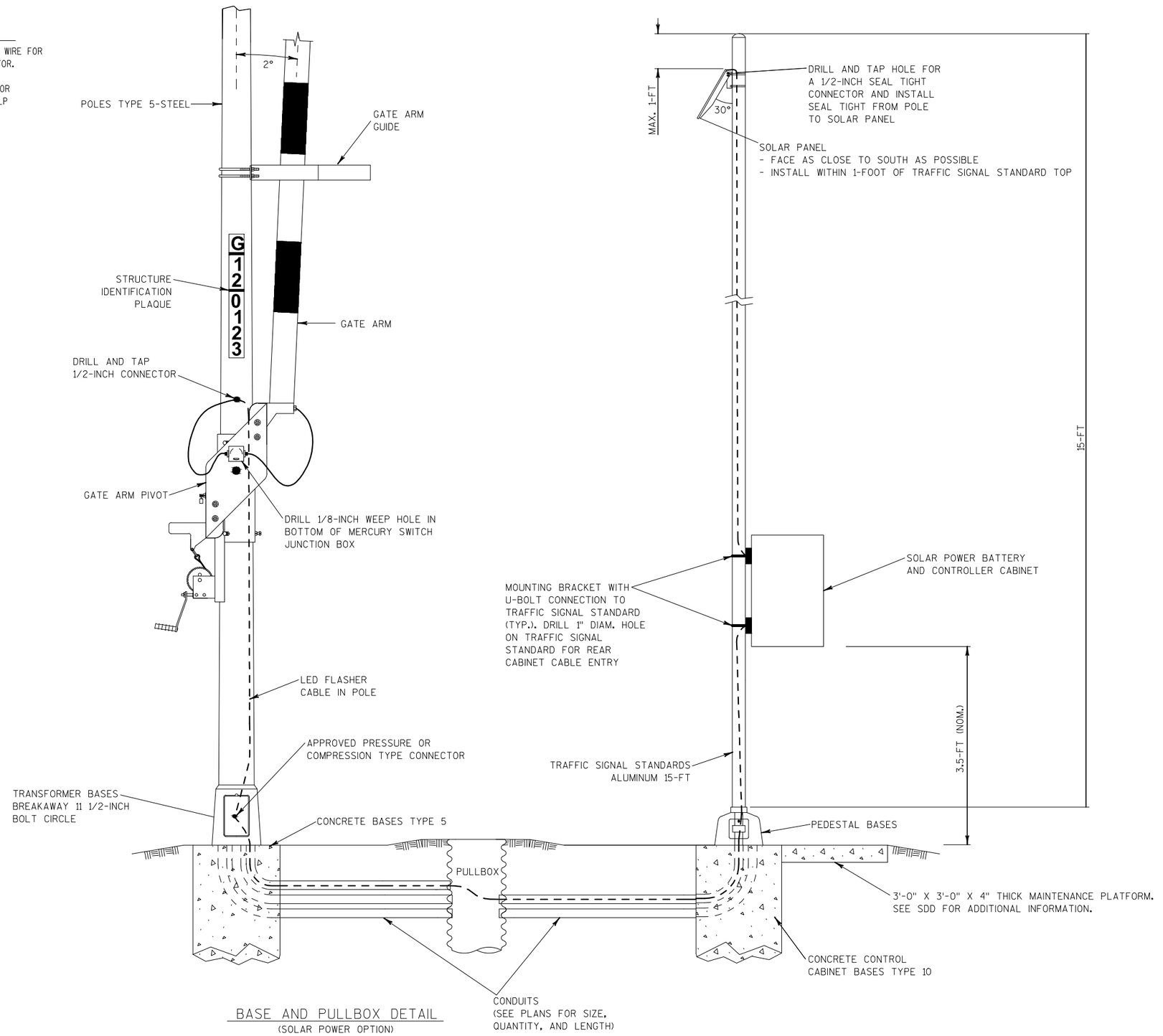
BUMPER ROD MOUNTING BRACKET DETAIL

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 12	E

WIRING NOTES

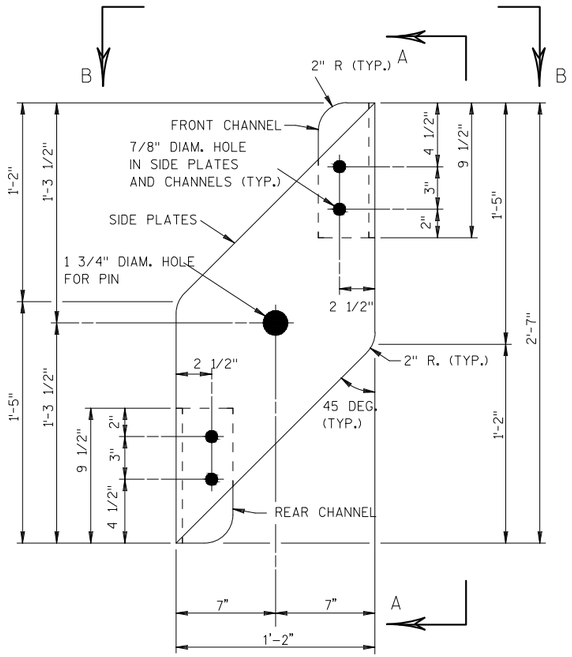
1. WIRING FROM SOLAR PANEL TO CABINET SHALL BE BLUE #10 XLP WIRE FOR POSITIVE CONDUCTOR AND WHITE #10 XLP FOR NEGATIVE CONDUCTOR.

2. WIRING FROM CABINET TO GATE ARM SHALL BE WHITE #10 XLP FOR COMMON, RED #10 XLP FOR FLASHER CIRCUIT 1, AND BLUE #10 XLP FOR FLASHER CIRCUIT 2.

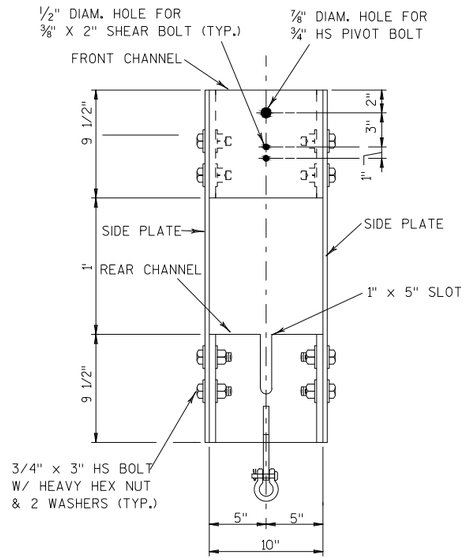


BASE AND PULLBOX DETAIL
(SOLAR POWER OPTION)

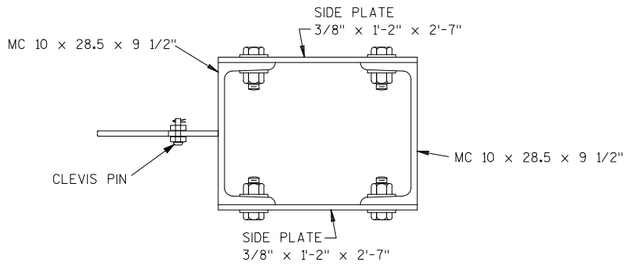
PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 13	E



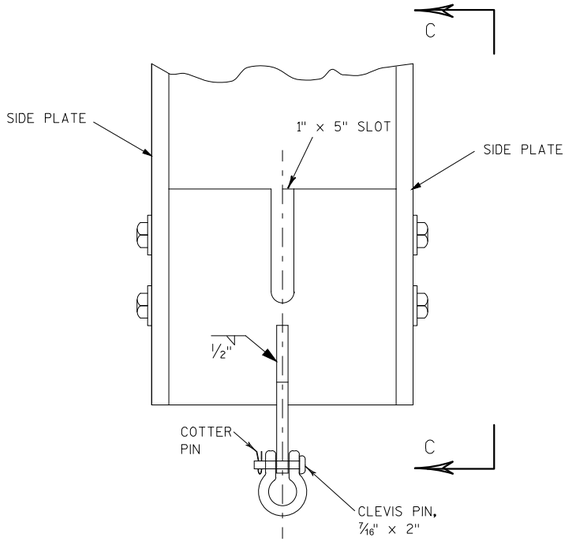
SIDE PLATE DETAIL



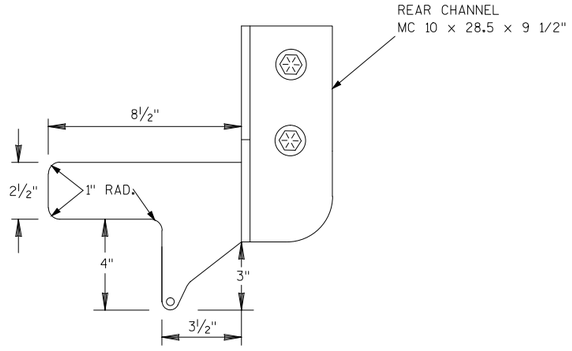
SECTION A-A



SECTION B-B



YOKE ASSEMBLY DETAIL

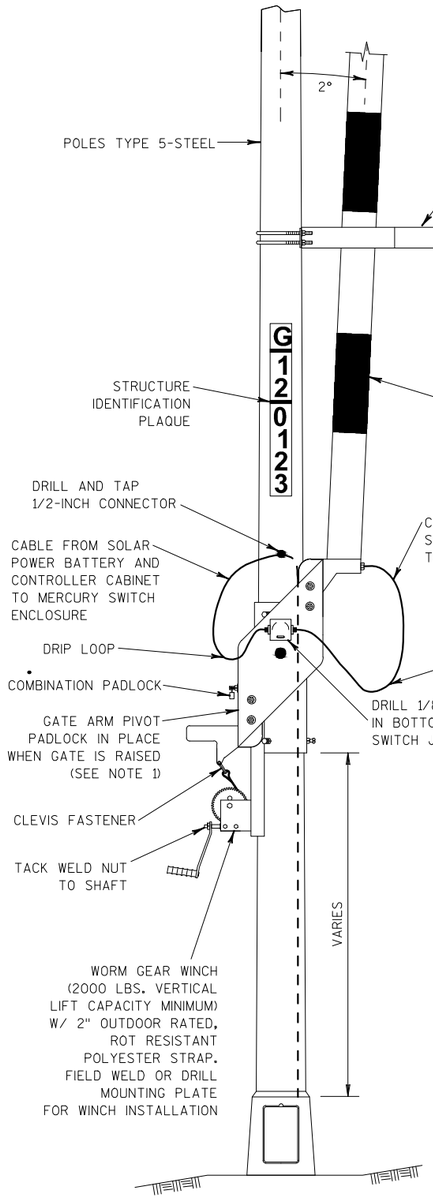


SECTION C-C

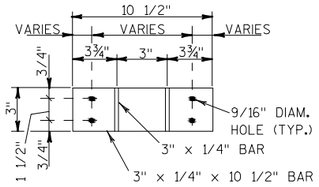
PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONSTRUCTION DETAILS	SHEET 14	E

GENERAL NOTES

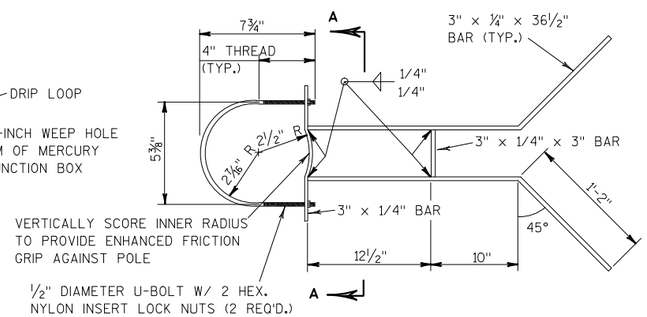
1. WHEN THE GATE IS FULLY RAISED, THE NUT AND WASHER SHALL BE PLACED SNUGLY AGAINST THE OUTSIDE OF THE REAR CHANNEL AND PADLOCKED IN PLACE.
2. WHEN THE GATE IS FULLY LOWERED, THE NUT AND WASHER SHALL BE PLACED SNUGLY AGAINST THE INSIDE OF THE REAR CHANNEL AND PADLOCKED INTO PLACE.
3. ANTI-SEIZE LUBRICATING MATERIAL SHALL BE USED ON ALL BOLT THREADS BEFORE INSTALLATION.
4. ALL BOLTS SHALL BE GALVANIZED AND CONFORM TO ASTM A307, GRADE A, UNLESS DESIGNATED AS HS (HIGH STRENGTH), WHICH SHALL CONFORM TO ASTM A325. BOLTS OF ½" NOMINAL DIAMTER OR LESS MAY BE STAINLESS STEEL.



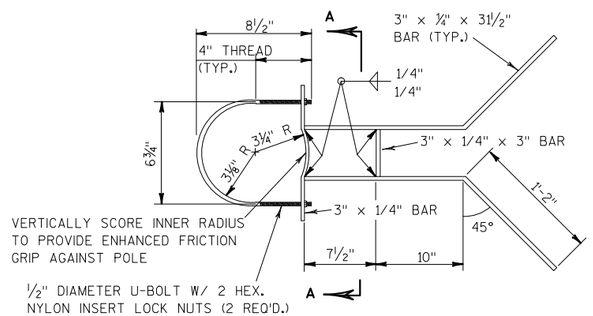
GATE PIVOT ASSEMBLY



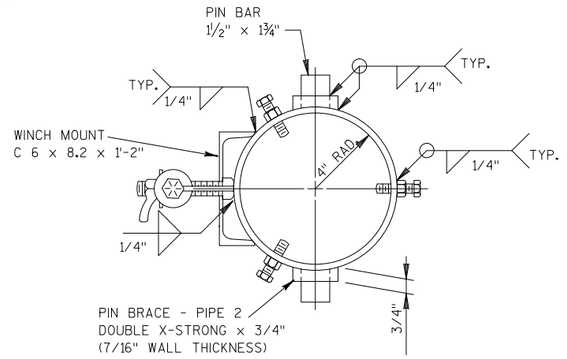
SECTION A-A
U-BOLTS NOT SHOWN



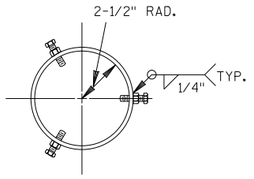
UPPER GATE ARM GUIDE DETAIL



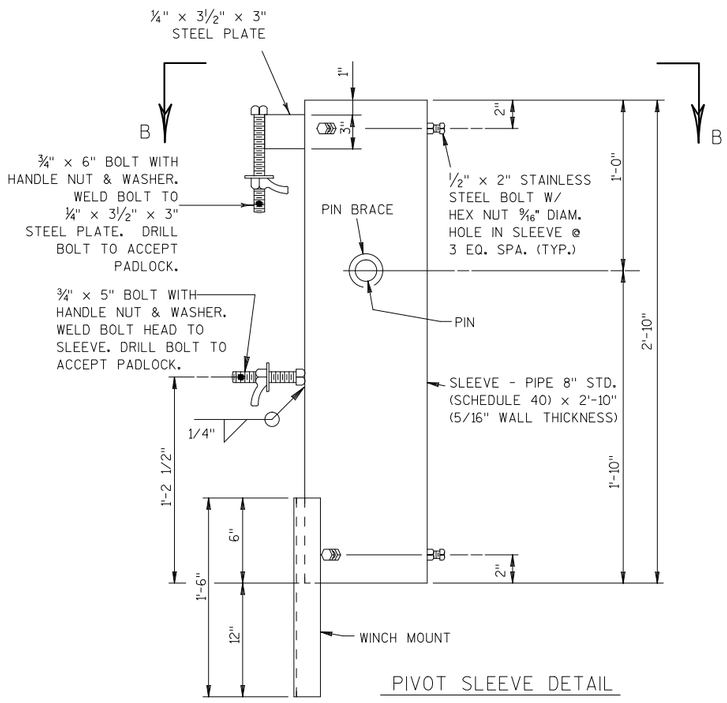
LOWER GATE ARM GUIDE DETAIL



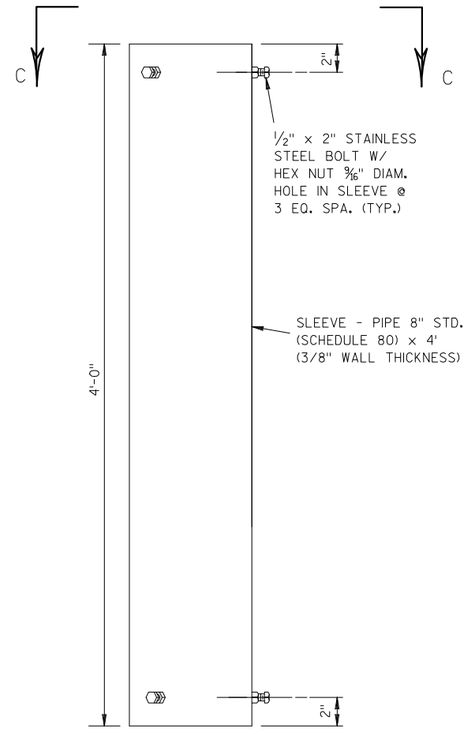
SECTION B-B



SECTION C-C



PIVOT SLEEVE DETAIL



TOP COLLAR

2

RED COLORED CONCRETE PAVEMENT 10-INCH

SURFACE WATER FLOW

EROSION MAT URBAN CLASS 1, TYPE B - SEED MIXTURE NO. 30

SILT FENCE

TEMPORARY DITCH CHECK

CULVERT PIPE CHECK

N

IH 43 SB

SLOPE INTERCEPT

17'

R/W

GRAV

CONC

EP: 13+49.75

59+00WB

60+00WB

61+00WB

62+00WB

63+00WB

64+00WB

ASPH

STH 147

CTH Z

BEGIN PROJECT
STA 60+90WB

CONCRETE SURFACE DRAIN

RIP RAP MEDIUM

6'

6'

13+00A

WETLANDS

RIP RAP MEDIUM

OH

R/W

18" RCCP EXTENSION

2'

WETLANDS

WPS
CHARTER

SLOPE INTERCEPT

12+00A

18'

SLOPE INTERCEPT

R/W

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	EROSION CONTROL	SHEET 16	E

2

2

RED COLORED CONCRETE PAVEMENT 10-INCH

SURFACE WATER FLOW

EROSION MAT URBAN CLASS 1, TYPE B - SEED MIXTURE NO. 30

SILT FENCE

CULVERT PIPE CHECK

TEMPORARY DITCH CHECK

INLET PROTECTION, TYPE C

N

IH 43 NB

STH 147

SLOPE INTERCEPT

WETLANDS

18" CMP

CONCRETE SURFACE DRAIN

RIP RAP MEDIUM

WPS CHARTER

R/W

END PROJECT
STA 70+73WB

CONCRETE SURFACE DRAIN

6' X 6'

SLOPE INTERCEPT

65+00WB 66+00WB 67+00WB 68+00WB 69+00WB 70+00WB

30+00C 31+00C

BP: 30+00.00

PC: 1+02.36B

PT: 1+66.33B

PT: 2+19.09B

EP: 3+62.18B

1+00B 2+00B 3+00B 3+62B

ASPH CONC GRAV OH

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	EROSION CONTROL	SHEET 17	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\022001_EC.DWG PLOT DATE : 6/12/2013 2:40 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

RED COLORED CONCRETE PAVEMENT 10-INCH

SURFACE WATER FLOW

N

IH 43 SB

R/W

MAINTENANCE OF EXISTING DRAINAGE

SLOPE INTERCEPT

CONC

GRAV

CONC

EP: 13+49.75

59+00WB

60+00WB

61+00WB

62+00WB

63+00WB

64+00WB

ASPH

STH 147

CTH Z

GRAV

CONC

ASPH

STH 147

REMOVE EXISTING APRON ENDWALLS

BEGIN PROJECT
STA 60+90WB

CONCRETE SURFACE DRAIN

WETLANDS

13+00A

18"

24'-18" CPRC @ 0.60%

STA 12+47'A', RT 62.0'
APRON ENDWALLS FOR CULVERT PIPE
REINFORCED CONCRETE 18-INCH

STA 12+77'A', LT 38.0'
APRON ENDWALLS FOR CULVERT PIPE
REINFORCED CONCRETE 18-INCH

12'-18" CPRC @ 0.60%

MAINTENANCE OF EXISTING DRAINAGE

OH

R/W

CONCRETE COLLAR

19'

WPS
CHARTER

CONCRETE COLLAR

8'

WETLANDS

SLOPE INTERCEPT

12+00A

SLOPE INTERCEPT

CONC

R/W

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	DRAINAGE	SHEET 18	E

2

2

RED COLORED CONCRETE PAVEMENT 10-INCH

SURFACE WATER FLOW

N

IH 43 NB

SLOPE INTERCEPT

WETLANDS

MAINTENANCE OF EXISTING DRAINAGE

CONCRETE SURFACE DRAIN

18" CMP

ASPH

CONC

23+00C

31+00C

R/W

END PROJECT
STA 70+73WB

GRAV

OH

65+00WB

66+00WB

67+00WB

BP: 30+00.00

30+50.00C

68+00WB

69+00WB

70+00WB

PI: 1+66.33B

PI: 2+61.09B

EP: 3+62.18B

3+00B

3+62B

2+00B

1+00B

PC: 1+02.36B

STH 147

CONCRETE SURFACE DRAIN

STA 70+60'WB', RT 18'
REMOVE INLET COVER 3.0
INLET COVER TYPE T - REQ'D
TEMPORARY COVER PLATE

WPS
CHARTER

SLOPE INTERCEPT

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	DRAINAGE	SHEET 19	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\022501_SS.DWG PLOT DATE : 6/12/2013 2:40 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

LEGEND

EXISTING SIGN MOUNTED ON POSTS

XR-XX DENOTES REMOVING SIGN NUMBER

1R-1 STOP R1-1

1R-2 PARK & RIDE D4-5

1R-3 DO NOT ENTER R5-1

1R-4 DO NOT ENTER R5-1

1R-5 R3-1

1R-6 R4-7

1R-9 SOUTH INTERSTATE 43 J3-1

1R-10 R3-2

1R-11 SOUTH INTERSTATE 43 J3-1

1R-12 RAMP CLOSED USE ALT ROUTE R11-54F

1R-13 DO NOT ENTER R5-1

1R-14 ONE WAY R6-2L

1R-15 RAMP CLOSED USE ALT ROUTE R11-54F

1R-7 SOUTH INTERSTATE 43 J3-1

1R-8 PARK & RIDE AHEAD D4-2A

1R-16 PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED R5-57

STH 147

IH 43 SB

N

2

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	EXISTING SIGNING REMOVAL	SHEET 20	E

2

2

LEGEND

EXISTING SIGN MOUNTED ON POST

XR-XX DENOTES REMOVING SIGN NUMBER

N

IH 43 NB

STH 147

2R-1 ONE WAY R6-2L

2R-2 RAMP CLOSED USE ALT ROUTE R11-54F

2R-3 NORTH INTERSTATE 43 J3-1

2R-4 R3-2

2R-5 DO NOT ENTER R5-1

2R-6 ONE WAY R6-2R

2R-7 ONE WAY R6-2L

2R-8 STOP R1-1

2R-9 STOP R1-1

2R-10 TO COUNTY R M1-5A M4-5

2R-11

2R-12 M6-1

2R-13 W6-2

2R-14 M2-1 JCT

2R-15 COUNTY R M1-5A

PROJECT NO:1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	EXISTING SIGNING REMOVAL	SHEET 21	E

NOTES:

SIGNS SHOWN ON THIS SHEET HAVE TUBULAR STEEL SIGN POSTS.

TOP OF SIGN BASES TO BE INSTALLED FLUSH WITH ADJACENT CONCRETE OR GROUND.

LEGEND

SIGNS MOUNTED ON POSTS

X-XX DENOTES SIGN NUMBER

1-1 STOP R1-1 30"X30"

1-2 PARK & RIDE D4-5 36"X48"

1-3 DO NOT ENTER R5-1 30"X30"

1-4 DO NOT ENTER R5-1 30"X30"

1-5 R3-1 24"X24"

1-6 R4-7 24"X30"

1-7 SOUTH INTERSTATE 43 J3-1 24"X57"

1-8 PARK & RIDE AHEAD D4-5A 36"X48"

1-9 SOUTH INTERSTATE 43 J3-1 24"X57"

1-10 R3-2 24"X24"

1-11 SOUTH INTERSTATE 43 J3-1 24"X57"

1-12 RAMP CLOSED USE ALT ROUTE R11-54F 48"X30"

1-13 DO NOT ENTER R5-1 30"X30"

1-14 ONE WAY R6-2L 24"X30"

1-15 RAMP CLOSED USE ALT ROUTE R11-54F 48"X30"

1-16 PEDESTRIANS BICYCLES NON MOTORIZED TRAFFIC MOTOR BICYCLES PROHIBITED R5-57 36"X36"

PAVEMENT MARKINGS, CONCRETE CORRUGATED MEDIAN, EPOXY (SEE SDD)

WPS CHARTER

STH 147

IH 43 SB

N

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	PERMANENT SIGNING AND PAVEMENT MARKINGS	SHEET 22	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\023202_PS.DWG PLOT DATE : 6/12/2013 2:40 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

2

2

NOTES:

SIGNS SHOWN ON THIS SHEET HAVE TUBULAR STEEL SIGN POSTS.

TOP OF SIGN BASES TO BE INSTALLED FLUSH WITH ADJACENT CONCRETE OR GROUND.

LEGEND

SIGNS MOUNTED ON POSTS

X-XX DENOTES SIGN NUMBER

N

IH 43 NB

2-1 ONE WAY R6-2L 24"X30"

2-2 RAMP CLOSED USE ALT ROUTE R11-54F 48"X30"

2-3 NORTH INTERSTATE 43 J3-1 24"X57"

2-4 R3-2 24"X24"

2-5 DO NOT ENTER R5-1 30"X30"

PAVEMENT MARKING CURB, EPOXY, YELLOW

STH 147

2-6 ONE WAY R6-2R 24"X30"

PAVEMENT MARKING CURB, EPOXY, YELLOW

2-7 ONE WAY R6-2L 24"X30"

WPS CHARTER

2-8 STOP R1-1 30"X30"

2-9 STOP R1-1 30"X30"

2-10 TO COUNTY R M1-5A 24"X24" M4-5 24"X12"

2-11

2-12 M6-1 24"X24"

2-13 W6-2 36"x36"

STH 147

M2-1 21"x15"

2-14 JCT

2-15 COUNTY R M1-5A 24"x24"

PROJECT NO:1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	PERMANENT SIGNING AND PAVEMENT MARKING	SHEET 23	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\023202_PS.DWG PLOT DATE : 6/12/2013 2:40 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:50 FT

2

2

GENERAL TRAFFIC CONTROL NOTES:

FOR OTHER PERTINENT DETAILS, SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES"

ALL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

PCMS LOCATED BY FIELD ENGINEER.

LEGEND

- DRUM
- DIRECTION OF TRAVEL
- WORK ZONE

N

IH 43 SB

IH 43 NB

WORK AREA 1

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

STH 147

CTH R

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TRAFFIC CONTROL	SHEET 24	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\025001_TC.DWG PLOT DATE : 6/12/2013 2:41 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

2

GENERAL TRAFFIC CONTROL NOTES:
FOR OTHER PERTINENT DETAILS ,SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES"

ALL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

PCMS LOCATED BY FIELD ENGINEER.

LEGEND

- DRUM
- DIRECTION OF TRAVEL
- WORK ZONE
- SIGN MOUNT ON POST

N

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

YIELD
R1-2

W3-2

IH 43 SB

IH 43 NB

WORK AREA 2

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

CTH Z

STH 147

WORK AREA 3

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TRAFFIC CONTROL	SHEET	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\025001_TC.DWG PLOT DATE : 6/12/2013 2:41 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

GENERAL TRAFFIC CONTROL NOTES:

FOR OTHER PERTINENT DETAILS, SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES"

ALL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

PCMS LOCATED BY FIELD ENGINEER.

LEGEND

- DRUM
- DIRECTION OF TRAVEL
- WORK ZONE

N

IH 43 SB

IH 43 NB

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

STH 147

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

WORK AREA 4

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

CTH R

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TRAFFIC CONTROL	SHEET 26	E

GENERAL TRAFFIC CONTROL NOTES:
FOR OTHER PERTINENT DETAILS ,SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES"

ALL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

PCMS LOCATED BY FIELD ENGINEER.

LEGEND

- DRUM
- DIRECTION OF TRAVEL
- WORK ZONE

N

IH 43 SB

IH 43 NB

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

CTH Z

STH 147

WORK AREA 5

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TRAFFIC CONTROL	SHEET 27	E

2

2

GENERAL TRAFFIC CONTROL NOTES:

FOR OTHER PERTINENT DETAILS, SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES"

ALL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

PCMS LOCATED BY FIELD ENGINEER.

LEGEND

- DRUM
- DIRECTION OF TRAVEL
- WORK ZONE

N

IH 43 SB

IH 43 NB

WORK AREA 6

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

STH 147

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

SEE SDD TRAFFIC CONTROL FOR LANE CLOSURES (SUITABLE FOR MOVING OPERATIONS)

CTH R

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TRAFFIC CONTROL	SHEET 28	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\025001_TC.DWG PLOT DATE : 6/12/2013 2:41 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:100 FT

GENERAL TRAFFIC CONTROL NOTES:
FOR OTHER PERTINENT DETAILS ,SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES"

ALL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.

PCMS LOCATED BY FIELD ENGINEER.

LEGEND

- DRUM
- DIRECTION OF TRAVEL
- WORK ZONE

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	TRAFFIC CONTROL	SHEET 29	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\025001_TC.DWG PLOT DATE : 6/12/2013 2:41 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

2

N

BEGIN PROJECT
STA 60+90WB
Y = 368,174.575
X = 200,770.611

58+27WB
60+00WB
EP: 13+49.75A
13+50A
13+00A
12+00A
11+00A
10+00A
BP: 58+26.73WB
N13° 12' 06"W
BP: 10+00.00A

IH 43 SB
IH 43 NB

65+00WB
S89° 12' 47"E
30+00C
STH 147
70+00WB
71+61WB
EP: 71+60.82WB

EP: 33+48.82C
33+49C
33+00C
32+00C
N11° 40' 15"W
31+00C
BP: 30+00.00C

BEGIN CONSTRUCTION 'C' LINE
STA 30+00C
Y = 368,165.445
X = 201,435.257

END PROJECT
STA 70+73

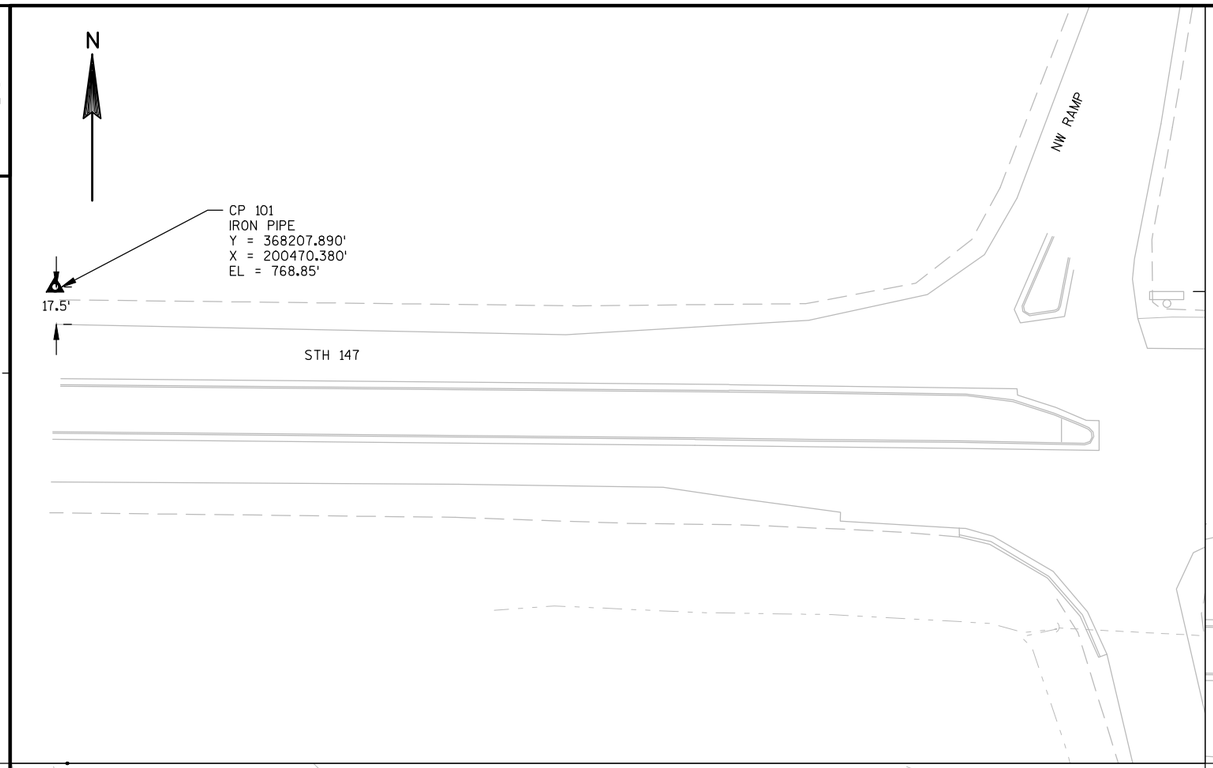
PC: 1+02.36B
N83° 50' 22"E
2+00B
N89° 51' 56"E
3+00B
3+62B
1+00B
N22° 45' 19"E
PT: 1+66.33B
PI: 2+61.09B
EP: 3+62.18B
0+00B
BP: 0+00.00B

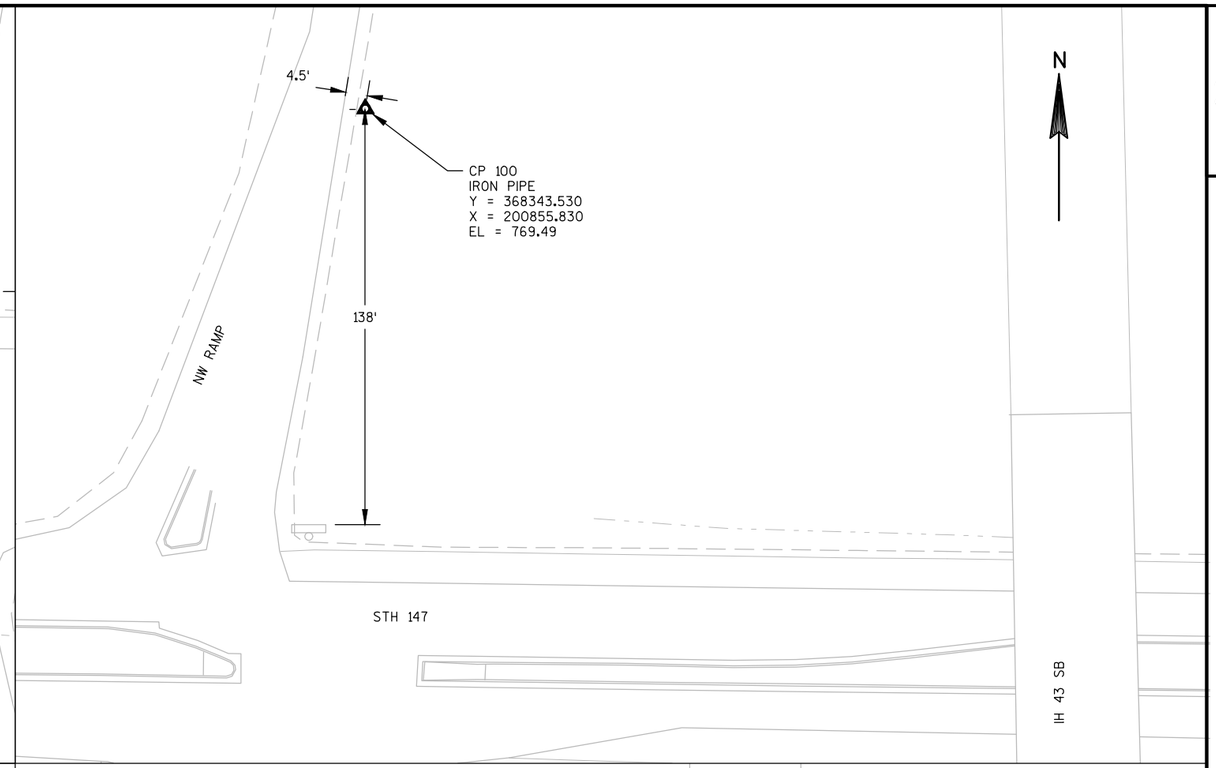
BEGIN CONSTRUCTION 'A' LINE
STA 10+00A
Y = 367,833.589
X = 200,885.083

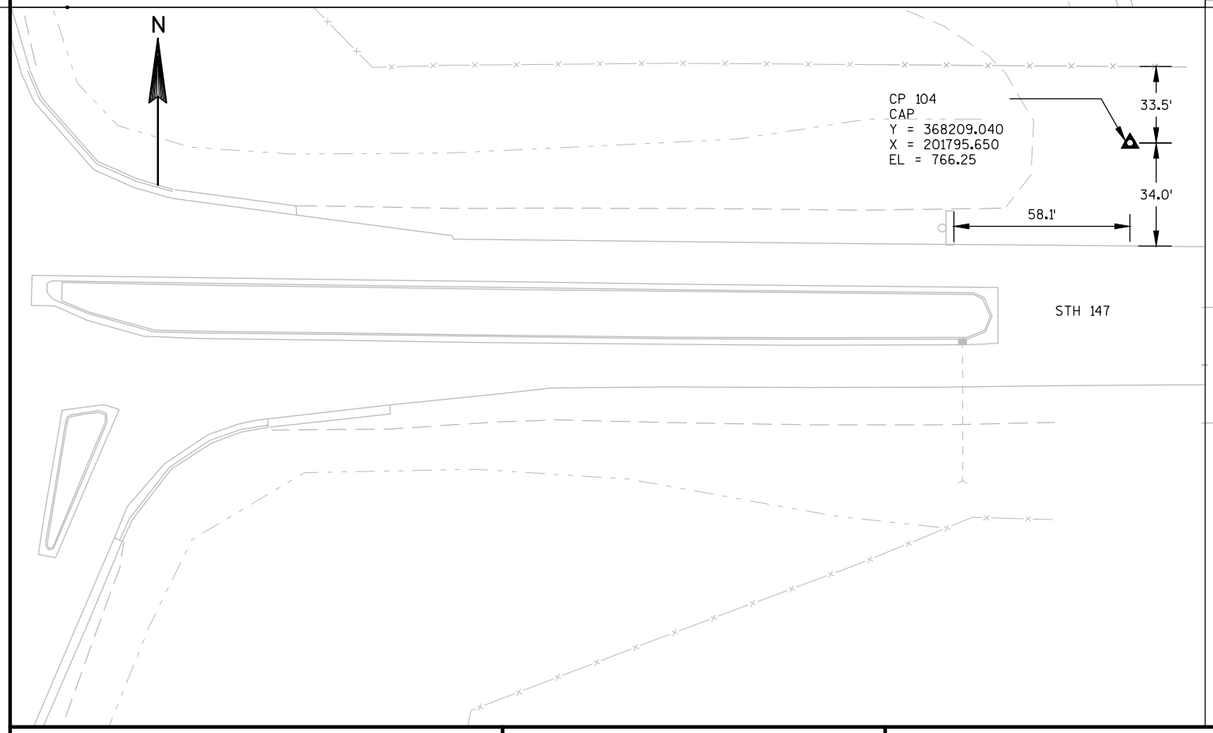
BEGIN CONSTRUCTION 'B' LINE
STA 0+00B
Y = 367,987.201
X = 201,422.151

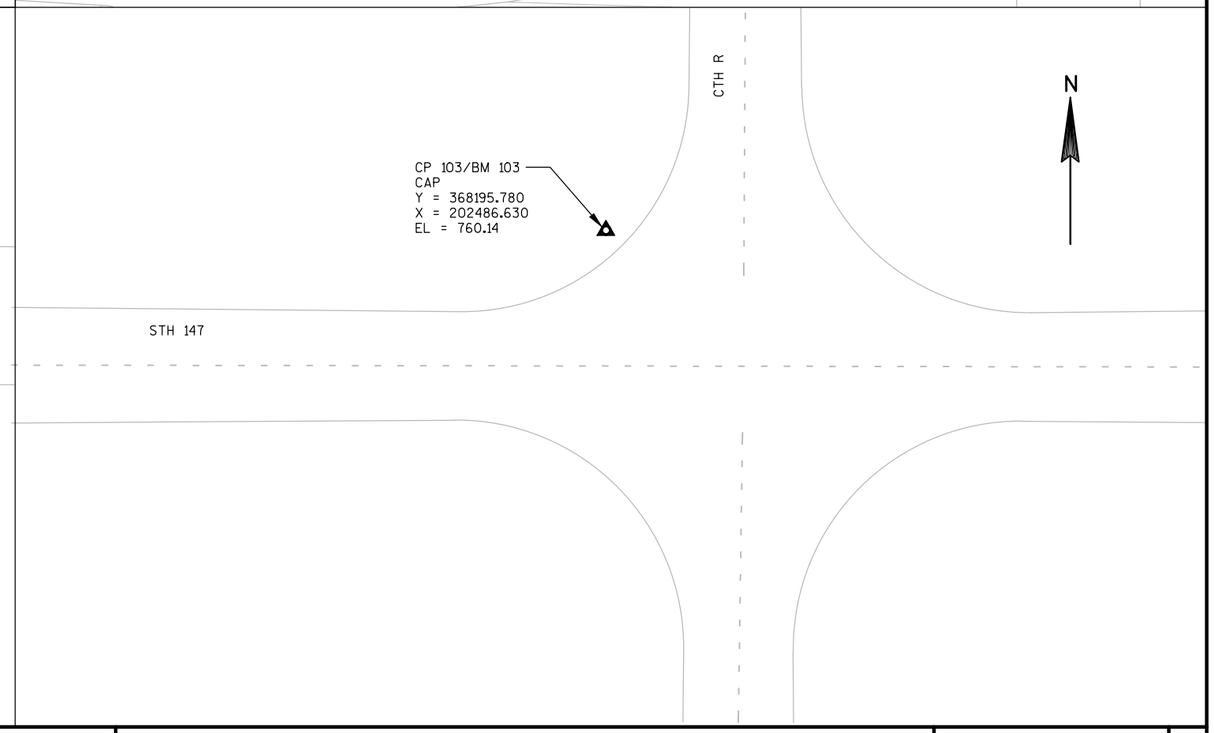
PI STA = 1+37.76
Y = 368114.24
X = 201475.44
DELTA = 61°05'03"
D = 95°29'35"
T = 35.40
L = 63.97
R = 60.00
PC STA = 1+02.36
PT STA = 1+66.33

PROJECT NO:1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	ALIGNMENT DETAIL	SHEET 30	E









PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CONTROL POINTS	SHEET 31	E

DATE 13JUN13 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1226-08-71 QUANTITY
0010	204.0150	REMOVING CURB & GUTTER	LF	1,020.000	1,020.000
0020	204.0155	REMOVING CONCRETE SIDEWALK	SY	35.000	35.000
0030	205.0100	EXCAVATION COMMON	CY	1,215.000	1,215.000
0040	213.0100	FINISHING ROADWAY (PROJECT) 01. 1226-08-71	EACH	1.000	1.000
0050	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	15.000	15.000
0060	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,310.000	1,310.000
0070	311.0110	BREAKER RUN	TON	1,025.000	1,025.000
0080	405.0100	COLORING CONCRETE RED	CY	490.000	490.000
0090	415.0100	CONCRETE PAVEMENT 10-INCH	SY	2,010.000	2,010.000
0100	416.0610	DRILLED TIE BARS	EACH	629.000	629.000
0110	416.1010	CONCRETE SURFACE DRAINS	CY	6.000	6.000
0120	520.8000	CONCRETE COLLARS FOR PIPE	EACH	2.000	2.000
0130	522.0118	CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	36.000	36.000
0140	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	2.000	2.000
0150	601.0501	CONCRETE CURB AND GUTTER INTEGRAL 4-INCH SLOPED 36-INCH	LF	244.000	244.000
0160	601.0580	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE R	LF	1,530.000	1,530.000
0170	606.0200	RIPRAP MEDIUM	CY	8.000	8.000
0180	611.0652	INLET COVERS TYPE T	EACH	1.000	1.000
0190	611.8120.S	COVER PLATES TEMPORARY	EACH	1.000	1.000
0200	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1226-08-71	EACH	1.000	1.000
0210	619.1000	MOBILIZATION	EACH	1.000	1.000
0220	620.0100	CONCRETE CORRUGATED MEDIAN	SF	730.000	730.000
0230	625.0500	SALVAGED TOPSOIL	SY	1,000.000	1,000.000
0240	628.1504	SILT FENCE	LF	1,225.000	1,225.000
0250	628.1520	SILT FENCE MAINTENANCE	LF	1,225.000	1,225.000
0260	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0270	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0280	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,950.000	1,950.000
0290	628.7015	INLET PROTECTION TYPE C	EACH	1.000	1.000
0300	628.7504	TEMPORARY DITCH CHECKS	LF	100.000	100.000
0310	628.7555	CULVERT PIPE CHECKS	EACH	10.000	10.000
0320	629.0210	FERTILIZER TYPE B	CWT	2.000	2.000
0330	630.0120	SEEDING MIXTURE NO. 20	LB	15.000	15.000
0340	630.0130	SEEDING MIXTURE NO. 30	LB	29.000	29.000
0350	630.0200	SEEDING TEMPORARY	LB	52.000	52.000
0360	634.0812	POSTS TUBULAR STEEL 2X2-INCH X 12-FT	EACH	23.000	23.000
0370	634.0814	POSTS TUBULAR STEEL 2X2-INCH X 14-FT	EACH	14.000	14.000
0380	637.0202	SIGNS REFLECTIVE TYPE II	SF	172.790	172.790
0390	637.0502	SIGNS NON REFLECTIVE FOLDING TYPE II	SF	30.000	30.000
0400	638.2602	REMOVING SIGNS TYPE II	EACH	31.000	31.000
0410	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	17.000	17.000
0420	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000
0430	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1226-08-71	EACH	1.000	1.000
0440	643.0300	TRAFFIC CONTROL DRUMS	DAY	780.000	780.000
0450	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	15.000	15.000
0460	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	120.000	120.000
0470	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	60.000	60.000
0480	643.0900	TRAFFIC CONTROL SIGNS	DAY	367.000	367.000
0490	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	31.000	31.000

3

DATE 13JUN13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1226-08-71 QUANTITY
0500	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	40.000	40.000
0510	647.0456	PAVEMENT MARKING CURB EPOXY	LF	115.000	115.000
0520	647.0856	PAVEMENT MARKING CONCRETE CORRUGATED MEDIAN EPOXY	SF	730.000	730.000
0530	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	1,333.000	1,333.000
0540	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	918.000	918.000
0550	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1226-08-71	LS	1.000	1.000
0560	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	918.000	918.000
0570	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	46.000	46.000
0580	652.0605	CONDUIT SPECIAL 2-INCH	LF	150.000	150.000
0590	653.0135	PULL BOXES STEEL 24X36-INCH	EACH	2.000	2.000
0600	654.0105	CONCRETE BASES TYPE 5	EACH	4.000	4.000
0610	654.0220	CONCRETE CONTROL CABINET BASES TYPE 10	EACH	2.000	2.000
0620	655.0240	CABLE TRAFFIC SIGNAL 7-14 AWG	LF	226.000	226.000
0630	657.0100	PEDESTAL BASES	EACH	2.000	2.000
0640	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	4.000	4.000
0650	657.0321	POLES TYPE 5-STEEL	EACH	4.000	4.000
0660	657.0425	TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	EACH	2.000	2.000
0670	690.0150	SAWING ASPHALT	LF	21.000	21.000
0680	690.0250	SAWING CONCRETE	LF	905.000	905.000
0690	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000
0700	SPV.0060	SPECIAL 01. RAMP CLOSURE GATES SOLAR POWERED 40-FT	EACH	4.000	4.000
0710	SPV.0105	SPECIAL 01. MAINTENANCE OF EXISTING DRAINAGE	LS	1.000	1.000

3

REMOVING CURB AND GUTTER

CATEGORY	STATION	-	STATION	LOCATION	204.0150 (LF)
010	12+50 A	-	13+15 A	LT	75
	0+90 B	-	1+65 B	RT	75
	0+80 B	-	1+30 B	ISLAND	130
	60+90 WB	-	61+35 WB	MEDIAN	90
	67+50 WB	-	70+75 WB	MEDIAN	650
				TOTAL	1020

REMOVING CONCRETE SIDEWALK

CATEGORY	STATION	-	STATION	LOCATION	204.0155 REMOVING CONCRETE SIDEWALK (SY)
010	0+80 B	-	1+30 B	ISLAND	35
				TOTAL	35

BASE AGGREGATE DENSE

CATEGORY	STATION	-	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)
010						
	11+30 A	-	13+13 A	LT & RT	5	300
	60+90 WB	-	61+35 WB	RT	--	25
	61+45 WB	-	63+90 WB	LT	4	340
	0+90 B	-	2+62 B	RT	3	150
	0+80 B	-	1+30 B	ISLAND	--	25
	67+53 WB	-	70+73 WB	RT	--	240
	30+44 C	-	32+25 C	LT	3	230
				TOTAL	15	1310

BREAKER RUN

CATEGORY	STATION	-	STATION	LOCATION	311.0110 BREAKER RUN (TON)
010					
	11+30 A	-	13+13 A	LT & RT	380
	60+90 WB	-	61+35 WB	RT	55
	61+45 WB	-	63+90 WB	LT	220
	0+90 B	-	2+62 B	RT	30
	0+80 B	-	1+30 B	ISLAND	70
	67+53 WB	-	70+73 WB	RT	160
	30+44 C	-	32+25 C	LT	110
				TOTAL	1025

CONCRETE PAVEMENT

CATEGORY	STATION	-	STATION	LOCATION	405.0100 COLORING CONCRETE RED (CY)	415.0100 CONCRETE PAVEMENT 10-INCH (SY)
010						
	11+30 A	-	13+13 A	LT & RT	99	355
	61+45 WB	-	63+90 WB	LT	90	595
	0+90 B	-	2+62 B	RT	50	175
	0+80 B	-	1+30 B	ISLAND	25	70
	67+53 WB	-	70+73 WB	RT	128	460
	30+44 C	-	32+25 C	LT	98	355
				TOTAL	490	2010

DRILLED TIE BARS

CATEGORY	STATION	-	STATION	LOCATION	416.0610 DRILLED TIE BARS (EACH)
010					
	11+30 A	-	13+13 A	LT & RT	118
	60+90 WB	-	61+35 WB	RT	29
	61+45 WB	-	63+90 WB	LT	80
	0+90 B	-	2+62 B	RT	57
	0+80 B	-	1+30 B	ISLAND	45
	67+53 WB	-	70+73 WB	RT	224
	30+44 C	-	32+25 C	LT	76
				TOTAL	629

CONCRETE SURFACE DRAINS

CATEGORY	STATION	LOCATION	416.1010 CONCRETE SURFACE DRAINS (CY)
010			
	13+35.45 A	LT	2
	2+61.62 B	RT	2
	30+43.96 C	LT	2
		TOTAL	6

EARTHWORK SUMMARY

205.0100
COMMON EXCAVATION

CATEGORY	STATION	-	STATION	LOCATION	(1) CUT FROM EW DATA (CY)	(2) EBS (CY)	(3) REDUCED EBS IN FILL FACTOR = 0.8 (CY)	(4) EXPANDED EBS BACKFILL FACTOR = 1.3 (CY)	(5) EXPANDED FILL FROM EW DATA (CY)	(6) EXPANDED FILL (CY)	(7) MASS ORDINATE (CY)	(8) BORROW (CY)	WASTE (CY)
010													
	11+30 A	-	13+10 A	SW ENTRANCE RAMP	149				36	36	113		113
	0+90 B	-	2+60 B	SE EXIT RAMP	223				45	45	178		178
	30+45 C	-	32+25 C	NE ENTRANCE RAMP	195				106	106	89		89
	61+50 WB		63+90 WB	STH 147 SHOULDER	390				59	59	331		331
	67+60 WB	-	70+70 WB	STH 147 MEDIAN	258						258		258
				TOTAL	1215				246	246	969		969
					1215								

(1) COMMON FROM COMPUTER EARTHWORK DATA, INCLUDES PAVEMENT REMOVAL
(2) UNDISTRIBUTED EBS
EBS AREAS TO BE BACKFILLED WITH BREAKER RUN
EBS IS ESTIMATED AS AN UNDISTRIBUTED QUANTITY
EBS QUANTITIES ARE USED IN EARTHWORK BALANCE
(3) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.8
(4) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH SELECT CRUSHED MATERIAL
(5) EXPANDED FILL FROM COMPUTER EARTHWORK DATA
(6) EXPANDED FILL. FACTOR = 1.3
EXPANDED FILL = EW DATA FILL - REDUCED EBS IN FILL
(7) MASS ORDINATE IS + OR - QUANTITY FOR STAGE . PLUS IS EXCESS, MINUS IS SHORTAGE.

3

CONCRETE COLLARS FOR PIPE

CATEGORY	STATION	LOCATION	520.8000 CONCRETE COLLARS FOR PIPE (EACH)
010			
	12+77 A	LT	1
	12+47 A	RT	1
		TOTAL	2

CULVERT PIPE REINFORCED CONCRETE CLASS III

CATEGORY	STATION	LOCATION	522.0118 CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH (LF)
010			
	12+77 A	LT	12
	12+47 A	RT	24
		TOTAL	36

APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE

CATEGORY	STATION	LOCATION	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH (EACH)
010			
	12+77 A	LT 38.0'	1
	12+47 A	RT 62.0'	1
		TOTAL	2

3

CONCRETE CURB & GUTTER

CATEGORY	STATION	-	STATION	LOCATION	601.0501 CONCRETE CURB & GUTTER INTEGRAL 4-INCH SLOPED 36-INCH (LF)	601.0580 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE R (LF)
010						
	11+75.00 A	-	13+13.45 A	LT	--	155
	11+30.00 A	-	12+86.71 A	RT	--	197
	0+90.00 B	-	2+61.62 B	RT	--	171
	0+80.00 A	-	1+30.00 A	ISLAND	--	130
	30+43.96 C	-	32+25.00 C	LT	--	227
	61+44.86 WB	-	63+90.00 WB	LT	244	--
	67+53.22 WB	-	70+73.00 WB	RT	--	650
				TOTAL	244	1530

RIPRAP SUMMARY

CATEGORY	STATION	LOCATION	606.0200 RIPRAP MEDIUM (CY)	645.0120 GEOTEXTILE FABRIC TYPE HR (SY)
010				
	60+90 WB	RT	2	10
	61+00 WB	RT	2	10
	66+75 WB	LT	2	10
	69+30 WB	RT	2	10
		TOTAL	8	40

INLET SUMMARY

CATEGORY	STATION	LOCATION	611.0652 INLET COVERS TYPE T (EACH)	611.8120.S COVER PLATES TEMPORARY (EACH)
010				
	70+60 WB	RT, 18'	1	1
		TOTAL	1	1

CONCRETE CORRUGATED MEDIAN

CATEGORY	STATION		STATION	LOCATION	620.0100 CONCRETE CORRUGATED MEDIAN (SF)
010					
	60+90WB	-	61+35WB	RT	730
				TOTAL	730

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	MISCELLANEOUS QUANTITIES	SHEET NO: 36	E

FILE NAME X:\3230500\130048.01\TECH\Misc Quantities\

PLOT SCALE : 1:1

EROSION CONTROL SUMMARY

CATEGORY	STATION	-	STATION	LOCATION	628.1504 SILT FENCE (LF)	628.0500 SALVAGED TOPSOIL (SY)	628.1520 SILT FENCE MAINTENANCE (LF)	629.1905 MOBILIZATIONS EROSION CONTROL (EACH)	629.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)	628.2008 EROSION MAT URBAN CLASS 1 TYPE B (SY)	628.7015 INLET PROTECTION TYPE C (EACH)	628.7504 TEMPORARY DITCH CHECKS (LF)	628.7555 CULVERT PIPE CHECKS (EACH)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0130 SEEDING MIXTURE NO. 30 (LB)	630.0200 SEEDING TEMPORARY (LB)
010																	
	11+75 A	-	13+00 A	LT	170	140	170	--	--	280	--	30	--	0.18	2	4	7
	11+25 A	-	13+00 A	RT	165	150	165	--	--	260	--	20	5	0.17	2	4	7
	61+50 WB	-	63+75 WB	LT	270	160	270	--	--	330	--	--	--	0.21	3	5	9
	0+90 B	-	3+20 B	RT	185	250	185	--	--	400	--	40	--	0.25	3	6	11
	30+50 C	-	32+10 C	LT	185	130	185	--	--	280	--	10	5	0.18	2	4	8
	70+60 WB			MEDIAN	--		--	--	--	--	1	--	--	--	--	--	--
	UNDISTRIBUTED				250	170	250	1	1	400	--	--	--	1.01	3	6	10
				TOTAL	1225	1000	1225	1	1	1950	1	100	10	2	15	29	52

PERMANENT SIGNING TYPE II

CATEGORY	SIGN NUMBER	SINGLE SIGN CODE	SIGN SIZE IN	637.0202 SIGNS REFLECTIVE TYPE II (SF)	637.0402 SIGNS REFLECTIVE FOLDING TYPE II (SF)	634.0812 POST TUBULAR STEEL 2" x 2" x 12' (EACH)	634.0814 POST TUBULAR STEEL 2" x 2" x 14' (EACH)	REMARKS
010								
	1-1	R1-1	30 x 30	5.18	--	1	--	STOP SIGN
	1-2	D4-2L	36 x 48	12.00	--	2	--	PARK & RIDE LEFT
	1-3	R5-1	30 x 30	6.25	--	1	--	DO NOT ENTER
	1-4	R5-1	30 x 30	6.25	--	1	--	DO NOT ENTER
	1-5	R3-1	24 x 24	4.00	--	1	--	NO RIGHT TURN
	1-6	R4-7	24 x 30	5.00	--	1	--	KEEP RIGHT
	1-7	J3-1	24 x 57	9.50	--	--	2	J ASSEMBLY
	1-8	D4-2A	36 x 48	12.00	--	--	2	PARK & RIDE AHEAD
	1-9	J3-1	24 x 57	9.50	--	--	2	J ASSEMBLY
	1-10	R3-2	24 x 24	4.00	--	1	--	NO LEFT TURN
	1-11	J3-1	24 x 57	9.50	--	--	2	J ASSEMBLY
	1-12	R11-54F	48 x 30	--	10.00	2	--	RAMP CLOSED USE ALT ROUTE
	1-13	R5-1	30 x 30	6.25	--	1	--	DO NOT ENTER
	1-14	R6-2L	24 x 30	5.00	--	1	--	ONE WAY
	1-15	R11-54F	48 x 30	--	10.00	--	2	RAMP CLOSED USE ALT ROUTE
	1-16	R5-57	36 x 36	9.00	--	1	--	PEDESTRIANS BICYCLES PROHIBITED
	2-1	R6-2L	24 x 30	5.00	--	1	--	ONE WAY
	2-2	R11-54F	48 x 30	--	10.00	2	--	RAMP CLOSED USE ALT ROUTE
	2-3	J3-1	24 x 57	9.50	--	--	2	J ASSEMBLY
	2-4	R3-2	24 x 24	4.00	--	1	--	NO LEFT TURN
	2-5	R5-1	30 x 30	6.25	--	1	--	DO NOT ENTER
	2-6	R6-2R	24 x 30	5.00	--	1	--	ONE WAY
	2-7	R6-2L	24 x 30	5.00	--	1	--	ONE WAY
	2-8	R1-1	30 x 30	5.18	--	1	--	STOP SIGN
	2-9	R1-1	30 x 30	5.18	--	--	1	STOP SIGN
	2-10	M4-5	24 x 12	2.00	--	1	--	TO
	2-11	M1-5A	24 x 24	4.00	--	--	--	COUNTY R
	2-12	M6-1	21 x 21	3.06	--	--	--	ARROW RIGHT
	2-13	W6-2	36 x 36	9.00	--	--	1	MEDIAN
	2-14	M2-1	21 x 15	2.19	--	1	--	JUNCTION
	2-15	M1-5A	24 x 24	4.00	--	--	--	COUNTY R
		TOTAL		172.79	30.00	23	14	

REMOVING SIGNING

CATEGORY	SIGN NUMBER	SINGLE SIGN CODE	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)	SIGN MOUNTED ON SAME POST AS	REMARKS
010						
	1R-1	R1-1	1	1	--	STOP SIGN
	1R-2	D4-2L	1	1	--	PARK & RIDE LEFT
	1R-3	R5-1	1	--	1R-2	DO NOT ENTER
	1R-4	R5-1	1	1	--	DO NOT ENTER
	1R-5	R3-1	1	--	1R-4	NO RIGHT TURN
	1R-6	R4-7	1	1	--	KEEP RIGHT
	1R-7	J3-1	1	--	1R-6	J ASSEMBLY
	1R-8	D4-2A	1	1	--	PARK & RIDE AHEAD
	1R-9	J3-1	1	1	--	J ASSEMBLY
	1R-10	R3-2	1	--	1R-9	NO LEFT TURN
	1R-11	J3-1	1	1	--	J ASSEMBLY
	1R-12	R11-54F	1	--	1R-11	RAMP CLOSED USE ALT ROUTE
	1R-13	R5-1	1	--	1R-11	DO NOT ENTER
	1R-14	R6-2L	1	1	--	ONE WAY
	1R-15	R11-54F	1	--	1R-14	RAMP CLOSED USE ALT ROUTE
	1R-16	R5-57	1	1	--	PEDESTRIANS BICYCLES PROHIBITED
	2R-1	R6-2L	1	1	--	ONE WAY
	2R-2	R11-54F	1	--	2R-1	RAMP CLOSED USE ALT ROUTE
	2R-3	J3-1	1	1	--	J ASSEMBLY
	2R-4	R3-2	1	--	2R-3	NO LEFT TURN
	2R-5	R5-1	1	1	--	DO NOT ENTER
	2R-6	R6-2R	1	--	2R-5	ONE WAY
	2R-7	R6-2L	1	1	--	ONE WAY
	2R-8	R1-1	1	--	2R-7	STOP SIGN
	2R-9	R1-1	1	1	--	STOP SIGN
	2R-10	M4-5	1	1	--	TO
	2R-11	M1-5A	1	---	2R-10	COUNTY R
	2R-12	M6-1	1	--	2R-10	ARROW RIGHT
	2R-13	W6-2	1	1	--	MEDIAN
	2R-14	M2-1	1	1	--	JUNCTION
	2R-15	M1-5A	1	--	2R-14	COUNTY R
		TOTAL	31	17		

TRAFFIC CONTROL SUMMARY

CATEGORY	LOCATION	643.0300 TRAFFFIC CONTROL DRUMS (DAY)	643.0420 TRAFFFIC CONTROL BARRICADES TYPE III (DAY)	643.0705 TRAFFFIC CONTROL WARNING LIGHTS TYPE A (DAY)	643.0715 TRAFFFIC CONTROL WARNING LIGHTS TYPE C (DAY)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.1050 TRAFFIC CONTROL SIGN PCMS (DAY)
010							
	PROJECT	720	--	--	--	352	28
	UNDISTRIBUTED	60	15	120	60	15	3
	TOTAL	780	15	120	60	367	31

PAVEMENT MARKINGS

CATEGORY	STATION	-	STATION	LOCATION	647.0456 PAVEMENT MARKING CURB EPOXY (LF)	647.0856 PAVEMENT MARKING CONCRETE CORRUGATED MEDIAN EPOXY (SF)
010						
	60+90 WB	-	61+35 WB	MEDIAN	--	730
	67+59 WB	-	67+46 WB	MEDIAN	50	--
	70+56 WB	-	70+70 WB	MEDIAN	35	--
	0+80 B	-	1+30 B	ISLAND	30	--
				TOTAL	115	730

RAMP CLOSURE GATE SUMMARY

CATEGORY	LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH (LF)	652.0605 CONDUIT SPECIAL 2-INCH (LF)	653.0135 PULL BOXES STEEL 24X36-INCH (EACH)	654.0105 CONCRETE BASES TYPE 5 (EACH)	654.0220 CONCRETE CONTROL CABINET BASES TYPE 10 (EACH)	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG (LF)	657.0100 PEDESTAL BASES (EACH)	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE (EACH)	657.0321 POLES TYPE 5-STEEL (EACH)	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT (EACH)	SPV.0060.01 RAMP CLOSURE GATES SOLAR POWERED 40-FT (EACH)
010												
	I43 SB ON RAMP	23	75	1	2	1	113	1	2	2	1	2
	I43 NB ON RAMP	23	75	1	2	1	113	1	2	2	1	2
	TOTAL	46	150	2	4	2	226	2	4	4	2	4

CONSTRUCTION STAKING SUMMARY

CATEGORY	STATION	-	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE (LF)	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT (LF)	650.9920 CONSTRUCTION STAKING SLOPE STAKES (LF)
010							
	11+30 A	-	13+13 A	LT & RT	320	320	320
	60+90 WB	-	61+35 WB	MEDIAN	45	--	--
	61+45 WB	-	63+90 WB	LT	245	245	245
	0+90 B	-	2+62 B	RT	172	172	172
	0+80 B	-	1+30 B	ISLAND	50	--	--
	67+53 WB	-	70+73 WB	MEDIAN	320	--	--
	30+44 C	-	32+25 C	LT	181	181	181
				TOTAL	1333	918	918

SAWING SUMMARY

CATEGORY	STATION	-	STATION	LOCATION	690.0150 SAWING ASPHALT (LF)	690.0250 SAWING CONCRETE (LF)
010						
	61+90 WB	-	61+35 WB	RT	--	105
	61+50 WB			LT	11	--
	63+90 WB			LT	10	--
	67+50.75 WB	-	70+73 WB	RT	--	670
	0+80 B	-	1+30 B	ISLAND	--	130
				TOTAL	21	905

RED COLORED CONCRETE PAVEMENT 10-INCH

CONCRETE PAVEMENT 10-INCH

XXXXX SAWCUT, MATCH EXISTING

N

R/W

GRAV

CONC

SB OFF RAMP

IH 43 SB

61+87.13WB
-46.00'

61+44.86WB
-37.87'

62+27.26WB
-46.00'

SLOPE INTERCEPT

63+70.00WB
-29.00'

63+90.00WB
-27.00'

19'

11'

2'

10'

14'

CONCRETE CURB AND GUTTER INTEGRAL
4-INCH SLOPED 36-INCH

EP: 13+49.75

59+00WB

60+00WB

61+00WB

62+00WB

63+00WB

64+00WB

5

5

ASPH

STH 147

CTH Z

CONCRETE CORRUGATED MEDIAN

CONCRETE CURB AND GUTTER
4-INCH SLOPED 36-INCH TYPE R

REMOVE CURB AND GUTTER

13+13.45A
-46.00'

12+86.71A
62.74'

13+00A

BEGIN PROJECT
STA 60+90WB

CONCRETE SURFACE DRAIN

12+98.75A
-28.58'

PROPOSED RAMP GATE

12+33.82A
-43.66'

12+60.20A
-18.60'

19'

12+25.94A
-13.09'

8'

WETLANDS

WPS
CHARTER

SLOPE INTERCEPT

12+01.44A
-13.09'

12+00A

2'

SB ON RAMP

11+75.00A
-8.00'

11+39.59A
24.00'

2'

11+30.00A
20.00'

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	PLAN	SHEET 40	E

RED COLORED CONCRETE PAVEMENT 10-INCH

XXXX SAWCUT, MATCH EXISTING

N

32+25.00C
-22.00'
2'
32+07.08C
-24.00'
31+79.05C
-27.13'
32+00C
SLOPE INTERCEPT
19'
NB ON RAMP
31+00C
30+76.85C
-52.20'
PROPOSED RAMP GATE
30+43.96C
-67.24'
IH 43 NB
CONCRETE SURFACE DRAIN
CONCRETE CURB AND GUTTER 4-INCH
SLOPED 36-INCH TYPE R
ASPH
CONC
65+00WB
66+00WB
67+00WB
BP: 30+00.00
30+00C
18" CMP
STH 147
67+53.22WB
13.43'
67+90.99WB
20.00'
R=69.00'
68+00WB
69+00WB
70+00WB
71+00
15'
20'
EP: 2+62.18B
A=21.69B
R=69.00'
CONCRETE CURB AND GUTTER 4-INCH
SLOPED 36-INCH TYPE R
REMOVE CURB AND GUTTER
3+00B
3+62B
2+00B
GRAV
CONCRETE SURFACE DRAIN
2+61.62B
5.00'
2+41.05B
5.00'
1+88.01B
13.13'
1+33.41B
20.16'
1+02.36B
1+00B
PC: 1+02.36B
0+90.00B
5.00'
SLOPE INTERCEPT
WPS
CHARTER
NB OFF RAMP
R/W
R/W
WPS
CHARTER
PROPOSED RAMP GATE
END PROJECT
STA 70+73WB
OH

5

5

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	PLAN	SHEET 41	E

EARTHWORK TABULATION - SW ENTRANCE RAMP EXPANSION FACTOR = 1.3

STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
11+30 A	12.7	0.1	0.0	0.0	0.0	0.0	0.0
11+50 A	13.4	3.0	10	1	10	1	8
12+00 A	34.4	6.7	44	12	54	13	41
12+50 A	34.1	6.2	63	16	117	29	89
13+00 A	0.0	0.0	32	7	149	36	113
13+10 A	0.0	0.1	0	0	149	36	113
		TOTAL	149	36			

EARTHWORK TABULATION - NE ENTRANCE RAMP EXPANSION FACTOR = 1.3

STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE FILL CUT (CY)	CUMMULATIVE FILL EXP FILL (CY)	MASS ORDINATE (CY)
30+45 C	54.3	0.0					
30+50 C	70.9	0.0	12	0	12	0	12
31+00 C	27.8	23.0	91	28	103	28	75
31+50 C	23.3	12.7	47	43	150	71	80
32+00 C	13.0	8.6	34	26	184	96	88
32+25 C	11.9	8.0	12	10	195	106	89
		TOTAL	195	106			

EARTHWORK TABULATION - STH 147 MEDIAN EXPANSION FACTOR = 1.3

STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY)	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
67+60 WB	15.0	0.0					
68+00 WB	23.0	0.0	28	0	28	0	28
68+50 WB	23.0	0.0	43	0	71	0	71
69+00 WB	23.0	0.0	43	0	113	0	113
69+50 WB	23.0	0.0	43	0	156	0	156
70+00 WB	23.0	0.0	43	0	199	0	199
70+50 WB	23.0	0.0	43	0	241	0	241
70+70 WB	23.0	0.0	17	0	258	0	258
		TOTAL	258	0			

EARTHWORK TABULATION - SE EXIT RAMP EXPANSION FACTOR = 1.3

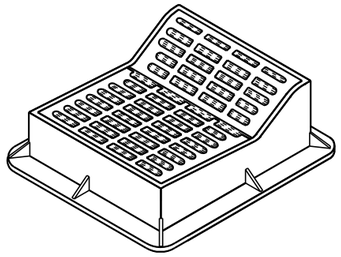
STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
0+90 B	17.2	0.2	0.0	0.0	0.0	0.0	0.0
1+00 B	26.0	4.5	8	1	8	1	7
1+50 B	59.5	3.8	79	10	87	11	76
2+00 B	32.4	9.2	85	16	172	27	145
2+50 B	15.7	4.6	45	17	217	43	173
2+60 B	16.5	0.1	6	1	223	45	178
		TOTAL	223	45			

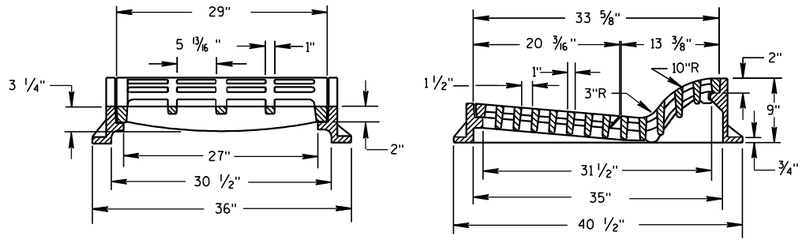
EARTHWORK TABULATION - STH 147 SHOULDER EXPANSION FACTOR = 1.3

STATION	END AREA CUT (SF)	END AREA FILL (SF)	INCREMENTAL VOLUME CUT (CY)	INCREMENTAL VOLUME EXP FILL (CY)	CUMMULATIVE VOLUME CUT (CY)	CUMMULATIVE VOLUME EXP FILL (CY)	MASS ORDINATE (CY)
61+50 WB	0.0	0.2					
62+00 WB	49.8	11.9	46	15	46	15	32
62+50 WB	48.6	7.7	91	24	137	38	99
63+00 WB	64.5	0.1	105	9	242	48	194
63+50 WB	38.8	2.7	96	3	338	51	287
63+90 WB	32.3	5.3	53	8	390	59	332
		TOTAL	390	59			

Standard Detail Drawing List

08A05-18C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
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
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09C05-07	CONCRETE CONTROL CABINET BASES
11B01-05	CONCRETE CORRUGATED MEDIAN
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13A03-05	CONCRETE PAVEMENT SHOULDERS
13C01-15	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-10A	RURAL DOWELED CONCRETE PAVEMENT
13C11-10B	RURAL DOWELED CONCRETE PAVEMENT
13C18-01A	CONCRETE PAVEMENT JOINTING
13C18-01B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-01C	CONCRETE PAVEMENT JOINT TIES
13C18-01D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15C08-15F	PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D27-01	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH



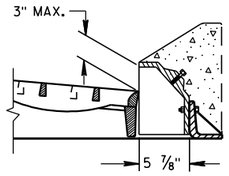


TYPE "F"

(APPROXIMATE WEIGHT 644 LBS.)

FRAME.....302 LBS.
GRATE.....160 LBS.
GRATE.....182 LBS.

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



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT CURB BOX 68 LBS.)

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

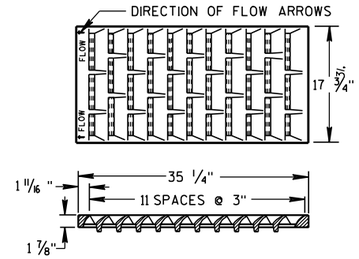
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

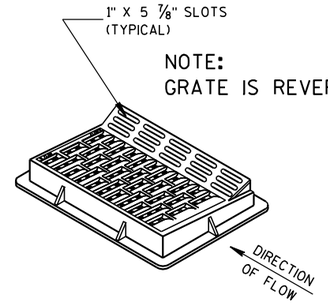
GENERAL NOTES

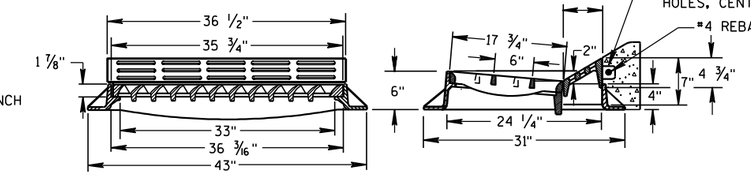
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





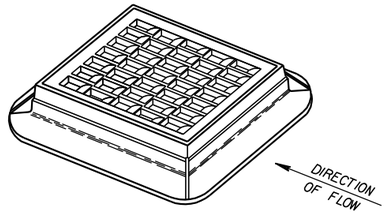


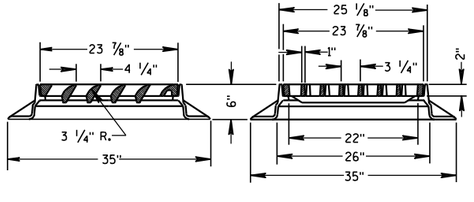
TYPE "HM"

(APPROXIMATE WEIGHT 414 LBS.)
FRAME..... 181 LBS.
GRATE..... 159 LBS.
CURB BOX..... 74 LBS.

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

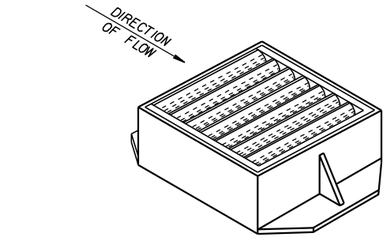


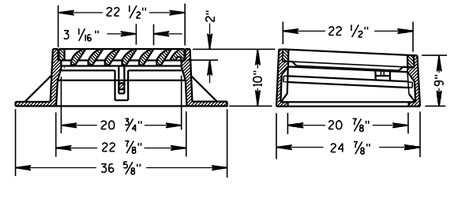


TYPE "S"

(APPROXIMATE WEIGHT 333 LBS.)

FRAME.....164 LBS.
GRATE..... 169 LBS.

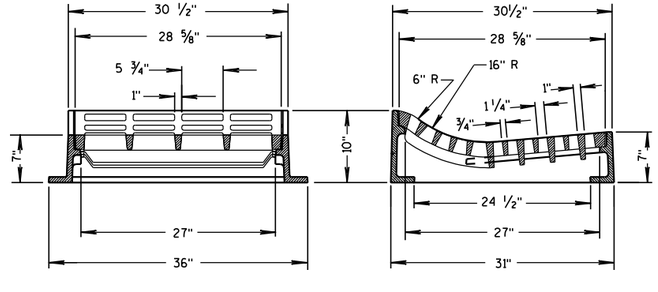




TYPE "V"

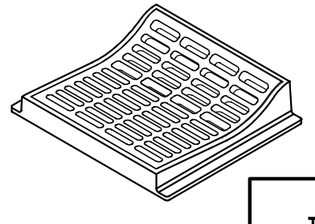
(APPROXIMATE WEIGHT 410 LBS.)

FRAME..... 269 LBS.
GRATE..... 136 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
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

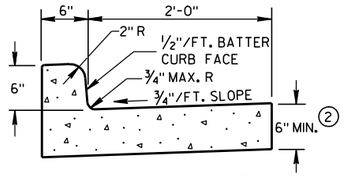
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

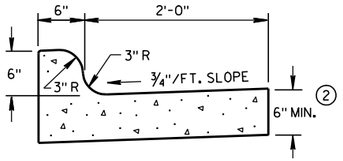
S.D.D. 8 A 5-18c

6

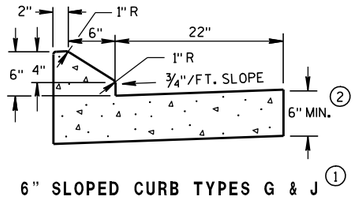
S.D.D. 8 A 5-18c



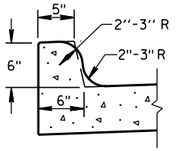
TYPES A & D (1)



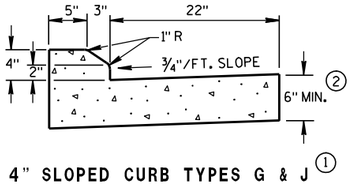
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

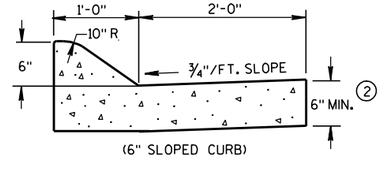


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

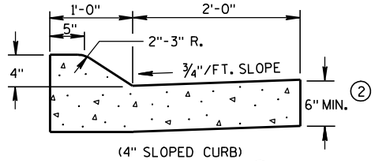


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

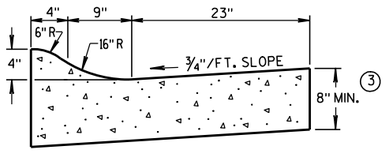


(6" SLOPED CURB)



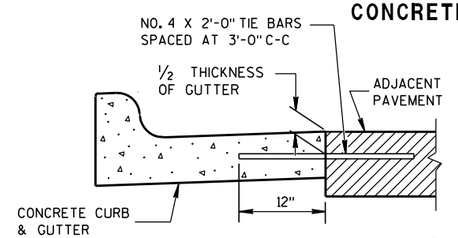
(4" SLOPED CURB)

TYPES A & D (1)

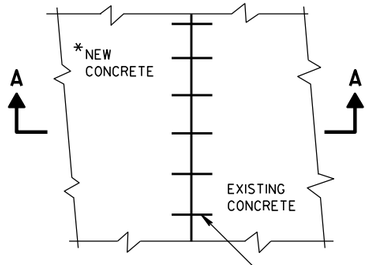


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

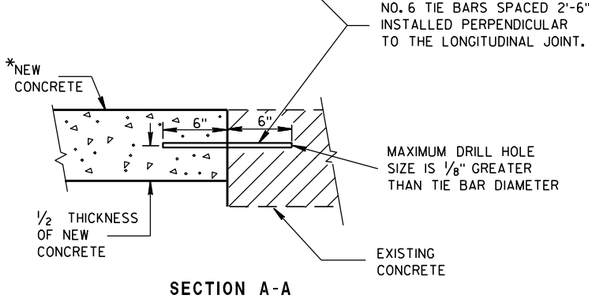


TYPICAL TIE BAR LOCATION (1)



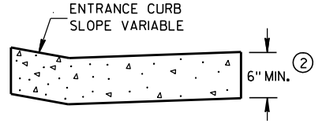
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW



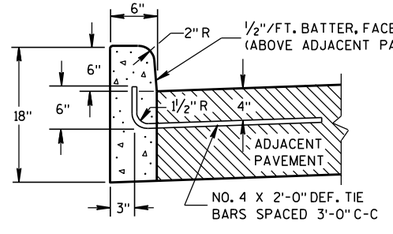
SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



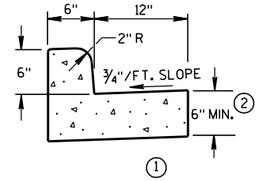
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



(1)

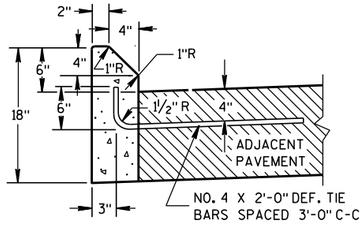
TYPES A & D



(1)

TYPES A & D

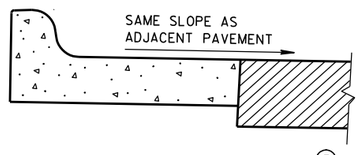
CONCRETE CURB & GUTTER 18"



(1)

TYPES G & J

CONCRETE CURB



(5)

REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

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

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

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

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

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

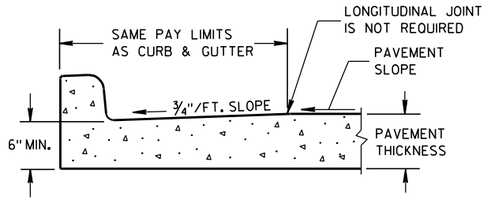
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

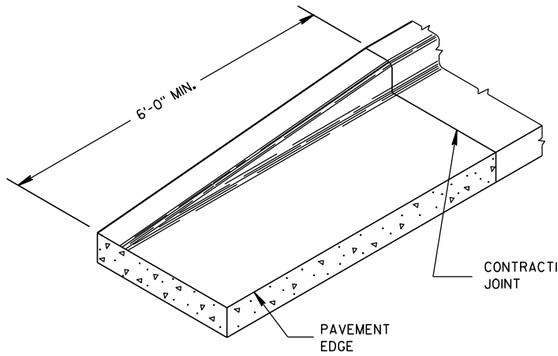
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

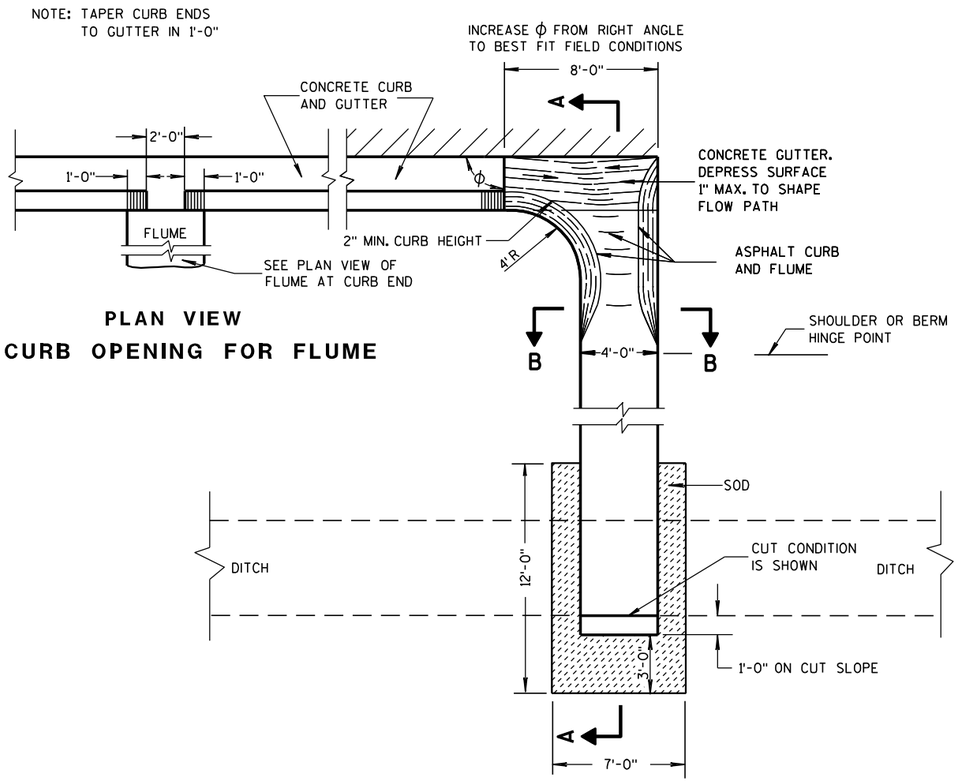
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA

6

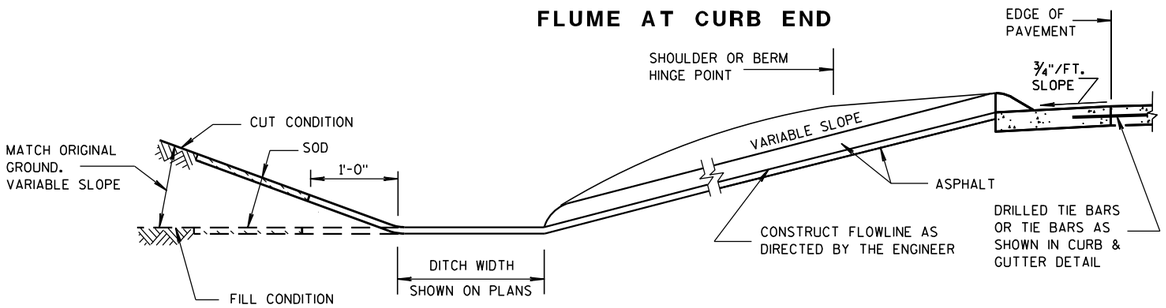
S.D.D. 8 D 1-17

ASPHALTIC FLUME

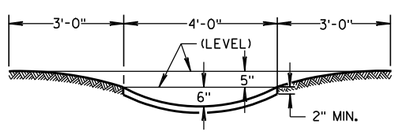


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

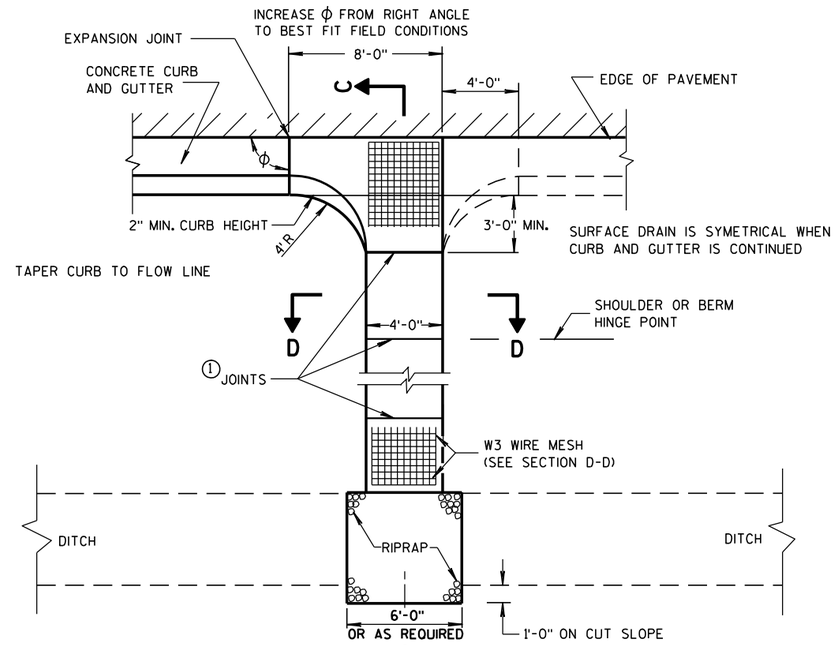
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

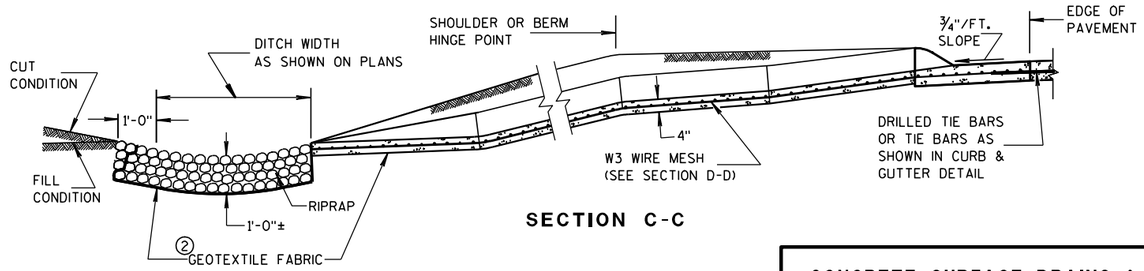
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

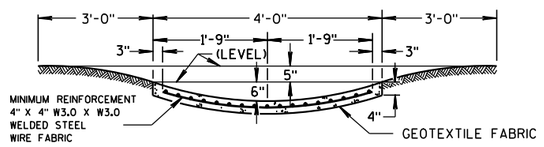
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 D 4-5

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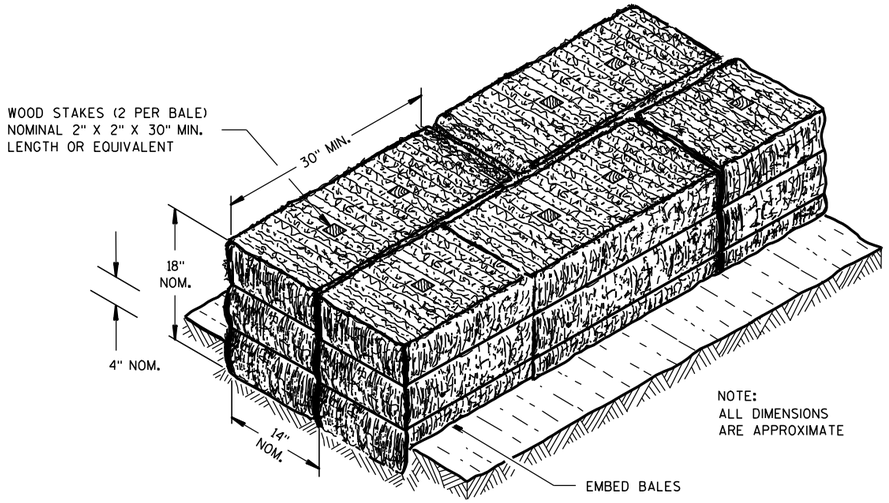
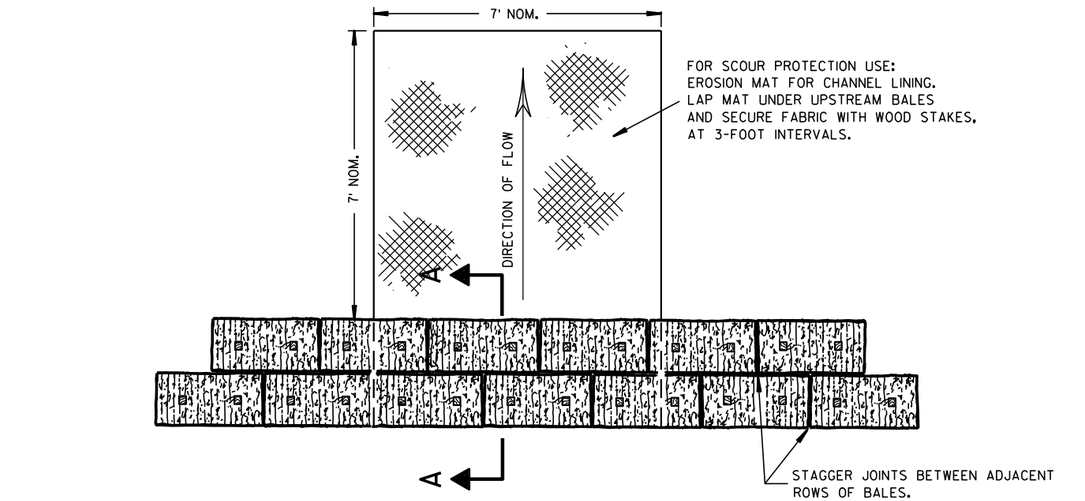
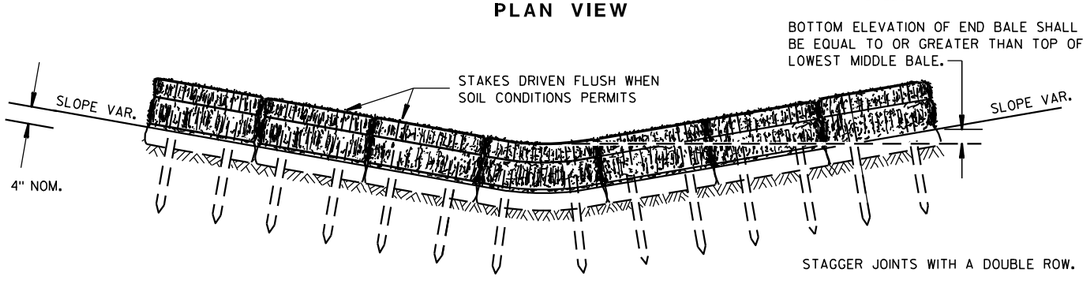
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



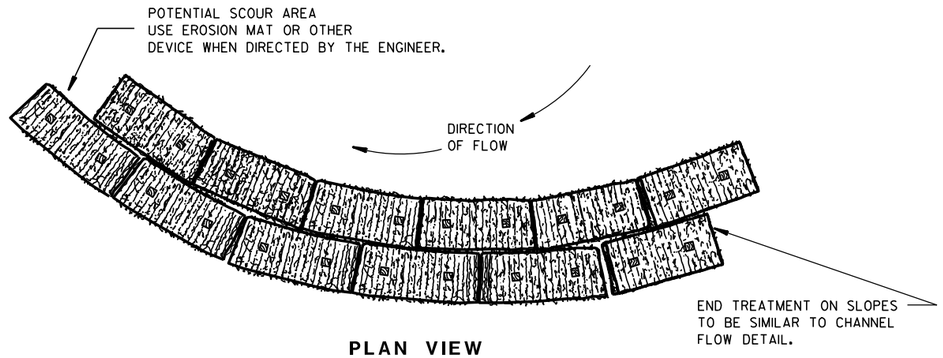
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

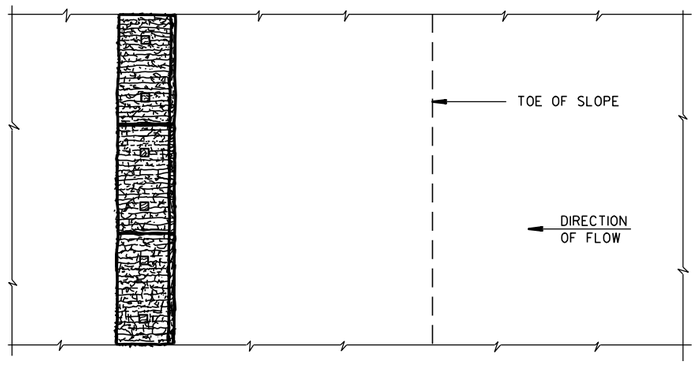
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

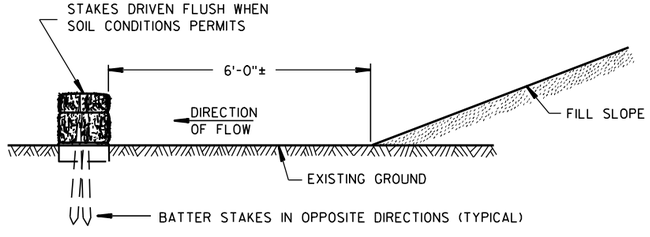


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 8-3

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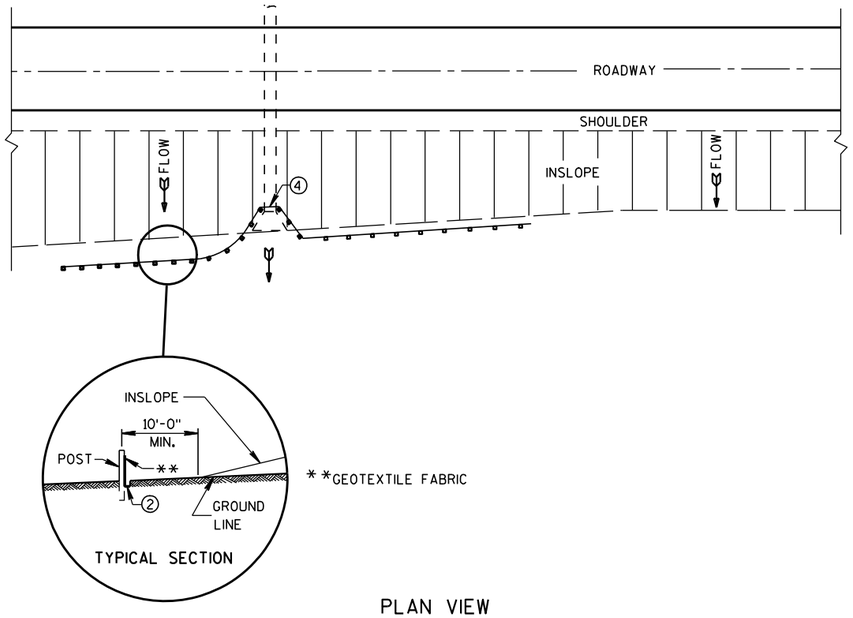
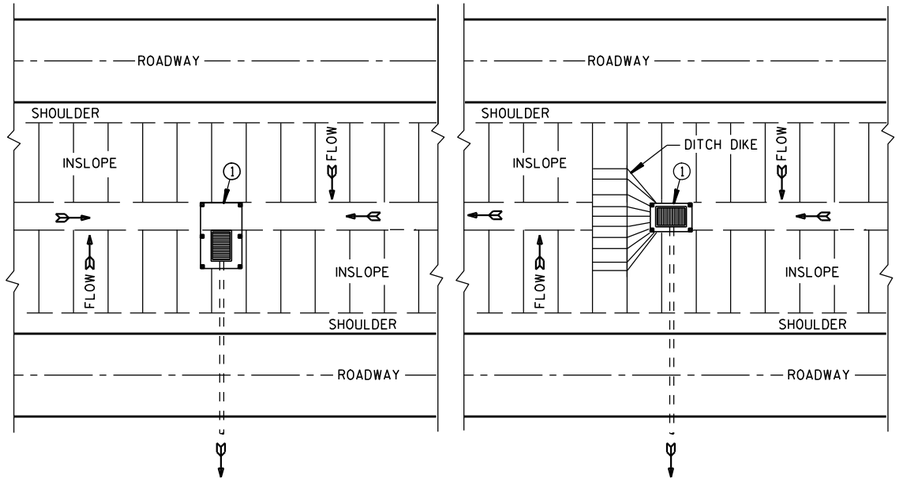
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



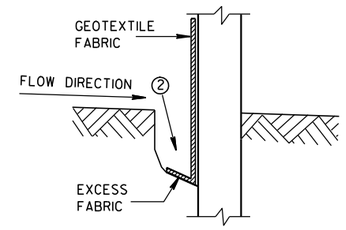
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

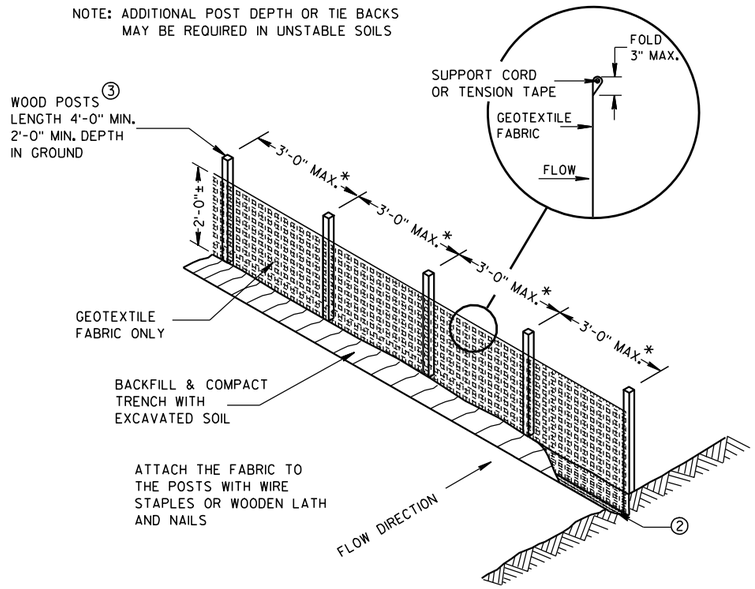
GENERAL NOTES

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

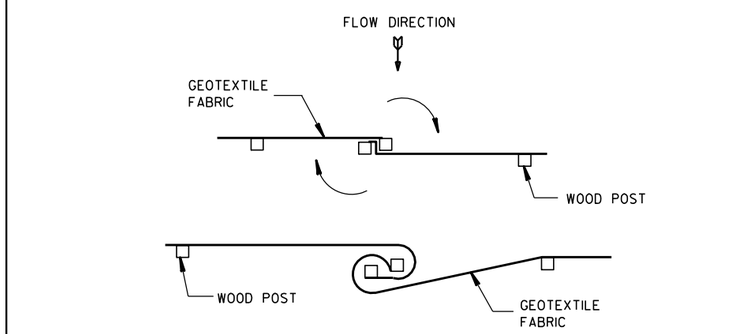
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL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



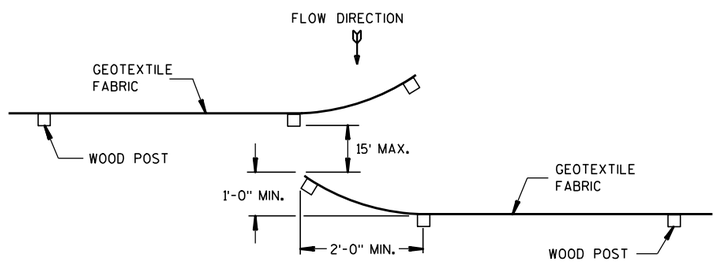
TRENCH DETAIL



SILT FENCE

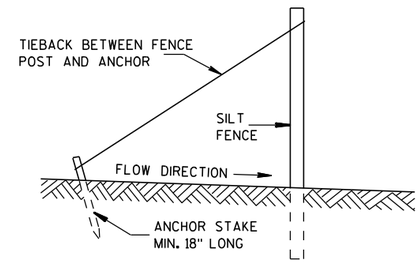


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

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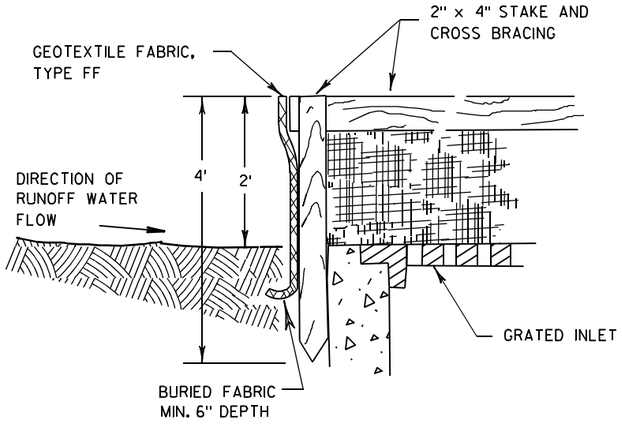
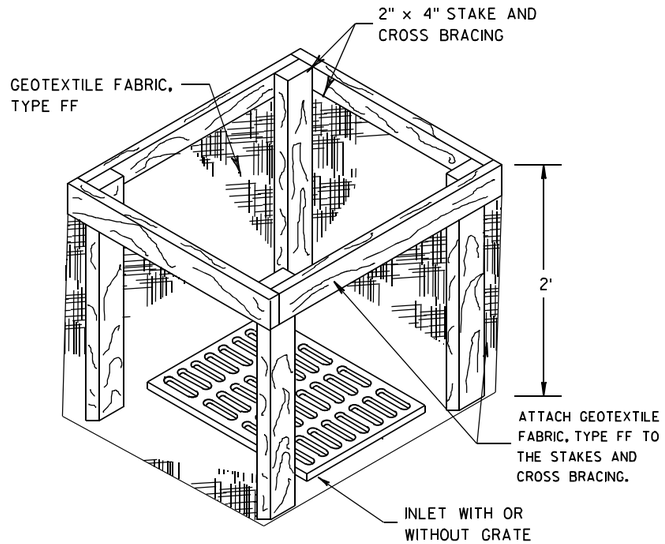
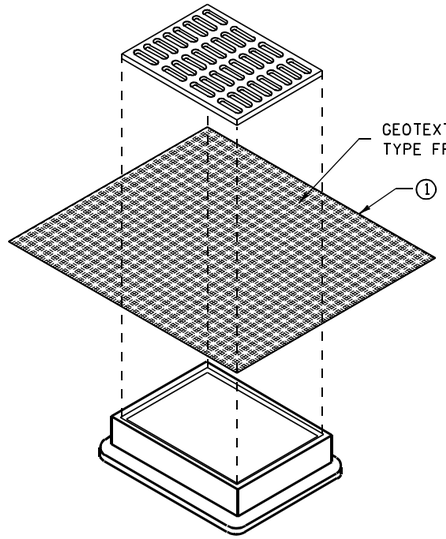
S.D.D. 8 E 9-6



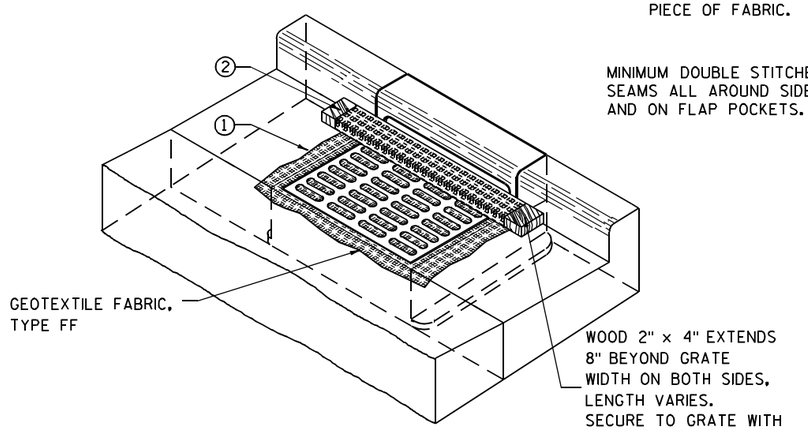


INLET PROTECTION, TYPE A

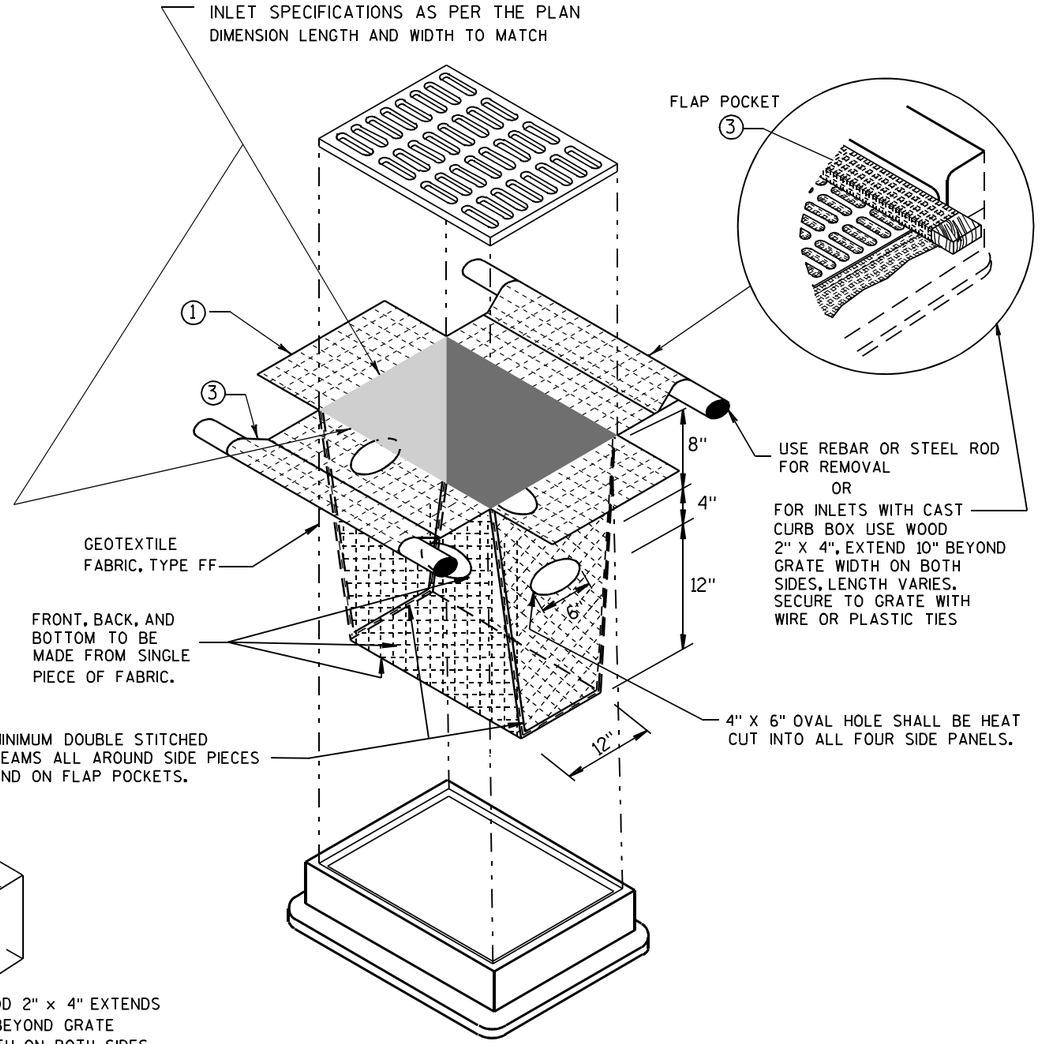


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 8 E 10-2

METAL APRON ENDWALLS

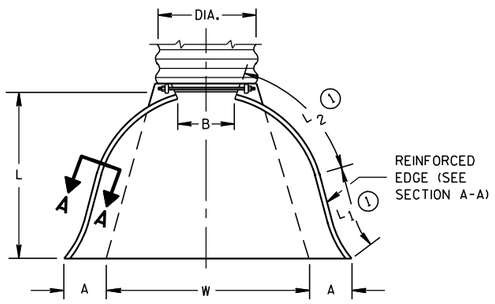
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to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

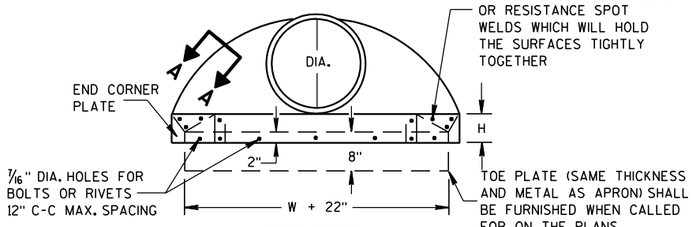
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
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

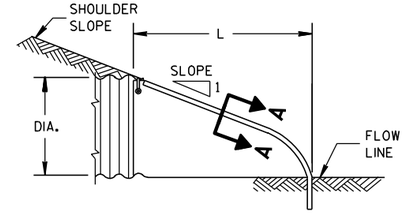
*MINIMUM
**MAXIMUM



PLAN VIEW

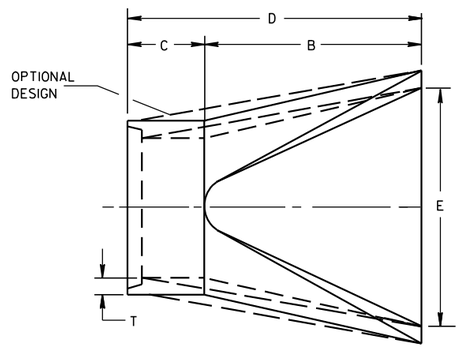


END VIEW

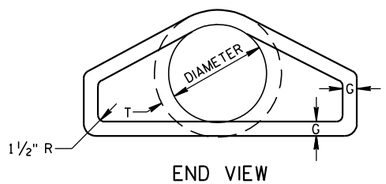


SIDE ELEVATION

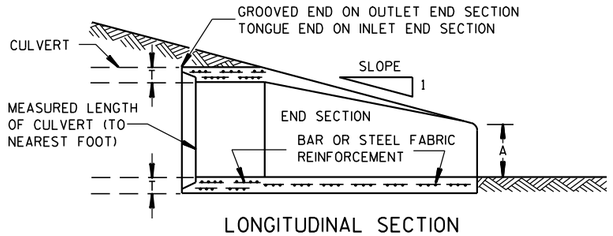
METAL ENDWALLS



PLAN

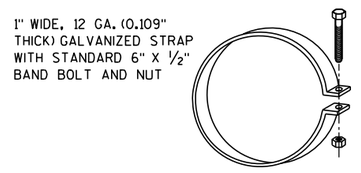


END VIEW



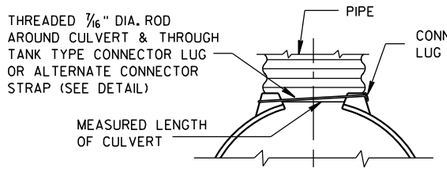
LONGITUDINAL SECTION

CONCRETE ENDWALLS

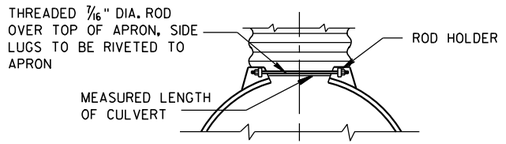


ALTERNATE FOR TYPE 1 CONNECTION

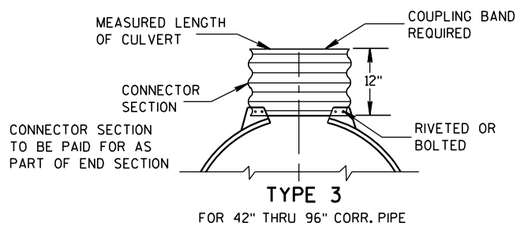
END SECTION CONNECTOR STRAP



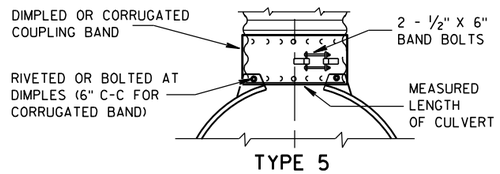
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

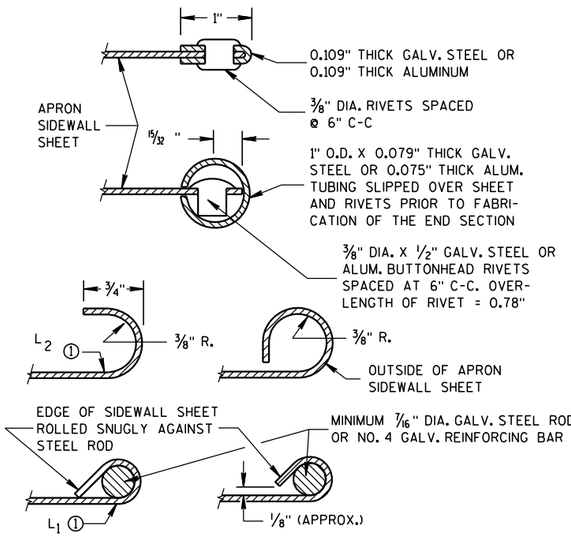
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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 DEVELOPMENGINEER
FHWA

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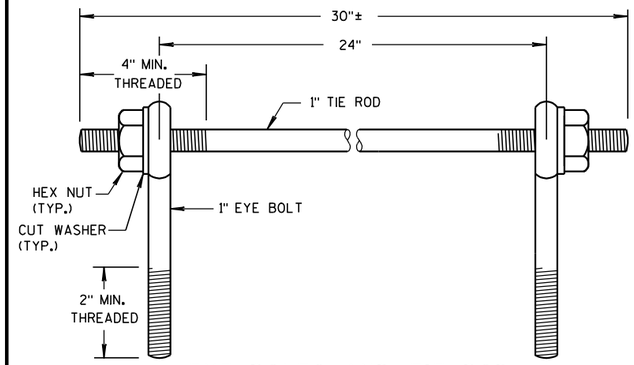
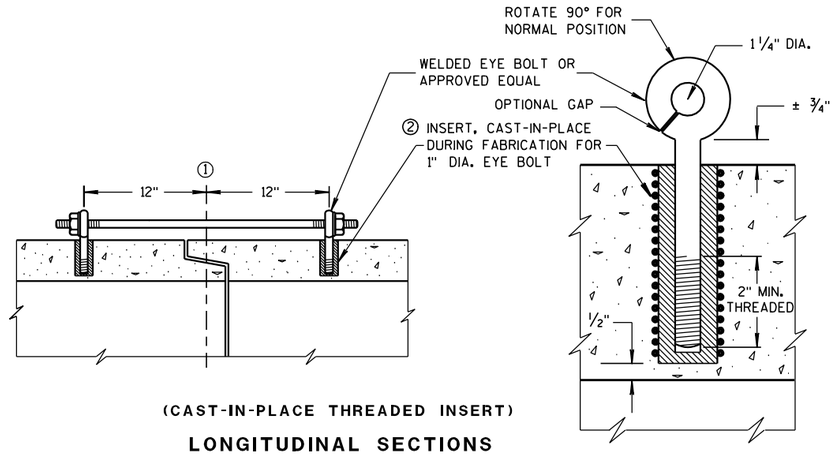


EYE BOLTS AND TIE ROD



(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.

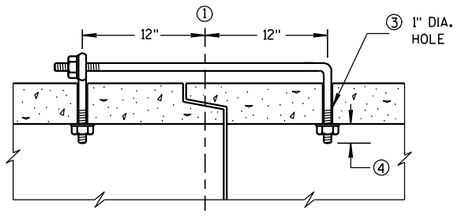
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

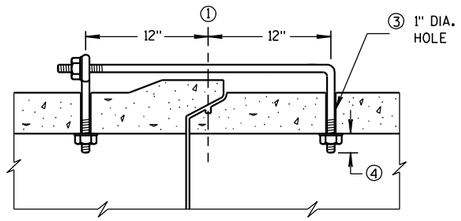
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

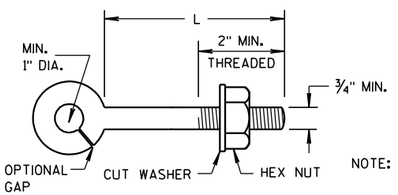


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

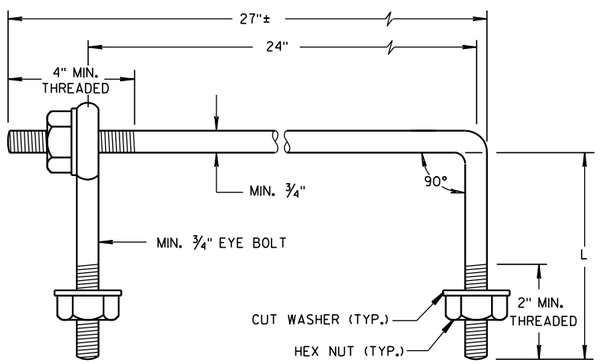
EYE BOLT DIMENSION TABLE

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"	



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

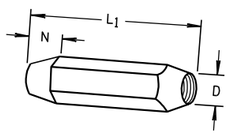
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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



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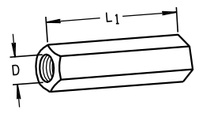
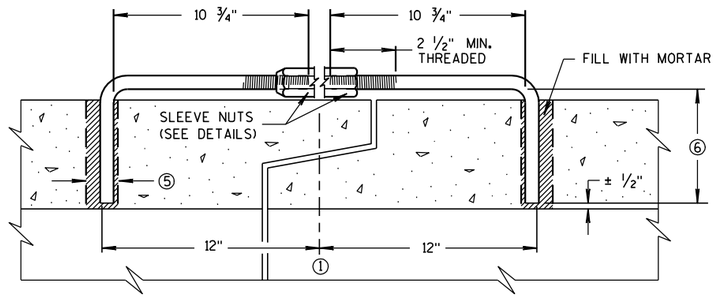


PLAIN

RIGHT AND LEFT THREADS

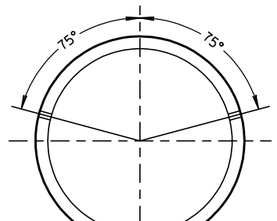
SLEEVE NUTS



LONGITUDINAL SECTION

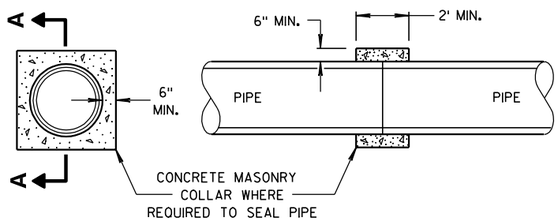
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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
FHWA

6

S.D.D. 8 F 4-7

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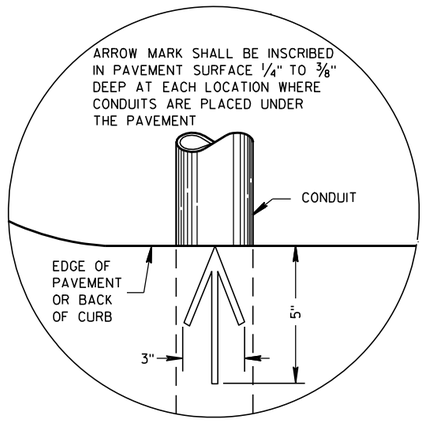
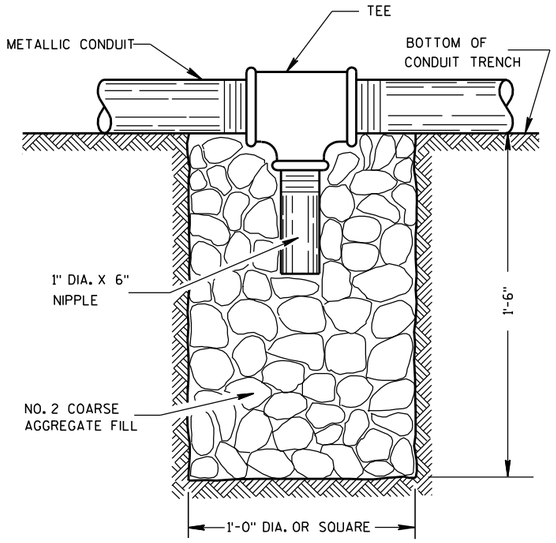
S.D.D. 8 F 4-7



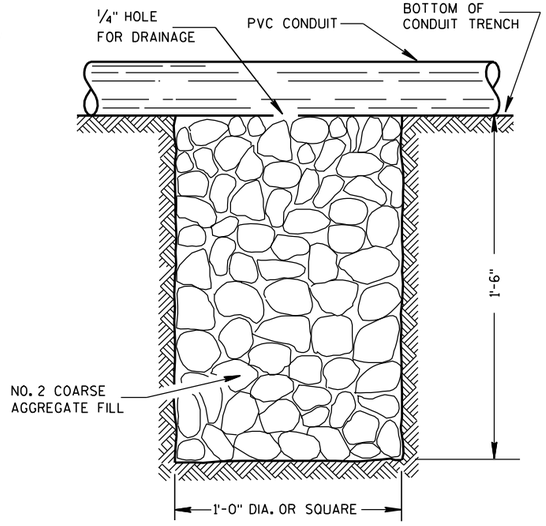
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

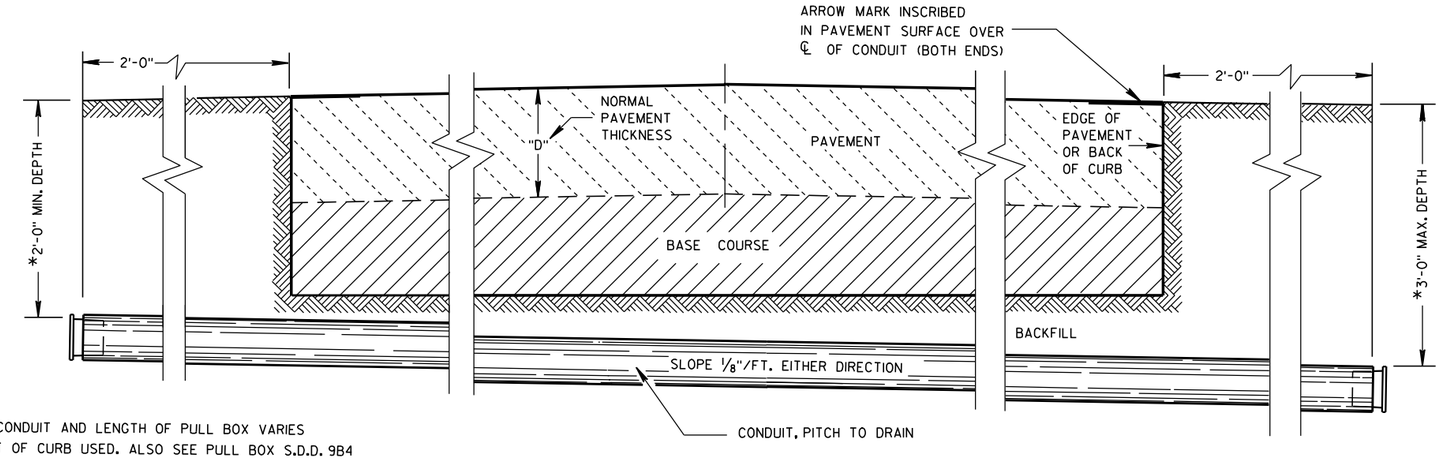
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03 — DATE

/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI

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HWYS

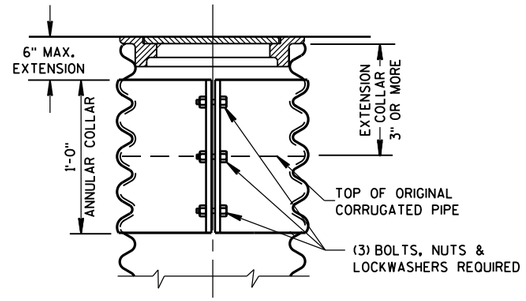
FHWA

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

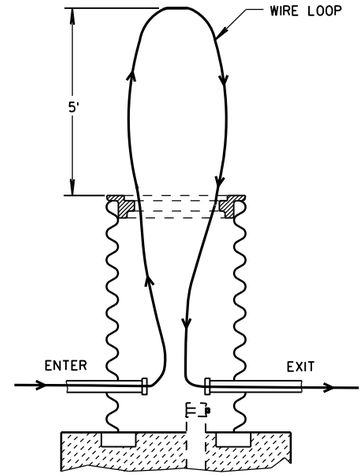
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

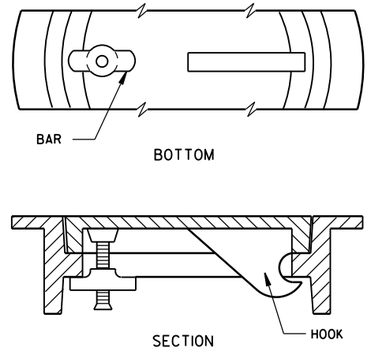
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

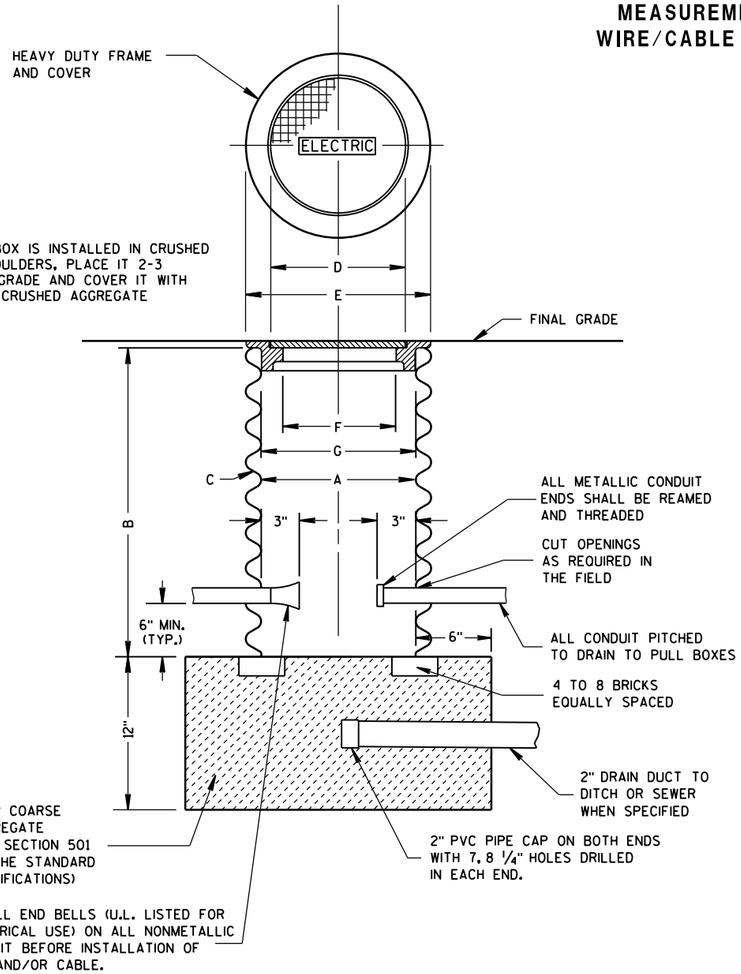


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



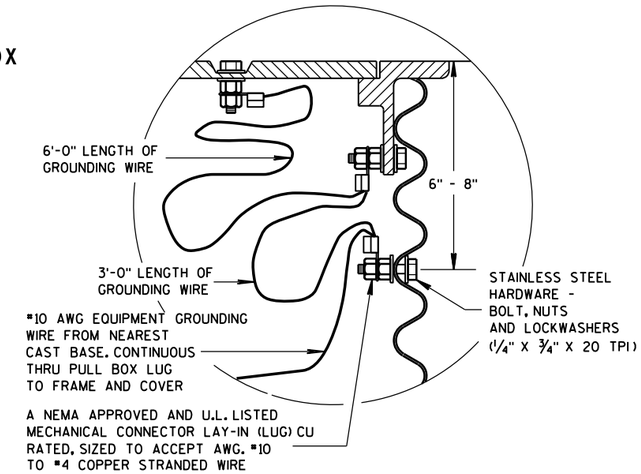
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

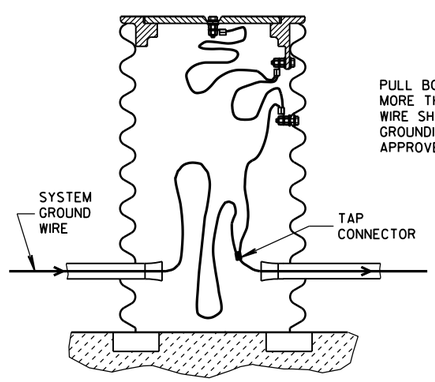


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-7-2013
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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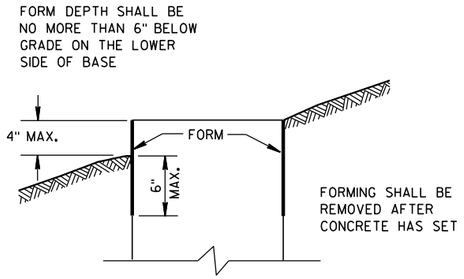
S.D.D. 9 B 4-10



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

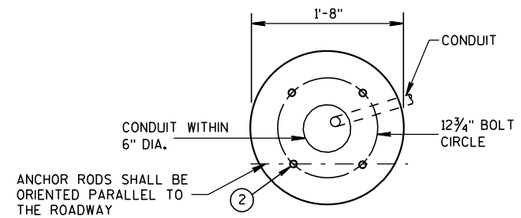
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

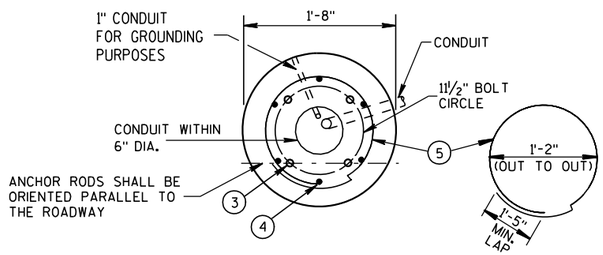
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

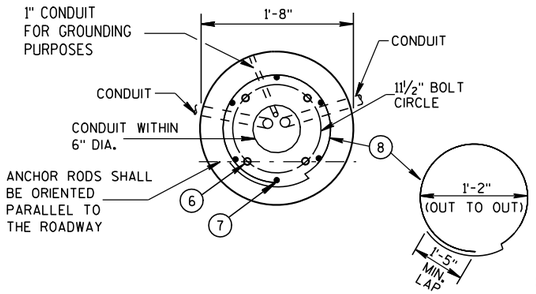
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

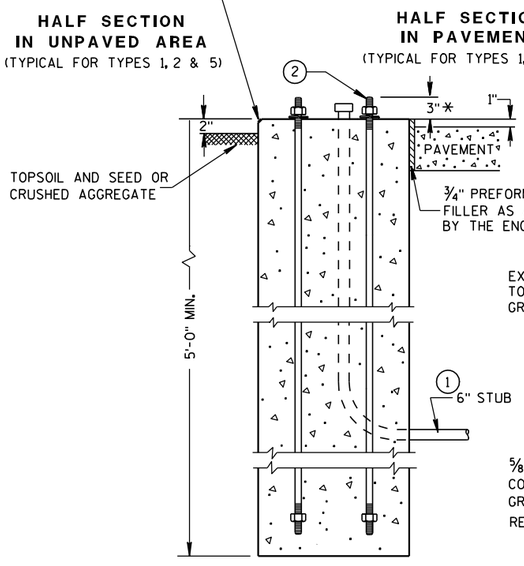






FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

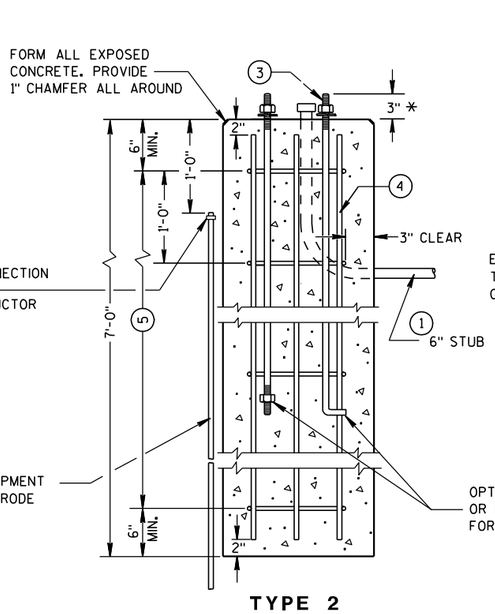
HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2 & 5)



HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2 & 5)

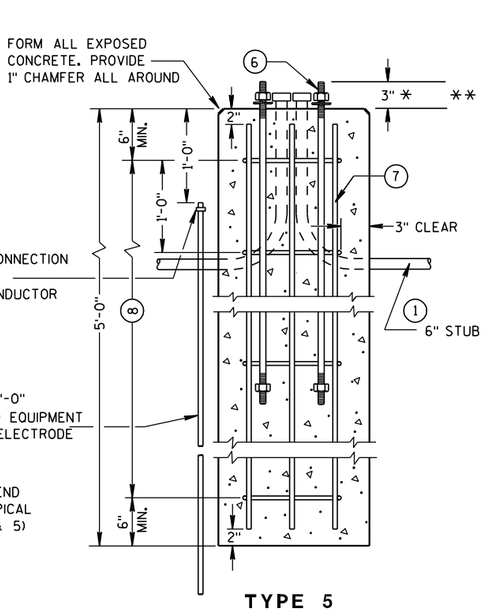
TYPE 1

FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 2

FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2 & 5

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/3/10 — DATE
/S/ Joanna L. Rush — STATE ELECTRICAL ENGI
54
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S.D.D. 9 C 2-6

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

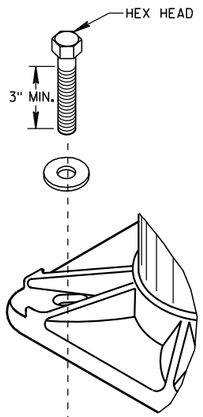
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

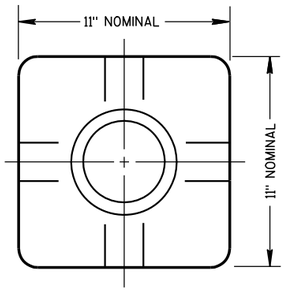
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

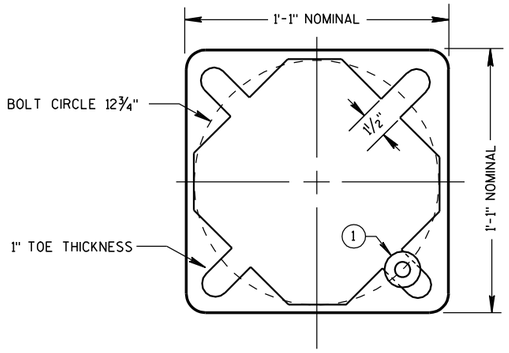
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1½", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

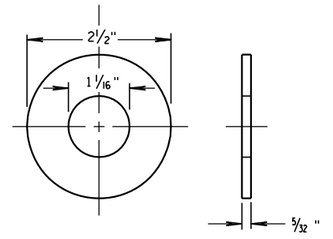




TOP VIEW
(PEDESTAL BASE)

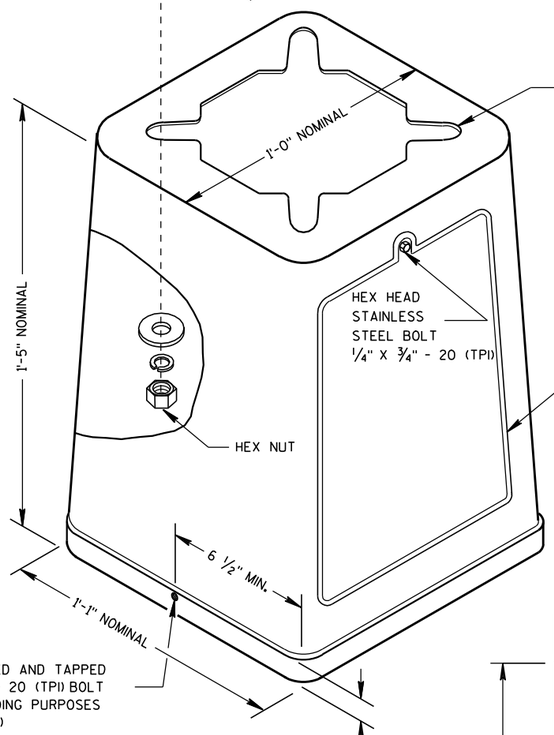


BOTTOM VIEW
(PEDESTAL BASE)

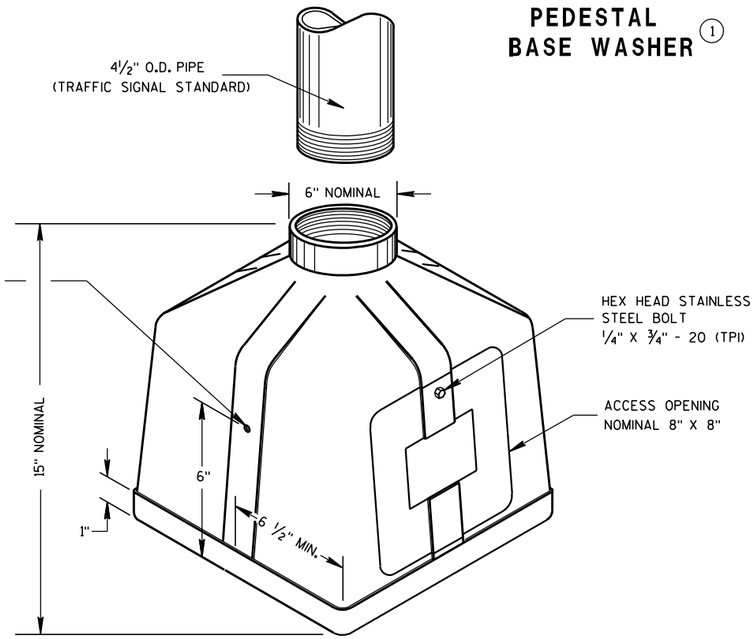


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

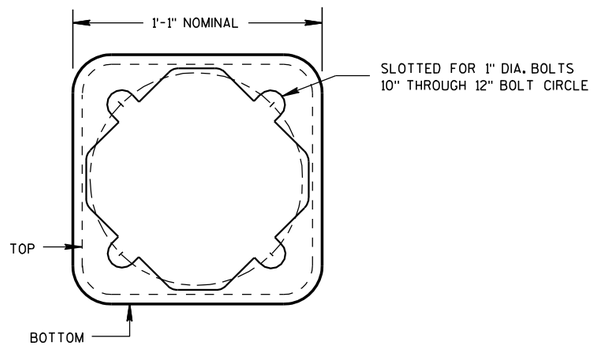


ISOMETRIC VIEW

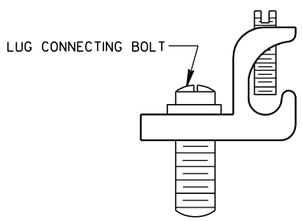


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

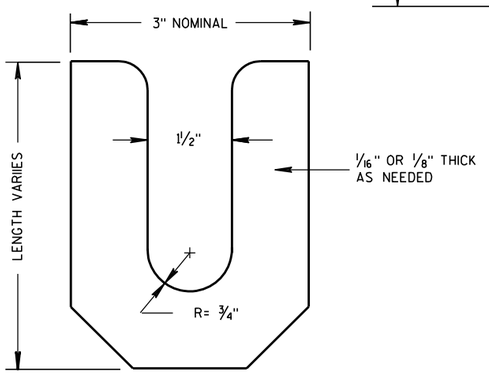


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/27/09 — DATE
/S/ Joanna L. [illegible] — STATE ELECTRICAL ENGI
55 — HWYS
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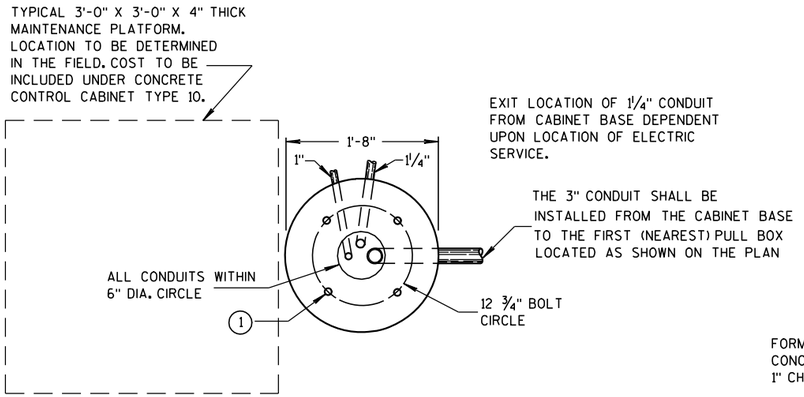
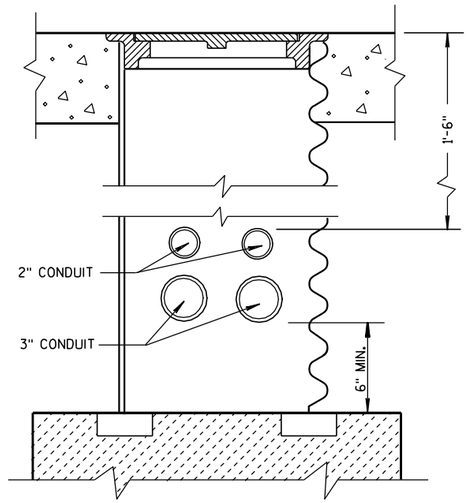
S.D.D. 9 C 3-3

CONTROL CABINET BASE TYPE	DIMENSIONS				C.Y. CONCRETE (APPROX.)
	H	I	J	K	
TYPE 6 - 30" CABINET	34"	60"	10"	17"	.64
TYPE 7 - 38" CABINET	42"	60"	10"	21"	.93
TYPE 8 - 38" CABINET	42"	72"	12"	21"	1.29
TYPE 9 - VARIABLE	54"	72"	14"	27"	1.56
TYPE 10 - POST MOUNT	AS SHOWN				.65 *

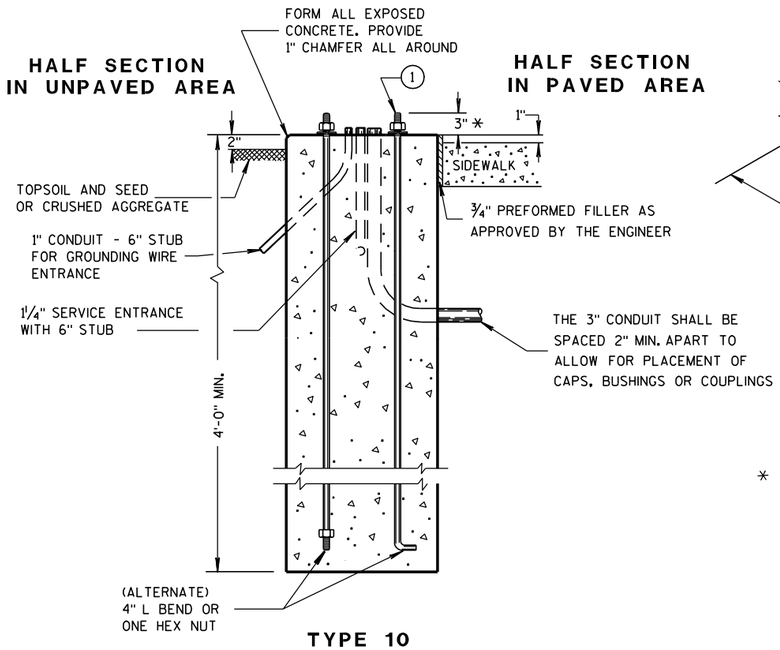
* INCLUDES MAINTENANCE PLATFORM.



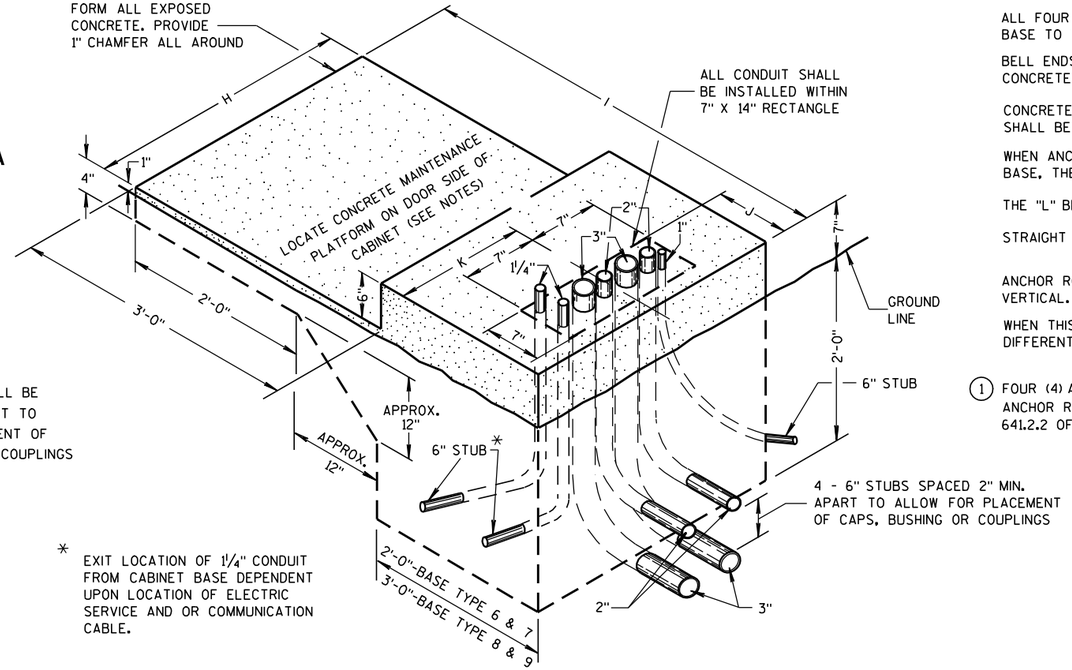


CONDUIT LOCATIONS IN 24" X 36" PULL BOX

(LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)



TYPE 10



TYPE 6,7,8 AND 9
(ISOMETRIC VIEW)

* EXIT LOCATION OF 1¼" CONDUIT FROM CABINET BASE DEPENDENT UPON LOCATION OF ELECTRIC SERVICE AND OR COMMUNICATION CABLE.

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A 36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE BROOM FINISHED AND LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

ALL FOUR (TWO INCH AND THREE INCH) CONDUIT SHALL BE INSTALLED FROM THE CABINET BASE TO THE FIRST (NEAREST PULL BOX LOCATED AS SHOWN ON THE PLANS.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

WHEN ANCHOR RODS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10 BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH.

THE "L" BEND SHALL NOT BE THREADED.

STRAIGHT ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WHEN THIS DRAWING IS USED FOR STREET LIGHTING CABINET BASES, CONDUIT MAY BE DIFFERENT AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

(1) FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6"
ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

CONCRETE CONTROL CABINET BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10
DATE

/S/ Joanna L. [illegible]
STATE ELECTRICAL ENGI

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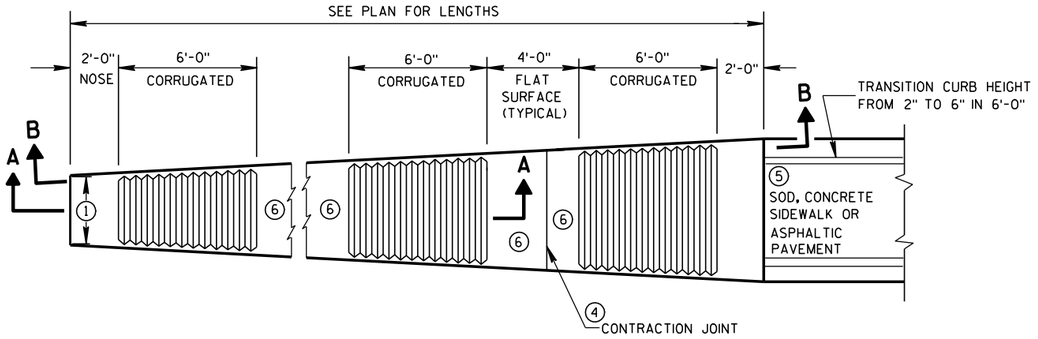
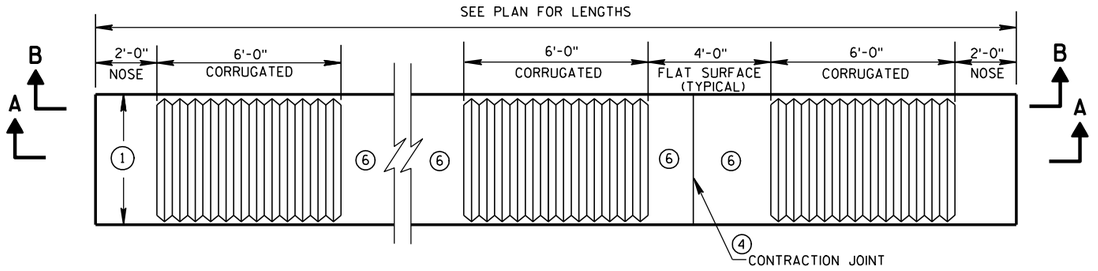


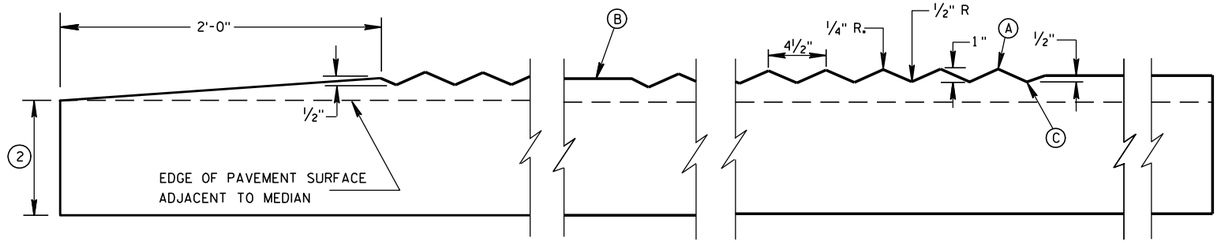
PLAN VIEW

VARIABLE WIDTH CONCRETE CORRUGATED MEDIAN



PLAN VIEW

UNIFORM WIDTH CONCRETE CORRUGATED MEDIAN



SECTION A-A

LONGITUDINAL SECTION

GENERAL NOTES

(1) SEE PLANS FOR CONSTANT OR VARIABLE WIDTH.

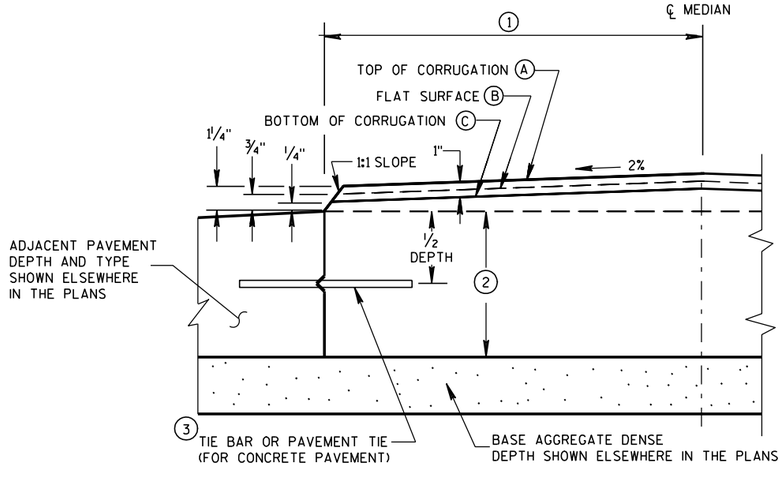
(2) THE DEPTH OF THE CONCRETE CORRUGATED MEDIAN SHALL BE 9-INCHES UNLESS SHOWN OTHERWISE IN THE PLAN.
ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN IN THE PLAN. TYPICAL OPTIONS ARE:
(1) NEW OR EXISTING CONCRETE PAVEMENT.
(2) ASPHALTIC CONCRETE OVER NEW OR EXISTING CONCRETE BASE COURSE, OR PAVEMENT.
(3) ASPHALTIC PAVEMENT OVER BASE AGGREGATE DENSE.

(3) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.
INSTALL TIE BARS TO MAINTAIN A MINIMUM OF 3-INCHES OF COVER BETWEEN THE TIE BAR AND THE CONCRETE SURFACE (BOTTOM AND TOP).
PAVEMENT TIES REQUIRED IN EXISTING CONCRETE PAVEMENT OR CONCRETE BASE COURSE, PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

(4) CONCRETE CORRUGATED MEDIAN CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH THE JOINTS IN ADJACENT CONCRETE PAVEMENT. WHERE ADJACENT PAVEMENT IS ASPHALT WITH BASE AGGREGATE DENSE. TRANSVERSE CONTRACTION JOINTS SHALL BE PROVIDED AT 20 FOOT INTERVALS.

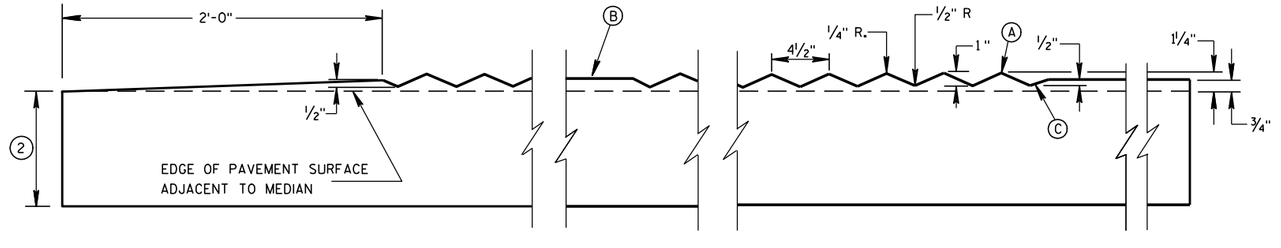
(5) SURFACE TYPE AND DETAILS ARE DEFINED ELSEWHERE IN THE PLAN.

(6) YELLOW MARKING ON FLAT SURFACE WHEN MEDIAN SEPARATES OPPOSING TRAFFIC.



HALF CROSS SECTION

(2) CONCRETE CORRUGATED MEDIAN AND ADJACENT PAVEMENT



SECTION B-B

LONGITUDINAL SECTION

CONCRETE CORRUGATED MEDIAN

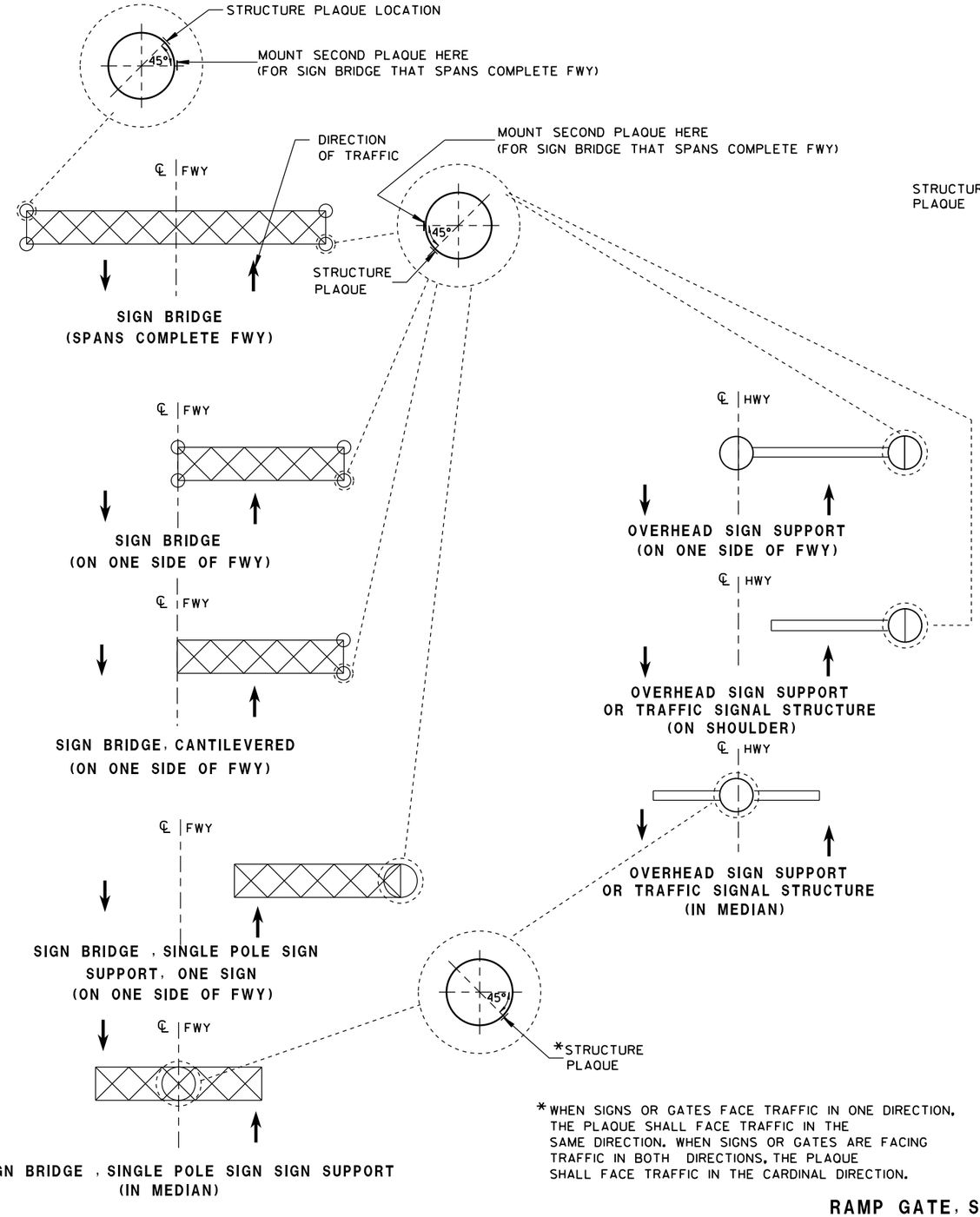
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/07
DATE

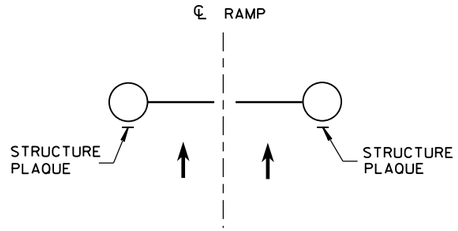
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

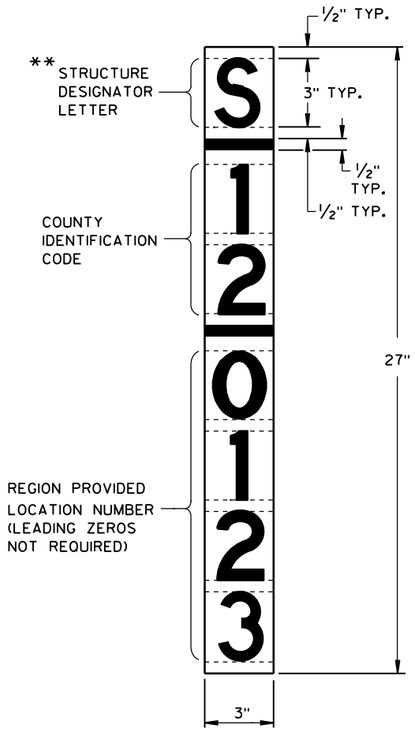


*WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.

LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES



RAMP GATE
(ACROSS FWY ON-RAMP)



** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

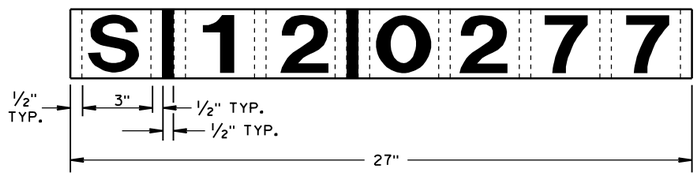
FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, ½" WIDE, SELF-ADHESIVE

CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.



IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

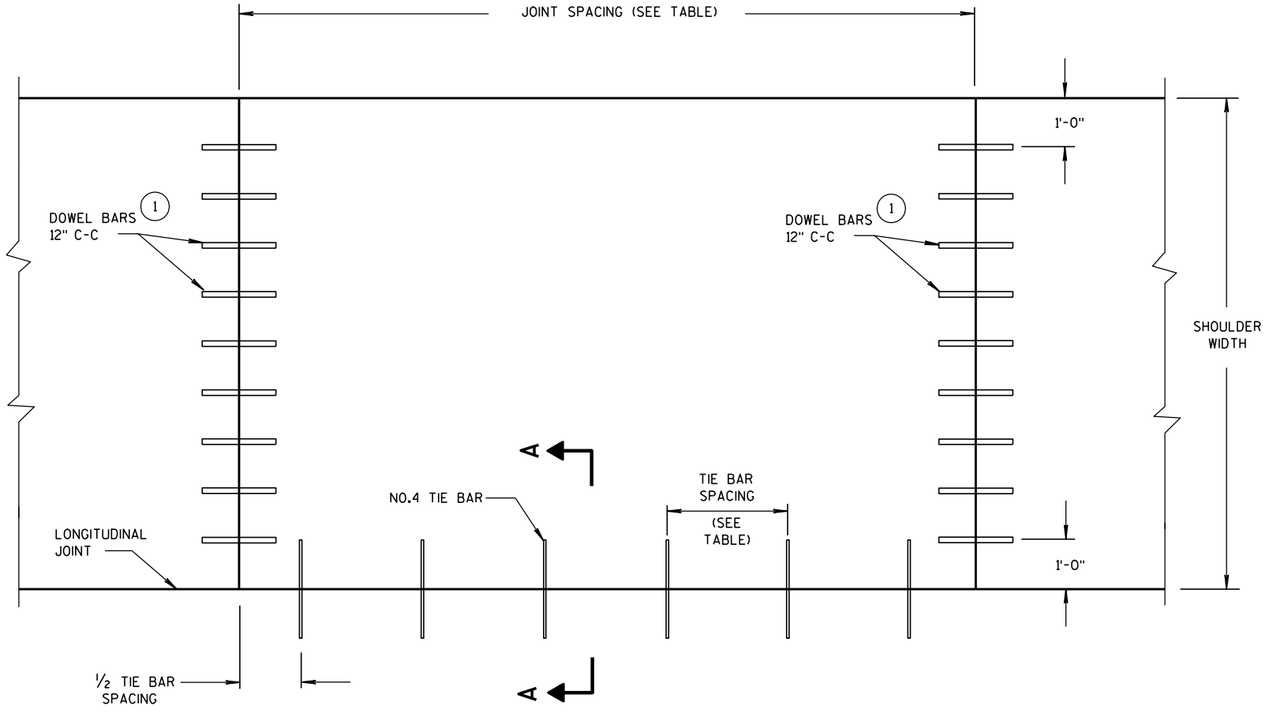
STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/4/2012 DATE
/S/ Travis Feltes STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 12 A 4-3



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

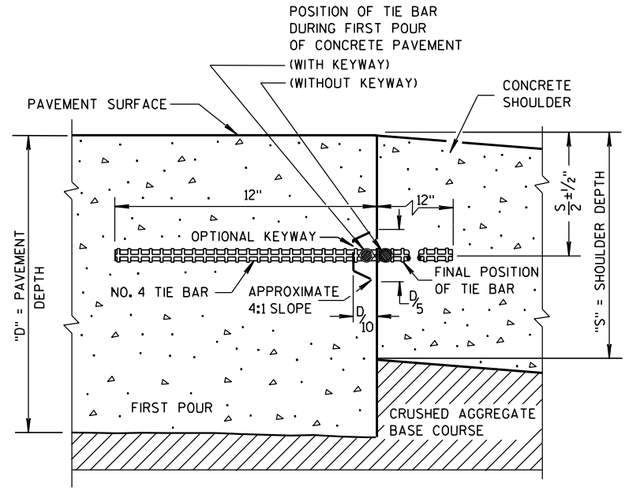
GENERAL NOTES

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

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDERS
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDERS

(1)

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
8/15/2011 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D — INEER
FHWA

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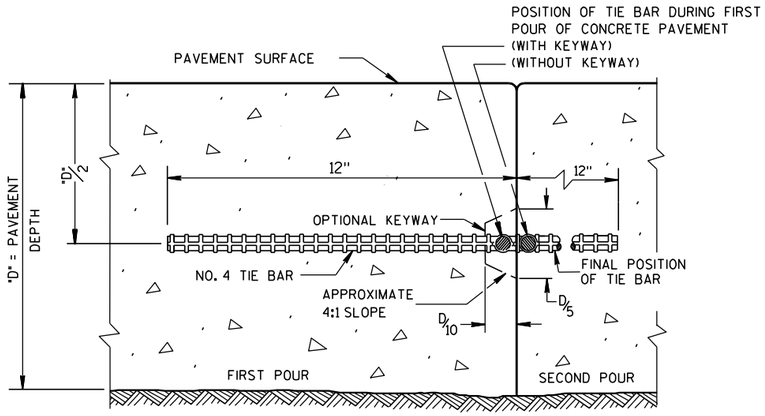
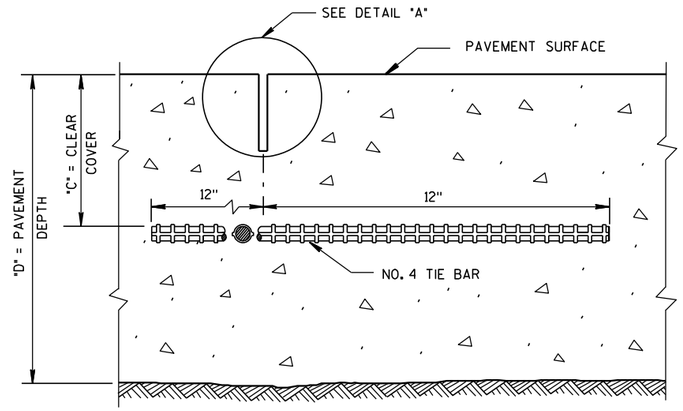
S.D.D. 13 A 3-5



CONSTRUCTION JOINT



SAWED JOINT

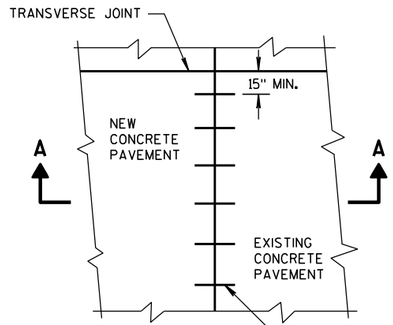
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

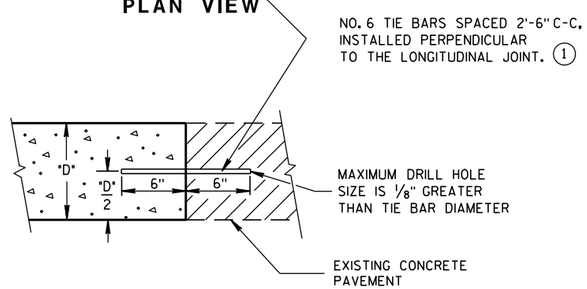
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

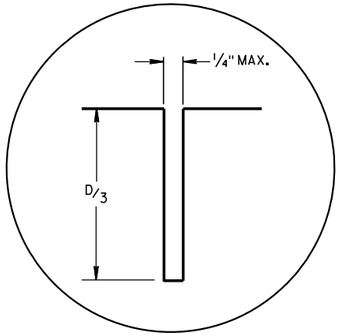
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

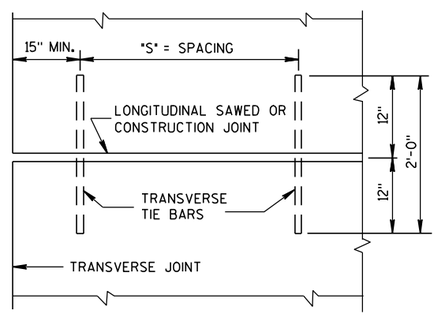


SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

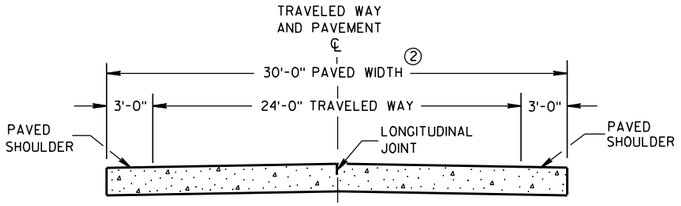
10-5-2010 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DI ENGINEER

FHWA

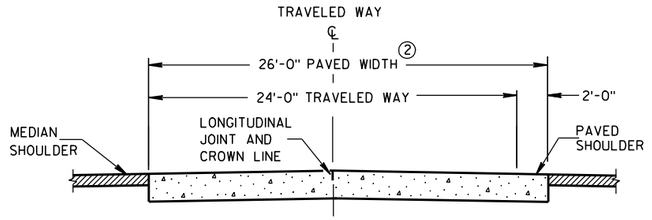
6

S.D.D. 13 C 1-15

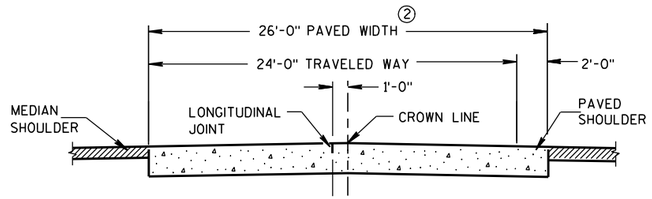


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B

①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

FOR PAVEMENT SLABS OF VARYING WIDTHS, CENTER THE DOWEL ASSEMBLY ACROSS THE LANES. LOCATE THE INNER AND OUTER MOST DOWEL BARS SO THAT THE CENTER OF THE BARS ARE A MINIMUM OF 6 INCHES AND A MAXIMUM OF 12 INCHES FROM THE LONGITUDINAL JOINT AND THE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

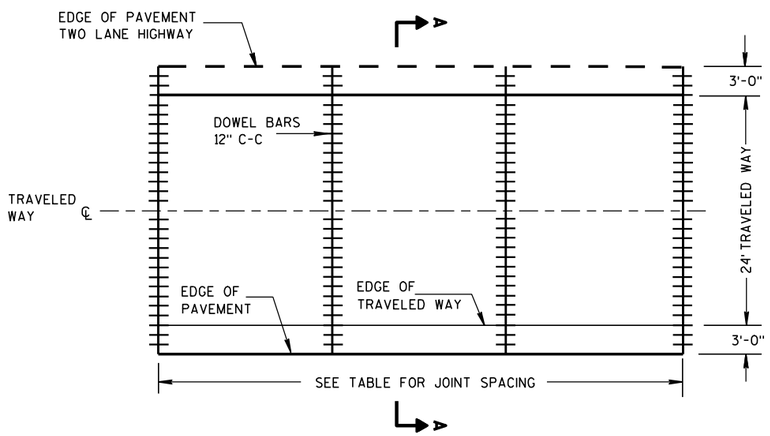
THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

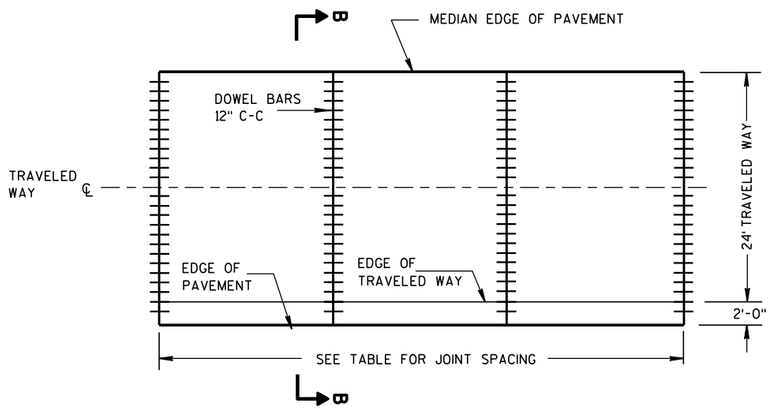
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

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



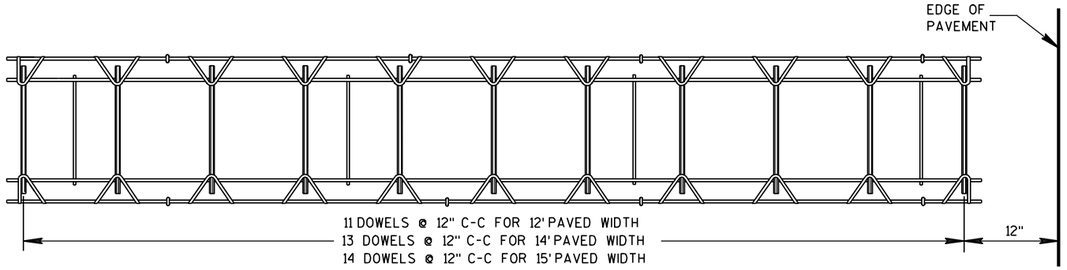
CONTRACTION JOINT LAYOUT FOR DIVIDED HIGHWAY

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 11-10a



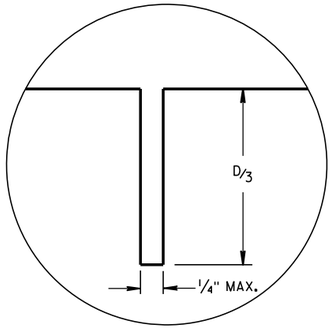
PLAN VIEW

⑤

SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① THE ENGINEER MAY APPROVE THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. THE CONTRACTOR MAY USE MECHANICAL DOWEL BAR INSERTERS INSTEAD OF DOWEL ASSEMBLIES.

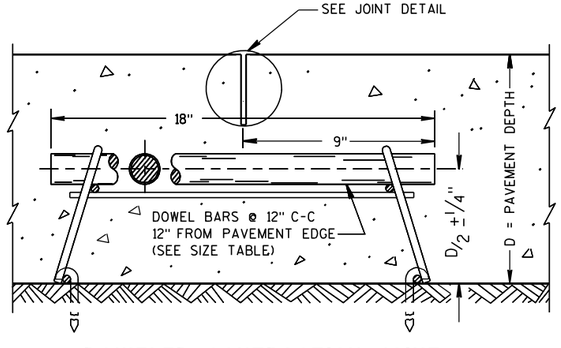
② ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

③ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

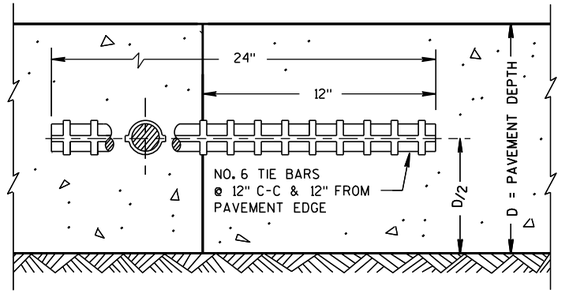
④ SPACE DOWEL BARS INSTALLED BY DRILLING 1'-3" ON CENTER. CENTER THE GROUPING OF DOWEL BARS INSIDE THE SLAB BASED ON ALL THE FOLLOWING SITUATIONS:

BETWEEN THE EDGES OF PAVEMENTS WITHOUT LONGITUDINAL JOINTS OR BETWEEN THE EDGE OF PAVEMENT AND NEAREST LONGITUDINAL JOINT OR BETWEEN TWO ADJACENT LONGITUDINAL JOINTS.

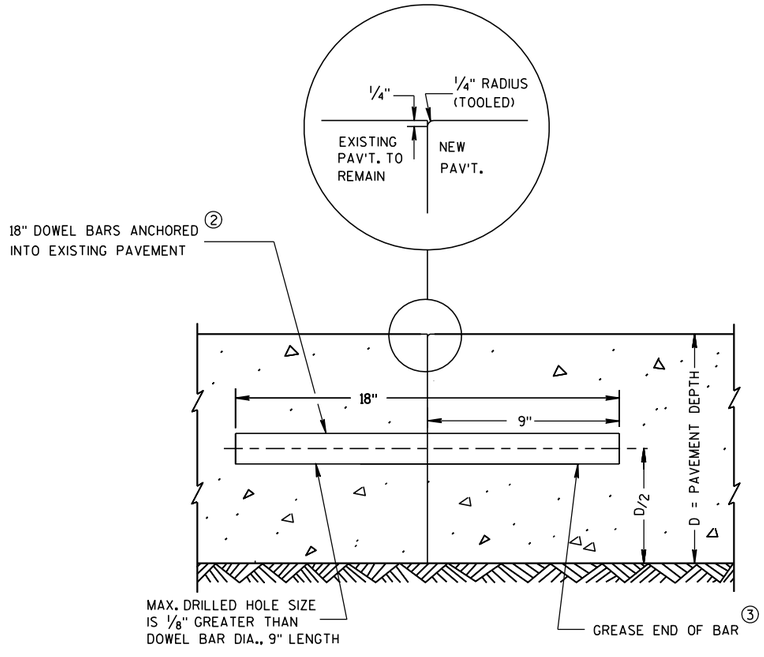
⑤ SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.



DOWELED CONTRACTION JOINT



CONSTRUCTION JOINT



TRANSVERSE CONTRACTION JOINTS ABUTTING EXISTING PAVEMENT

④ **DOWEL BAR DETAIL**

RIRAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/09 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DESIGNER
FHWA

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S.D.D. 13 C 11-10b

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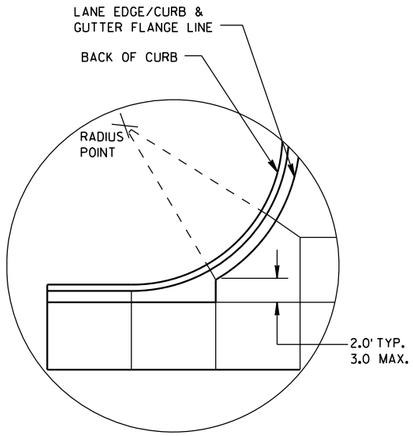
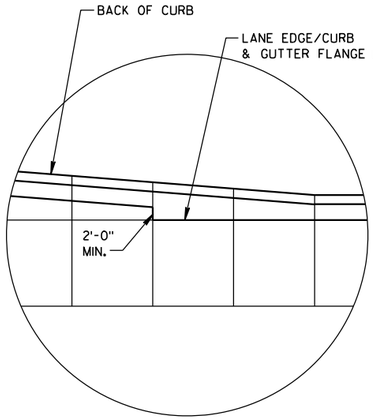
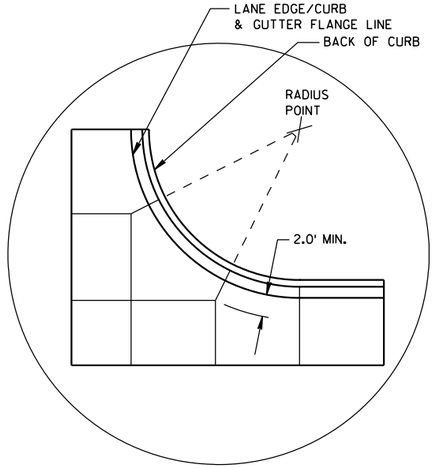
S.D.D. 13 C 11-10b



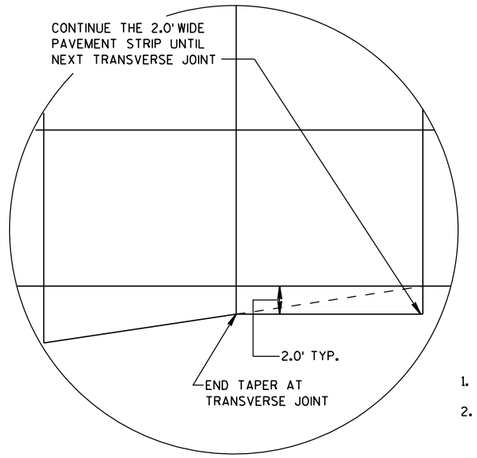
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

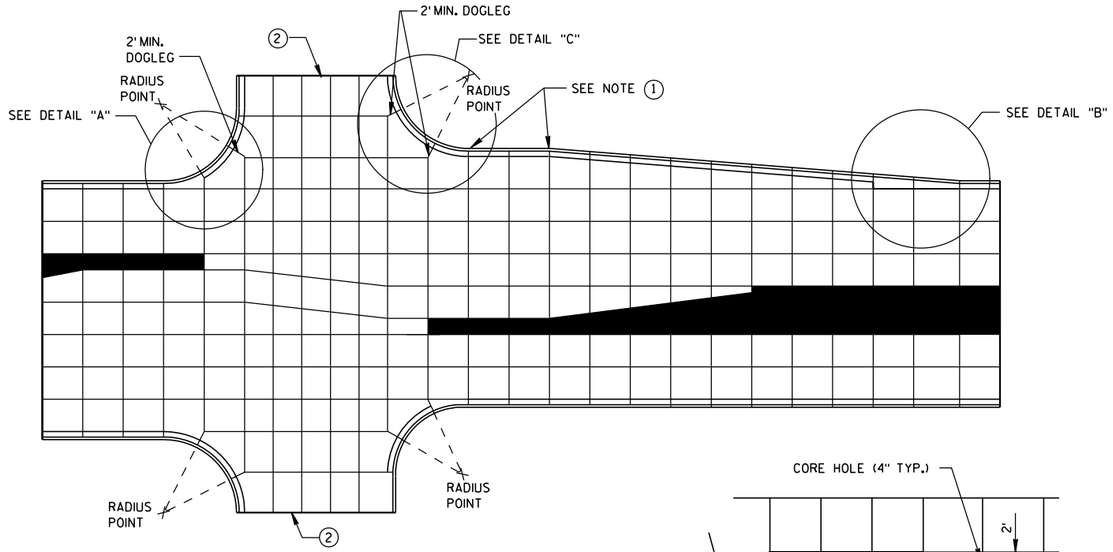
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

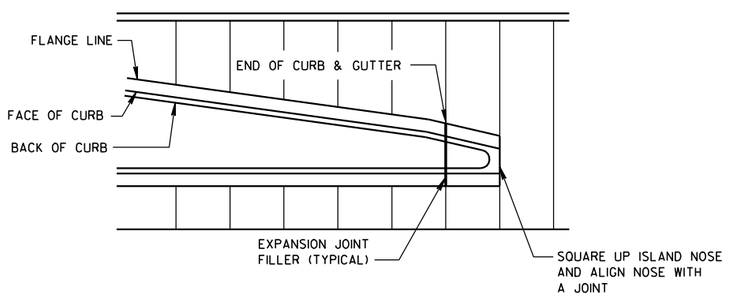
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



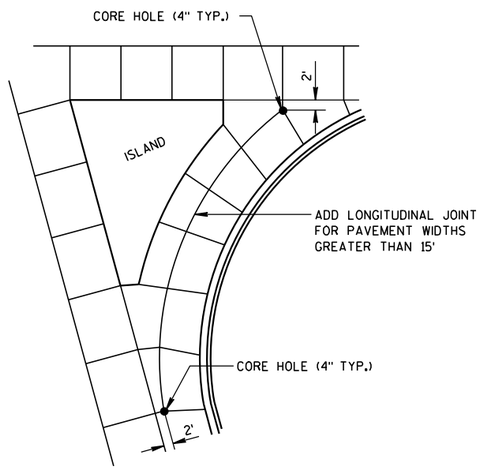
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

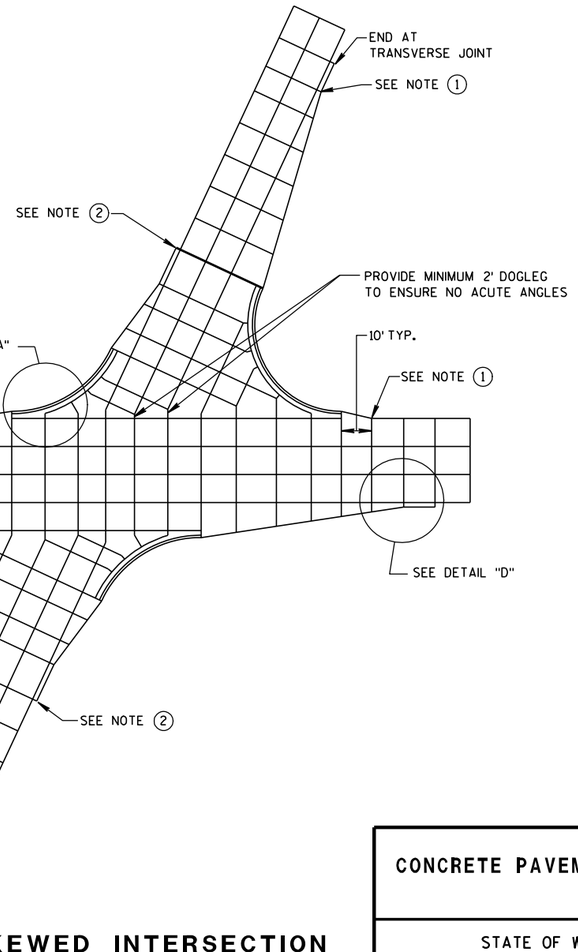
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



APPROACH TO MEDIAN



LARGE RIGHT TURN



SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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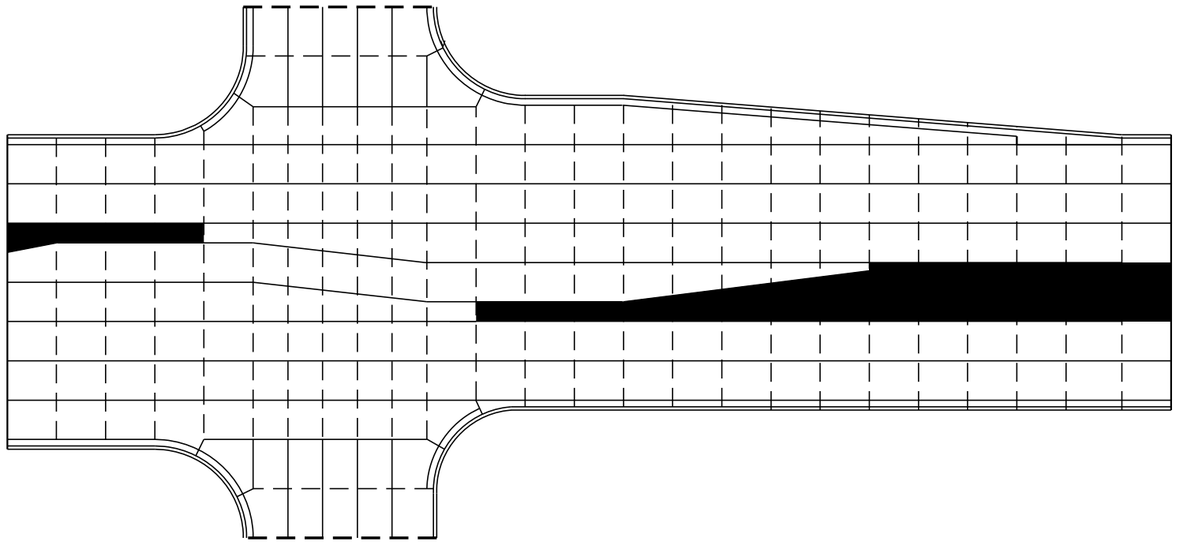
S.D.D. 13 C 18-1a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

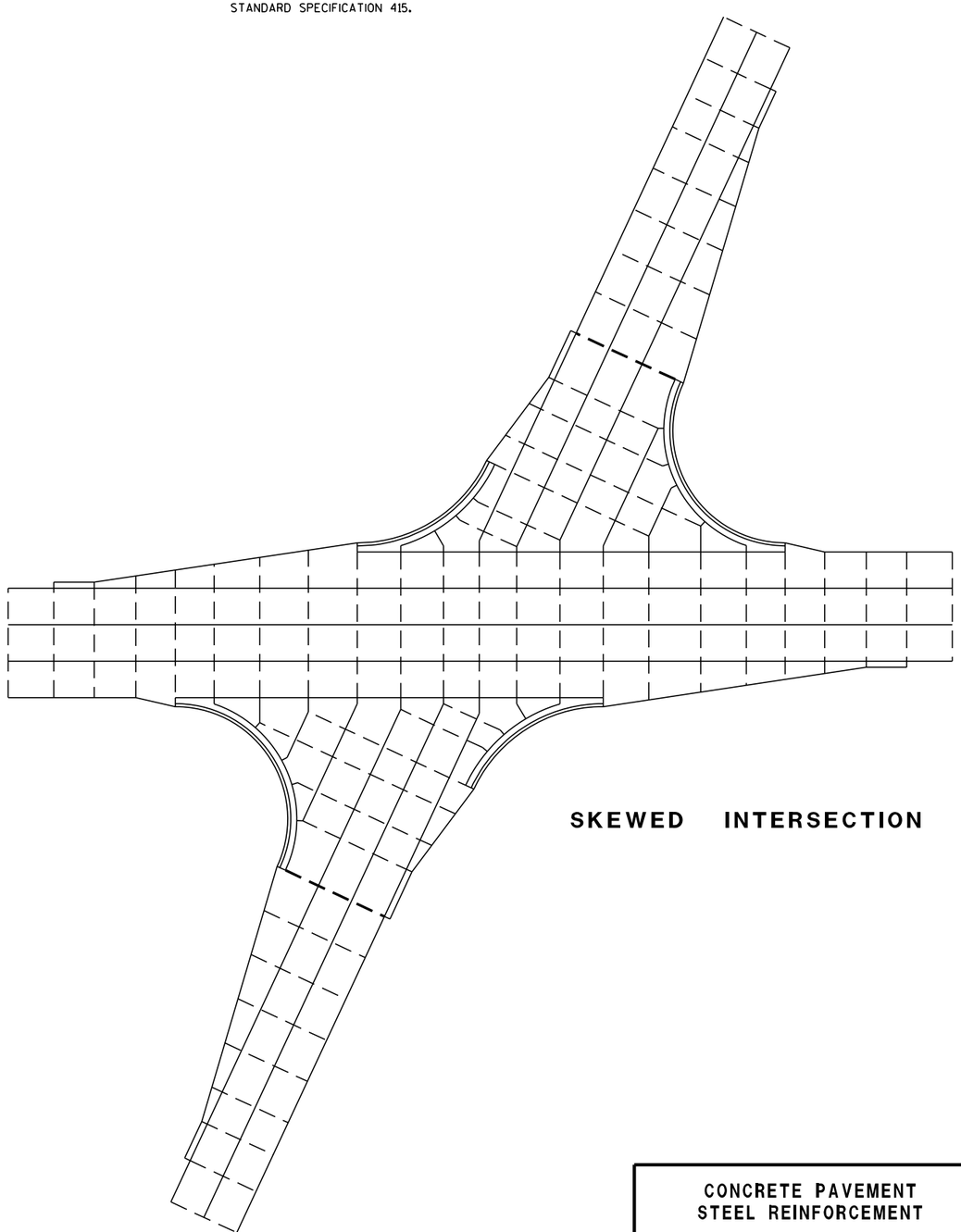
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

6

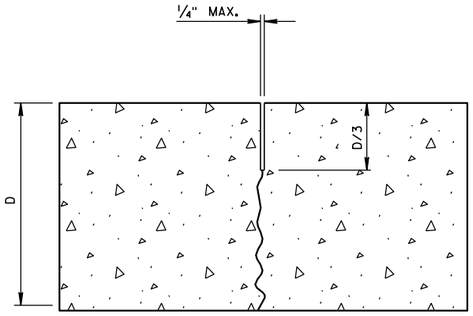
6

S.D.D. 13 C 18-1b

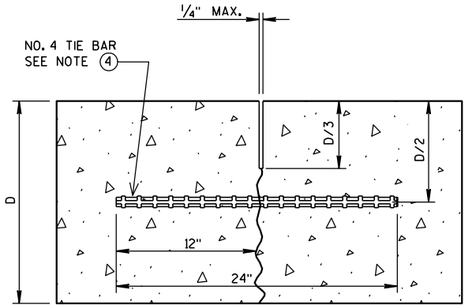
S.D.D. 13 C 18-1b

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



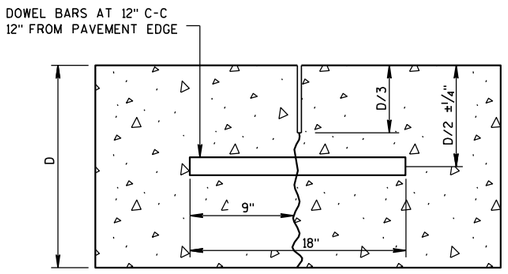
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

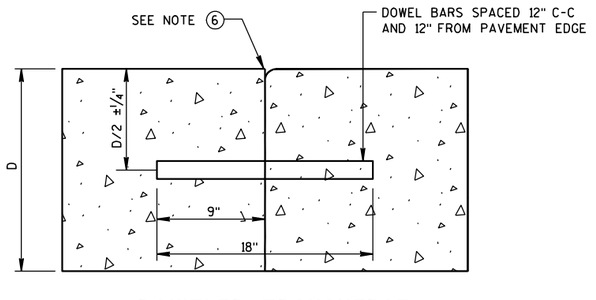
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.



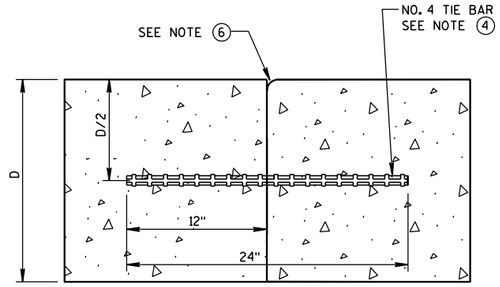
DOWELED-TRANSVERSE

CONTRACTION JOINTS

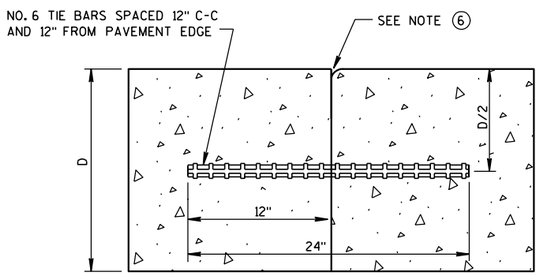
SEE NOTE (2)



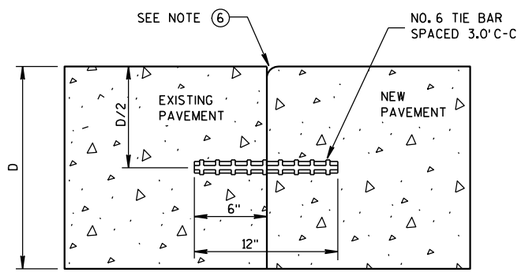
DOWELED TRANSVERSE



TIED LONGITUDINAL



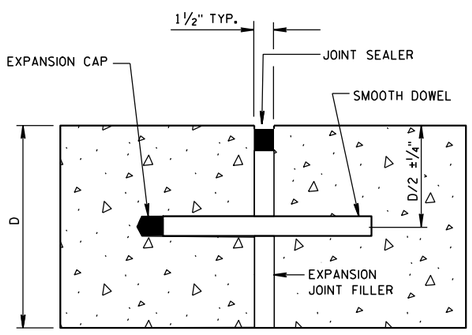
TIED TRANSVERSE
SEE NOTE (3)



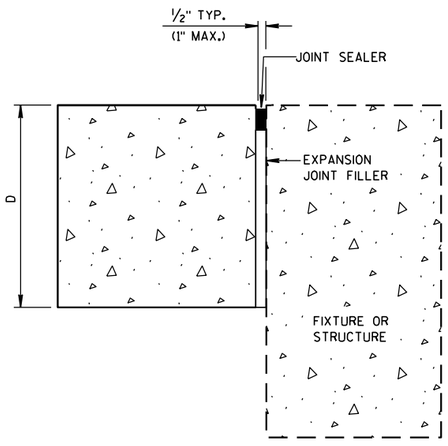
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE
SEE NOTE (1)



UNTIED-LONGITUDINAL

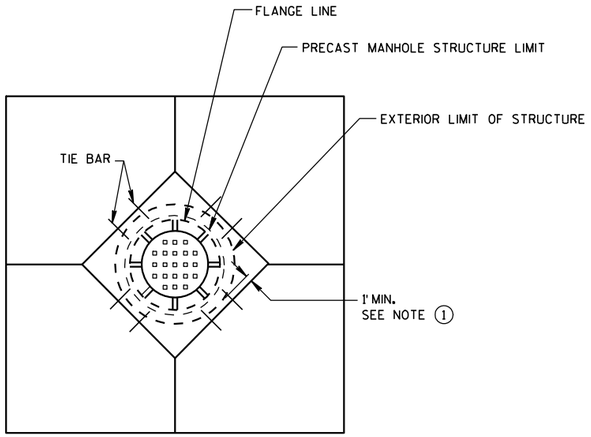
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

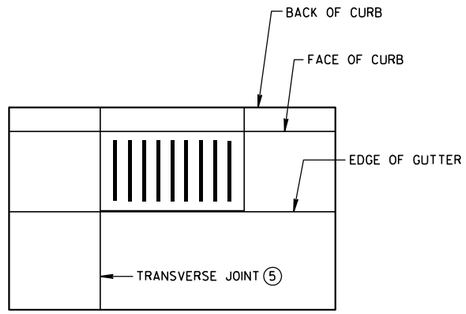
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

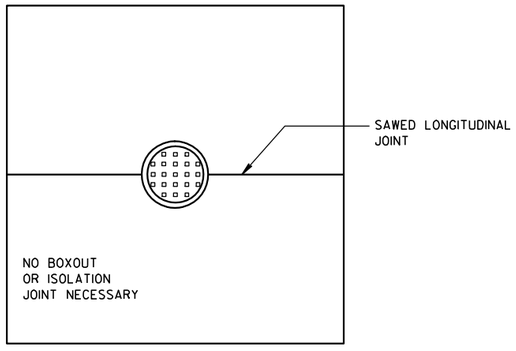
S.D.D. 13 C 18-1c



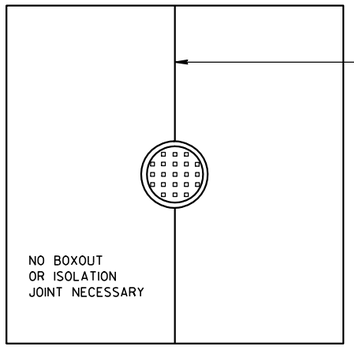
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



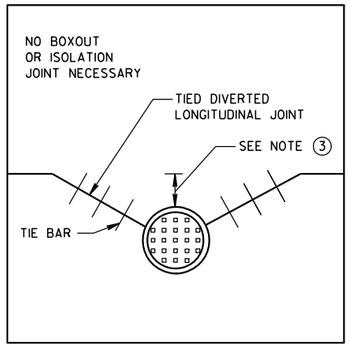
INLET WITH TRANSVERSE JOINT



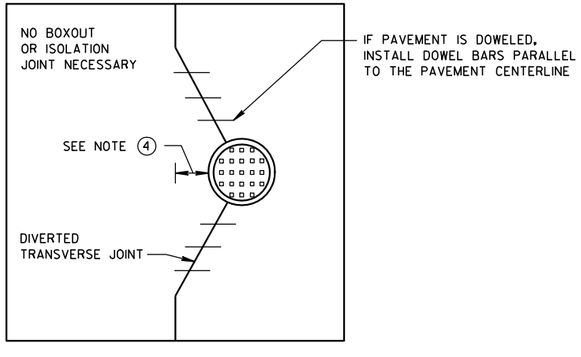
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS GREATER THAN 2 FEET, DO NOT DIVERT JOINT AND SAW LONGITUDINAL JOINT AS NORMAL. IF DISTANCE IS 2 FEET OR LESS, DIVERT LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE.
4. IF DISTANCE FROM THE EDGE OF MANHOLE TO THE NEAREST TRANSVERSE JOINT IS GREATER THAN 4 FEET, REDIRECT JOINT TO INTERSECT MANHOLE. IF DISTANCE IS 4 FEET OR LESS, PLACE REBAR REINFORCEMENT AROUND MANHOLE.
5. ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

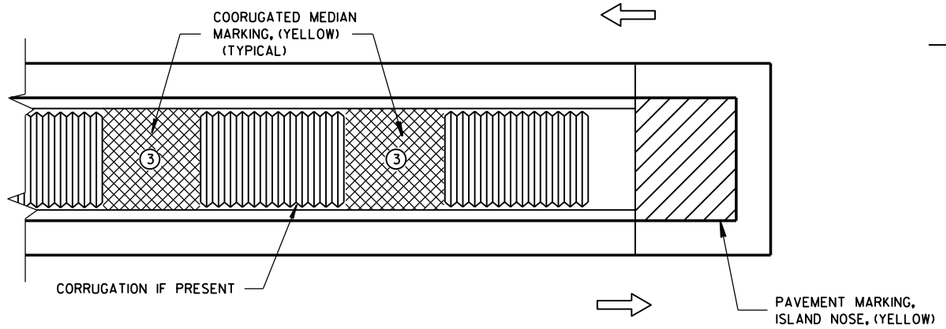
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

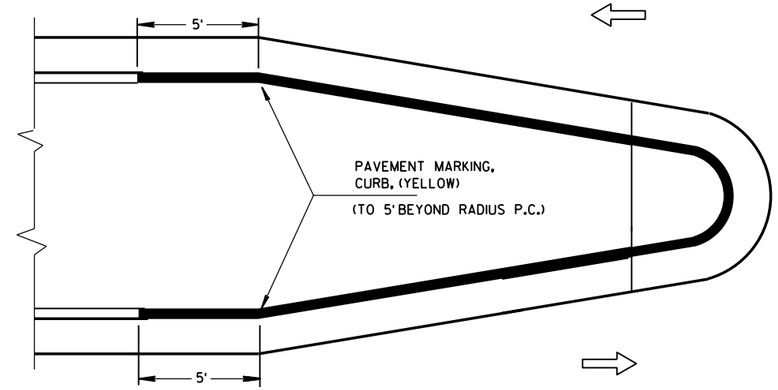
APPROVED
10-5-2010 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D ENGINEER
FHWA

6

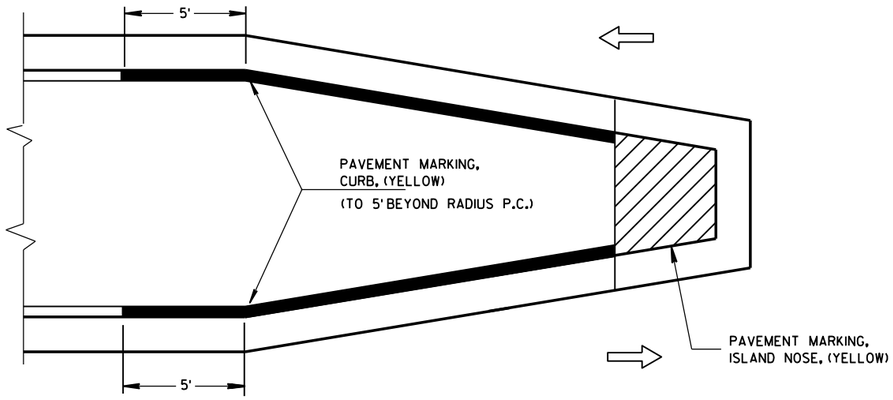
S.D.D. 13 C 18-1d



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

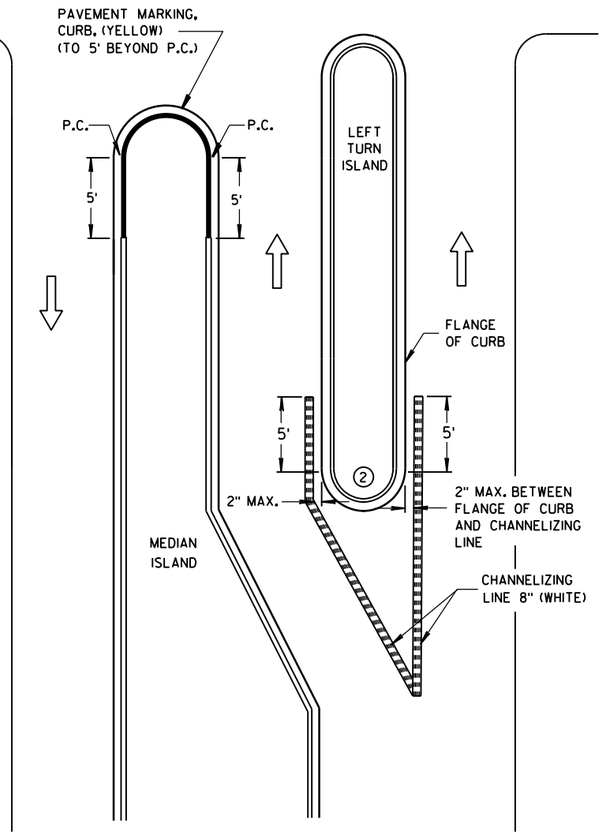


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

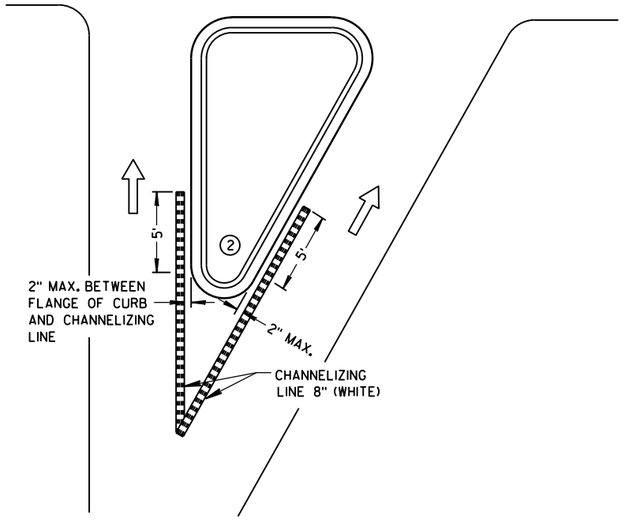
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



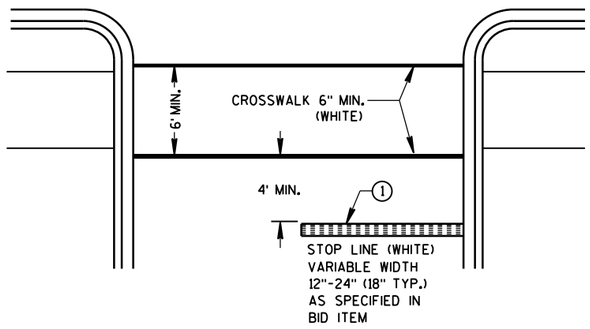
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. STOP LINE IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
3. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND



STOP LINE AND CROSSWALK

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 C 8-15f

6

S.D.D. 15 C 8-15f

TWO-LANE ROADWAY

SYMBOLS

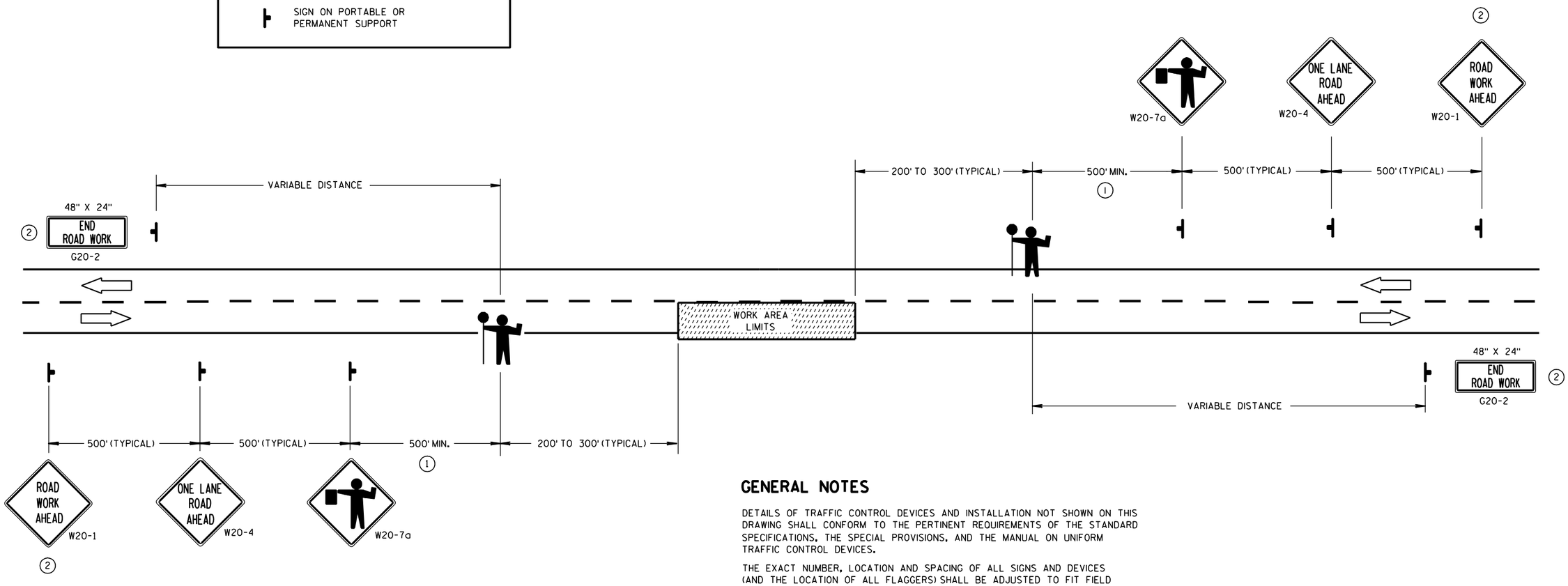
WORK AREA

FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN ON PORTABLE OR PERMANENT SUPPORT

W3-4

USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/5/06 — DATE

/S/ Thomas N. Nathaam — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 12-3

SYMBOLS

- TRAFFIC CONTROL DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW
- ARROW BOARD IN CAUTION MODE

GENERAL NOTES

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

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

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

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

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

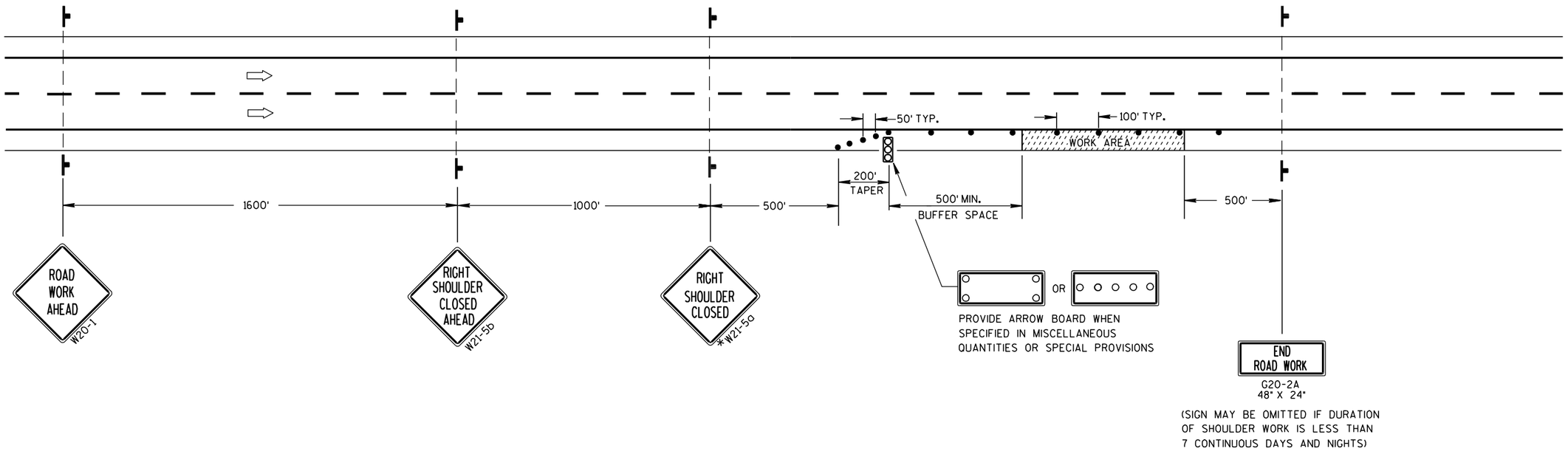
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

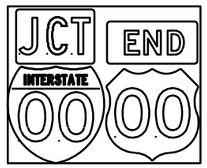
APPROVED
5/23/00
DATE
/S/ Chester J Spong
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

6

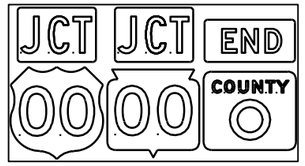
S.D.D. 15 D 27-1

TYPICAL ASSEMBLIES

J1-1

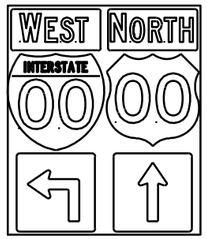


J1-2

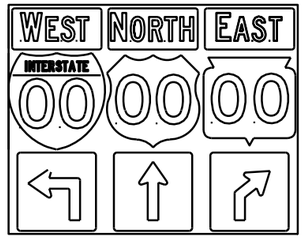


J1-3

J2-1



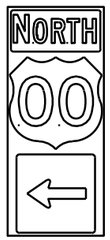
J2-2



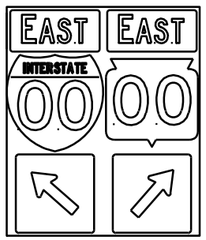
J2-3

JV

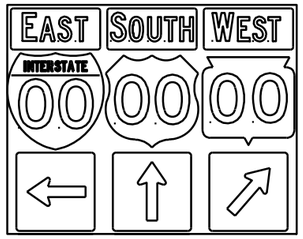
(Typical Vertical J-Assembly
See Note 10 and 11)



J3-1

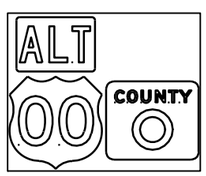


J3-2

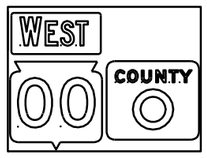


J3-3

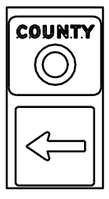
J4-1



J4-2



J4-2



J13-1

J12-1

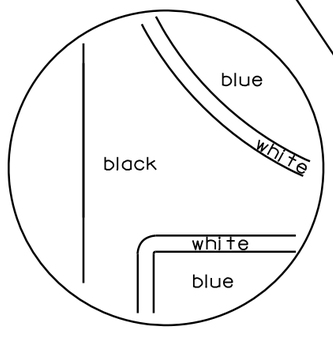
J32-1

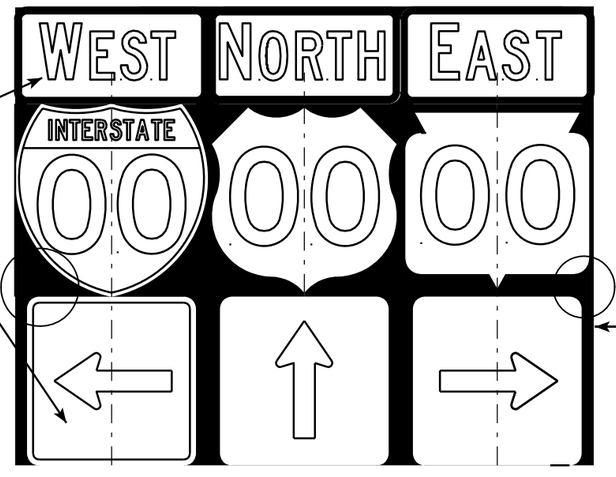
J33-1

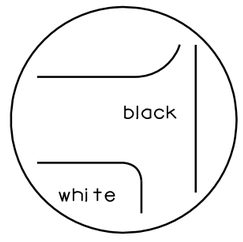
J23-1

J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of interstate and non interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/13 PLATE NO. A2-1S.7

7

7

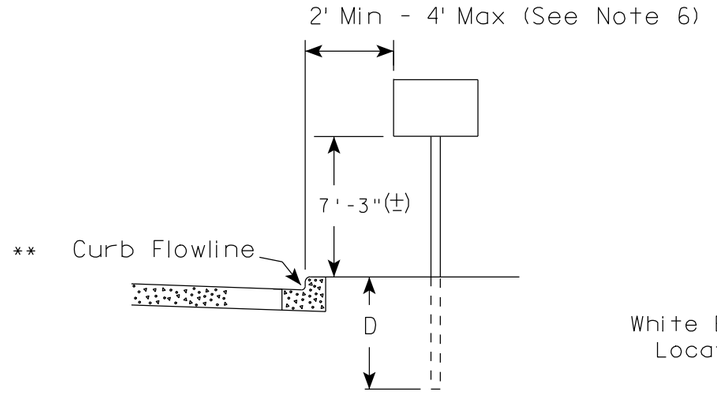
PROJECT NO:

SHEET NO: 70 E

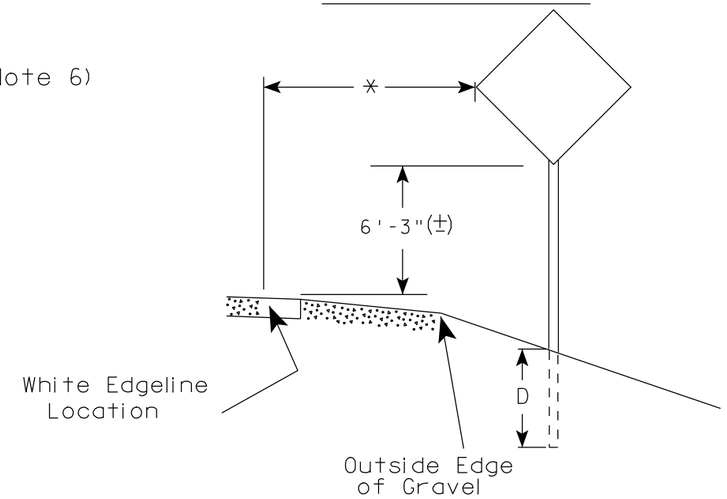
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 25-MAR-2013 11:33 PLOT BY : mscsja PLOT NAME :

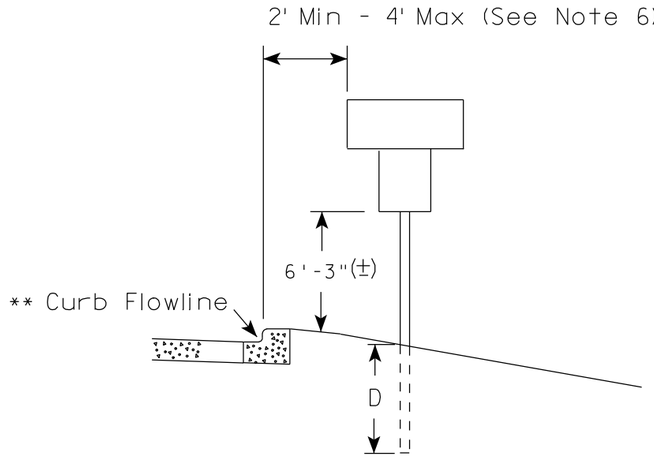
WISDOT/CADDS SHEET 42

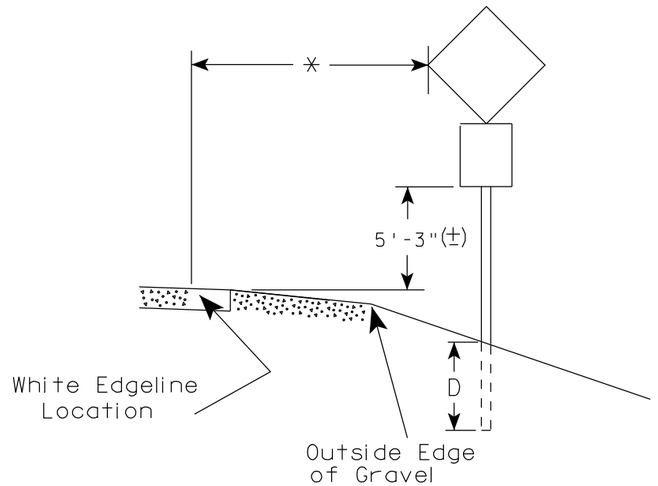
URBAN AREA



RURAL AREA (See Note 2)







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

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

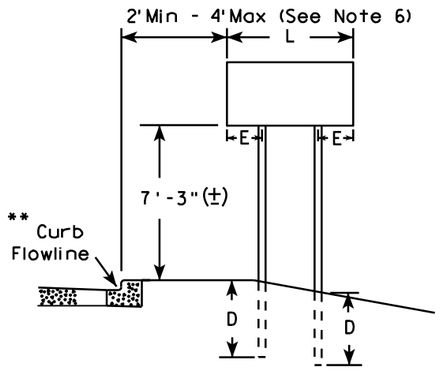
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

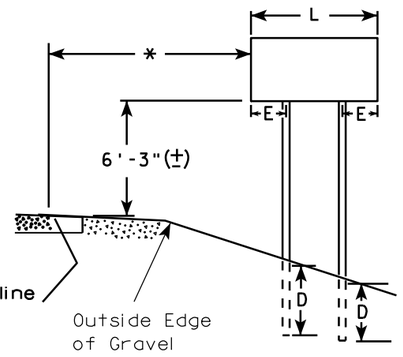
DATE 5/24/2013 PLATE NO. A4-3.17

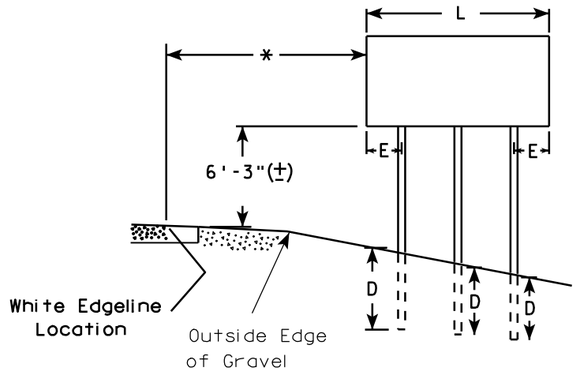
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 71	E

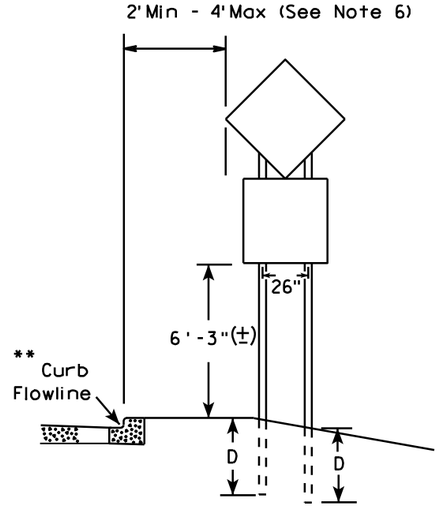
URBAN AREA



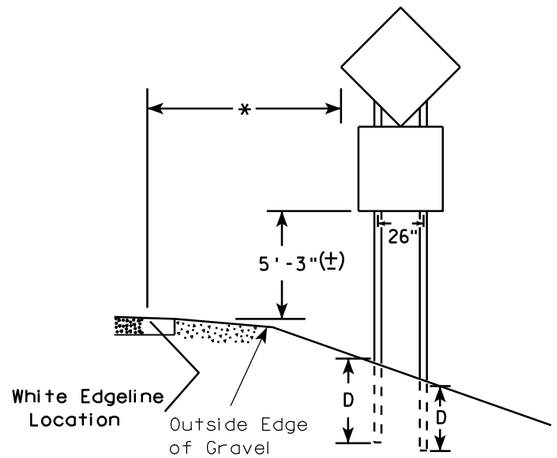
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

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

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

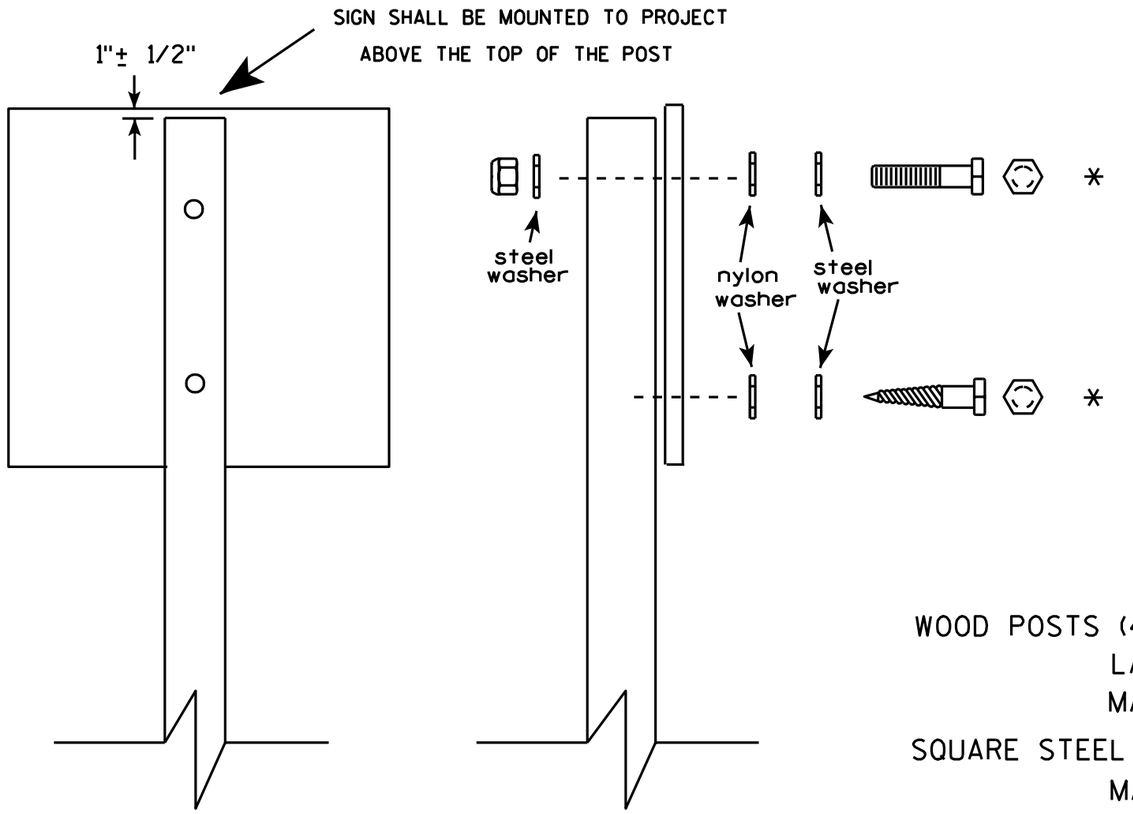
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 72	E



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

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

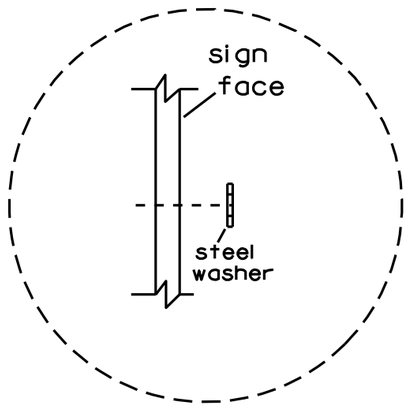
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

7

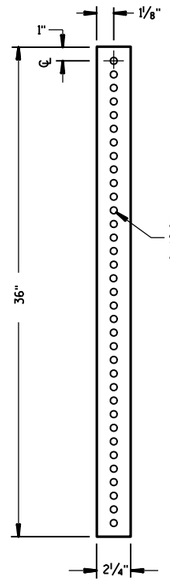
7

PROJECT NO:

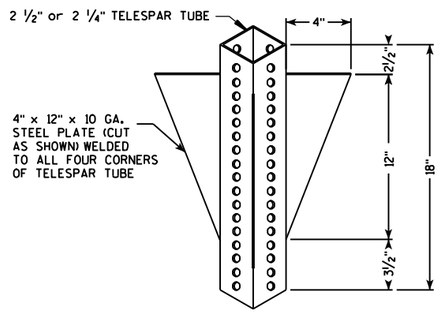
SHEET NO: 73 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

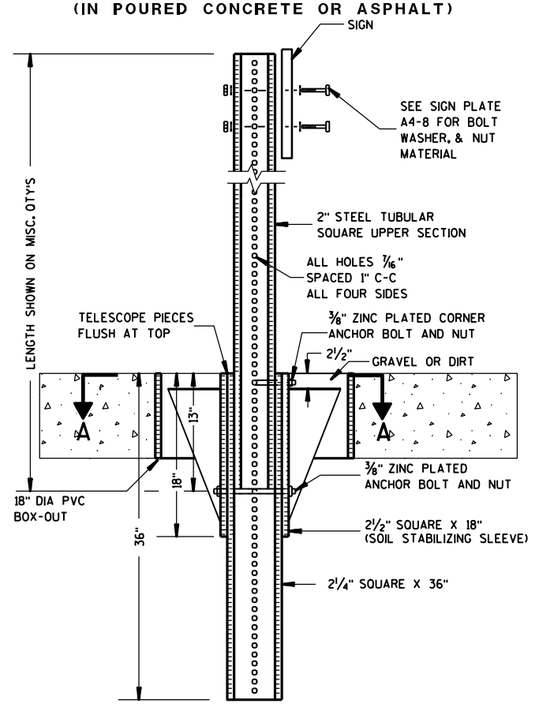
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



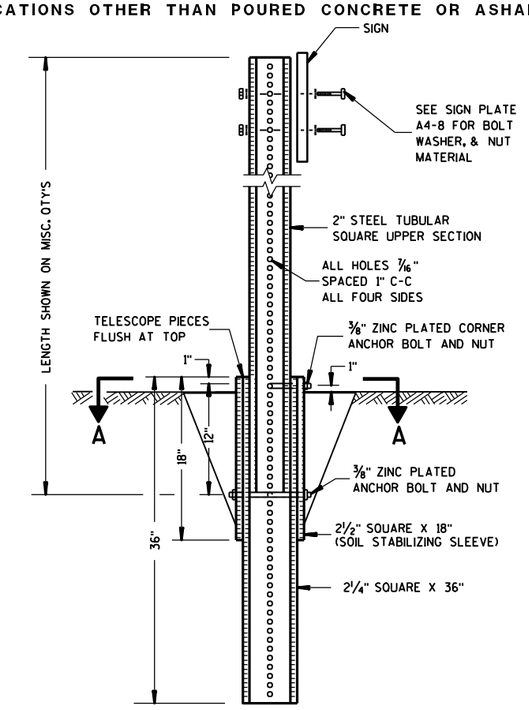
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

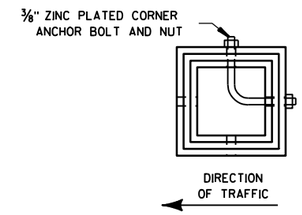


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

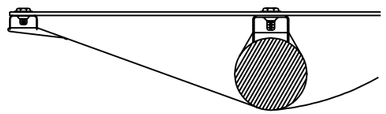
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

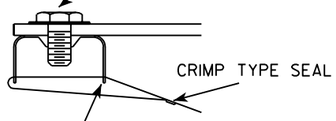
APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 74	E

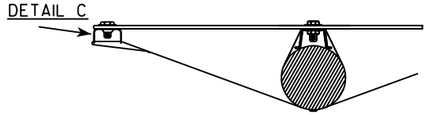
BRACE BANDING

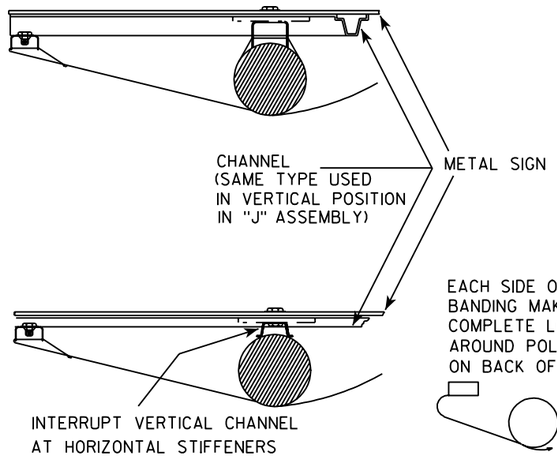


DETAIL C
CADMIUM PLATED STEEL BOLT
THROUGH BLACK BORDER



DETAIL C

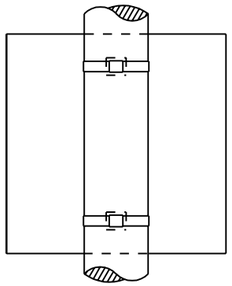


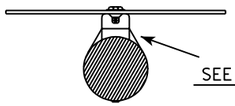


EACH SIDE OF BRACE
BANDING MAKES ONE
COMPLETE LOOP
AROUND POLE-SEAL
ON BACK OF POLE

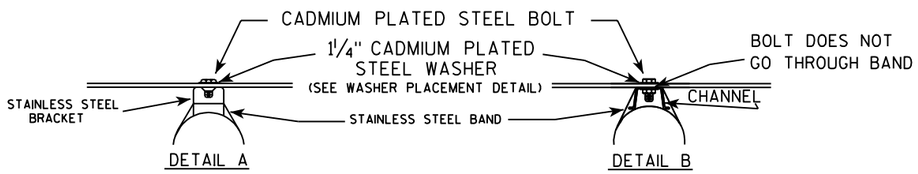
BRACKET BANDING

SINGLE SIGN





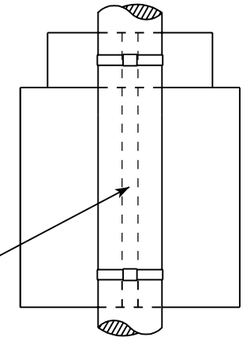
SEE DETAIL A



DETAIL A

DETAIL B

"J" ASSEMBLY

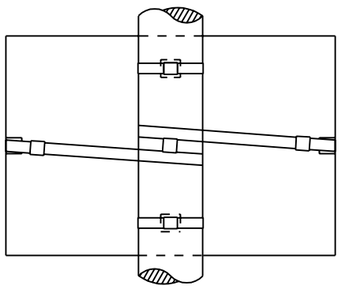


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

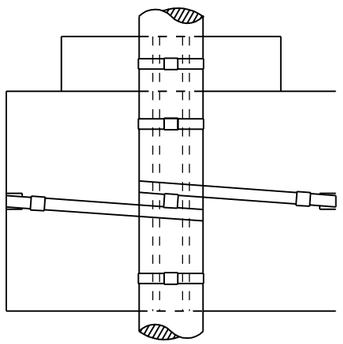
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

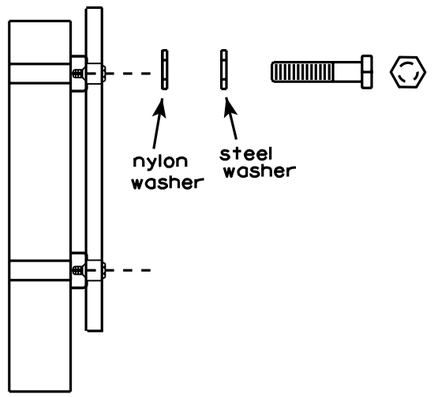


BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.



WASHER PLACEMENT



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

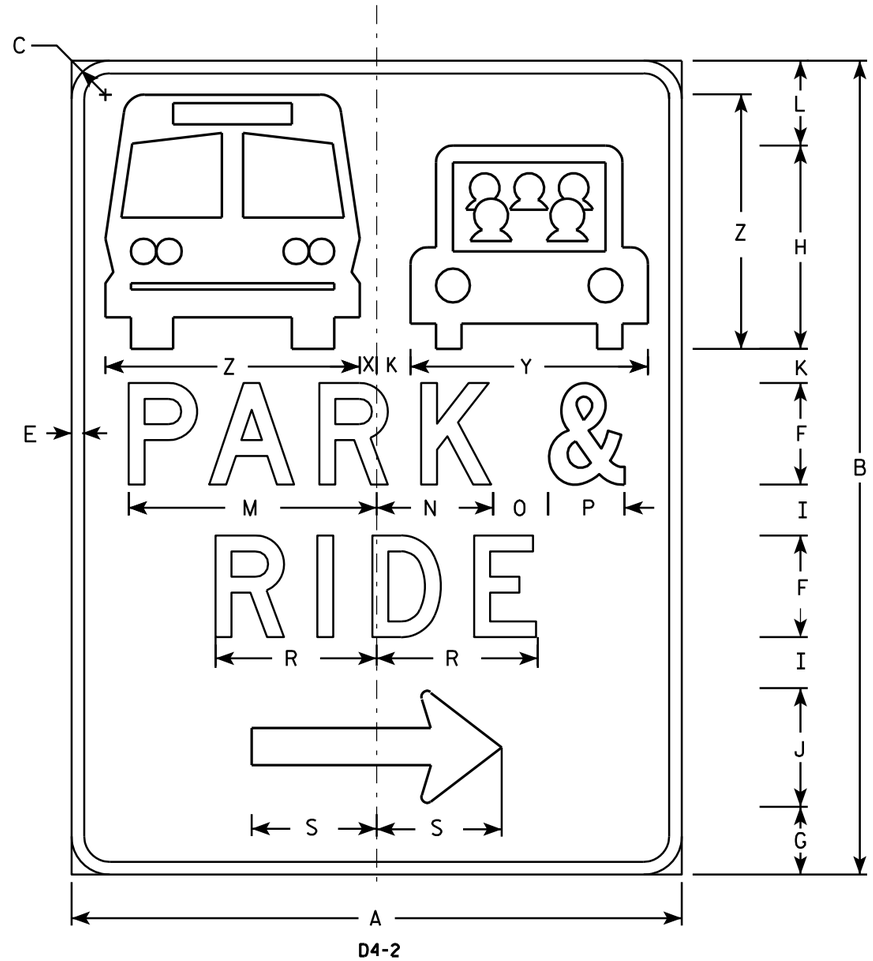
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

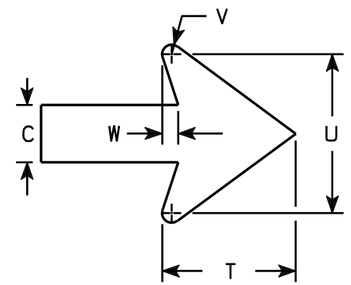
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 75	E



D4-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The D4-2L is the same as a D4-2R except the arrow is reversed.
6. The D4-2 sign may have either symbol or both symbols at the same time.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	30	1 1/8		1/2	4	1 5/8	7 1/2	1 1/2	4 5/8	1 3/8	3 7/8	9 3/4	4	2 3/4	3		6 3/8	4 7/8	3 1/2	4 1/8	1/4	3/8	5/8	9 3/8	10	5.0
2	30	36	1 3/8		5/8	5	2	9	1 5/8	5 1/2	1 5/8	4 5/8	12 1/4	5 1/8	3 3/8	3 3/4		8	6 1/8	4 3/8	5 1/4	3/8	1/2	7/8	11 3/4	12 1/2	7.50
3	36	48	2 1/4		3/4	6	4	12	3	7	2	5	14 5/8	6 7/8	3 1/4	4 1/2		9 1/2	7 1/2	5 1/4	6 1/4	3/8	5/8	1	14	15	12.0
4																											
5																											

STANDARD SIGN
D4-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/20/10 PLATE NO. D4-2.5

PROJECT NO:

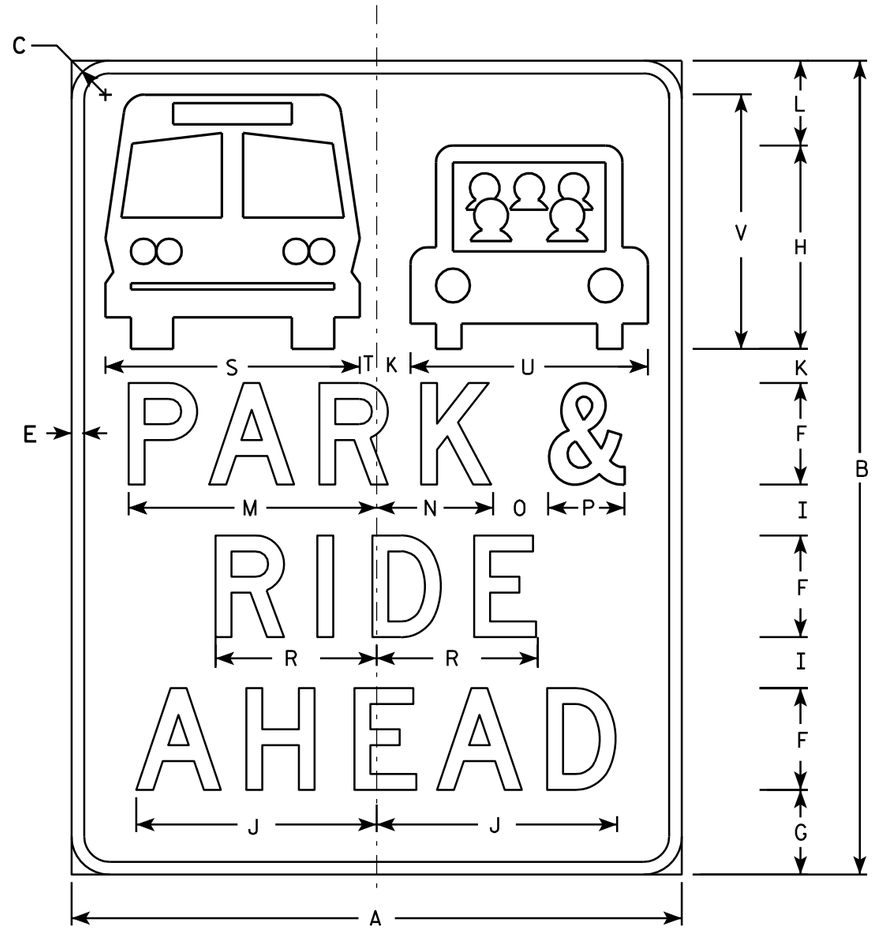
SHEET NO: 76 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\D42.dgn PLOT DATE : 10-FEB-2011 14:21 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

7

7



D4-2A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	30	1 1/8		1/2	4	1 3/4	7 1/2	2	9 1/8	1 3/8	3 3/8	9 3/4	4 5/8	2 3/4	3		6 3/8	10	5/8	9 3/8	9 3/8					5.0
2	30	36	1 3/8		5/8	5	1 7/8	9	2	11 3/8	1 5/8	4 1/2	12 1/4	5 1/8	3 3/8	3 3/4		8	12 1/2	7/8	11 3/4	12					7.5
3	36	48	2 1/4		3/4	6	5	12	3	14 1/4	2	5	14 5/8	6 7/8	3 1/4	4 1/2		9 1/2	15	1	14	15					12.0
4																											
5																											

STANDARD SIGN
D4-2A

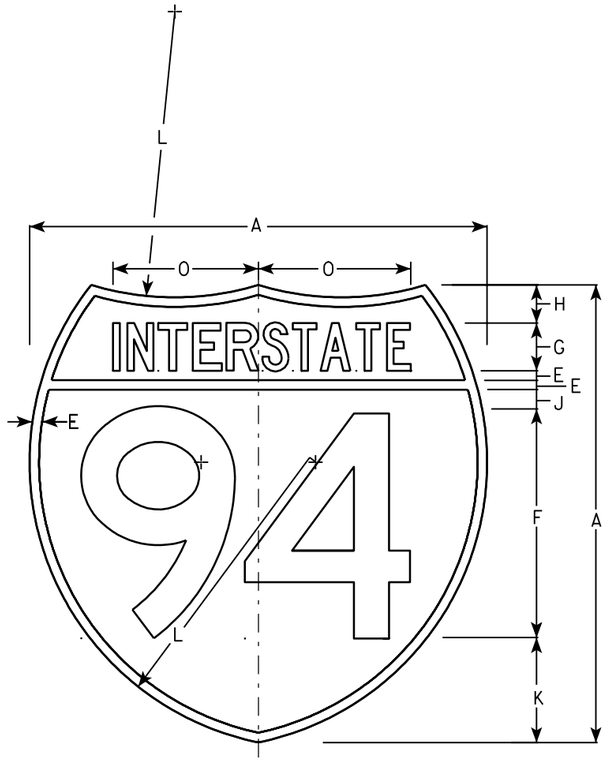
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

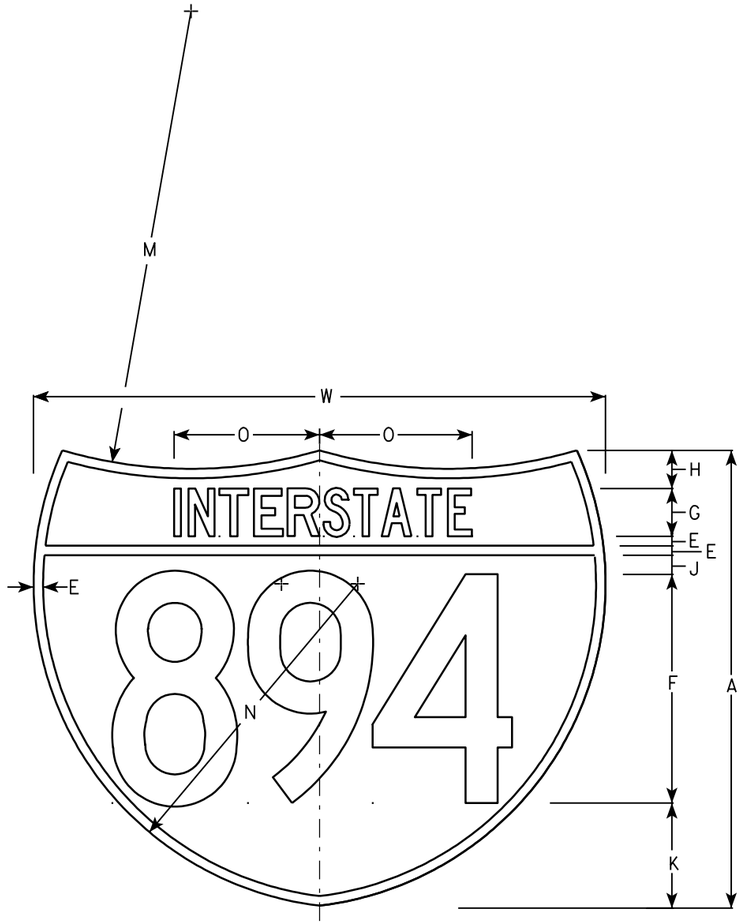
DATE 12/30/10 PLATE NO. D4-2A.2

PROJECT NO:

SHEET NO: 77 E



M1-1



M1-1A

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Top Red - Bottom Blue (See Note 6)
   Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C
6. Permanent Signs
   Message - Type H Reflective
   Detour or other temporary signs
   Background - Reflective
   Message - Reflective

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m2	M1-1A Area m2
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

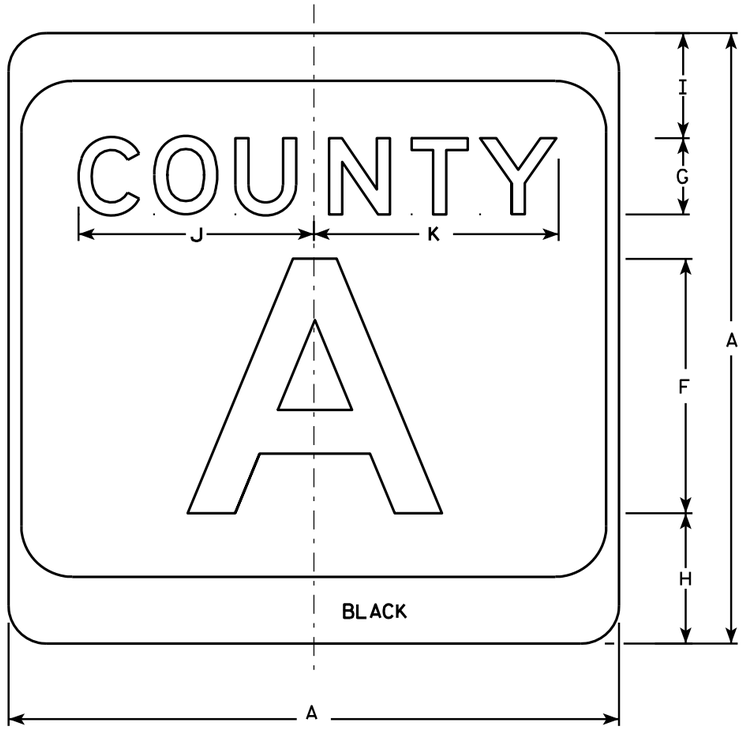
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

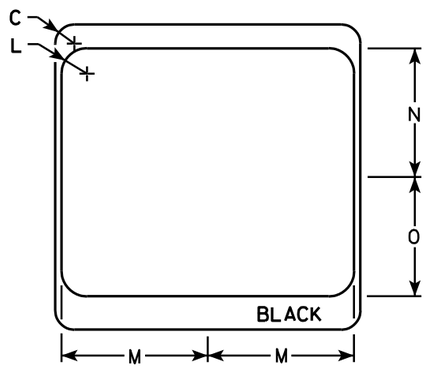
APPROVED Matthew R Rauch
for State Traffic Engineer

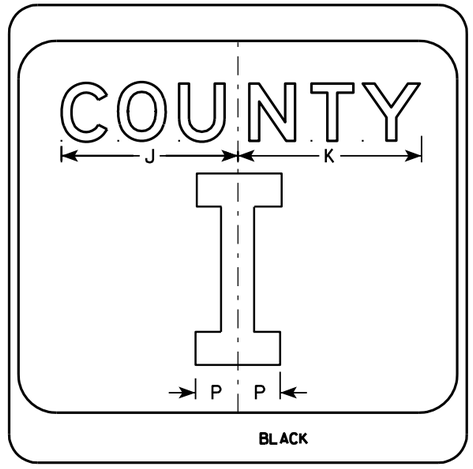
DATE 08/23/05 PLATE NO. M1-1.8

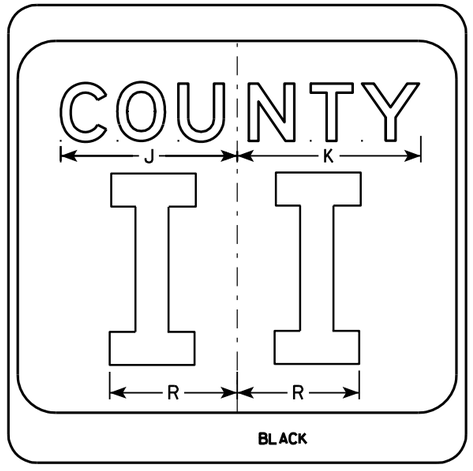
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 78	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

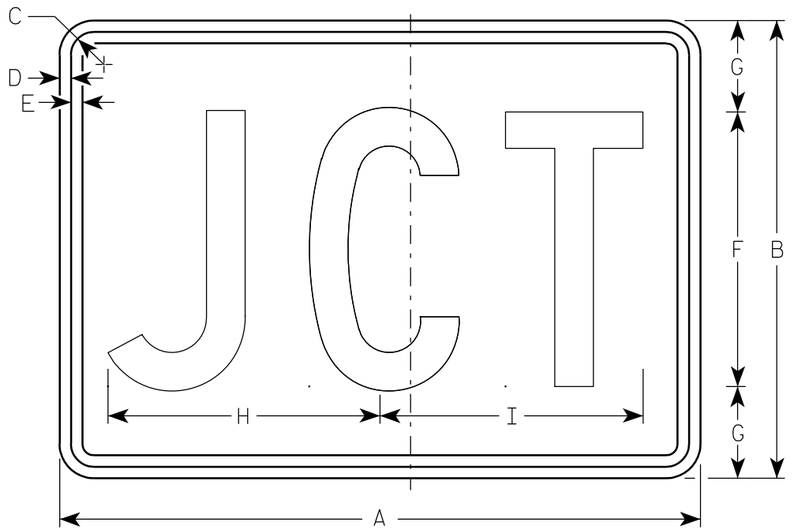
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

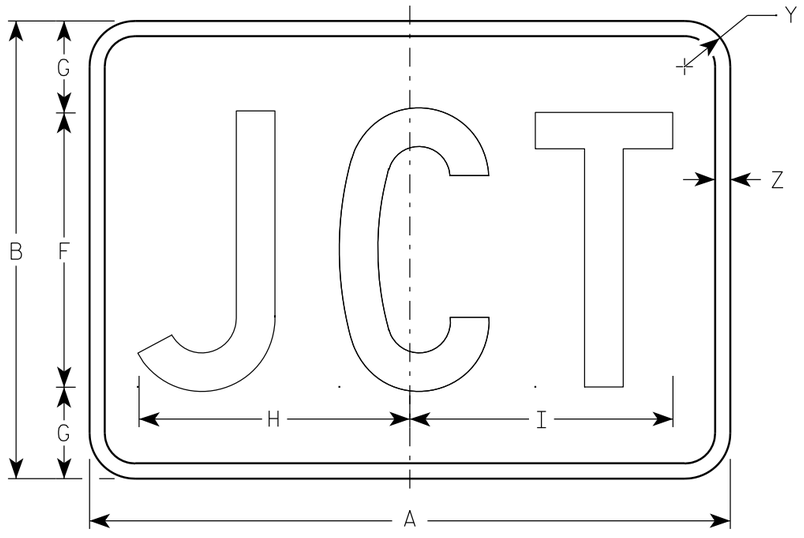
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 79	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

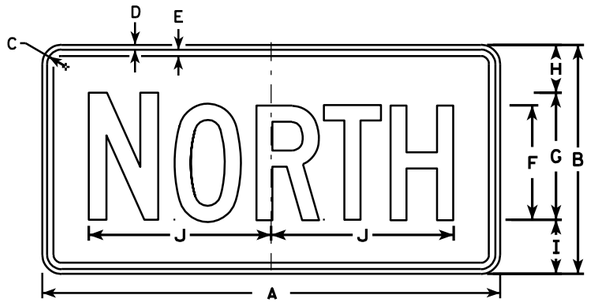
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

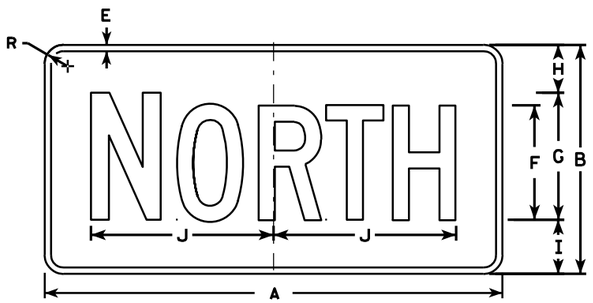
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 80 | E

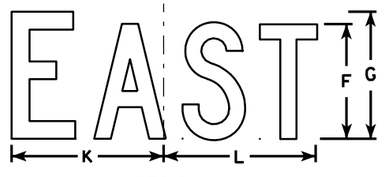


M3-1
MK3-1
MO3-1

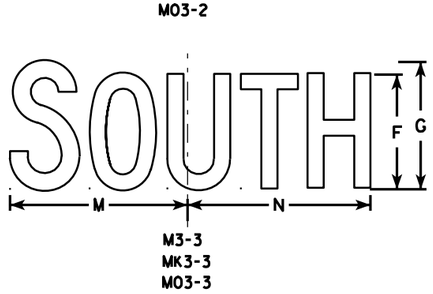


MB3-1
MG3-1
MM3-1
MN3-1

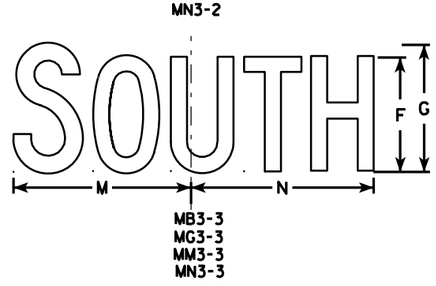
M3-2
MK3-2
MO3-2



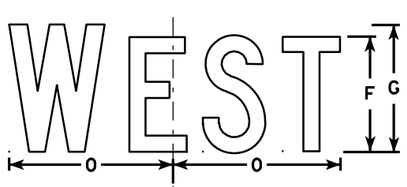
MB3-2
MG3-2
MM3-2
MN3-2



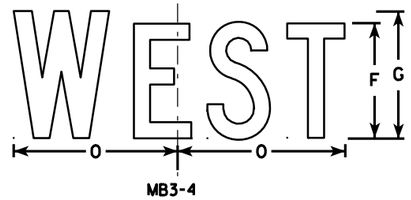
M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective) Message - Black
   MB3-1 thru MB3-4 Background - Blue Message - White - Type H Reflective (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective Message - Green
   MN3-1 thru MN3-4 Background - Brown Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

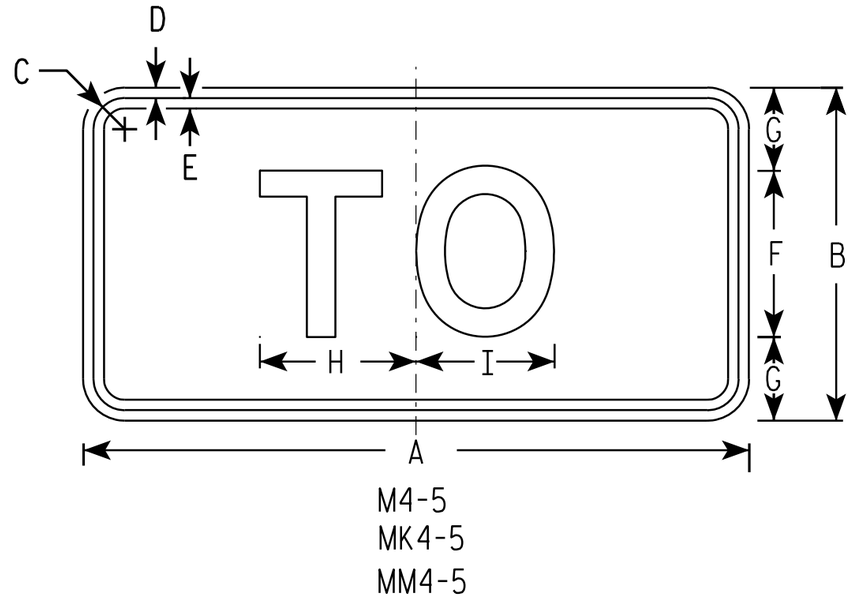
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

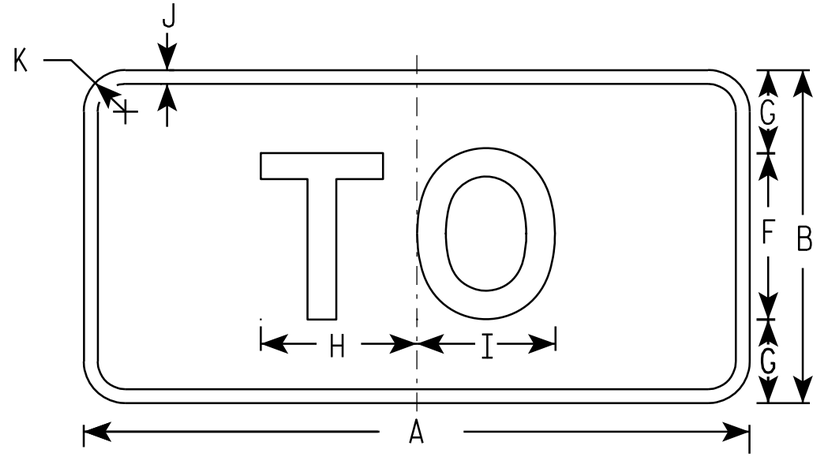
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 81	E



M4-5
MK4-5
MM4-5



MB4-5
MG4-5
MN4-5

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
   Message - Black
   MB4-5 Background - Blue
   Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG4-5 Background - Green
   Message - White - Type H Reflective
   MK4-5 Background - Green
   Message - White - Type H Reflective
   MM4-5 Background - White - Type H Reflective
   Message - Green
   MN4-5 Background - Brown
   Message - White - Type H Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

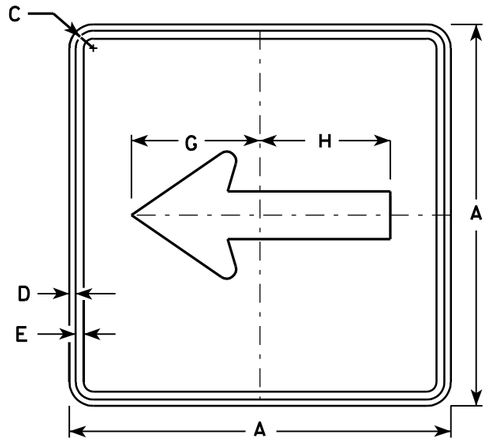
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-5.6

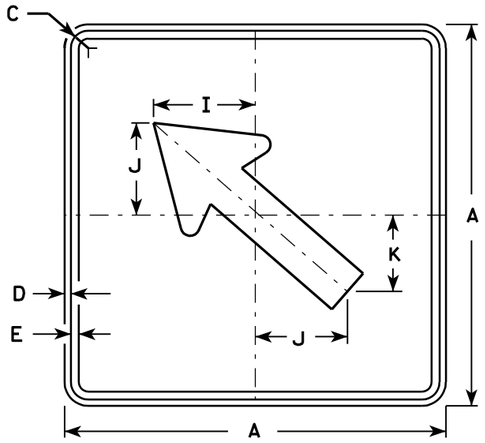
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 82 | E

7

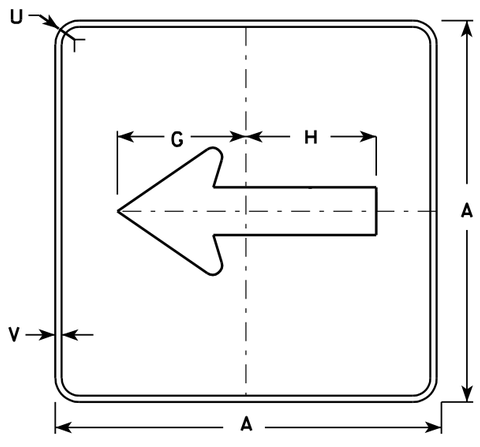
FILE NAME : C:\Users\PROJECTS\tr_stdplate\M45.DGN PLOT DATE : 10-NOV-2010 12:48 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 5.462457:1.000000
WISDOT/CADDS SHEET 42



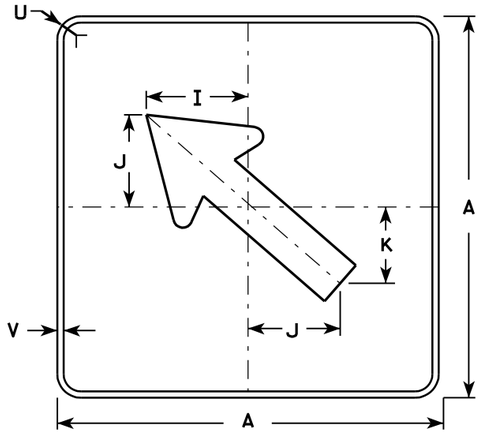
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



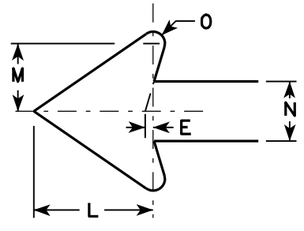
MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG6-1 and MG6-2 Background - Green
   Message - White - Type H Reflective
   MK6-1 and MK6-2 Background - Green
   Message - White - Type H Reflective
   MM6-1 and MM6-2 Background - White - Type H Reflective
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White - Type H Reflective
   MO6-1 and MO6-2 Background - Orange - Reflective
   Message - Black
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow - Type H Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

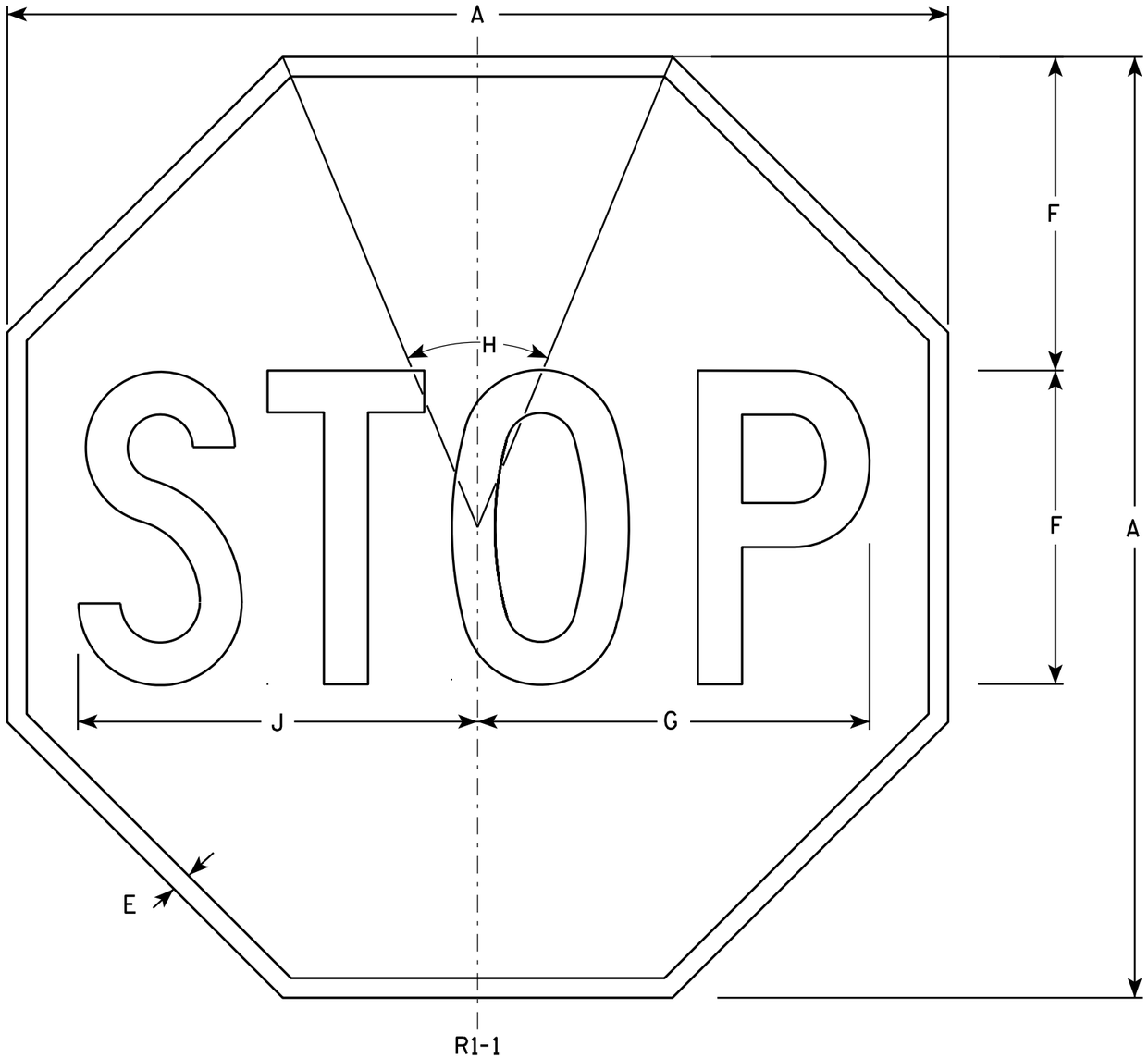
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 83	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

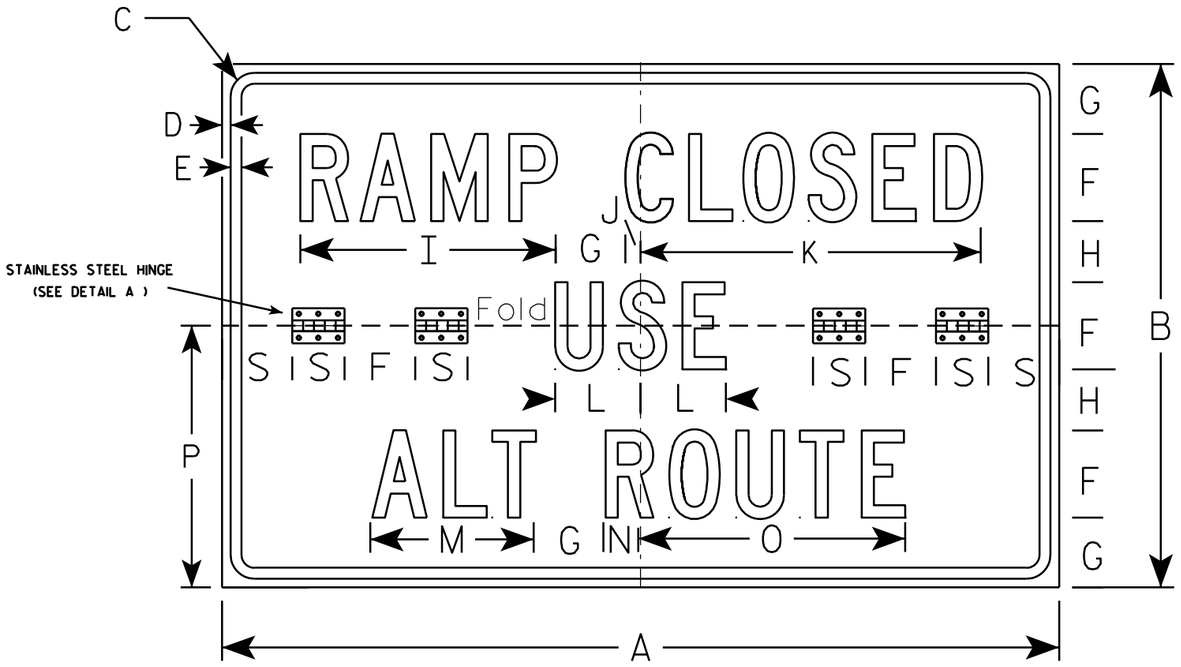
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 84	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R11.DGN PLOT DATE : 02-DEC-2010 15:09 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 4.469282:1.000000

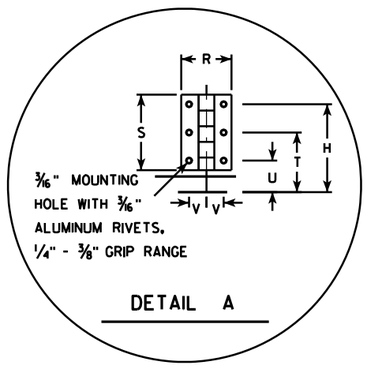
WISDOT/CADDS SHEET 42

7

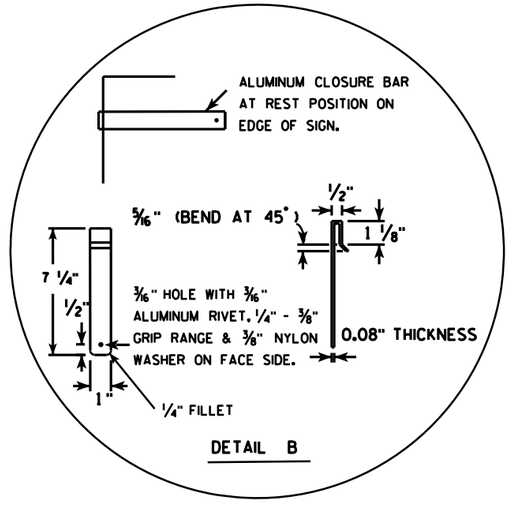
7



R11-54F



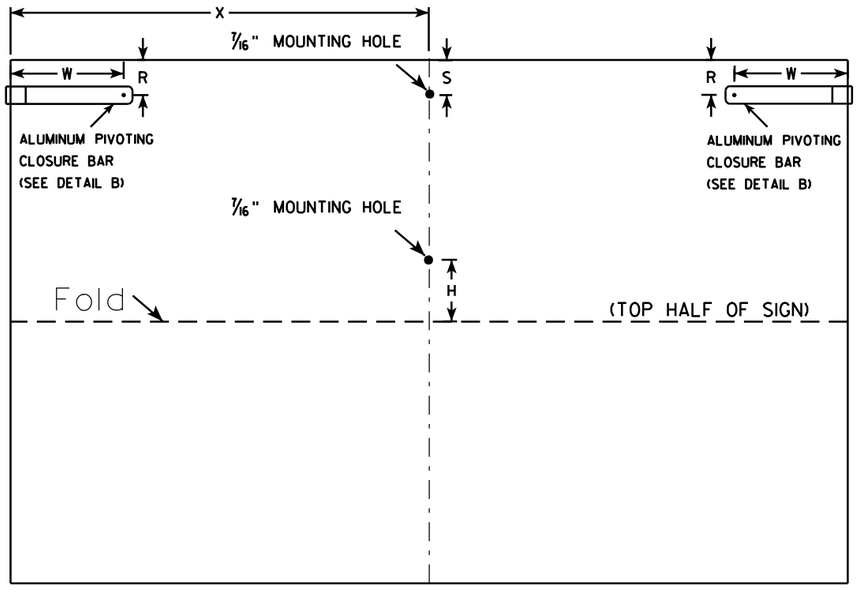
DETAIL A



DETAIL B

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - WHITE
   Message - BLACK
3. Message Series - C
4. Sign Base Material shall be aluminum corners and borders shall be rounded.
5. All hardware used on the folding sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



(BACK VIEW)

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	5	4	3 1/2	14 5/8	7/8	19 1/2	4 7/8	9 3/8	2	15 1/4	15		2	3	2 5/8	1 1/4	11/16	6 1/2	24			10.0
2M	48	30	1 3/8	1/2	5/8	5	4	3 1/2	14 5/8	7/8	19 1/2	4 7/8	9 3/8	2	15 1/4	15		2	3	2 5/8	1 1/4	11/16	6 1/2	24			10.0
3																											
4																											
5																											

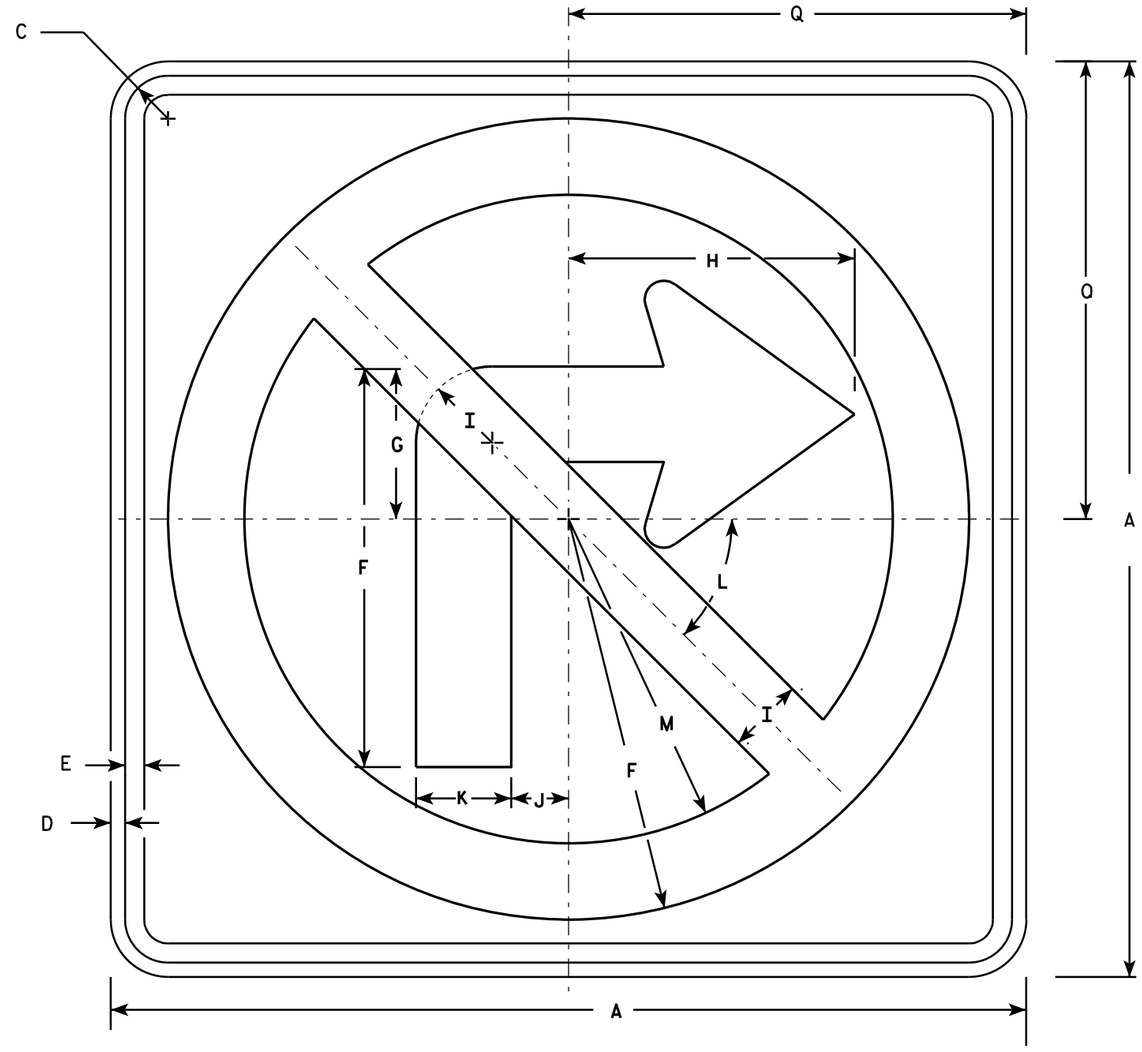
STANDARD SIGN
R11-54F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-54F.2

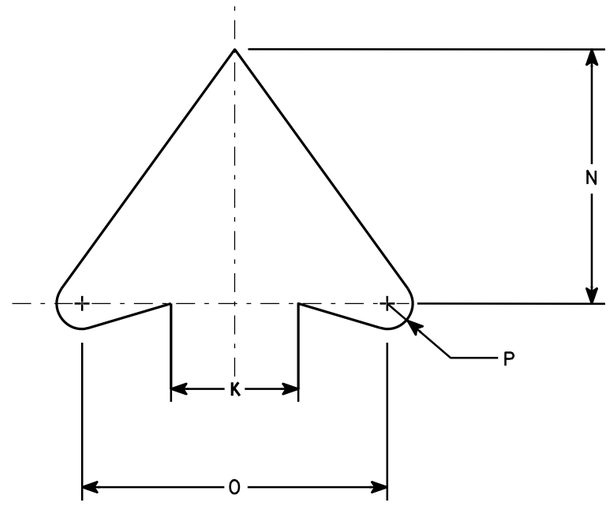
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 85	E



R3-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

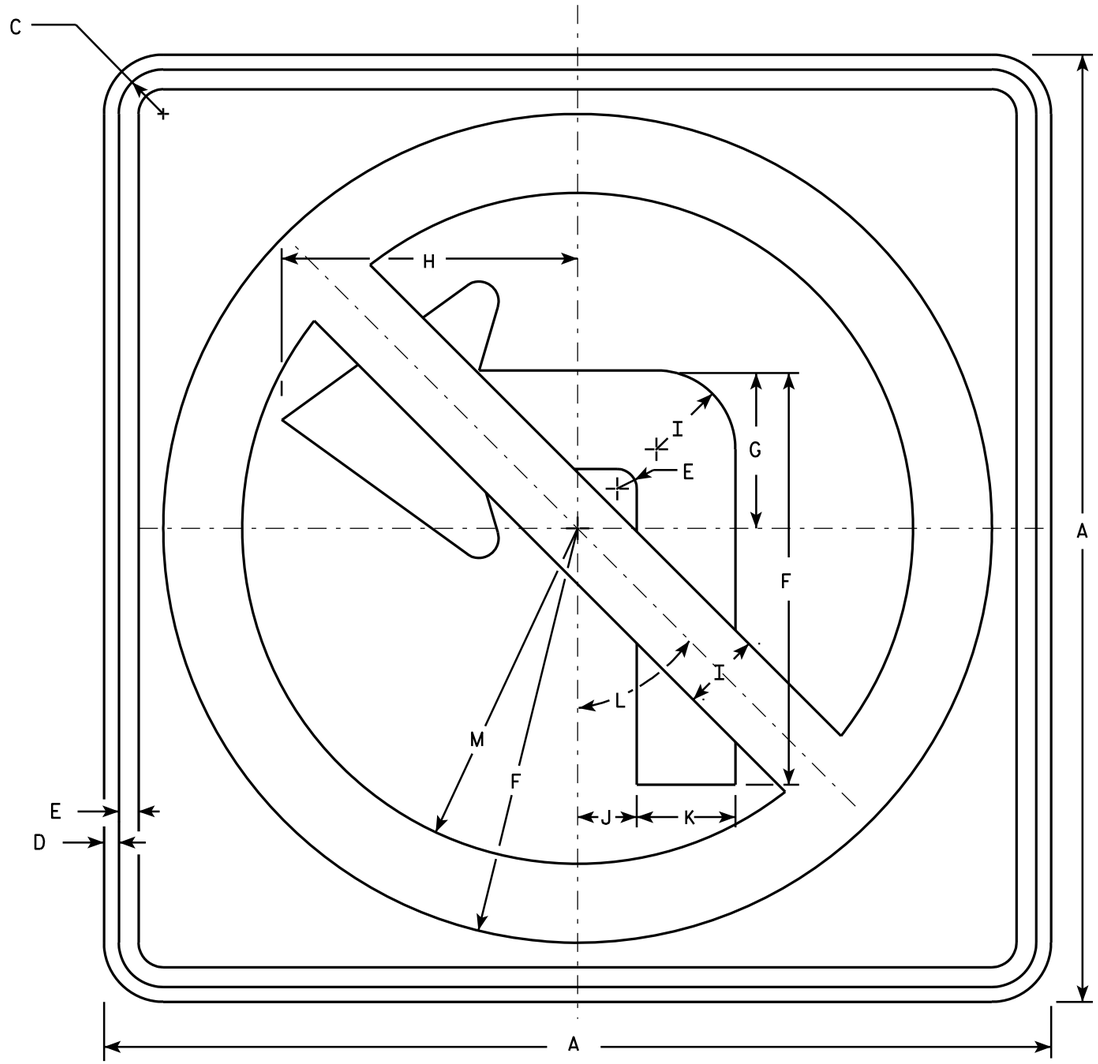
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

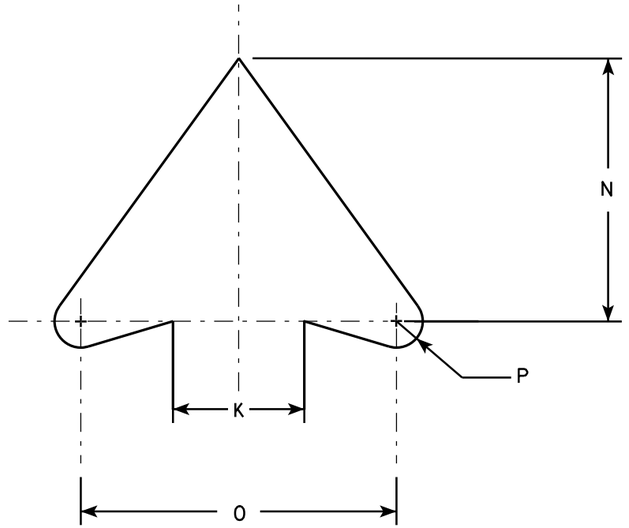
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 86	E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

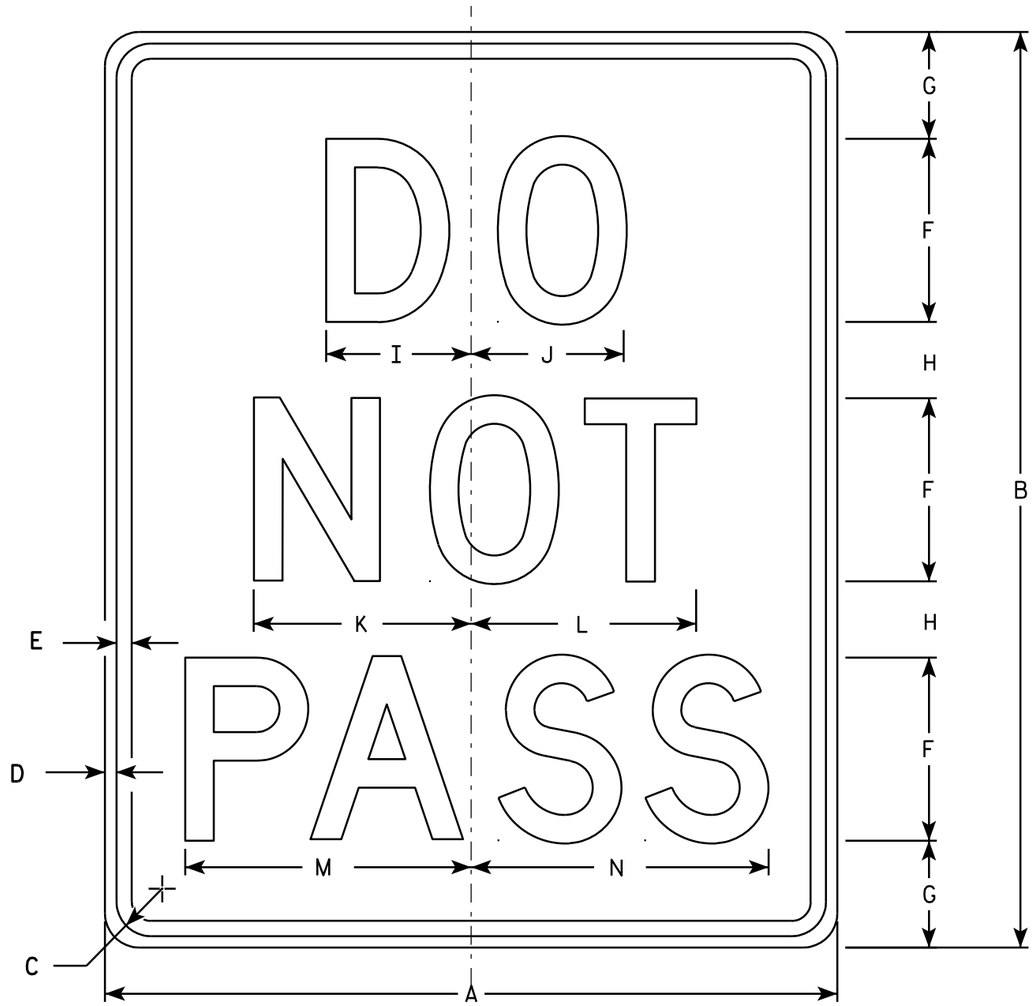
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 87	E



R4-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3																											
4	36	48	1 5/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	2 1/4	3/4	1	10	8	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4													20.0

STANDARD SIGN
R4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-1.7

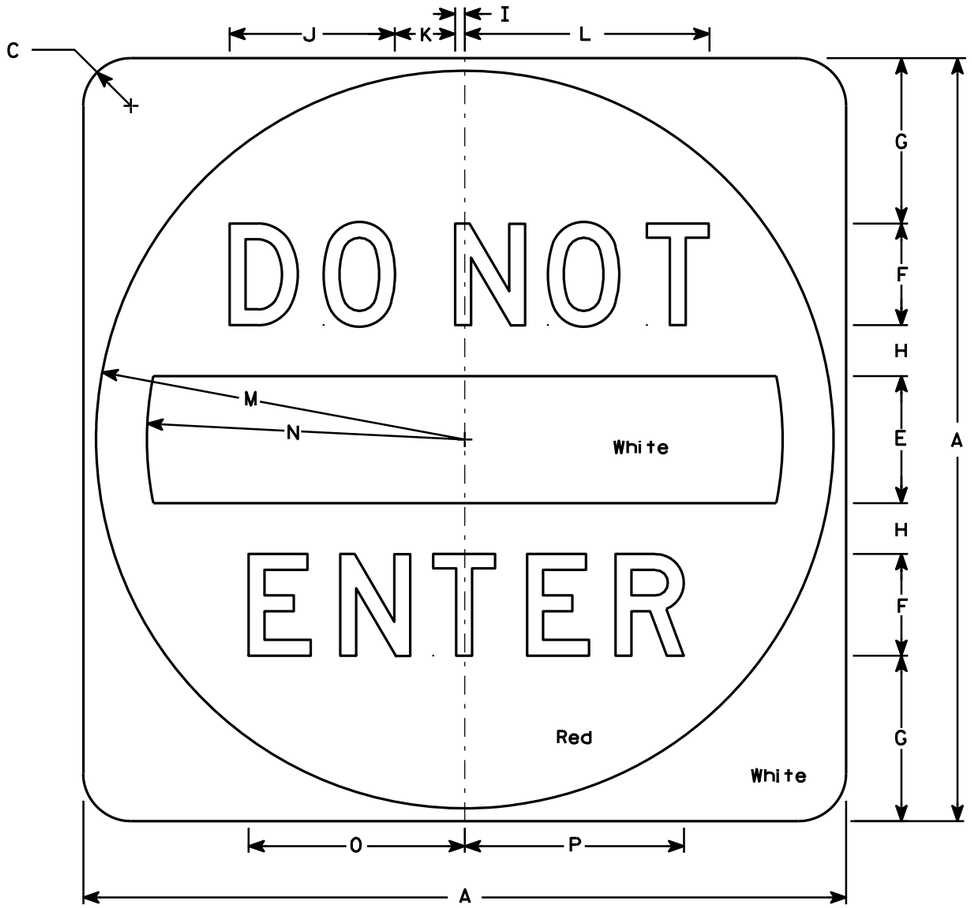
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 88 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R41.DGN PLOT DATE : 25-MAR-2011 13:24 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 4.965868:1.000000

WISDOT/CADDS SHEET 42

7

7



R5-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.26
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 89 | E

R5-57

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - Lines 1, 2, and 5 are Series C.
   Lines 3 and 4 are Series B.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

STANDARD SIGN
R5-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-57.10

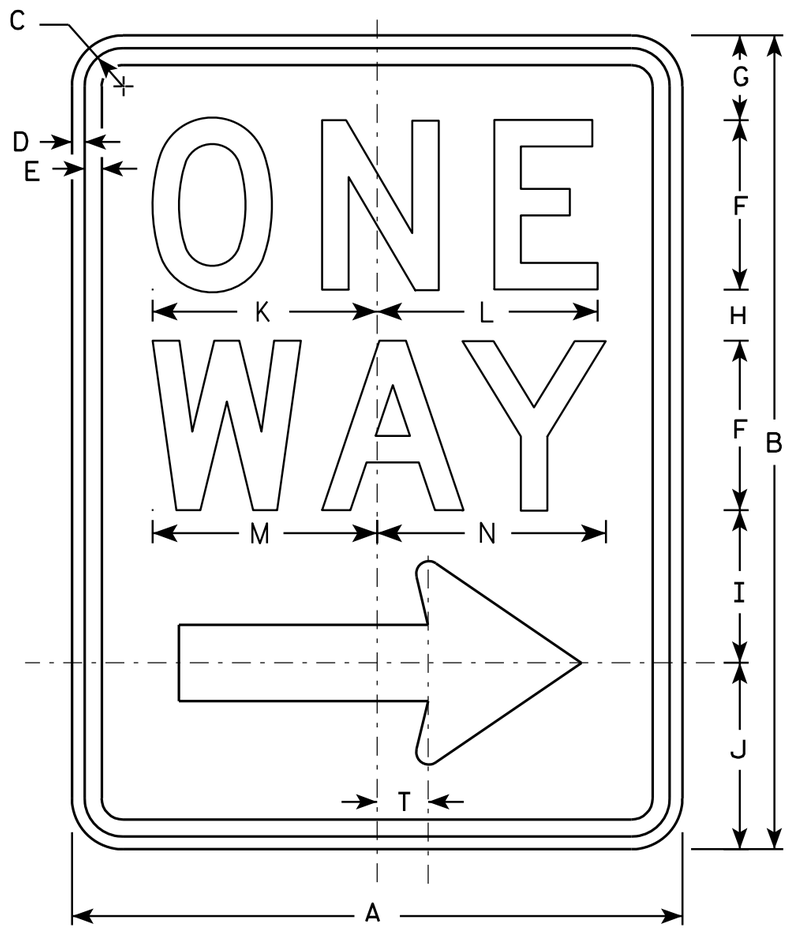
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 90	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R557.DGN PLOT DATE : 29-MAR-2011 14:38 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

WISDOT/CADDS SHEET 42

7

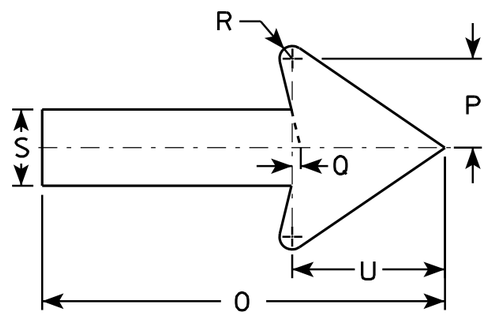
7



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

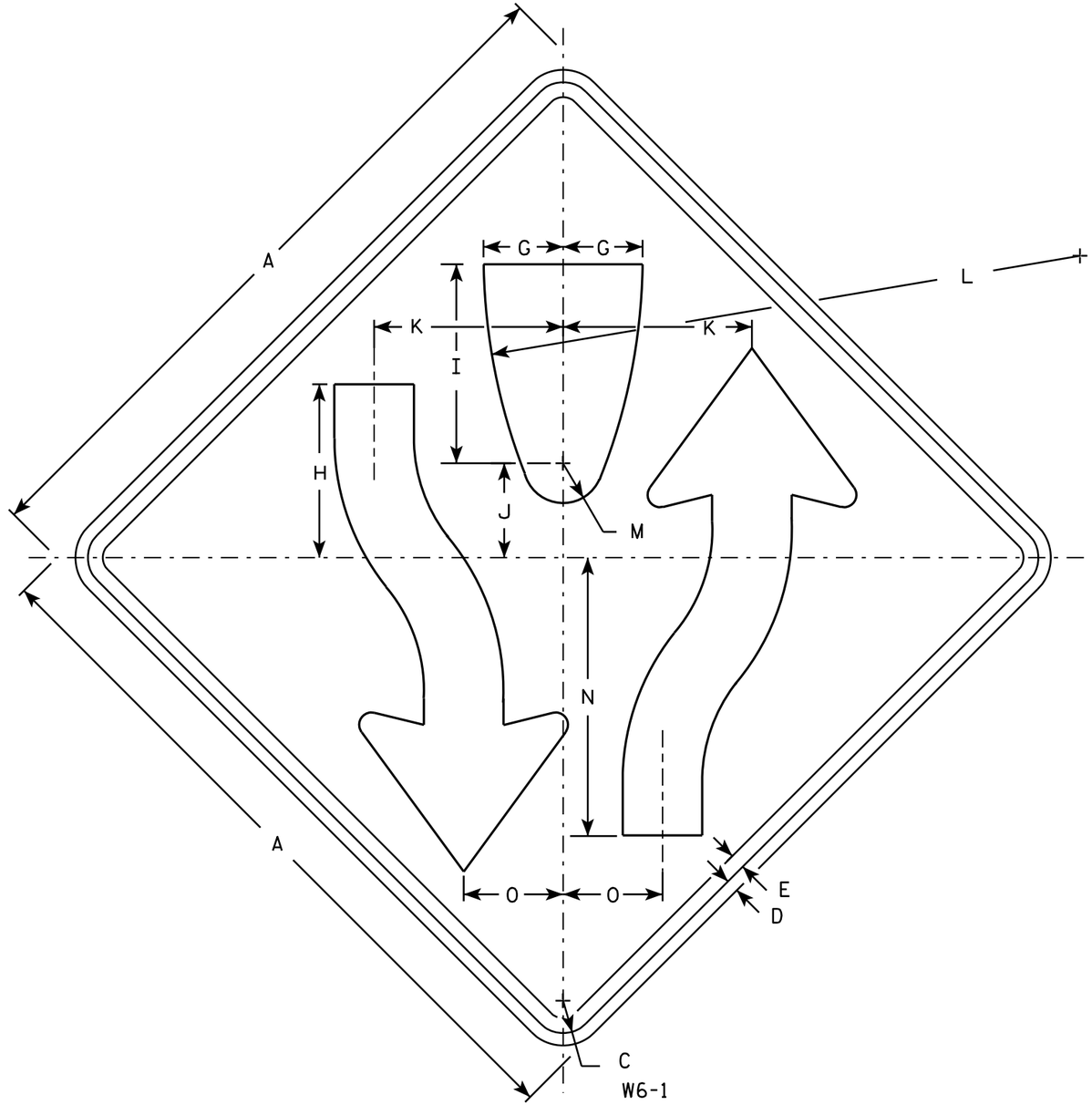
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

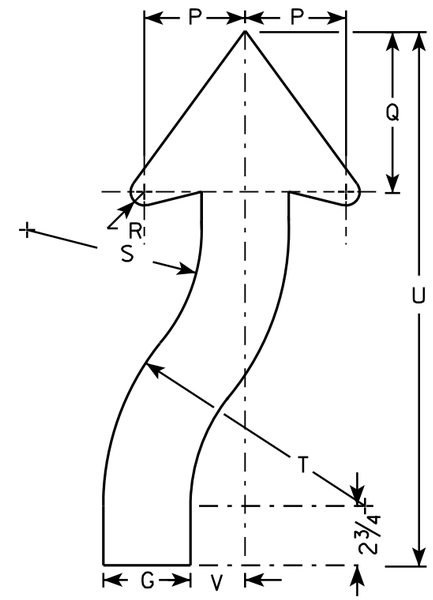
DATE 11/2/10 PLATE NO. R6-2.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 91	E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W6-2 same as W6-1 but is rotated 180° when mounted.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		3 1/4	8	8 1/4	4 1/8	7 7/8	25	1 3/4	11 5/8	4 1/8	3 7/8	6 3/4	5/8	6 5/8	9 7/8	21 5/8	2					6.25
2S	36		1 5/8	5/8	3/4		4	8 3/4	10	4 3/4	9 1/2	30	2	14	5	4 5/8	7 3/8	7/8	8	12	24 1/2	2 1/2					9.0
2M	36		1 5/8	5/8	3/4		4	8 3/4	10	4 3/4	9 1/2	30	2	14	5	4 5/8	7 3/8	7/8	8	12	24 1/2	2 1/2					9.0
3																											
4	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8					16.0
5	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8					16.0

STANDARD SIGN
W6-1 & W6-2

WISCONSIN DEPT OF TRANSPORTATION

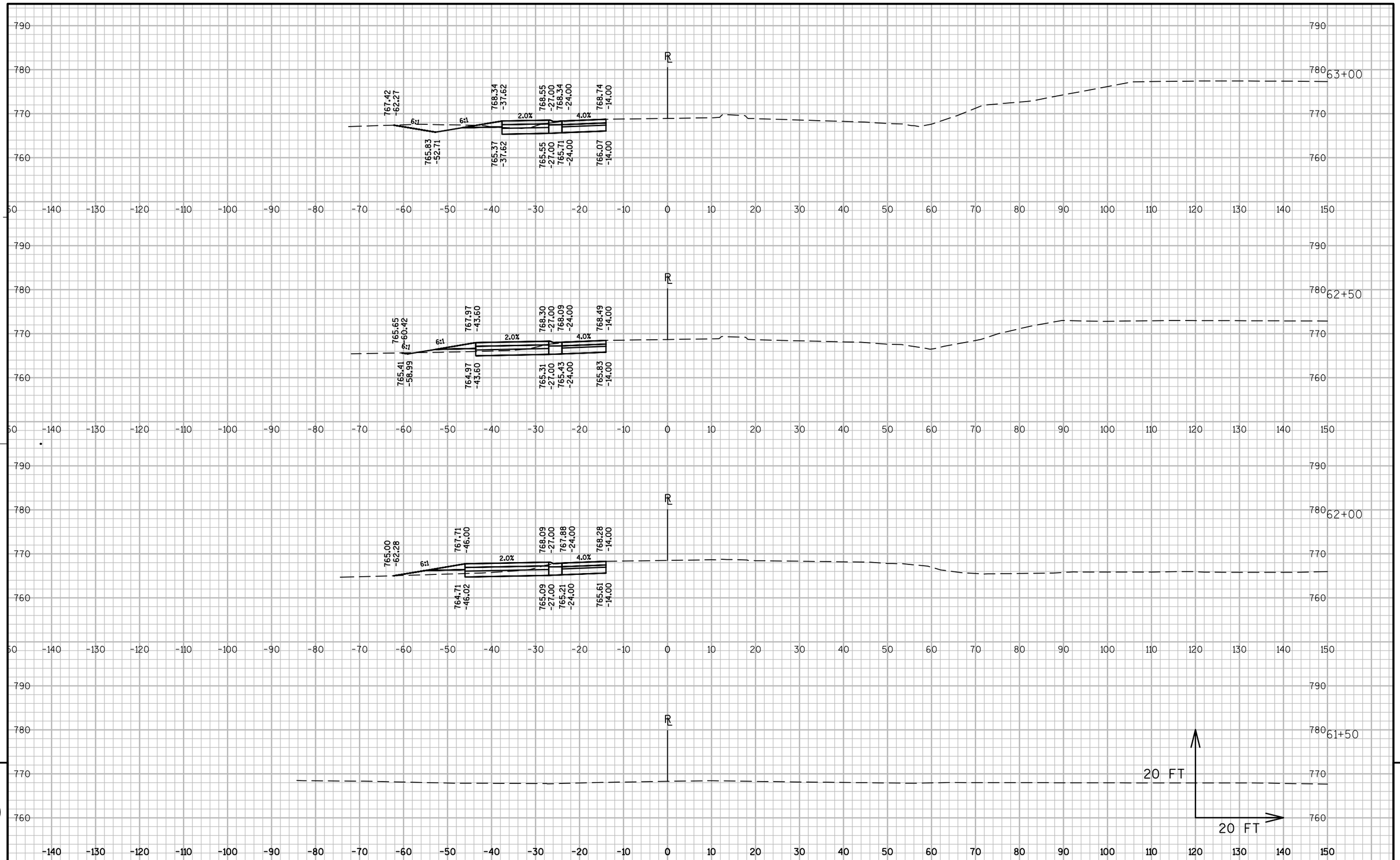
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W6-1.14

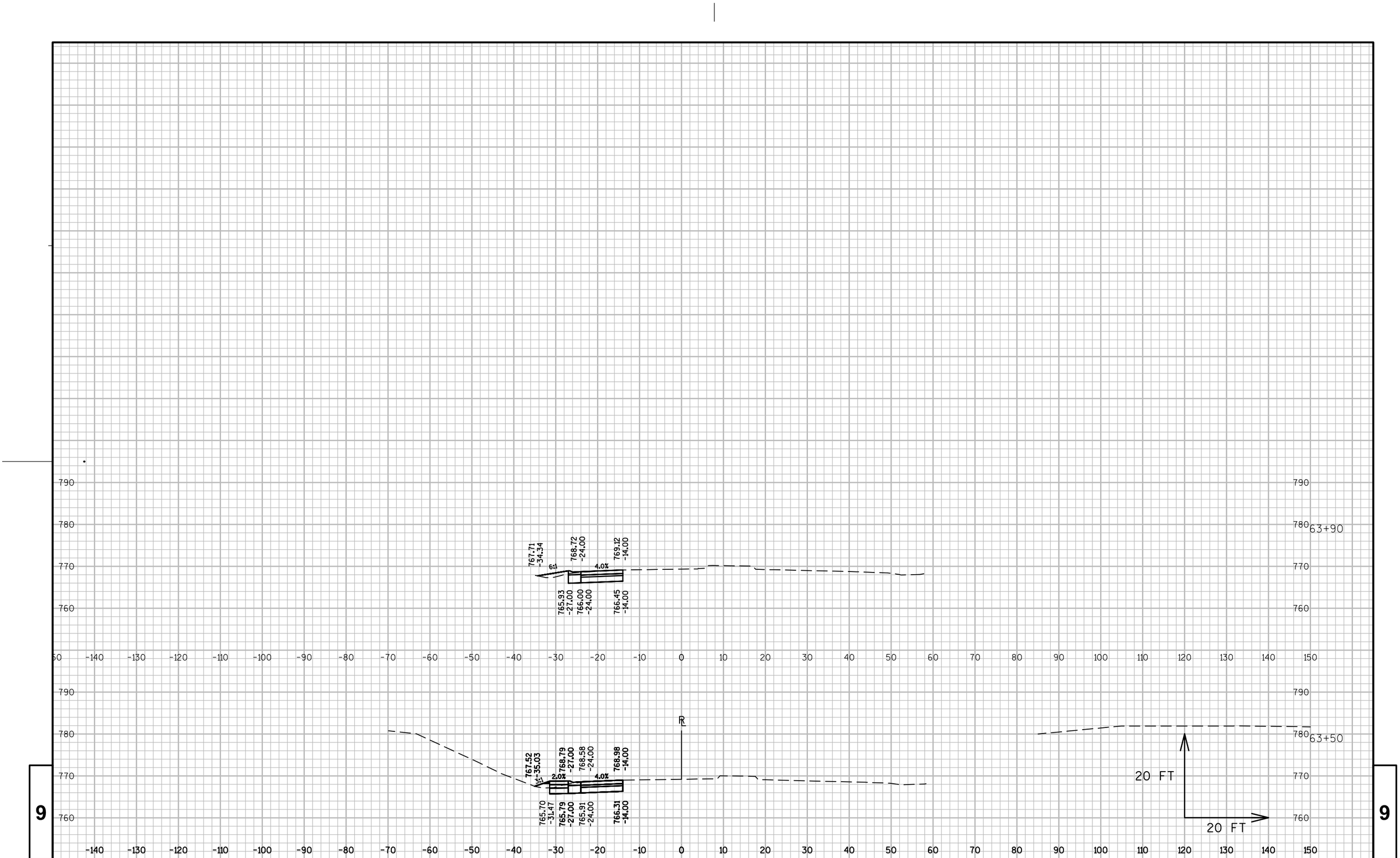
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 92 | E

7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W61.DGN PLOT DATE : 12-MAR-2013 14:02 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.946657:1.000000
WISDOT/CADDS SHEET 42



PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CROSS SECTIONS: STH 147 SHOULDER	SHEET 93	E



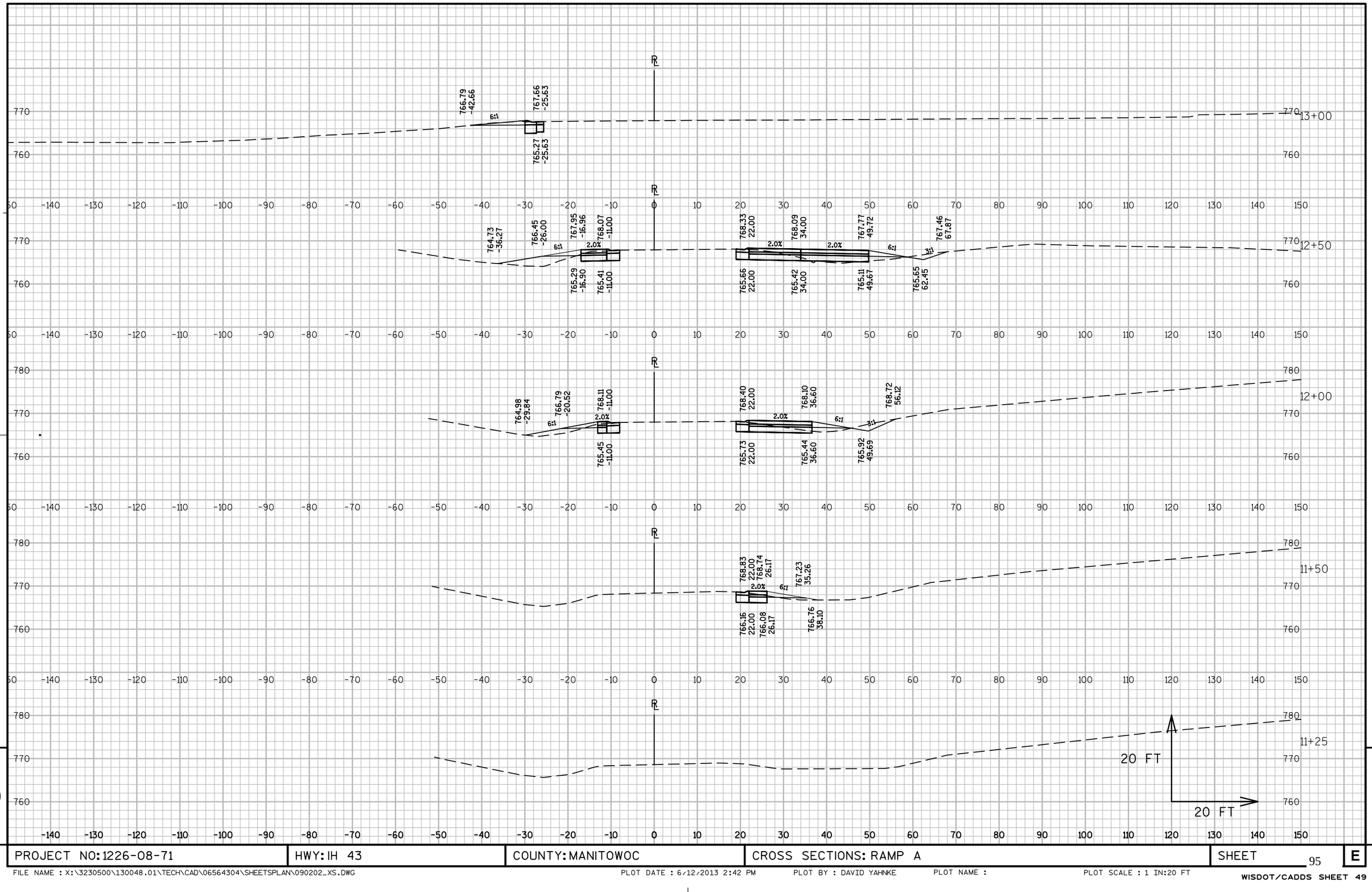
9

9

PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CROSS SECTIONS: STH 147 SHOULDER	SHEET 94	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\090201_XS.DWG PLOT DATE : 6/12/2013 2:42 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:20 FT

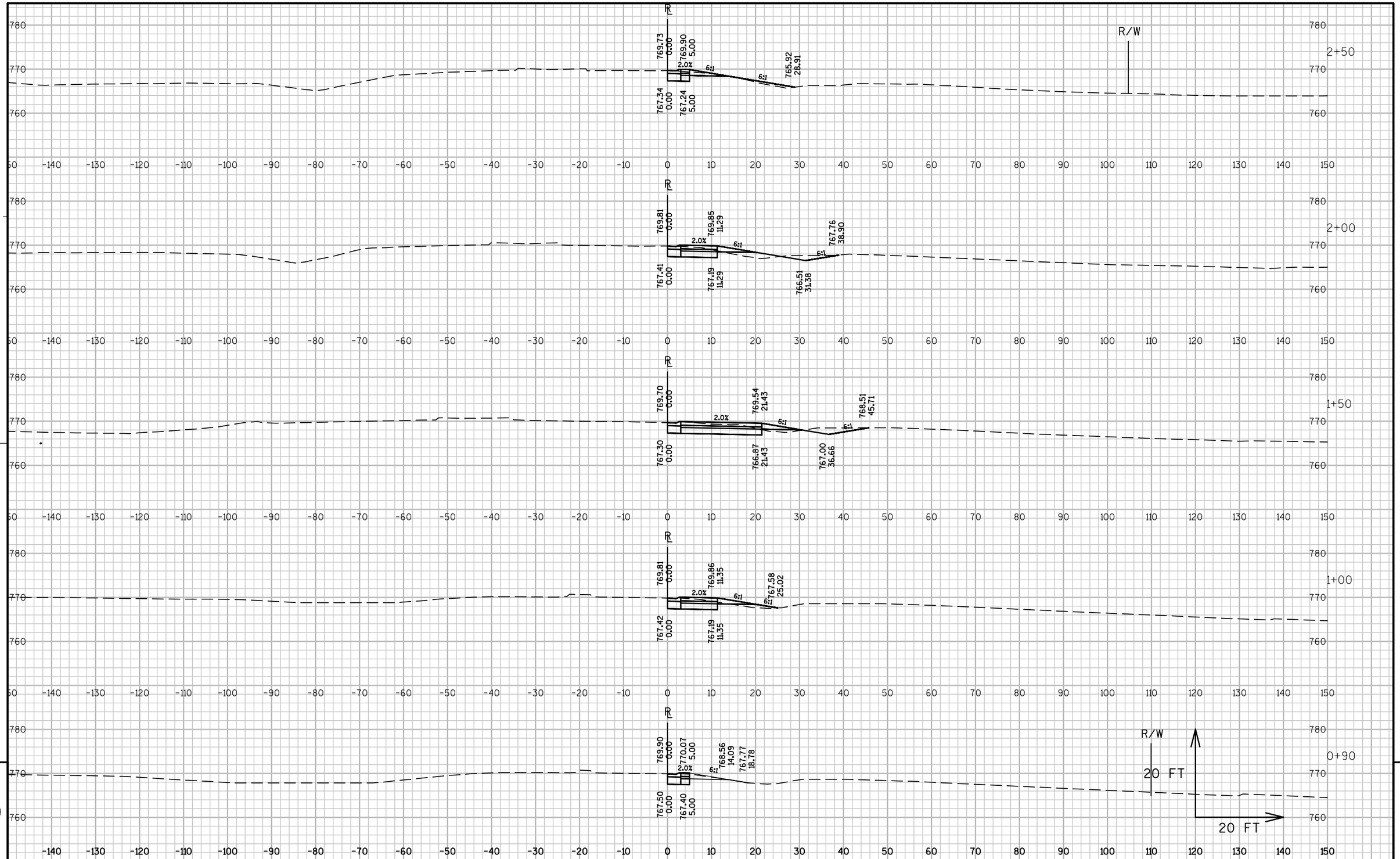
WISDOT/CADDS SHEET 49



PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CROSS SECTIONS: RAMP A	SHEET 95	E

FILE NAME : X:\3230500\130048.01\TECH\CAD\06564304\SHEETSPLAN\090202_XS.DWG PLOT DATE : 6/12/2013 2:42 PM PLOT BY : DAVID YAHNKE PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



PROJECT NO:1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CROSS SECTIONS: RAMP B	SHEET 96	E

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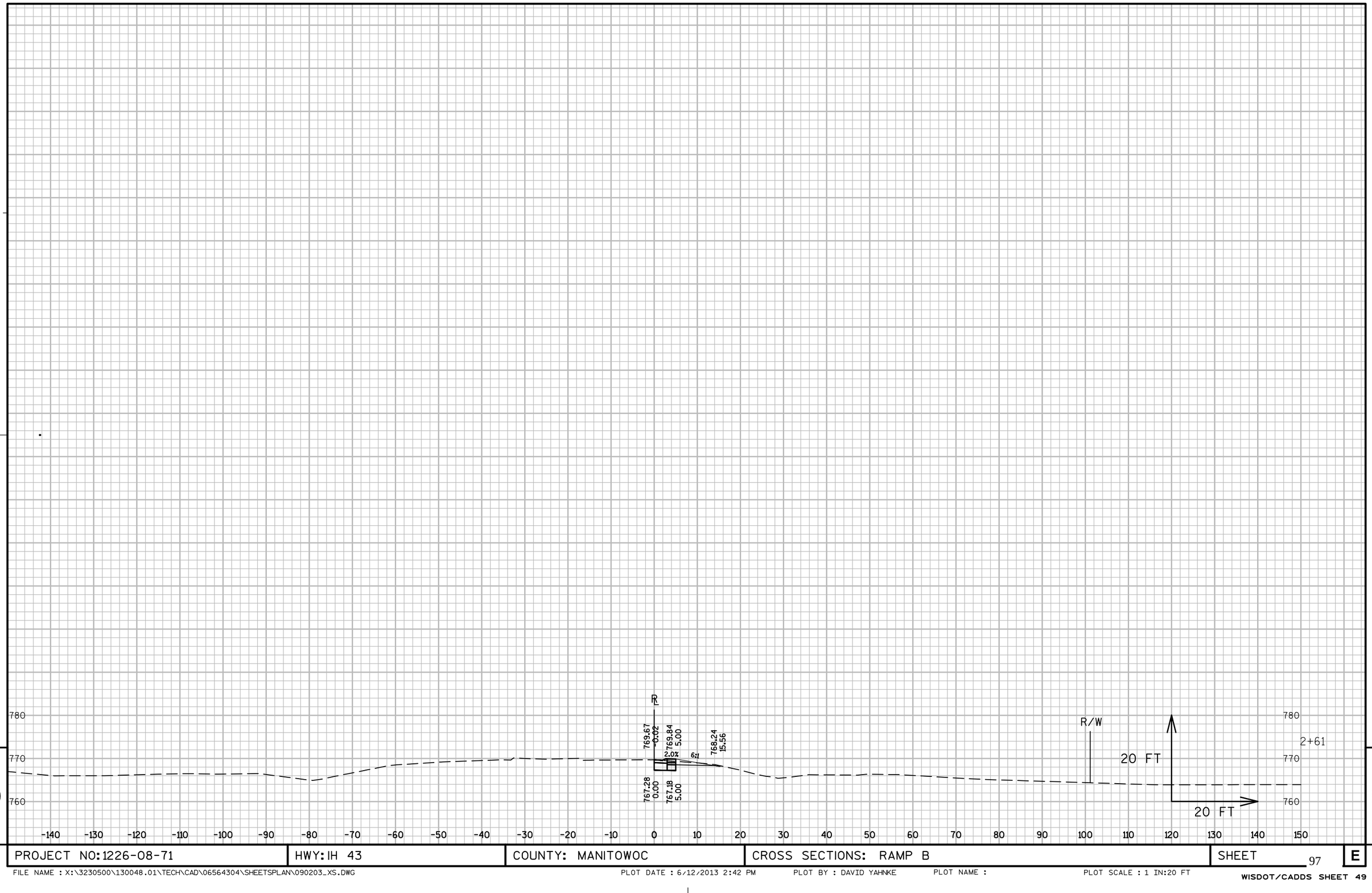
WISDOT/CADDS SHEET 49



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PROJECT NO:1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CROSS SECTIONS: RAMP B	SHEET 97	E

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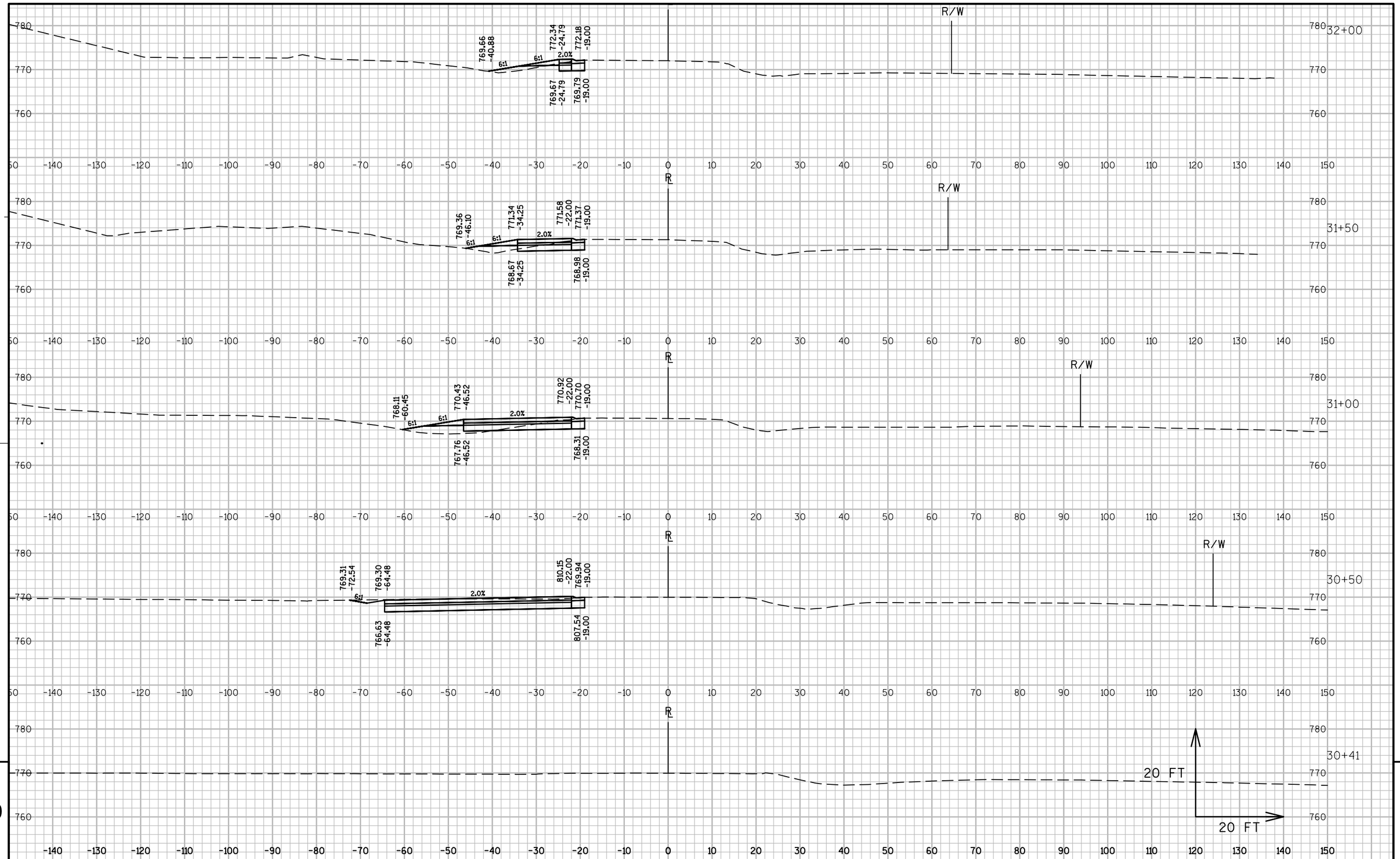
WISDOT/CADDS SHEET 49



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PROJECT NO: 1226-08-71	HWY: IH 43	COUNTY: MANITOWOC	CROSS SECTIONS: RAMP C	SHEET 98	E

Notes

Wisconsin Department of Transportation

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