WKE

MAY 2015

PROJECT ID: 3700-20-71
WITH: N/A

COUNTY: KENOSHA

ORDER OF SHEETS

TOTAL SHEETS = 128

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3700-20-71		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 50

NEW SIGNAL, STH 50 & CTH O

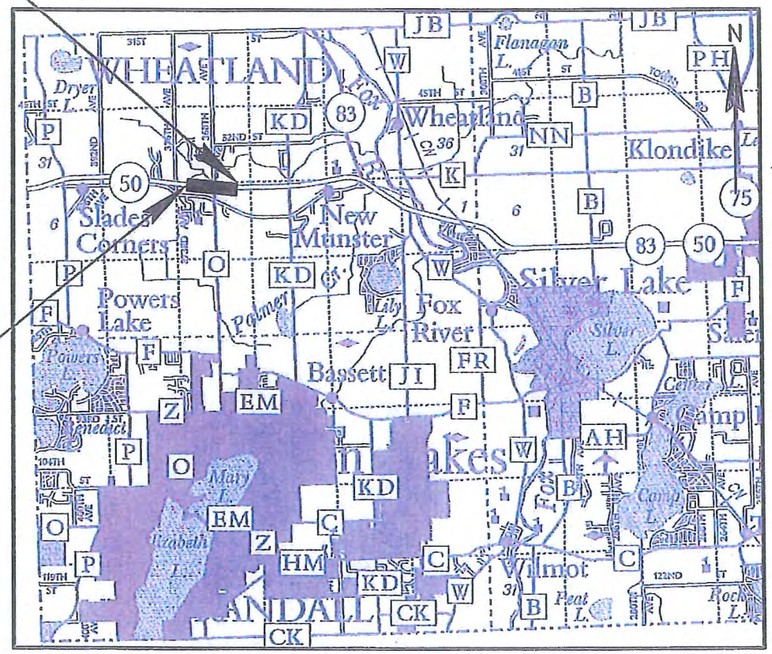
STH 50

KENOSHA COUNTY

STATE PROJECT NUMBER
3700-20-71

END PROJECT 3700-20-71
STA 621+15.00

BEGIN PROJECT 3700-20-71
STA 605+88.00
Y = 133,150.21
X = 511,642.11



DESIGN DESIGNATION

		STH 50	CTH O
A.A.D.T.	2014 =	14,200	2,400 (2002)
A.A.D.T.	20__ =	--	
D.H.V.	20__ =	--	
D.D.	=	--	
T.	=	--	
DESIGN SPEED	=	60 MPH	40 MPH
ESALS	=	--	

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
MARSH AREA		TELEPHONE	T
		WATER	W
		UTILITY PEDESTAL	
WOODED OR SHRUB AREA		POWER POLE	
		TELEPHONE POLE	

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, KENOSHA COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. VERTICAL DATUM BASED ON USGS (NAVD 88)

ORIGINAL PLANS PREPARED BY

SEH
Building a Better World for All of Us®

Short Elliott Hendrickson Inc.
6808 Odana Road, Suite 200
Madison, WI 53719-1137
608.620.6199 main | 888.908.8166 fax
800.732.4362 toll free | www.sehinc.com

WISCONSIN
JILLENE J. FEHRMAN
E-31565
BEAVER DAM
WISCONSIN
PROFESSIONAL ENGINEER

1/29/2015 (Date) Jillene J. Fehrman (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	M SQUARED ENGINEERING
Designer	SEH
Project Manager	JUSTIN EFFINGER
Regional Examiner	
Regional Supervisor	JOHN HAUG
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 1/30/15 Gabriel R. Affing (Signature)

E

UTILITY CONTACT LIST:

AT&T WISCONSIN - COMMUNICATION LINE
2005 PEWAUKEE RD
WAUKESHA, WI 53188
PH: (262) 896-7434
ATTENTION: MARK EDER
EMAIL: ME1754@ATT.COM

TDS TELECOM - COMMUNICATION LINE
20875 CROSSROADS CIR - SUITE 800
WAUKESHA, WI 53186
PH: (262) 754-3052
ATTENTION: MICHAEL JOHNSON
EMAIL: MICHAEL.JOHNSON@TDSTELECOM.COM

TIME WARNER CABLE, A DELAWARE LIMITED PARTNERSHIP - COMMUNICATION LINE
1320 N DR MARTIN LUTHER KING JR DR
MILWAUKEE, WI 53212-4002
PH: (414) 277-4045
ATTENTION: STEVEN CRAMER
EMAIL: WIS.ENGINEERING@TWCABLE.COM

WISCONSIN DEPARTMENT OF TRANSPORTATION - WISCONSIN SIGNALS
141 NW BARSTOW ST
WAUKESHA, WI 53187-0798
PH: (414) 750-260

WE ENERGIES - ELECTRICITY
SEND ALL CORRESPONDENCE TO:

LATROY BRUMFIELD
333 WEST EVERETT ST - A299
MILWAUKEE, WI 53203
PH: (414) 221-5617
EMAIL: LATROY.BRUMFIELD@WE-ENERGIES.COM

CONSTRUCTION FIELD CONTACT:

FRANCISCO CHAVEZ
500 S 116TH ST
WEST ALLIS, WI 53214
PH: (414) 944-5540
EMAIL: FRANCISCO.CHAVEZ@WE-ENERGIES.COM

WE ENERGIES - GAS
SEND ALL CORRESPONDENCE TO:

LATROY BRUMFIELD
333 WEST EVERETT ST - A299
MILWAUKEE, WI 53203
PH: (414) 221-5617
EMAIL: LATROY.BRUMFIELD@WE-ENERGIES.COM

CONSTRUCTION FIELD CONTACT:

SCOTT HOLSTEIN
700 S KANE ST
BURLINGTON, WI 53105
PH: (262) 763-1084
EMAIL: SCOTT.HOLSTEIN@WE-ENERGIES.COM

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

DIGGERS HOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

NOTE: WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

WISDOT REGION CONTACT:

JUSTIN EFFINGER
WISDOT SOUTHEAST REGION
WAUKESHA OFFICE
141 NW BARSTOW ST
WAUKESHA, WI 53187
PH: (262) 548-5676
EMAIL: JUSTIN.EFFINGER@DOT.WI.GOV

DESIGN CONTACT:

JILL FEHRMAN
SEH INC.
6808 ODANA ROAD SUITE 200
MADISON, WI 53719
PH: (608) 620-6183
EMAIL: JFEHRMAN@SEHINC.COM

WI DNR CONTACT:

CRAIG WEBSTER
WI DEPARTMENT OF NATURAL RESOURCES
141 NW BARSTOW
ROOM 180
WAUKESHA, WI 53188
PH: (262) 574-2141
EMAIL: CRAIG.WEBSTER@WISCONSIN.GOV

ORDER OF SHEETS - SECTION 2:

STANDARD ABBREVIATIONS:

ABUT	ABUTMENT	HYD	HYDRANT
AC	ACRE	ID	INSIDE DIAMETER
AGG	AGGREGATE	INV	INVERT
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE	IP	IRON PIPE OR PIN
		LHF	LEFT-HAND FORWARD
AECPCS	APRON ENDWALL FOR CULVERT PIPE CORRUGATED STEEL	L	LENGTH OF CURVE
		LF	LINEAR FOOT
ASPH	ASPHALTIC	LC	LONG CHORD OF CURVE
AVG	AVERAGE	LS	LUMP SUM
ADT	AVERAGE DAILY TRAFFIC	MH	MANHOLE
BF	BACK FACE	MOR	MID POINT OF RADIUS
BM	BENCH MARK	MCE	MARKERS CULVERT END
BR	BRIDGE	NC	NORMAL CROWN
CE	COMMERCIAL ENTRANCE	NO	NUMBER
CL OR C/L OR ℄	CENTER LINE	OBLIT	OBLITERATE
Δ	CENTRAL ANGLE OR DELTA	PAVT	PAVEMENT
CONC	CONCRETE	PE	PRIVATE ENTRANCE
CPRC	CULVERT PIPE REINFORCED CONCRETE	PVRC	POINT OF VERTICAL REVERSE CURVE
CPCS	CULVERT PIPE CORRUGATED STEEL	QOR	QUARTER POINT OF RADIUS
CR	CREEK	R	RADIUS
CY	CUBIC YARD	REQ'D	REQUIRED
C & G	CURB AND GUTTER	RES	RESIDENCE OR RESIDENTIAL
D	DEGREE OF CURVE	RHF	RIGHT-HAND FORWARD
DHV	DESIGN HOUR VOLUME	R/W	RIGHT-OF-WAY
DISCH	DISCHARGE	R	RIVER
DG	DITCH GRADE	RDWY	ROADWAY
DWY	DRIVEWAY	R/L OR ℄	REFERENCE LINE
X	EAST GRID COORDINATE	SALV	SALVAGED
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	SAN	SANITARY SEWER
		SF	SQUARE FEET
EOR	END POINT OF RADIUS	SY	SQUARE YARD
EL	ELEVATION	SDD	STANDARD DETAIL DRAWINGS
ENT	ENTRANCE	STA	STATION
ESALS	EQUIVALENT SINGLE AXLE LOADS	SS	STORM SEWER
EXC	EXCAVATION	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
EBS	EXCAVATION BELOW SUBGRADE		
EXIST	EXISTING	SE	SUPERELEVATION RATE
FC	FACE OF CURB	TC	TOP OF CURB
FF	FACE TO FACE	T OR TN	TOWN
FERT	FERTILIZE	T	TRUCKS (PERCENT OF)
FE	FIELD ENTRANCE	TYP	TYPICAL
FL	FLOW LINE	VAR	VARIABLE
FO	FIBER OPTIC	VC	VERTICAL CURVE
CWT	HUNDREDWEIGHT	Y	NORTH GRID COORDINATE
		YD	YARD

GENERAL NOTES:

1. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
3. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
4. PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLANS WITH THE ENGINEER.
5. INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.
6. WETLANDS, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIALS NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.
7. BROKEN CONCRETE CONTAINING RE-BAR SHALL NOT BE USED AS RIPRAP.
8. CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE REPLACED WITH 4-INCH TYPICAL DEPTH.
9. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
10. RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
11. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.
12. EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.
13. REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.
14. ASPHALTIC AND CONCRETE SURFACES SHALL BE SAWCUT AT THE MATCH LINE AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.
15. DISTURBED AREAS AMOUNTING TO GREATER THAN 25 SQUARE FEET WILL BE PROTECTED WITH SILT FENCE ON THE DOWN SLOPE AND SHALL BE TOPSOILED, FERTILIZED, SEEDED AND HAVE EROSION MAT PLACED ON THE AREA.
16. FERTILIZER SHALL NOT BE USED NEAR NAVIGABLE WATERWAYS OR WETLANDS.
17. A CONVERSION FACTOR OF 2.0 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE AGGREGATE DENSE.
18. A CONVERSION FACTOR OF 1.75 TONS/CY IS USED TO ESTIMATE QUANTITIES FOR BASE COURSE, OPEN GRADED.
19. A CONVERSION FACTOR OF 112 LBS/IN/SY IS USED TO ESTIMATE QUANTITIES FOR HMA PAVEMENT.

2

N

368TH AV

50'0'

48'0'

BEGIN PROJECT
STA 605+88.00

606

608

610

612

STH 50

614

616

618

620

STH 50

48'0'

44'0'

CTH O (368TH AV)

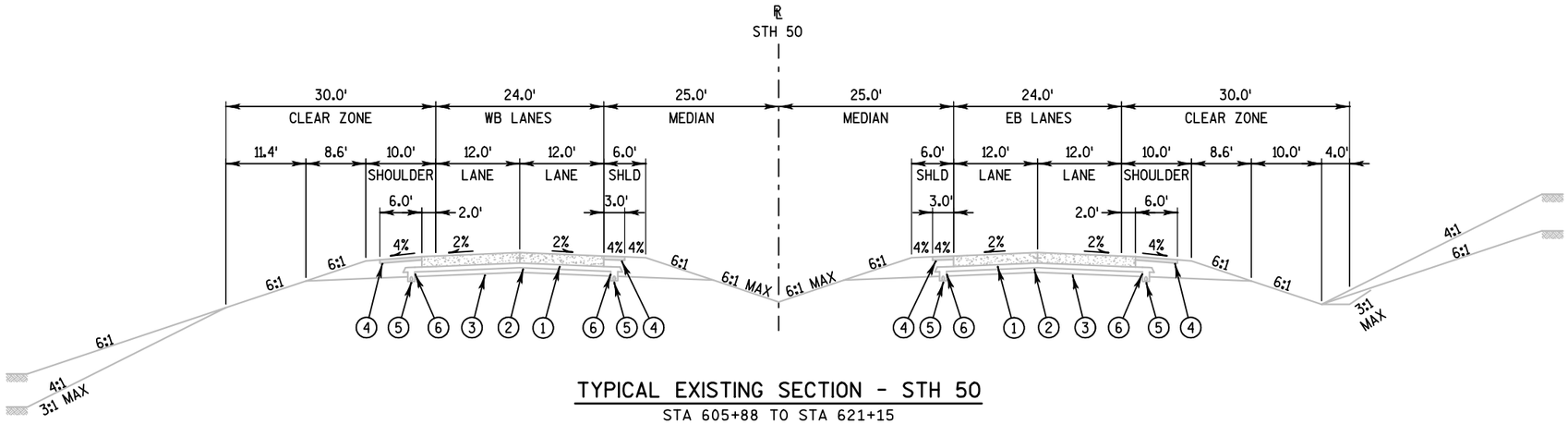
END PROJECT
STA 621+15.00

PROJECT NO:3700-20-71	HWY:STH 50	COUNTY:KENOSHA	PROJECT OVERVIEW	SHEET	E

FILE NAME : 020201_PO (PROJ OVERVIEW).DWG | PLOT DATE : 1/27/2015 7:05 PM | PLOT BY : SEH INC | LAYOUT NAME : 020201_PO | PLOT SCALE : 1 IN:100 FT

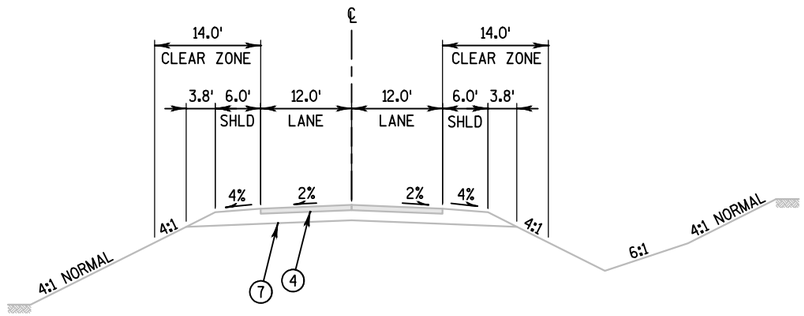
WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS



TYPICAL EXISTING SECTION - STH 50

STA 605+88 TO STA 621+15



TYPICAL EXISTING SECTION - CTH O (368TH AV)

STA 42+00'0' TO 50+00'0'

KEYED NOTE LEGEND

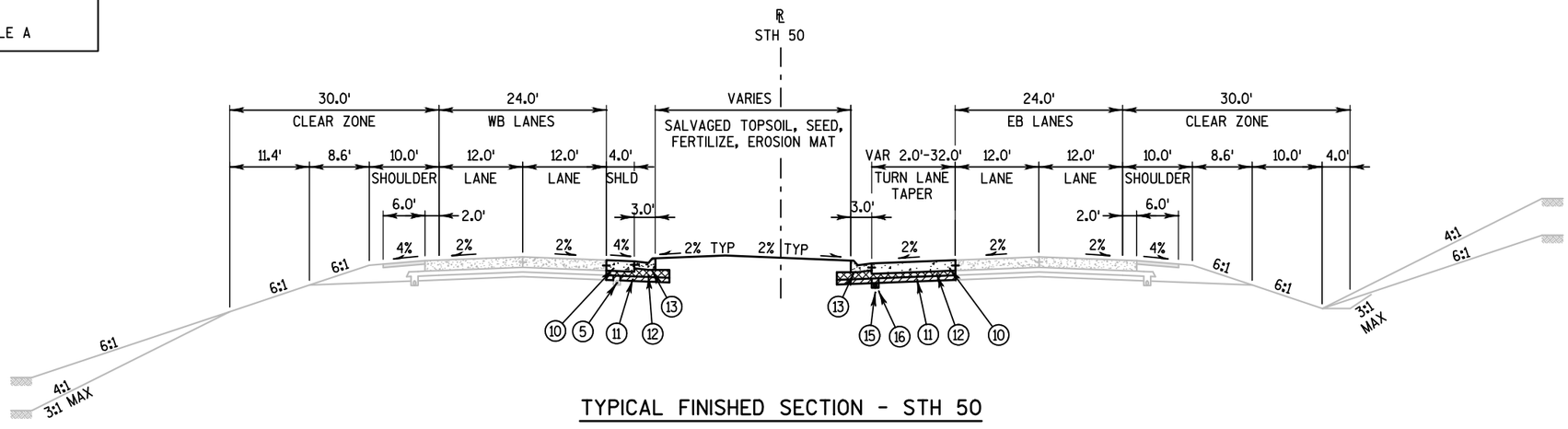
1. NON-REINFORCED CONCRETE PAVEMENT, DOWELED, 9-INCH
2. CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, 4 INCHES
3. CRUSHED AGGREGATE BASE COURSE, 4 INCHES
4. ASPHALTIC CONCRETE PAVEMENT, 3 INCHES
5. PIPE UNERDRAIN, WRAPPED, 4-INCH
6. GEOTEXTILE FABRIC, TYPE DF
7. CRUSHED AGGREGATE BASE COURSE, 8 INCHES

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	TYPICAL SECTIONS	SHEET 4	E

2

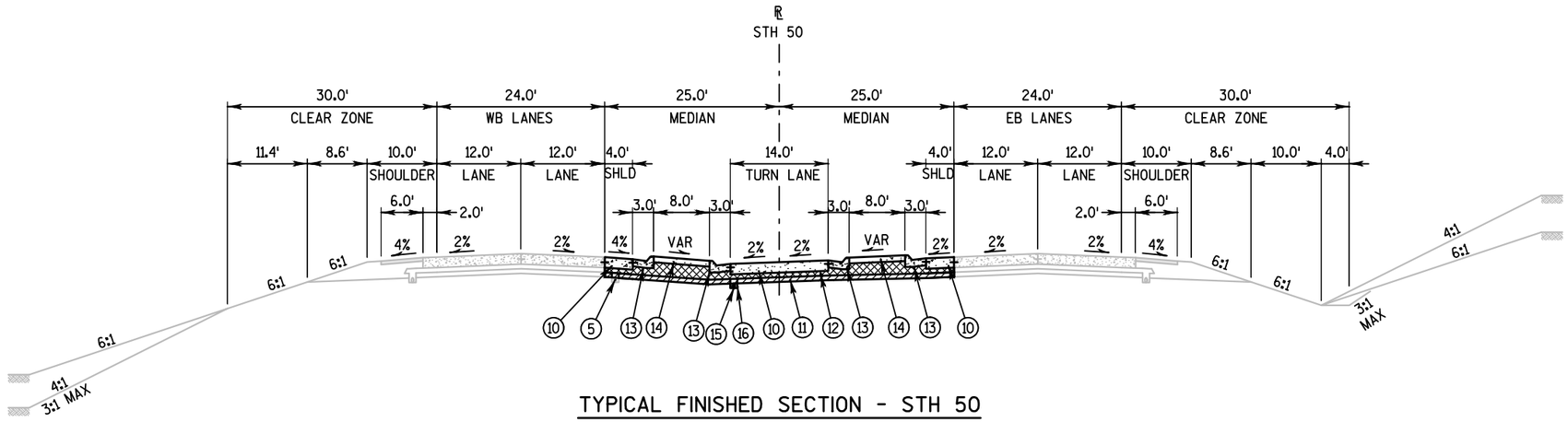
KEYED NOTE LEGEND

(5)	PIPE UNERDRAIN, WRAPPED, 4-INCH (TO BE PROTECTED DURING CONSTRUCTION)
(10)	CONCRETE PAVEMENT 9-INCH, DOWLED AND TINED
(11)	BASE AGGREGATE OPEN GRADED (4-INCH DEPTH)
(12)	BASE AGGREGATE DENSE 1-1/4-INCH (4-INCH DEPTH)
(13)	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
(14)	CONCRETE SIDEWALK 5-INCH
(15)	PIPE UNDERDRAIN, WRAPPED, 6-INCH
(16)	GEOTEXTILE FABRIC, TYPE DF, SCHEDULE A



TYPICAL FINISHED SECTION - STH 50

STA 607+18.74 TO STA 611+75.00
STA 615+25.00 TO STA 619+82.89



TYPICAL FINISHED SECTION - STH 50

STA 611+75.00 TO STA 613+29.49
STA 613+71.66 TO STA 615+25.00

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	TYPICAL SECTIONS	SHEET 5 E

FILE NAME : 020301_TS (TYP SECTIONS).DWG | PLOT DATE : 1/27/2015 7:05 PM | PLOT BY : SEH INC | LAYOUT NAME : 020302_TS | PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 42

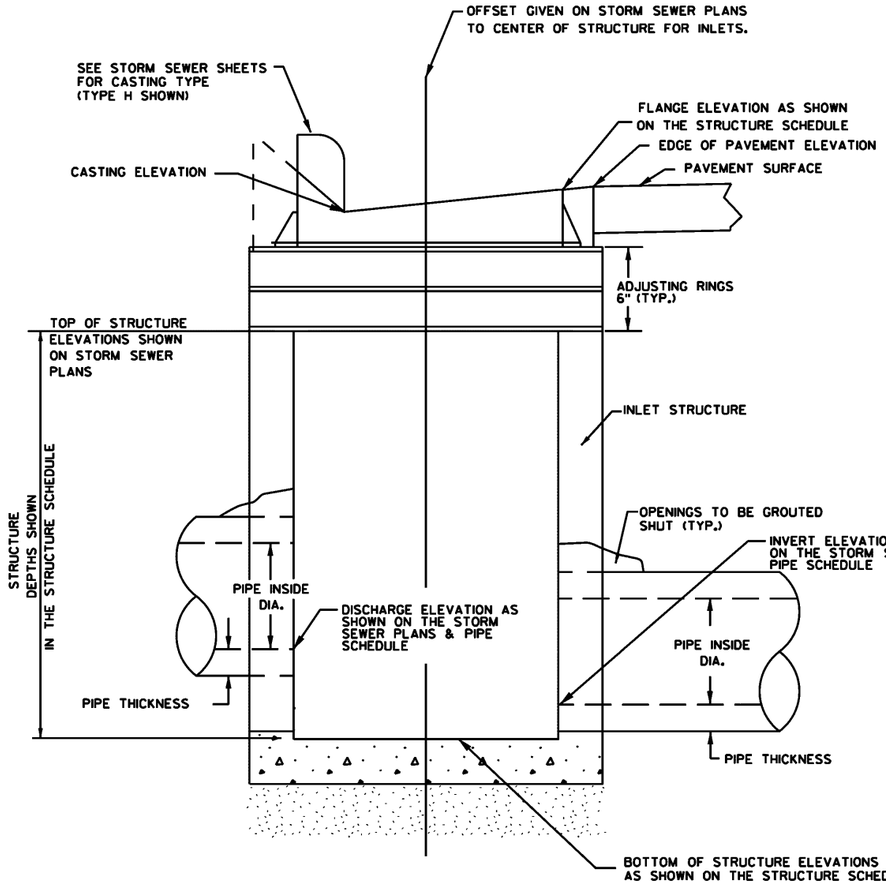
SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

GENERAL NOTES:

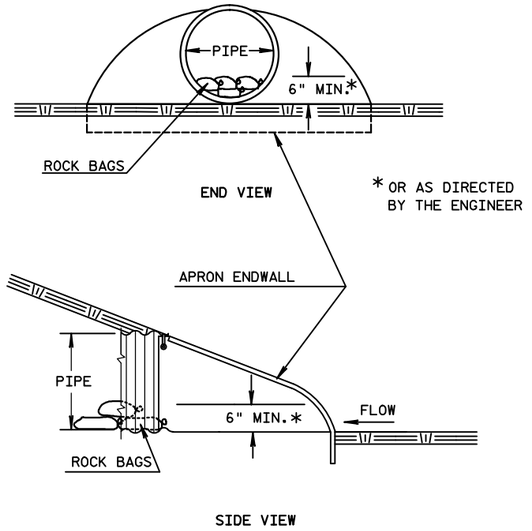
GRANULAR BACKFILL REQUIRED AROUND INLET (INCIDENTAL TO CONSTRUCTION OF INLET)

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, APPLICABLE SPECIAL PROVISIONS, S.D.D. FOR INLETS TYPE 1, 2, 3 & 4 AND UNDERDRAIN PIPE DETAIL.

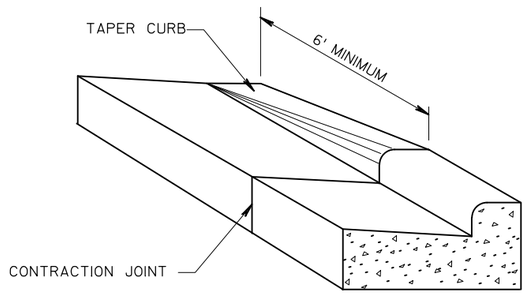
CONNECT PIPE UNDERDRAIN TO INLETS. SEE S.D.D. "EDGEDRAIN OUTLET & OUTFALL MARKERS" FOR DETAILS.



DETAIL OF INLET W/CASTING

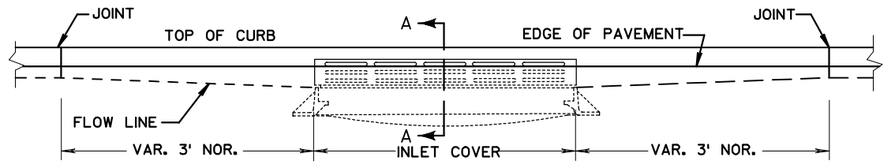


CULVERT DITCH CHECKS

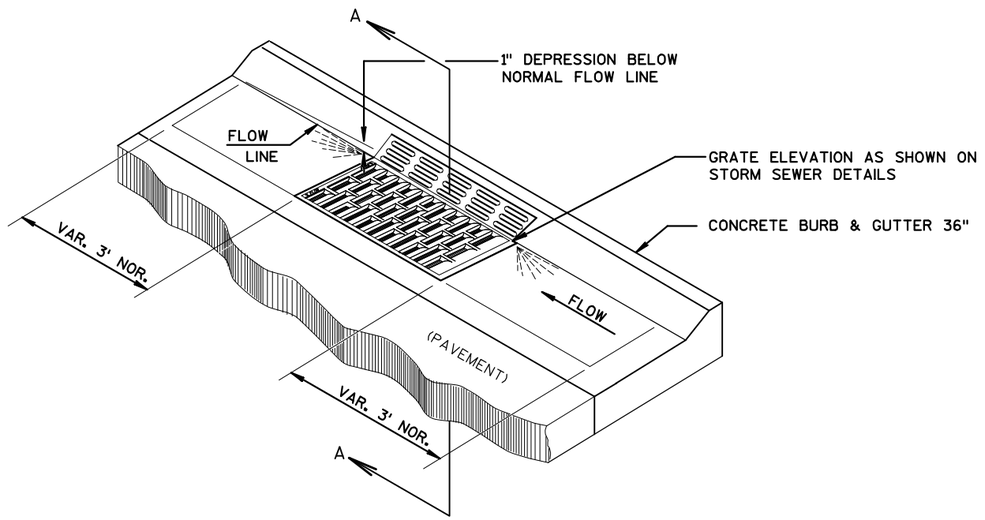


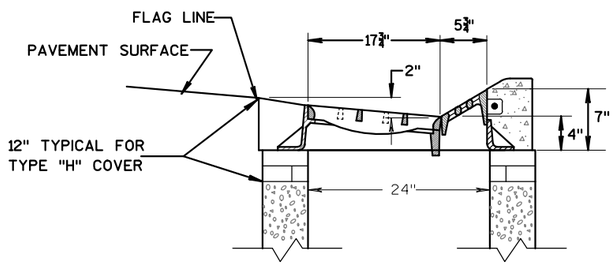
DETAIL OF CURB & GUTTER TERMINI

2



ELEVATION
VIEW AT FLAG LINE
(GRATE AND CURB DETAILS OMITTED
FOR DRAWING CLARITY)





SECTION A-A

DETAIL OF CURB AND GUTTER AT INLETS

(TYPE HM INLET SHOWN)

KEYNOTE LEGEND: PLAN DETAIL	
CP10	CONCRETE PAVEMENT 9-INCH, DOWELED AND TINED
AG11	BASE AGGREGATE DENSE 3/4-INCH
CG12	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
CS13	CONCRETE SIDEWALK 5-INCH
CM14	CONCRETE MEDIAN SLOPED NOSE
SW01	SAWING ASPHALT
SW02	SAWING CONCRETE

N

EXISTING R/W (TYP)

EDGE OF EXISTING AGGREGATE SHOULDER (TYP)

EDGE OF EXISTING ASPHALT SHOULDER (TYP)

EDGE OF EXISTING CONCRETE PAVEMENT (TYP)

STH 50

BEGIN PROJECT 3700-20-71
STA 605+88.00
Y=133,150.21
X=511,642.11

605+88.00 22.00'RT
606
607
606+88.69 19.12'RT
607+72.00 22.54'LT
607+72.00 19.54'LT
608+02.38 21.00'LT
607+18.74 18.48'RT
608
609
610

SW01
AG11
CP10
CG12
SW02

10:1
20:1 TAPER

BM 1

MATCH LINE 610+50

EXISTING R/W (TYP)

AT&T

WE ENERGIES

TDS TELCOM

BENCH MARK TABLE						
NO	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	ELEV
1	607+15.92	21.606 RT	133115.907	511767.286	EDGE OF ASPHALT, REBAR 0.75	808.604

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PLAN DETAILS	SHEET	E

SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

FILE NAME : 021200_PD (PLAN DETAILS).DWG | PLOT DATE : 2/2/2015 8:19 AM | PLOT BY : SEH INC | LAYOUT NAME : 021201_PD | PLOT SCALE : 1 IN:40 FT | WISDOT/CADDS SHEET 42

2

KEYNOTE LEGEND: PLAN DETAIL	
CP10	CONCRETE PAVEMENT 9-INCH, DOWELED AND TINED
AG11	BASE AGGREGATE DENSE 3/4-INCH
CG12	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
CS13	CONCRETE SIDEWALK 5-INCH
CM14	CONCRETE MEDIAN SLOPED NOSE
SW01	SAWING ASPHALT
SW02	SAWING CONCRETE

N

AT&T
TIME WARNER CABLE
TDS TELCOM
EXISTING LIGHTING REMOVED BY WE ENERGIES
WE ENERGIES
WE ENERGIES
EXISTING R/W (TYP)
368TH AV
TDS TELCOM
EXISTING R/W (TYP)
BM 2
SLOPE INTERCEPT (TYP)
EDGE OF EXISTING AGGREGATE SHOULDER (TYP)
EDGE OF EXISTING ASPHALT SHOULDER (TYP)
EDGE OF EXISTING CONCRETE PAVEMENT (TYP)
MATCH LINE 610+50
20:1 TAPER
612+23.13 6.76'LT
612+32.67 7.00'LT
613+08.26 25.00'LT
613+08.26 21.00'LT
613+03.02 12.03'LT
612+27.99 14.00'RT
613+22.48 14.00'RT
613+29.49 21.00'RT
613+29.49 25.00'RT
613+71.66 25.00'LT
613+71.66 21.00'LT
613+78.59 14.00'LT
614+73.40 14.00'LT
613+98.42 11.97'RT
613+93.47 21.00'RT
613+93.49 25.00'RT
614+93.10 6.97'RT
615+10.90 6.26'RT
20:1 TAPER
MATCH LINE 616+50
CAUTION
AT&T
WE ENERGIES
TDS TELCOM
EXISTING R/W (TYP)
WE ENERGIES
WE ENERGIES
TDS TELCOM
CTH O (368TH AV)
WE ENERGIES
EXISTING LIGHTING REMOVED BY WE ENERGIES
AT&T
TDS TELCOM
EXISTING R/W (TYP)

BENCH MARK TABLE

NO	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	ELEV
2	613+56.72	106.199 LT	133189.923	512415.303	EDGE OF PAVEMENT, REBAR 0.75	801.120

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PLAN DETAILS	SHEET	E

SAVE FOLDER PATH: P:\UZ\WWITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

FILE NAME : 021200_PD (PLAN DETAILS).DWG | PLOT DATE : 2/2/2015 8:19 AM | PLOT BY : SEH INC | LAYOUT NAME : 021202_PD | PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

KEYNOTE LEGEND: PLAN DETAIL	
CP10	CONCRETE PAVEMENT 9-INCH, DOWELED AND TINED
AG11	BASE AGGREGATE DENSE 3/4-INCH
CG12	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A
CS13	CONCRETE SIDEWALK 5-INCH
CM14	CONCRETE MEDIAN SLOPED NOSE
SW01	SAWING ASPHALT
SW02	SAWING CONCRETE

N

EXISTING R/W (TYP)

EDGE OF EXISTING AGGREGATE SHOULDER (TYP)

EDGE OF EXISTING ASPHALT SHOULDER (TYP)

EDGE OF EXISTING CONCRETE PAVEMENT (TYP)

STH 50

MATCH LINE 616+50

SW02

802.07 802.20 802.32 802.44 802.56 802.50 802.72 802.81 802.87 802.98 803.10 803.16 803.19 803.23 803.28 803.22 803.13 803.13 803.16

CP10

619+82.89
18.45'LT

SW01
621+15.00
25.00'LT

801.59 801.74 801.90 802.05 802.20 802.31 802.40 802.50 802.60 802.70 802.80 802.90 803.03 803.10 803.13 803.11 803.04 803.05 803.09

10:1

620+12.82
19.26'LT

621+15.00
22.04'LT

AG11

618 619 620 621 622

20:1 TAPER

CG12

801.87 802.01 802.14 802.27 802.40 802.54 802.62 802.69 802.75 802.81 802.87 802.93 802.99

801.95 802.11 802.28 802.43 802.57 802.70 802.82 802.86 802.89 802.96 803.04 803.11 803.16 803.21

AG11

10:1

619+90.00
22.00'RT

CP10

619+49.93
21.00'RT

SW01

619+90.00
25.00'RT

STH 50

END PROJECT 3700-20-71
STA 621+15.00
Y=133,043.84
X=513,165.11

BM 3

WE ENERGIES

AT&T

EXISTING R/W (TYP)

BENCH MARK TABLE

NO	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION	ELEV
3	618+05.12	57.357 RT	132999.933	512852.661	EDGE OF ASPHALT, REBAR 0.75	802.520

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PLAN DETAILS	SHEET	E

FILE NAME : 021200_PD (PLAN DETAILS).DWG PLOT DATE : 2/2/2015 8:19 AM PLOT BY : SEH INC LAYOUT NAME : 021203_PD PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\WI\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

2

2

N

STH 50

24" CPRC

6" PVC TILE

605

606

607

608

609

610

BEGIN PROJECT 3700-20-71

MATCH LINE 616+50

STH 50

6" PVC TILE

6" PVC TILE

6" PVC TILE

6" PVC TILE

6" PVC TILE

6" PVC TILE

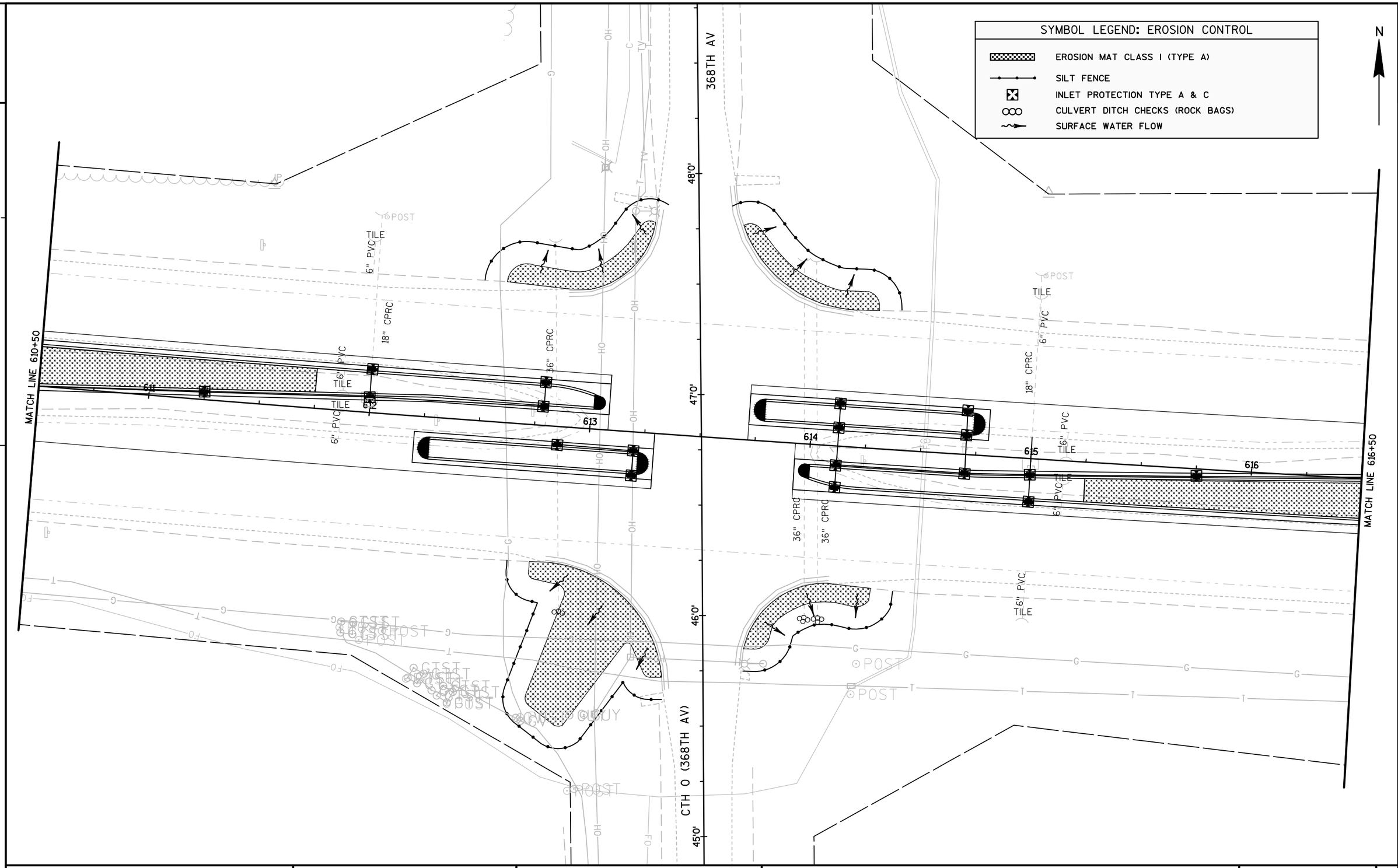
SYMBOL LEGEND: EROSION CONTROL

- EROSION MAT CLASS I (TYPE A)
- SILT FENCE
- INLET PROTECTION TYPE A & C
- CULVERT DITCH CHECKS (ROCK BAGS)
- SURFACE WATER FLOW

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	EROSION CONTROL PLAN	SHEET	E

FILE NAME : 022000_EC (EROSION CONTROL).DWG
PLOT DATE : 3/5/2015 9:13 AM
PLOT BY : SEH INC
LAYOUT NAME : 022001EC
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\MWITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS



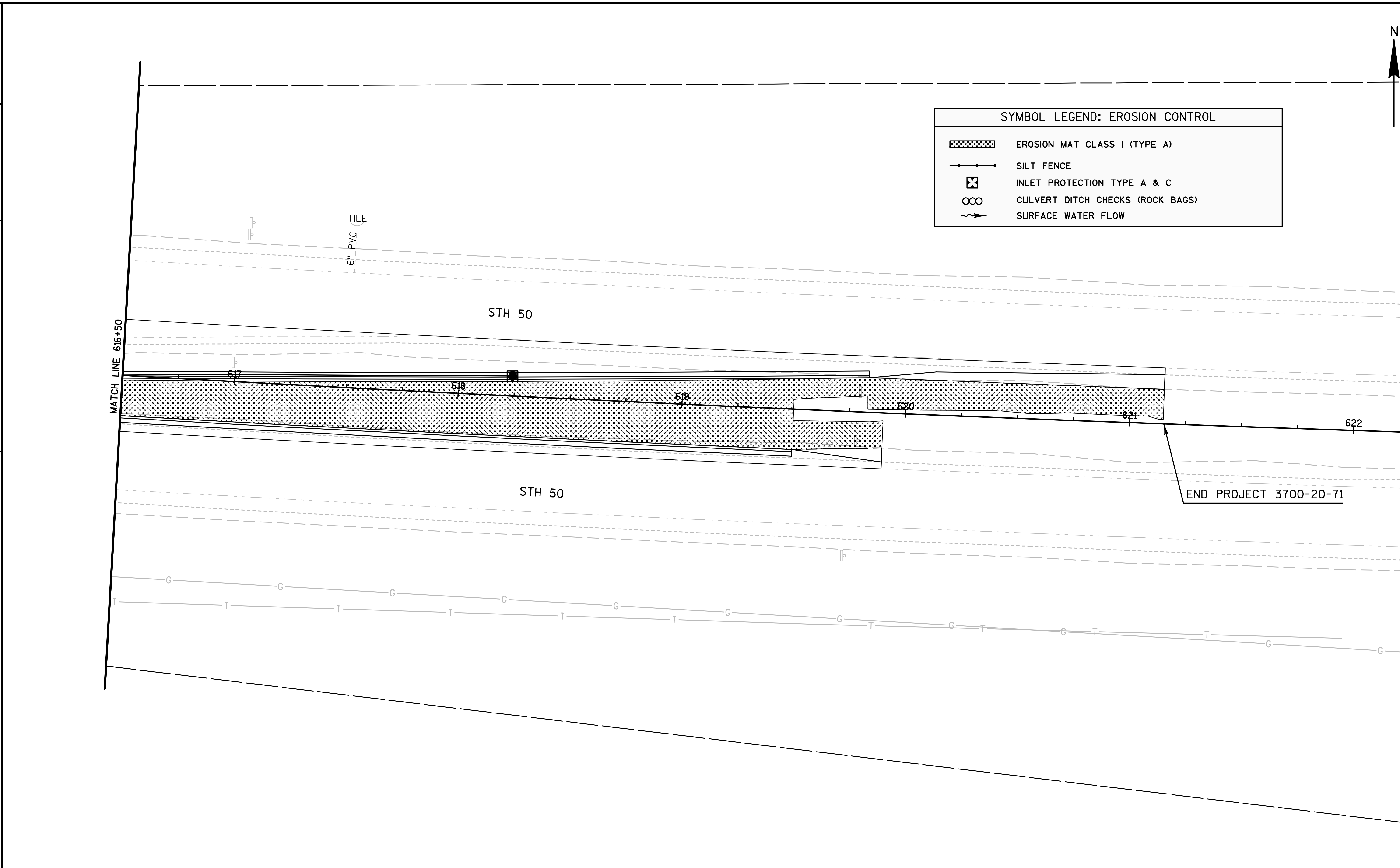
2

SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

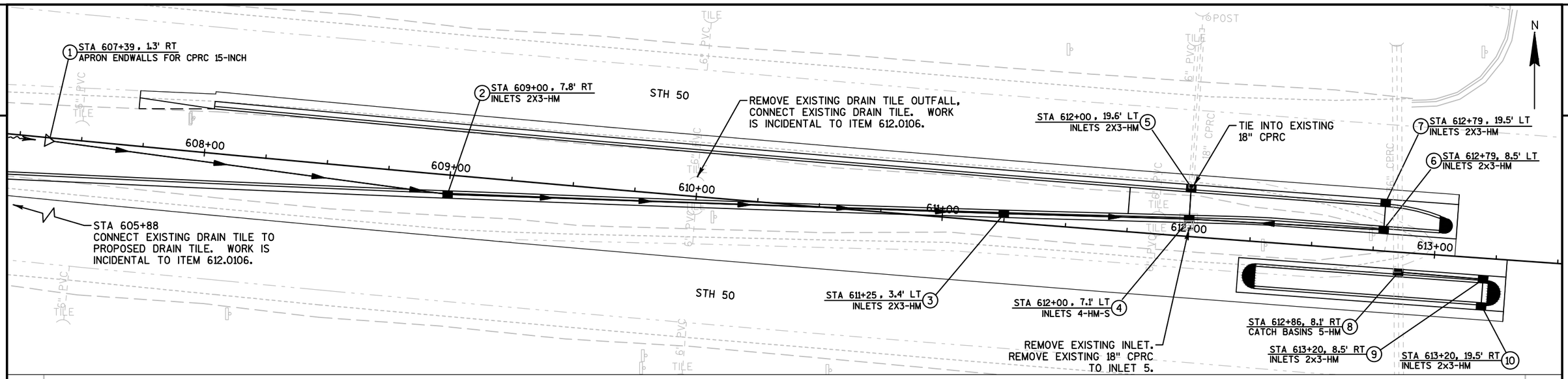
PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	EROSION CONTROL PLAN	SHEET	E

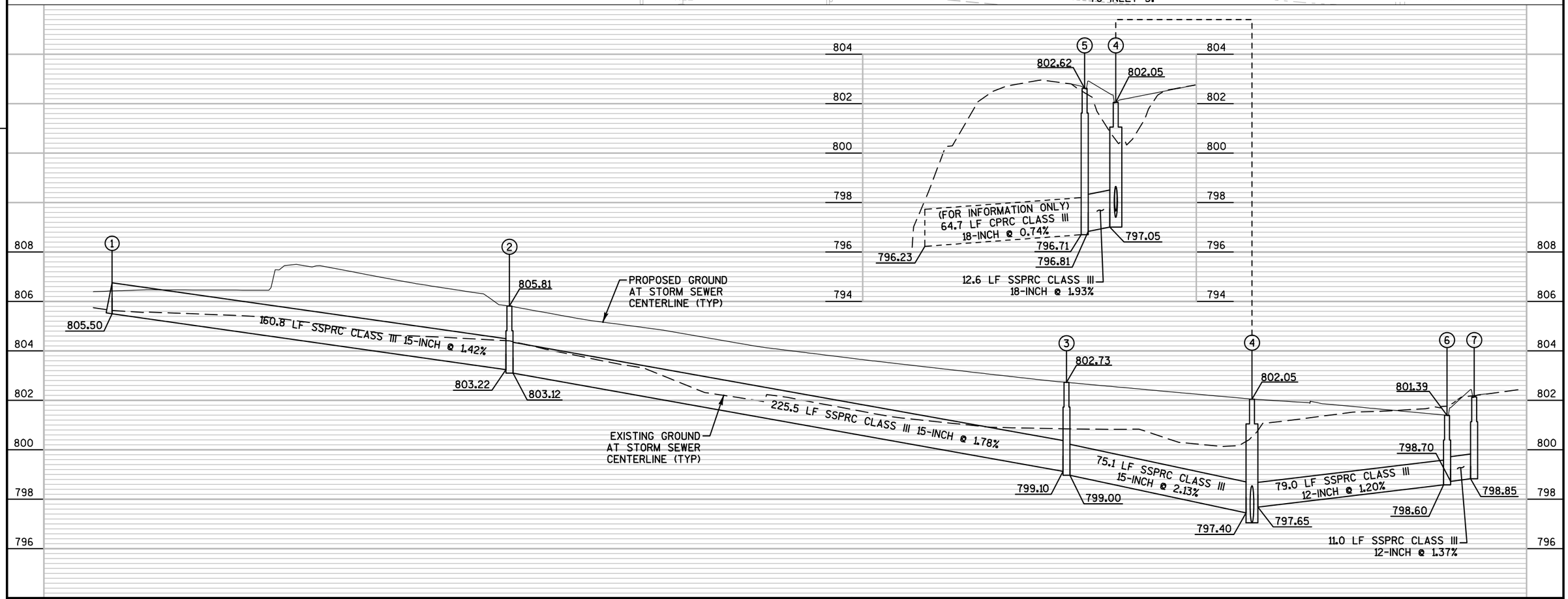
FILE NAME : 022000_EC (EROSION CONTROL).DWG | PLOT DATE : 3/5/2015 9:13 AM | PLOT BY : SEH INC | LAYOUT NAME : 022002_EC | PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42



PROJECT NO:3700-20-71	HWY:STH 50	COUNTY:KENOSHA	EROSION CONTROL PLAN	SHEET 13	E



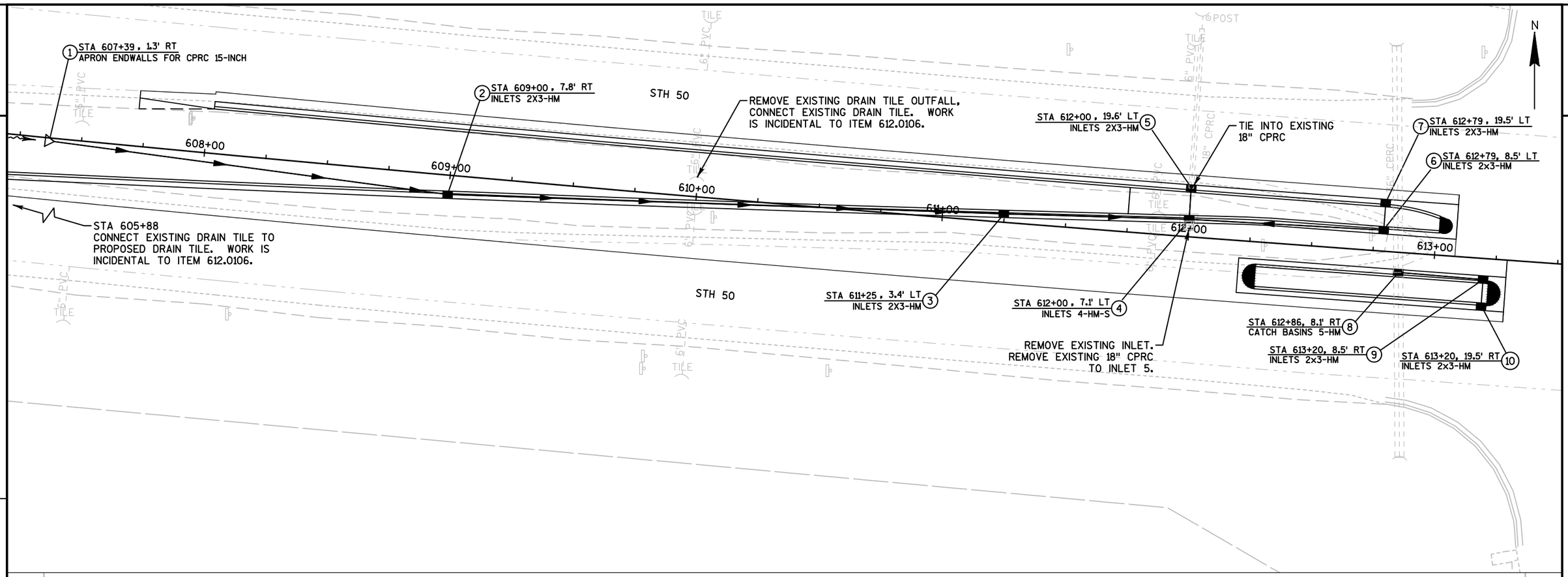


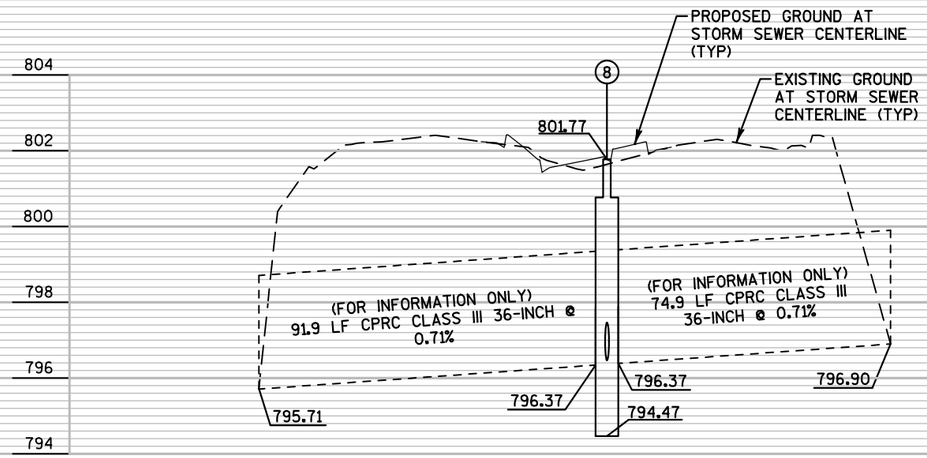
PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	STORM SEWER	PAGE 01 OF 03	SHEET	E

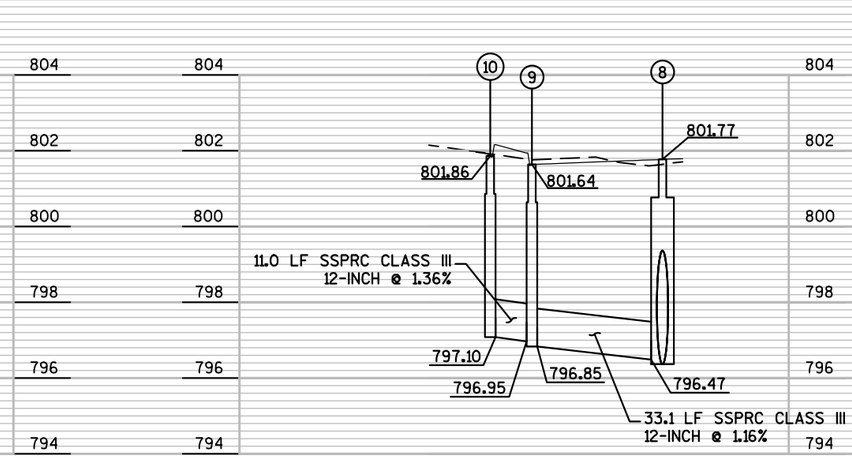
FILE NAME : 022500_SS (STM SWR).DWG | PLOT DATE : 1/28/2015 5:15 PM | PLOT BY : SEH INC | LAYOUT NAME : 022501_SS | PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

FILE SAVE PATH: \\SEHMADISON\PROJECTS\UZ\MKWITSE\128766\15-CIVIL 3D\3700200I\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS







PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	STORM SEWER PAGE 02 OF 03	SHEET E

FILE SAVE PATH: \\SEHMADISON\PROJECTS\UZ\WK\WITSEC\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

FILE NAME : 022500_SS (STM SWR).DWG PLOT DATE : 1/28/2015 5:15 PM PLOT BY : SEH INC LAYOUT NAME : 022502_SS PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

N

STA 615+00, 9.6' LT
CONC COLLAR
CC1

STA 614+12, 19.5' LT
INLETS 2x3-HM
14

STA 614+13, 8.5' LT
INLETS 2x3-HM
13

STA 614+70, 19.5' LT
INLETS 2x3-HM
17

STA 614+70, 8.6' LT
INLETS 2x3-HM
16

REMOVE EXISTING INLET. REMOVE EXISTING 18" CPRC AS NECESSARY FOR CONNECTION TO PROPOSED PIPE. CONC. COLLAR REQUIRED.

20 STA 615+75 , 3.4' RT
INLETS 2X3-HM

STH 50

STA 618+24 , 8.9' LT
INLETS 2X3-HM
21

STA 621+15
CONNECT EXISTING DRAIN TILE TO PROPOSED DRAIN TILE. WORK IS INCIDENTAL TO ITEM 612.0106.

614+00
615+00
616+00
617+00
618+00
619+00

HIGH POINT AT STA 620+05
UPSTATION DRAINS TO EXISTING MEDIAN INLET AT STA 625+00

12 STA 614+12, 8.5' RT
INLETS 2x3-HM

11 STA 614+12 , 18.9' RT
INLETS 2X3-HM

STA 614+71, 8.5' RT
INLETS 2x3-HM
15

18 STA 615+00 , 7.3' RT
INLETS 4-HM-S

19 STA 615+00 , 19.5' RT
INLETS 2X3-HM-S

STH 50

36" CPRC
36" CPRC
18" CPRC
6" PVC TILE
6" PVC TILE
6" PVC TILE

14 13 12 11
801.40 801.24 801.54
801.61
798.35
798.20
798.10
798.05
797.90
797.90
11.0 LF SSPRC CLASS III 12-INCH @ 1.37%
10.4 LF SSPRC CLASS III 12-INCH @ 1.44%
17.0 LF SSPRC CLASS III 12-INCH @ 1.18%

17 16 15
801.54 801.32 801.06
10.9 LF SSPRC CLASS III 12-INCH @ 1.28%
17.0 LF SSPRC CLASS III 12-INCH @ 1.06%

18 19
800.97 801.35
12.3 LF SSPRC CLASS III 15-INCH @ 1.14%
16.8 LF CPRC CLASS III 18-INCH @ 1.84%
CONCRETE COLLAR REQUIRED
(FOR INFORMATION ONLY) 73.4 LF CPRC CLASS III 18-INCH @ 0.78%
795.26
795.83
796.14
796.63
796.49

802 800 798 796 794 804

12 15 18 20 21
801.24 801.06 800.97 801.20 802.40
PROPOSED GROUND AT STORM SEWER CENTERLINE (TYP)
29.5 LF SSPRC CLASS III 12-INCH @ 1.12%
58.2 LF SSPRC CLASS III 12-INCH @ 1.08%
75.4 LF SSPRC CLASS III 12-INCH @ 1.41%
248.9 LF SSPRC CLASS III 12-INCH @ 0.92%
797.80
797.17
797.07
796.74
796.74
797.80
797.90
800.20
EXISTING GROUND AT STORM SEWER CENTERLINE (TYP)

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	STORM SEWER	PAGE 03 OF 03	SHEET	E

FILE SAVE PATH: \\SEHMADISON\PROJECTS\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

FILE NAME : 022500_SS (STM SWR).DWG | PLOT DATE : 1/28/2015 5:15 PM | PLOT BY : SEH INC | LAYOUT NAME : 022503_SS | PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

112 JCT 50 J1-1(2S)

300'

N

115 STOP R1-1F(3)

114 EAST WEST 50 50 J3-2(2S)

STOP REMOVE

115A DIVIDED HIGHWAY MOVE(10)

111 WEST 50 J4-1(3)

103 368th AVE M1-94-H

CTH O/368TH AVE

113 DO NOT ENTER REMOVE

ESTR

STH 50

40'

ONE WAY R6-2-L(2M) 131

610

PI: 46+80.56

WRONG WAY REMOVE WRONG WAY R5-1A 102

BEGIN LEFT TURN LANE R3-20-L(3) STA 606+25 100

BEGIN LEFT TURN LANE R3-20-LL(2S) 130

STOP R1-1F(3) 105

DO NOT ENTER R5-1(3) 108

REMOVE R4-7(3) 106

STOP R1-1F(3) 107

DO NOT ENTER R5-1(3) 110

20'

COUNTY O REMOVE COUNTY O J12-1(3) 101

Twin Lakes ESTR

COUNTY O REMOVE COUNTY O J13-1(3) 104

STOP R1-1F(3) 109

SPEED LIMIT 35 ESTR

CTH O/368TH AVE

SHEET 1 OF 2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DELINEATOR - 60' SPACING WHITE/RIGHT YELLOW/LEFT
- XXX — DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

PROJECT NO:3700-20-71	HWY: STH 50 @ CTH O	COUNTY:KENOSHA	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\CAD\37002071\SIGNING\023201_PS.DWG
LAYOUT NAME - ****
PLOT DATE : 1/13/2015 3:04 PM PLOT BY : WALKER, KRISTINE V PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

N

CTH O/368TH AVE

SPEED LIMIT 35
WEIGHT LIMIT 10 TONS
ESTR

Twin Lakes
ESTR

120
BEGIN LEFT TURN LANE
R3-20-L(3)
STA 621+00

20°

118
STOP
R1-1F(3)

134
BEGIN LEFT TURN LANE
R3-20-LL(2S)

119
COUNTY O
J13-1(3)

DO NOT ENTER
R5-1(3)
121

116
STOP
R1-1F(3)

117
STOP
R1-1F(3)

615

REMOVE
127

STH 50

DO NOT ENTER
R5-1(3)
122

368th AVE
M1-94-H
132

40'

REMOVE
R4-7(3)
125

ONE WAY
R6-2-L(2M)
133

DO NOT ENTER
REMOVE
126

WRONG WAY
REMOVE
WRONG WAY
R5-1A(3)
129

20'

STOP
DIVIDED HIGHWAY
REMOVE

50
REMOVE

WEST 50 EAST 50
J3-2(2S)
124

123
STOP
R1-1F

123A
DIVIDED HIGHWAY
R6-3(3)

JCT 50
ESTR

EAST 50
J4-1(3)
128

45

CTH O/368TH AVE

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DELINEATOR - 60' SPACING WHITE/RIGHT YELLOW/LEFT
- XXX DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

SHEET 2 OF 2

PROJECT NO: 3700-20-71	HWY: STH 50 @ CTH O	COUNTY: KENOSHA	PERMANENT SIGNING	SHEET 18	E

LEGEND

- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- RADAR DETECTION AREA
- RADAR DETECTOR

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION.
6. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL CABINET
- PULL BOX, 24" X 42"
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

MONOTUBE STRUCTURE NUMBERS	
BASE #	STRUCTURE #
SB7	S-30-1172
SB9	S-30-1173
SB15	S-30-1174
SB17	S-30-1175

TRAFFIC CONTROL SIGNAL
STH 50 &
CTH O (368TH AVENUE)
TOWN OF WHEATLAND
KENOSHA COUNTY
SIGNAL NO. S30-1419
CABINET TYPE: TS-2
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVAL RECOMMENDED
DATE 1-30-15 REGION TRAFFIC ENGINEER
APPROVED
DATE 1/30/15 STATE TRAFFIC ENGINEER

REGION CONTACT: JUSTIN EFFINGER
DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC.
REVISED BY:
PAGE 1 OF 3

JOSHUA M. WOLLER E-42424-6 FITCHBURG WI PROFESSIONAL ENGINEER WISCONSIN 1/29/15

JRE 1/30/15

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	TRAFFIC SIGNAL PLAN	SHEET E

FILE NAME : 024000_SP (SIG PLAN).DWG | PLOT DATE : 1/29/2015 9:00 AM | PLOT BY : SEH INC | LAYOUT NAME : 024005_SP | PLOT SCALE : 1 IN:40 FT | WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\KW\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

2

D

N

R/W IS OFF
THE PAGE

STH 50

606 607 608 609 610

SB6

SB5

POSTED SPEED
LIMIT 55 MPH

R/W

D

B

R/W IS OFF
THE PAGE

POSTED SPEED
LIMIT 55 MPH

618 619 620 621

SB14

SB13

STH 50

R/W IS OFF
THE PAGE

B

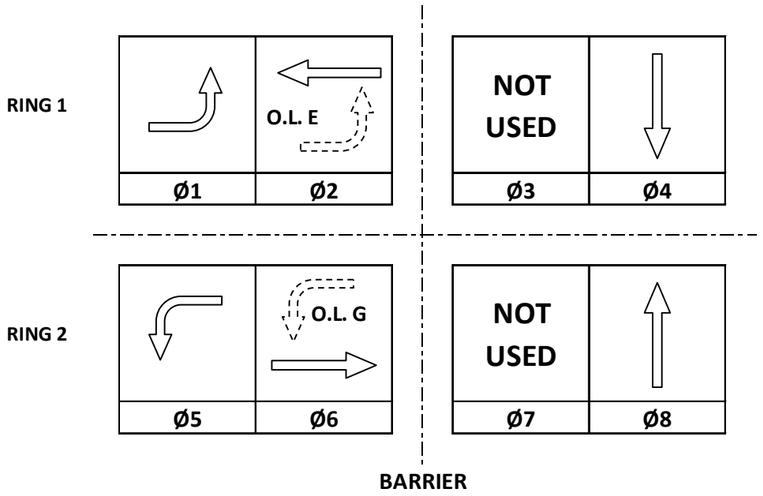
TRAFFIC CONTROL SIGNAL
STH 50 &
CTH O (368TH AVENUE)
TOWN OF WHEATLAND
KENOSHA COUNTY

SIGNAL NO. S30-1419

REGION CONTACT: JUSTIN EFFENGER
DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 2 OF 3
REVISED BY:

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	TRAFFIC SIGNAL PLAN	SHEET	E

	HEAD NUMBERS	FLASH
Ø1	4,5	R ←
Ø2	6,7,8	R
Ø3		
Ø4	14,15,16	R
Ø5	9,10	R ←
Ø6	1,2,3	R
Ø7		
Ø8	11,12,13	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	4,5	-
OLF		
OLG	9,10	-
OLH		



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3				
4		8		X
5		2		X
6	X	2	MIN	X
7				
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	X

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM NO: SS-	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13	19	17	23	21	27	25	31	29	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	11	41	51	81													PLAN LOOP DETECTOR*(S)
CALLED PHASE	1	4	5	8													CALLED PHASE
CALL OPTION	X		X														CALL OPTION
DELAY TIME																	DELAY TIME
EXTENTION OPTION	X	X	X	X													EXTENTION OPTION
EXTEND TIME		X		X													EXTEND TIME
USE ADDED INITIAL																	USE ADDED INITIAL
CROSS SWITCH PHASE	2		6														CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14	20	18	24	22	28	26	32	30	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	21	42	61	82													PLAN LOOP DETECTOR*(S)
CALLED PHASE	2	4	6	8													CALLED PHASE
CALL OPTION	X	X	X	X													CALL OPTION
DELAY TIME																	DELAY TIME
EXTENTION OPTION	X	X	X	X													EXTENTION OPTION
EXTEND TIME																	EXTEND TIME
USE ADDED INITIAL	X		X														USE ADDED INITIAL
CROSS SWITCH PHASE																	CROSS SWITCH PHASE

STH 50 & CTH O (368TH AVENUE)
TOWN OF WHEATLAND
KENOSHA COUNTY

SIGNAL NO: S30-1419 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 01/15 PAGE NO. 3 OF 3

PROJECT ID:	3700-20-71
INTERSECTION:	STH 50 & CTH O (368TH AVENUE)

SIGNAL WIRE COLOR CODING	BLK - BLACK	RED - RED	GRN - GREEN
	WHT - WHITE	BLU - BLUE	ORG - ORANGE

CB_TO	AWG 14 # OF	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING> <YELLOW>	D/WALK	WALK	
SB1	12	1	RED	ORG	GRN							
		9				RED/BLK	ORG/BLK	GRN/BLK	BLU/BLK			
SB2	7	10				RED	ORG	GRN	BLU/BLK			
SB7	12	7	RED	ORG	GRN							
		8	RED	ORG	GRN							
SB8	12	12	RED	ORG	GRN							
		14	RED/BLK	ORG/BLK	GRN/BLK							
SB9	12	13	RED	ORG	GRN							
SB10	12	4				RED	ORG	GRN	BLU/BLK			
		6	RED/BLK	ORG/BLK	GRN/BLK							
SB11	7	5				RED	ORG	GRN	BLU/BLK			
SB15	12	2	RED	ORG	GRN							
		3	RED	ORG	GRN							
SB16	12	11	RED	ORG	GRN							
		15	RED/BLK	ORG/BLK	GRN/BLK							
SB17	7	16	RED	ORG	GRN							

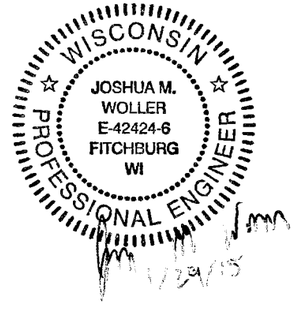
EQUIPMENT GROUNDING CONDUCTOR 10 AWG GREEN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB7
SB7	SB8
SB8	SB8
SB9	SB10
SB10	SB11
SB11	SB15
SB15	SB16
SB16	SB17
SB17	CB1

PULL BOX BONDING JUMPER 10 AWG GREEN XLP	
FROM	TO
PB1	CB1
PB2	SB1
PB3	SB2
PB4	SB2
PB5	SB7
PB6	SB8
PB7	SB9
PB8	SB10
PB9	SB11
PB10	SB11
PB11	SB15
PB12	SB16
PB13	SB17
PB14	CB1

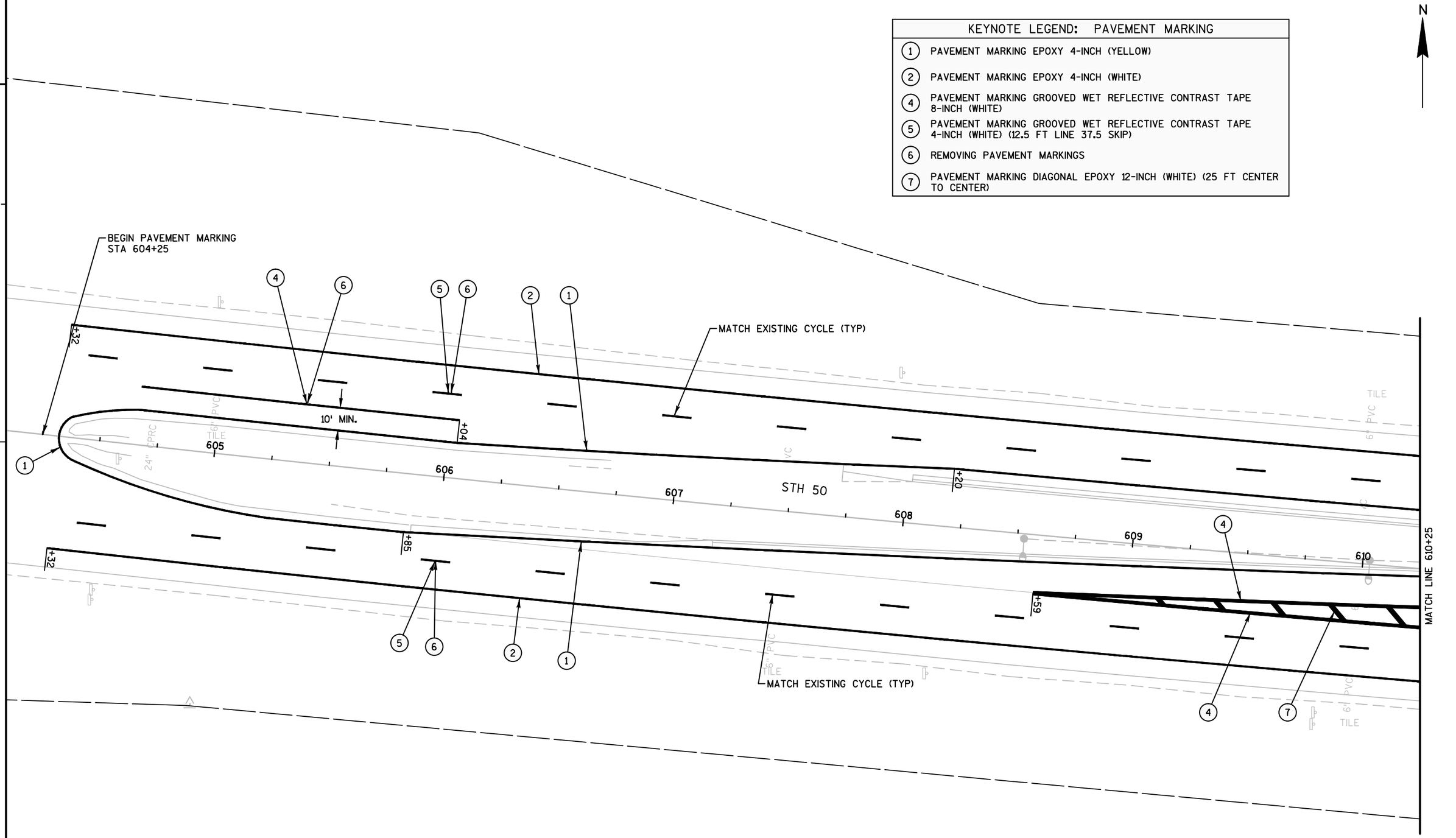
LIGHTING UF 2-10 AWG W/ GROUND	
FROM	TO
CB1	SB3
SB3	SB4
SB3	SB9
SB4	SB5
SB5	SB6
CB1	SB17
SB17	SB11
SB11	SB12
SB12	SB13
SB13	SB14

RADAR DETECTION CABLE	
FROM	TO
CB1	RA1 (SB11)
CB1	RA2 (SB3)
CB1	RA3 (SB9)
CB1	RA4 (SB17)
CB1	RM1 (SB15)
CB1	RM2 (SB7)
CB1	RM3 (SB9)
CB1	RM4 (SB1)

*USE THE WHITE CONDUCTOR IN THE CABLE ASSEMBLY AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
*ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
*AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR
"OTHER" COLUMN MAY INCLUDE SHADOW BOX SIGN



KEYNOTE LEGEND: PAVEMENT MARKING	
1	PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2	PAVEMENT MARKING EPOXY 4-INCH (WHITE)
4	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE) (12.5 FT LINE 37.5 SKIP)
6	REMOVING PAVEMENT MARKINGS
7	PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (WHITE) (25 FT CENTER TO CENTER)



PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PAVEMENT MARKING PLAN	SHEET	E

FILE NAME : 024500_PM (PAVMNT MARKING PLAN).DWG | PLOT DATE : 1/27/2015 7:09 PM | PLOT BY : SEH INC | LAYOUT NAME : 024501_PM | PLOT SCALE : 1 IN:40 FT

SAVE FOLDER PATH: P:\UZ\WI\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

WISDOT/CADDS SHEET 42

2

N

368TH AV

48'0"

47'0"

46'0"

45'0"

MATCH LINE 610+25

MATCH LINE 616+25

STH 50

CTH O (368TH AV)

MATCH EXISTING CYCLE (TYP)

MATCH EXISTING CYCLE (TYP)

KEYNOTE LEGEND: PAVEMENT MARKING	
1	PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2	PAVEMENT MARKING EPOXY 4-INCH (WHITE)
3	PAVEMENT MARKING EPOXY 4-INCH (WHITE) 3 FT LINE 9 FT SKIP)
4	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE) (12.5 FT LINE 37.5 SKIP)
6	REMOVING PAVEMENT MARKINGS
7	PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (WHITE) (25 FT CENTER TO CENTER)

KEYNOTE LEGEND: PAVEMENT MARKING	
10	PAVEMENT MARKING GROOVED CONTRAST PREFORMED THERMOPLASTIC STOP LINE 18-INCH (WHITE)
20	PAVEMENT MARKING CURB EPOXY (YELLOW)
21	PAVEMENT MARKING ISLAND NOSE EPOXY (YELLOW)
26	PAVEMENT MARKING GROOVED CONTRAST PREFORMED THERMOPLASTIC ARROWS TYPE 2 (WHITE)
28	PAVEMENT MARKING GROOVED CONTRAST PREFORMED THERMOPLASTIC WORDS (WHITE)

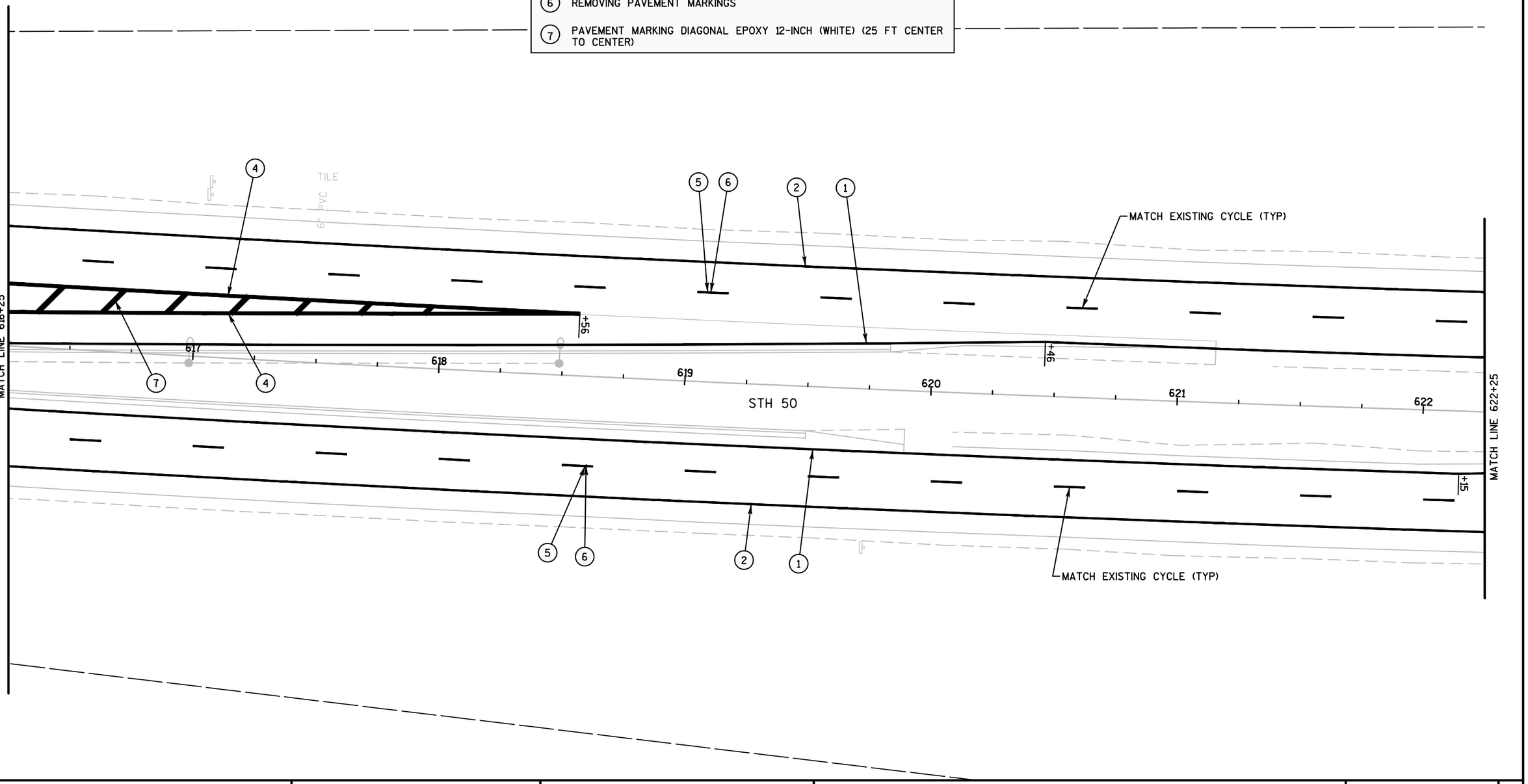
PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PAVEMENT MARKING PLAN	SHEET	E

SAVE FOLDER PATH: P:\UZ\WI\TSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

FILE NAME : 024500_PM (PAVMNT MARKING PLAN).DWG PLOT DATE : 1/27/2015 7:09 PM PLOT BY : SEH INC LAYOUT NAME : 024502_PM PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

KEYNOTE LEGEND: PAVEMENT MARKING	
1	PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2	PAVEMENT MARKING EPOXY 4-INCH (WHITE)
4	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE) (12.5 FT LINE 37.5 SKIP)
6	REMOVING PAVEMENT MARKINGS
7	PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (WHITE) (25 FT CENTER TO CENTER)



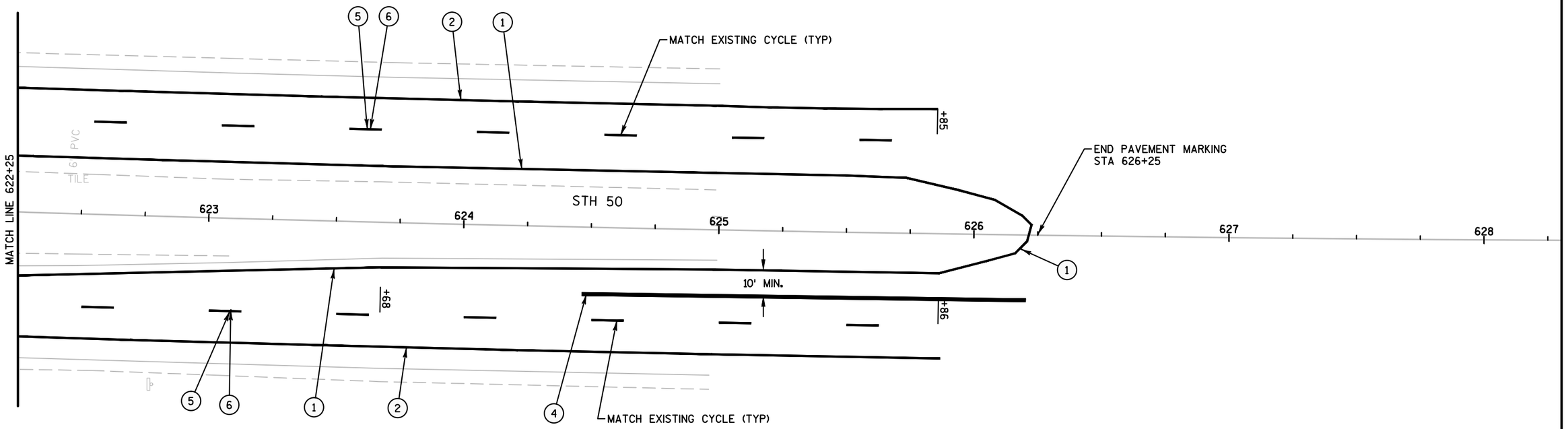
SAVE FOLDER PATH: P:\UZ\WWITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PAVEMENT MARKING PLAN	SHEET	E

FILE NAME : 024500_PM (PAVMNT MARKING PLAN).DWG | PLOT DATE : 1/27/2015 7:09 PM | PLOT BY : SEH INC | LAYOUT NAME : 024503_PM | PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

KEYNOTE LEGEND: PAVEMENT MARKING	
1	PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
2	PAVEMENT MARKING EPOXY 4-INCH (WHITE)
4	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH (WHITE)
5	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (WHITE) (12.5 FT LINE 37.5 SKIP)
6	REMOVING PAVEMENT MARKINGS



PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	PAVEMENT MARKING PLAN	SHEET	E

2

TRAFFIC CONTROL LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONTROL DRUM
- WORK AREA

GENERAL NOTES: TRAFFIC CONTROL

CONTRACTOR IS PROHIBITED FROM WORKING IN THE MEDIAN WORK ZONE AND RADII WORK ZONES AT THE SAME TIME.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

N

2

FOR CLOSURE OF INSIDE LANE, SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY"

FOR MEDIAN OPENING, SEE SDD "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

FOR SHOULDER CLOSURE, SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH"

FOR MEDIAN OPENING, SEE SDD "TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

368TH AV

500'

180'

180'

44'0'

42'0'

CTH O (368TH AV)

STH 50

598 600 602 604 606 608 610 612 614 616 618 620 622 624 626 628

R3-2 24"X24"

15 FT 24"X24" (TYP)

50 FT (TYP)

LANE CLOSED

R11-2-L 48"X30"

FOR SHOULDER CLOSURE, SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH"

FOR CLOSURE OF INSIDE LANE, SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY"

SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	TRAFFIC CONTROL PLAN	SHEET	E

FILE NAME : 025000_TC.DWG PLOT DATE : 1/27/2015 7:09 PM PLOT BY : SEH INC LAYOUT NAME : 025001_SP PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

2

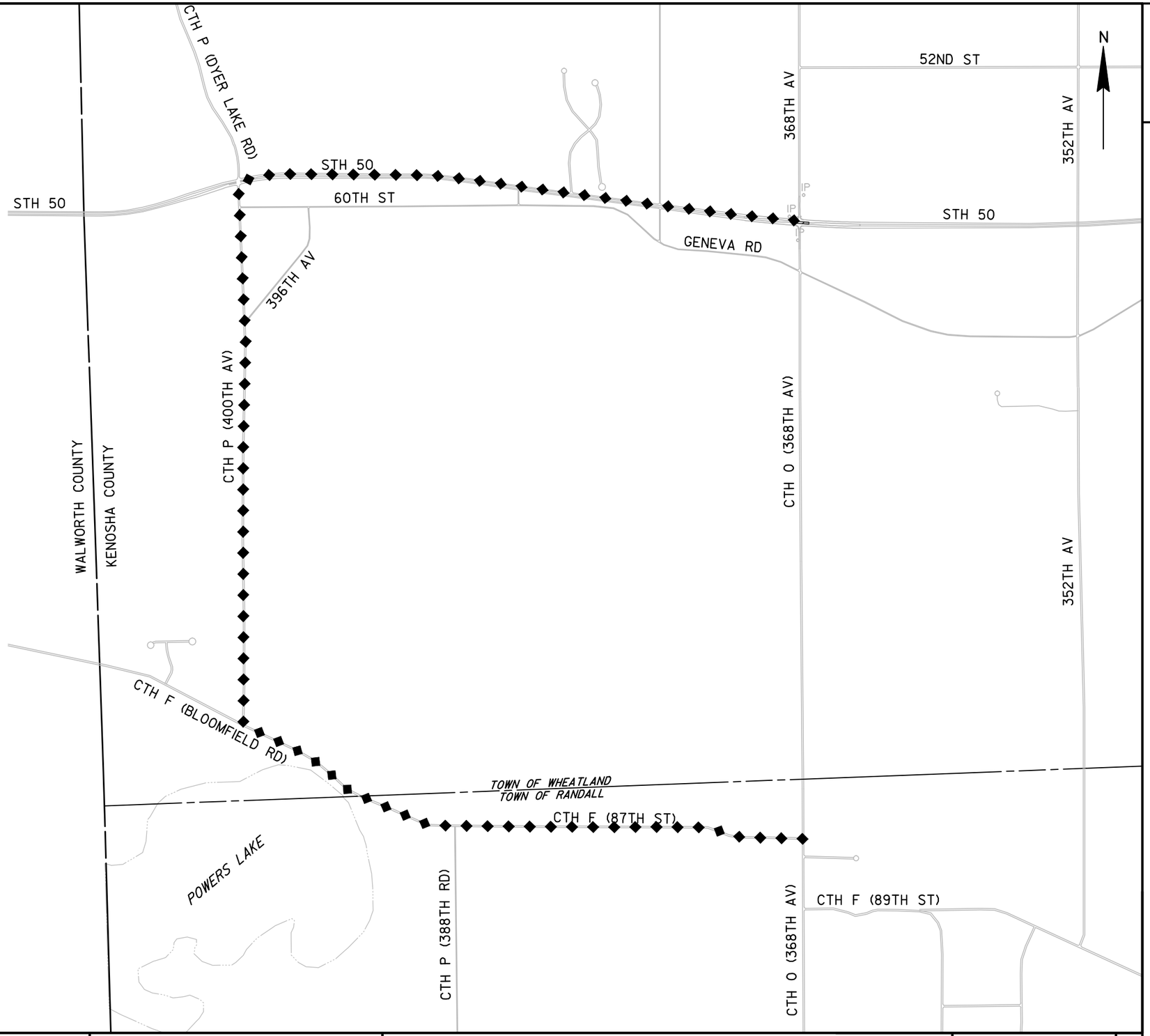
GENERAL NOTES: TRAFFIC CONTROL AND DETOURS

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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



TRAFFIC CONTROL LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONTROL DRUM
- WORK AREA
- DETOUR ROUTE

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	DETOUR PLAN OVERVIEW	SHEET 28	E

FILE NAME : 027001_DT.DWG | PLOT DATE : 1/29/2015 10:50 AM | PLOT BY : SEH INC | LAYOUT NAME : 027001_DT | PLOT SCALE : 1 IN:2000 FT

WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\WWITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

N

CTH P (DYER LAKE RD)

STH 50

M4-8 24"X12" DETOUR SOUTH COUNTY O
M3-3 24"X12"
M1-5A 24"X24"
M05-1L 21"X21"
SOUTH COUNTY P
NORTH COUNTY P

JCT DETOUR SOUTH COUNTY P COUNTY O
M4-8 24"X12"
M3-3 24"X12"
M1-5A 24"X24"

M4-8 24"X12" DETOUR SOUTH COUNTY O
M3-3 24"X12"
M1-5A 24"X24"
M06-1 21"X21"
SOUTH COUNTY P

M4-8 24"X12" DETOUR NORTH COUNTY O
M3-1 24"X12"
M1-5A 24"X24"

M4-8 24"X12" DETOUR SOUTH COUNTY O
M3-3 24"X12"
M1-5A 24"X24"

60TH ST

CTH P (400TH AV)

WEST 50

M4-8 24"X12" DETOUR SOUTH COUNTY O
M3-3 24"X12"
M1-5A 24"X24"

IP

368TH AV

M4-8 24"X12" DETOUR SOUTH COUNTY O
M3-3 24"X12"
M1-5A 24"X24"
M06-1 21"X21"

M4-8 24"X12" DETOUR SOUTH COUNTY O
M3-3 24"X12"
M1-5A 24"X24"
M06-1 21"X21"

STH 50

STH 50

COUNTY O

GENEVA RD

CTH O (368TH AV)

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- NEW SIGN (COUNTY X)
- EXISTING SIGN (COUNTY X)
- EXISTING SIGN TO BE COVERED WITH BLANK ORANGE PANEL
- WORK ZONE

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	DETOUR PLAN - DETAILS	SHEET	E

FILE NAME : 027000_DT.DWG PLOT DATE : 1/28/2015 3:55 PM PLOT BY : SEH INC LAYOUT NAME : 027002_DT PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

2

N

CTH P (400TH AV)

DETOUR SOUTH
COUNTY O
JCT COUNTY F
M4-8 24"X12"
M3-3 24"X12"
M1-5A 24"X24"
M05-1L 21"X21"

DETOUR NORTH
COUNTY O
M4-8 24"X12"
M3-1 24"X12"
M1-5A 24"X24"

DETOUR SOUTH
COUNTY O
COUNTY P COUNTY F
M4-8 24"X12"
M3-3 24"X12"
M1-5A 24"X24"
M06-1 21"X21"

CTH F (BLOOMFIELD RD)

STOP

CTH F/CTH P (BLOOMFIELD RD)

DETOUR NORTH
COUNTY O
COUNTY P
M4-8 24"X12"
M3-1 24"X12"
M1-5A 24"X24"
M05-1R 21"X21"

DETOUR SOUTH
COUNTY O
M4-8 24"X12"
M3-3 24"X12"
M1-5A 24"X24"

DETOUR NORTH
COUNTY O
COUNTY P
M4-8 24"X12"
M3-1 24"X12"
M1-5A 24"X24"
M06-1 21"X21"

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- NEW SIGN (COUNTY X)
- EXISTING SIGN (COUNTY X)
- EXISTING SIGN TO BE COVERED WITH BLANK ORANGE PANEL
- WORK ZONE

N

CTH F/CTH P (87TH ST)

DETOUR NORTH
COUNTY O
M4-8 24"X12"
M3-1 24"X12"
M1-5A 24"X24"

STOP

DETOUR SOUTH
COUNTY O
JCT COUNTY O
M4-8 24"X12"
M3-3 24"X12"
M1-5A 24"X24"

COUNTY O COUNTY F

CTH O (368TH AV)

COUNTY F
DETOUR NORTH
COUNTY O
M4-8 24"X12"
M3-1 24"X12"
M1-5A 24"X24"
M06-1 21"X21"

DETOUR NORTH
COUNTY O
COUNTY F
M4-8 24"X12"
M3-1 24"X12"
M1-5A 24"X24"
M05-1L 21"X21"

CTH F/CTH O (368TH AV)

2

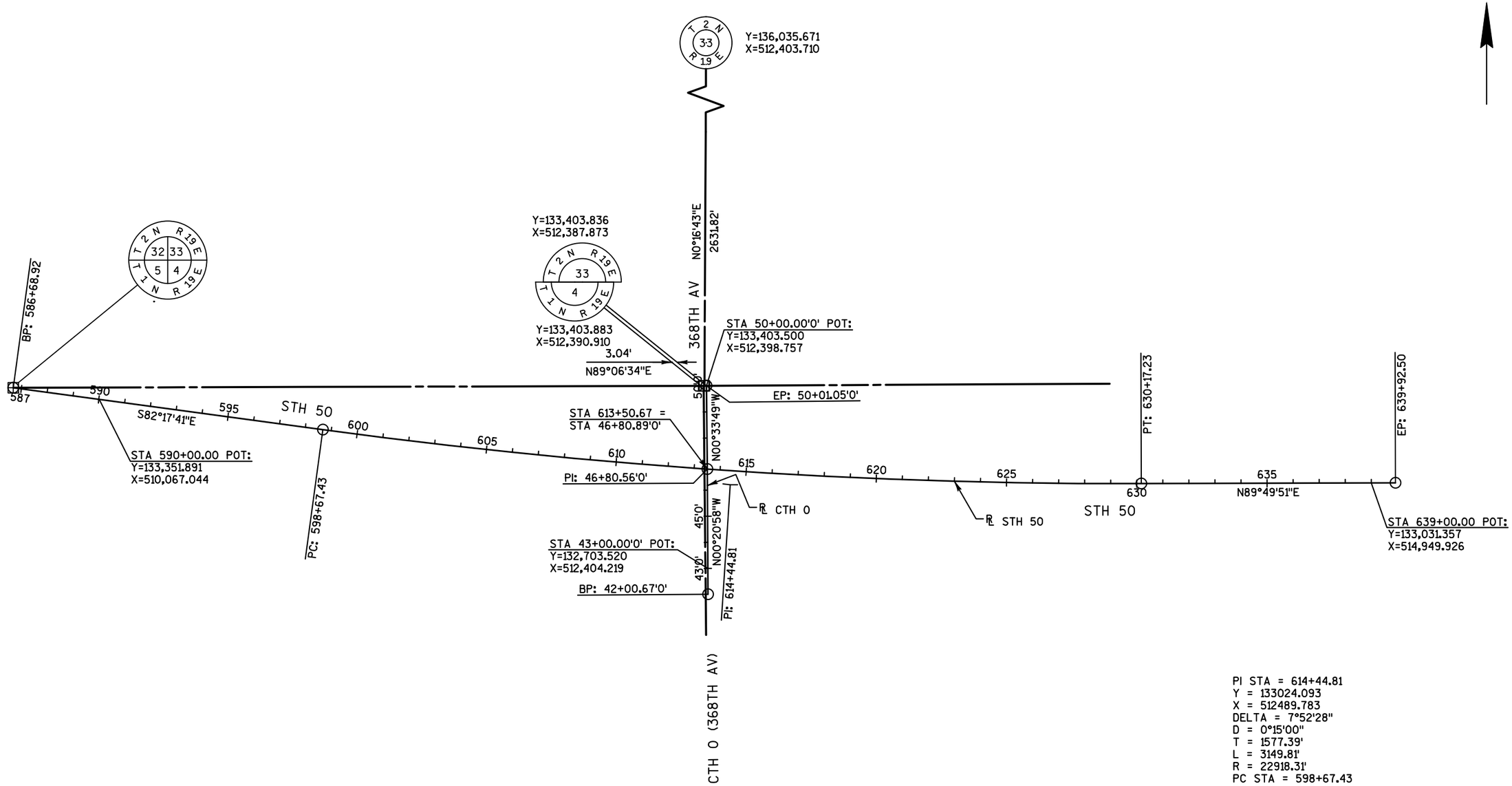
SAVE FOLDER PATH: P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	DETOUR PLAN - DETAILS	SHEET E

FILE NAME : 027000_DT.DWG | PLOT DATE : 1/28/2015 3:55 PM | PLOT BY : SEH INC | LAYOUT NAME : 027003_DT | PLOT SCALE : 1 IN:200 FT

2

N



PI STA = 614+44.81
Y = 133024.093
X = 512489.783
DELTA = 7°52'28"
D = 0°15'00"
T = 1577.39'
L = 3149.81'
R = 22918.31'
PC STA = 598+67.43
PT STA = 630+17.23

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	ALIGNMENT DETAIL	SHEET	E

FILE NAME : 027200_AD (ALIGNMENT DETAIL).DWG | PLOT DATE : 1/27/2015 7:10 PM | PLOT BY : SEH INC | LAYOUT NAME : 027201_AD | PLOT SCALE : 1 IN:400 FT

SAVE FOLDER PATH: P:\DZ\WW\WITSEV\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 02 TYPICAL SECTIONS AND DETAILS

DATE 25MAR15 — 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	3700-20-71 QUANTITY
0010	204.0100	Removing Pavement	SY	1,157.000	1,157.000
0020	204.0220	Removing Inlets	EACH	2.000	2.000
0030	204.0245	Removing Storm Sewer (size) 01. 18-Inch	LF	29.000	29.000
0040	205.0100	Excavation Common	CY	1,829.000	1,829.000
0050	213.0100	Finishing Roadway (project) 01. 3700-20-71	EACH	1.000	1.000
0060	305.0110	Base Aggregate Dense 3/4-Inch	TON	26.000	26.000
0070	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,251.000	1,251.000
0080	310.0110	Base Aggregate Open Graded	TON	1,227.000	1,227.000
0090	415.0090	Concrete Pavement 9-Inch	SY	3,195.000	3,195.000
0100	416.0610	Drilled Tie Bars	EACH	1,010.000	1,010.000
0110	416.0620	Drilled Dowel Bars	EACH	100.000	100.000
0120	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0130	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	1.000	1.000
0140	601.0551	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A	LF	2,590.000	2,590.000
0150	602.0410	Concrete Sidewalk 5-Inch	SF	3,755.000	3,755.000
0160	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	613.000	613.000
0170	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	474.000	474.000
0180	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	29.000	29.000
0190	611.0627	Inlet Covers Type HM	EACH	18.000	18.000
0200	611.0636	Inlet Covers Type HM-S	EACH	2.000	2.000
0210	611.1005	Catch Basins 5-FT Diameter	EACH	1.000	1.000
0220	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0230	611.3230	Inlets 2x3-FT	EACH	17.000	17.000
0240	612.0106	Pipe Underdrain 6-Inch	LF	1,800.000	1,800.000
0250	619.1000	Mobilization	EACH	1.000	1.000
0260	620.0300	Concrete Median Sloped Nose	SF	216.000	216.000
0270	625.0500	Salvaged Topsoil	SY	3,490.000	3,490.000
0280	628.1504	Silt Fence	LF	560.000	560.000
0290	628.1520	Silt Fence Maintenance	LF	560.000	560.000
0300	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0310	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0320	628.2002	Erosion Mat Class I Type A	SY	3,490.000	3,490.000
0330	628.7005	Inlet Protection Type A	EACH	20.000	20.000
0340	628.7015	Inlet Protection Type C	EACH	20.000	20.000
0350	628.7555	Culvert Pipe Checks	EACH	50.000	50.000
0360	629.0210	Fertilizer Type B	CWT	2.000	2.000
0370	630.0130	Seeding Mixture No. 30	LB	64.000	64.000
0380	630.0200	Seeding Temporary	LB	128.000	128.000
0390	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	3.000	3.000
0400	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	12.000	12.000
0410	637.2210	Signs Type II Reflective H	SF	272.500	272.500
0420	637.2215	Signs Type II Reflective H Folding	SF	59.680	59.680
0430	638.2102	Moving Signs Type II	EACH	1.000	1.000
0440	638.2602	Removing Signs Type II	EACH	12.000	12.000
0450	638.3000	Removing Small Sign Supports	EACH	11.000	11.000
0460	642.5001	Field Office Type B	EACH	1.000	1.000
0470	643.0100	Traffic Control (project) 01. 3700-20-71	EACH	1.000	1.000
0480	643.0300	Traffic Control Drums	DAY	5,333.000	5,333.000
0490	643.0420	Traffic Control Barricades Type III	DAY	76.000	76.000

3

DATE 25MAR15 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	3700-20-71 QUANTITY
0500	643.0715	Traffic Control Warning Lights Type C	DAY	5,333.000	5,333.000
0510	643.0800	Traffic Control Arrow Boards	DAY	76.000	76.000
0520	643.0900	Traffic Control Signs	DAY	608.000	608.000
0530	643.2000	Traffic Control Detour (project) 01. 3700-20-71	EACH	1.000	1.000
0540	643.3000	Traffic Control Detour Signs	DAY	2,432.000	2,432.000
0550	645.0111	Geotextile Fabric Type DF Schedule A	SY	1,200.000	1,200.000
0560	646.0106	Pavement Marking Epoxy 4-Inch	LF	7,798.000	7,798.000
0570	646.0600	Removing Pavement Markings	LF	1,691.000	1,691.000
0580	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	1,063.000	1,063.000
0590	646.0843.S	Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch	LF	1,708.000	1,708.000
0600	647.0456	Pavement Marking Curb Epoxy	LF	20.000	20.000
0610	647.0606	Pavement Marking Island Nose Epoxy	EACH	2.000	2.000
0620	647.0726	Pavement Marking Diagonal Epoxy 12-Inch	LF	360.000	360.000
0630	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	988.000	988.000
0640	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	555.000	555.000
0650	652.0615	Conduit Special 3-Inch	LF	752.000	752.000
0660	653.0140	Pull Boxes Steel 24x42-Inch	EACH	14.000	14.000
0670	654.0101	Concrete Bases Type 1	EACH	4.000	4.000
0680	654.0102	Concrete Bases Type 2	EACH	2.000	2.000
0690	654.0105	Concrete Bases Type 5	EACH	7.000	7.000
0700	654.0110	Concrete Bases Type 10	EACH	2.000	2.000
0710	654.0113	Concrete Bases Type 13	EACH	2.000	2.000
0720	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	1.000	1.000
0730	655.0230	Cable Traffic Signal 5-14 AWG	LF	441.000	441.000
0740	655.0240	Cable Traffic Signal 7-14 AWG	LF	778.000	778.000
0750	655.0260	Cable Traffic Signal 12-14 AWG	LF	2,001.000	2,001.000
0760	655.0320	Cable Type UF 2-10 AWG Grounded	LF	1,845.000	1,845.000
0770	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	1,968.000	1,968.000
0780	655.0615	Electrical Wire Lighting 10 AWG	LF	1,512.000	1,512.000
0790	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. Sth 50 & Cth O	LS	1.000	1.000
0800	657.0100	Pedestal Bases	EACH	4.000	4.000
0810	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	9.000	9.000
0820	657.0305	Poles Type 2	EACH	1.000	1.000
0830	657.0310	Poles Type 3	EACH	1.000	1.000
0840	657.0322	Poles Type 5-Aluminum	EACH	7.000	7.000
0850	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	2.000	2.000
0860	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	2.000	2.000
0870	657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT	EACH	2.000	2.000
0880	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	8.000	8.000
0890	657.1350	Install Poles Type 10	EACH	2.000	2.000
0900	657.1355	Install Poles Type 12	EACH	2.000	2.000
0910	657.1520	Install Monotube Arms 20-FT	EACH	2.000	2.000
0920	657.1540	Install Monotube Arms 40-FT	EACH	2.000	2.000
0930	657.1808	Install Luminaire Arms Steel 8-FT	EACH	2.000	2.000
0940	658.0110	Traffic Signal Face 3-12 Inch Vertical	EACH	12.000	12.000

3

DATE 25MAR15 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	3700-20-71 QUANTITY
0950	658.0115	Traffic Signal Face 4-12 Inch Vertical	EACH	4.000	4.000
0960	658.0215	Backplates Signal Face 3 Section 12-Inch	EACH	12.000	12.000
0970	658.0220	Backplates Signal Face 4 Section 12-Inch	EACH	4.000	4.000
0980	658.0600	Led Modules 12-Inch Red Ball	EACH	12.000	12.000
0990	658.0605	Led Modules 12-Inch Yellow Ball	EACH	12.000	12.000
1000	658.0610	Led Modules 12-Inch Green Ball	EACH	12.000	12.000
1010	658.0615	Led Modules 12-Inch Red Arrow	EACH	4.000	4.000
1020	658.0620	Led Modules 12-Inch Yellow Arrow	EACH	8.000	8.000
1030	658.0625	Led Modules 12-Inch Green Arrow	EACH	4.000	4.000
1040	658.5069	Signal Mounting Hardware (location) 01. Sth 50 & Cth O	LS	1.000	1.000
1050	659.1125	Luminaires Utility LED C	EACH	12.000	12.000
1060	690.0150	Sawing Asphalt	LF	12.000	12.000
1070	690.0250	Sawing Concrete	LF	1,120.000	1,120.000
1080	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1090	SPV.0060	Special 01. Grooved Contrast Preformed Thermoplastic Arrows Type 2	EACH	2.000	2.000
1100	SPV.0060	Special 02. Grooved Contrast Preformed Thermoplastic Words	EACH	2.000	2.000
1110	SPV.0060	Special 03. Install Wireless Modem Sth 50 & Cth O	EACH	1.000	1.000
1120	SPV.0090	Special 01. Grooved Contrast Preformed Thermoplastic Stop Line 18-Inch	LF	141.000	141.000
1130	SPV.0105	Special 01. Transporting Signal And Lighting Materials	LS	1.000	1.000
1140	SPV.0105	Special 02. Install State Furnished Traffic Signal Cabinet	LS	1.000	1.000
1150	SPV.0105	Special 03. Transporting And Installing State Furnished Radar Detection System	LS	1.000	1.000
1160	SPV.0105	Special 04. Survey Project 3700-20-71	LS	1.000	1.000
1170	SPV.0105	Special 05. Concrete Pavement Joint Layout	LS	1.000	1.000

3

EARTHWORK DATA SUMMARY TABLE

DIVISION	STAGE	CATEGORY CODE	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (2)	UNEXPANDED FILL	EXPANDED FILL (3)	MASS ORDINATE +/- (4)	DIVISION WASTE	208.0100 DIVISION BORROW
					CUT				FACTOR 1.25			
1	1	0010	605+88 - 613+30	STH 50	815	184	631	453	566	65	65	
		0010	613+72 - 621+15	STH 50	1014	177	837	399	499	338	338	
	STAGE 1 SUBTOTAL				1829	361	1468	852	1065	403	403	0
					1829	361	1468	852	1065	403	403	0
DIVISION 1 SUBTOTAL					1829	361	1468	852	1065	403	403	0
ITEM TOTALS					TOTAL COMMON EXC		1829	CY				

1) COMMON EXCAVATION IS THE SUM OF THE CUT, ITEM NUMBER 205.0100.
2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
3) EXPANDED FILL. FACTOR = 1.25
4) THE MASS ORDINATE + OR - QUANTITY CALCULATED FOR THE STAGE. PLUS QUANTITY INDICATES EXCESS OF MATERIAL WITHIN THE STAGE AND IS CATEGORIZED AT DIVISION WASTE. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE STAGE AND IS CATEGORIZED AS DIVISION BORROW, ITEM NUMBER 208.0100.

FILE NAME : P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 03 MISCELLANEOUS QTY\030200_MQ (ROADWAY).DWG PLOT DATE : 1/29/2015 10:37 AM PLOT BY : SEH INC LAYOUT NAME : 030201_MQ PLOT SCALE : NTS
WISDOT/CADDS SHEET 42

3

REMOVAL ITEMS

STATION	LOCATION	REMOVING PAVEMENT 204.0100 SY	REMOVING INLETS 204.0220 EACH	REMOVING STORM STORM SEWER 18-INCH 204.0245 LF
609+27 - 613+30	LT & RT	593	1	
612+00	4.5' LT		1	15
613+72 - 617+72	LT & RT	564		
615+00	4.8' RT			14
	TOTAL	1157	2	29

BASE AGGREGATES

STATION - STATION	LOCATION	305.0110 BASE AGGREGATES 3/4-INCH TON	305.0120 BASE AGGREGATES 1 1/4-INCH TON	310.0110 BASE AGGREGATES OPEN GRADED TON	REMARKS
STH 50					
605+88 - 607+18	RT	11	11	20	EB SHOULDER
605+88 - 613+30	LT/RT		405	363	EB TURN LANE
607+72 - 613+08	LT		148	112	WB SHOULDER
611+75 - 613+01	LT		26	64	EB MEDIAN
612+30 - 613+23	RT		19	46	EB SPLITTER ISLAND
613+72 - 621+15	LT/RT		405	363	WB TURN LANE
613+79 - 614+73	LT		19	46	WB SPLITTER ISLAND
613+93 - 619+90	RT		178	121	EB SHOULDER
614+00 - 615+25	RT		26	63	WB MEDIAN
619+83 - 621+15	LT	15	15	28	WB SHOULDER
	TOTALS	26	1251	1227	

PAVING ITEMS

STATION - STATION	LOCATION	415.0090 CONCRETE PAVEMENT 9-INCH SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	601.0551 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE A LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF
STH 50							
605+88 - 613+30		1343	303	25	584		
607+72 - 613+08	LT	240	202	25	500	1075	28
612+21 - 613+30	RT				190	810	80
613+72 - 614+80	LT				190	810	
613+72 - 621+15		1341	303	25	584		80
613+93 - 619+50	RT	271	202	25	542	1060	28
ITEM TOTALS		3195	1010	100	2590	3755	216

3

STORM SEWER STRUCTURE ITEMS

STRUCTURE NUMBER	STATION	LOCATION	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	CATH BASINS 611.1005 5-FT DIAMETER EACH.1005	INLETS 611.3004 4-FT DIAMETER EACH	INLETS 611.3230 2x3-FT EACH	INLET COVERS 611.0627 TYPE HM EACH	INLET COVERS 611.0636 TYPE HM-S EACH
1	607+35.16	1.3' RT	1	-	-	-	-	-
2	609+00.00	7.8' RT	-	-	-	1	1	-
3	611+25.00	3.4' LT	-	-	-	1	1	-
4	611+99.78	7.1' LT	-	-	1	-	-	1
5	611+99.67	19.6' LT	-	-	-	1	1	-
6	612+78.74	8.5 LT	-	-	-	1	1	-
7	612+78.74	19.5' LT	-	-	-	1	1	-
8	612+85.85	8.09 RT	-	1	-	-	1	-
9	613+20.29	8.49 RT	-	-	-	1	1	-
10	613+20.29	19.50 RT	-	-	-	1	1	-
11	614+12.28	18.9' RT	-	-	-	1	1	-
12	614+12.36	8.5' RT	-	-	-	1	1	-
13	614+12.50	8.5' LT	-	-	-	1	1	-
14	614+12.50	19.5' LT	-	-	-	1	1	-
15	614+70.54	8.5' RT	-	-	-	1	1	-
16	614+70.36	8.6' LT	-	-	-	1	1	-
17	614+70.24	19.5' LT	-	-	-	1	1	-
18	615+00.05	7.3' RT	-	-	1	-	-	1
19	615+00.15	19.5' RT	-	-	-	1	1	-
20	615+75.30	3.4' RT	-	-	-	1	1	-
21	618+24.00	8.9' LT	-	-	-	1	1	-
ITEM TOTALS			1	1	2	17	18	2

STORM SEWER PIPE REINFORCED CONCRETE CLASS III

PIPE NUMBER	STATION - STATION	INLET ELEV	OUTLET ELEV	SLOPE FT/FT	520.8000 CONCRETE COLLAR EACH	608.0312 12-INCH LF	608.0315 15-INCH LF	608.0318 18-INCH LF
P-1	607+39 - 609+00	805.50	803.22	0.014	-	-	161	-
P-2	609+00 - 611+25	803.12	799.10	0.018	-	-	225	-
P-3	611+25 - 612+00	799.00	797.40	0.021	-	-	75	-
P-4	612+00	797.05	796.81	0.020	-	-	-	12
P-5	612+00 - 612+79	798.60	797.65	0.012	-	79	-	-
P-6	612+79	798.85	798.70	0.014	-	11	-	-
P-7	612+86 - 613+20	796.85	796.47	0.012	-	33	-	-
P-8	613+20	797.10	796.95	0.014	-	11	-	-
P-9	614+12	798.05	797.90	0.015	-	10	-	-
P-10	614+12	798.10	797.90	0.012	-	17	-	-
P-11	614+13	798.35	798.20	0.014	-	11	-	-
P-12	614+13 - 614+71	797.80	797.17	0.011	-	58	-	-
P-13	614+71	797.35	797.17	0.011	-	17	-	-
P-14	614+71	797.50	797.36	0.013	-	11	-	-
P-15	614+77 - 615+00	797.07	796.74	0.011	-	30	-	-
P-16	615+00	796.63	796.49	0.011	-	-	13	-
P-17	615+00	796.14	795.83	0.018	1	-	-	17
P-18	615+00 - 615+75	797.80	796.74	0.014	-	75	-	-
P-19	615+75 - 618+25	800.20	797.90	0.009	-	250	-	-
ITEM TOTALS					1	613	474	29

PIPE UNDERDRAIN

STATION - STATION	LOCATION	612.0106 6-INCH LF	645.0111 GEOTEXTILE FABRIC TYPE DF SCHEDULE A SY	REMARKS
STH 50				
605+88 - 613+08	LT/RT	720	500	ALONG TURN LANE
610+00	LT	10	7	CONNECT EXISTING
611+88 - 612+00	LT	20	14	TO PROPOSED INLET
613+93 - 620+74	LT/RT	725	503	ALONG TURN LANE
615+00 - 615+15	RT	25	17	TO PROPOSED INLET
UNDISTRIBUTED		300	158	
	TOTAL	1800	1200	

3

RESTORATION ITEMS

LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2002 EROSION MAT CLASS I TYPE A SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
STH 50					
605+88 - 611+75	1221	1221	0.77	22.0	44.0
615+25 - 621+15	1237	1237	0.78	22.3	44.5
NW QUADRANT	70	70	0.04	1.3	2.5
SW QUADRANT	257	257	0.16	4.6	9.2
SE QUADRANT	59	59	0.04	1.1	2.1
NE QUADRANT	64	64	0.04	1.2	2.3
UNDISTRIBUTED	582	582	0.37	11.5	22.9
ITEM TOTALS	3490	3490	2	64	128

EROSION CONTROL ITEMS

LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7555 CULVERT DITCH CHECKS EACH
STH 50 & CTH O INTERSECTION					
NW QUADRANT	102	102	-	-	-
NE QUADRANT	100	100	-	-	-
SW QUADRANT	175	175	-	-	10
SE QUADRANT	88	88	-	-	20
STH 50					
607+35	-	-	-	-	10
609+00	-	-	1	1	-
611+25	-	-	1	1	-
612+00	-	-	2	2	-
612+79	-	-	2	2	-
612+86	-	-	1	1	-
613+20	-	-	2	2	-
614+12	-	-	4	4	-
614+70	-	-	3	3	-
615+00	-	-	2	2	-
615+75	-	-	1	1	-
618+24	-	-	1	1	-
UNDISTRIBUTED	95	95	-	-	10
ITEM TOTALS	560	560	20	20	50

EROSION CONTROL MOBILIZATIONS

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT (3700-20-71)	2	2
ITEM TOTALS	2	2

3

TRAFFIC CONTROL

STATION - STATION	LOCATION	DAYS	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0715 WARNING LIGHTS TYPE C DAYS	643.0800 ARROW BOARDS DAYS	643.0900 SIGNS DAYS
STH 50							
605+88 - 621+15	LT	38	2297	38	2297	38	304
605+88 - 621+15	RT	38	2297	38	2297	38	304
STH 50 & CTH O INTERSECTION							
NW QUADRANT		38	152		152		
NE QUADRANT		38	218		218		
SW QUADRANT		38	218		218		
SE QUADRANT		38	152		152		
	TOTALS		5333	76	5333	76	608

TRAFFIC CONTROL DETOUR SIGNS

SIGN CODE	MESSAGE	EACH	DAYS	643.3000 TOTAL DAYS
M4-8	"DETOUR"	18	38	684
M3-1	"NORTH"	7	38	266
M3-3	"SOUTH"	11	38	418
M1-5A	"COUNTY O"	18	38	684
MO6-1		6	38	228
MO5-1L		3	38	114
MO5-1R		1	38	38
	TOTALS	64	266	2432

SAWING

STATION	LOCATION	690.0150 ASPHALT LF	690.0250 CONCRETE LF
STH 50			
605+88	RT	3	
607+72	LT	3	
609+27 - 613+30	RT		428
612+20 - 613+08	LT		114
613+08 - 613+30	CL		22
613+72 - 617+76	LT		430
613+72 - 613+93	CL		22
613+93 - 614+72	RT		104
619+90	RT	3	
621+15	LT	3	
ITEM TOTAL		12	1120

PAVEMENT MARKING

STATION - STATION	LOCATION	646.0106 EPOXY 4-INCH EDGELINE YELLOW LF	646.0106 EPOXY 4-INCH EDGELINE WHITE LF	646.0600 REMOVING PAVEMENT MARKINGS LF	646.0841.S GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH LF	646.0843.S GROOVED WET REFLECTIVE CONTRAST TAPE 8-INCH LF	646.0843.S 3' SKIPS LF	647.0456 CURB EPOXY LF	647.0606 ISLAND NOSE EPOXY EACH	646.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH LF	SPV.0060.01 GROOVED CONTRAST PREFORMED THERMOPLASTIC ARROWS TYPE 2 EACH	SPV.0060.02 GROOVED CONTRAST PREFORMED THERMOPLASTIC WORDS EACH	SPV.0090.01 GROOVED CONTRAST PREFORMED THERMOPLASTIC STOP LINE 18-INCH LF	REMARKS
STH 50														
604+25 - 625+00	RT & LT	4220	3578	1518	1062.5	1624	84	20	2	360	2	2	141	"ONLY"
CTH O/368TH AVE														
45+90'O' - 47+70'O'	CL	-	-	173	-	-		-	-				-	
BID ITEM TOTAL		4,220	3,578			1624	84							
ITEM TOTALS		7,798		1,691	1,063	1,708		20	2	360	2	2	141	

INCENTIVE STRENGTH CONCRETE PAVEMENT

STATION	715.0415 DOL
STH 50	
605+88 - 621+15	500
	500

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	MISCELLANEOUS QUANTITIES	SHEET 37	E

FILE NAME : P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 03 MISCELLANEOUS QTY\030200_MQ (ROADWAY).DWG PLOT DATE : 3/5/2015 2:28 PM PLOT BY : SEH INC LAYOUT NAME : 030203_MQ PLOT SCALE : NTS

WISDOT/CADDS SHEET 42

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 1000

SIGN NO.	SIGN CODE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.] x H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING [SF]	634.0616 POSTS WOOD 4X6-INCH X 16-FT [EA]	634.0618 POSTS WOOD 4X6-INCH X 18-FT [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	638.2102 MOVING SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
100	R3-20L(3)	--	36 x 54	13.50	--	--	1	--	--	--	--	--
101	J12-1(3)	--	36 x 66	16.50	--	--	1	1	1	--	--	--
--	M1-5A	CTH O	36 x 36	--	--	--	--	--	--	--	--	--
--	M5-1L	--	30 x 30	--	--	--	--	--	--	--	--	--
102	R5-1A(3)	--	42 x 30	8.75	--	1	--	1	1	--	--	--
103	M1-94H	368TH AVE	60 x 18	7.50	--	--	--	--	--	--	--	ON SIGNAL MAST ARM
104	J13-1(3)	--	36 x 66	16.50	--	--	1	1	1	--	--	--
	M1-5A	CTH O	36 x 36	--	--	--	--	--	--	--	--	--
	M6-1	--	30 x 30	--	--	--	--	--	--	--	--	--
105	R1-1F(3)	--	36 x 36	--	7.46	--	1	--	--	--	106	--
106	R4-7(3)	--	36 x 48	12.00	--	--	--	1	1	--	105	--
107	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	ON SIGNAL POLE
108	R5-1(3)	--	36 x 36	9.00	--	--	--	--	--	--	--	ON SIGNAL POLE
109	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	ON SIGNAL POLE
110	R5-1(3)	--	36 x 36	9.00	--	--	--	--	--	--	--	ON SIGNAL POLE
111	J4-1(3)	--	36 x 54	13.50	--	--	1	--	--	--	--	--
	M3-4	--	36 x 18	--	--	--	--	--	--	--	--	--
	M1-6	STH 50	36 x 36	--	--	--	--	--	--	--	--	--
112	J1-1(2S)	--	24 x 39	6.50	--	--	1	--	--	--	--	--
	M2-1	--	21 x 15	--	--	--	--	--	--	--	--	--
	M1-6	STH 50	24 x 24	--	--	--	--	--	--	--	--	--
113	R5-1	--	-- x --	--	--	--	--	1	1	--	--	--
114	J3-2(2S)	--	48 x 57	19.00	--	--	1	1	1	--	--	--
	M3-2	--	24 x 12	--	--	--	--	--	--	--	--	--
	M1-6	STH 50	24 x 24	--	--	--	--	--	--	--	--	--
	M6-1	--	21 x 21	--	--	--	--	--	--	--	--	--
	M3-4	--	24 x 12	--	--	--	--	--	--	--	--	--
	M1-6	STH 50	24 x 24	--	--	--	--	--	--	--	--	--
	M1-6	--	21 x 21	--	--	--	--	--	--	--	--	--
115	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	ON SIGNAL POLE
115A	R6-3	--	-- x --	--	--	--	--	--	--	1	--	ON SIGNAL POLE
116	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	ON SIGNAL POLE
117	R1-1F(3)	--	36 x 36	--	7.46	--	1	--	--	--	125	--
118	R1-1F(3)	--	36 x 36	--	7.46	--	--	--	--	--	--	ON SIGNAL POLE
119	J13-1(3)	--	36 x 66	16.50	--	--	1	--	--	--	129	--
--	M1-5A	CTH O	36 x 36	--	--	--	--	--	--	--	--	--
--	M6-1	--	30 x 30	--	--	--	--	--	--	--	--	--
120	R3-20L(3)	--	36 x 54	13.50	--	--	1	--	--	--	--	--
121	R5-1(3)	--	36 x 36	9.00	--	--	--	--	--	--	--	ON SIGNAL POLE
122	R5-1(3)	--	36 x 36	9.00	--	--	--	--	--	--	--	ON SIGNAL POLE

PROJECT NO: 3700-20-71	HWY: STH 50 @ CTH 0	COUNTY: KENOSHA	MISCELLANEOUS QUANTITIES – PERMANENT SIGNING	SHEET: 38	E

FILE NAME N:\PDS\C3D\CAD\37002071\SIGNING\QUANTITIES\STH50_CTHO_MQ.PPT PLOT DATE : 1/13/2015 2:41:05 PM PLOT BY : MSCKVW PLOT NAME : 030214_mq_fm1 PLOT SCALE : 1:1

TYPE I & II PERMANENT SIGNING

CATEGORY CODE 1000

SIGN NO.	SIGN CODE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.] x H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING [SF]	634.0616 POSTS WOOD 4X6-INCH X 16-FT [EA]	634.0618 POSTS WOOD 4X6-INCH X 18-FT [EA]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	638.2102 MOVING SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS NEW SIGN LOCATION
123	R1-1F(3)	--	36 x 36	--	7.46	--	--	1	1	--	--	ON SIGNAL POLE
123A	R6-3(2S)	--	30 x 24	5.00	--	--	--	--	--	--	--	--
124	J3-2(2S)	--	48 x 57	19.00	--	--	1	1	1	--	--	--
--	M3-4	--	24 x 12	--	--	--	--	--	--	--	--	--
--	M1-6	STH 50	24 x 24	--	--	--	--	--	--	--	--	--
--	M6-1	--	21 x 21	--	--	--	--	--	--	--	--	--
--	M3-3	--	24 x 12	--	--	--	--	--	--	--	--	--
--	M1-6	STH 50	24 x 24	--	--	--	--	--	--	--	--	--
--	M6-1	--	21 x 21	--	--	--	--	--	--	--	--	--
125	R4-7(3)	--	36 x 48	12.00	--	--	--	1	1	--	117	--
126	R5-1	--	-- x --	--	--	--	--	1	1	--	--	--
127	J13-1	--	-- x --	--	--	--	--	1	--	--	--	--
128	J4-1(3)	--	36 x 54	13.50	--	--	1	--	--	--	--	--
--	M3-2	--	36 x 18	--	--	--	--	--	--	--	--	--
--	M1-6	STH 50	36 x 36	--	--	--	--	--	--	--	--	--
129	R5-1A(3)	--	42 x 30	8.75	--	--	--	1	1	--	119	--
130	R3-20LL(2S)	--	24 x 36	6.00	--	1	--	--	--	--	--	--
131	R6-2L(2M)	--	30 x 36	7.50	--	--	--	--	--	--	--	ON SIGNAL POLE
132	M1-94H	368TH AVE	60 x 18	7.50	--	--	--	--	--	--	--	ON SIGNAL MAST ARM
133	R6-2L(2M)	--	30 x 36	7.50	--	--	--	--	--	--	--	ON SIGNAL POLE
134	R3-20LL(2S)	--	24 x 36	6.00	--	1	--	--	--	--	--	--
--	--	--	x	--	--	--	--	--	--	--	--	--
	TOTALS			272.50	59.68	3	12	12	11	1	--	--

SHEET 2 OF 2

PROJECT NO: 3700-20-71	HWY: STH 50 @ CTH 0	COUNTY: KENOSHA	MISCELLANEOUS QUANTITIES – PERMANENT SIGNING	SHEET: 39	E

3

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

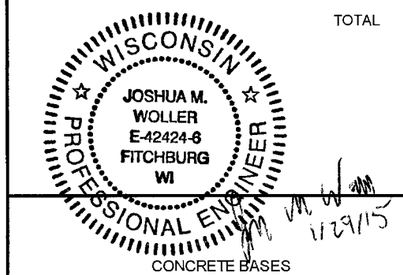
QUANTITY	UNIT	DESCRIPTION
1	EACH	TRAFFIC SIGNAL CONTROLLER AND CABINET
2	EACH	POLES, TYPE 10
2	EACH	POLES, TYPE 12
2	EACH	MONOTUBE ARMS, 20-FOOT
2	EACH	MONOTUBE ARMS, 40-FOOT
2	EACH	STEEL LUMINAIRE ARMS, 8-FOOT
1	LS	RADAR DETECTION SYSTEM

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	—	18	—
PB1	PB2	—	106	—
PB2	PB3	—	—	108
PB3	PB4	—	—	54
PB4	PB5	—	—	104
PB5	PB6	—	68	—
PB6	PB7	—	—	102
PB7	PB8	—	108	—
PB8	PB9	—	—	104
PB9	PB10	—	—	56
PB10	PB11	—	—	104
PB11	PB12	—	72	—
PB12	PB13	—	—	120
PB13	PB14	—	106	—
PB14	CB1	—	15	—
PB2	SB1	5	—	—
PB3	SB2	19	—	—
PB3	SB3	19	—	—
PB4	SB4	143	—	—
PB5	SB7	—	25	—
PB6	SB8	5	—	—
PB7	SB9	—	5	—
PB8	SB10	13	—	—
PB9	SB11	32	—	—
PB10	SB12	136	—	—
PB11	SB15	—	7	—
PB12	SB16	8	—	—
PB13	SB17	—	25	—
SB4	SB5	152	—	—
SB5	SB6	152	—	—
SB12	SB13	152	—	—
SB13	SB14	152	—	—
TOTAL		988	555	752

PULL BOXES STEEL

PULL BOX NUMBER	STATION	LOCATION	653.0140 PULL BOXES STEEL 24 X 42 - INCH EACH
PB1	612+86.0	118.6' RT	1
PB2	613+01.6	67.9' RT	1
PB3	612+97.7	13.9' RT	1
PB4	612+95.7	13.0' LT	1
PB5	612+92.0	65.1' LT	1
PB6	613+18.1	86.1' LT	1
PB7	613+69.5	89.7' LT	1
PB8	614+16.1	65.6' LT	1
PB9	614+16.6	14.0' LT	1
PB10	614+16.9	13.8' RT	1
PB11	614+17.5	65.6' RT	1
PB12	613+84.7	79.4' RT	1
PB13	613+24.7	83.6' RT	1
PB14	612+95.7	127.5' RT	1
		TOTAL	14



1/29/15

CONCRETE BASES

BASE NUMBER	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0105 CONCRETE BASES TYPE 5 EACH	654.0110 CONCRETE BASES TYPE 10 EACH	654.0113 CONCRETE BASES TYPE 13 EACH	654.0217 CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
SB1	612+97.1	67.2' RT	—	1	—	—	—	—
SB2	613+16.0	14.0' RT	1	—	—	—	—	—
SB3	612+79.1	13.6' RT	—	—	1	—	—	—
SB4	611+52.9	9.2' LT	—	—	1	—	—	—
SB5	610+03.0	1.8' LT	—	—	1	—	—	—
SB6	608+52.8	2.2' RT	—	—	1	—	—	—
SB7	612+67.2	67.4' LT	—	—	—	—	1	—
SB8	613+18.9	90.6' LT	1	—	—	—	—	—
SB9	613+68.2	94.1' LT	—	—	—	1	—	—
SB10	614+04.0	68.9' LT	1	—	—	—	—	—
SB11	613+85.1	14.0' LT	—	1	—	—	—	—
SB12	615+48.4	10.3' RT	—	—	1	—	—	—
SB13	616+98.4	2.9' RT	—	—	1	—	—	—
SB14	618+48.6	4.7' LT	—	—	1	—	—	—
SB15	614+24.7	67.0' RT	—	—	—	—	1	—
SB16	613+82.0	86.6' RT	1	—	—	—	—	—
SB17	613+35.6	105.2' RT	—	—	—	1	—	—
CB1	612+91.4	122.8' RT	—	—	—	—	—	1
		TOTAL	4	2	7	2	2	1

TRAFFIC SIGNAL CABLE NO. 14 (ABOVE GROUND)

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5 - 14 AWG LF	655.0240 CABLE TRAFFIC SIGNAL 7 - 14 AWG LF
SB1	HEAD 1	21	
SB1	HEAD 9		22
SB2	HEAD 10		22
SB7	HEAD 7	64	
SB7	HEAD 8	51	
SB8	HEAD 12	19	
SB8	HEAD 14	19	
SB9	HEAD 13	47	
SB10	HEAD 4		22
SB10	HEAD 6	21	
SB11	HEAD 5		22
SB15	HEAD 2	64	
SB15	HEAD 3	52	
SB16	HEAD 11	19	
SB16	HEAD 16	19	
SB17	HEAD 15	45	
	TOTAL	441	88

ADDITIONAL QUANTITIES SHOWN ELSEWHERE

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SIGNAL NO. S30-1419
STH 50 & CTH O
PAGE 01 OF 03

3

TRAFFIC SIGNAL CABLE NO. 14 (BELOW GROUND)

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7 - 14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12 - 14 AWG LF
CB1	SB1	---	107
CB1	SB2	191	---
CB1	SB7	---	308
CB1	SB8	---	338
CB1	SB9	---	405
CB1	SB10	---	422
CB1	SB11	373	---
CB1	SB15	---	236
CB1	SB16	---	185
CB1	SB17	126	---
	TOTAL	690	2,001

ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ELECTRICAL SERVICE METER BREAKER PEDESTAL
STH 50 & CTH O

BASE NUMBER	656.0200.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
CB1	1
TOTAL	1

LIGHTING WIRE

FROM	TO	655.0320 CABLE TYPE UF 2 - 10 AWG GROUNDED LF	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG LF
CB1	SB3	191	---
SB3	LUMIN	---	288
SB3	SB4	230	---
SB4	LUMIN	---	117
SB3	SB10	276	---
SB10	LUMIN	---	117
SB4	SB5	160	---
SB5	LUMIN	---	117
SB5	SB6	160	---
SB6	LUMIN	---	117
CB1	SB17	126	---
SB17	LUMIN	---	117
SB17	SB11	337	---
SB11	LUMIN	---	288
SB11	SB12	236	---
SB12	LUMIN	---	117
SB12	SB13	160	---
SB13	LUMIN	---	117
SB13	SB14	160	---
SB14	LUMIN	---	117
	TOTAL	1,845	1,512

ELECTRIC WIRE TRAFFIC SIGNALS, NO. 10

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB1	107
SB1	SB2	118
SB2	SB7	179
SB7	SB8	104
SB8	SB9	101
SB9	SB10	112
SB10	SB11	137
SB11	SB15	175
SB15	SB16	91
SB16	SB17	133
SB17	CB1	126
PB1	CB1	29
PB2	SB1	40
PB3	SB2	39
PB4	SB2	82
PB5	SB7	45
PB6	SB8	25
PB7	SB9	25
PB8	SB10	24
PB9	SB11	52
PB10	SB11	96
PB11	SB15	27
PB12	SB16	28
PB13	SB17	45
PB14	CB1	28
	TOTAL	1,968

3

BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NUMBER	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE EACH	657.0305 POLES TYPE 2 EACH	657.0310 POLES TYPE 3 EACH	657.0322 POLES TYPE 5 ALUMINUM EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13 - FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15 - FT EACH	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4 -INCH CLAMP 6-FOOT EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FOOT EACH	657.1350 INSTALL POLES TYPE 10 EACH	657.1355 INSTALL POLES TYPE 12 EACH	657.1520 INSTALL MONOTUBE ARMS 20-FT EACH	657.1540 INSTALL MONOTUBE ARMS 40-FT EACH	657.1808 INSTALL LUMINAIRE ARMS 8-FT EACH	659.1125 LUMINAIRES UTILITY LED C EACH
SB1	---	1	1	---	---	---	---	---	---	---	---	---	---	---	---
SB2	1	---	---	---	---	---	1	---	---	---	---	---	---	---	---
SB3	---	1	---	---	1	---	---	---	2	---	---	---	---	---	2
SB4	---	1	---	---	1	---	---	---	1	---	---	---	---	---	1
SB5	---	1	---	---	1	---	---	---	1	---	---	---	---	---	1
SB6	---	1	---	---	1	---	---	---	1	---	---	---	---	---	1
SB7	---	---	---	---	---	---	---	---	---	---	1	---	1	---	---
SB8	1	---	---	---	---	1	---	---	---	---	---	---	---	---	---
SB9	---	---	---	---	---	---	---	---	---	1	---	1	---	1	1
SB10	1	---	---	---	---	---	1	---	---	---	---	---	---	---	---
SB11	---	1	---	1	---	---	---	2	---	---	---	---	---	---	2
SB12	---	1	---	---	1	---	---	---	1	---	---	---	---	---	1
SB13	---	1	---	---	1	---	---	---	1	---	---	---	---	---	1
SB14	---	1	---	---	1	---	---	---	1	---	---	---	---	---	1
SB15	---	---	---	---	---	---	---	---	---	---	1	---	1	---	---
SB16	1	---	---	---	---	1	---	---	---	---	---	---	---	---	---
SB17	---	---	---	---	---	---	---	---	---	1	---	1	---	1	1
TOTAL	4	9	1	1	7	2	2	2	8	2	2	2	2	2	12

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SIGNAL NO. S30-1419
STH 50 & CTH O
PAGE 02 OF 03

3

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH
1	SB1	1	---	1	---	1	1	1	---	---	---
2	SB15	1	---	1	---	1	1	1	---	---	---
3	SB15	1	---	1	---	1	1	1	---	---	---
4	SB10	---	1	---	1	---	---	---	1	2	1
5	SB11	---	1	---	1	---	---	---	1	2	1
6	SB10	1	---	1	---	1	1	1	---	---	---
7	SB7	1	---	1	---	1	1	1	---	---	---
8	SB7	1	---	1	---	1	1	1	---	---	---
9	SB1	---	1	---	1	---	---	---	1	2	1
10	SB2	---	1	---	1	---	---	---	1	2	1
11	SB16	1	---	1	---	1	1	1	---	---	---
12	SB8	1	---	1	---	1	1	1	---	---	---
13	SB9	1	---	1	---	1	1	1	---	---	---
14	SB8	1	---	1	---	1	1	1	---	---	---
15	SB16	1	---	1	---	1	1	1	---	---	---
16	SB17	1	---	1	---	1	1	1	---	---	---
	TOTAL	12	4	12	4	12	12	12	4	8	4

3

SIGNAL MOUNTING HARDWARE
STH 50 & CTH O

LOCATION	658.5069.01 SIGNAL MOUNTING HARDWARE LS
STH 50 & CTH O	1
TOTAL	1

INSTALL WIRELESS MODEM
STH 50 & CTH O

	SPV.0060.03 INSTALL WIRELESS MODEM EACH
STH 50 & CTH O	1
TOTAL	1

TRANSPORTING SIGNAL AND LIGHTING MATERIALS
STH 50 & CTH O

	SPV.0105.01 TRANSPORTING SIGNAL AND LIGHTING MATERIALS LS
STH 50 & CTH O	1
TOTAL	1

INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET
STH 50 & CTH O

	SPV.0105.02 INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET LS
STH 50 & CTH O	1
TOTAL	1

TRANSPORTING AND INSTALLING RADAR DETECTION SYSTEM
STH 50 & CTH O

	SPV.0105.03 TRANSPORTING AND INSTALLING STATE FURNISHED RADAR DETECTION SYSTEM LS
STH 50 & CTH O	1
TOTAL	1

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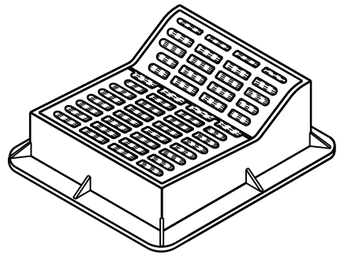
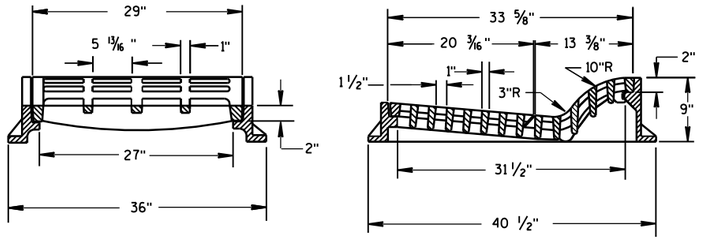
SIGNAL NO. S30-1419
STH 50 & CTH O
PAGE 03 OF 03

Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08A08-01	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D15-04A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-04B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-04C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
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
09B02-08	CONDUIT UNDER PAVED HIGHWAYS
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-05	CONCRETE BASE TYPE 10
09C12-05A	CONCRETE BASE TYPE 13
09C12-05B	CONCRETE BASE TYPE 13
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-13A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-13B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-13D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-13G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E08-06B	TYPE 10 POLE 15'-30' MONOTUBE ARM
09E08-06C	TYPE 12 POLE 35'-55' MONOTUBE ARM
09E08-06E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
11B02-02	CONCRETE MEDIAN NOSE
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C18-03	MEDIAN ISLAND MARKING
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-02	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-03	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

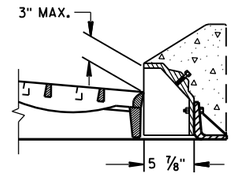
6





TYPE "F"

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



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

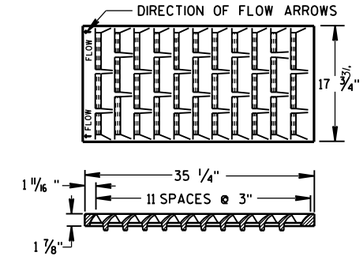
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

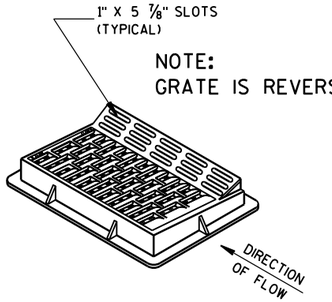
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

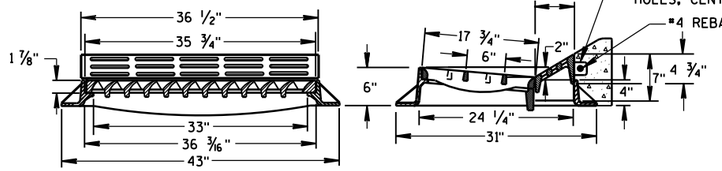
GENERAL NOTES

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

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



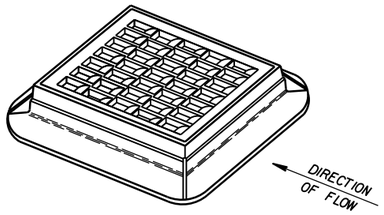


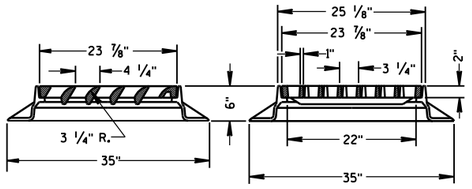


TYPE "HM"

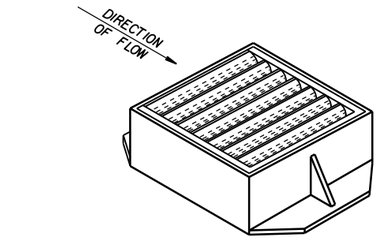
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

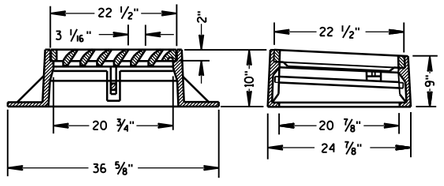
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



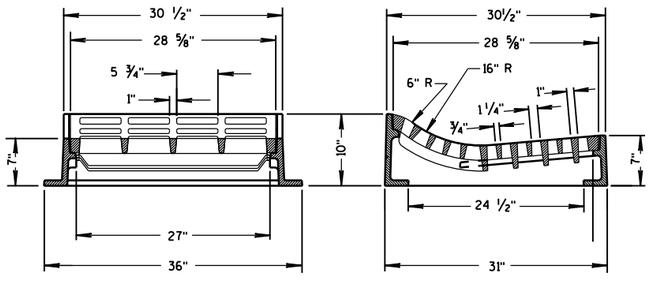


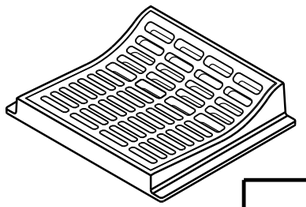
TYPE "S"





TYPE "V"





TYPE "T"

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

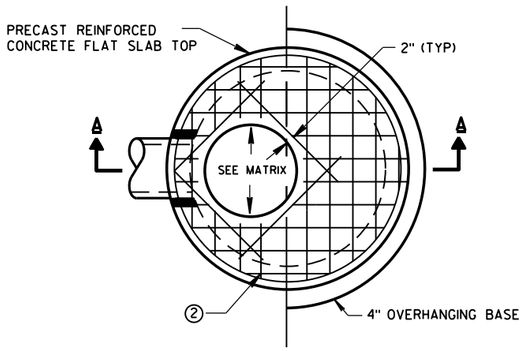
APPROVED
11/27/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

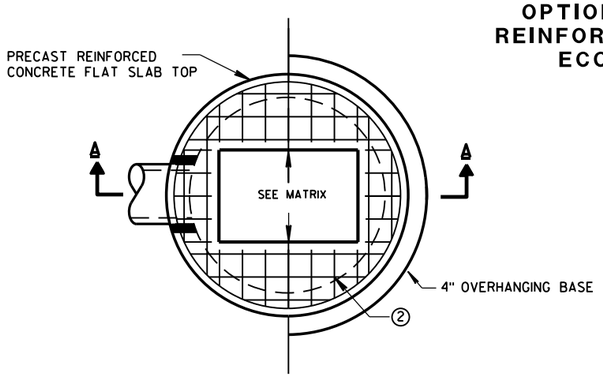
FHWA

6

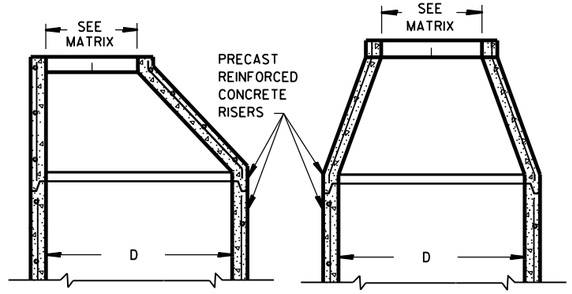
S.D.D. 8 A 5-19c



PLAN VIEW CIRCULAR OPENING

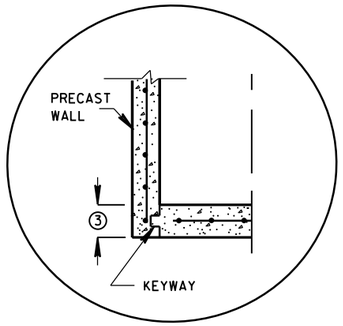


PLAN VIEW RECTANGULAR OPENING

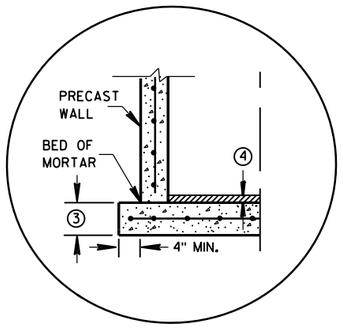


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

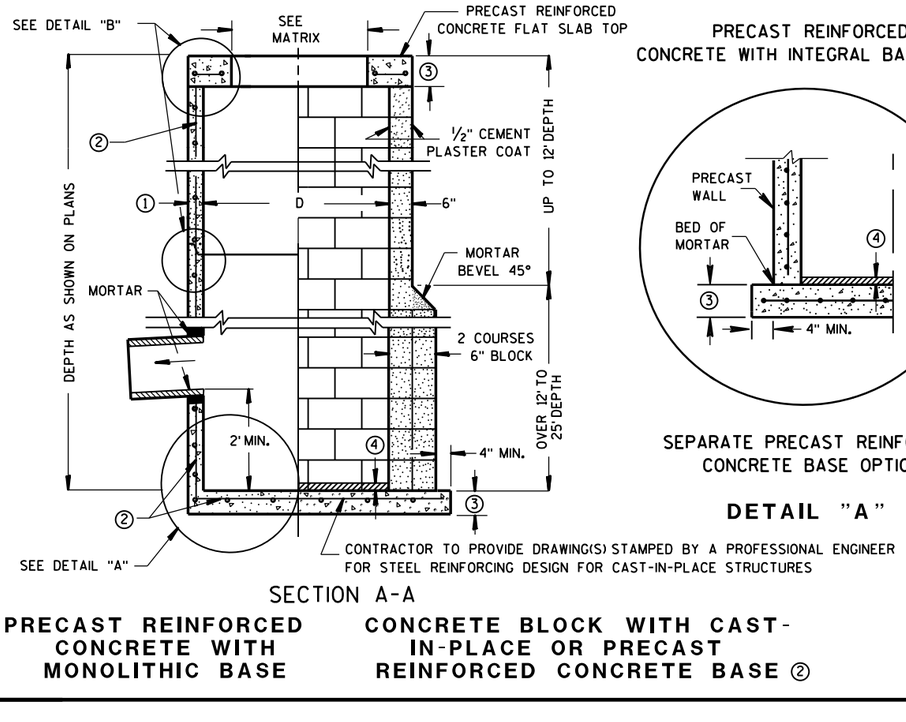


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"

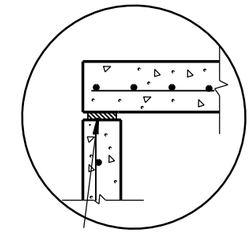


CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES

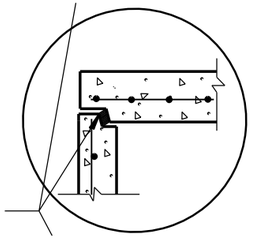
SECTION A-A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

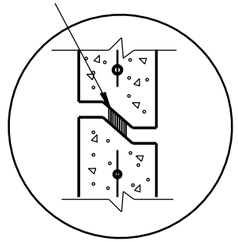


TOP WITH PLAIN END JOINT



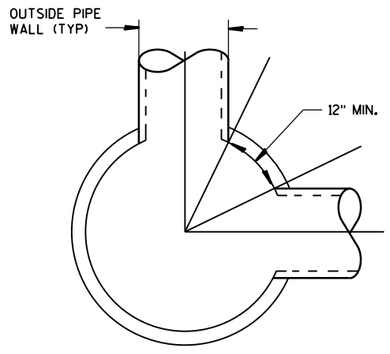
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
	OPENING SIZE (FT)											
3-FT	2X2	X	X					X		X		
	2 DIA.				X							X
4-FT-6-FT	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2 DIA.				X							X
	2X3						X					
	2.5X3					X						

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

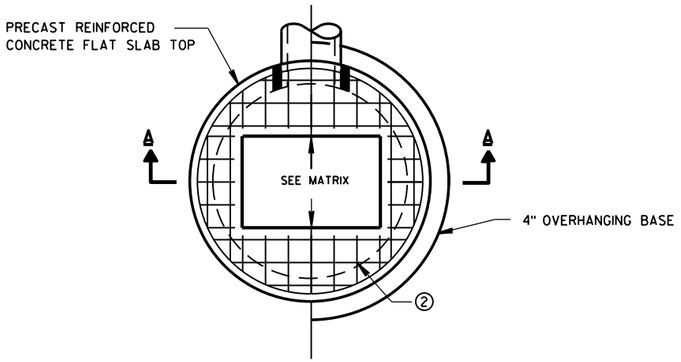
CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

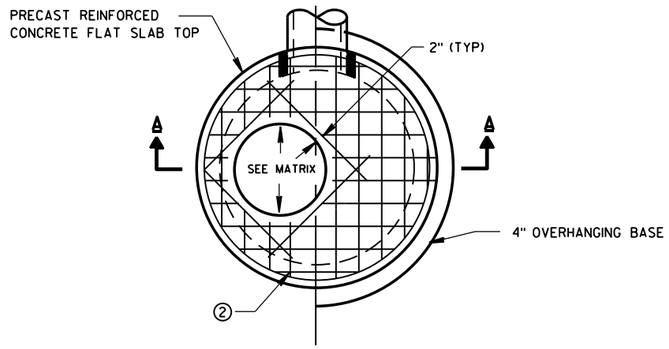
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

S.D.D. 8 A 8-1

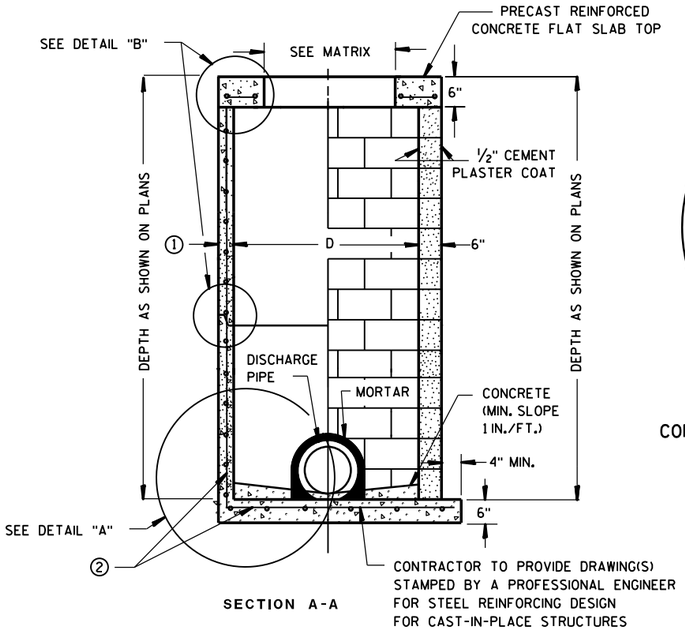
S.D.D. 8 A 8-1



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

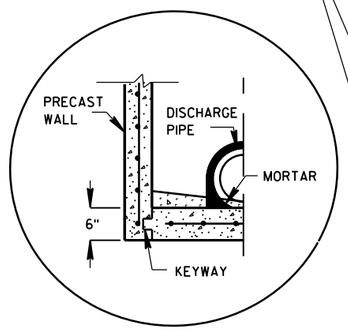


SECTION A-A

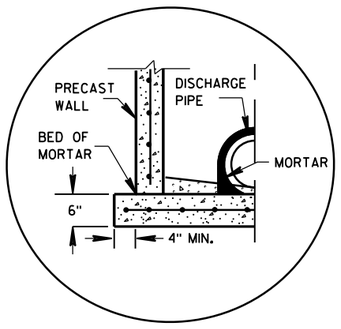
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

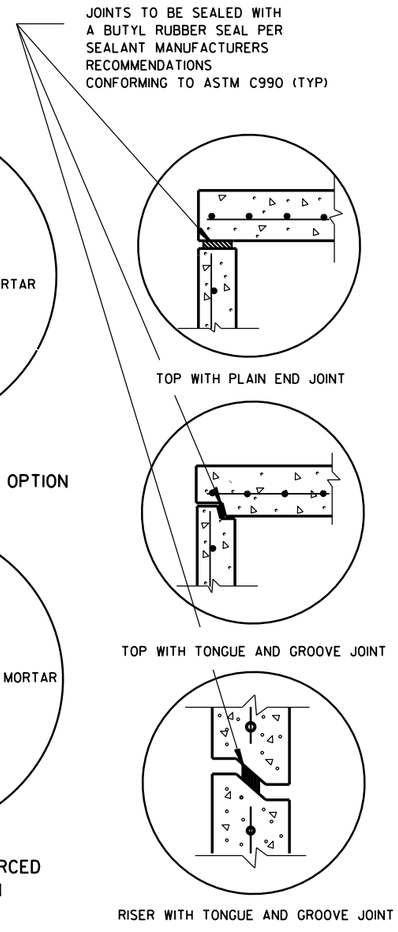


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

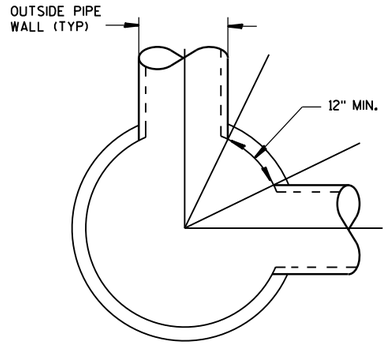
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

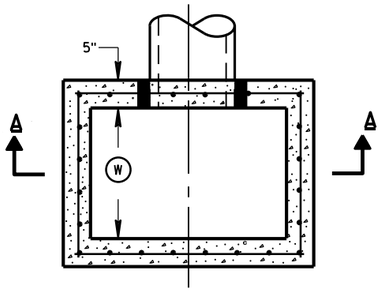
APPROVED
6/5/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

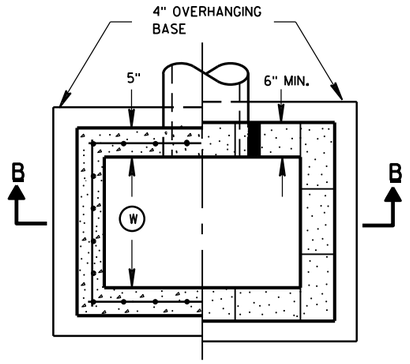
INLETS 3-FT AND 4-FT DIAMETER

6

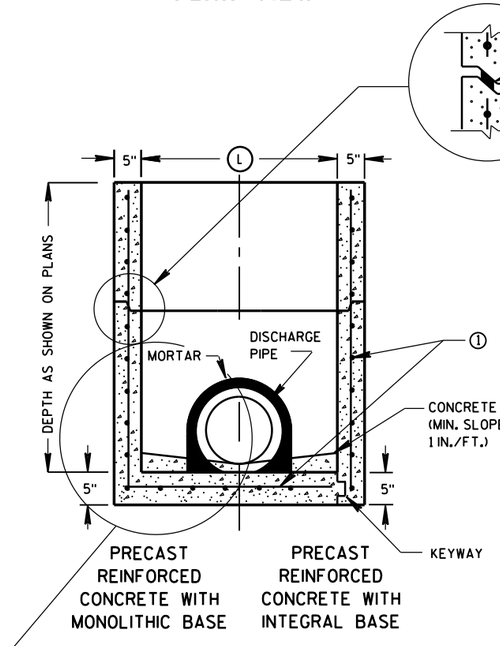
S.D.D. 8 C 6-1



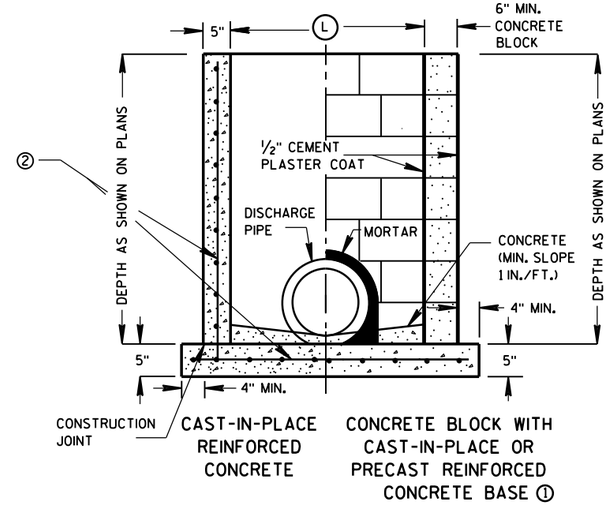
PLAN VIEW



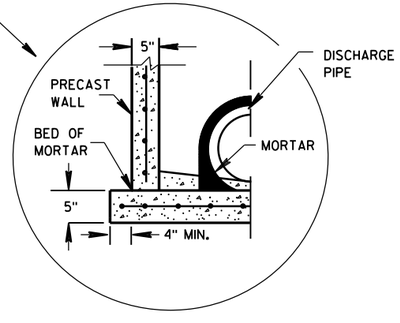
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

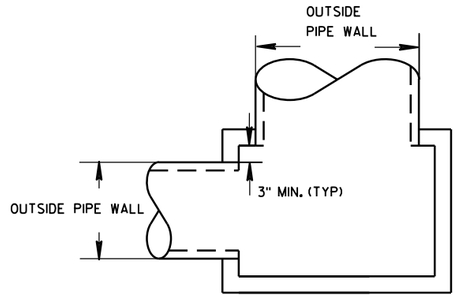
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



DETAIL "A"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DE ENGINEER

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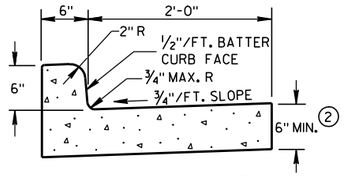
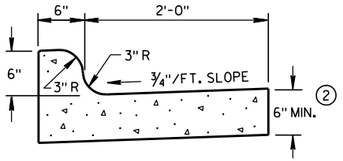
S.D.D. 8 C 7-1

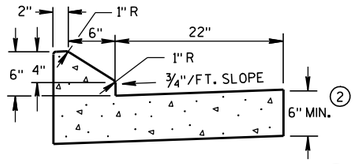
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



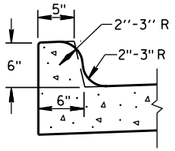
TYPES A & D (1)



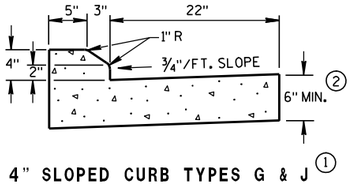
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

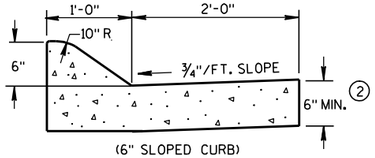


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

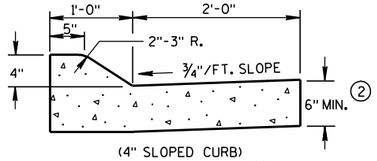


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

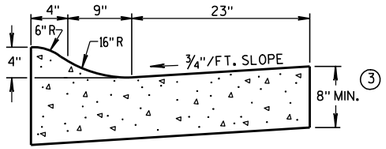


(6" SLOPED CURB)



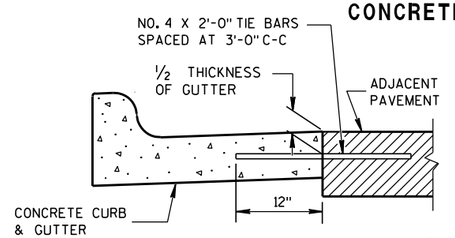
(4" SLOPED CURB)

TYPES A & D (1)



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

CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)

REVERSE SLOPE GUTTER (5)
(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.

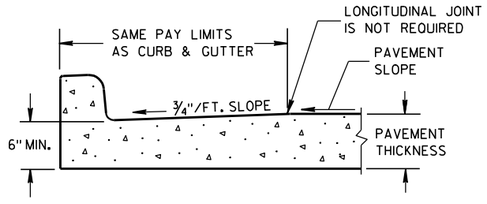
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

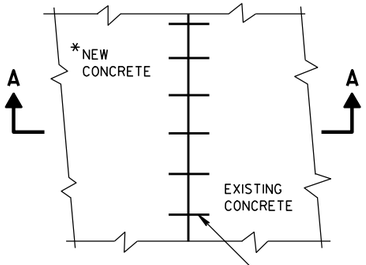
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(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.

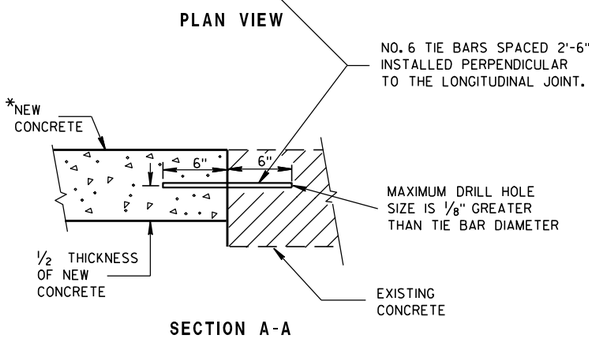


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



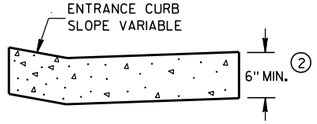
PLAN VIEW

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

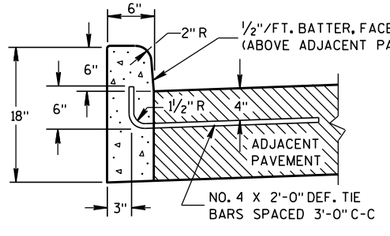


SECTION A-A

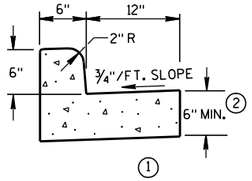
TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

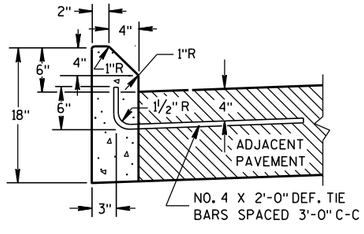


(1) TYPES A & D

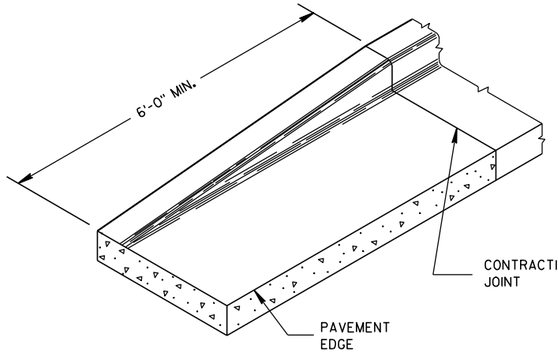


(1) TYPES A & D

CONCRETE CURB & GUTTER 18"



(1) TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB

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	48 ENT

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S.D.D. 8 D 1-17

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S.D.D. 8 D 1-17

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) UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

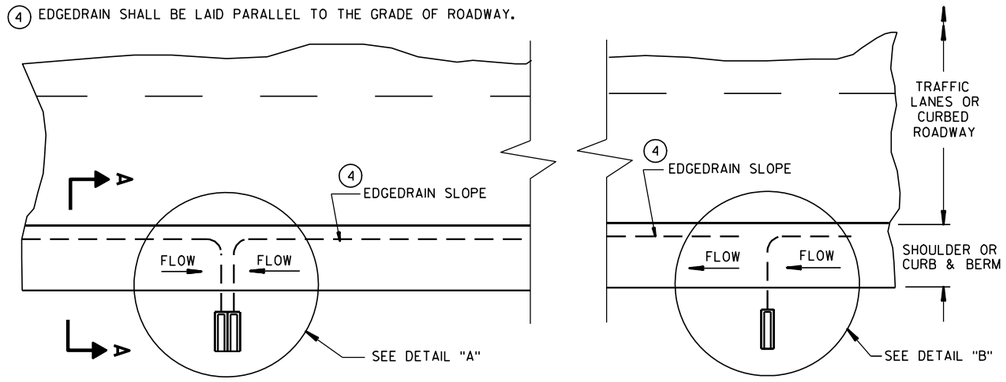
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

(2) MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.

(3) EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.

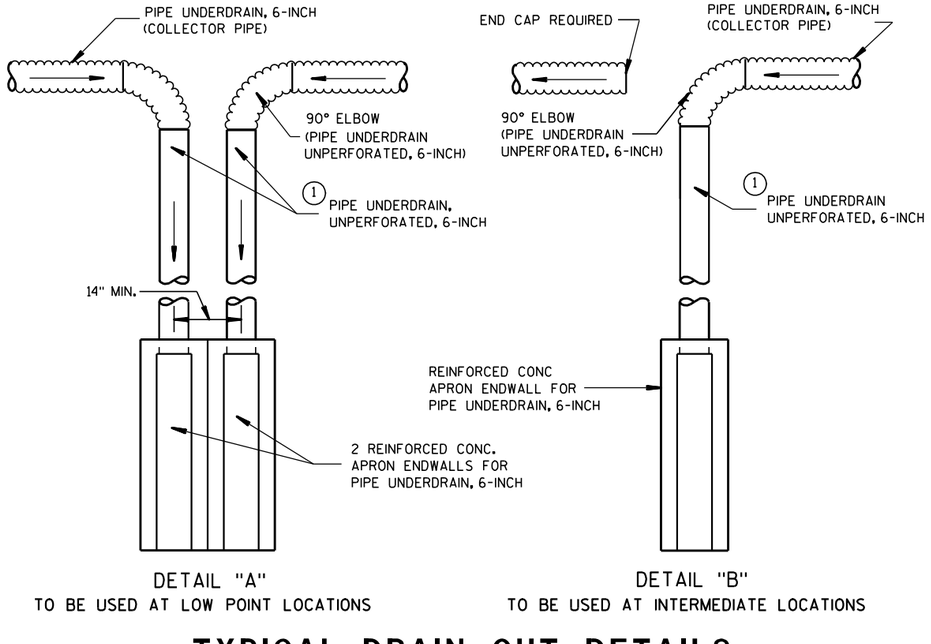
(4) EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



PLAN VIEW

ROADWAY WITH SHOULDERS OR CURBS

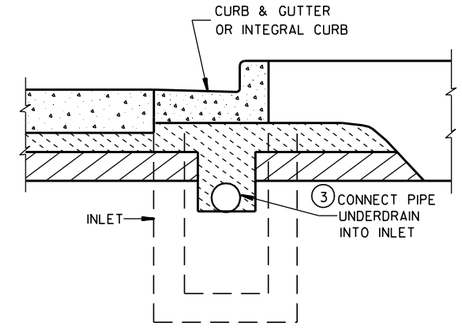
(EDGEDRAIN OUTLETS TO ROADSIDE) (2)



DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

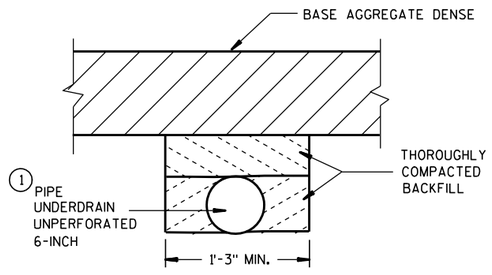
DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



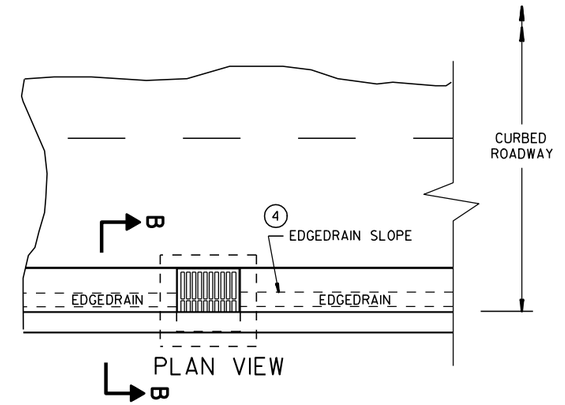
SECTION B-B

URBAN CROSS SECTION



SECTION C-C

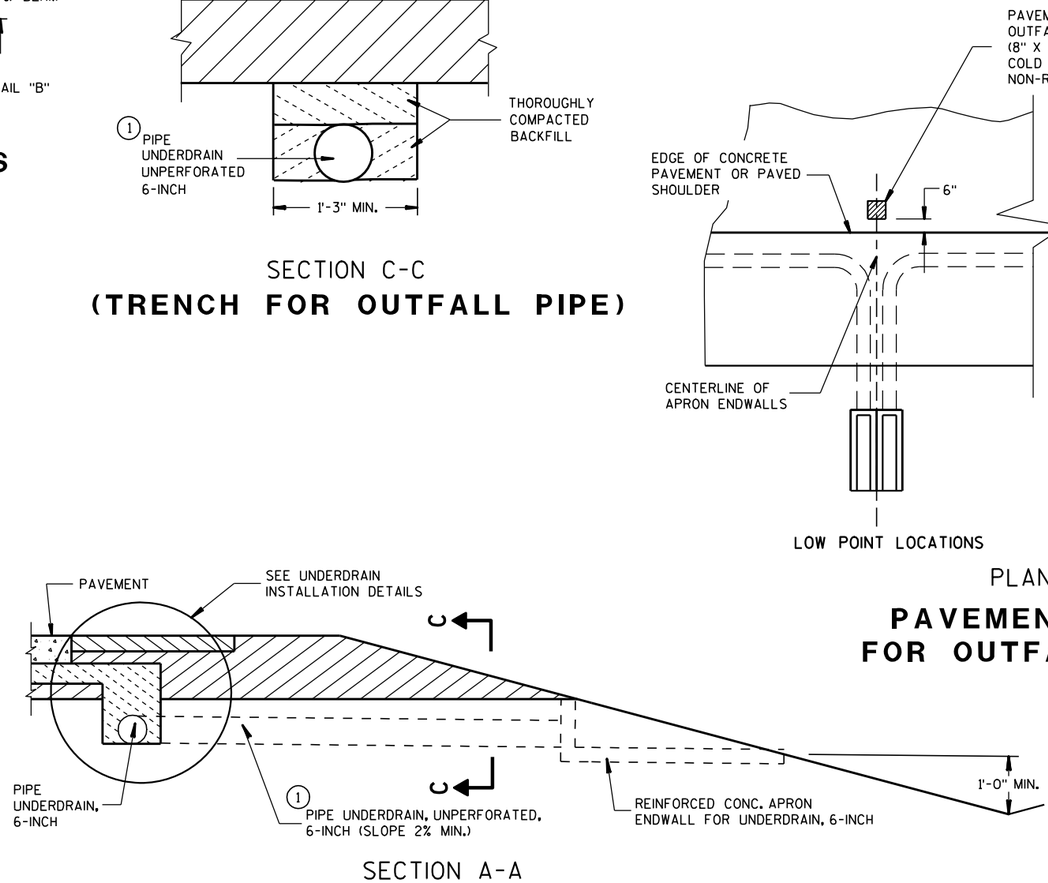
(TRENCH FOR OUTFALL PIPE)



PLAN VIEW

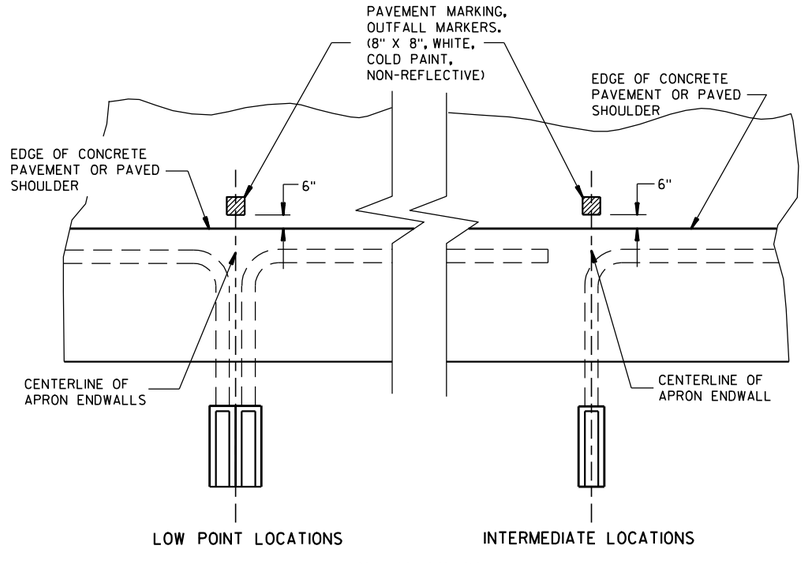
ROADWAY WITH CURBS

(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)



SECTION A-A

RURAL CROSS SECTION



PLAN VIEW

PAVEMENT MARKING FOR OUTFALL MARKERS

EDGEDRAIN OUTLET AND OUTFALL MARKERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 8 D 15-4a

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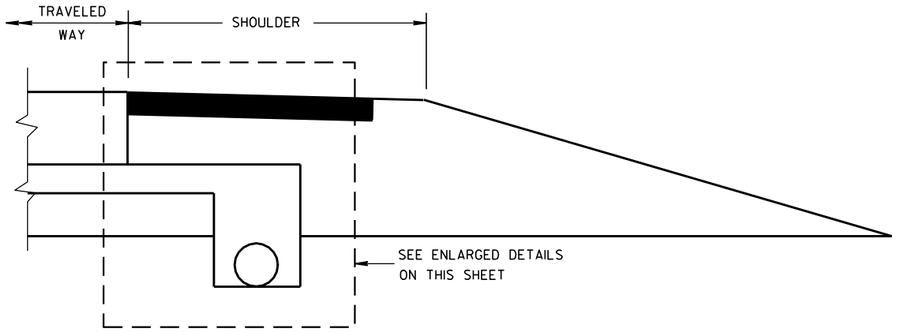
S.D.D. 8 D 15-4a



RURAL CROSS SECTION

GENERAL NOTES

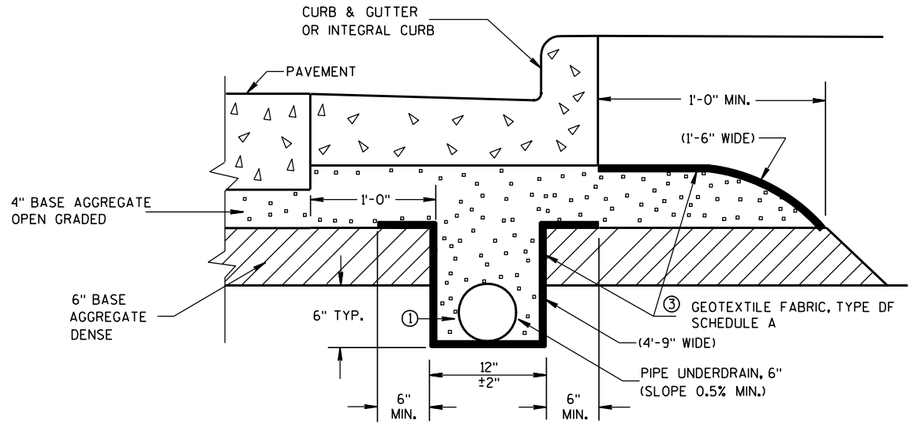
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

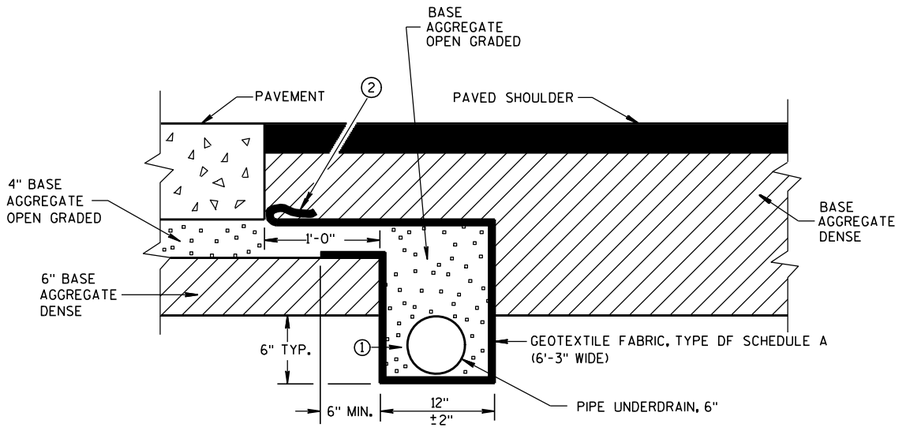
① TRENCH BACKFILL WILL BE PAID FOR AS BASE AGGREGATE OPEN GRADED.

② FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.

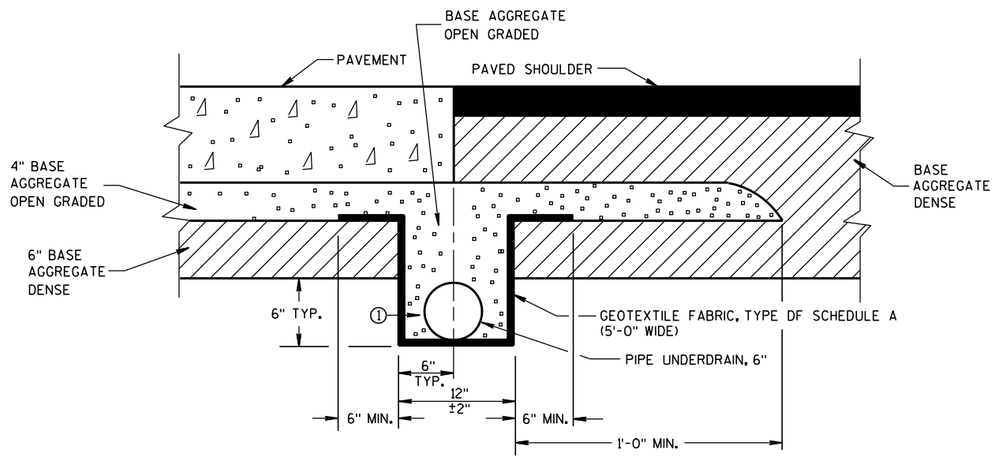
③ TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/21/07 DATE — /S/ Steven W. [illegible] CHIEF MATERIALS MANAGER

FHWA

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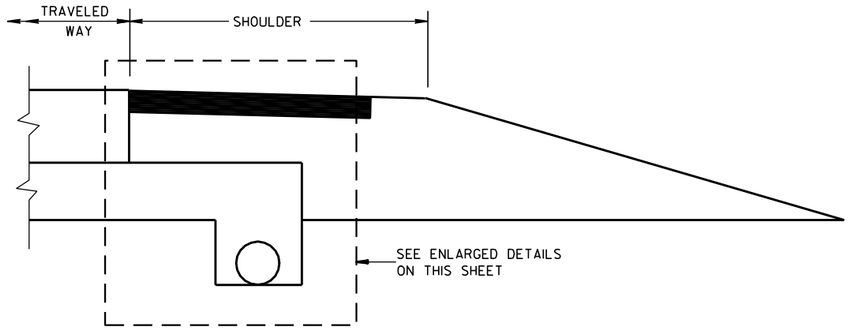
S.D.D. 8 D 15-4b



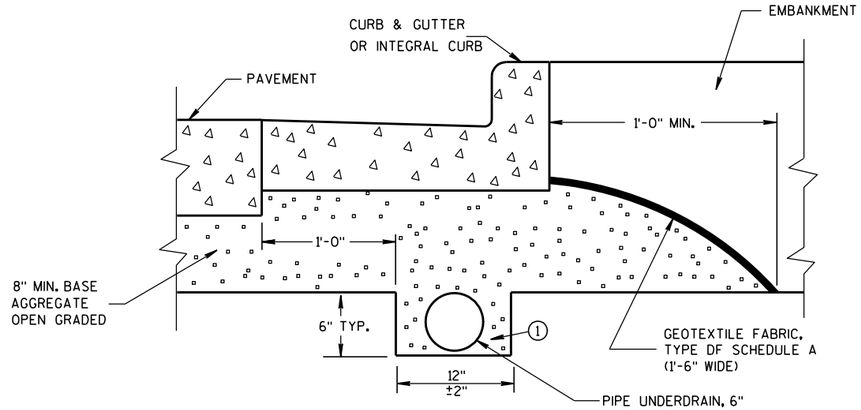
RURAL CROSS SECTION

GENERAL NOTES

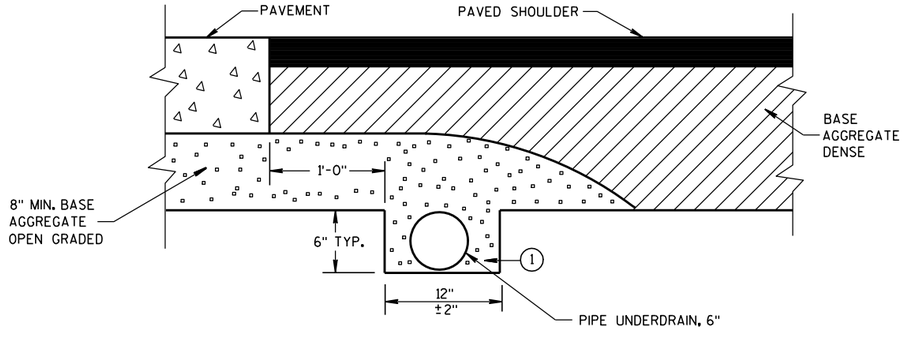
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

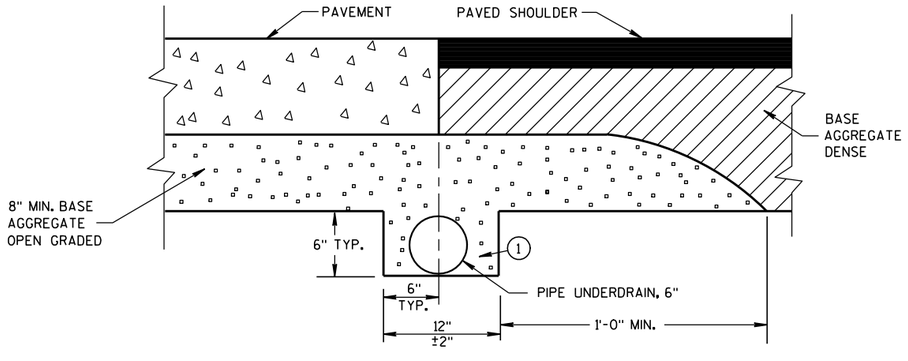
(1) TRENCH BACKFILL WILL BE PAID FOR AS BASE AGGREGATE OPEN GRADED.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

EDGEDRAIN AND BASE AGGREGATE OPEN GRADED

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/21/07 DATE
/S/ Steven W. Krebs CHIEF MATERIALS MANAGER ENGINEER
FHWA

6

S.D.D. 8 D 15-4c

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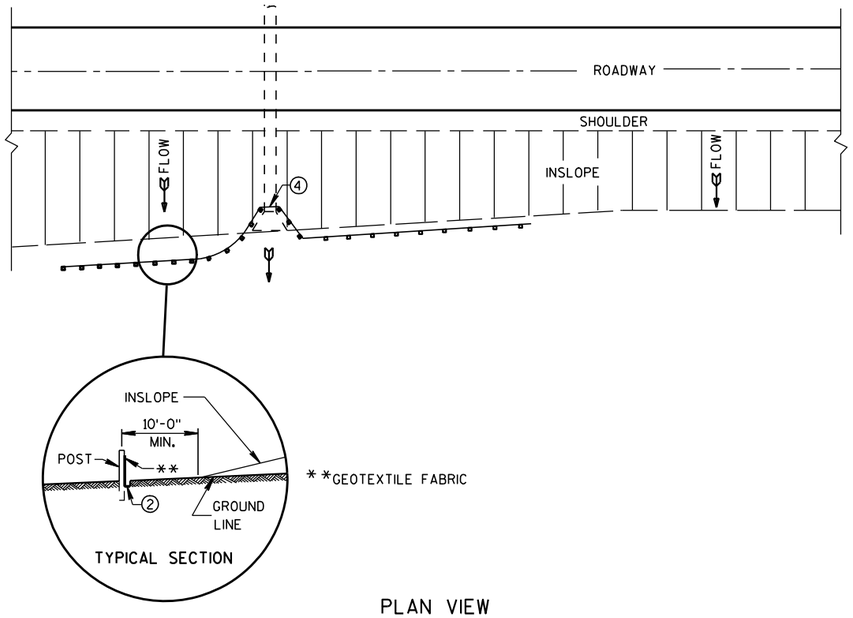
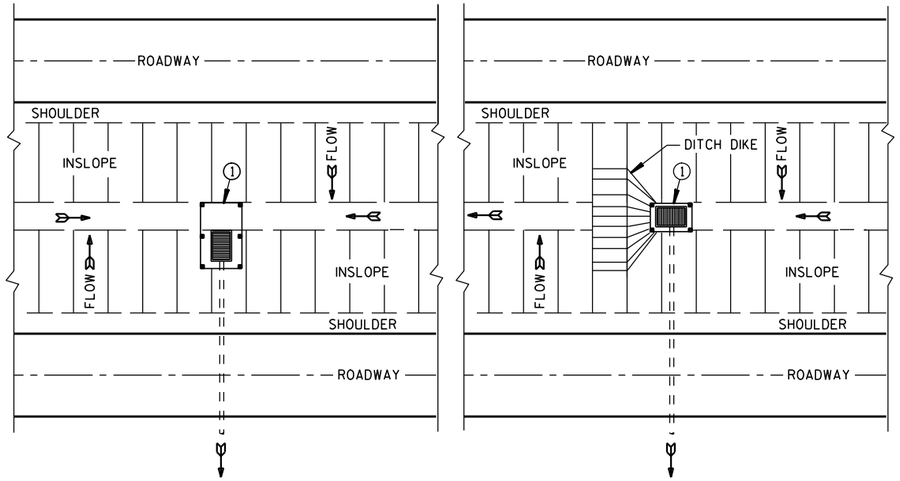
S.D.D. 8 D 15-4c



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



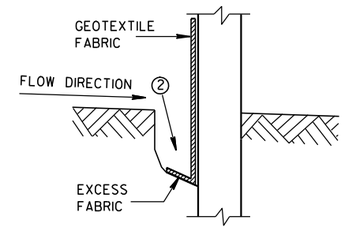
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

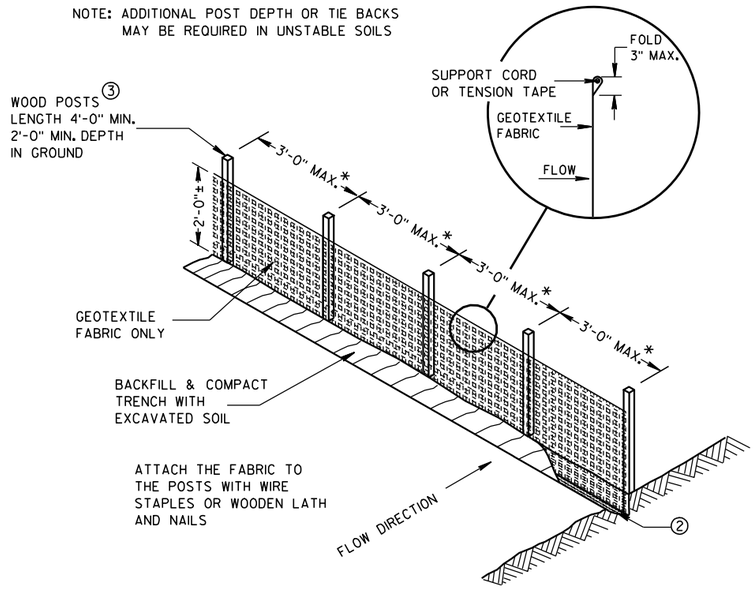
GENERAL NOTES

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

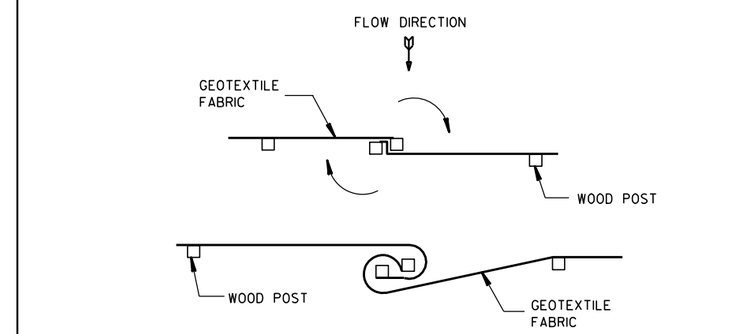
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



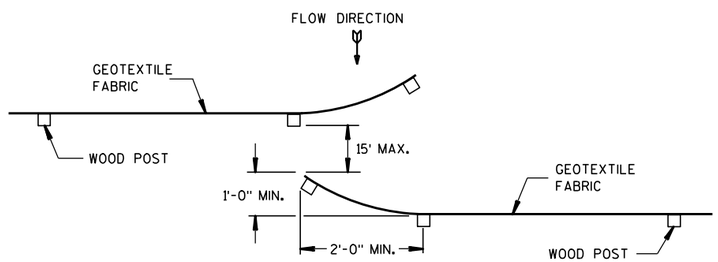
TRENCH DETAIL



SILT FENCE

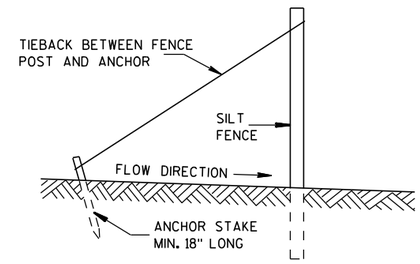


TWIST METHOD



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

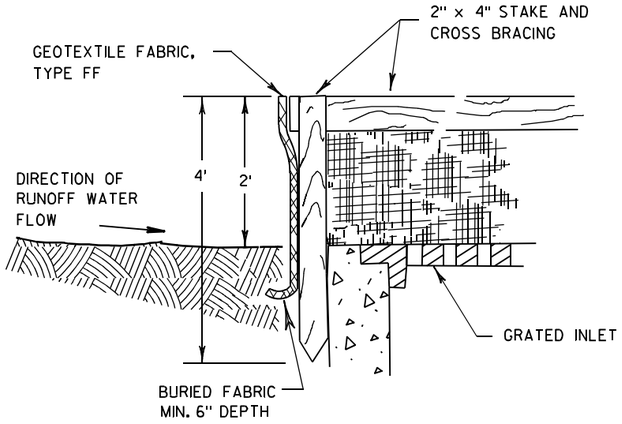
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

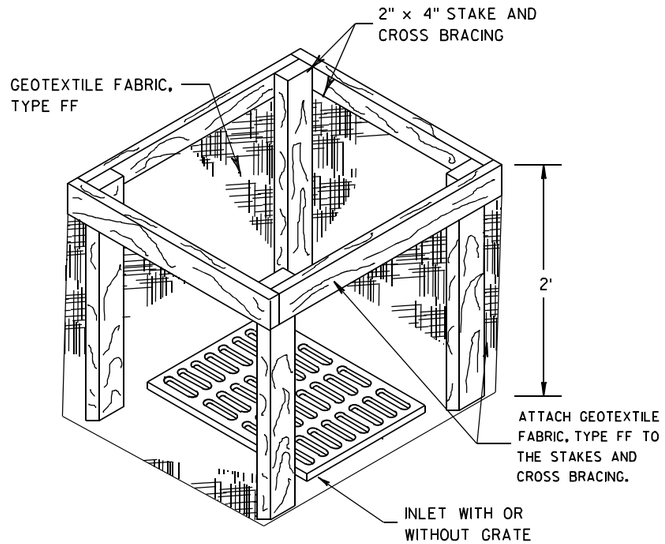
6

S.D.D. 8 E 9-6

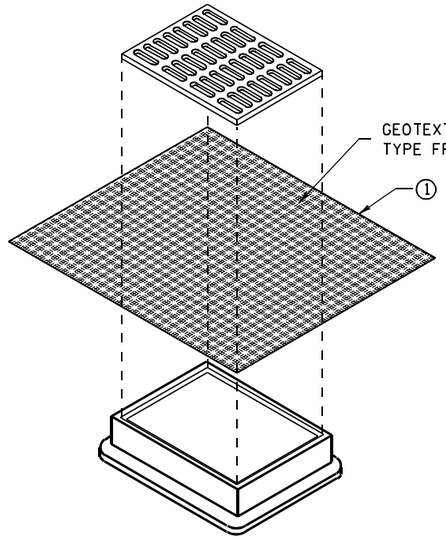
6

S.D.D. 8 E 9-6



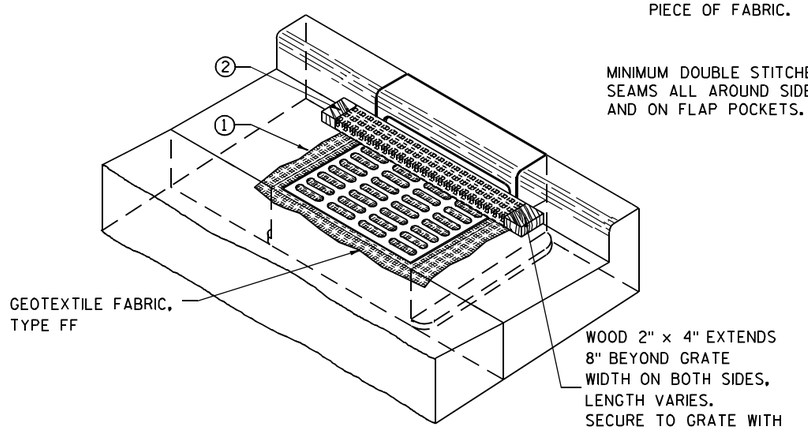


INLET PROTECTION, TYPE A

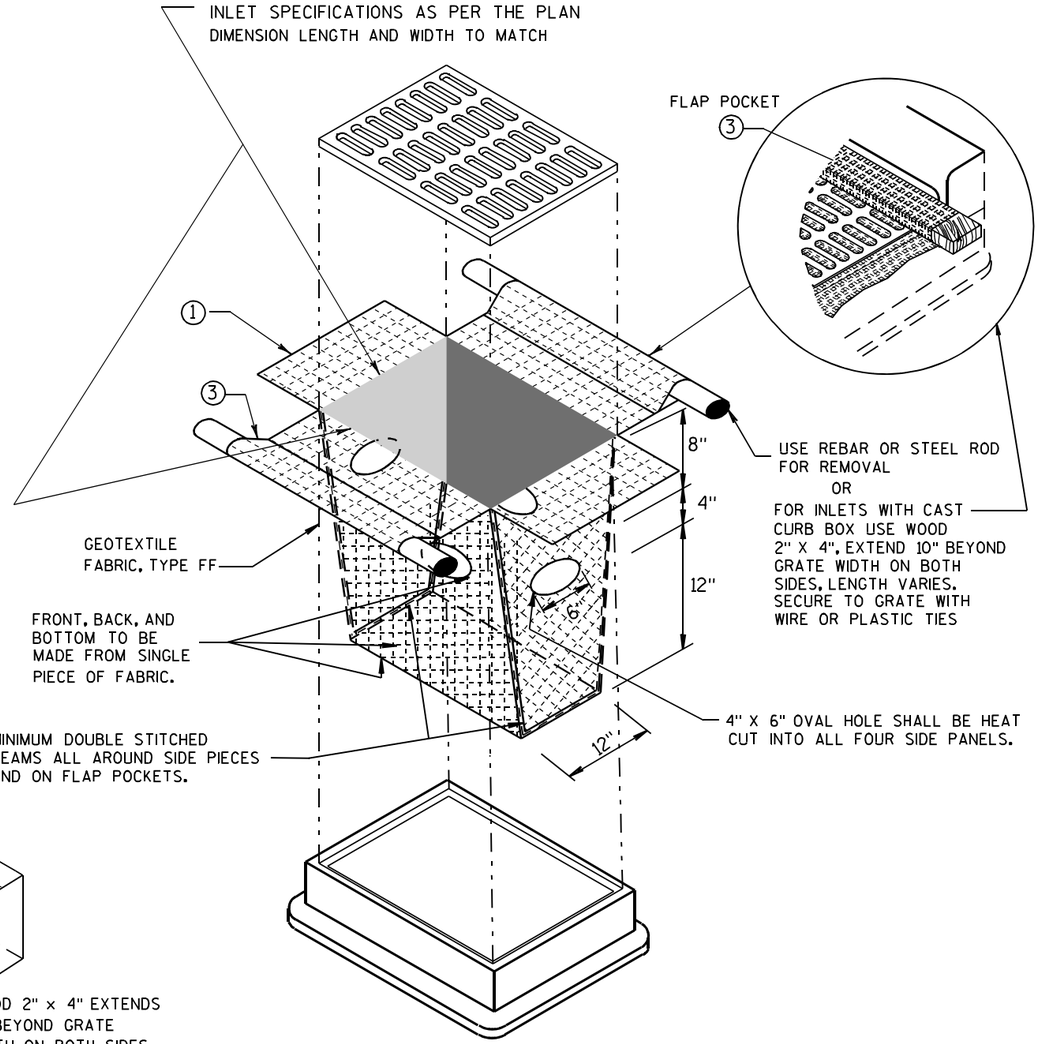


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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

METAL APRON ENDWALLS

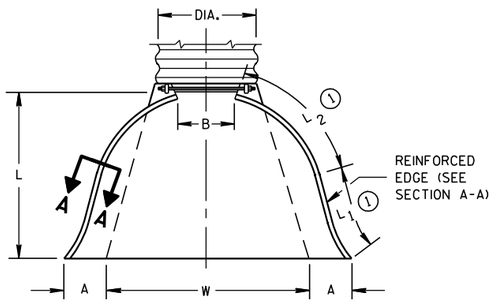
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

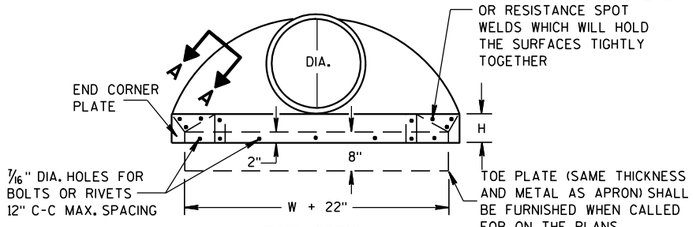
REINFORCED CONCRETE APRON ENDWALLS

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

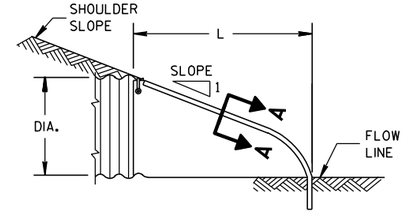
*MINIMUM
**MAXIMUM



PLAN VIEW

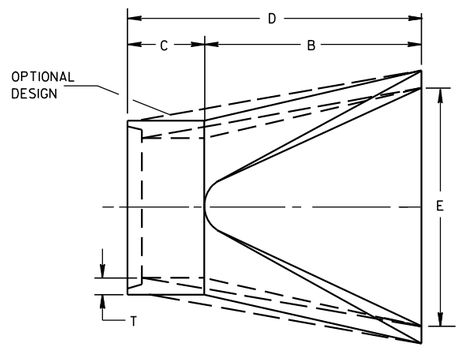


END VIEW

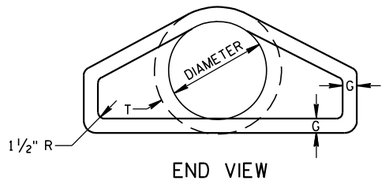


SIDE ELEVATION

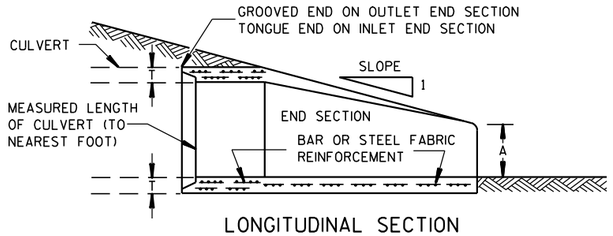
METAL ENDWALLS



PLAN

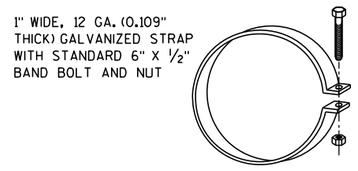


END VIEW



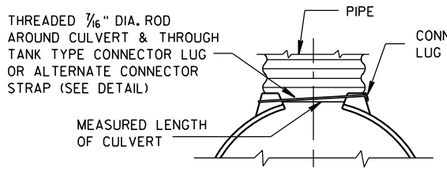
LONGITUDINAL SECTION

CONCRETE ENDWALLS

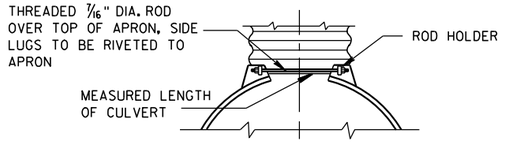


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

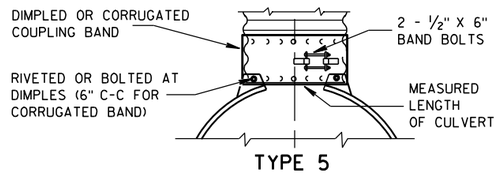


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

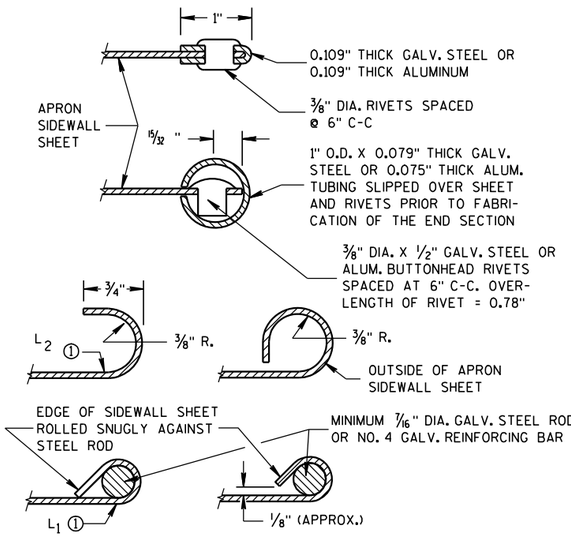
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 F 1-11

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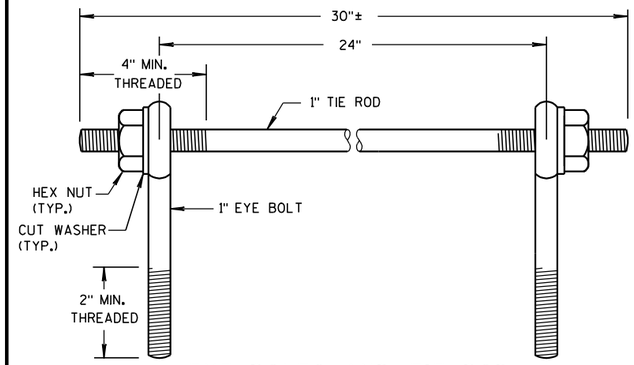
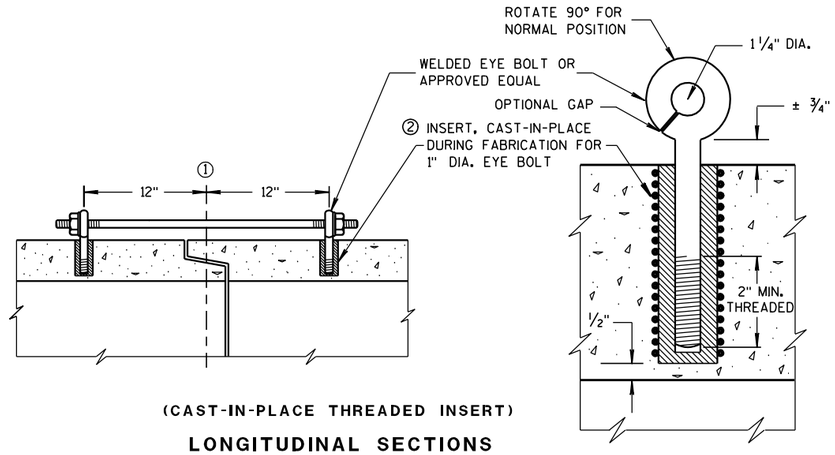
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

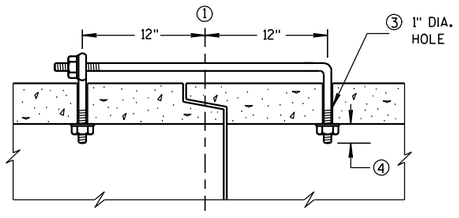
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

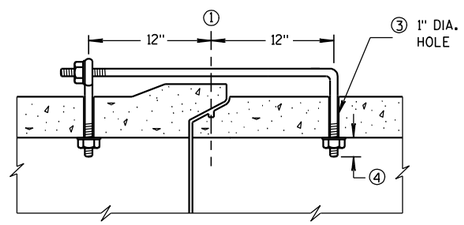
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

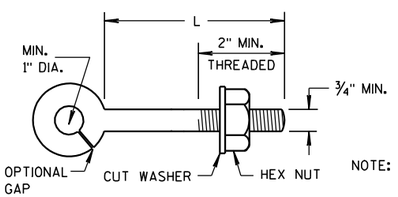


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

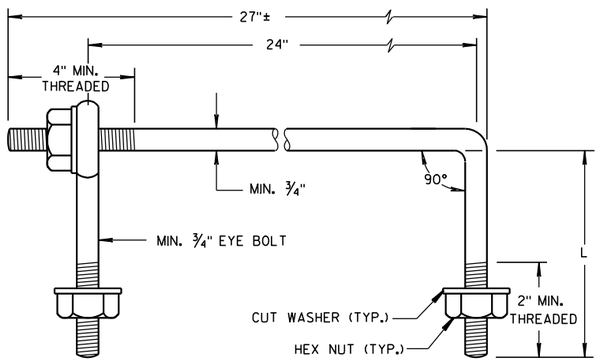
EYE BOLT DIMENSION TABLE

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



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

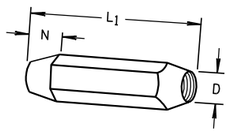
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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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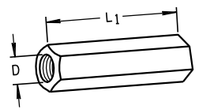
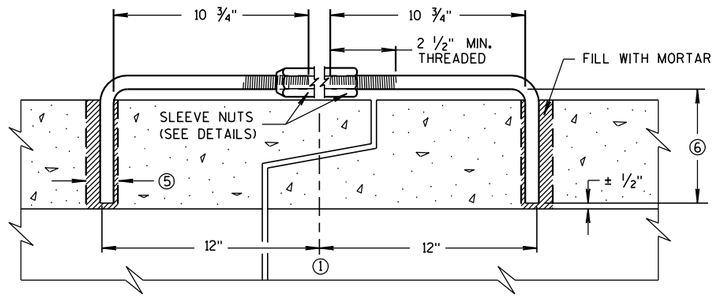


PLAIN

RIGHT AND LEFT THREADS

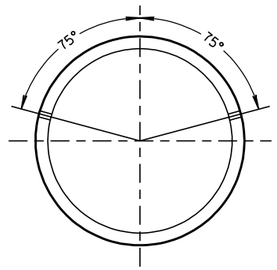
SLEEVE NUTS



LONGITUDINAL SECTION

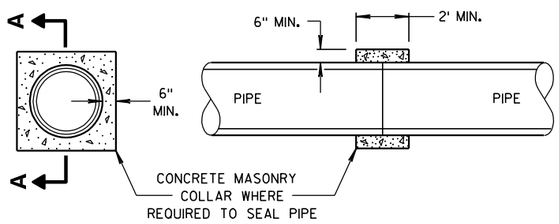
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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
55 — 'MENT

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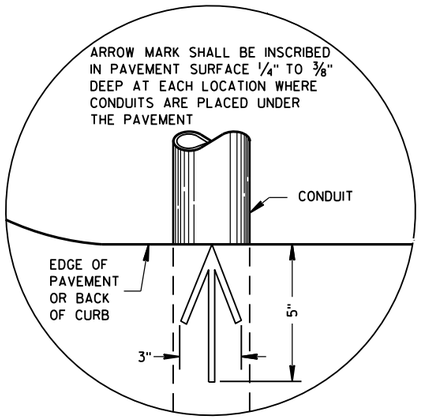
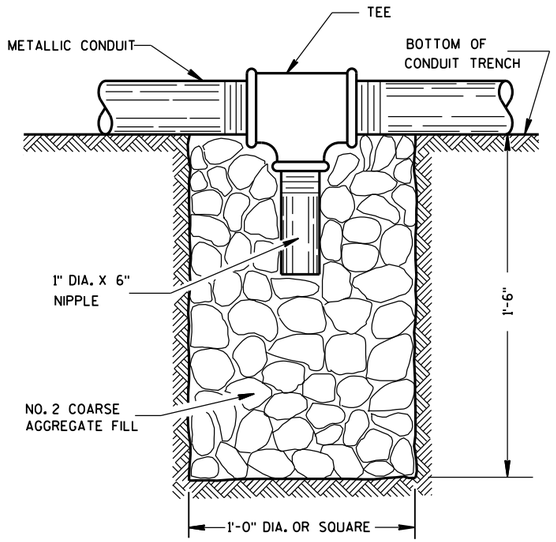


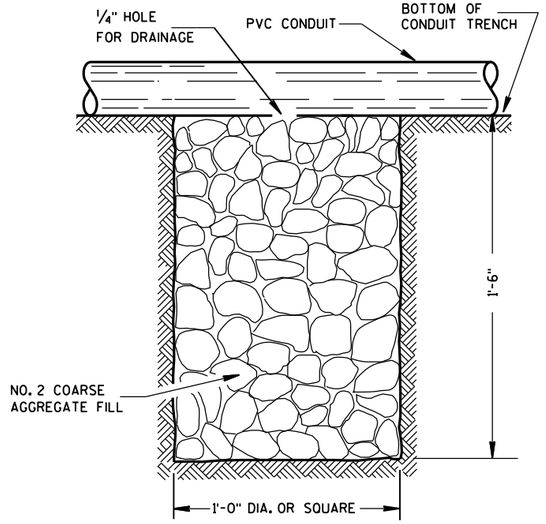
PLAN VIEW

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.

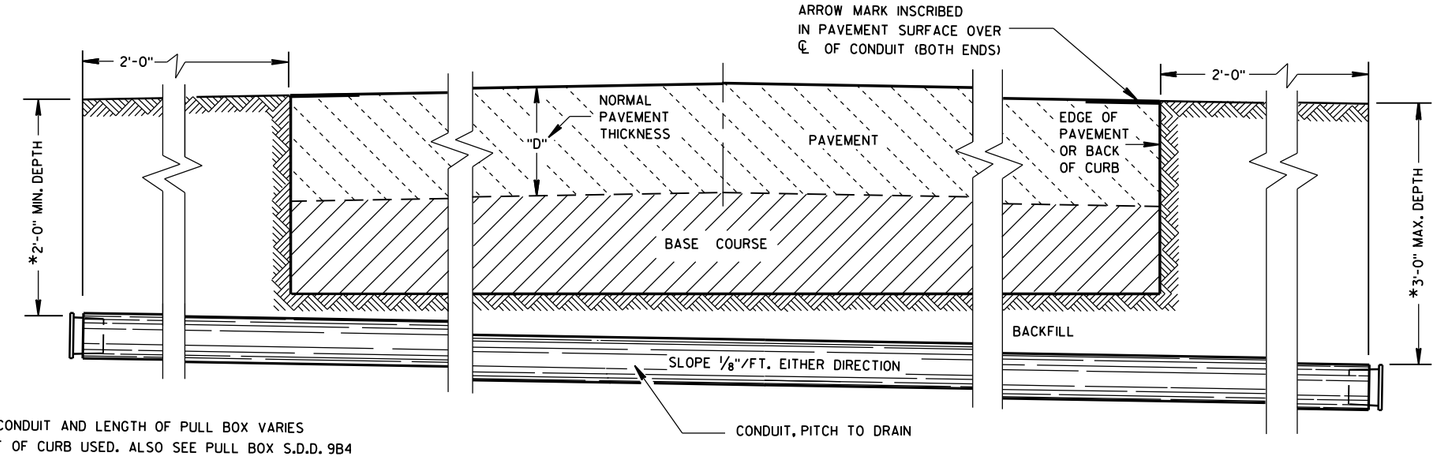
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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 UNDER PAVED HIGHWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014 — DATE

/S/ Ahmet Demirbilek — STATE ELECTRICAL

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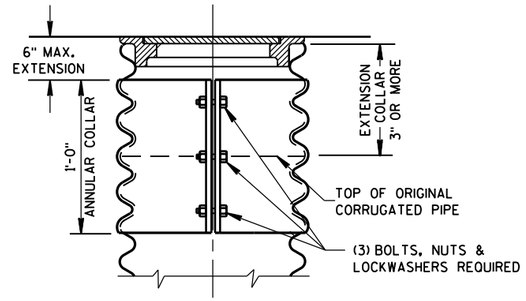
TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

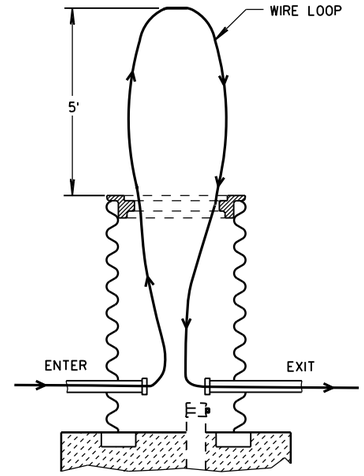
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	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.

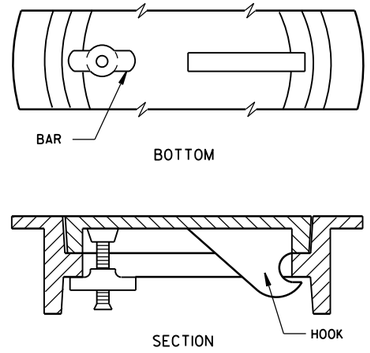
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

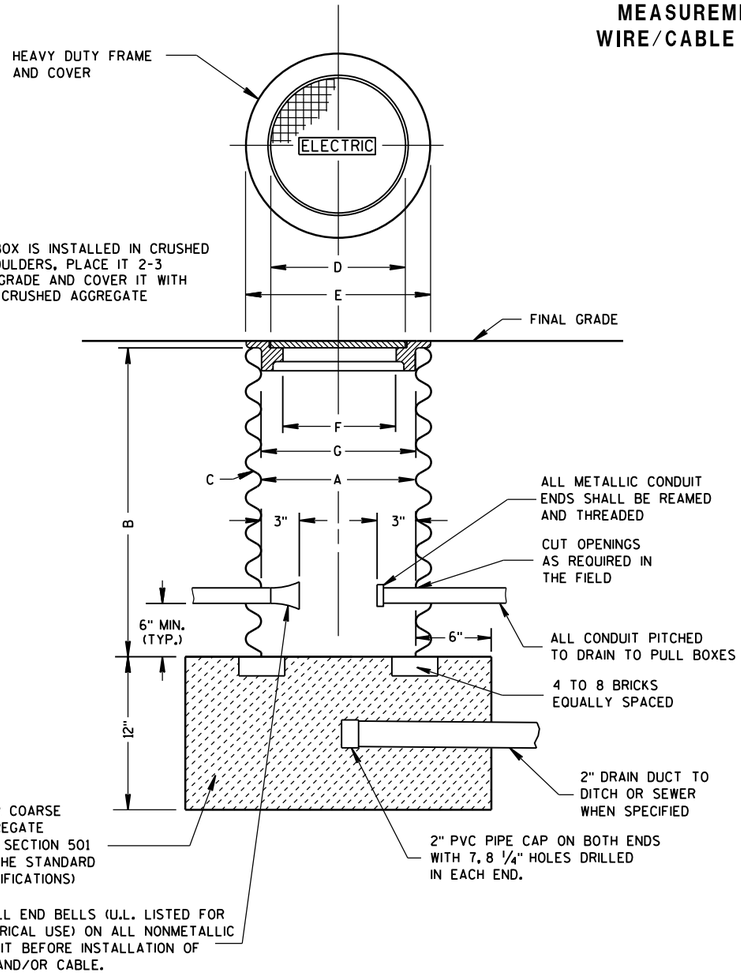


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



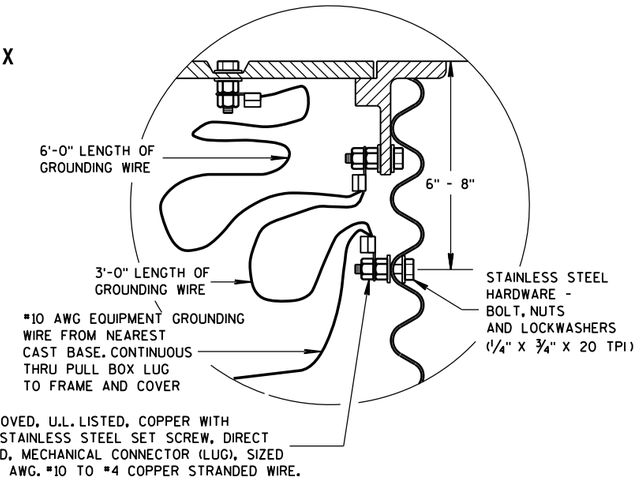
ALTERNATE COVER (LOCKING)

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

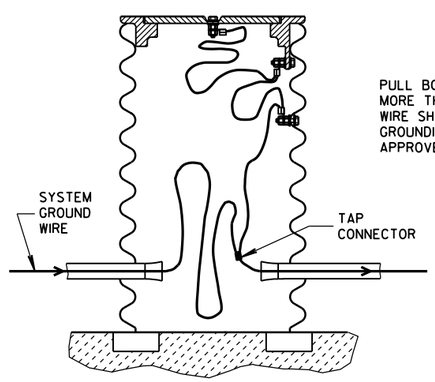
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

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

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



PULL BOX 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

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL
FHWA

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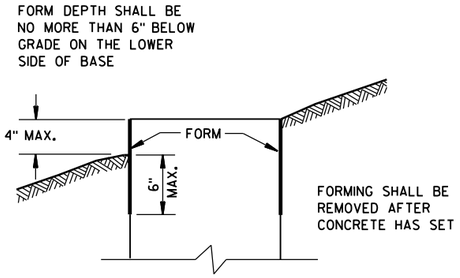


FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

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

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

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

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

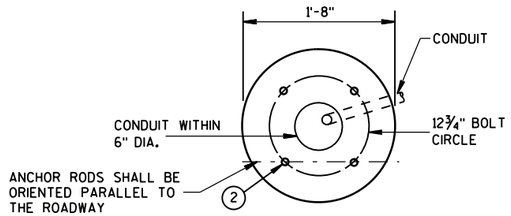
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

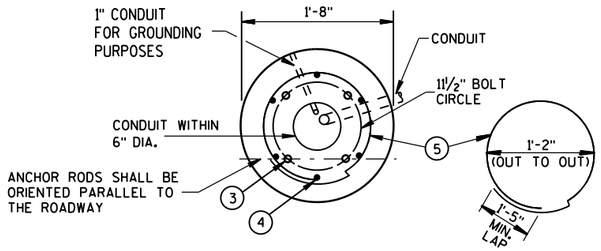
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

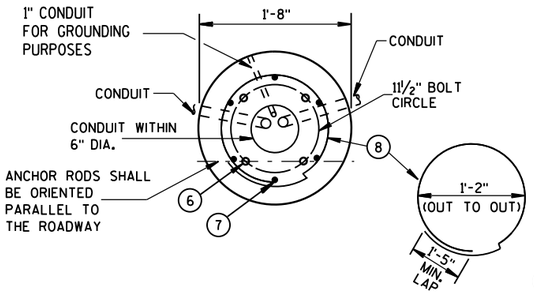
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

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

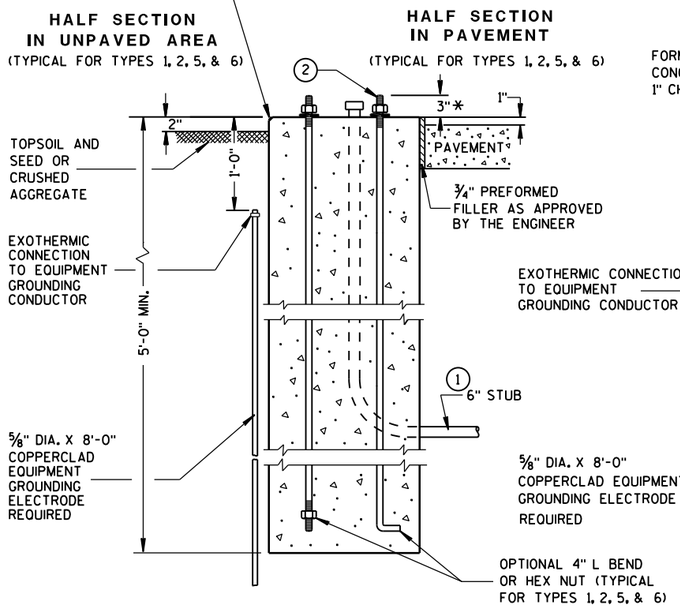
(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



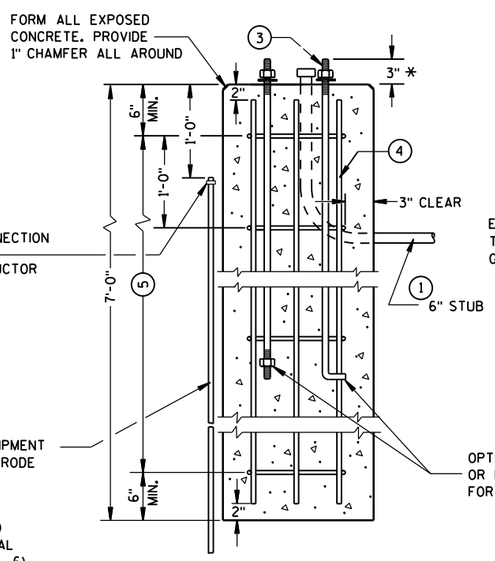




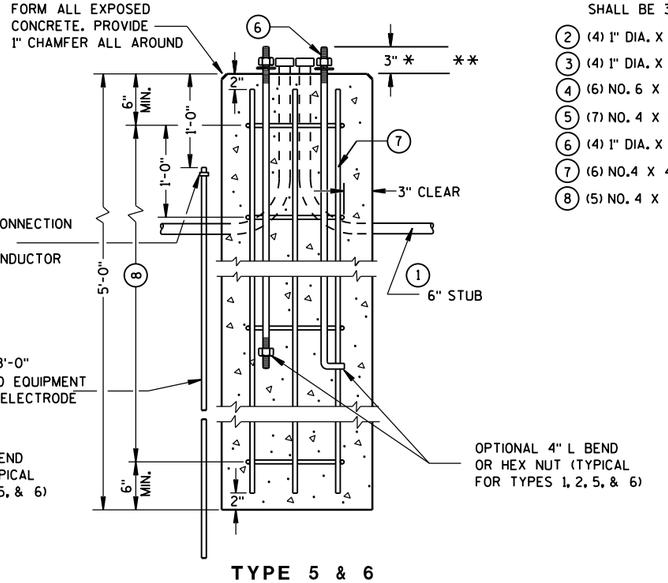
HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5, & 6)



HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5, & 6)



TYPE 2



TYPE 5 & 6

CONCRETE BASES

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

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

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

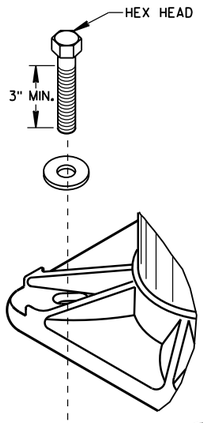
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

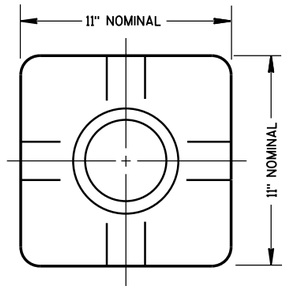
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

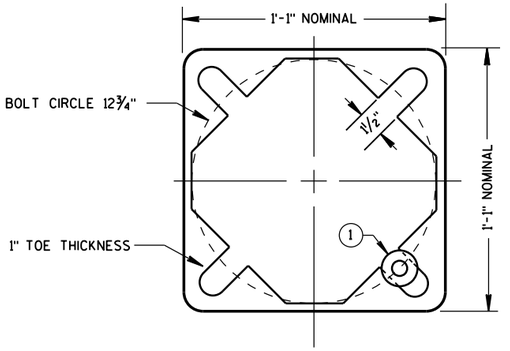
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

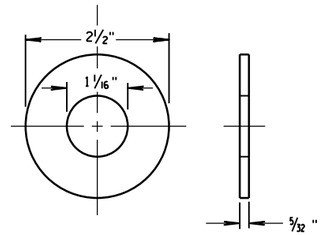




TOP VIEW
(PEDESTAL BASE)

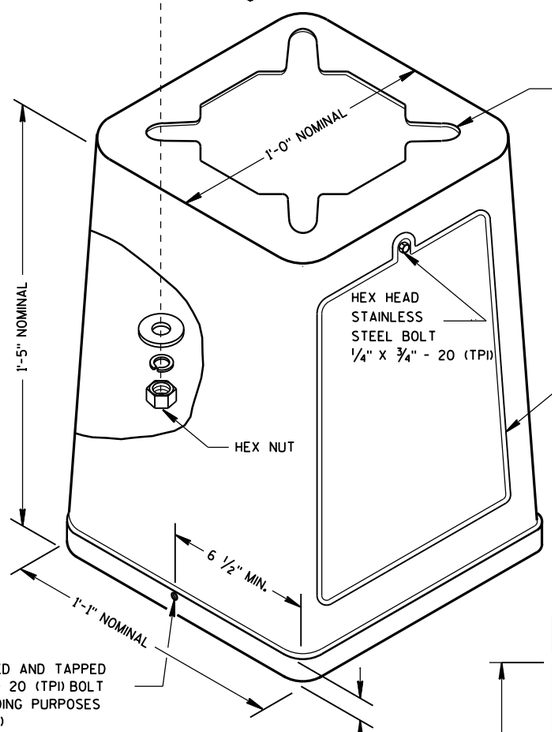


BOTTOM VIEW
(PEDESTAL BASE)

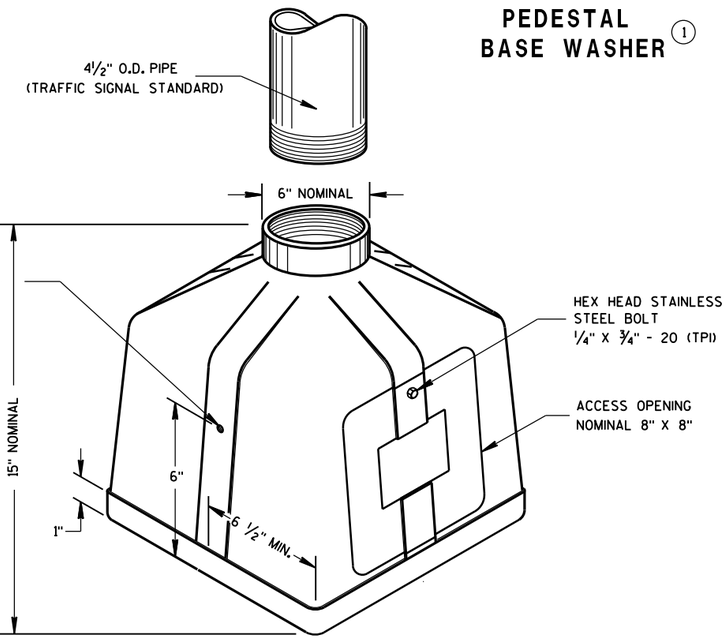


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

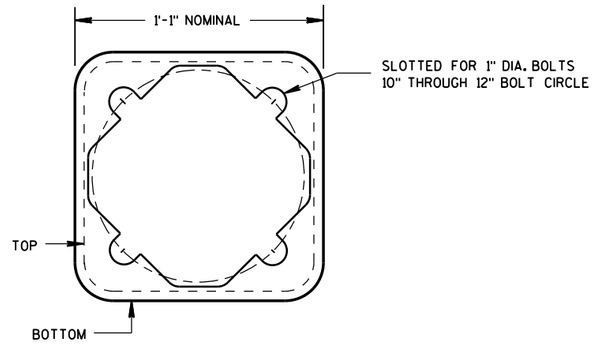
PEDESTAL BASE WASHER (1)



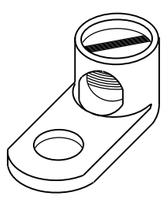
ISOMETRIC VIEW



ISOMETRIC VIEW
PEDESTAL BASE

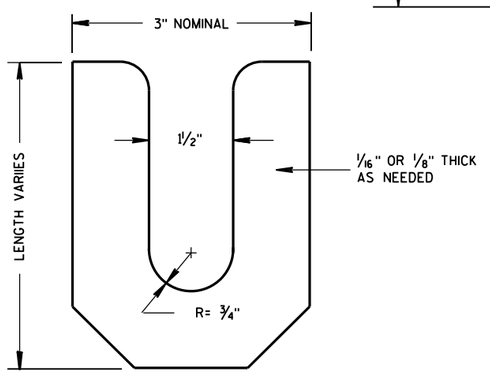


BOTTOM VIEW
(TRANSFORMER BASE)



TYPICAL MECHANICAL CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

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



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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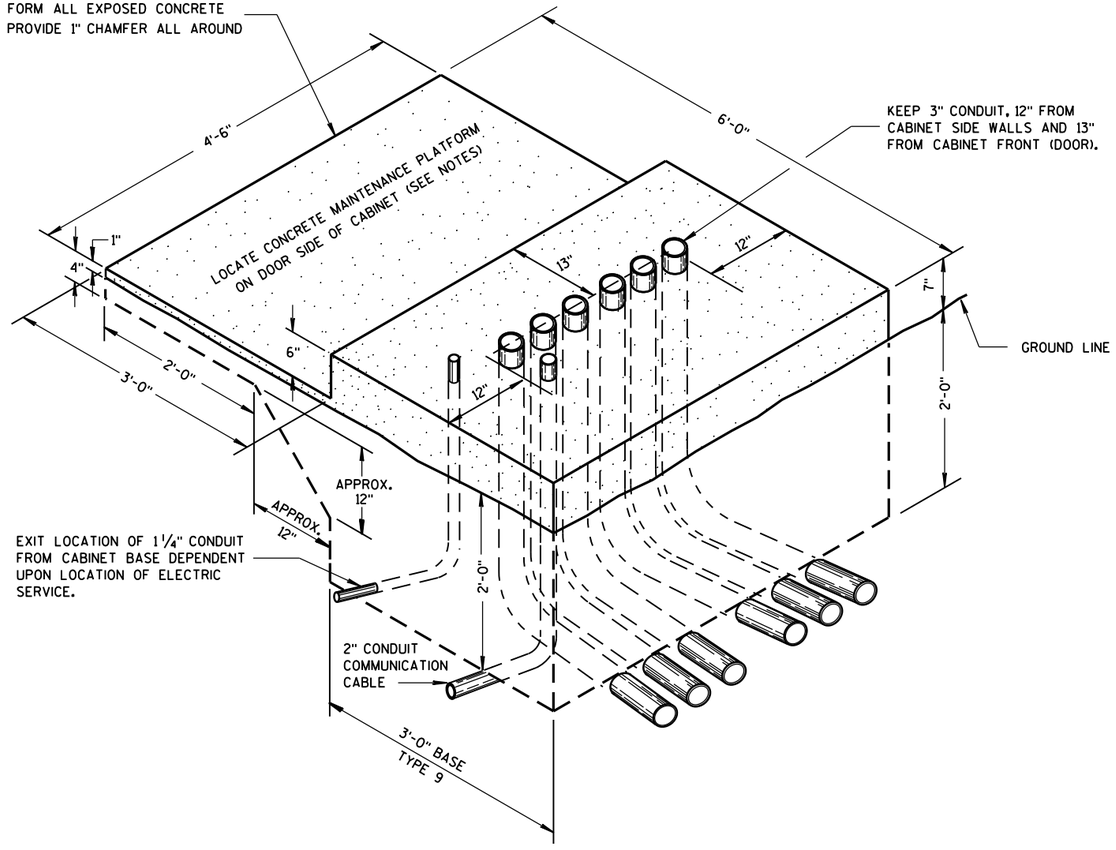
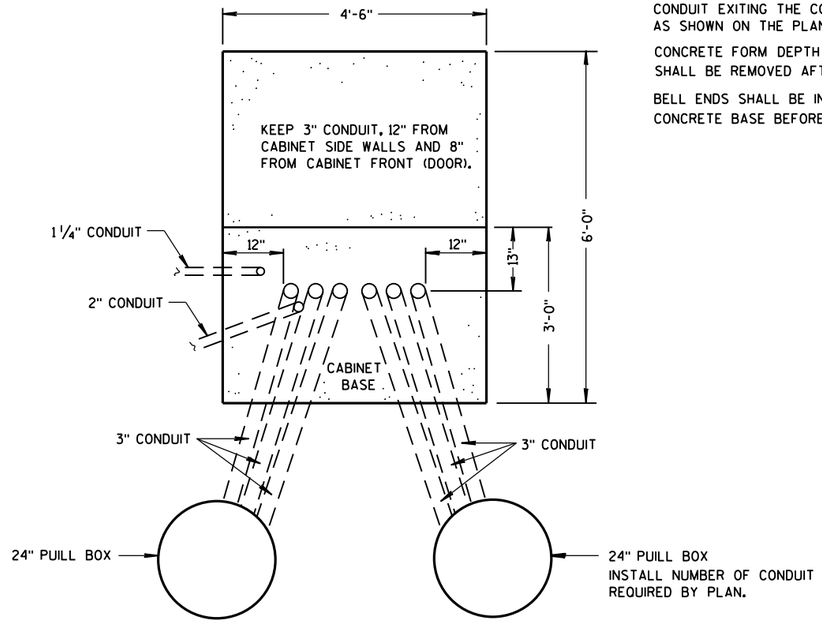


ISOMETRIC VIEW

TYPE 9, SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

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 STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. 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 SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE 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.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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.

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

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

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

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

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6
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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 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 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED TO PULL BOX.

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. CONDUIT IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

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).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE 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.

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

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

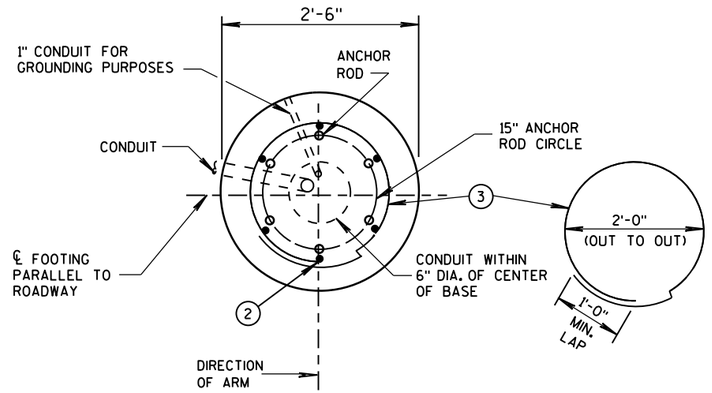
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

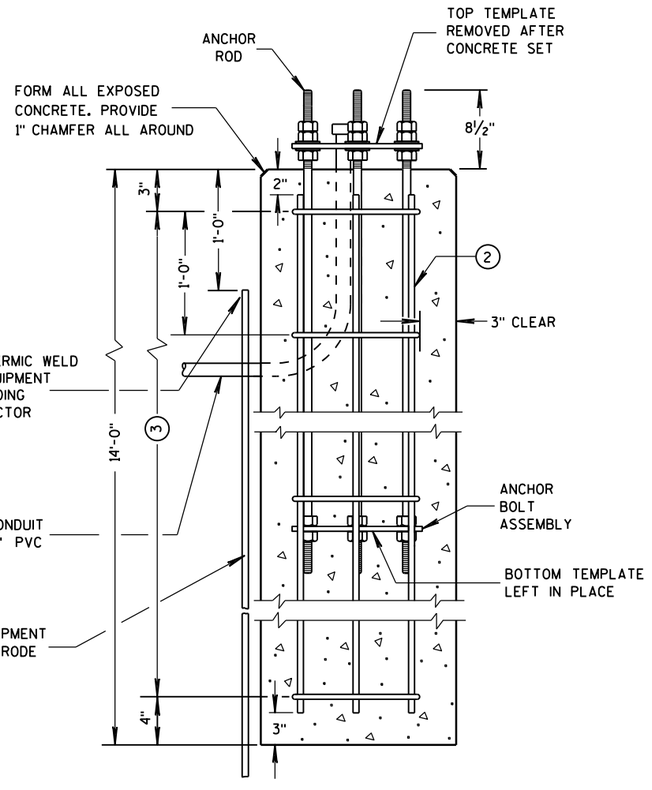
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN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

(2) (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.

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

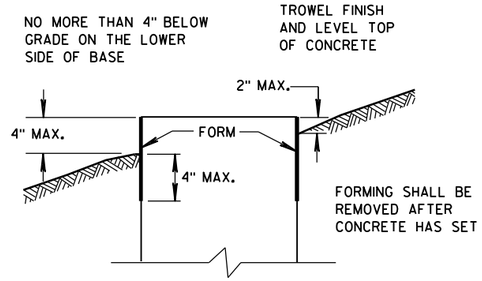
CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000 p.s.i.



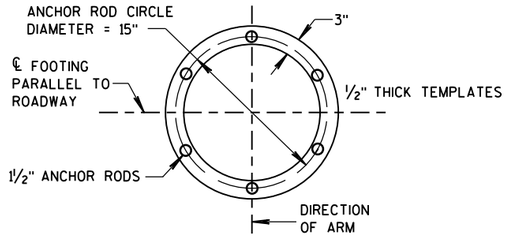


CONCRETE BASE TYPE 10
(FOR TYPE 9 & 10 POLES)

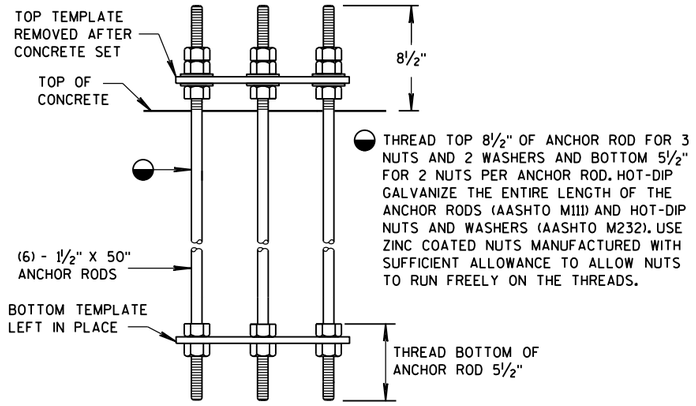
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10
ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	69
LBS. OF VERTICAL BAR STEEL	122

CONCRETE BASE TYPE 10

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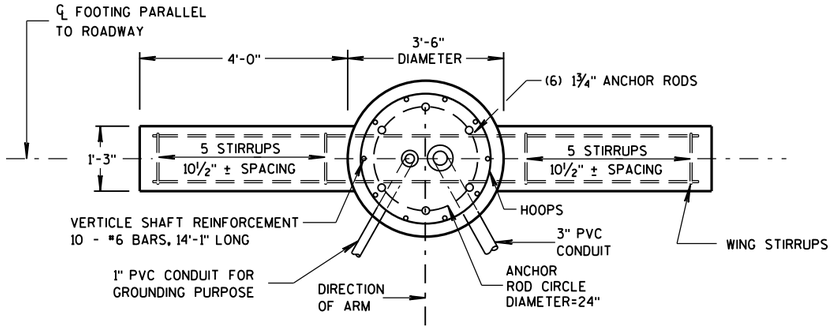
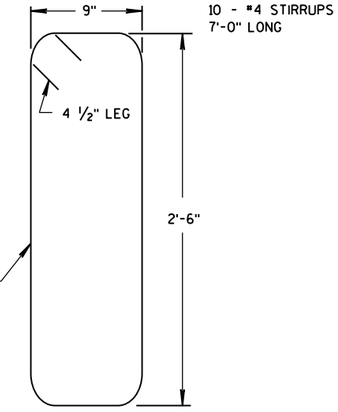
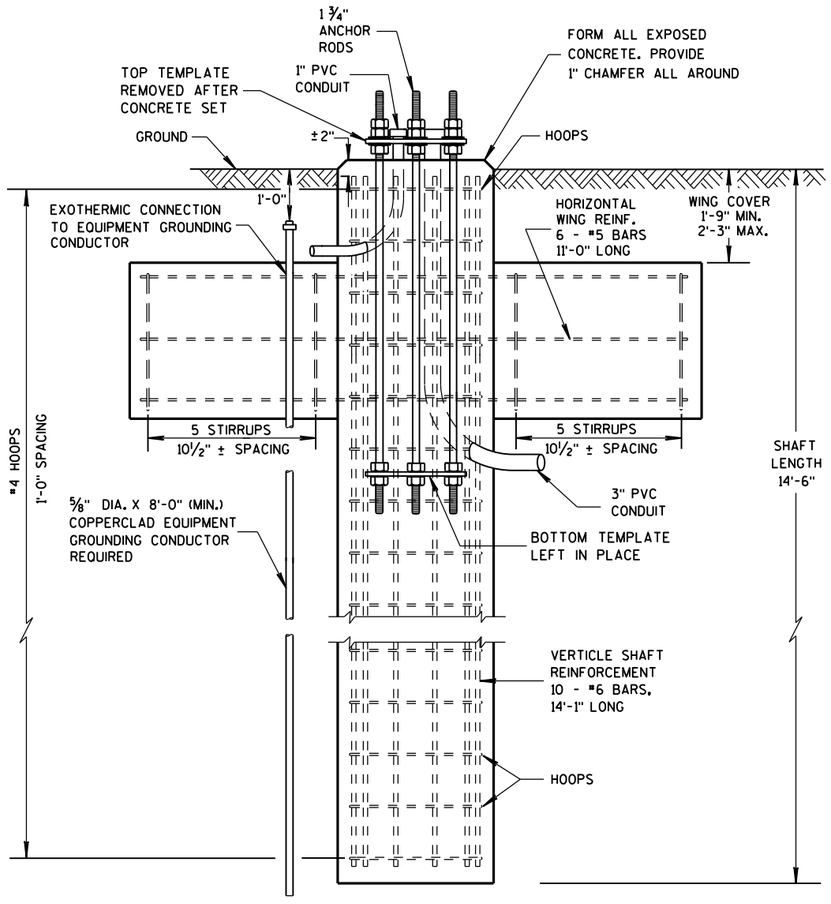


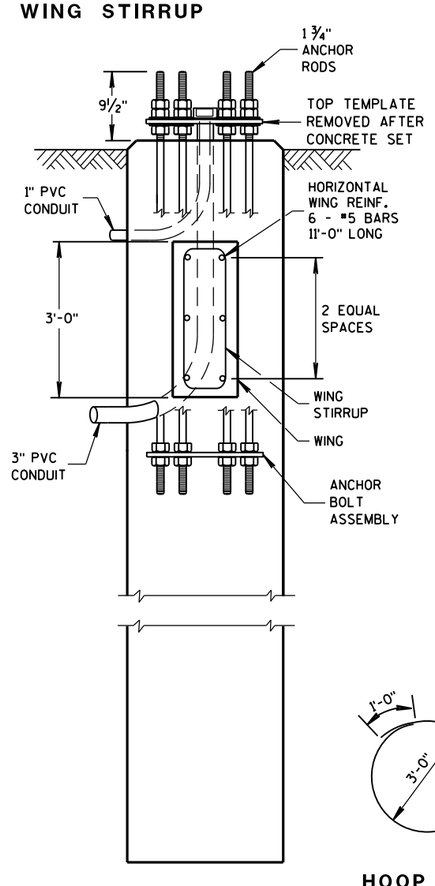
PLAN VIEW



WING STIRRUP

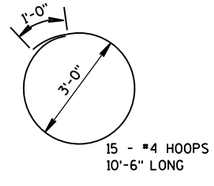


ELEVATION VIEW



SIDE VIEW

DOES NOT SHOW HOOPS OR VERTICAL SHAFT REINFORCEMENT



15 - #4 HOOPS 10'-6" LONG

HOOP DETAIL

GENERAL NOTES

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

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

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

BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUNG THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

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

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

CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4½" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF THE 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.

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

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTOR FITTINGS, UL LISTED FOR ELECTRICAL USE, SHALL BE USED.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE 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.

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

THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL 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, (GREATER THAN 36-INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.

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

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, AASHTO M314 GRADE 55	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

(FOR TYPE 12 & 13 POLES)

CONCRETE = 6.3 C.Y.
H.S. REINFORCEMENT = 433 LBS.

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.
SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE TYPE 13

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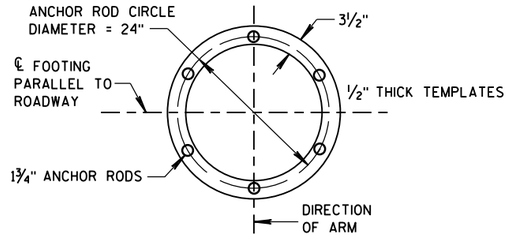
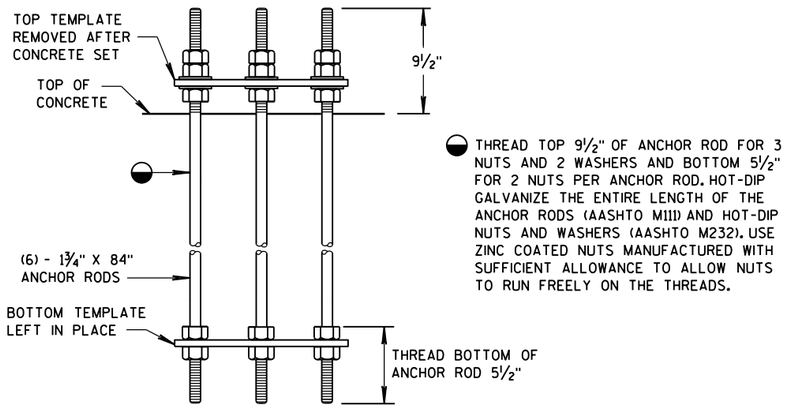
S.D.D. 9 C 12-5a

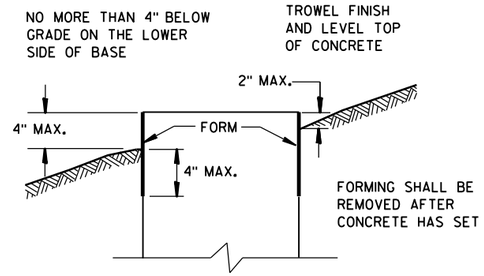


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY



FORMING DETAIL

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CONCRETE BASE TYPE 13

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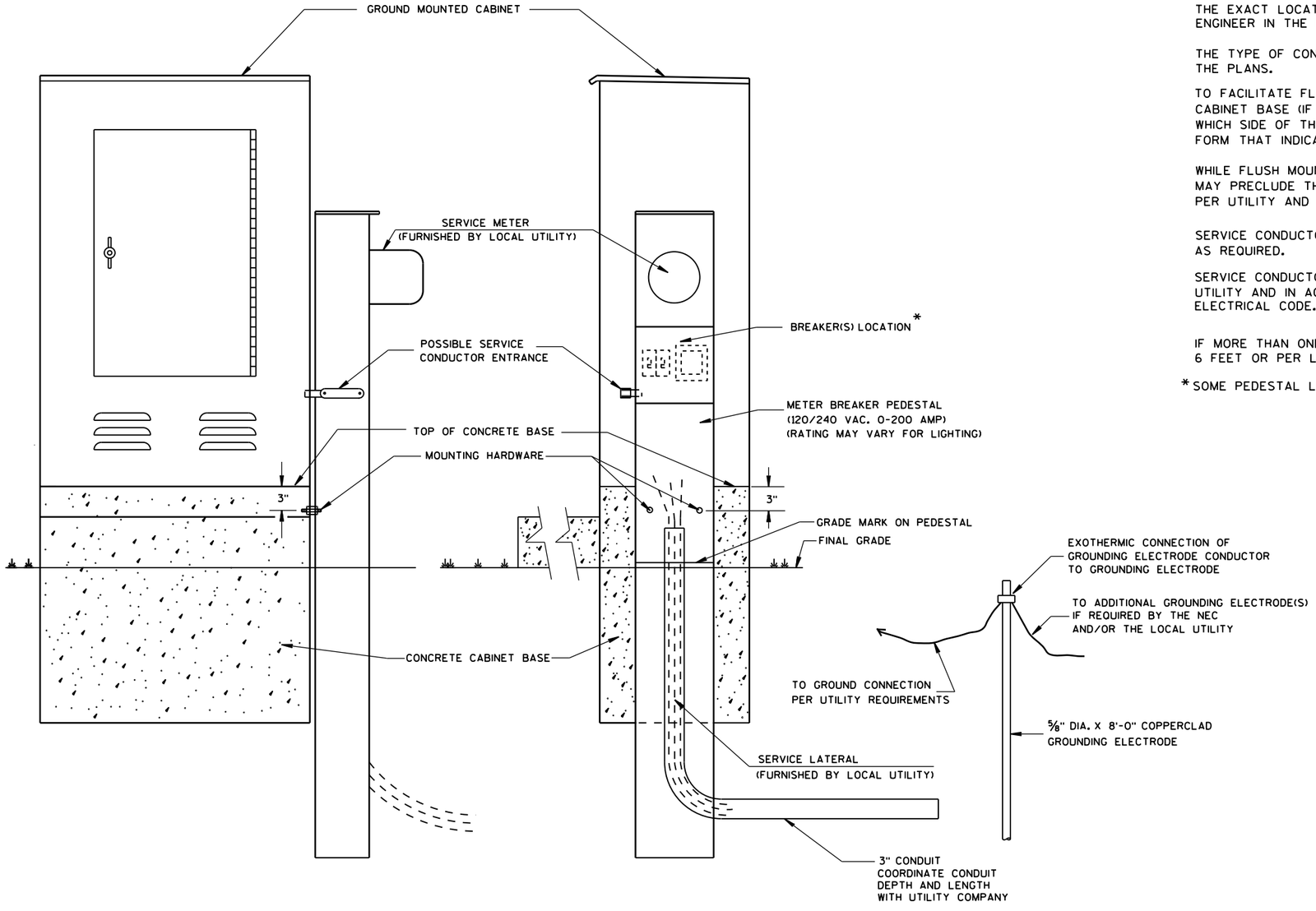

TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

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

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

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

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
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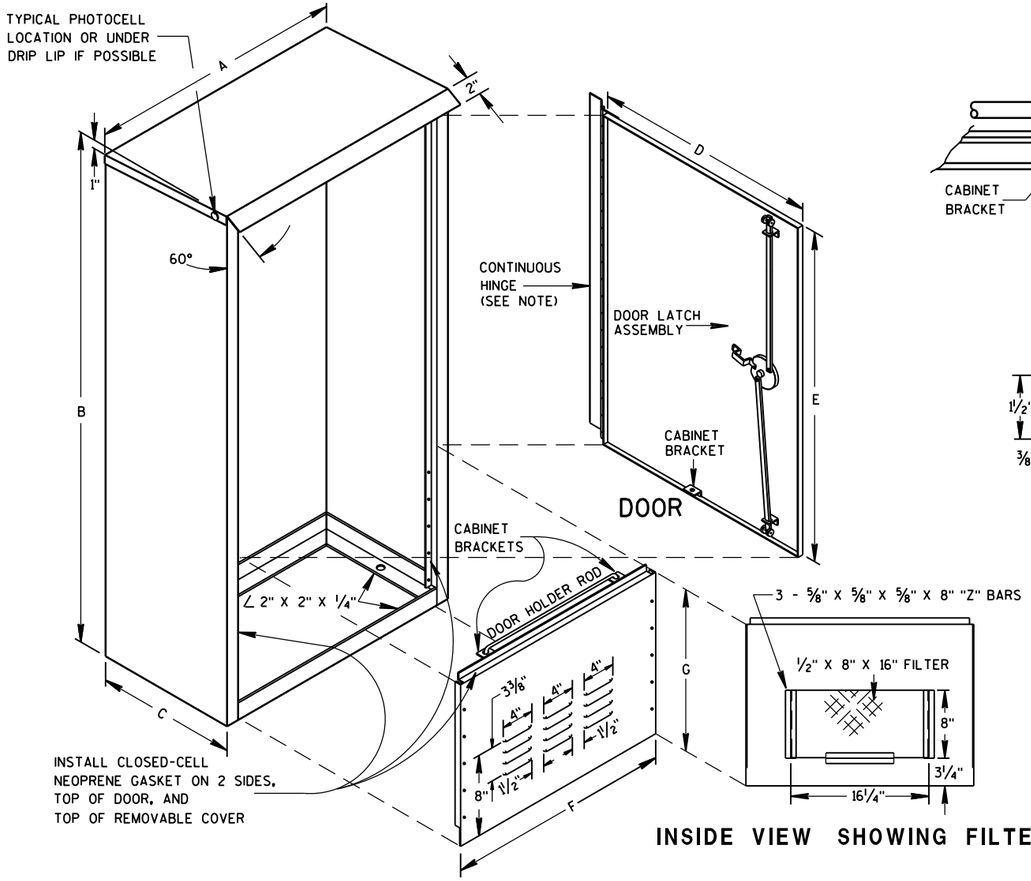
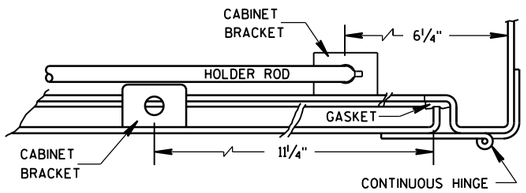
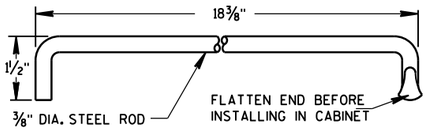


REMOVABLE COVER

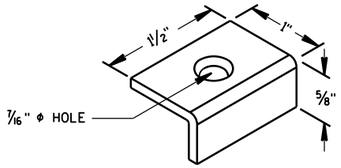
INSIDE VIEW SHOWING FILTER



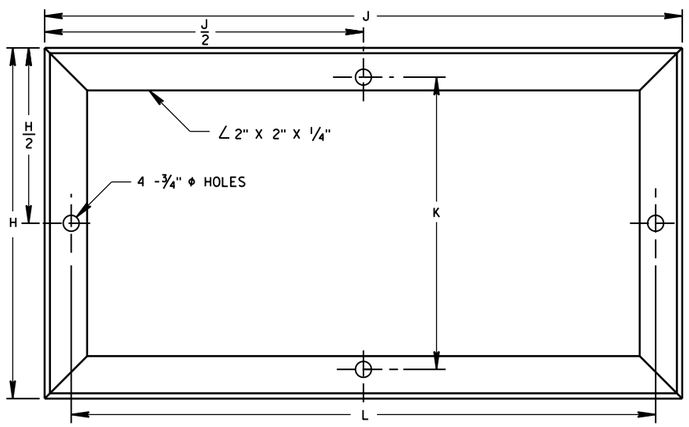
HINGE & DOOR HOLDER



HOLDER ROD



CABINET BRACKET



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2

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.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

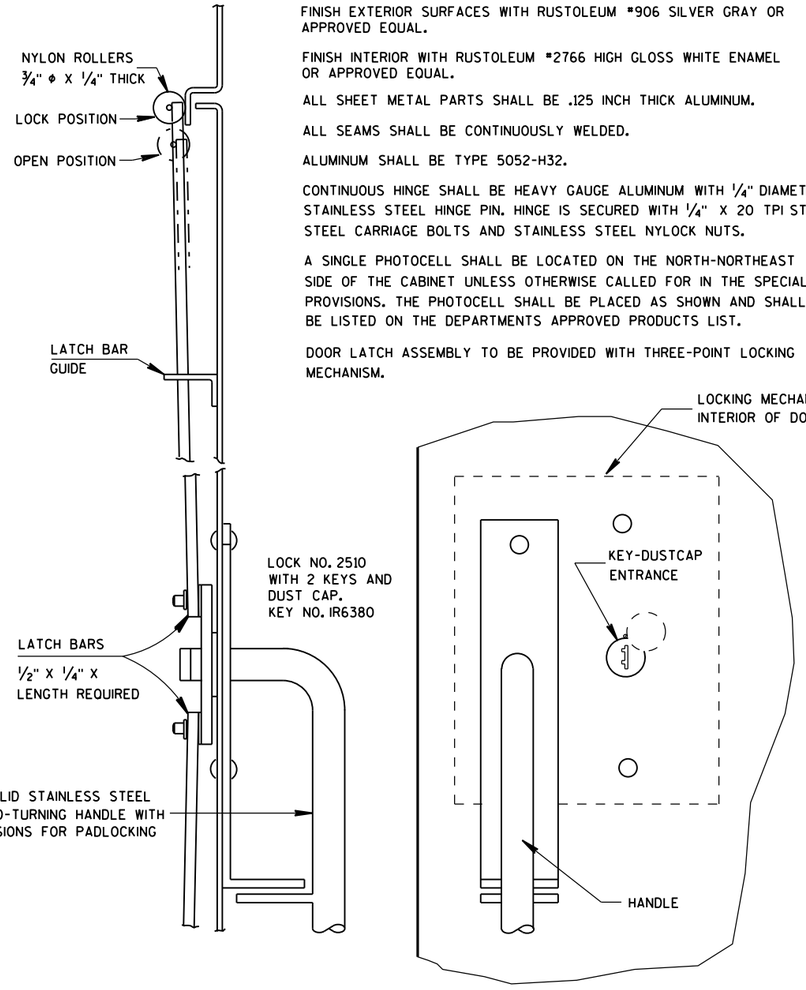
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

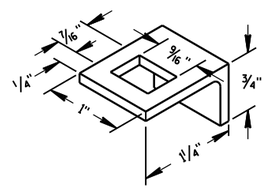
DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



SIDE VIEW

FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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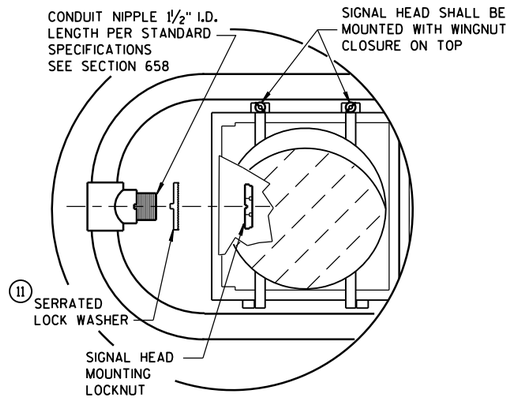
S.D.D. 9 D 2-3

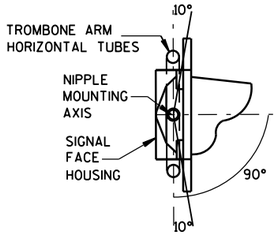
6

S.D.D. 9 D 2-3



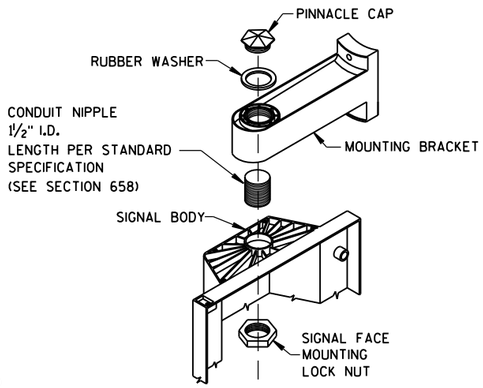
HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR



SECTION A-A

(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)



SIGNAL FACE MOUNTING DETAIL

(BANDED)

GENERAL NOTES

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

POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).

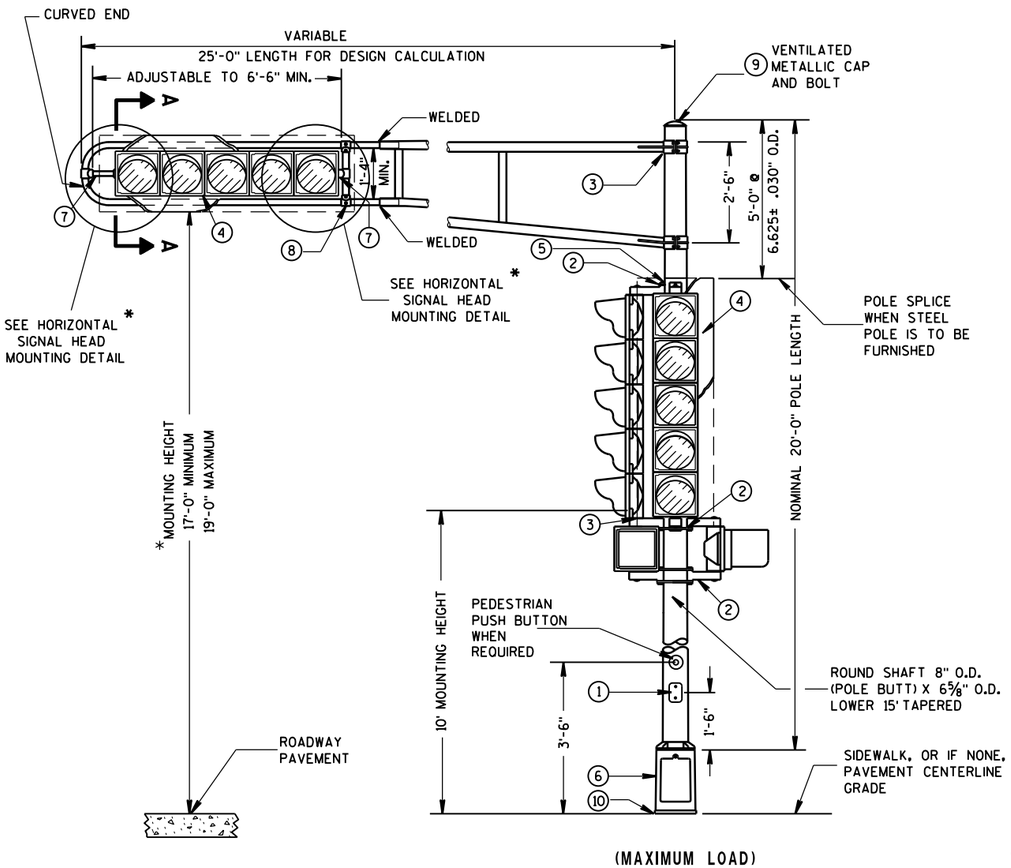
(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" LONG - 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

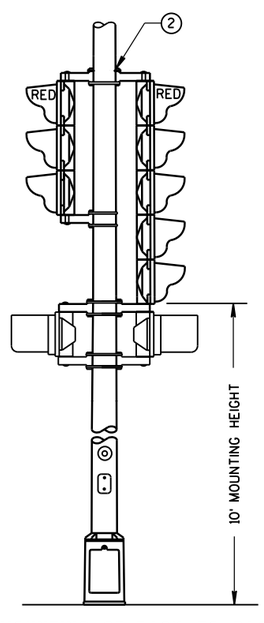
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

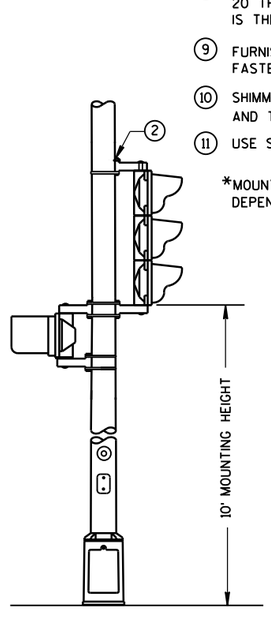
*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.



(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES

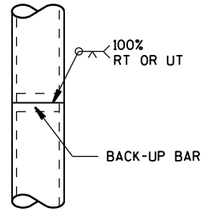


TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 2 POLE MOUNTING CONFIGURATION

FOR MANUFACTURERS USE ONLY

WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



POLE SPLICE DETAIL

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

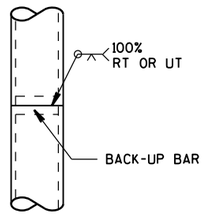
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

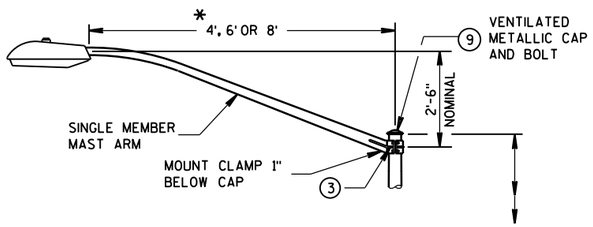
6

S.D.D. 9 E 1-13a

FOR MANUFACTURERS USE ONLY

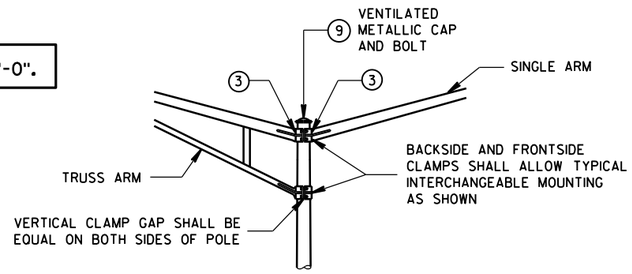
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.





POLE SPLICE DETAIL

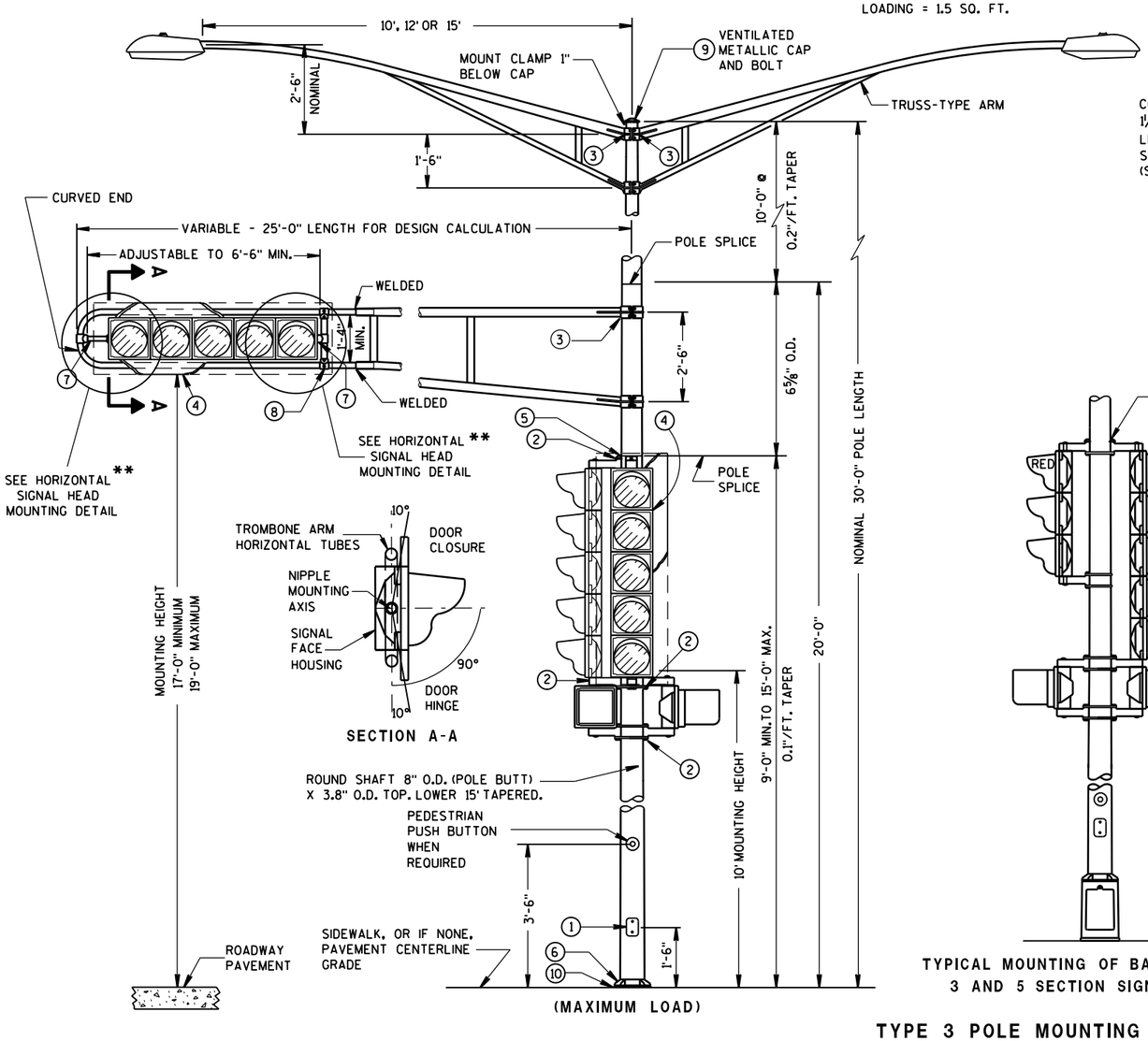
***RISE FOR 4' ARM SHALL BE 2'-0".**

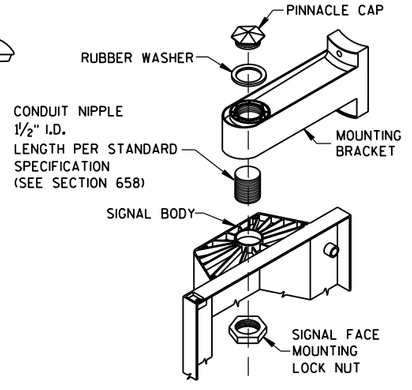


INTERCHANGEABLE MOUNTING DETAIL

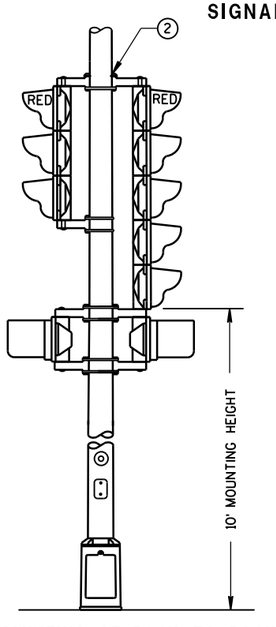
LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

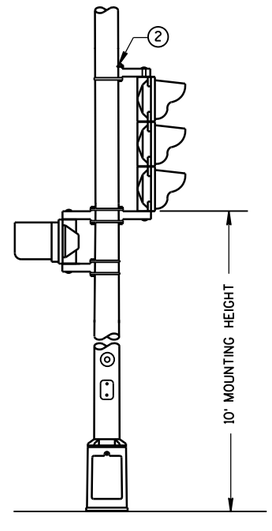




SIGNAL FACE MOUNTING DETAIL
(BANDED)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

GENERAL NOTES

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.

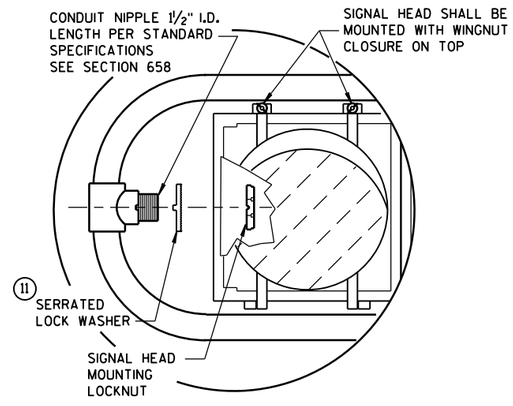
(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL**

** SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

TYPE 3 POLE MOUNTING CONFIGURATION

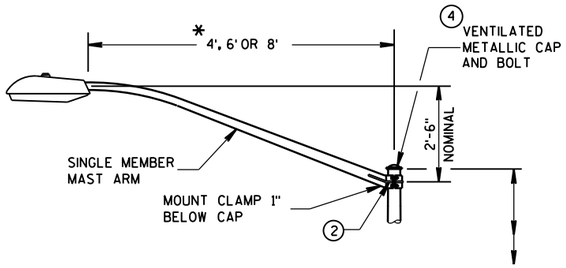
POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)

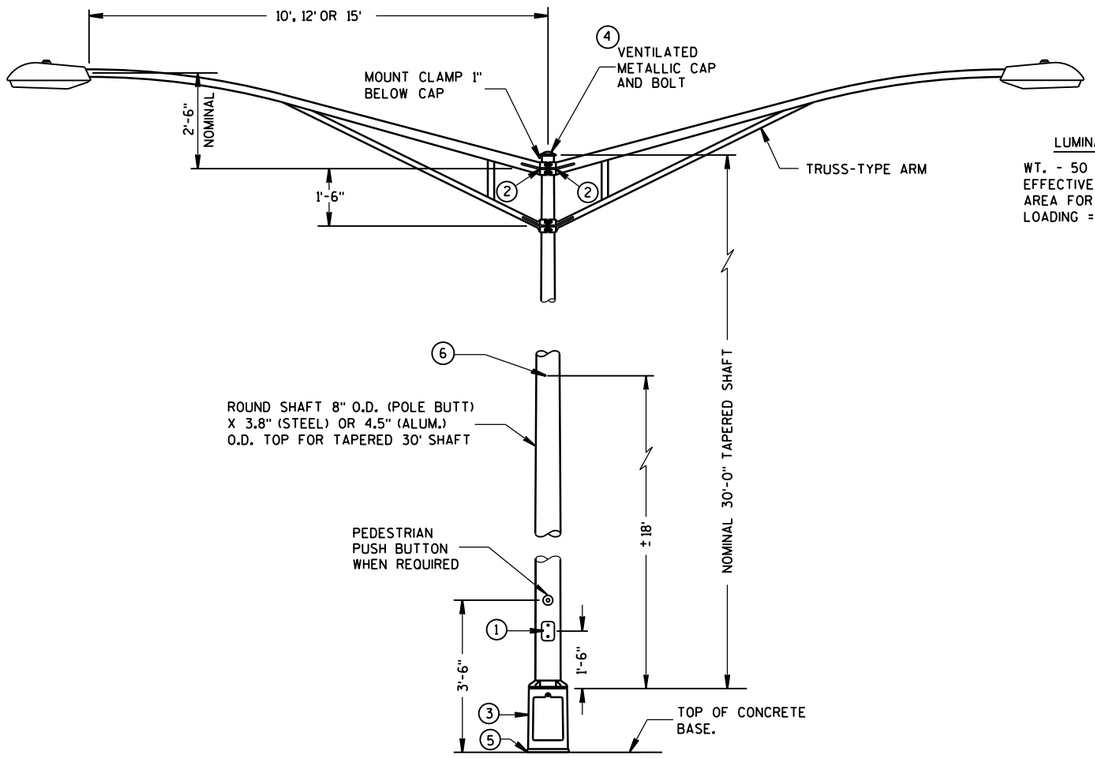
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

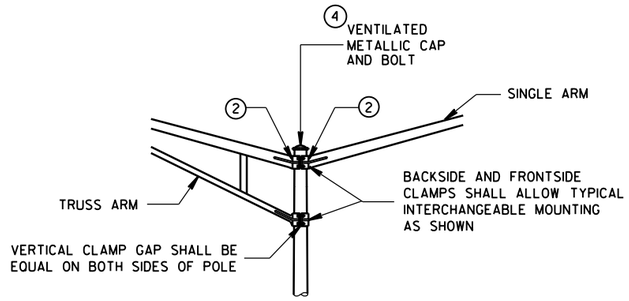
S.D.D. 9 E 1-13b

*RISE FOR 4' ARM SHALL BE 2'-0".





TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY



INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

GENERAL NOTES

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

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONEECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(4) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(6) INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

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S.D.D. 9 E 1-13d

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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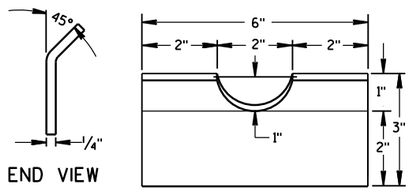
S.D.D. 9 E 1-13d

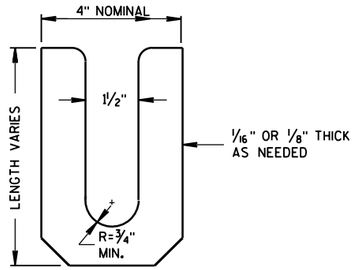


END VIEW

FRONT VIEW

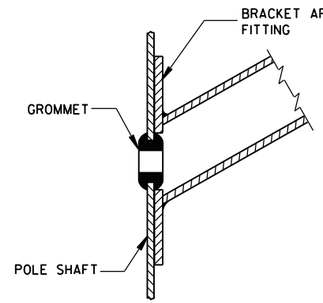
RECTANGULAR CLAMP SHIM

(4 TO A SET)

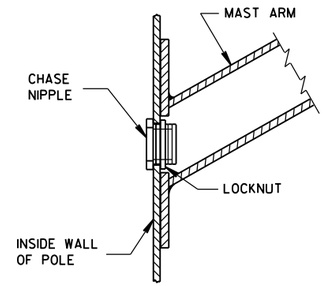


LEVELING SHIM (15)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)

(14) VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")

SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".

SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".

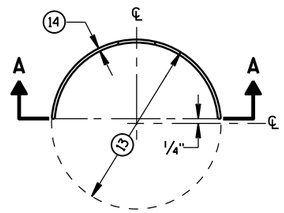
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.

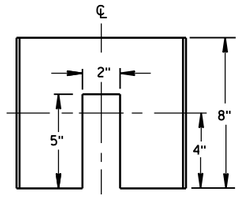
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(15) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

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



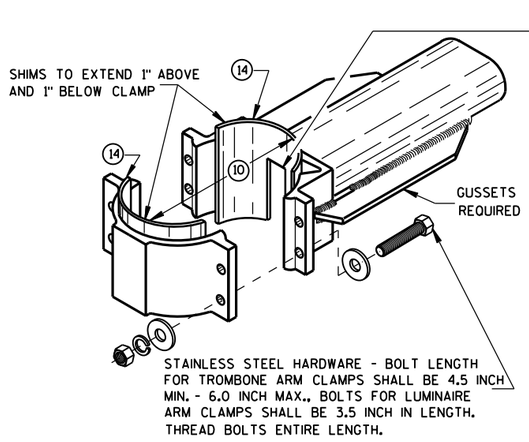
PLAN VIEW



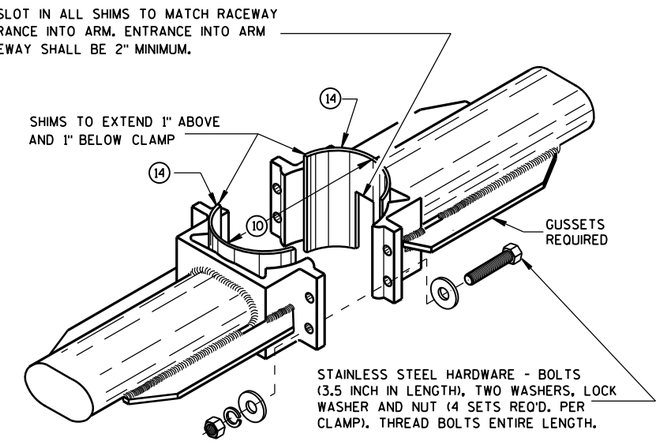
SECTION A-A

CIRCULAR CLAMP SHIM

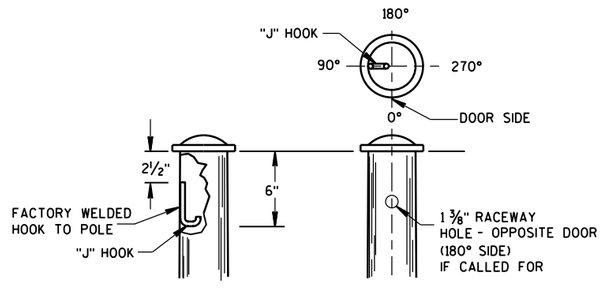
(2 TO A SET)



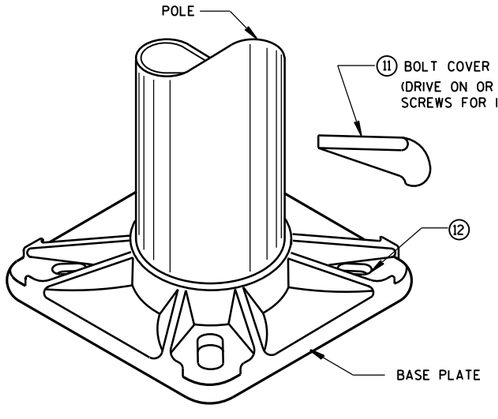
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



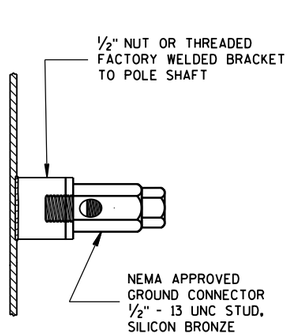
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

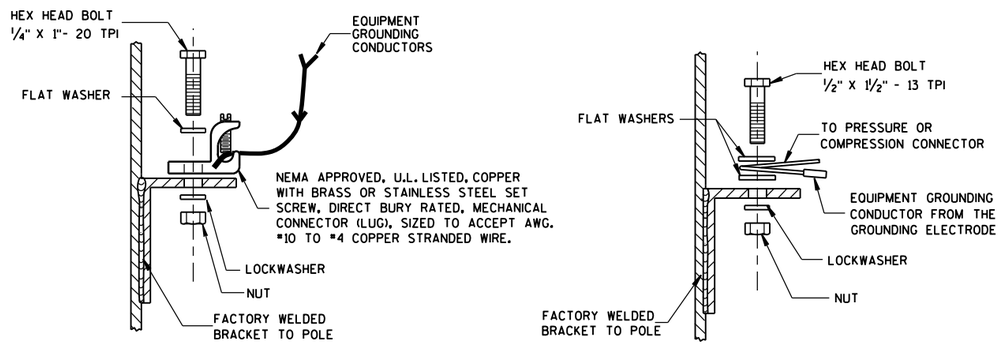


TYPICAL "J" HOOK LOCATION



BASE PLATE





TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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6

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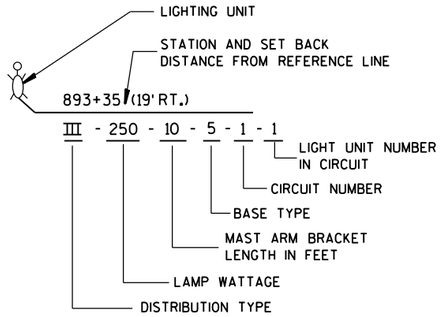
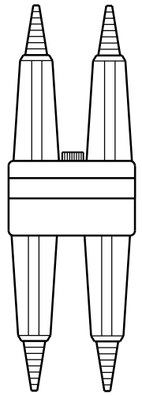
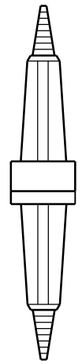


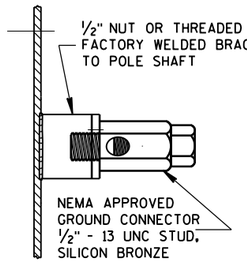
LIGHTING UNIT CODE
(TYPICAL)

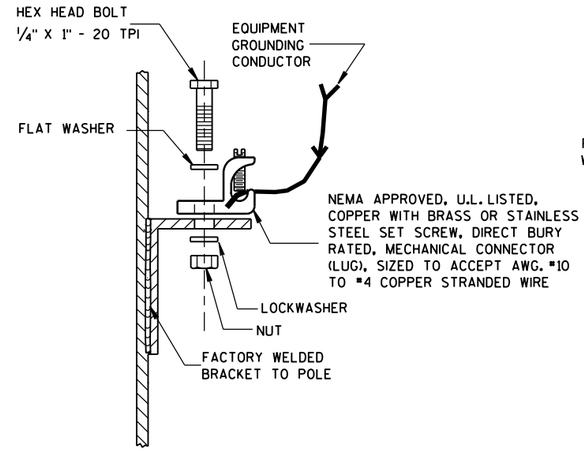


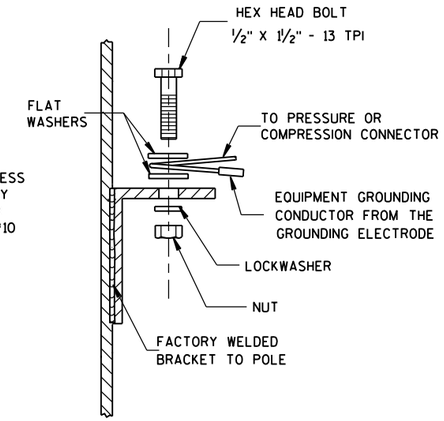
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



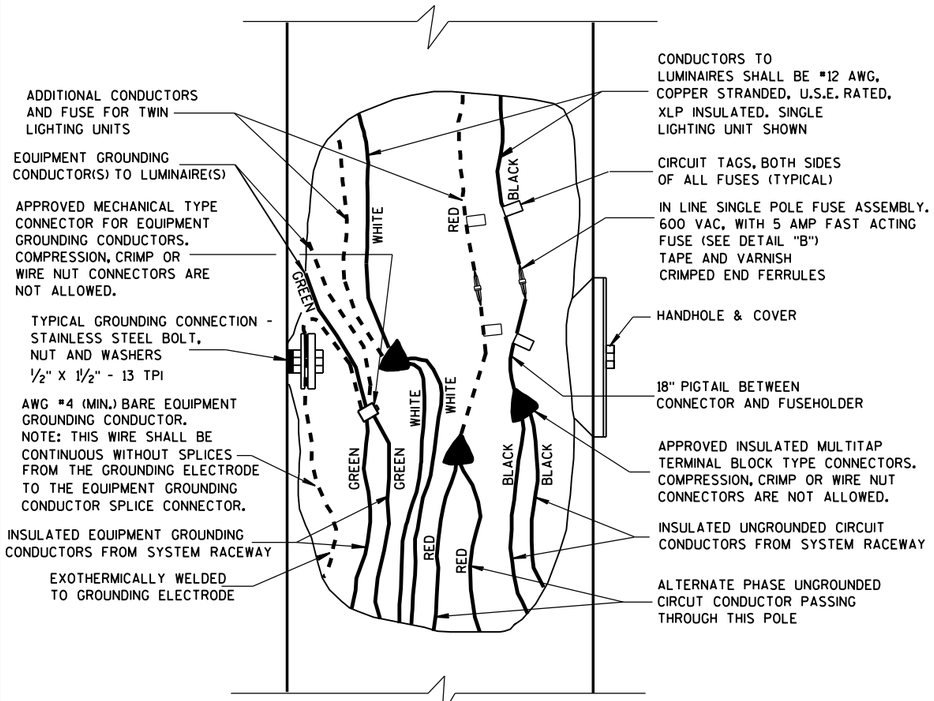
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



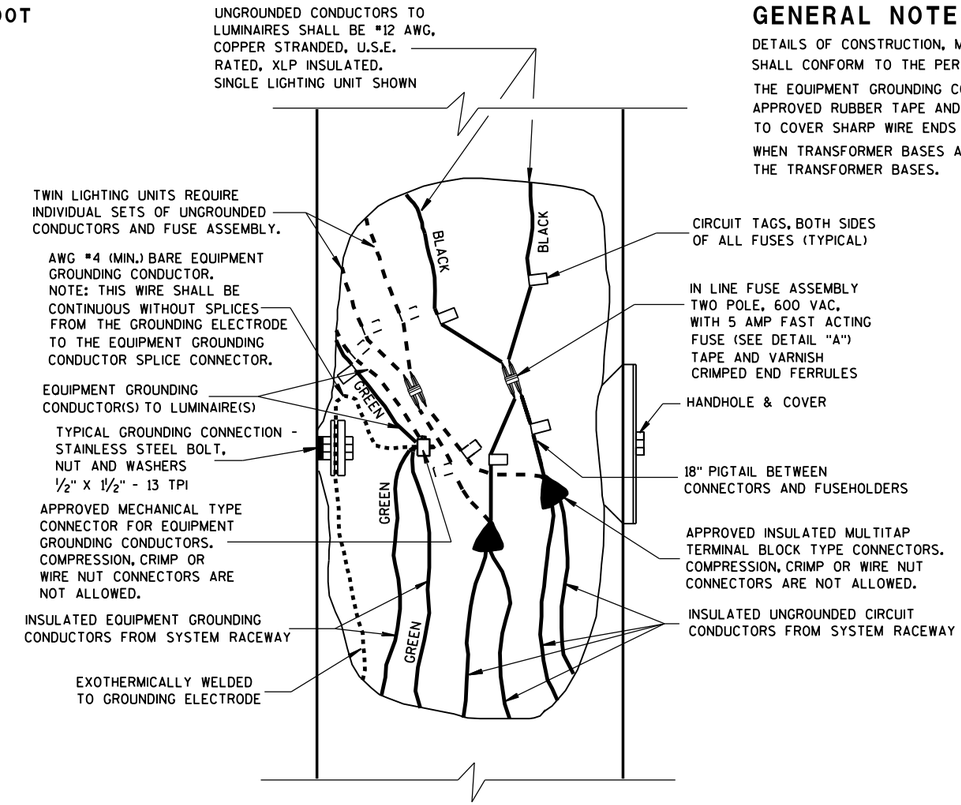




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

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

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

NON-FREEWAY LIGHTING UNIT POLE WIRING

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6
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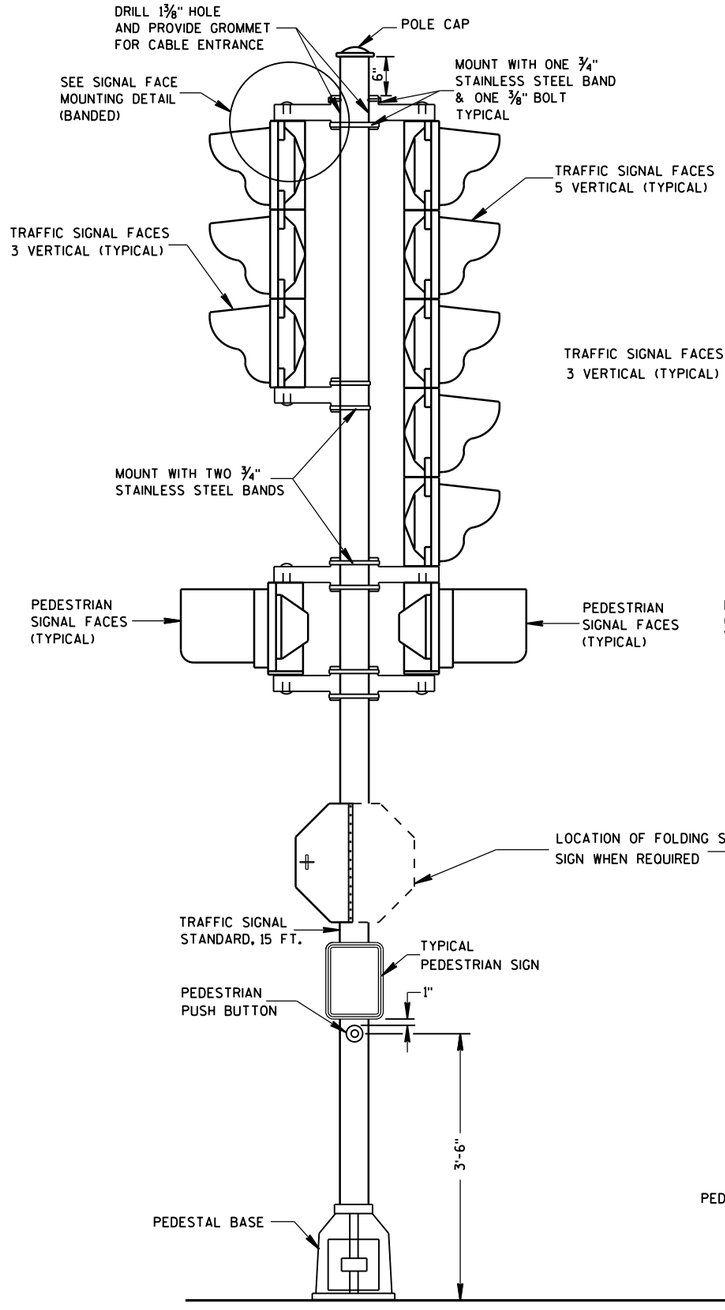
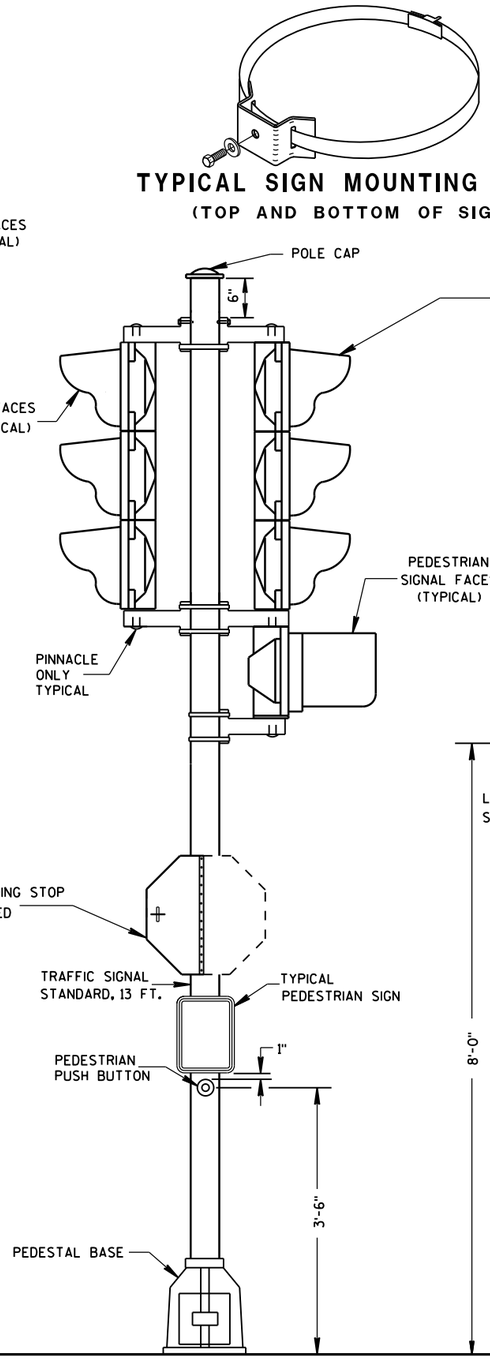
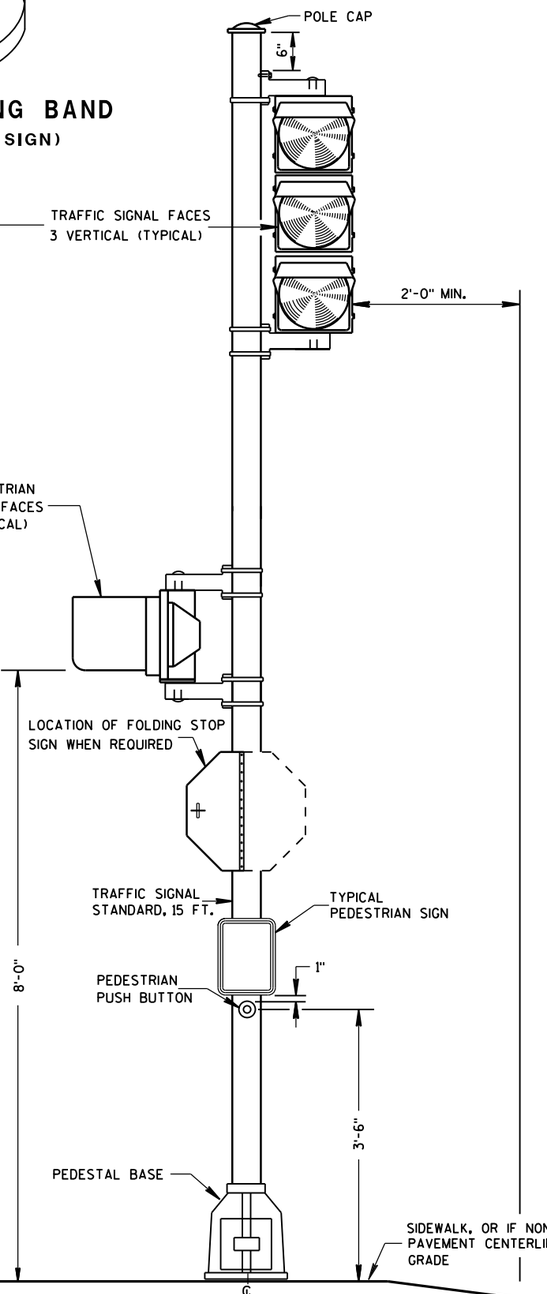


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

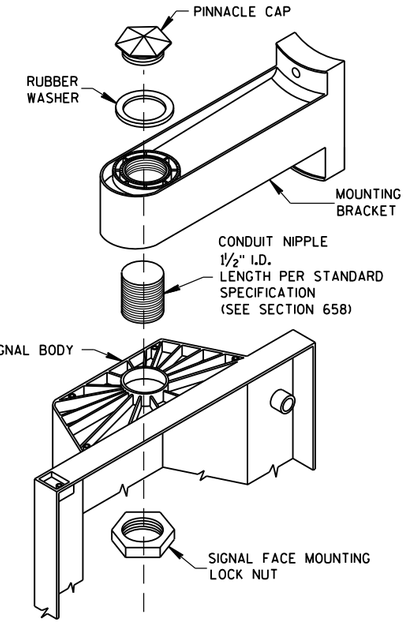
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SIGNAL FACE MOUNTING DETAIL
(BANDED)

TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.

STATE OF WISCONSIN
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6

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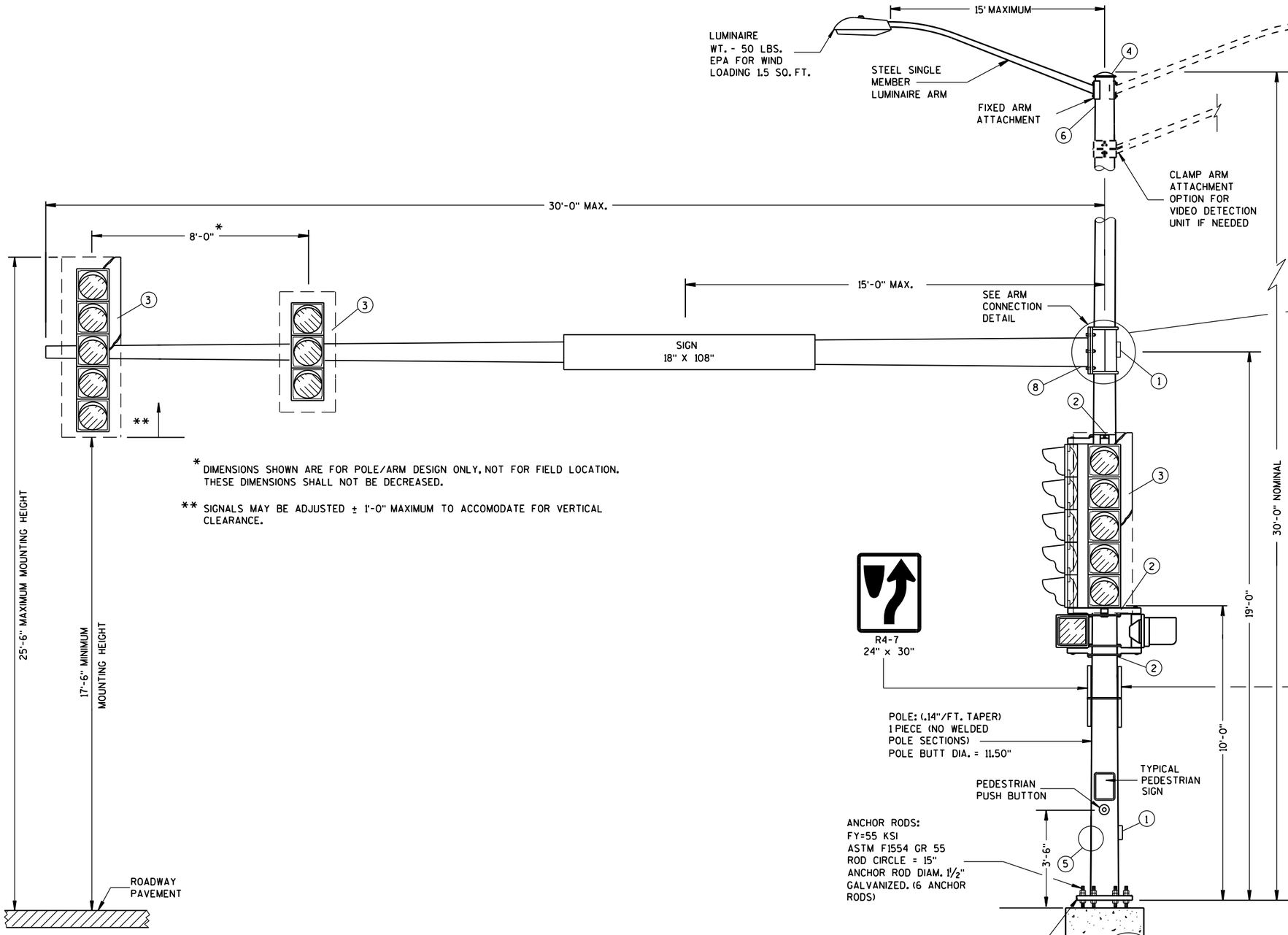
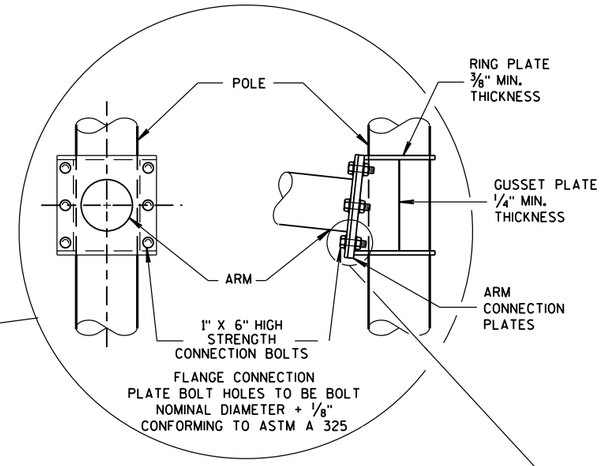
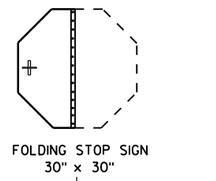


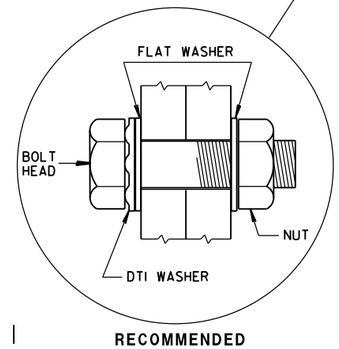
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.

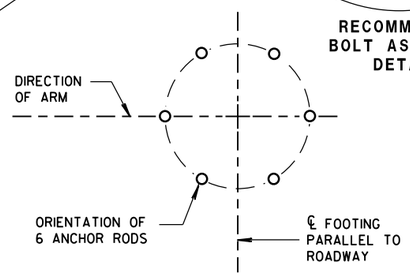


6 BOLT ARM CONNECTION DETAIL





RECOMMENDED BOLT ASSEMBLY DETAIL



ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 10 POLE
15'- 30' MONOTUBE ARM

TYPE 10 POLE
15' - 30' MONOTUBE ARM

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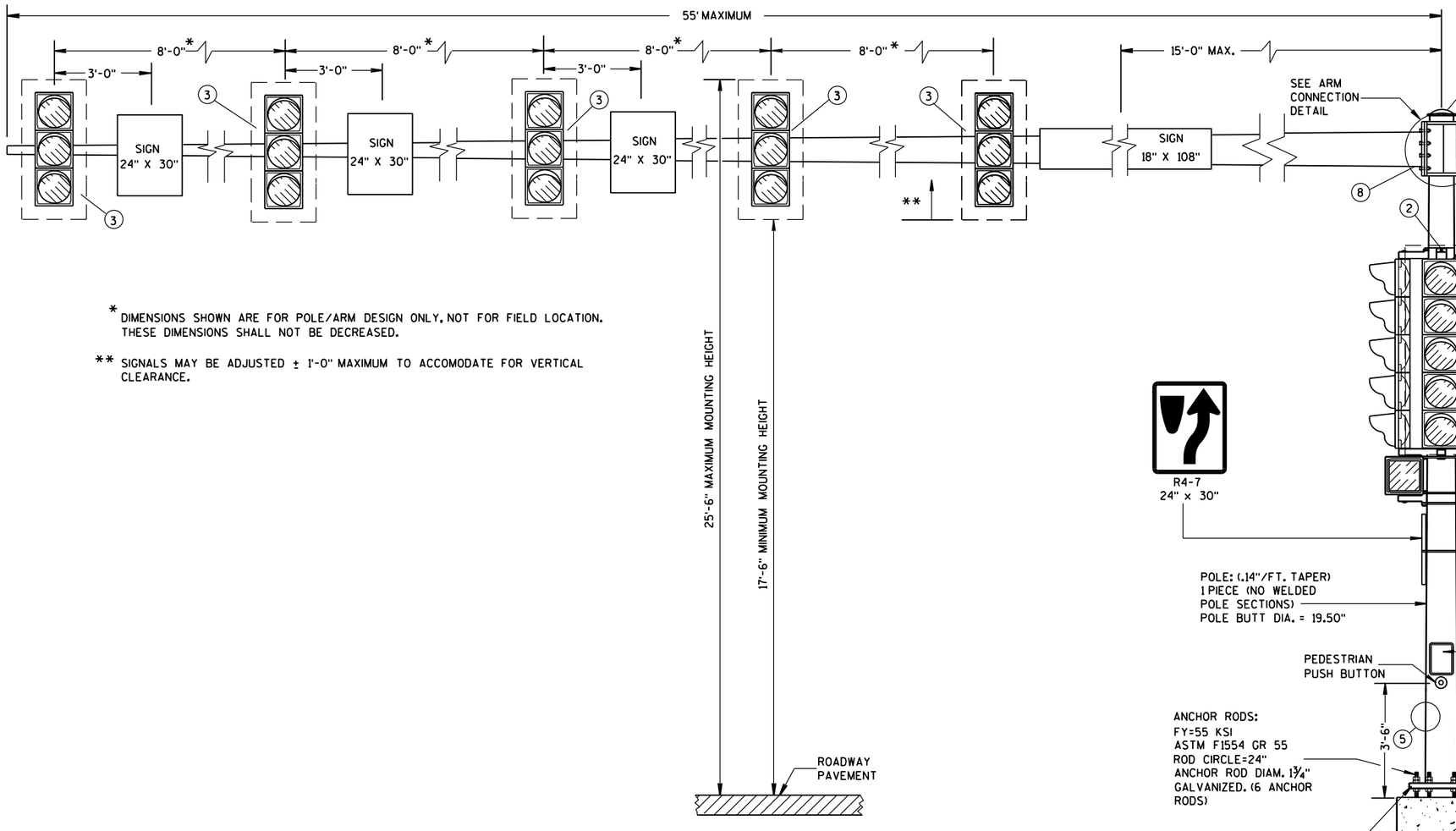
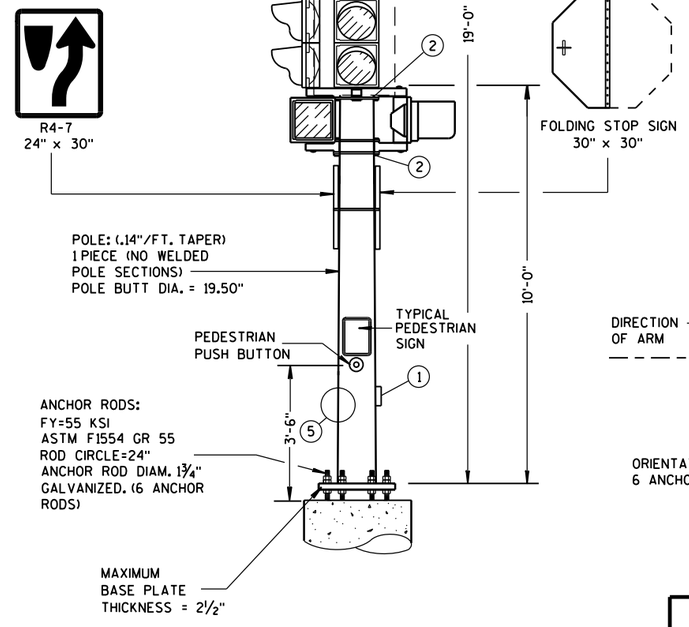
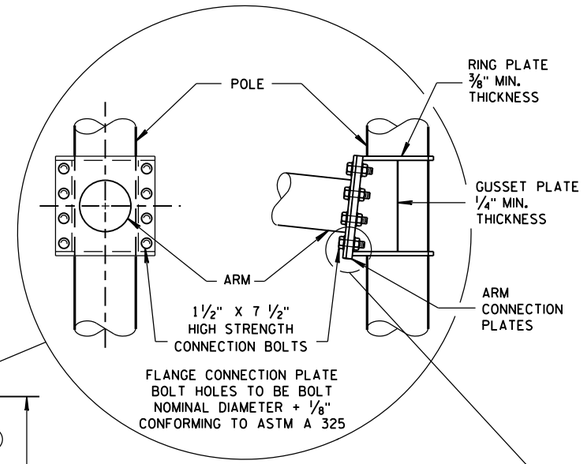


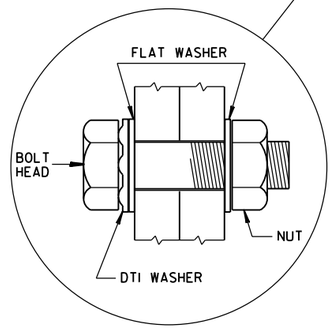
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.

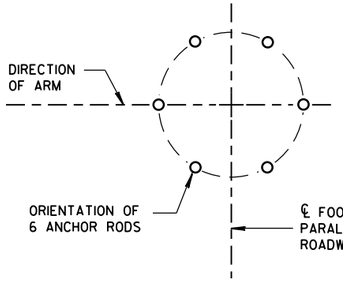




8 BOLT ARM CONNECTION DETAIL



RECOMMENDED BOLT ASSEMBLY DETAIL



ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 12 POLE 35'- 55' MONOTUBE ARM

TYPE 12 POLE
35' - 55' MONOTUBE ARM

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Sept. 2014 — DATE
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6

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GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

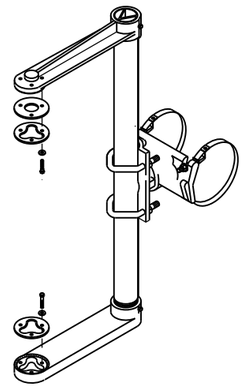
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL DEPARTMENT PROVIDED STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

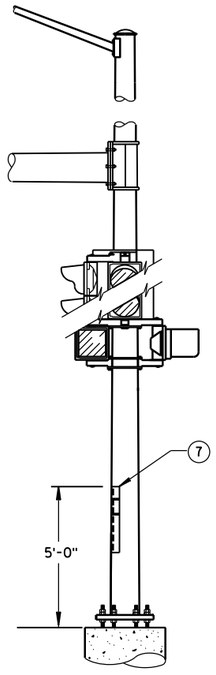
MOUNTING HEIGHT SHALL BE 5'-0" ABOVE THE CURB OR SHOULDER . ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

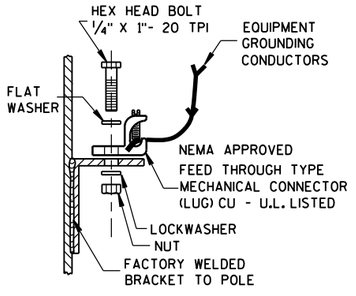


SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

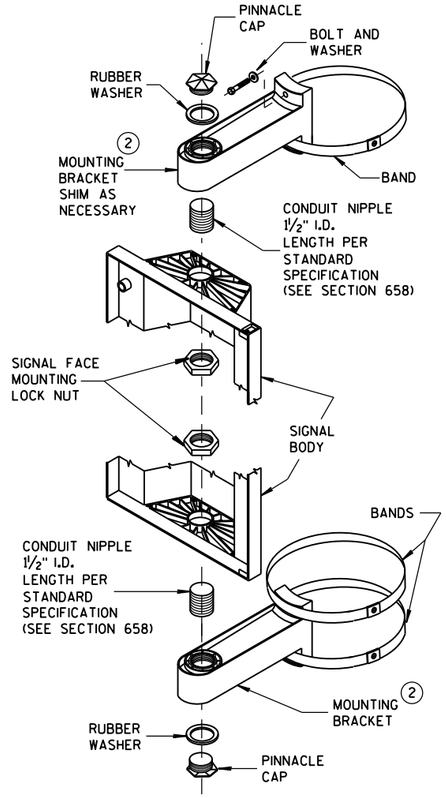


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT

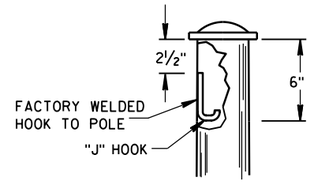


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014 — DATE

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6

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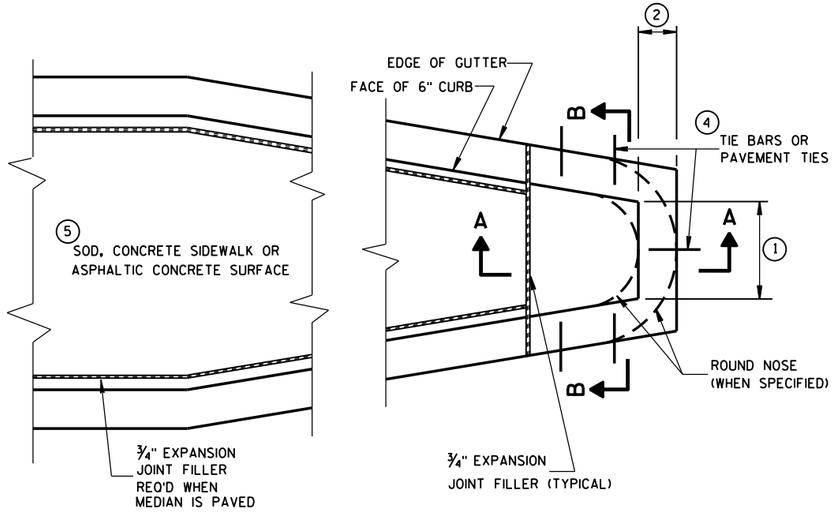
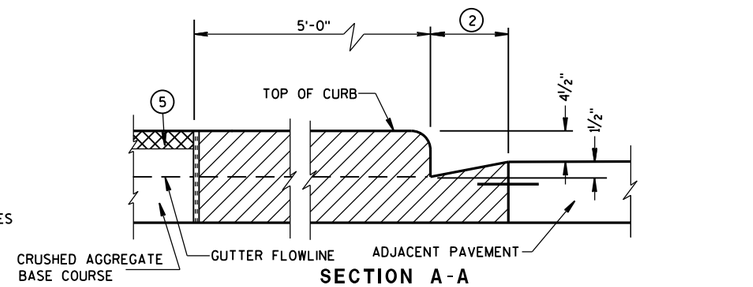
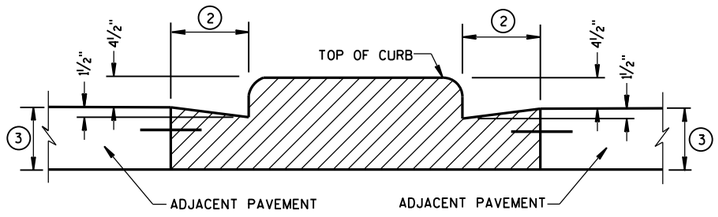






CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

(1) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

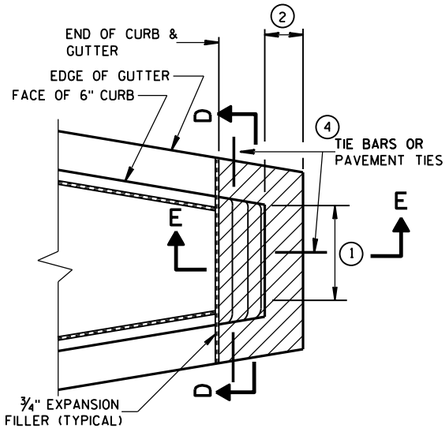
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

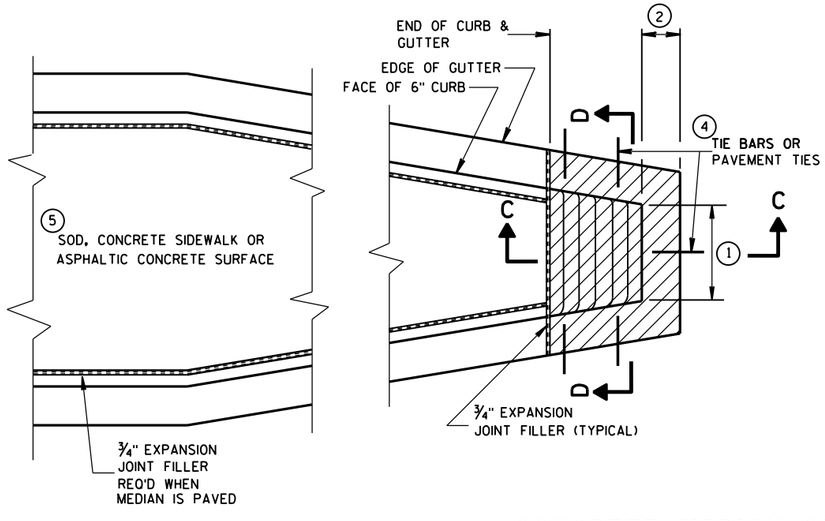
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

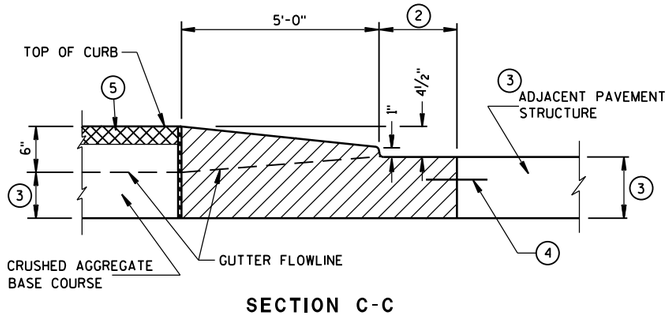
(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

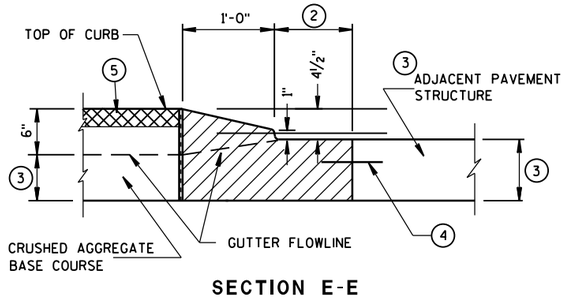
PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

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



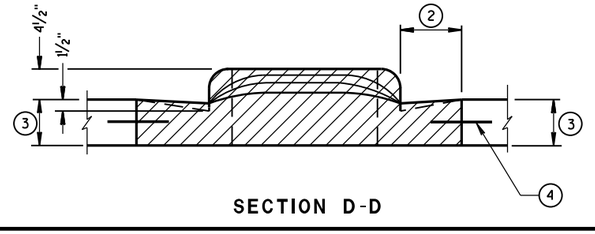






CONCRETE MEDIAN SLOPED NOSE TYPE 2

CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/8/2006
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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S.D.D. 11 B 2-2

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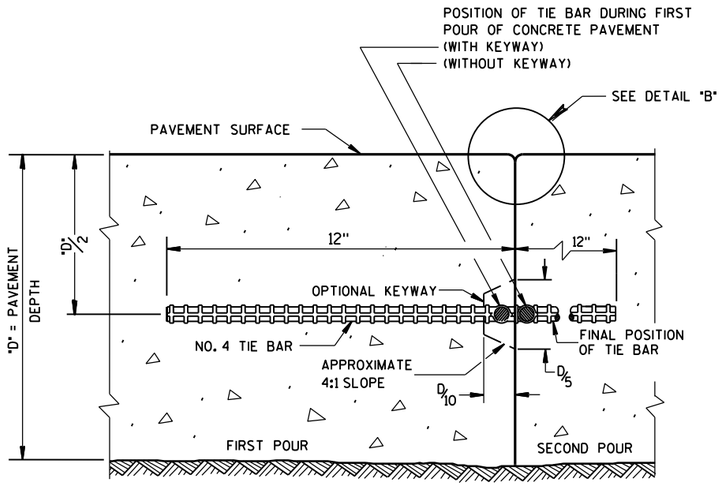
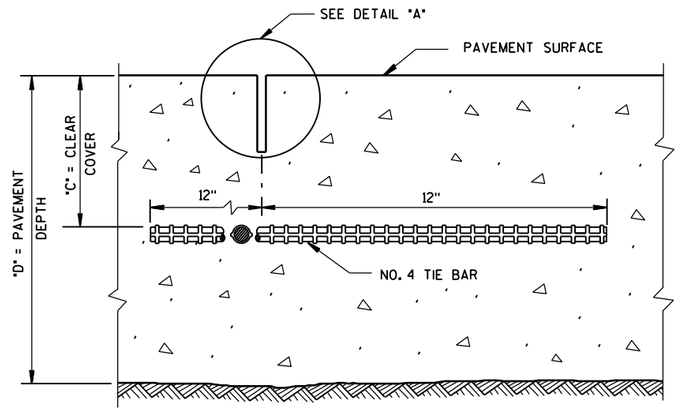
S.D.D. 11 B 2-2



CONSTRUCTION JOINT



SAWED JOINT

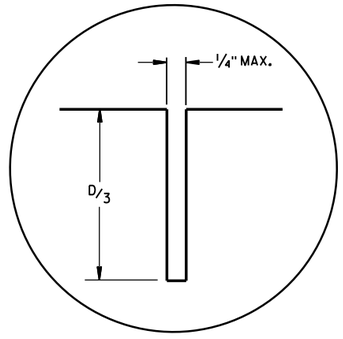
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

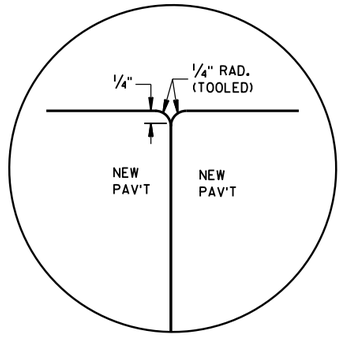
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

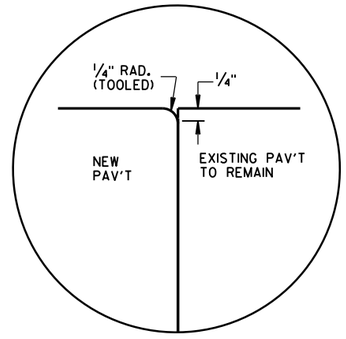
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



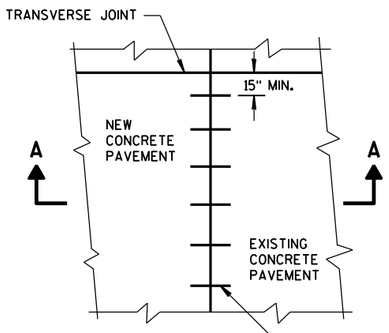
DETAIL "A"



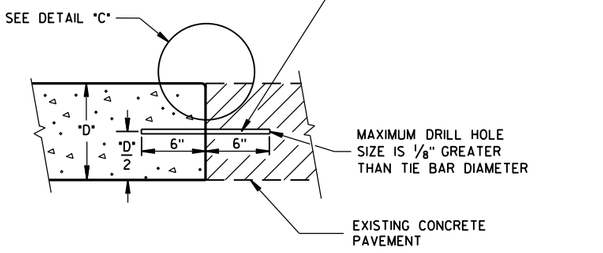
DETAIL "B"



DETAIL "C"



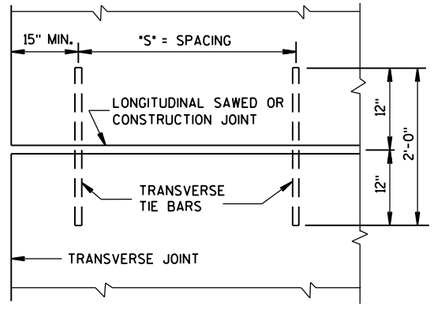
PLAN VIEW



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

TIE BAR TABLE

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

9/2014 DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE ... NEER

FHWA

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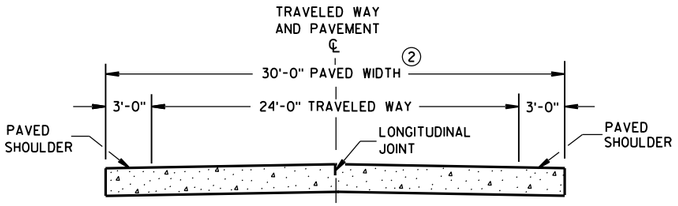
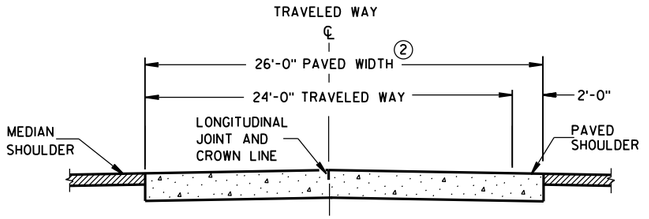
S.D.D. 13 C 1-17

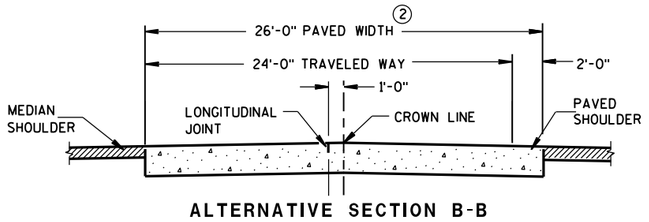


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

CONSTRUCTION JOINTS

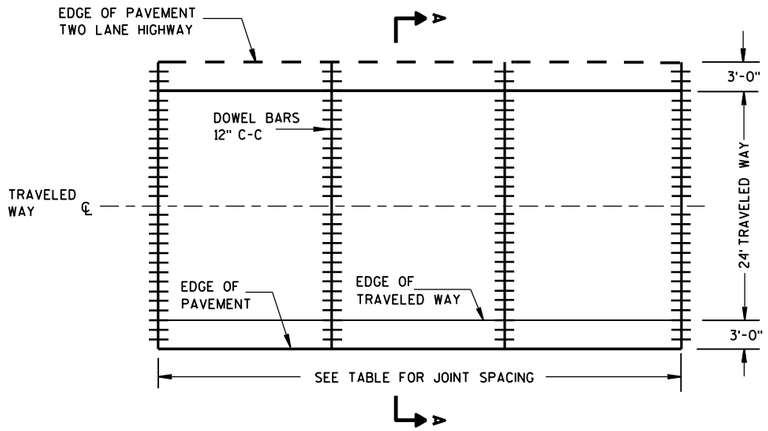
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

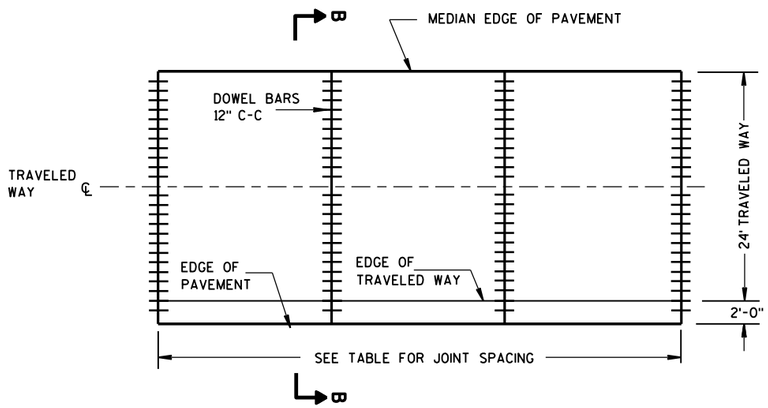
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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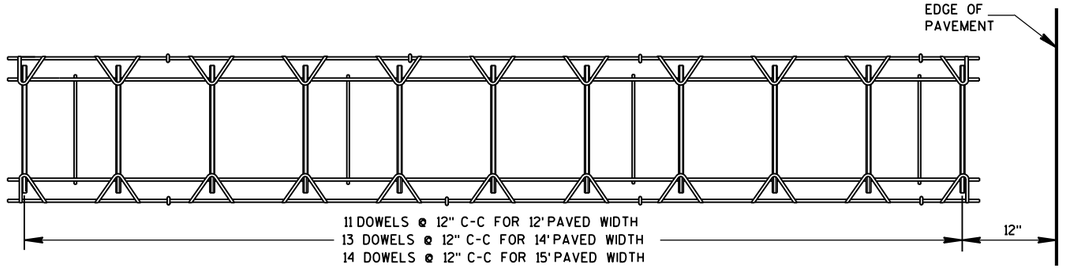
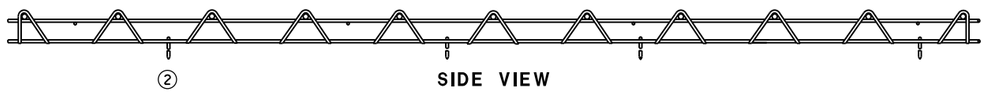
S.D.D. 13 C 11-11a



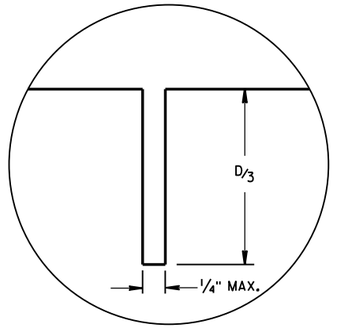
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

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

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

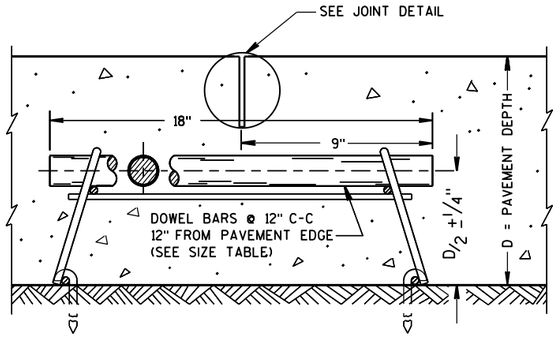
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

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

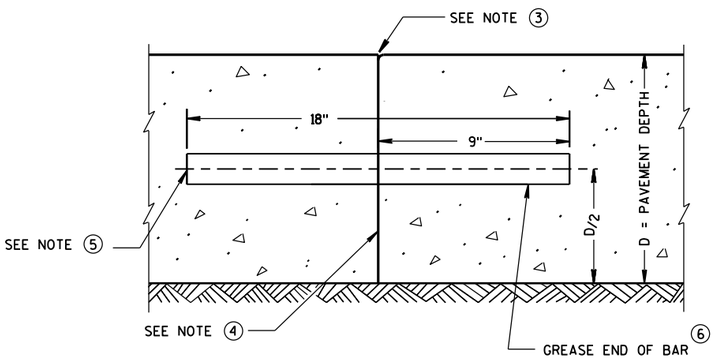
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL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

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

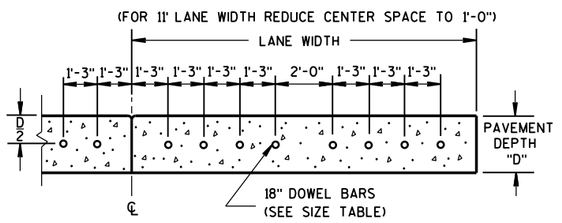
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ENGINEER
FHWA

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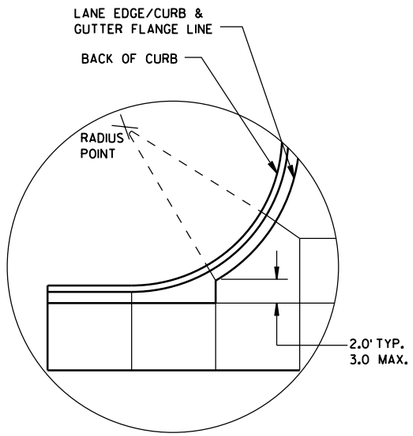
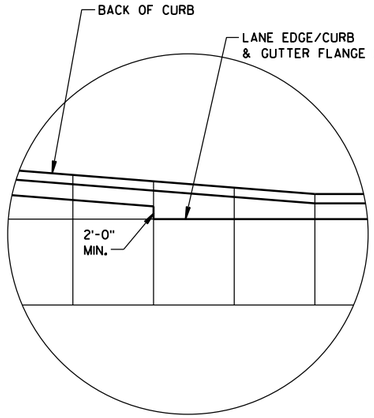
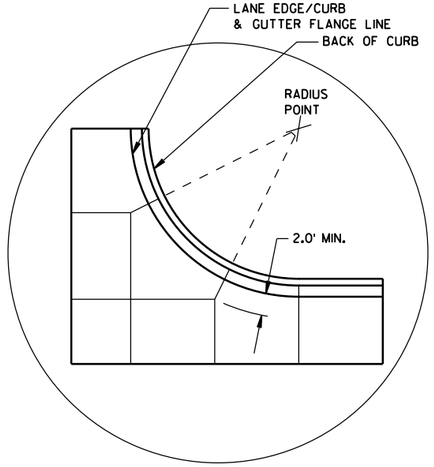
S.D.D. 13 C 11-11b



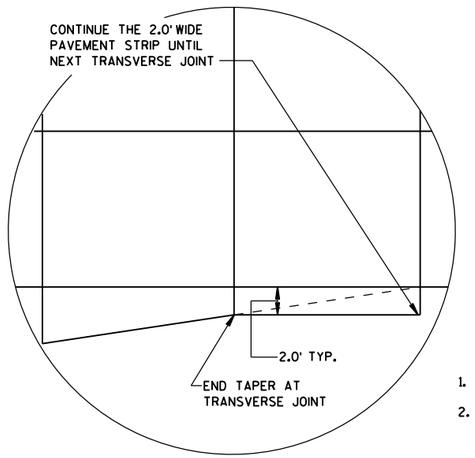
DETAIL "A"



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.

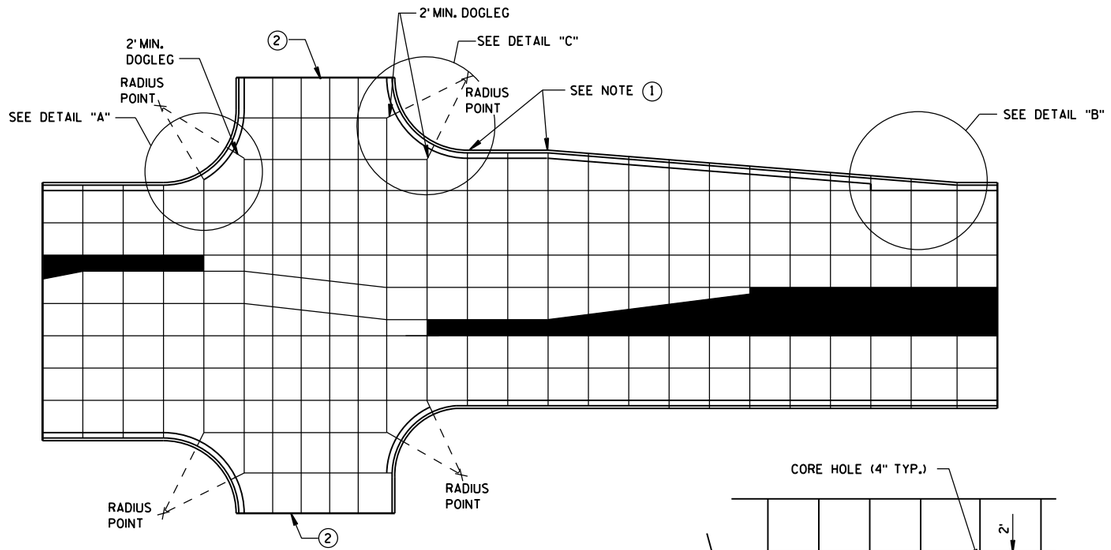
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

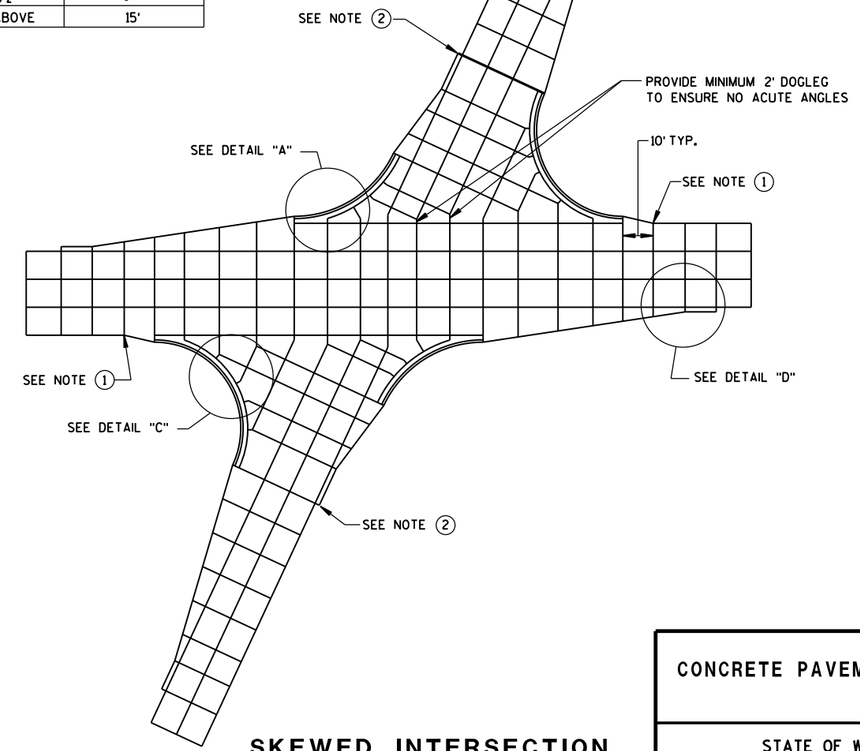
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



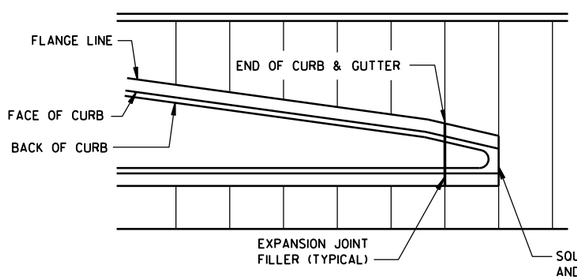
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

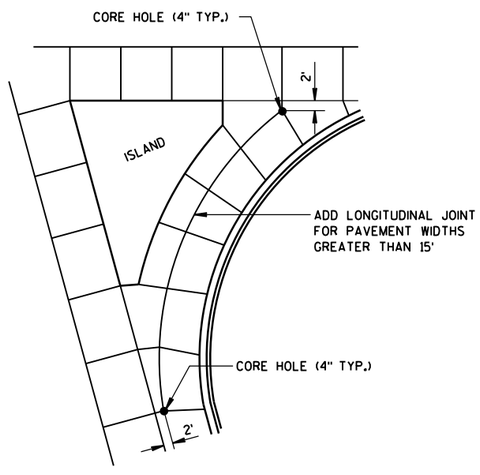
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

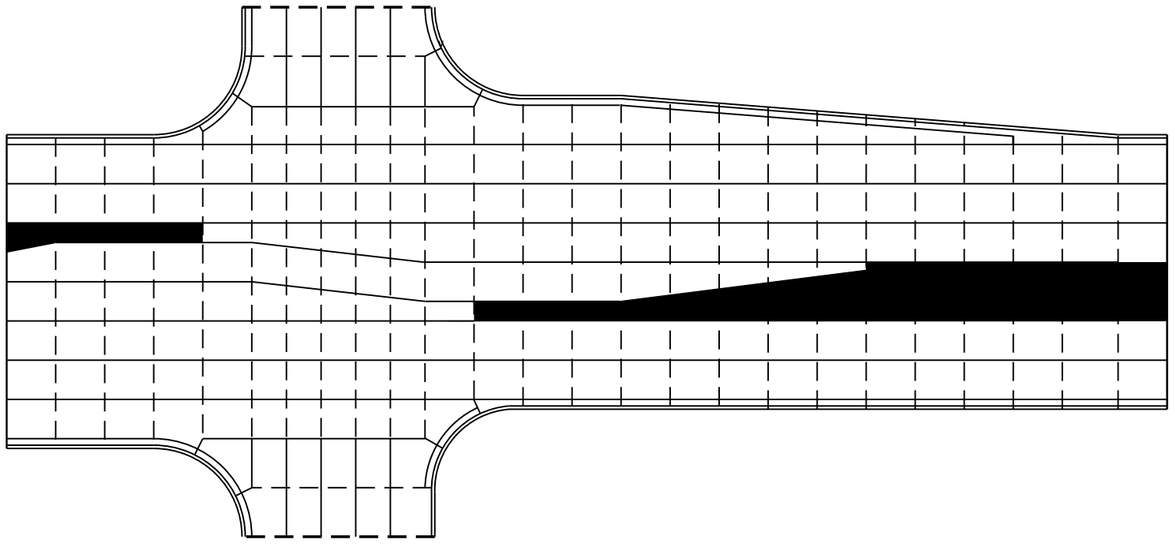
6
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

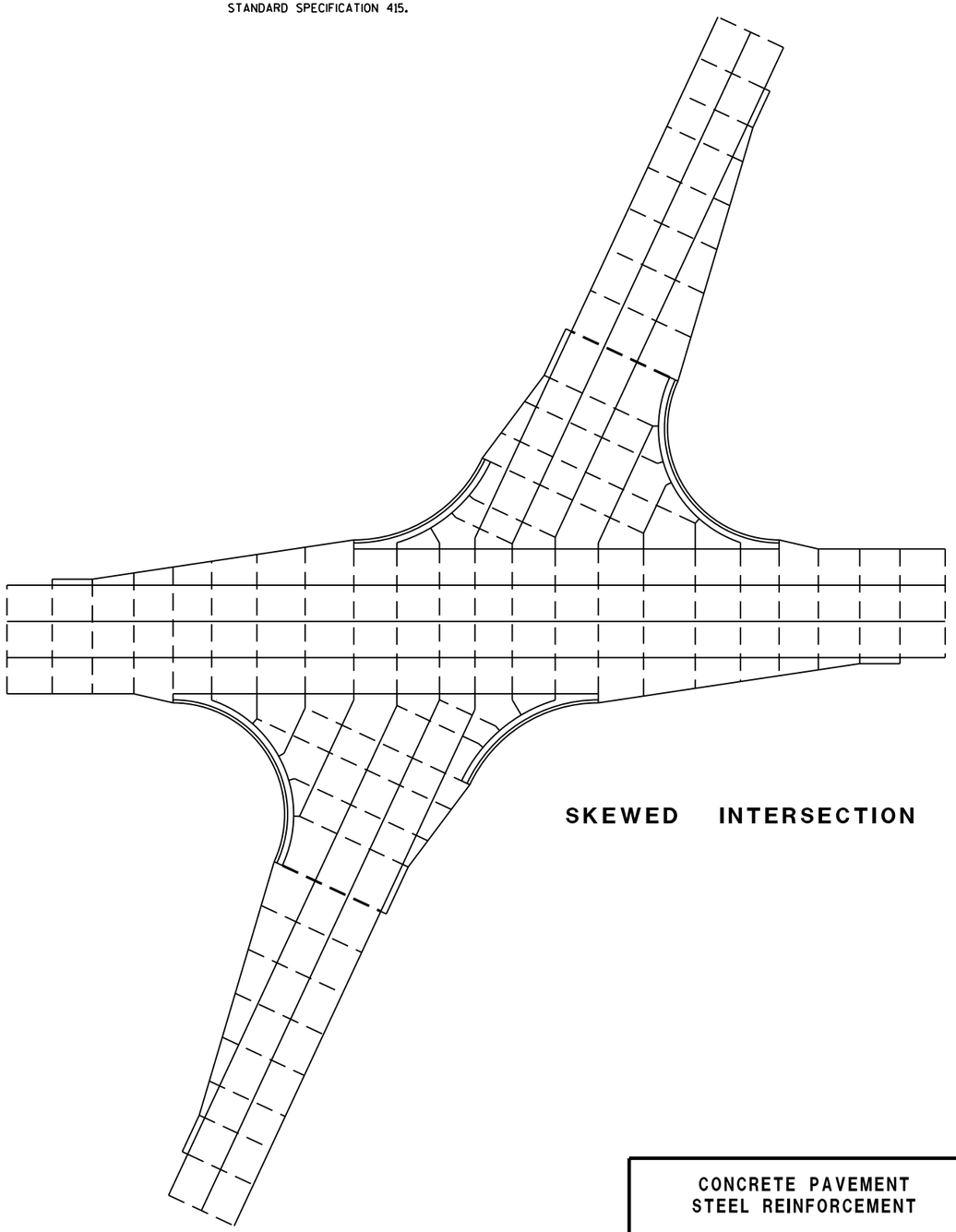
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 13 C 18-2b

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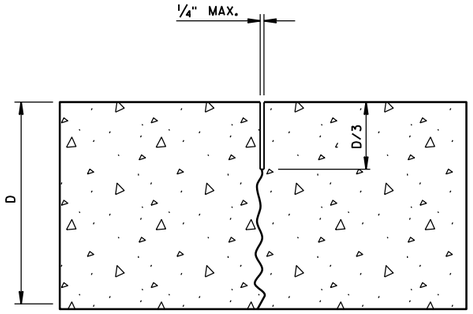
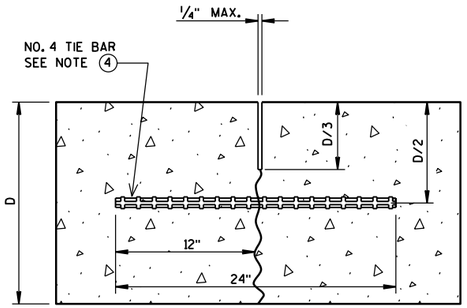
S.D.D. 13 C 18-2b



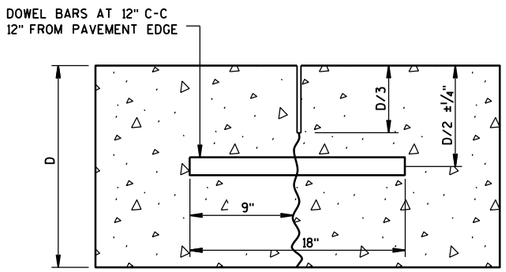
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

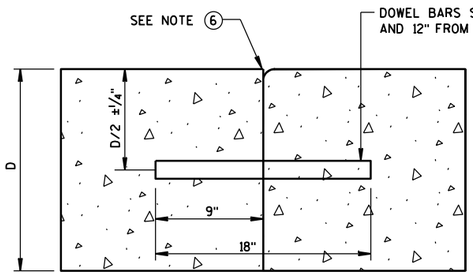
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO 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.



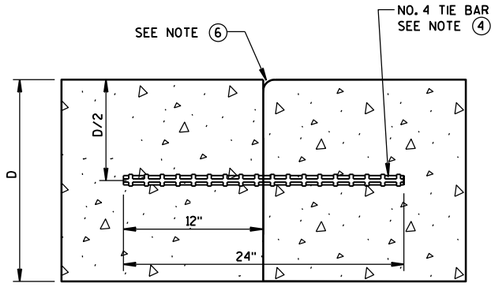
DOWELED-TRANSVERSE

CONTRACTION JOINTS

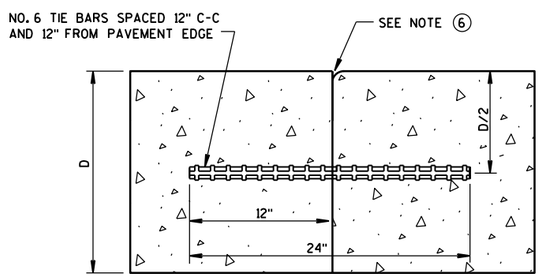
SEE NOTE (2)



DOWELED TRANSVERSE

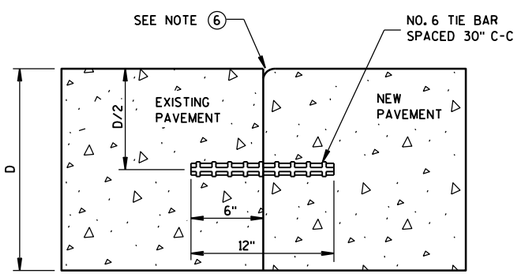


TIED LONGITUDINAL



TIED TRANSVERSE

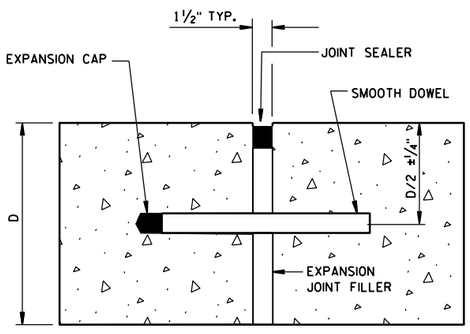
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

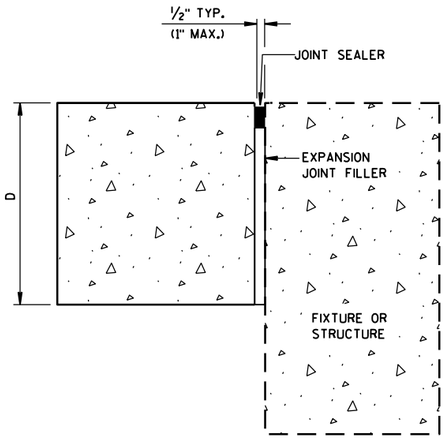
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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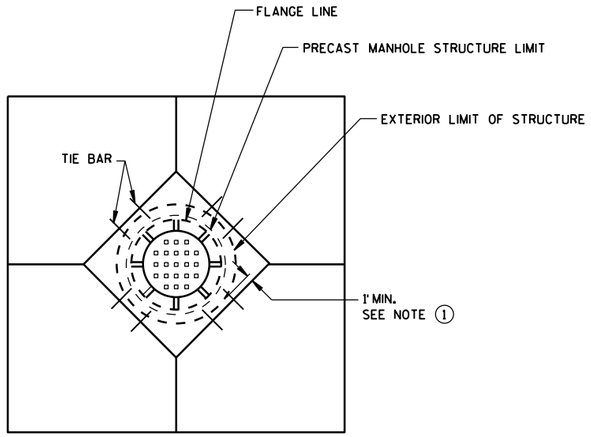
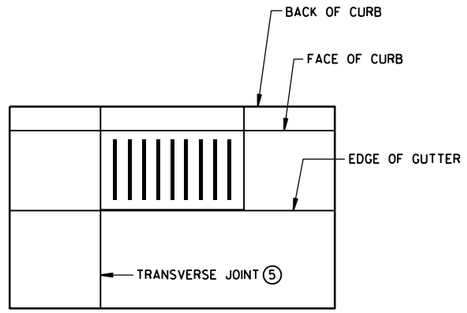
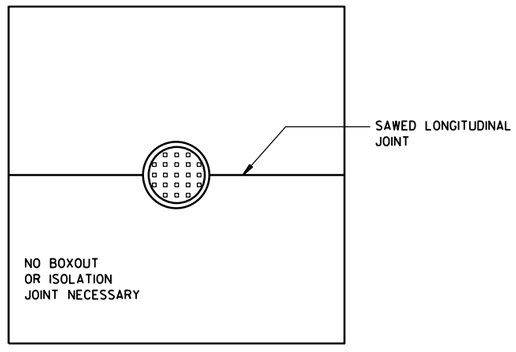
S.D.D. 13 C 18-2c



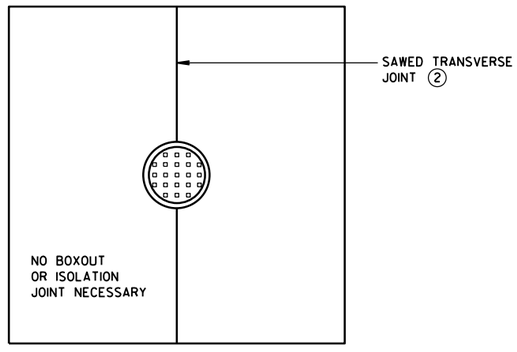
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



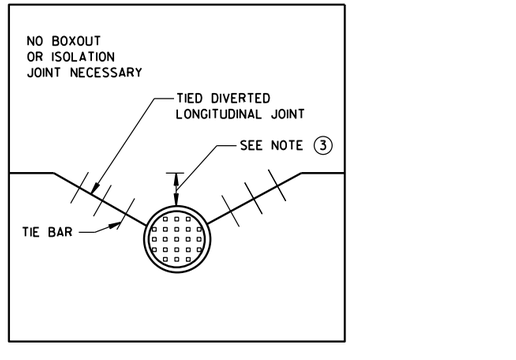
INLET WITH TRANSVERSE JOINT



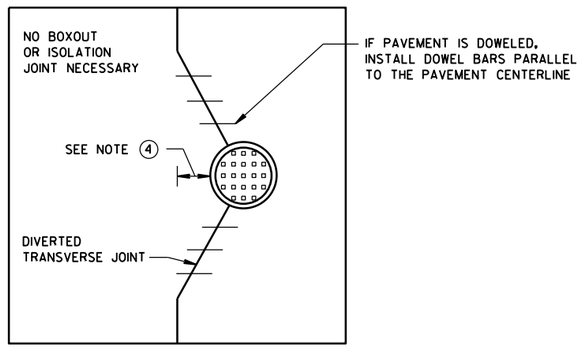
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013
DATE

/S/ Deb Bischoff
PAVEMENT POLICY & DE

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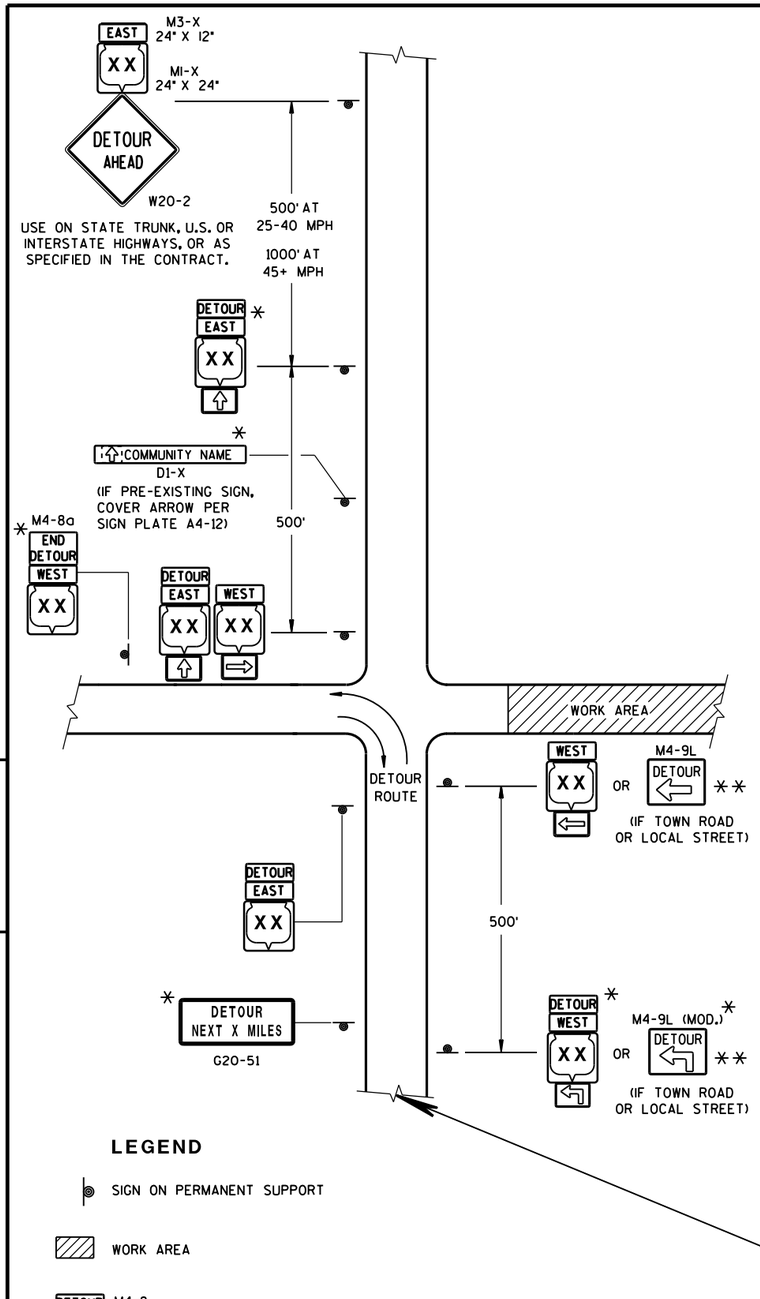
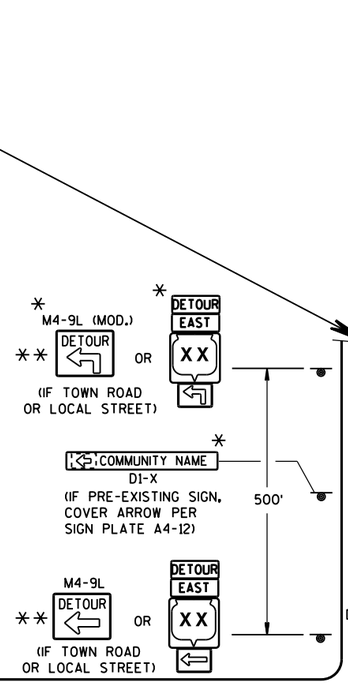
6

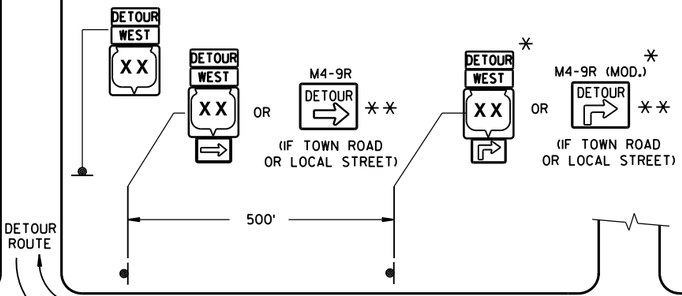
S.D.D. 13 C 18-2d

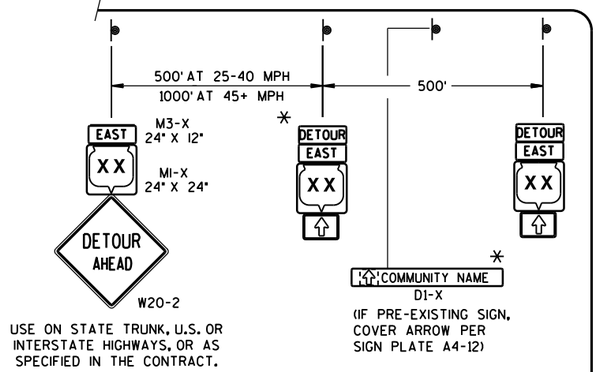
THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

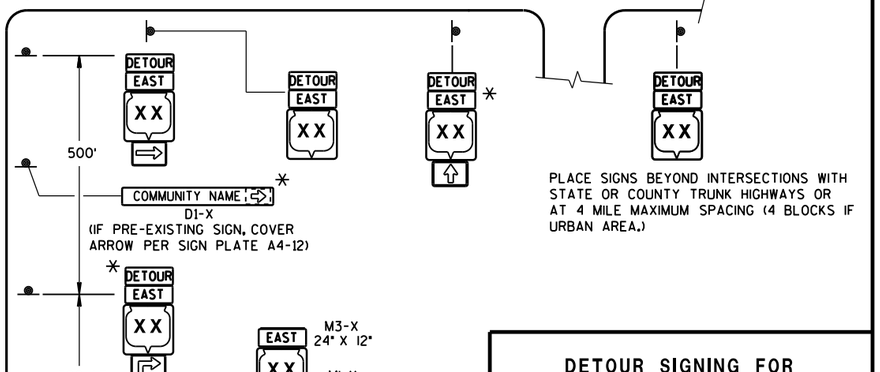


MATCH POINT









LEGEND

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

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

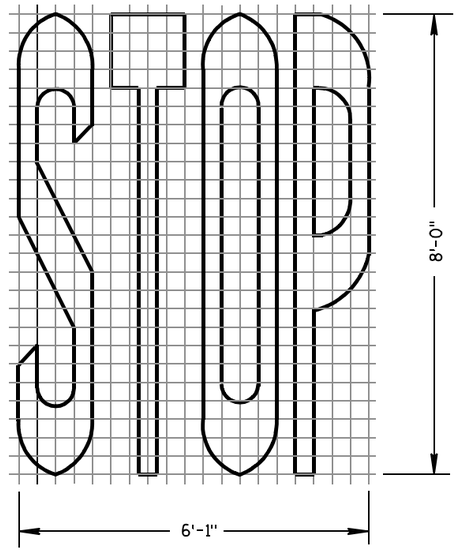
6

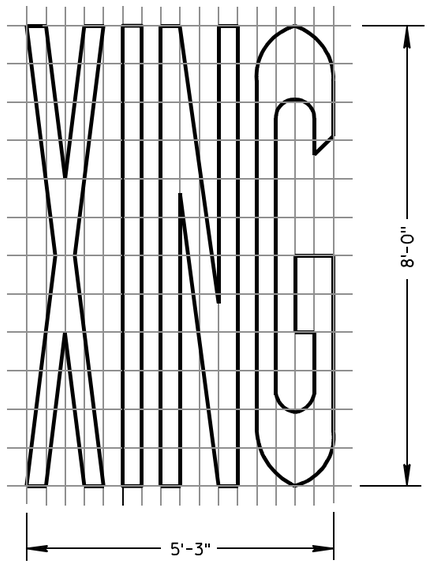
S.D.D. 15 C 2-5c

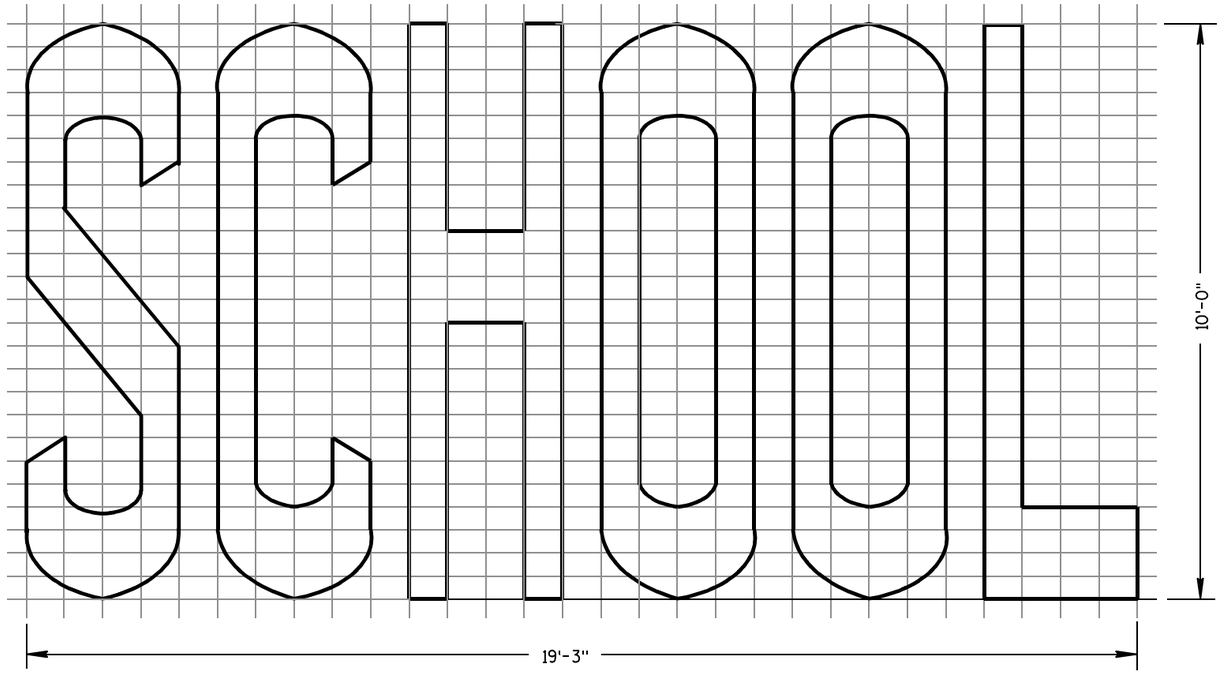
GENERAL NOTES

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

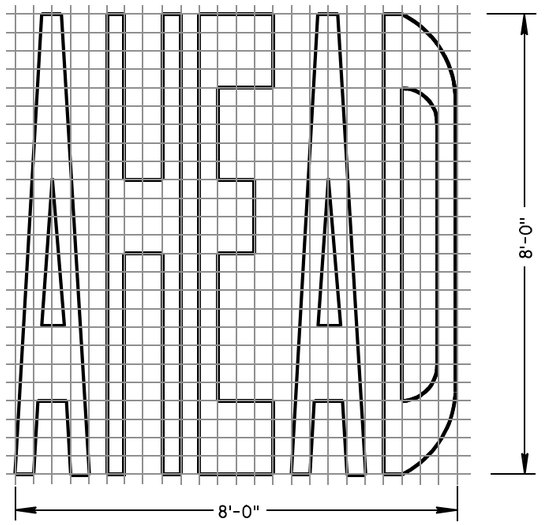
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

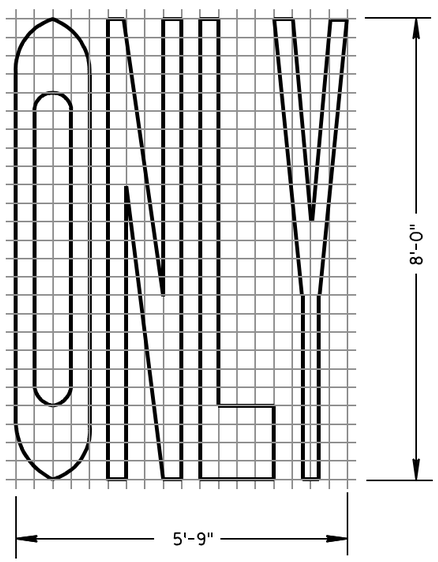


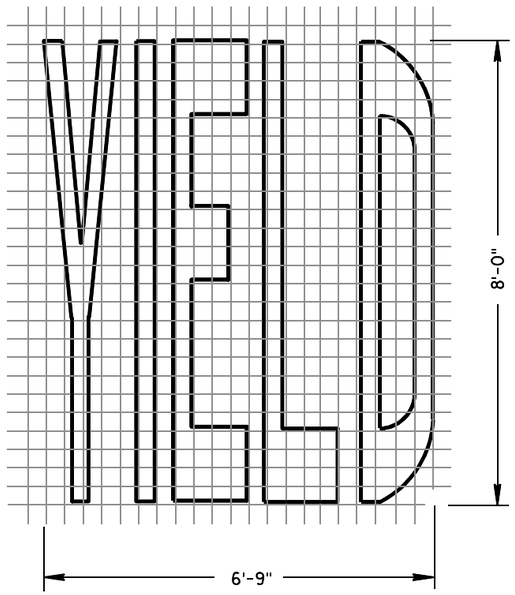


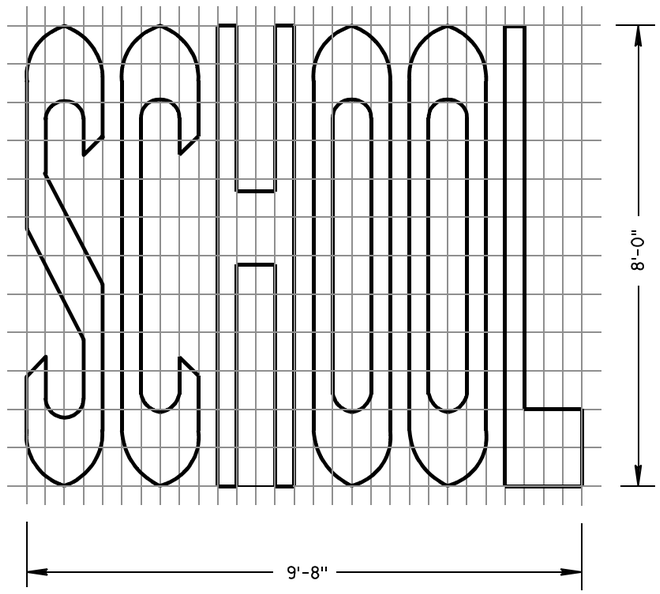


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 DATE — /S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER — IGN

FHWA

6

S.D.D. 15 C 7-12b

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S.D.D. 15 C 7-12b

GENERAL NOTES

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

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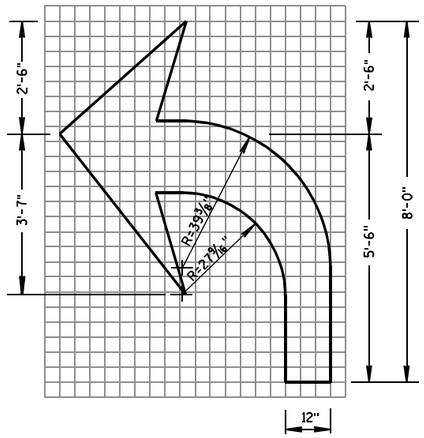

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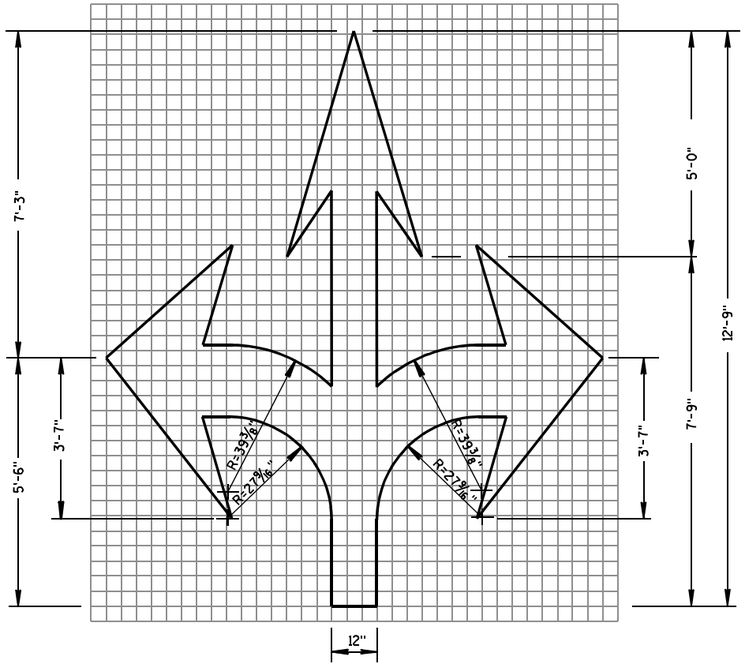

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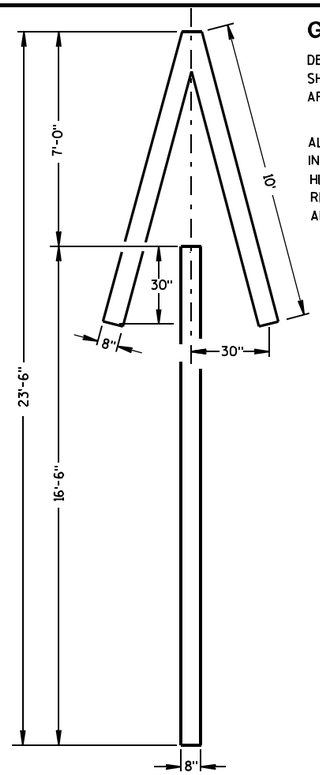

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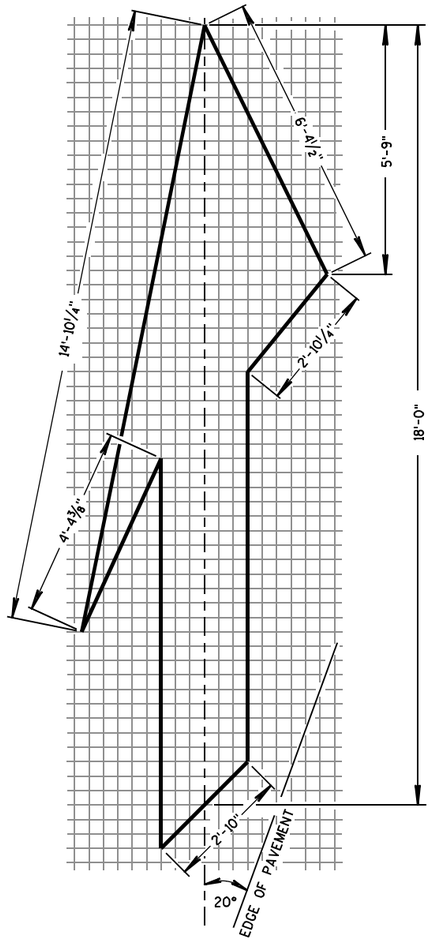
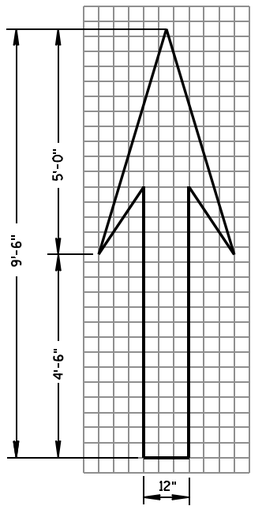
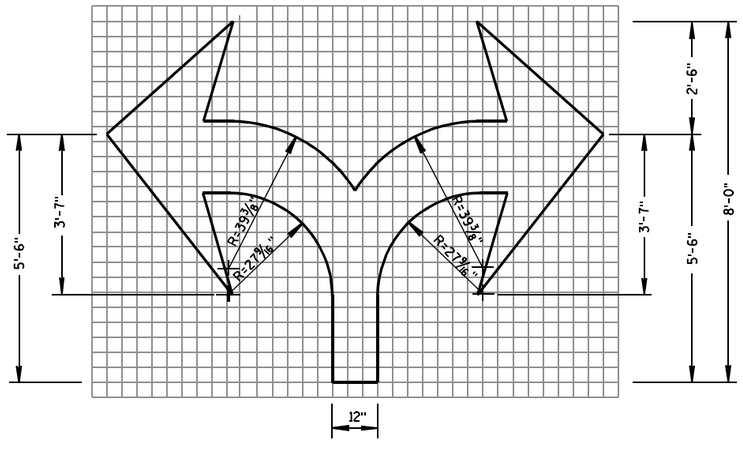


TYPE 5 LANE DROP ARROW



TYPE 1



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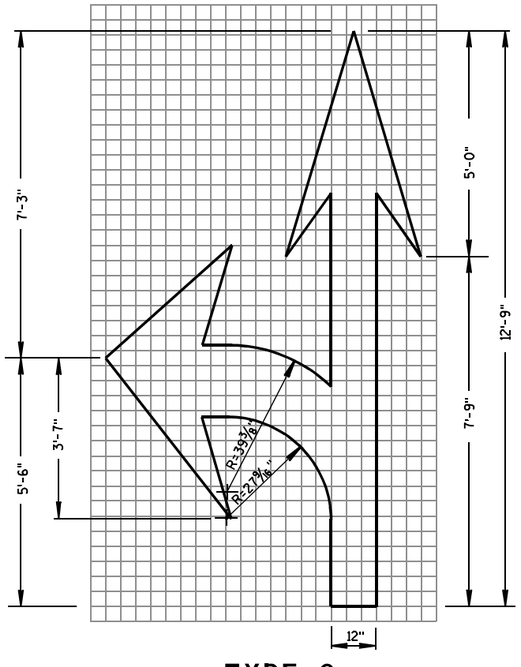

TYPE 3

PAVEMENT MARKING ARROWS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/1/11 DATE	/S/ Thomas N. Nathaham STATE TRAFFIC ENGINEER
FHWA	

6

S.D.D. 15 C 7-12c

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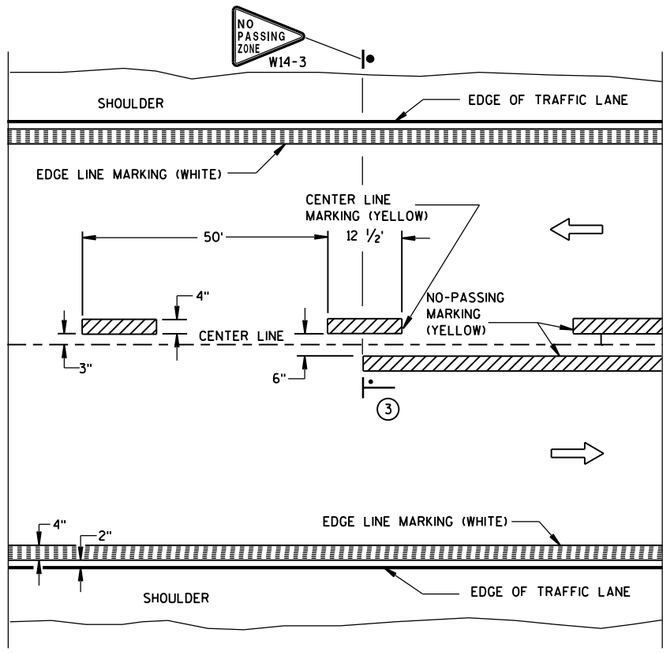
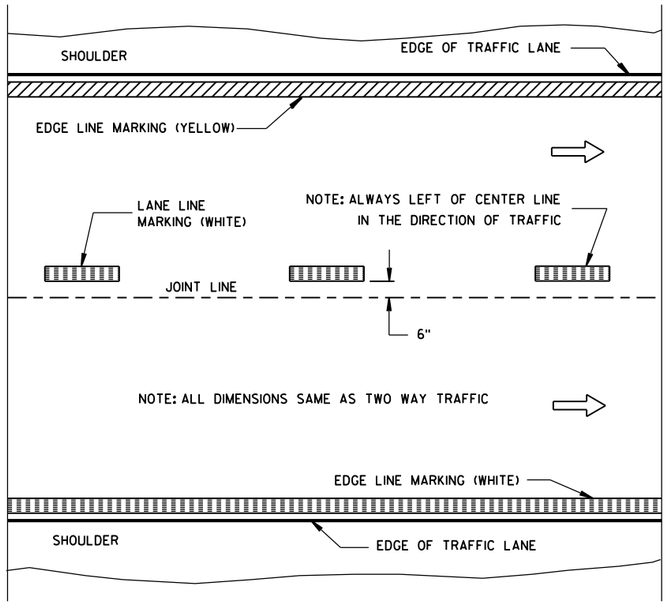
S.D.D. 15 C 7-12c

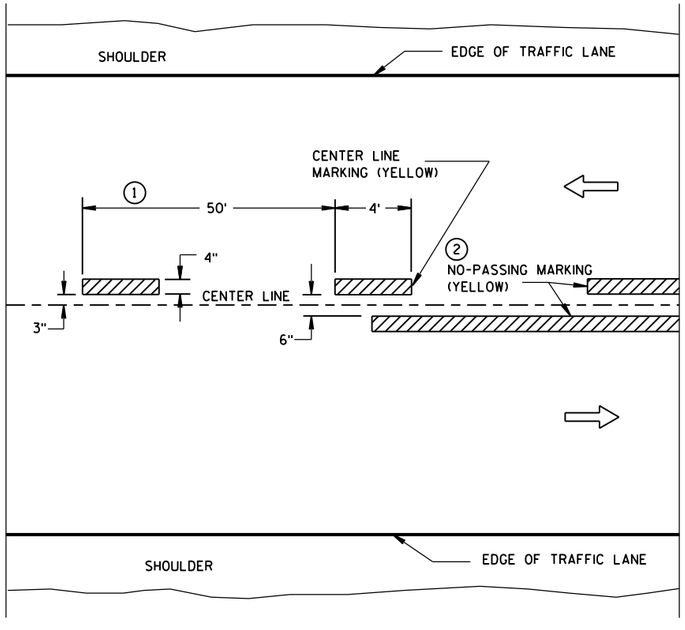


TWO WAY TRAFFIC

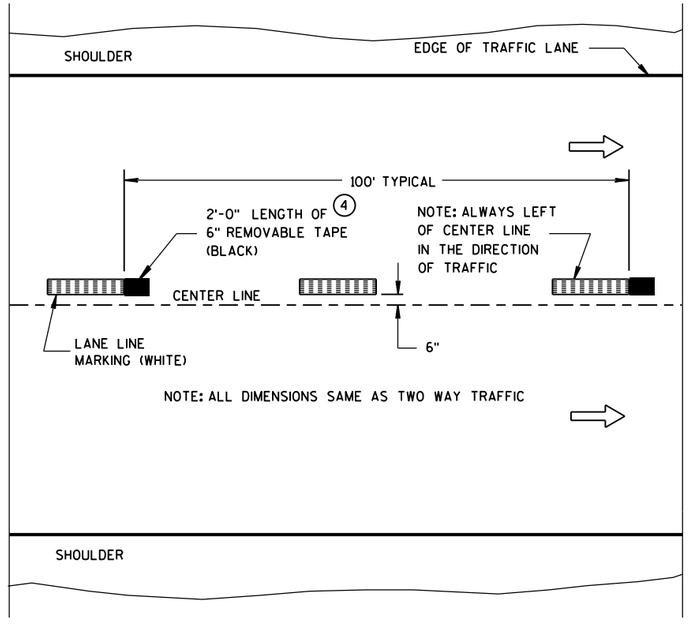


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

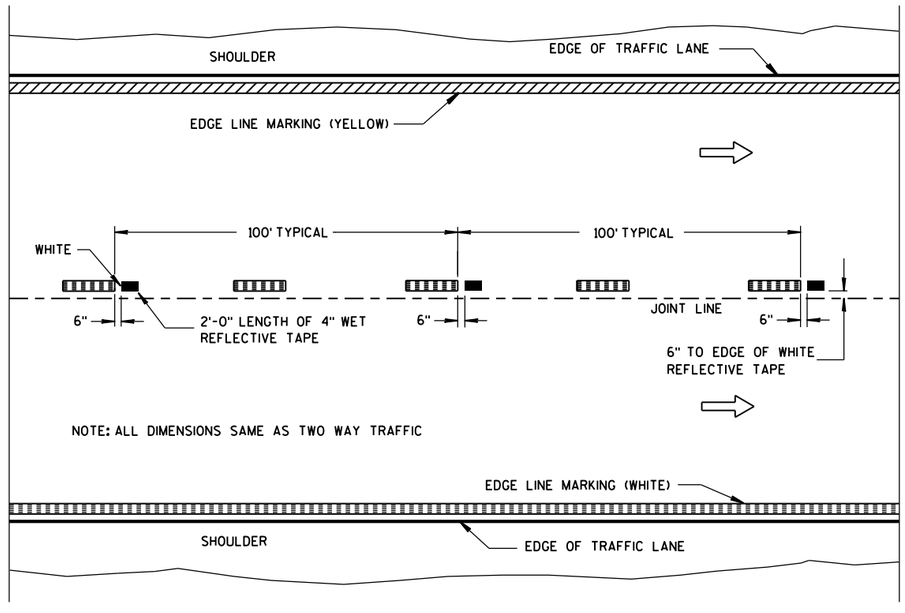
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

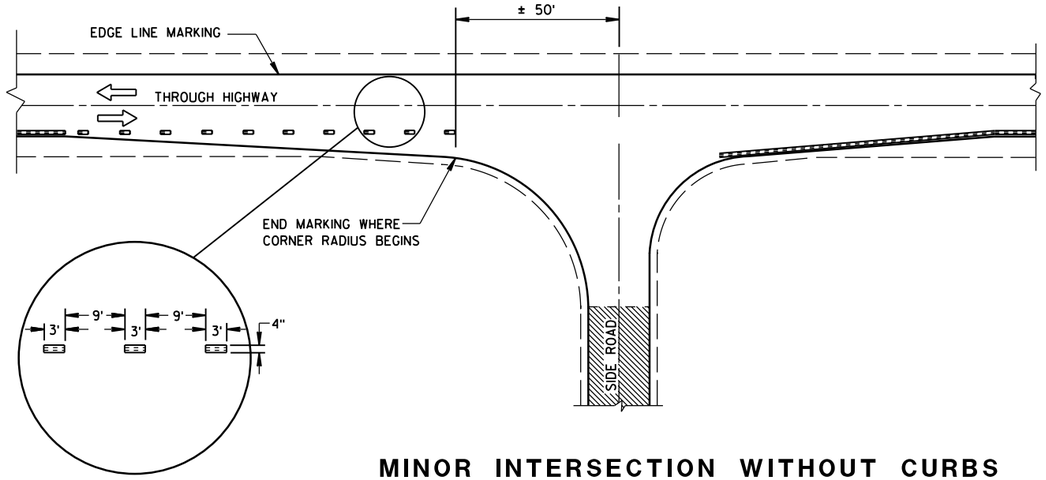
FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

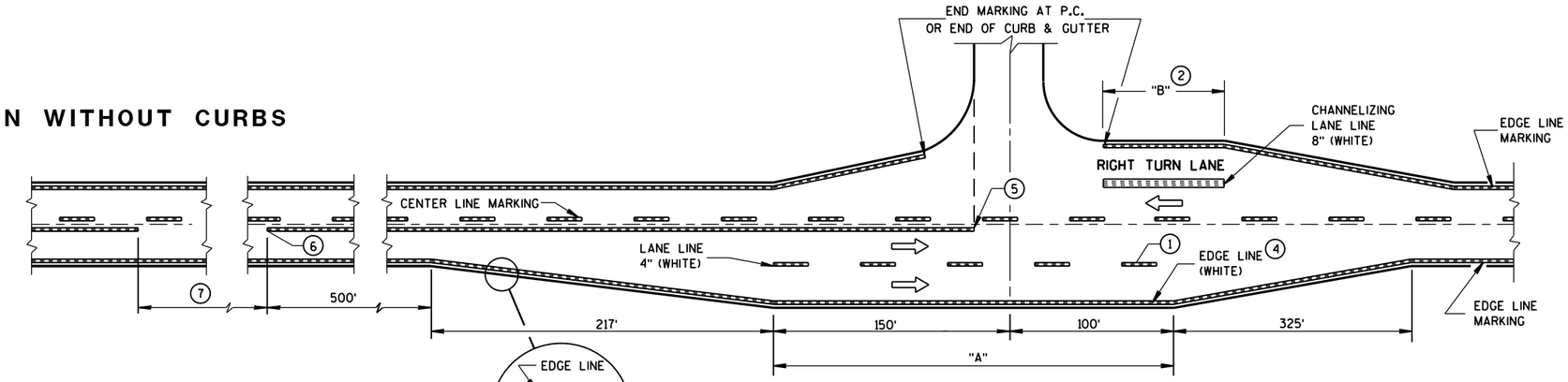
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

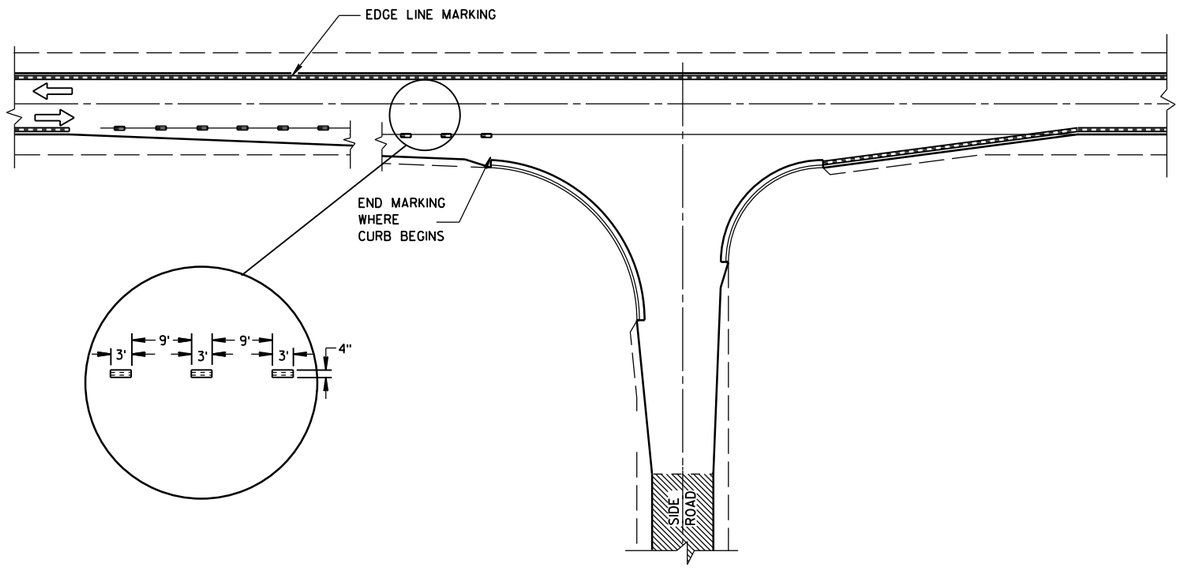
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



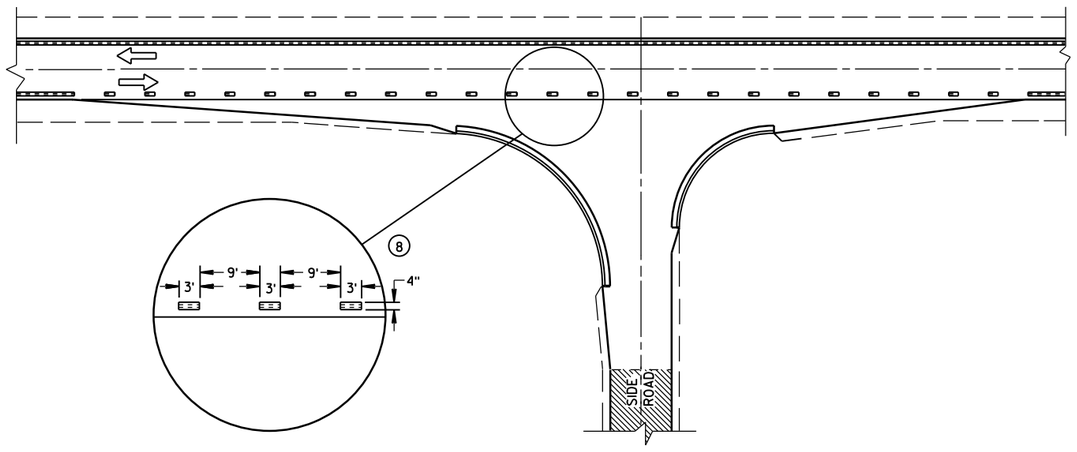
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-16b

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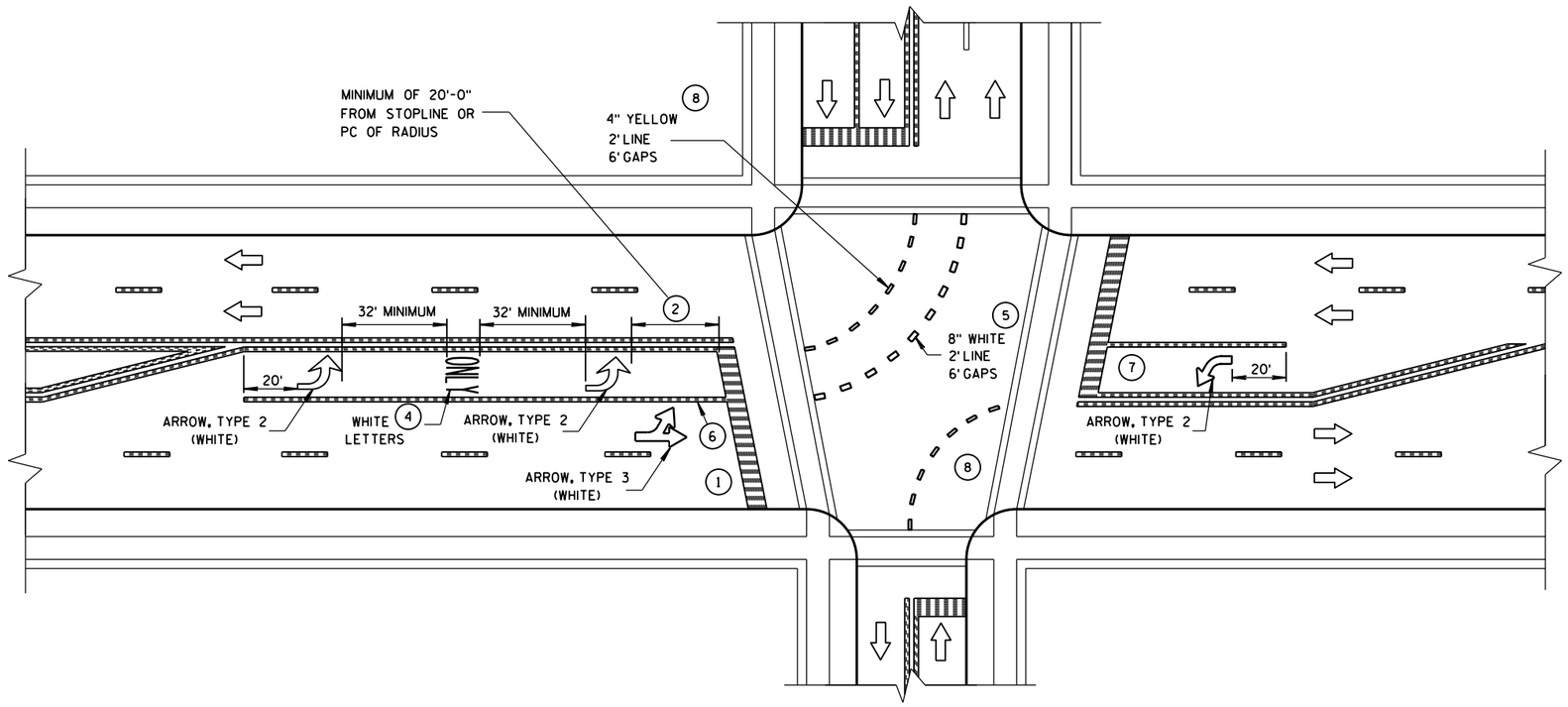
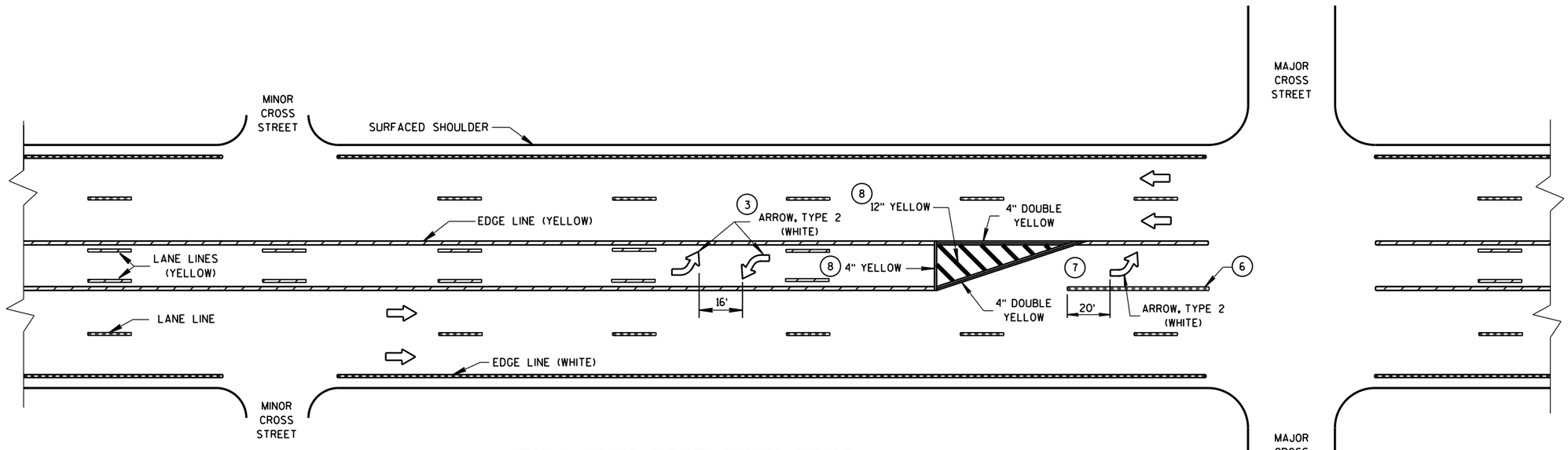
S.D.D. 15 C 8-16b



GENERAL NOTES

1. STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
3. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
5. 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
6. 8" WHITE
7. ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
8. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

PAVEMENT MARKING (LEFT TURN LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 8-16e

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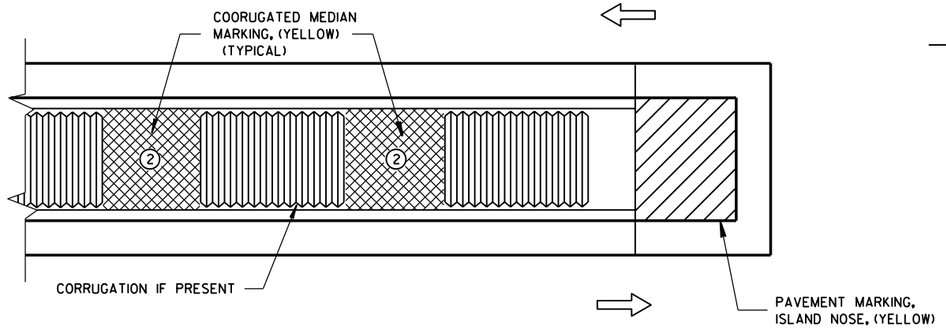
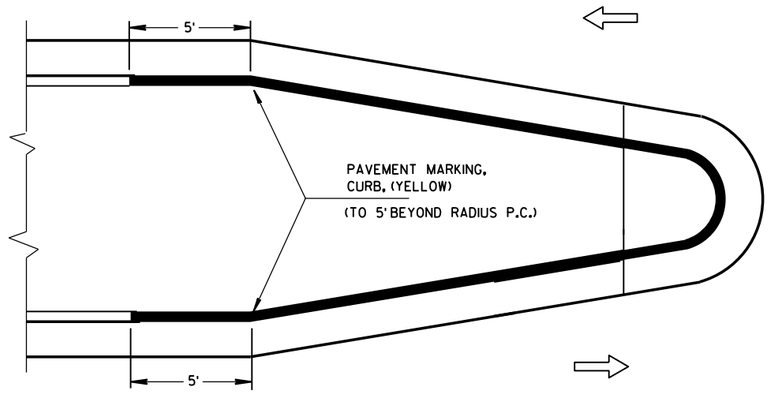
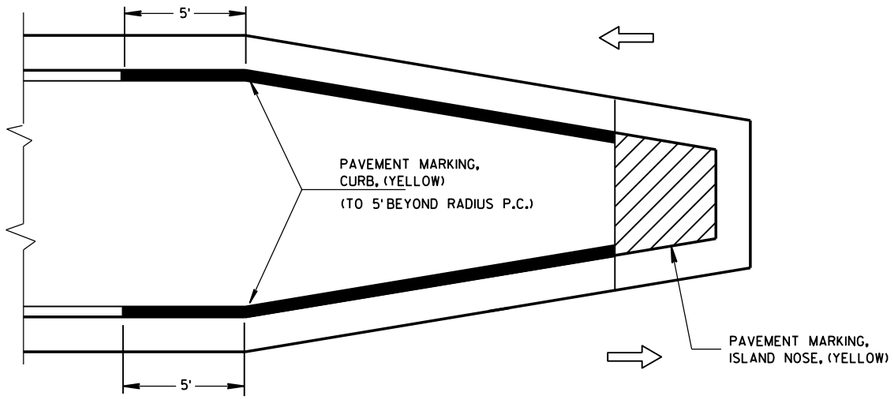
S.D.D. 15 C 8-16e



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

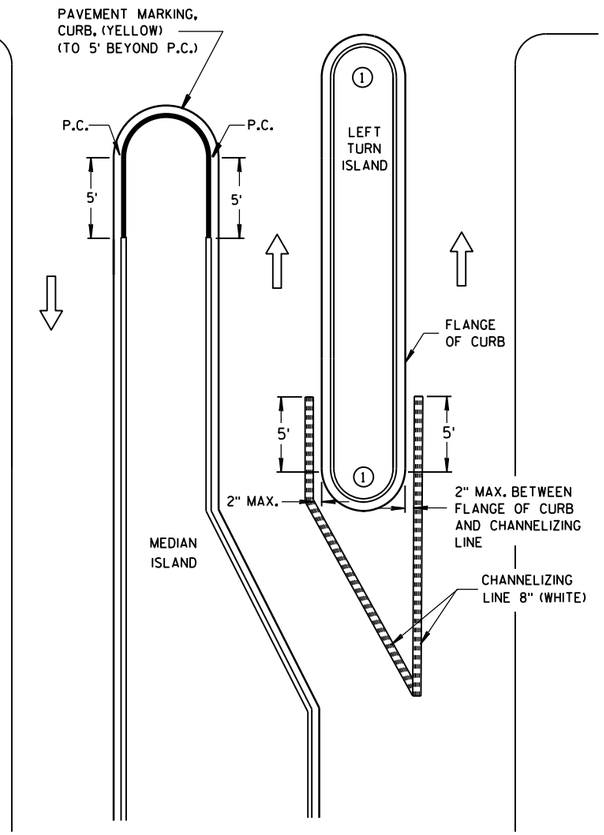


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

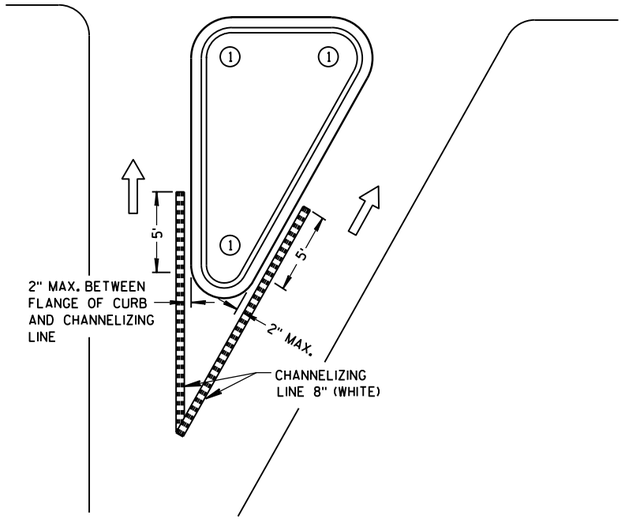


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.

2. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND

LEGEND

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

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 15 C 8-16f

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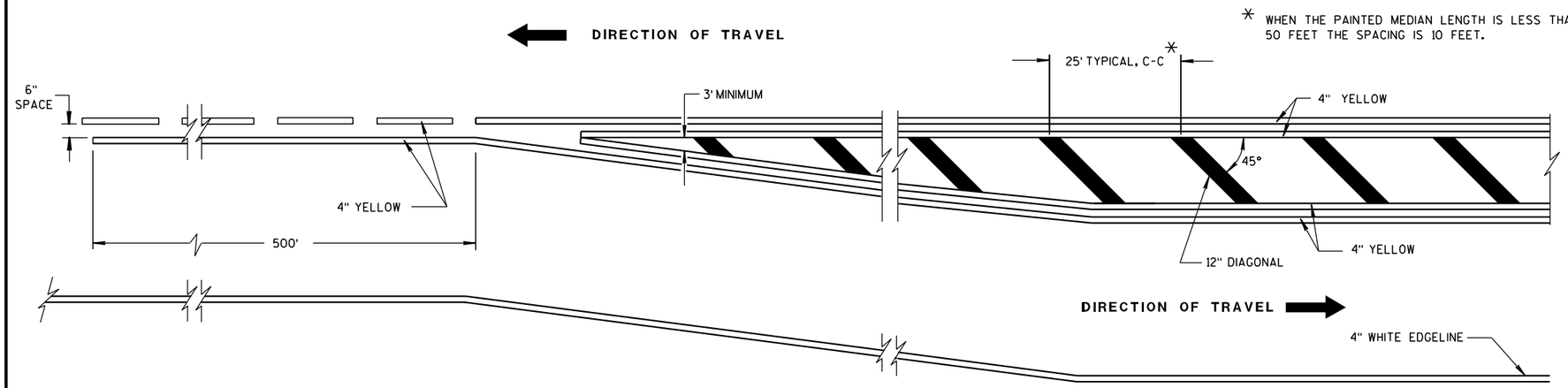
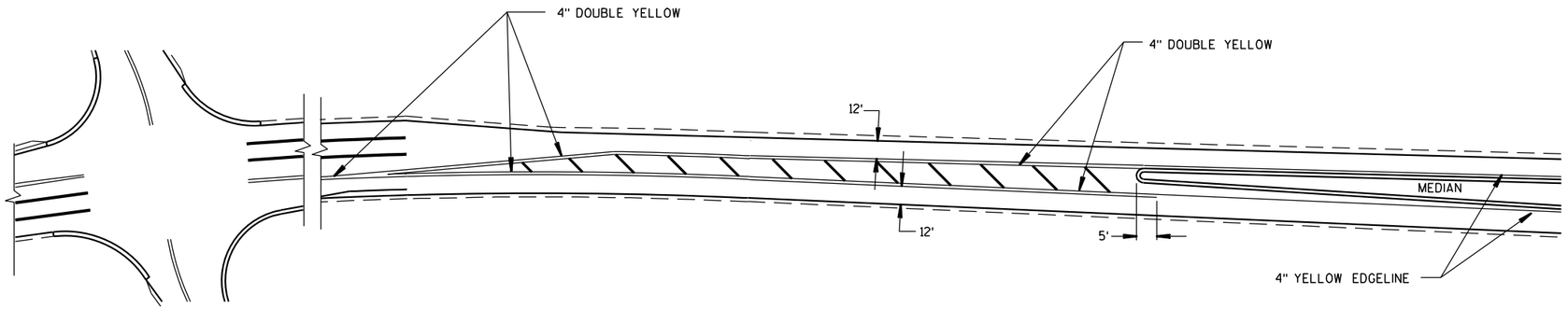
S.D.D. 15 C 8-16f



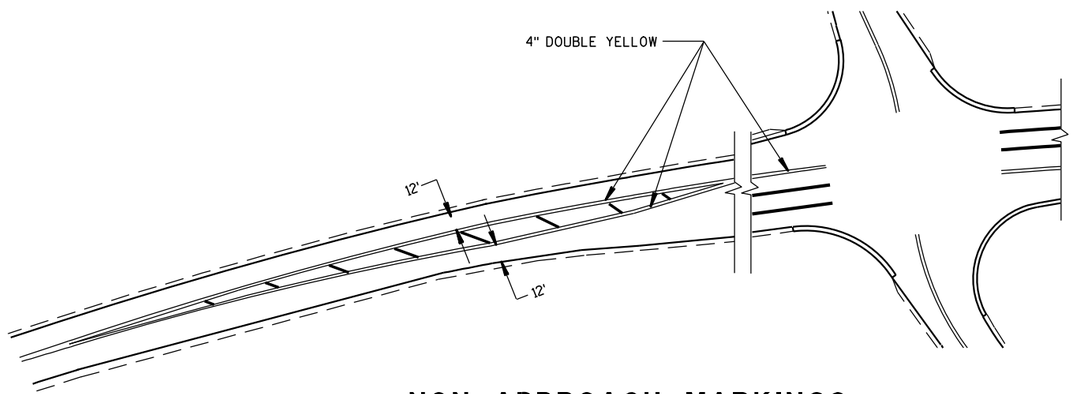
MEDIAN ISLAND DETAIL

GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-5-09 DATE	/S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER
FHWA	

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S.D.D. 15 C 18-3

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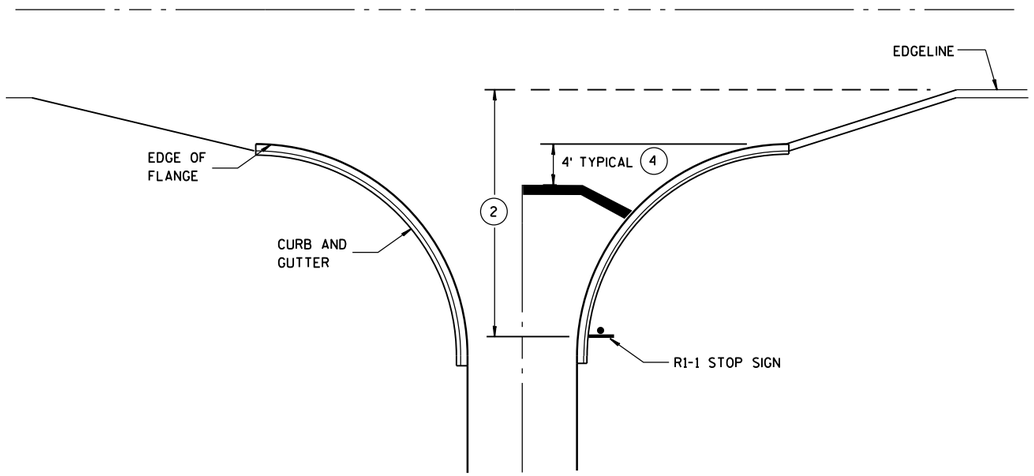
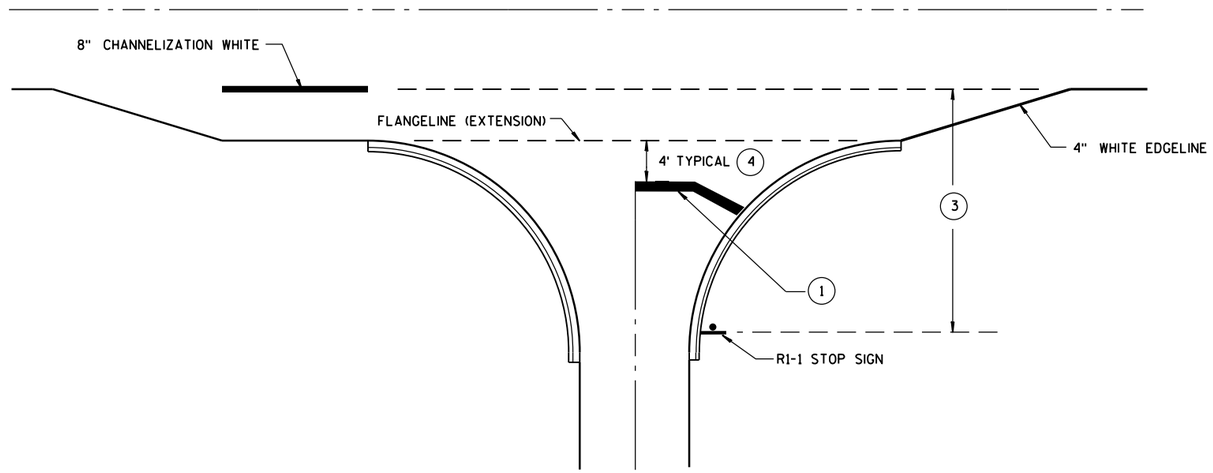
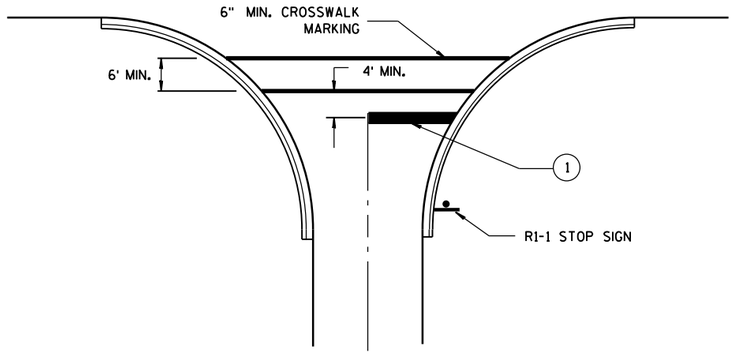
S.D.D. 15 C 18-3



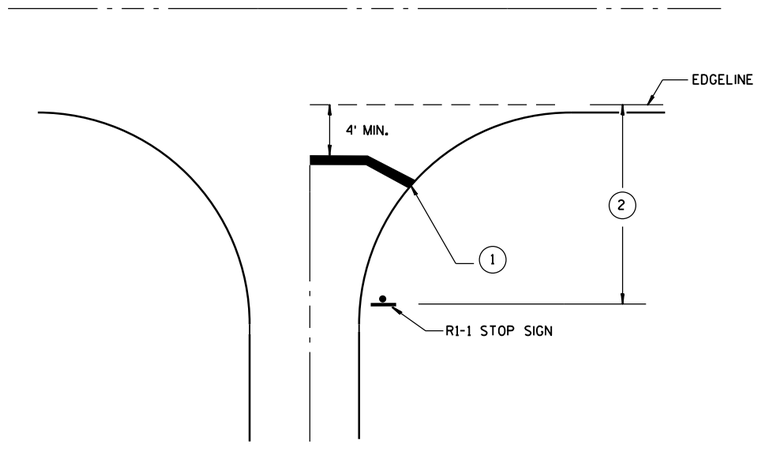
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

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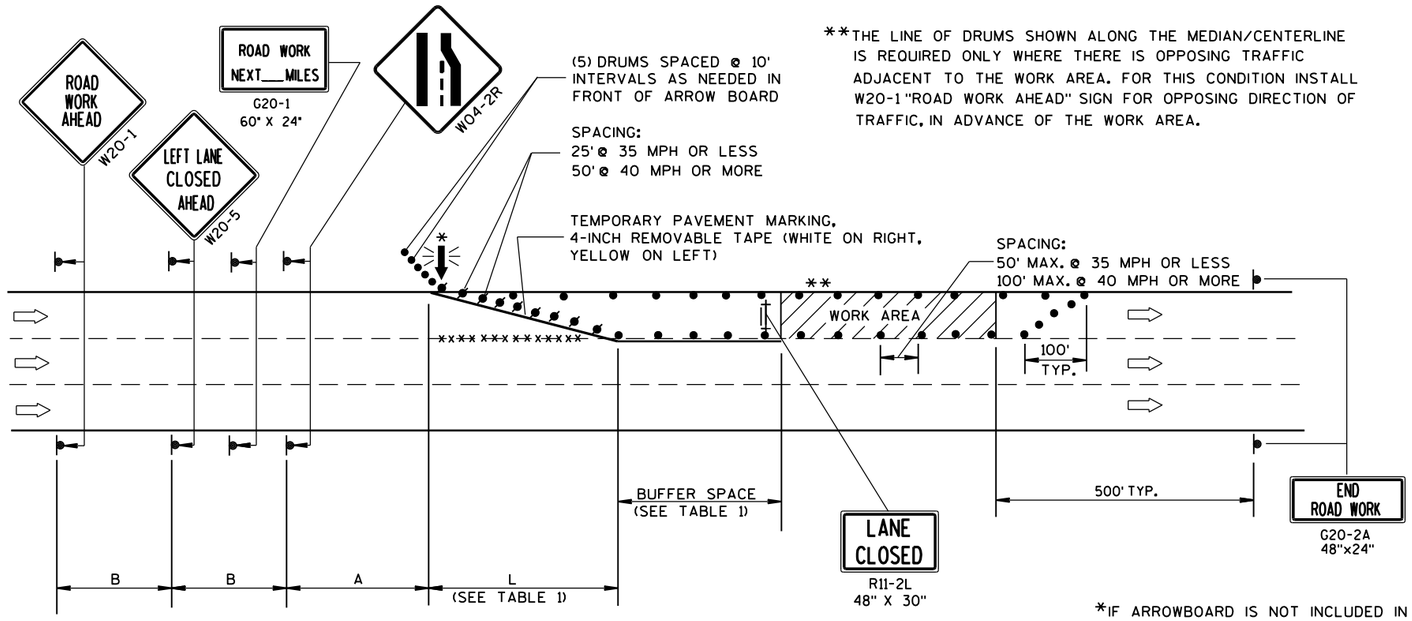
S.D.D. 15 C 33-1



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

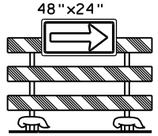


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

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

GENERAL NOTES

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

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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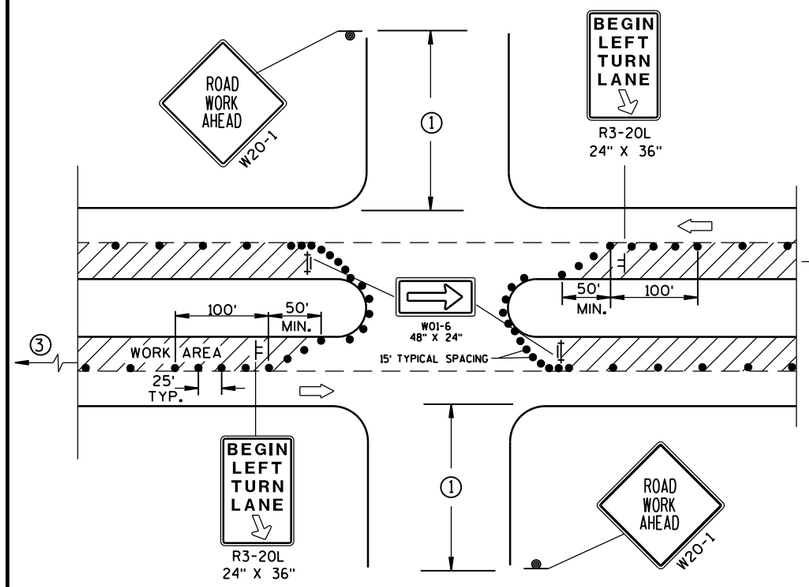
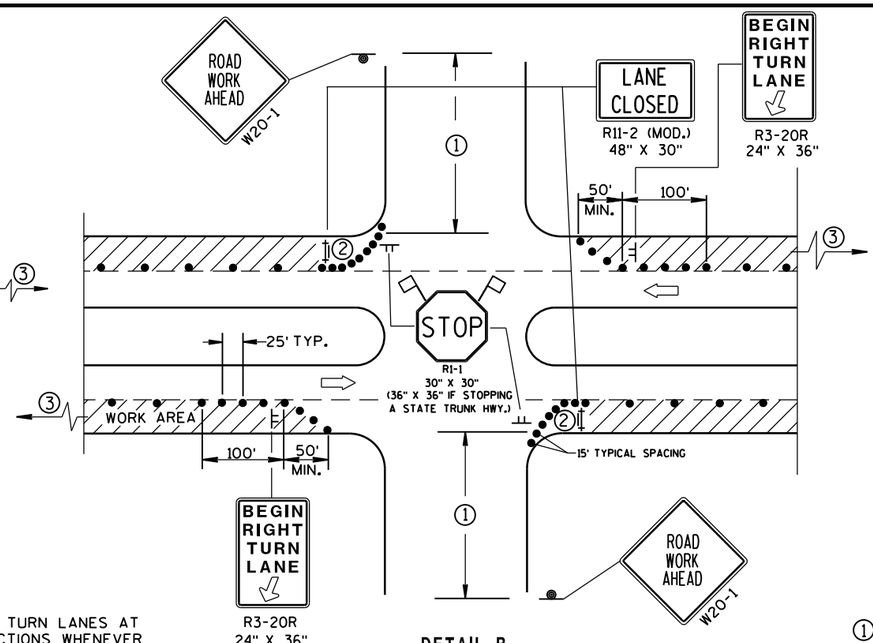
S.D.D. 15 D 20-2



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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

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

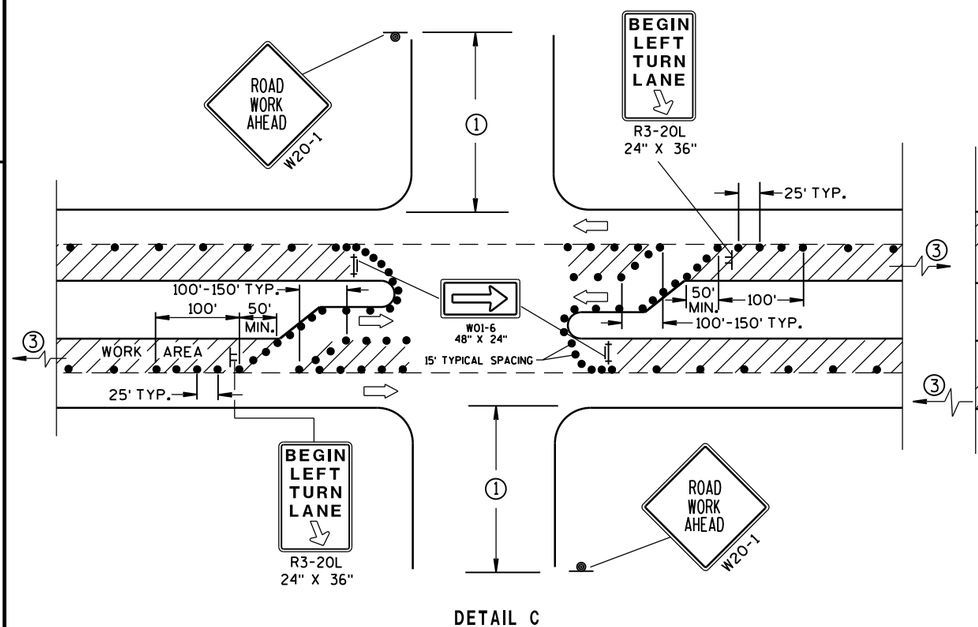
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.

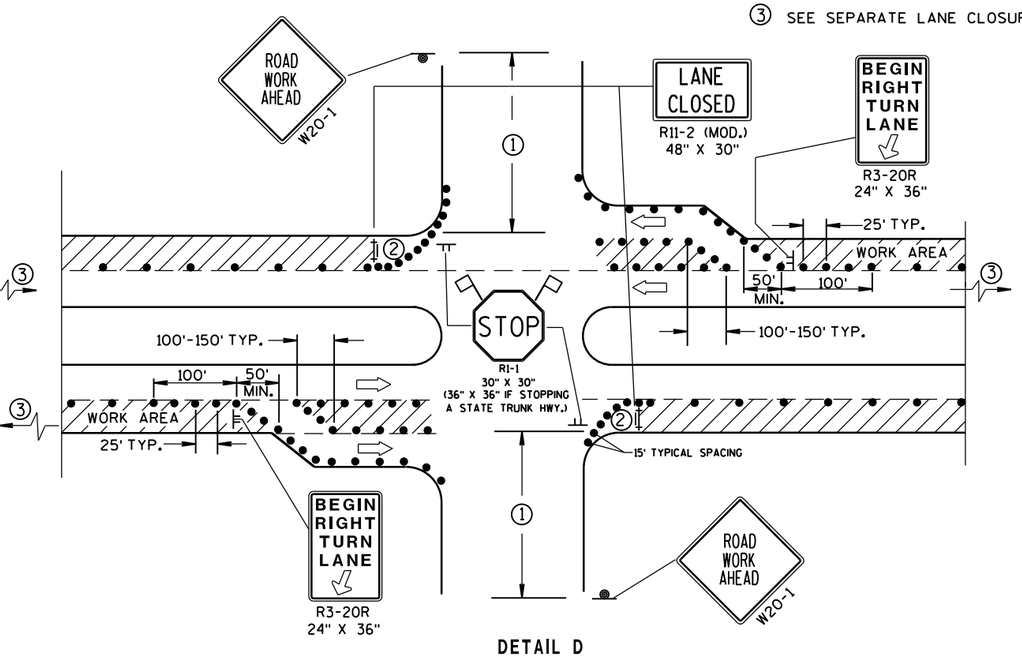
② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



DETAIL D

FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 D 21-3

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

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

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

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

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

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

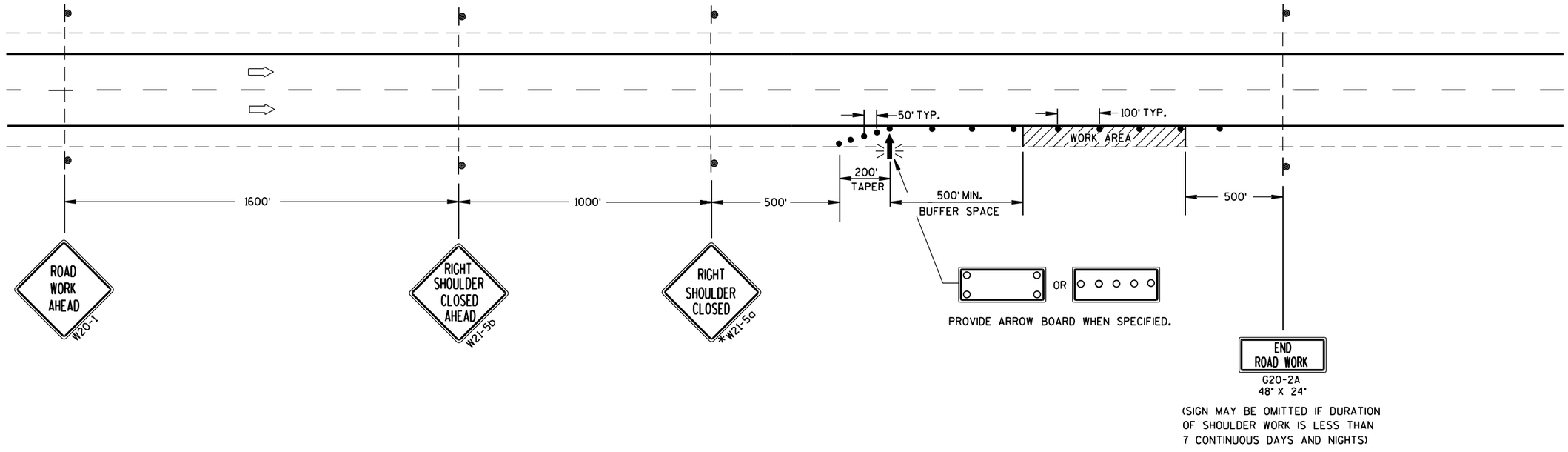
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 27-2

GENERAL NOTES:

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

2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".

3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE "TYPE SH REFLECTIVE SHEETING".

4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.

5. TYPE II SIGNS ALL UPPERCASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E". ALL LOWERCASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E".

6. TYPE I SIGNS ALL UPPERCASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E MODIFIED". ALL LOWER CASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E MODIFIED". ALL CAP WORDS ARE "SERIES E".

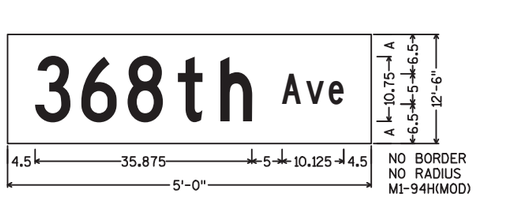
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.

8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.

9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.

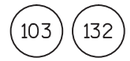
10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE "SERIES E" PER PLATES A11-7 AND A11-10.

11. DO NOT SCALE.



TYPE C LETTERS

NO BORDER
NO RADIUS
M1-94H(MOD)



A=3.625"

7

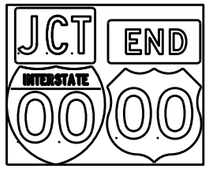
7

SHEET 1 OF 1

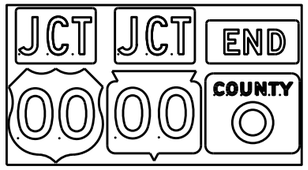
PROJECT NO:3700-20-71	HWY: STH 50	COUNTY:KENOSHA	SIGNING DETAIL - TYPE II SIGNS	SCALE: 0 1/2" 1"	SHEET 95	E

TYPICAL ASSEMBLIES

J1-1

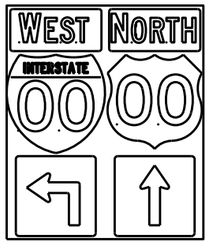


J1-2

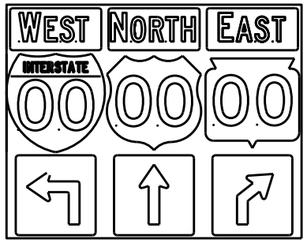


J1-3

J2-1



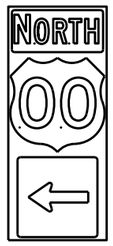
J2-2



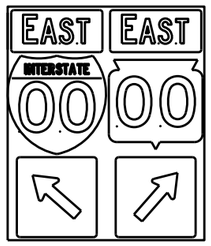
J2-3

JV

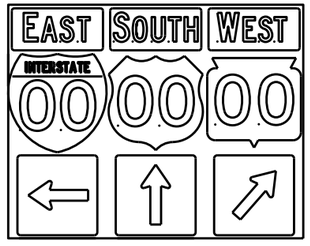
(Typical Vertical J-Assembly
See Note 10 and 11)



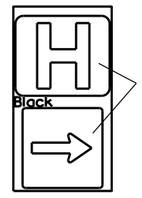
J3-1



J3-2



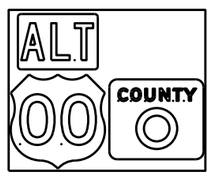
J3-3



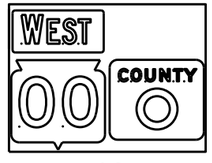
Blue Background

JH-1

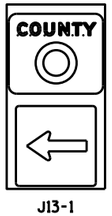
J4-1



J4-2



J4-2



J13-1

J12-1

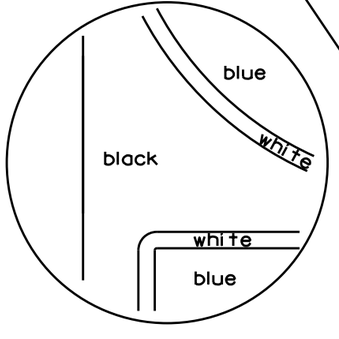
J32-1

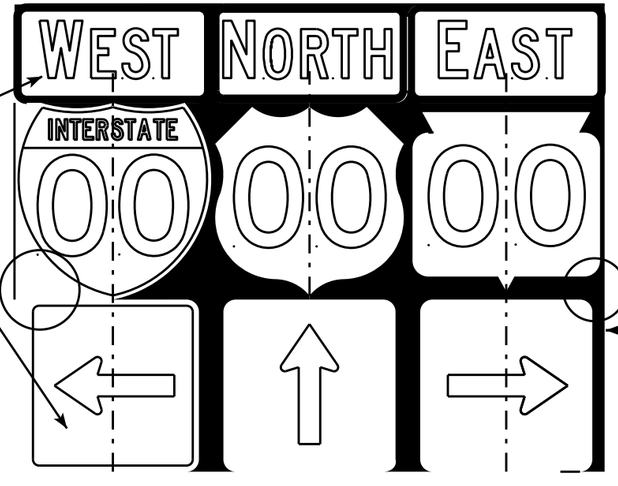
J33-1

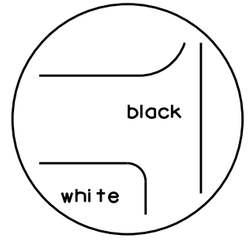
J23-1

J22-1

[blue background with interstate]







[black background]

NOTES

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

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

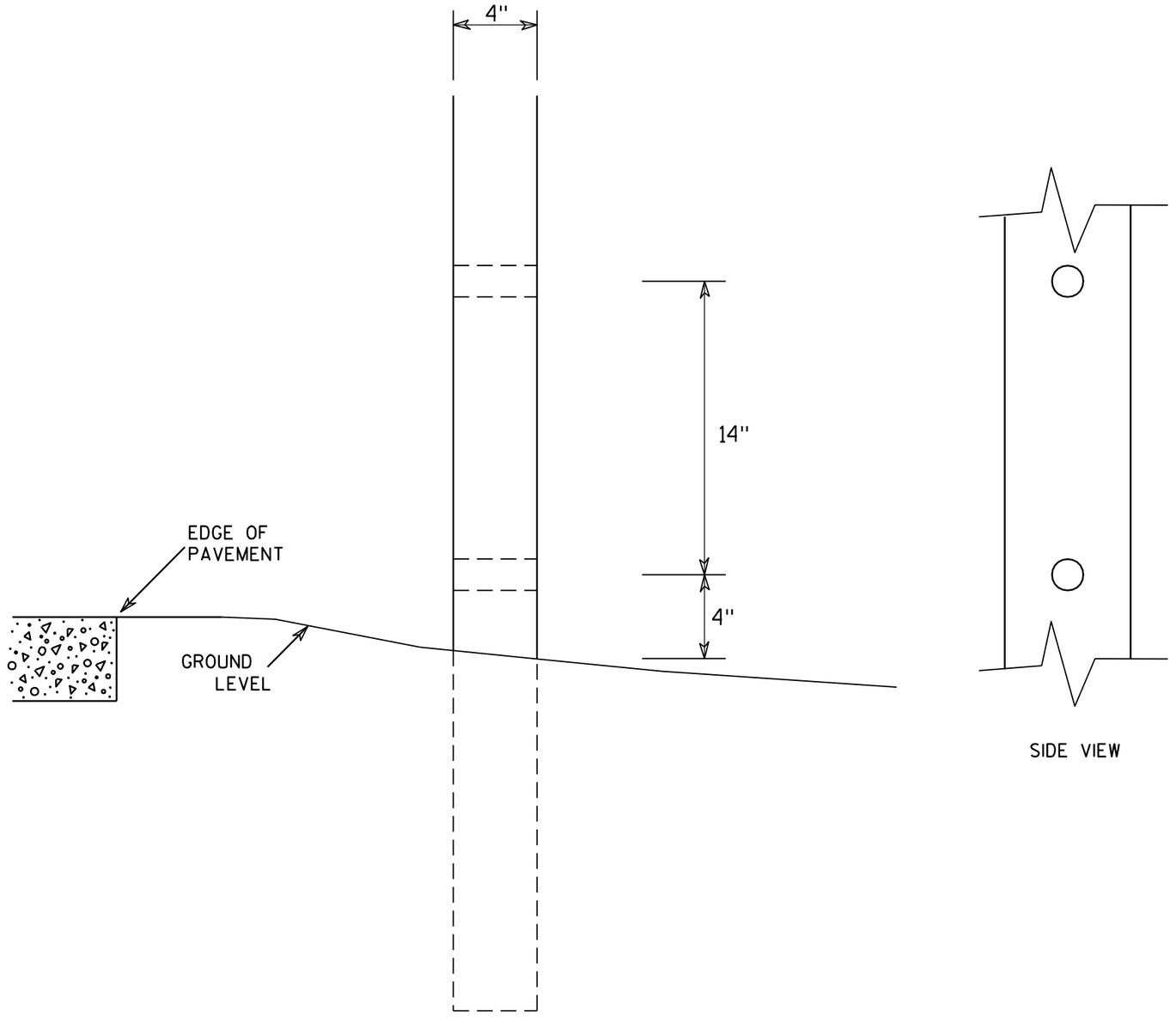
DATE 2/06/14 PL... A2-1S.8

PROJECT NO:

SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

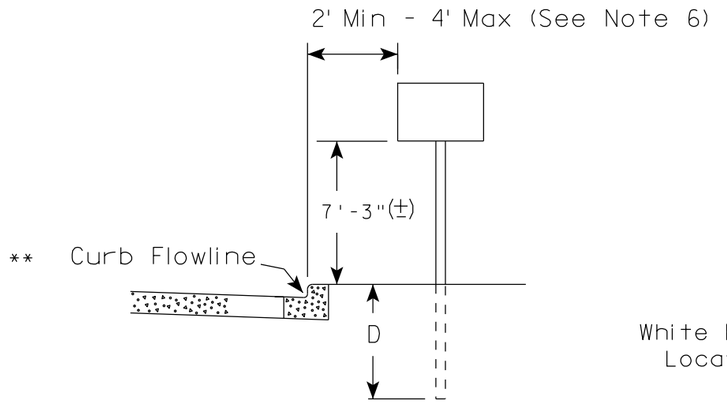
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

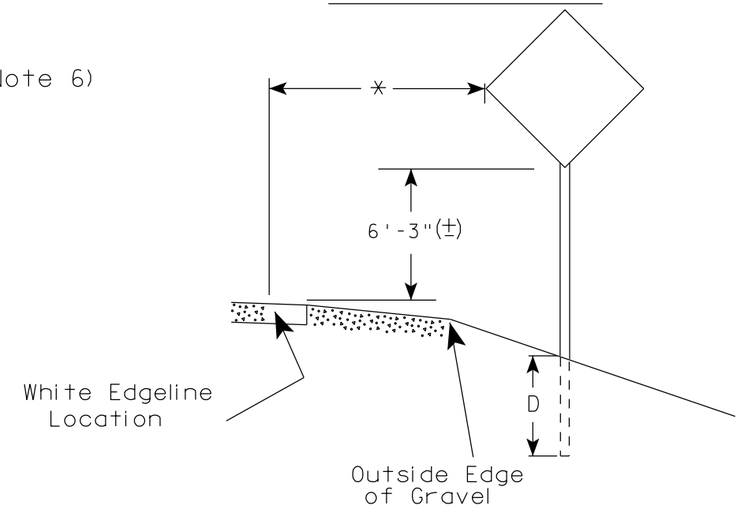
DATE 3/27/97 PLATE NO. A4-11.2

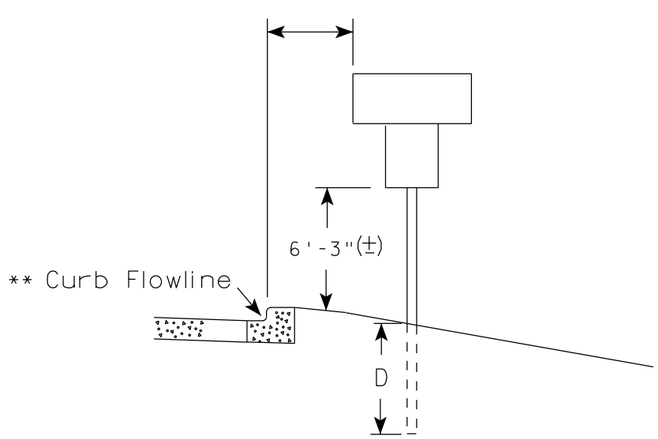
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 97	E

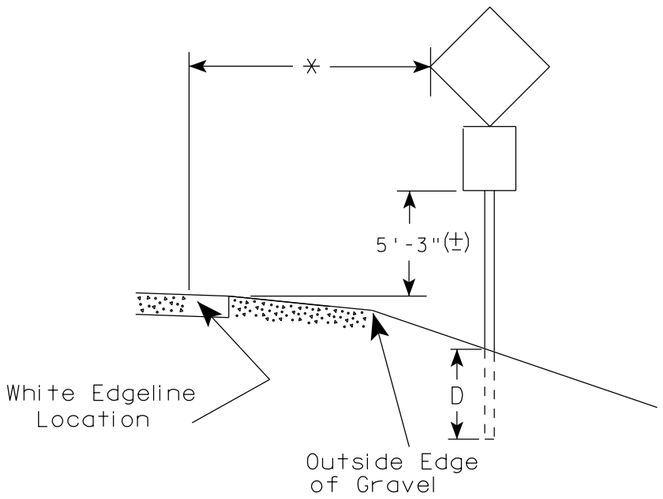
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

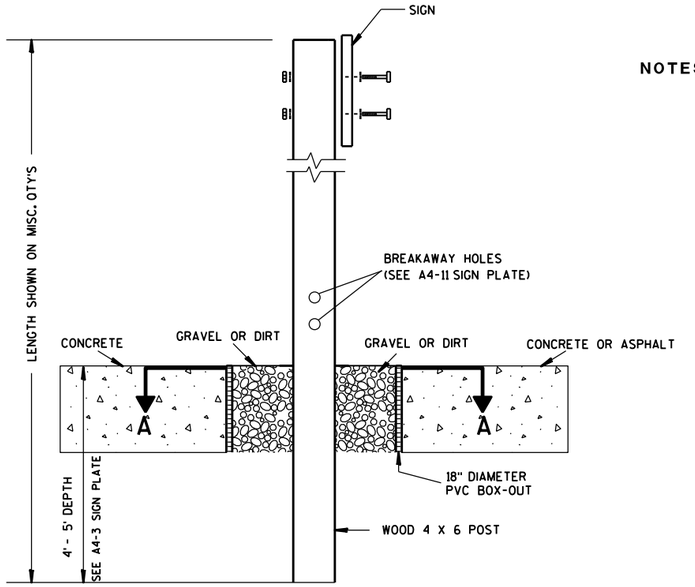
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

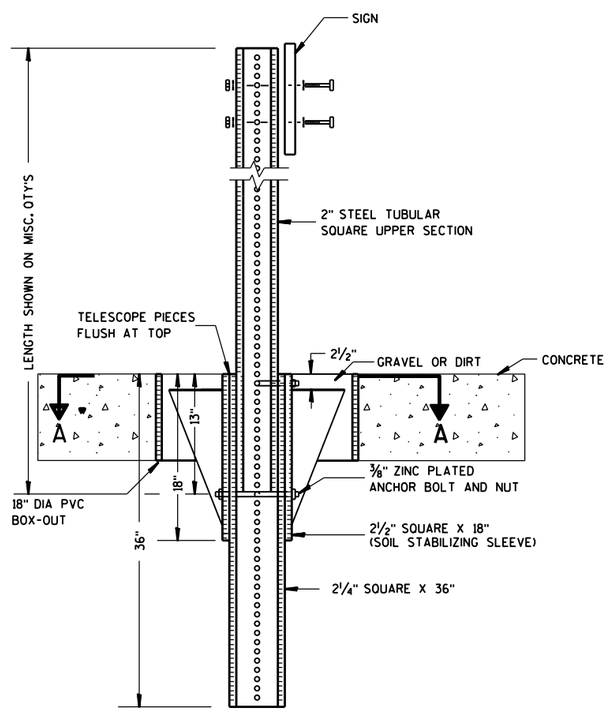
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

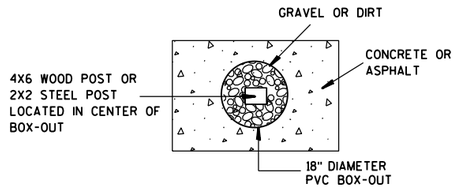
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

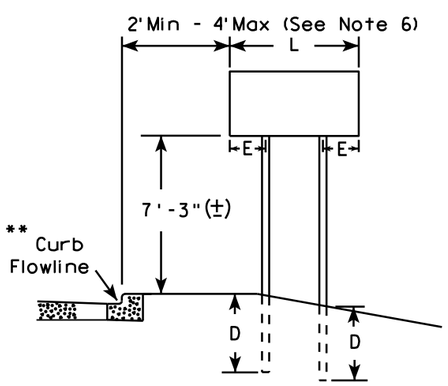
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

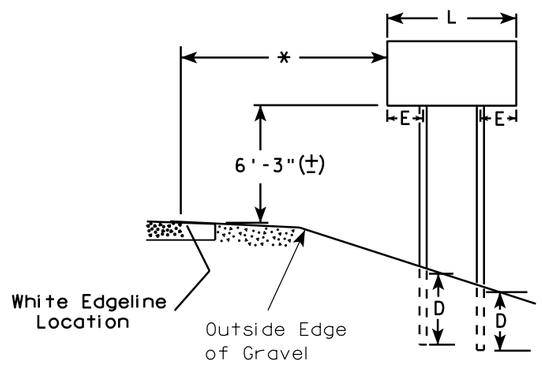
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

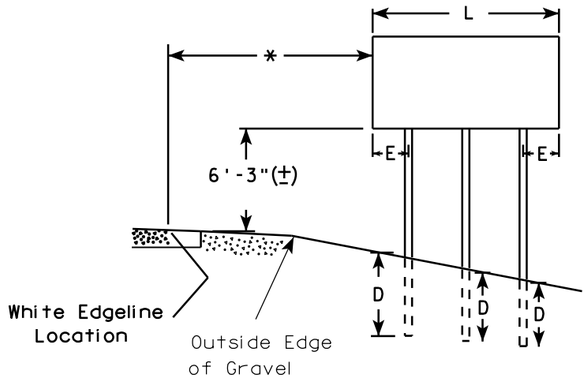
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

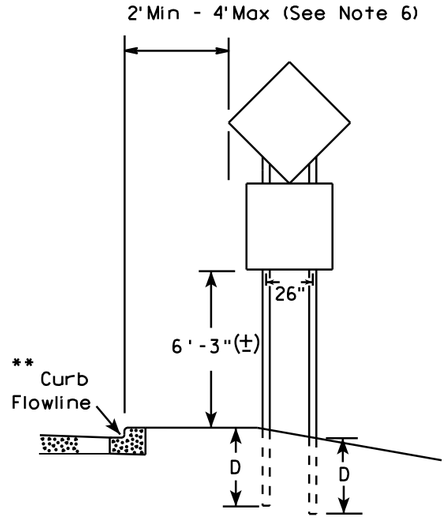
URBAN AREA



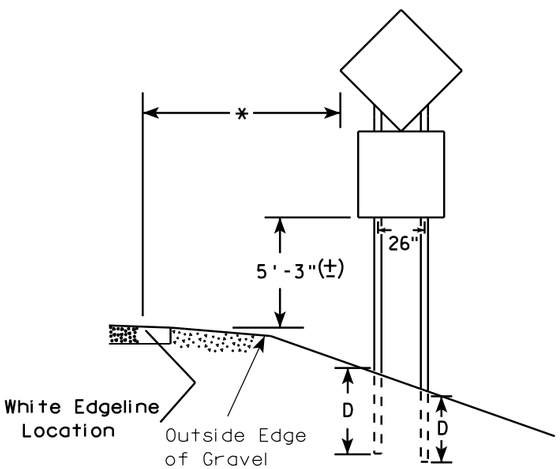
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

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'

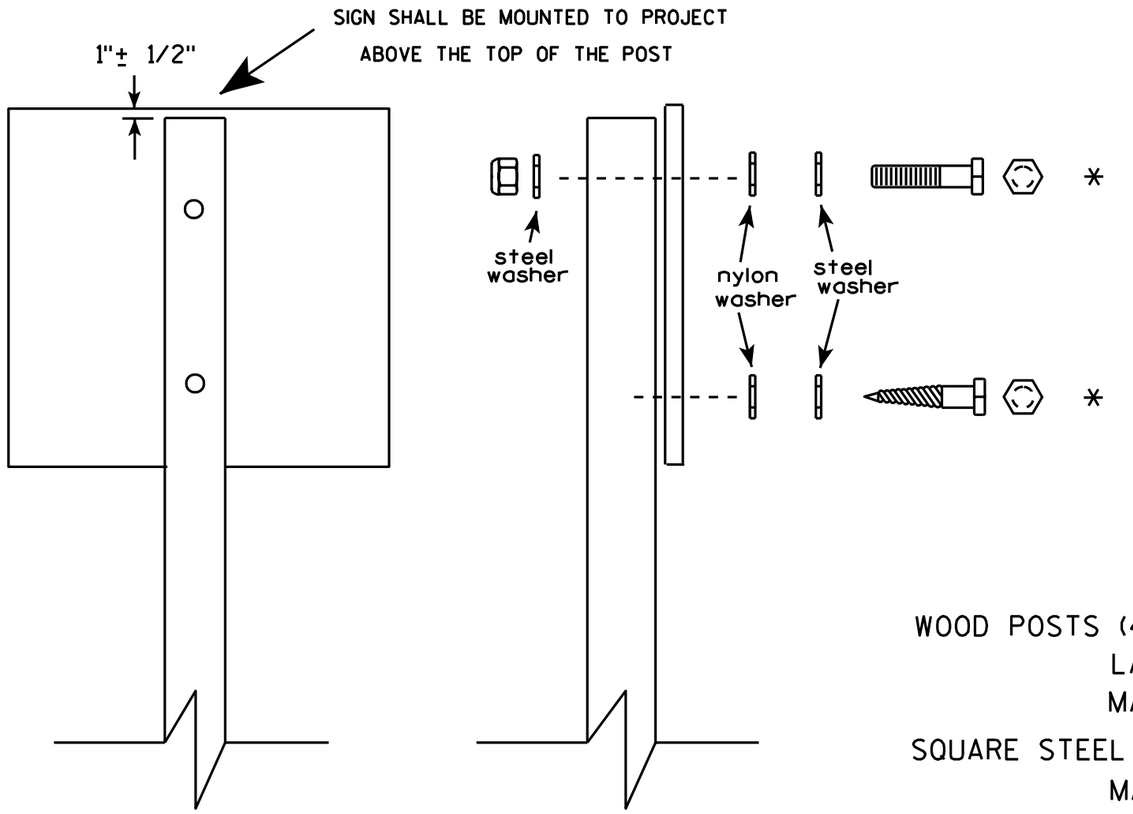
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-4 100 13

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

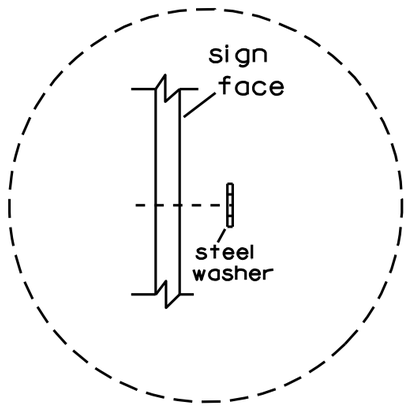
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

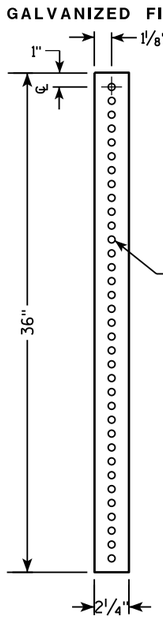
7

PROJECT NO:

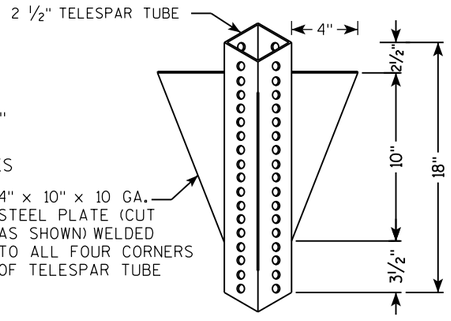
SHEET NO: 101 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

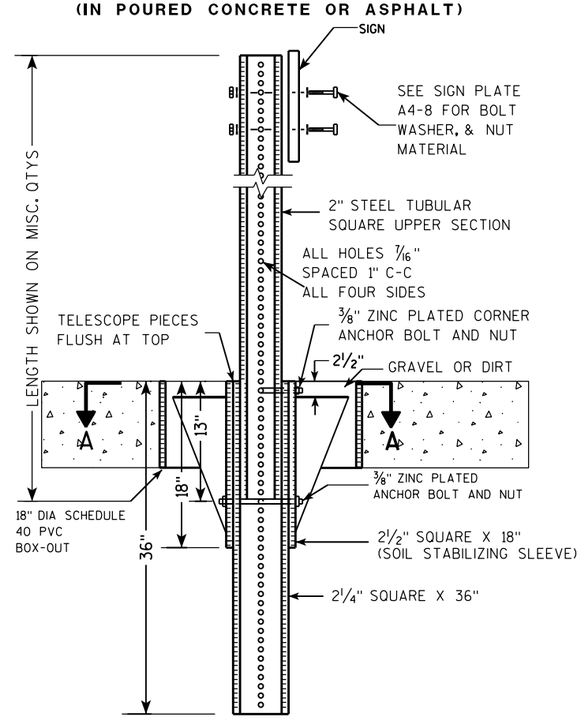
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



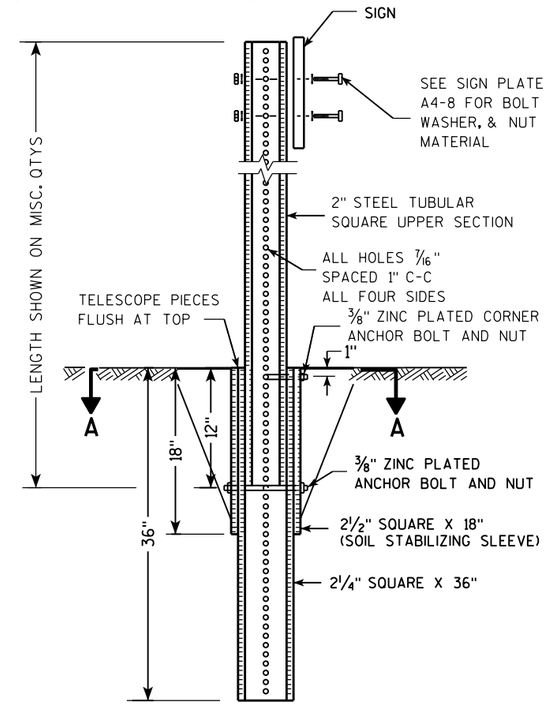
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

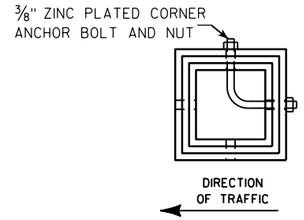


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

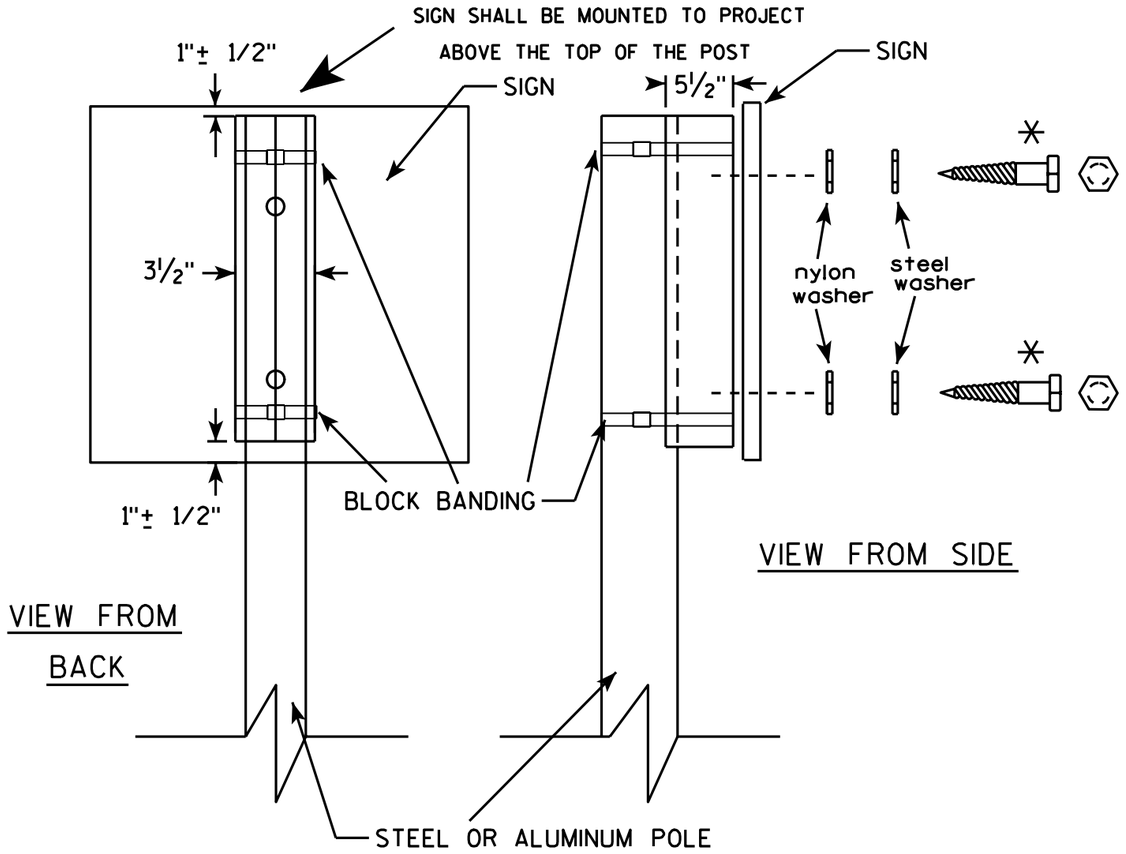
WISCONSIN DEPT OF TRANSPORTATION

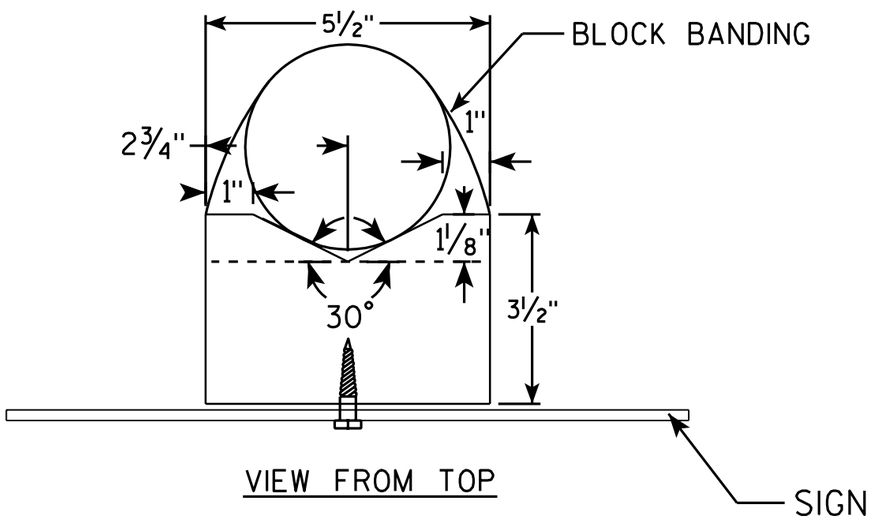
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
   b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
   c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

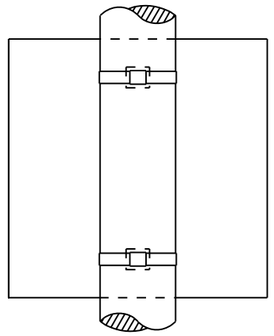
DATE 7/12/07 PLATE NO. A5-10.1

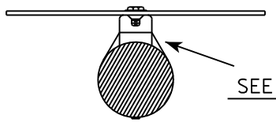
PROJECT NO:

SHEET NO: 103 E

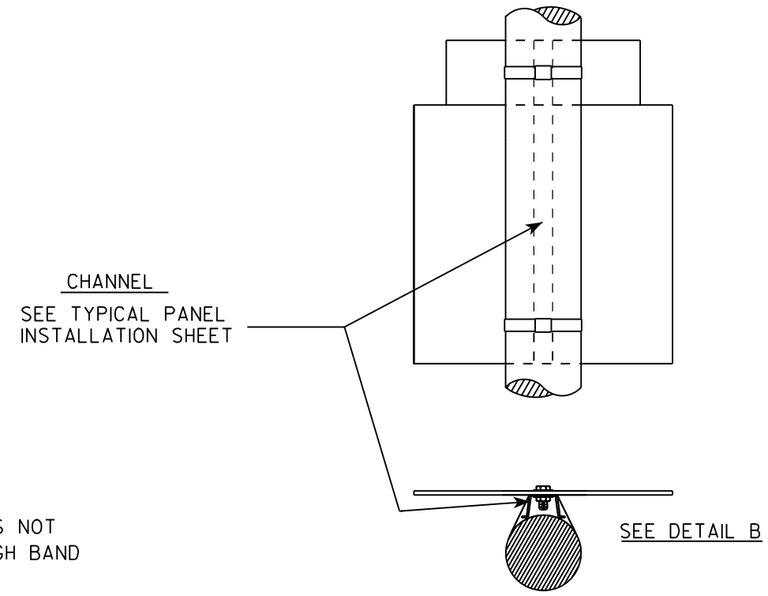
BANDING

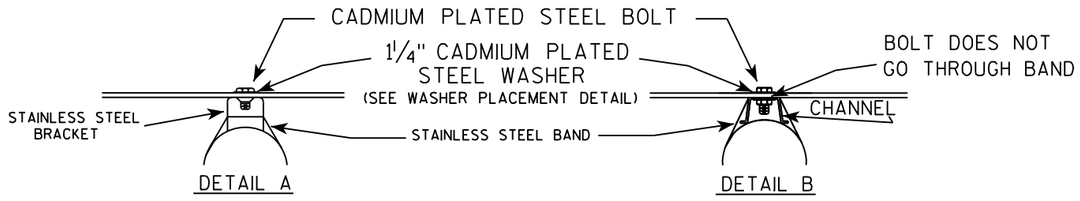
SINGLE SIGN



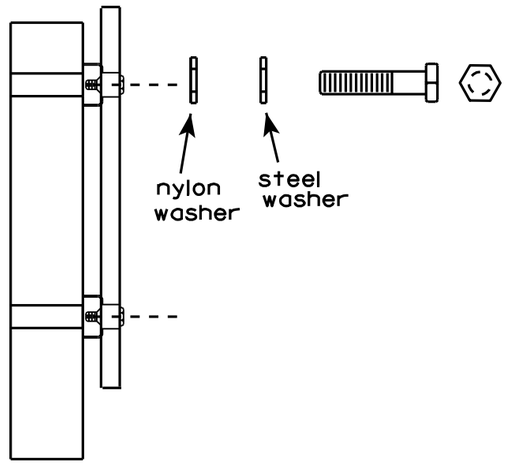


"J" ASSEMBLY





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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

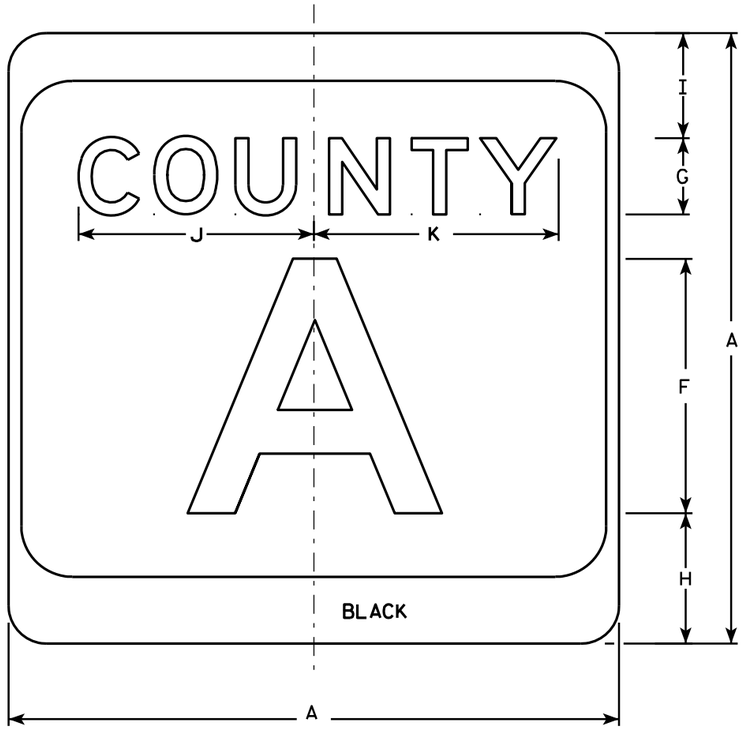
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

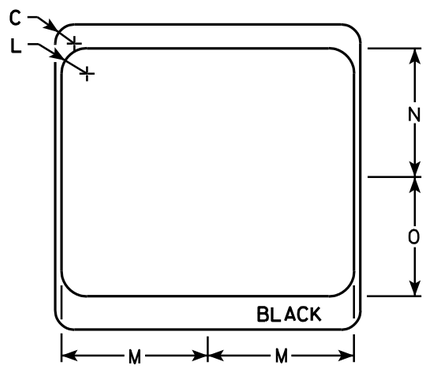
APPROVED Matthew R Rauch
for State Traffic Engineer

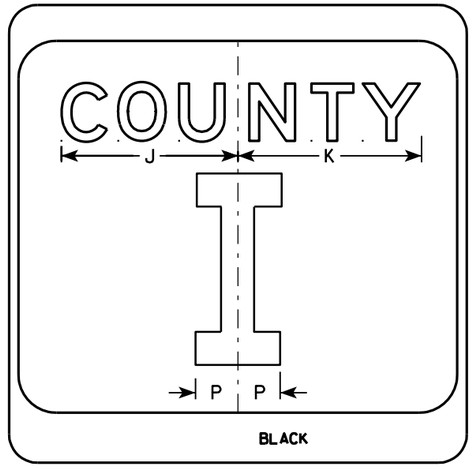
DATE 8/16/13 PLATE NO. A5-9.3

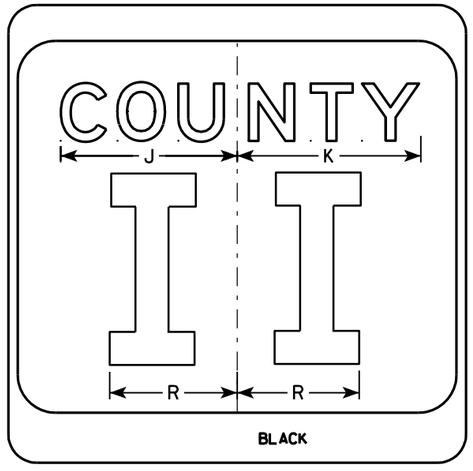
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 104	E



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

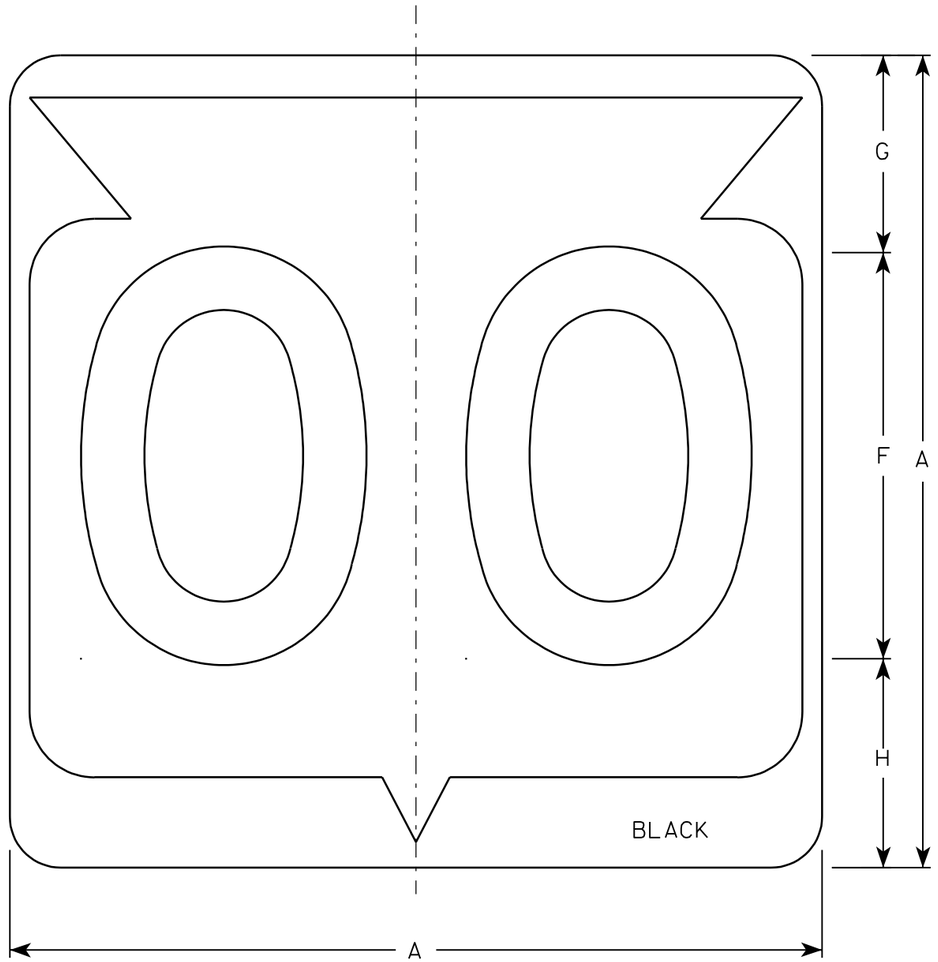
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

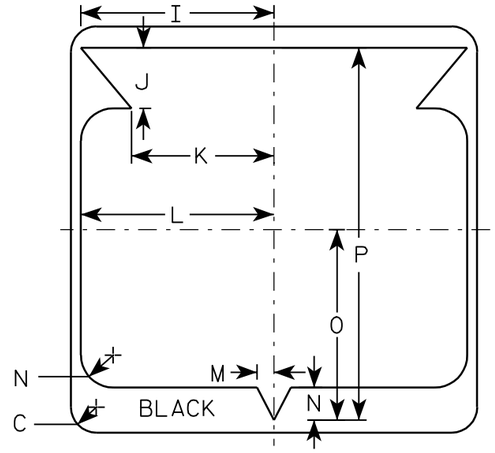
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 105	E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

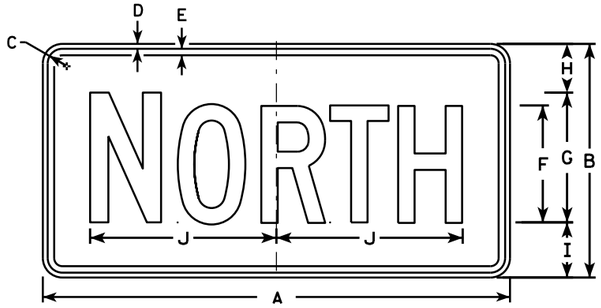
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

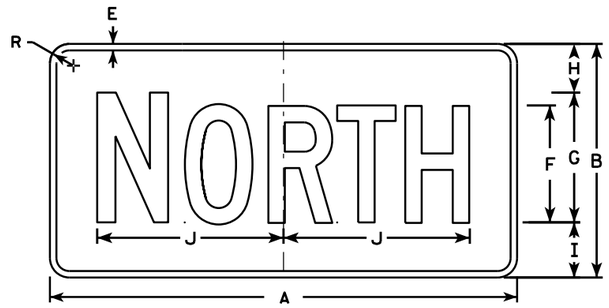
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 106	E

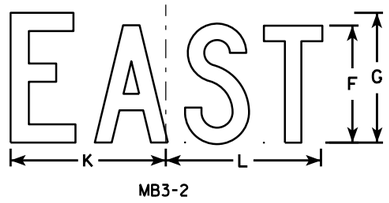


M3-1
MK3-1
MM3-1
MN3-1

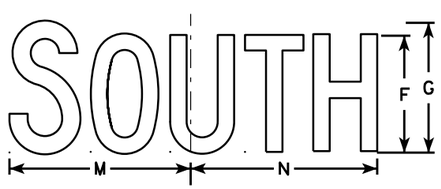


MB3-1

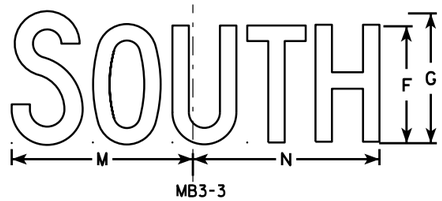
M3-2
MK3-2
MM3-2
MN3-2



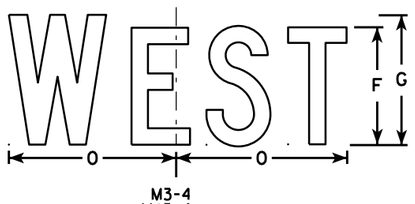
MB3-2



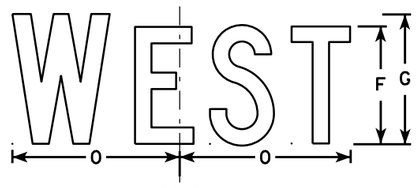
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



M3-4
MK3-4
MM3-4
MN3-4



MB3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
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

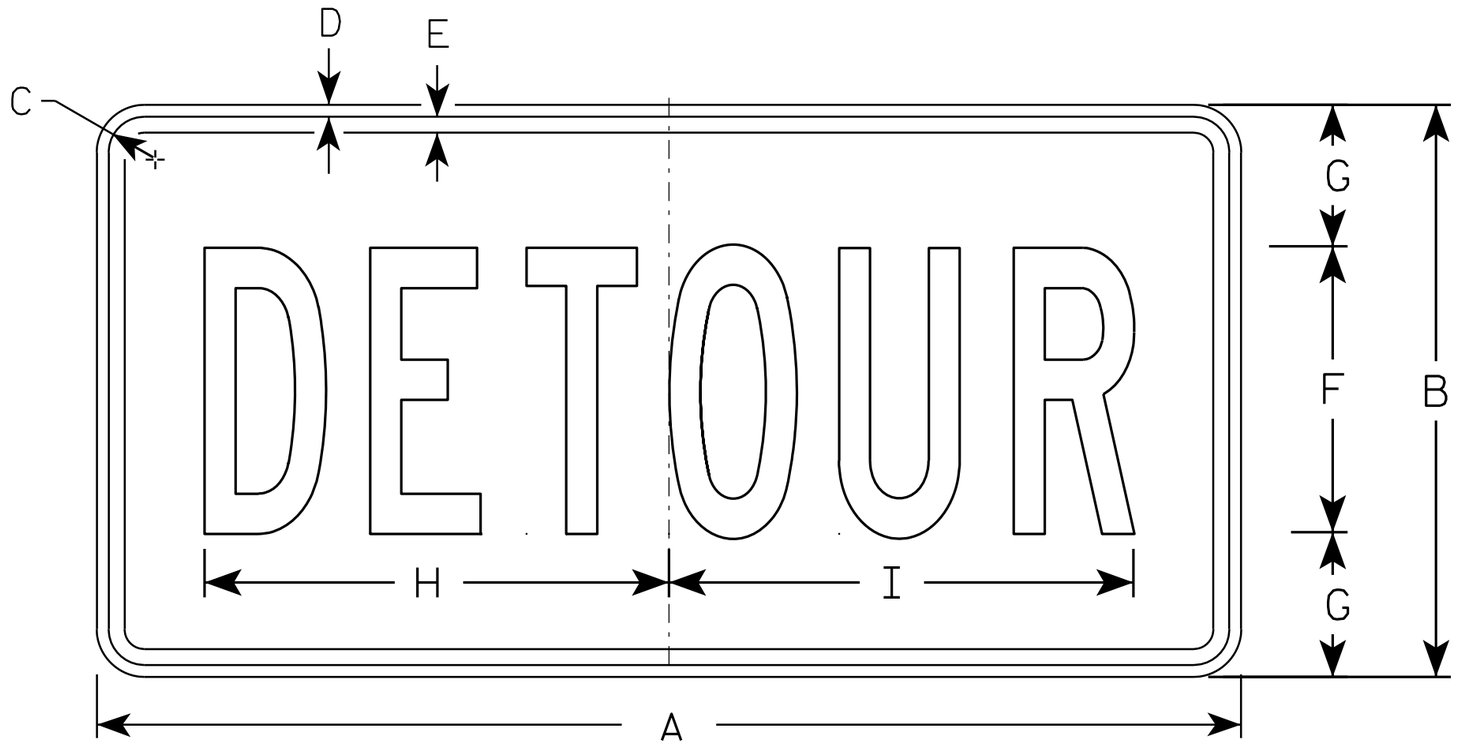
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

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

7



M4-8

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

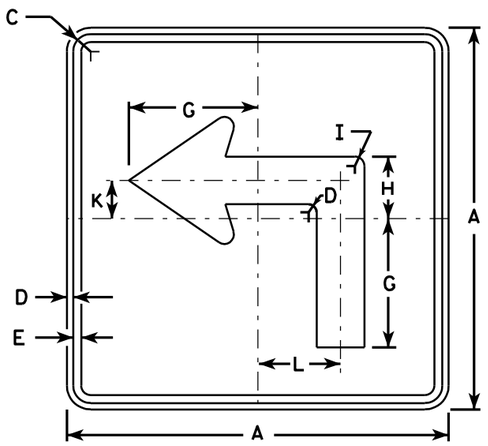
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

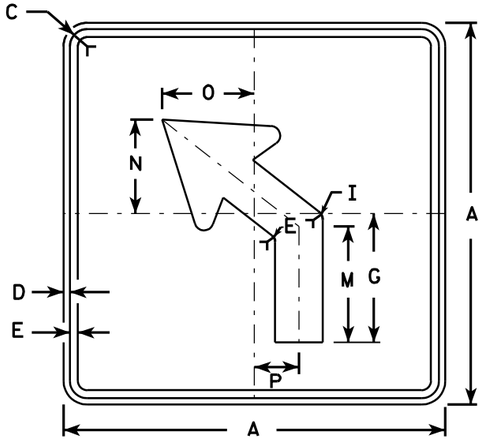
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

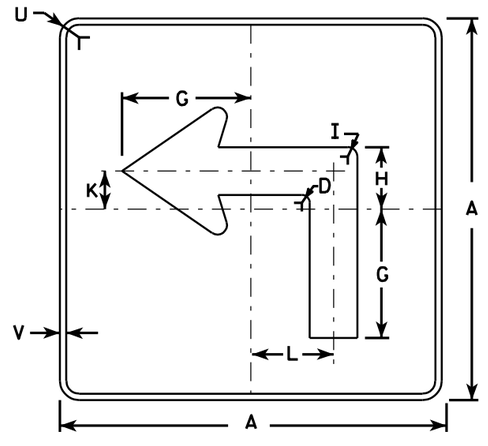
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 108	E



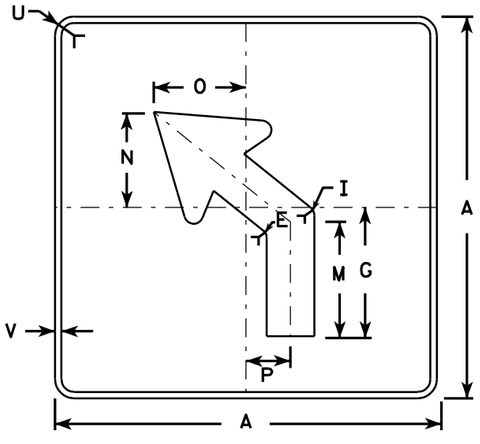
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



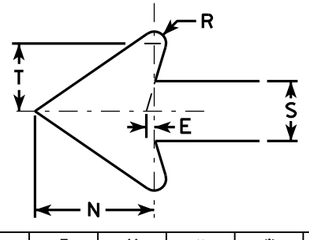
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



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. M5-1 and M5-2 Background - White - Type H Reflective
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White - Type H Reflective
   MG5-1 and MG5-2 Background - Green
   Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green
   Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

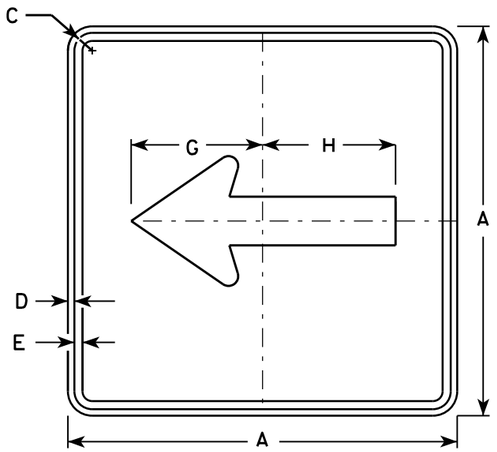
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

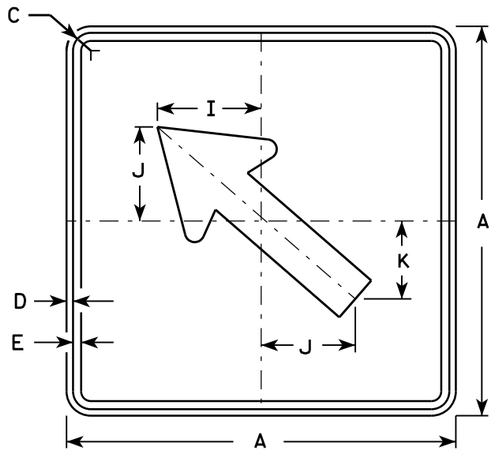
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 109 | E



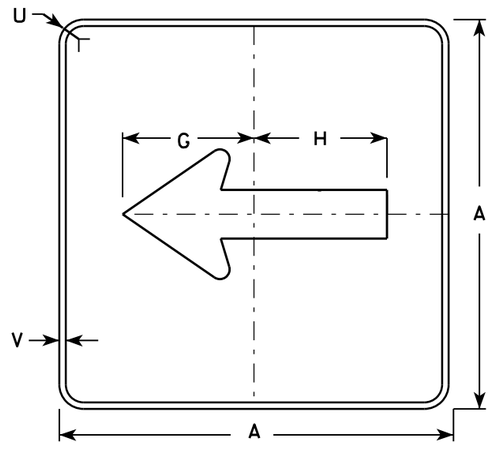
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



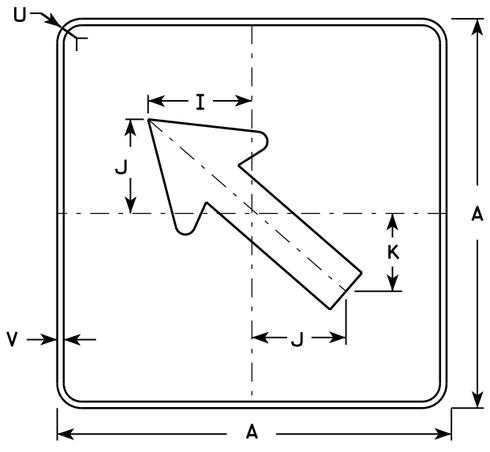
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

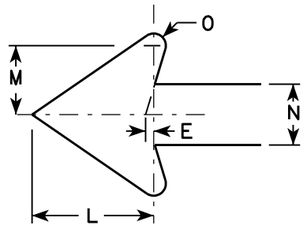
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MG6-1 and MG6-2 Background - Green
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1



MB6-2



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

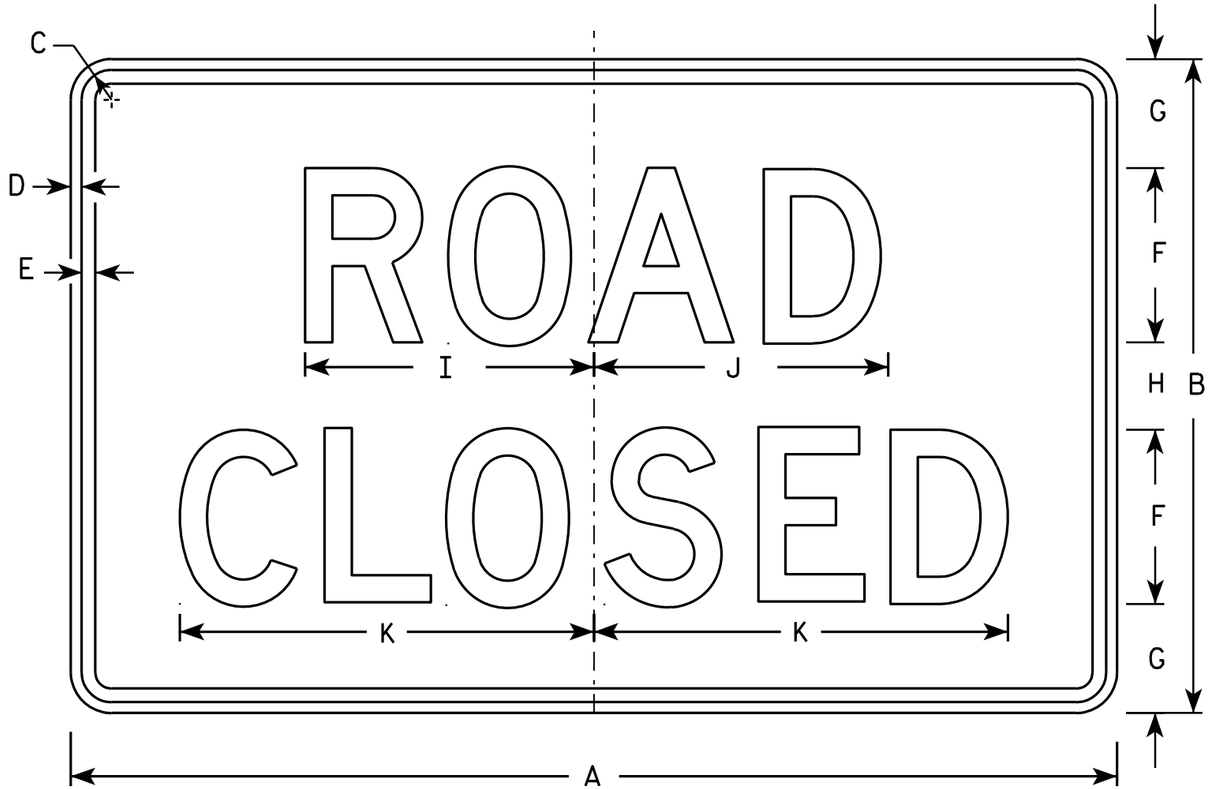
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 7/03/14 PLATE 110 M6-1.14

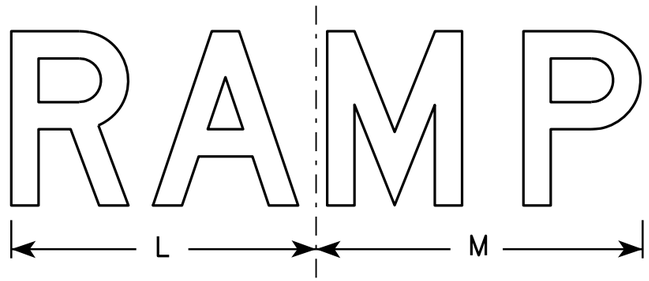
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



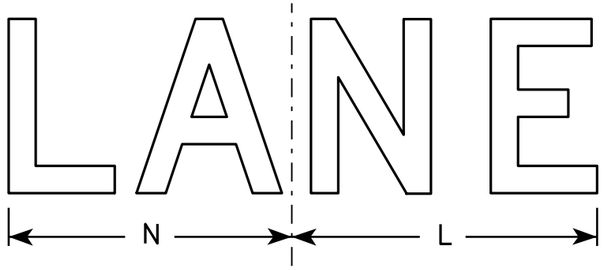
R11-2

NOTES

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



R11-2R



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

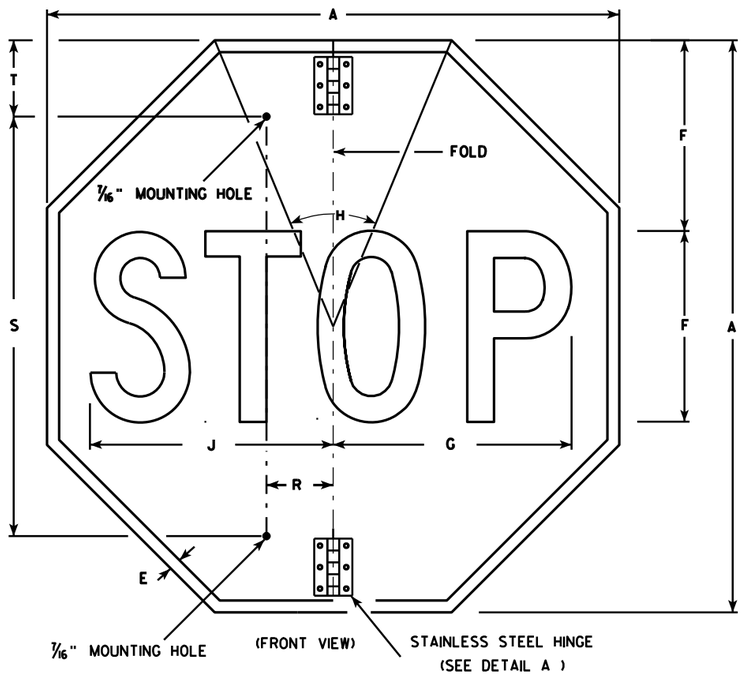
APPROVED Matthew R Rauch
for State Traffic Engineer

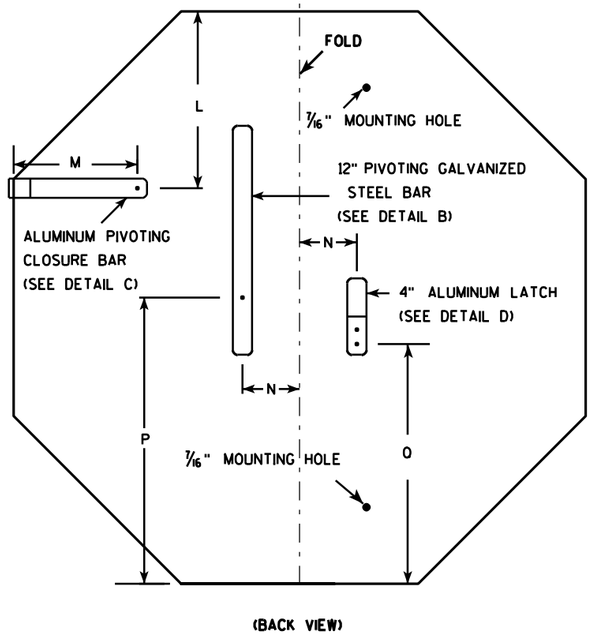
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 111	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R112.DGN PLOT DATE : 01-APR-2011 14:25 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.952219:1.000000

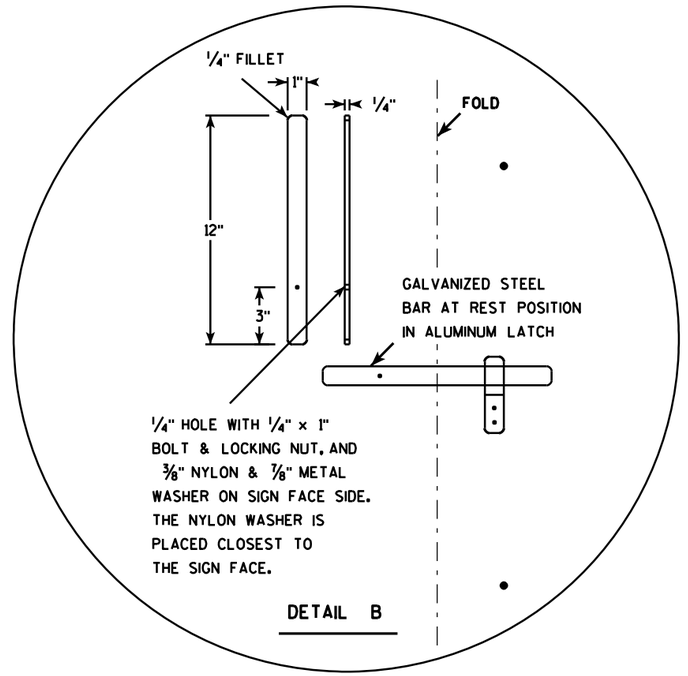
WISDOT/CADDS SHEET 42

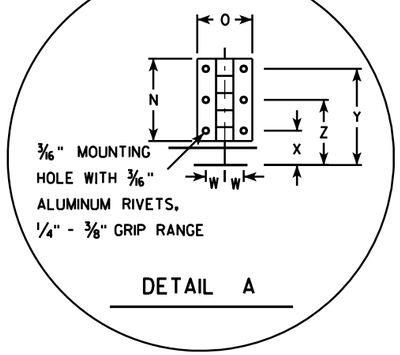


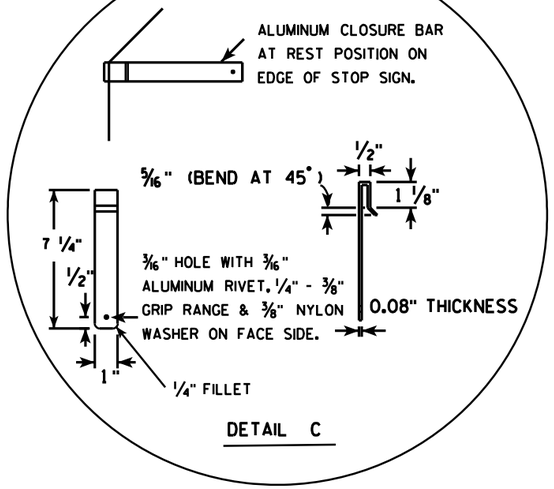


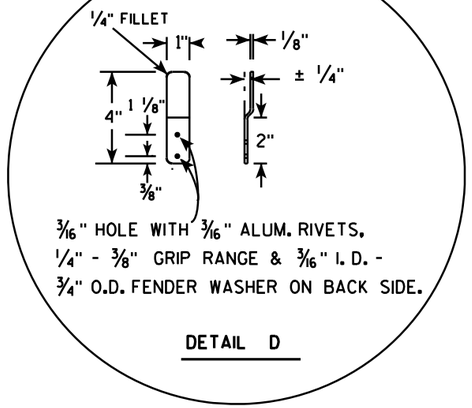
NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.









SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

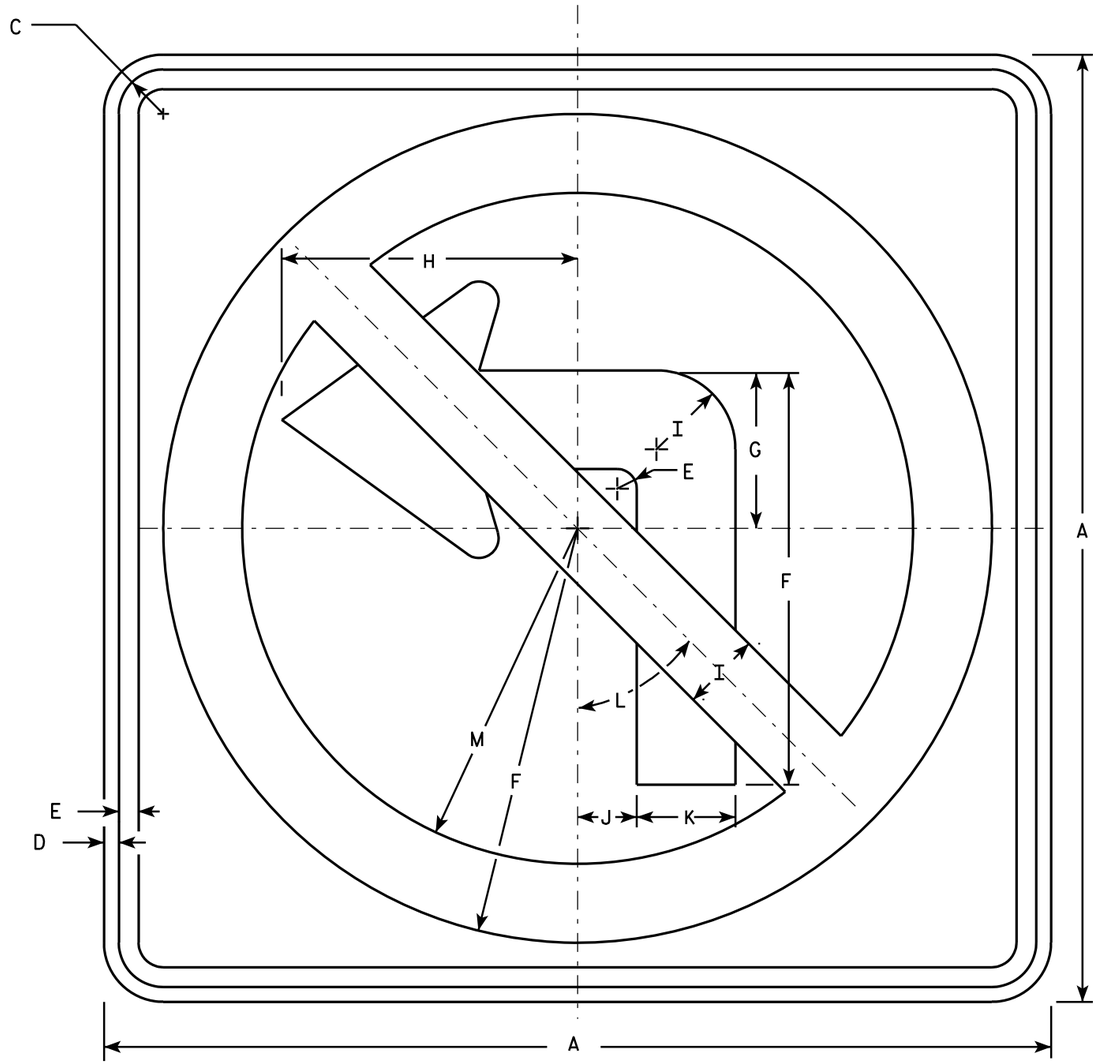
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

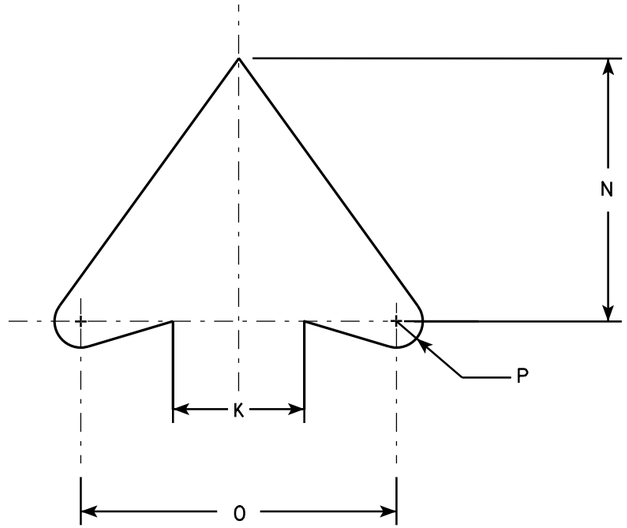
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 112	E



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

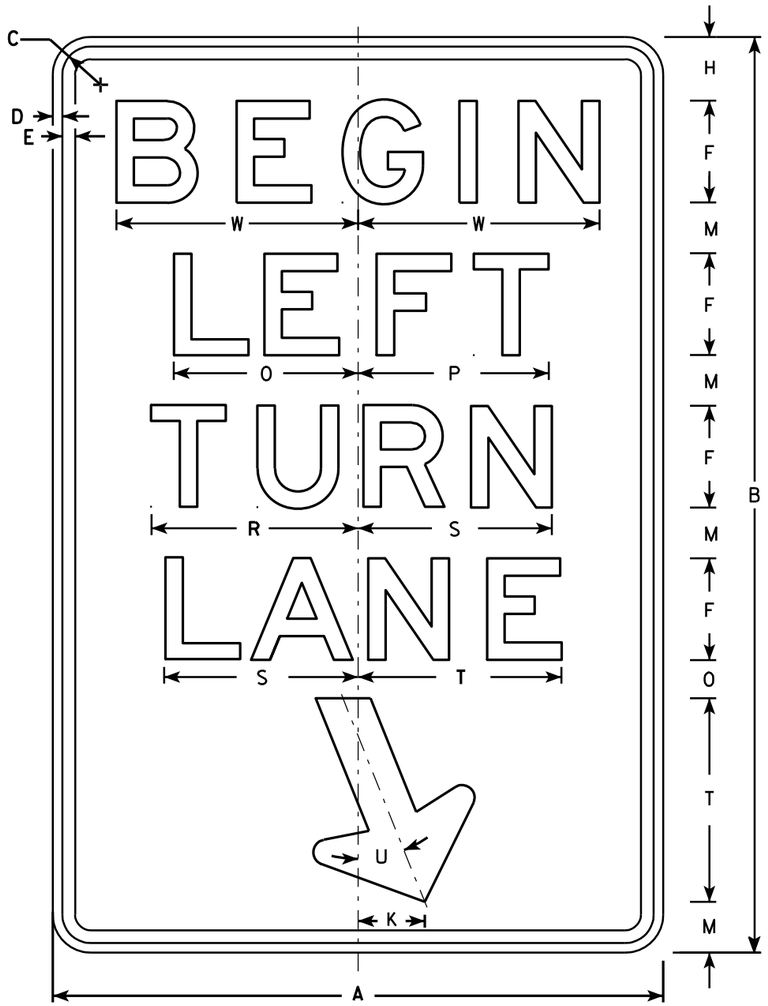
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

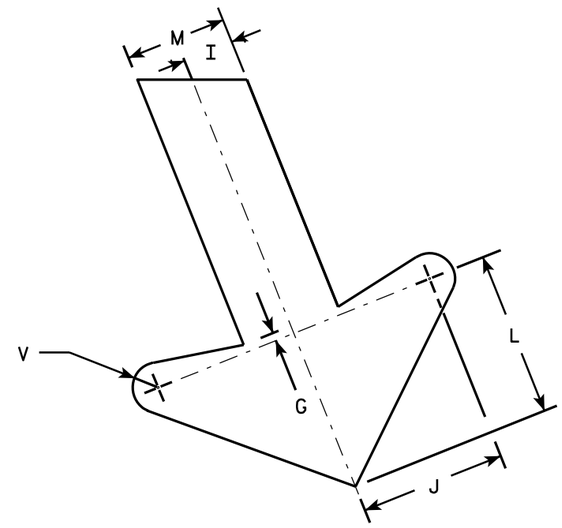
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 113	E



R3-20L

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

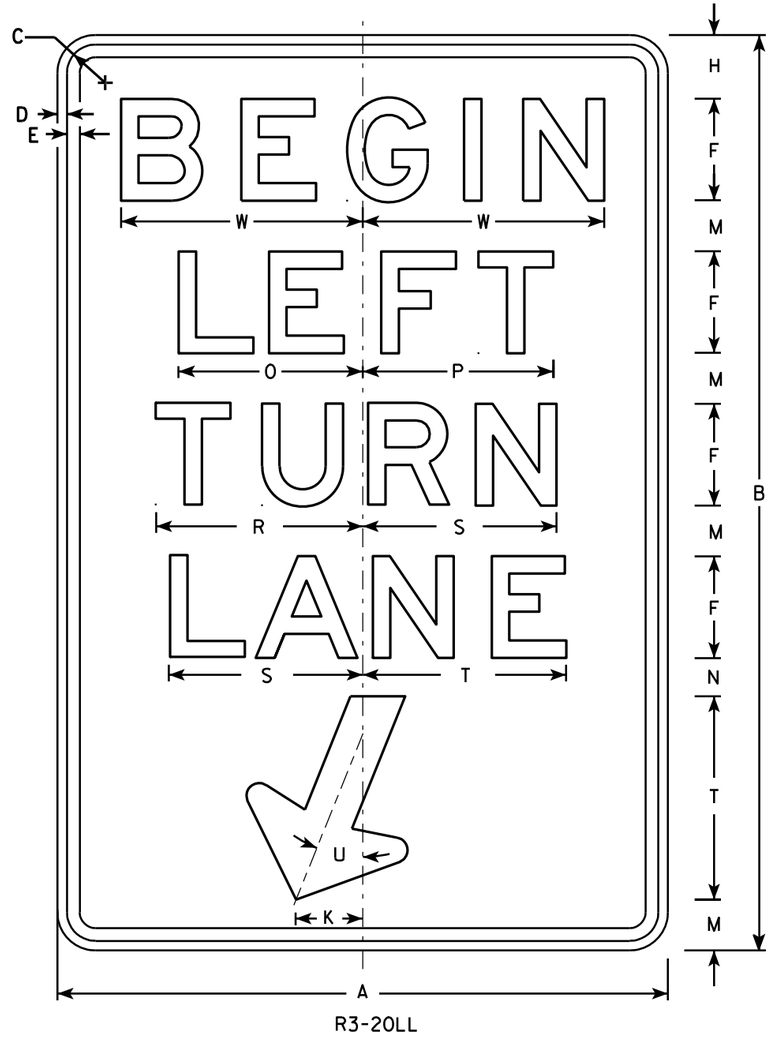
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

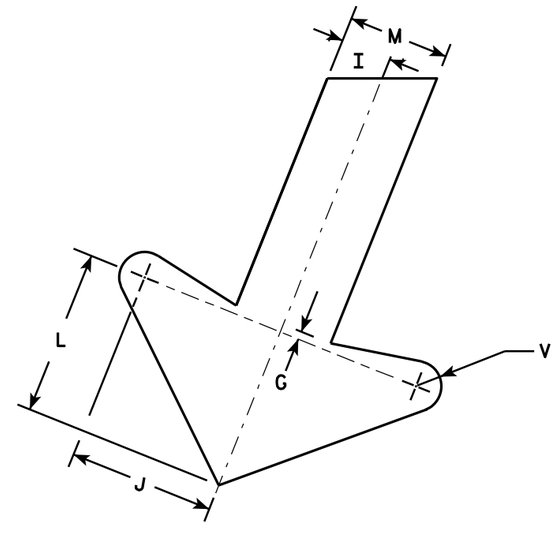
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 114 | E



R3-20LL

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

STANDARD SIGN
R3-20LL

WISCONSIN DEPT OF TRANSPORTATION

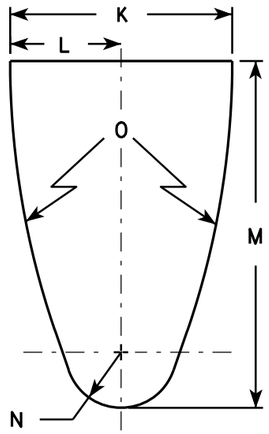
APPROVED Matthew R Rauch
for State Traffic Engineer

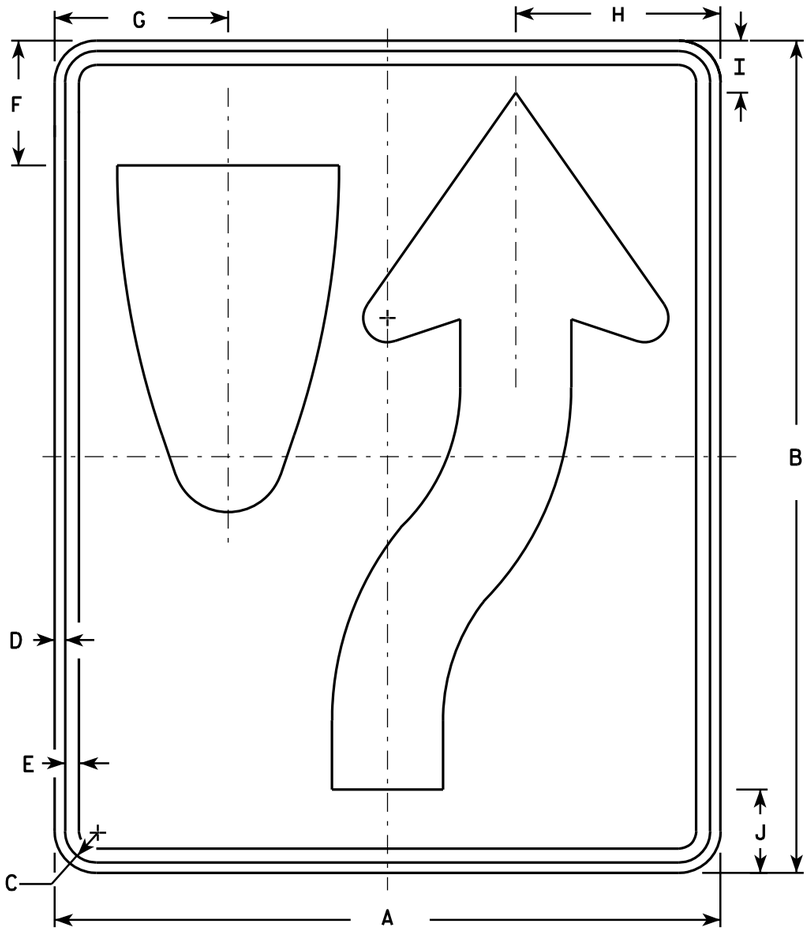
DATE 10/18/10 PLATE NO. R3-20LL.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 115	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R320LL.DGN PLOT DATE : 15-OCT-2010 14:38 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

WISDOT/CADDS SHEET 42

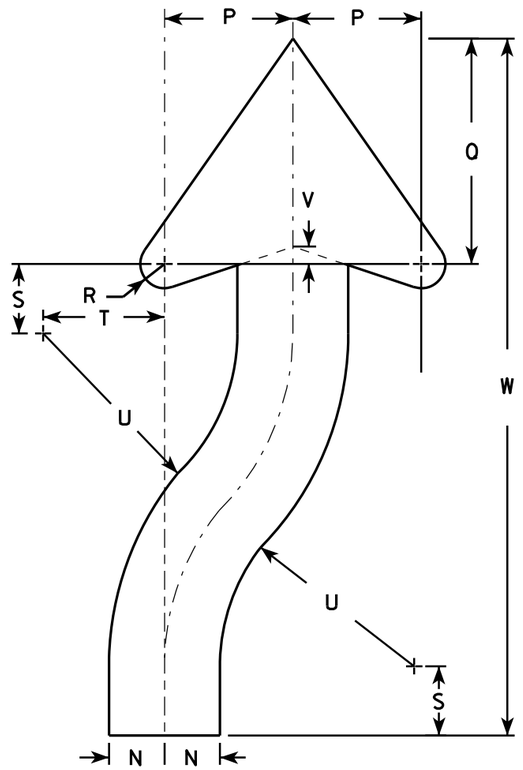




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

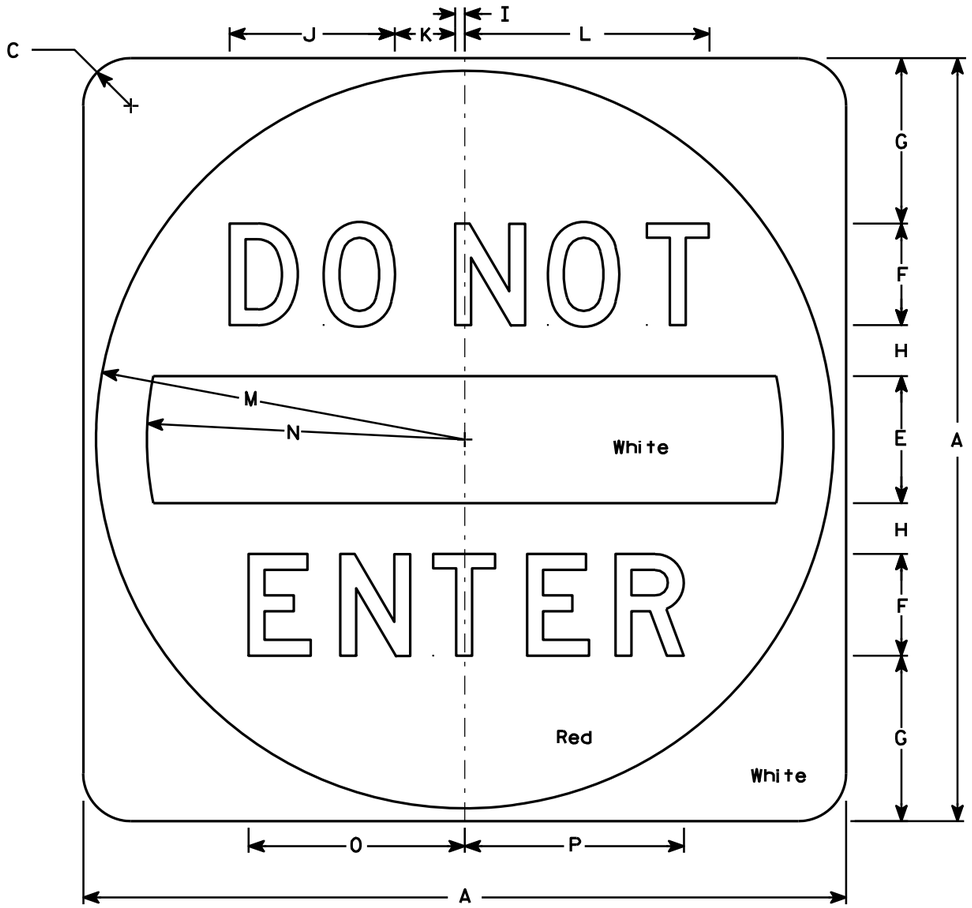
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 116	E



R5-1

NOTES

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

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

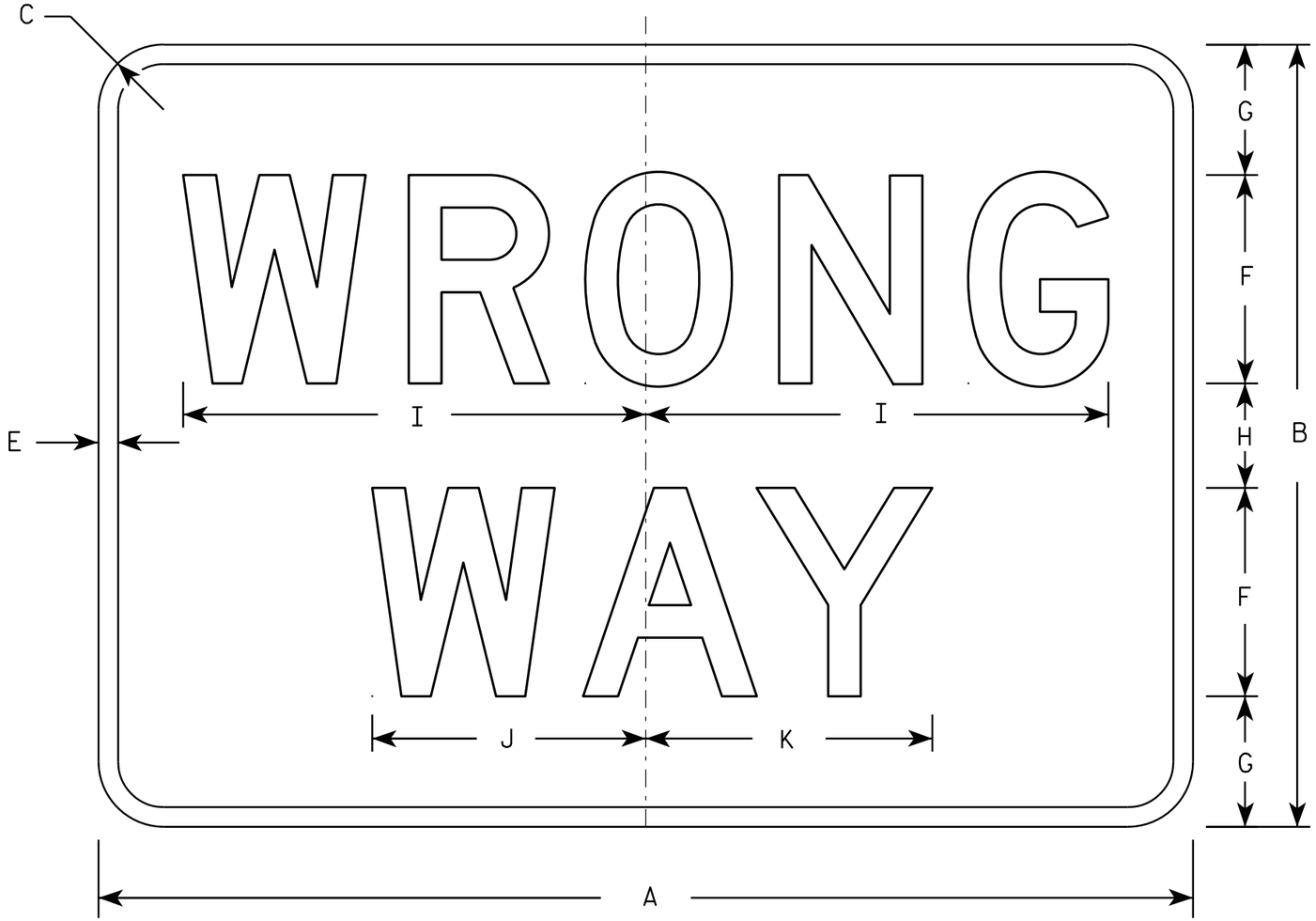
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 117 | E



R5-1A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

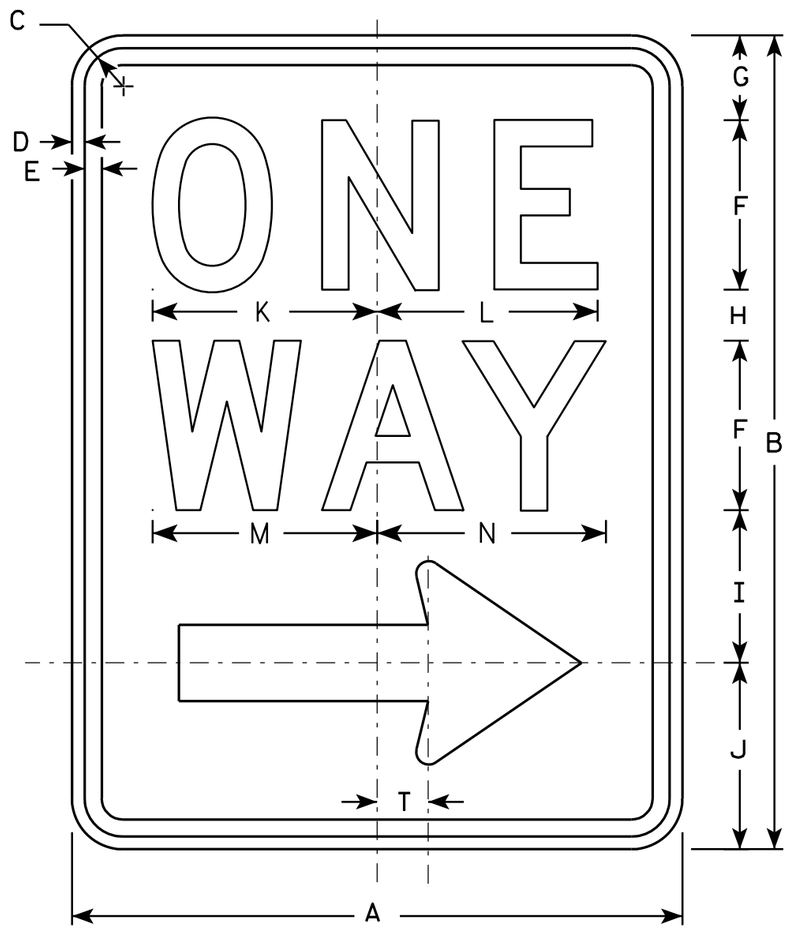
STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

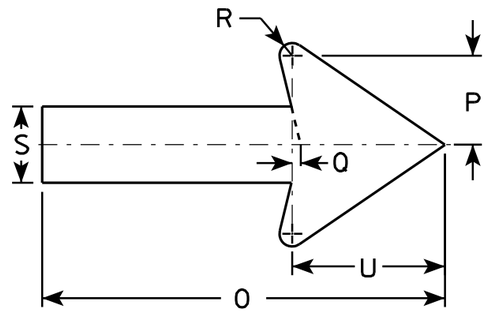
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 118 | E



R6-2R

NOTES

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



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

STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

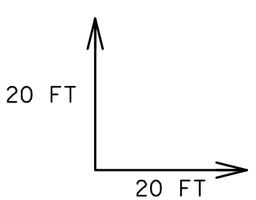
DATE 11/2/10 PLATE NO. R6-2.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 119	E

STH 50
KENOSHA COUNTY

STATION	CUT (SF)	FILL (SF)	CUT (CY)	*FILL (CY)	CUMULATIVE VOLUME CUT (CY)	CUMULATIVE VOLUME FILL (CY)	MASS HAUL (CY)
605+88.000	13.68	0.00	0.00	0.00	0.00	0.00	0.00
606+00.000	10.48	1.15	5.28	0.31	5.28	0.31	4.97
606+50.000	11.89	2.39	20.72	4.10	26.00	4.41	21.59
607+00.000	11.49	1.48	21.65	4.48	47.65	8.89	38.76
607+50.000	13.52	11.32	23.16	14.81	70.81	23.70	47.11
608+00.000	25.99	12.11	36.58	27.11	107.39	50.81	56.58
608+50.000	25.76	52.02	47.92	74.23	155.31	125.04	30.27
609+00.000	26.08	46.14	48.00	113.61	203.31	238.65	-35.34
609+50.000	29.40	37.06	51.37	96.30	254.68	334.95	-80.27
610+00.000	33.04	27.37	57.82	74.58	312.50	409.53	-97.03
610+50.000	34.71	24.20	62.73	59.70	375.23	469.23	-94.00
611+00.000	37.42	16.75	66.79	47.40	442.02	516.63	-74.61
611+50.000	39.01	10.58	70.77	31.64	512.79	548.26	-35.47
612+00.000	42.42	2.28	75.40	14.89	588.19	563.15	25.04
612+50.000	63.89	0.00	98.44	2.64	686.63	565.79	120.84
613+00.000	69.23	0.00	128.20	0.00	814.83	565.79	249.04
613+50.000	0.00	0.00	0.00	0.00	814.83	565.79	249.04
614+00.000	69.56	0.00	128.81	0.00	943.64	565.79	377.85
614+50.000	63.86	0.00	123.54	0.00	1067.18	565.79	501.39
615+00.000	48.95	1.51	104.46	1.74	1171.64	567.53	604.12
615+50.000	38.56	11.46	81.03	15.01	1252.67	582.54	670.13
616+00.000	37.39	14.08	70.32	29.56	1322.99	612.10	710.89
616+50.000	35.66	19.08	67.64	38.38	1390.63	650.48	740.16
617+00.000	33.00	24.22	63.58	50.11	1454.21	700.59	753.62
617+50.000	29.31	32.02	57.70	65.09	1511.91	765.68	746.24
618+00.000	29.89	31.62	54.81	73.65	1566.72	839.33	727.40
618+50.000	29.38	37.48	54.88	79.98	1621.60	919.30	702.30
619+00.000	28.22	40.71	53.33	90.50	1674.93	1009.80	665.13
619+50.000	26.90	3.15	51.04	50.76	1725.97	1060.56	665.41
620+00.000	16.06	0.00	39.78	3.65	1765.75	1064.21	701.54
620+50.000	13.95	0.06	27.78	0.06	1793.53	1064.28	729.26
621+00.000	14.74	0.00	26.56	0.06	1820.09	1064.34	755.75
621+15.000	15.37	0.00	8.31	0.00	1828.40	1064.34	764.06

*EXPANDED 25%

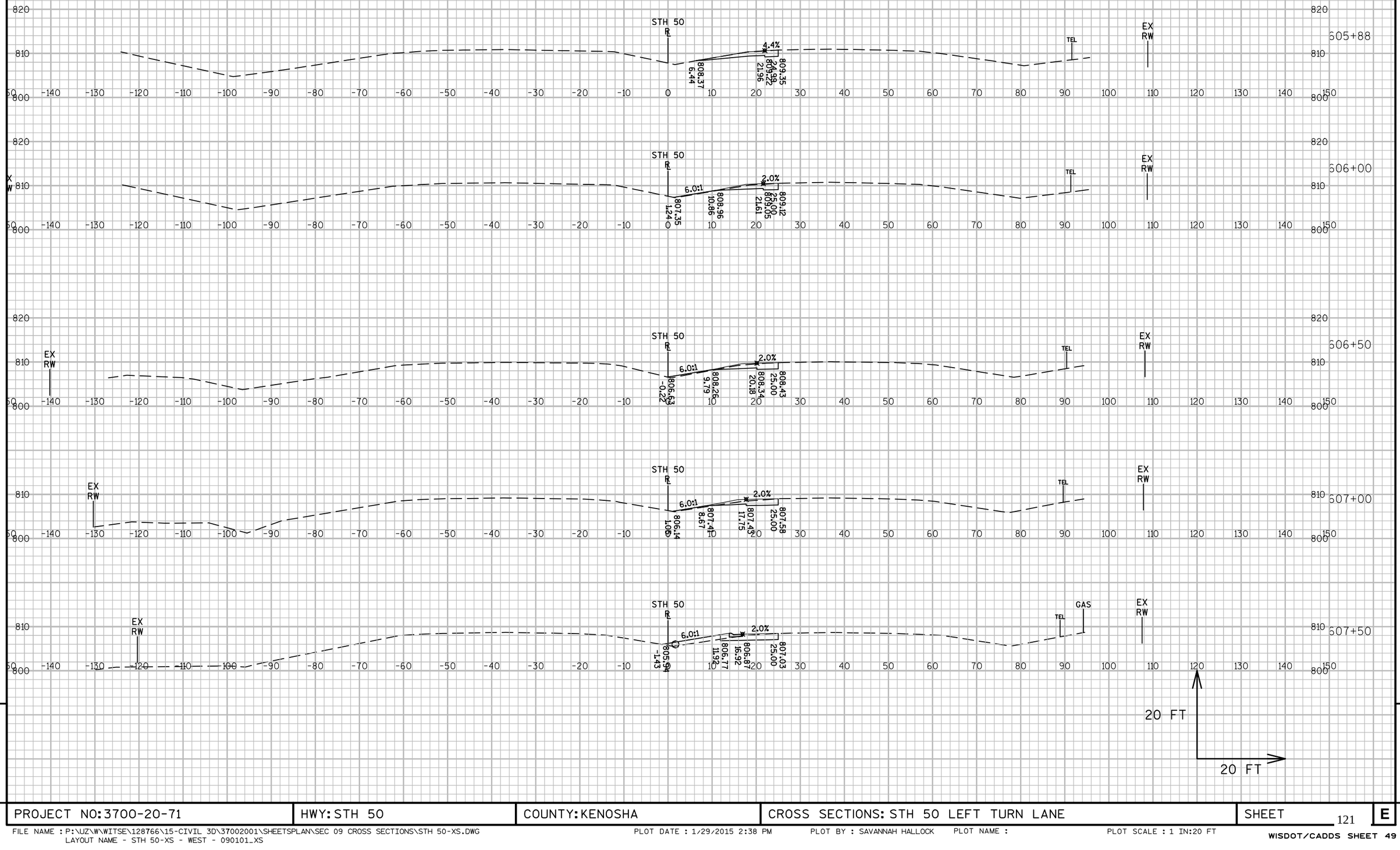


9

9

PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: EARTHWORK DATA TABLE	SHEET 120	E

BEGIN PROJECT
STA 605+88.00

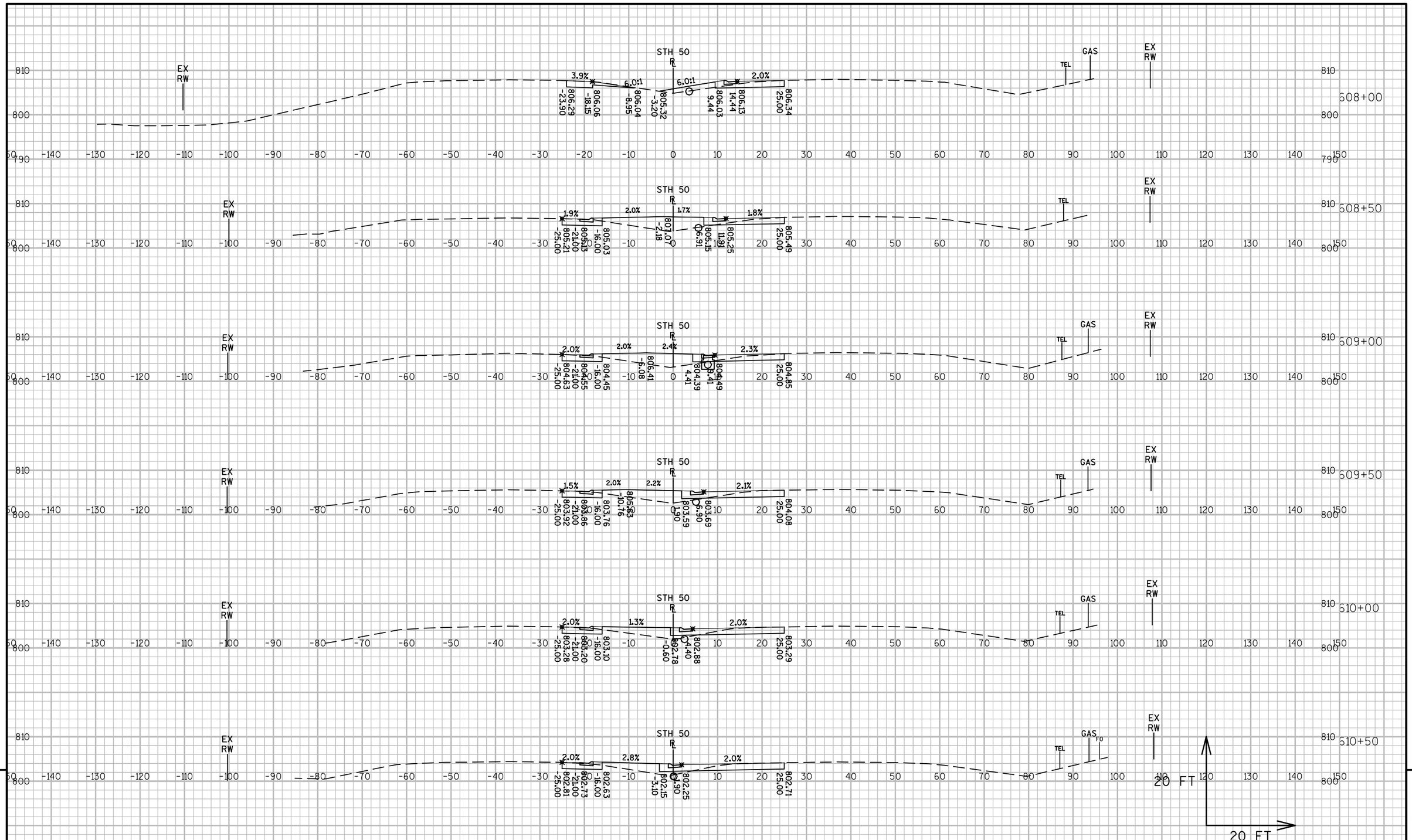


PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: STH 50 LEFT TURN LANE	SHEET 121	E

FILE NAME : P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 09 CROSS SECTIONS\STH 50-XS.DWG
LAYOUT NAME - STH 50-XS - WEST - 090101_XS

PLOT DATE : 1/29/2015 2:38 PM PLOT BY : SAVANNAH HALLOCK PLOT NAME : PLOT SCALE : 1 IN:20 FT

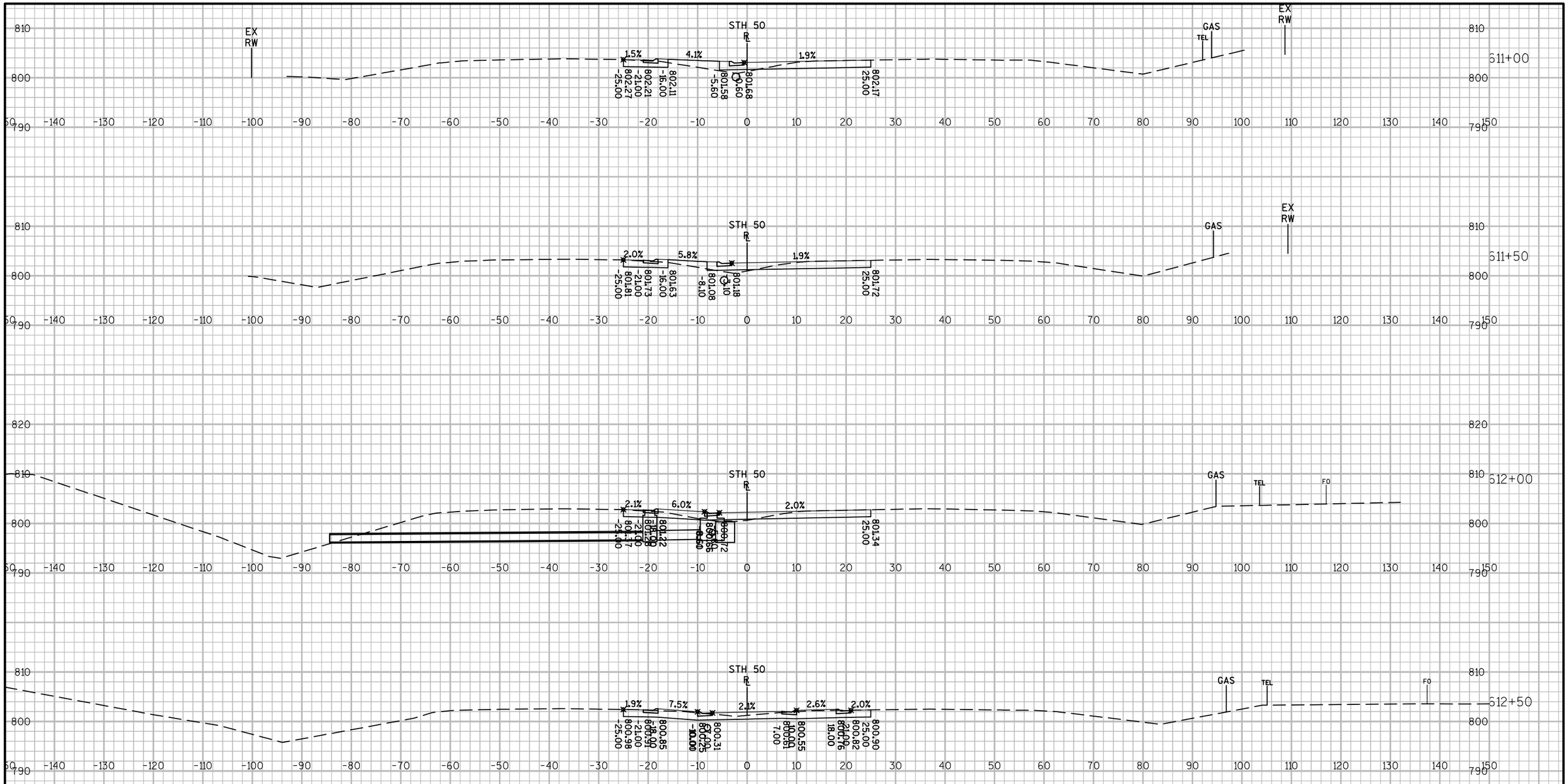
WISDOT/CADDS SHEET 49



PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: STH 50 LEFT TURN LANE	SHEET 122	E

FILE NAME : P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 09 CROSS SECTIONS\STH 50-XS.DWG
LAYOUT NAME - STH 50-XS - WEST - 090102_XS

PLOT DATE : 1/29/2015 2:38 PM PLOT BY : SAVANNAH HALLOCK PLOT NAME : PLOT SCALE : 1 IN:20 FT



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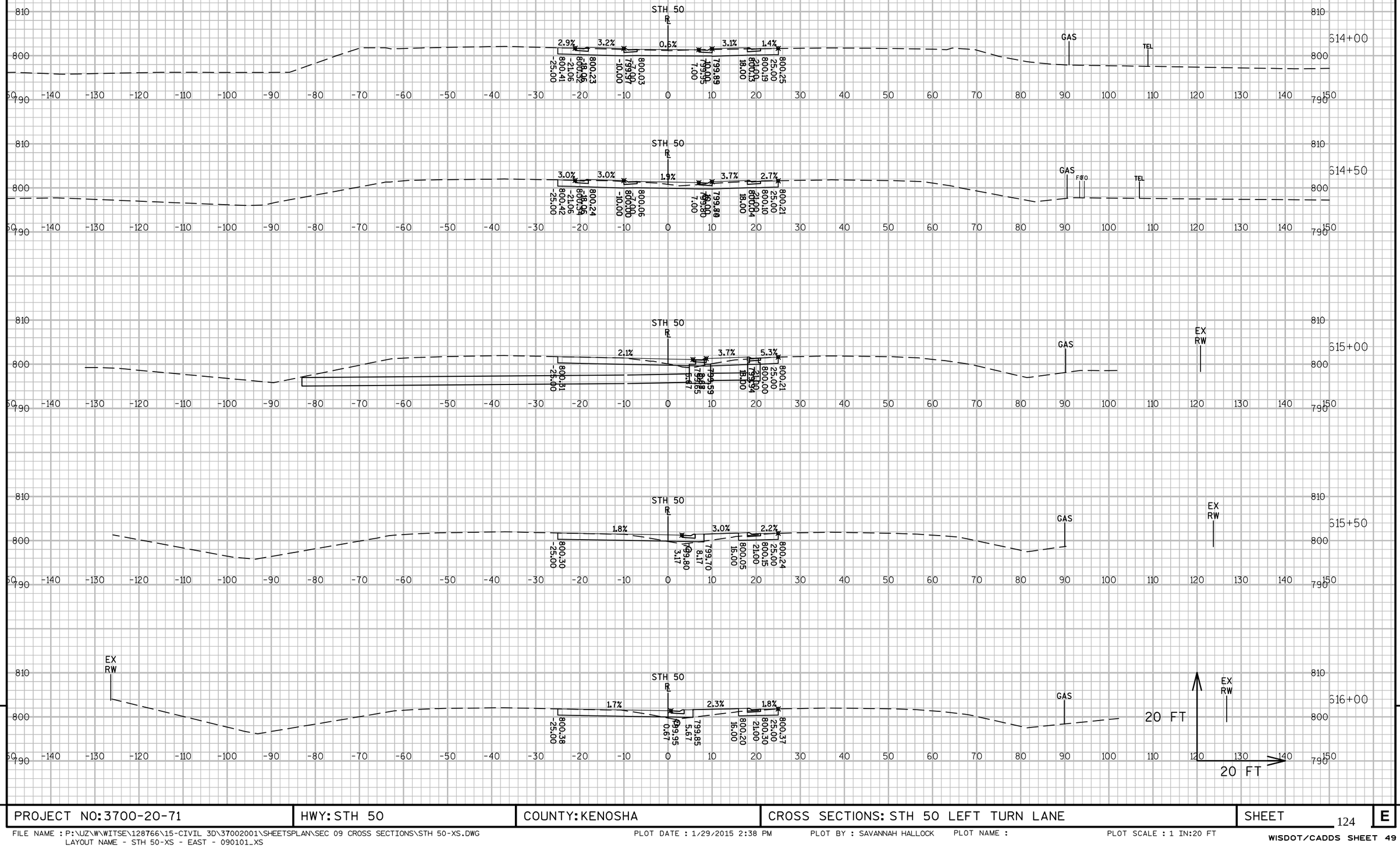
PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: STH 50 LEFT TURN LANE	SHEET 123	E

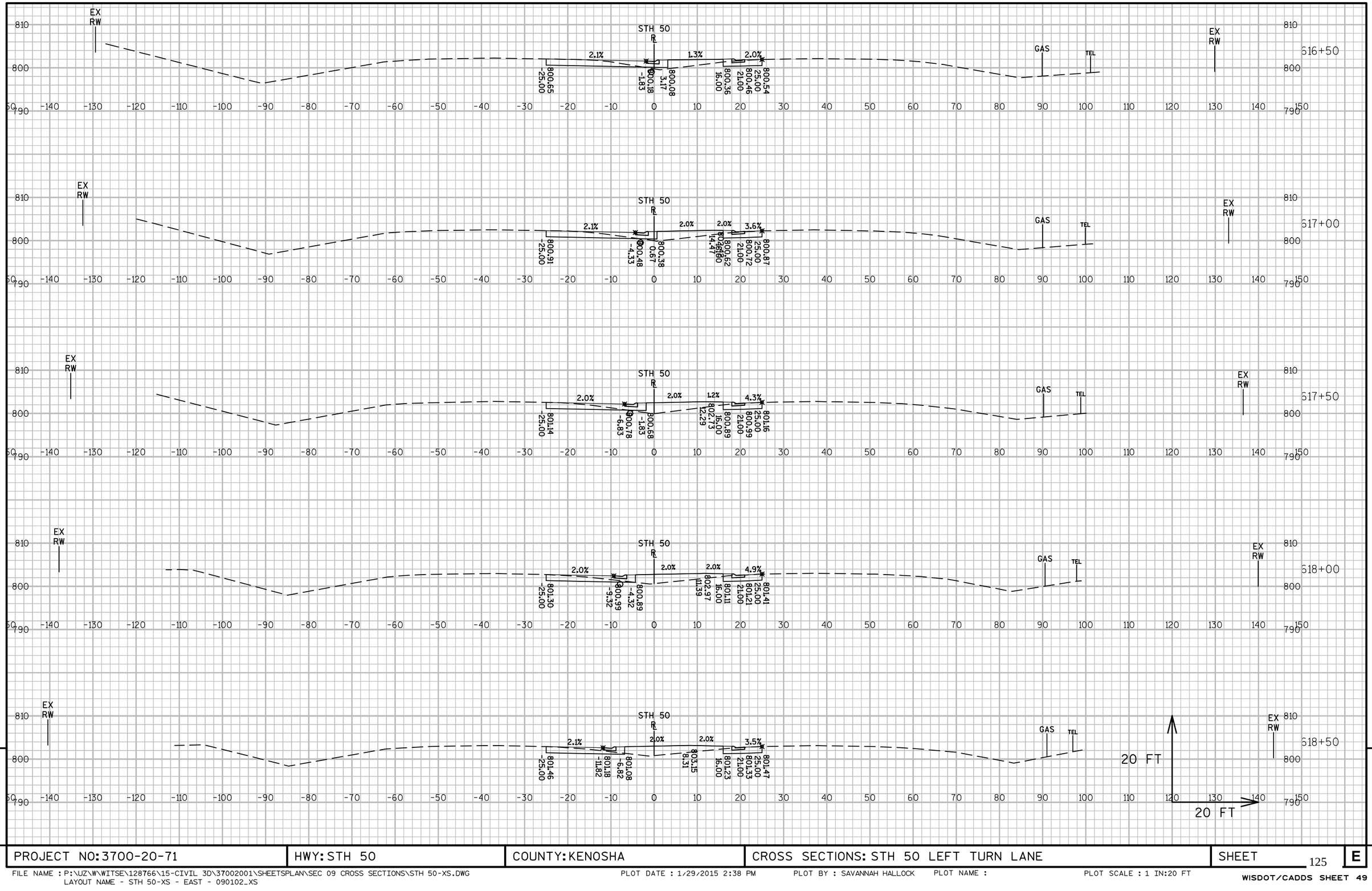
FILE NAME : P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 09 CROSS SECTIONS\STH 50-XS.DWG
LAYOUT NAME - STH 50-XS - WEST - 090103_XS

PLOT DATE : 1/29/2015 2:38 PM PLOT BY : SAVANNAH HALLOCK PLOT NAME : PLOT SCALE : 1 IN:20 FT

STH 50 / CTH O
INTERSECTION



PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: STH 50 LEFT TURN LANE	SHEET 124	E



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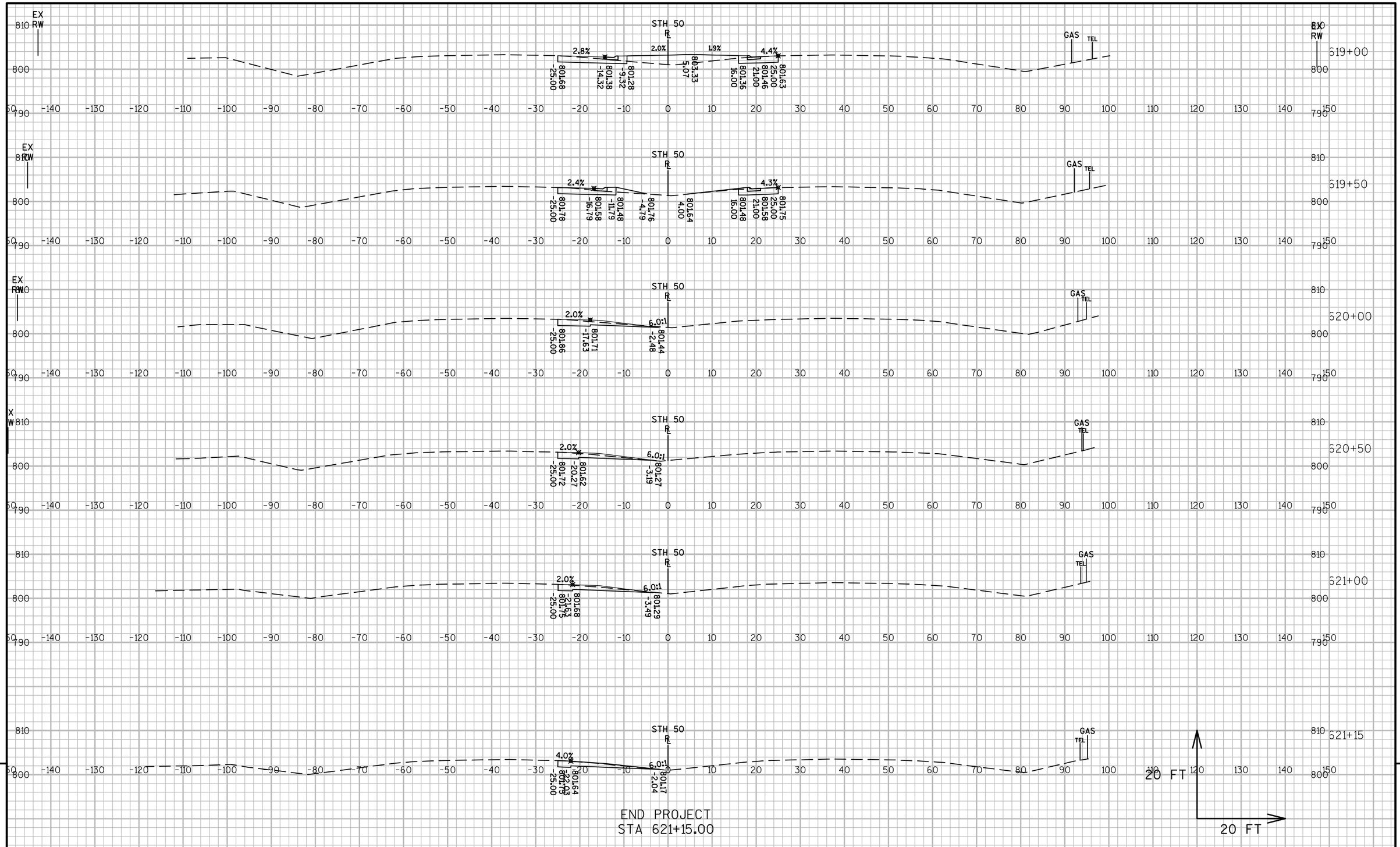
PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: STH 50 LEFT TURN LANE	SHEET 125	E



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PROJECT NO: 3700-20-71	HWY: STH 50	COUNTY: KENOSHA	CROSS SECTIONS: STH 50 LEFT TURN LANE	SHEET	E

FILE NAME : P:\UZ\W\WITSE\128766\15-CIVIL 3D\37002001\SHEETSPLAN\SEC 09 CROSS SECTIONS\STH 50-XS.DWG
LAYOUT NAME - STH 50-XS - EAST - 090103_XS
PLOT DATE : 1/29/2015 2:39 PM PLOT BY : SAVANNAH HALLOCK PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov