WKE

MAY 2019

PROJECT ID: 1060-33-94

WITH: 1060-35-94 & 1693-37-74

COUNTY: MILWAUKEE

ORDER OF SHEETS

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

TOTAL SHEETS = 318

51

N

DESIGN DESIGNATION		SWAN BOULEVARD	DISCOVERY PARKWAY
A.A.D.T.	2014	= 13,490	= -
A.A.D.T.	2035	= 14,970	= -
D.H.V.	2035	= 2,115	= 150
D.D.		= 60% EB/40% WB	= 68% NB/42% SB
T.		= 2.85% EB/2.85% WB	= -
DESIGN SPEED		= 35 MPH	= 25 MPH
ESALS		= 3,241,200	= -

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
		TELEPHONE	T
MARSH AREA		WATER	W
		OVERHEAD ELECTRIC	OH
		UTILITY PEDESTAL	
WOODED OR SHRUB AREA		POWER POLE	
		TELEPHONE POLE	
		LIGHT POLE	

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-33-94	WISC 2019219	1

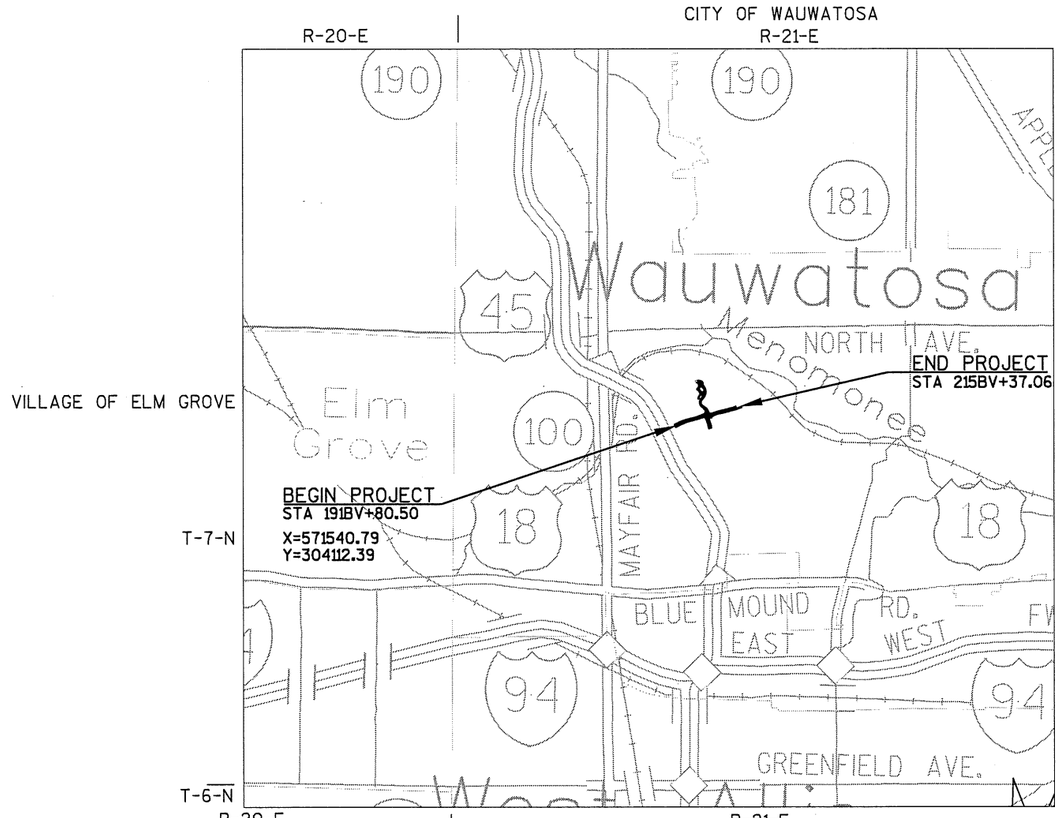
ZOO IC, SWAN & DISCOVERY RNDABT

1060-33-73 LIMITS TO WDNR ACCESS RD

LOCAL STREET

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1060-33-94



LAYOUT

SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.446

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE 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.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	KAPUR & ASSOCIATES
Designer	WISDOT
Project Manager	CHRISTOPHER HAGER
Regional Examiner	
Regional Supervisor	WAFA ELQAQ

APPROVED FOR THE DEPARTMENT

DATE: 3/12/19 (Signature)

E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\010101_TI.DWG

PLOT DATE : 3/12/2019 7:27 AM

PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

WISDOT/CADDS SHEET 10

UTILITY CONTACTS

AT&T WISCONSIN
MR. JAY BULANEK
2005 PEWAUKEE RD
WAUKESHA, WI 53188
PHONE: (262) 896-7669
CELL: (414) 491-2855
jb5175@att.com

CHARTER COMMUNICATIONS
MR. STEVE CRAMER
1320 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
PHONE: (414) 277-4045
CELL: (414) 688-2385
steve.cramer@charter.com
wis.engineering@charter.com

MILWAUKEE COUNTY – WATER & SANITARY
MR. KARL STAVE
633 W. WISCONSIN AVENUE
SUITE 1000
MILWAUKEE, WI 53203
karl.stave@milwaukeecountywi.gov

WAUWATOSA, CITY OF - LIGHTING
MR. RANDY MICHELZ
11100 W. WALNUT RD
WAUWATOSA, WI 53226
PHONE: (414) 479-8929
rmichelz@wauwatosa.net

WAUWATOSA, CITY OF - WATER
MR. DAVID SIMPSON
WATER SUPERINTENDENT
7725 W. NORTH AVENUE
WAUWATOSA, WI 53213
PHONE: (414) 831-0799
dsimpson@wauwatosa.net

WAUWATOSA, CITY OF - SEWER
MR. MIKE MAKI
WATER SUPERINTENDENT
7725 W. NORTH AVENUE
WAUWATOSA, WI 53213
PHONE: (414) 479-8991
mmaki@wauwatosa.net

WE ENERGIES - ELECTRIC
SEND ALL CORRESPONDENCE TO:
MS. NICOLE SMULLEN
333 W. EVERETT STREET - A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
CELL: (414) 460-7190
nicole.smullen@we-energies.com

CONSTRUCTION FIELD CONTACT:
MR. NICHOLAS WELCH
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5765
CELL: (414) 791-0406
nicholas.welch@we-energies.com

WE ENERGIES - GAS
SEND ALL CORRESPONDENCE TO:
MS. NICOLE SMULLEN
333 W. EVERETT STREET - A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
CELL: (414) 460-7190
nicole.smullen@we-energies.com

CONSTRUCTION FIELD CONTACT:
MR. NICK ERNSTER
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5574
nicholas.ernster@we-energies.com

OTHER AGENCIES

MILWAUKEE COUNTY DPW
MR. GREG HEISEL, HWY MAINT. MANAGER
10190 WATERTOWN PLANK ROAD
MILWAUKEE, WI 53226
PHONE: (414) 257-6566
gheisel@milwcnty.com

MILWAUKEE COUNTY PARK SYSTEM
MS. SARAH TOOMSEN
9480 WATERTOWN PLANK ROAD
WAUWATOSA, WI 53226
PHONE: (414) 257-7389 / (414) 257-6242
CELL: (414) 380-2052 / (414) 254-5691
sarah.toomsen@milwcnty.com / kevin.haley@milwcnty.com

MILWAUKEE COUNTY TRANSIT SYSTEM
MS. MELANIE FLYNN
1942 N. 17TH STREET
MILWAUKEE, WI 53205
PHONE: (414) 343-1764
mflynn@mcts.org

MILWAUKEE METRO SEWERAGE DIST
MR. LARRY ANDERSON
260 W. SEEBOTH STREET
MILWAUKEE, WI 53204
PHONE: (414) 225-2241
landerson@mmsd.com

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMISSION
MR. ROB MERRY
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953-4289
CELL: (920) 912-1086
rmerry@sewrpc.org

UWM TRUST
MR. DAVID H. GILBERT
1440 EAST NORTH AVENUE
MILWAUKEE, WI 53202
PHONE: (414) 906-4670
CELL: (414) 412-4140
dhg@uwmfdn.org

WAUWATOSA, CITY OF
MR. BILL WEHRLEY, CITY ENGINEER
7725 W. NORTH AVENUE
WAUWATOSA, WI 53213
PHONE: (414) 479-8929
wwehrley@wauwatosa.net

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES / FOREST EXPLORATION CENTER
MS. KRISTINA BETZOLD
DNR SERVICE CENTER
2925 COLUMBIA DR
PORTAGE, WI 53901-0950
PHONE: (414) 263-8517
CELL: (414) 507-4946
kristina.betzold@wisconsin.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MS. BRENDA RUENGER,
ENVIRONMENTAL COORDINATOR
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
PHONE: (262) 548-6709
brenda.ruenger@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. CHRISTOPHER HAGER, PROJECT MANAGER
MR. LANCE PARVE, DESIGN LEAD
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
PHONE: (414) 750-1487 – CHRIS HAGER
CELL NOS. (414) 731-5375 – LANCE PARVE
christopher.hager@dot.wi.gov
lance.parve@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. GREG BERRY- UTILITY COORDINATOR
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
CELL: (414) 750-7828
gregory.berry@dot.wi.gov

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

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

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

GENERAL NOTES

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

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.

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES SHALL BE FILLED WITH COMPACTED BACKFILL GRANULAR UNLESS REGULATIONS REQUIRE OTHERWISE. BACKFILL GRANULAR MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE. CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE.

ADJUST TRAFFIC CONTROL DEVICES TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE PLACED WITH 6-INCH TYPICAL DEPTH.

DO NOT REMOVE TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

THE EXACT LOCATION OF EXCAVATION BELOW SUBGRADE (EBS) WILL BE DETERMINED BY THE ENGINEER.

WHEN DEFINING THE PAVEMENT STRUCTURE, THE BOTTOM OF THE BASE AGGREGATE DENSE IS CONSIDERED THE SUBGRADE LINE. THE SELECT CRUSHED MATERIAL LAYER IS A SUBGRADE IMPROVEMENT.

CONVERSION TABLE (FDM 14-15-10.2.2):

MATERIAL	UNIT WEIGHT
HMA PAVEMENT	110 LB/SY/INCH
BASE AGGREGATE DENSE 1 1/4-INCH	2.0 TONS/CY
SELECT CRUSHED MATERIAL	1.9 TONS/CY

PROVIDE TEMPORARY POSITIVE DRAINAGE ON THE NEWLY INSTALLED STORM SEWER SYSTEM UNTIL IT IS ABLE TO EFFECTIVELY DRAIN TO ITS INTENDED OR PLANNED OUTFALL. ANY WORK REQUIRED TO COMPLETE THIS DRAINAGE IS INCIDENTAL TO THE BID ITEMS FOR STORM SEWER.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, VERIFY RELATED DRAINAGE INFORMATION IN THE PLANS AND PROVIDE DOCUMENTATION TO ENGINEER IN ACCORDANCE WITH THE SPECIFICATIONS.

GROUND DISTURBANCE SHOULD NOT TAKE PLACE OUTSIDE OF THE SLOPE INTERCEPTS IN WETLAND AREAS OR “NO TOUCH” HABITAT AREAS.

CONSTRUCT HMA PAVEMENT WITH THE FOLLOWING LAYERS:

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	
4 LT 58-28 S 3 LT 58-28 S	6"	2 1/2" UPPER LAYER 3 1/2" LOWER LAYER	A
4 LT 58-28 S 3 LT 58-28 S	4"	1 3/4" UPPER LAYER 2 1/4" LOWER LAYER	B

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEWS
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLANS
PLAN DETAILS
PAVING GRADES
EXISTING TOPOGRAPHY
GRADING PLAN
CROSS SECTION MATCHLINES
EROSION CONTROL
STORM SEWER
EXISTING UTILITY PLANS
PERMANENT SIGNING
LIGHTING PLANS
PAVEMENT MARKING
TRAFFIC CONTROL
DETOUR
ALIGNMENT LAYOUT

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
ASPH	ASPHALTIC
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EB	EASTBOUND
FE	FIELD ENTRANCE
FL	FLOW LINE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PGL	PROFILE GRADE LINE
PLE	PERMANENT LIMITED EASEMENT
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RRFB	RECTANGULAR RAPID FLASH BEACON
RRSP	RAILROAD SPIKE
RT	RIGHT
SALV	SALVAGED
SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COARSE
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND

2

FUTURE PATH (BY OTHERS)

FUTURE BUILDING (BY OTHERS)

FUTURE TRAIL HEAD (BY OTHERS)

FUTURE PATH (BY OTHERS)

FUTURE WOOD SHED (BY OTHERS)

FOREST EXPLORATION DRIVE

45NB

40NB

35NB

30NB

25NB

FINAL LANDSCAPING TO BE DONE BY CITY OF WAUWATOSA

N

USH 45

SWAN BOULEVARD

BEGIN PROJECT 1060-33-94
STA. 191BV+80.50

END PROJECT 1060-33-94
STA. 215BV+37.06

CONSTRUCTION LIMITS
STA. 26NB+41.00

CITY OF WAUWATOSA

UNDERWOOD PARKWAY

DISCOVERY PARKWAY

STH 100

W. WATERTOWN PLANK ROAD

170BV

175BV

180BV

185BV

190BV

195BV

200BVEB

200BVWB

205BVEB

205BVWB

210BV

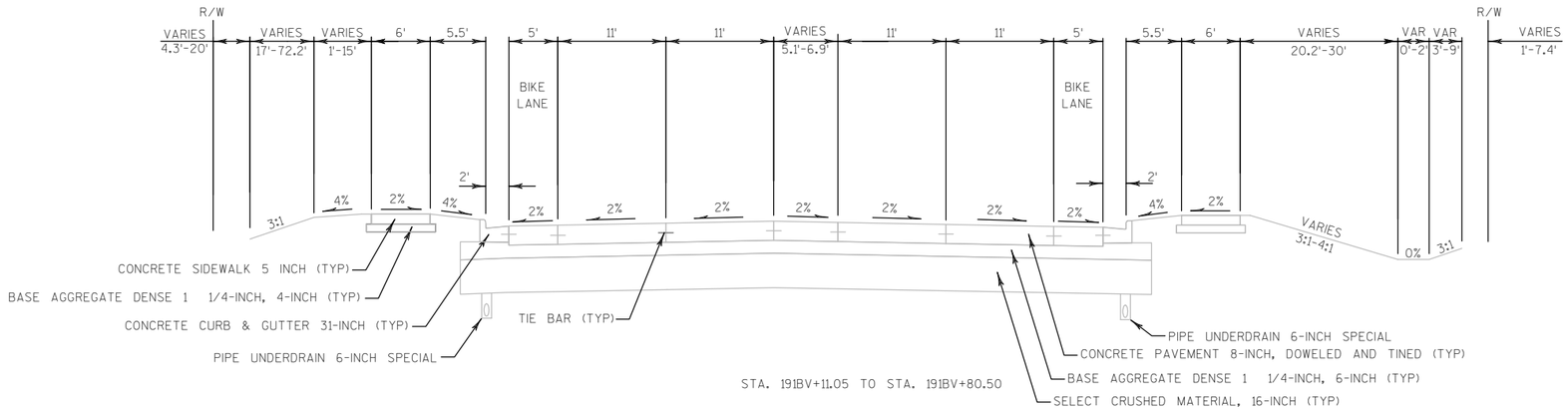
215BV

220BV

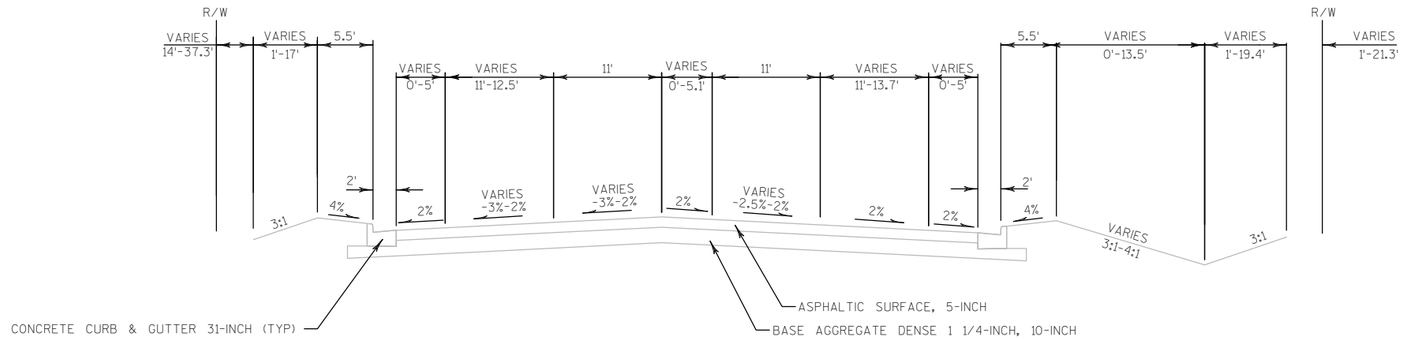
225BV

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E

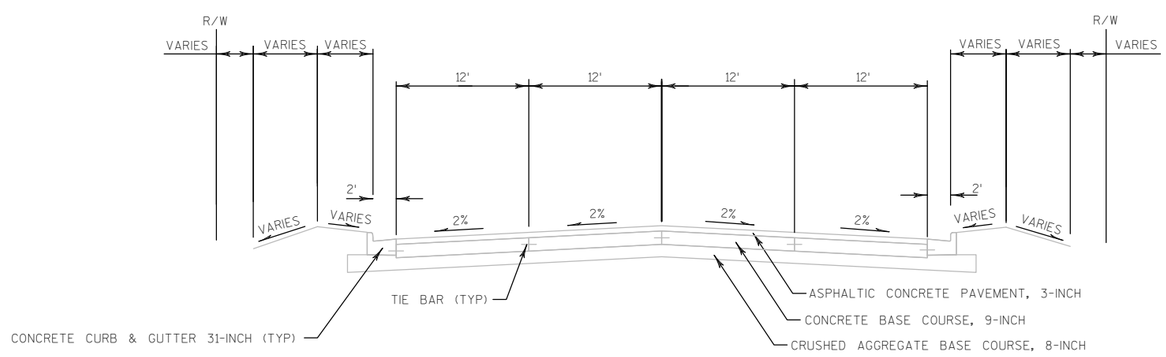
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\020201_PO.DWG PLOT DATE : 1/24/2019 11:11 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:400 FT



STA. 191BV+11.05 TO STA. 191BV+80.50



STA. 191BV+80.50 TO STA. 195BV+06.59



STA. 195BV+06.59 TO STA. 211BV+04.50

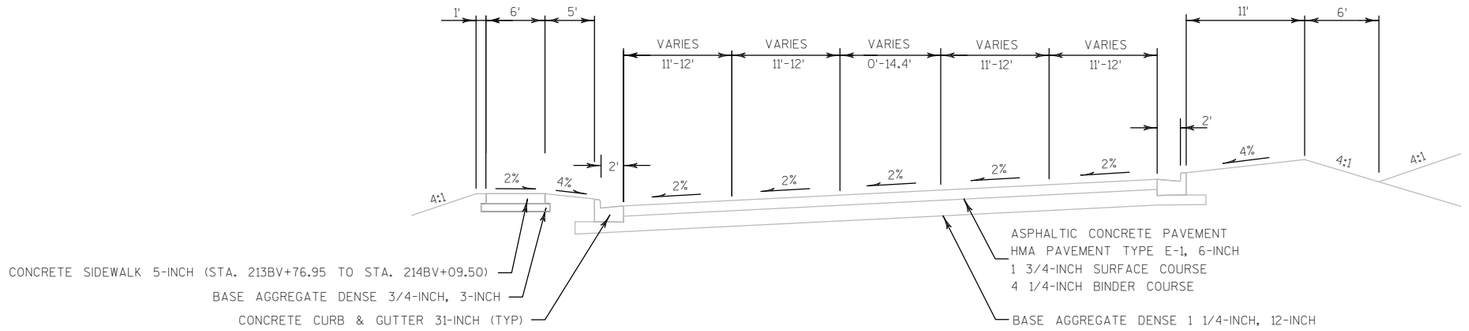
TYPICAL EXISTING SECTION

SWAN BOULEVARD

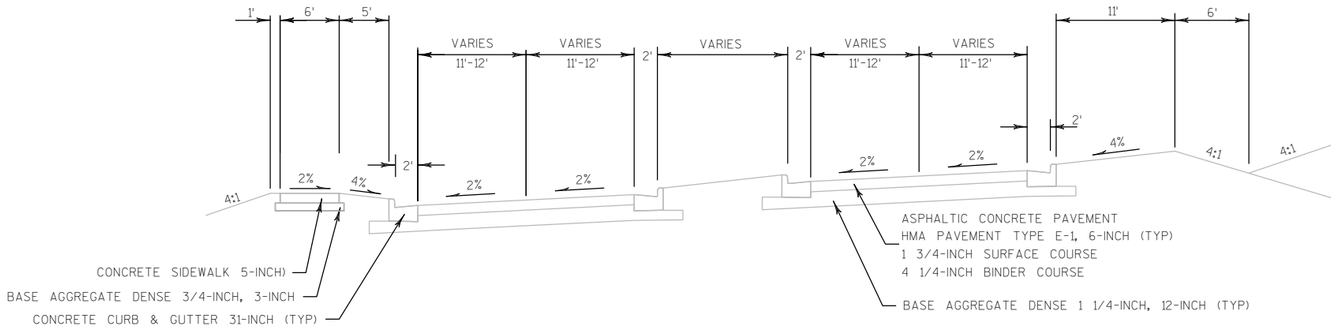
STA. 191BV+11.05 TO STA. 211BV+04.50

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 5	E

2



STA. 211BV+04.50 TO STA. 214BV+09.50

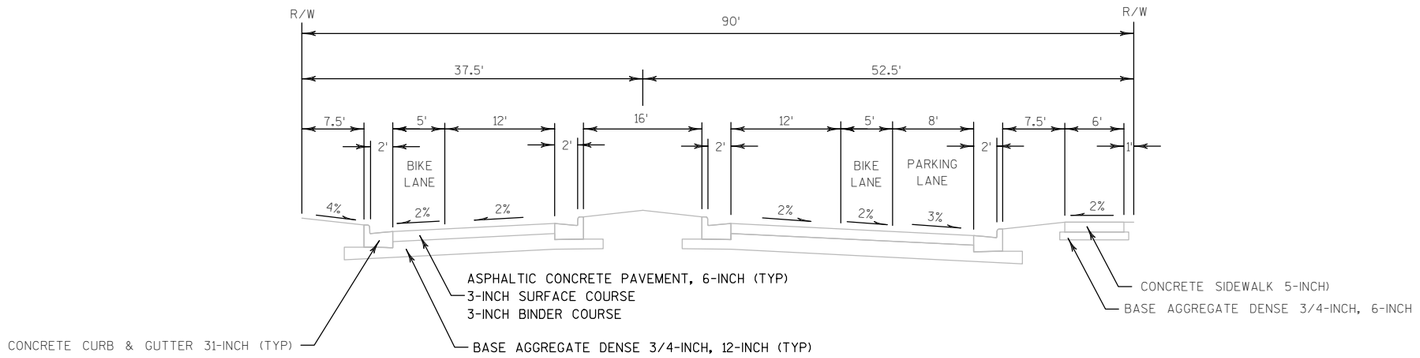


STA. 214BV+09.50 TO STA. 215BV+37.06

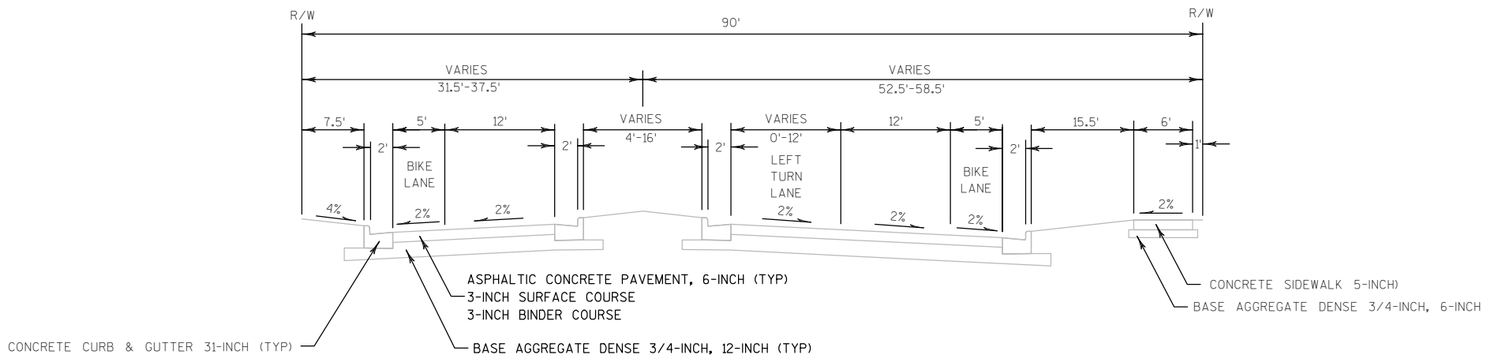
TYPICAL EXISTING SECTION

SWAN BOULEVARD

STA. 211BV+04.50 TO STA. 215BV+37.06



STA. 26NB+30.00 TO STA. 27NB+24.19



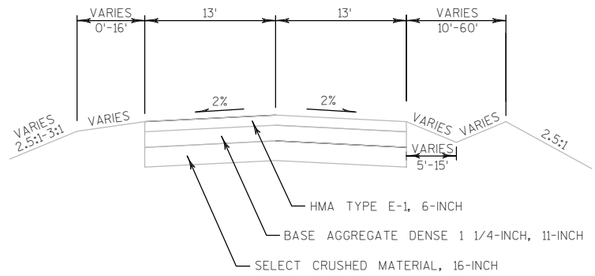
STA. 27NB+24.19 TO STA. 30NB+00.00

TYPICAL EXISTING SECTION

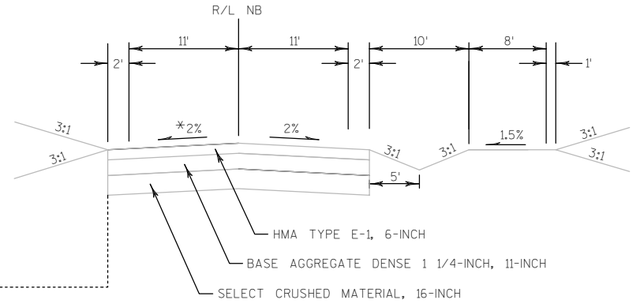
DISCOVERY PARKWAY

STA. 26NB+30.00 TO STA. 30NB+00.00

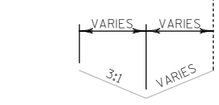
2



STA. 31NB+75.00 TO STA. 33NB+78.46



STA. 33NB+78.46 TO STA. 36NB+59.20



STA. 35NB+00.00 TO STA. 35NB+50.00

NOTES

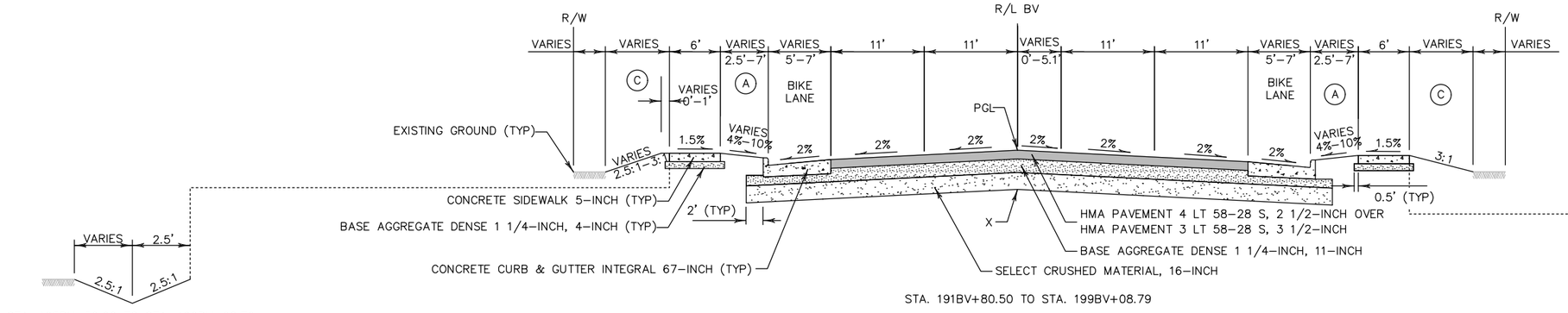
PCL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS-SECTION
*SLOPES IN OPPOSITE DIRECTION FROM STA. 34NB+72.83 TO STA. 36NB+59.20

TYPICAL EXISTING SECTION

FOREST EXPLORATION DRIVE

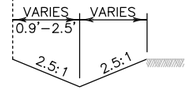
STA. 31NB+75.00 TO STA. 36NB+59.20

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 8	E

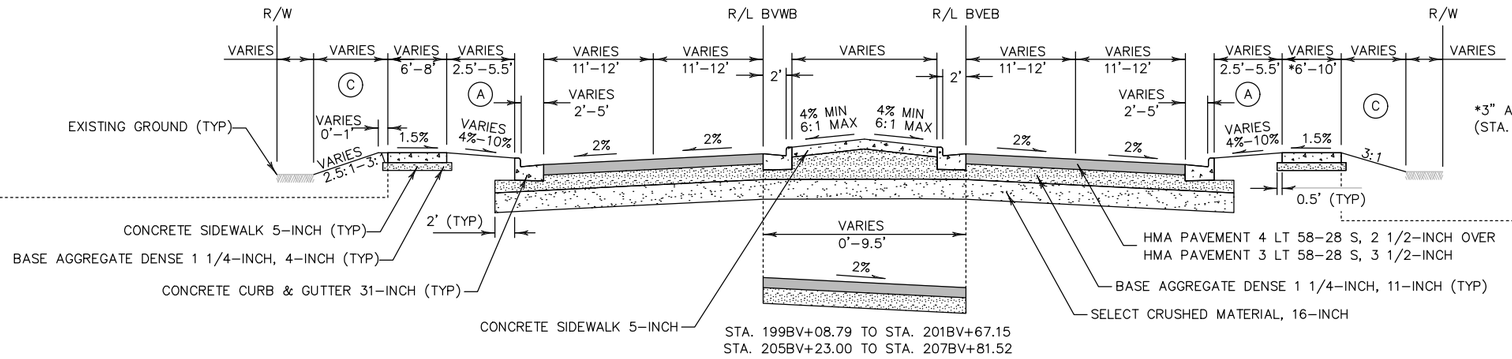


STA. 191BV+80.50 TO STA. 199BV+08.79

STA. 195BV+50.00 TO STA. 199BV+08.79

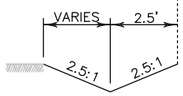


STA. 193BV+50.00 TO STA. 199BV+08.79

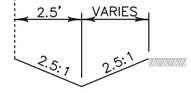


STA. 199BV+08.79 TO STA. 201BV+67.15
STA. 205BV+23.00 TO STA. 207BV+81.52

*3" ASPHALTIC SURFACE OVER 6" BASE AGGREGATE DENSE 1 1/4–INCH (STA. 205BV+23.00 TO STA. 207BV+81.52)

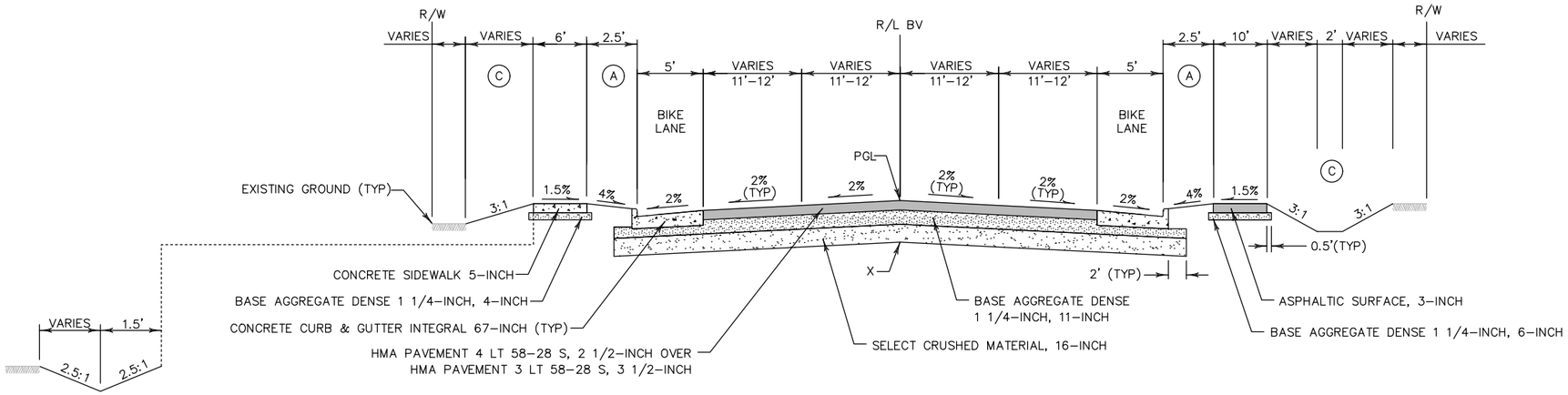


STA. 199BV+08.79 TO STA. 201BV+00.00



STA. 199BV+08.79 TO STA. 202BV+00.00

STA. 199BV+08.79 TO STA. 207BV+81.52



STA. 208BV+75.00 TO STA. 210BV+25.00

STA. 207BV+81.52 TO STA. 213BV+00.00

NOTES

PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS–SECTION

TYPICAL FINISHED SECTION

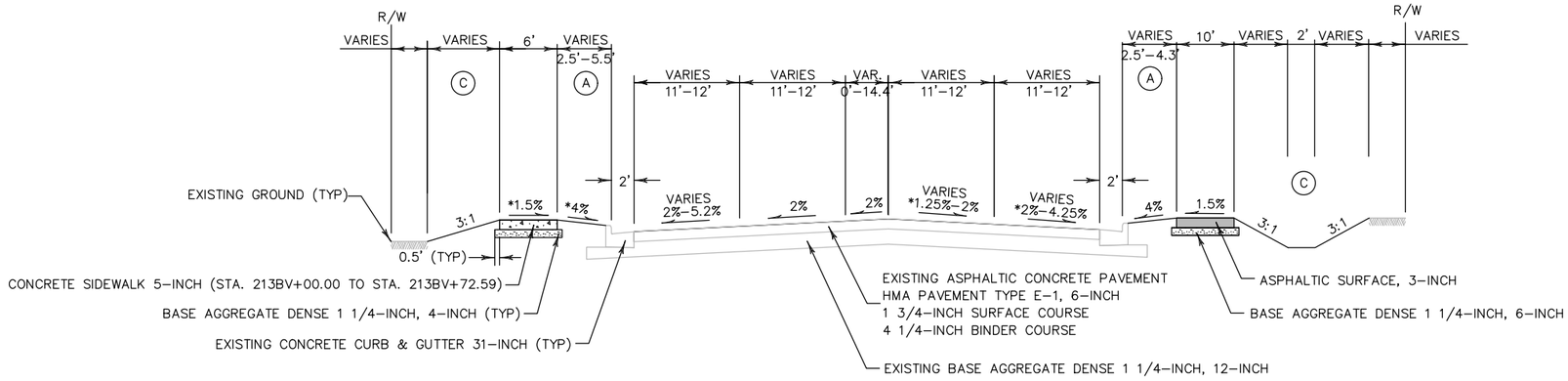
SWAN BOULEVARD

STA. 191BV+80.50 TO STA. 213BV+00.00

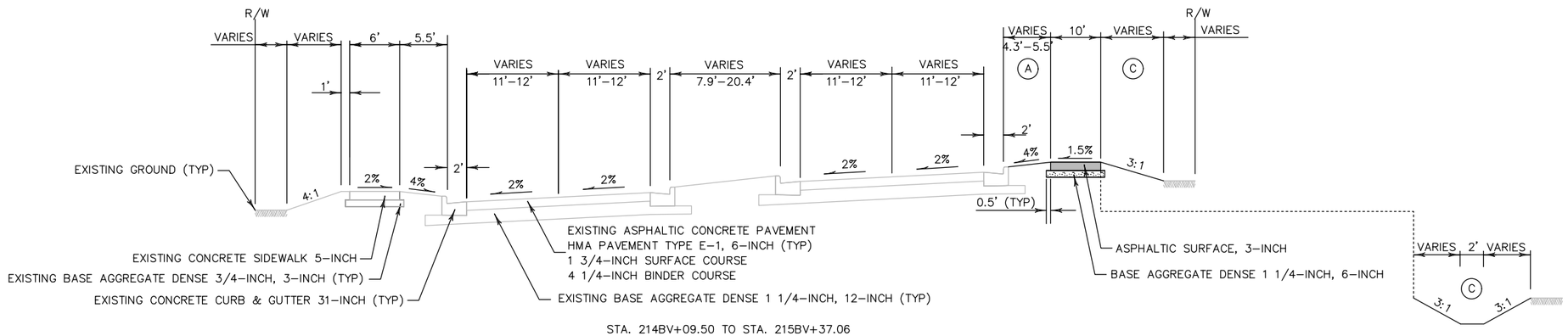
LEGEND

(A) TOPSOIL, SOD LAWN & FERTILIZER
(C) TOPSOIL, SEED, FERTILIZER & MULCH

PROJECT NO: 1060–33–94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 9	E



STA. 213BV+00.00 TO STA. 214BV+09.50



STA. 214BV+09.50 TO STA. 215BV+37.06

STA. 214BV+09.50 TO STA. 215BV+00.00

NOTES

PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS–SECTION
*SLOPES IN OPPOSITE DIRECTION AT STA. 213+25.00

TYPICAL FINISHED SECTION

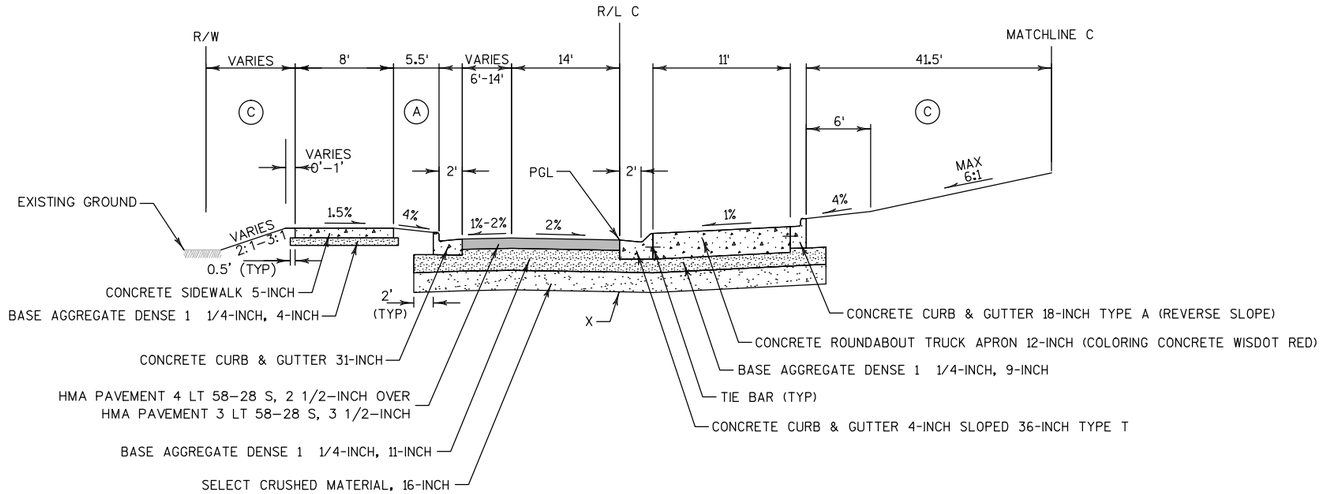
SWAN BOULEVARD

STA. 213BV+00.00 TO STA. 215BV+37.06

LEGEND

(A) TOPSOIL, SOD LAWN & FERTILIZER
(C) TOPSOIL, SEED, FERTILIZER & MULCH

PROJECT NO: 1060–33–94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 10	E



TYPICAL FINISHED SECTION

ROUNDABOUT

STA 1C+00.00 TO STA 4C+58.14

NOTES

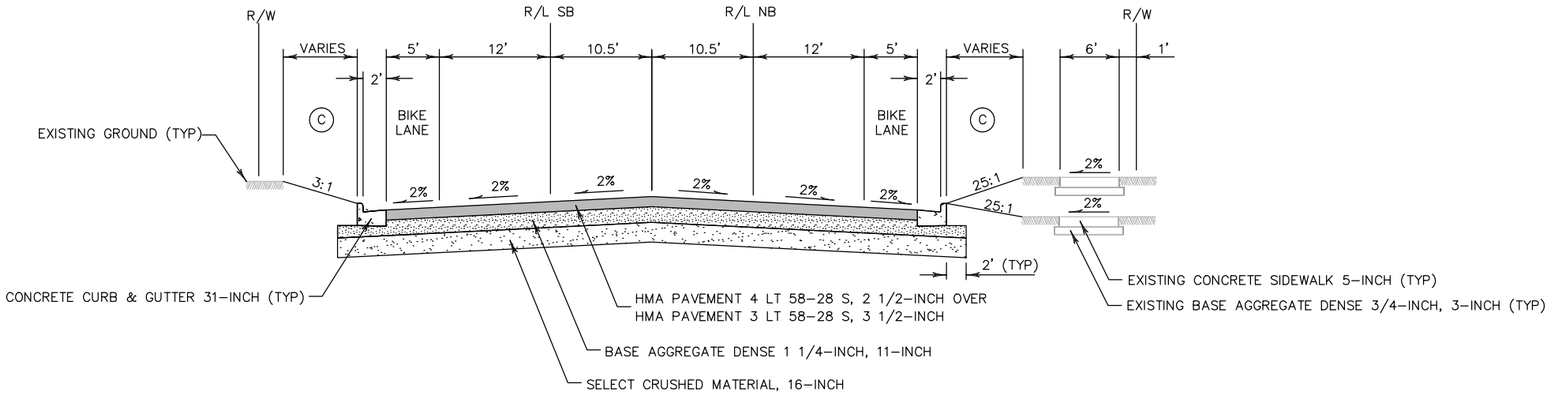
PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS-SECTION

LEGEND

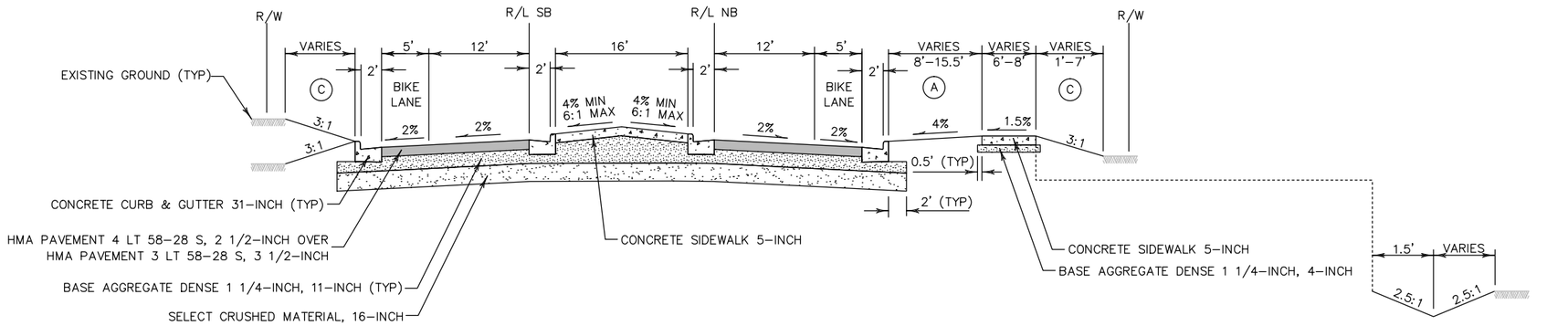
(A) TOPSOIL, SOD LAWN & FERTILIZER
(C) TOPSOIL, SEED, FERTILIZER & MULCH

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 11	E

2



STA. 26NB+41.00 TO STA. 26NB+91.00



STA. 26NB+91.00 TO STA. 30NB+00.00

STA. 27NB+85.00 TO STA. 29NB+20.00

NOTES

PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS-SECTION

TYPICAL FINISHED SECTION

DISCOVERY PARKWAY

STA. 26NB+41.00 TO STA. 30NB+00.00

LEGEND

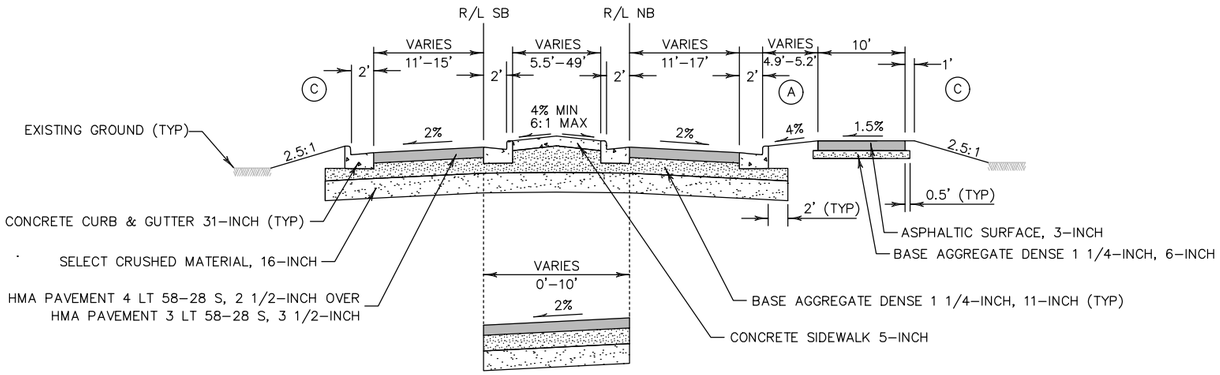
(A) TOPSOIL, SOD LAWN & FERTILIZER
(C) TOPSOIL, SEED, FERTILIZER & MULCH

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 12	E

LEGEND

(A) TOPSOIL, SOD LAWN & FERTILIZER

(C) TOPSOIL, SEED, FERTILIZER & MULCH

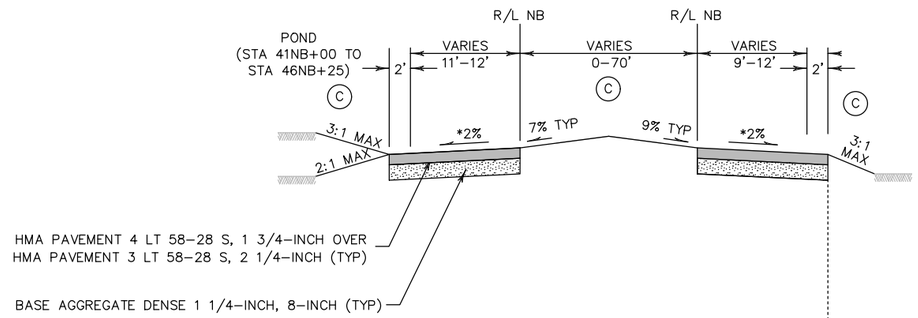


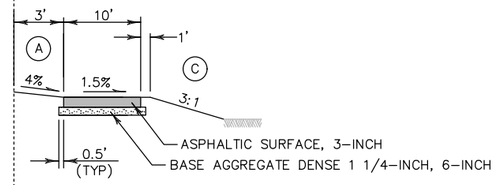
STA. 32NB+90.00 TO STA. 33NB+78.46

TYPICAL FINISHED SECTION

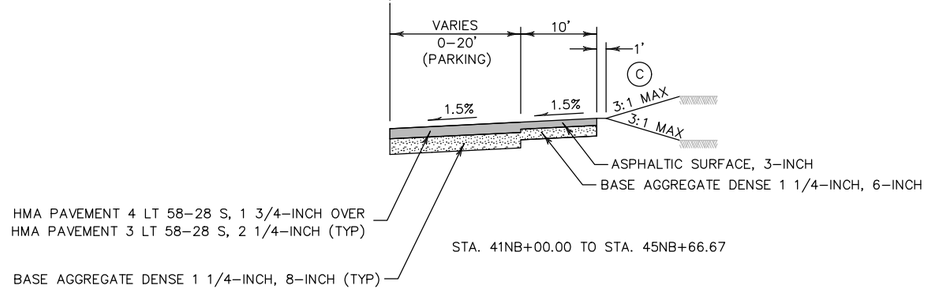
FOREST EXPLORATION DRIVE

STA. 31NB+75.00 TO STA. 33NB+78.46





STA. 33NB+78.46 TO STA. 35NB+67.00



STA. 41NB+00.00 TO STA. 45NB+66.67

TYPICAL FINISHED SECTION

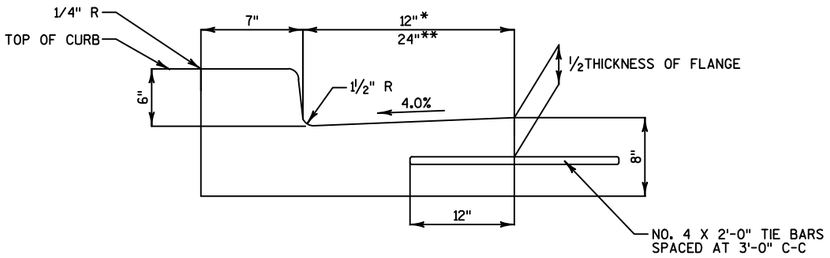
WDNR SITE

STA. 33NB+78.46 TO STA. 48NB+14.48

NOTES

PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS–SECTION
*MAY SLOPE IN OPPOSITE DIRECTION.
REFER TO SUPERELEVATION TABLE FOR DETAILS

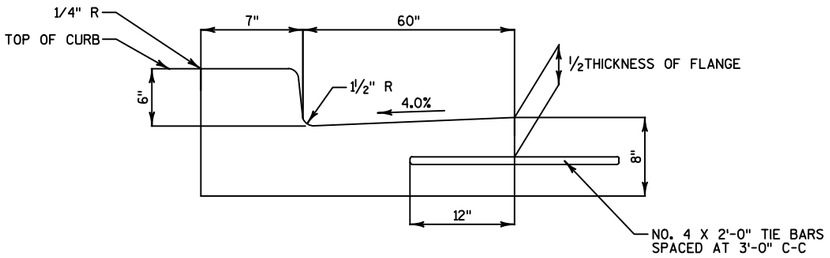
PROJECT NO: 1060–33–94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 13	E



CONCRETE CURB AND GUTTER 19-INCH* AND 31-INCH**

NOTES

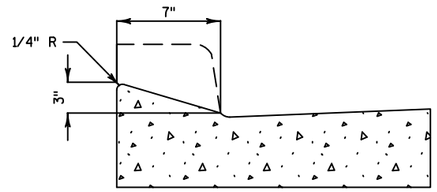
1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER ADJACENT TO NEW CONCRETE PAVEMENT.
2) OMIT TIE BARS WHERE INTEGRAL CURB AND GUTTER IS REQUIRED.
3) SEE STANDARD DETAIL DRAWING FOR DETAILS NOT SHOWN HERE.



CONCRETE CURB AND GUTTER INTEGRAL 67-INCH

NOTES

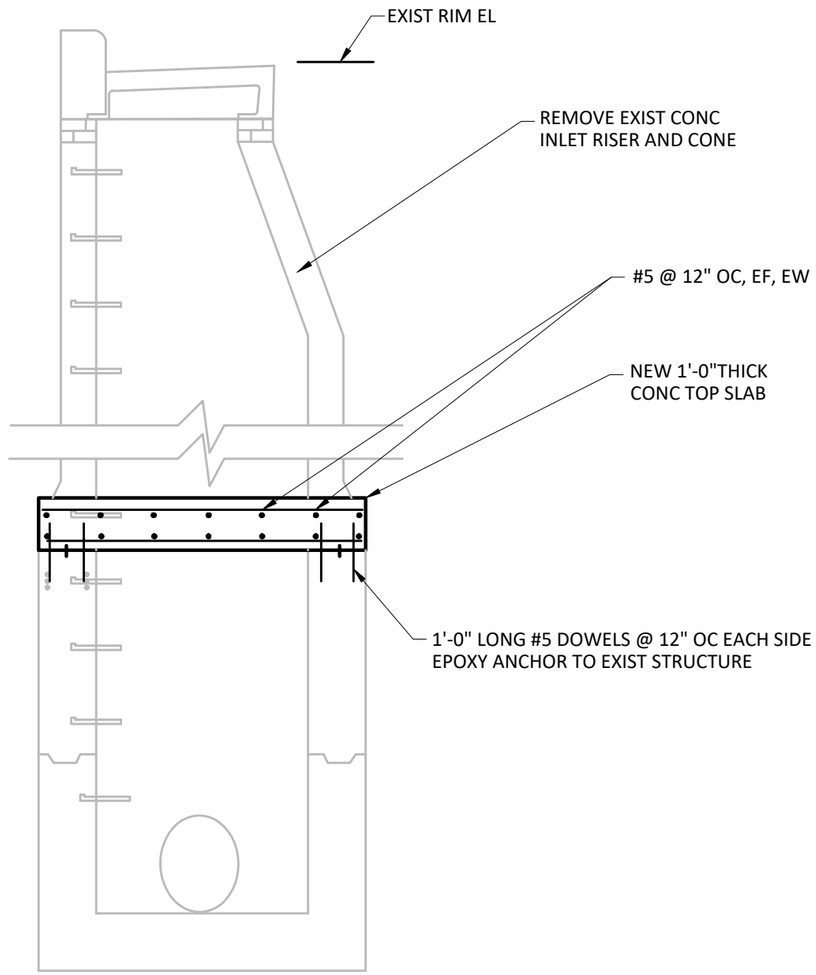
1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER ADJACENT TO NEW CONCRETE PAVEMENT.
2) OMIT TIE BARS WHERE INTEGRAL CURB AND GUTTER IS REQUIRED.
3) SEE STANDARD DETAIL DRAWING FOR DETAILS NOT SHOWN HERE.



DRIVEWAY ENTRANCE CURB

NOTE

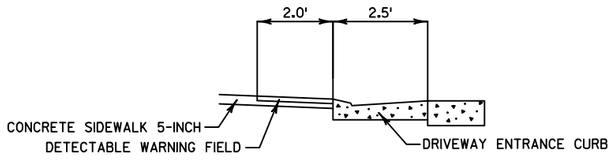
PAID FOR AS CONCRETE CURB AND GUTTER 31-INCH. MEASURED ALONG FLOW LINE.



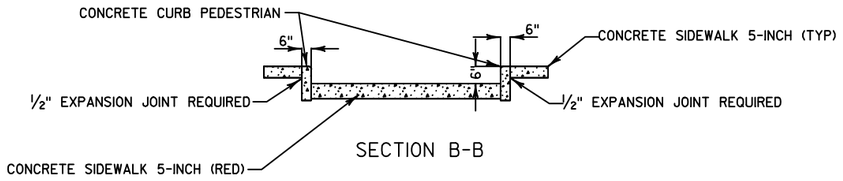
SECTION

REMOVE AND CAP EXISTING DRAINAGE STRUCTURE

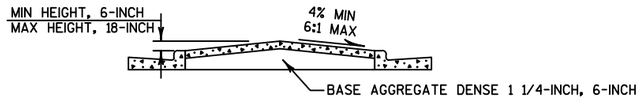
REFER TO REMOVAL PLAN



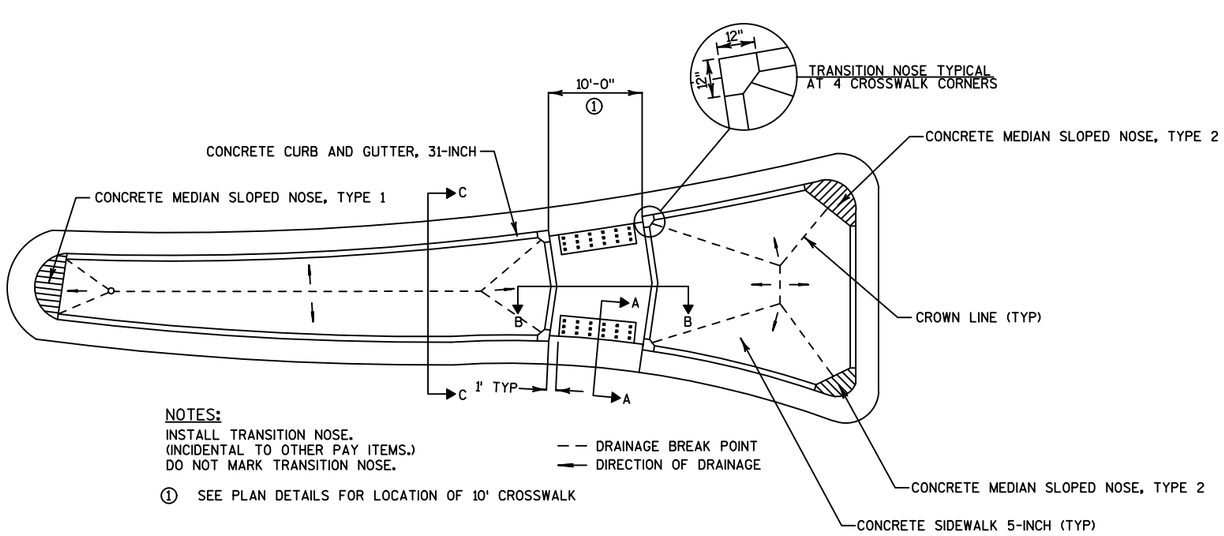
SECTION A-A



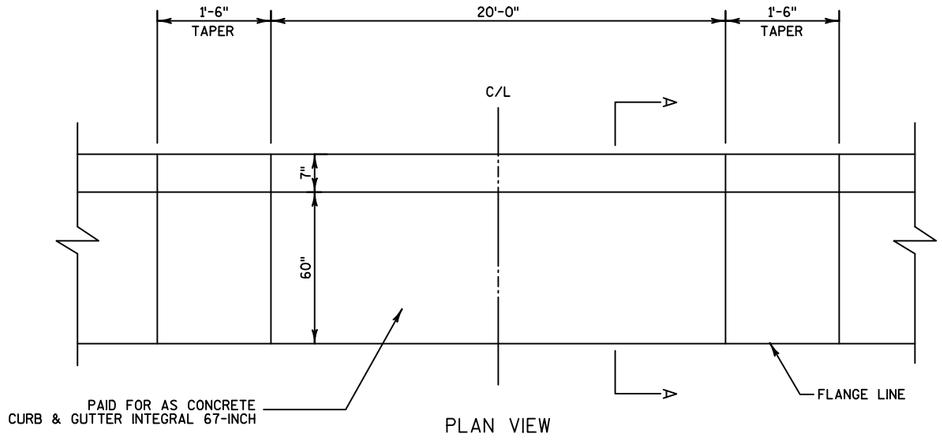
SECTION B-B



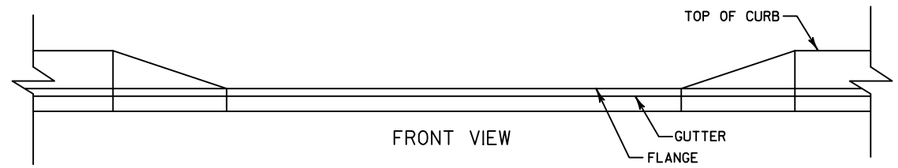
SECTION C-C



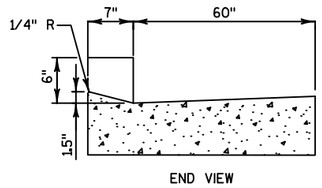
ROUNDABOUT SPLITTER ISLAND DETAIL (TYP)



PLAN VIEW



FRONT VIEW



END VIEW

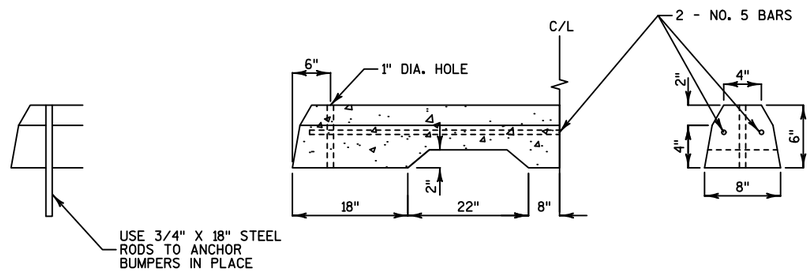
SECTION A-A

NOTE

PAID FOR AS CURB AND GUTTER. MEASURED ALONG FLOW LINE.

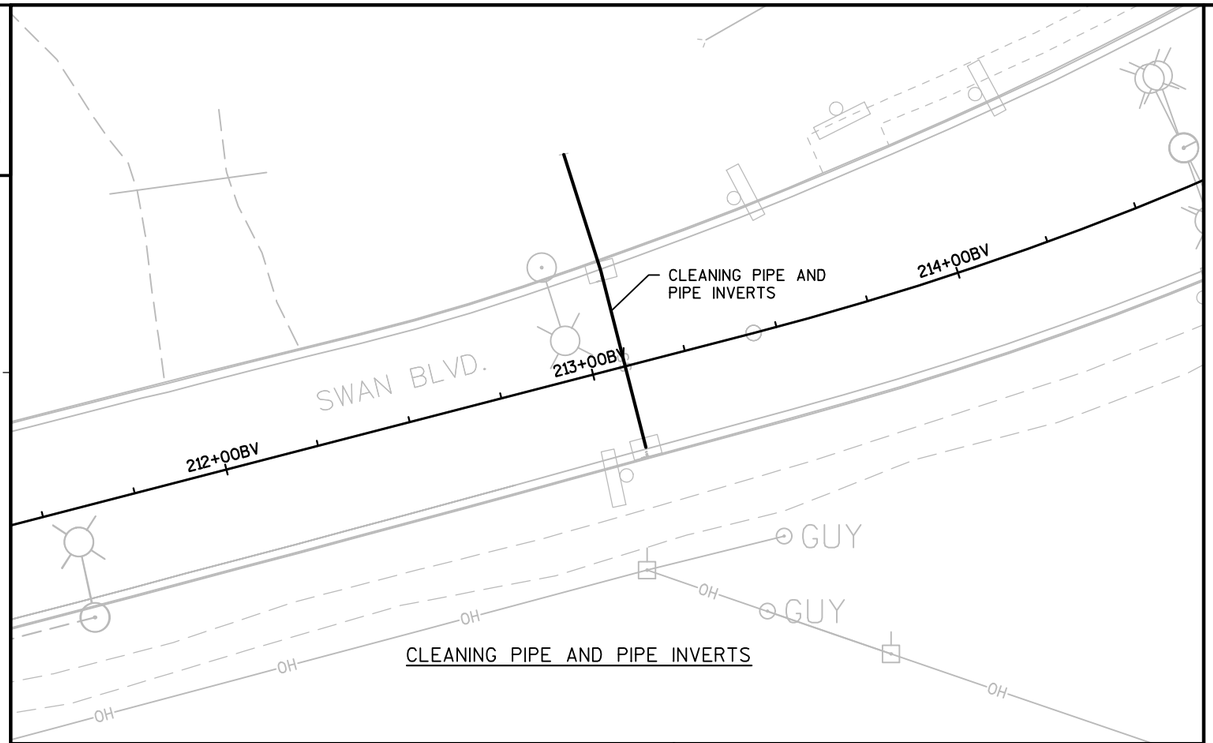
MAINTENANCE OPENING

200BVWB+22.11, 27' LT

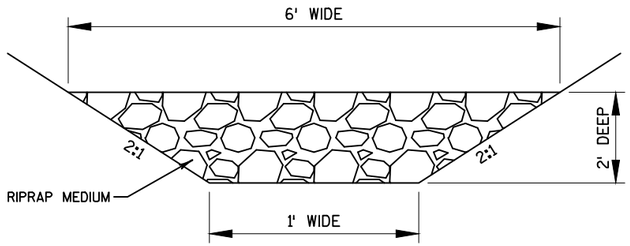


PRECAST CONCRETE PARKING BUMPER

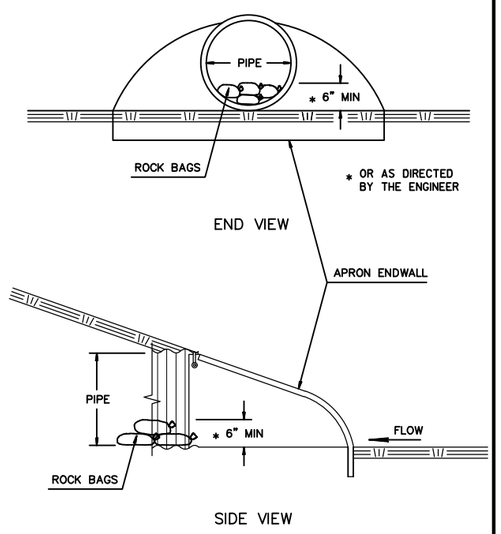
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 15	E



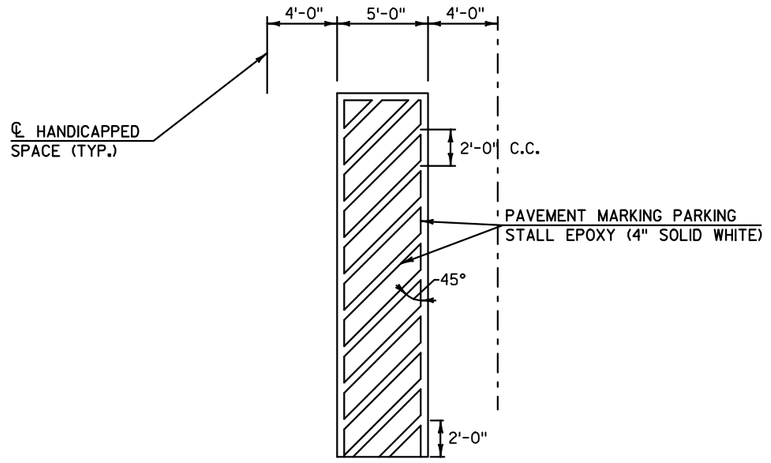
CLEANING PIPE AND PIPE INVERTS



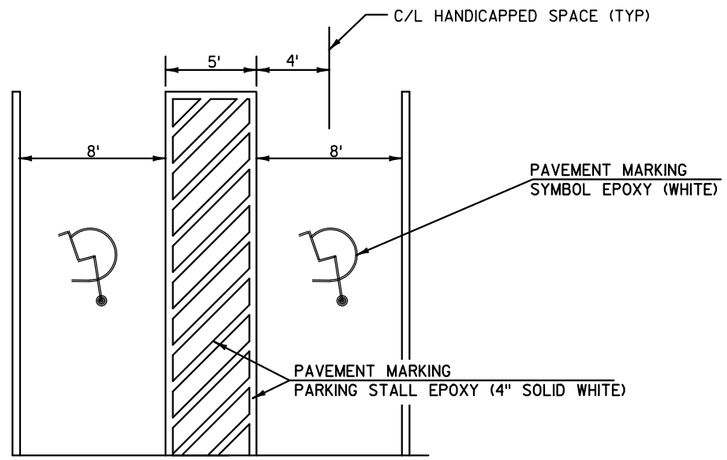
RIPRAP REPAIR DETAIL



CULVERT PIPE CHECK

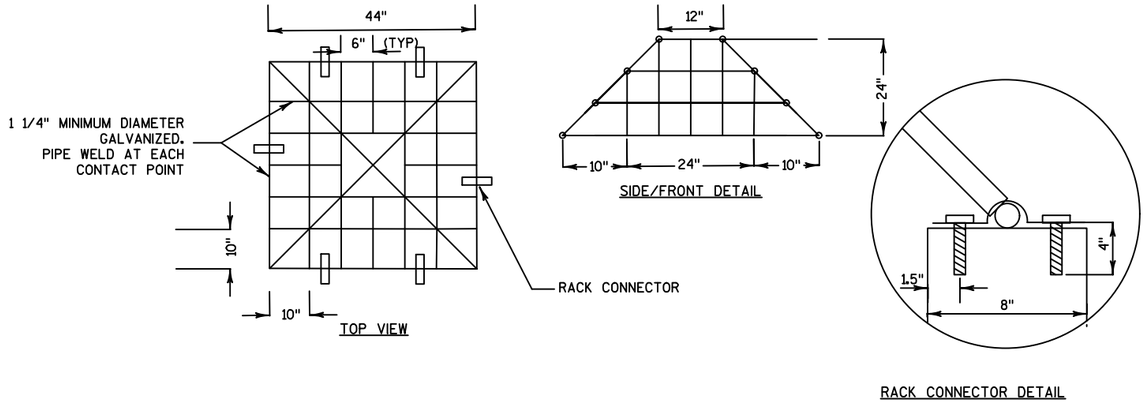


STRIPING DETAIL BETWEEN HANDICAPPED SPACES

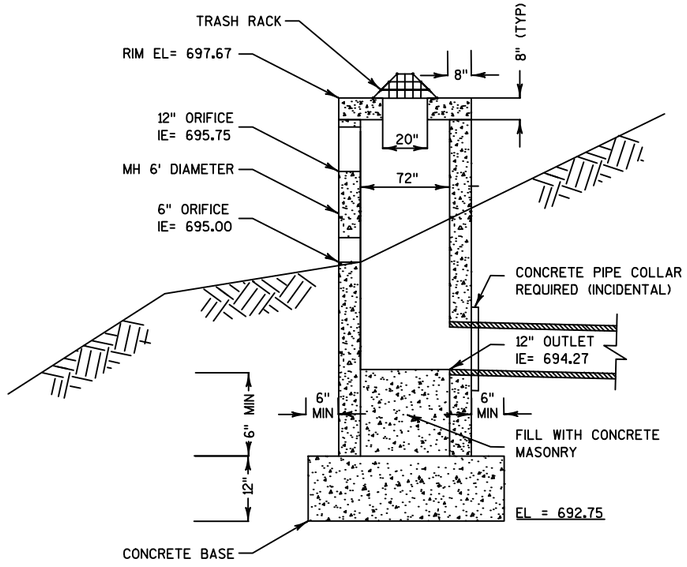


HANDICAP PAVEMENT MARKING DETAIL

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 16	E



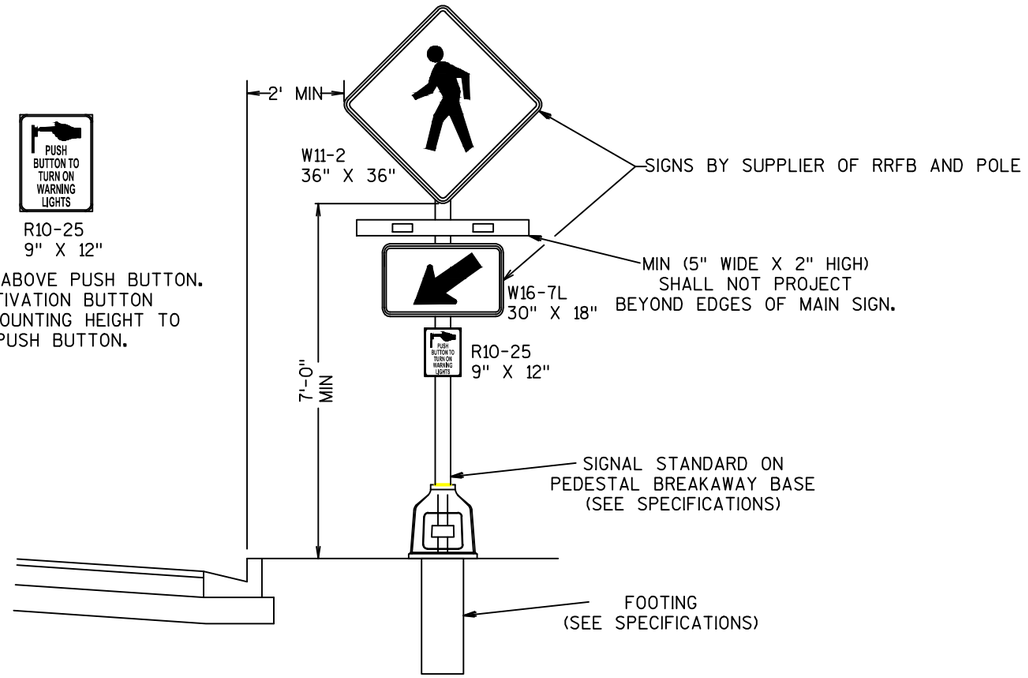
TRASH RACK



POND OUTLET STORM SEWER STRUCTURE DETAIL

R10-25
9" X 12"

LOCATE ABOVE PUSH BUTTON.
ACTIVATION BUTTON
3.5' MOUNTING HEIGHT TO
PUSH BUTTON.

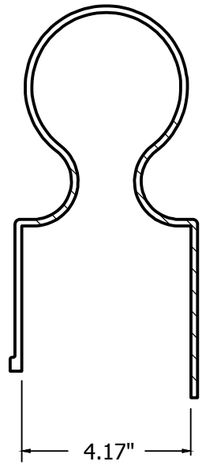


NOTE

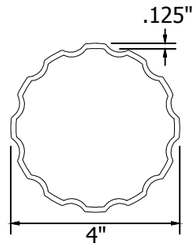
REFER TO SIGNING PLAN FOR SIGN AND RRFB LOCATIONS

RAPID RECTANGULAR FLASHING BEACON (RRFB)

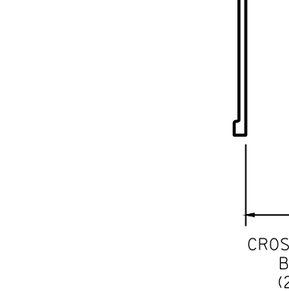
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PEDESTRIAN SIGNS FOR RRFB INSTALLATION	SHEET 17	E



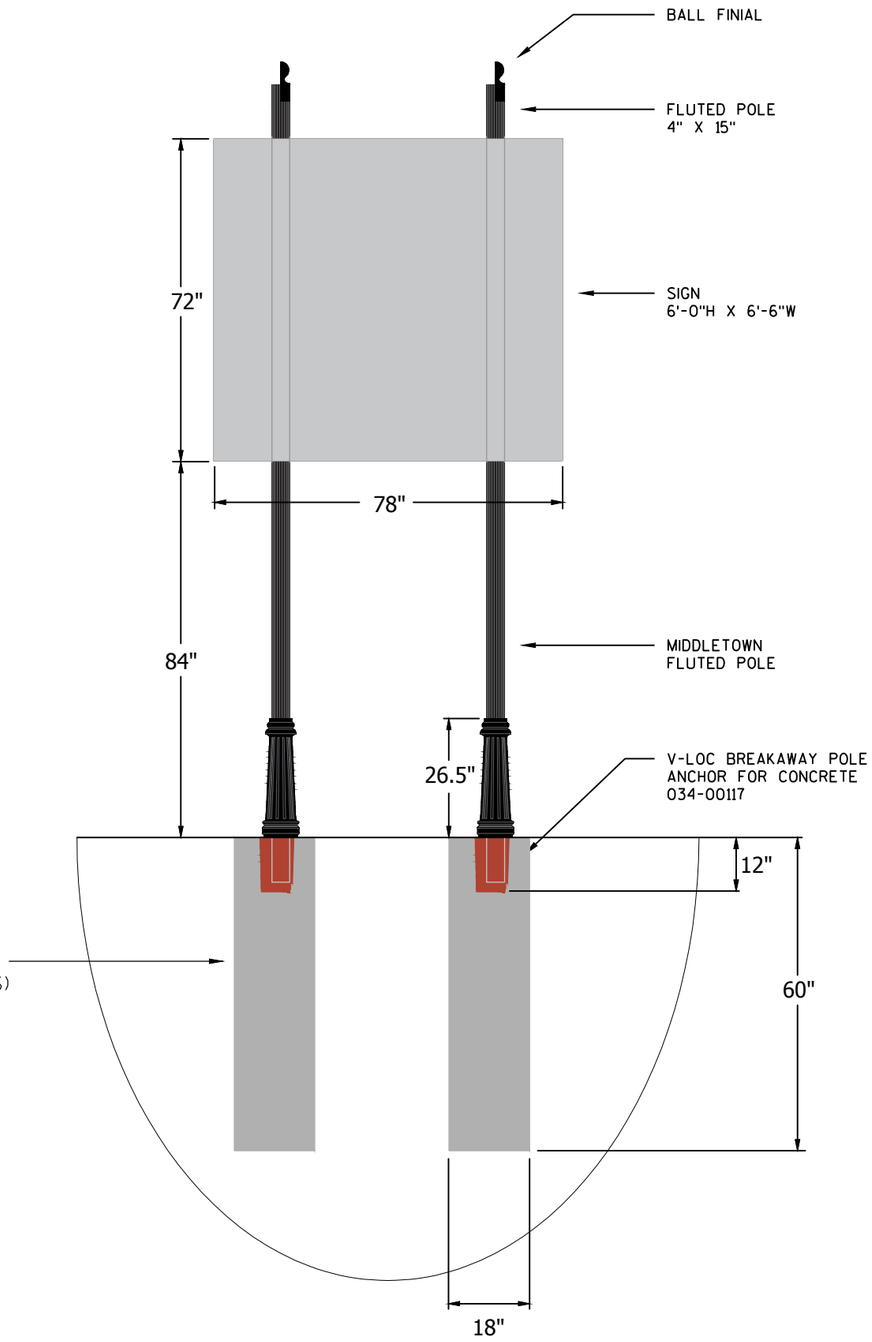
CROSS SECTION OF
BALL FINIAL
(203-00032)

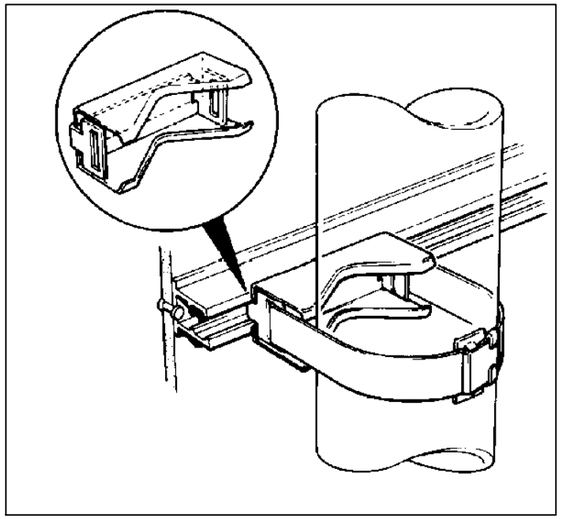


CROSS SECTION OF
FLUTED POLE
(2514-00623)

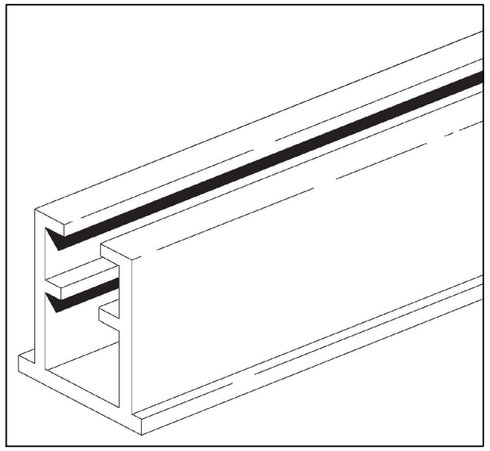


TOP DOWN VIEW
SHOWING V-LOC &
POLE IN CONCRETE

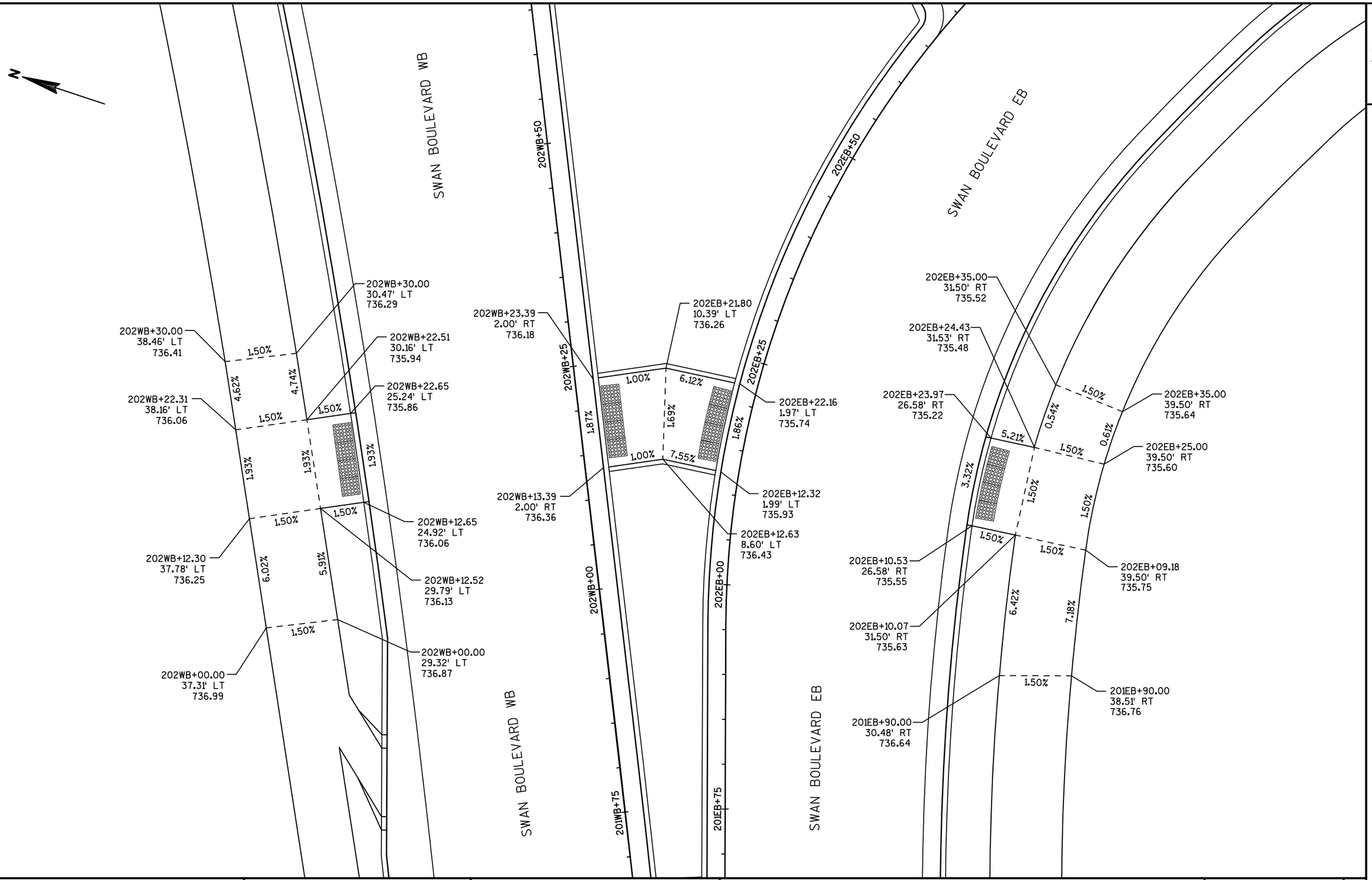




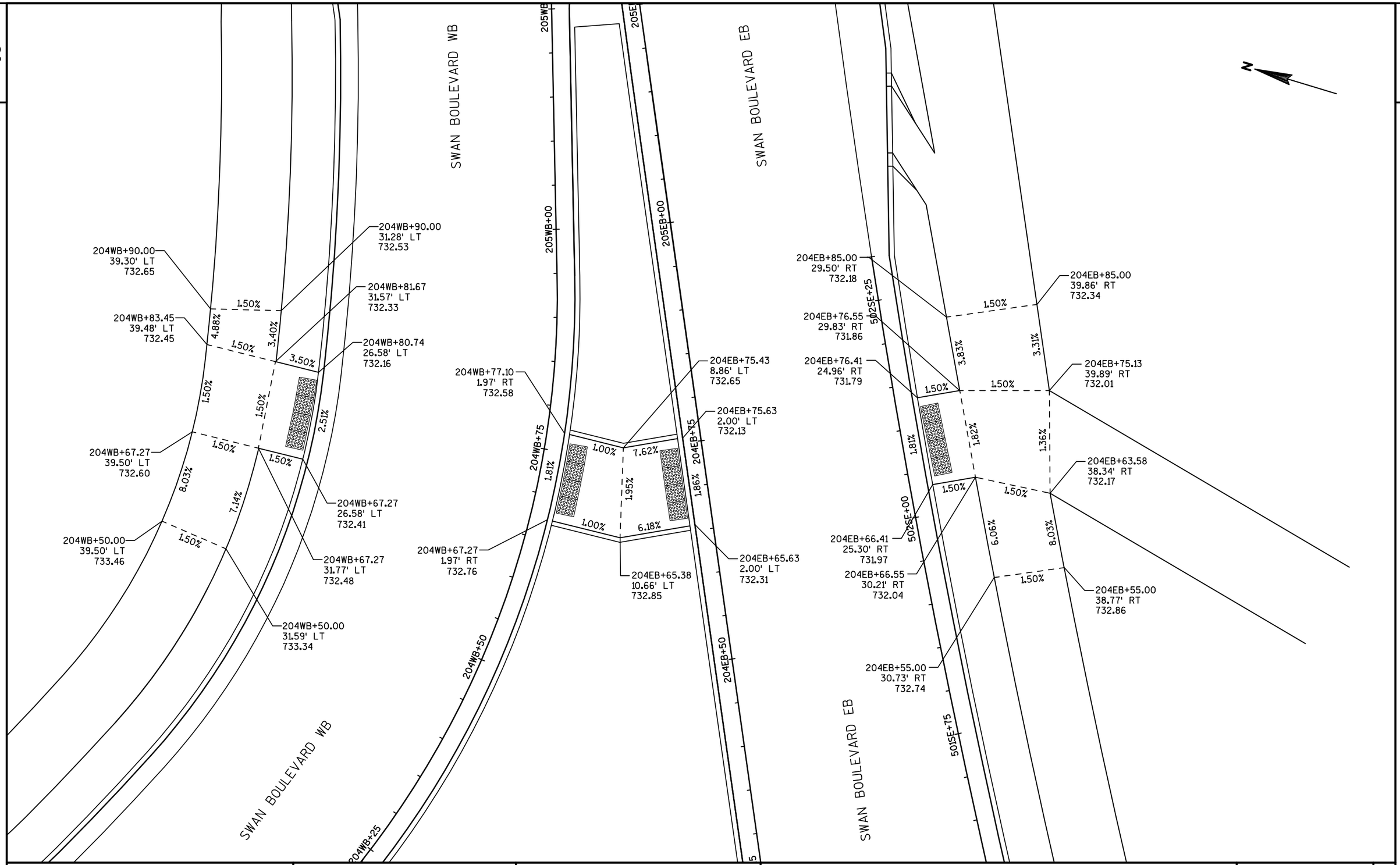
CLAMP DETAIL
UNIVERSAL POST CHANNEL CLAMP
TO FASTEN CHANNEL TO POLES



MEDIUM CHANNEL EXTRUSION
HORIZONTAL ALUMINUM SIGN STIFFENER
3 PER SIGN



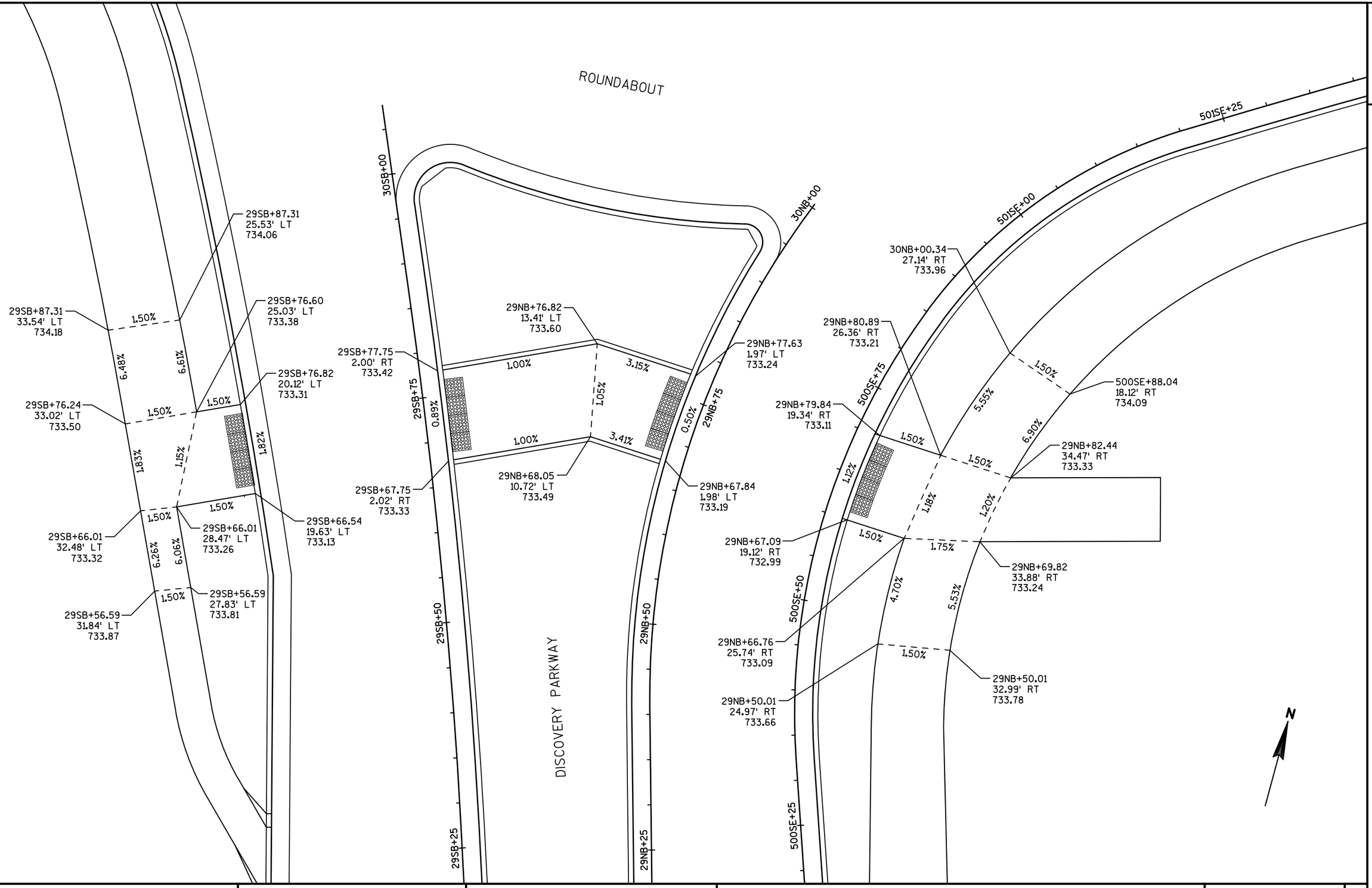
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CURB RAMP DETAILS (SWAN BLVD - WEST OF RAB)	SHEET 19	E



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CURB RAMP DETAILS (SWAN BLVD - EAST OF RAB)	SHEET 20 E

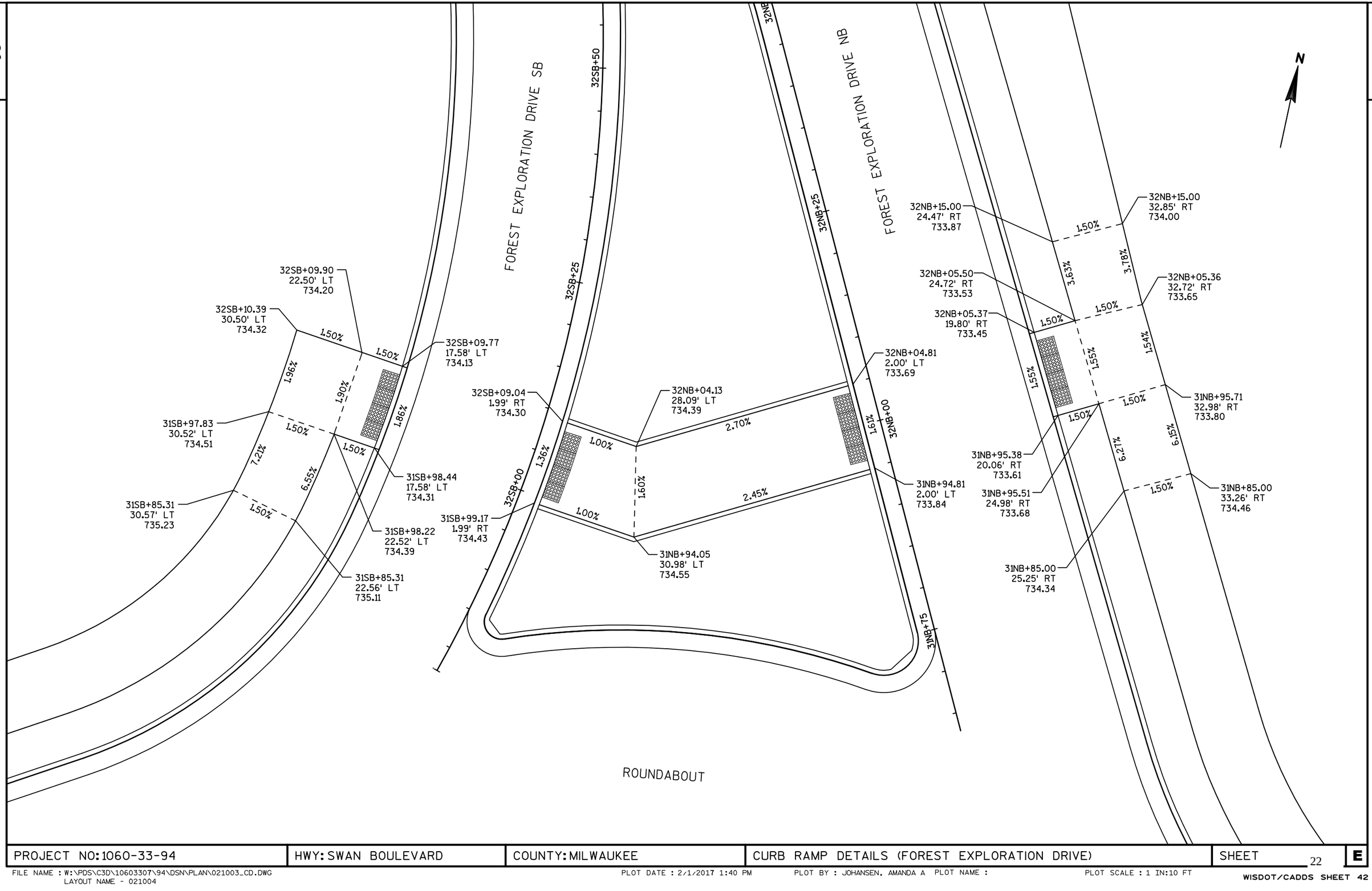
2

ROUNDABOUT



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CURB RAMP DETAILS (DISCOVERY PARKWAY)	SHEET 21	E

2



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CURB RAMP DETAILS (FOREST EXPLORATION DRIVE)	SHEET 22	E

NOTES

FOR LIGHTING REMOVALS REFER TO LIGHTING PLANS

LEGEND

- CLEARING AND GRUBBING (STA.)
- REMOVING PAVEMENT
- REMOVING CONCRETE SIDEWALK
- REMOVING CURB AND GUTTER
- SLOPE INTERCEPT
- SAWING ASPHALT
- REMOVING INLETS
- RM — REMOVING STORM SEWER
- REMOVING FENCE
- X X — ABANDONING UTILITIES
- REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE

N

USH 45 SB

USH 45 NB

341-9994-002
MK225

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

SWAN BOULEVARD

R/W

BV+80.15
27.01' LT

BV+06.75
23.49' LT

BV+80.22
32.40' RT

BV+06.40
26.67' RT

186BV

188BV

190BV

192BV

194BV

196BV

198BV

199BV+00

TLE

MATCHLINE

374-9999-011
UWM INNOVATION PARK LLC
MK206

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET 23	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021101_RM.DWG PLOT DATE : 1/22/2019 11:21 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1:100_XREF

WISDOT/CADDS SHEET 42

2

2

MATCHLINE 35NB+00

FOREST EXPLORATION DRIVE

SWAN BOULEVARD

DISCOVERY PARKWAY

MATCHLINE 199BV+00

TLE

R/W

RM

200BVWB

200BVEB

202BVWB

300SW 202BVEB

202NW

32SB

32NB

400NE

RM

R/W

402NE

206BVWB

206BVEB

208BV

210BV

212BV

TLE

RM

R/W

BV+04.50
24.04' LT

BV+00.00
25.67' LT

BV+04.50
24.11' RT

BV+00.00
22.66' RT

R/W

RELOCATE FIRE HYDRANT

305B

30NB

502SE

500SE

28SB

28NB

NB+40.98
37.89' LT

NB+41.02
25.22' RT

LEGEND

- CLEARING AND GRUBBING (STA.)
- REMOVING PAVEMENT
- REMOVING CONCRETE SIDEWALK
- REMOVING CURB AND GUTTER
- SLOPE INTERCEPT
- SAWING ASPHALT
- REMOVING INLETS
- RM — REMOVING STORM SEWER
- REMOVING FENCE
- X X ABANDONING UTILITIES
- REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE

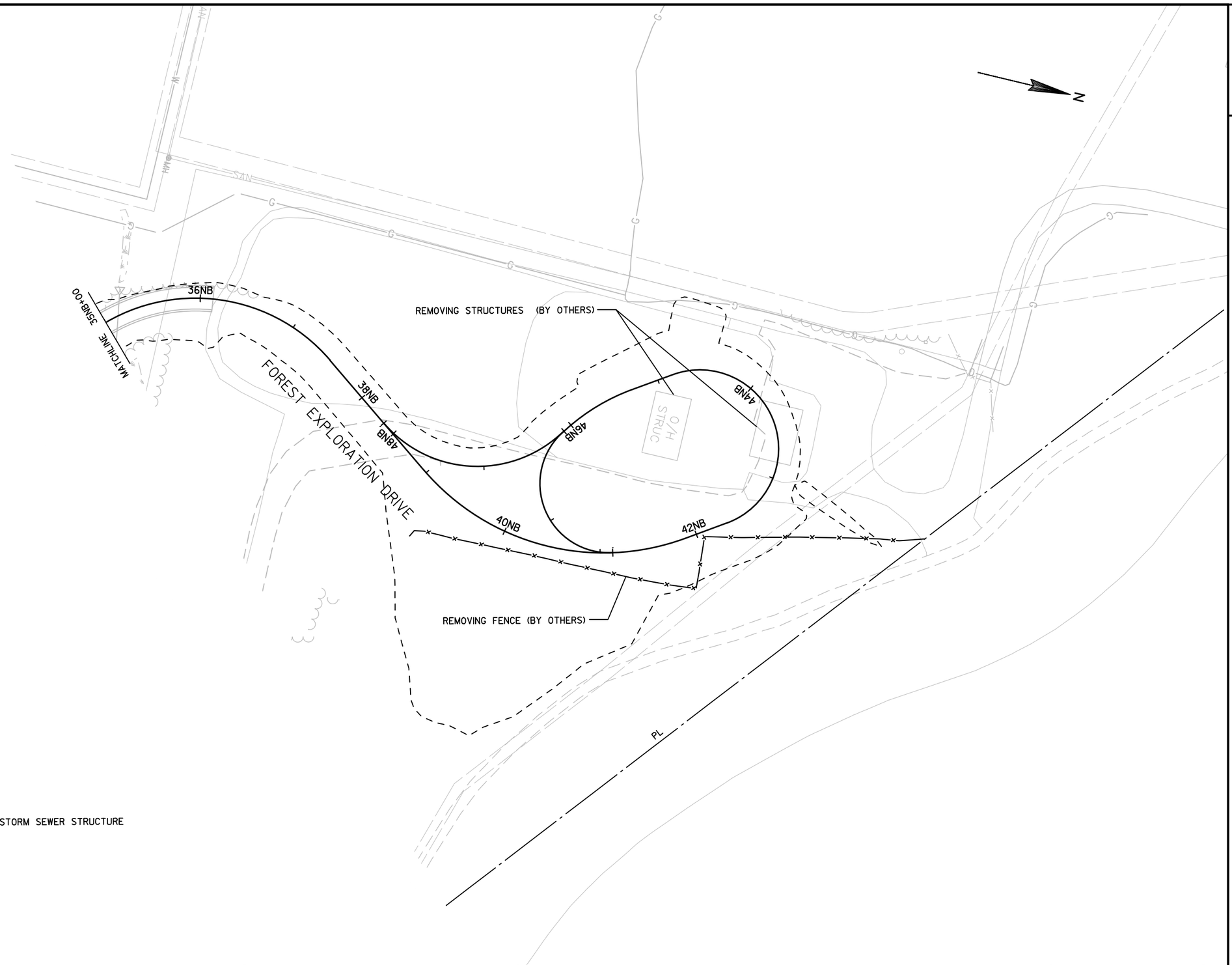
NOTES

FOR LIGHTING REMOVALS REFER TO LIGHTING PLANS

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET 24	E

NOTES

FOR LIGHTING REMOVALS REFER TO LIGHTING PLANS



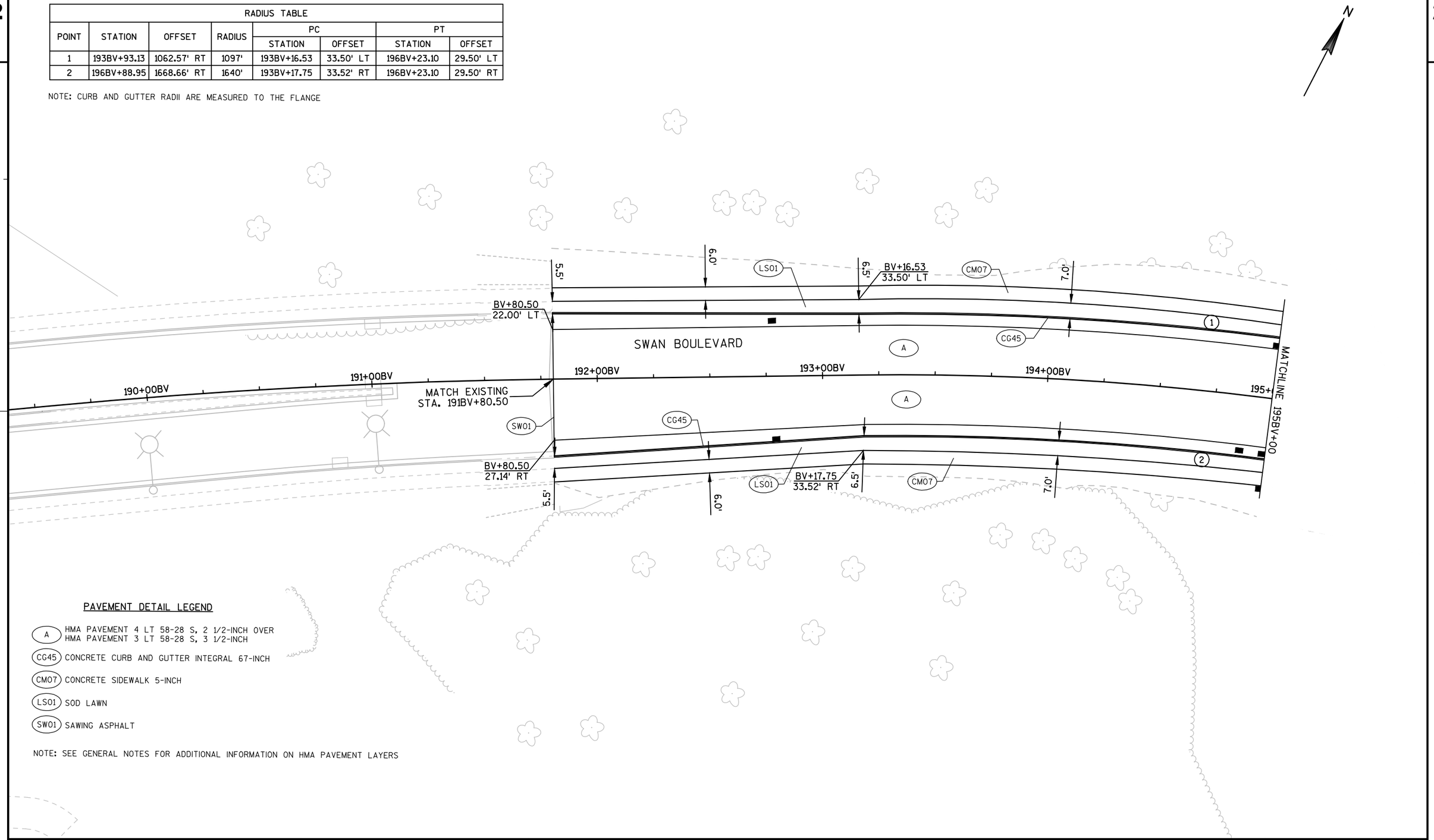
LEGEND

- CLEARING AND GRUBBING (STA.)
- REMOVING PAVEMENT
- REMOVING CONCRETE SIDEWALK
- REMOVING CURB AND GUTTER
- SLOPE INTERCEPT
- X X XX SAWING ASPHALT
- REMOVING INLETS
- RM REMOVING STORM SEWER
- REMOVING FENCE
- X X ABANDONING UTILITIES
- REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	REMOVAL PLANS	SHEET 25	E

RADIUS TABLE							
POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	193BV+93.13	1062.57' RT	1097'	193BV+16.53	33.50' LT	196BV+23.10	29.50' LT
2	196BV+88.95	1668.66' RT	1640'	193BV+17.75	33.52' RT	196BV+23.10	29.50' RT

NOTE: CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE



PAVEMENT DETAIL LEGEND

- (A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH
- (CG45) CONCRETE CURB AND GUTTER INTEGRAL 67-INCH
- (CM07) CONCRETE SIDEWALK 5-INCH
- (LS01) SOD LAWN
- (SW01) SAWING ASPHALT

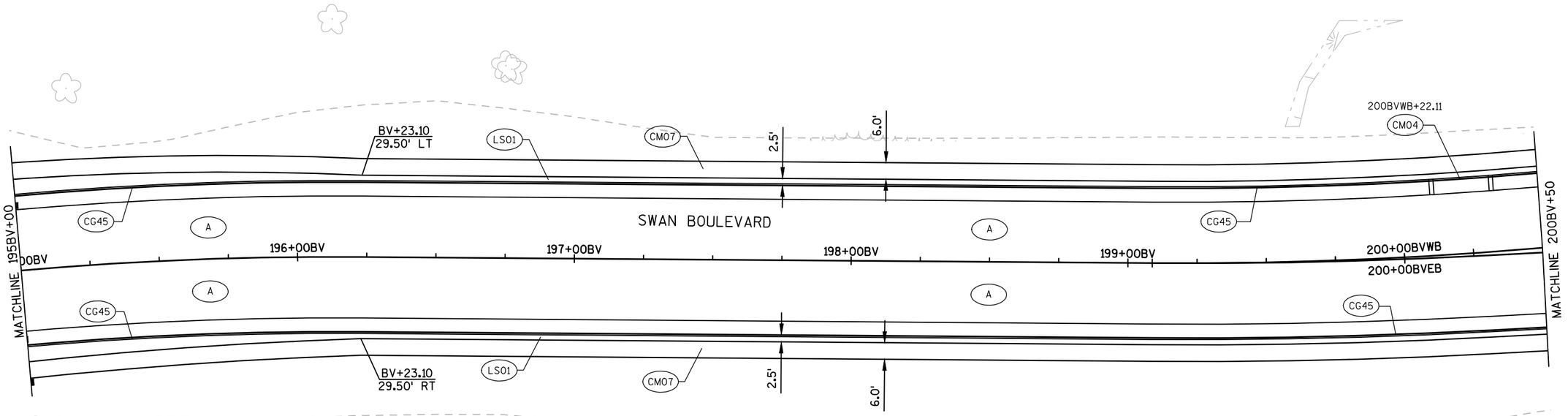
NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 26	E

PAVEMENT DETAIL LEGEND

- (A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH
- (CG45) CONCRETE CURB AND GUTTER INTEGRAL 67-INCH
- (CM04) MAINTENANCE OPENING
- (CM07) CONCRETE SIDEWALK 5-INCH
- (LS01) SOD LAWN

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS

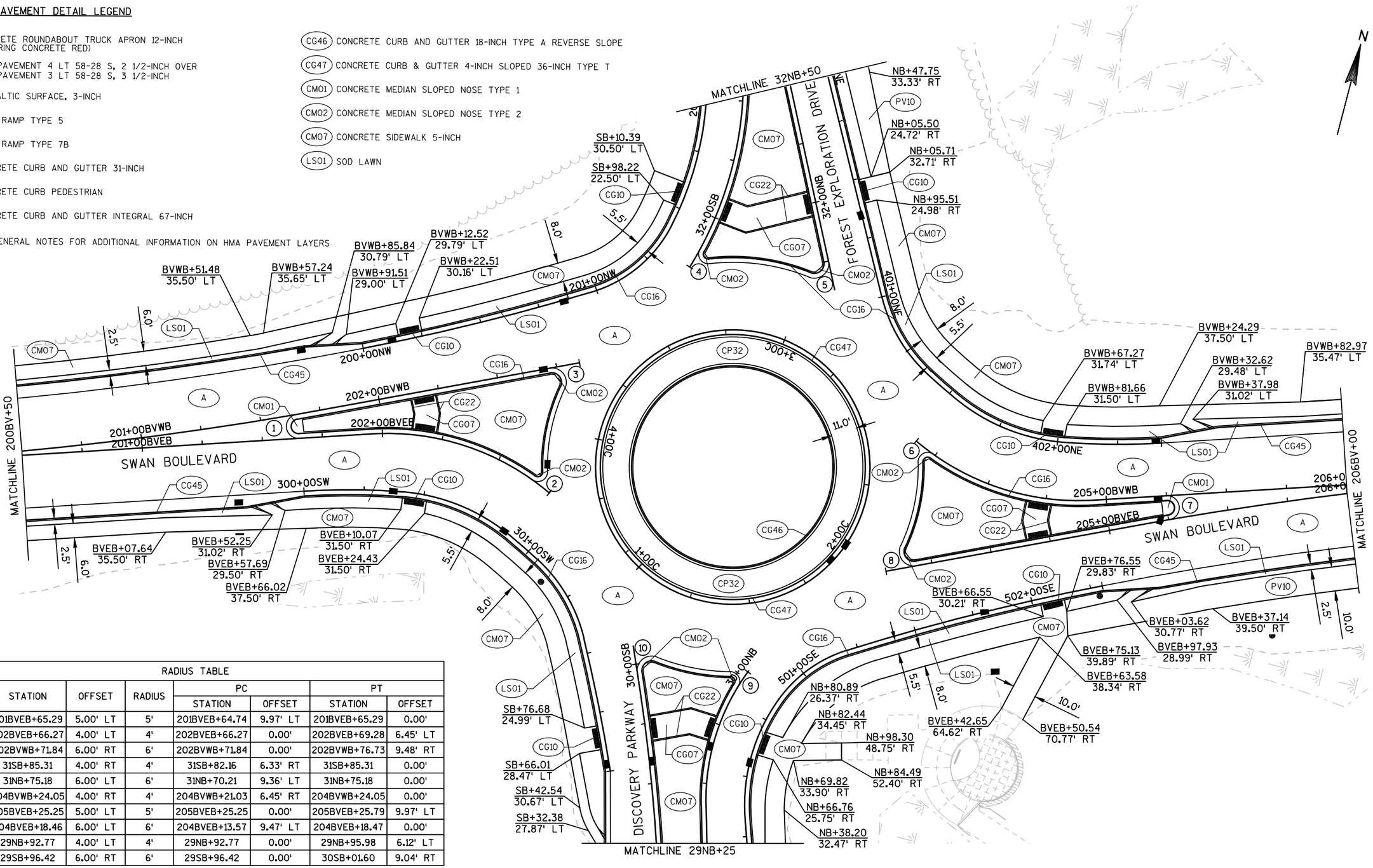


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 27	E

PAVEMENT DETAIL LEGEND

- (CP32) CONCRETE ROUNDABOUT TRUCK APRON 12-INCH (COLORING CONCRETE RED)
- (A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH
- (PV10) ASPHALTIC SURFACE, 3-INCH
- (CG07) CURB RAMP TYPE 5
- (CG10) CURB RAMP TYPE 7B
- (CG16) CONCRETE CURB AND GUTTER 31-INCH
- (CG22) CONCRETE CURB PEDESTRIAN
- (CG45) CONCRETE CURB AND GUTTER INTEGRAL 67-INCH
- (CG46) CONCRETE CURB AND GUTTER 18-INCH TYPE A REVERSE SLOPE
- (CG47) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE T
- (CM01) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (CM02) CONCRETE MEDIAN SLOPED NOSE TYPE 2
- (CM07) CONCRETE SIDEWALK 5-INCH
- (LS01) SOD LAWN

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS



RADIUS TABLE							
POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	201BVEB+65.29	5.00' LT	5'	201BVEB+64.74	9.97' LT	201BVEB+65.29	0.00'
2	202BVEB+66.27	4.00' LT	4'	202BVEB+66.27	0.00'	202BVEB+69.28	6.45' LT
3	202BVWB+71.84	6.00' RT	6'	202BVWB+71.84	0.00'	202BVWB+76.73	9.48' RT
4	31SB+85.31	4.00' RT	4'	31SB+82.16	6.33' RT	31SB+85.31	0.00'
5	31NB+75.18	6.00' LT	6'	31NB+70.21	9.36' LT	31NB+75.18	0.00'
6	204BVWB+24.05	4.00' RT	4'	204BVWB+21.03	6.45' RT	204BVWB+24.05	0.00'
7	205BVEB+25.25	5.00' LT	5'	205BVEB+25.25	0.00'	205BVEB+25.79	9.97' LT
8	204BVEB+18.46	6.00' LT	6'	204BVEB+13.57	9.47' LT	204BVEB+18.47	0.00'
9	29NB+92.77	4.00' LT	4'	29NB+92.77	0.00'	29NB+95.98	6.12' LT
10	29SB+96.42	6.00' RT	6'	29SB+96.42	0.00'	30SB+01.60	9.04' RT

NOTE: CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE

2

2

PAVEMENT DETAIL LEGEND

(A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER
HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH

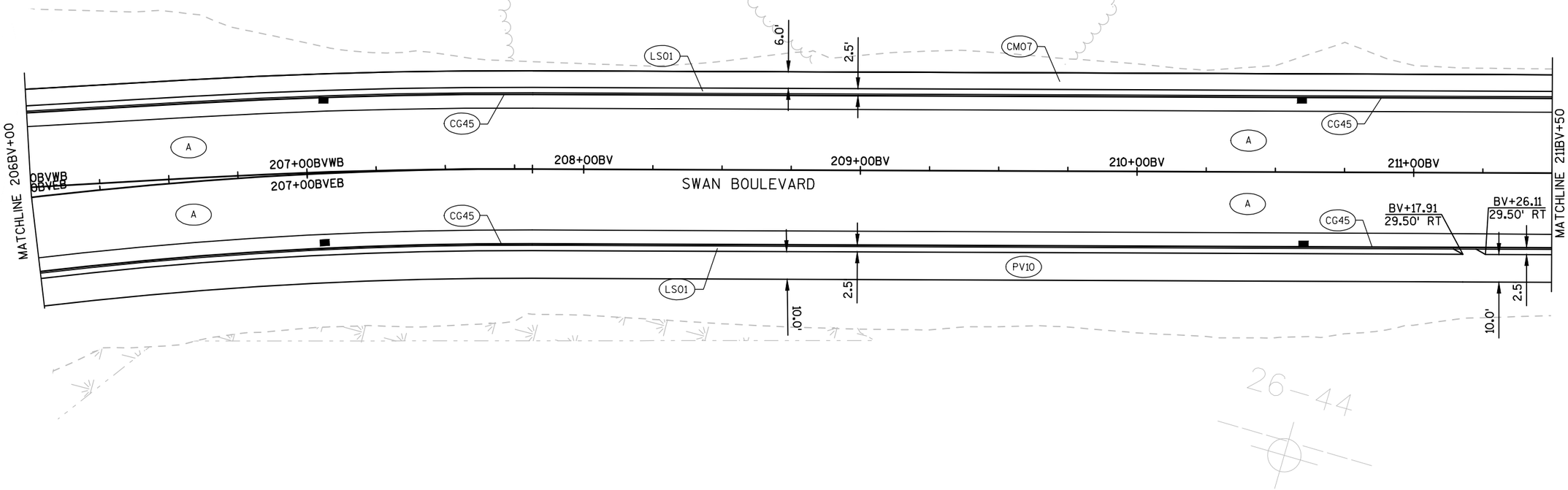
(PV10) ASPHALTIC SURFACE, 3-INCH

(CG45) CONCRETE CURB AND GUTTER INTEGRAL 67-INCH

(CM07) CONCRETE SIDEWALK 5-INCH

(LS01) SOD LAWN

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS



26-44

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 29	E

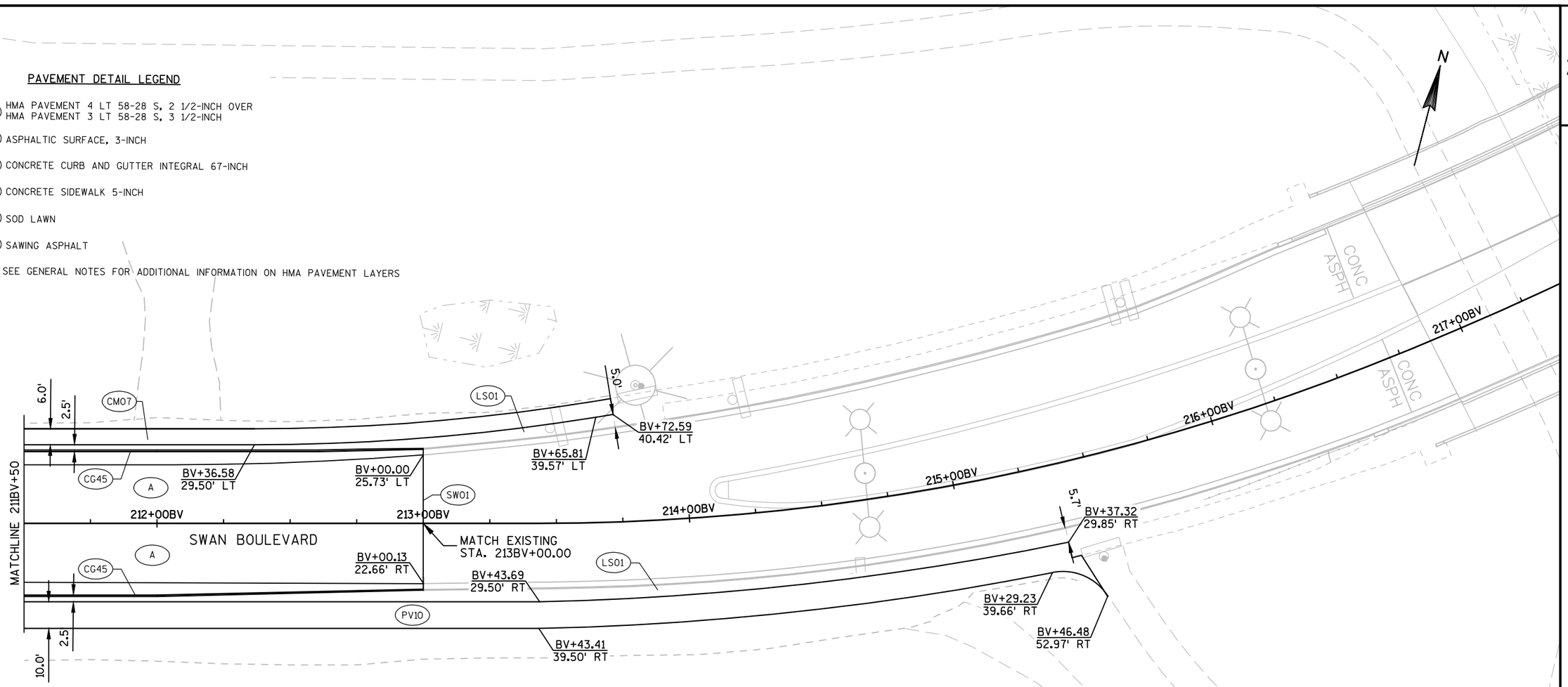
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021201_PD.DWG PLOT DATE : 10/9/2018 7:35 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

PAVEMENT DETAIL LEGEND

- (A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH
- (PV10) ASPHALTIC SURFACE, 3-INCH
- (CG45) CONCRETE CURB AND GUTTER INTEGRAL 67-INCH
- (CMO7) CONCRETE SIDEWALK 5-INCH
- (LS01) SOD LAWN
- (SW01) SAWING ASPHALT

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS



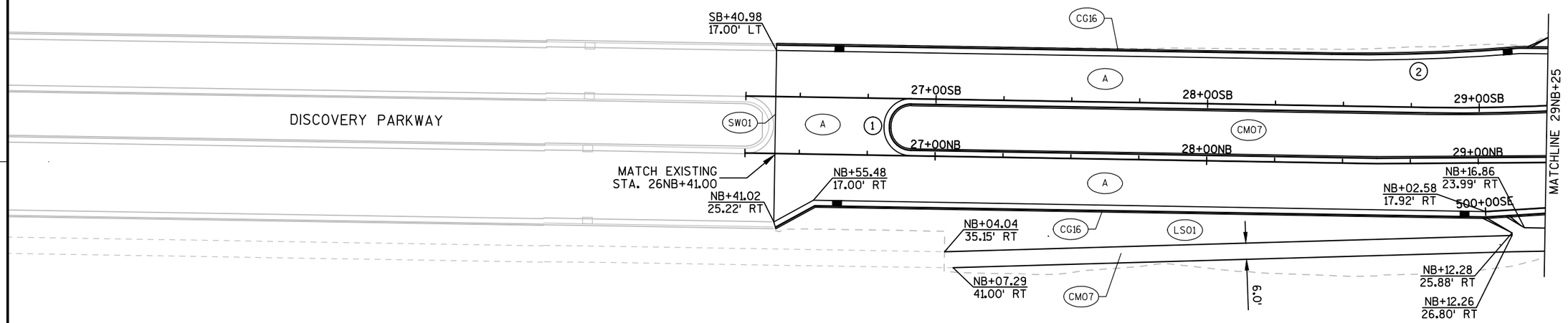
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 30	E

2

PAVEMENT DETAIL LEGEND

- (A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH
- (CG16) CONCRETE CURB AND GUTTER 31-INCH
- (CMO1) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (CMO7) CONCRETE SIDEWALK 5-INCH
- (LSO1) SOD LAWN
- (SWO1) SAWING ASPHALT

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS



RADIUS TABLE							
POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	26NB+91.01	11.00' LT	10'	26NB+91.01	21.00' LT	26NB+91.01	0.00'
2	28SB+45.48	712.00' LT	695'	28SB+45.48	17.00' LT	29SB+15.76	19.62' LT

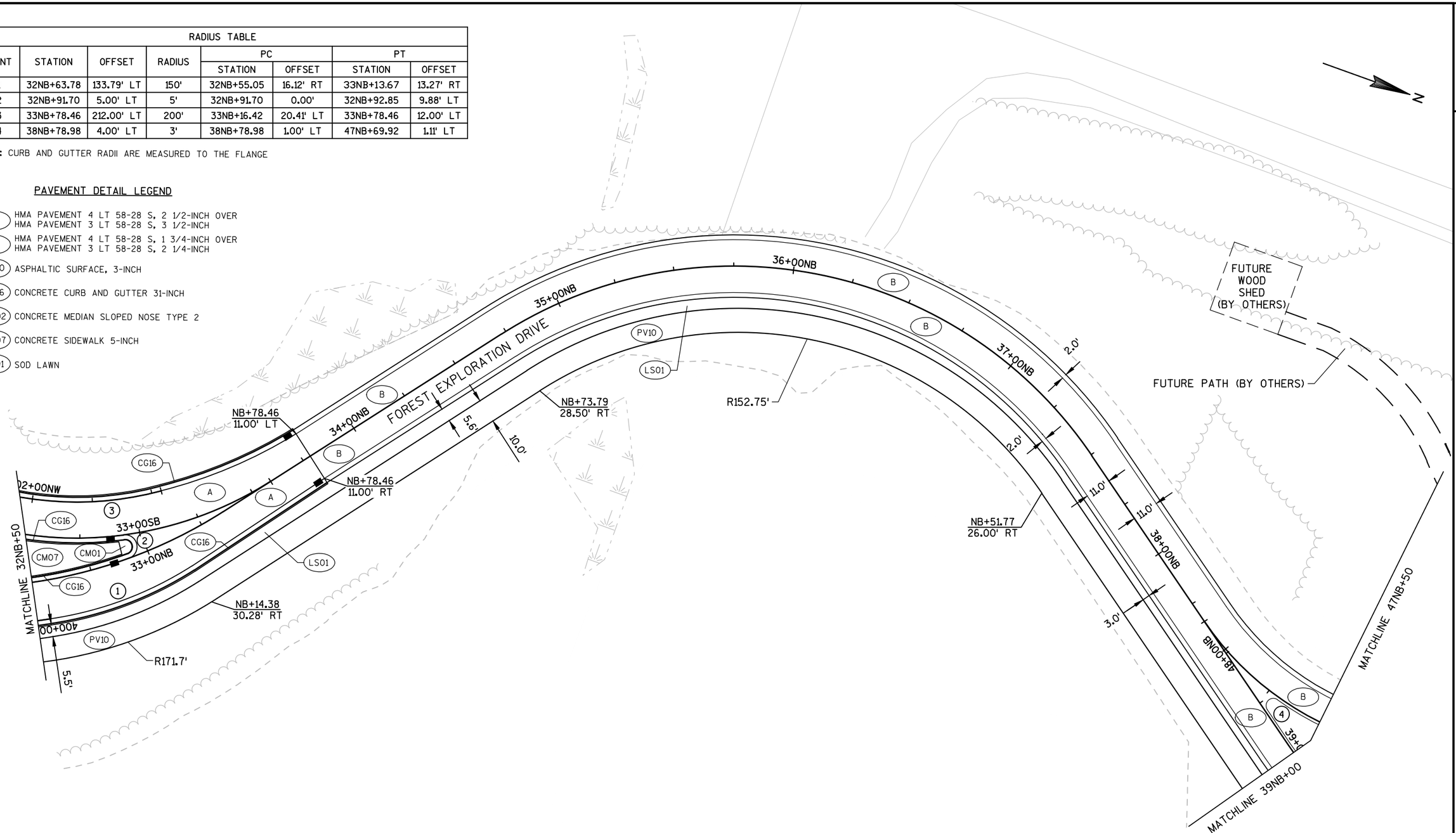
NOTE: CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE

RADIUS TABLE							
POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	32NB+63.78	133.79' LT	150'	32NB+55.05	16.12' RT	33NB+13.67	13.27' RT
2	32NB+91.70	5.00' LT	5'	32NB+91.70	0.00'	32NB+92.85	9.88' LT
3	33NB+78.46	212.00' LT	200'	33NB+16.42	20.41' LT	33NB+78.46	12.00' LT
4	38NB+78.98	4.00' LT	3'	38NB+78.98	1.00' LT	47NB+69.92	1.11' LT

NOTE: CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE

PAVEMENT DETAIL LEGEND

- (A) HMA PAVEMENT 4 LT 58-28 S, 2 1/2-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 3 1/2-INCH
- (B) HMA PAVEMENT 4 LT 58-28 S, 1 3/4-INCH OVER HMA PAVEMENT 3 LT 58-28 S, 2 1/4-INCH
- (PV10) ASPHALTIC SURFACE, 3-INCH
- (CG16) CONCRETE CURB AND GUTTER 31-INCH
- (CM02) CONCRETE MEDIAN SLOPED NOSE TYPE 2
- (CM07) CONCRETE SIDEWALK 5-INCH
- (LS01) SOD LAWN



NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS

PAVEMENT DETAIL LEGEND

(B) HMA PAVEMENT 4 LT 58-28 S, 1 3/4-INCH OVER
HMA PAVEMENT 3 LT 58-28 S, 2 1/4-INCH

(PV10) ASPHALTIC SURFACE, 3-INCH

NOTE: SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON HMA PAVEMENT LAYERS

RADIUS TABLE							
POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	0DR+43.06	14.00' RT	5'	0DR+39.82	17.07' RT	0DR+43.06	9.00' RT
2	1DR+11.77	14.00' RT	5'	1DR+11.77	9.00' RT	1DR+14.00	18.18' RT
3	40NB+72.63	19.98' RT	10'	40NB+72.56	9.98' RT	40NB+77.42	11.38' RT
4	42NB+80.48	14.00' RT	5'	42NB+76.23	13.99' RT	42NB+80.48	9.00' RT
5	44NB+45.25	23.00' RT	4'	44NB+45.25	19.00' RT	44NB+48.33	23.47' RT
6	44NB+75.99	14.00' RT	5'	44NB+75.99	9.00' RT	44NB+79.07	10.48' RT
7	44NB+73.46	35.00' RT	4'	44NB+70.92	33.31' RT	44NB+73.46	31.00' RT
8	45NB+86.35	14.00' RT	5'	45NB+83.86	9.75' RT	45NB+86.35	9.00' RT
9	42NB+96.99	39.00' RT	20'	42NB+83.51	35.99' RT	42NB+96.99	19.00' RT

NB+63.94
61.44' RT

FUTURE TRAIL
HEAD (BY OTHERS)

NB+45.79
54.44' RT

NB+67.39
30.79' RT

NB+68.64
20.89' RT

NB+87.34
21.00' RT

FUTURE PATH (BY OTHERS)

MATCHLINE 47NB+50

MATCHLINE 39NB+00

0+00DR

1+00DR

40+00NB

41+00NB

42+00NB

43+00NB

44+00NB

45+00NB

46+00NB

47+00NB

10.0'

2.0'

9.0'

9.0'

10.0'

29.0'

FOREST EXPLORATION DRIVE

STORM WATER POND

FUTURE BUILDING
(BY OTHERS)

NB+17.30
27.05' RT

NB+76.52
30.39' RT

NB+83.21
42.86' RT

NB+01.39
29.00' RT

NB+83.60
39.04' RT

R252.0'

LS01

PV10

B

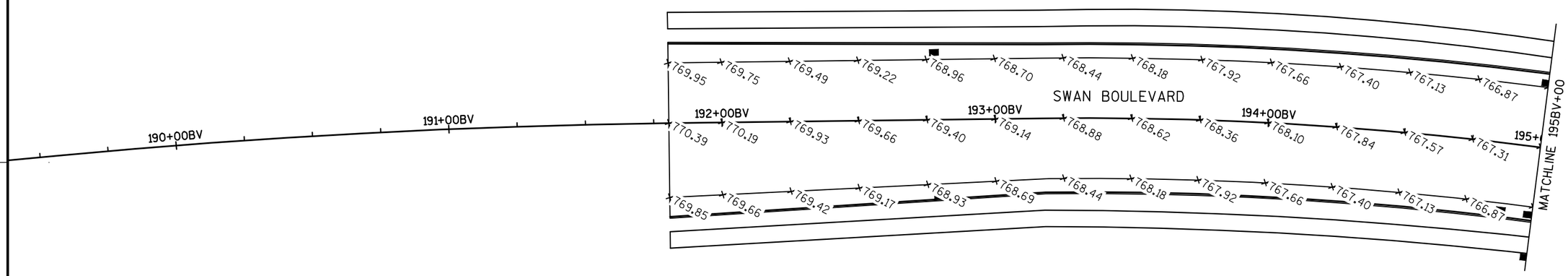
1 2 3 4 5 6 7 8 9

N

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 33	E

2

2

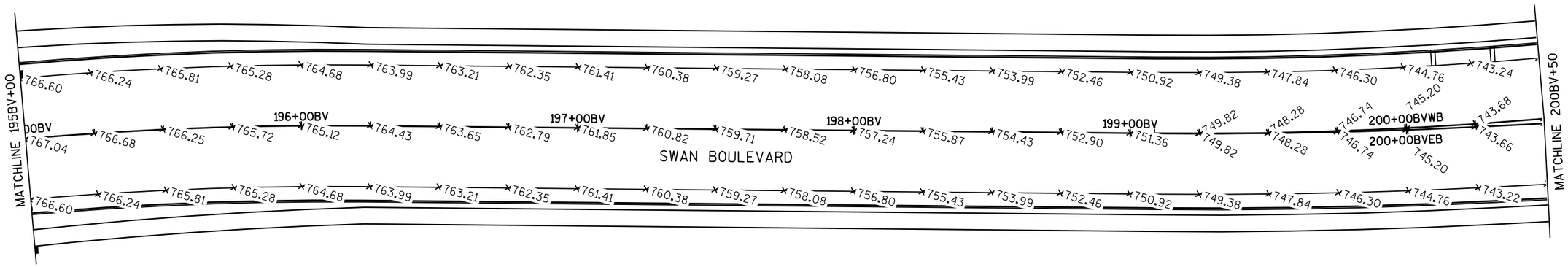


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE OF CURB AND GUTTER

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 34	E

2

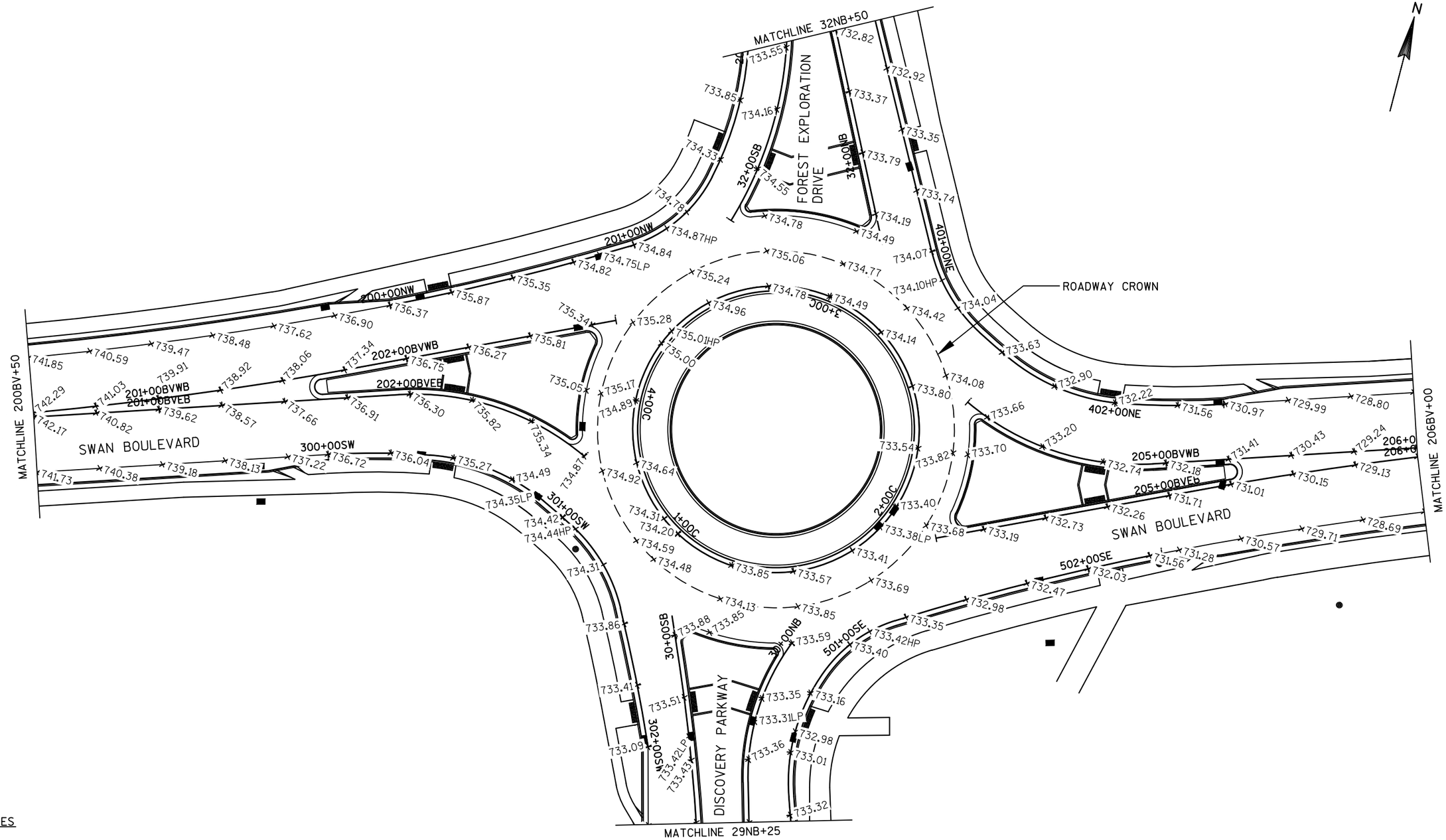


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE
OF CURB AND GUTTER

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 35	E

2

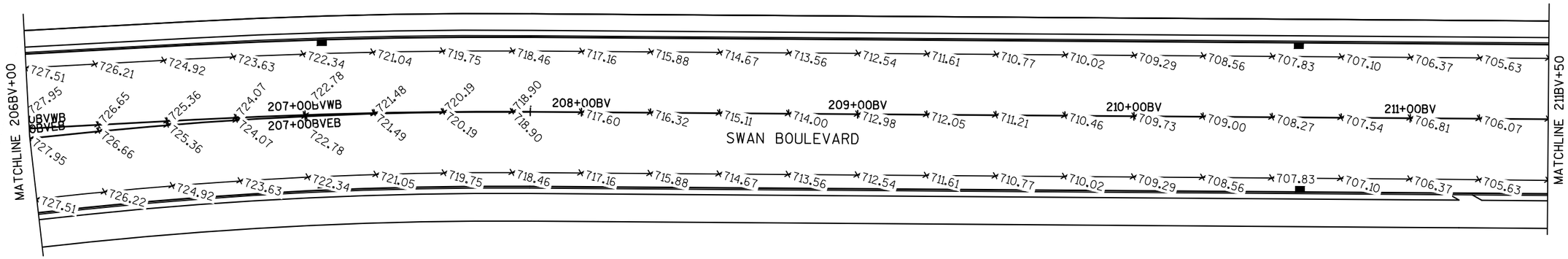


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE OF CURB AND GUTTER

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 36	E

2

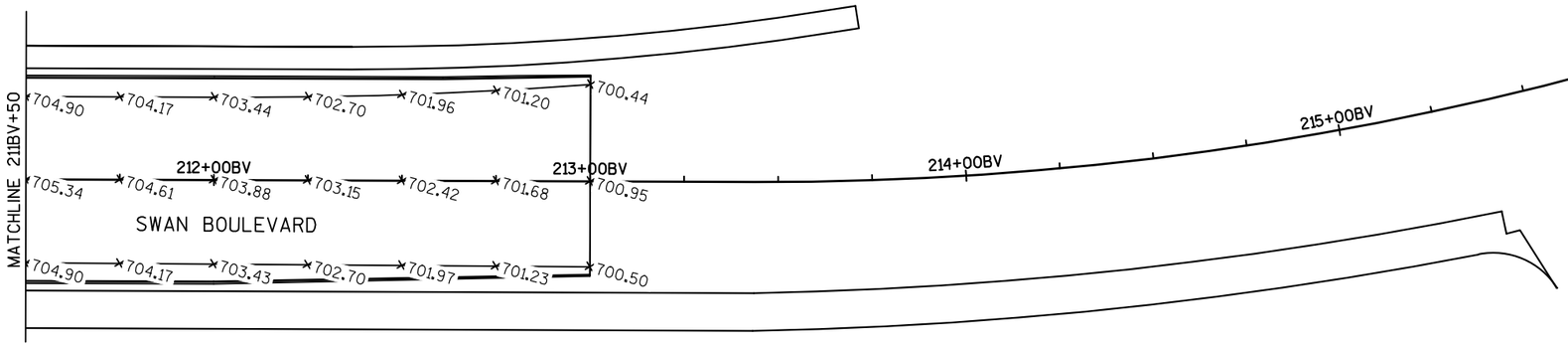


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE OF CURB AND GUTTER

2

N

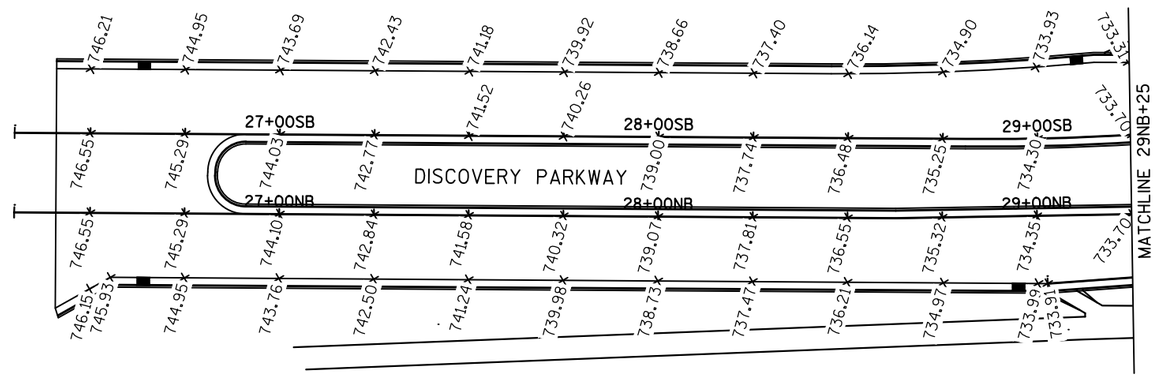


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE OF CURB AND GUTTER

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 38	E

2

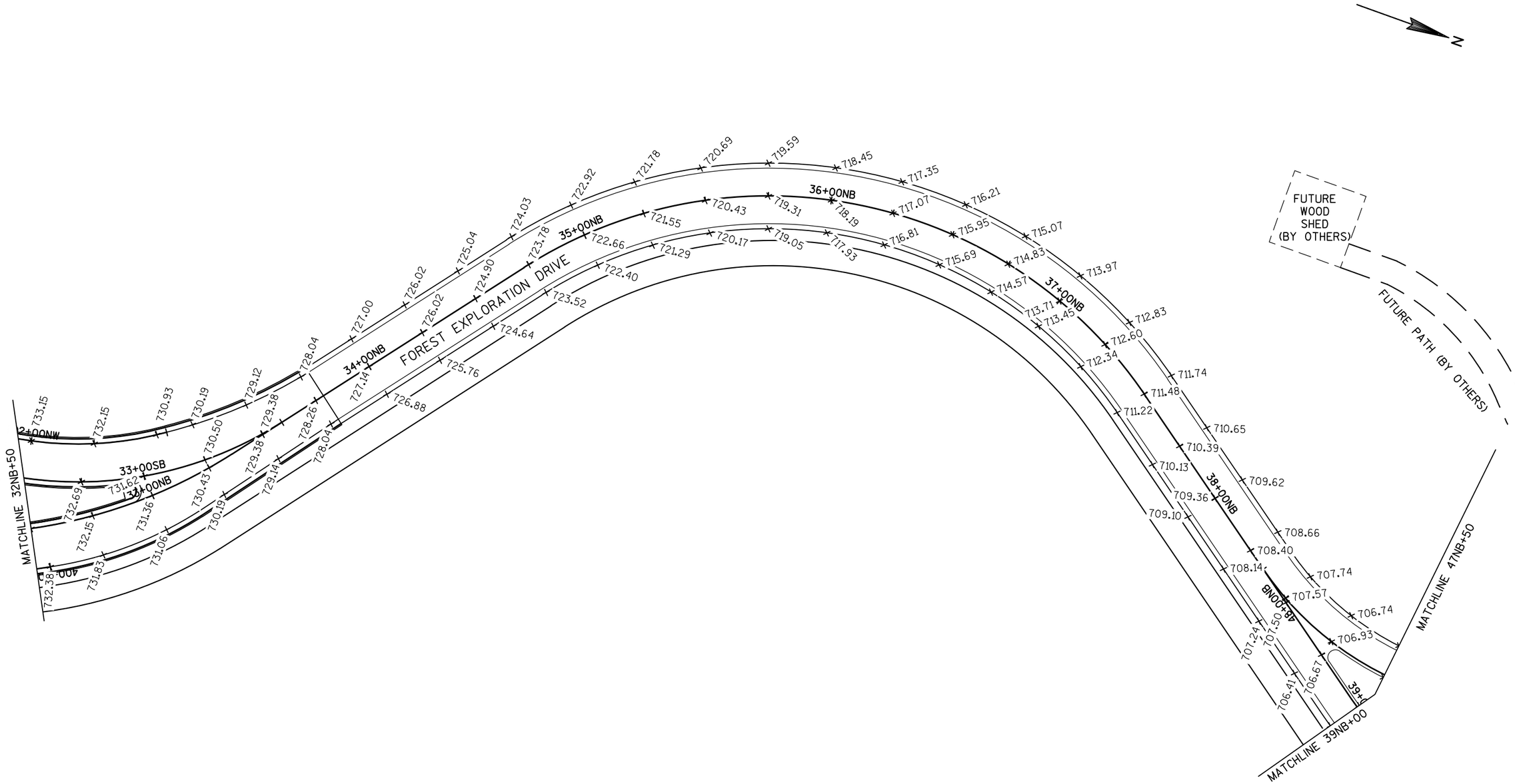


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE
OF CURB AND GUTTER

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 39	E

2

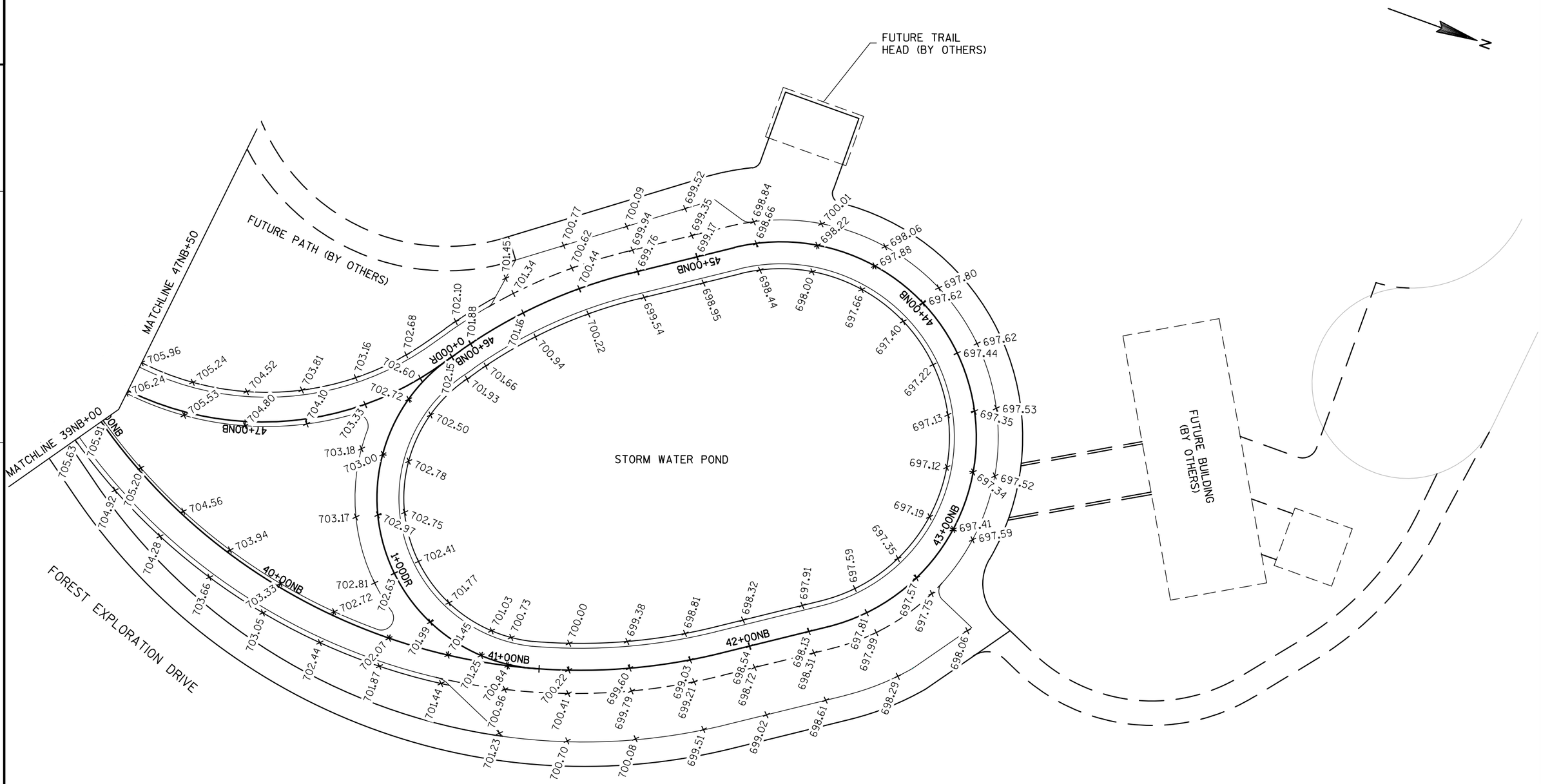


NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE OF CURB AND GUTTER

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 40	E

2



NOTES

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE
OF CURB AND GUTTER

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 41	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021302_JD.DWG
LAYOUT NAME - 050110
PLOT DATE : 10/9/2018 8:44 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

2

N

DNR FORESTRY
EDUCATION CENTER

UNDERWOOD CREEK
PARKWAY

UNDERWOOD PARKWAY

45NB

0PR

40NB

FOREST EXPLORATION DRIVE

35NB

40ME

SWAN BOULEVARD

200NW

200BVWB

200BVEB

300SW

30NB

35SB

350SE

DISCOVERY PARKWAY

205BVWB

205BVEB

210BV

215BV

220BV

195BV

190BV

USH 45 NB

USH 45 SB

MILWAUKEE COUNTY
GROUNDS

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EXISTING TOPOGRAPHY - OVERVIEW	SHEET 42	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021601_CM.DWG PLOT DATE : 10/9/2018 9:01 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 200'_XREF

2

2

N

DNR FORESTRY EDUCATION CENTER

UNDERWOOD CREEK PARKWAY

UNDERWOOD PARKWAY

FOREST EXPLORATION DRIVE

SWAN BOULEVARD

DISCOVERY PARKWAY

MILWAUKEE COUNTY GROUNDS

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

45NB

40NB

35NB

30NB

25NB

20NB

15NB

10NB

5NB

220BV

215BV

210BV

205BV WB

205BV EB

200BV WB

200BV EB

195BV

190BV

USH 45 NB

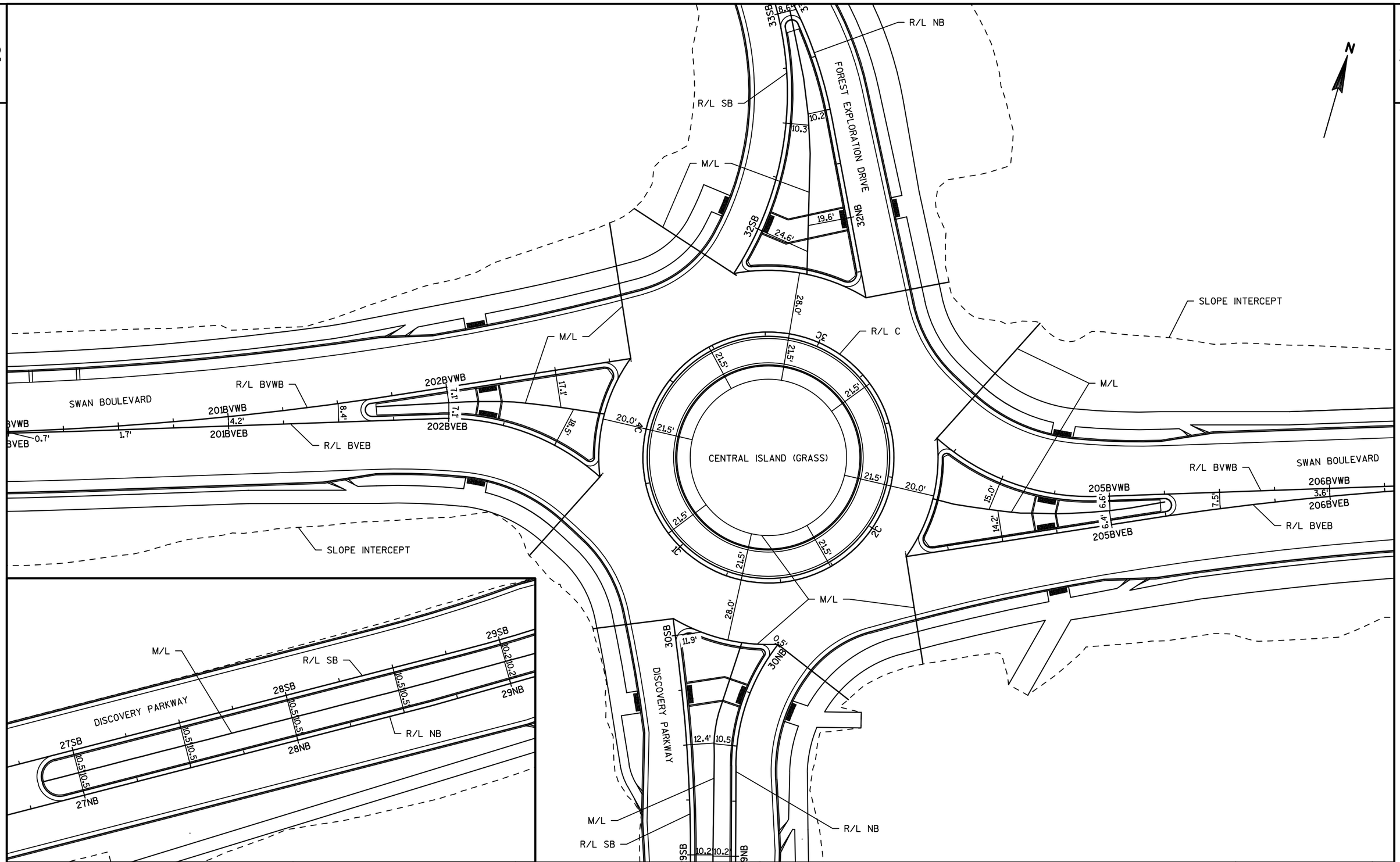
USH 45 SB

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	GRADING PLAN	SHEET 43	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021601_CM.DWG PLOT DATE : 10/16/2018 3:21 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 200'_XREF

WISDOT/CADDS SHEET 42

2



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTION MATCHLINE DETAIL	SHEET 44	E

2

2

N

SLOPE INTERCEPT

R/L NB

37NB

FOREST EXPLORATION DRIVE

38NB

48NB

0.5'

0.5'

47NB

6.1'

18.2'

70.0'

8.2'

9.1'

39NB

26.3'

M/L

R/L DR

70.0'

22.2'

M/L

26.6'

20.3'

11R

40NB

6.0'

1.5'

0.4'

41NB

45NB

44NB

R/L NB

80.2'

80.0'

80.0'

80.1'

80.0'

M/L

73.3'

70.0'

80.0'

43NB

79.5'

77.0'

70.0'

42NB

SLOPE INTERCEPT

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTION MATCHLINE DETAIL	SHEET 45	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021701_XM.DWG
LAYOUT NAME - SHEET - (2)

PLOT DATE : 10/16/2018 3:23 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

NOTES

INLET PROTECTION TYPE A WILL BE PLACED AT ALL NEW INLET LOCATIONS DURING GRADING STAGES.

INLET PROTECTION TYPE D WILL BE PLACED UNDER INLET COVERS LOCATED IN CURB AND GUTTER UNTIL COMPLETION OF THE PROJECT.

LEGEND

- (A) INLET PROTECTION TYPE A
- (D) INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- MEDIUM RIP RAP
- SLOPE INTERCEPT
- SURFACE WATER FLOW
- EROSION MAT CLASS II, TYPE B; FERTILIZER TYPE B SPECIAL; TOPSOIL SPECIAL; AND SEEDING MIXTURE NO. 30 SPECIAL.
- EROSION MAT CLASS II, TYPE B; FERTILIZER TYPE B SPECIAL; TOPSOIL SPECIAL; AND SEEDING MIXTURE NO. 70A.

FOR DISTURBED AREAS ADJACENT TO WETLANDS USE EROSION CONTROL URBAN CLASS II TYPE C ORGANIC NETTED BIODEGRADABLE MAT. MATS NOT TO BE INSTALLED IN WATER.

- SOD LAWN
- SILT FENCE

N

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

USH 45 SB

USH 45 NB

SWAN BOULEVARD

STA 193BV+00
768.92 HP

MATCHLINE 199BV+00

374-9999-011
WM INNOVATION PARK LLC
MK206

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 46	E

2

LEGEND

- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- MEDIUM RIP RAP
- SLOPE INTERCEPT
- SURFACE WATER FLOW
- EROSION MAT CLASS II, TYPE B; FERTILIZER TYPE B SPECIAL; TOPSOIL SPECIAL; AND SEEDING MIXTURE NO. 30 SPECIAL.
- EROSION MAT CLASS II, TYPE B; FERTILIZER TYPE B SPECIAL; TOPSOIL SPECIAL; AND SEEDING MIXTURE NO. 70A.

  FOR DISTURBED AREAS ADJACENT TO WETLANDS USE EROSION CONTROL URBAN CLASS II TYPE C ORGANIC NETTED BIODEGRADABLE MAT. MATS NOT TO BE INSTALLED IN WATER.
- SOD LAWN
- SILT FENCE

MATCHLINE 199BV+00

SWAN BOULEVARD

DISCOVERY PARKWAY

WETLAND BOUNDARY

FUTURE WOOD SHED (BY OTHERS)

FUTURE PATH (BY OTHERS)

FOREST EXPLORATION DRIVE

WETLAND BOUNDARY

WETLAND BOUNDARY

WETLAND BOUNDARY

START RIPRAP REPAIR AT STA. 206BV+50
(REFER TO CONSTRUCTION DETAIL)

SWAN BOULEVARD

MATCHLINE 207BV+00

POND OUTLET DETAIL

NOTES

INLET PROTECTION TYPE A WILL BE PLACED AT ALL NEW INLET LOCATIONS DURING GRADING STAGES.

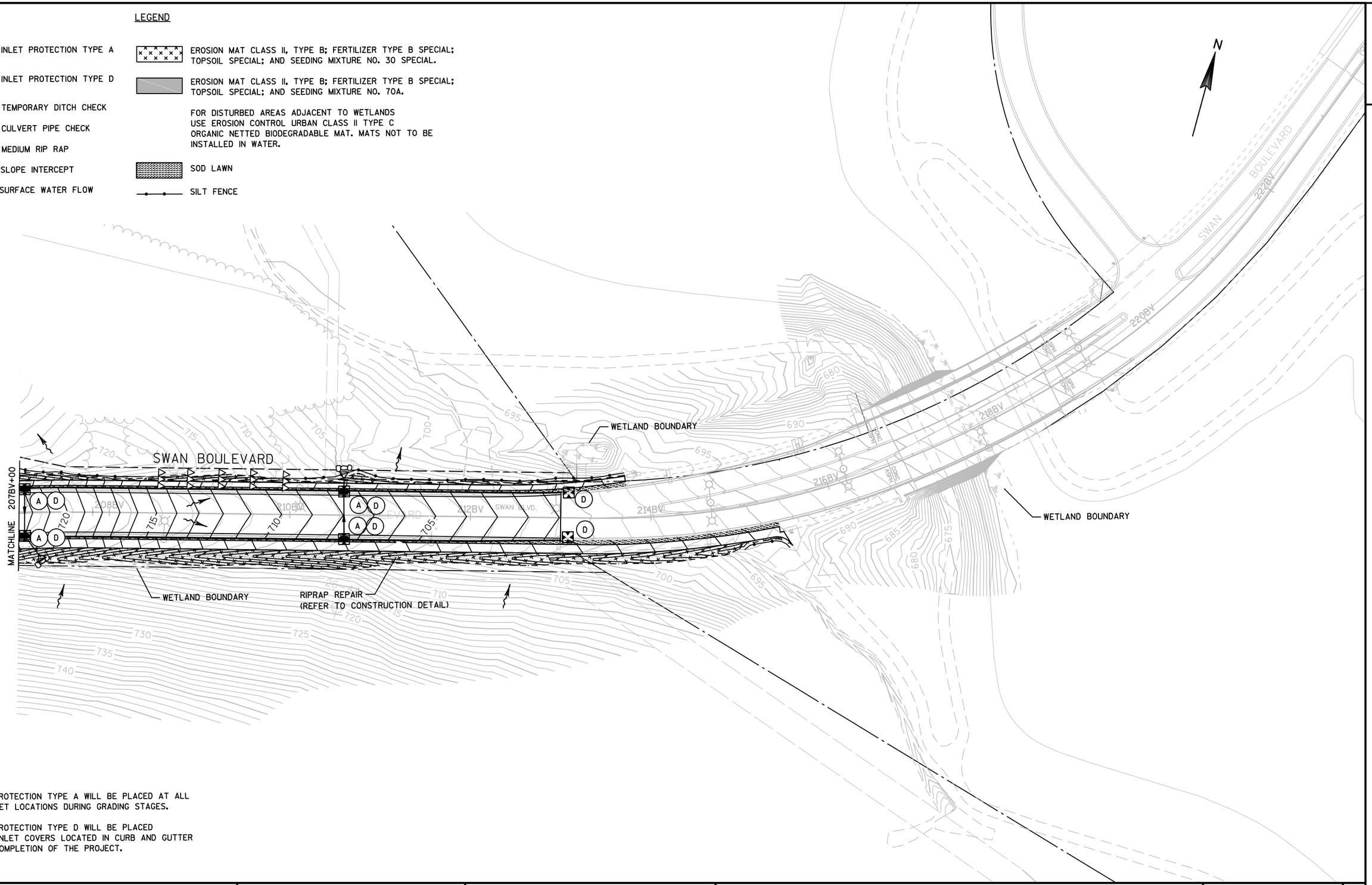
INLET PROTECTION TYPE D WILL BE PLACED UNDER INLET COVERS LOCATED IN CURB AND GUTTER UNTIL COMPLETION OF THE PROJECT.

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 47	E

LEGEND

- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- MEDIUM RIP RAP
- SLOPE INTERCEPT
- SURFACE WATER FLOW
- EROSION MAT CLASS II, TYPE B; FERTILIZER TYPE B SPECIAL; TOPSOIL SPECIAL; AND SEEDING MIXTURE NO. 30 SPECIAL.
- EROSION MAT CLASS II, TYPE B; FERTILIZER TYPE B SPECIAL; TOPSOIL SPECIAL; AND SEEDING MIXTURE NO. 70A.

  FOR DISTURBED AREAS ADJACENT TO WETLANDS USE EROSION CONTROL URBAN CLASS II TYPE C ORGANIC NETTED BIODEGRADABLE MAT. MATS NOT TO BE INSTALLED IN WATER.
- SOD LAWN
- SILT FENCE



NOTES

INLET PROTECTION TYPE A WILL BE PLACED AT ALL NEW INLET LOCATIONS DURING GRADING STAGES.

INLET PROTECTION TYPE D WILL BE PLACED UNDER INLET COVERS LOCATED IN CURB AND GUTTER UNTIL COMPLETION OF THE PROJECT.

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 48	E

GENERAL DRAINAGE NOTES

LOCATION OF STRUCTURES IN CURB AND GUTTER SECTION REFER TO CURB AND GUTTER FLOW LINE. LOCATION OF STRUCTURES NOT IN CURB AND GUTTER SECTION REFER TO CENTER OF STRUCTURE OR AS NOTED ON PLAN.

RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF INLET OR AT CENTER OF MANHOLE. SEE STRUCTURE LOCATION DETAIL.

PLAN LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND IS USED FOR ESTIMATING. PIPE LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE AND IS USED TO COMPUTE PIPE SLOPE.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES AND PIPES SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

UTILITY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE. LOCATIONS SHOWN ARE TAKEN FROM EXISTING RECORDS AND BEST INFORMATION AVAILABLE FROM EXISTING PLANS. IT IS EXPECTED THAT THERE MAY BE DISCREPANCIES AND OMISSIONS IN THE LOCATION OF UTILITIES AND STRUCTURES SHOWN. VERIFY ALL LOCATIONS IN THE FIELD.

SUPPORTING UTILITIES DURING STORM SEWER CONSTRUCTION IS INCIDENTAL TO STORM SEWER PIPE AND/OR STORM SEWER STRUCTURE.

COORDINATE WITH DIGGERS HOTLINE TO FIELD LOCATE UTILITIES. SHEETING SHALL NOT GO THROUGH UTILITIES. ANY UTILITIES DAMAGED DUE TO CONTRACTOR ACTIVITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE UTILITY FACILITY.

VERIFY THE EXISTING STORM SEWER SYSTEM CONNECTION LOCATIONS AND ELEVATIONS PRIOR TO ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS PRIOR TO INSTALLING THE PROPOSED STORM SEWER.

SEE REMOVAL PLANS FOR REMOVAL OF EXISTING STORM SEWER SYSTEM.

PROVIDE TEMPORARY POSITIVE DRAINAGE THROUGHOUT THE PROJECT DURING ALL PROJECT STAGES. PROVIDING TEMPORARY POSITIVE DRAINAGE IS INCIDENTAL TO CONSTRUCTION.

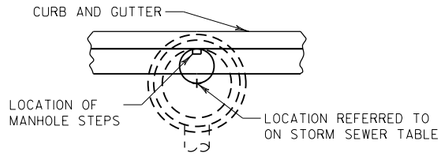
STORM SEWER PLAN & PROFILE NOTE:
PLAN VIEW HIGHLIGHTS CORRESPOND TO PROFILES SHOWN IN PROFILE BELOW PLAN VIEW (SAME SHEET). STORM SEWER STRUCTURES AND PIPES LABELED IN PLAN VIEW WITHOUT HIGHLIGHT ARE SHOWN ON THE NEXT PROFILE ONLY SHEET(S).

STORM SEWER LEGEND

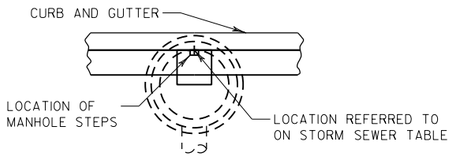
EXISTING BQ***	EXISTING DRAINAGE STRUCTURE TO BE ALTERED*
BE***	EXISTING DRAINAGE STRUCTURE
B***	PROPOSED DRAINAGE STRUCTURE
●	PROPOSED MANHOLE
■	PROPOSED INLET
△	PROPOSED ENDWALL
EXISTING PE***	EXISTING STORM SEWER PIPE
P***	PROPOSED STORM SEWER PIPE
——→——	PROPOSED STORM SEWER PIPE PLAN VIEW

* EXISTING DRAINAGE STRUCTURE TO BE ALTERED MEANS AN EXISTING DRAINAGE STRUCTURE THAT WILL BE RECONSTRUCTED, ADJUSTED OR HAVE A NEW FRAME AND GRATE INSTALLED BY REPLACING AN EXISTING FRAME AND GRATE.

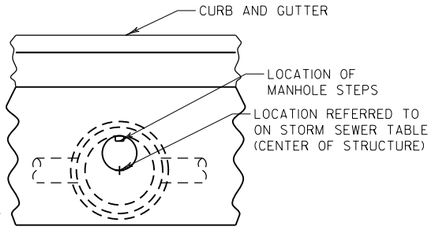
2



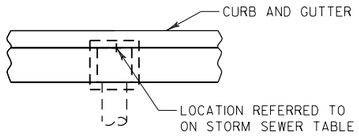
MANHOLE IN CURB AND GUTTER



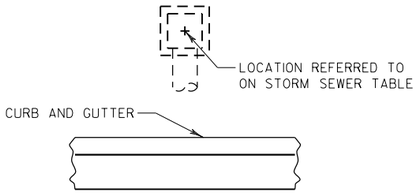
MANHOLE WITH INLET COVER
IN CURB AND GUTTER



MANHOLE NOT IN CURB AND GUTTER



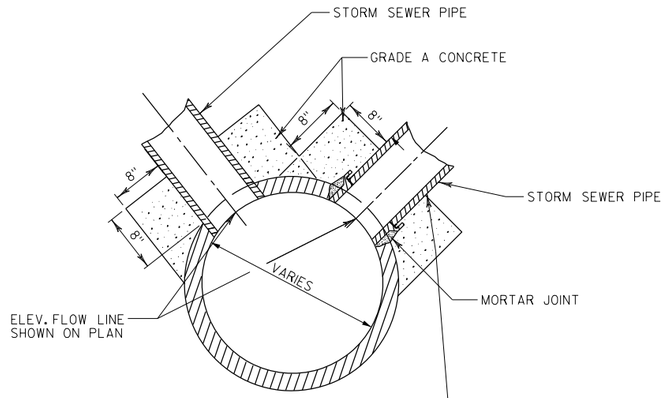
INLET IN CURB AND GUTTER



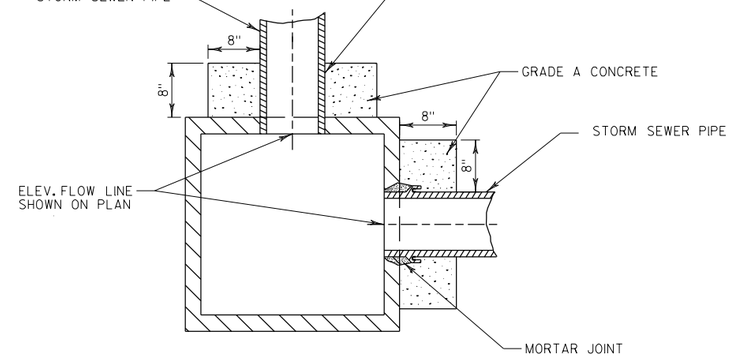
INLET NOT IN CURB AND GUTTER

NOTE
1) LOCATION OF STRUCTURE MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
2) LOCATION AND SIZE OF STRUCTURE COVER OPENING DEPENDS ON TYPE OF CASTING. CASTING TYPES ARE SHOWN ON THE STORM SEWER TABLE.

STRUCTURE LOCATION DETAIL



AT MANHOLE
INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS



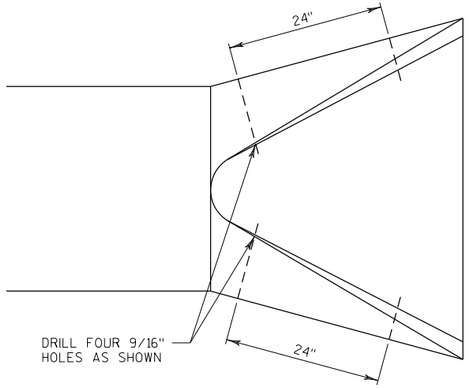
AT STORM SEWER INLET
INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS

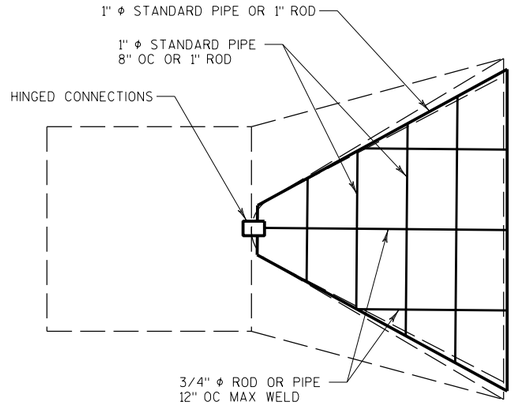
NOTE

CONCRETE COLLAR TO BE PAID AS A BID ITEM WHEN CONNECTING AN EXISTING PIPE TO A NEW STRUCTURE.

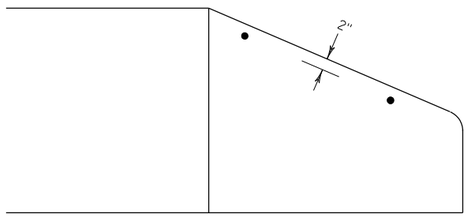
CONCRETE COLLAR DETAIL

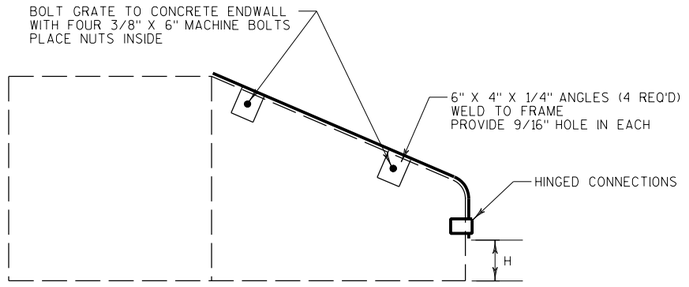
FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS





AT EACH PIPE





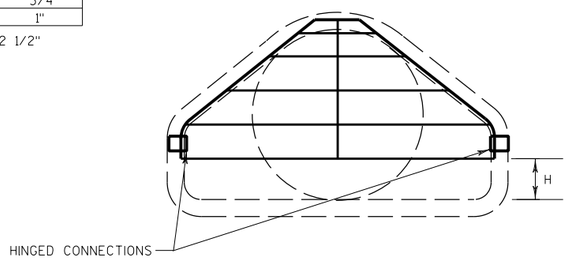
GRATE BAR SIZES
(STANDARD DESIGN)

	PIPE SIZE	HOLE DIAMETER REQUIRED	BOLT DIAMETER	BAR SIZE
ROUND PIPE	12" - 24"	3/4"	5/8"	5/8"
	27" - 48"	7/8"	3/4"	3/4"
	54" - 90"	1 1/8"	1"	1"
ARCH PIPE	22" - 29"	3/4"	5/8"	5/8"
	36" - 59"	7/8"	3/4"	3/4"
	65" - 85"	1 1/8"	1"	1"

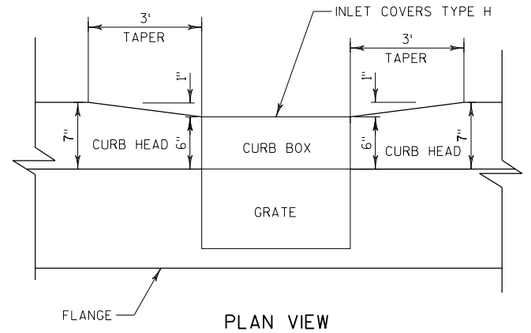
BOLT LENGTH = PIPE WALL THICKNESS + 2 1/2"

GRATE CLEARANCE HEIGHT

ROUND PIPE		ARCH PIPE	
PIPE SIZE	H	PIPE SIZE	H
12"	2 1/2"	22" - 29"	4"
15"	3"	36" - 44"	5"
18" - 24"	4"	51" - 65"	6"
27" - 36"	5"	73" - 85"	7"
42" - 54"	6"		
60" - 72"	7"		
78" - 90"	8"		



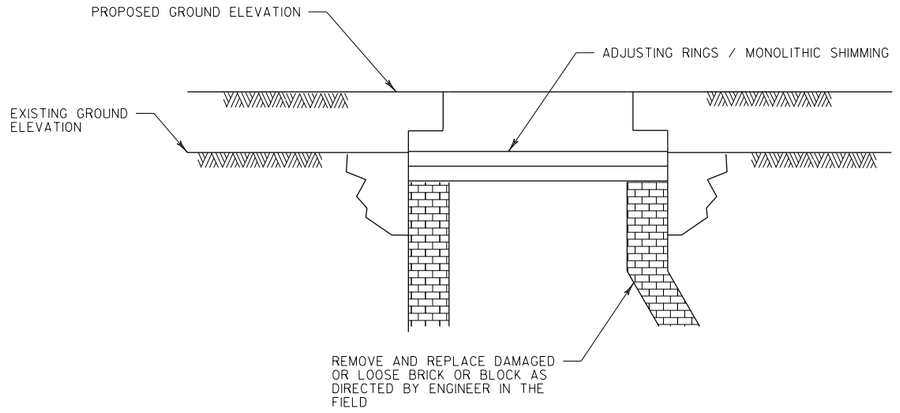
PIPE GRATE DETAIL



PLAN VIEW

CURB HEAD TRANSITION FOR INLET COVERS TYPE H

NOTE:
TAPER BACK CURB HEAD EDGE; MAINTAIN FRONT CURB FACE.
PAID FOR AS CONCRETE CURB AND GUTTER 31-INCH.

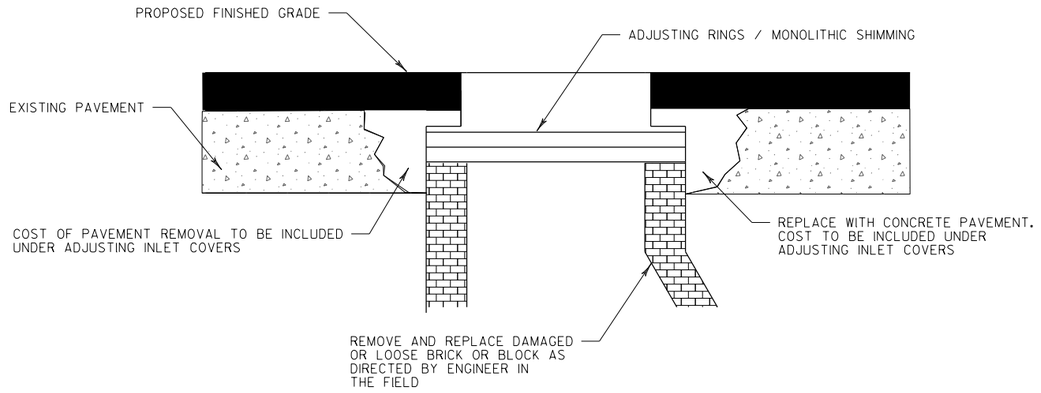


NON-PAVED LOCATION

NOTES

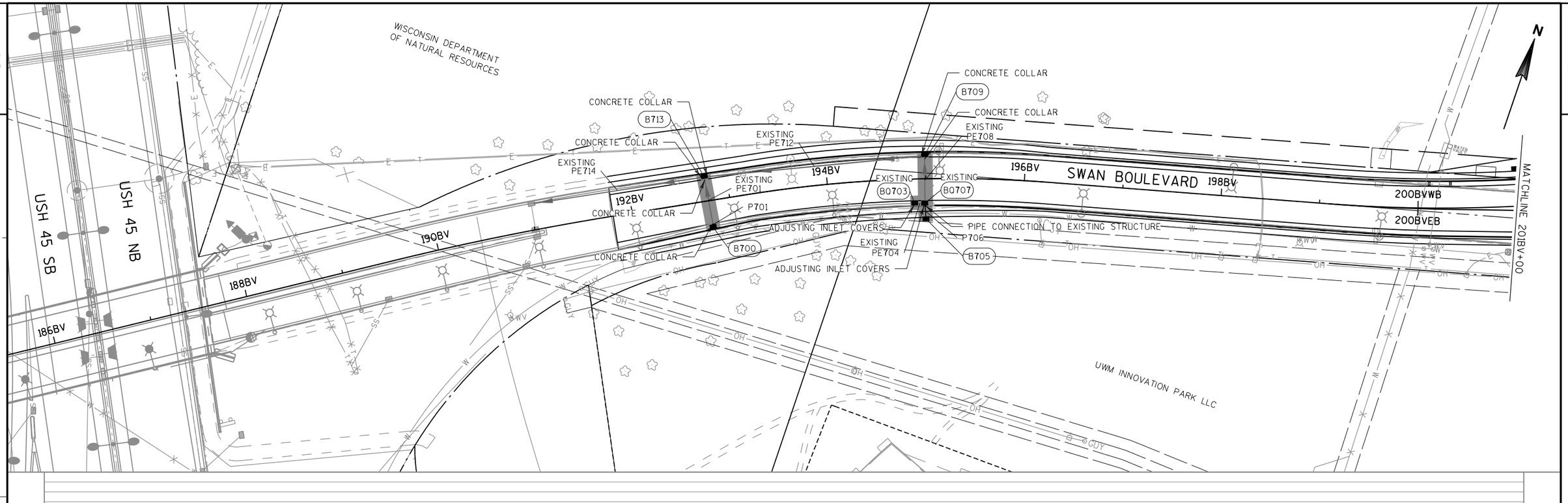
1. IF EXISTING PAVEMENT REMOVAL IS NOT SHOWN IN THE REMOVAL PLANS AND A SAWCUT IS REQUIRED THE SAWCUT IS CONSIDERED INCIDENTAL TO ADJUSTING INLET COVERS.

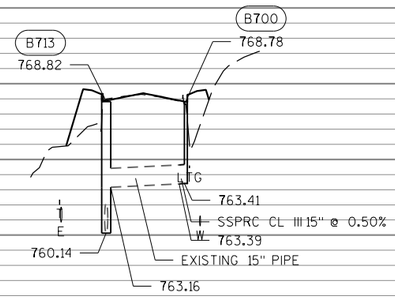
2. ADJUST CHIMNEY WITH PROPER SIZE CONCRETE ADJUSTING RINGS (SIZE OF OPENING OF CONCRETE ADJUSTING RING TO BE DETERMINED BY SIZE OF OPENING IN FRAME) AND REINSTALL EXISTING FRAME AND LID TO FINISHED GRADE. BACKFILL AND OTHER WORK TO BE DONE IN ACCORDANCE WITH ITEM ADJUSTING INLET COVERS.

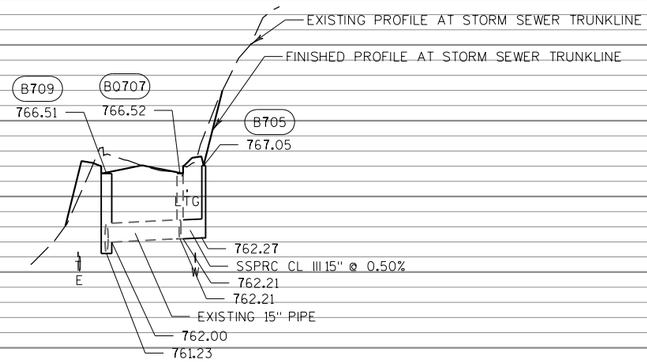


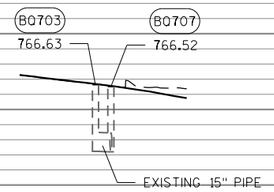
PAVED LOCATION

ADJUSTING INLET COVERS

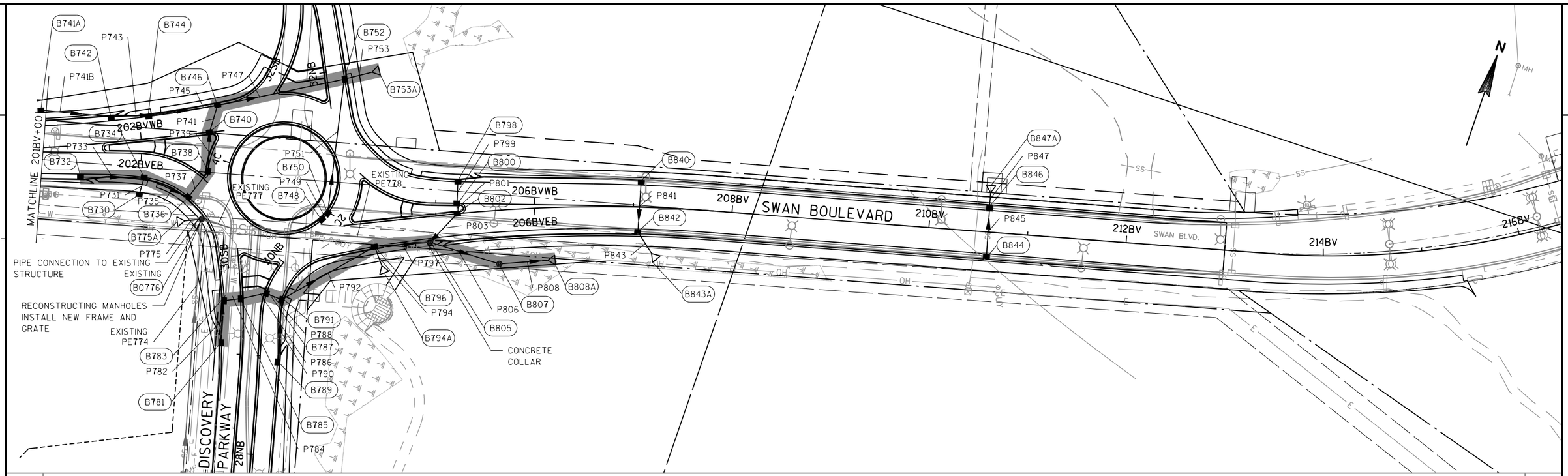


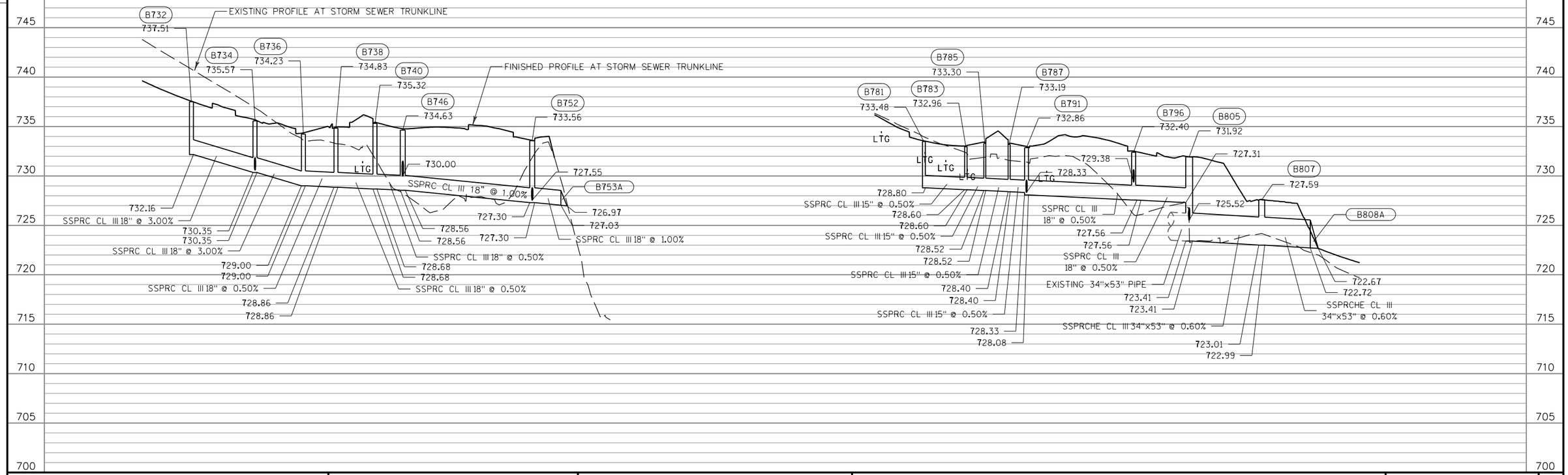




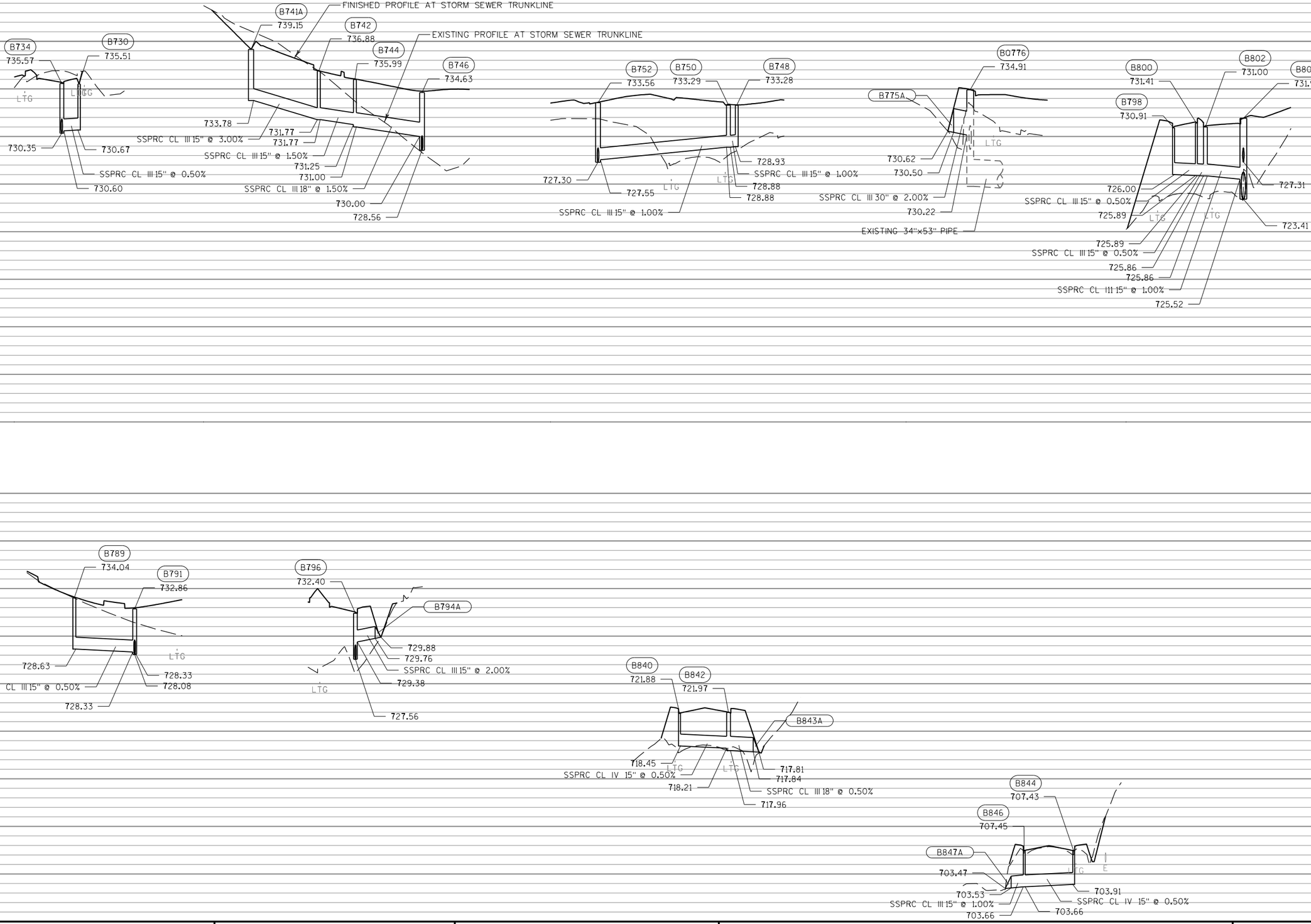


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STORM SEWER	SHEET 53	E

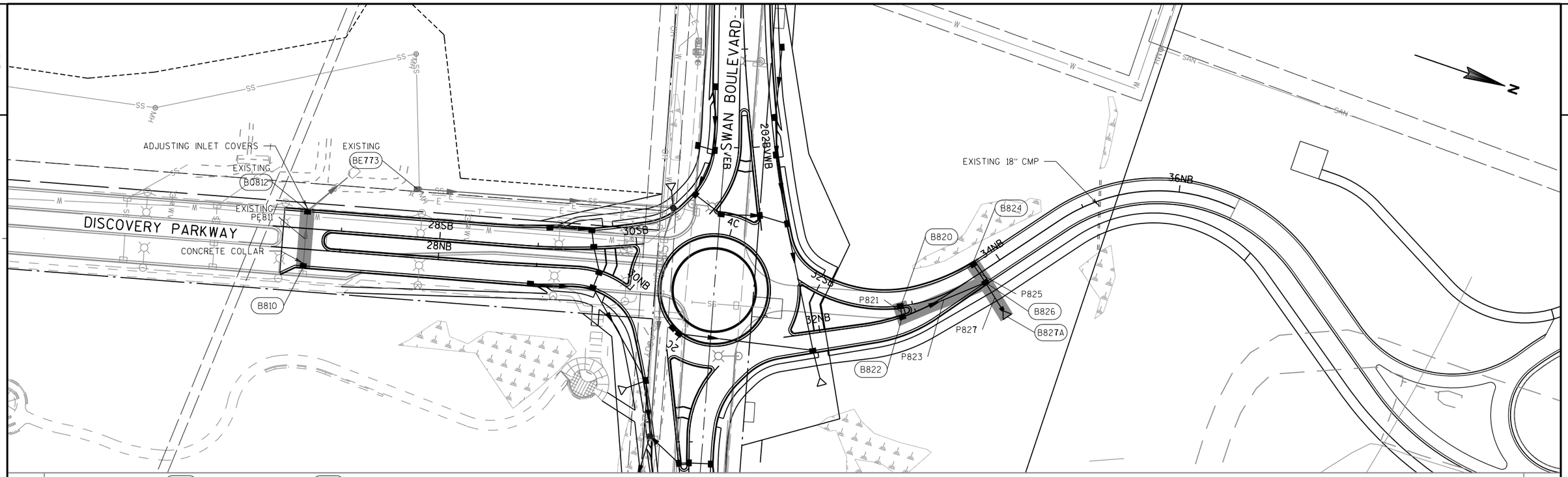


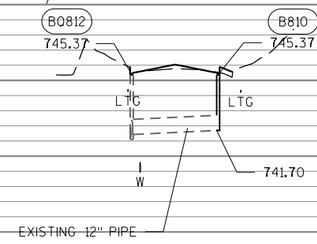


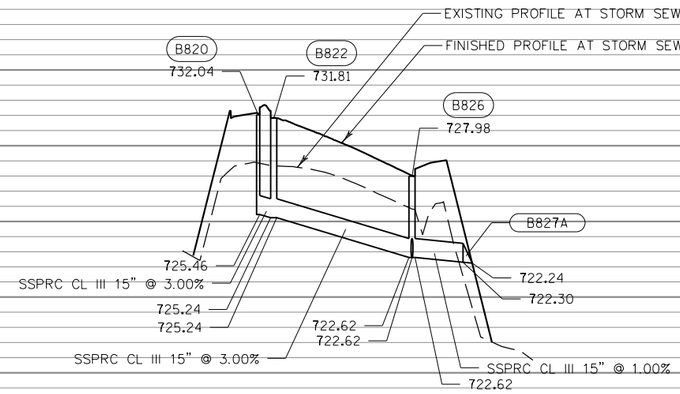
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STORM SEWER	SHEET 54	E

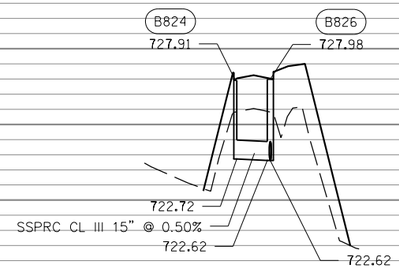


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STORM SEWER	SHEET 55	E





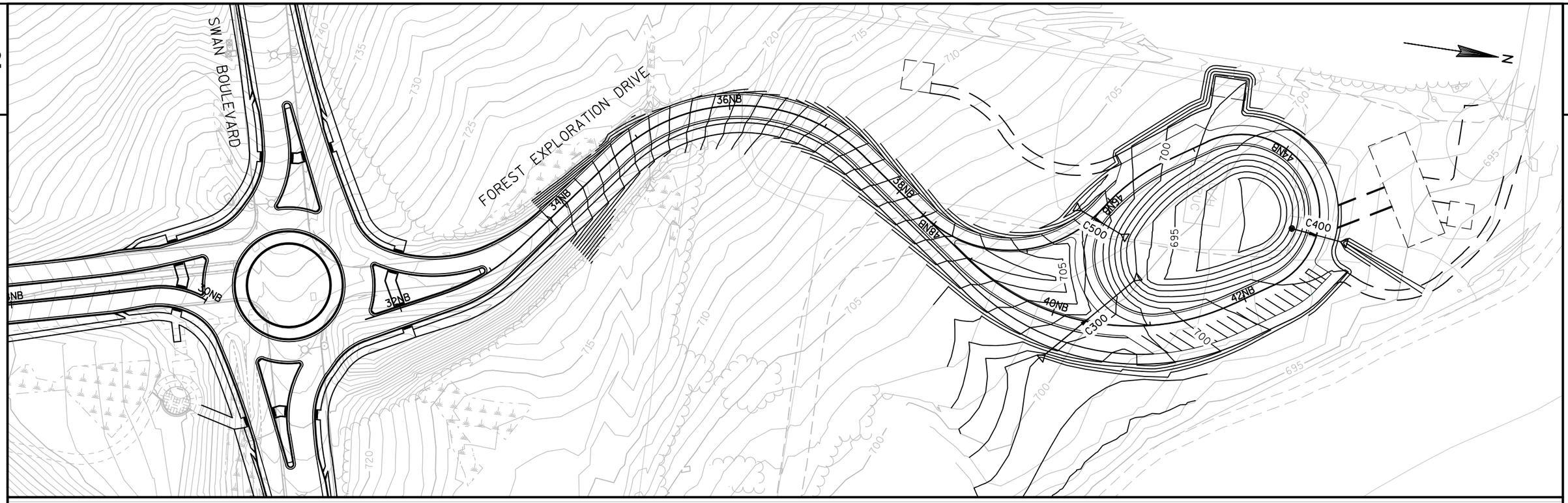


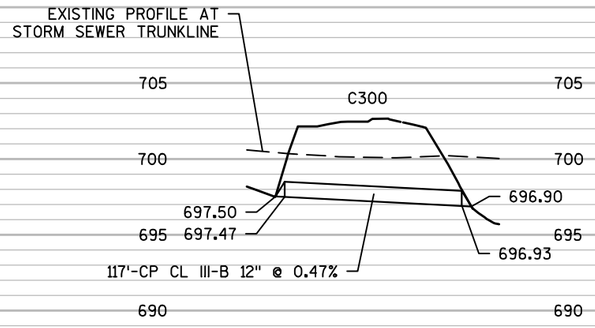


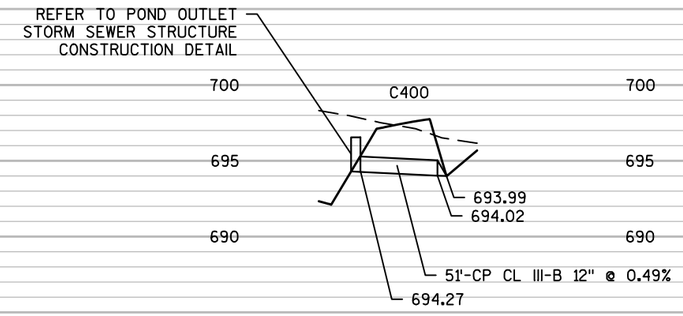
745 740 735 730 725 720 715 710 705 700

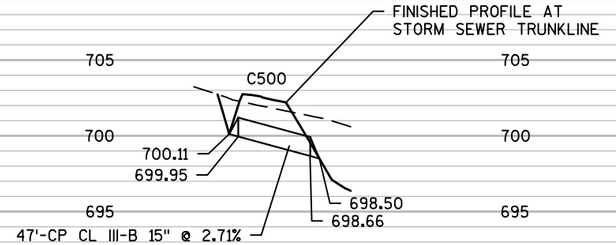
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STORM SEWER	SHEET 56	E

FILE NAME : W:\CADD\FINAL\10603394 BVR_Roads\Roads\cds\022503_ss.dgn PLOT DATE : 10/30/2018 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

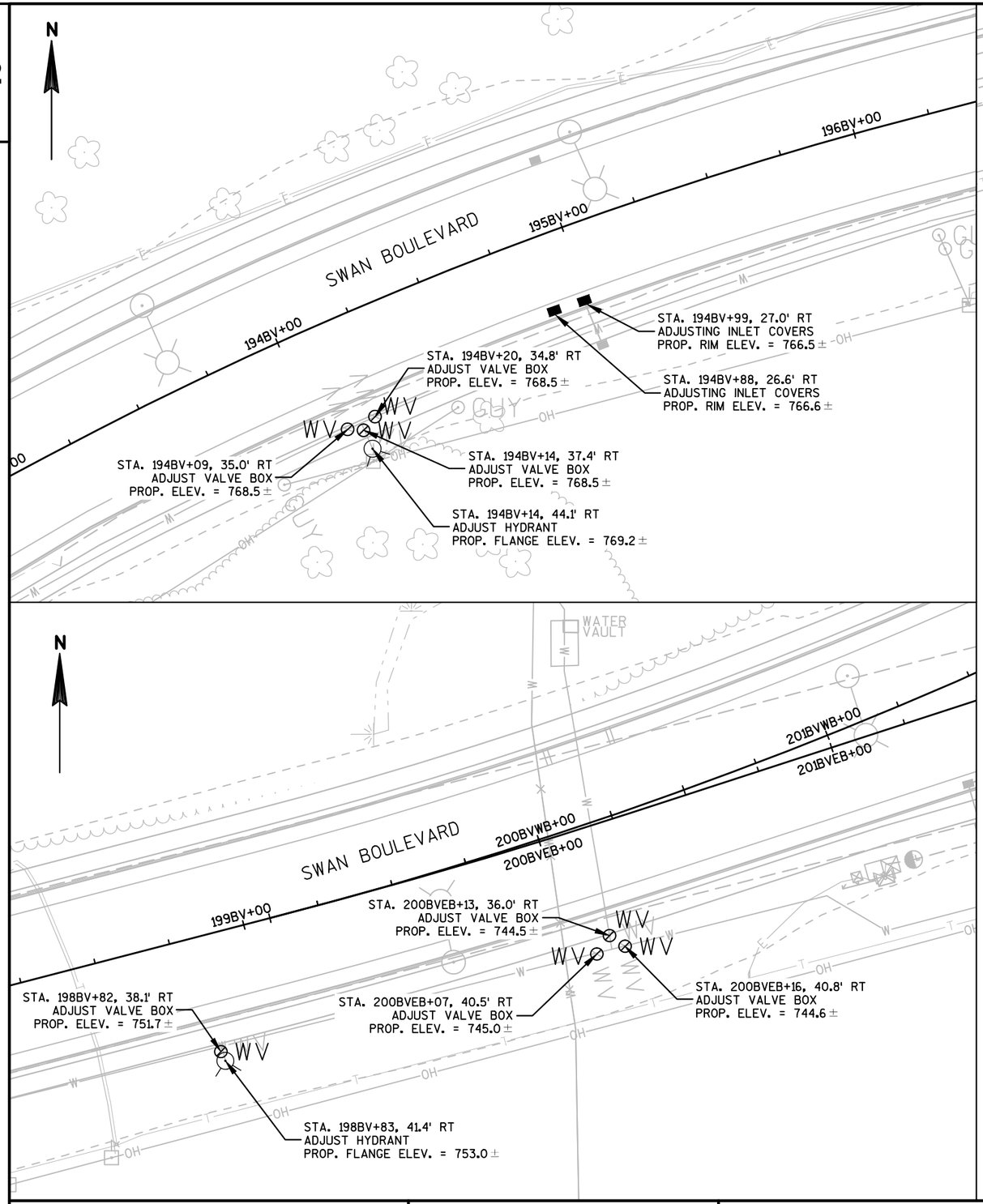








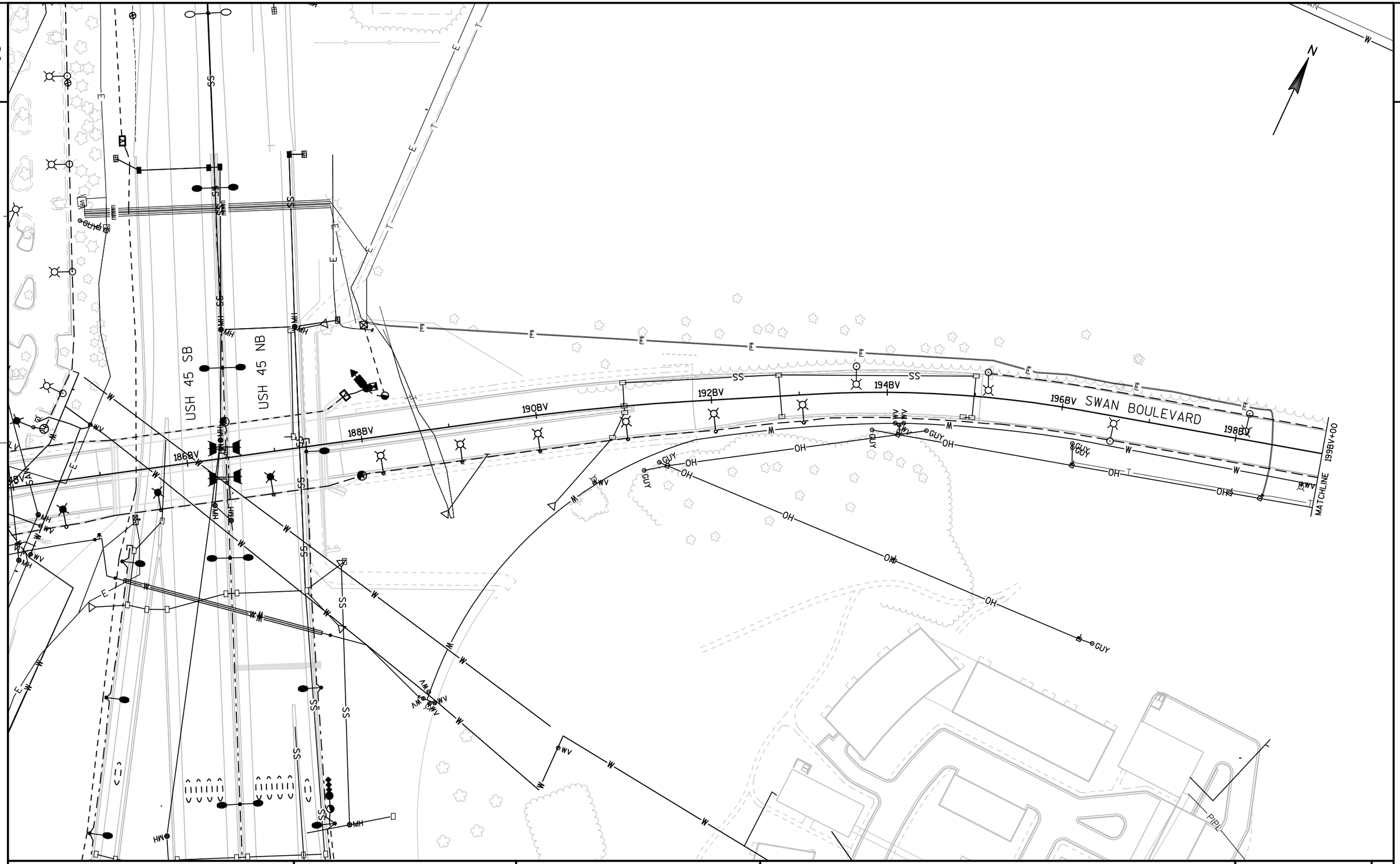
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CULVERTS - WDNR SITE	SHEET 57	E



2

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	UTILITY ADJUSTMENTS	SHEET 58 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\023002_UP.DWG
LAYOUT NAME - SHEET - (1)
PLOT DATE : 1/30/2017 4:02 PM
PLOT BY : JOHANSEN, AMANDA A PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EXISTING UTILITIES	SHEET 59	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\023001_UP.DWG PLOT DATE : 11/21/2017 1:53 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 100'_XREF

2

MATCHLINE 199BV+00

PIPL

ABANDONED WATER MAIN

SAN

DISCOVERY PARKWAY

SWAN BOULEVARD

MATCHLINE 207BV+00

N

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EXISTING UTILITIES	SHEET 60	E

2

2

N

SWAN BOULEVARD

222BV

220BV

218BV

216BV

214BV

212BV

210BV

208BV

207BV+00

MATCHLINE

SWAN BLVD.

BOULEVARD

MH

OH

GUY

ASPH

CONC

26-44

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	EXISTING UTILITIES	SHEET 61	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\023001_UP.DWG PLOT DATE : 11/21/2017 2:17 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 100'_XREF

2

UNDERWOOD PARKWAY

USH 45 NB

SWAN BLVD.

SWAN BLVD.

SWAN BLVD.

USH 45 SB

W. WATERTOWN PLANK ROAD

⇦ Swan Blvd
Innovation Dr ⇨
NEXT SIGNAL

ESTR
IN MEDIAN

⇧ UWM Innovation Campus
⇦ WI Luth College Athletic Fields
⇦ To Underwood Parkway

ESTR
WAYFINDER

UWM Innovation Campus ⇨ (1)

⇦ Milw Research Park
⇨ To Underwook Pkwy
⇦ Wil-O-Way Underwood

ESTR
WAYFINDER

(111) Forest Exploration Center ⇨

W2-6 (2S) (3)

15 M.P.H. W13-1 (2S) (4)

(SEE SHEET 4)

NOTE: FOR EB TRAFFIC THERE IS A UWM INNOVATION CAMPUS SIGN THAT TURNS MOTORISTS LEFT AT DISCOVERY PARKWAY

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 1 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 62	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023201_PS.DWG PLOT DATE : 10/22/2018 9:14 AM PLOT BY : VANDE LEEST, CYNTHIAPLOT NAME : PLOT SCALE : 1" = 200'_XREF

WISDOT/CADDS SHEET 42

NOTE: OVERVIEW SHEET

8 W2-6 (2S)

7 15 M.P.H. W13-1 (2S)
STA 37+00
(SEE SHEET 10)

6 Swan Blvd
EAST WEST
D1-61
STA 35+25
(SEE SHEET 10)

UWM Innovation Campus
Milw Co Parks Administration
Watertown Plk Rd
1003 WAYFINDER SIGN
STA 206+95
(SEE SHEET 6)

Discovery Pkwy
LEFT LANE
Forest Exploration Dr
RIGHT LANE
9
STA 209+95
OUTSIDE SIDEWALK
(SEE SHEET 6)

112 Forest Exploration Center

Underwood Pkwy
13
(SEE SHEET 8)

Forest Exploration Dr
LEFT LANE
Discovery Pkwy
RIGHT LANE
WAYFINDER SIGN
STA 196+60
5
(SEE SHEET 5)

SEE 40 SCALE
(SHEET 3)

Forest Exploration Center
UWM Innovation Campus
Milw Co Parks
WAYFINDER SIGN
STA 199+60
(SEE SHEET 5)
1001

Swan Blvd
WEST EAST
D1-60
STA 25+50
17

Watertown Plk Rd
Forest Exploration Center
WAYFINDER SIGN
STA 27+00
(SEE SHEET 9)
1002

15 W2-6 (2S)
16 15 M.P.H. W13-1 (2S)
STA 24+00

14 H D9-2
MB6-1
(SEE SHEET 6)

10 W2-6 (2S)
11 15 M.P.H. W13-1 (2S)
STA 213+00
ON LIGHT POLE
(SEE SHEET 7)

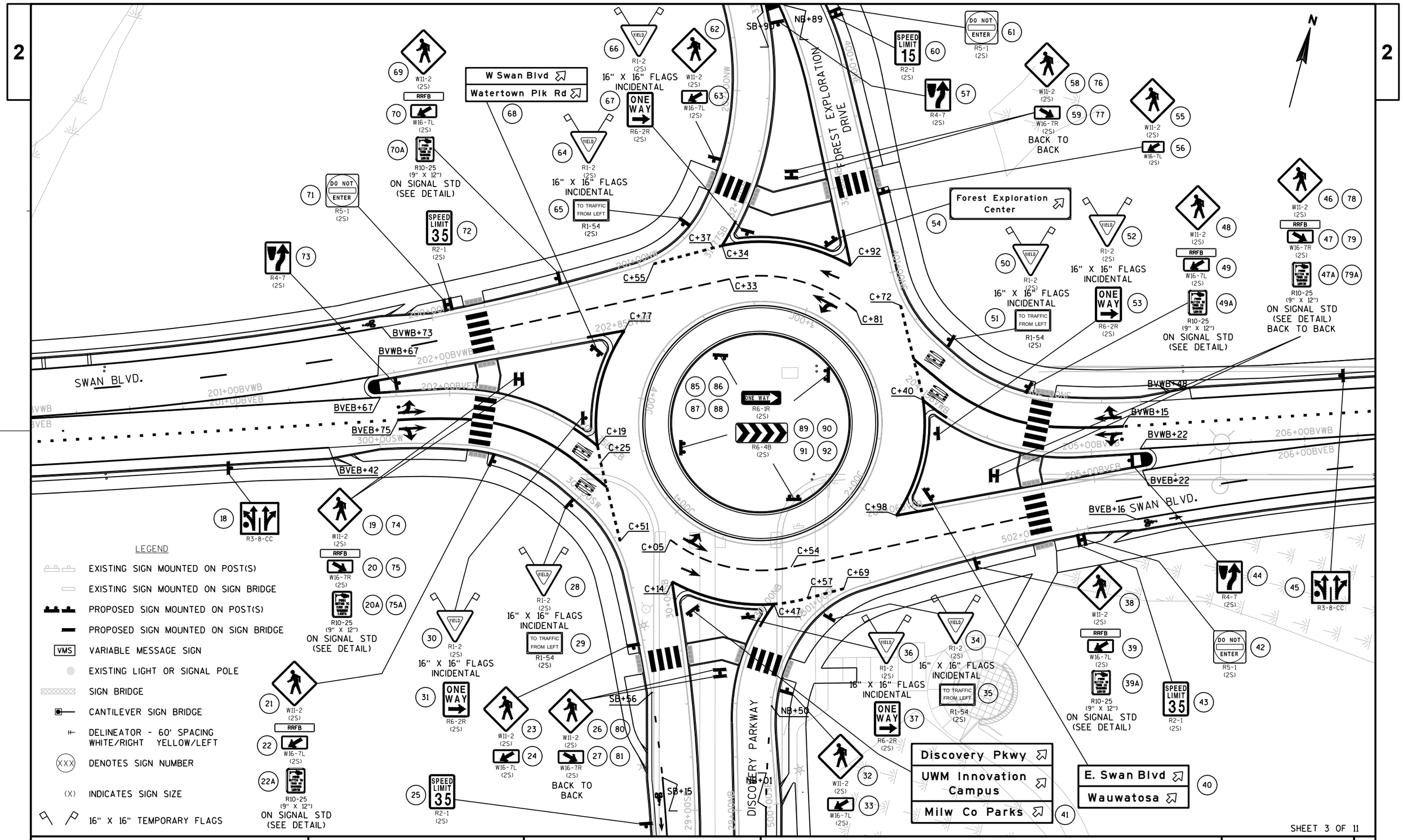
Underwood Pkwy
12
(SEE SHEET 8)

SWAN BLVD.
CENTER PARKWAY
DISCOVERY PARKWAY
UNDERWOOD PARKWAY
MILWAUKEE COUNTY GROUNDS
MENOMONEE RIVER PARKWAY
UNDERWOOD CREEK PARKWAY

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 11



SHEET 3 OF 11

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 64	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023201_PS.DWG PLOT DATE : 10/22/2018 9:15 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1:40_XREF

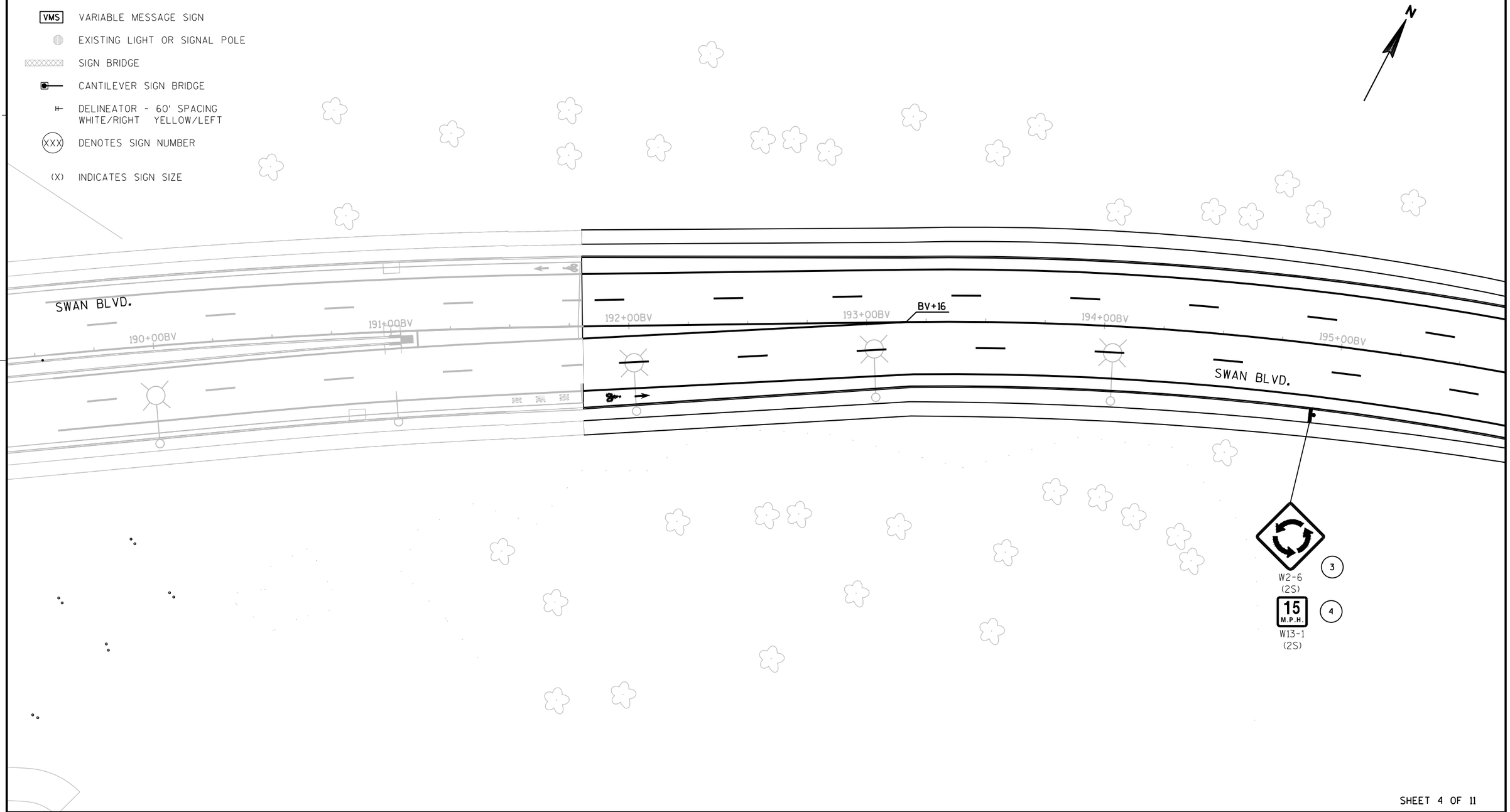
WISDOT/CADDS SHEET 42

2

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



SHEET 4 OF 11

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 65	E

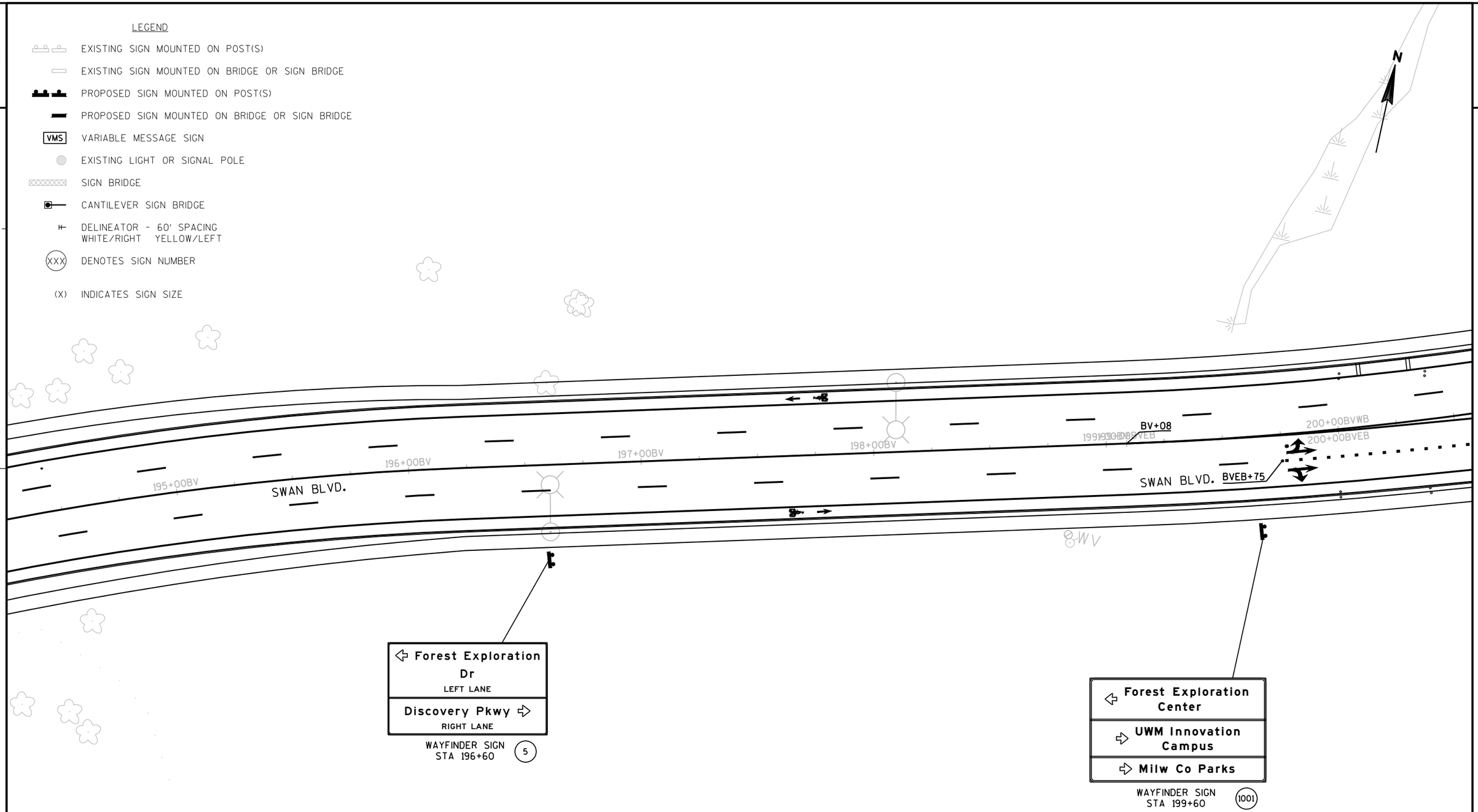
FILE NAME : J:\PROJECTS\D2_10603345\94\023201_PS.DWG PLOT DATE : 10/22/2018 9:15 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

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



2

SHEET 5 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 66	E

2

N

UWM Innovation Campus
Milw Co Parks Administration
Watertown Plk Rd
1003 WAYFINDER SIGN
STA 206+95

14 H D9-2
MB6-1

Discovery Pkwy
LEFT LANE
Forest Exploration Dr
RIGHT LANE
9
STA 209+95
OUTSIDE SIDEWALK

SWAN BLVD.
BVWB+15
206+00BVWB
206+00BVEB
207+00BVWB
207+00BVEB
207+82BVWB
208+00BV
BV+81
209+00BV
210+00BV
211+00BV
BOULEVARD
SWAN BLVD.
BV+14

LEGEND

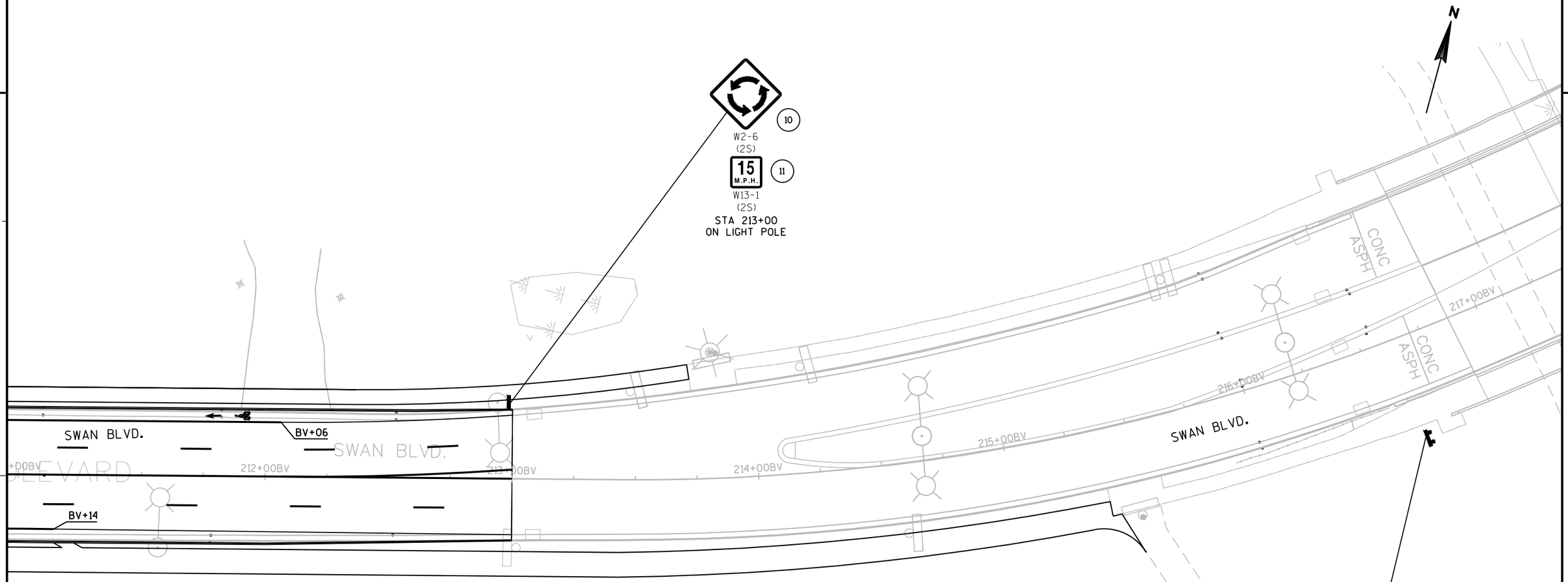
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DELINEATOR - 60' SPACING WHITE/RIGHT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

26-44

SHEET 6 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 67	E

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

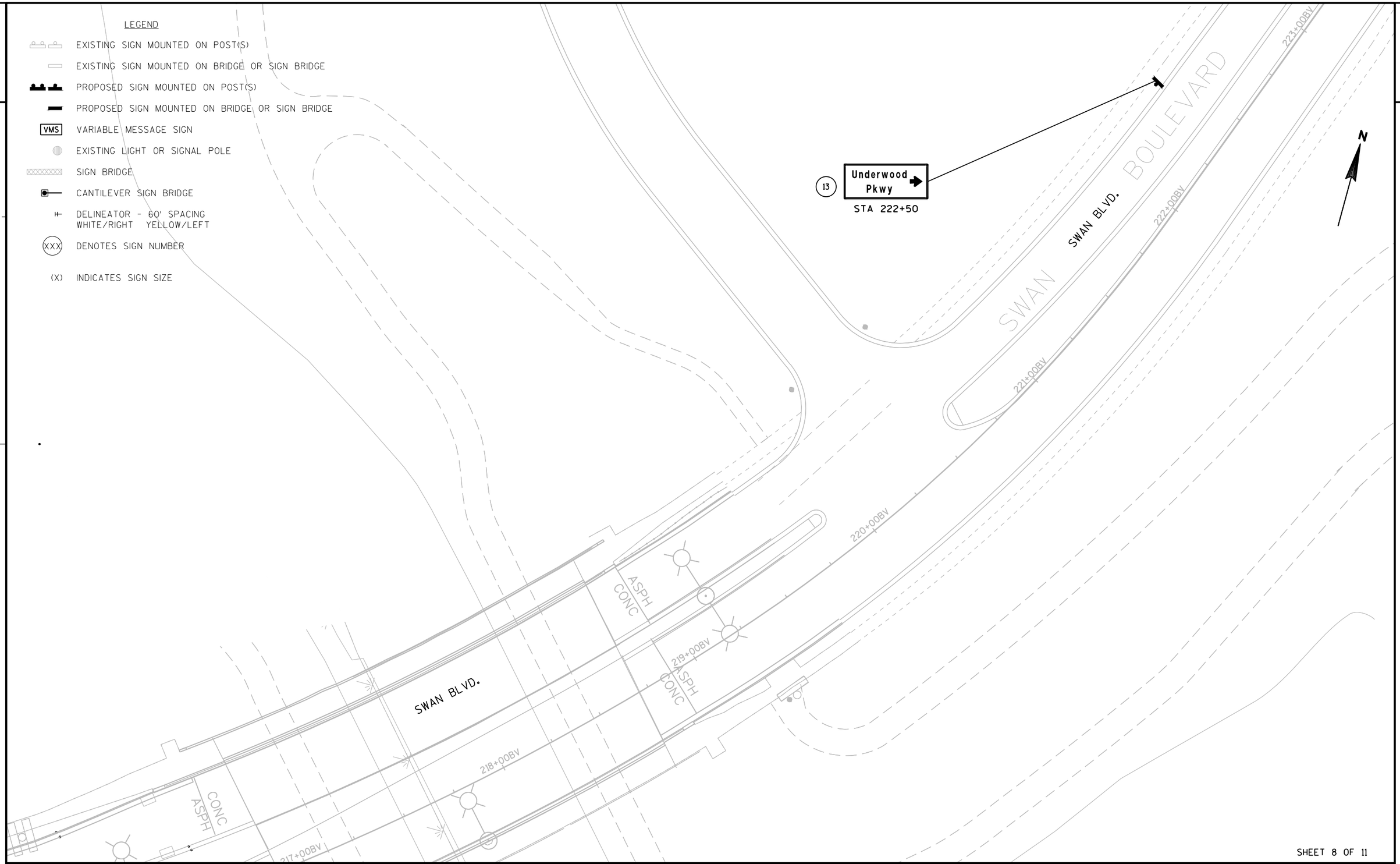
SHEET 7 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 68	E

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



SHEET 8 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 69	E

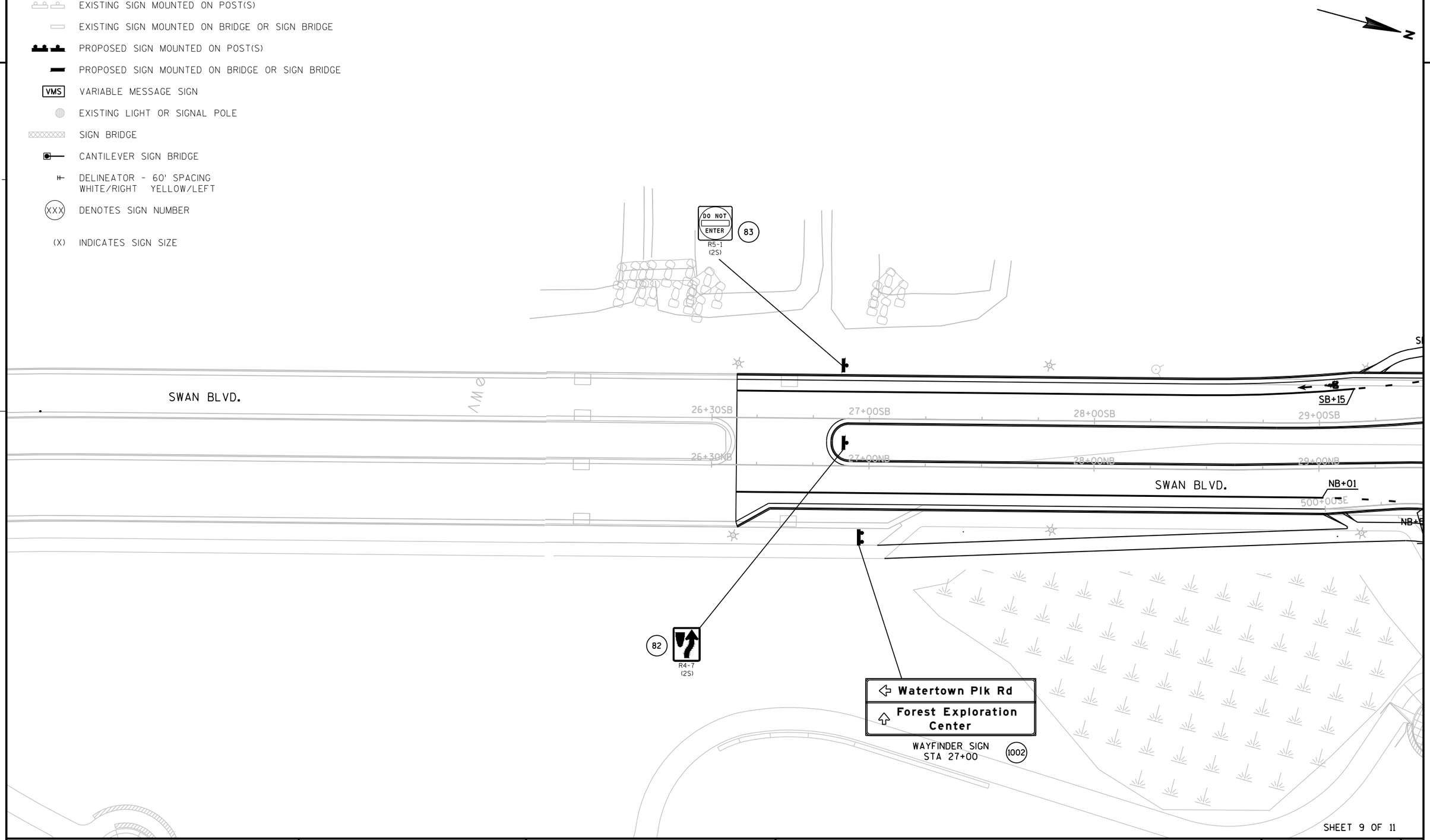
FILE NAME : J:\PROJECTS\D2_10603345\94\023201_PS.DWG PLOT DATE : 10/22/2018 9:16 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

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



SHEET 9 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 70	E

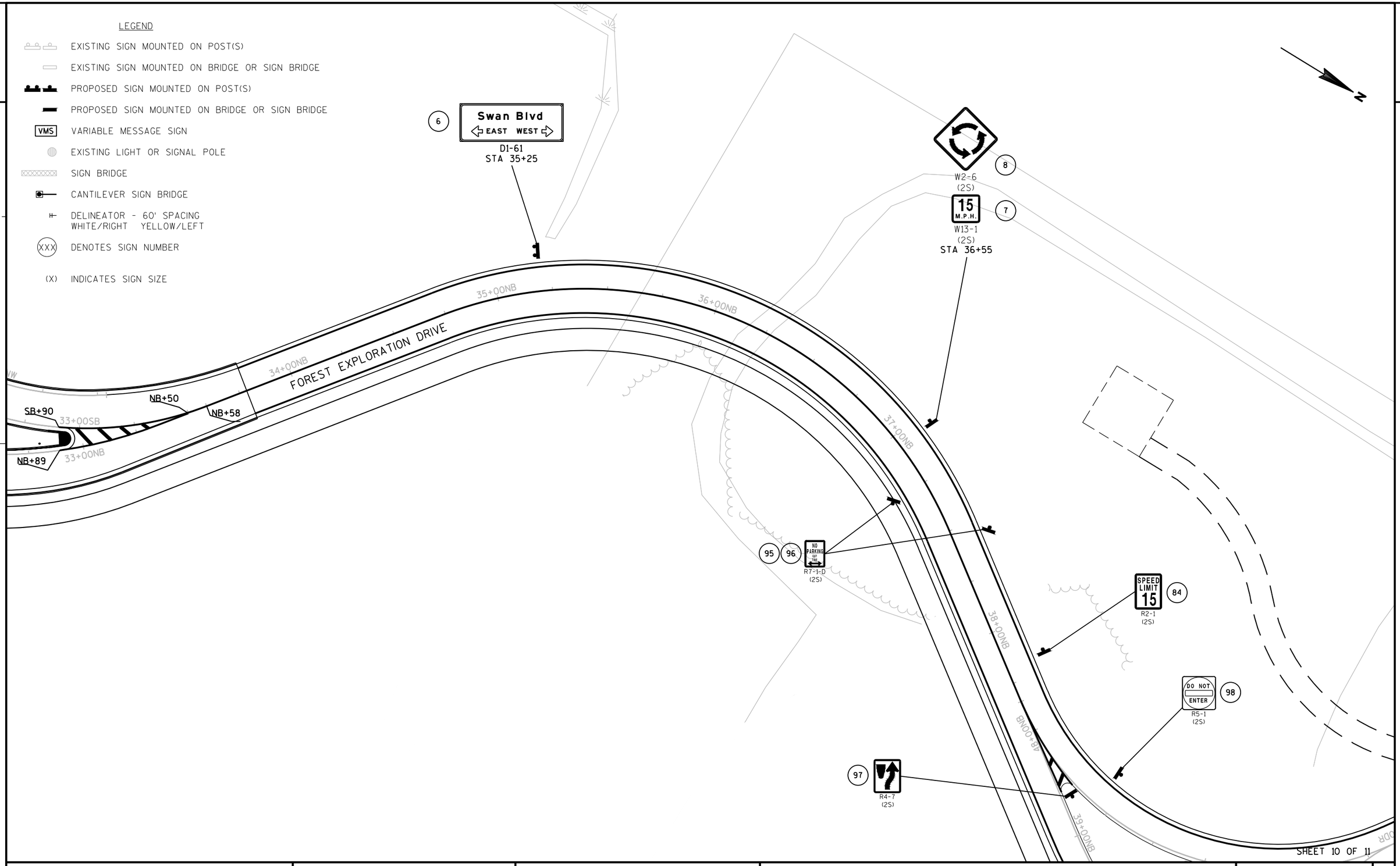
FILE NAME : J:\PROJECTS\D2_10603345\94\023201_PS.DWG PLOT DATE : 10/22/2018 9:16 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

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



SHEET 10 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023201_PS.DWG PLOT DATE : 10/22/2018 9:16 AM PLOT BY : VANDE LEEST, CYNTHIA PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

2

FOREST EXPLORATION DRIVE

38+00NB

39+00NB

47+00NB

0+00DR

46+00NB

45+00NB

44+00NB

43+00NB

42+00NB

41+00NB

40+00NB

1+00DR

NB+72

106 107 NO PARKING BUS STOP R7-7-D (2S)

108 NO PARKING ANY TIME R7-1-D (2S)

105 NO PARKING ANY TIME R7-1-D (2S)

EXIT 110

SEE DETAIL

DO NOT ENTER 101 R5-1 (2S)

99 R3-2 (2S)

100 NO PARKING ANY TIME R7-1-R (2S)

102 103 RESERVED PARKING R7-8-A (2S)

104 NO PARKING ANY TIME R7-1-L (2S)

N

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 11 OF 11

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 72	E

2

N

USH 45

N. SWAN BLVD.

EXISTING LIGHT CONTROL CABINET #89 TO REMAIN

89
CIRCUITS NE (#1) NW (#2) SW (#3) SE (#4)
240/480V 1 PHASE GROUNDED NEUTRAL

DISCOVERY PARKWAY

N. SWAN BLVD.

W. INNOVATION DR.

USH 45

W. WATERTOWN PLANK RD.

PROJECT NO: 1060-34-94	HWY: SWAN BLVD	COUNTY: MILWAUKEE	LIGHTING PLAN - LIGHTING CONTROLLER OVERVIEW - REMOVAL	SHEET 73	E

2

2

N

USH 45

FOREST EXPLORATION DRIVE

N. SWAN BLVD.

EXISTING LIGHT CONTROL CABINET #89 TO REMAIN

89
CIRCUITS NE (#1) NW (#2) SW (#3) SE (#4)
240/480V 1 PHASE GROUNDED NEUTRAL

DISCOVERY PARKWAY

N. SWAN BLVD.

W. INNOVATION DR.

USH 45

W. WATERTOWN PLANK RD.

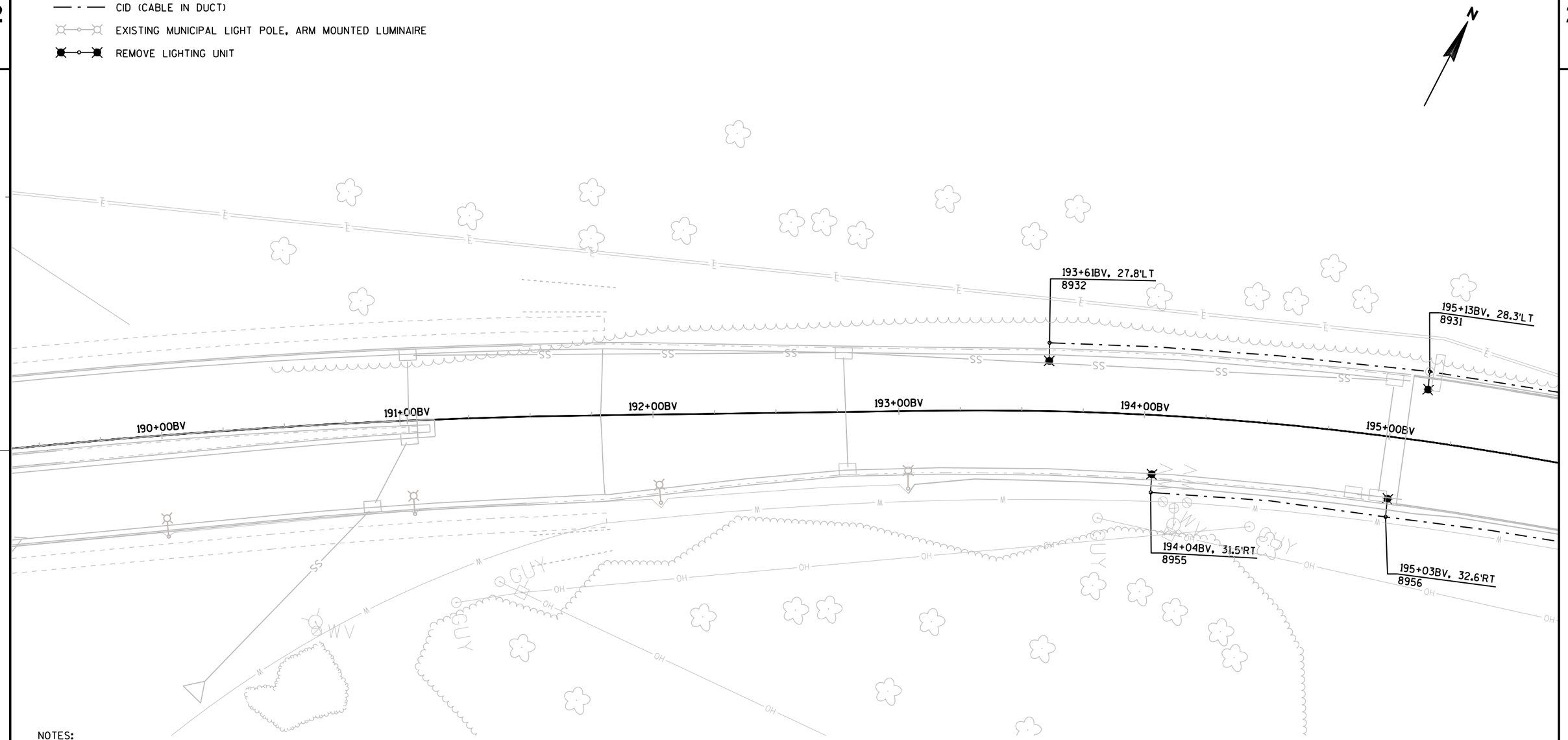
PROJECT NO: 1060-34-94	HWY: SWAN BLVD	COUNTY: MILWAUKEE	LIGHTING PLAN - LIGHTING CONTROLLER OVERVIEW - FINAL	SHEET 74	E

LEGEND

CID (CABLE IN DUCT)

EXISTING MUNICIPAL LIGHT POLE, ARM MOUNTED LUMINAIRE

REMOVE LIGHTING UNIT



NOTES:

1. EQUIPMENT SHOWN IN BOLD SHALL BE REMOVED UNLESS NOTED OTHERWISE.
2. THE EXISTING LIGHTING UNIT TO BE REMOVED SHALL BE DISCONNECTED, REMOVED FROM EXISTING FOUNDATION AND SALVAGED.
3. CONTRACTOR SHALL DISPOSE OF REMOVED EXISTING LAMPS IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
4. THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

2

2

N

WATER VAULT

195+13BV, 28.3'LT
8931

198+11BV, 29.8'LT
8930

195+00BV

196+00BV

197+00BV

198+00BV

199+00BV

200+00BVEB

195+03BV, 32.6'RT
8956

196+60BV, 28.9'RT
8957

199+62BVEB, 29.7'RT
8958

SHEET 2 OF 5

PROJECT NO:1060-33-94	HWY: SWAN BLVD	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 76	E

2

2

N

WATER VAULT

201+00NW

200+00NW

202+00NW

32+00SB

32+00NB

400+00NE

401+00NE

401+33NE, 17.8'RT

402+00NE

201+12BVEB, 20.6'LT
8927

202+00BVWB

201+00BVWB
201+00BVEB

202+00BVEB

300+00SW

205+00BVWB

206+00BVWB
206+00BVEB

205+00BVEB

205+59BVWB, 19.5'RT

502+00SE

300+00SW

300+96SW, 4.3'LT

29+89SB, 16.3'LT

30+00SB

30+00NB

501+00SE

29+84SB, 56.8'RT

29+22SB, 23.5'LT

29+17SB, 49.6'RT

29+00SB

29+00NB

500+00SE

1+00C

2+00C

3+00C

4+00C

SHEET 3 OF 5

PROJECT NO:1060-33-94	HWY: SWAN BLVD	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 77	E

2

2

N

207+11BVWB, 30.7'LT

210+10BV, 29.3'LT

206+00BVWB
206+00BVEB

207+00BVWB

208+00BV

209+00BV

210+00BV

211+00BV

205+59BVWB, 19.5'RT

208+61BV, 29.0'RT

211+57BV,

OH

GUY

SHEET 4 OF 5

PROJECT NO:1060-33-94	HWY: SWAN BLVD	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 78	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023601_LP.DWG PLOT DATE : 11/10/2015 6:39 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

2

N

SWAN BLVD.

212+94BV, 30.7'LT

211+57BV, 29.1'RT

00BV

212+00BV

213+00BV

214+00BV

215+00BV

216+00BV

217+00BV

CONC ASPH

CONC ASPH

MH

SS

OH

GUY

SHEET 5 OF 5

PROJECT NO:1060-33-94	HWY: SWAN BLVD	COUNTY: MILWAUKEE	LIGHTING REMOVAL PLAN	SHEET 79	E

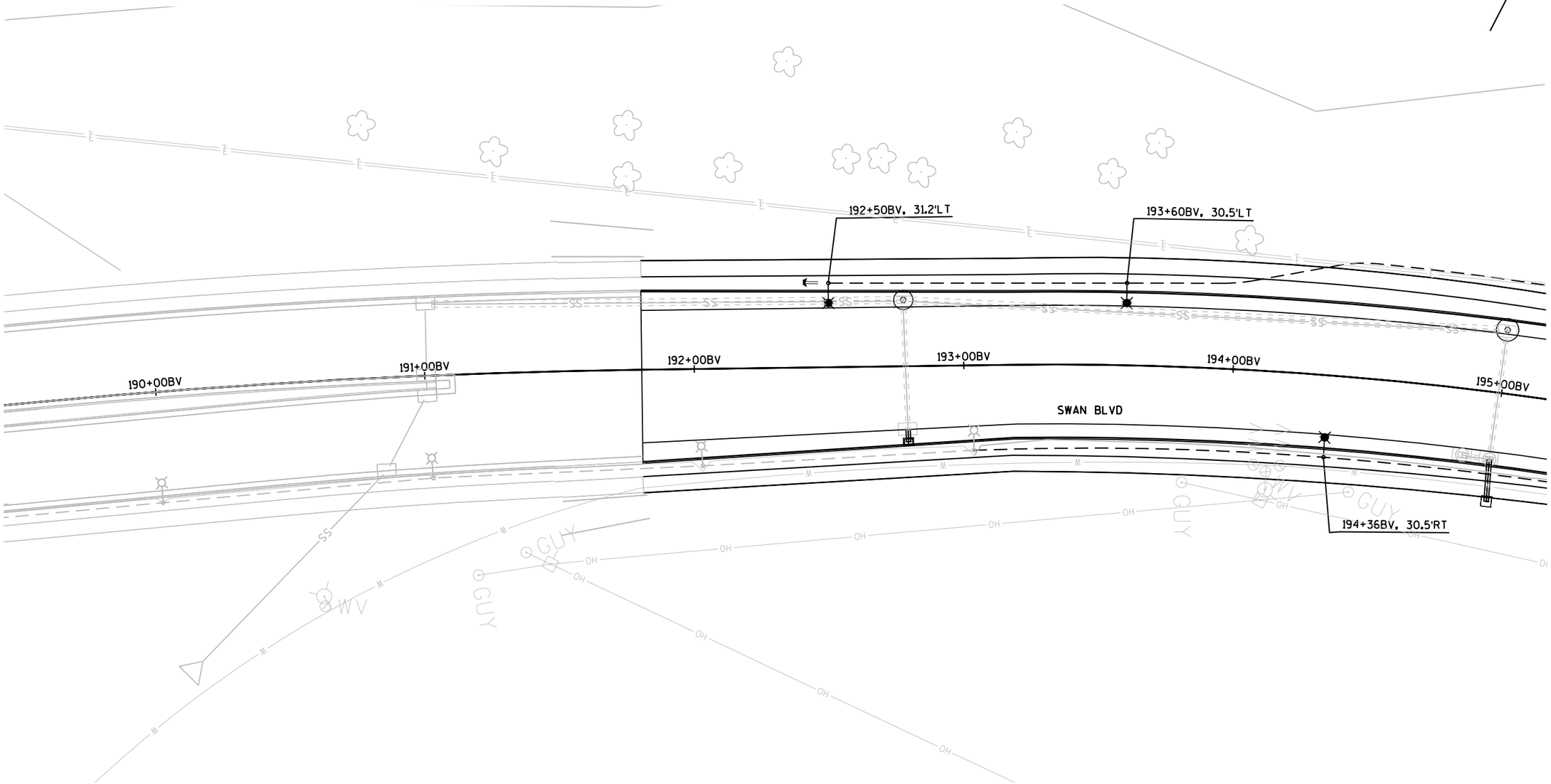
FILE NAME : J:\PROJECTS\D2_10603345\94\023601_LP.DWG PLOT DATE : 11/10/2015 6:40 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1:40_XREF

LEGEND

— — — CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 1 OF 8

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 80	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023701_LP.DWG PLOT DATE : 11/10/2015 6:32 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1" = 40'_XREF

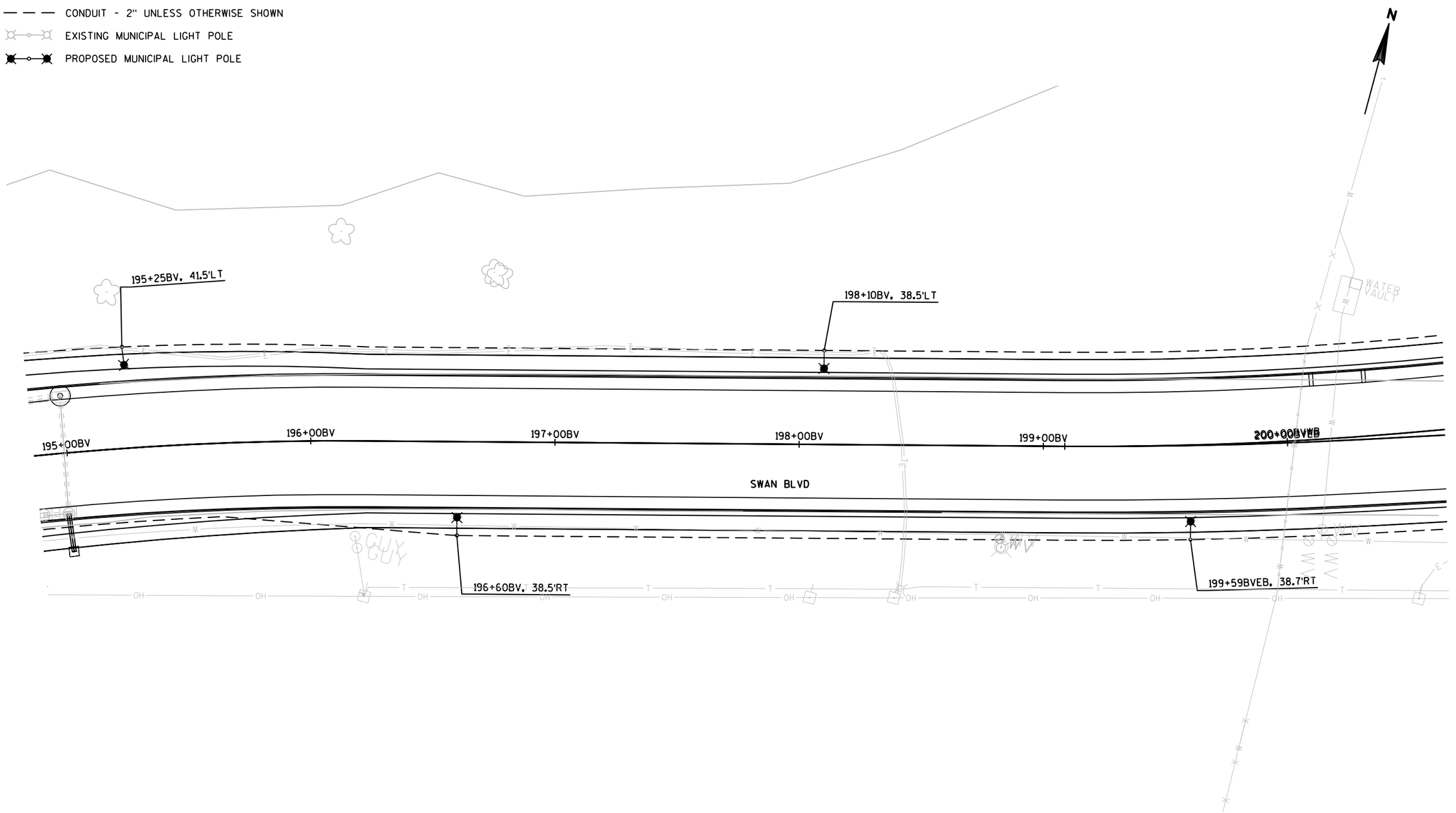
WISDOT/CADDS SHEET 42

LEGEND

— — — CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 2 OF 8

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 81	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023701_LP.DWG PLOT DATE : 11/10/2015 6:32 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1" = 40'_XREF

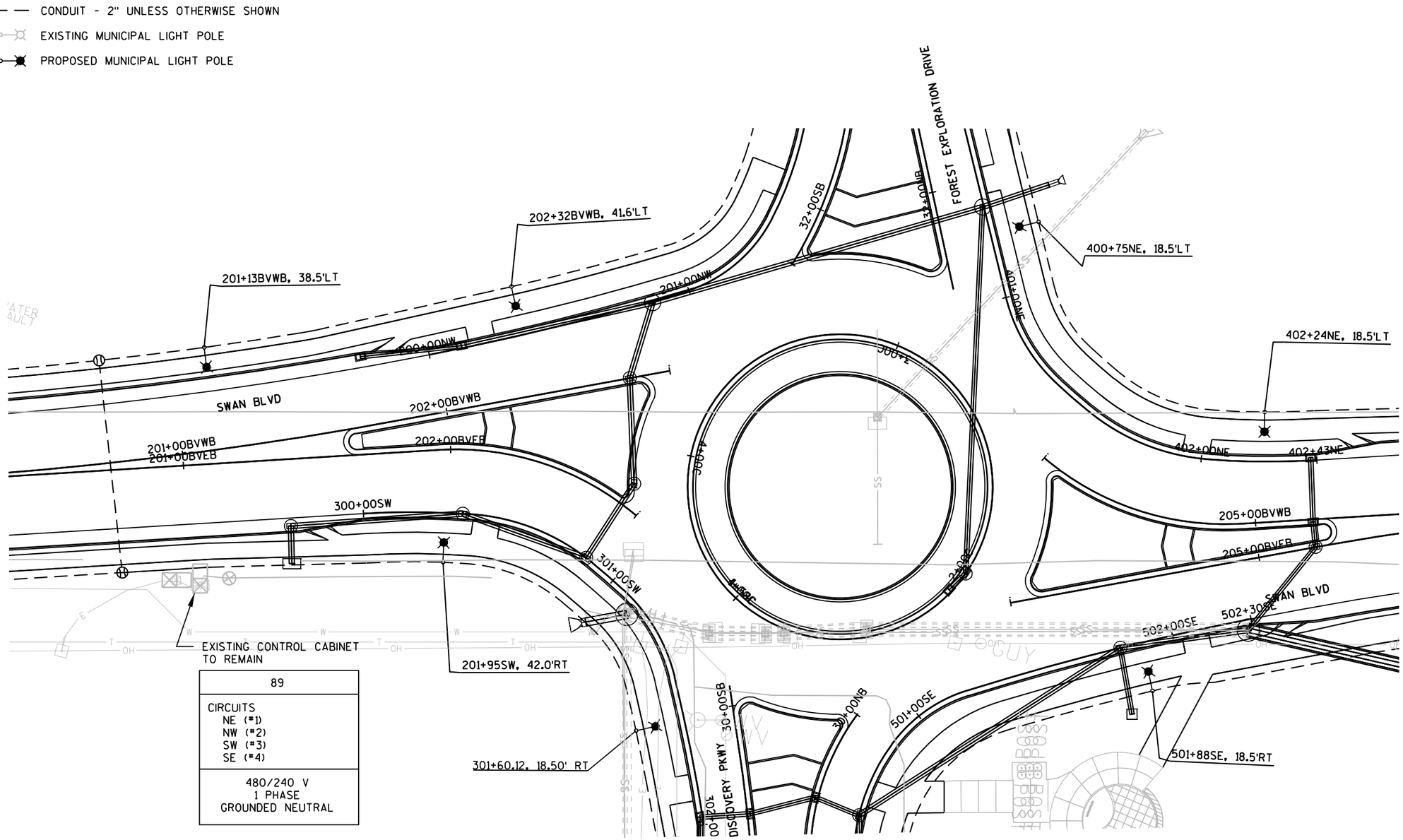
WISDOT/CADDS SHEET 42

LEGEND

CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 3 OF 8

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 82	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023701_LP.DWG PLOT DATE : 11/10/2015 6:33 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1" = 40'_XREF

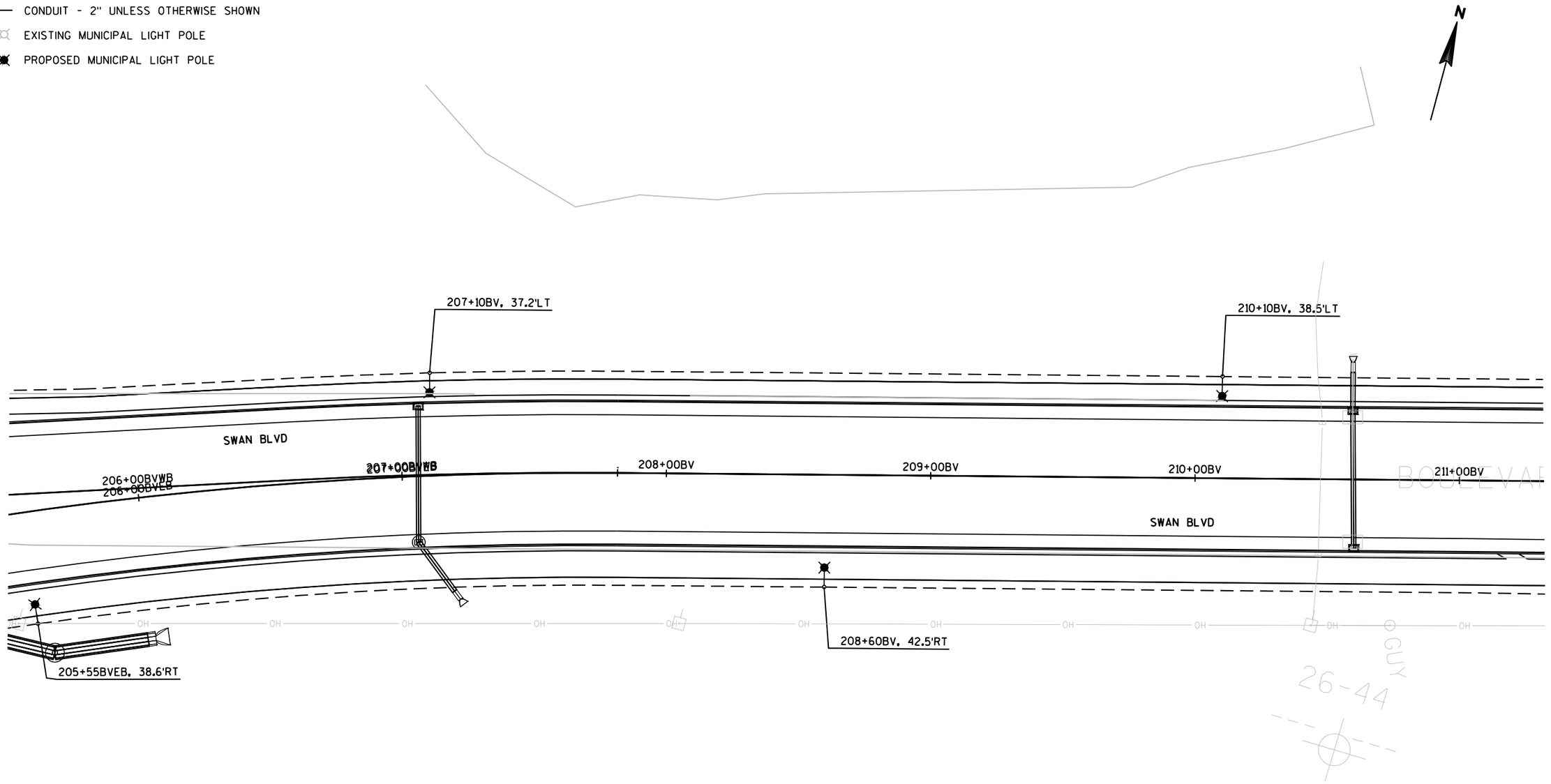
WISDOT/CADDS SHEET 42

LEGEND

CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 4 OF 8

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 83	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023701_LP.DWG PLOT DATE : 11/10/2015 6:34 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1" = 40'_XREF

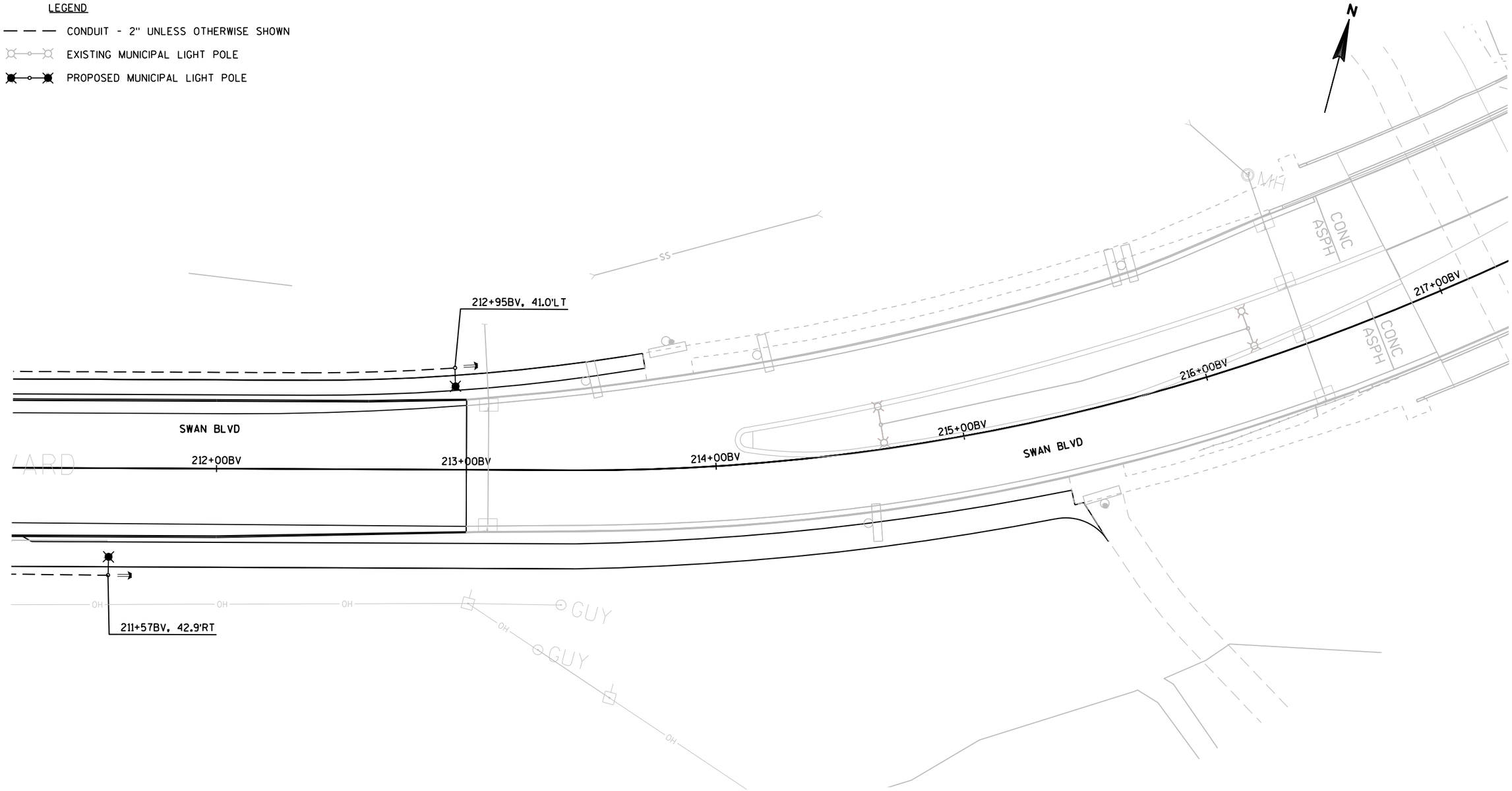
WISDOT/CADDS SHEET 42

LEGEND

CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 5 OF 8

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 84	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023701_LP.DWG PLOT DATE : 11/10/2015 6:34 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1" = 40'_XREF

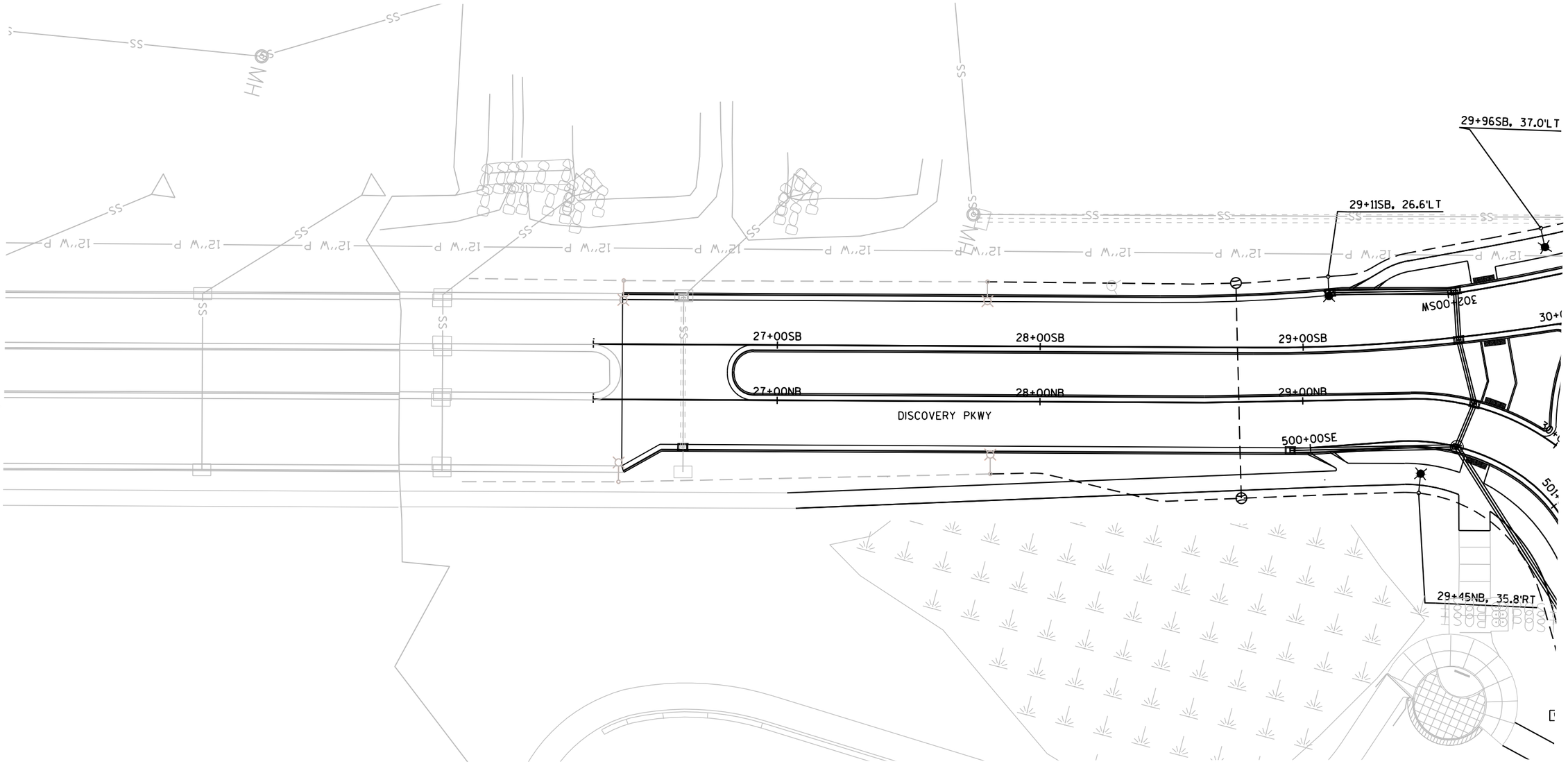
WISDOT/CADDS SHEET 42

LEGEND

— — — CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 6 OF 8

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 85	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023706_LP.DWG PLOT DATE : 11/10/2015 6:35 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1:40_XREF

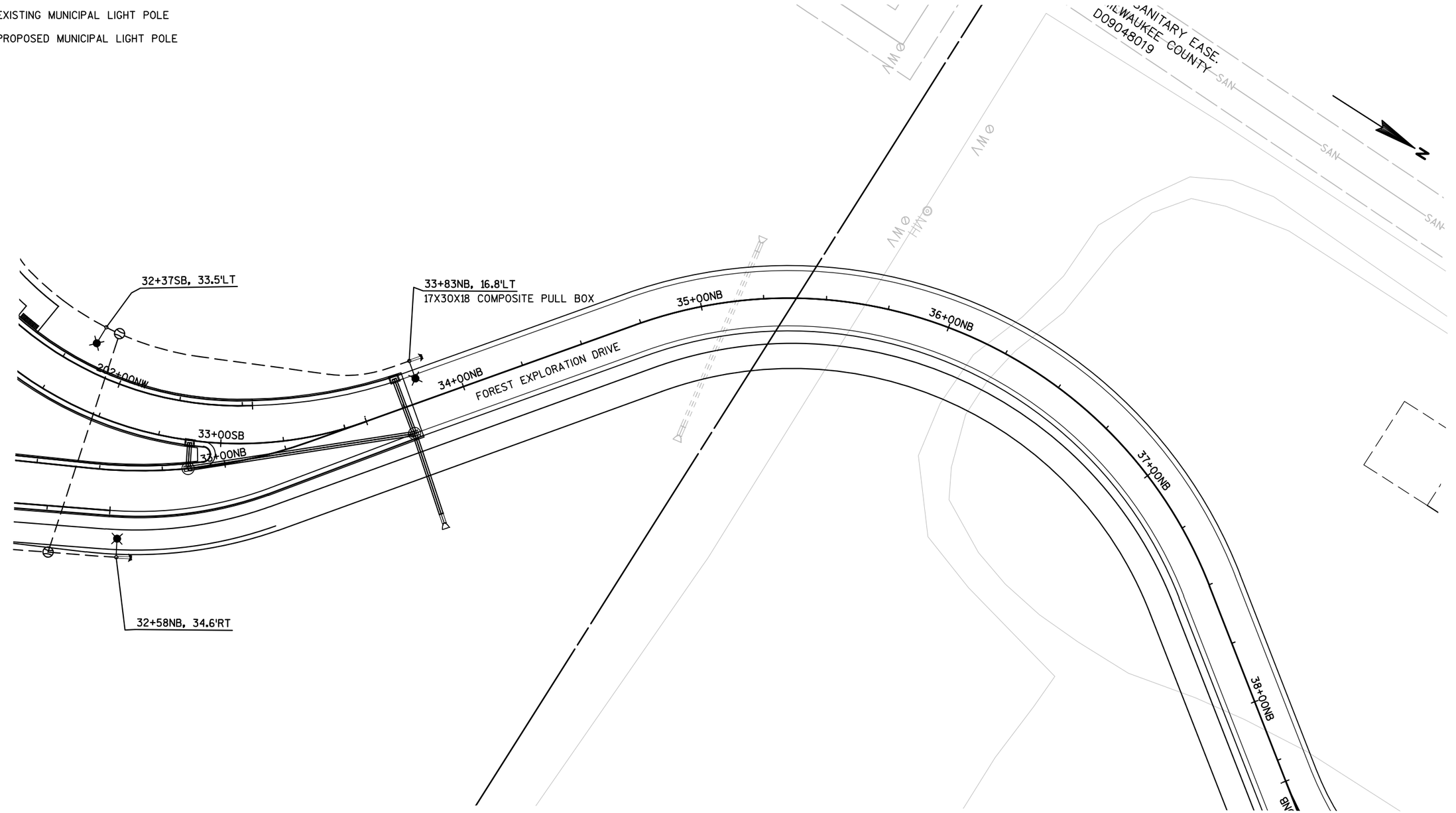
WISDOT/CADDS SHEET 42

LEGEND

CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



SHEET 7 OF 8

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 86	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023706_LP.DWG PLOT DATE : 10/31/2018 10:50 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 40'_XREF

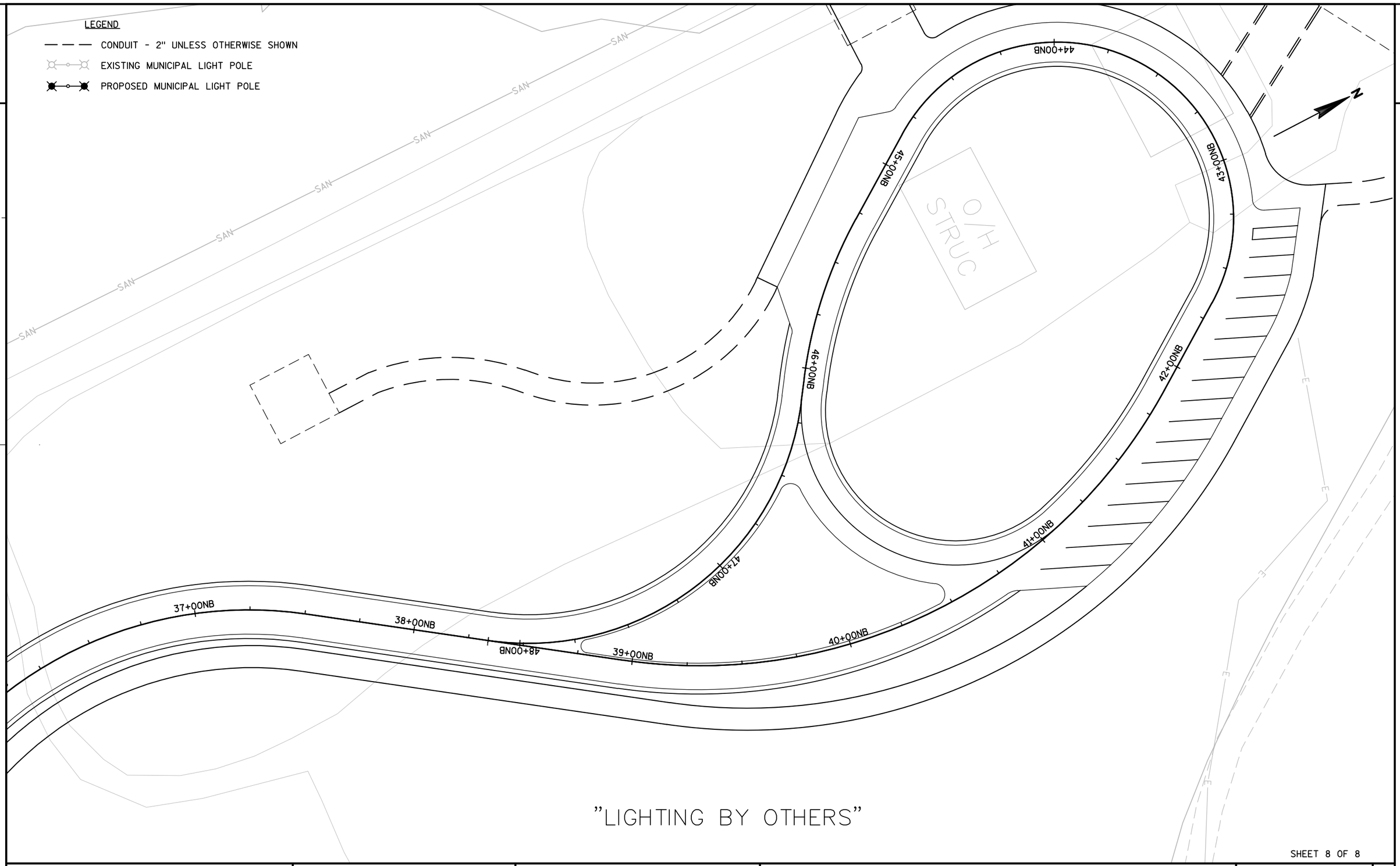
WISDOT/CADDS SHEET 42

LEGEND

CONDUIT - 2" UNLESS OTHERWISE SHOWN

EXISTING MUNICIPAL LIGHT POLE

PROPOSED MUNICIPAL LIGHT POLE



"LIGHTING BY OTHERS"

SHEET 8 OF 8

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	LIGHTING PLAN	SHEET 87	E

FILE NAME : J:\PROJECTS\D2_10603345\94\023706_LP.DWG PLOT DATE : 10/25/2018 3:58 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

2

2

LEGEND

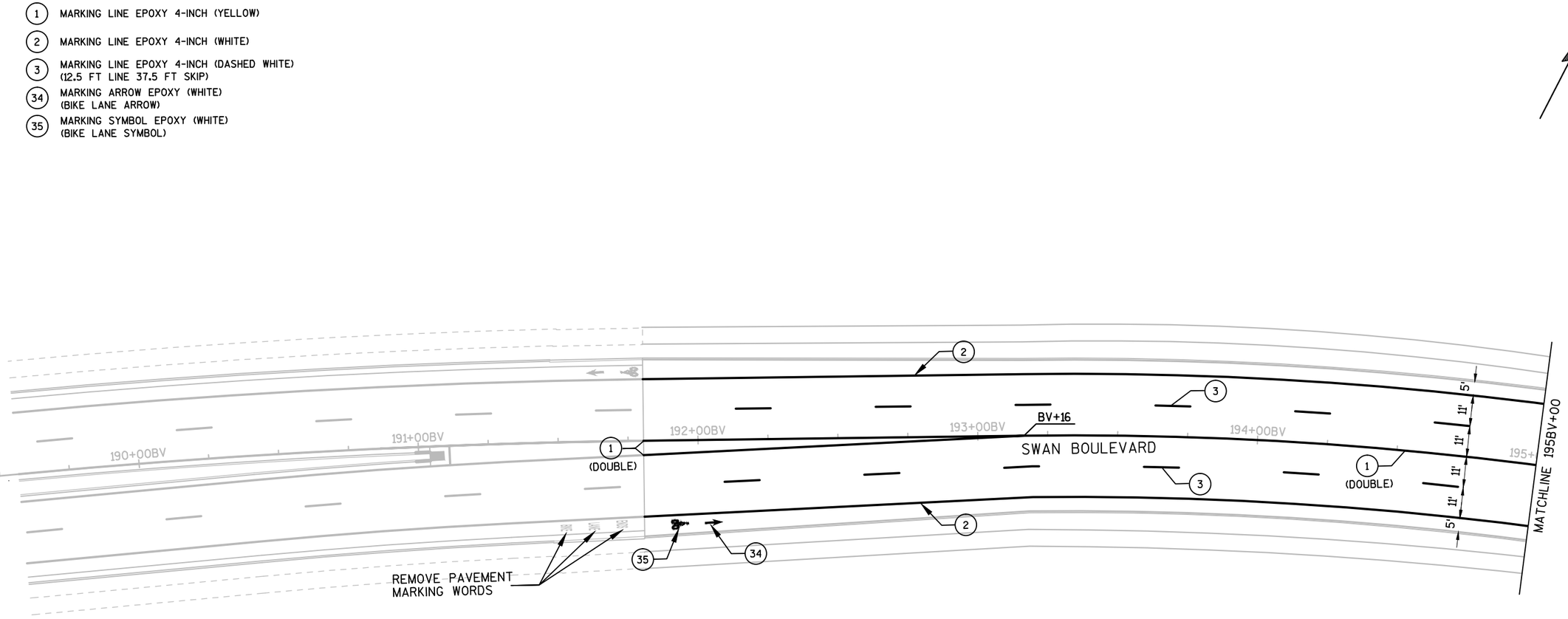
(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(3) MARKING LINE EPOXY 4-INCH (DASHED WHITE)
(12.5 FT LINE 37.5 FT SKIP)

(34) MARKING ARROW EPOXY (WHITE)
(BIKE LANE ARROW)

(35) MARKING SYMBOL EPOXY (WHITE)
(BIKE LANE SYMBOL)



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 88	E

2

LEGEND

(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(3) MARKING LINE EPOXY 4-INCH (DASHED WHITE)
(12.5 FT LINE 37.5 FT SKIP)

(5) MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE)
(3 FT LINE 9 FT SKIP)

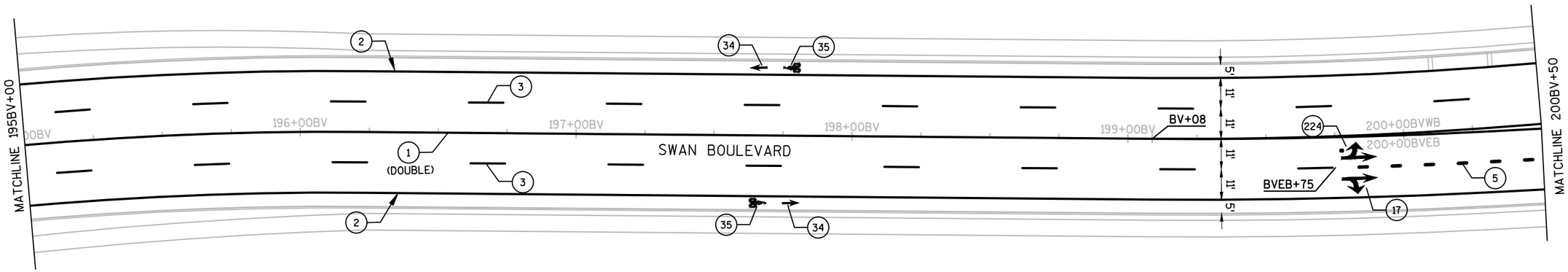
(17) MARKING ARROW EPOXY (WHITE)
(TYPE 3)

(34) MARKING ARROW EPOXY (WHITE)
(BIKE LANE ARROW)

(35) MARKING SYMBOL EPOXY (WHITE)
(BIKE LANE SYMBOL)

(224) MARKING ARROW EPOXY (WHITE)
(TYPE 3R)

N



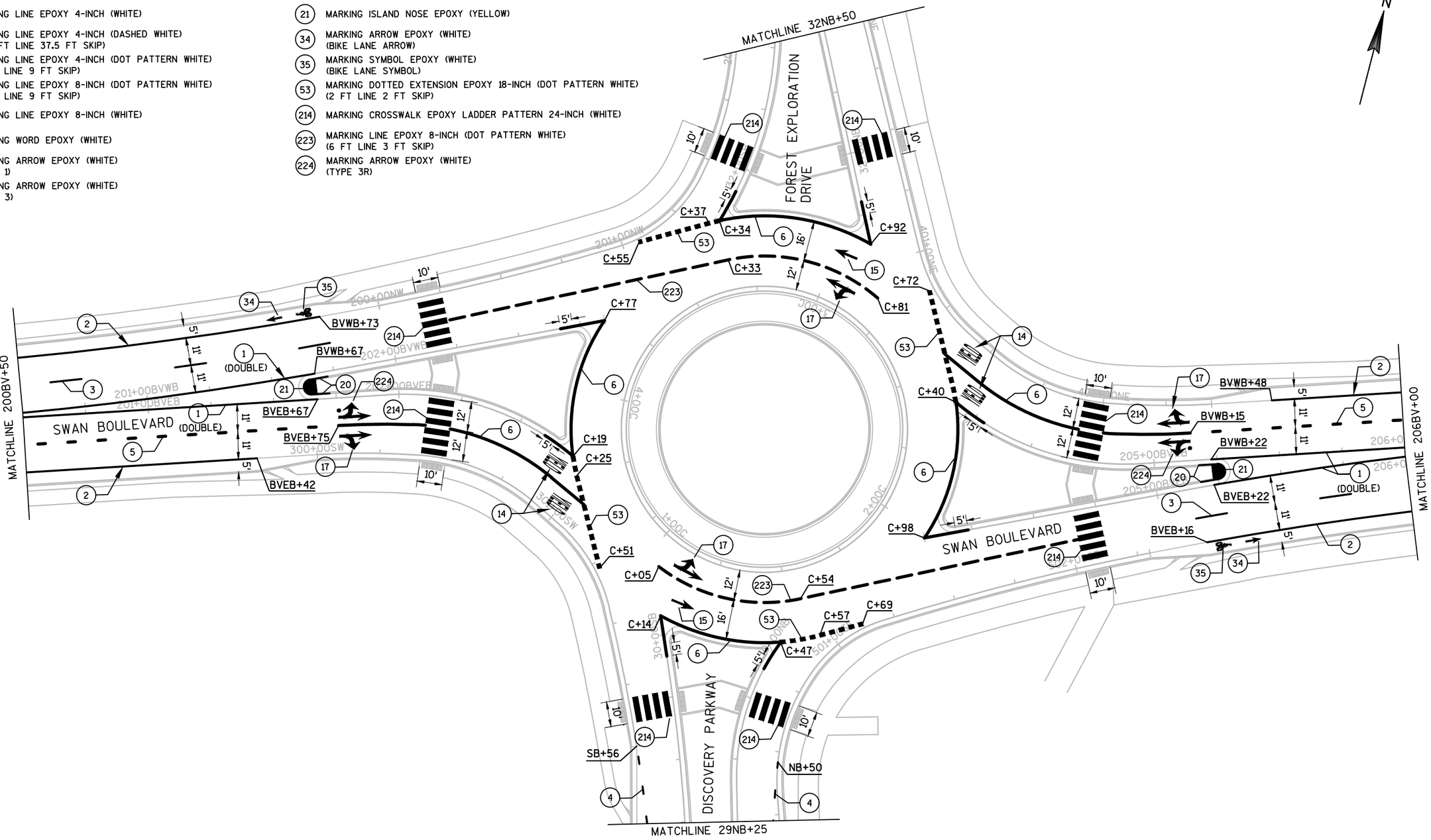
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 89	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\024501_PM.DWG PLOT DATE : 10/23/2017 12:37 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42

LEGEND

1. MARKING LINE EPOXY 4-INCH (YELLOW)
2. MARKING LINE EPOXY 4-INCH (WHITE)
3. MARKING LINE EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
4. MARKING LINE EPOXY 4-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
5. MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
6. MARKING LINE EPOXY 8-INCH (WHITE)
14. MARKING WORD EPOXY (WHITE)
15. MARKING ARROW EPOXY (WHITE) (TYPE 1)
17. MARKING ARROW EPOXY (WHITE) (TYPE 3)
20. MARKING CURB EPOXY (YELLOW)
21. MARKING ISLAND NOSE EPOXY (YELLOW)
34. MARKING ARROW EPOXY (WHITE) (BIKE LANE ARROW)
35. MARKING SYMBOL EPOXY (WHITE) (BIKE LANE SYMBOL)
53. MARKING DOTTED EXTENSION EPOXY 18-INCH (DOT PATTERN WHITE) (2 FT LINE 2 FT SKIP)
214. MARKING CROSSWALK EPOXY LADDER PATTERN 24-INCH (WHITE)
223. MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE) (6 FT LINE 3 FT SKIP)
224. MARKING ARROW EPOXY (WHITE) (TYPE 3R)



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 90	E

2

LEGEND

(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(3) MARKING LINE EPOXY 4-INCH (DASHED WHITE)
(12.5 FT LINE 37.5 FT SKIP)

(5) MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE)
(3 FT LINE 9 FT SKIP)

(17) MARKING ARROW EPOXY (WHITE)
(TYPE 3)

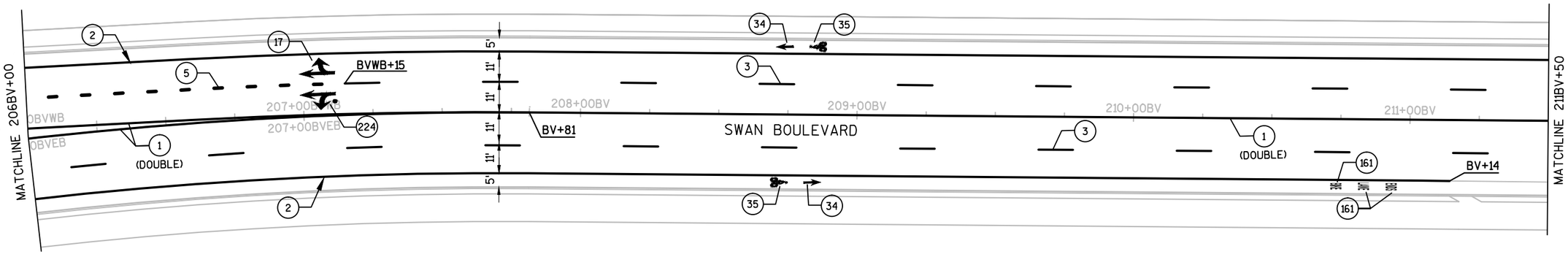
(34) MARKING ARROW EPOXY (WHITE)
(BIKE LANE ARROW)

(35) MARKING SYMBOL EPOXY (WHITE)
(BIKE LANE SYMBOL)

(161) MARKING WORD EPOXY (WHITE)
(BIKE LANE)

(224) MARKING ARROW EPOXY (WHITE)
(TYPE 3R)

N



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 91	E

2

LEGEND

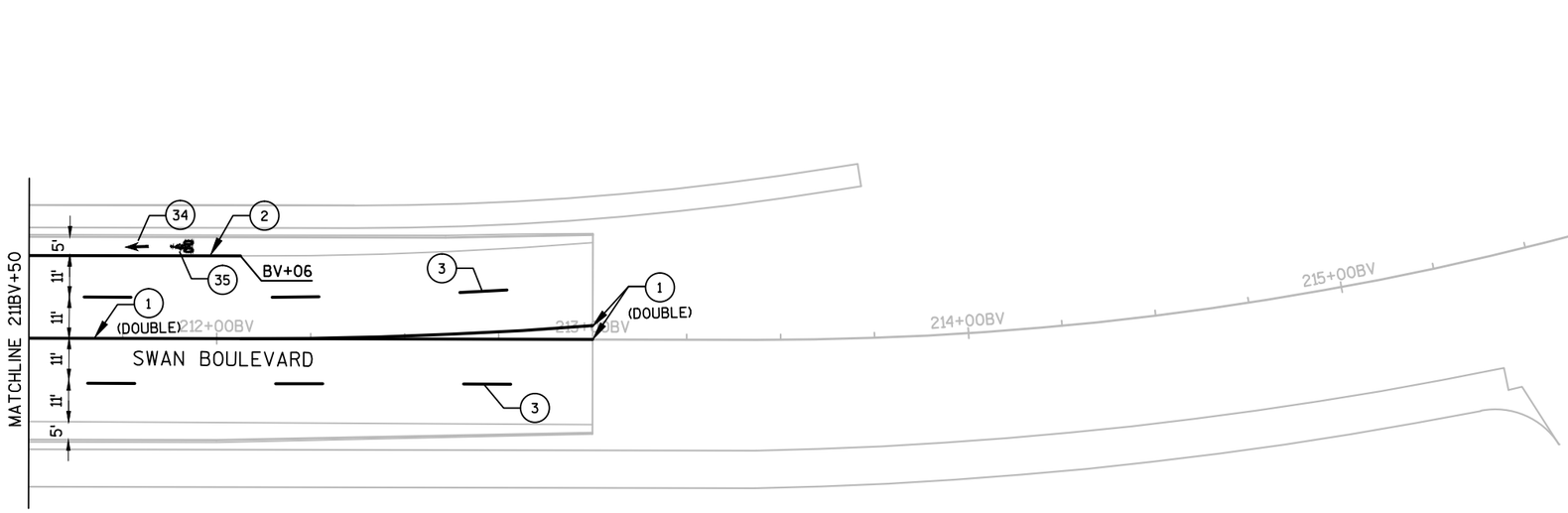
(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(3) MARKING LINE EPOXY 4-INCH (DASHED WHITE)
(12.5 FT LINE 37.5 FT SKIP)

(34) MARKING ARROW EPOXY (WHITE)
(BIKE LANE ARROW)

(35) MARKING SYMBOL EPOXY (WHITE)
(BIKE LANE SYMBOL)



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 92	E

2

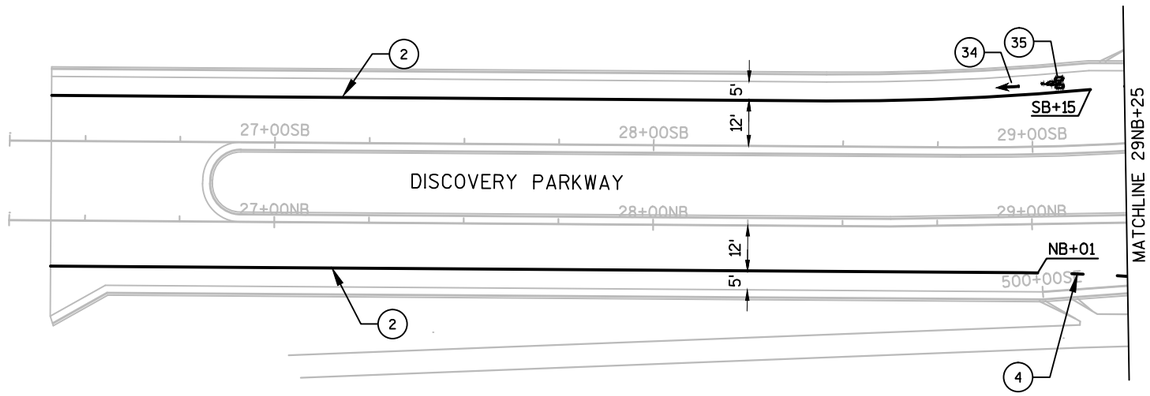
LEGEND

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(4) MARKING LINE EPOXY 4-INCH (DOT PATTERN WHITE)
(3 FT LINE 9 FT SKIP)

(34) MARKING ARROW EPOXY (WHITE)
(BIKE LANE ARROW)

(35) MARKING SYMBOL EPOXY (WHITE)
(BIKE LANE SYMBOL)



2

2

LEGEND

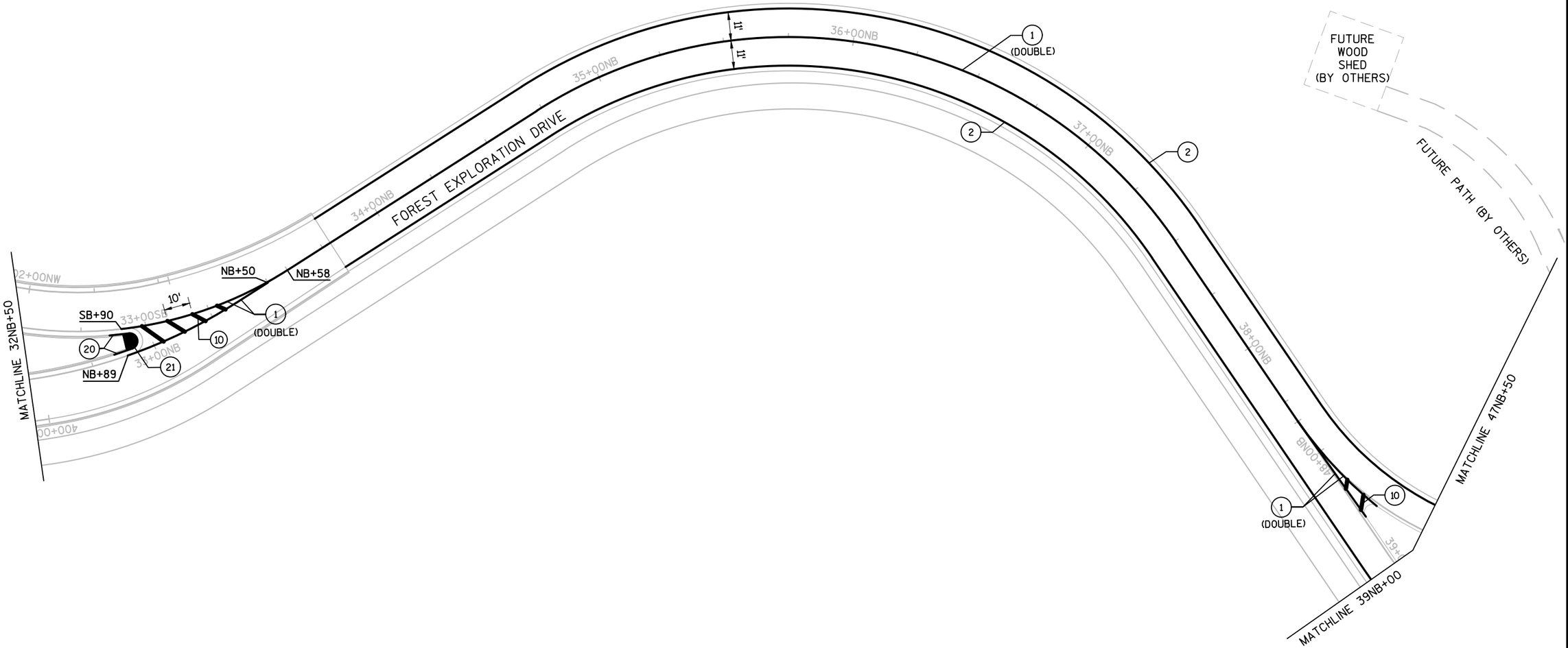
(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(10) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

(20) MARKING CURB EPOXY (YELLOW)

(21) MARKING ISLAND NOSE EPOXY (YELLOW)



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 94	E

2

FUTURE TRAIL
HEAD (BY OTHERS)

N

FUTURE PATH (BY OTHERS)

MATCHLINE 47NB+50

MATCHLINE 39NB+00

FOREST EXPLORATION DRIVE

STORM WATER POND

FUTURE BUILDING
(BY OTHERS)

FUTURE PATH (BY OTHERS)

0+00DR

1+00DR

39+00NB

40+00NB

41+00NB

42+00NB

43+00NB

44+00NB

45+00NB

46+00NB

47+00NB

NB+72

2'

18'

REFER TO
CONSTRUCTION DETAIL

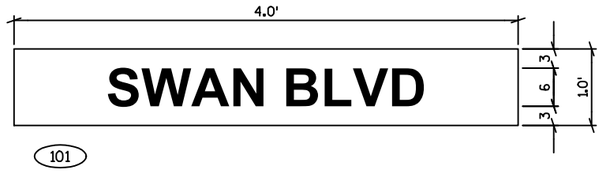
16 SPACES @ 9' EACH

PRECAST CONCRETE
PARKING BUMPER
(18 TOTAL)

LEGEND

2	MARKING LINE EPOXY 4-INCH (WHITE)
6	MARKING LINE EPOXY 8-INCH (WHITE)
15	MARKING ARROW EPOXY (WHITE) (TYPE I)
141	MARKING SYMBOL EPOXY (WHITE) (HANDICAP SYMBOL)

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 95	E



NOTES

1. AFTER SIGNS HAVE BEEN LOCATED IN THE FIELD, BUT BEFORE INSTALLATION, THE SIGNING AND MARKING SUPERVISOR SHALL VERIFY EACH SIGN LOCATION.

2. ALL SIGNS TO BE MOUNTED ON WOODEN POST SUPPORTS (4"x6"). THE NUMBER OF POSTS REQUIRED FOR EACH LAYOUT IS SHOWN. STEEL POSTS (2"X2") MAY BE USED FOR SIGNS ON SURFACE STREETS. SIGNS WHERE NO POSTS ARE SHOWN ARE TO BE MOUNTED ON EXISTING SIGNS. FOR SIGNS MOUNTED ON POSTS, USE POSTS FROM FHWA LIST OF ACCEPTED BREAKAWAY SIGN SUPPORTS.

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

4. SIGNS ON THIS SHEET TO BE PAID UNDER THE ITEM "TRAFFIC CONTROL SIGNS FIXED MESSAGE".

5. SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND UNLESS OTHERWISE NOTED.

6. ALL SIGNS SHALL HAVE CAPITAL LETTERS AND NUMERALS:
12" CAPS SHALL BE SERIES "D", 6" CAPS SHALL BE SERIES "C".

7. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW PRIOR TO MANUFACTURING.

8. SIGN BASE MATERIAL SHALL BE ACCORDING TO SECTION 637.2.1.2.

9. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

(XXX) = SIGN NUMBER FIXED MESSAGE

STAGE 1

CONSTRUCTION
- CONSTRUCT DISCOVERY PARKWAY
- CONSTRUCT SWAN BOULEVARD
- CONSTRUCT ROUNDABOUT
- CONSTRUCT STORM SEWER

TRAFFIC
- FOLLOW DETOUR

WORK ZONE

(X) DIRECTION OF TRAVEL (NUMBER OF LANES)

TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN

SIGN ON PERMANENT SUPPORT

SWAN BOULEVARD

UNDERWOOD PARKWAY

DISCOVERY PARKWAY

USH 45 NB
USH 45 SB

WATERTOWN PLANK ROAD

ROAD CLOSED
R11-2
48"X30"

ROAD CLOSED AHEAD
W20-3A

ROAD CLOSED 500 FT
W20-3D

SIDEWALK CLOSED
R9-9
24"X12"

500'

(2)

(1)

PLACE SIGN AT NORTH MENOMONEE RIVER PARKWAY

N

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 1 OVERVIEW	SHEET 97	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\026001_S1.DWG PLOT DATE : 1/22/2019 2:00 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:400 FT

WISDOT/CADDS SHEET 42

2

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL III BARRICADE
- TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN
- DIRECTION OF TRAFFIC

N

2

ROAD CLOSED
R11-2
48"X30"

SIDEWALK CLOSED
R9-9
24"X12"

SIDEWALK CLOSED
R9-9
24"X12"

SWAN BOULEVARD

USH 45

186BV
188BV
190BV
192BV
194BV
196BV
198BV
200B
200B

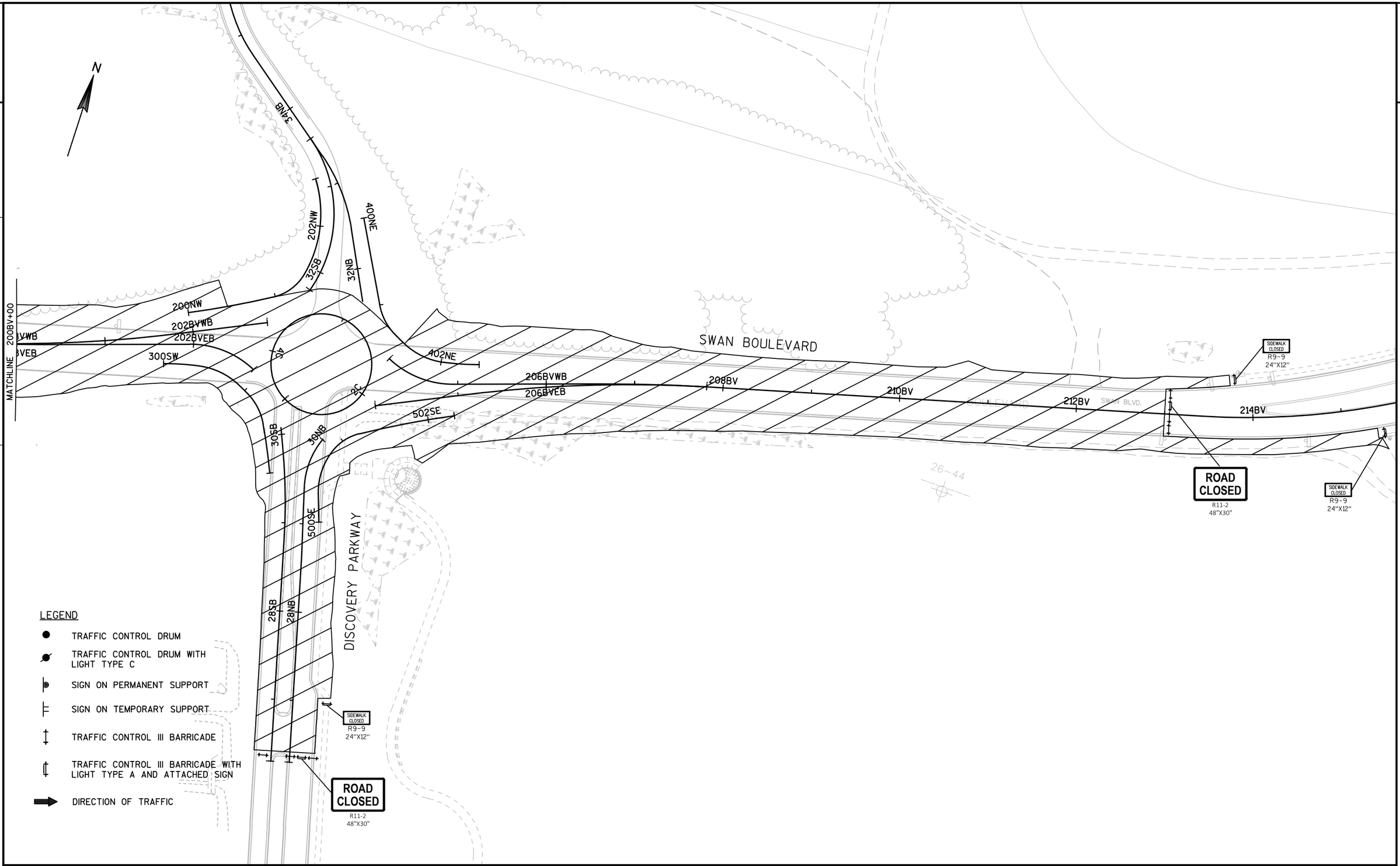
MATCHLINE 200BV+00

©MP

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STAGE 1 CONSTRUCTION	SHEET 98	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\026002_S1.DWG PLOT DATE : 10/11/2018 9:25 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 100'_XREF

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL III BARRICADE
- TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN
- DIRECTION OF TRAFFIC

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STAGE 1 CONSTRUCTION	SHEET 99	E

2

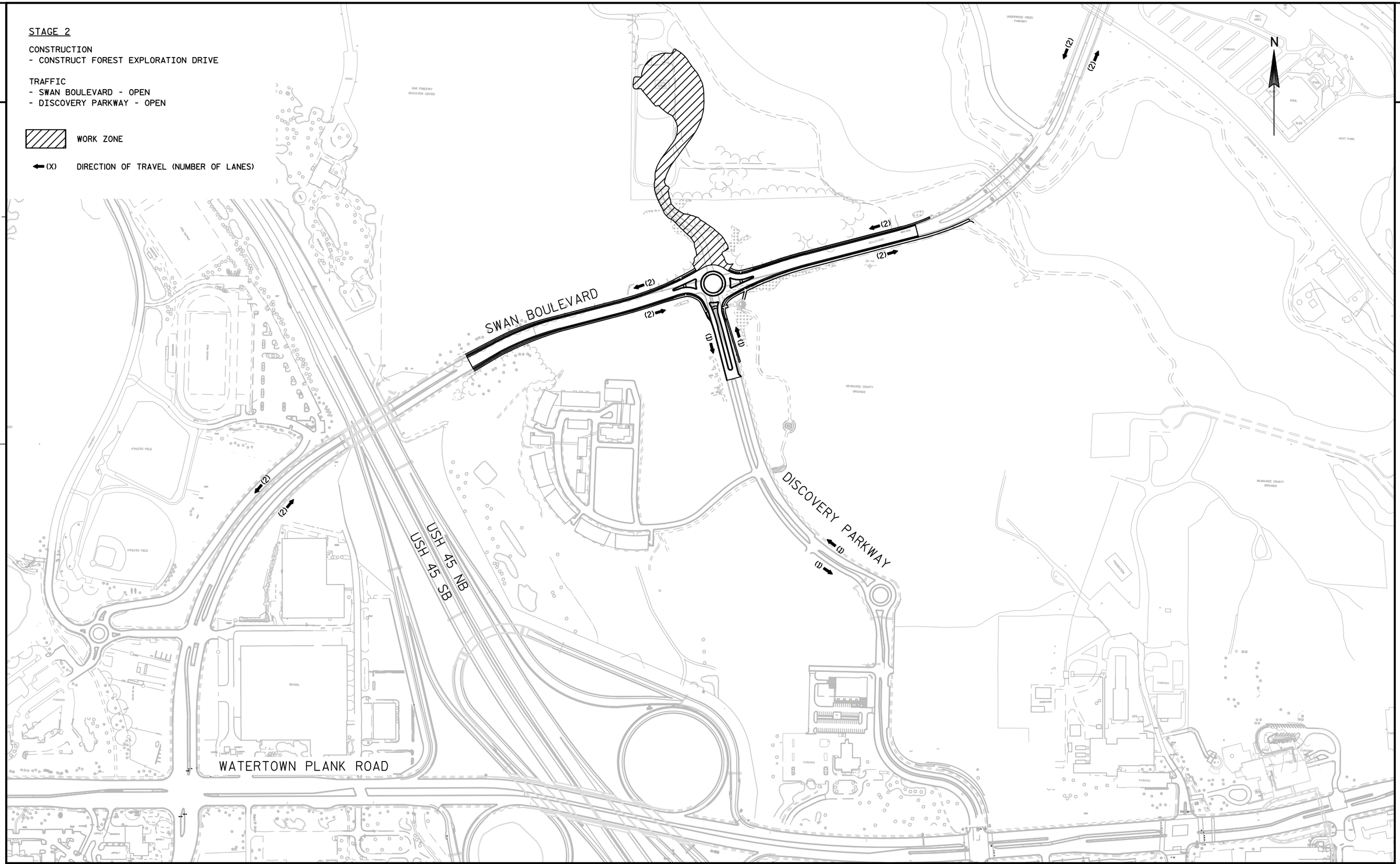
STAGE 2

CONSTRUCTION
- CONSTRUCT FOREST EXPLORATION DRIVE

TRAFFIC
- SWAN BOULEVARD - OPEN
- DISCOVERY PARKWAY - OPEN

WORK ZONE

(X) DIRECTION OF TRAVEL (NUMBER OF LANES)



2

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 2 OVERVIEW	SHEET 100	E

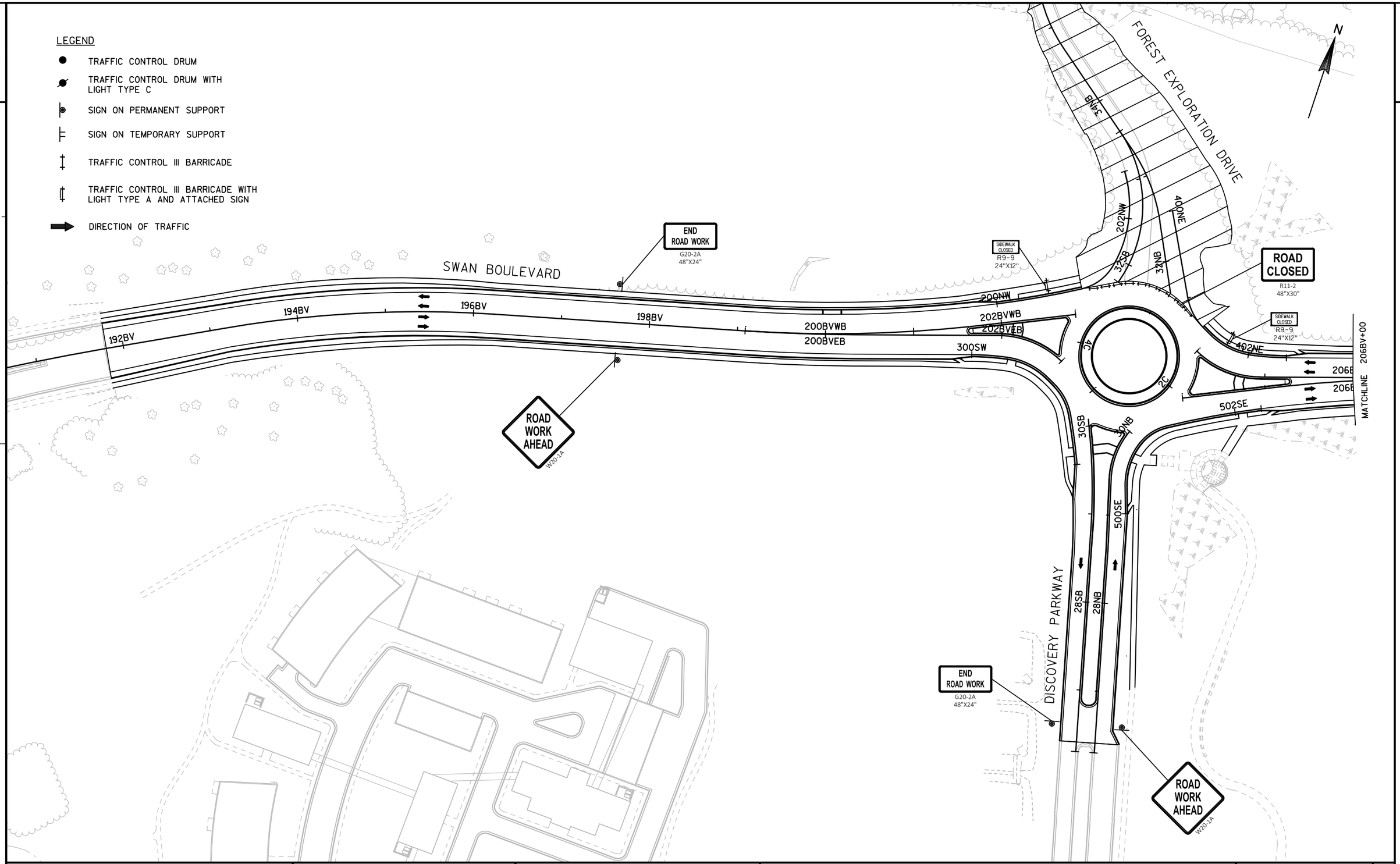
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\026001_S2.DWG PLOT DATE : 10/11/2018 9:40 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:400 FT

WISDOT/CADDS SHEET 42

2

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL III BARRICADE
- TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN
- DIRECTION OF TRAFFIC



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STAGE 2 CONSTRUCTION	SHEET 101	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\026002_S2.DWG PLOT DATE : 10/11/2018 10:32 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 100'_XREF

WISDOT/CADDS SHEET 42

2

2

N

ROAD WORK AHEAD
W20-1A

SWAN BOULEVARD

MATCHLINE 206BV+00

206VWB
206VEB

208BV

210BV

212BV

214BV

216BV

218BV

220BV

UNDERWOOD PARKWAY

END ROAD WORK
G20-2A
48"X24"

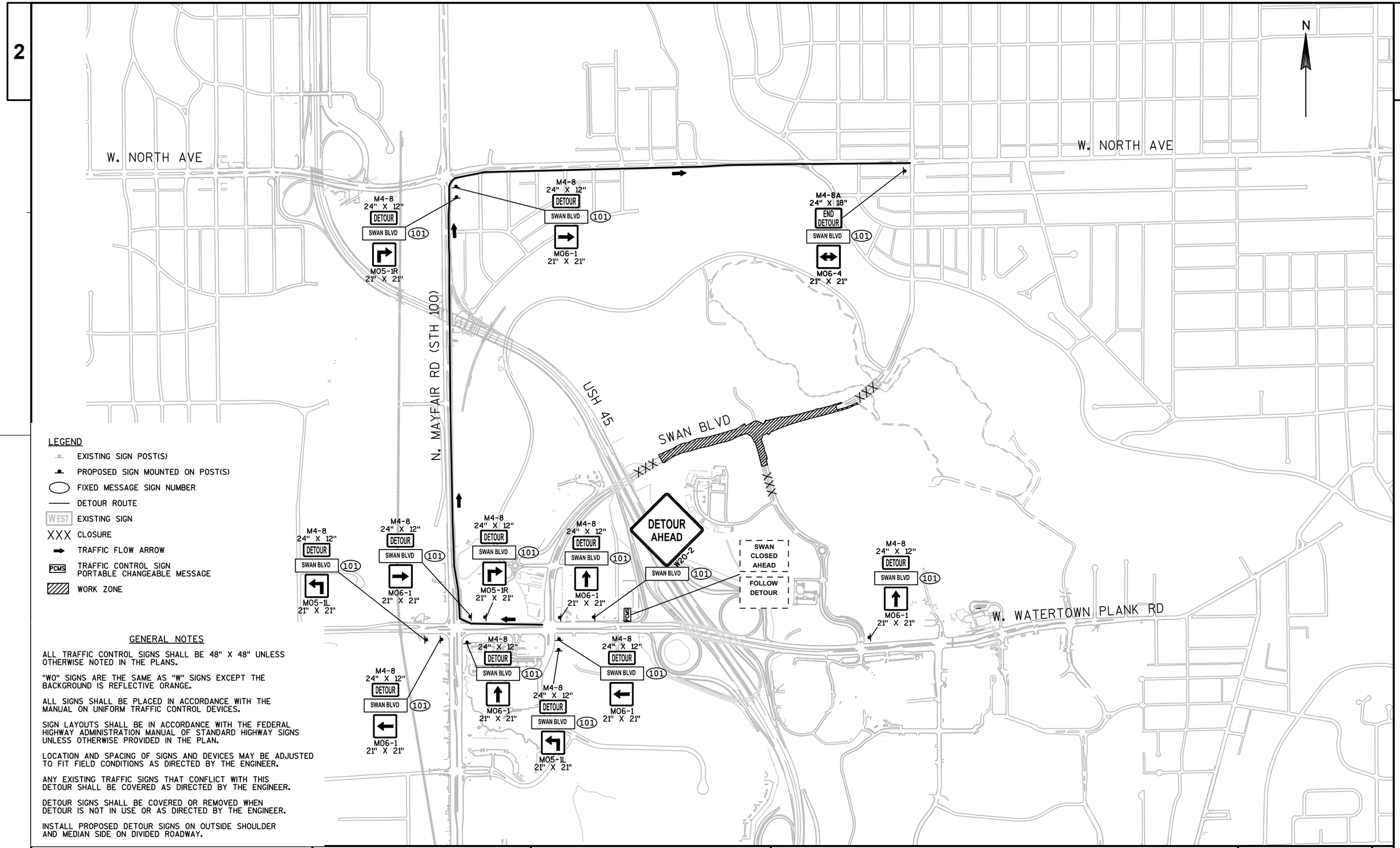
26-44

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL III BARRICADE
- TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN
- DIRECTION OF TRAFFIC

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	STAGE 2 CONSTRUCTION	SHEET 102	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\026002_S2.DWG PLOT DATE : 10/11/2018 10:04 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 100'_XREF



LEGEND

- EXISTING SIGN POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- FIXED MESSAGE SIGN NUMBER
- DETOUR ROUTE
- WEST EXISTING SIGN
- XXX CLOSURE
- TRAFFIC FLOW ARROW
- PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- WORK ZONE

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

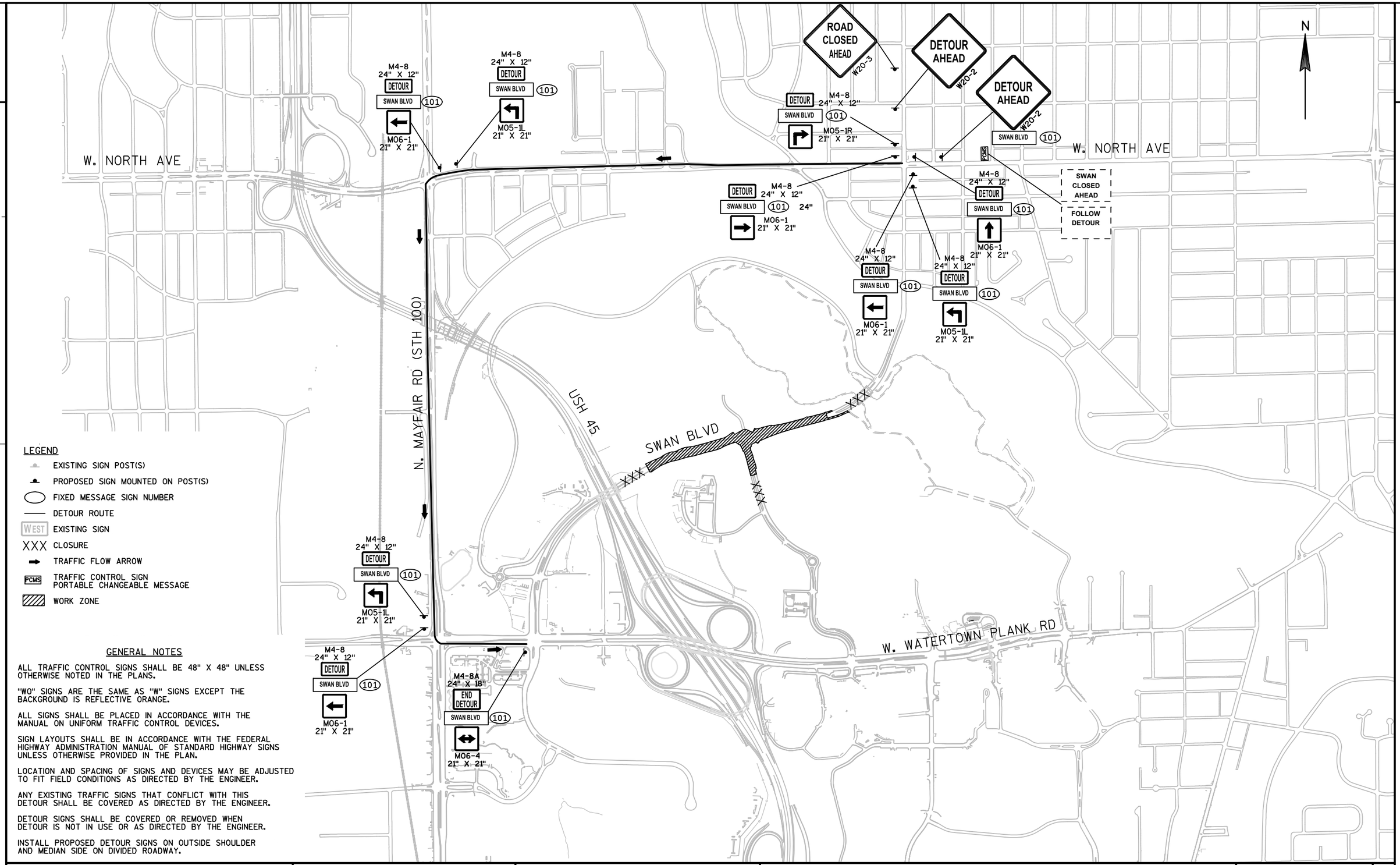
LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	DETOUR - SWAN BLVD NB (STAGE I)	SHEET 103	E



LEGEND

- EXISTING SIGN POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- FIXED MESSAGE SIGN NUMBER
- DETOUR ROUTE
- WEST EXISTING SIGN
- XXX CLOSURE
- TRAFFIC FLOW ARROW
- PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
- WORK ZONE

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	DETOUR - SWAN BLVD SB (STAGE I)	SHEET 104	E

2

N

CP629
CP FENO 629
STA 185BV+16.24, 210.93' LT
N 303939.859
E 570862.909
ELEV. 751.986

USH 45

SWAN BOULEVARD

182BV
184BV
186BV
188BV
190BV

BM1000
BM N. SWAN BLVD. BRIDGE B-40-775 DISC IN SE PARAPET WALL
STA 185BV+11.13, 47.15' RT
N 303719.683
E 570997.643
ELEV. 773.199

N

SWAN BOULEVARD

214BV
216BV
218BV
220BV

CP204
684.599
CP 204 BERNTSEN FENO - MAG NAIL
STA 219BV+43.35, 46.51' RT
N 305013.141
E 574140.149
ELEV. 684.599

CP24
CP 24 MMSD MONUMENT IN SIDEWALK
STA 216BV+86.16, 61.80' LT
N 304916.903
E 573879.997
ELEV. 688.100

2

N

34NB
32SB
32NB
4C
2C
30NB
30SB

DISCOVERY PARKWAY

SWAN BLVD.

198BV
200BVWB
200BVEB
202BVWB
202BVEB
206BVWB
206BVEB
208BV
210BV
212BV

CP200
CP 200 BERNTSEN FENO - MAG NAIL
STA 199BVEB+22.51, 49.39' RT
N 304314.550
E 572248.437
ELEV. 756.540

CP201
CP 201 BERNTSEN FENO - MAG NAIL
STA 204BVEB+74.26, 37.59' RT
N 304436.879
E 572795.468
ELEV. 725.604

CP202
CP 202 BERNTSEN FENO - MAG NAIL
STA 208BV+10.08, 34.53' LT
N 304618.034
E 573086.359
ELEV. 715.687

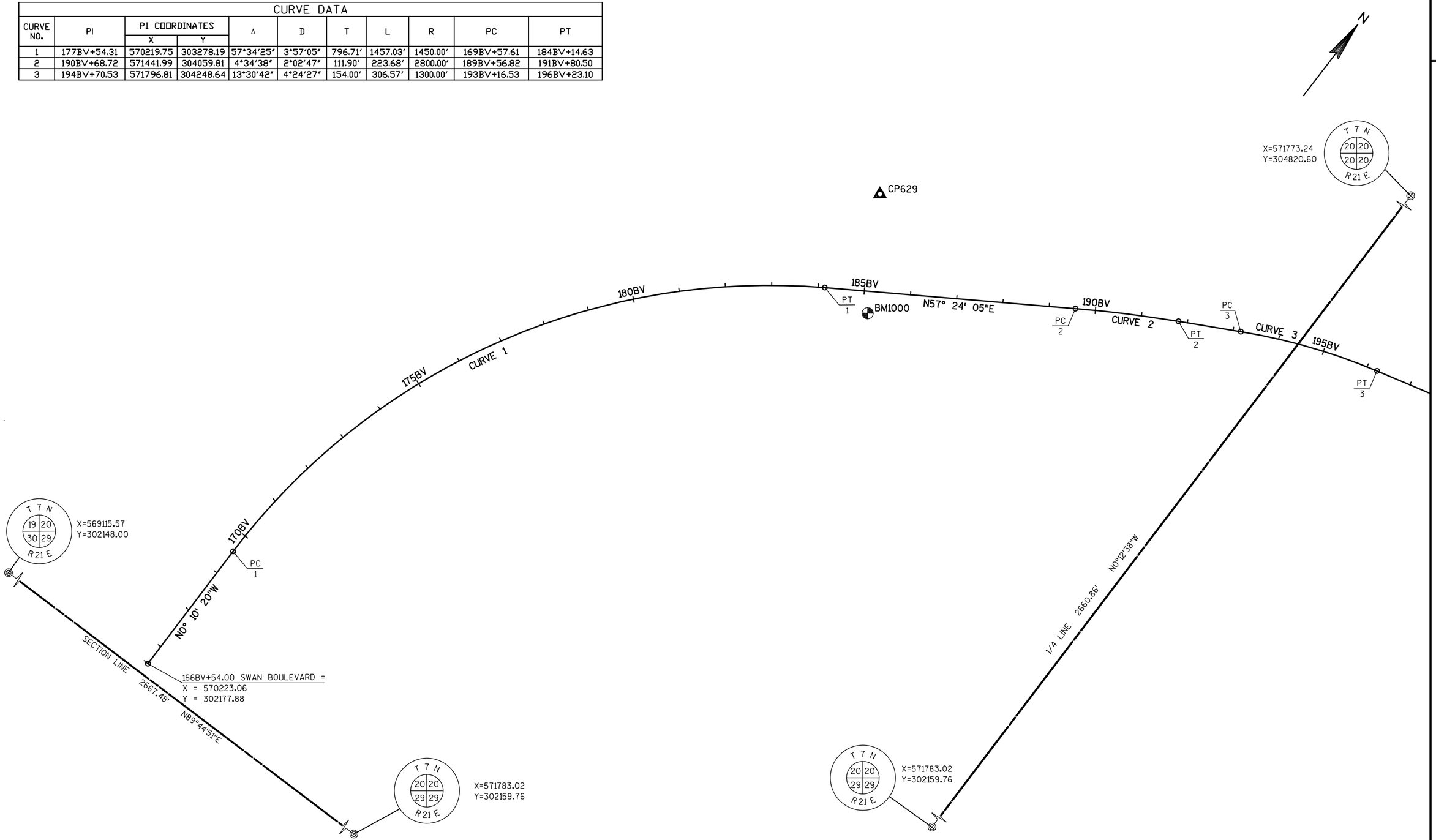
CP203
CP 203 BERNTSEN FENO - MAG NAIL
STA 211BV+03.56, 35.99' RT
N 304623.301
E 573388.153
ELEV. 706.010

26-44

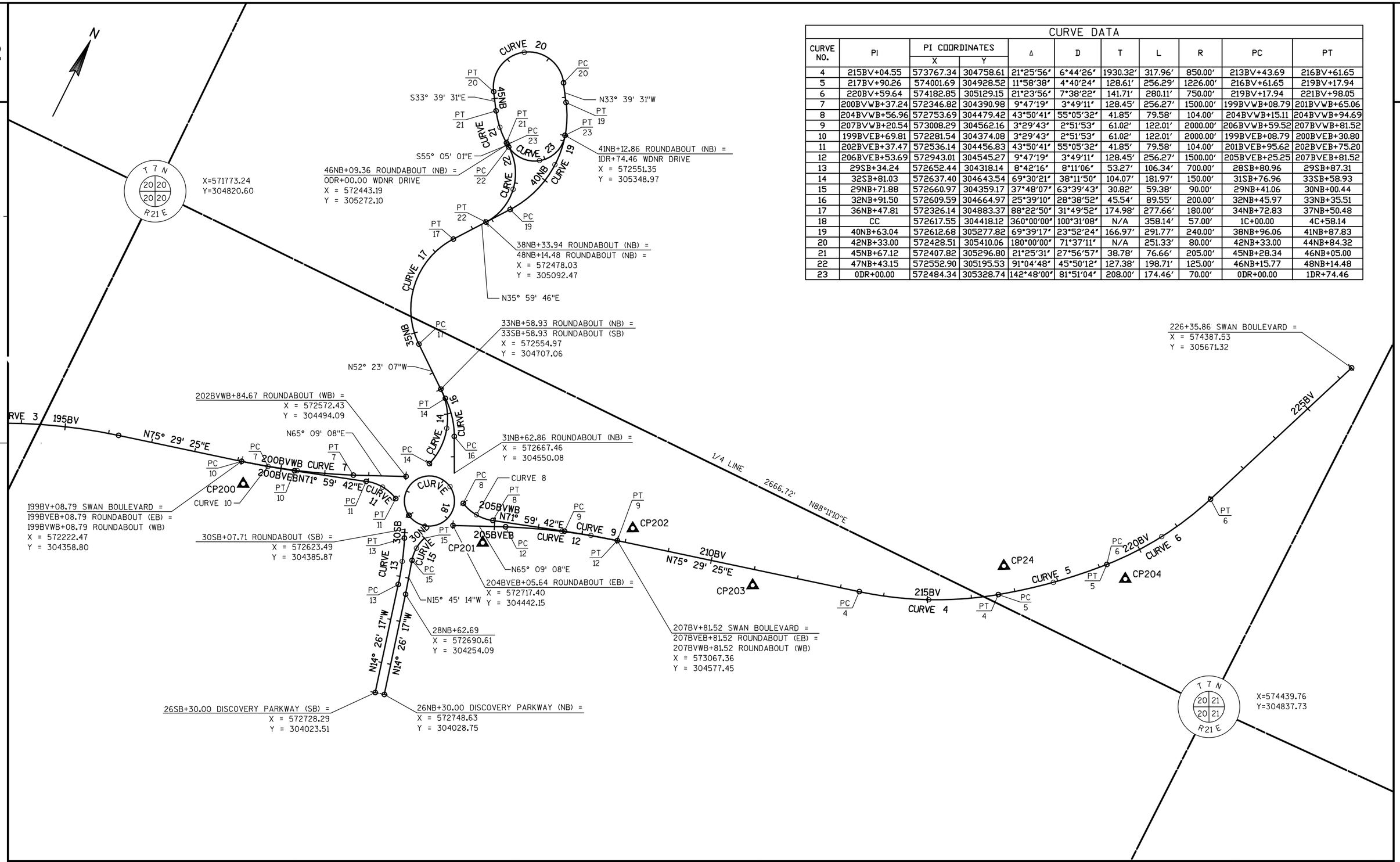
PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 105	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\027200_AD.DWG
LAYOUT NAME - SHEET - (1)
PLOT DATE : 10/12/2018 9:45 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

CURVE DATA										
CURVE NO.	PI	PI COORDINATES		Δ	D	T	L	R	PC	PT
		X	Y							
1	177BV+54.31	570219.75	303278.19	57°34'25"	3°57'05"	796.71'	1457.03'	1450.00'	169BV+57.61	184BV+14.63
2	190BV+68.72	571441.99	304059.81	4°34'38"	2°02'47"	111.90'	223.68'	2800.00'	189BV+56.82	191BV+80.50
3	194BV+70.53	571796.81	304248.64	13°30'42"	4°24'27"	154.00'	306.57'	1300.00'	193BV+16.53	196BV+23.10



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET 106	E



CURVE DATA

CURVE NO.	PI	PI COORDINATES X	PI COORDINATES Y	Δ	D	T	L	R	PC	PT
4	215BV+04.55	573767.34	304758.61	21°25'56"	6°44'26"	1930.32'	317.96'	850.00'	213BV+43.69	216BV+61.65
5	217BV+90.26	574001.69	304928.52	11°58'38"	4°40'24"	128.61'	256.29'	1226.00'	216BV+61.65	219BV+17.94
6	220BV+59.64	574182.85	305129.15	21°23'56"	7°38'22"	141.71'	280.11'	750.00'	219BV+17.94	221BV+98.05
7	200BVWB+37.24	572346.82	304390.98	9°47'19"	3°49'11"	128.45'	256.27'	1500.00'	199BVWB+08.79	201BVWB+65.06
8	204BVWB+56.96	572753.69	304479.42	43°50'41"	55°05'32"	41.85'	79.58'	104.00'	204BVWB+15.11	204BVWB+94.69
9	207BVWB+20.54	573008.29	304562.16	3°29'43"	2°51'53"	61.02'	122.01'	2000.00'	206BVWB+59.52	207BVWB+81.52
10	199BVEB+69.81	572281.54	304374.08	3°29'43"	2°51'53"	61.02'	122.01'	2000.00'	199BVEB+08.79	200BVEB+30.80
11	202BVEB+37.47	572536.14	304456.83	43°50'41"	55°05'32"	41.85'	79.58'	104.00'	201BVEB+95.62	202BVEB+75.20
12	206BVEB+53.69	572943.01	304545.27	9°47'19"	3°49'11"	128.45'	256.27'	1500.00'	205BVEB+25.25	207BVEB+81.52
13	29SB+34.24	572652.44	304318.14	8°42'16"	8°11'06"	53.27'	106.34'	700.00'	28SB+80.96	29SB+87.31
14	32SB+81.03	572637.40	304643.54	69°30'21"	38°11'50"	104.07'	181.97'	150.00'	31SB+76.96	33SB+58.93
15	29NB+71.88	572660.97	304359.17	37°48'07"	63°39'43"	30.82'	59.38'	90.00'	29NB+41.06	30NB+00.44
16	32NB+91.50	572609.59	304664.97	25°39'10"	28°38'52"	45.54'	89.55'	200.00'	32NB+45.97	33NB+35.51
17	36NB+47.81	572326.14	304883.37	88°22'50"	31°49'52"	174.98'	277.66'	180.00'	34NB+72.83	37NB+50.48
18	CC	572617.55	304418.12	360°00'00"	100°31'08"	N/A	358.14'	57.00'	1C+00.00	4C+58.14
19	40NB+63.04	572612.68	305277.82	69°39'17"	23°52'24"	166.97'	291.77'	240.00'	38NB+96.06	41NB+87.83
20	42NB+33.00	572428.51	305410.06	180°00'00"	71°37'11"	N/A	251.33'	80.00'	42NB+33.00	44NB+84.32
21	45NB+67.12	572407.82	305296.80	21°25'31"	27°56'57"	38.78'	76.66'	205.00'	45NB+28.34	46NB+05.00
22	47NB+43.15	572552.90	305195.53	91°04'48"	45°50'12"	127.38'	198.71'	125.00'	46NB+15.77	48NB+14.48
23	0DR+00.00	572484.34	305328.74	142°48'00"	81°51'04"	208.00'	174.46'	70.00'	0DR+00.00	1DR+74.46

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET 107	E

2

CURVE DATA										
CURVE NO.	PI	PI COORDINATES		Δ	D	T	L	R	PC	PT
		X	Y							
1	200NW+48.93	572528.07	304498.50	5°36'10"	5°43'46"	48.93'	97.79'	1000.00'	200NW+00.00	200NW+97.79
2	201NW+21.31	572590.09	304535.97	46°19'11"	104°10'27"	23.53'	44.46'	55.00'	200NW+97.79	201NW+42.25
3	202NW+01.57	572608.07	304616.85	47°26'44"	42°26'29"	59.32'	111.79'	135.00'	201NW+42.25	202NW+54.04
4	300SW+20.27	572494.26	304420.09	7°43'54"	19°05'55"	20.27'	40.48'	300.00'	300SW+00.00	300SW+40.48
5	300SW+66.07	572539.39	304428.27	35°28'39"	71°37'11"	25.59'	49.54'	80.00'	300SW+40.48	300SW+90.02
6	300SW+97.61	572569.41	304414.14	2°53'50"	19°05'55"	7.59'	15.17'	300.00'	300SW+90.02	301SW+05.19
7	301SW+24.97	572593.55	304401.25	33°51'03"	88°08'33"	19.78'	38.40'	65.00'	301SW+05.19	301SW+43.59
8	301SW+71.74	572616.08	304358.95	4°36'12"	8°10'58"	28.14'	56.26'	700.19'	301SW+43.59	301SW+99.85
9	500SE+59.91	572677.57	304354.01	40°25'16"	76°23'40"	27.61'	52.91'	75.00'	500SE+32.30	500SE+85.21
10	501SE+03.46	572694.35	304396.69	36°42'58"	104°10'27"	18.25'	35.25'	55.00'	500SE+85.21	501SE+20.46
11	501SE+75.28	572756.44	304435.21	6°16'33"	5°43'46"	54.82'	109.53'	1000.00'	501SE+20.46	502SE+29.99
12	402NE+22.99	572795.57	304516.16	7°43'54"	19°05'55"	20.27'	40.48'	300.00'	402NE+02.72	402NE+43.20
13	401NE+78.77	572750.44	304507.98	35°28'39"	71°37'11"	25.59'	49.54'	80.00'	401NE+53.18	402NE+02.72
14	401NE+45.60	572720.42	304522.11	2°53'50"	19°05'55"	7.59'	15.17'	300.00'	401NE+38.01	401NE+53.18
15	401NE+19.48	572696.38	304534.95	33°40'04"	88°08'50"	19.67'	38.19'	65.00'	400NE+99.82	401NE+38.01

N

T 7 N
20 20
20 20
R 21 E

X=571773.24
Y=304820.60

202NW+54.04 ROUNDABOUT =
X = 572574.12
Y = 304665.50

400NE+00.00 ROUNDABOUT =
X = 572639.86
Y = 304640.22

200NW+00.00 ROUNDABOUT =
X = 572483.92
Y = 304477.40

300SW+00.00 ROUNDABOUT =
X = 572474.98
Y = 304413.82

CP200

PT 3
PC 1
PCC 2/3
CURVE 3
CURVE 2
CURVE 1
PC 4
PCC 1/2
CURVE 4
CURVE 5
CURVE 6
CURVE 7
PCC 4/5
PCC 5/6
PCC 6/7
PCC 7/8
CURVE 8
PT 8
PC 9
PCC 9/10
CURVE 9
CURVE 10
PCC 10/11
CURVE 11
CP201
PT 11
PT 12
PC 15
PCC 14/15
CURVE 15
CURVE 14
PCC 13/14
CURVE 13
PCC 12/13
CURVE 12
S28° 13' 51"E
N18° 57' 18"W

CP202

402NE+43.20 ROUNDABOUT =
X = 572814.85
Y = 304522.43

502SE+29.99 ROUNDABOUT =
X = 572805.91
Y = 304458.85

302SW+01.02 ROUNDABOUT =
X = 572627.83
Y = 304332.10

500SE+00.00 ROUNDABOUT =
X = 572697.03
Y = 304297.35

1/4 LINE 2666.72' N88°11'10"E

CP203

CP24

CP204

T 7 N
20 21
20 21
R 21 E

X=574439.76
Y=304837.73

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - ROUNDABOUT CURB RETURNS	SHEET 108	E

2

FOREST EXPLORATION DRIVE - NB			
SUPERELEVATION DATA	STATION	RATE	
		LEFT LANE	RIGHT LANE
END NORMAL CROWN	33NB+78.46	-2.00%	-2.00%
REMOVE CROWN	34NB+25.65	0.00%	-2.00%
BEGIN FULL SUPER	34NB+72.83	2.00%	-2.00%
END FULL SUPER	40NB+44.16	2.00%	-2.00%
LEVEL CROWN	40NB+78.51	0.00%	0.00%
BEGIN FULL SUPER	41NB+12.86	-2.00%	2.00%
END FULL SUPER	46NB+09.36	-2.00%	2.00%
LEVEL CROWN	46NB+32.75	0.00%	0.00%
BEGIN FULL SUPER	46NB+56.15	2.00%	-2.00%
END FULL SUPER	47NB+69.92	2.00%	-2.00%
LEVEL CROWN	47NB+92.20	0.00%	0.00%
FULL SUPER	48NB+14.48	-2.00%	2.00%

1060-33-94

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	14.000	14.000
0004	201.0205	Grubbing	STA	14.000	14.000
0006	204.0100	Removing Pavement	SY	9,370.000	9,370.000
0008	204.0150	Removing Curb & Gutter	LF	2,637.000	2,637.000
0010	204.0155	Removing Concrete Sidewalk	SY	264.000	264.000
0012	204.0195	Removing Concrete Bases	EACH	20.000	20.000
0014	204.0220	Removing Inlets	EACH	10.000	10.000
0016	204.0245	Removing Storm Sewer (size) 01. 15-Inch	LF	76.000	76.000
0018	204.0245	Removing Storm Sewer (size) 02. 18-Inch	LF	215.000	215.000
0020	205.0100	Excavation Common	CY	28,105.000	28,105.000
0022	208.0100	Borrow	CY	13,127.000	13,127.000
0024	213.0100	Finishing Roadway (project) 01. 1060-33-94	EACH	1.000	1.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	15,971.000	15,971.000
0030	312.0110	Select Crushed Material	TON	16,684.000	16,684.000
0032	405.0100	Coloring Concrete WisDOT Red	CY	124.000	124.000
0036	416.0512	Concrete Truck Apron 12-Inch	SY	372.000	372.000
0042	455.0605	Tack Coat	GAL	1,764.000	1,764.000
0044	460.2000	Incentive Density HMA Pavement	DOL	3,450.000	3,450.000
0046	460.5223	HMA Pavement 3 LT 58-28 S	TON	3,118.000	3,118.000
0048	460.5224	HMA Pavement 4 LT 58-28 S	TON	2,259.000	2,259.000
0050	465.0105	Asphaltic Surface	TON	491.000	491.000
0052	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	3.000	3.000
0054	520.1015	Apron Endwalls for Culvert Pipe 15-Inch	EACH	2.000	2.000
0056	520.3512	Culvert Pipe Class III-B 12-Inch	LF	168.000	168.000
0058	520.3515	Culvert Pipe Class III-B 15-Inch	LF	47.000	47.000
0060	520.8000	Concrete Collars for Pipe	EACH	8.000	8.000
0062	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	3.000	3.000
0064	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	2.000	2.000
0066	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	1.000	1.000
0068	522.2634	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 34x53-Inch	EACH	1.000	1.000
0070	601.0331	Concrete Curb & Gutter 31-Inch	LF	3,080.000	3,080.000
0072	601.0405	Concrete Curb & Gutter 18-Inch Type A	LF	264.000	264.000
0074	601.0582	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type T	LF	346.000	346.000
0076	601.0600	Concrete Curb Pedestrian	LF	182.000	182.000
0078	602.0410	Concrete Sidewalk 5-Inch	SF	36,357.000	36,357.000
0080	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	256.000	256.000
0082	606.0200	Riprap Medium	CY	27.000	27.000

1060-33-94

Line	Item	Item Description	Unit	Total	Qty
0084	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	727.000	727.000
0086	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	635.000	635.000
0088	608.0330	Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	LF	17.000	17.000
0090	608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	104.000	104.000
0092	608.2334	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 34x53-Inch	LF	123.000	123.000
0094	611.0420	Reconstructing Manholes	EACH	1.000	1.000
0096	611.0535	Manhole Covers Type J-Special	EACH	3.000	3.000
0098	611.0624	Inlet Covers Type H	EACH	31.000	31.000
0100	611.0642	Inlet Covers Type MS	EACH	5.000	5.000
0102	611.0652	Inlet Covers Type T	EACH	2.000	2.000
0104	611.2005	Manholes 5-FT Diameter	EACH	2.000	2.000
0106	611.2006	Manholes 6-FT Diameter	EACH	2.000	2.000
0108	611.2007	Manholes 7-FT Diameter	EACH	2.000	2.000
0110	611.3004	Inlets 4-FT Diameter	EACH	12.000	12.000
0112	611.3230	Inlets 2x3-FT	EACH	17.000	17.000
0114	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
0116	611.3902	Inlets Median 2 Grate	EACH	2.000	2.000
0118	611.8115	Adjusting Inlet Covers	EACH	3.000	3.000
0120	611.9800.S	Pipe Grates	EACH	7.000	7.000
0122	619.1000	Mobilization	EACH	0.800	0.800
0124	620.0300	Concrete Median Sloped Nose	SF	503.000	503.000
0126	623.0200	Dust Control Surface Treatment	SY	23,212.000	23,212.000
0128	624.0100	Water	MGAL	321.000	321.000
0130	627.0200	Mulching	SY	17,256.000	17,256.000
0132	628.1504	Silt Fence	LF	3,291.000	3,291.000
0134	628.1520	Silt Fence Maintenance	LF	3,291.000	3,291.000
0136	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0138	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0140	628.2023	Erosion Mat Class II Type B	SY	21,570.000	21,570.000
0142	628.7005	Inlet Protection Type A	EACH	39.000	39.000
0146	628.7020	Inlet Protection Type D	EACH	41.000	41.000
0148	628.7504	Temporary Ditch Checks	LF	931.000	931.000
0150	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0152	628.7560	Tracking Pads	EACH	4.000	4.000
0154	630.0171	Seeding Mixture No. 70A	LB	4.000	4.000
0156	631.0300	Sod Water	MGAL	56.000	56.000

1060-33-94

Line	Item	Item Description	Unit	Total	Qty
0158	631.1000	Sod Lawn	SY	2,492.000	2,492.000
0160	633.5200	Markers Culvert End	EACH	12.000	12.000
0162	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0164	634.0816	Posts Tubular Steel 2x2-Inch X 16-FT	EACH	82.000	82.000
0166	637.2210	Signs Type II Reflective H	SF	701.540	701.540
0168	637.2230	Signs Type II Reflective F	SF	166.000	166.000
0170	638.2102	Moving Signs Type II	EACH	2.000	2.000
0172	638.2602	Removing Signs Type II	EACH	40.000	40.000
0174	638.3000	Removing Small Sign Supports	EACH	13.000	13.000
0176	642.5401	Field Office Type D	EACH	0.950	0.950
0180	643.0420	Traffic Control Barricades Type III	DAY	2,625.000	2,625.000
0182	643.0705	Traffic Control Warning Lights Type A	DAY	5,250.000	5,250.000
0184	643.0900	Traffic Control Signs	DAY	6,688.000	6,688.000
0186	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0188	643.1000	Traffic Control Signs Fixed Message	SF	100.000	100.000
0190	643.1050	Traffic Control Signs PCMS	DAY	150.000	150.000
0192	643.5000	Traffic Control	EACH	0.800	0.800
0194	645.0120	Geotextile Type HR	SY	53.000	53.000
0196	646.1020	Marking Line Epoxy 4-Inch	LF	14,247.000	14,247.000
0200	646.3020	Marking Line Epoxy 8-Inch	LF	935.000	935.000
0202	646.5020	Marking Arrow Epoxy	EACH	25.000	25.000
0204	646.5120	Marking Word Epoxy	EACH	7.000	7.000
0206	646.5220	Marking Symbol Epoxy	EACH	11.000	11.000
0210	646.6320	Marking Dotted Extension Epoxy 18-Inch	LF	79.000	79.000
0212	646.7120	Marking Diagonal Epoxy 12-Inch	LF	37.000	37.000
0216	646.7520	Marking Crosswalk Epoxy Ladder Pattern 24-Inch	LF	410.000	410.000
0218	646.8120	Marking Curb Epoxy	LF	70.000	70.000
0220	646.8220	Marking Island Nose Epoxy	EACH	3.000	3.000
0222	646.9310	Marking Removal Special Marking Water Blasting	EACH	3.000	3.000
0224	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	4,545.000	4,545.000
0226	654.0105	Concrete Bases Type 5	EACH	25.000	25.000
0228	655.0610	Electrical Wire Lighting 12 AWG	LF	3,600.000	3,600.000
0230	655.0620	Electrical Wire Lighting 8 AWG	LF	4,545.000	4,545.000
0232	655.0625	Electrical Wire Lighting 6 AWG	LF	13,635.000	13,635.000
0234	657.0322	Poles Type 5-Aluminum	EACH	21.000	21.000
0236	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	21.000	21.000
0238	690.0150	Sawing Asphalt	LF	170.000	170.000
0244	740.0440	Incentive IRI Ride	DOL	1,050.000	1,050.000
0246	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,100.000	1,100.000
0248	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,600.000	1,600.000

1060-33-94

Line	Item	Item Description	Unit	Total	Qty
0250	SPV.0030	Special 1000. Fertilizer Type B Special	CWT	19.600	19.600
0252	SPV.0035	Special 1000. Riprap Repair	CY	250.000	250.000
0254	SPV.0060	Special 01. Removing Luminaires	EACH	7.000	7.000
0256	SPV.0060	Special 02. Luminaires Utility Salvaged	EACH	13.000	13.000
0258	SPV.0060	Special 03. Removing Lighting Units	EACH	20.000	20.000
0260	SPV.0060	Special 04. Lighting Units Salvaged	EACH	4.000	4.000
0262	SPV.0060	Special 05. 17X30X18 Composite Pull Boxes	EACH	1.000	1.000
0264	SPV.0060	Special 06. Luminaires Utility LED C 3000K	EACH	12.000	12.000
0266	SPV.0060	Special 1000. Remove and Cap Existing Drainage Storm Sewer Structure	EACH	4.000	4.000
0268	SPV.0060	Special 1001. Pond Outlet Storm Sewer Structure	EACH	1.000	1.000
0270	SPV.0060	Special 1002. Cleaning Pipe and Pipe Inverts	EACH	2.000	2.000
0272	SPV.0060	Special 1003. Precast Concrete Parking Bumper	EACH	18.000	18.000
0274	SPV.0075	Special 1000. Pavement Cleanup Project 1060-33-94	HRS	100.000	100.000
0276	SPV.0085	Special 1000. Seeding Mixture No. 30 Special	LB	669.000	669.000
0278	SPV.0090	Special 1000. Concrete C&G Integral 67-Inch	LF	3,579.000	3,579.000
0280	SPV.0105	Special 1000. Survey Project 1060-33-94	LS	1.000	1.000
0282	SPV.0105	Special 1001. RRFB System 'STA 204+65 BVWB Right	LS	1.000	1.000
0284	SPV.0105	Special 1002. RRFB System 'STA 204+50 Median Left WB	LS	1.000	1.000
0286	SPV.0105	Special 1003. RRFB System 'STA 204+50 BVWB Median Left EB	LS	1.000	1.000
0288	SPV.0105	Special 1004. RRFB System 'STA 501+70 SE Right	LS	1.000	1.000
0290	SPV.0105	Special 1005. RRFB System 'STA 300+50 SW Right	LS	1.000	1.000
0292	SPV.0105	Special 1006. RRFB System 'STA 202+30 Median Island Left EB	LS	1.000	1.000
0294	SPV.0105	Special 1007. RRFB System 'STA 202+30 Median Island Left WB	LS	1.000	1.000
0296	SPV.0105	Special 1008. RRFB System 'STA 100+60 NW Right	LS	1.000	1.000
0298	SPV.0105	Special 1009. Wayfinder Post Assembly - Sign No. 1001	LS	1.000	1.000
0300	SPV.0105	Special 1010. Wayfinder Post Assembly - Sign No. 1002	LS	1.000	1.000
0302	SPV.0105	Special 1011. Wayfinder Post Assembly - Sign No. 1003	LS	1.000	1.000
0306	SPV.0180	Special 1001. Topsoil Special	SY	19,749.000	19,749.000

3

CLEARING AND GRUBBING ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	201.0105 CLEARING STA	201.0205 GRUBBING STA
1000	WEST SWAN BOULEVARD						
		192BV+00	-	201BV+00	LT	9	9
		192BV+00	-	193BV+00	RT	1	1
	EAST SWAN BOULEVARD						
		205BV+00	-	208BV+00	LT	3	3
		209BV+00	-	210BV+00	LT	1	1
	TOTALS					14	14

SAWING

CATEGORY	ROADWAY	FROM STATION	OFFSET	TO STATION	OFFSET	690.0150 SAWING ASPHALT LF	COMMENT
1000	WEST SWAN BOULEVARD						
		191BV+80.50	32' RT	191BV+80.50	27' LT	59	MATCH EXISTING
	EAST SWAN BOULEVARD						
		213BV+00.00	24' RT	213BV+00.00	24' LT	48	MATCH EXISTING
	DISCOVERY PARKWAY						
		26NB+41.00	36' RT	26NB+41.00	27' LT	63	MATCH EXISTING
	TOTAL					170	

3

REMOVING CURB & GUTTER

CATEGORY	ROADWAY	FROM STATION	TO STATION	OFFSET	204.0150 REMOVING CURB & GUTTER LF	COMMENTS
1000	WEST SWAN BOULEVARD					
		191BV+81	195BV+07	LT	330	
		191BV+81	195BV+07	RT	323	
	EAST SWAN BOULEVARD					
		211BV+05	213BV+00	LT	196	
		211BV+05	213BV+00	RT	196	
	DISCOVERY PARKWAY					
		26SB+41	30SB+08	LT	365	
		26NB+41.00	30NB+00.00	RT	357	
		26NB+41.00	30NB+00.00	LT/RT	650	MEDIAN
	ROUNDABOUT					
		4C+30	1C+11	RT	64	SW
		1C+12	1C+30	RT	74	MEDIAN
		1C+48	2C+00	RT	82	SE
	TOTAL				2,637	

REMOVING PAVEMENT

CATEGORY	ROADWAY	STATION	TO	STATION	204.0100 REMOVING PAVEMENT SY
1000	WEST SWAN BOULEVARD				
		195BV+07		202BVEB+75	4,490
	EAST SWAN BOULEVARD				
		204BVWB+15		211BV+05	4,023
	ROUNDABOUT				
		3C+87		4C+37	857
		2C+05		2C+57	
	TOTAL				9,370

REMOVING CONCRETE SIDEWALK

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	204.0155 REMOVING CONCRETE SIDEWALK SY
1000	DISCOVERY PARKWAY					
		27NB+04	-	30NB+00	RT	215
	ROUNDABOUT					
		1C+58	-	1C+93	RT/LT	49
	TOTAL					264

REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE

CATEGORY	ROADWAY	STATION	OFFSET	SPV.0060.1000 REMOVE AND CAP EXISTING DRAINAGE STORM SEWER STRUCTURE EACH
1000	ROUNDABOUT			
		1C+03	15' RT	1
		1C+14	6' RT	1
		1C+24	1' RT	1
		1C+51	2' LT	1
	TOTAL			4

REMOVING INLETS

CATEGORY	ROADWAY	STATION	OFFSET	204.0220 REMOVING INLETS EACH
1000	WEST SWAN BOULEVARD			
		192BV+78	24' LT	1
		192BV+78	24' RT	1
		194BV+98	23' LT	1
		199BVEB+59	24' LT	1
		199BVEB+59	24' RT	1
	EAST SWAN BOULEVARD			
		210BV+60	24' LT	1
		210BV+60	24' RT	1
	DISCOVERY PARKWAY			
		26NB+64	17' RT	1
	ROUNDABOUT			
		2C+92	29' LT	1
		4C+28	24' RT	1
	TOTAL			10

REMOVING STORM SEWER

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	204.0245.01 REMOVING STORM SEWER 15-INCH LF	204.0245.02 REMOVING STORM SEWER 18-INCH LF
1000	WEST SWAN BOULEVARD						
		199BVEB+59	-	199BVEB+59	LT/RT	76	--
	EAST SWAN BOULEVARD						
		210BV+60	-	210BV+60	LT/RT	--	72
	ROUNDABOUT						
		2C+82	-	2C+92	LT/RT	--	143
	TOTAL					76	215

3

Category	From/To Station	Location	Common Excavation (1)	item # 205.0100	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Expanded EBS Backfill (6)	Unexpanded Fill	Expanded Fill (7)	Mass Ordinate +/- (8)	Waste	Borrow
			Cut (2)	EBS Excavation (3)			Factor 1.30		Factor 1.25			item #208.0100
1000	191BV+81 to 202BVEB+75	West Swan Blvd	14727	0	1743	12984	0	900	1125	11859	11859	0
	204BVEB+06 to 215BV+37	East Swan Blvd	2957	0	1513	1444	0	6163	7704	-6260	0	6260
	26SB+42 to 30SB+08	Discovery Pkwy	2232	0	320	1912	0	72	90	1822	1822	0
	31NB+63 to 33NB+78	Forest Expl Dr	58	0	94	-36	0	1936	2420	-2456	0	2456
	1C+00 to 4C+58	Roundabout	39	0	403	-364	0	3237	4046	-4410	0	4410
	33NB+78 to 48NB+14	WDNR Site	8092	0	0	8092	0	2468	3085	5007	5007	0
Grand Total			28105	0	4074	24031	0	14776	18470	5561	18688	13127
		Total Common Exc	28105									

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Cut material.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Expanded EBS Backfill - This is to be filled with Cut material. EBS Backfill Factor = 1.25.
7) Expanded Fill. Factor = 1.25
   Expanded Fill = Unexpanded Fill* Fill Factor
8) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON
1000	WEST SWAN BOULEVARD	191BV+81	-	202BV+00	5,044	6,396
	EAST SWAN BOULEVARD	204BV+10	-	213BV+00	4,385	5,163
	DISCOVERY PARKWAY	26NB+41	-	30NB+00	1,821	2,233
	FOREST EXPLORATION DRIVE	31NB+63	-	33NB+78	928	1,073
	ROUNDABOUT	1C+00	-	4C+58	1,291	1,818
	WDNR SITE	33NB+78	-	48NB+14	2,503	--
	TOTALS				15,971	16,684

FOR INFORMATION ONLY

AGGREGATE UNIT WEIGHTS USED	
Base Aggregate Dense	2.0 TON/CY
Select Crushed Material	1.9 TON/CY

ASPHALTIC ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5224 HMA PAVEMENT 4 LT 58-28 S TON	465.0105 ASPHALTIC SURFACE TON
1000	WEST SWAN BOULEVARD	191BV+81	-	202BV+00	550	1,059	756	--
	EAST SWAN BOULEVARD	204BV+10	-	213BV+00	445	858	613	197
	DISCOVERY PARKWAY	26NB+41	-	30NB+00	149	286	204	--
	FOREST EXPLORATION DRIVE	31NB+63	-	33NB+78	70	135	97	33
	ROUNDABOUT	1C+00	-	4C+58	146	280	200	--
	WDNR SITE	33NB+78	-	48NB+14	404	500	389	261
	TOTALS				1,764	3,118	2,259	491

FOR INFORMATION ONLY

MATERIAL UNIT WEIGHTS USED	
HMA Pavement	110 LB/(SY*IN)

CONCRETE PAVEMENT

CATEGORY	ROADWAY	STATION	TO	STATION	405.0100 COLORING CONCRETE WISDOT RED CY	416.0512 CONCRETE TRUCK APRON 12-INCH SY
1000	ROUNDABOUT	1C+00.00	-	4C+58.14	124	372
	TOTAL				124	372

CONCRETE CURB & GUTTER

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	601.0331 CONCRETE CURB & GUTTER 31-INCH LF	601.0405 CONCRETE CURB & GUTTER 18-INCH TYPE A (REVERSE SLOPE) LF	601.0582 CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE T LF	601.0600 CONCRETE CURB PEDESTRIAN LF	SPV.0090.1000 CONCRETE CURB & GUTTER INTEGRAL 67-INCH LF	COMMENTS
1000	WEST SWAN BOULEVARD										
		191BV+80.50	-	201BVWB+97.32	LT	--	--	--	--	1,018	
		200NW+00.00	-	200NW+87.70	--	88	--	--	--	--	
		191BV+80.50	-	201BVEB+66.02	RT	--	--	--	--	981	
		300SW+00.00	-	300SW+90.89	--	89	--	--	--	--	
		201BVEB+60.30	-	202BVEB+61.53	LT	245	--	--	28	--	WEST SPLITTER ISLAND
	EAST SWAN BOULEVARD										
		401NE+52.31	-	402NE+43.20	--	89	--	--	--	--	
		205BVWB+24.29	-	213BV+00.00	LT	--	--	--	--	778	
		501SE+42.30	-	502SE+29.99	--	87	--	--	--	--	
		204BVEB+92.85	-	213BV+00.00	RT	--	--	--	--	802	
		204BVEB+22.10	-	205BVEB+30.22	LT	245	--	--	29	--	EAST SPLITTER ISLAND
	DISCOVERY PARKWAY										
		26SB+41.00	-	301SW+49.66	LT	364	--	--	--	--	
		26NB+41.00	-	500SE+87.02	RT	349	--	--	--	--	
		26NB+81.01	-	29NB+95.98	LT	643	--	--	52	--	SOUTH SPLITTER ISLAND
	FOREST EXPLORATION DRIVE										
		201NW+31.20	-	33NB+78.46	LT	181	--	--	--	--	
		400NE+93.00	-	33NB+78.46	RT	223	--	--	--	--	
		31NB+79.75	-	32NB+96.79	LT	267	--	--	74	--	NORTH SPLITTER ISLAND
	ROUNDABOUT										
		1C+00.00	-	4C+58.14	LT	--	264	--	--	--	CENTRAL ISLAND
		1C+00.00	-	4C+58.14	LT	--	--	346	--	--	TRUCK APRON
		200NW+87.70	-	201NW+31.20	--	42	--	--	--	--	
		400NE+93.00	-	401NE+52.31	--	58	--	--	--	--	
		500SE+87.02	-	501SE+42.30	--	54	--	--	--	--	
		300SW+90.89	-	301SW+49.66	--	57	--	--	--	--	
TOTAL						3,080	264	346	182	3,579	

3

CONCRETE SIDEWALK

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	602.0410 CONCRETE SIDEWALK 5-INCH SF	COMMENTS
1000	WEST SWAN BOULEVARD	191BV+80.50	-	200NW+88.25	LT	6,914	
		191BV+80.50	-	300SW+90.84	RT	6,635	
		201BVEB+60.30	-	202BVEB+61.53	LT	1,771	WEST SPLITTER ISLAND
	EAST SWAN BOULEVARD	401NE+52.36	-	213BV+72.59	LT	5,851	
		501SE+41.74	-	215BV+37.32	RT	990	
		204BVEB+22.10	-	205BVEB+30.22	LT	1,769	EAST SPLITTER ISLAND
	DISCOVERY PARKWAY	29SB+14.63	-	301SW+49.23	LT	546	
		27NB+04.04	-	500SE+87.25	RT	2,039	
		26NB+81.01	-	29NB+90.05	LT	5,283	SOUTH SPLITTER ISLAND
	FOREST EXPLORATION DRIVE	201NW+30.42	-	201NW+61.53	LT	268	
		400NE+50.49	-	400NE+93.14	RT	391	
		31NB+79.75	-	32NB+96.79	LT	2,441	NORTH SPLITTER ISLAND
	ROUNDABOUT	200NW+88.25	-	201NW+30.42	LT	274	
		300SW+90.84	-	301SW+49.23	RT	405	
		400NE+93.14	-	401NE+52.36	LT	415	
		500SE+87.25	-	501SE+41.74	RT	365	
	TOTALS					36,357	

CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA

CATEGORY	ROADWAY	STATION	OFFSET	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF
1000	WEST SWAN BOULEVARD			
		202BVWB+18	RT/LT	32
		202BVEB+18	RT/LT	32
	EAST SWAN BOULEVARD			
		204BVWB+70	RT/LT	32
		204BVEB+70	RT/LT	32
	DISCOVERY PARKWAY			
		29SB+72	RT/LT	32
		29NB+73	RT/LT	32
	FOREST EXPLORATION DRIVE			
		32SB+04	RT/LT	32
		32NB+00	RT/LT	32
	TOTALS			256

PRECAST CONCRETE PARKING BUMPER

CATEGORY	ROADWAY	STATION	TO	STATION	SPV.0060.1003 PRECAST CONCRETE PARKING BUMPER EACH
1000	WDNR SITE	40NB+75	-	42NB+75	18
	TOTAL				18

CONCRETE MEDIAN SLOPED NOSE

CATEGORY	ROADWAY	STATION	OFFSET	620.0300 CONCRETE MEDIAN SLOPED NOSE TYPE 1 SF	TYPE 2 SF
1000	WEST SWAN BOULEVARD				
		201BVEB+65	LT	60	--
		202BVEB+67	LT	--	17
		202BVWB+75	RT	--	22
	EAST SWAN BOULEVARD				
		204BVEB+15	LT	--	22
		204BVWB+22	RT	--	17
		205BVEB+25	LT	60	--
	DISCOVERY PARKWAY				
		26NB+87	LT	167	--
		29NB+95	LT	--	17
		30SB+00	RT	--	22
	FOREST EXPLORATION DRIVE				
		31NB+70	LT	--	22
		32NB+92	LT	60	--
		31SB+84	RT	--	17
	SUBTOTAL			347	156
	TOTAL			503	

EROSION CONTROL ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2023 EROSION MAT CLASS II TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
1000	WEST SWAN BOULEVARD	191BV+81	-	202BV+00	LT	474	474	--	--	1,292	195	--
		191BV+81	-	202BV+00	RT	--	--	--	--	1,758	185	--
	EAST SWAN BOULEVARD	204BV+10	-	213BV+00	LT	720	720	--	--	1,066	50	--
		204BV+10	-	213BV+00	RT	55	55	--	--	1,846	30	--
	DISCOVERY PARKWAY	26SB+41	-	30SB+00	LT	--	--	--	--	38	--	--
		26NB+41	-	30NB+00	RT	--	--	--	--	173	30	--
	FOREST EXPLORATION DRIVE	31NB+63	-	33NB+78	LT	98	98	--	--	384	--	--
		31NB+63	-	33NB+78	RT	289	289	--	--	857	--	--
	ROUNDABOUT	1C+00	-	4C+58	LT	--	--	--	--	601	--	--
		1C+00	-	4C+58	RT	59	59	--	--	187	--	2
	WDNR SITE	33NB+78	-	48NB+14	LT/RT	939	939	--	--	9,054	255	3
	UNDISTRIBUTED					658	658	3	3	4,314	186	--
TOTAL						3,291	3,291	3	3	21,570	931	5

TRACKING PADS

CATEGORY	LOCATION	628.7560 TRACKING PADS EACH
1000	SWAN BOULEVARD	2
	DISCOVERY PARKWAY	1
	FOREST EXPLORATION DRIVE	1
		1
TOTAL		4

INLET PROTECTION

CATEGORY	LOCATION	STATION	628.7005 INLET PROTECTION TYPE A EACH	628.7020 INLET PROTECTION TYPE D EACH
1000	WEST SWAN BOULEVARD	192BV+78	2	2
		194BV+99	4	4
		201BVWB+00	1	1
		201BVEB+36	1	1
		201BVEB+68	1	1
		202BVEB+04	3	3
		202BVEB+58	4	4
	EAST SWAN BOULEVARD	204BVEB+43	1	1
		205BVEB+22	3	3
		207BVEB+10	2	2
		210BV+59	2	2
		213BV+09	--	2
	DISCOVERY PARKWAY	26NB+64	2	2
		29NB+03	2	2
		29NB+60	4	4
	FOREST EXPLORATION DRIVE	31NB+91	1	1
		32NB+86	2	2
		33NB+75	2	2
	ROUNDABOUT	1C+94	2	2
TOTALS			39	41

RIPRAP ITEMS

CATEGORY	LOCATION	STATION	OFFSET	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY	SPV.0035.1000 RIPRAP REPAIR CY
1000	SWAN BOULEVARD	205BVEB+97	RT	10	19	--
		207BVEB+18	RT	3	7	--
		210BV+59	LT	3	5	--
	FOREST EXPLORATION DRIVE	31NB+94	RT	3	7	--
		33NB+75	RT	3	5	--
	UNDISTRIBUTED	206BV+50 TO 215BV+00 (AS NEEDED)	--	--	--	250
	WDNR SITE	40NB+37	LT/RT	1	2	--
		43NB+01	LT/RT	1	2	--
		46NB+24	LT/RT	3	5	--
TOTAL				27	53	250

3

RESTORATION ITEMS

CATEGORY	LOCATION	STATION		TO STATION	OFFSET	627.0200 MULCHING SY	630.0171 SEEDING MIXTURE NO. 70A LB	631.0300 SOD WATER MGAL	631.1000 SOD LAWN SY	SPV.0030.1000 FERTILIZER TYPE B SPECIAL CWT	SPV.0085.1000 SEEDING MIXTURE NO. 30 SPECIAL LB	SPV.0180.1001 TOPSOIL SPECIAL SY
6000	WEST SWAN BOULEVARD	191BV+81	-	202BV+00	LT	1292	--	10	431	1.7	53.5	1,724
		191BV+81	-	202BV+00	RT	1758	--	9	420	2.2	72.8	2,178
	EAST SWAN BOULEVARD	204BV+10	-	213BV+00	LT	1066	--	6	250	1.3	44.2	1,317
		204BV+10	-	213BV+00	RT	1846	--	8	347	2.2	76.4	2,193
	DISCOVERY PARKWAY	26SB+41	-	30SB+00	LT	38	--	1	42	0.1	1.6	80
		26NB+41	-	30NB+00	RT	173	--	6	289	0.5	7.2	462
	FOREST EXPLORATION DRIVE	31NB+63	-	33NB+78	LT	384	0.4	0	10	0.4	11.1	394
		31NB+63	-	33NB+78	RT	857	3.0	3	115	1.0	1.3	972
	ROUNDABOUT	1C+00	-	4C+58	LT	601	--	--	--	0.6	24.9	601
		1C+00	-	4C+58	RT	187	--	3	118	0.3	7.7	304
	WDNR SITE	33NB+78	-	48NB+14	LT/RT	9054	0.6	11	470	9.4	368	9,524
	TOTAL					17,256	4.0	56	2,492	19.6	669	19,749

MOBILIZATION

CATEGORY	LOCATION	619.1000 MOBILIZATION EACH
1000	PROJECT 1060-33-94	0.95
	TOTAL	0.95

WATER

CATEGORY	LOCATION	COMMENT	624.0100 WATER MGAL
1000	PROJECT (EXCEPT WDNR SITE)	BASE AGGREGATE	237
		EXCAVATION/BORROW	84
	TOTAL		321

FINISHING ROADWAY

CATEGORY	LOCATION	213.0100 FINISHING ROADWAY (1060-33-94) EACH
1000	PROJECT 1060-33-94	1
	TOTAL	1

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME: W:\PDS\C3D\10603307\94\DSN\PLAN\030201_mq.pptx PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

ADJUSTING STRUCTURES

LOCATION	STRUCTURE ID	STATION	OFFSET FT	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	611.8115 ADJUSTING INLET COVERS EACH
LOCAL ROADS							
SWAN BOULEVARD							
	BQ703	194BV+88	27' RT	766.57		766.63	1
	BQ707	194BV+99	27' RT	766.38		766.51	1
DISCOVERY PARKWAY							
	BQ812	26SB+64	19' LT	745.42		745.37	1
TOTAL							3

RECONSTRUCTING STRUCTURES

LOCATION	STRUCTURE ID	STATION	OFFSET FT	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	611.0420 RECONSTRUCTING MANHOLES EACH
LOCAL ROADS							
SWAN BOULEVARD							
	BQ776	4C+42	36' RT	733.00		734.91	1
TOTAL							1

ALL ITEMS CATEGORY 1000

FILE NAME : W:\CADD\FINAL\10603394 BVR_Roads\Roads\cds\030202_mq_dra.ppt PLOT DATE : 10/30/2018 1:40:32 PM PLOT BY : BRIAN C. ADAMS PLOT NAME : 030202_mq_dra1 PLOT SCALE : 1:1

ENDWALLS AND PIPE GRATES

ROADWAY	PIPE ID	ENDWALL ID	ENDWALL ELEVATION	ENDWALL STATION	ENDWALL OFFSET	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	522.2634 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 34x53-INCH EACH	611.9800.S PIPE GRATES EACH	633.5200* MARKERS CULVERT END EACH
LOCAL ROADS											
SWAN BOULEVARD											
	P775	B775A	730.62	4C+38	58' RT	--	--	1	--	1	1
	P794	B794A	729.88	204BVEB+42	50' RT	1	--	--	--	1	1
	P808	B808A	722.67	206BVEB+20	53' RT	--	--	--	1	1	1
	P843	B843A	717.81	207BVEB+24	51' RT	--	1	--	--	1	1
	P847	B847A	703.47	210BV+59	46' LT	1	--	--	--	1	1
DISCOVERY PARKWAY											
	P753	B753A	726.97	31NB+95	52' RT	--	1	--	--	1	1
	P827	B827A	722.24	33NB+74	51' RT	1	--	--	--	1	1
TOTALS						3	2	1	1	7	7

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

CONCRETE COLLARS FOR PIPE

ROADWAY	STATION	OFFSET	PIPE ID	SIZE (IN)	520.8000 CONCRETE COLLARS FOR PIPE EACH
LOCAL ROADS					
SWAN BOULEVARD					
	192BV+75	25' LT	PE714	24	1
	192BV+78	22' LT	PE702	15	1
	192BV+79	24' RT	PE702	15	1
	192BV+81	24' LT	PE712	24	1
	194BV+96	23' LT	PE712	24	1
	194BV+99	20' LT	PE708	15	1
	204BVEB+88	25' RT	PE778	34x53	1
DISCOVERY PARKWAY					
	26NB+64	17' RT	PE811	12	1
TOTAL					8

ALL ITEMS CATEGORY 1000

STORM SEWER STRUCTURES										STORM SEWER PIPES										
ROADWAY	STRUCTURE NO.	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH[1] (FT)	STRUCTURE COMMENTS	PIPE ID	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE[A] %	PIPE LENGTH[B] (FT)	PLAN LENGTH[C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	PIPE COMMENTS
SWAN BOULEVARD	B700	192BV+79.18	29.0	RT	768.78	INLETS 2x3-FT	H	5.37	---	P701	B700	PE702	763.41	763.39	0.50	3	4	III	15	---
---	---	---	---	---	---	---	---	--	---	PE702	P701	B713	763.39	763.16	---	---	---	---	15	EXIST PIPE INTERPOL ELEV
SWAN BOULEVARD	BQ703	194BV+88.19	26.6	RT	766.63	---	---	---	SEE ADJUSTING STRUCTURES TABLE	PE704	BQ703	BQ707	762.23	762.20	---	---	---	---	15	EXIST PIPE INTERPOL ELEV
SWAN BOULEVARD	B705	194BV+99.40	40.6	RT	767.04	INLETS MEDIAN 1 GRATE	MS	4.78	---	P706	B705	BQ707	762.26	762.20	0.50	12	16	III	15	---
SWAN BOULEVARD	BQ707	194BV+98.59	27.0	RT	766.51	---	---	---	SEE ADJUSTING STRUCTURES TABLE	PE708	BQ707	B709	762.20	761.98	---	---	---	---	15	EXIST PIPE INTERPOL ELEV
SWAN BOULEVARD	B709	194BV+99.24	27.0	LT	766.51	MANHOLES 7-FT DIAMETER	H	5.28	---	PE712	B709	B713	761.23	760.14	---	---	---	---	24	EXIST PIPE INTERPOL ELEV
SWAN BOULEVARD	B713	192BV+77.85	27.6	LT	768.82	MANHOLES 6-FT DIAMETER	H	8.68	---	PE714	B713	---	760.14	---	---	---	---	---	24	EXIST PIPE INTERPOL ELEV
SWAN BOULEVARD	B730	202BVEB+00.00	41.8	RT	735.51	INLETS MEDIAN 2 GRATE	MS	4.84	---	P731	B730	B734	730.67	730.60	0.50	15	18	III	15	---
SWAN BOULEVARD	B732	201BVEB+38.68	27.0	RT	737.51	INLETS 4-FT DIAMETER	H	5.35	---	P733	B732	B734	732.16	730.35	3.00	60	64	III	18	---
SWAN BOULEVARD	B734	202BVEB+05.35	26.0	RT	735.57	INLETS 4-FT DIAMETER	H	5.22	---	P735	B734	B736	730.35	729.00	3.00	45	49	III	18	---
SWAN BOULEVARD	B736	202BVEB+70.00	26.0	RT	734.23	INLETS 4-FT DIAMETER	H	5.23	---	P737	B736	B738	729.00	728.86	0.50	29	33	III	18	---
SWAN BOULEVARD	B738	4C+10.57	22.0	RT	734.83	INLETS 4-FT DIAMETER	H	5.97	---	P739	B738	B740	728.86	728.68	0.50	35	39	III	18	---
SWAN BOULEVARD	B740	202BVWB+69.44	2.0	RT	735.32	INLETS 4-FT DIAMETER	H	6.64	---	P741	B740	B746	728.68	728.56	0.50	24	28	III	18	---
SWAN BOULEVARD	B741A	201BVWB+00.01	38.0	LT	739.15	INLETS MEDIAN 2 GRATE	MS	5.37	---	P741B	B741A	B742	733.78	731.77	3.00	67	71	III	15	---
SWAN BOULEVARD	B742	201BVWB+71.86	27.0	LT	736.88	INLETS 2x3-FT	H	5.11	---	P743	B742	B744	731.77	731.25	1.50	35	38	III	15	---

(CONTINUED ON NEXT SHEET)

(CONTINUED)

STORM SEWER STRUCTURES										STORM SEWER PIPES										
ROADWAY	STRUCTURE NO.	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH[1] (FT)	STRUCTURE COMMENTS	PIPE ID	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE[A] %	PIPE LENGTH[B] (FT)	PLAN LENGTH[C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	PIPE COMMENTS
SWAN BOULEVARD	B744	202BVWB+09.72	24.3	LT	735.99	INLETS 2x3-FT	H	4.99	---	P745	B744	B746	731.00	730.00	1.50	67	71	III	18	---
SWAN BOULEVARD	B746	202BVWB+80.00	28.5	LT	734.63	MANHOLES 5-FT DIAMETER	H	6.07	---	P747	B746	B752	728.56	727.30	1.00	126	131	III	18	---
SWAN BOULEVARD	B748	1C+89.23	2.0	LT	733.28	INLETS 2X3-FT	T	4.35	---	P749	B748	B750	728.93	728.88	1.00	5	9	III	15	---
SWAN BOULEVARD	B750	1C+97.92	2.0	LT	733.29	INLETS 4-FT DIAMETER	T	4.41	---	P751	B750	B752	728.88	727.55	1.00	133	137	III	15	---
DISCOVERY PARKWAY	B752	31NB+90.75	19.6	RT	733.56	MANHOLES 5-FT DIAMETER	H	6.26	---	P753	B752	B753A	727.30	727.03	1.00	27	29	III	18	---
DISCOVERY PARKWAY	BE773	27SB+73.27	48.7	LT	741.24	---	---	---	---	PE774	BE773	BQ776	---	728.64	---	---	---	---	30	EXIST PIPE INTERPOL ELEV
---	---	---	---	---	---	---	---	--	---	P775	B775A	BQ776	730.50	730.15	2.00	14	17	III	30	---
SWAN BOULEVARD	BQ776	4C+42.18	35.9	RT	734.91	---	J	---	SEE RECONSTRUCTING STRUCTURES TABLE	PE777	BQ776	---	724.77	---	---	---	---	---	34x53	EXIST PIPE INTERPOL ELEV
---	---	---	---	---	---	---	---	--	---	PE778	---	B805	---	723.41	---	---	---	---	34x53	EXIST PIPE INTERPOL ELEV
DISCOVERY PARKWAY	B781	29SB+10.96	21.4	LT	733.48	INLETS 2x3-FT	H	4.68	---	P782	B781	B783	728.80	728.60	0.50	40	43	III	15	---
DISCOVERY PARKWAY	B783	29SB+55.00	18.8	LT	732.96	INLETS 2x3-FT	H	4.36	---	P784	B783	B785	728.60	728.52	0.50	17	19	III	15	---
DISCOVERY PARKWAY	B785	29SB+56.60	2.0	RT	733.30	INLETS 2x3-FT	H	4.78	---	P786	B785	B787	728.52	728.40	0.50	23	25	III	15	---
DISCOVERY PARKWAY	B787	29NB+63.75	2.0	LT	733.19	INLETS 2x3-FT	H	4.79	---	P788	B787	B791	728.40	728.33	0.50	15	18	III	15	---
DISCOVERY PARKWAY	B789	28NB+94.82	19.7	RT	734.04	INLETS 2x3-FT	H	5.41	---	P790	B789	B791	728.63	728.33	0.50	60	63	III	15	---
DISCOVERY PARKWAY	B791	29NB+62.33	18.5	RT	732.86	INLETS 4-FT DIAMETER	H	4.78	---	P792	B791	B796	728.08	727.56	0.50	104	108	III	18	---

(CONTINUED ON NEXT SHEET)

(CONTINUED)

STORM SEWER STRUCTURES										STORM SEWER PIPES										
ROADWAY	STRUCTURE NO.	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH[1] (FT)	STRUCTURE COMMENTS	PIPE ID	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE[A] %	PIPE LENGTH[B] (FT)	PLAN LENGTH[C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	PIPE COMMENTS
---	---	---	---	---	---	---	---	--	---	P794	B794A	B796	729.76	729.38	2.00	19	21	III	15	---
SWAN BOULEVARD	B796	204BVEB+35.10	26.4	RT	732.40	INLETS 4-FT DIAMETER	H	4.84	---	P797	B796	B805	727.56	727.31	0.50	51	56	III	18	---
SWAN BOULEVARD	B798	205BVWB+22.06	24.0	LT	730.91	INLETS 2x3-FT	H	4.91	---	P799	B798	B800	726.00	725.89	0.50	22	24	III	15	---
SWAN BOULEVARD	B800	205BVWB+21.46	2.0	RT	731.41	INLETS 2x3-FT	H	5.52	---	P801	B800	B802	725.89	725.86	0.50	6	9	III	15	---
SWAN BOULEVARD	B802	205BVEB+21.46	2.0	LT	731.00	INLETS 4-FT DIAMETER	H	5.14	---	P803	B802	B805	725.86	725.52	1.00	34	40	III	15	---
SWAN BOULEVARD	B805	204BVEB+91.16	26.0	RT	731.92	MANHOLES 7-FT DIAMETER	J	8.51	---	P806	B805	B807	723.41	723.01	0.60	67	73	HE-III	34x53	---
SWAN BOULEVARD	B807	205BVEB+60.43	54.3	RT	727.59	MANHOLES 6-FT DIAMETER	J	4.60	---	P808	B807	B808A	722.99	722.72	0.60	46	49	HE-III	34x53	---
DISCOVERY PARKWAY	B810	26NB+64.20	19.0	RT	745.37	INLETS 2x3-FT	H	3.67	---	PE811	B810	BQ812	741.70	741.42	---	---	---	---	12	EXIST PIPE INTERPOL ELEV
DISCOVERY PARKWAY	BQ812	26SB+64.13	19.0	LT	745.37	---	---	---	SEE ADJUSTING STRUCTURES TABLE	PE813	BQ812	---	741.12	---	---	---	---	---	15	EXIST PIPE INTERPOL ELEV
DISCOVERY PARKWAY	B820	32SB+87.65	2.0	RT	732.04	INLETS 2x3-FT	H	6.58	---	P821	B820	B822	725.46	725.24	3.00	7	10	III	15	---
DISCOVERY PARKWAY	B822	32NB+85.26	2.0	LT	731.81	INLETS 4-FT DIAMETER	H	6.57	---	P823	B822	B826	725.24	722.62	3.00	87	91	III	15	---
DISCOVERY PARKWAY	B824	33NB+75.07	13.1	LT	727.91	INLETS 2x3-FT	H	5.19	---	P825	B824	B826	722.72	722.62	0.50	20	23	III	15	---
DISCOVERY PARKWAY	B826	33NB+75.38	13.1	RT	727.98	INLETS 4-FT DIAMETER	H	5.36	---	P827	B826	B827A	722.62	722.30	1.00	32	34	III	15	---
SWAN BOULEVARD	B840	207BVWB+06.86	27.0	LT	721.88	INLETS 2x3-FT	H	3.43	---	P841	B840	B842	718.45	718.21	0.50	49	52	IV	15	---
SWAN BOULEVARD	B842	207BVEB+05.11	27.0	RT	721.97	INLETS 4-FT DIAMETER	H	4.01	---	P843	B842	B843A	717.96	717.84	0.50	24	26	III	18	---
SWAN BOULEVARD	B844	210BV+60.29	27.0	RT	707.43	INLETS 2x3-FT	H	3.52	---	P845	B844	B846	703.91	703.66	0.50	50	52	IV	15	---
SWAN BOULEVARD	B846	210BV+59.53	27.0	LT	707.45	INLETS 2x3-FT	H	3.79	---	P847	B846	B847A	703.66	703.53	1.00	13	14	III	15	---

TOTAL

ALL ITEMS CATEGORY 1000

3

611.2005 MANHOLES 5-FT DIAMETER EACH	611.2006 MANHOLES 6-FT DIAMETER EACH	611.2007 MANHOLES 7-FT DIAMETER EACH	611.3230 INLETS 2x3-FT EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.3902 INLETS MEDIAN 2 GRATE EACH	611.0535 MANHOLE COVERS TYPE J SPECIAL EACH	611.0624 INLET COVERS TYPE H EACH	611.0642 INLET COVERS TYPE MS EACH	611.0652 INLET COVERS TYPE T EACH
2	2	2	17	12	1	2	3	31	5	2

608.0315 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH LF	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH LF	608.0330 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 30-INCH LF	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH LF	608.2334 STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 34x53-INCH LF
727	635	17	104	123

ALL ITEMS CATEGORY 1000

FILE NAME : W:\CADD\FINAL\10603394 BVR_Roads\Roads\cds\030202_mq_dra.ppt PLOT DATE : 1/23/2019 10:32:56 AM PLOT BY : BRIAN C. ADAMS PLOT NAME : 030202_mq_dra6 PLOT SCALE : 1:1

3

CULVERT PIPES

CATEGORY	ROADWAY	PIPE ID	STATION	OFFSET	INLET ELEVATION	STATION	OFFSET	DISCHARGE ELEVATION	520.1012 APRON ENDWALLS FOR CULVERT PIPE 12-INCH EACH	520.1015 APRON ENDWALLS FOR CULVERT PIPE 15-INCH EACH	520.3512 CULVERT PIPE CLASS III-B 12-INCH LF	520.3515 CULVERT PIPE CLASS III-B 15-INCH LF	633.5200* MARKERS CULVERT END EACH	SPV.0060.1002 CLEANING PIPE AND PIPE INVERTS EACH
1000	WDNR SITE	C300	40NB+05.91	43.2' RT	697.47	40NB+83.83	45.9' LT	696.93	2	--	117	--	2	--
		C400	43NB+00.73	25.8' LT	694.27	43NB+01.47	25.1' RT	694.02	1	--	51	--	1	--
		C500	46NB+28.98	13.9' RT	699.95	46NB+16.90	31.7' LT	698.66	--	2	--	47	2	--
	EAST SWAN BOULEVARD	EXIST	213BV+09	RT/LT	--	--	--	--	--	--	--	--	--	2
	TOTAL								3	2	168	47	5	2

NOTES:
1) STATIONS AND OFFSETS SHOWN ARE TO THE END OF PIPE
2) PIPE LENGTH IS FROM END OF THE PIPE TO END OF PIPE AND DOES NOT INCLUDE LENGTH OF APRON ENDWALL

*ADDITIONAL QUANTITIES FOUND ELSEWHERE.

POND OUTLET STORM SEWER STRUCTURE

CATEGORY	ROADWAY	STATION	OFFSET	SPV.0060.1001 POND OUTLET STORM SEWER STRUCTURE EACH
1000	WDNR SITE	40NB+05.91	43.2' RT	1
	TOTAL			1

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION		TO STATION	646.1020 MARKING LINE EPOXY 4-INCH 3 FT LINE, 9 FT SKIP WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH 3 FT LINE, 9 FT SKIP YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH 12.5 FT LINE, 37.5 FT SKIP WHITE LF	646.3020 MARKING LINE EPOXY 8-INCH 3 FT LINE, 9 FT SKIP WHITE LF	646.3020 MARKING LINE EPOXY 8-INCH 3 FT LINE, 9 FT SKIP YELLOW LF	646.3020 MARKING LINE EPOXY 8-INCH 6 FT LINE, 3 FT SKIP WHITE LF	646.5020 MARKING ARROW EPOXY (TYPE 1) WHITE EACH	646.5020 MARKING ARROW EPOXY (TYPE 3R) WHITE EACH	646.5020 MARKING ARROW EPOXY (TYPE 3) WHITE EACH	646.5020 MARKING ARROW EPOXY (BIKE LANE) WHITE EACH
1000	WEST SWAN BOULEVARD	191BV+81	-	202BV+00	1,952	2,763	--	456	185	50	--	--	2	2	4
	EAST SWAN BOULEVARD	204BV+10	-	213BV+00	1,254	2,259	--	352	185	50	--	--	2	2	4
	DISCOVERY PARKWAY	26NB+41	-	30NB+00	535	--	22	--	79	--	--	--	--	--	1
	FOREST EXPLORATION DRIVE	31NB+63	-	33NB+78	--	449	--	--	93	--	--	--	--	--	--
	ROUNDABOUT	1C+00	-	4C+58	--	--	--	--	--	--	234	2	--	2	--
	WDNR SITE	33NB+78	-	48NB+14	3,114	1,091	--	--	59	--	--	4	--	--	--
					6,854	6,563	22	808	601	100	234	6	4	6	9
		TOTAL					14,247			935			25		

PAVEMENT MARKING ITEMS CONTINUED

CATEGORY	LOCATION	STATION		TO STATION	646.5120 MARKING WORD EPOXY (BIKE LANE) WHITE EACH	646.5120 MARKING WORD EPOXY (BIKE LANE) WHITE EACH	646.5220 MARKING SYMBOL EPOXY (HANDICAP) WHITE EACH	646.5220 MARKING SYMBOL EPOXY (BIKE LANE) WHITE EACH	646.6320 MARKING DOTTED EXTENSION EPOXY 18-INCH 2 FT LINE, 2 FT SKIP WHITE LF	646.7120 MARKING DIAGONAL EPOXY 12-INCH YELLOW LF	646.7520 MARKING CROSSWALK EPOXY LADDER PATTERN 24-INCH WHITE LF	646.8120 MARKING CURB EPOXY YELLOW LF	646.8220 MARKING ISLAND NOSE EPOXY YELLOW EACH	646.9310 MARKING REMOVAL SPECIAL MARKING WATER BLASTING EACH
1000	WEST SWAN BOULEVARD	191BV+81	-	202BV+00	2	--	--	4	--	--	120	23	1	3
	EAST SWAN BOULEVARD	204BV+10	-	213BV+00	2	3	--	4	--	--	120	23	1	--
	DISCOVERY PARKWAY	26NB+41	-	30NB+00	--	--	--	1	--	--	90	--	--	--
	FOREST EXPLORATION DRIVE	31NB+63	-	33NB+78	--	--	--	--	--	27	80	24	1	--
	ROUNDABOUT	1C+00	-	4C+58	--	--	--	--	79	--	--	--	--	--
	WDNR SITE	33NB+78		48NB+14	--	--	2	--	--	9	--	--	--	--
		SUBTOTAL			4	3	2	9	79	37	410	70	3	3
		TOTAL			7		11		79	37	410	70	3	3

3

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	STAGE DURATION DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.0900 TRAFFIC CONTROL SIGNS (DETOUR) EACH	643.0900 TRAFFIC CONTROL SIGNS (DETOUR) DAYS	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS
1000	1	WEST SWAN BOULEVARD	75	9	675	18	1,350	7	525	4	300	2	8	--	--
		EAST SWAN BOULEVARD	75	8	600	16	1,200	7	525	10	750	4	16	--	--
		DISCOVERY PARKWAY	75	7	525	14	1,050	6	450	--	--	--	--	--	--
		MAYFAIR ROAD (STH 100)	75	--	--	--	--	--	--	10	750	5	20	--	--
		WATERTOWN PLANK ROAD	75	--	--	--	--	--	--	15	1,125	9	36	1	75
		NORTH AVENUE	75	--	--	--	--	--	--	9	675	5	20	1	75
		STAGE 1 SUBTOTAL			1,800		3,600		1,500		3,600		100		150
	2	WEST SWAN BOULEVARD	25	--	--	--	--	3	75	--	--	--	--	--	--
		EAST SWAN BOULEVARD	25	--	--	--	--	3	75	--	--	--	--	--	--
		DISCOVERY PARKWAY	25	--	--	--	--	2	50	--	--	--	--	--	--
		ROUNDABOUT	25	12	300	24	600	2	50	--	--	--	--	--	--
		STAGE 2 SUBTOTAL			300		600		250		--		--		--
		UNDISTRIBUTED			525		1,050		438		900		--		38
		TOTAL			2,625		5,250		2,188		4,500		100		150
		TOTAL			2,625		5,250		6,688				100		150

TRAFFIC CONTROL

CATEGORY	LOCATION	643.5000 TRAFFIC CONTROL EACH
1000	PROJECT 1060-33-94	0.80
	TOTAL	0.80

3

COMPOSITE PULL BOXES

CATEGORY	LOCATION	STATION	OFFSET	SPV.0060.05 17X30X18 COMPOSITE PULL BOXES EACH
1100	FOREST EXPLORATION DRIVE	33NB+83	16.8' LT	1
	TOTAL			1

PAVEMENT CLEANUP PROJECT

CATEGORY	LOCATION	SPV.0075.1000 PAVEMENT CLEANUP PROJECT 1060-33-94 HRS
1000	PROJECT	100
	TOTAL	100

SURVEY PROJECT

CATEGORY	LOCATION	SPV.0105.1000 SURVEY PROJECT 1060-33-94 LS
1000	PROJECT	0.95
	TOTAL	0.95

FIELD OFFICE

CATEGORY	LOCATION	642.5401 FIELD OFFICE TYPE D EACH
1000	PROJECT	0.95
	TOTAL	0.95

DUST CONTROL SURFACE TREATMENT

CATEGORY	LOCATION	623.0200 DUST CONTROL SURFACE TREATMENT SY
1000	PROJECT	23,212
	TOTAL	23,212

TYPE I&II PERMANENT SIGNING Category Code 1000

1060-33-94 SWAN BLVD

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	SIGN SIZE H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**637.2230** SIGNS TYPE II RELFECTIVE F [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVING SIGNS TYPE II [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0816** POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	**643.0920** TRAFFIC CONTROL COVERING SIGNS TYPE II [EA]	**SPV.0105.1009** WAYFINDER POST ASSEMBLY SIGN # 1001 L.S	**SPV.0105.1010** WAYFINDER POST ASSEMBLY SIGN # 1002 L.S	**SPV.0105.1011** WAYFINDER POST ASSEMBLY SIGN # 1003 L.S	REMARKS / NEW SIGN LOCATION
1	D1-1 (MOD)	UWM INNOVATION CAMPUS [A]	54	X	60	22.50						2					BLUE BACKGROUND, WHITE LETTERS
2	NOT USED			X		--											
3	W2-6 (2S)	CIRCULAR INTERSECTION	30	X	30	--	6.250					1					
4	W13-1 (2S)	ADVISORY SPEED PLATE (15 MPH)	18	x	18	--	2.250										
5	D1-2 (MOD)	[A] FOREST EXPLORATION DR LEFT LANE	114	X	66	52.250						3					
		DISCOVERY PKWY [A] RIGHT LANE															
6	D1-60	SWAN BLVD [A] EAST WEST [A]	72	X	24	12.000						2					
7	W13-1 (2S)	ADVISORY SPEED PLATE (15 MPH)	18	X	18	--	2.250										
8	W2-6 (2S)	CIRCULAR INTERSECTION	30	X	30	--	6.250					1					
9	D1-2 (MOD)	[A] DISCOVERY PKWY LEFT LANE	114	X	66	52.250						3					
		FOREST EXPLORATION DR [A] RIGHT LANE															
10	W2-6 (2S)	CIRCULAR INTERSECTION	30	X	30	--	6.250										MOUNT ON LIGHT POLE
11	W13-1 (2S)	ADVISORY SPEED PLATE (15 MPH)	18	X	18	--	2.250										
12	D1-1 (MOD)	UNDERWOOD PKWY [A]	60	X	42	17.500						2					
13	D1-1 (MOD	UNDERWOOD PKWY [A]	60	X	42	17.500						2					
14			24	X	45	7.500						1					
	D9-2	HOSPITAL	24	X	24												BLUE BACKGROUND, WHITE LETTERS
	MB6-1	LEFT ARROW	21	X	21												
15	W2-6 (2S)	CIRCULAR INTERSECTION	30	X	30	--	6.250					1					
16	W13-1 (2S)	ADVISORY SPEED PLATE (15 MPH)	18	X	18	--	2.250										
17	D1-60	SWAN BLVD [A] WEST EAST [A]	72	X	24	12.000						2					
18	R3-8-CC (2S)	LEFT, AHEAD/AHEAD, RIGHT (ROUNI	36	X	30	7.500						1					
19	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										MOUNT ON SIGNAL STANDARD
20	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
20A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
21	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										MOUNT ON SIGNAL STANDARD
22	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
22A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
23	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250					1					
24	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
25	R2-1 (2S)	SPEED LIMIT 35 MPH	24	X	30	5.000						1					
26	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250					1					
27	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
28	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
29	R1-54 (2S)	TO TRAFFIC FROM LEFT	24	X	15	2.500											
30	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL

TYPE I&II PERMANENT SIGNING -

1060-33-94 SWAN BLVD

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**637.2230** SIGNS TYPE II RELFECTIVE F [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVING SIGNS TYPE II [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0816** POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	**643.0920** TRAFFIC CONTROL COVERING SIGNS TYPE II [EA]	**SPV.0105.1009** WAYFINDER POST ASSEMBLY SIGN # 1001 L.S	**SPV.0105.1010** WAYFINDER POST ASSEMBLY SIGN # 1002 L.S	**SPV.0105.1011** WAYFINDER POST ASSEMBLY SIGN # 1003 L.S	REMARKS / NEW SIGN LOCATION
31	R6-2R (2S)	ONE WAY RIGHT ARROW	24	X	30	5.000											
32	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250					1					
33	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
34	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
35	R1-54 (2S)	TO TRAFFIC FROM LEFT	24	X	15	2.500											
36	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
37	R6-2R (2S)	ONE WAY RIGHT ARROW	24	X	30	5.000											
38	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										MOUNT ON SIGNAL STANDARD
39	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
39A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
40	D1-2 (MOD)	E. SWAN BLVD [A] WAUWATOSA [A]	78	X	30	16.250						2					
41	D1-3 (MOD)	DISCOVERY PKWY [A] UWM INNOVATION [A] CAMPUS MILW CO PARKS [A]	84	X	60	35.000						3					
42	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250						1					
43	R2-1 (2S)	SPEED LIMIT 35 MPH	24	X	30	5.000											
44	R4-7 (2S)	KEEP RIGHT	24	X	30	5.000						1					
45	R3-8-CC (2S)	LEFT, AHEAD/AHEAD, RIGHT (ROUNI	36	X	30	7.500						1					
46	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										MOUNT ON SIGNAL STANDARD
47	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
47A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
48	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										MOUNT ON SIGNAL STANDARD
49	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
49A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
50	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
51	R1-54 (2S)	TO TRAFFIC FROM LEFT	24	X	15	2.500											
52	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
53	R6-2R (2S)	ONE WAY RIGHT ARROW	24	X	30	5.000											
54	D1-1 (MOD)	FOREST EXPLORATION [A] CENTER	66	X	42	19.250						3					
55	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30		6.250					1					
56	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12		2.000										
57	R4-7 (2S)	KEEP RIGHT	24	X	30	5.000						1					
58	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250					1					
59	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										

TYPE I&II PERMANENT SIGNING Category Code 1000

1060-33-94 SWAN BLVD

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**637.2230** SIGNS TYPE II RELFECTIVE F [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVING SIGNS TYPE II [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0816** POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	**643.0920** TRAFFIC CONTROL COVERING SIGNS TYPE II [EA]	**SPV.0105.1009** WAYFINDER POST ASSEMBLY SIGN # 1001 L.S	**SPV.0105.1010** WAYFINDER POST ASSEMBLY SIGN # 1002 L.S	**SPV.0105.1011** WAYFINDER POST ASSEMBLY SIGN # 1003 L.S	REMARKS / NEW SIGN LOCATION
60	R2-1 (2S)	SPEED LIMIT 15 MPH	24	X	30	5.000						1					
61	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250											
62	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250					1					
63	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
64	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
65	R1-54 (2S)	TO TRAFFIC FROM LEFT	24	X	15	2.500											
66	R1-2 (2S)	YIELD	36	X	31	3.880						1					MOUNT WITH 16" X 16" FLAGS INCIDENTAL
67	R6-2R (2S)	ONE WAY RIGHT ARROW	24	X	30	5.000											
68	D1-2 (MOD)	W. SWAN BLVD [A] TO WATERTOWN [A] ROAD	96	X	42	28.000						3					
69	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										MOUNT ON SIGNAL STANDARD
70	W16-7L (2S)	LEFT DIAGONAL DOWNWARD POINT	24	X	12	--	2.000										
70A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
71	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250						1					
72	R2-1 (2S)	SPEED LIMIT 35 MPH	24	X	30	5.000											
73	R4-7 (2S)	KEEP RIGHT	24	X	30	5.000						1					
74	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										
75	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
75A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
76	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										
77	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
78	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										
79	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
79A	R10-25 (2S)	PUSH BUTTON TO TURN ON WARNIN	9	X	12	0.750											
80	W11-2 (2S)	PED CROSSING SYMBOL	30	X	30	--	6.250										
81	W16-7R (2S)	RIGHT DIAGONAL DOWNWARD POIN	24	X	12	--	2.000										
82	R4-7 (2S)	KEEP RIGHT	24	X	30	5.000						1					
83	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250						1					
84	R2-1 (2S)	SPEED LIMIT 25 MPH	24	X	30	5.000											
85	R6-1R (2S)	ONE WAY RIGHT ARROW	36	X	12	3.000						2					
86	R6-1R (2S)	ONE WAY RIGHT ARROW	36	X	12	3.000						2					
87	R6-1R (2S)	ONE WAY RIGHT ARROW	36	X	12	3.000						2					
88	R6-1R (2S)	ONE WAY RIGHT ARROW	36	X	12	3.000						2					
89	R6-4B (2S)	ROUNDABOUT CHEVRON BANK	60	X	24	10.000											
90	R6-4B (2S)	ROUNDABOUT CHEVRON BANK	60	X	24	10.000											

TYPE I&II PERMANENT SIGNING Category Code 1000

1060-33-94 SWAN BLVD

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**637.2230** SIGNS TYPE II RELFECTIVE F [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVING SIGNS TYPE II [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0816** POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	**643.0920** TRAFFIC CONTROL COVERING SIGNS TYPE II [EA]	**SPV.0105.1009** WAYFINDER POST ASSEMBLY SIGN # 1001 L.S	**SPV.0105.1010** WAYFINDER POST ASSEMBLY SIGN # 1002 L.S	**SPV.0105.1011** WAYFINDER POST ASSEMBLY SIGN # 1003 L.S	REMARKS / NEW SIGN LOCATION
91	R6-4B (2S)	ROUNDABOUT CHEVRON BANK	60	X	24	10.000											
92	R6-4B (2S)	ROUNDABOUT CHEVRON BANK	60	X	24	10.000											
93	NOT USED																
93A	NOT USED																
94	NOT USED					--											
94A	NOT USED					--											
95	R7-1D (2S)	NO PARKING ANYTIME DOUBLE ARR	18	X	24	3.000						1					8 foot mounting height per state plate A4-3S
96	R7-1D (2S)	NO PARKING ANYTIME DOUBLE ARR	18	X	24	3.000											
97	R4-7 (2S)	KEEP RIGHT	24	X	30	5.000						1					
98	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250						1					
99	R3-2 (2S)	NO LEFT TURN SYMBOL	24	X	24	4.000						1					
100	R7-1R (2S)	NO PARKING ANYTIME RIGHT ARROV	18	X	24	3.000						1					
101	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250						1					
102	R7-8A (2S)	RESERVED PARKING HANDICAP THI	12	X	18	1.500						1					
103	R7-8A (2S)	RESERVED PARKING HANDICAP THI	12	X	18	1.500						1					
104	R7-1L (2S)	NO PARKING ANYTIME LEFT ARROW	18	X	24	3.000						1					
105	R7-1D (2S)	NO PARKING ANYTIME DOUBLE ARR	18	X	24	3.000						1					
106	R7-7D (2S)	NO PARKING BUS STOP DOUBLE AR	18	X	24	3.000						1					
107	R7-7D (2S)	NO PARKING BUS STOP DOUBLE AR	18	X	24	3.000						1					
108	R7-1D (2S)	NO PARKING ANYTIME DOUBLE ARR	18	X	24	3.000						1					
109	NOT USED																
110	NONE	EXIT (TILT ARROW RIGHT)	24	X	24	4.000						1					

TYPE I&II PERMANENT SIGNING Category Code 1000

1060-33-94 SWAN BLVD

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLECTIVE H [SF]	**637.2230** SIGNS TYPE II RELFECTIVE F [SF]	**638.2602** REM SIGNS TYPE II [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVING SIGNS TYPE II [EA]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0816** POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	**643.0920** TRAFFIC CONTROL COVERING SIGNS TYPE II [EA]	**SPV.0105.1009** WAYFINDER POST ASSEMBLY SIGN # 1001 L.S	**SPV.0105.1010** WAYFINDER POST ASSEMBLY SIGN # 1002 L.S	**SPV.0105.1011** WAYFINDER POST ASSEMBLY SIGN # 1003 L.S	REMARKS / NEW SIGN LOCATION
111	NONE	FOREST EXPLORATION CENTER (A)	48	X	54	18.000						2					
112	NONE	FOREST EXPLORATION CENTER (A)	48	X	54	18.000						2					
1001	WAYFINDER	[A] FOREST EXPLORATION CENTER [A] UWM INNOVATION CAMPUS [A] MILW CO PARKS	78	X	72	39.000								1			
1002	WAYFINDER	[A] TO WATERTOWN PLK ROAD [A] FOREST EXPLORATION CENTER	78	X	72	39.000									1		
1003	WAYFINDER	[A] UWM INNOVATION CAMPUS [A] MILW CO PARKS ADMINISTRATION [A] TO WATERTOWN PLK ROAD	78	X	72	39.000										1	
UNDISTRIBUTED						--		40	13	2	2		1				TURN OVER SIGNS TO CITY
TOTALS						701.540	166.000	40	13	2	2	82	1	1	1	1	--

3

SHEET: 5 OF 5

RECTANGULAR RAPID FLASH BEACON - MISC QUANTITIES | Category Code 1000 | 1060-33-94 SWAN BLVD

LOCATION	Rectangular Rapid Flash Beacon (RRFB) System Station 204+65 BVWB right L.S. SPV.0105.1001	Rectangular Rapid Flash Beacon (RRFB) System Station 204+50 median left WB L.S. SPV.0105.1002	Rectangular Rapid Flash Beacon (RRFB) System Station 204+50 BVWB median left EB L.S. SPV.0105.1003	Rectangular Rapid Flash Beacon (RRFB) System Station 501+70 SE right L.S. SPV.0105.1004	Rectangular Rapid Flash Beacon (RRFB) System Station 300+50 SW right L.S. SPV.0105.1005	Rectangular Rapid Flash Beacon (RRFB) System Station 202+30 median island left EB L.S. SPV.0105.1006	Rectangular Rapid Flash Beacon (RRFB) System Station 202+30 median island left WB L.S. SPV.0105.1007	Rectangular Rapid Flash Beacon (RRFB) System Station 100+60 NW right L.S. SPV.0105.1008
Station 204+65 BVWB right	1							
Station 204+50 median left WB		1						
Station 204+50 BVWB median left EB			1					
Station 501+70 SE right				1				
Station 300+50 SW right					1			
Station 202+30 median left EB						1		
Station 202+30 median left WB							1	
Station 100+60 NW right								1
TOTAL	1	1	1	1	1	1	1	1

3

SHEET: 1 OF 1

PROJECT NO:1060-33-94	HWY: SWAN BLVD	COUNTY:MILWAUKEE	MISCELLANEOUS QUANTITIES – RECTANGULAR RAPID FLASH BEACON	SHEET:	E

3

CATEGORY 1100
LIGHTING REMOVAL ITEMS

204.0195	REMOVING CONCRETE BASES
SPV.0060.01	REMOVING LUMINAIRES
SPV.0060.02	LUMINAIRES UTILITY SALVAGED
SPV.0060.03	REMOVING LIGHTING UNITS
SPV.0060.04	LIGHTING UNITS SALVAGED

SYSTEM	LOCATION	ITEM	204.0195 REMOVING CONCRETE BASES	SPV.0060.01 REMOVING LUMINAIRES	SPV.0060.02 LUMINAIRES UTILITY SALVAGED	SPV.0060.03 REMOVING LIGHTING UNITS	SPV.0060.04 LIGHTING UNITS SALVAGED
			EACH	EACH	EACH	EACH	EACH
89	193+61BV, 28' LT	8932	1	--	1	1	--
89	194+04BV, 32' RT	8955	1	--	1	1	--
89	195+03BV, 33' RT	8956	1	--	1	1	--
89	195+13BV, 28' LT	8931	1	--	1	1	--
89	196+60BV, 30' RT	8957	1	--	1	1	--
89	198+11BV, 30' LT	8930	1	--	1	1	--
89	199+62BV, 30' RT	8958	1	--	1	1	--
89	201+12VWB, 21' LT	8927	1	--	1	1	--
89	301+00SW, 04' LT	89YY	1	--	1	1	--
89	29+89SB, 16' LT	XXYY	1	--	1	1	1
89	29+22SB, 24' LT	XXYY	1	--	1	1	1
89	29+16SB, 49' RT	XXYY	1	--	1	1	1
89	29+84SB, 57' LT	XXYY	1	--	1	1	1
89	401+33NE, 18' RT	XXYY	1	1	--	1	--
89	205+59VWB, 20' RT	89YY	1	1	--	1	--
89	207+11VWB, 31' LT	89YY	1	1	--	1	--
89	208+61BV, 29' RT	89YY	1	1	--	1	--
89	210+10BV, 29' LT	89YY	1	1	--	1	--
89	211+57BV, 29' RT	89YY	1	1	--	1	--
89	212+94BV, 31' LT	89YY	1	1	--	1	--
	TOTAL (XXXX)		**20**	**7**	**13**	**20**	**4**

CATEGORY 1100
LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH

SYSTEM	LOCATION TO LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	COMMENTS
89	POLE 192+50BV TO POLE 193+65BV	115	--
89	POLE 193+65BV TO POLE 195+25BV	160	--
89	POLE 194+40BV TO POLE 196+65BV	225	--
89	POLE 195+25BV TO POLE 198+15BV	290	--
89	POLE 196+65BV TO POLE 199+60BV	295	--
89	POLE 198+15BV TO POLE 201+10VWB	295	--
89	POLE 199+60BV TO POLE 300+45SW	255	--
89	POLE 201+10BVWB TO POLE 200+80NW	170	--
89	POLE 200+80 NW TO POLE 201+80NW	100	--
89	POLE 201+80NW TO POLE 33+85NB	140	--
89	POLE 33+85NB TO STUBOUT WEST	25	--
89	POLE 300+45SW TO POLE 301+50SW	105	--
89	POLE 301+50SW TO POLE 29+10SB	100	--
89	POLE 29+10SB TO 27+80SB	140	INTERCEPT EXISTING CONDUIT
89	POLE 29+40NB TO POLE 27+80NB	160	INTERCEPT EXISTING CONDUIT
89	POLE 29+40NB TO POLE 501+40SE	120	--
89	POLE 501+40SE TO POLE 205+60BVEB	150	--
89	POLE 205+60BVEB TO POLE 208+60BV	300	--
89	POLE 208+60BV TO POLE 211+55BV	295	--
89	POLE 211+55BV TO STUBOUT EAST	25	--
89	STUBOUT NORTH TO POLE 32+60NB	25	--
89	POLE 32+60NB TO POLE 400+90NE	100	--
89	POLE 400+90NE TO POLE 402+05NE	115	--
89	POLE 402+05NE TO POLE 207+05BVWB	225	--
89	POLE 207+05BVWB TO POLE 210+10BV	305	--
89	POLE 210+10BV TO POLE 212+95BV	285	--
89	POLE 212+95 TO STUBOUT EAST	25	--
	TOTAL (XXXX)	**4,545**	

CATEGORY 1100
LIGHTING WIRE QUANTITIES
120/240 VAC 3-WIRE ISOLATED NEUTRAL SYSTEM

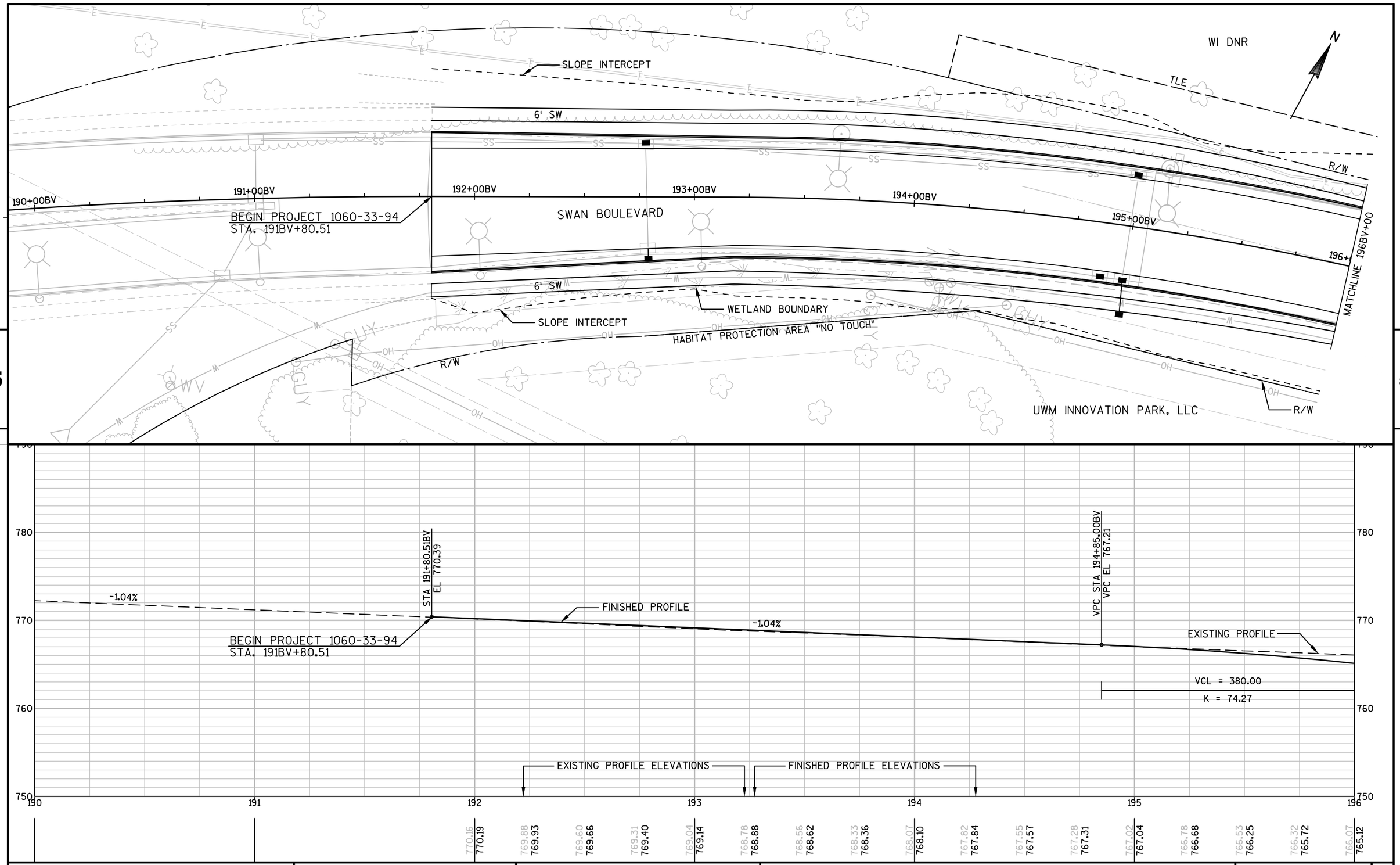
655.0620 ELECTRICAL WIRE LIGHTING 8 AWG
655.0625 ELECTRICAL WIRE LIGHTING 6 AWG

SYSTEM	NETWORK	LOCATION TO LOCATION	DISTANCE	655.0620 8 AWG LF	655.0625 6 AWG LF
89	A/B/N/G	POLE 192+50BV TO POLE 193+65BV	115	115	345
89	A/B/N/G	POLE 193+65BV TO POLE 195+25BV	160	160	480
89	A/B/N/G	POLE 194+40BV TO POLE 196+65BV	225	225	675
89	A/B/N/G	POLE 195+25BV TO POLE 198+15BV	290	290	870
89	A/B/N/G	POLE 196+65BV TO POLE 199+60BV	295	295	885
89	A/B/N/G	POLE 198+15BV TO POLE 201+10VWB	295	295	885
89	A/B/N/G	POLE 199+60BV TO POLE 300+45SW	255	255	765
89	A/B/N/G	POLE 201+10BVWB TO POLE 200+80NW	170	170	510
89	A/B/N/G	POLE 200+80 NW TO POLE 201+80NW	100	100	300
89	A/B/N/G	POLE 201+80NW TO POLE 33+85NB	140	140	420
89	A/B/N/G	POLE 33+85NB TO STUBOUT WEST	25	25	75
89	A/B/N/G	POLE 300+45SW TO POLE 301+50SW	105	105	315
89	A/B/N/G	POLE 301+50SW TO POLE 29+10SB	100	100	300
89	A/B/N/G	POLE 29+10SB TO 27+80SB	140	140	420
89	A/B/N/G	POLE 29+40NB TO POLE 27+80NB	160	160	480
89	A/B/N/G	POLE 29+40NB TO POLE 501+40SE	120	120	360
89	A/B/N/G	POLE 501+40SE TO POLE 205+60BVEB	150	150	450
89	A/B/N/G	POLE 205+60BVEB TO POLE 208+60BV	300	300	900
89	A/B/N/G	POLE 208+60BV TO POLE 211+55BV	295	295	885
89	A/B/N/G	POLE 211+55BV TO STUBOUT EAST	25	25	75
89	A/B/N/G	STUBOUT NORTH TO POLE 32+60NB	25	25	75
89	A/B/N/G	POLE 32+60NB TO POLE 400+90NE	100	100	300
89	A/B/N/G	POLE 400+90NE TO POLE 402+05NE	115	115	345
89	A/B/N/G	POLE 402+05NE TO POLE 207+05BVWB	225	225	675
89	A/B/N/G	POLE 207+05BVWB TO POLE 210+10BV	305	305	915
89	A/B/N/G	POLE 210+10BV TO POLE 212+95BV	285	285	855
89	A/B/N/G	POLE 212+95 TO STUBOUT EAST	25	25	75
		TOTAL (XXXX)		**4,545**	**13,635**

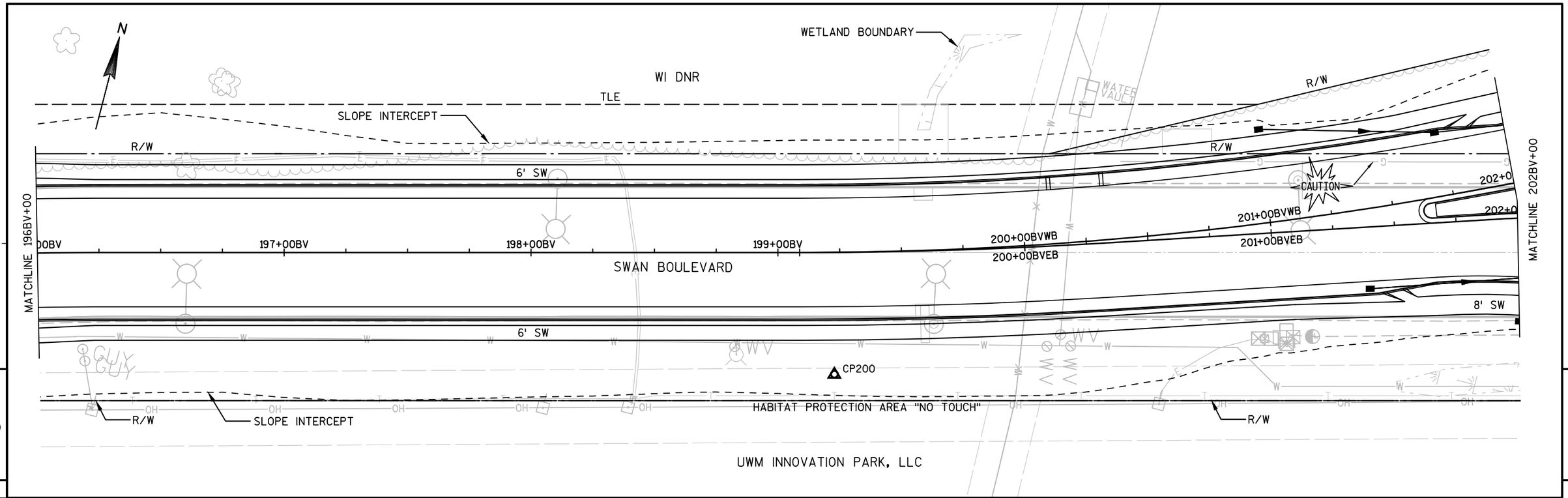
CATEGORY 1100
LIGHT POLE QUANTITIES 6-INCH ARM CLAMPS
240/480 VAC

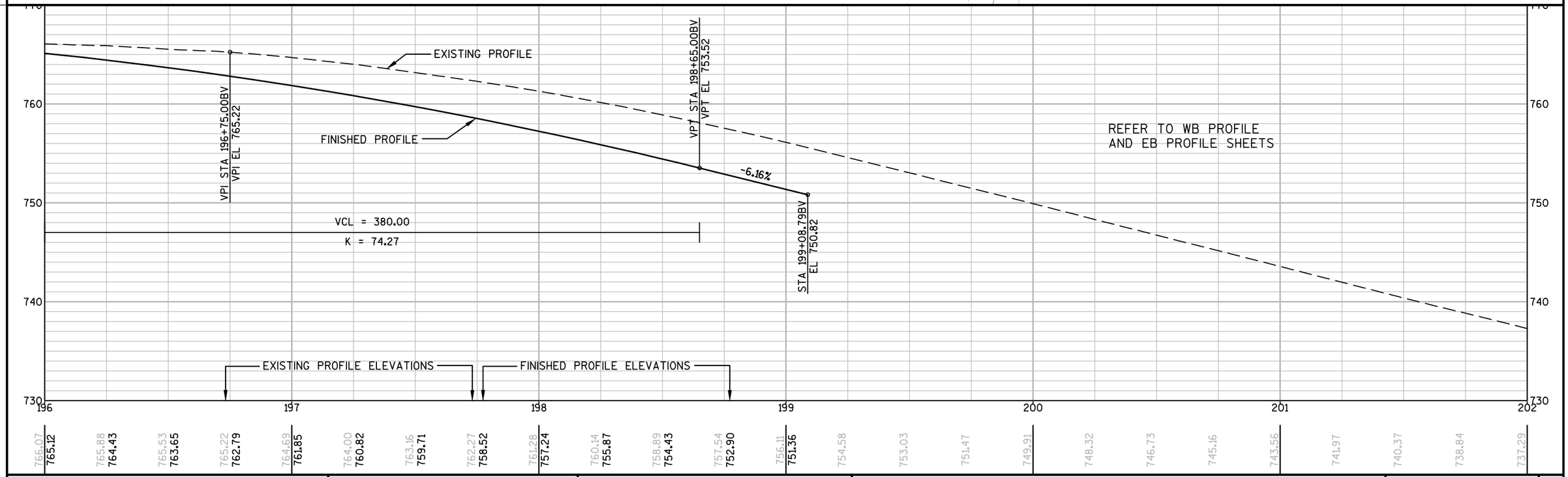
654.0105	CONCRETE BASES TYPE 5
655.0610	ELECTRICAL WIRE LIGHTING 12 AWG
657.0322	POLES TYPE 5-ALUMINUM
657.0610	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT
SPV.0060.06	LUMINAIRES UTILITY LED C 3000K

SYSTEM	STATION	OFFSET	ITEM	654.0105 CONCRETE BASES TYPE 5	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	657.0322 POLES TYPE 5 ALUMINUM	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT	SPV.0060.06 LUMINAIRES UTILITY LED C 3000K
				EACH	L.F.	EACH	EACH	EACH
89	192+50BV	30' LT	LP	1	144	1	1	--
89	193+65BV	30' LT	LP	1	144	1	1	--
89	194+40BV	30' RT	LP	1	144	1	1	--
89	195+25BV	30' LT	LP	1	144	1	1	--
89	196+65BV	35' LT	LP	1	144	1	1	--
89	198+15BV	35' LT	LP	1	144	1	1	--
89	199+60BV	35' LT	LP	1	144	1	1	--
89	201+10VWB	35' LT	LP	1	144	1	1	--
89	300+45SW	05' RT	LP	1	144	1	1	--
89	301+50SW	05' RT	LP	1	144	--	--	--
89	29+10SB	25' LT	LP	1	144	--	--	--
89	200+80NW	05' LT	LP	1	144	1	1	1
89	201+80NW	05' LT	LP	1	144	1	1	1
89	33+85NB	20' LT	LP	1	144	1	1	1
89	32+60NB	05' LT	LP	1	144	1	1	1
89	400+90NE	05' LT	LP	1	144	1	1	1
89	402+05NE	05' LT	LP	1	144	1	1	1
89	500+40SE	05' LT	LP	1	144	--	--	--
89	501+45SE	05' LT	LP	1	144	--	--	--
89	205+60VEB	37' LT	LP	1	144	1	1	1
89	207+05VWB	35' LT	LP	1	144	1	1	1
89	208+60BV	35' RT	LP	1	144	1	1	1
89	210+10BV	35' LT	LP	1	144	1	1	1
89	211+55BV	40' RT	LP	1	144	1	1	1
89	212+95BV	35' LT	LP	1	144	1	1	1
TOTAL (XXXX)				**25**	**3,600**	**21**	**21**	**12**



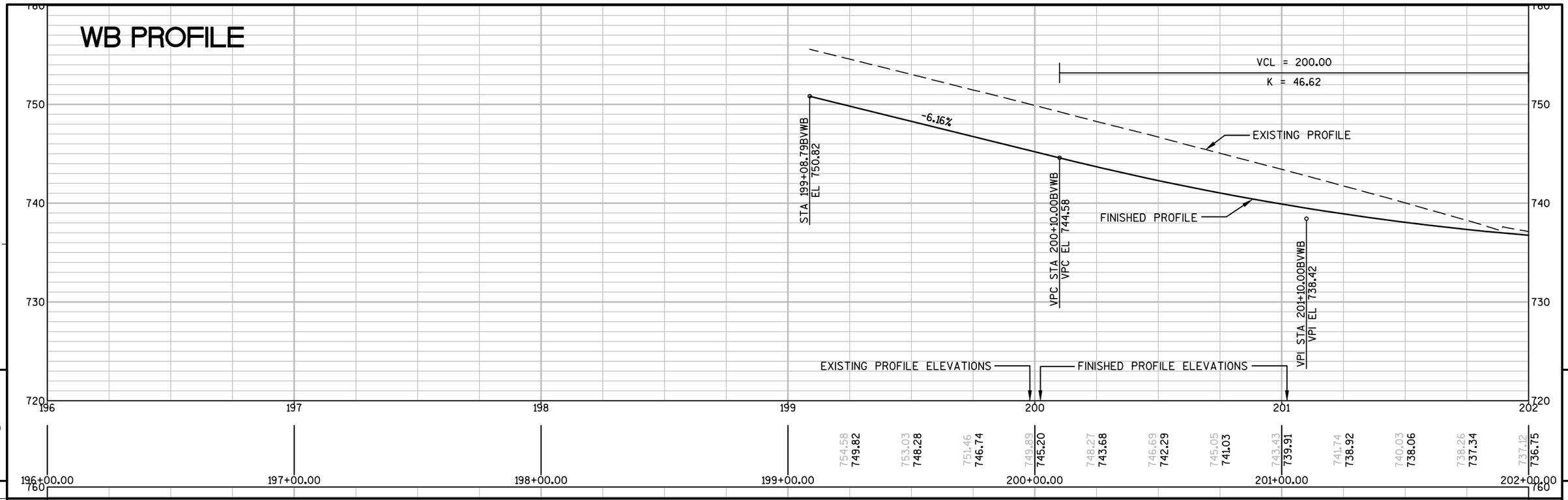
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 142	E



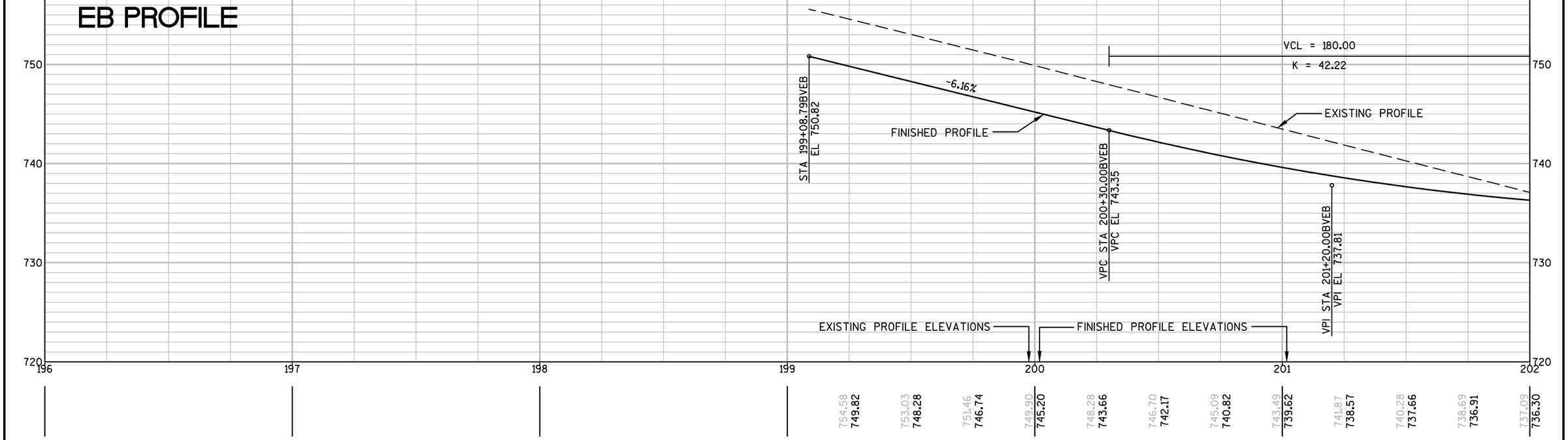


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 143	E

WB PROFILE

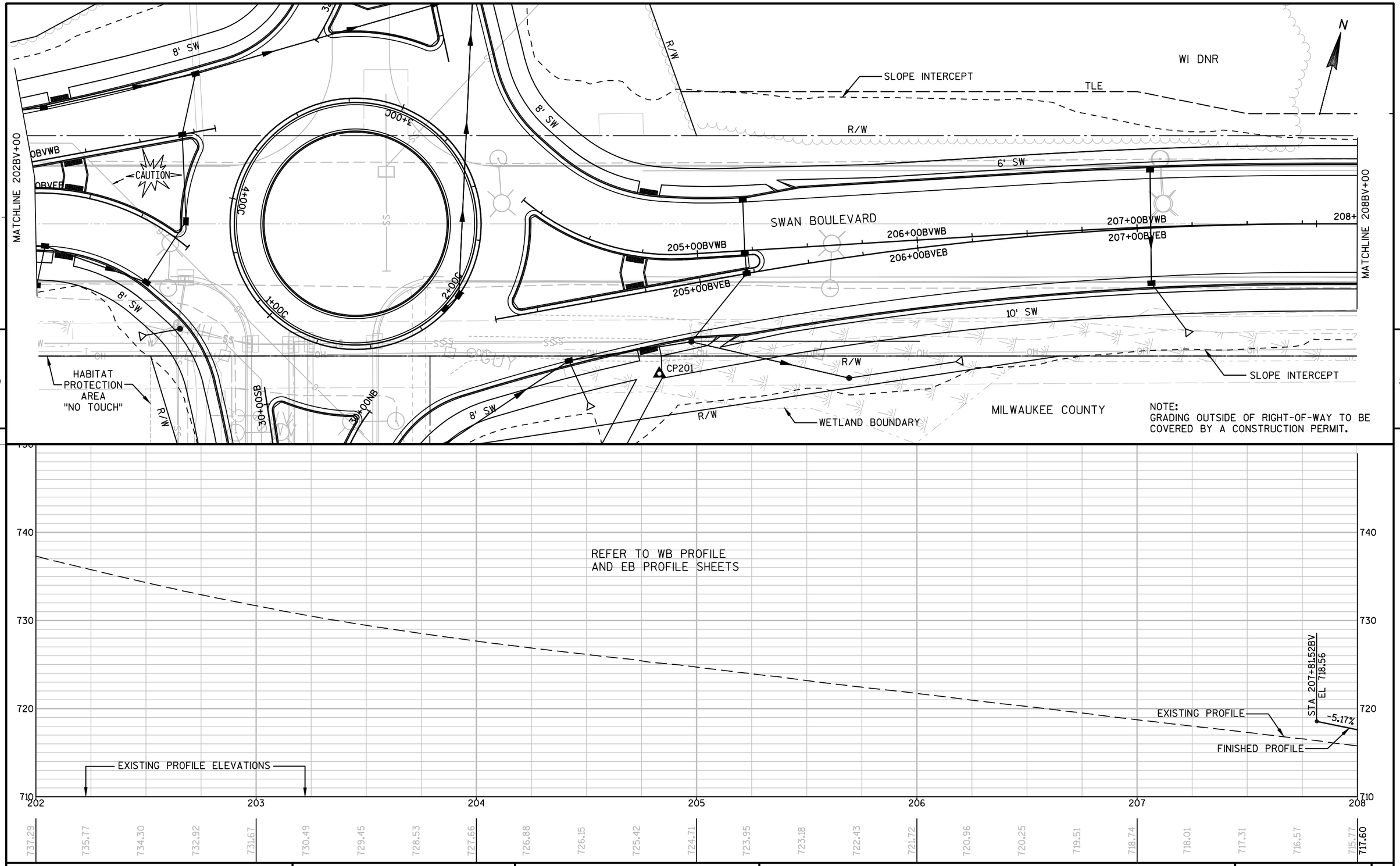


EB PROFILE

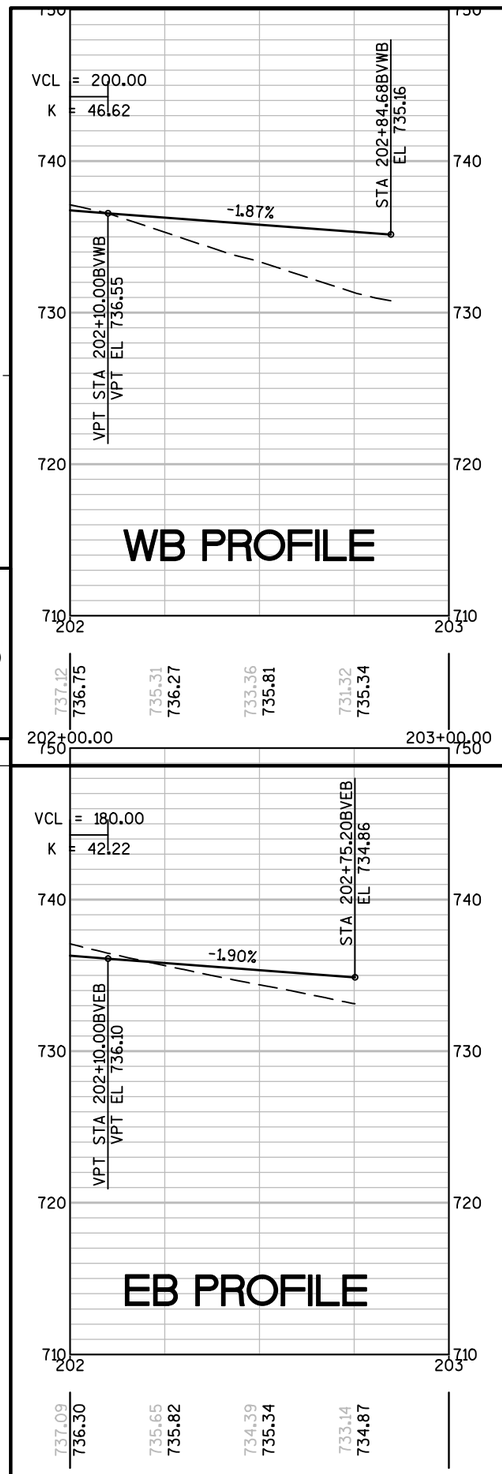


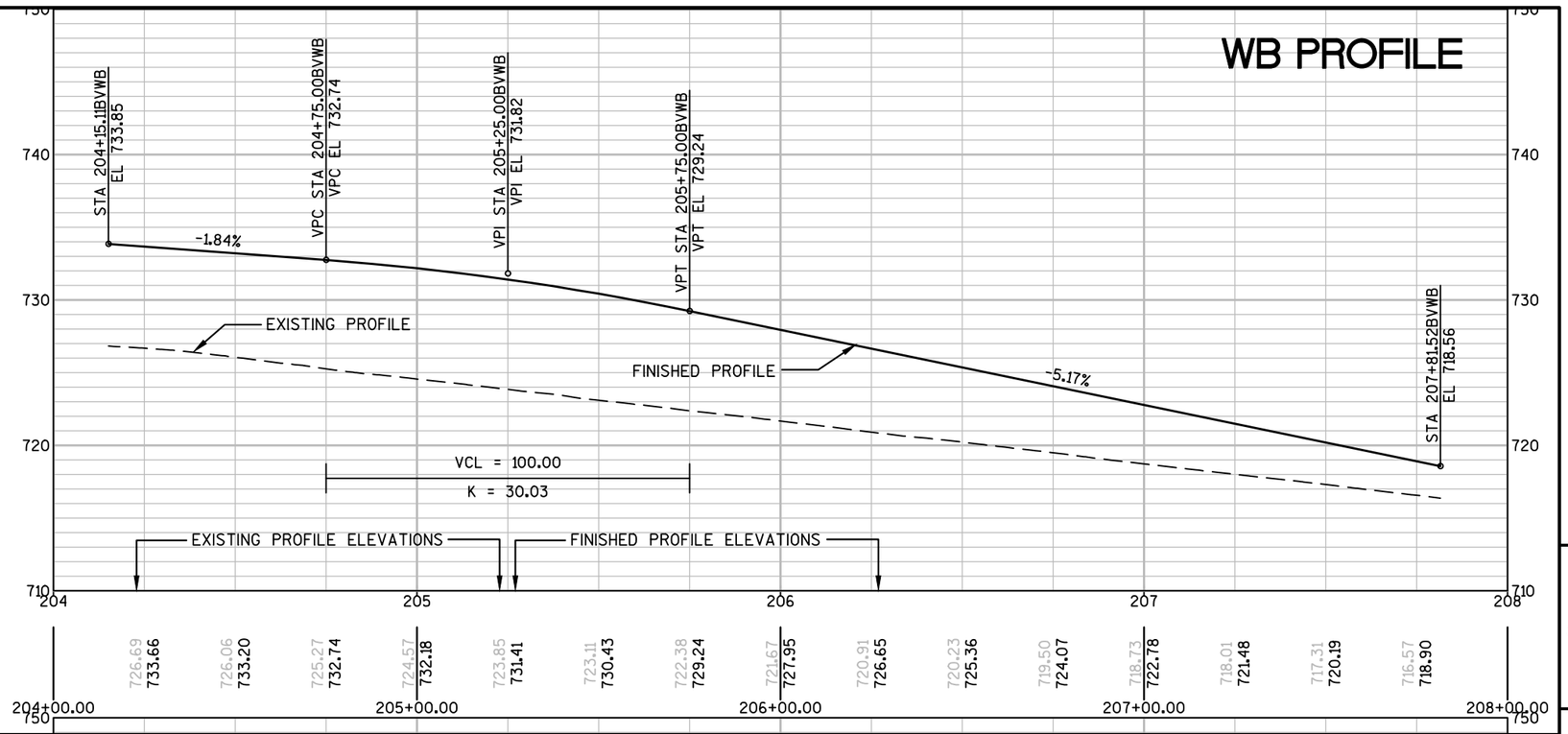
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 144	E

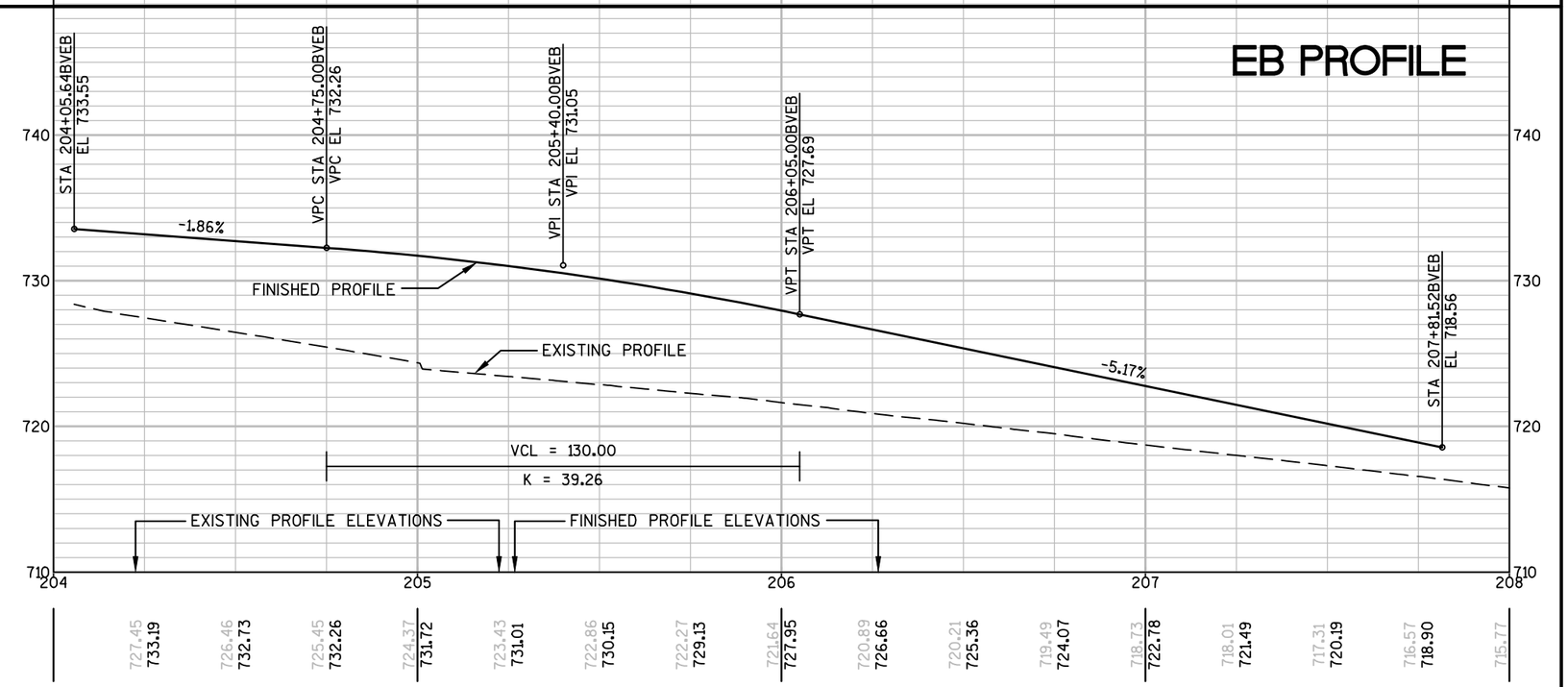
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050101_PP.DWG PLOT DATE : 6/13/2016 7:29 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1"= 40FT H 1"=10FT V



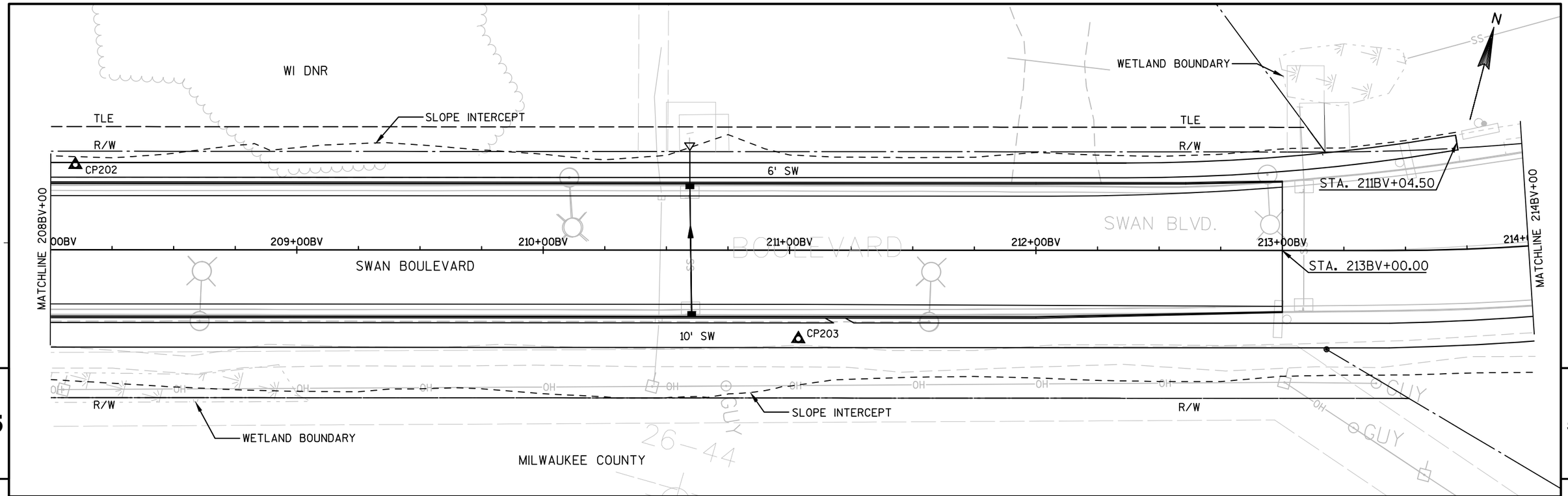
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 145	E

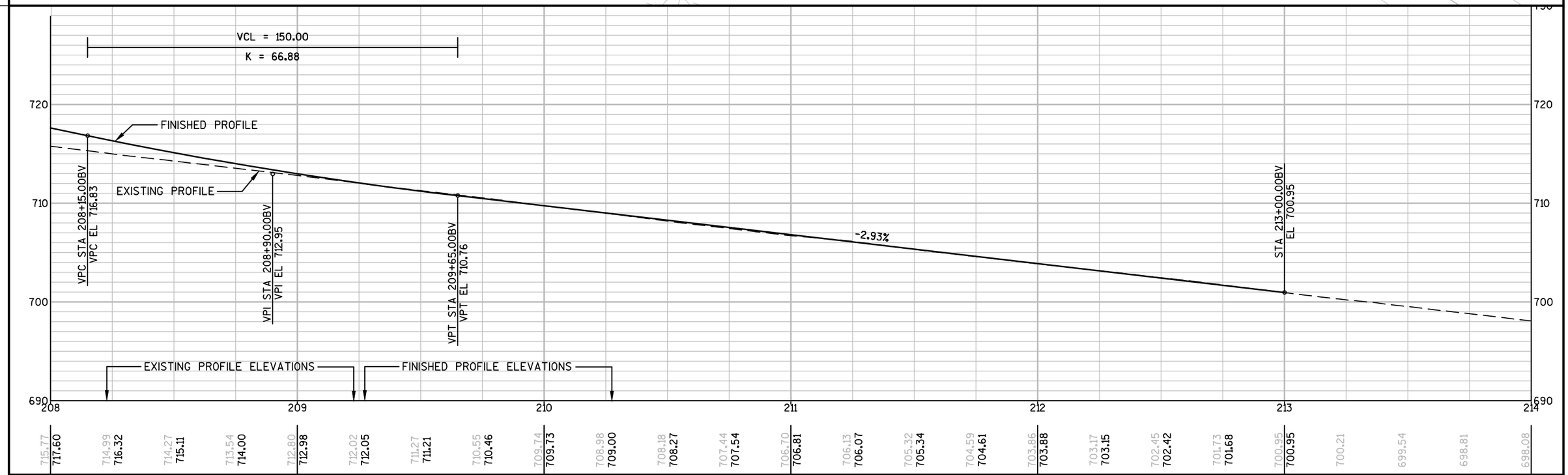






PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 146	E





PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 147 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050101_PP.DWG PLOT DATE : 10/12/2018 9:24 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1:40_XREF

WI DNR

R/W

MATCHLINE 214BV+00

00BV

SWAN BOULEVARD

215+00BV

216+00BV

217+00BV

218+00BV

219+00BV

220+00BV

10' SW

END PROJECT 1060-33-94
STA. 215BV+37.06

SLOPE INTERCEPT

MILWAUKEE COUNTY

R/W

CP24

CP204

CONC

ASPH

5

5

N

700

690

680

670

EXISTING PROFILE

EXISTING PROFILE ELEVATIONS

214 215 216 217 218 219 220

696.51 695.84 695.16 694.55 693.77 693.07 692.44 691.70 691.04 690.33 689.63 688.98 688.29 687.61 686.93 686.27 685.58 684.90 684.16 683.52 682.84

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: SWAN BOULEVARD	SHEET 148 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050101_PP.DWG PLOT DATE : 10/12/2018 9:40 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1:40_XREF

HABITAT PROTECTION AREA "NO TOUCH"

N

R/W

SLOPE INTERCEPT

R/W

8' SW

CONSTRUCTION LIMITS
STA. 26+41.00

27+00SB

28+00SB

29+00SB

30+00SB

DISCOVERY PARKWAY

27+00NB

28+00NB

29+00NB

30+00NB

CAUTION

6' SW

8' SW

R/W

R/W

SLOPE INTERCEPT

R/W

WETLAND BOUNDARY

MILWAUKEE COUNTY

4+00C

3+00C

2+00C

5

5

REFER TO SB PROFILE
AND NB PROFILE SHEETS

EXISTING PROFILE

EXISTING PROFILE ELEVATIONS

750
740
730
720

25 26 27 28 29 30 31

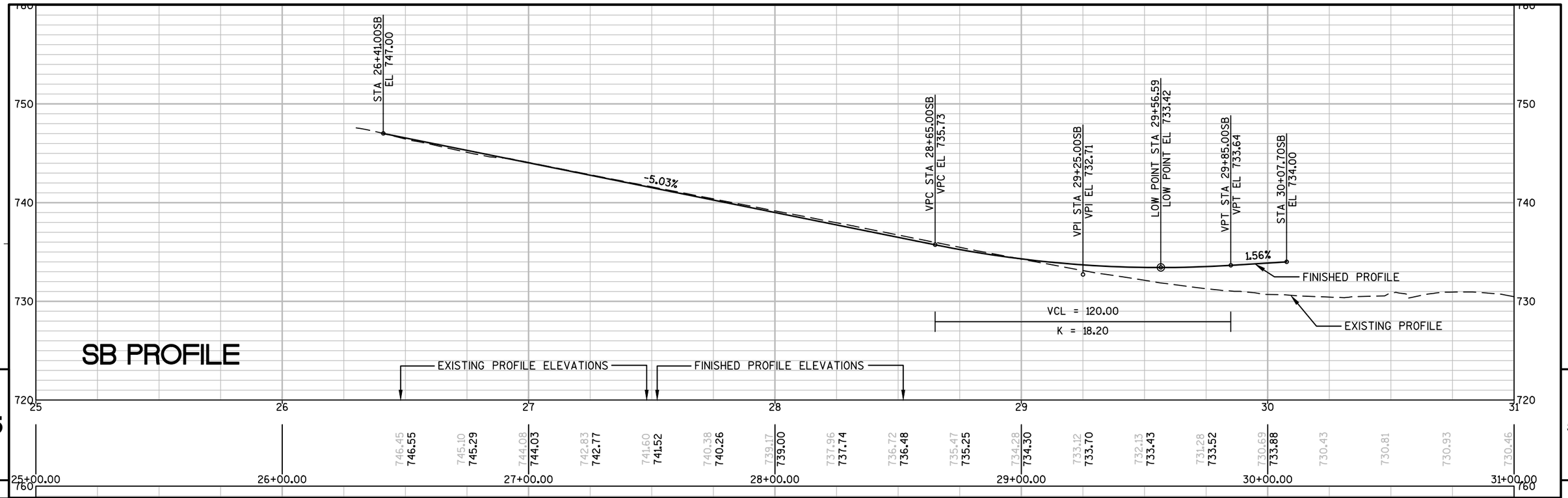
746.57 745.17 744.43 743.17 741.90 740.72 739.51 738.33 736.76 735.57 734.35 733.18 732.19 731.36 730.69 730.19 730.13 730.42

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: DISCOVERY PARKWAY	SHEET 149	E

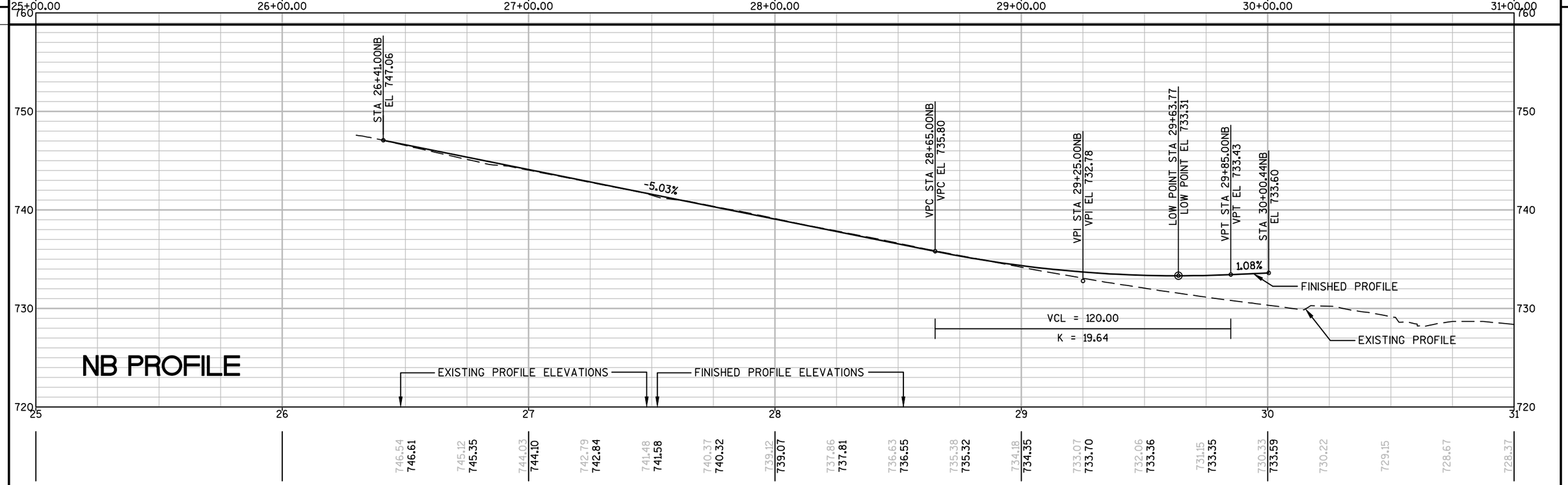
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050101_PP.DWG PLOT DATE : 11/21/2017 3:09 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 44

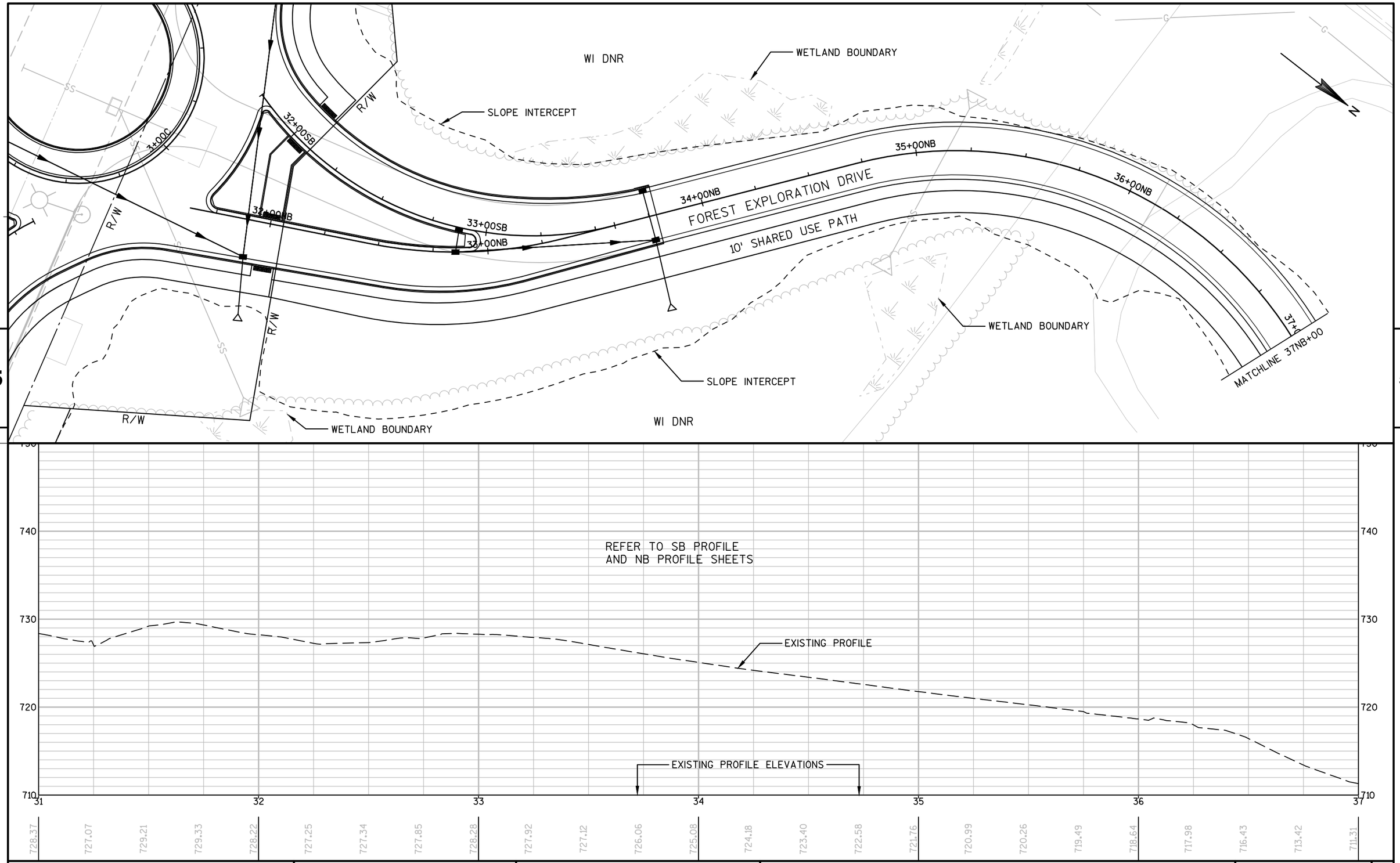
SB PROFILE



NB PROFILE



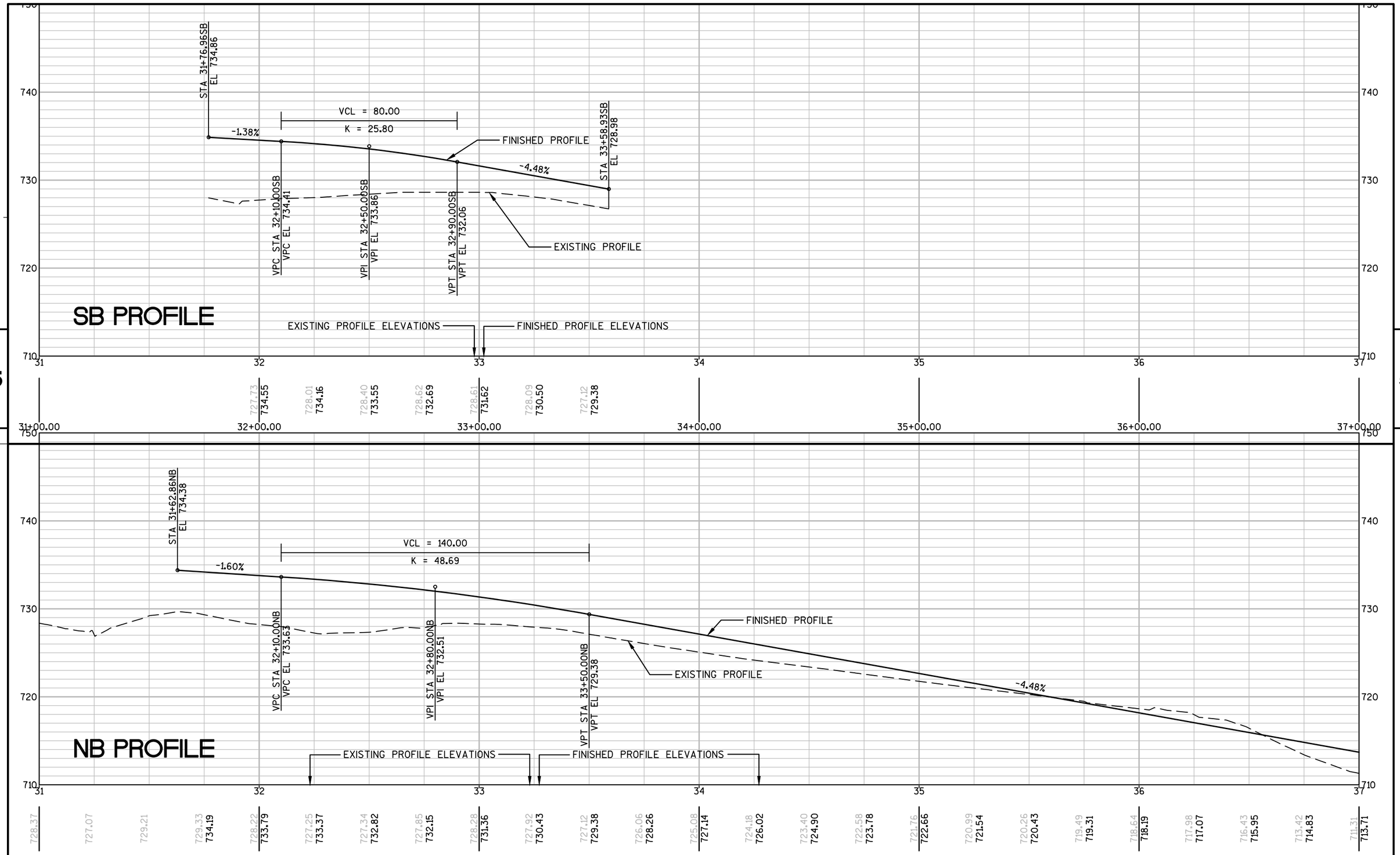
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: DISCOVERY PARKWAY	SHEET 150	E



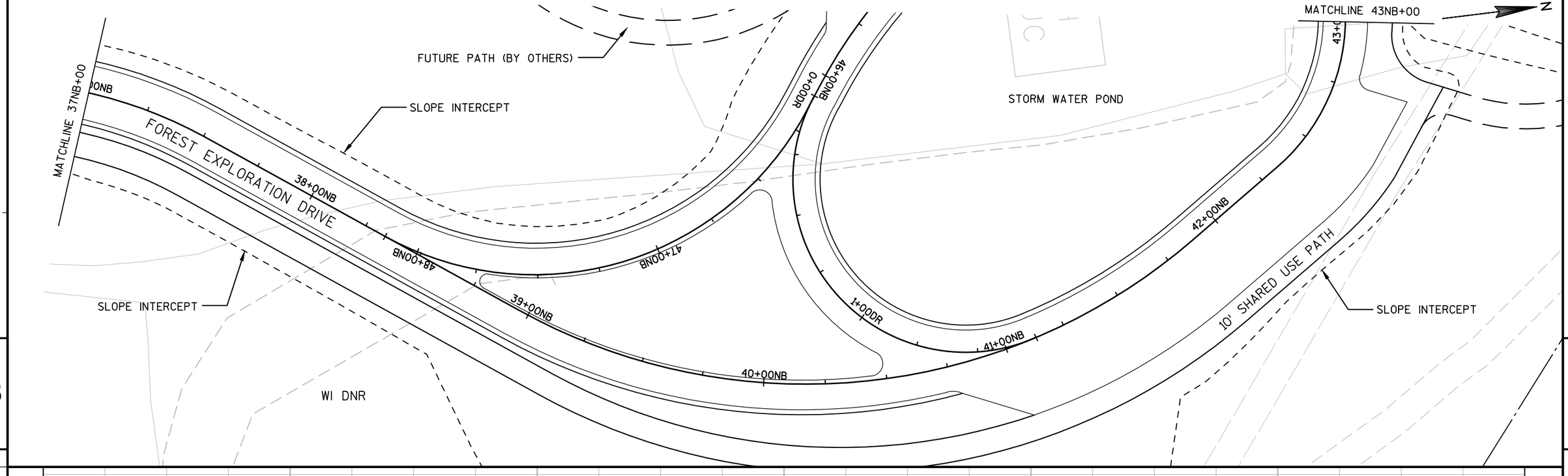
5

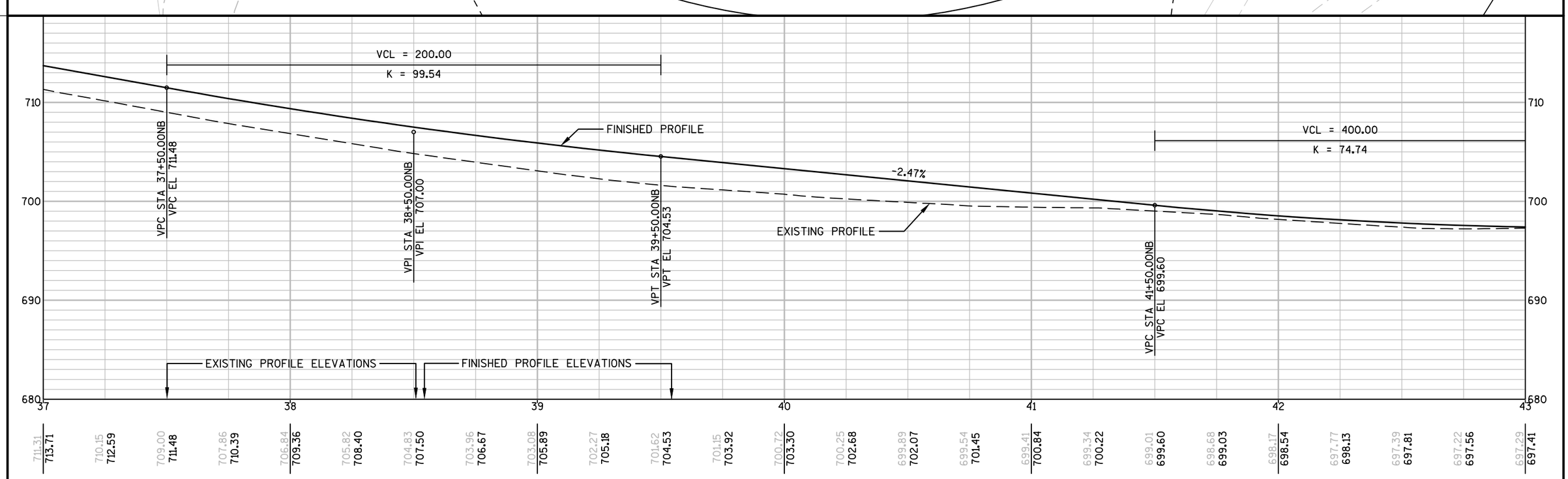
5

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: FOREST EXPLORATION DRIVE	SHEET 151	E



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: FOREST EXPLORATION DRIVE	SHEET 152	E



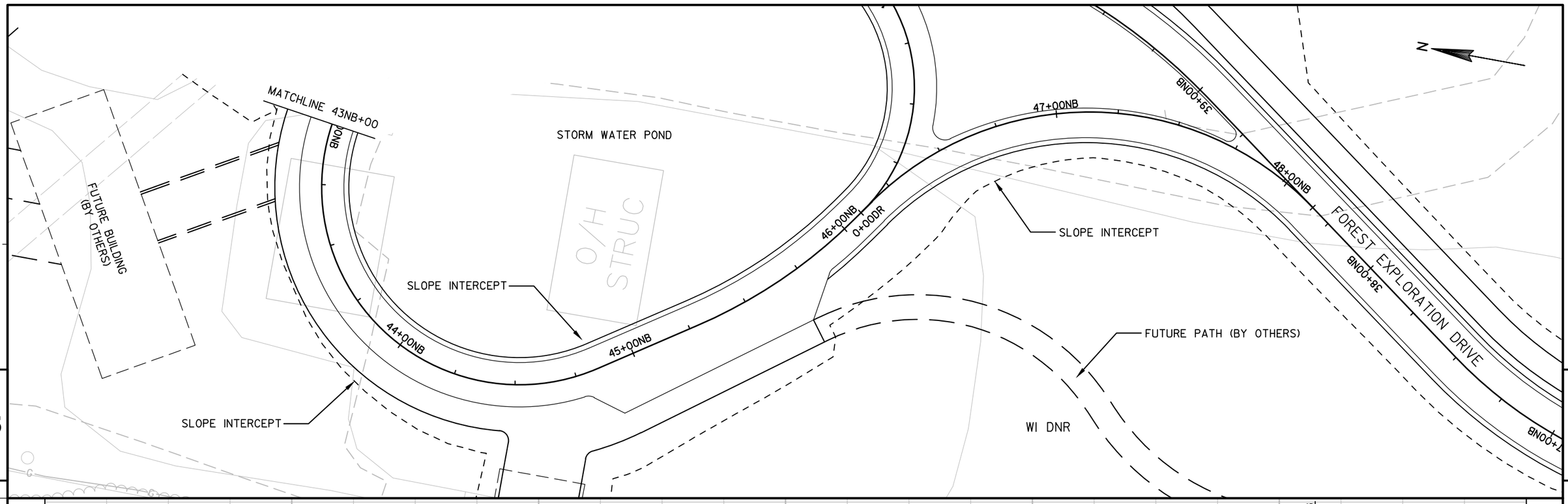


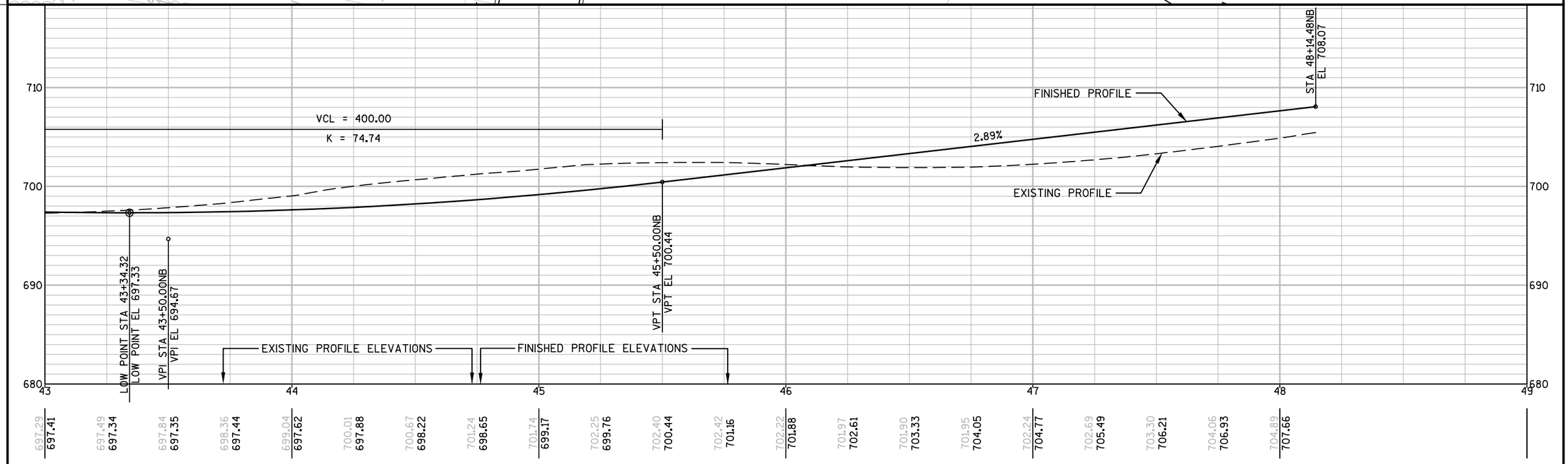
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: FOREST EXPLORATION DRIVE	SHEET 153	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050103_PP.DWG
LAYOUT NAME - 050127

PLOT DATE : 10/17/2018 2:14 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

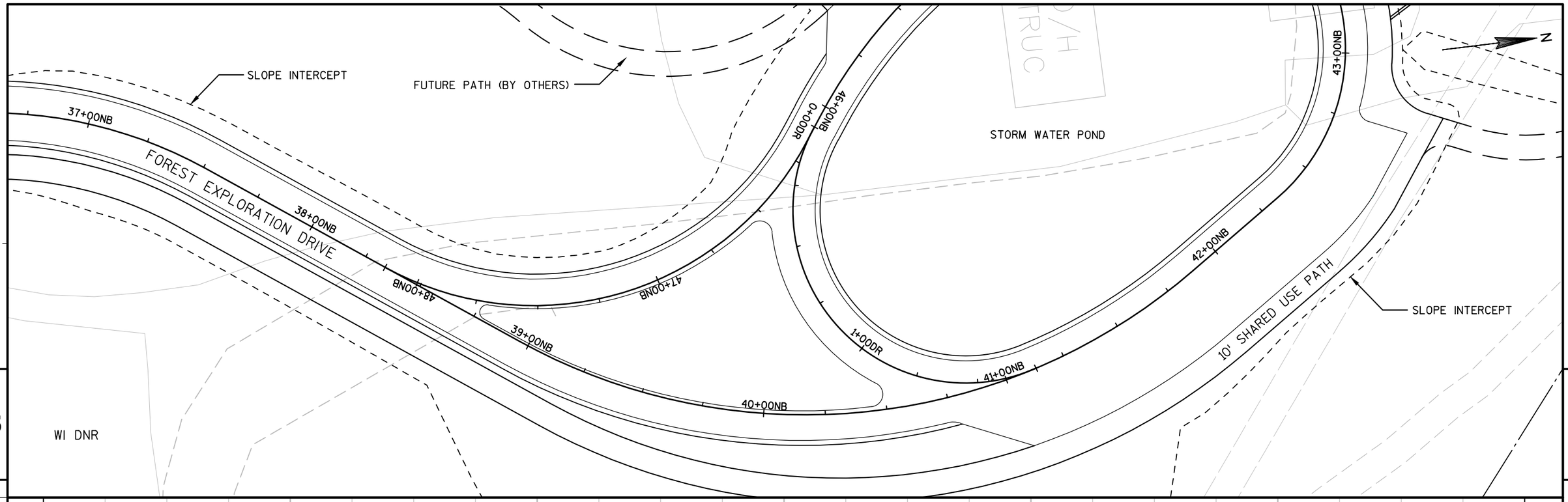
WISDOT/CADDS SHEET 44

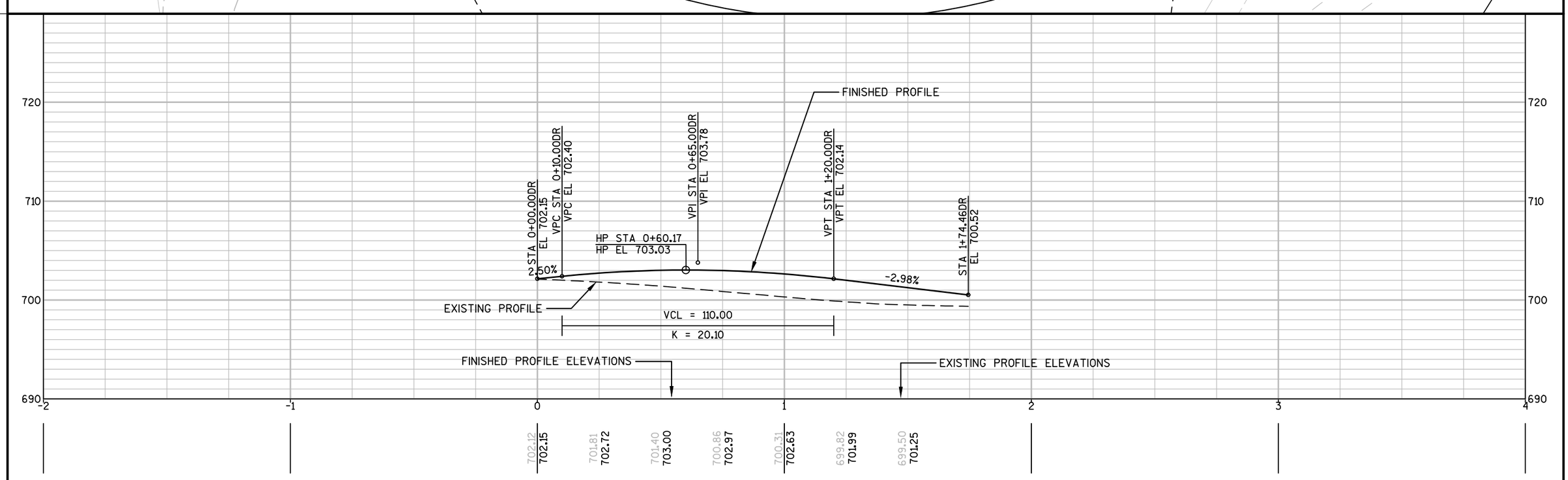




PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: FOREST EXPLORATION DRIVE	SHEET 154	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050103_PP.DWG
LAYOUT NAME - 050128
PLOT DATE : 10/17/2018 2:16 PM
PLOT BY : JOHANSEN, AMANDA A PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44



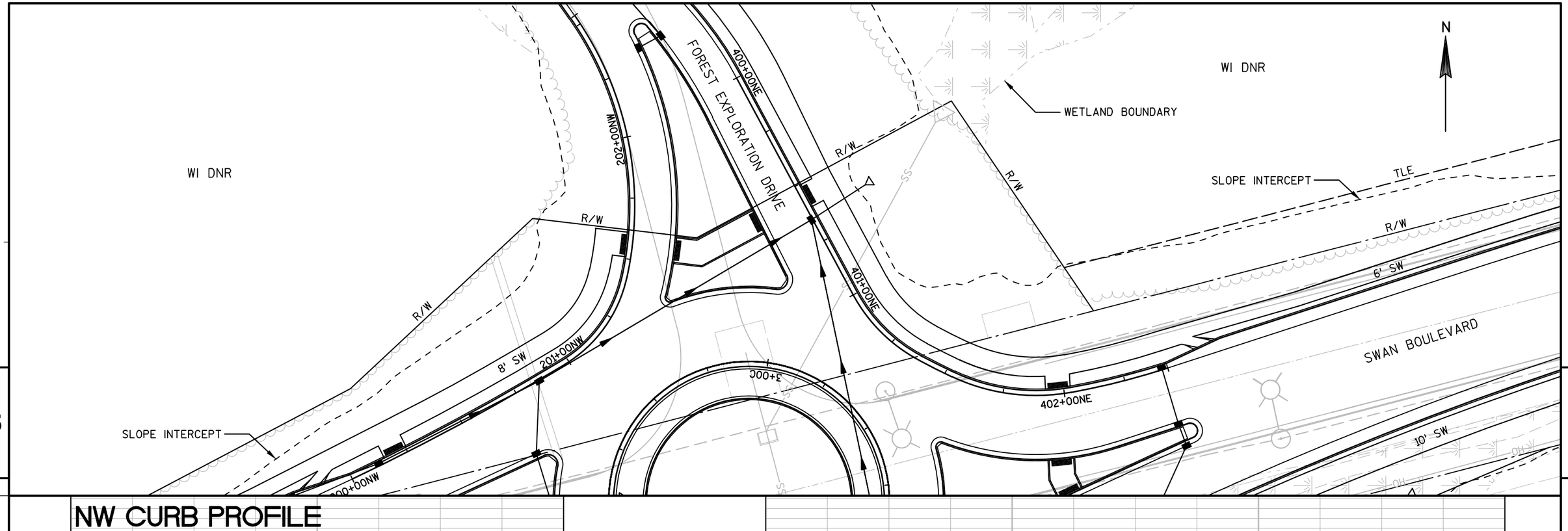


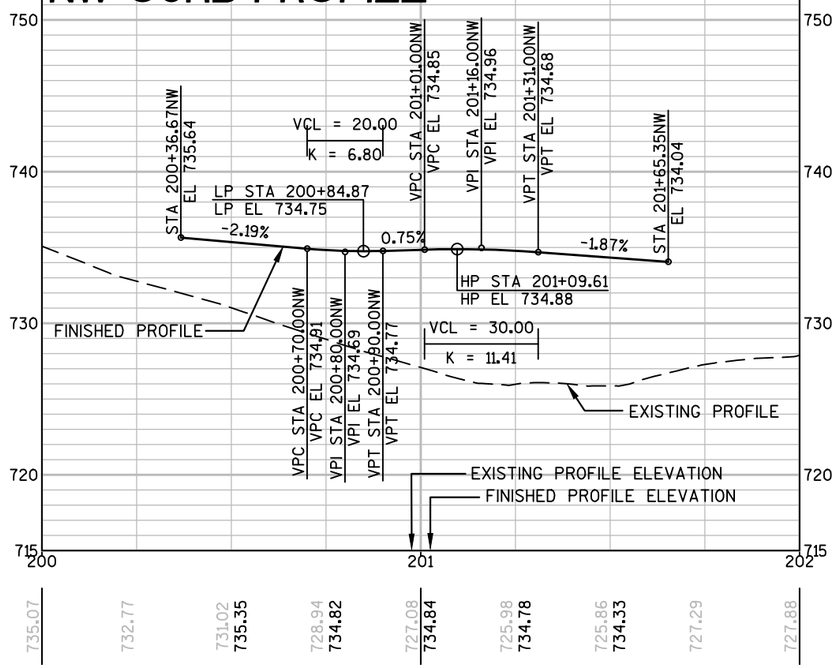
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: FOREST EXPLORATION DRIVE	SHEET 155	E

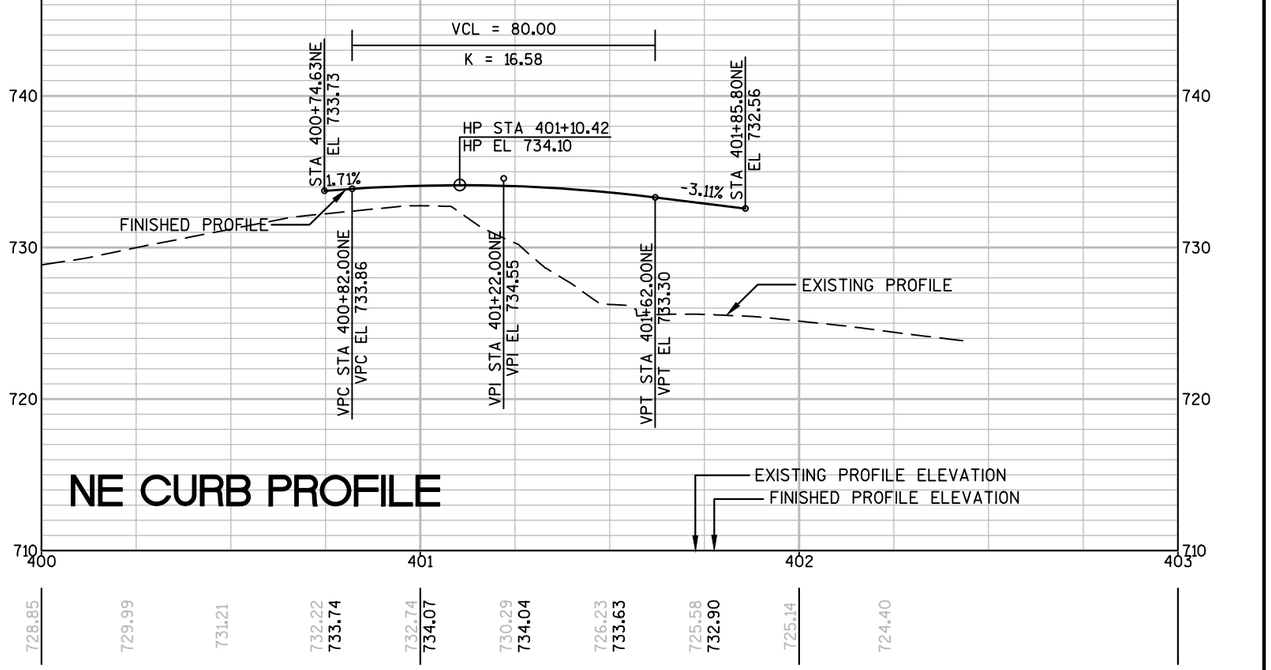
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\050103_PP.DWG
LAYOUT NAME - 050127

PLOT DATE : 10/17/2018 2:18 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

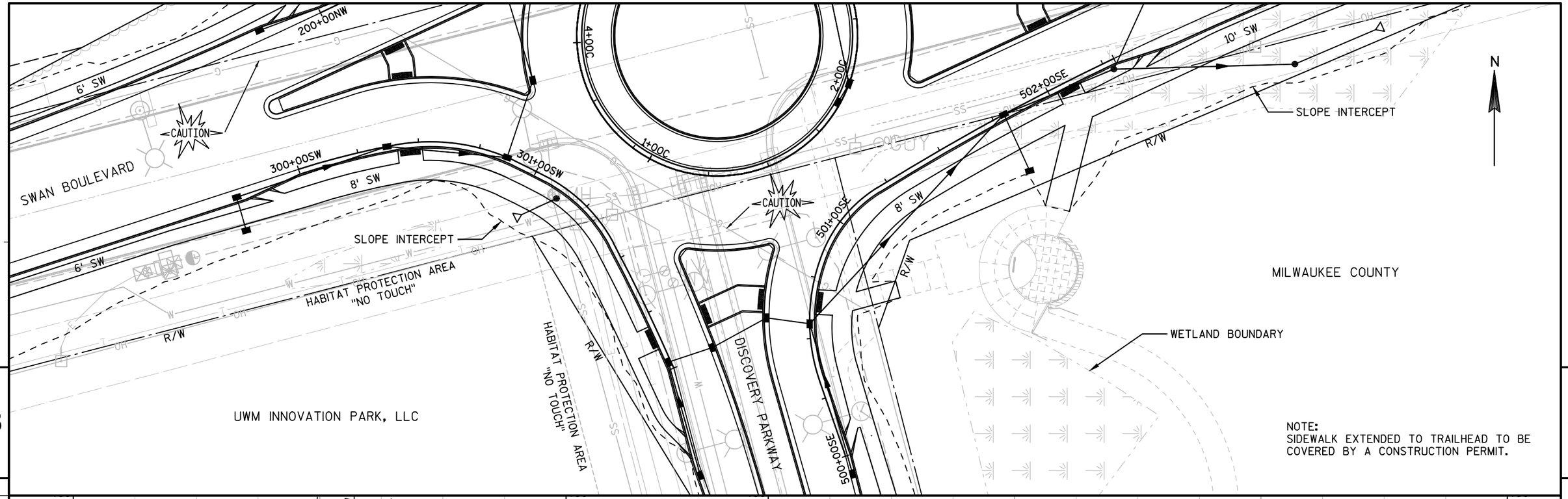
WISDOT/CADDS SHEET 44

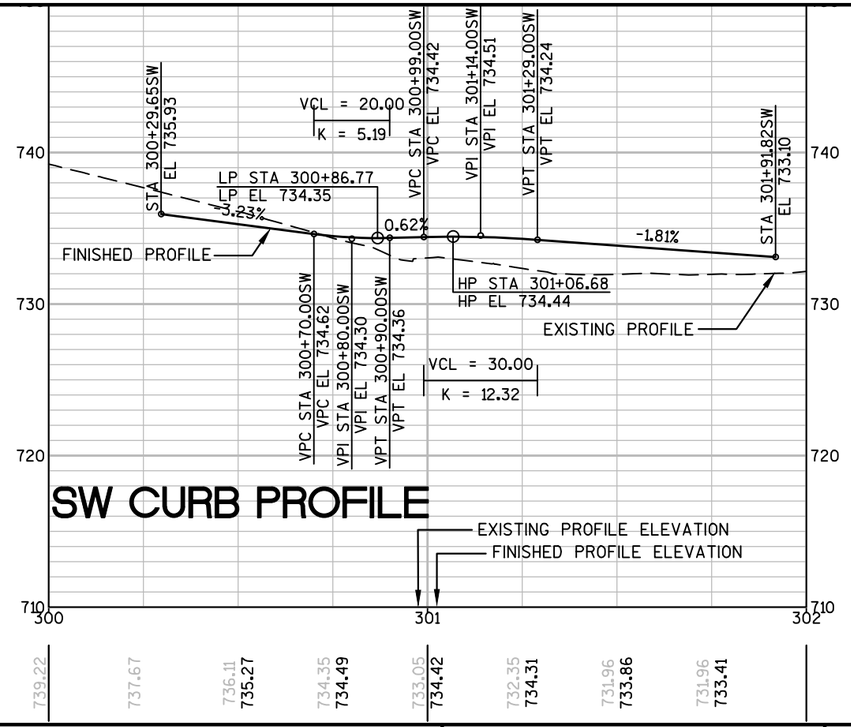


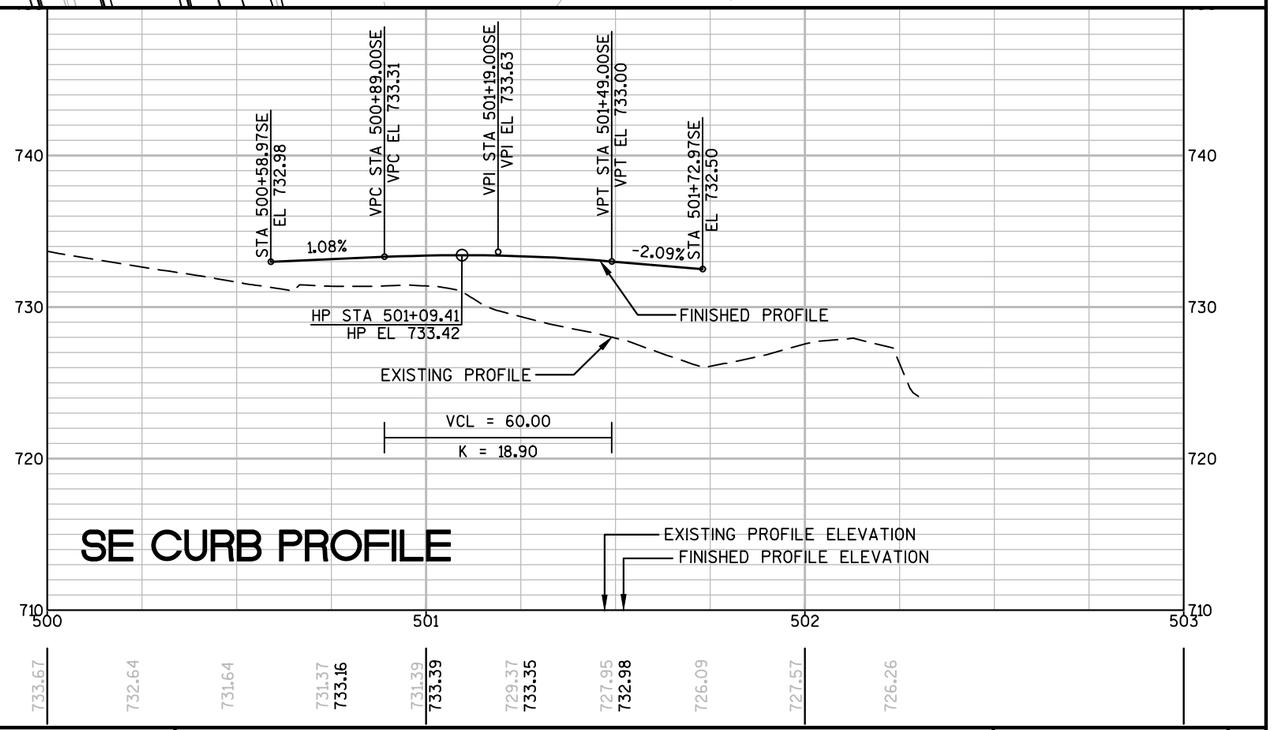




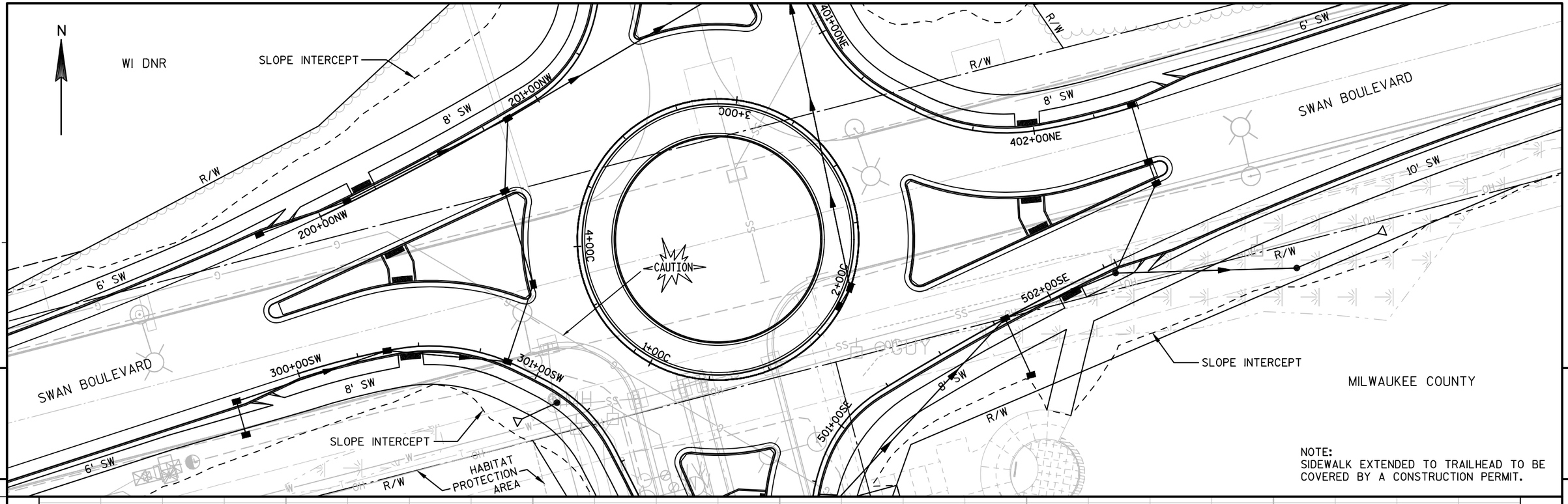
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: ROUNDABOUT CURB RETURNS	SHEET 156	E







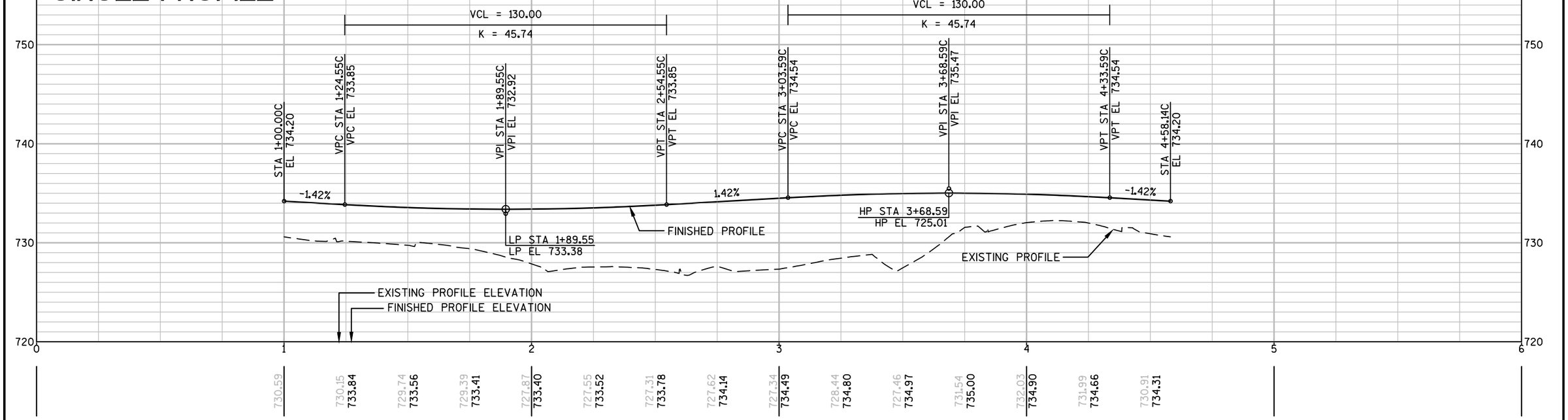
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: ROUNDABOUT CURB RETURNS	SHEET 157	E



5

5

CIRCLE PROFILE

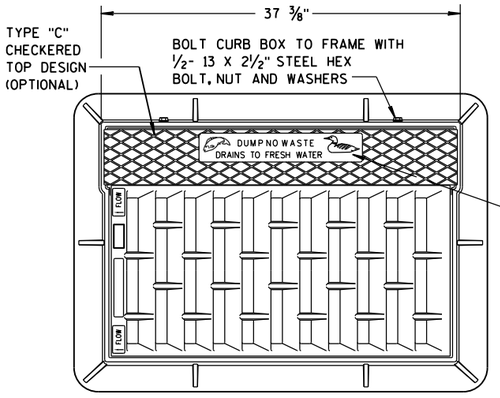


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN AND PROFILE: ROUNDABOUT CIRCLE	SHEET 158	E

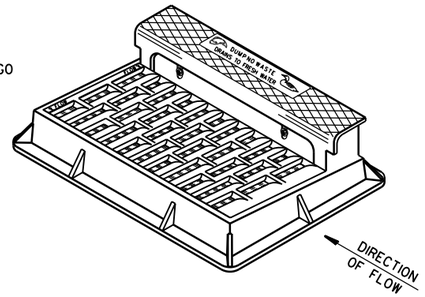
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09E01-14D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
11B02-02	CONCRETE MEDIAN NOSE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C07-14A	PAVEMENT MARKING SYMBOLS
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C07-14D	ROUNDABOUT ARROWS
15C07-14E	PAVEMENT MARKING FOR BIKE LANES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19B	PAVEMENT MARKING (TURN LANES)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C27-03B	PAVEMENT MARKING (ISLANDS)
15C29-06A	BICYCLE LANE MARKING
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

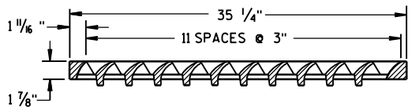
6

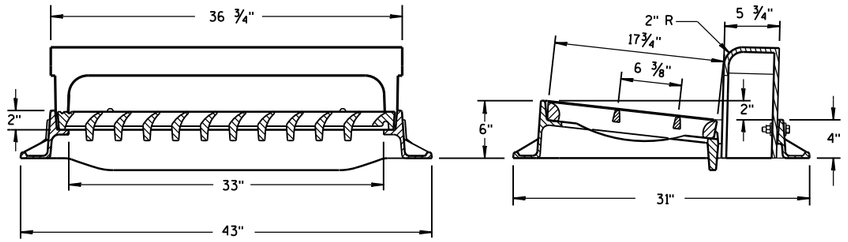


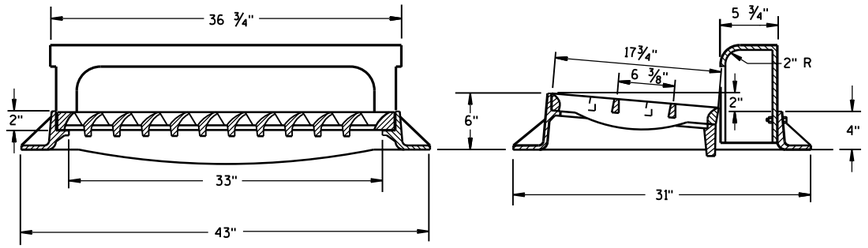
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

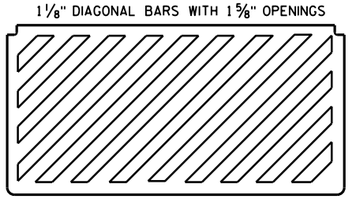






TYPE "H"

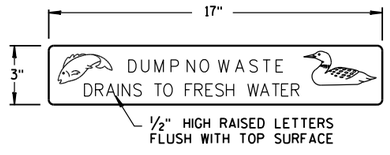
NOTE: EITHER CASTING IS ACCEPTABLE



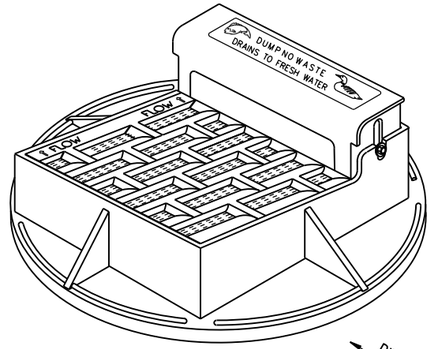
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

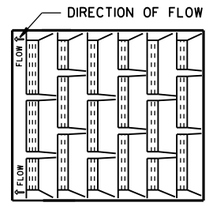


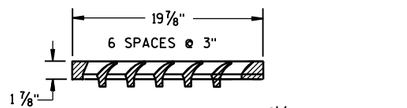
LOGO DETAIL

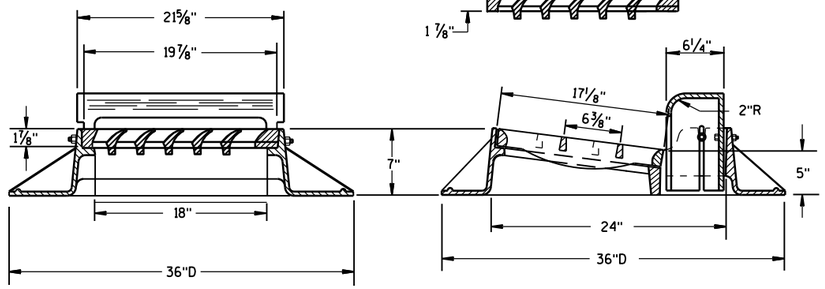


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.







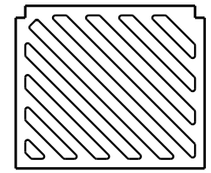
TYPE "A"

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.

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

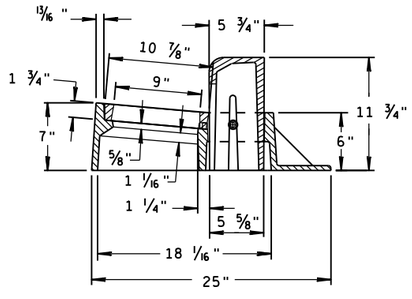
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

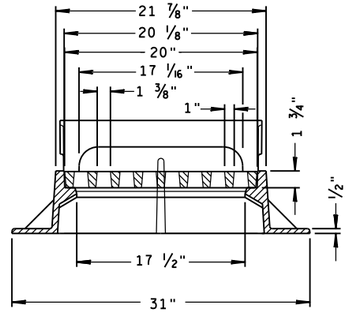


SPECIAL GRATE FOR TYPE "A" COVER

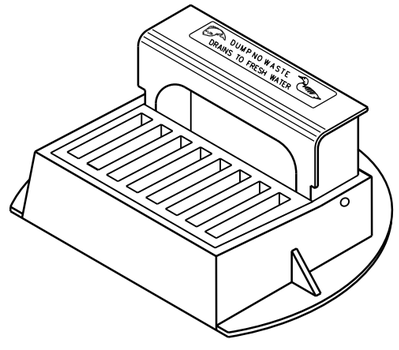
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"

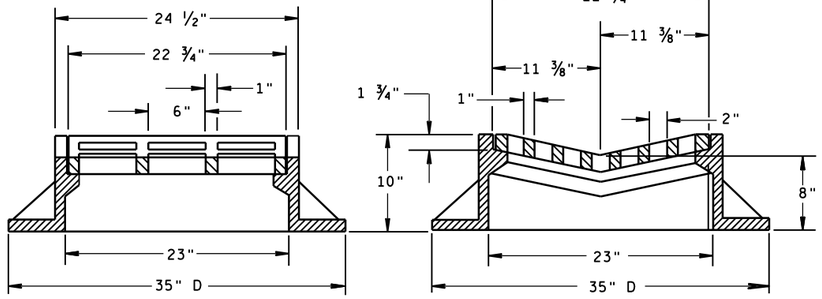


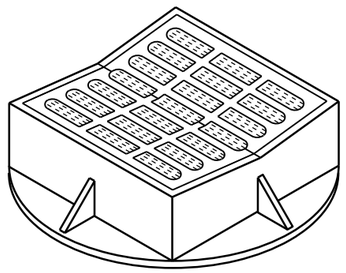
INLET COVERS TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

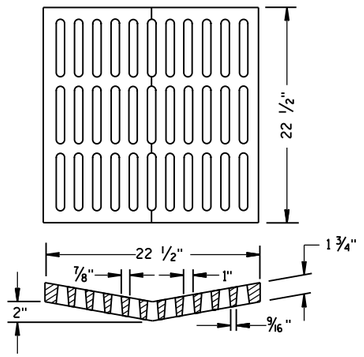
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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



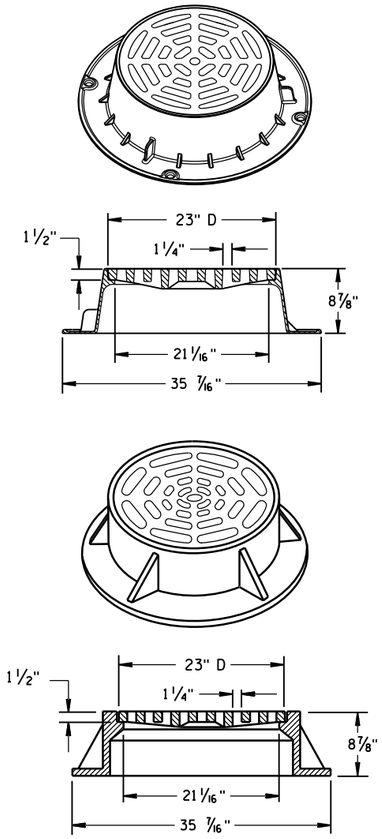


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

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



TYPE "C"

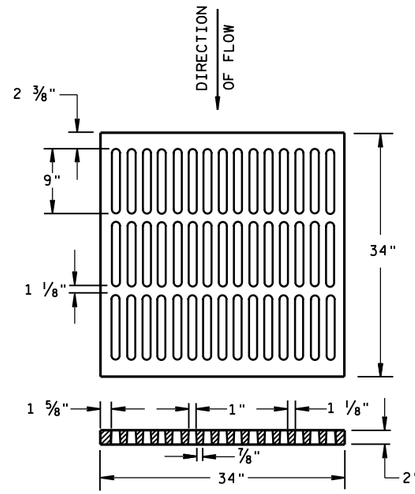
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

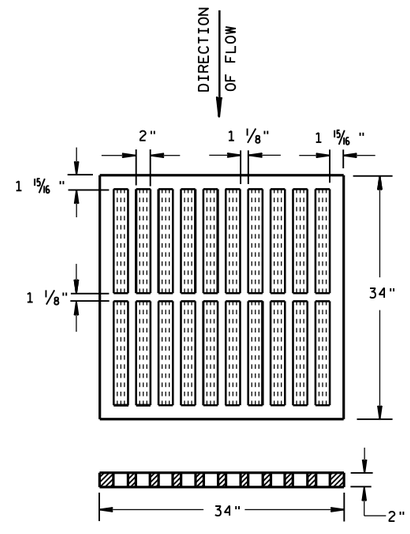
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



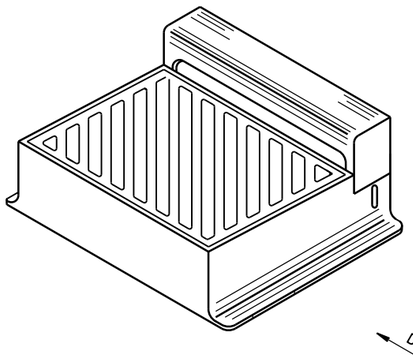
ALTERNATIVE TYPE "MS"

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

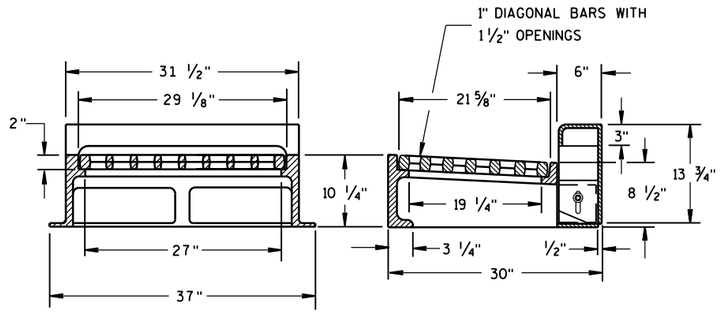


TYPE "MS"

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



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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

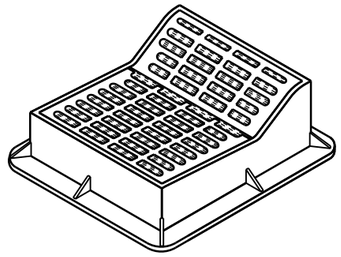
INLET COVERS
TYPE B, B-A, C, MS, MS-A, & WM

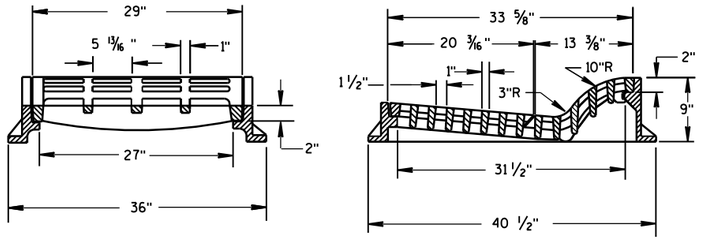
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

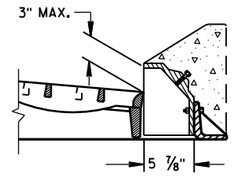
S.D.D. 8 A 5-19b





TYPE "F"

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



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

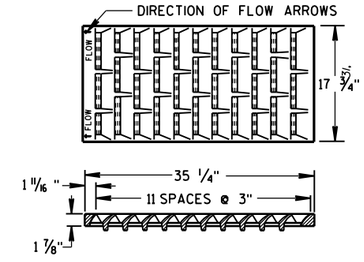
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

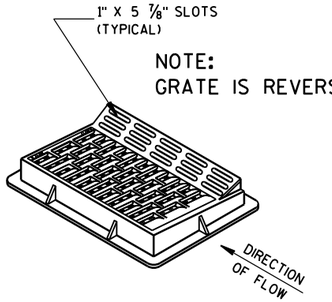
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

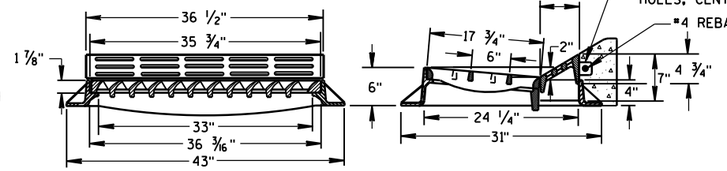
GENERAL NOTES

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.



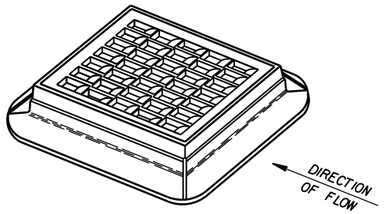


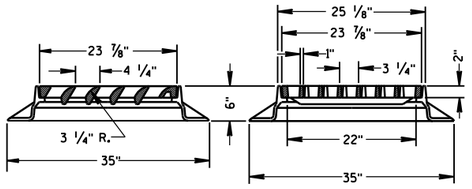


TYPE "HM"

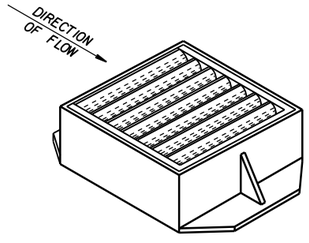
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

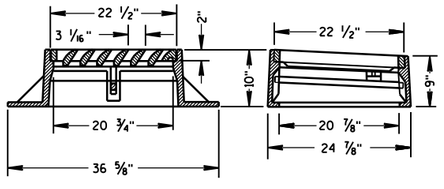
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



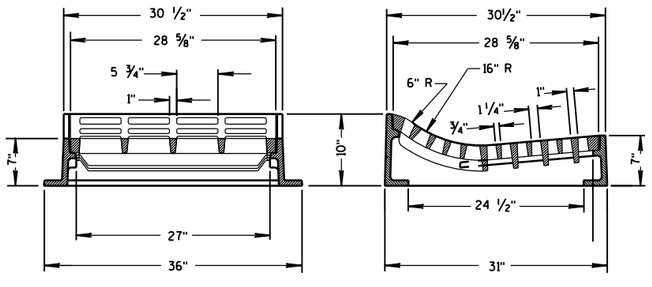


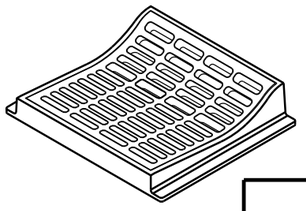
TYPE "S"





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

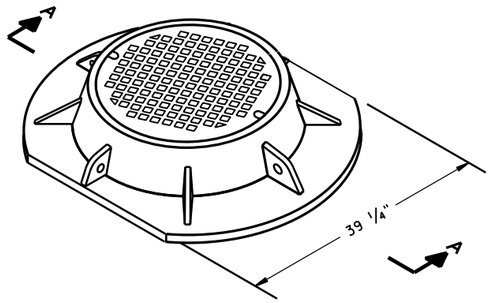
APPROVED
11/27/2013
DATE

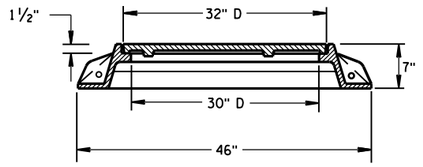
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

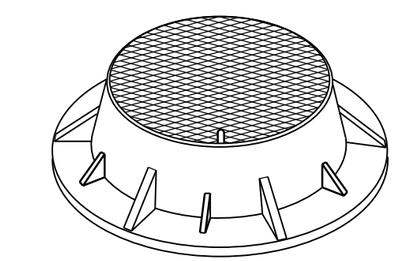
6

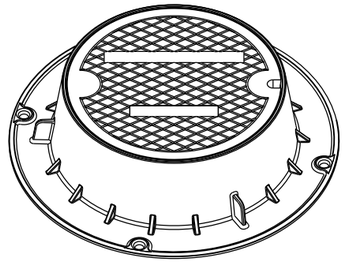
S.D.D. 8 A 5-19c

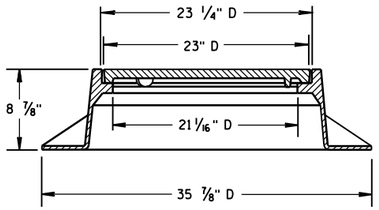


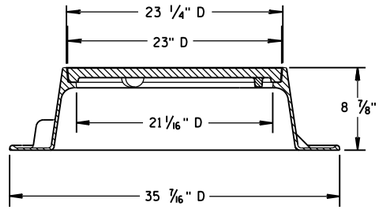


SECTION A-A
TYPE "K"









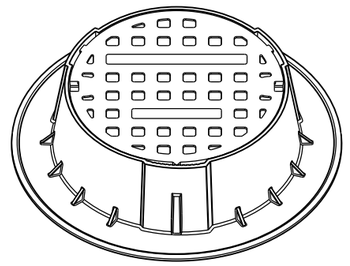
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

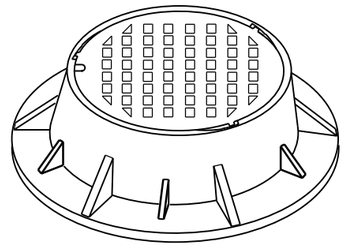
GENERAL NOTES

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

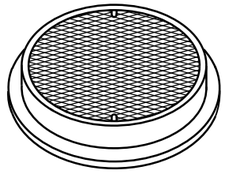
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

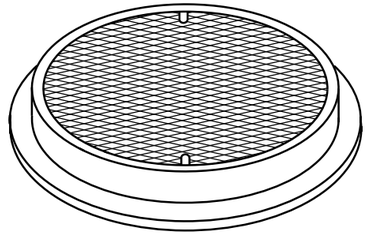
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

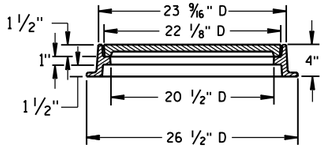




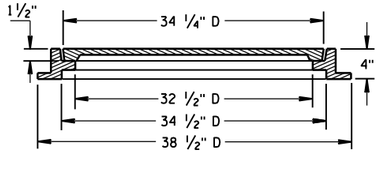
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



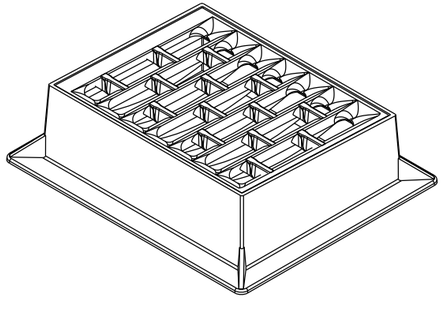


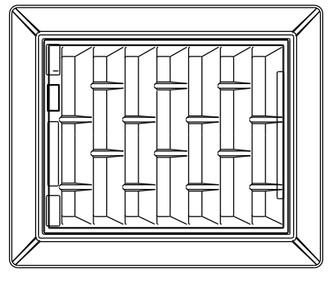


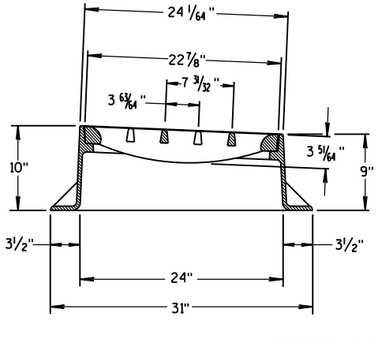
TYPE "L"

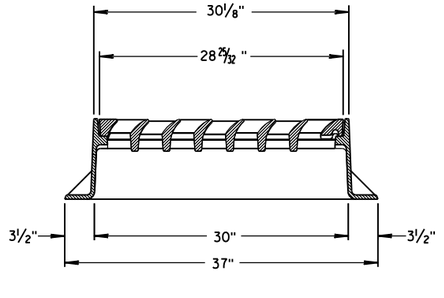


TYPE "M"









INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

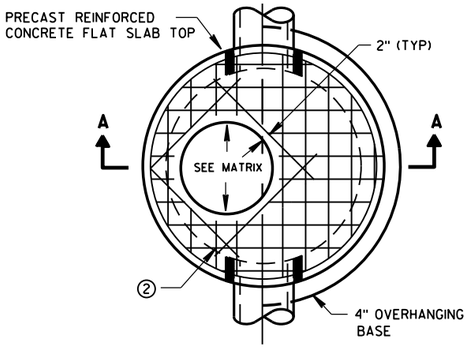
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

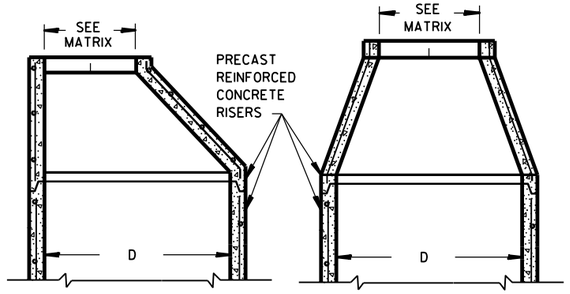
S.D.D. 8 A 5-19d

6

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

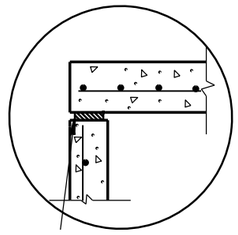


PLAN VIEW CIRCULAR OPENING

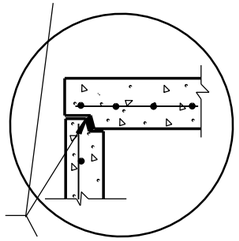


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

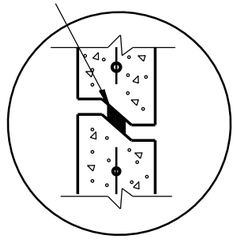


TOP WITH PLAIN END JOINT



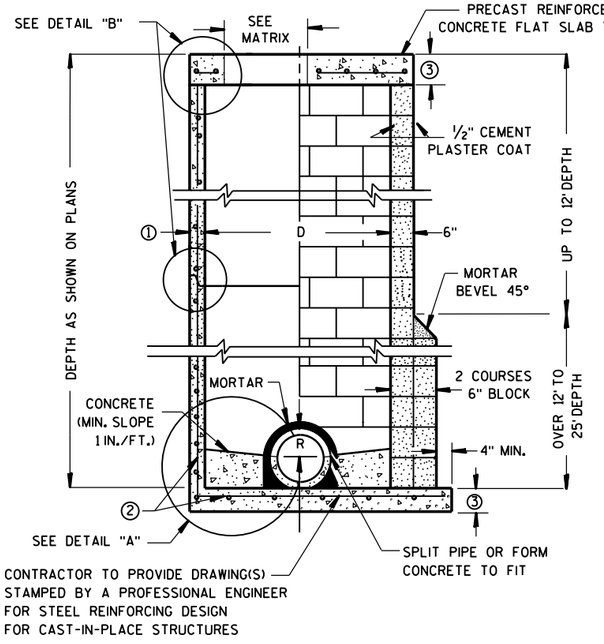
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



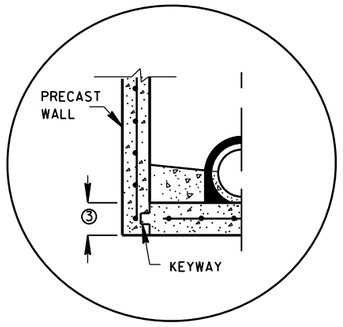
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

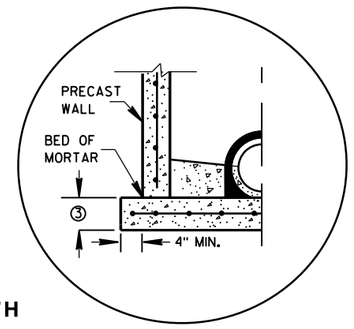


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

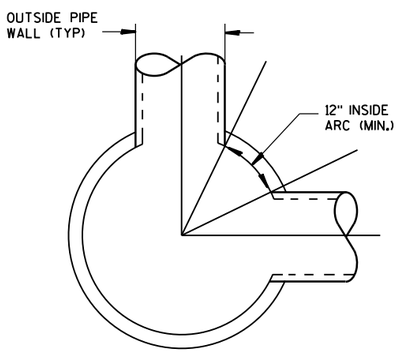


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



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 MANHOLE 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 FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

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 ½" 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.

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

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

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, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES 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".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE 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	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

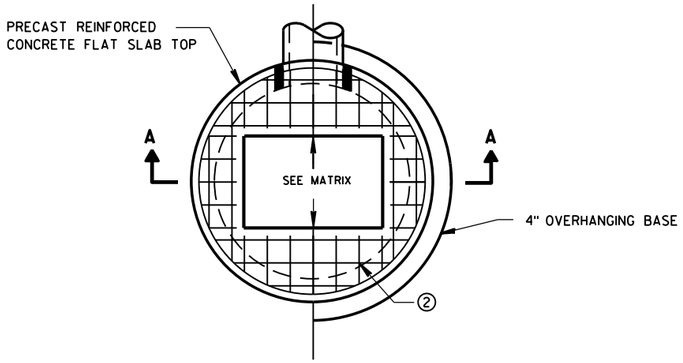
APPROVED

Sept., 2016
DATE

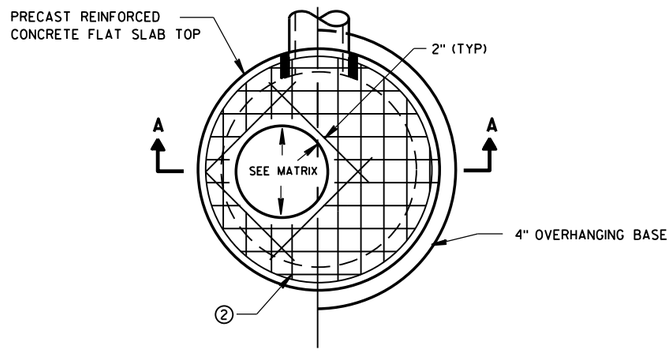
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERV

FHWA

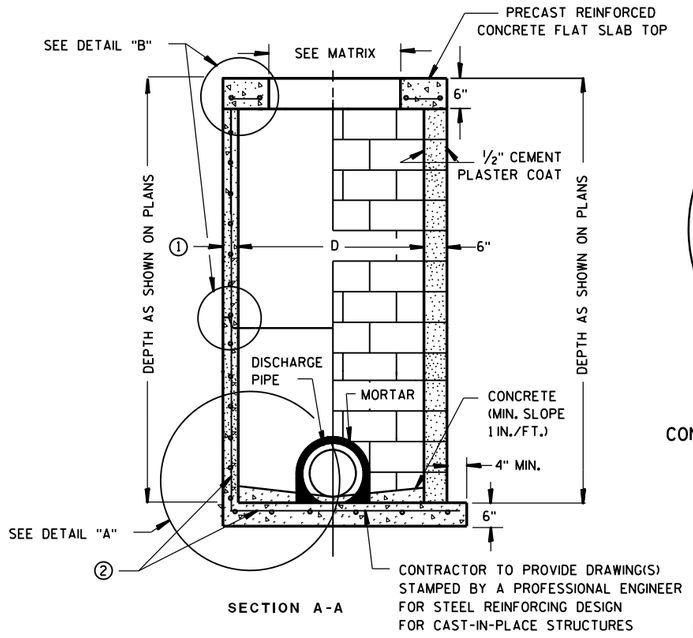
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

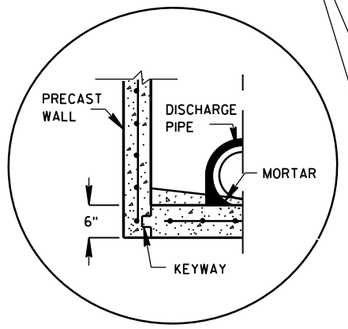


SECTION A-A

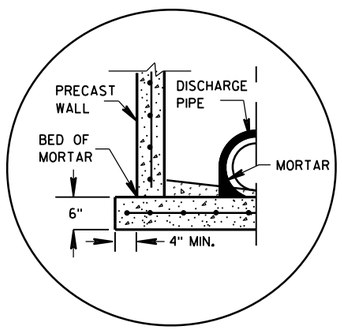
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

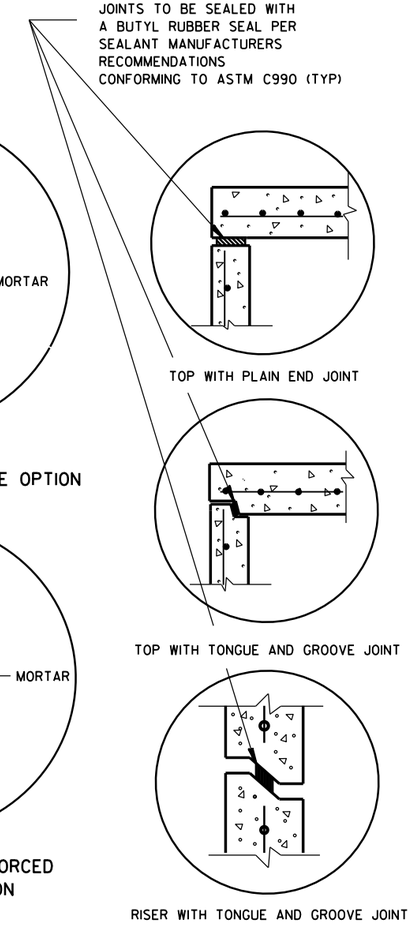


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



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 FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

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.

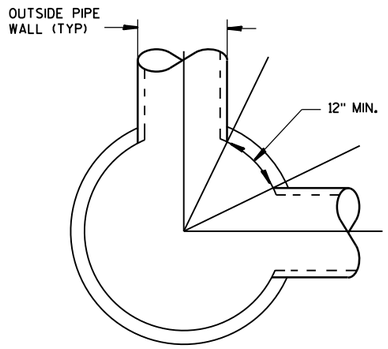
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

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

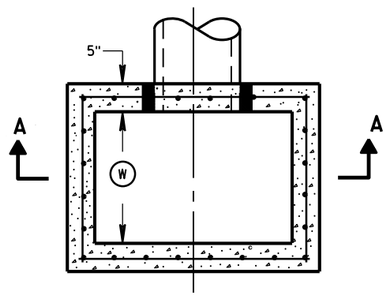
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept.. 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS | UNIT SUPERVI ENT
FHWA

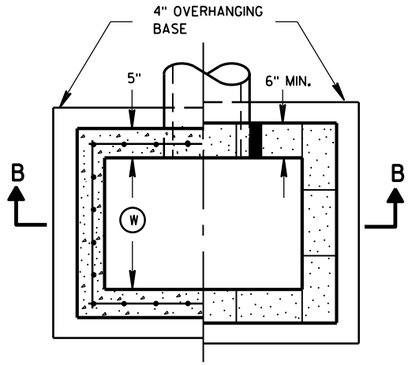
INLETS 3-FT AND 4-FT DIAMETER

6

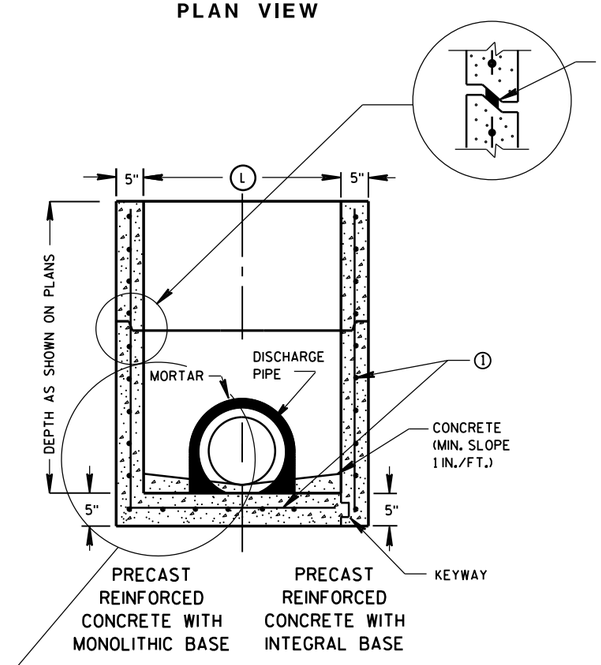
S.D.D. 8 C 6-2



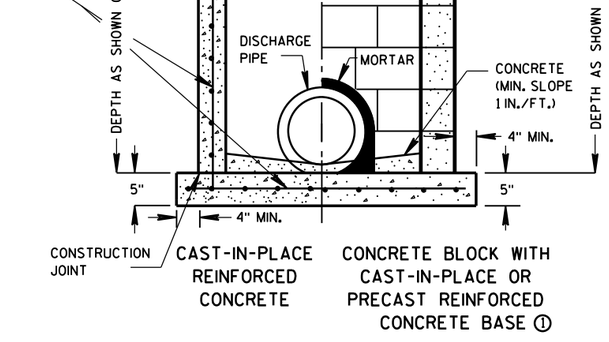
PLAN VIEW



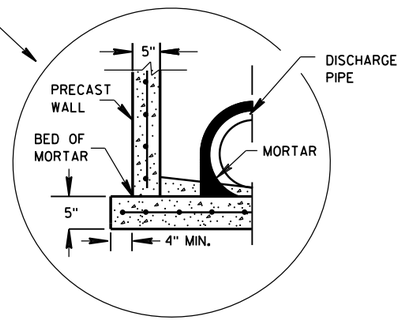
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

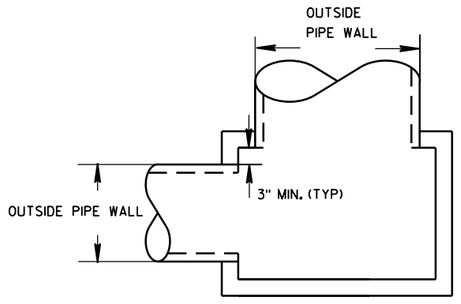
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



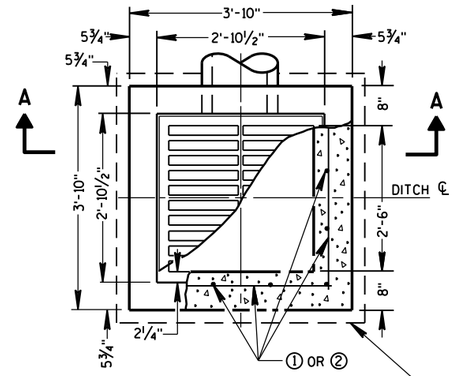
DETAIL "A"

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

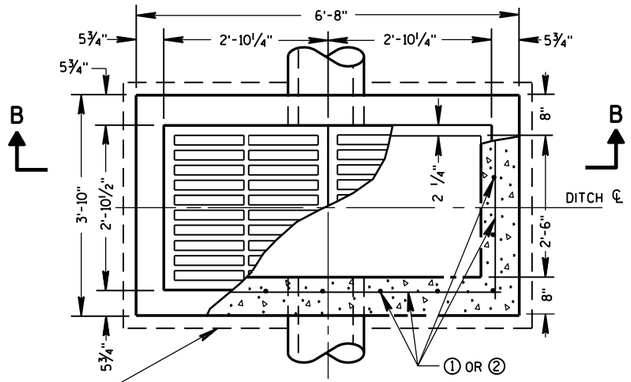
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

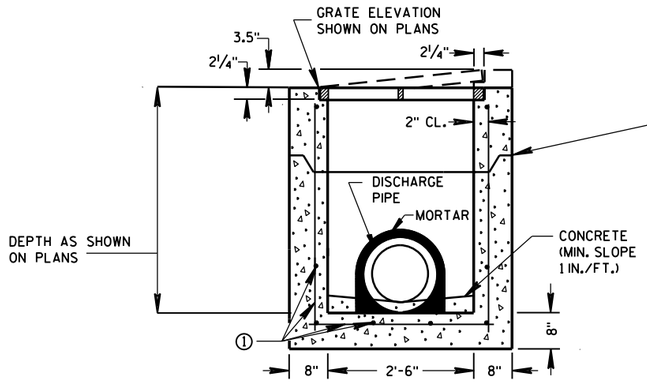


PLAN VIEW

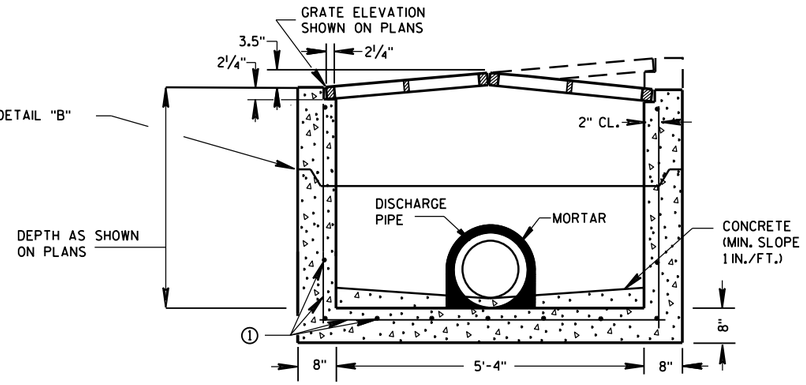


PLAN VIEW

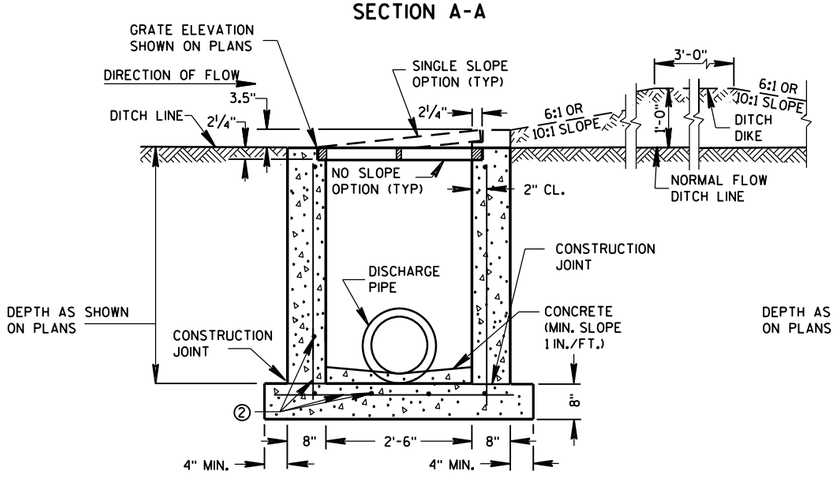
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



PRECAST REINFORCED CONCRETE SECTION A-A

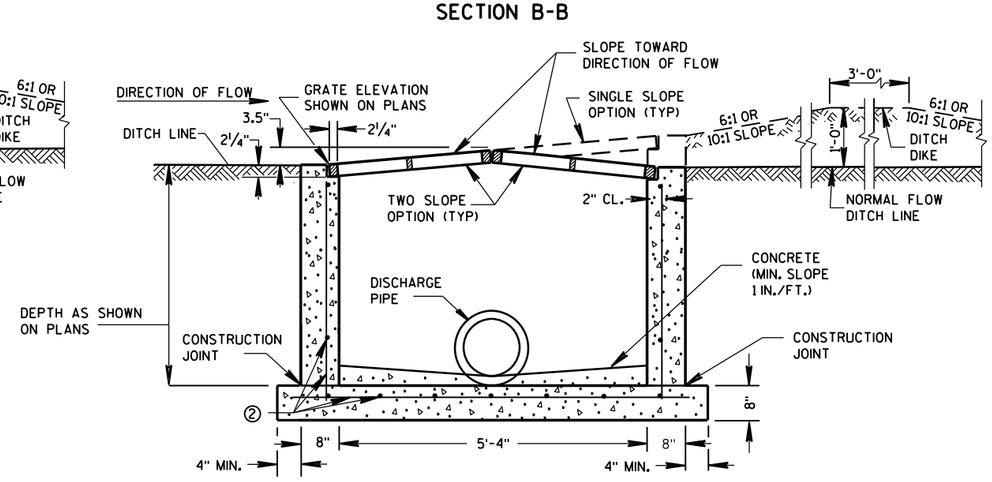


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

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

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

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

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

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

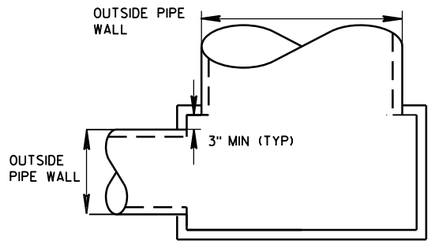
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

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

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

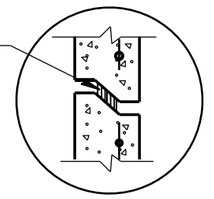
PIPE MATRIX

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



DETAIL "A"

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



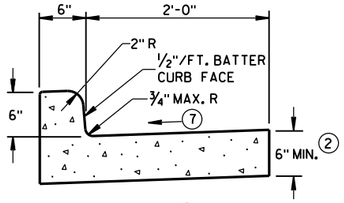
DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

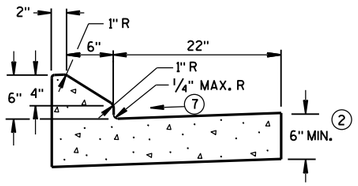
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVI ENT
FHWA

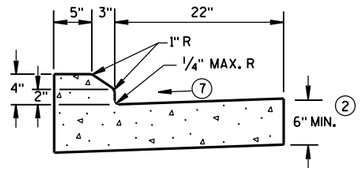
6
S.D.D. 8 C 8-2



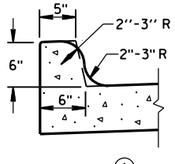
TYPES A (1) & D



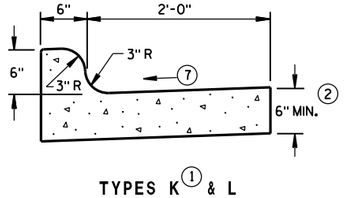
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

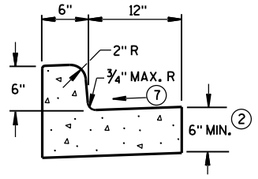


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



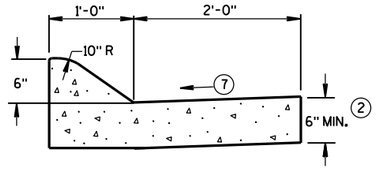
TYPES K (1) & L

CONCRETE CURB & GUTTER 30"

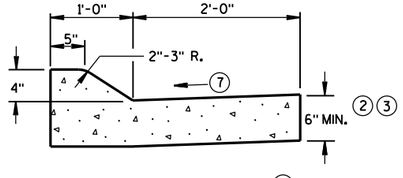


TYPES A (1) & D

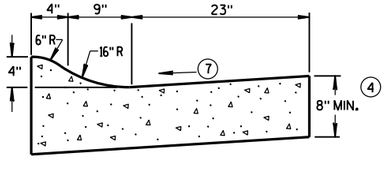
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

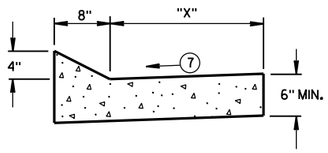


4" SLOPED CURB TYPES A (1) & D



4" SLOPED CURB TYPES R (1) & T (5)

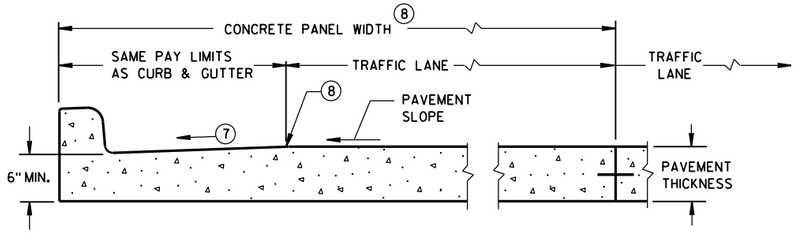
CONCRETE CURB & GUTTER 36"



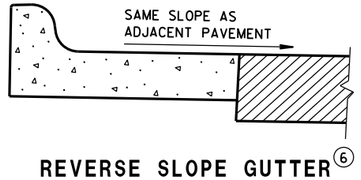
TYPES TBT & TBTT (1)

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER (6)
(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.

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

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

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

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

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

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

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

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

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

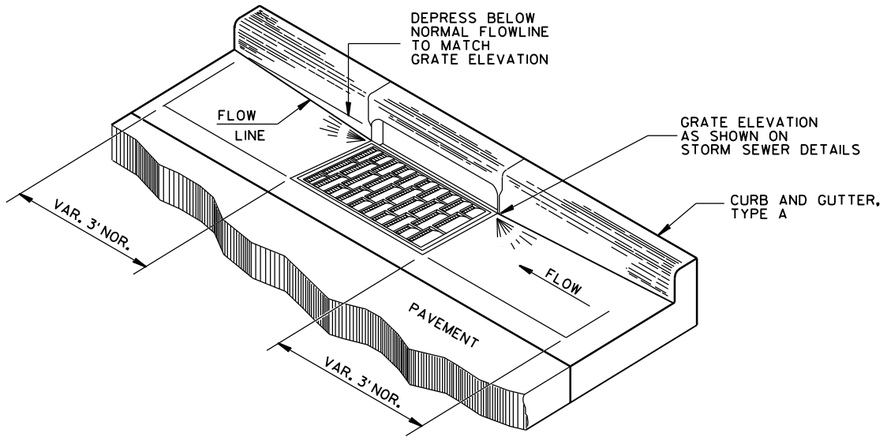
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6

S.D.D. 8 D 1-20a
S.D.D. 8 D 1-20a



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

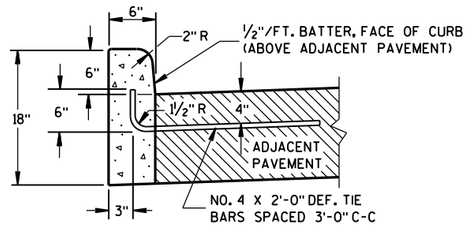
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

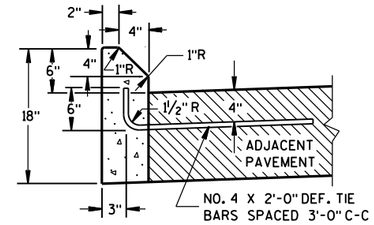
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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

(9) REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

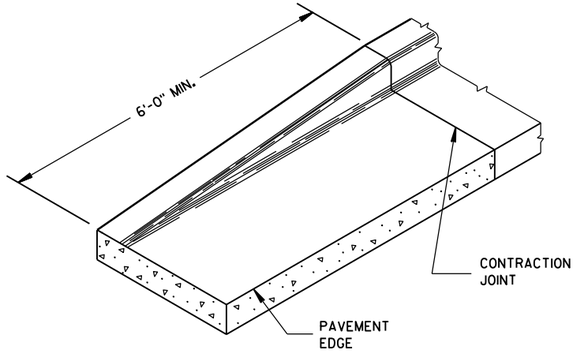


TYPES A (1) & D

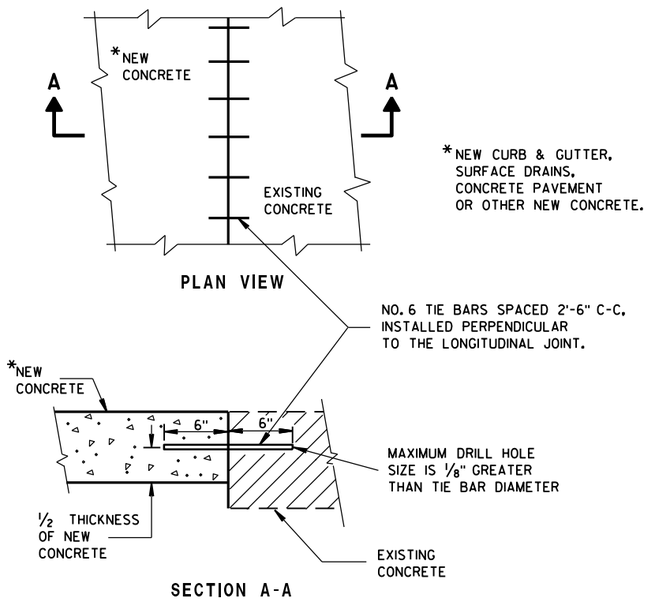


TYPES G (1) & J

CONCRETE CURB



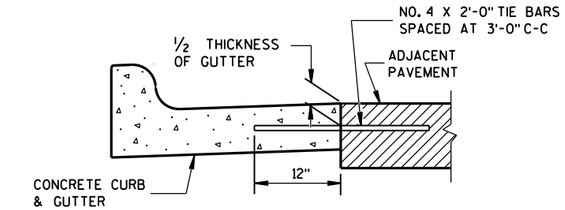
END SECTION CURB & GUTTER



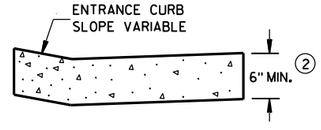
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

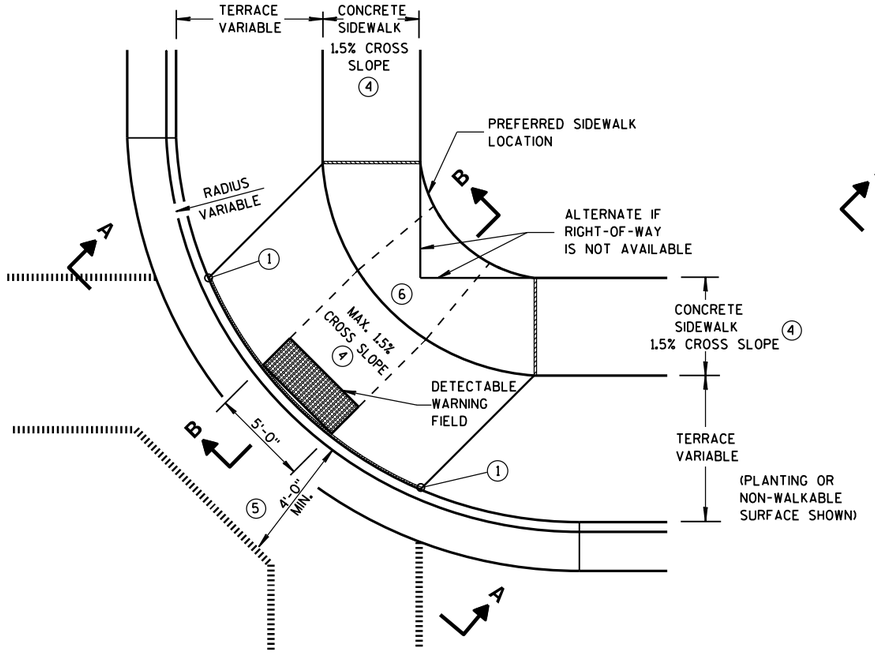
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

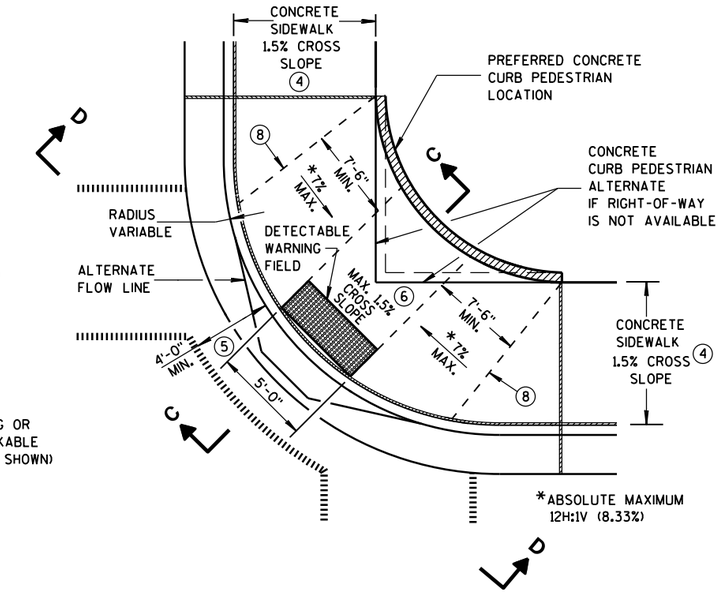
S.D.D. 8 D 1-20b



PLAN VIEW

TYPE 1 RAMP

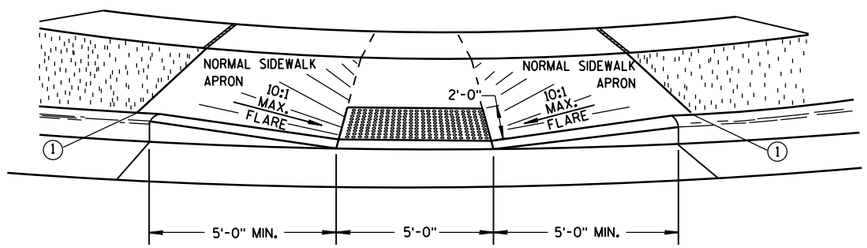
(CENTER OF CORNER RADIUS)



PLAN VIEW

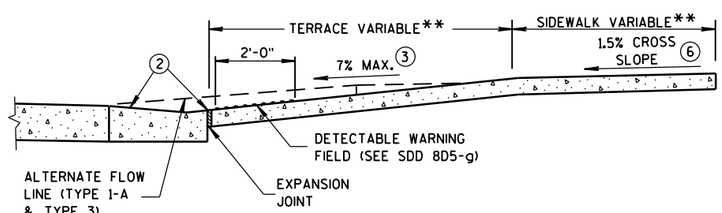
TYPE 1-A RAMP

(NO TERRACE)

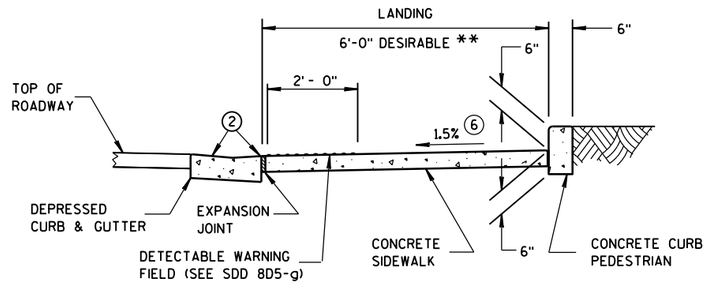


VIEW A-A

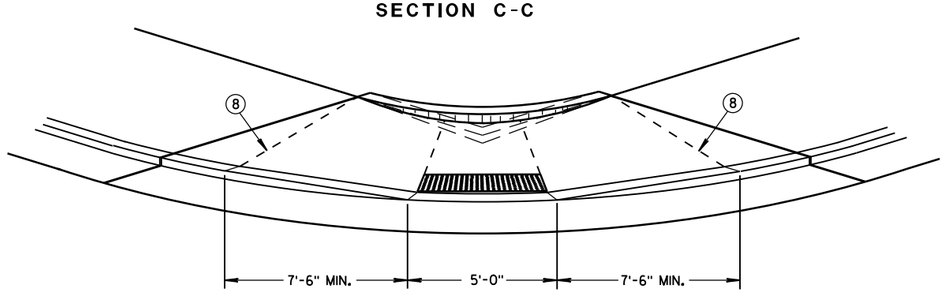
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

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

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

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

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

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

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

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

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

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

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

LEGEND

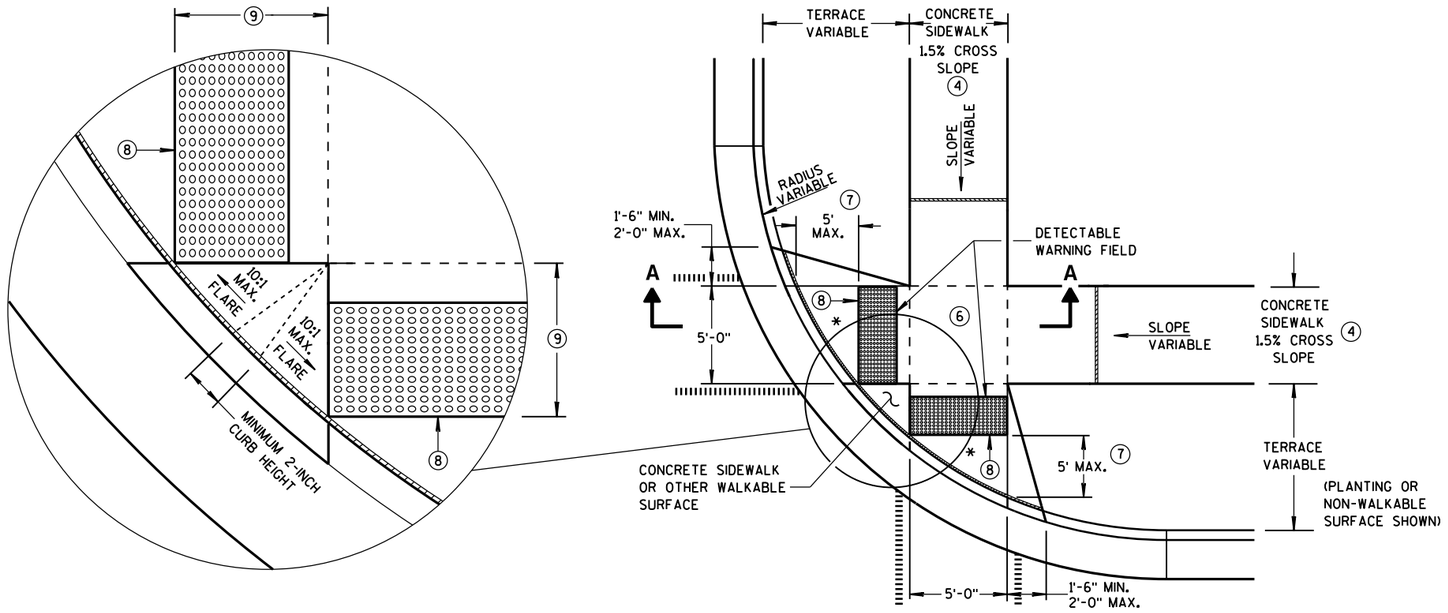
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 8 D 5-19a

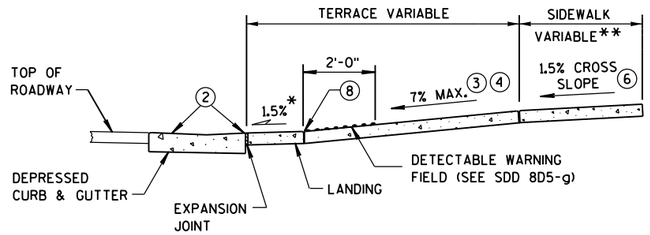


PLAN VIEW

TYPE 2 RAMP

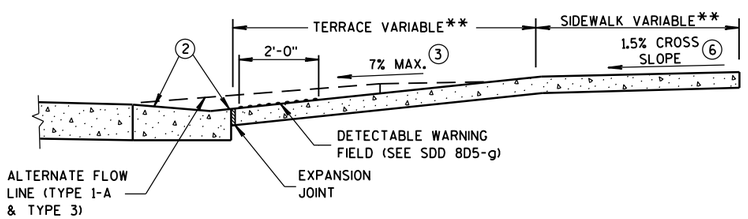
(ON LINE WITH SIDEWALK)

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



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

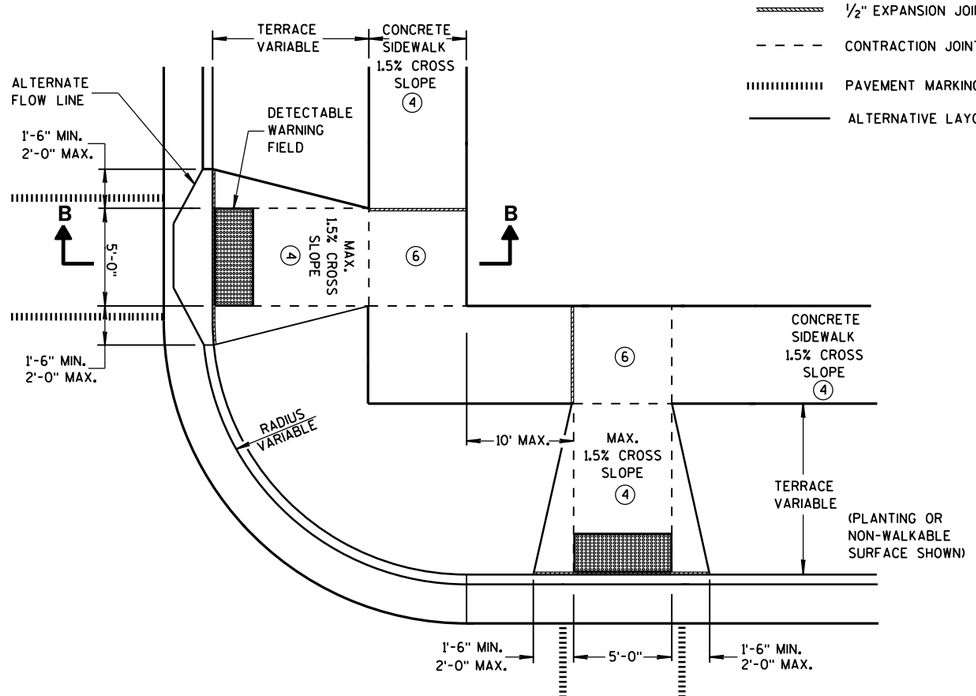
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

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

LEGEND

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



PLAN VIEW

TYPE 3 RAMP

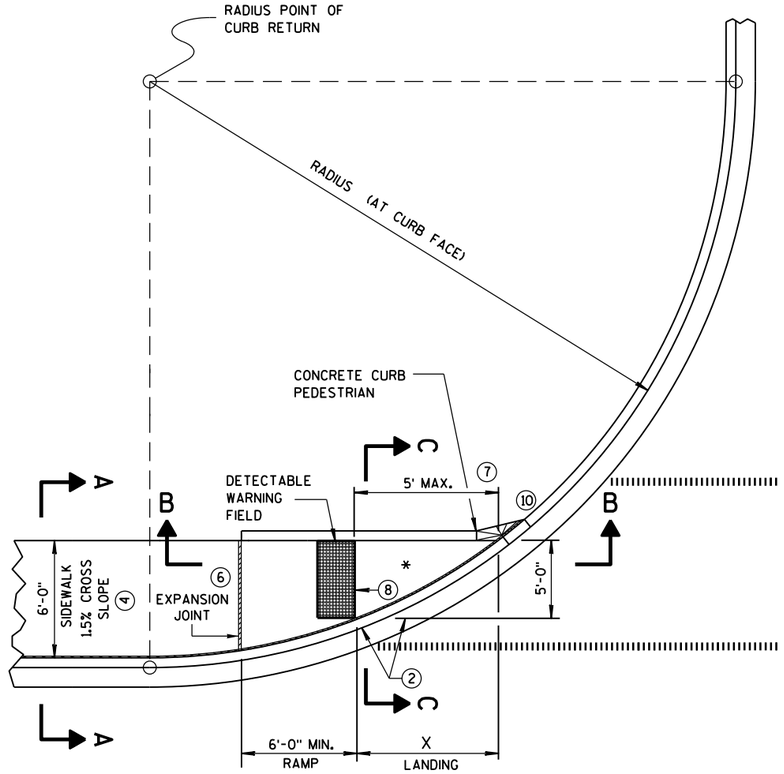
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

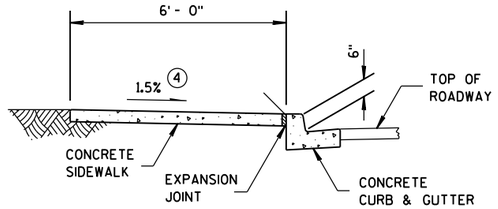
S.D.D. 8 D 5-19b



CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

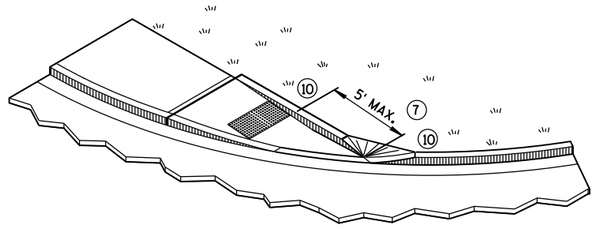
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

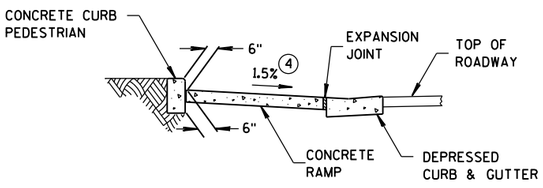
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

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

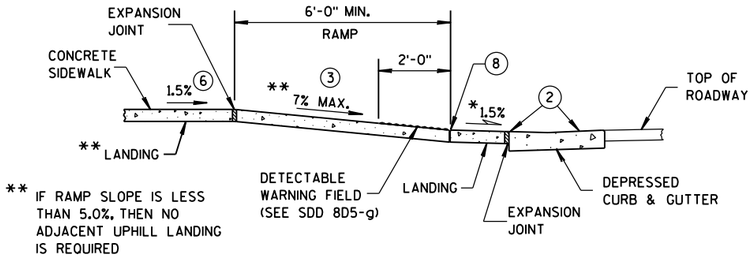


ISOMETRIC VIEW FOR TYPE 4A



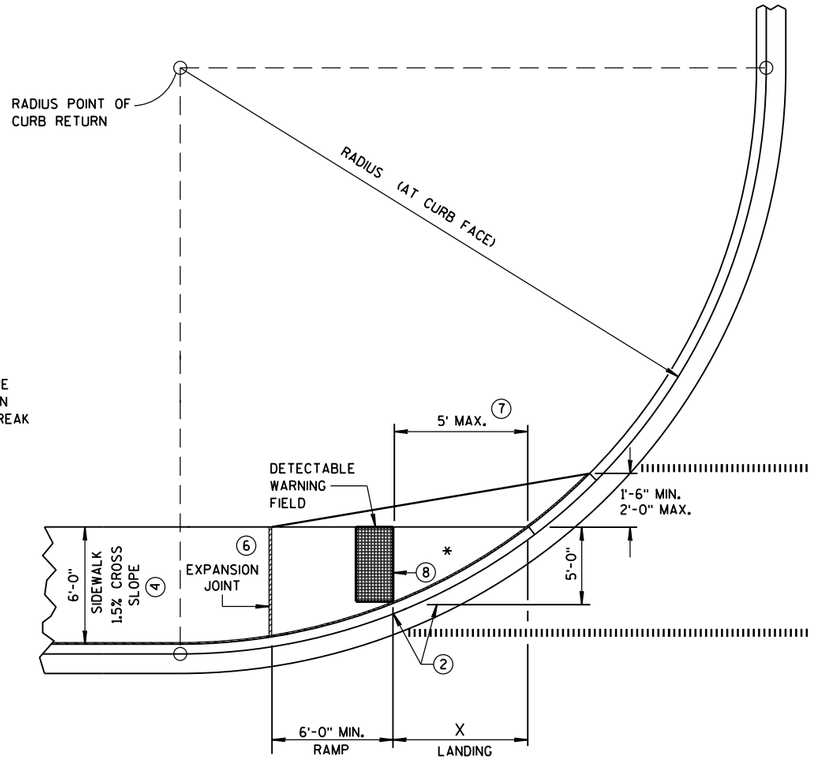
SECTION C-C FOR TYPE 4A

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

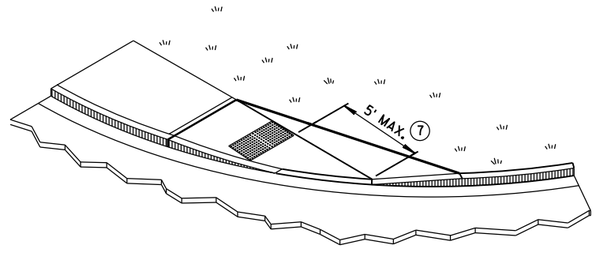


** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B-B FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

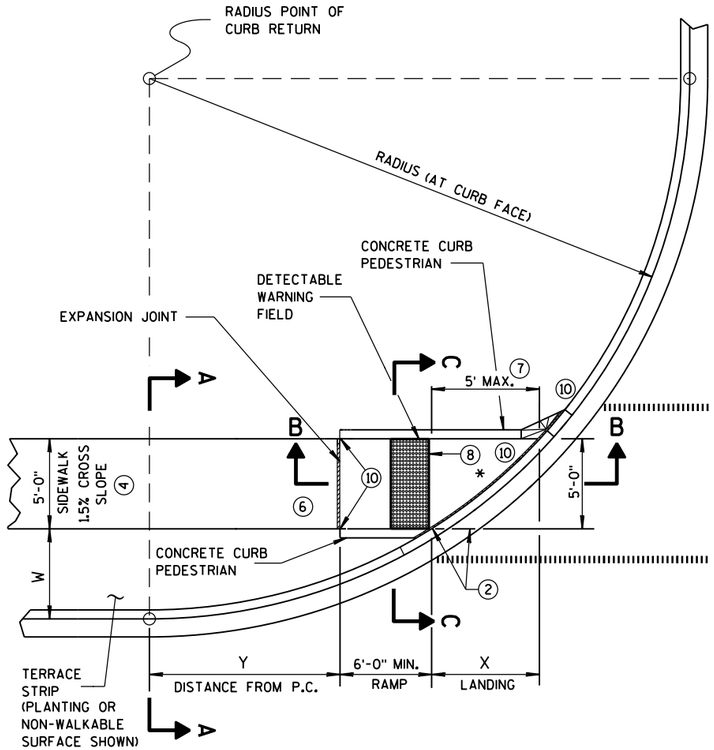
CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

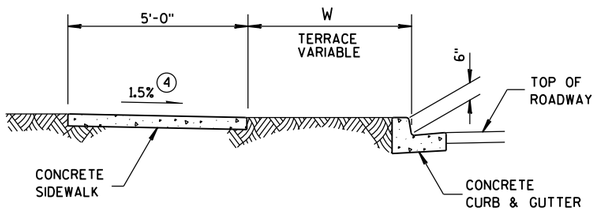
CURB RAMPS
TYPES 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

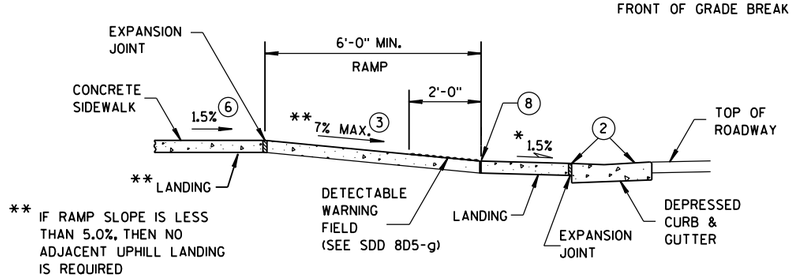
6
S.D.D. 8 D 5-19c



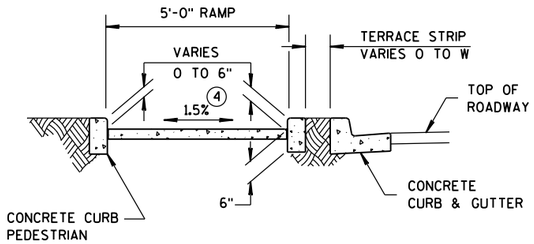
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"		W = 8'-0"		W = 9'-0"		W = 10'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10¼"	0'-5"	2'-1"	1'-4½"	1'-5"	2'-1"	0'-10"	2'-7½"	0'-3¼"	3'-0¼"						
15 FEET	4'-6¾"	2'-1¾"	3'-9"	3'-5¼"	3'-1¼"	4'-6"	2'-6¾"	5'-4½"	2'-1"	6'-1"	1'-8"	6'-8½"	1'-3¼"	7'-2½"	0'-10¾"	7'-7¼"
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-7"	3'-3"	8'-6½"	2'-10"	9'-4½"	2'-5½"	10'-1¼"	2'-1¼"	10'-9"
30 FEET			6'-9¼"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"	4'-5½"	13'-7¾"	4'-0¾"	14'-8½"	3'-8½"	15'-8¼"
40 FEET									6'-1¾"	15'-8½"	5'-8"	17'-2"	5'-3"	18'-5¾"	4'-10¾"	19'-8¼"
50 FEET															5'-10¼"	23'-2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

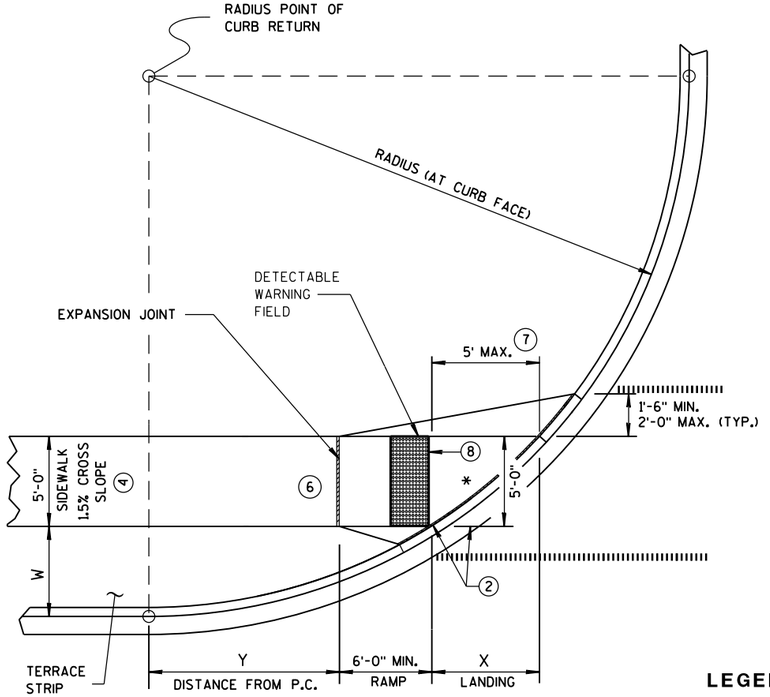
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

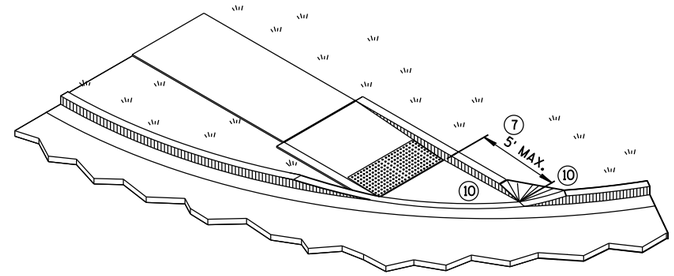
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

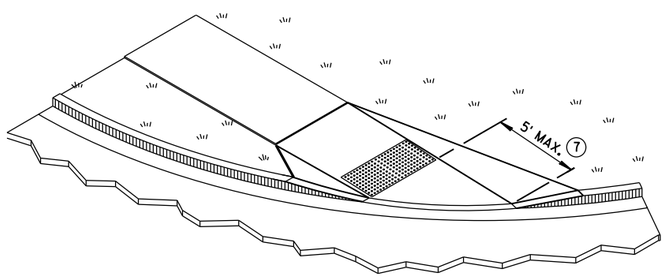
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

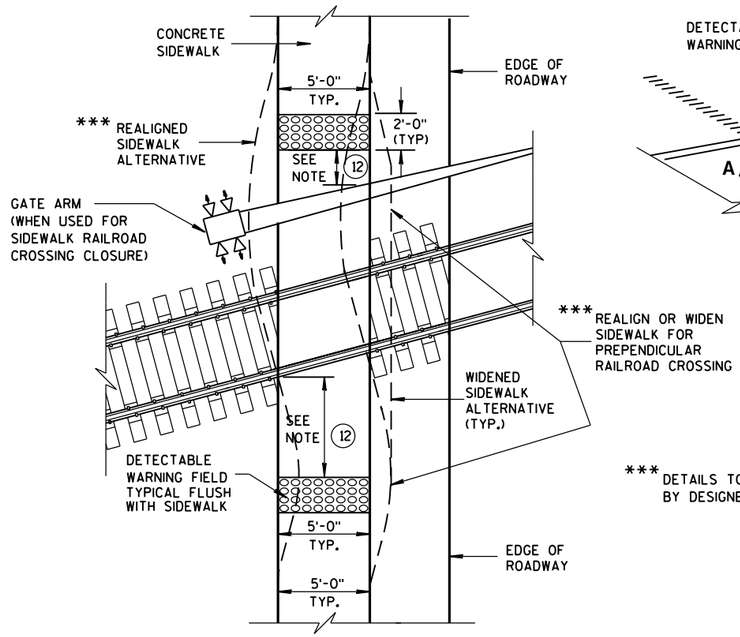
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

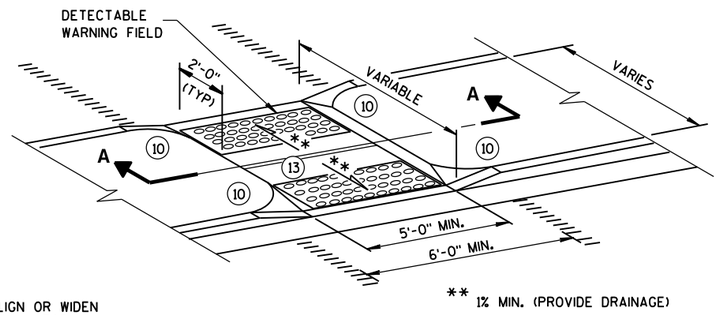
6

S.D.D. 8 D 5-19d



*** DETAILS TO BE DETERMINED BY DESIGNER

TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5

GENERAL NOTES

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

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

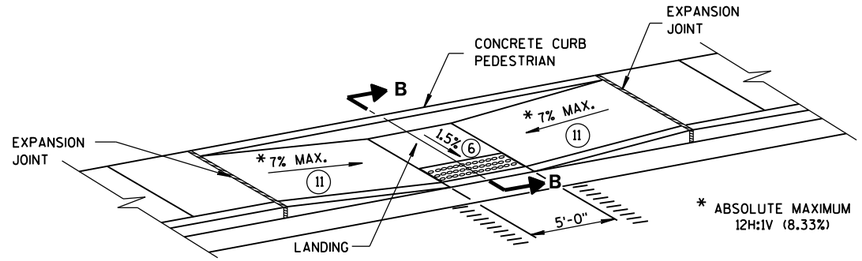
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

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

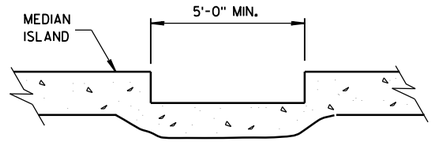
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

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

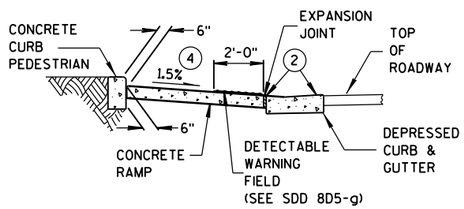
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



MID-BLOCK CROSSING
TYPE 7A

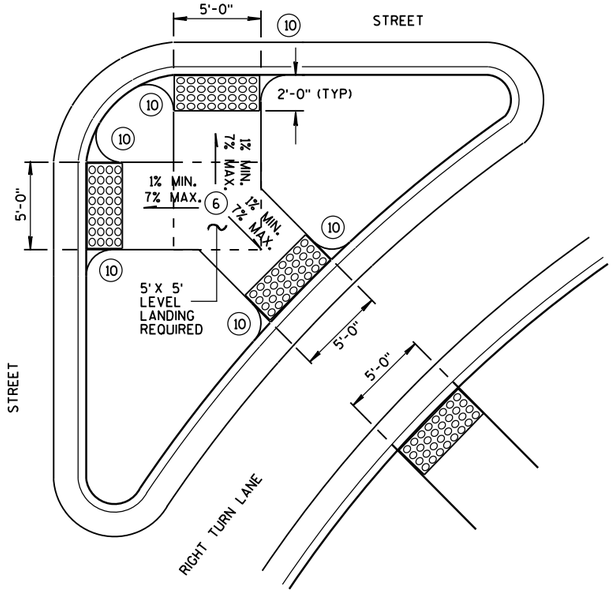


SECTION A-A

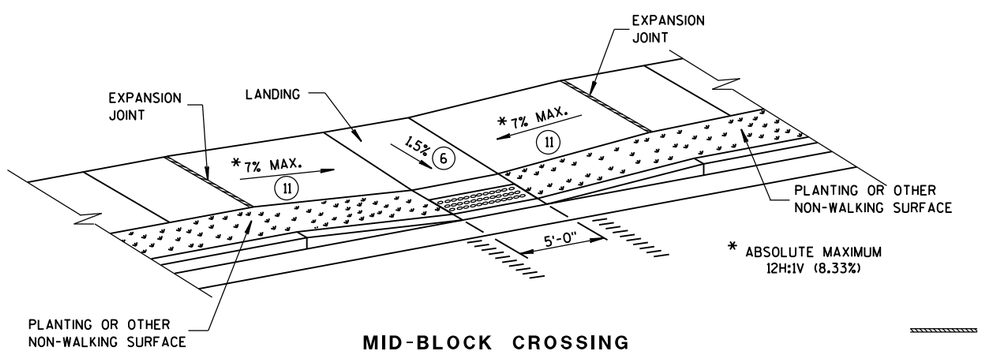


SECTION B-B

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



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

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

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

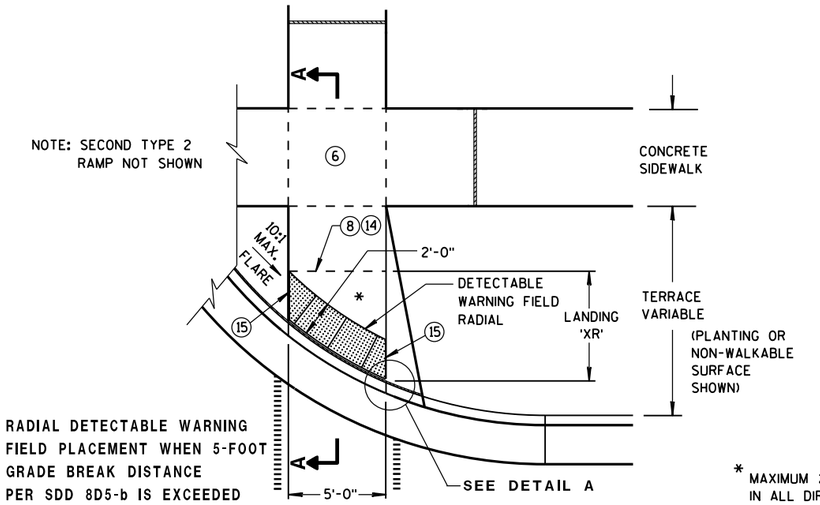
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-19e

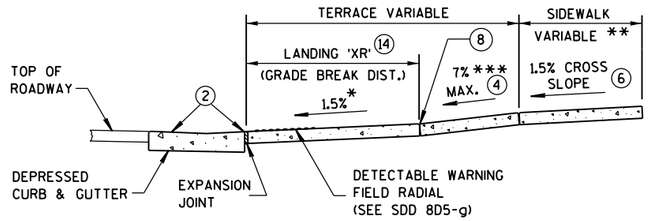
6

S.D.D. 8 D 5-19e



TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)

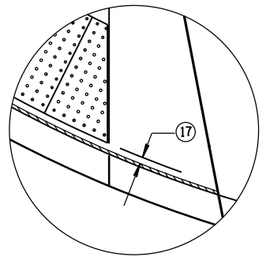
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



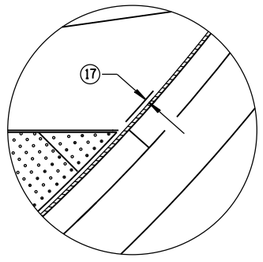
** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

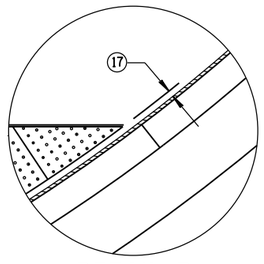
SECTION A-A



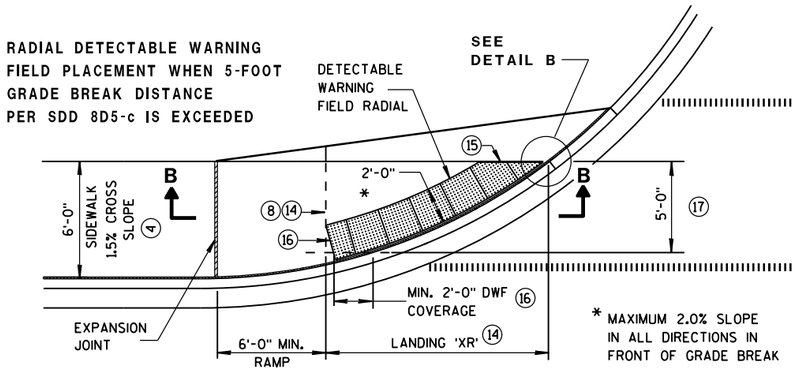
DETAIL A



DETAIL C

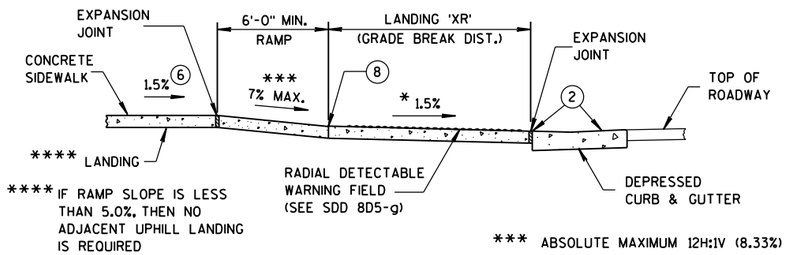


DETAIL B



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

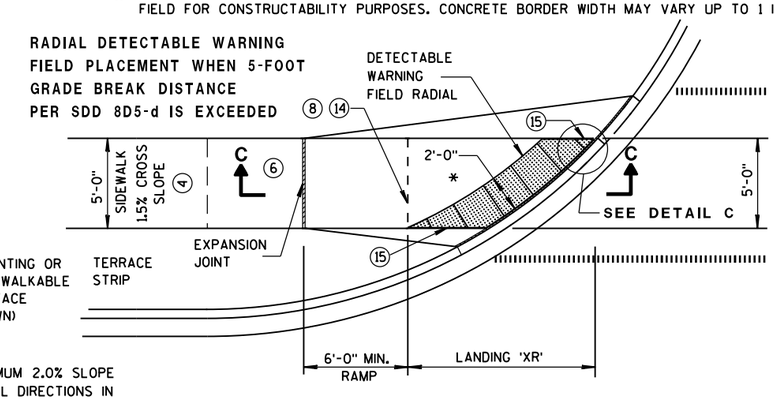
CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

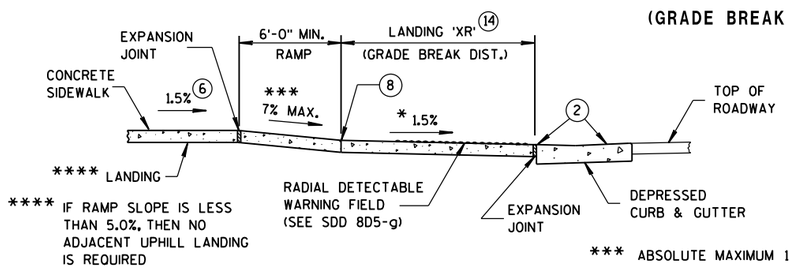
*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION B-B FOR TYPE 4A1



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

CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION C-C FOR TYPE 4B1

LEGEND

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

GENERAL NOTES

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

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

(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

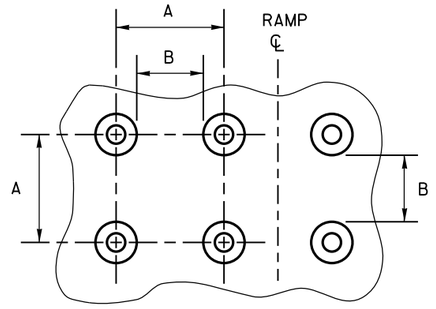
CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

6

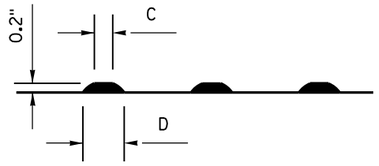
S.D.D. 8 D 5-19f

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

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



PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL

GENERAL NOTES

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

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

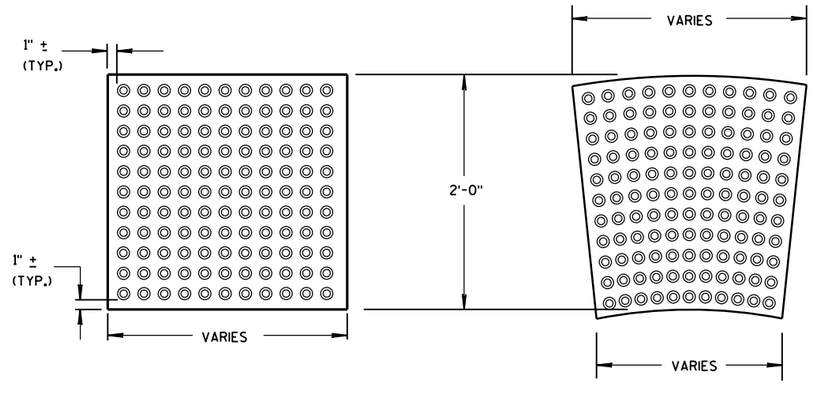
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

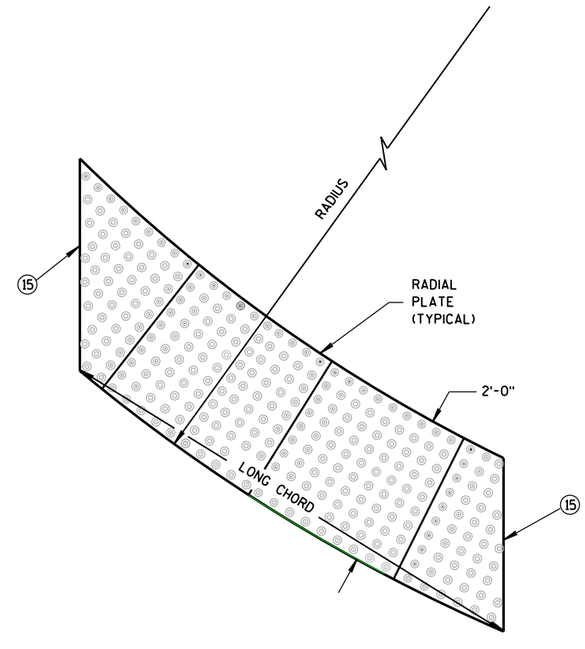


RECTANGULAR PLATES

RADIAL PLATES

DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

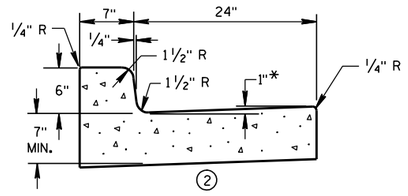
CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

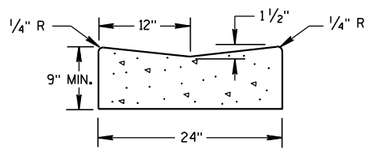
APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

6

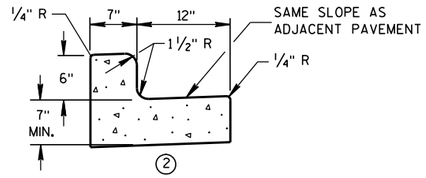
S.D.D. 8 D 5-19g



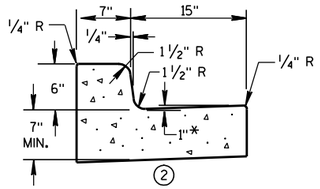
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

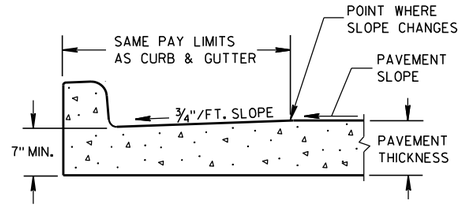


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

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.

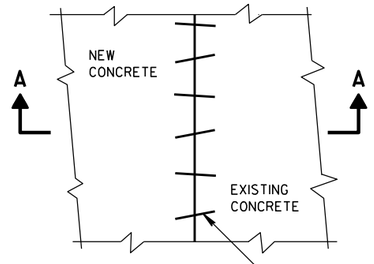
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.

① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".

② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MIMIMUM GUTTER THICKNESS IS MAINTAINED.

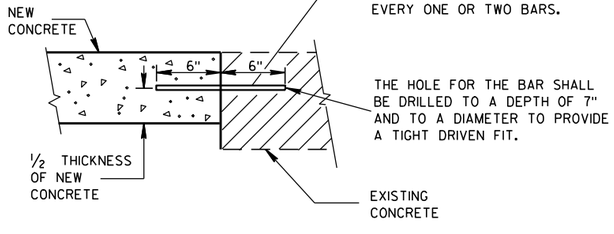
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

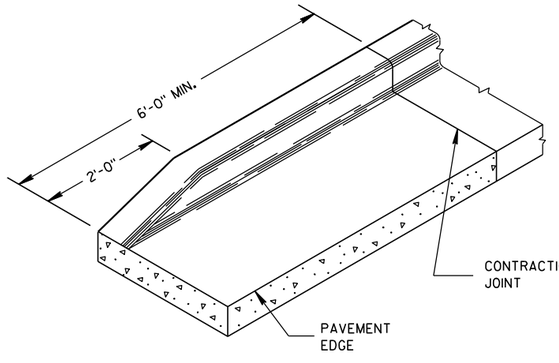
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



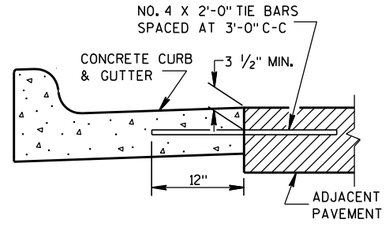
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

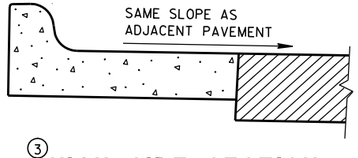
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

177

ENT

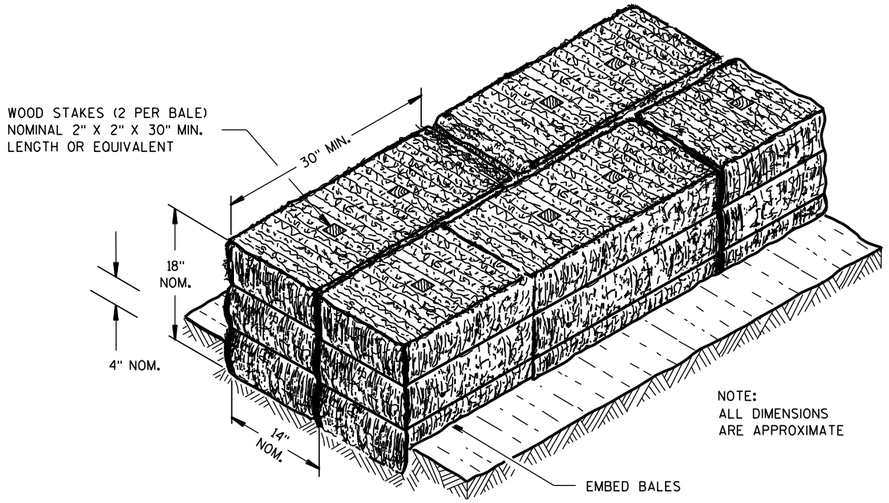
FHWA

6

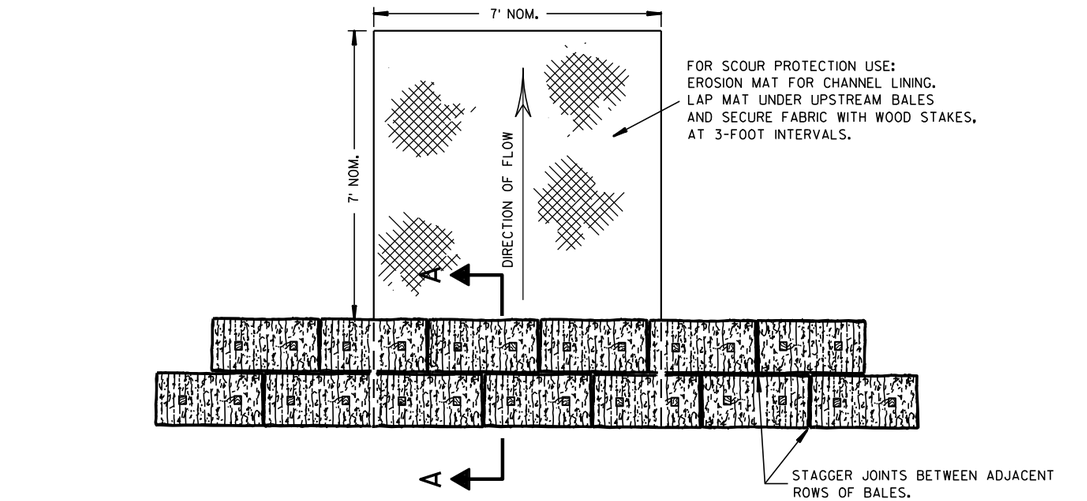
S.D.D. 8 D 16-10

6

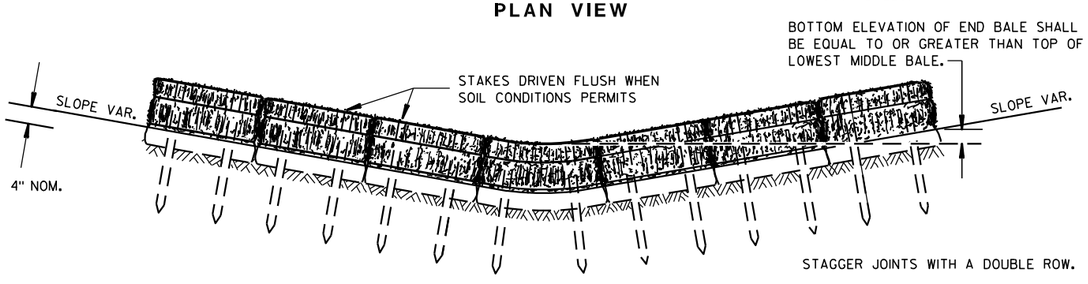
S.D.D. 8 D 16-10



SECTION A-A



PLAN VIEW



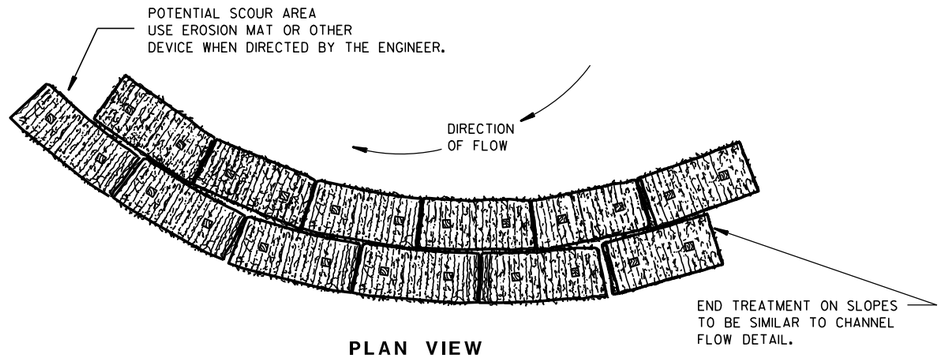
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

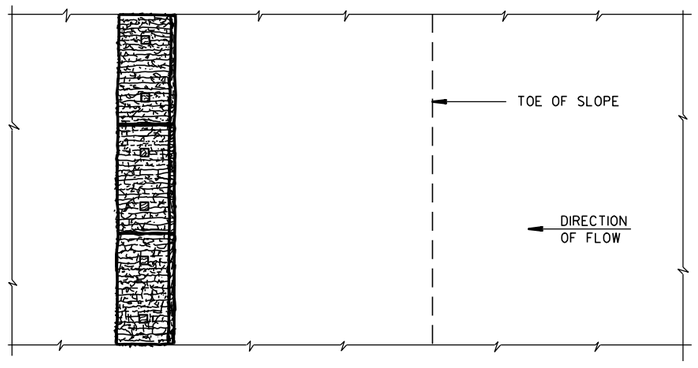
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

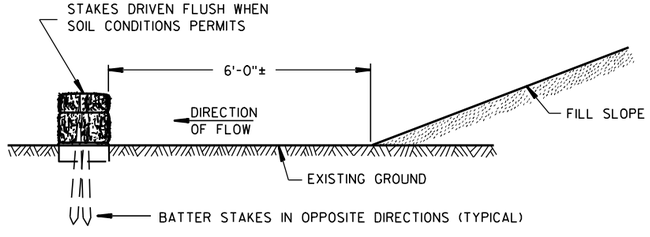


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

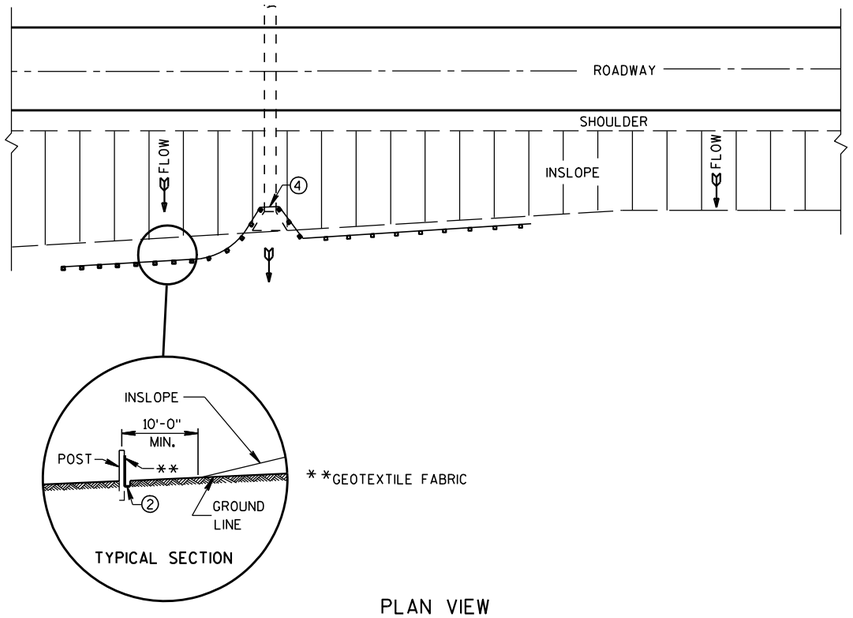
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

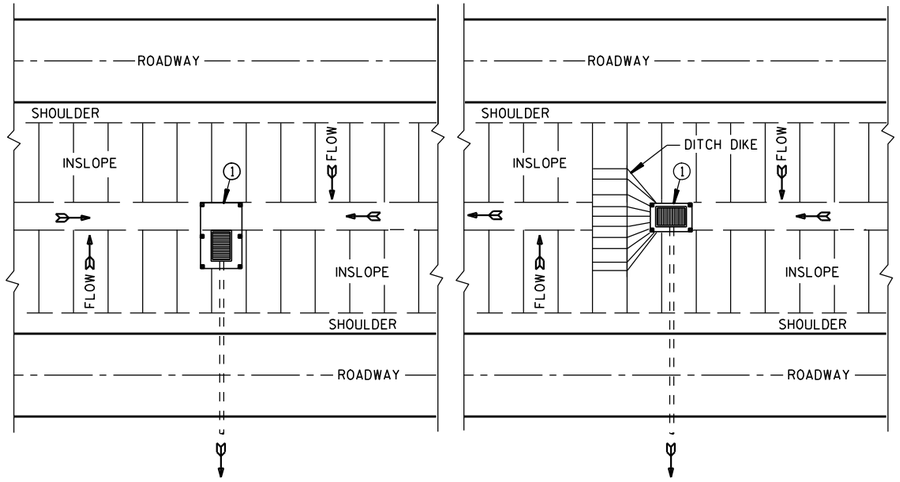
6

S.D.D. 8 E 8-3



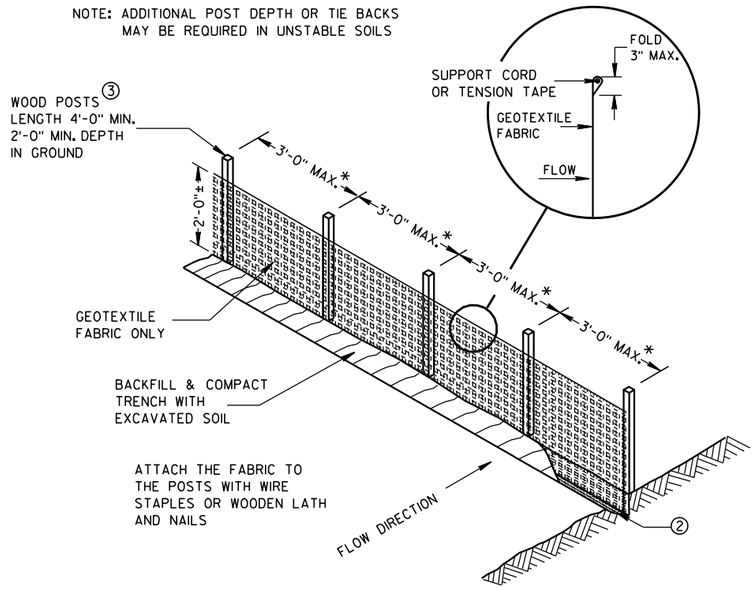
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



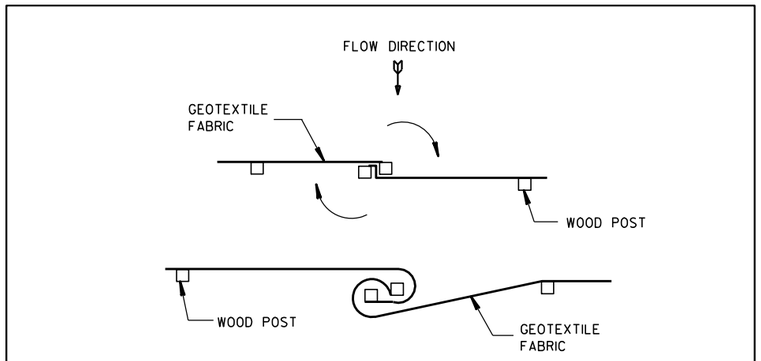
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

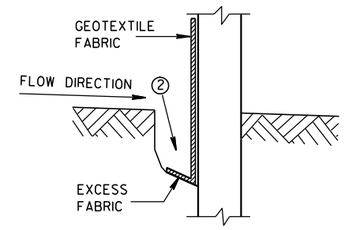


JOINING TWO LENGTHS OF SILT FENCE 5

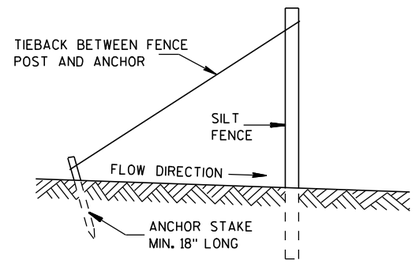
GENERAL NOTES

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 TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

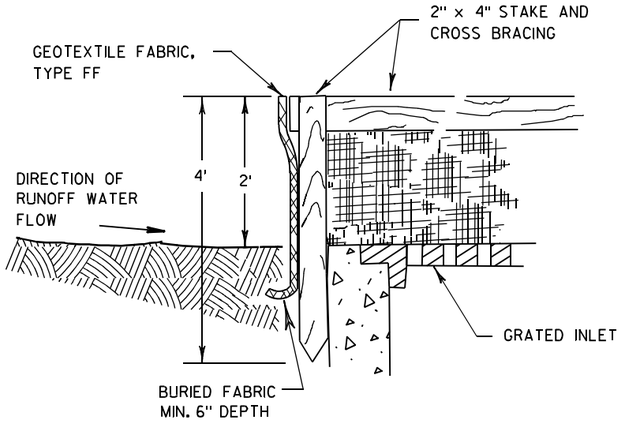
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

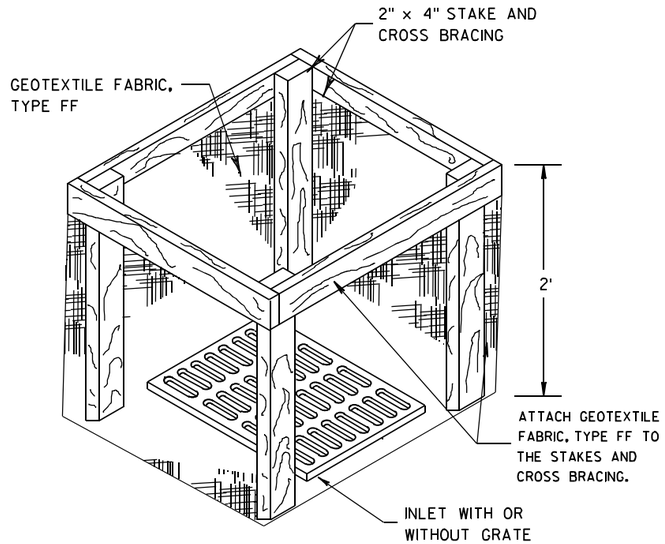
6

S.D.D. 8 E 9-6

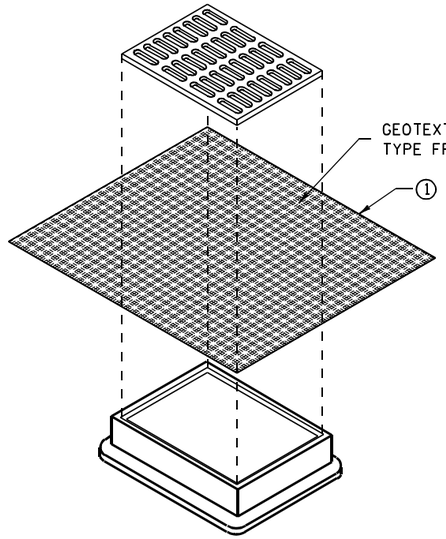
6

S.D.D. 8 E 9-6



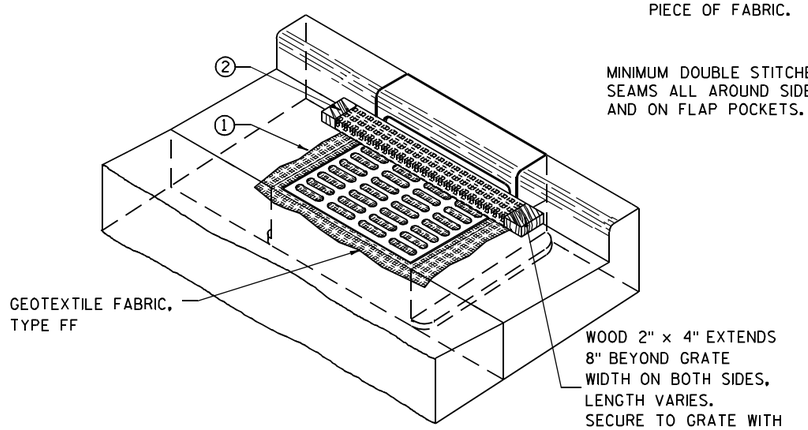


INLET PROTECTION, TYPE A

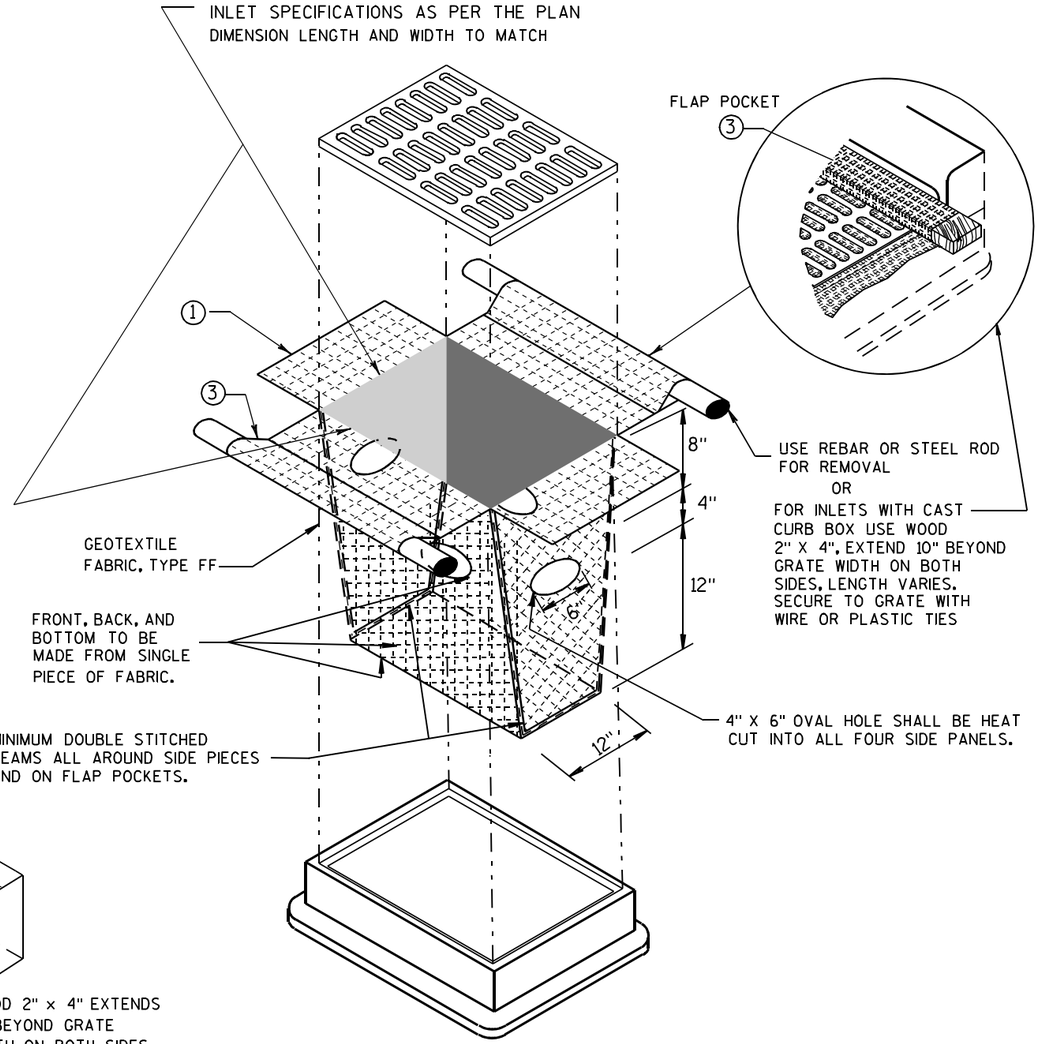


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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.

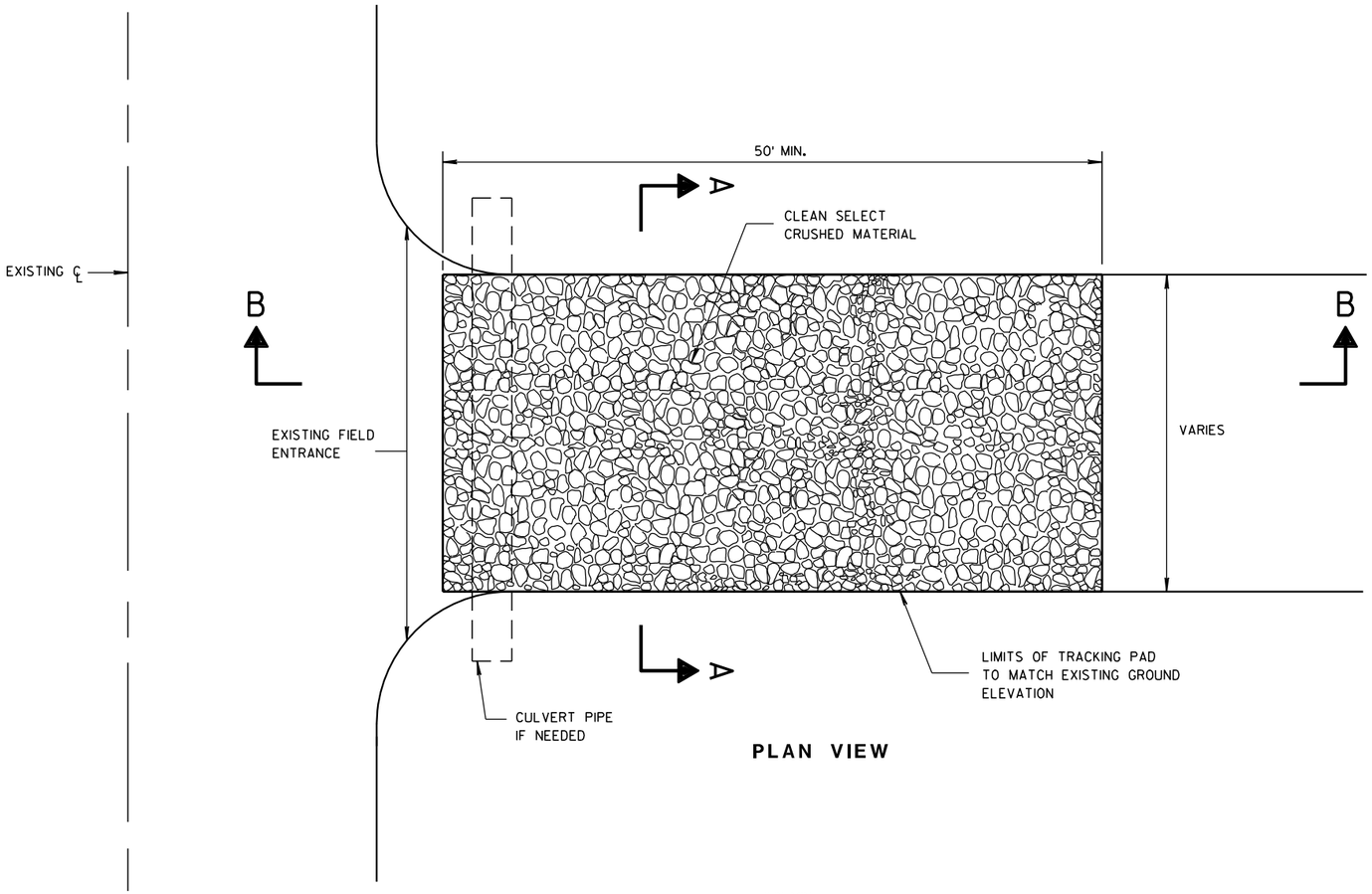
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

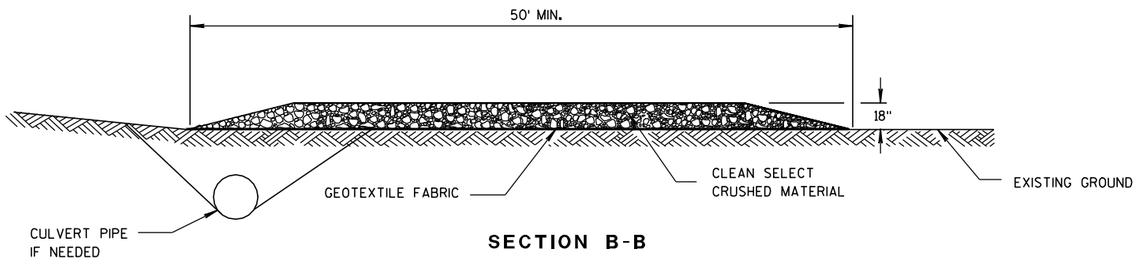
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



PLAN VIEW



SECTION B-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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

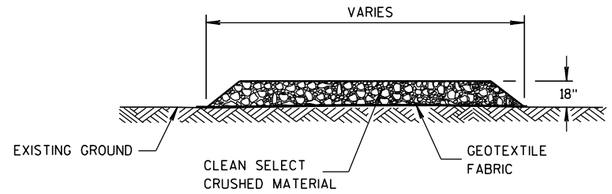
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

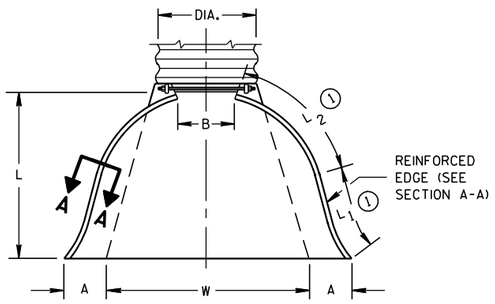
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

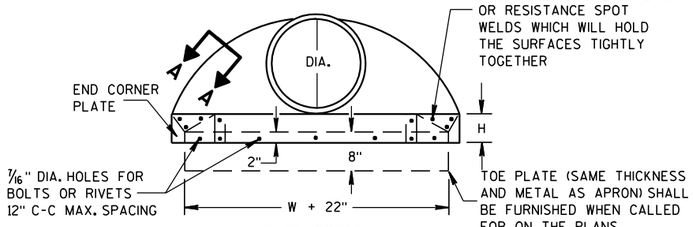
REINFORCED CONCRETE APRON ENDWALLS

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

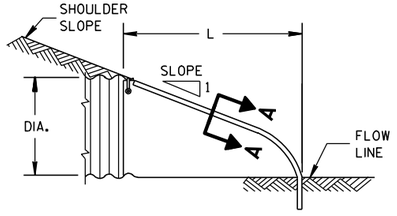
*MINIMUM
**MAXIMUM



PLAN VIEW

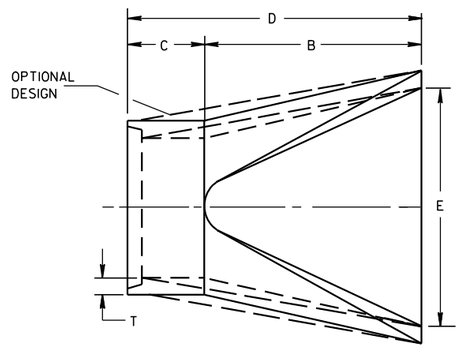


END VIEW

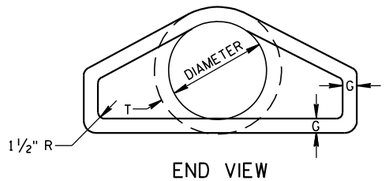


SIDE ELEVATION

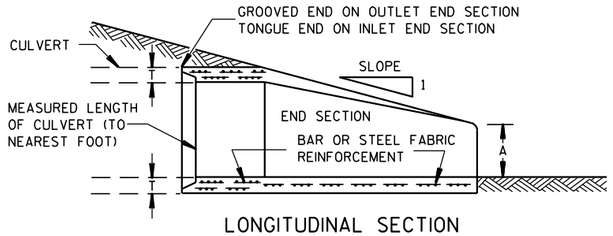
METAL ENDWALLS



PLAN

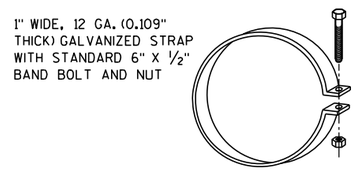


END VIEW



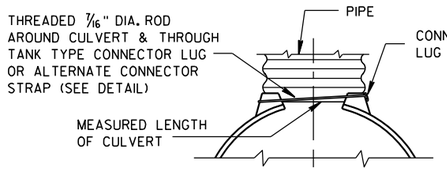
LONGITUDINAL SECTION

CONCRETE ENDWALLS

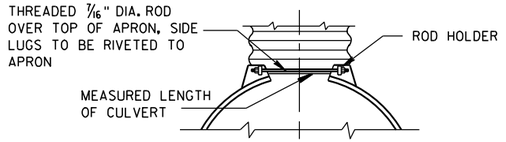


ALTERNATE FOR TYPE 1 CONNECTION

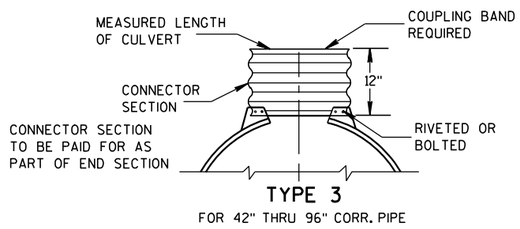
END SECTION CONNECTOR STRAP



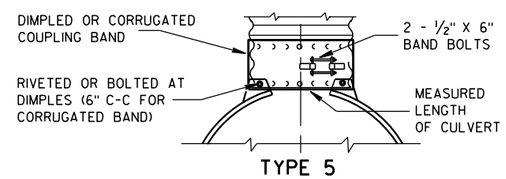
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

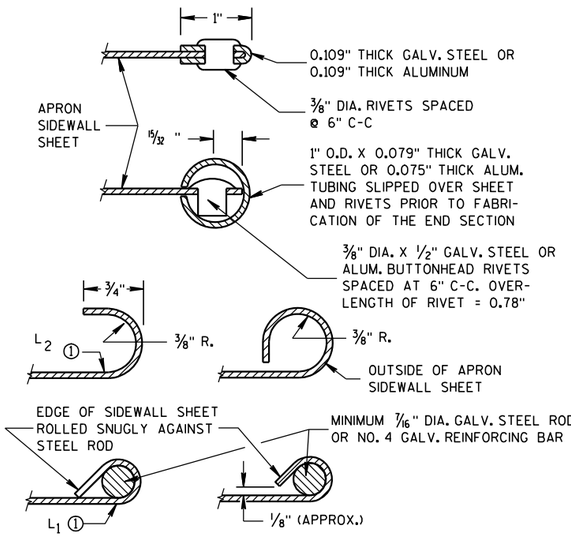
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

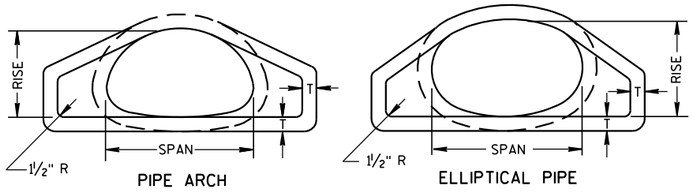
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

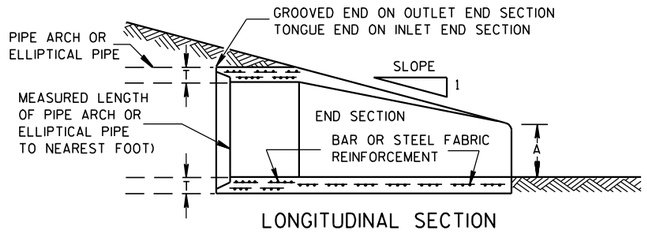
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

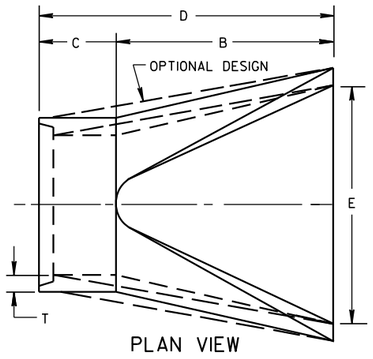
6
S.D.D. 8 F 1-11



END VIEW

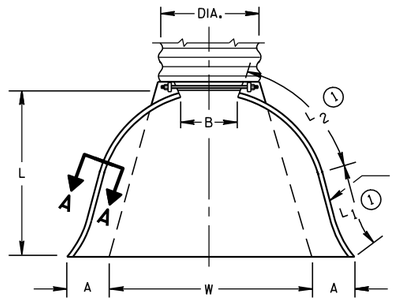


LONGITUDINAL SECTION

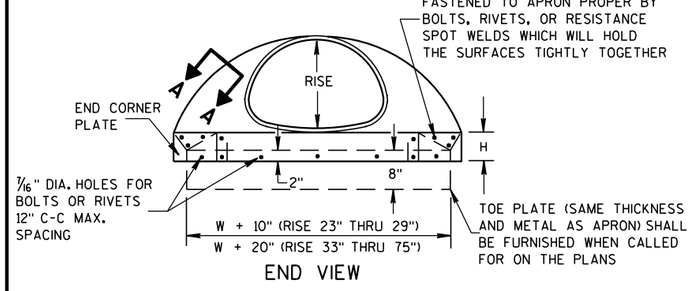


PLAN VIEW

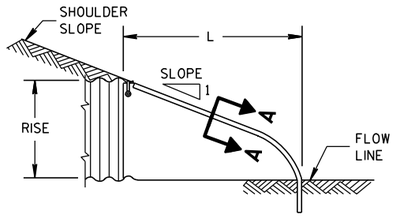
CONCRETE ENDWALLS



PLAN VIEW

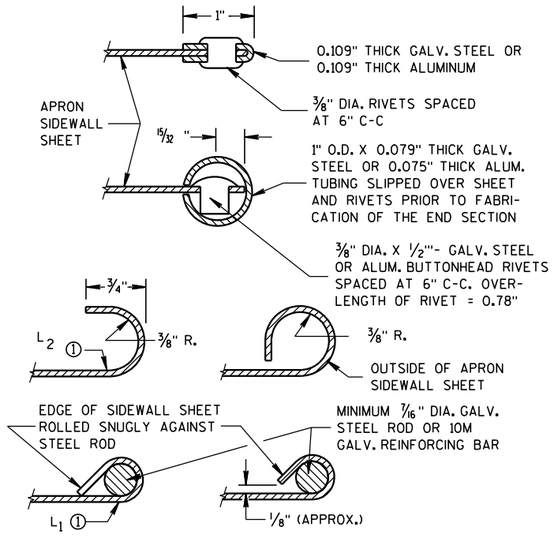


END VIEW



SIDE ELEVATION

METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	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
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅜	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	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
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

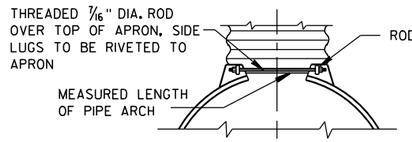
REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	29	18	3	8½	39	33	72	48	3 to 1
30	36	22	3½	9½	50	46	96	60	3 to 1
36	44	27	4	11⅛	60	36	96	72	3 to 1
42	51	31	4½	15 13/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5½	25½	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28½	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

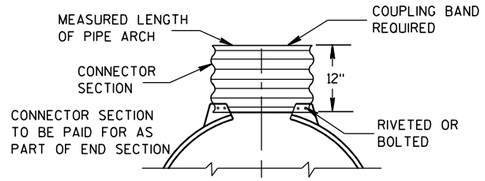
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48	6½	30	60	36	96	96	2½ to 1

**NOMINAL SIZE



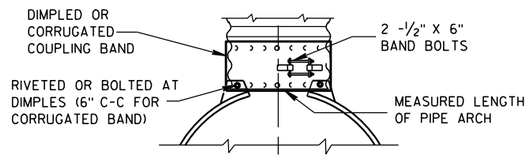
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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 ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

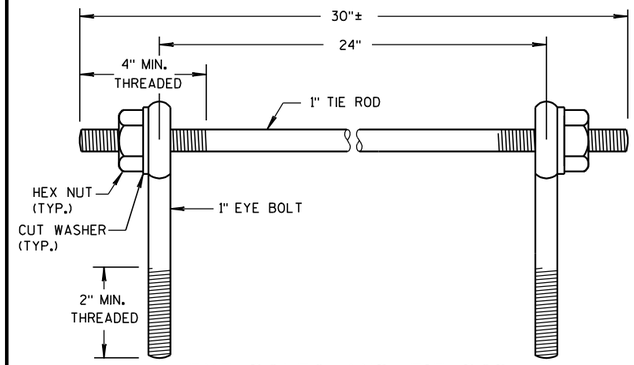
FHWA

6

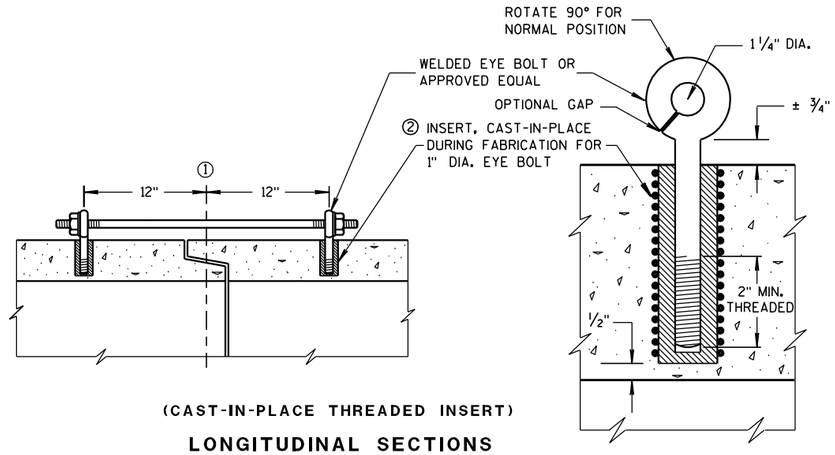
S.D.D. 8 F 2-1

6

S.D.D. 8 F 2-1



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

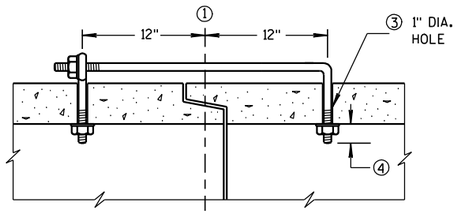
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

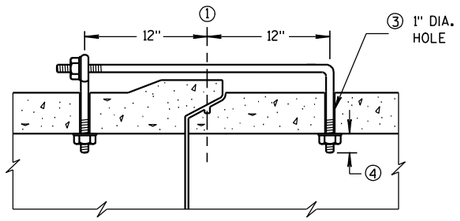
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

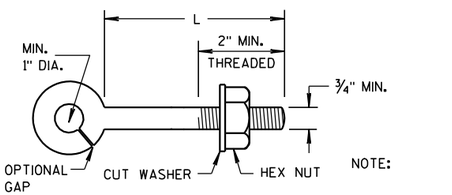


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

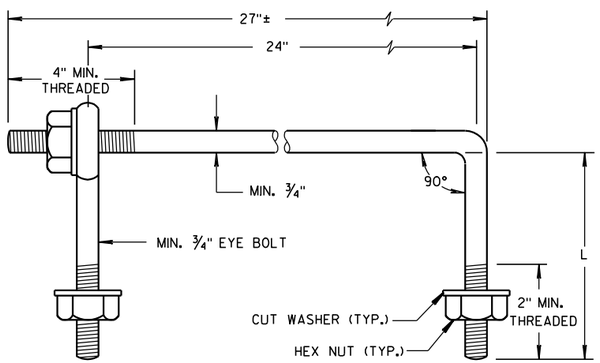
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

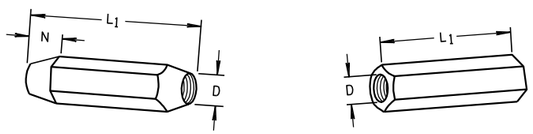
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

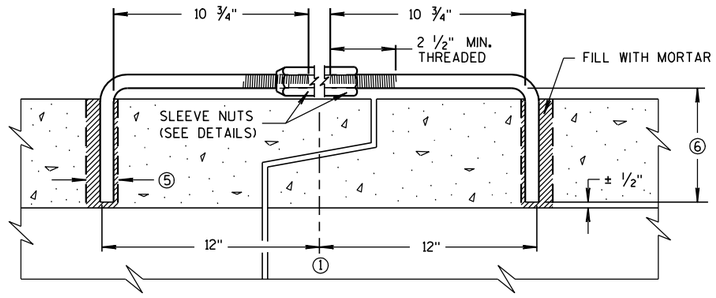
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

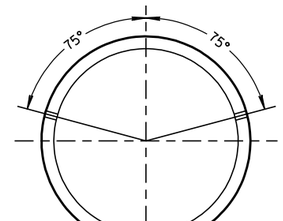
SLEEVE NUTS



LONGITUDINAL SECTION

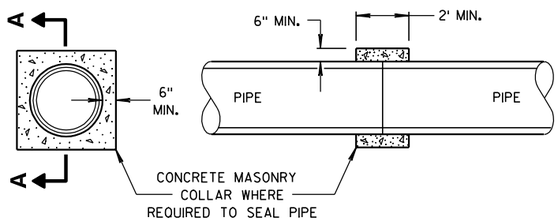
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

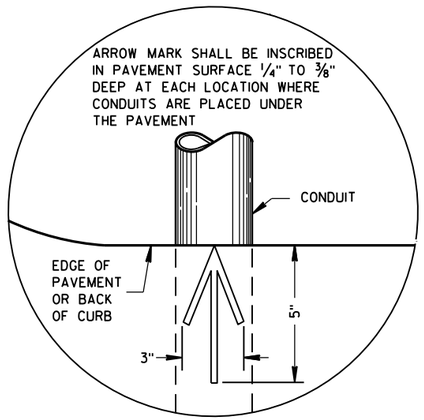
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
184
FHWA

6

S.D.D. 8 F 4-7

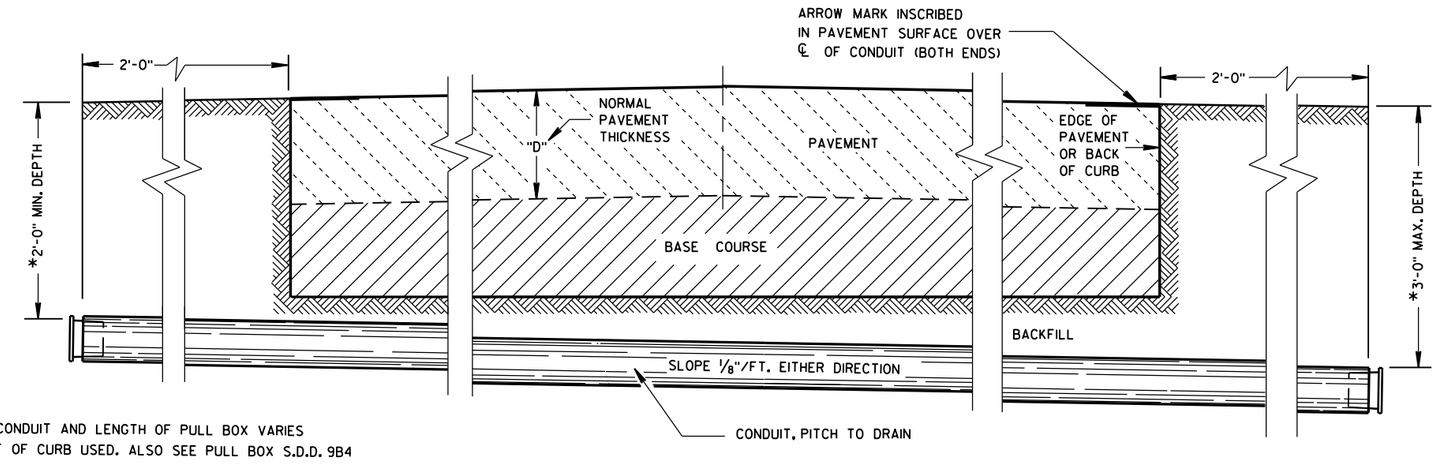
6

S.D.D. 8 F 4-7



PLAN VIEW

ARROW MARK



*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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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

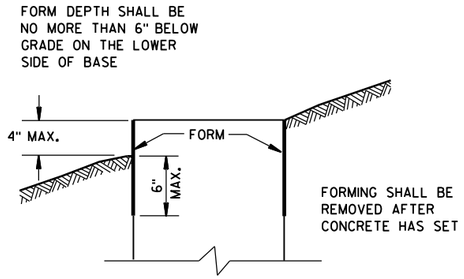
CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 B 2-10



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.

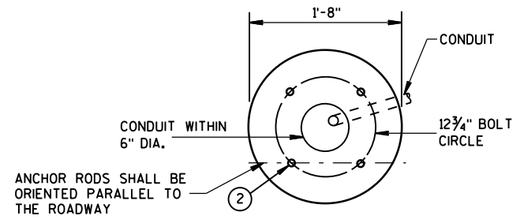
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

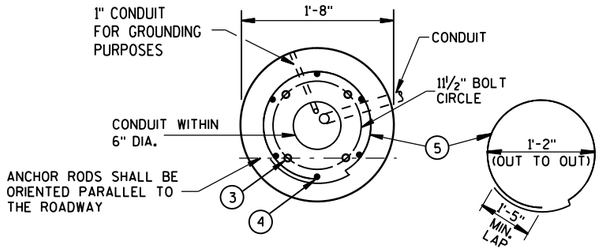
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

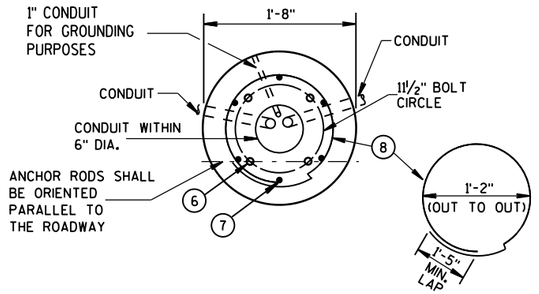
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

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

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

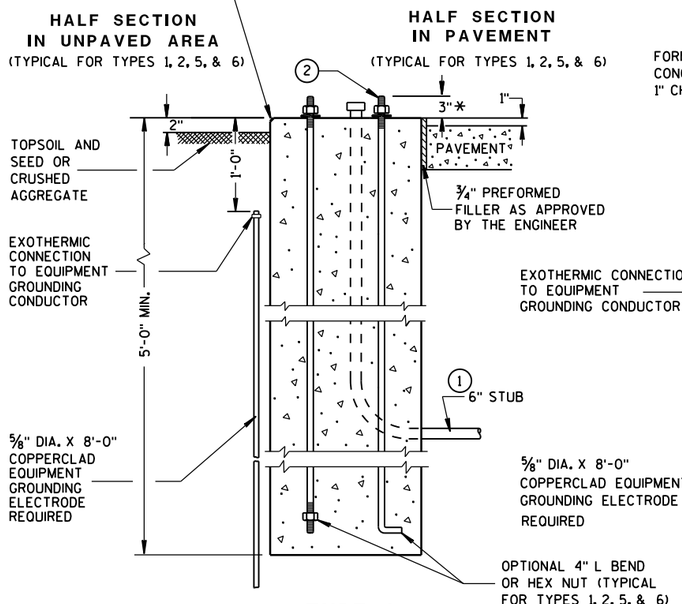






HALF SECTION IN UNPAVED AREA

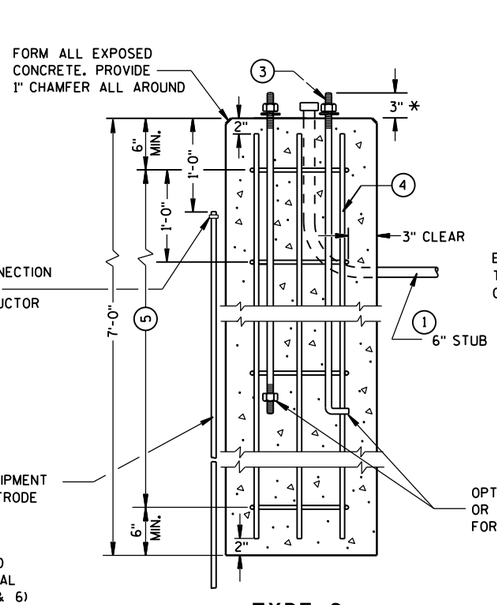
(TYPICAL FOR TYPES 1, 2, 5, & 6)



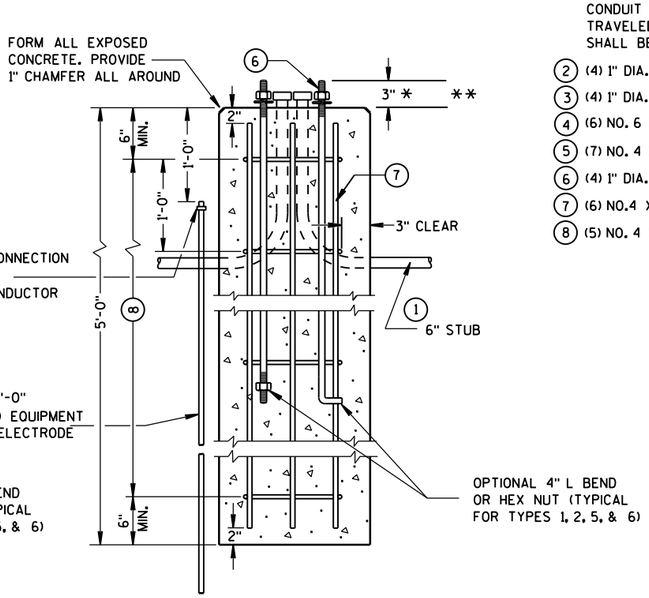
TYPE 1

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

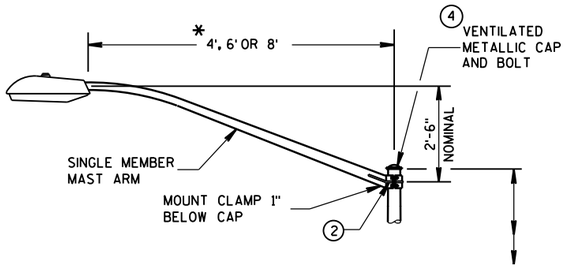
APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL

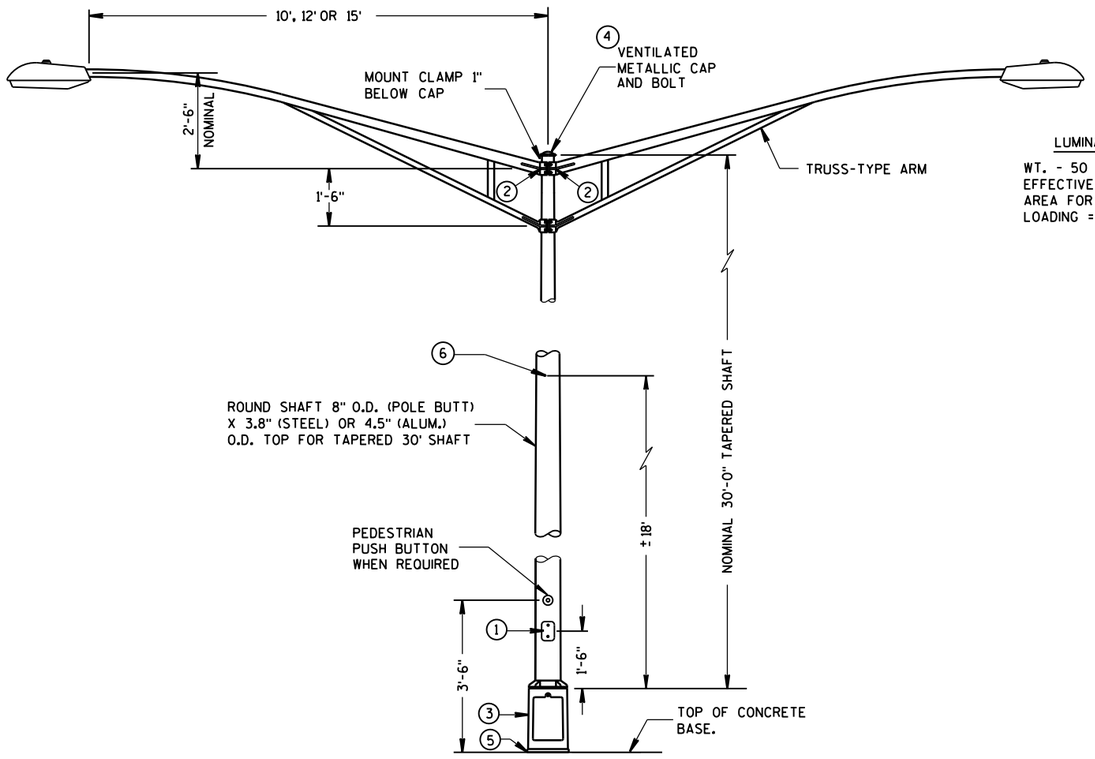
FHWA

6

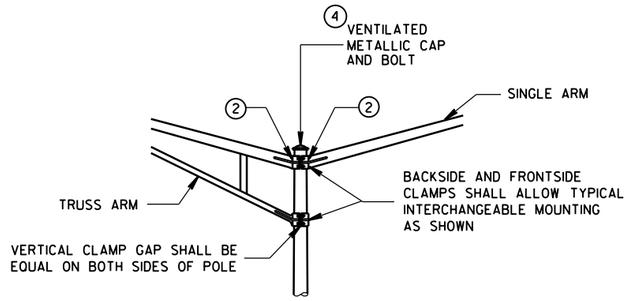
S.D.D. 9 C 2-7

*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.

6

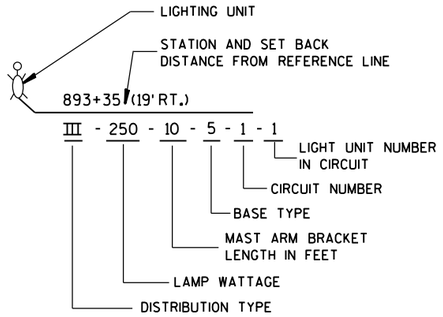
S.D.D. 9 E 1-14d

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

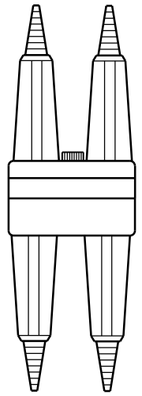
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

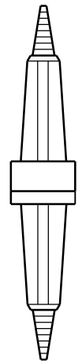
S.D.D. 9 E 1-14d



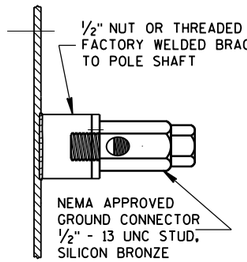
LIGHTING UNIT CODE
(TYPICAL)

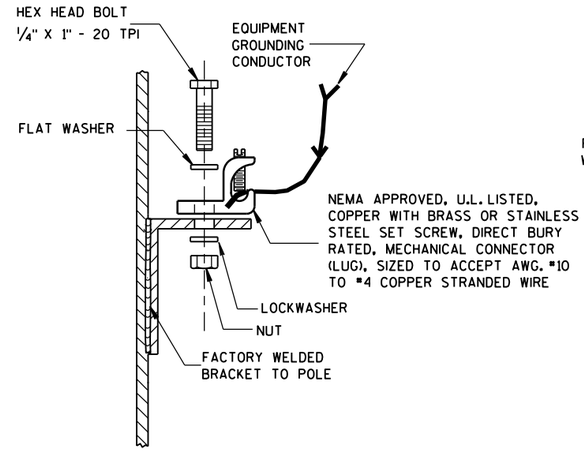


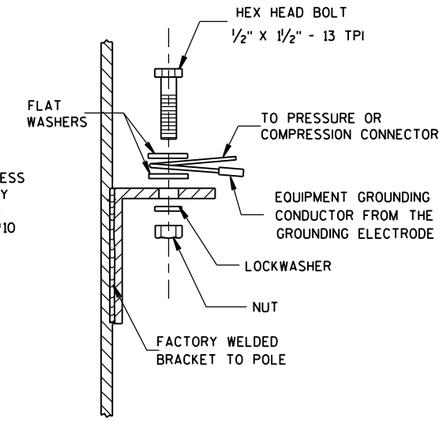
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



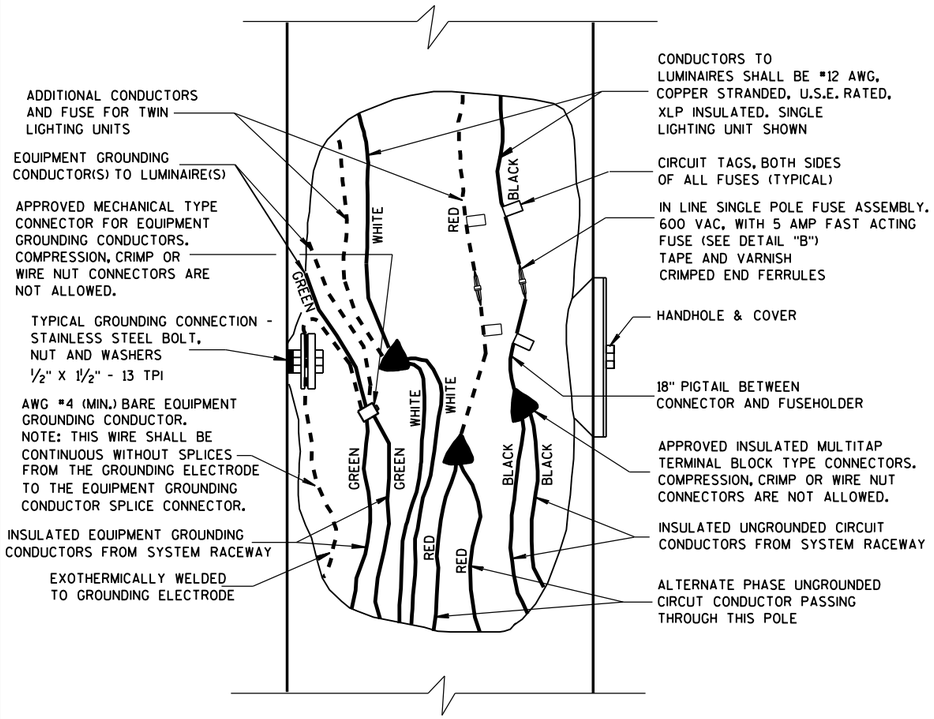
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



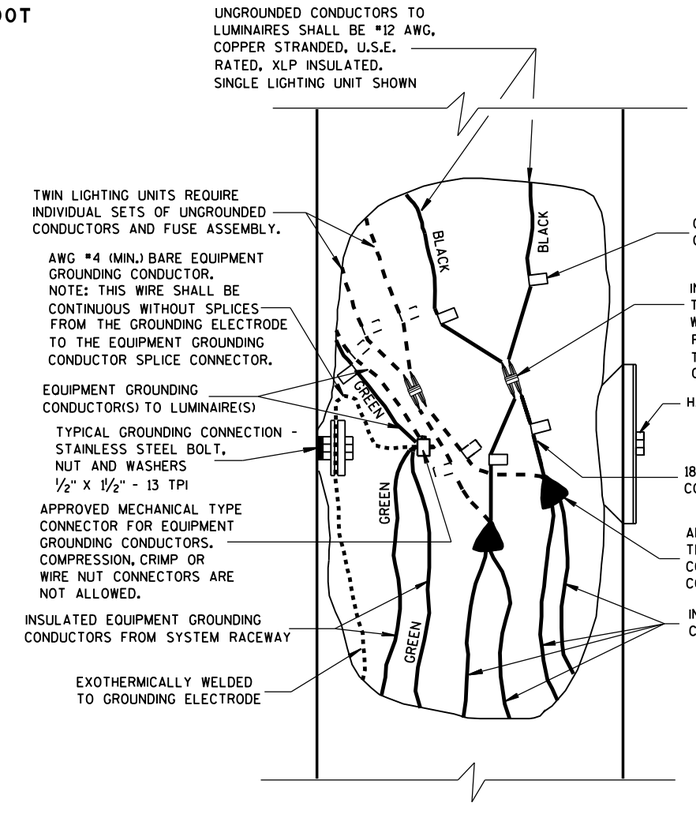




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



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



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

GENERAL NOTES

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

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

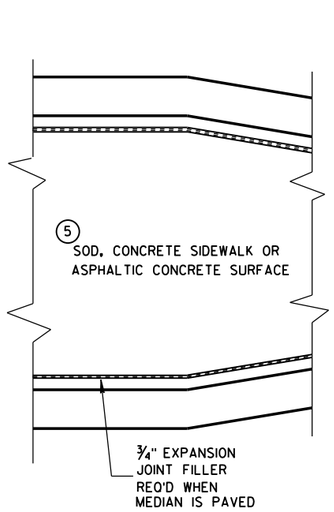
WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

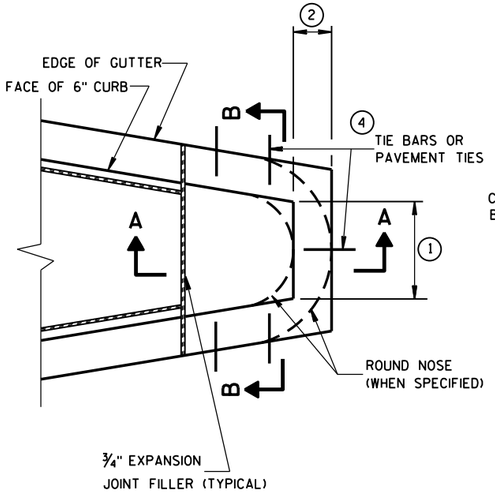
NON-FREEWAY LIGHTING UNIT POLE WIRING

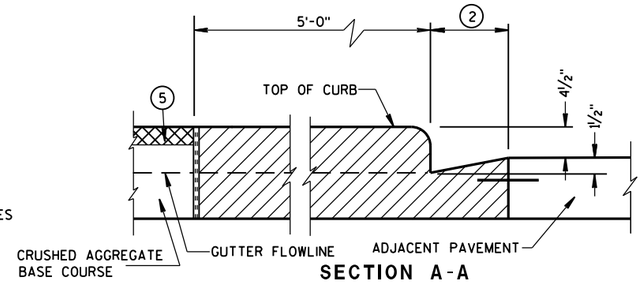
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

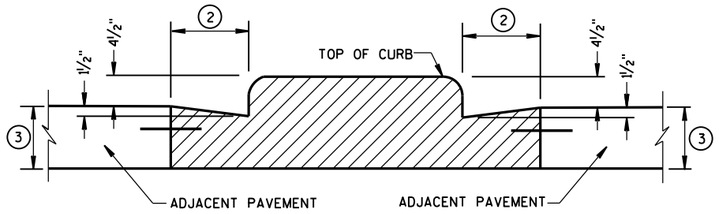
6
S.D.D. 9 E 3-5







SECTION A-A



SECTION B-B

CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

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

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

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

(1) NEW OR EXISTING CONCRETE PAVEMENT.

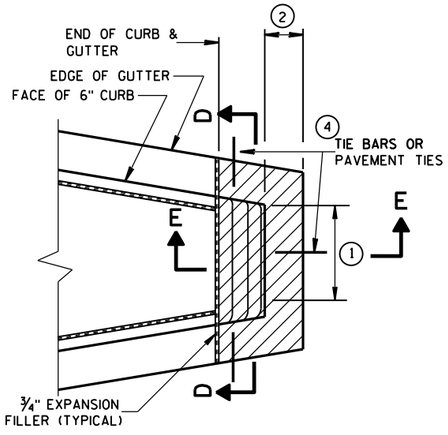
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

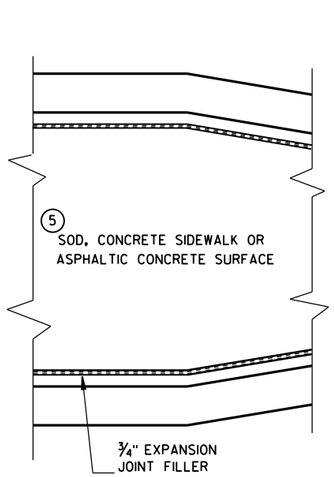
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

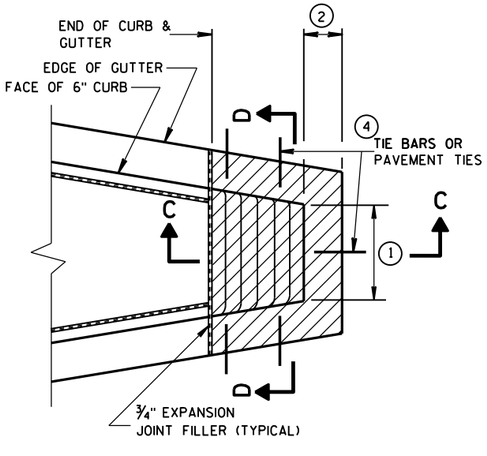
(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

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

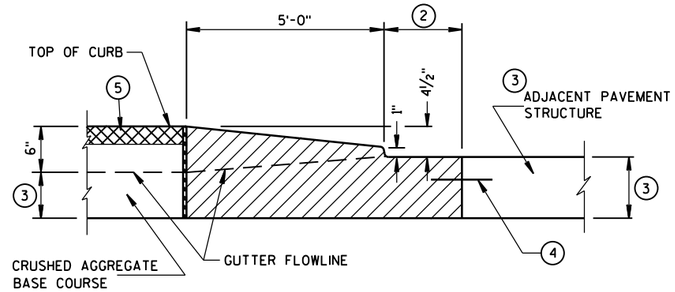
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



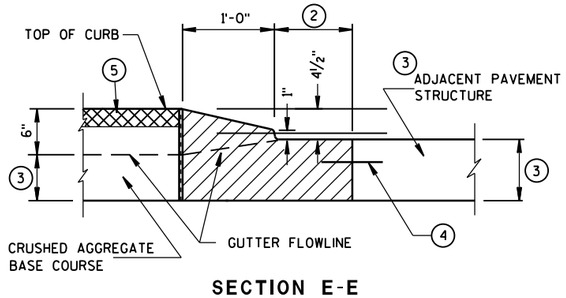




CONCRETE MEDIAN SLOPED NOSE TYPE 1

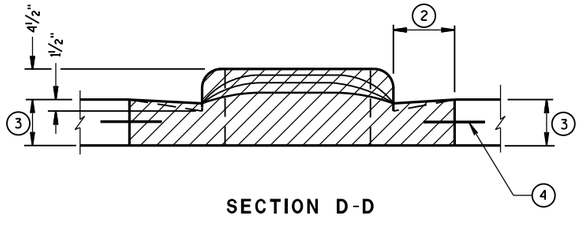


SECTION C-C



SECTION E-E

CONCRETE MEDIAN SLOPED NOSE TYPE 2



SECTION D-D

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

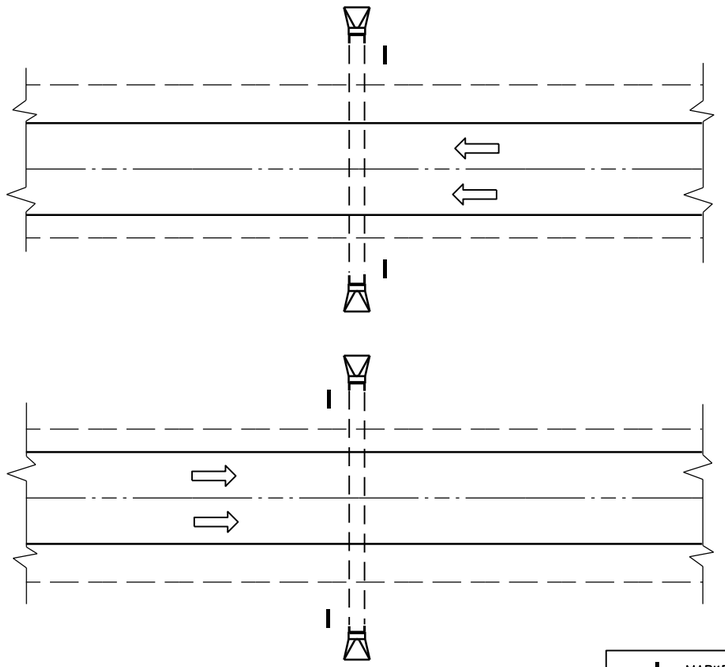
APPROVED
6/8/2006
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS D ENGINEER
FHWA

6

S.D.D. 11 B 2-2

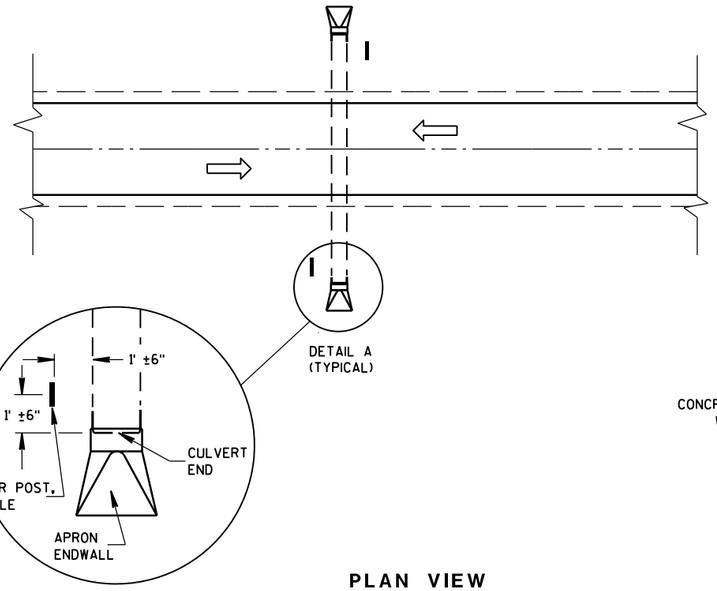
6

S.D.D. 11 B 2-2



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

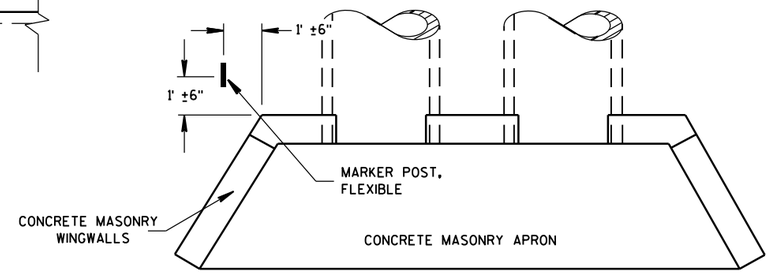
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

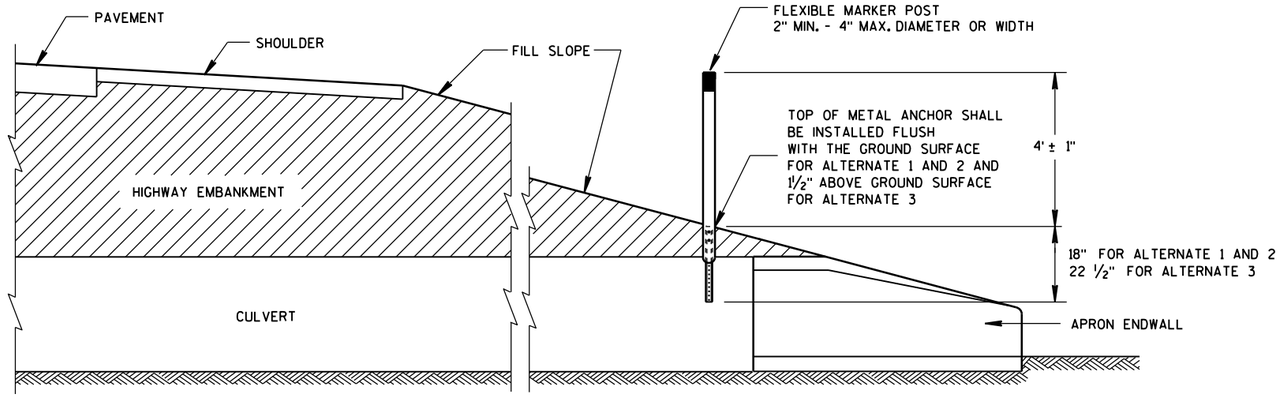
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

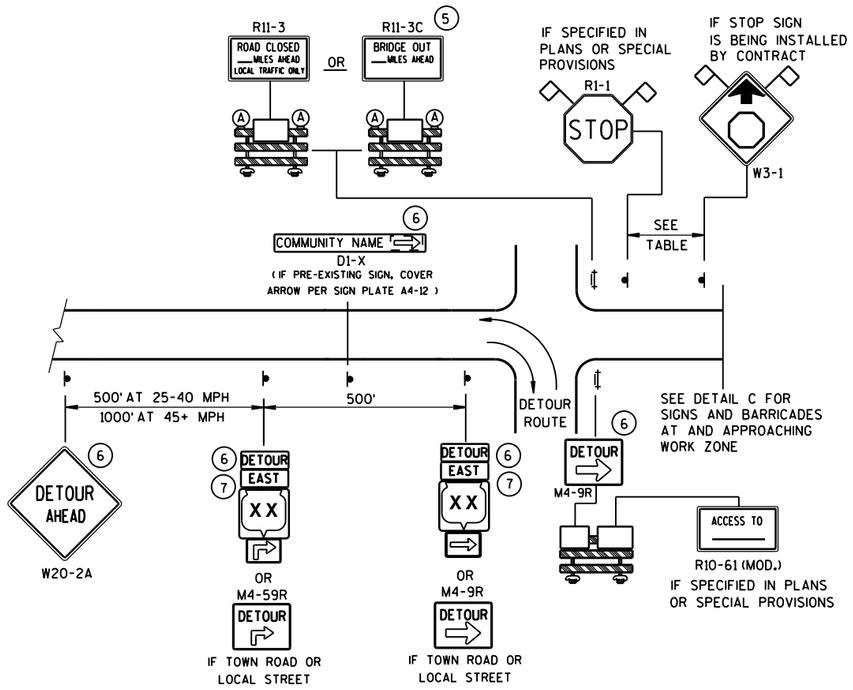
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

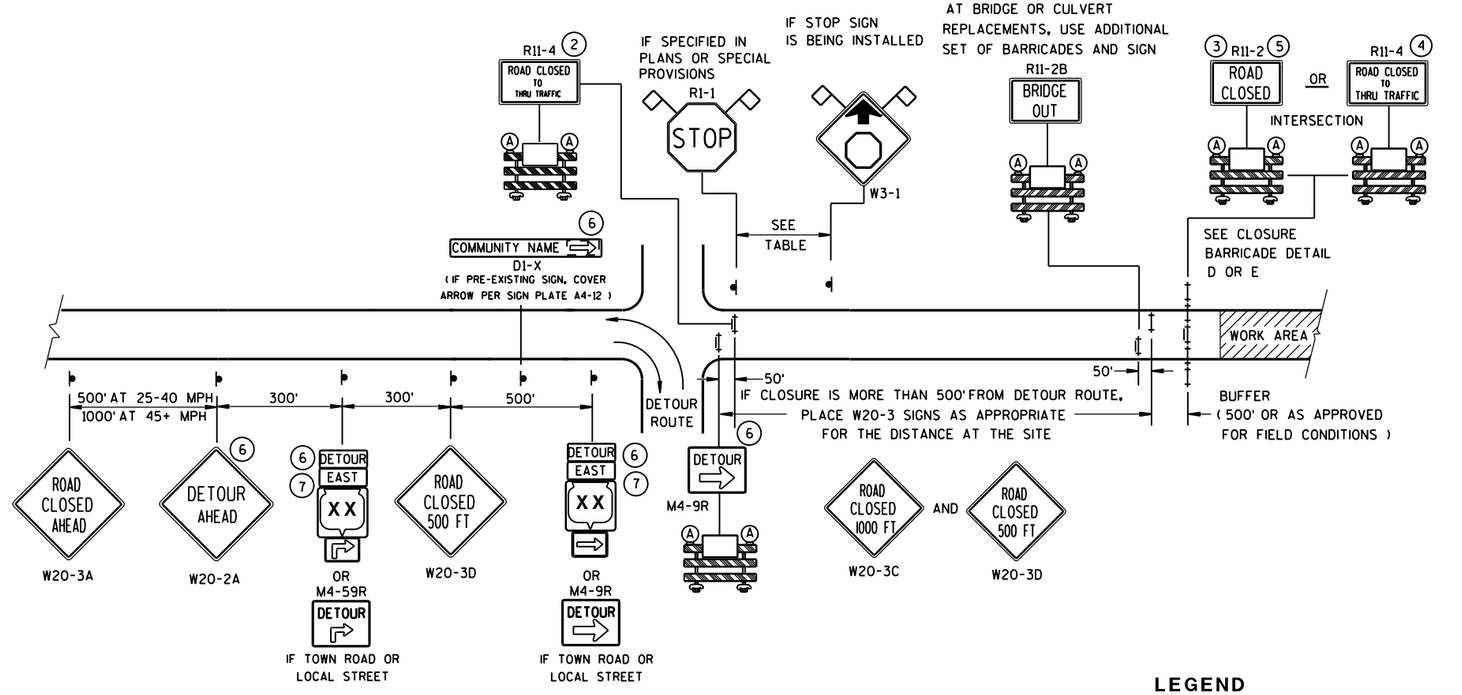
6

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



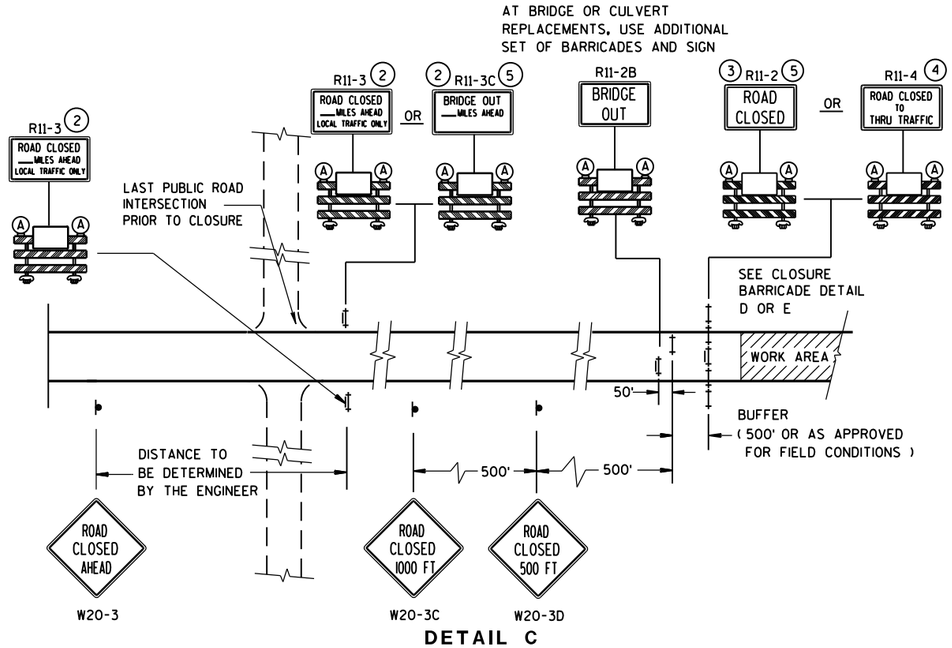
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

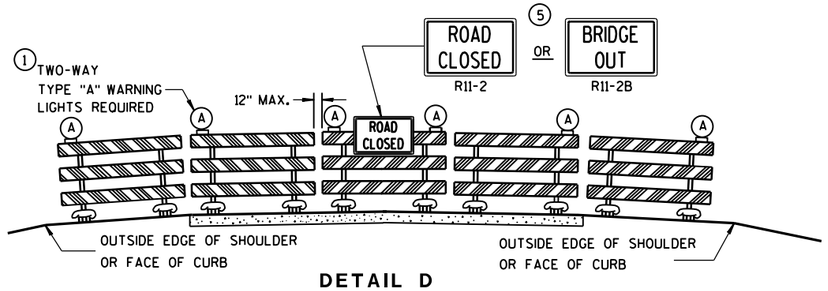
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

S.D.D. 15 C 2-6a

6

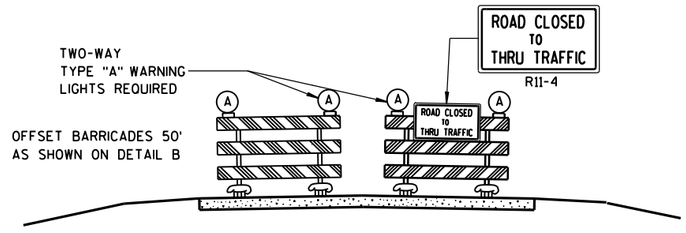
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

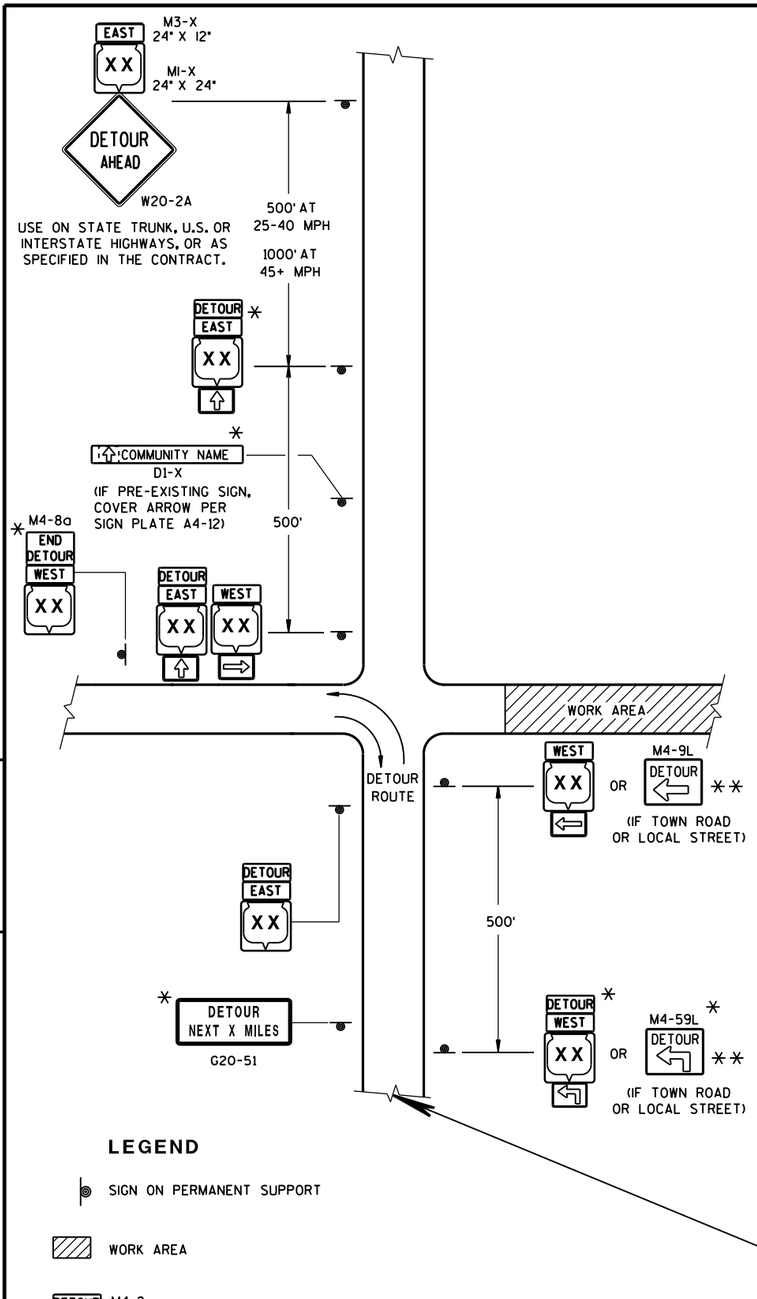
Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FIC

FHWA

6

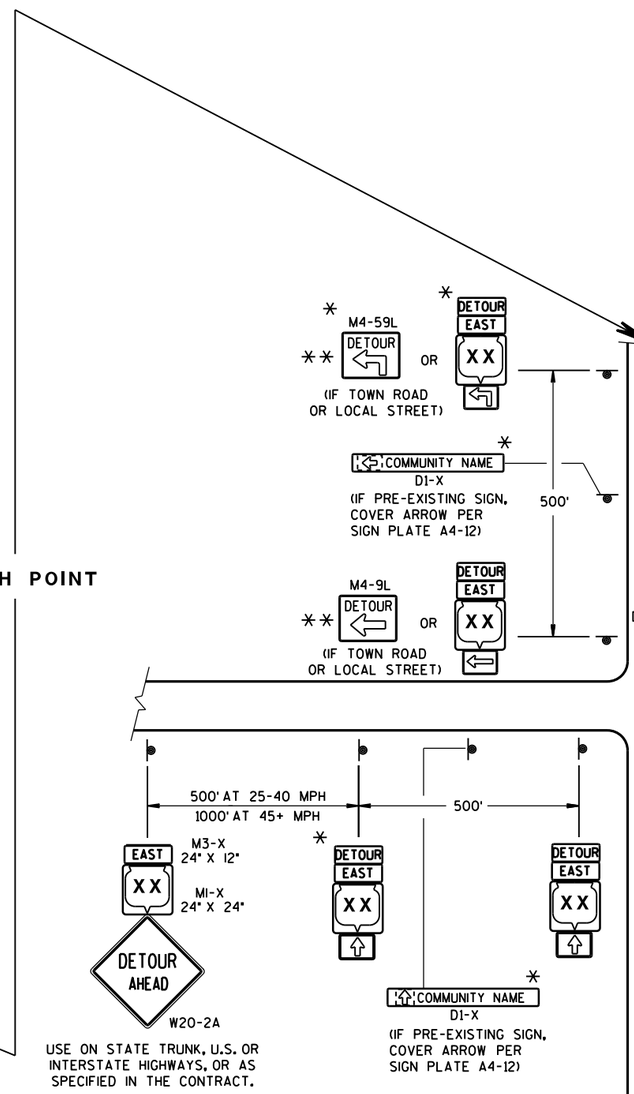
S.D.D. 15 C 2-6b

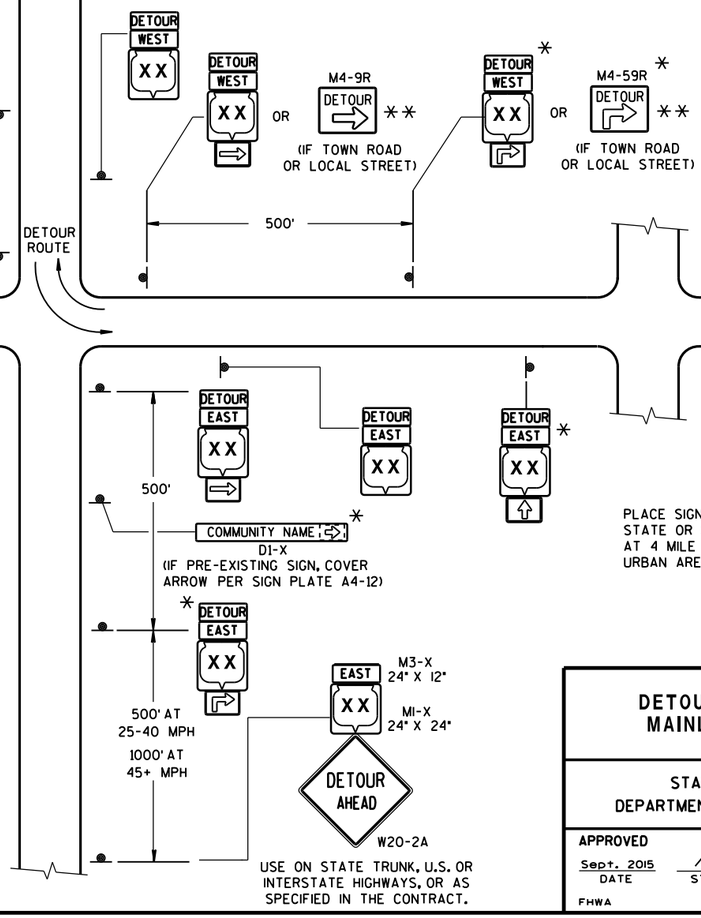


SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

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





GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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

DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015
DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] FIC
SAFETY ENGI[illegible]

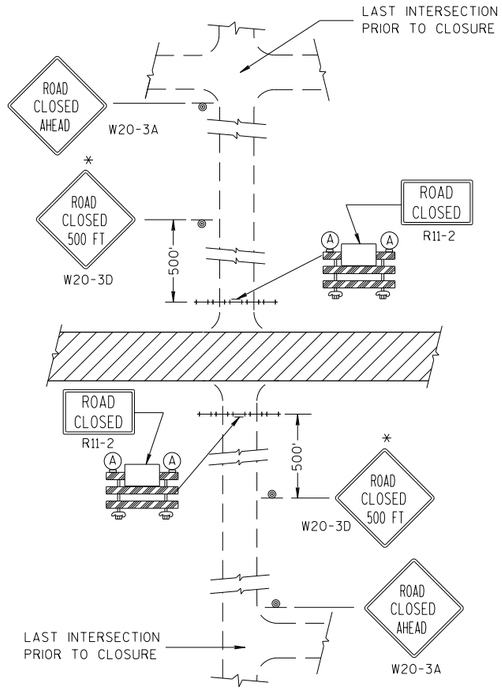
FHWA

6

S.D.D. 15 C 2-6c

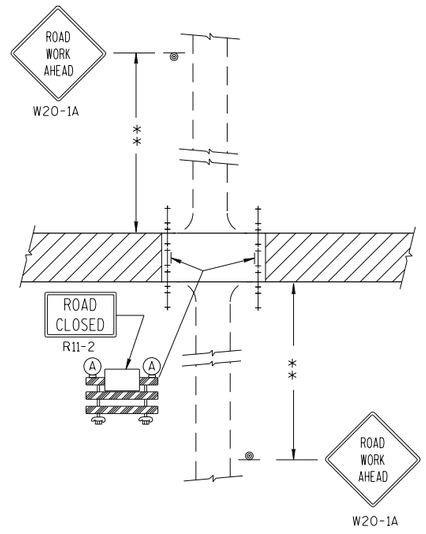
6

S.D.D. 15 C 2-6c



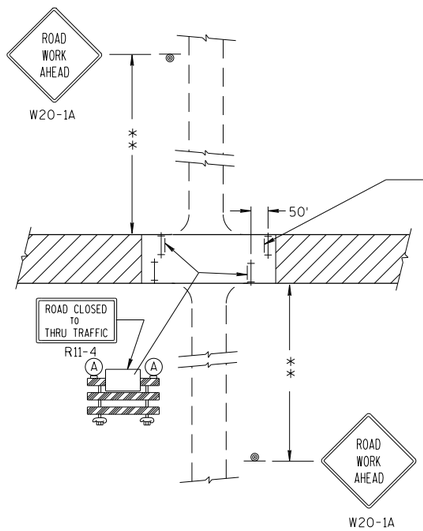
DETAIL 1

(NO ACCESS TO PROJECT)



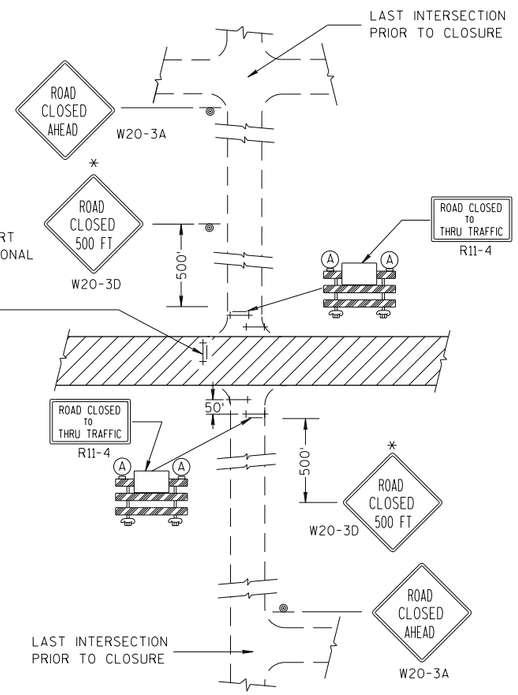
DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGI

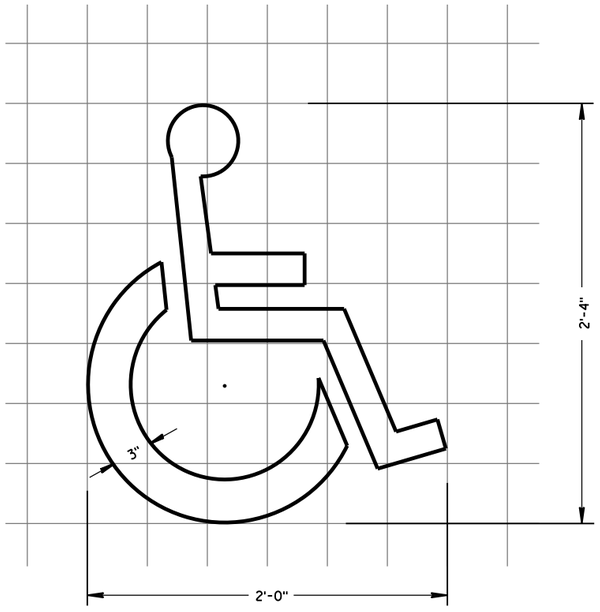
FHWA

6

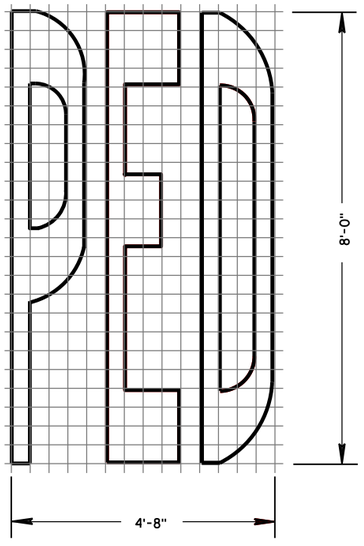
S.D.D. 15 C 3-5

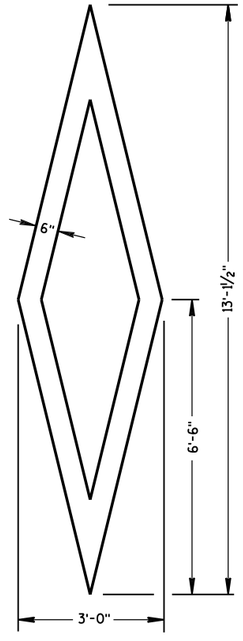
GENERAL NOTES

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.



HANDICAP SYMBOL





PREFERENTIAL LANE SYMBOL

6

6

S.D.D. 15 C 7-14a

S.D.D. 15 C 7-14a

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

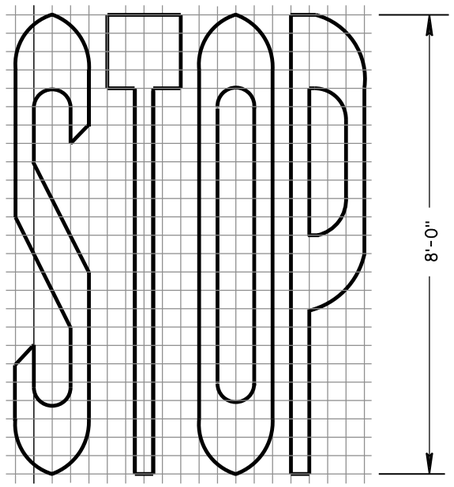
June 2017 — DATE

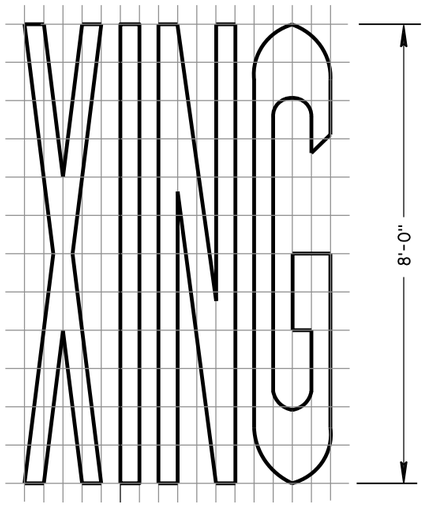
/S/ Matthew R. Rauch — STATE SIGNING AND MARK EER

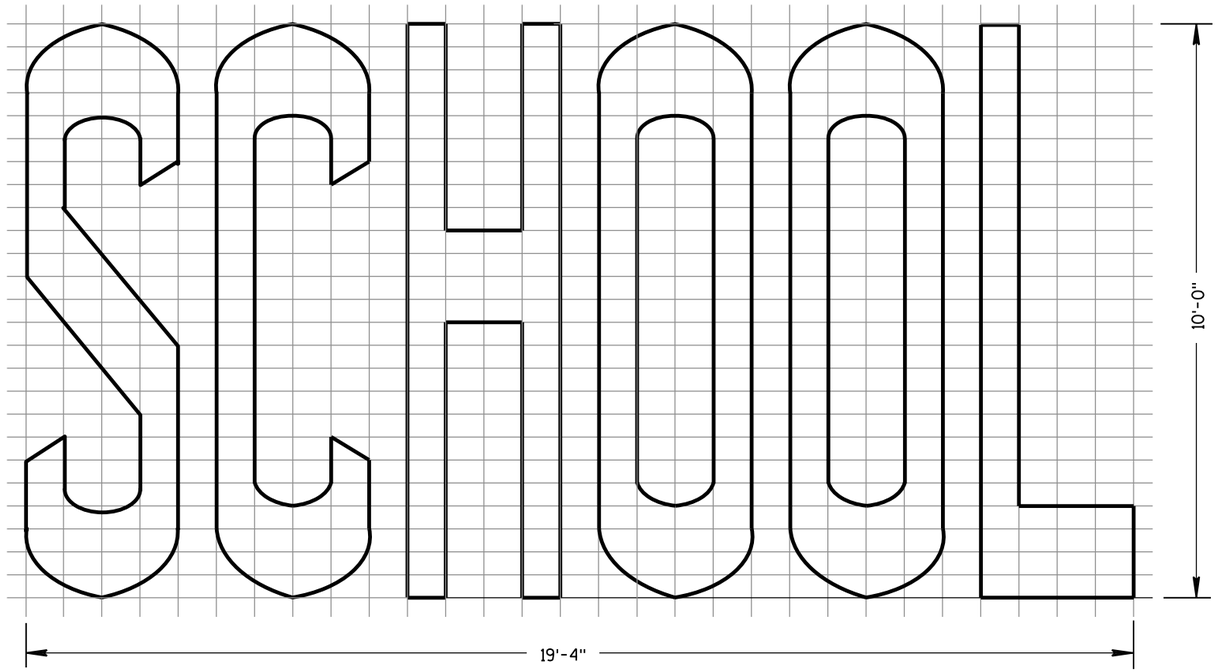
FHWA

GENERAL NOTES

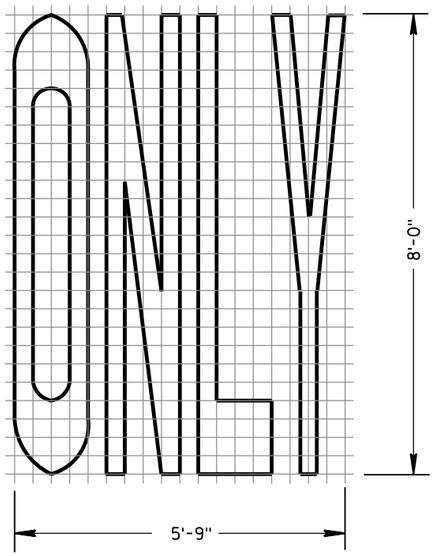
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

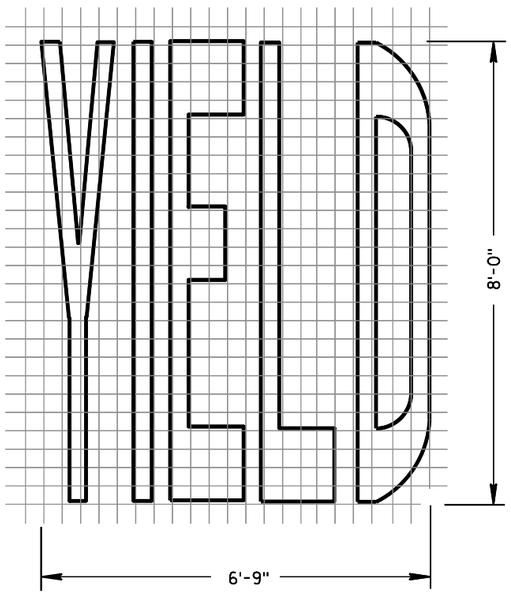


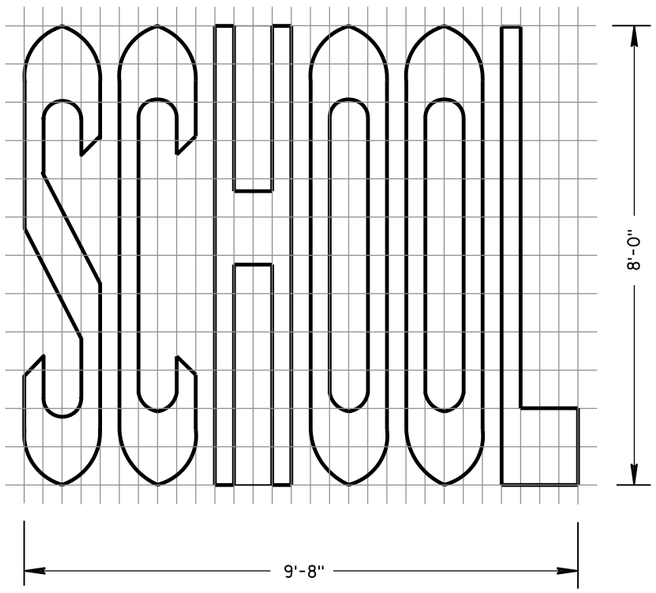




TWO-LANE







SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARK
EER
FHWA

6

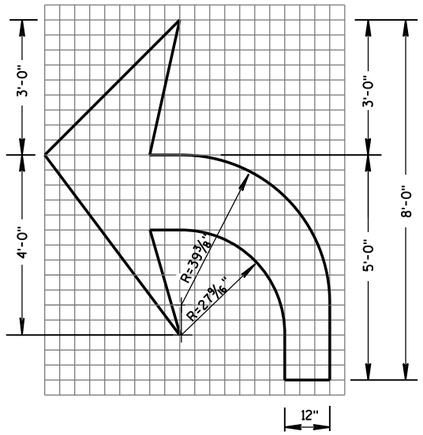
S.D.D. 15 C 7-14b

6

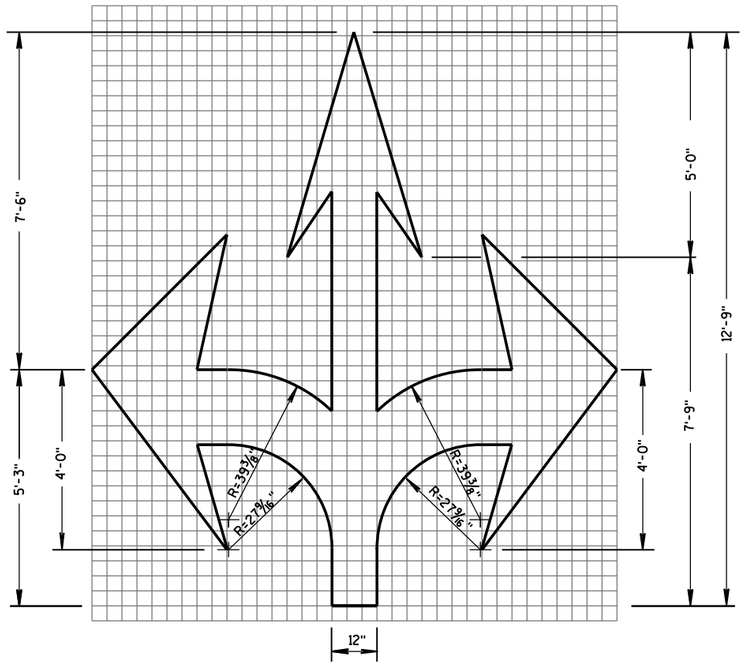
S.D.D. 15 C 7-14b

GENERAL NOTES

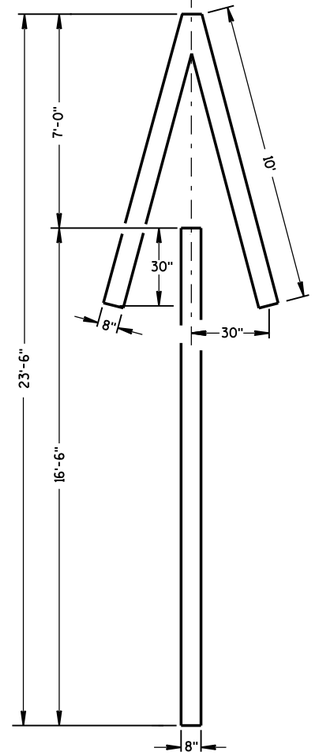
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



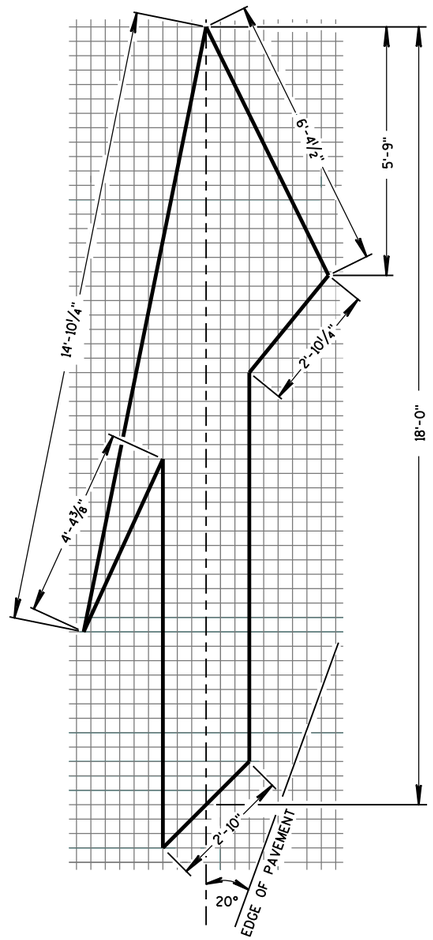
TYPE 2



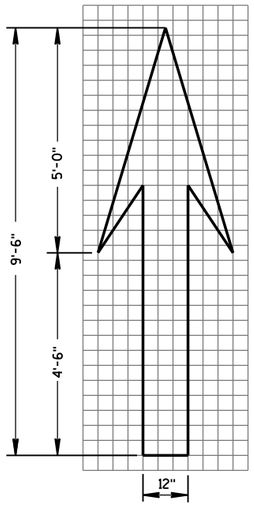
TYPE 6



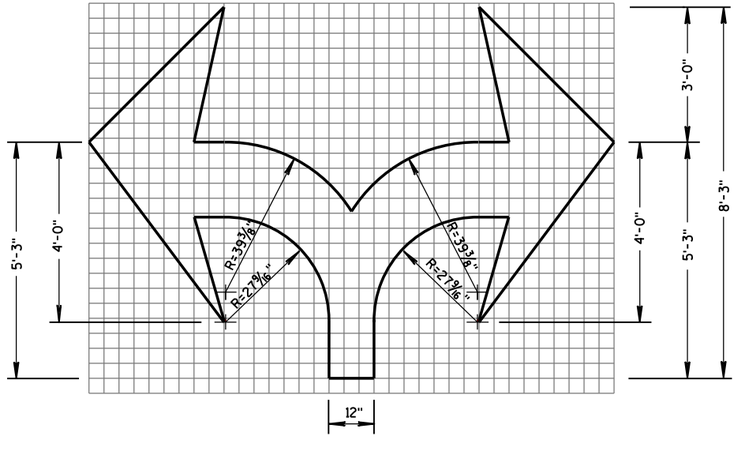
TYPE 4



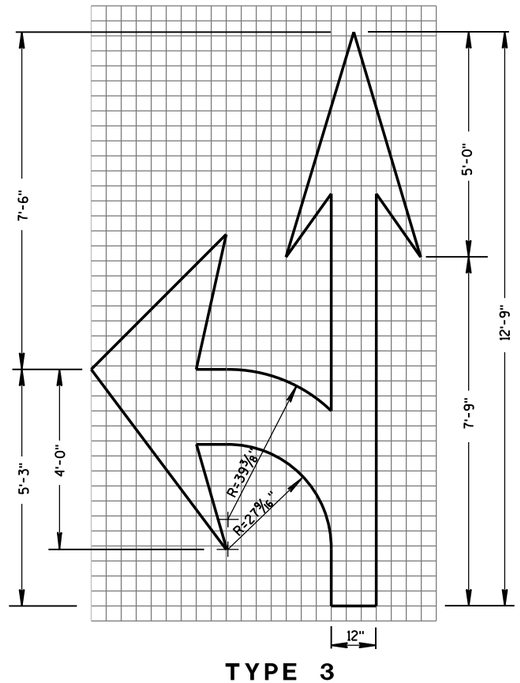
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

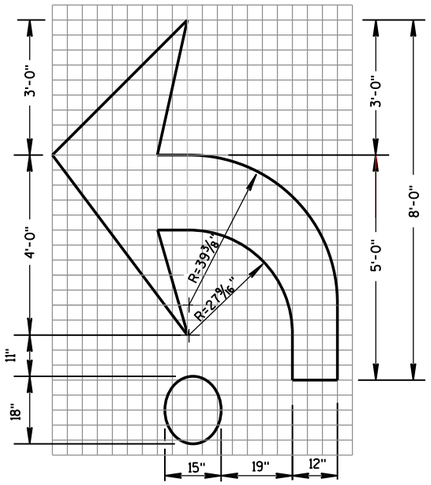
S.D.D. 15 C 7-14c

6

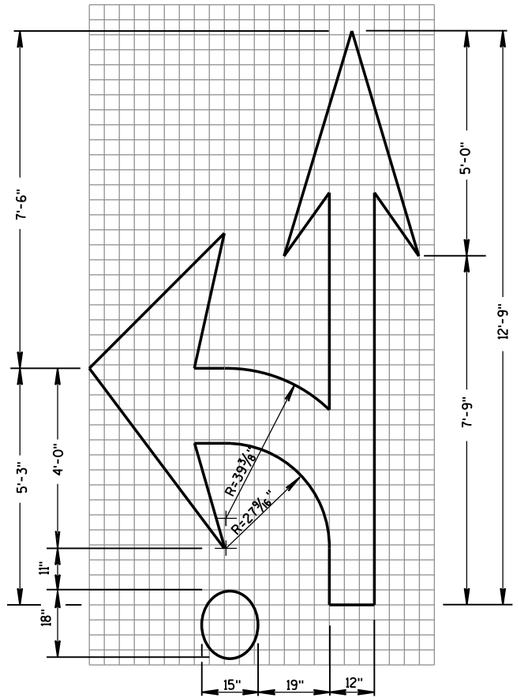
S.D.D. 15 C 7-14c

GENERAL NOTES

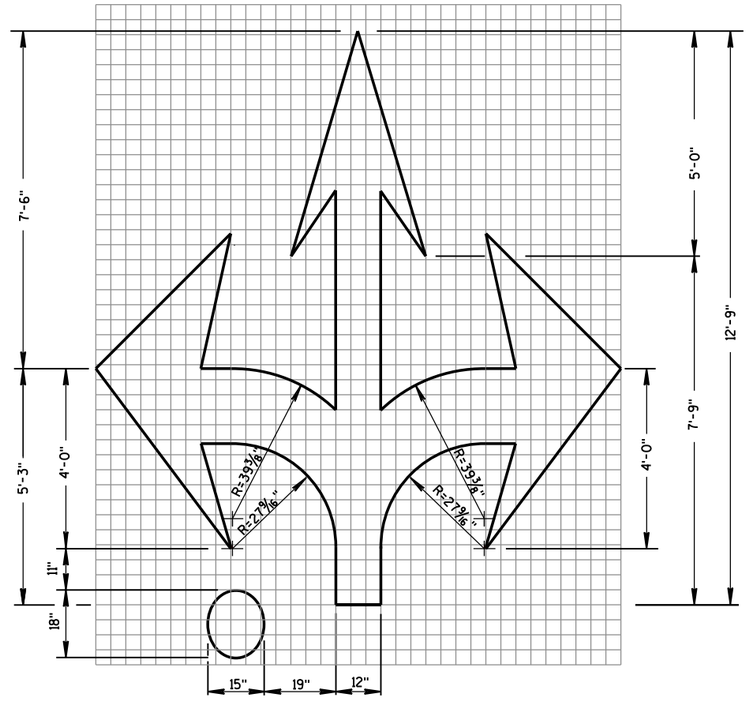
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



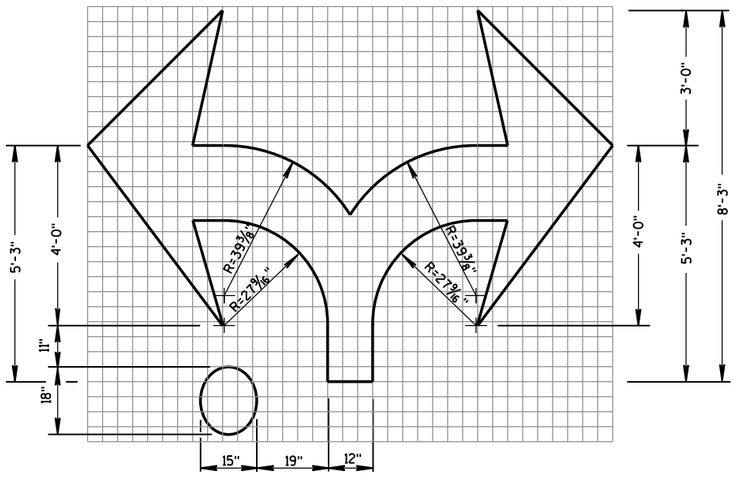
TYPE 2R



TYPE 3R



TYPE 6R



TYPE 7R

6

S.D.D. 15 C 7-14d

ROUNDABOUT ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

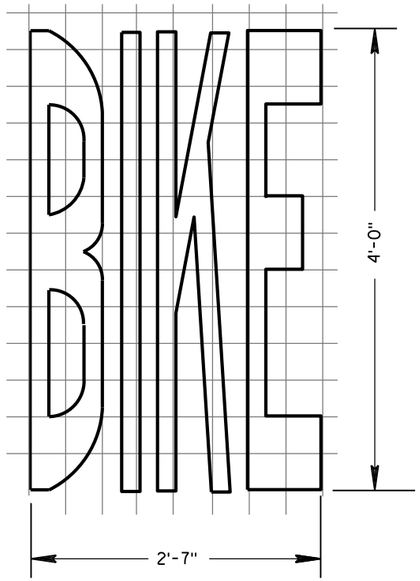
APPROVED
June 2017
DATE

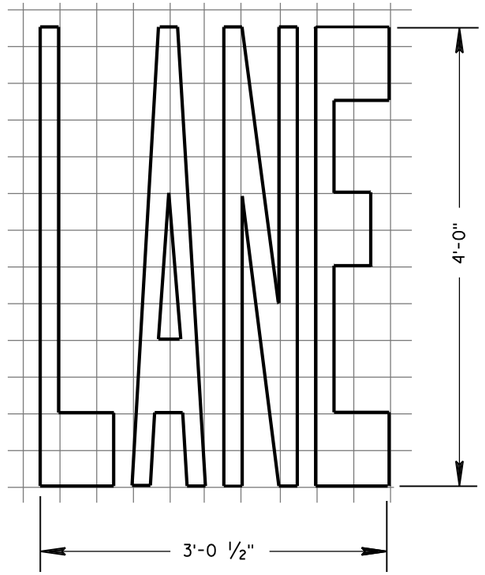
/S/ Matthew R. Rauch
STATE SIGNING AND MAR[illegible]NEER

FHWA

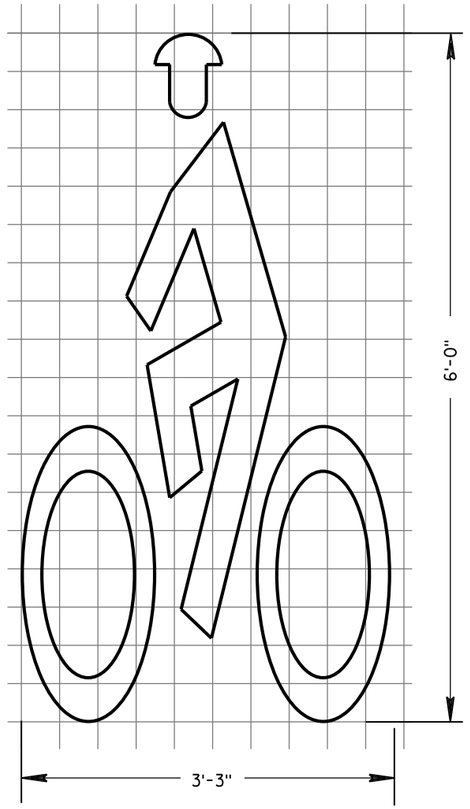
6

S.D.D. 15 C 7-14d

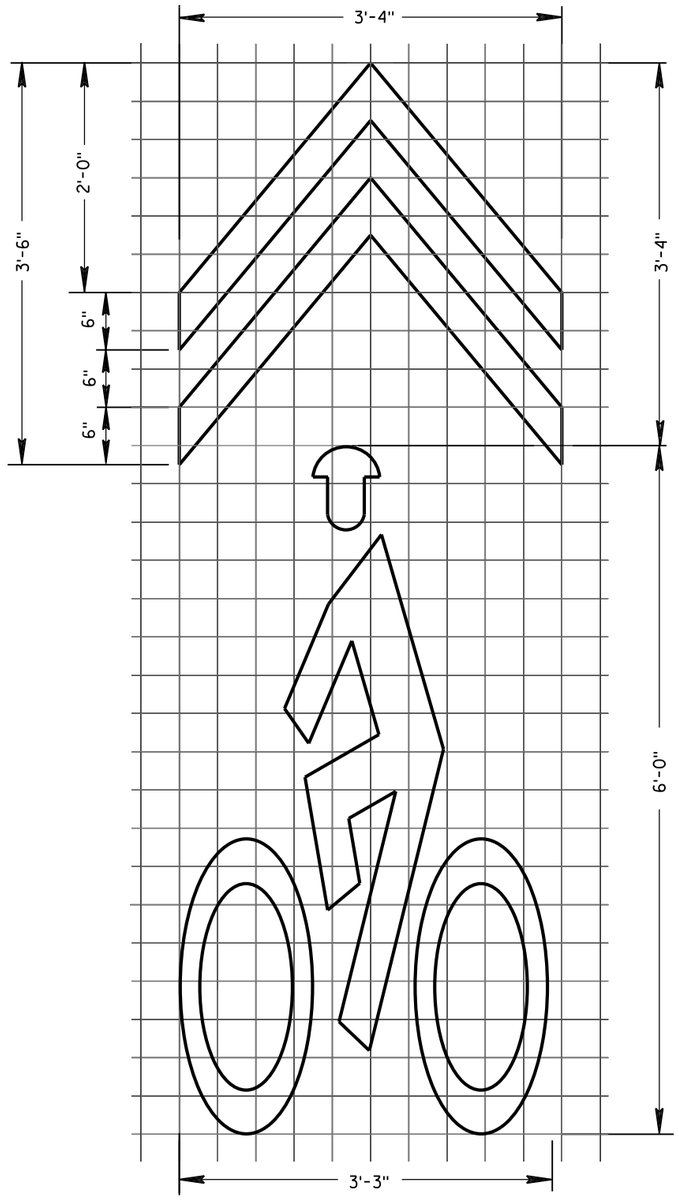




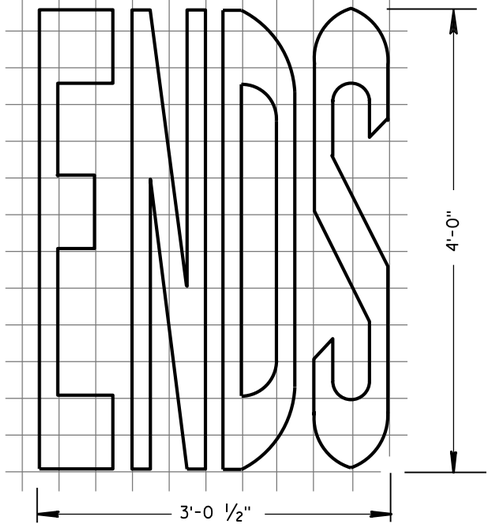
BIKE LANE WORDS



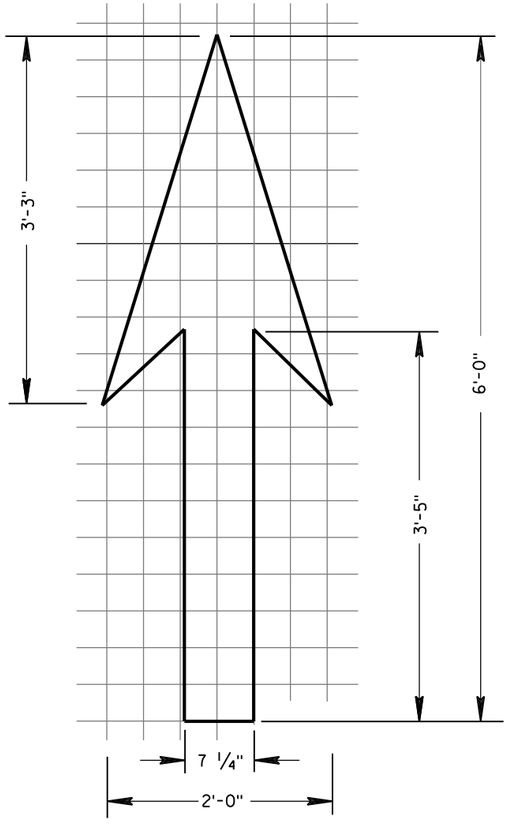
BIKE LANE SYMBOL



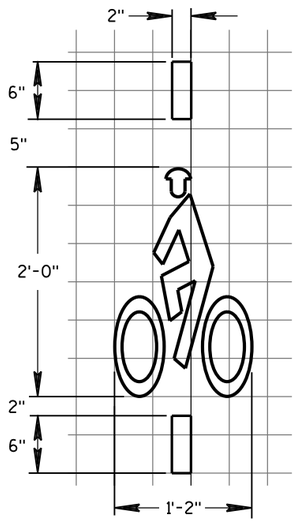
BIKE SYMBOL FOR SHARED LANE



BIKE LANE WORDS



BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING

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.

PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

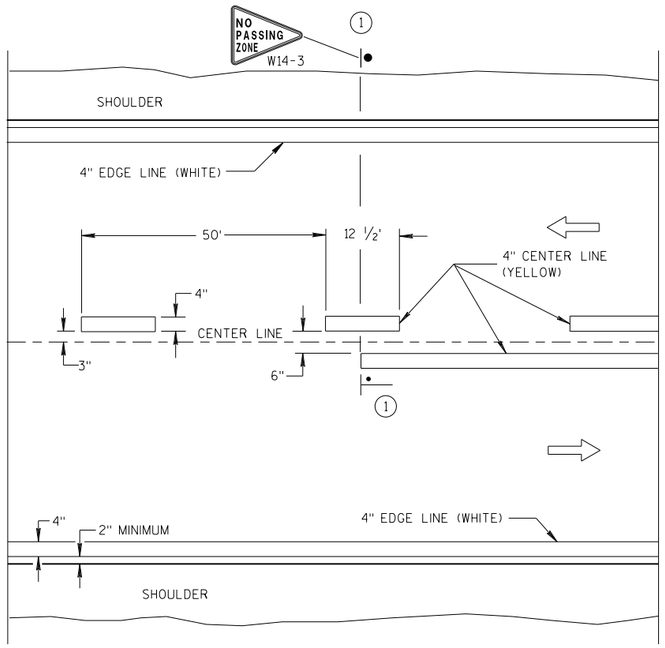
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

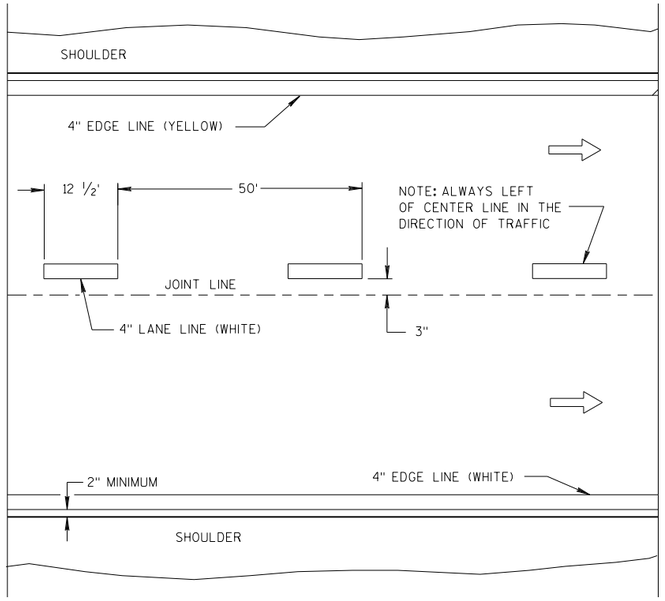
S.D.D. 15 C 7-14e

6

S.D.D. 15 C 7-14e



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

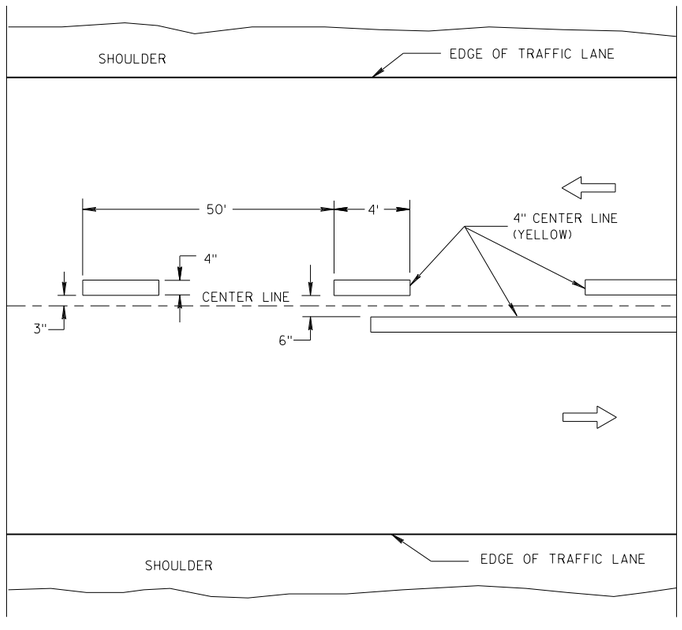
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

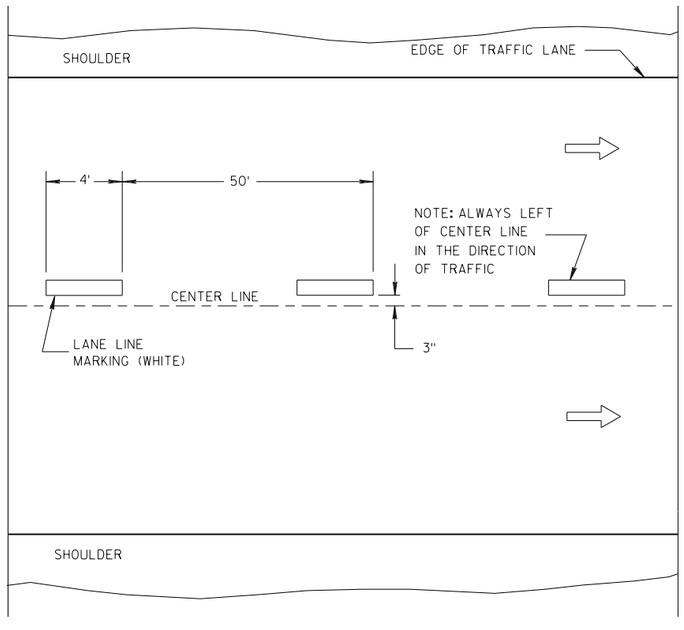
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

6

S.D.D. 15 C 8-19a

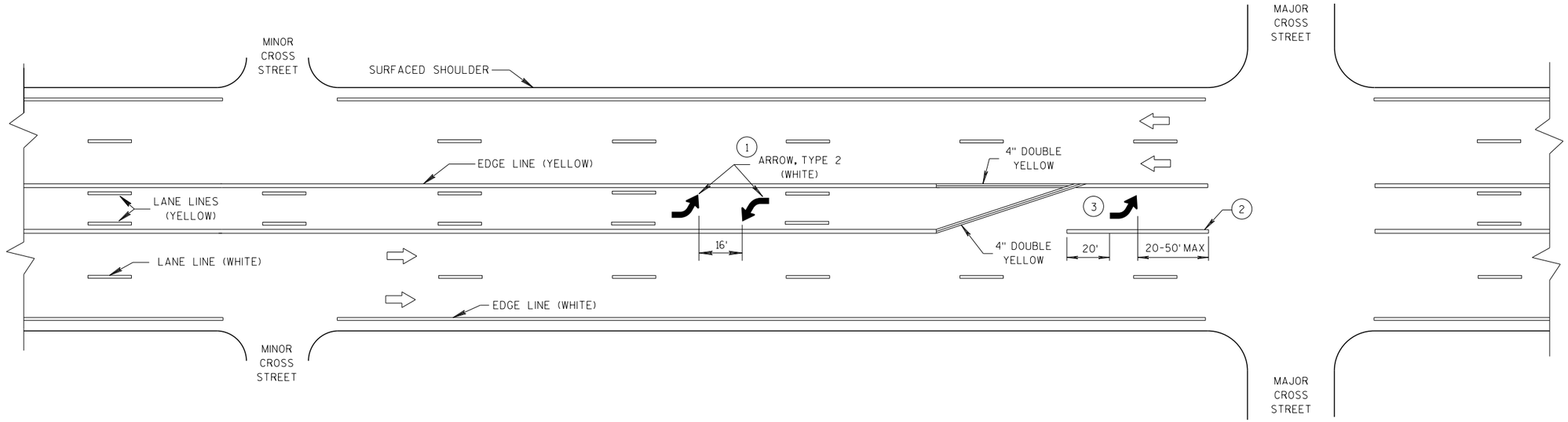
GENERAL NOTES

(1) A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

(2) 8" WHITE

(3) TURN BAY LENGTH OF LESS THAN 48'DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT

DIRECTION OF TRAFFIC



TWO WAY LEFT TURN LANE

PAVEMENT MARKING (TURN LANES)

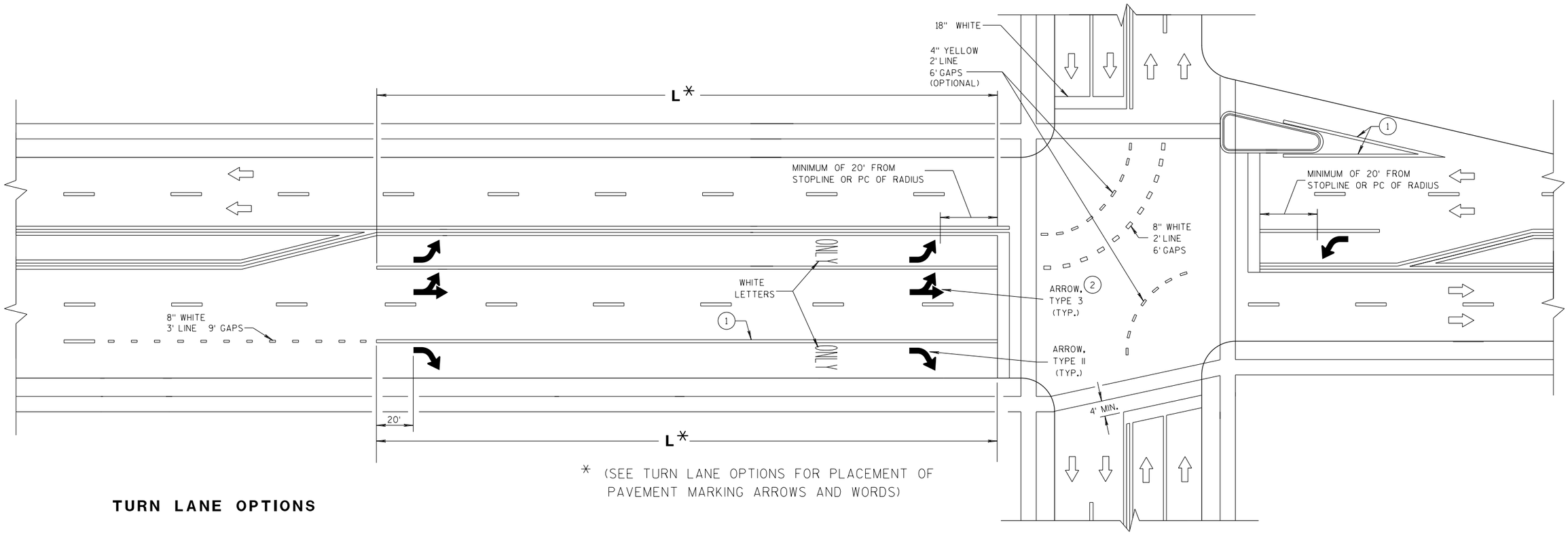
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 8-19b

6

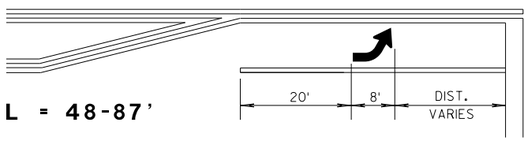
S.D.D. 15 C 8-19b



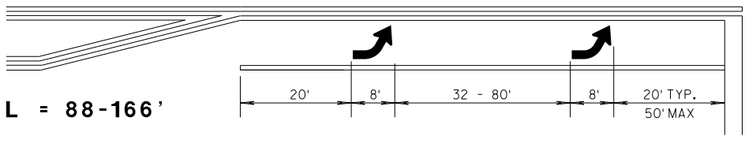
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

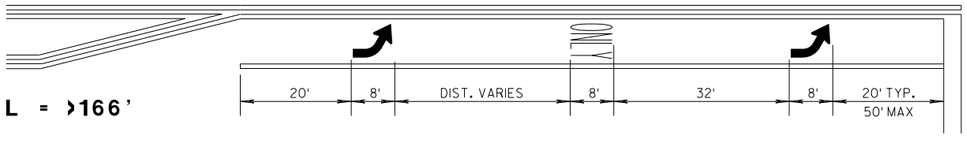
LENGTH OF TURN BAY (**L**) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48-87'



L = 88-166'



L = >166'

GENERAL NOTES

1. 8" WHITE
2. QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.

⇨ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

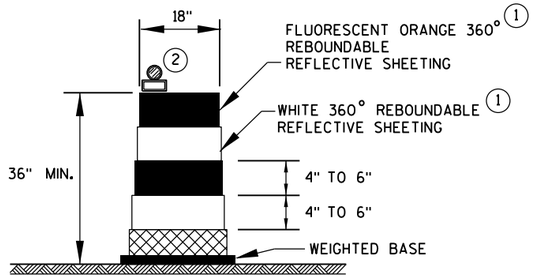
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORT

6

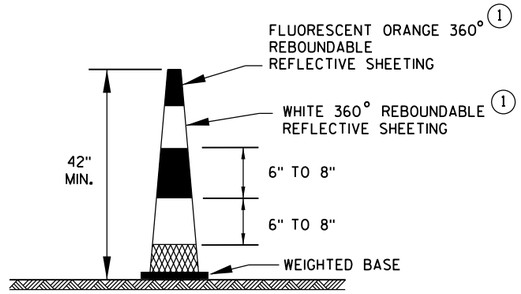
S.D.D. 15 C 8-19c

6

S.D.D. 15 C 8-19c



DRUM

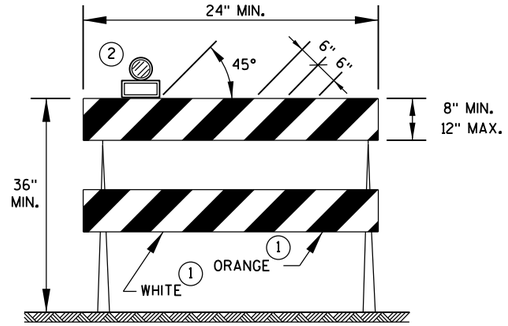


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

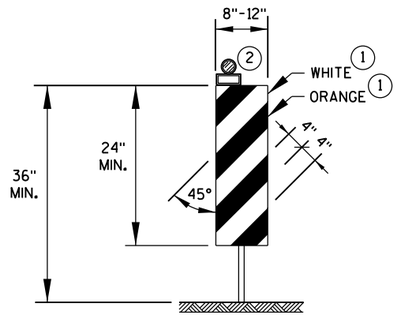
GENERAL NOTES

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



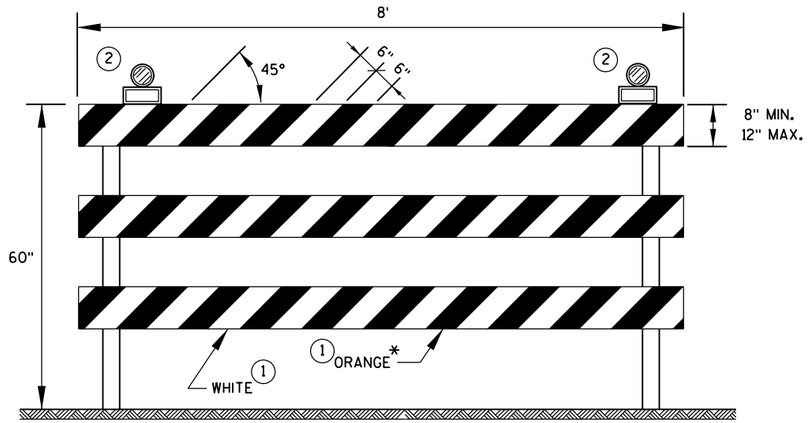
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

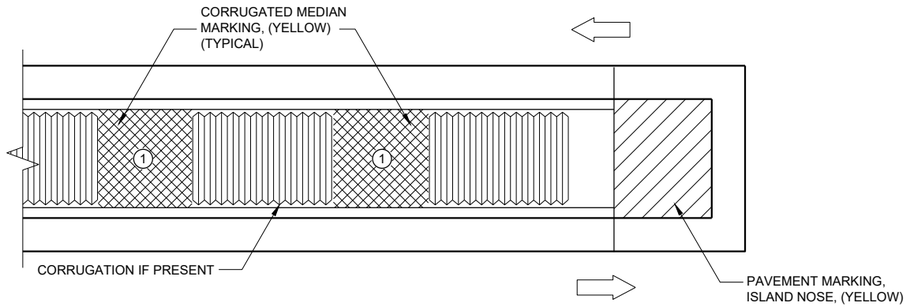
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

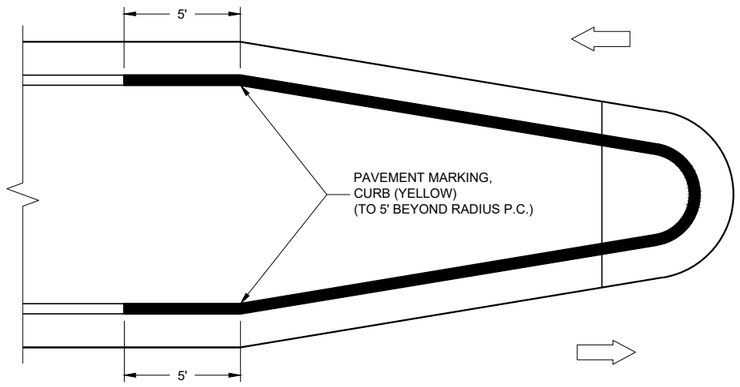
CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENG
FHWA	

6

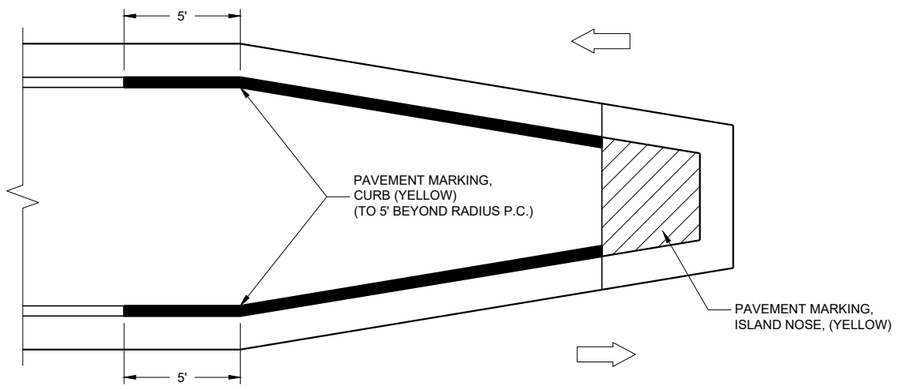
S.D.D. 15 C 11-7b



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

GENERAL NOTES

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 ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

ISLAND NOSE MARKING

CURB MARKING

CORRUGATED MEDIAN MARKING

DIRECTION OF TRAVEL

PAVEMENT MARKINGS
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR
ENGINEER

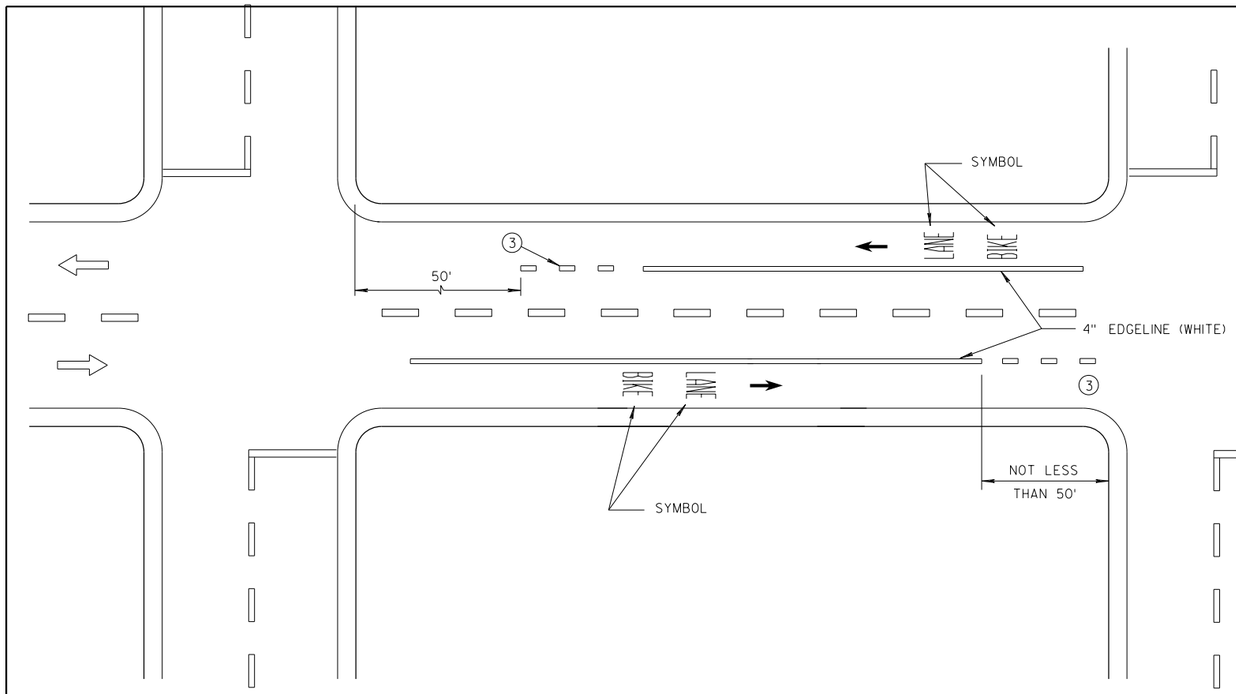
FHWA

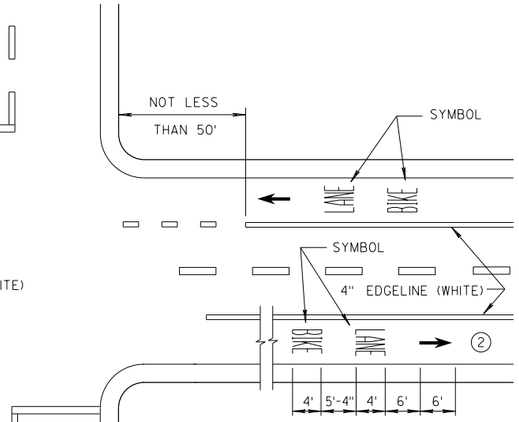
6

6

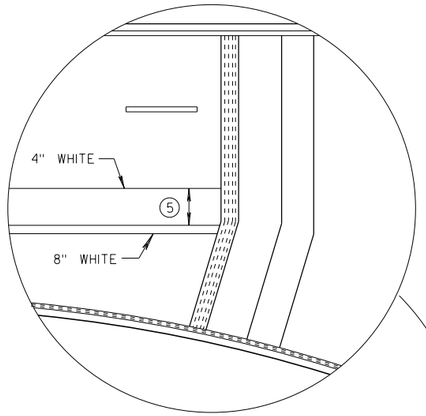
SDD 15C27 - 03b

SDD15C27 - 03b

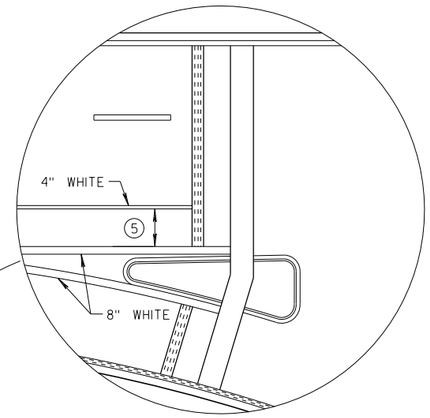




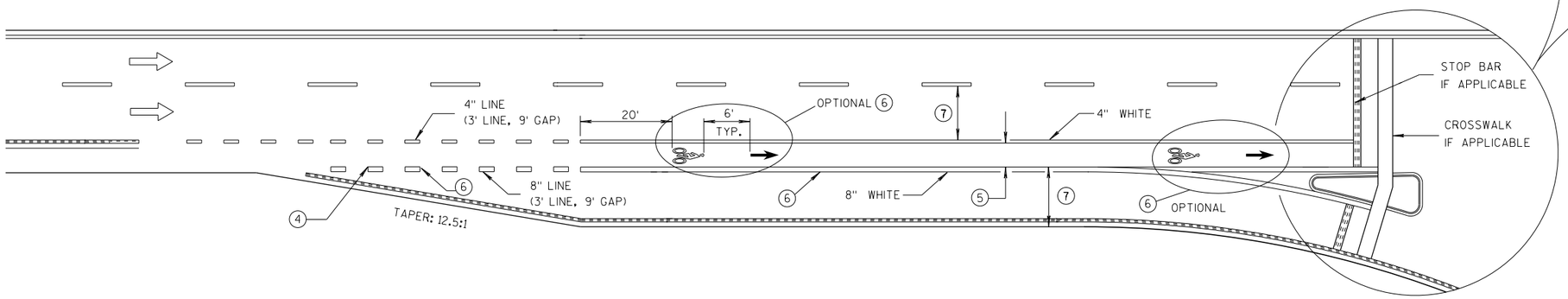
DESIGNATED BICYCLE LANE
NO PARKING



4 LANE DIVIDED WITHOUT ISLAND



4 LANE DIVIDED WITH ISLAND



BIKE LANE - FOR 2-LANE ROADWAYS AND 4-LANE DIVIDED ROADWAYS
(4-LANE DIVIDED WITH RIGHT TURN LANE SHOWN)

GENERAL NOTES

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. MINIMUM OF ONE PER BLOCK. MAXIMUM OF 250 FEET.
3. DOTTED LINES (3' LINE, 9' GAP) SHOULD BE USED 50 FEET TO 200 FEET IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
4. IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
5. BIKE ACCOMODATION IS TYPICALLY 5 FEET WIDE AND A MINIMUM OF 4 FEET FROM A LONGITUDINAL JOINT. USE 5 FEET AT 45 MPH.
6. OMIT THESE MARKINGS FOR WIDER TURN LANE APPLICATIONS (MINIMUM OF 15 FEET WIDE TURN LANE).
7. REFER TO CONTRACT PLANS FOR LANE WIDTH.

DIRECTION OF TRAVEL

BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

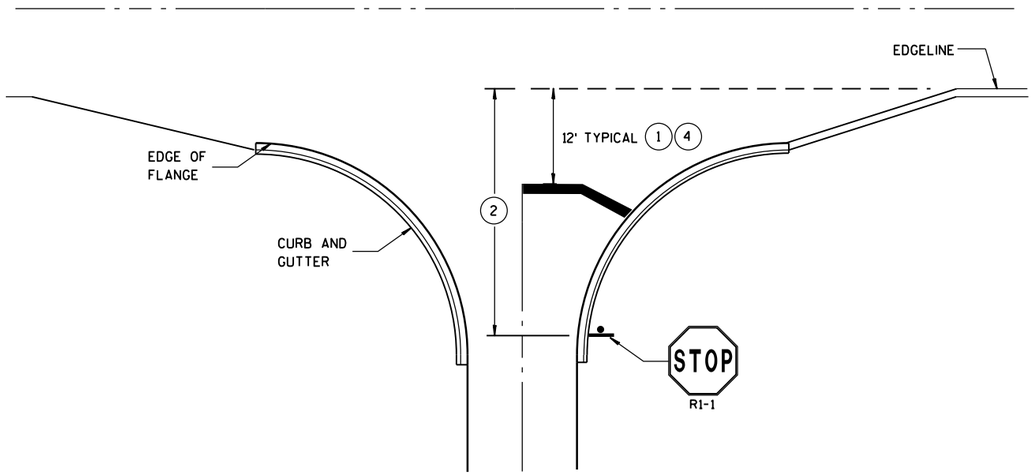
7/2018
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR

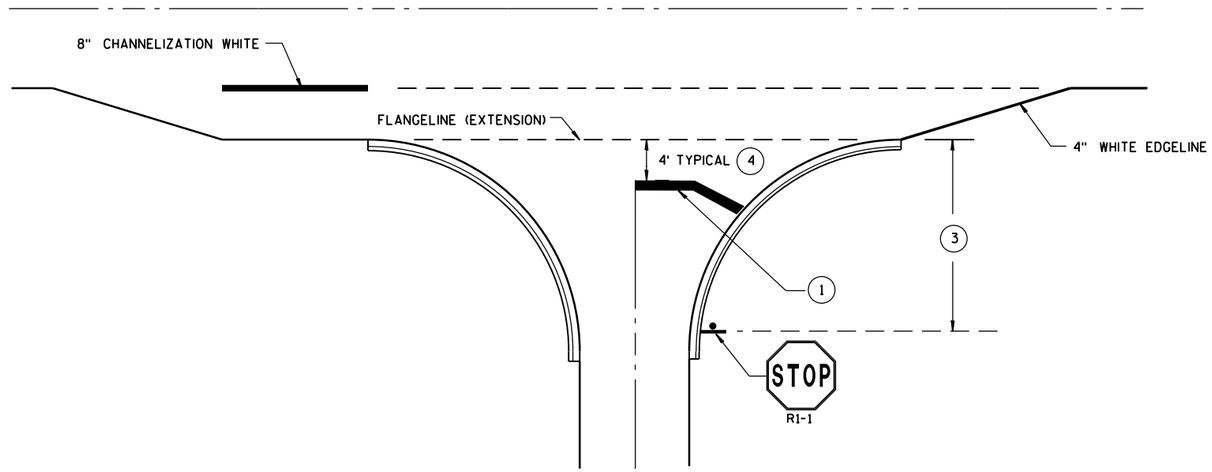
FHWA

6

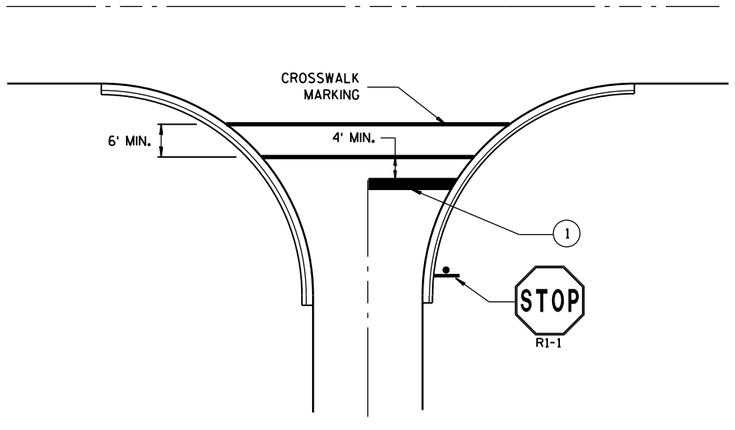
S.D.D. 15 C 29-6a



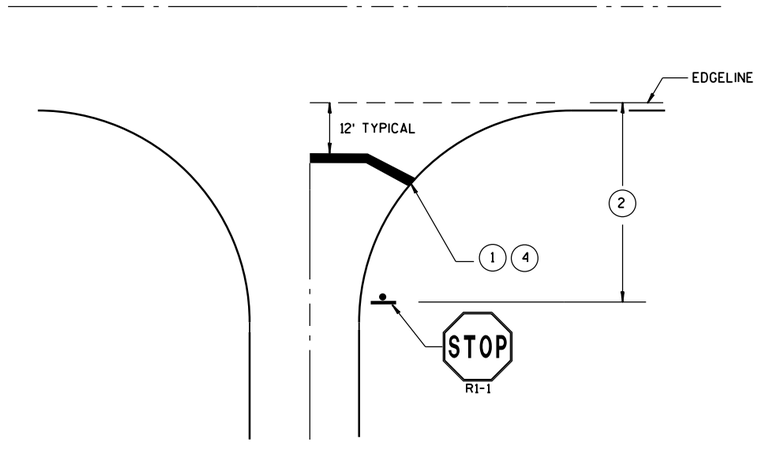
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

(1) 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.

(2) IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.

(3) IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.

(4) MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

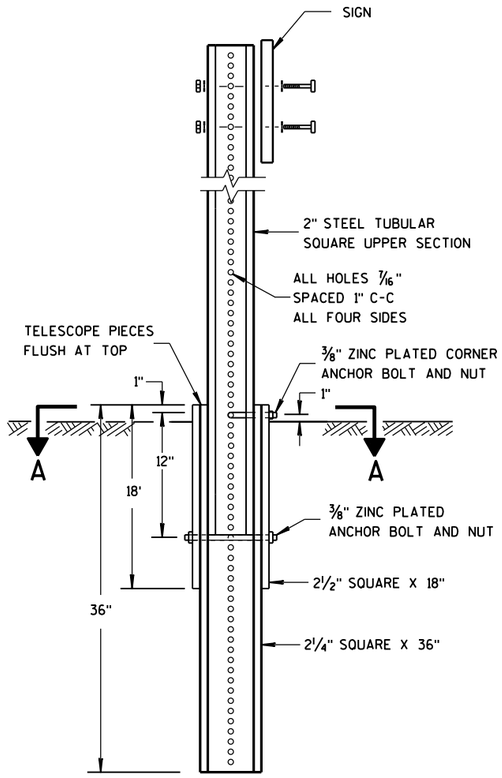
Sept., 2017 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]NEER

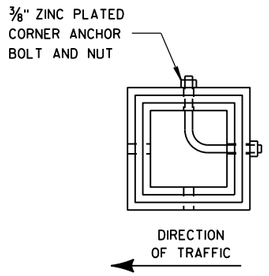
FHWA

6

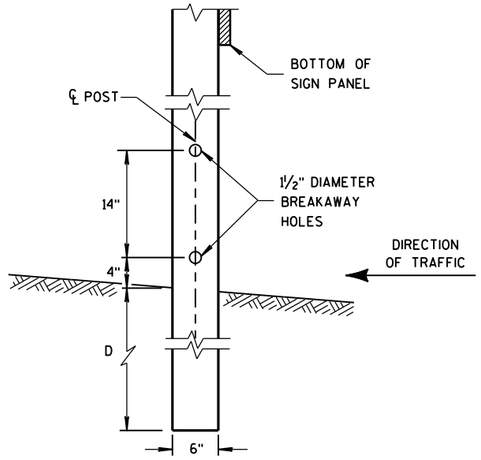
S.D.D. 15 C 33-3



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



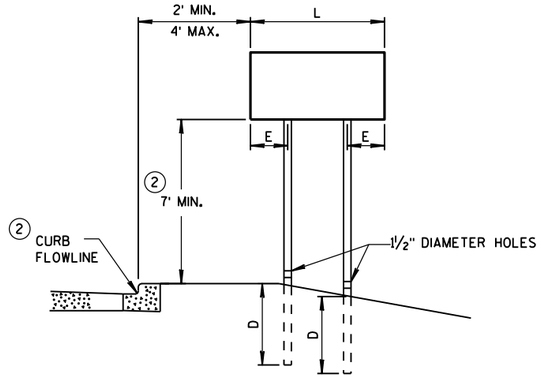
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

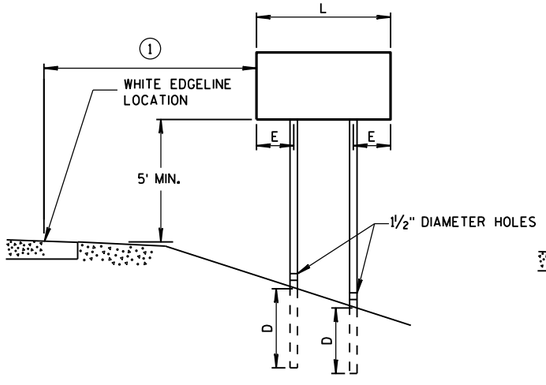
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

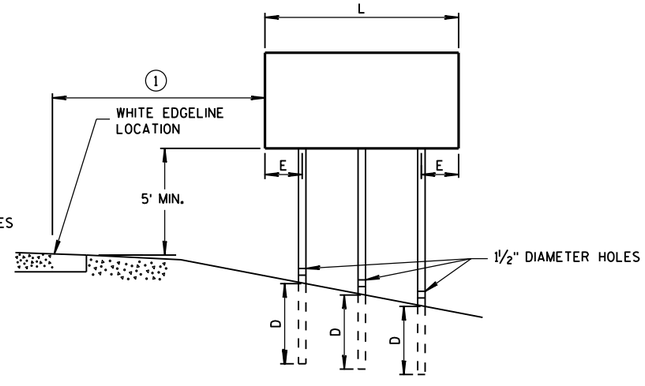
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

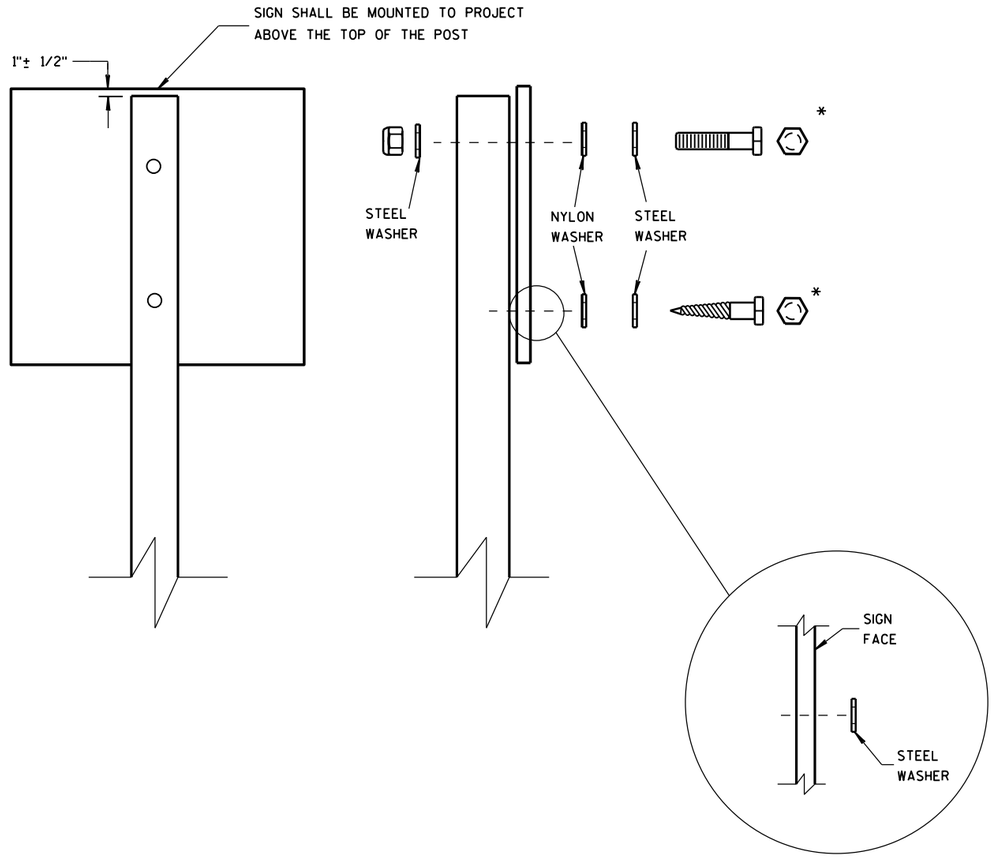
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

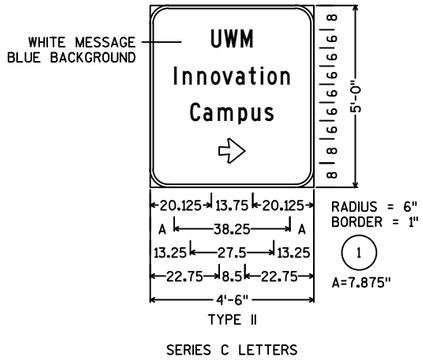
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

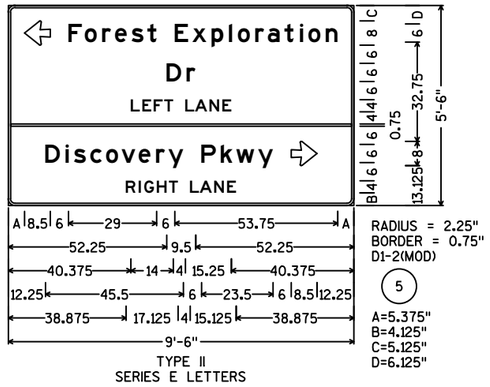
APPROVED

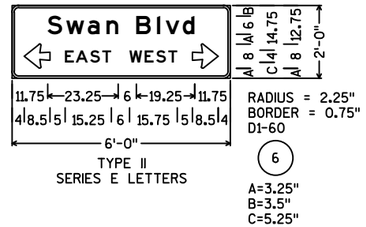
June 2017
DATE

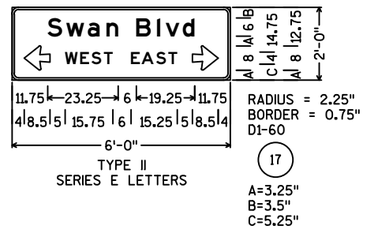
/S/ Andrew Heldtke
WORK ZONE ENG

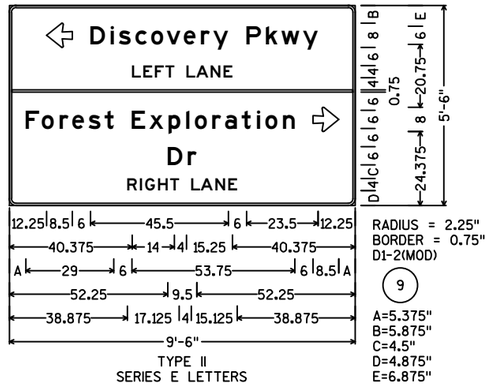
FHWA

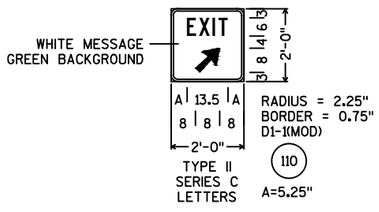


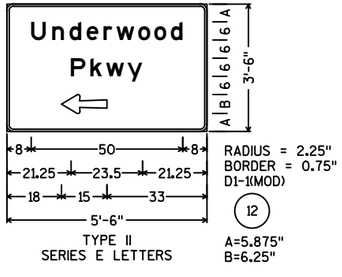


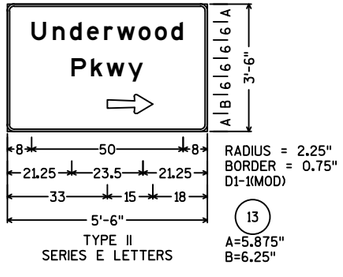


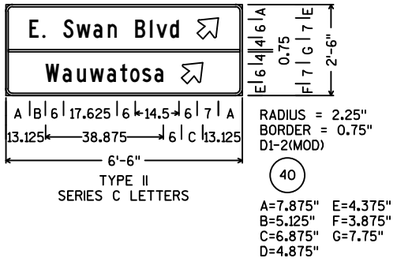






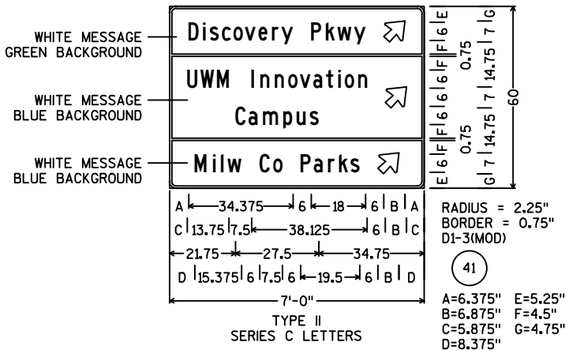


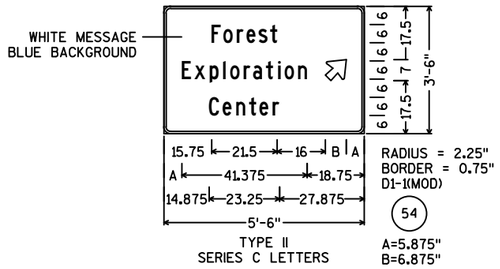


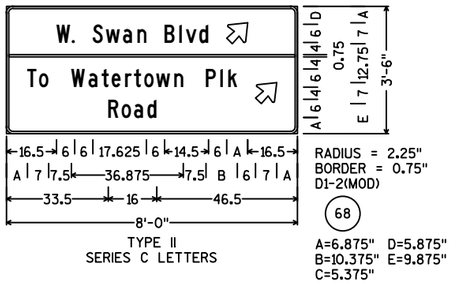


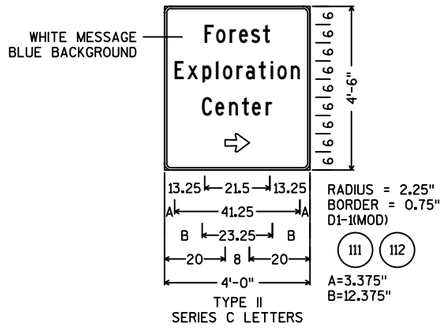
GENERAL NOTES:

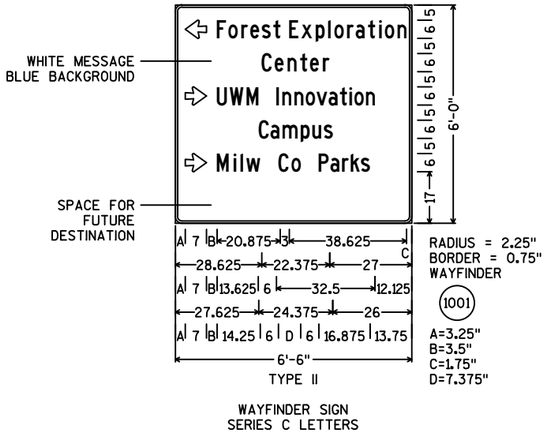
1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE PLANS.
2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".
3. UNLESS OTHERWISE NOTED, 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.

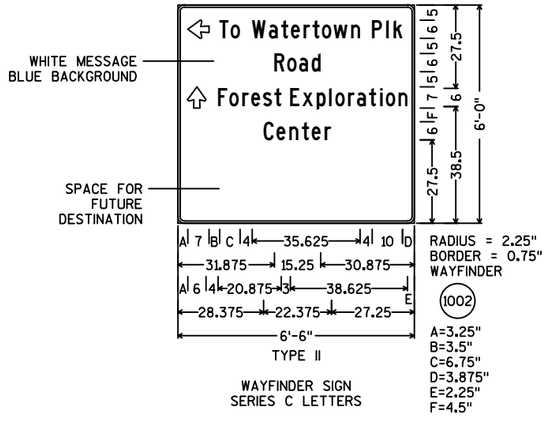


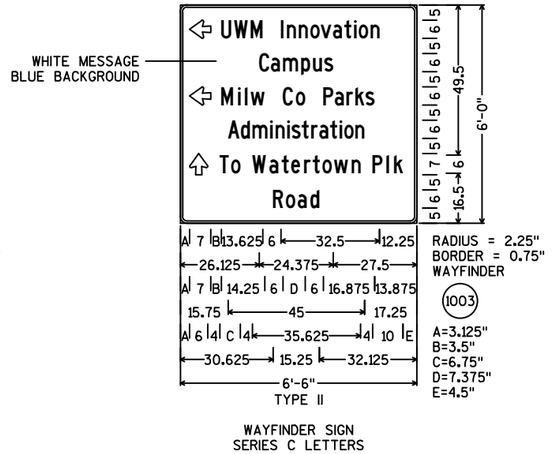










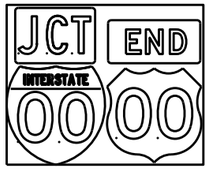


GENERAL NOTES:

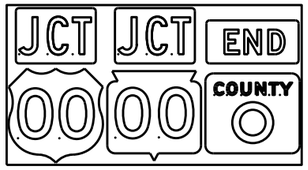
1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE PLANS.
2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".
3. UNLESS OTHERWISE NOTED, 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.

TYPICAL ASSEMBLIES

J1-1

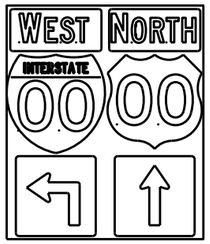


J1-2

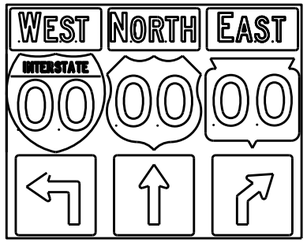


J1-3

J2-1



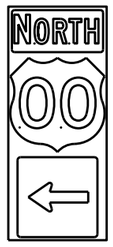
J2-2



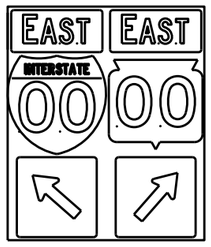
J2-3

JV

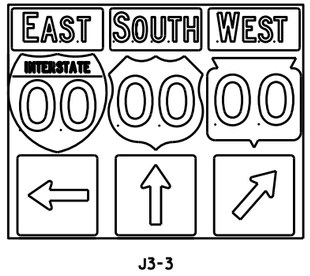
(Typical Vertical J-Assembly
See Note 10 and 11)



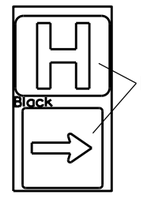
J3-1



J3-2



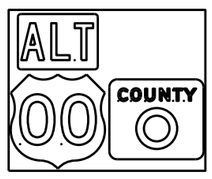
J3-3



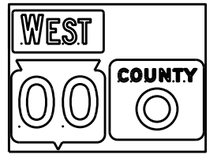
Blue Background

JH-1

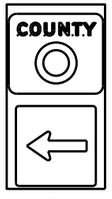
J4-1



J4-2



J4-2



J13-1

J12-1

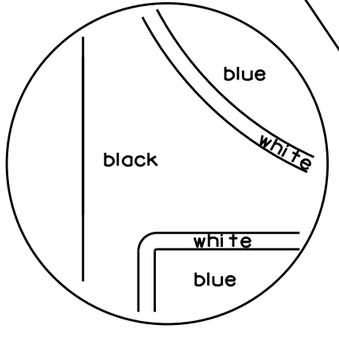
J32-1

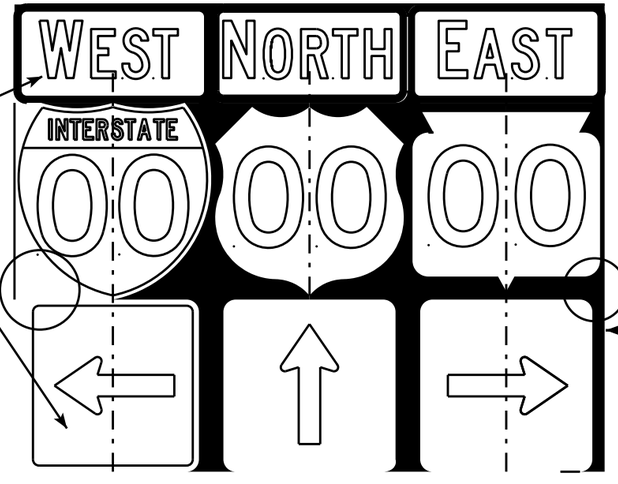
J33-1

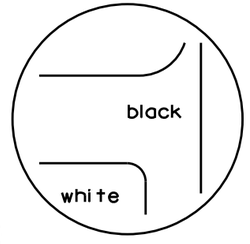
J23-1

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

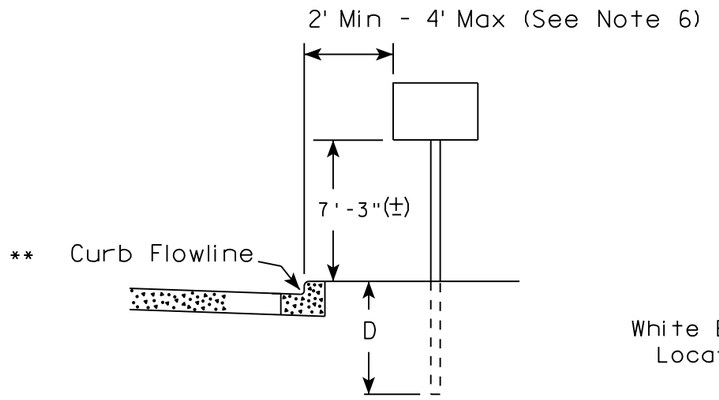
PROJECT NO:

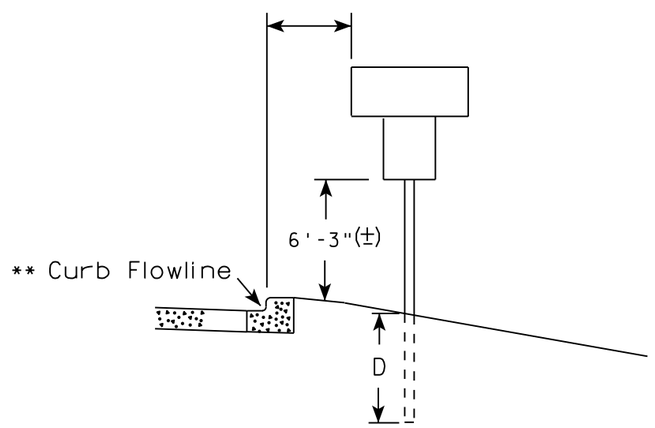
SHEET NO: E

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

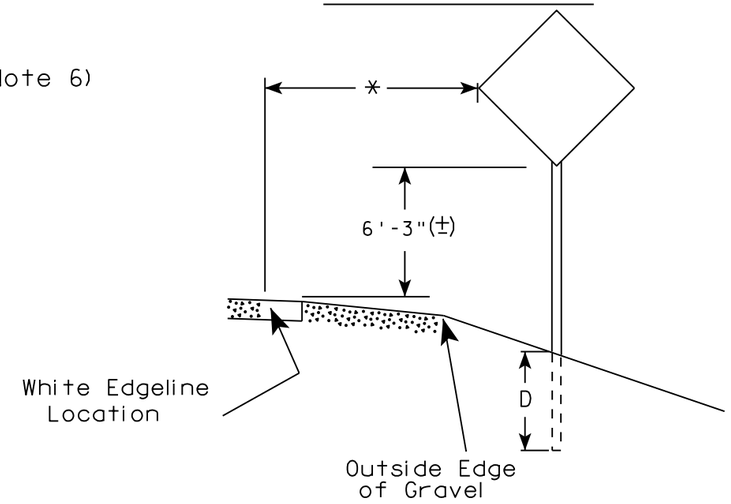
WISDOT/CADDS SHEET 42

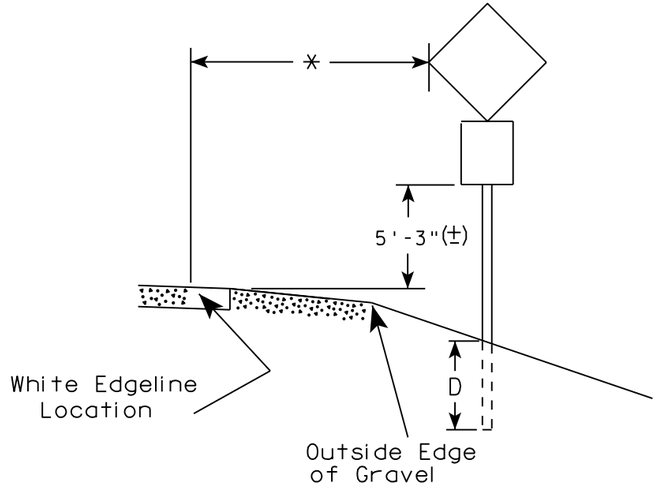
URBAN AREA





RURAL AREA (See Note 2)





GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
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" (±).

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

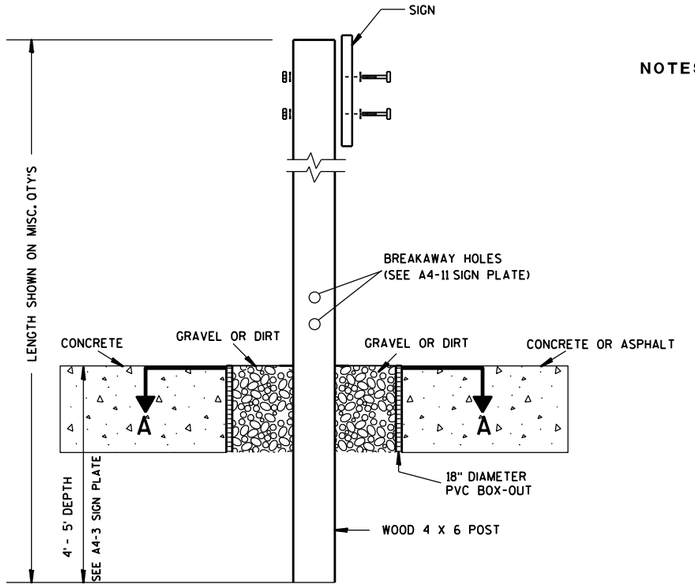
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

7

7

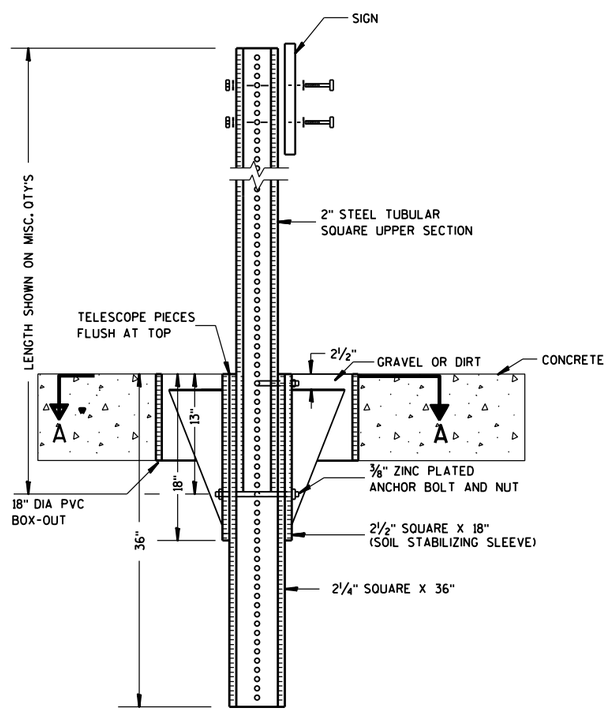
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 212	E



ELEVATION VIEW

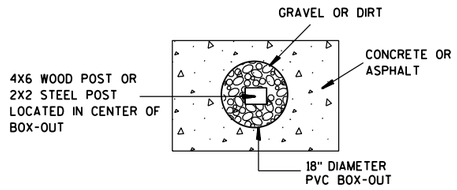
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

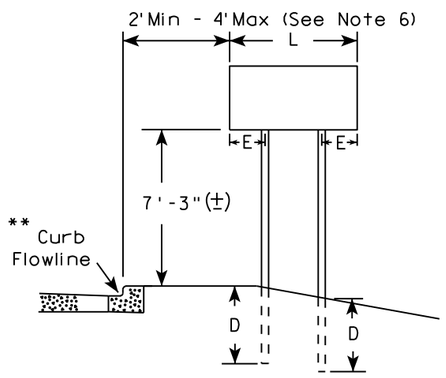
APPROVED Matthew R Rauch
for State Traffic Engineer

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

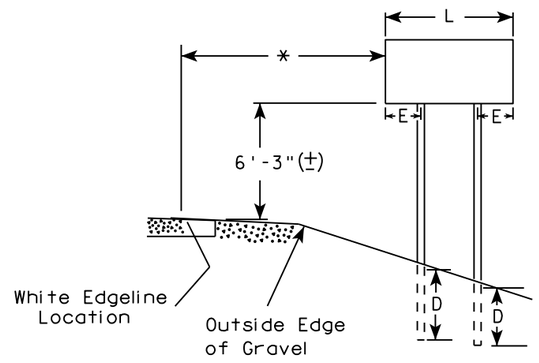
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

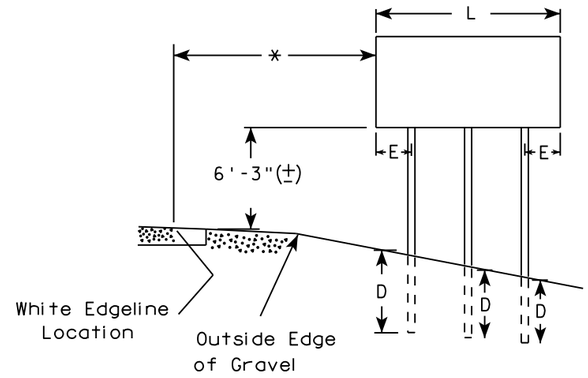
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

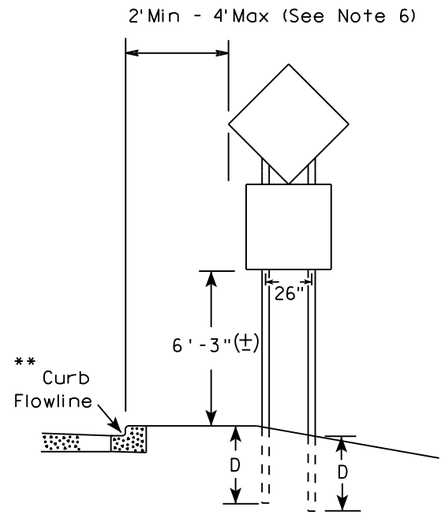
URBAN AREA



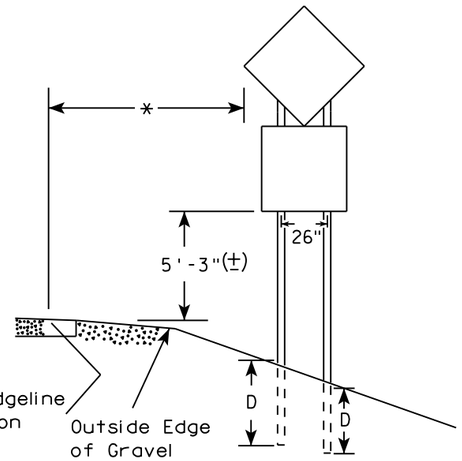
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

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

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. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

POST EMBEDMENT DEPTH

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

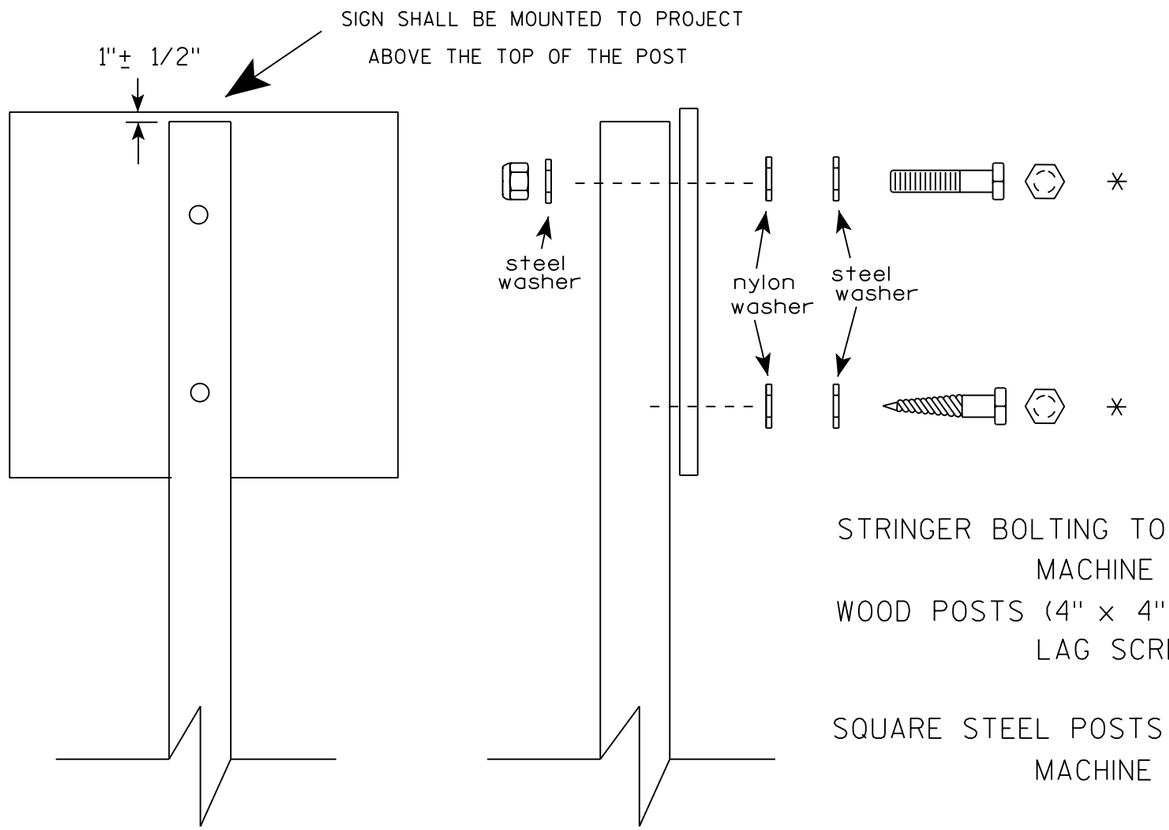
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 214	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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)
SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

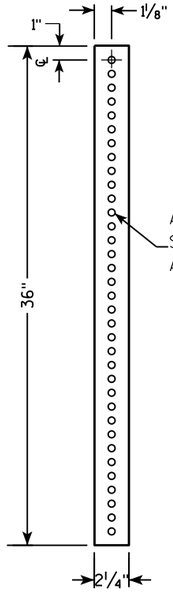
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

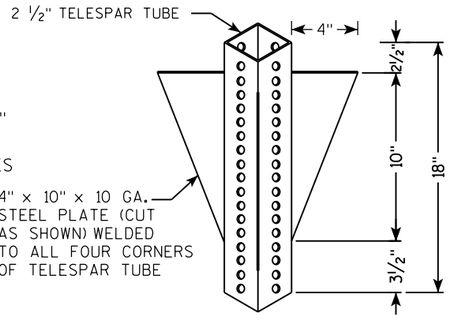
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

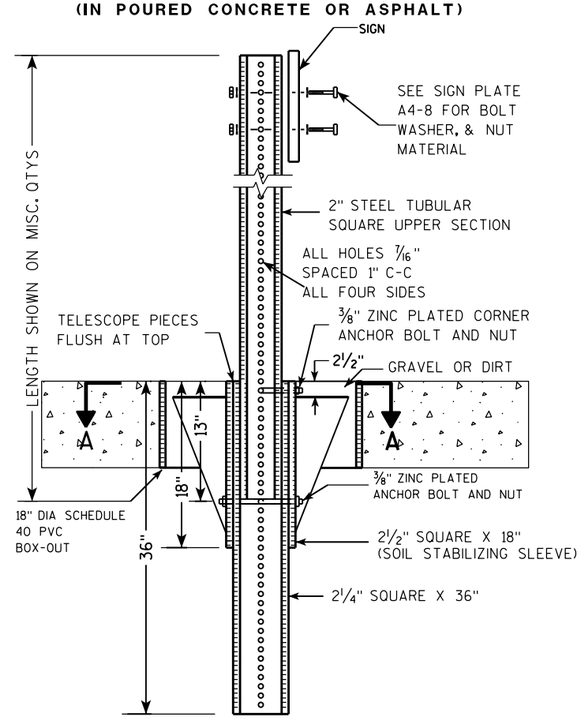
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



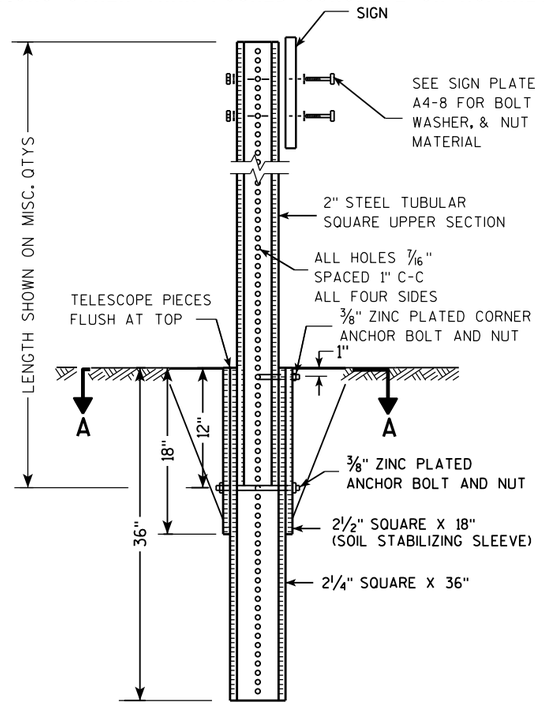
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

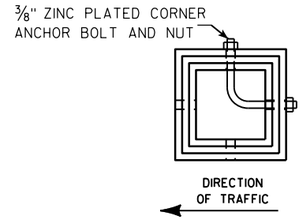


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

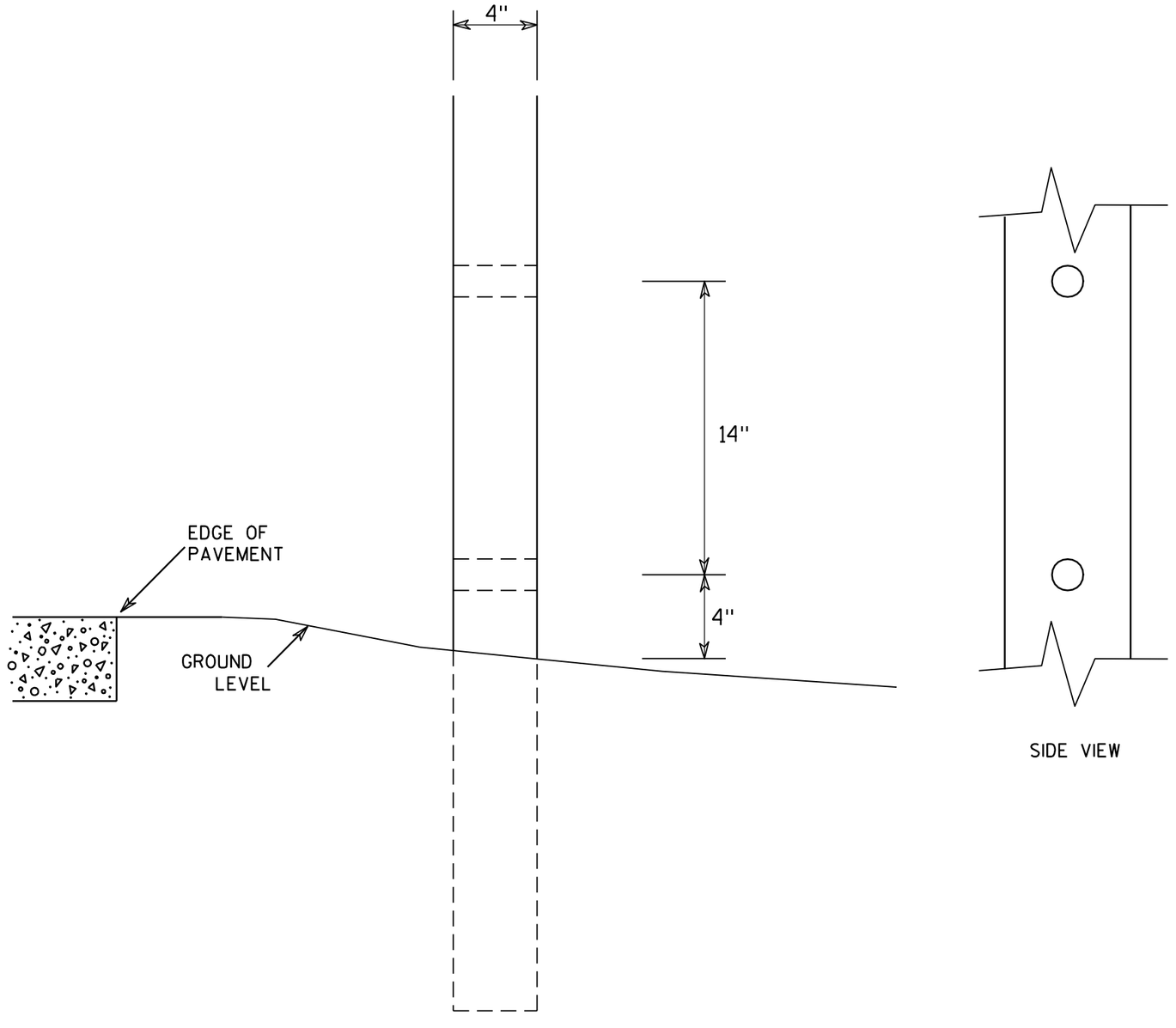
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 216 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

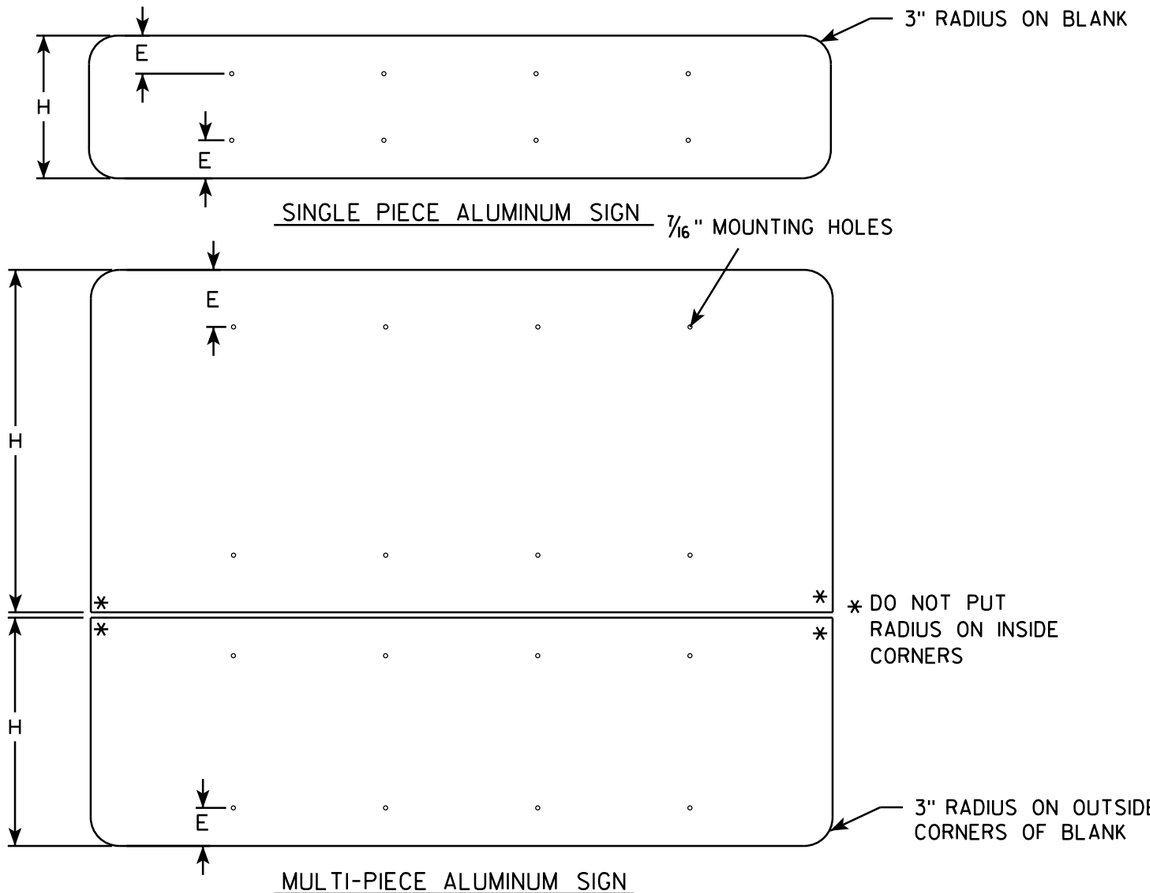
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

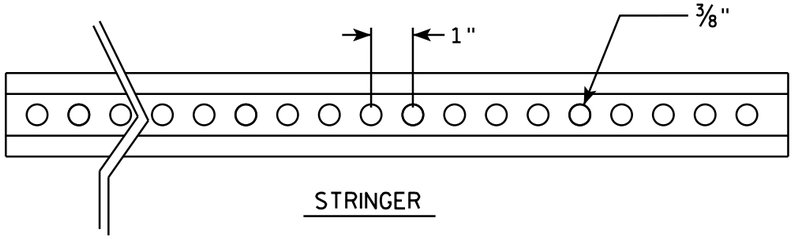
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 217	E



GENERAL NOTES

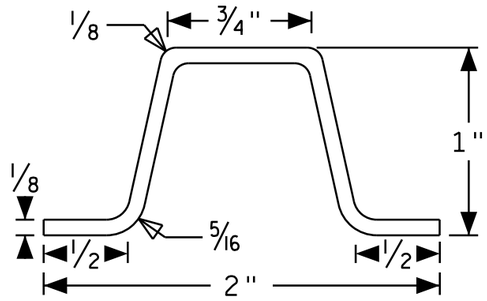
- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES
78"	72"	2	16"	15" 31" 47" 63"
84"	72"	2	17"	16½" 33½" 50½" 67½"
90"	72"	2	18"	18" 36" 54" 72"
96"	90"	2	19"	19½" 38½" 57½" 76½"
102"	90"	2	20"	21" 41" 61" 81"
108"	90"	2	21"	22½" 43½" 64½" 85½"
114"	108"	3	15"	12" 27" 42" 57" 72" 87" 102"
120"	108"	3	16"	12" 28" 44" 60" 76" 92" 108"
126"	108"	3	17"	12" 29" 46" 63" 80" 97" 114"
132"	126"	3	18"	12" 30" 48" 66" 84" 102" 120"
138"	126"	3	19"	12" 31" 50" 69" 88" 107" 126"
144"	126"	3	20"	12" 32" 52" 72" 92" 112" 132"

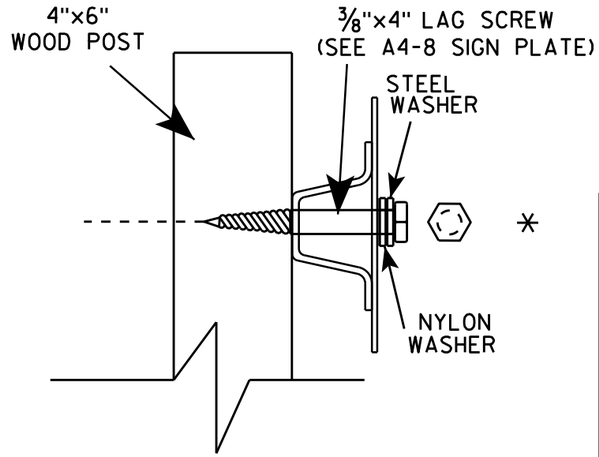


STRINGER

CROSS SECTION VIEW OF CHANNEL



POST MOUNTING



SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

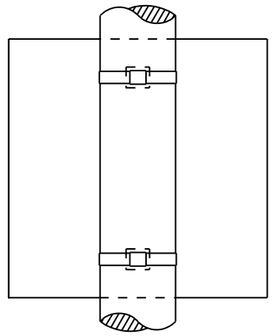
DATE 4/26/16 PLATE NO A4-18.1

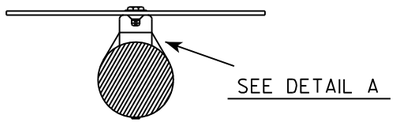
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A418.dgn PLOT DATE : 27-APR-2016 13:56 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 41.805205:1.000000 WISDOT/CADDS SHEET 42

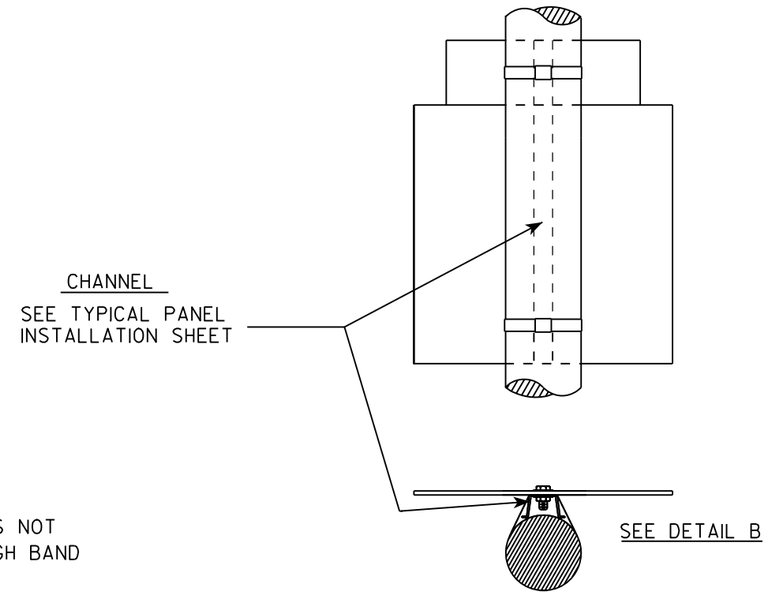
BANDING

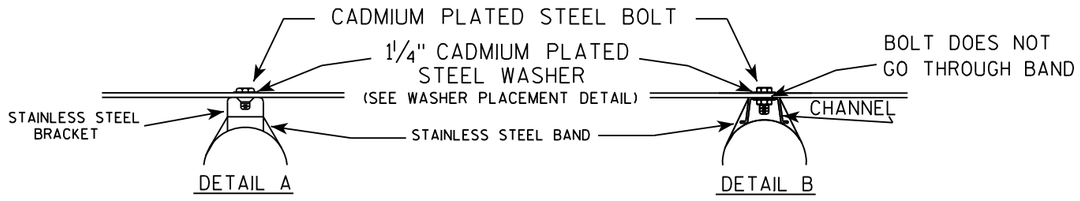
SINGLE SIGN



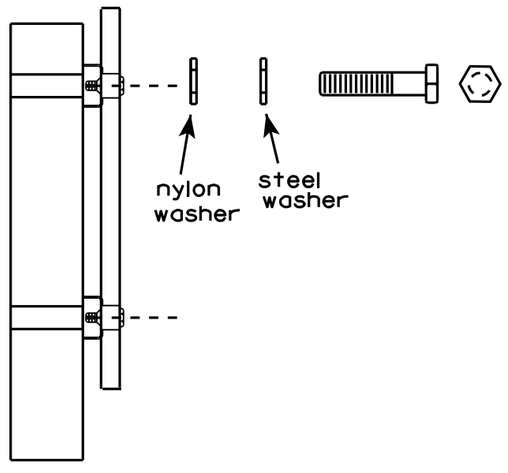


"J" ASSEMBLY





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.

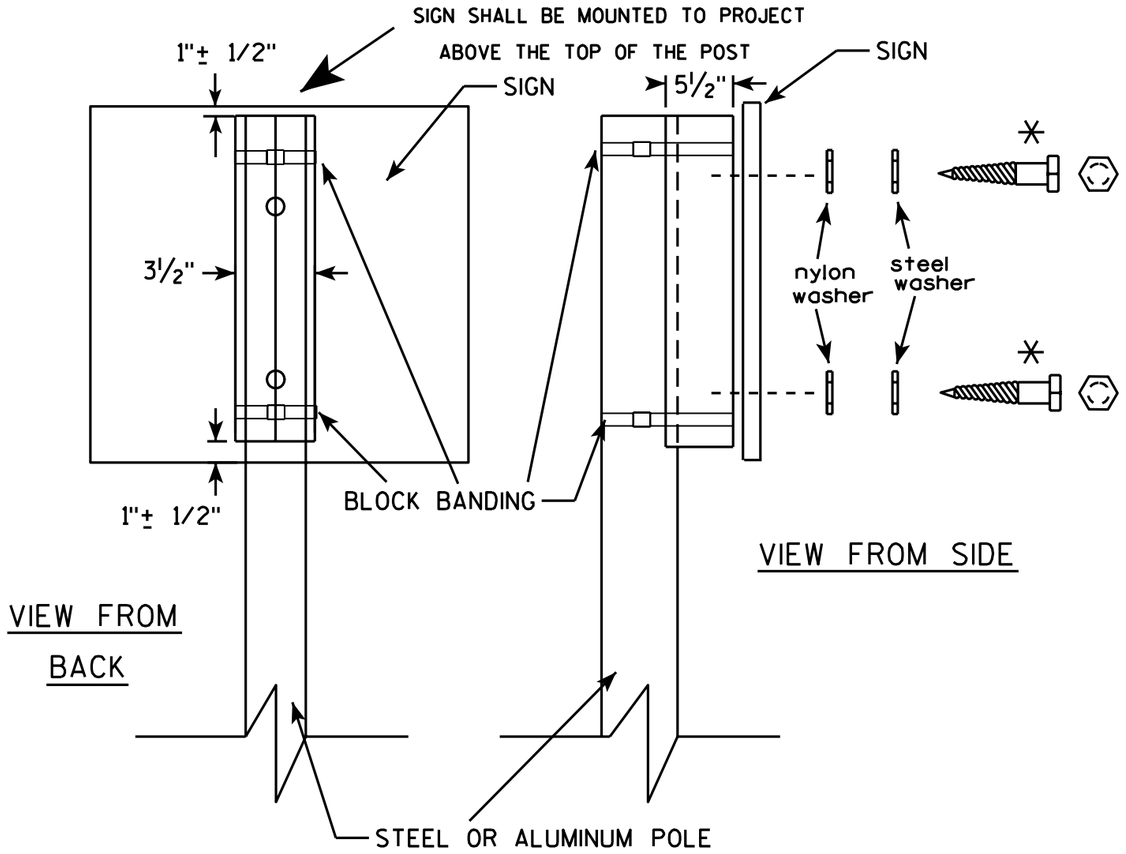
STANDARD SIGN
SIGN BANDING DETAILS

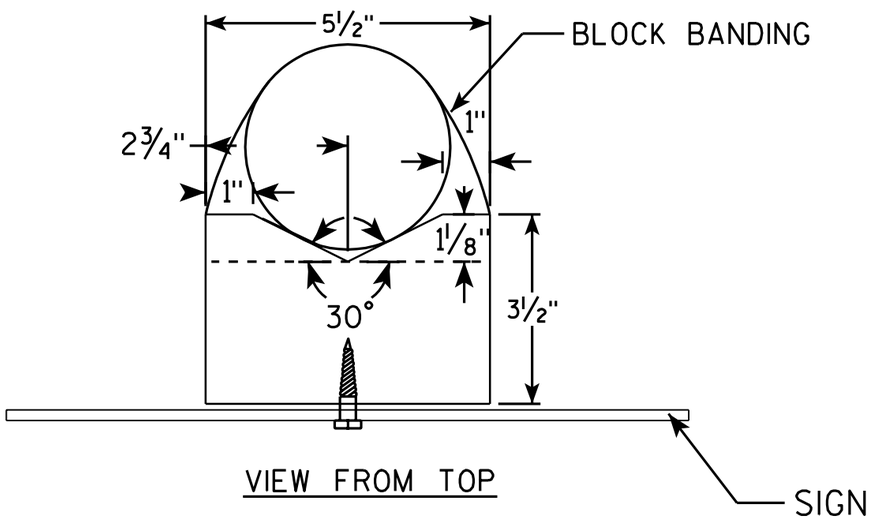
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 219	E





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)

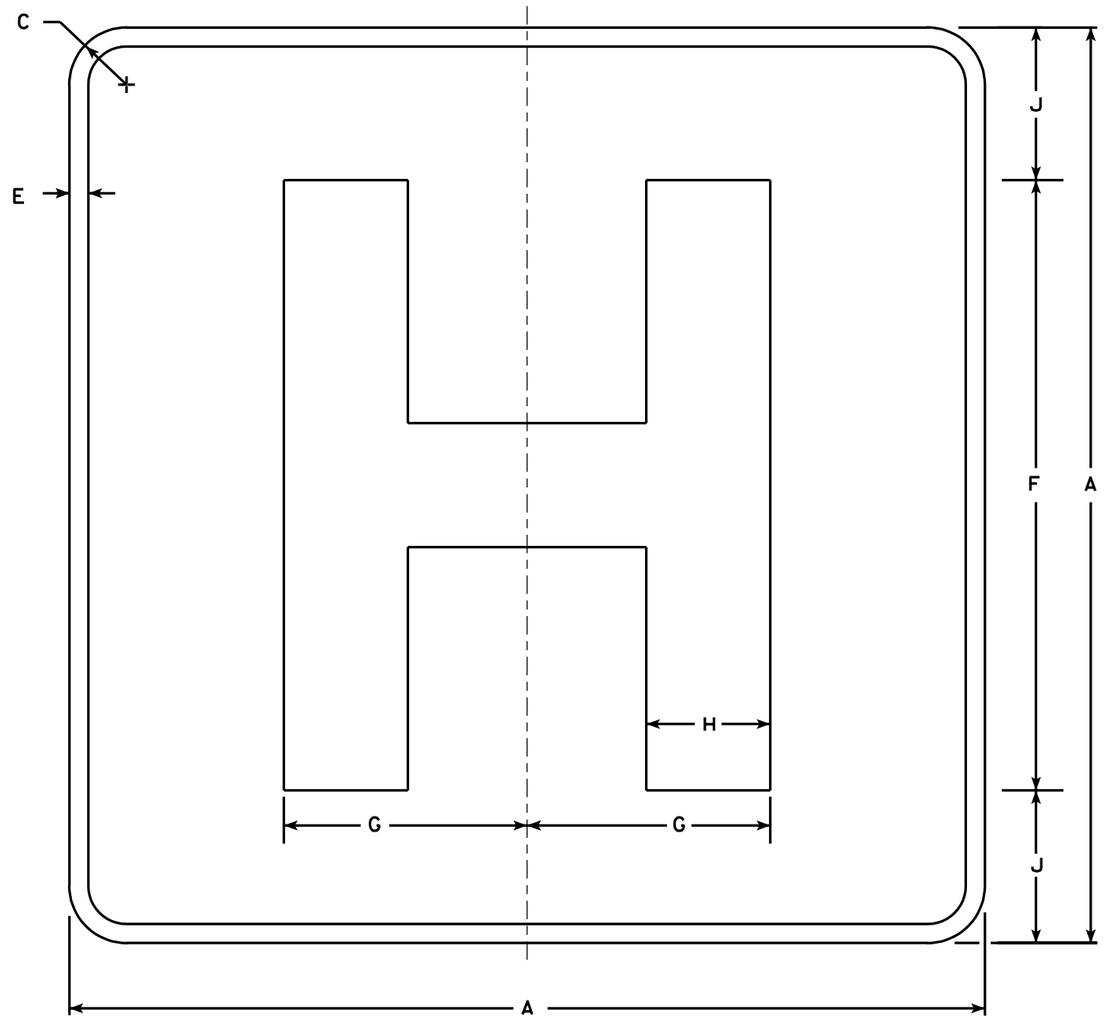
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 220 E



D9-2

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	450 mmX 450 mm
2	600 mmX 600 mm
3	900 mmX 900 mm
4	X
5	X

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		1 1/8		1/2	12	4 3/4	2 3/8		3																	4.0
2	24		1 1/2		1/2	16	6 3/8	3 1/4		4																	4.0
3	36		2 1/4		3/4	24	9 1/2	4 7/8		6																	9.0
4																											
5																											

STANDARD SIGN
D9-2

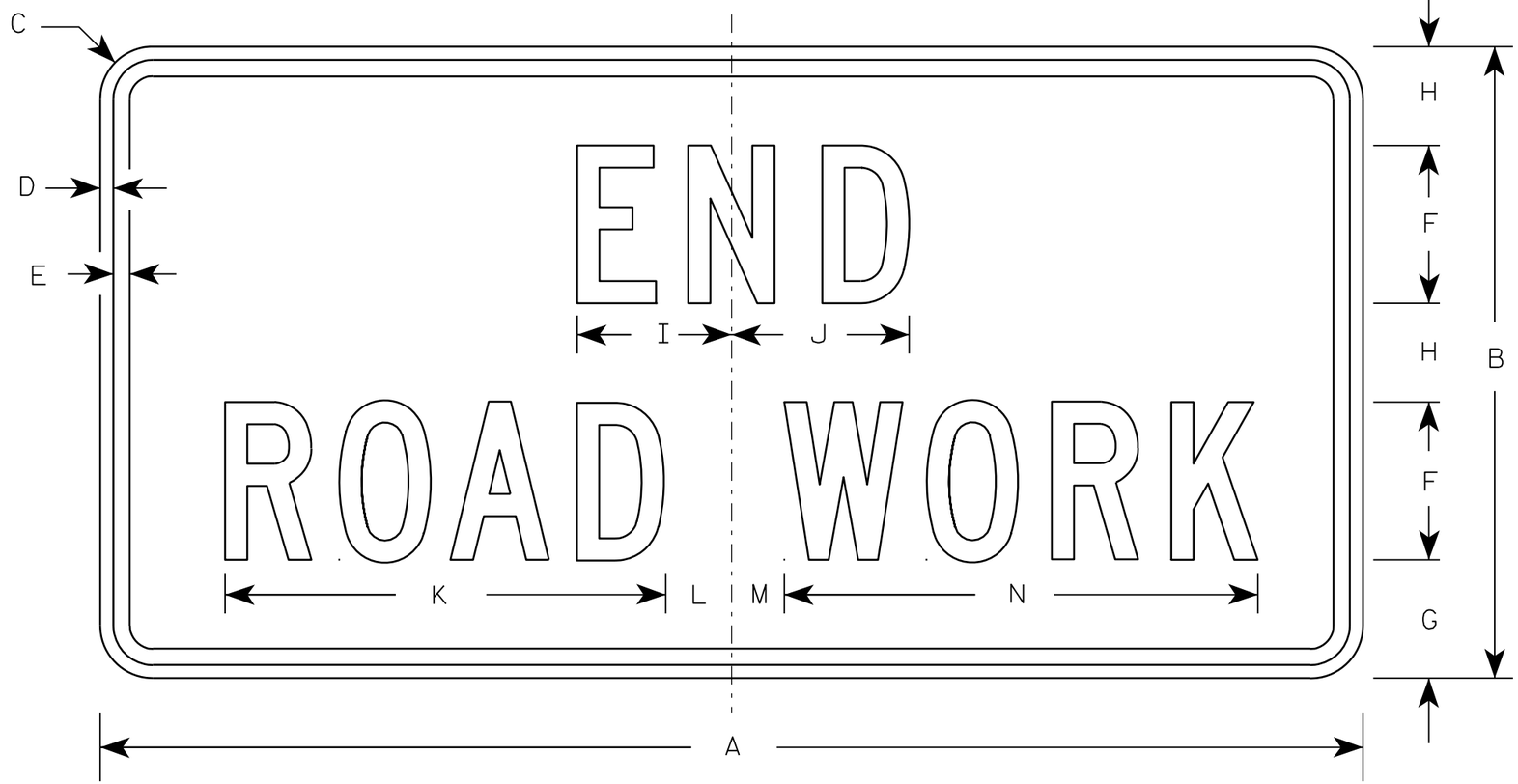
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spong
for State Traffic Engineer

DATE 1/15/02 PLATE NO. D9-2.4

PROJECT NO:

SHEET NO: 221 E



G20-2A

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

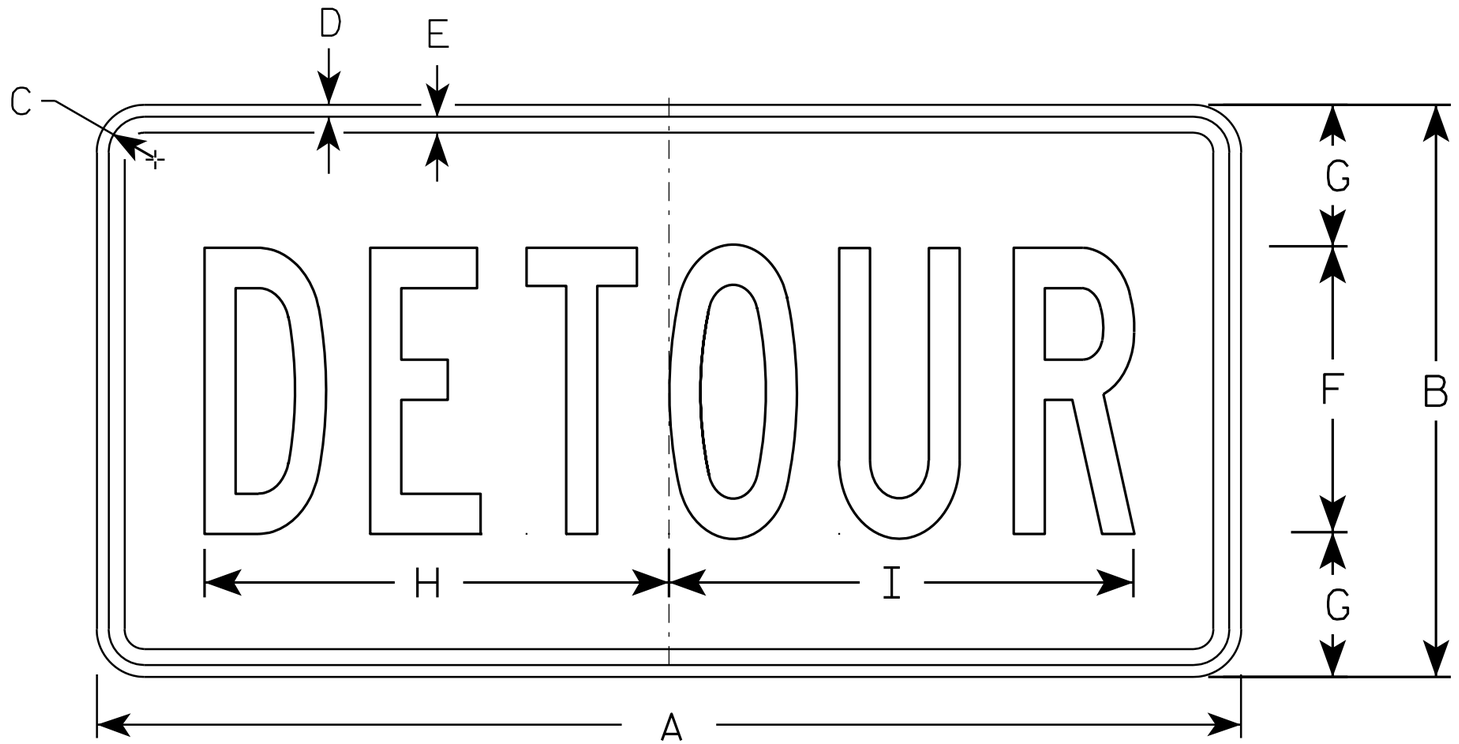
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 222	E



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																											

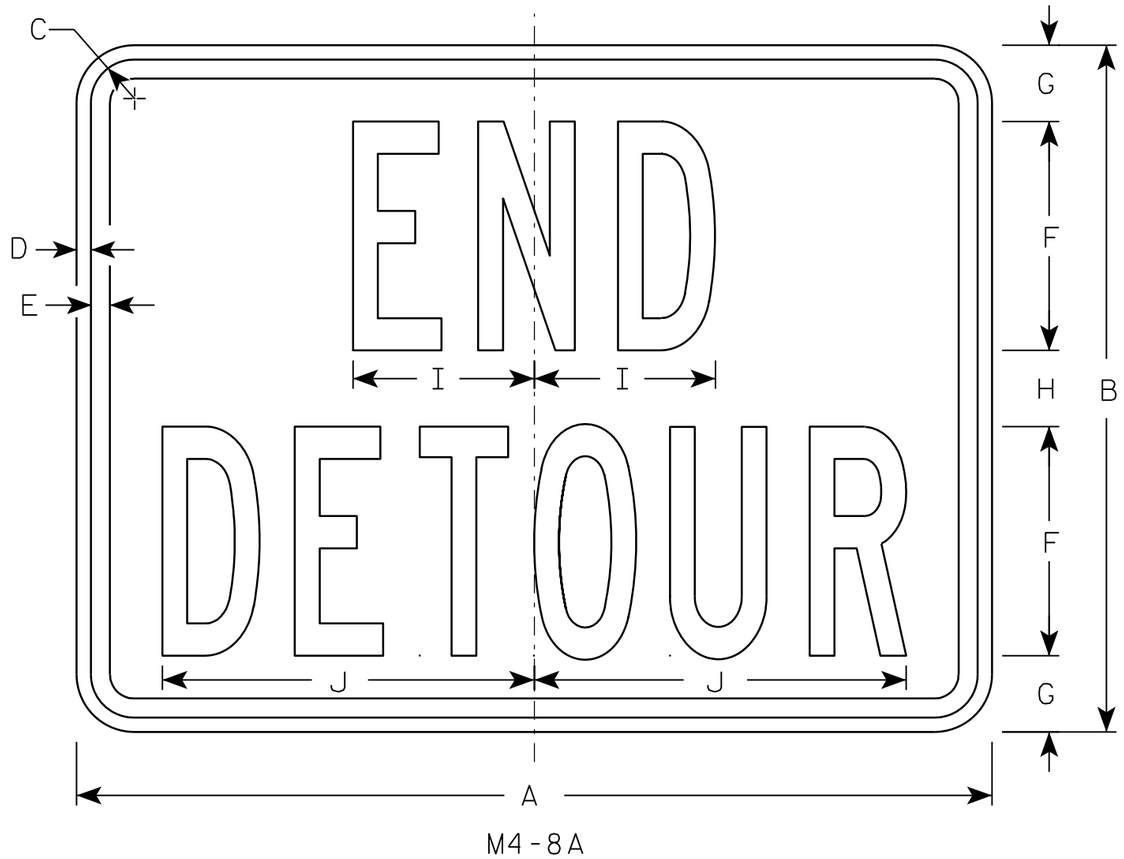
STANDARD SIGN
M4-8

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: 223	E



M4-8A

NOTES

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

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

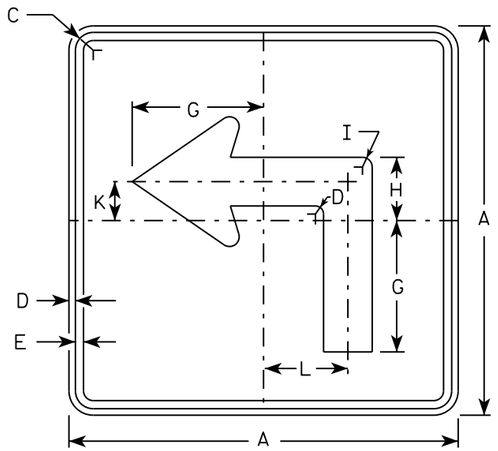
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

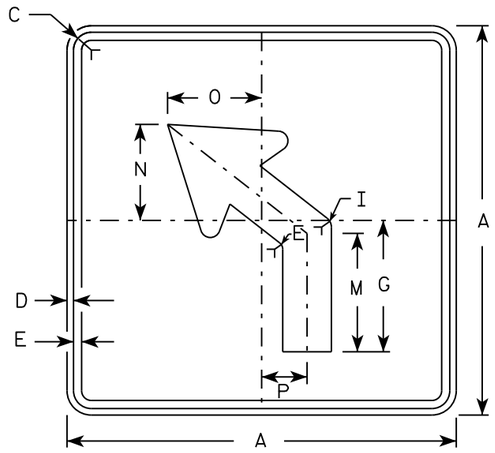
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

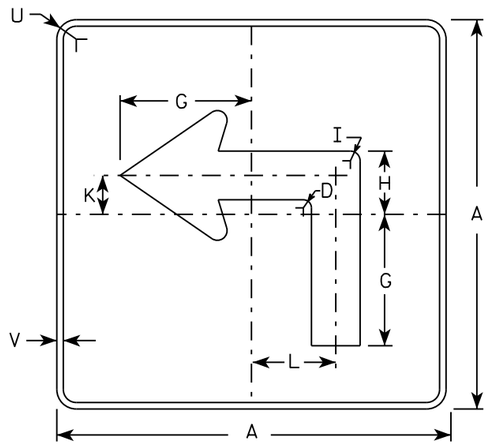
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 224	E



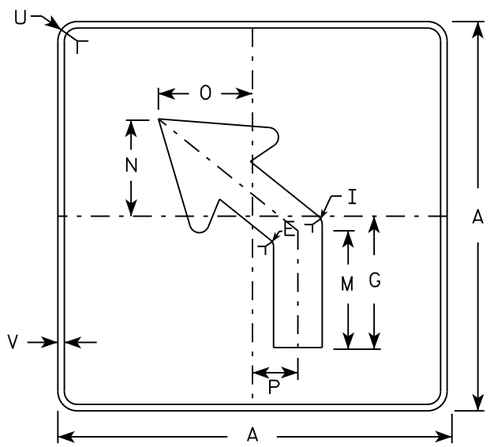
M5-1L
MM5-1L
MO5-1L
MP5-1L



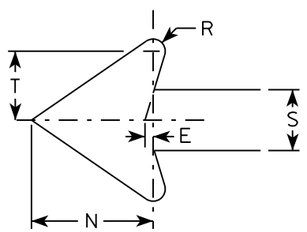
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

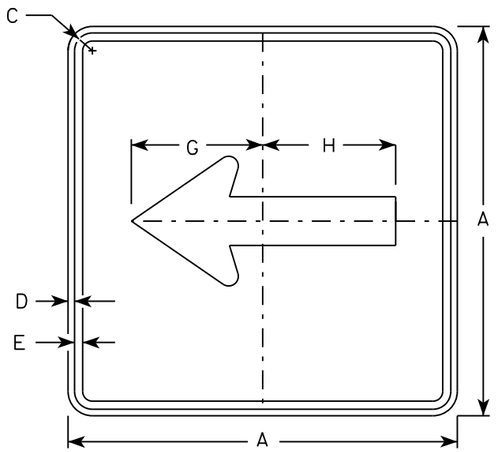
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

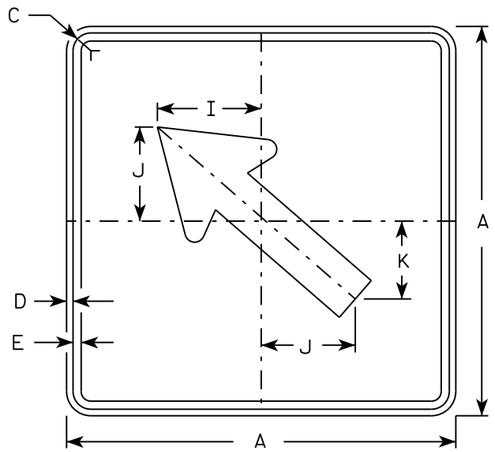
DATE 10/15/15 PLATE NO. M5-1.13

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



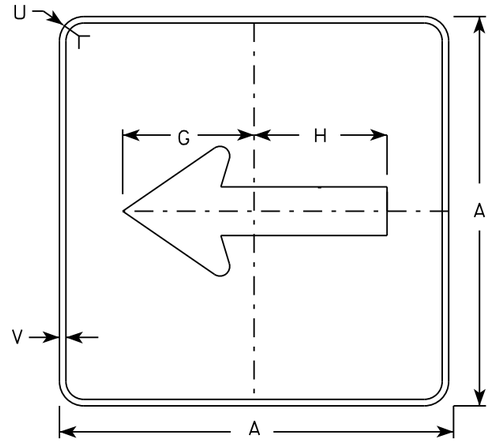
M6-1
MM6-1
MO6-1
MP6-1



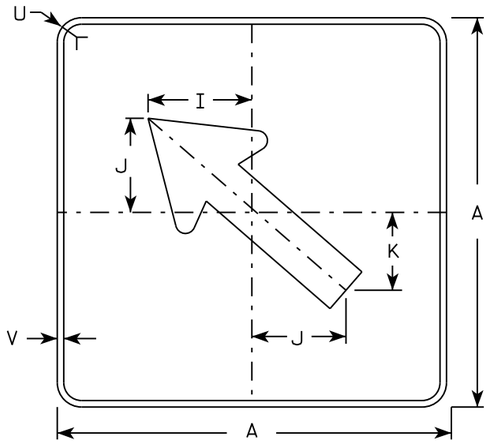
M6-2
MM6-2
MO6-2
MP6-2

NOTES

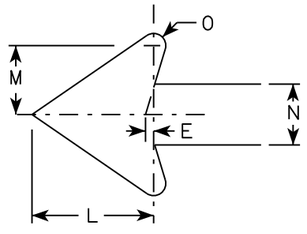
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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

STANDARD SIGN
M6-1 & M6-2
SERIES

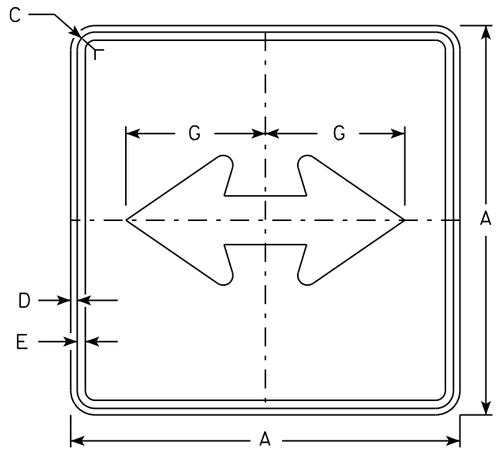
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

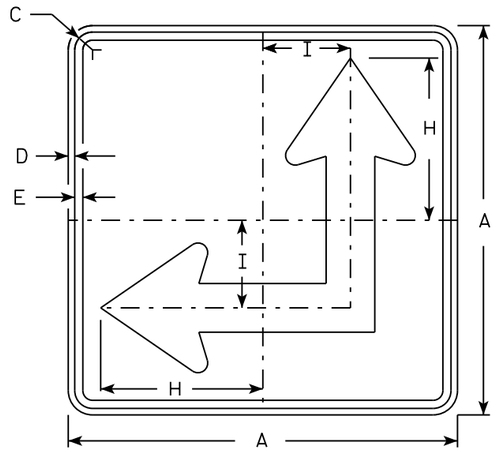
DATE 10/15/15 PLATE 226 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



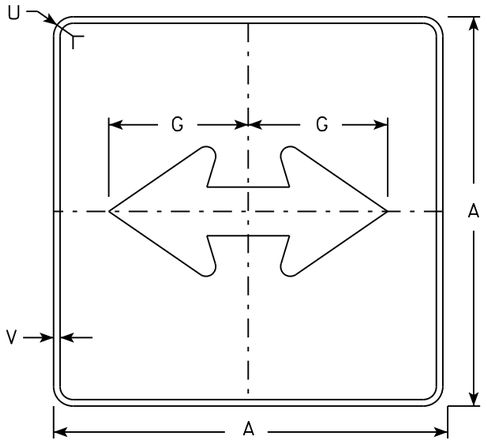
M6-4
MM6-4
MO6-4
MP6-4



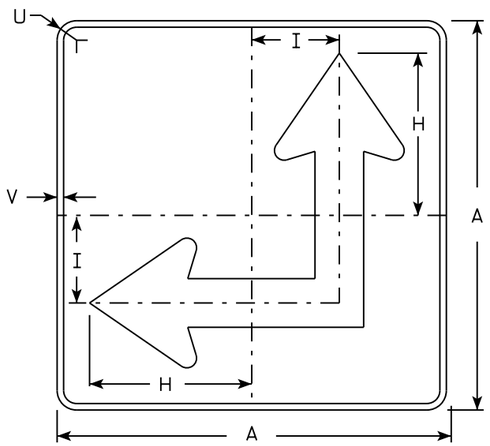
M6-6
MM6-6
MO6-6
MP6-6

NOTES

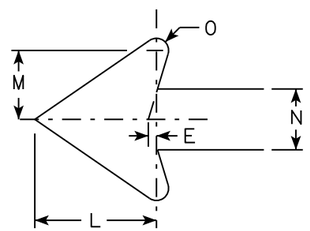
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White
   MK6-4 and MK6-6 Background - Green
   Message - White
   MM6-4 and MM6-6 Background - White
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow
5. M6-6R same as M6-6L except arrow points ahead and right.



MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6



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	8 3/4	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	12 1/2	6 3/4			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	12 1/2	6 3/4			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	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-4 & M6-6
SERIES

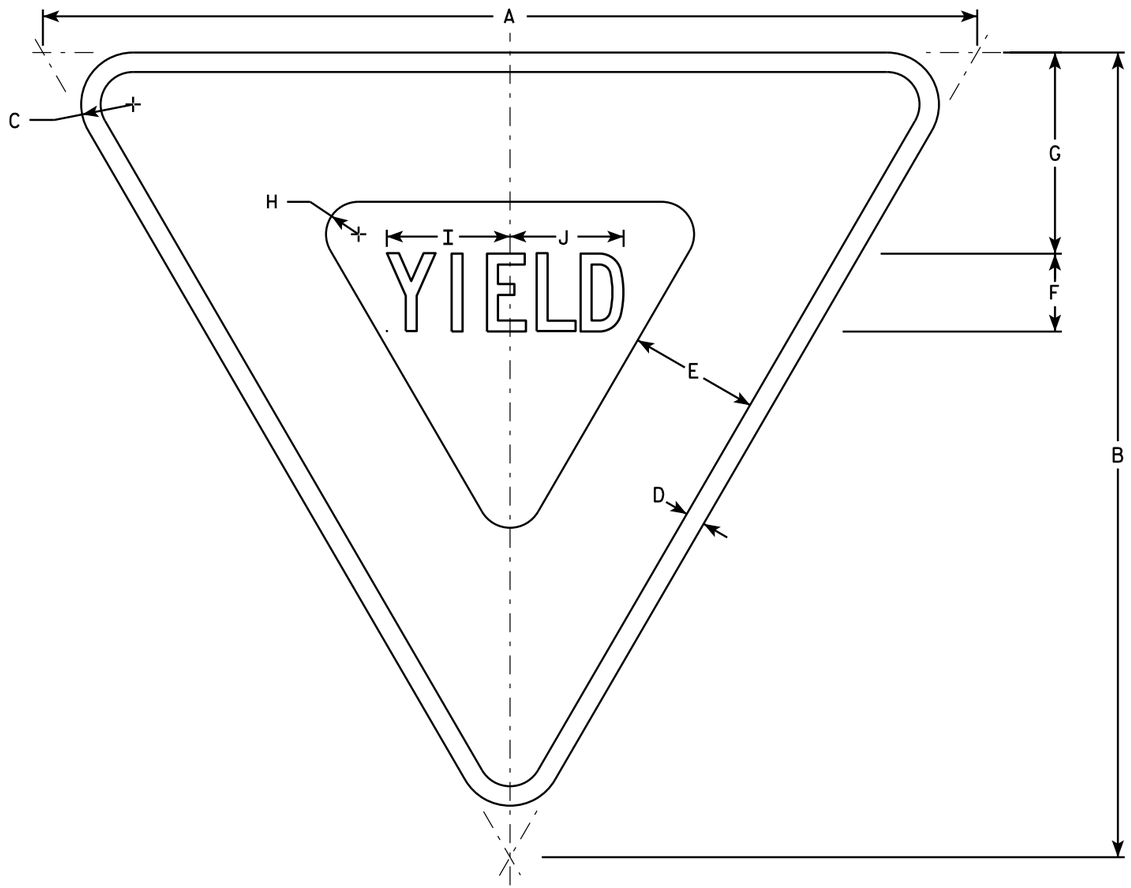
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 227 M6-4.10

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M64.DGN PLOT DATE : 01-DEC-2015 17:58 PLOT BY : $$ platuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



R1-2

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

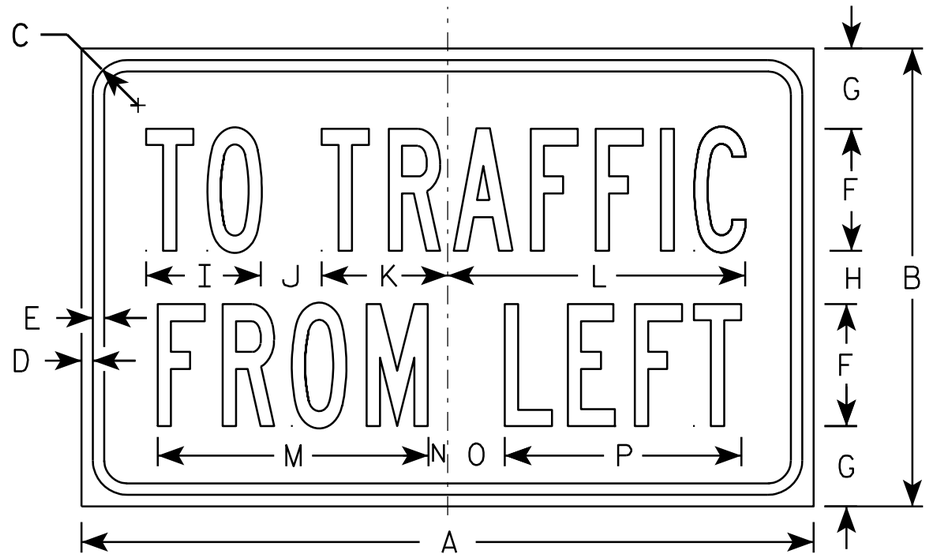
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE R1-2.12

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42



R1-54

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 - B

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	15	1 1/8	3/8	3/8	4	2 5/8	1 3/4	3 3/4	2	4 1/8	9 3/4	8 7/8	5/8	1 7/8	7 3/4											2.5
2M	24	15	1 1/8	3/8	3/8	4	2 5/8	1 3/4	3 3/4	2	4 1/8	9 3/4	8 7/8	5/8	1 7/8	7 3/4											2.5
3																											
4																											
5																											

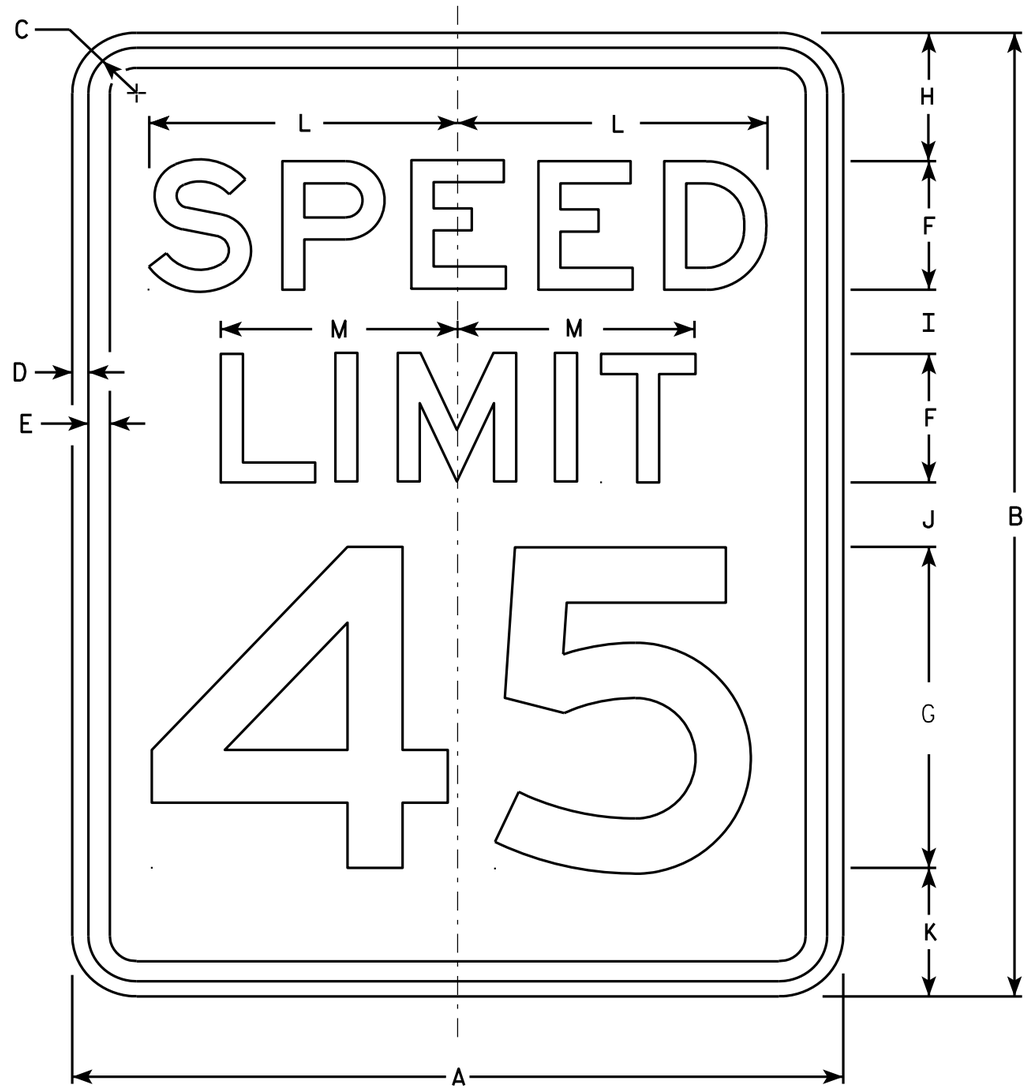
STANDARD SIGN
R1-54

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-54.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 229	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

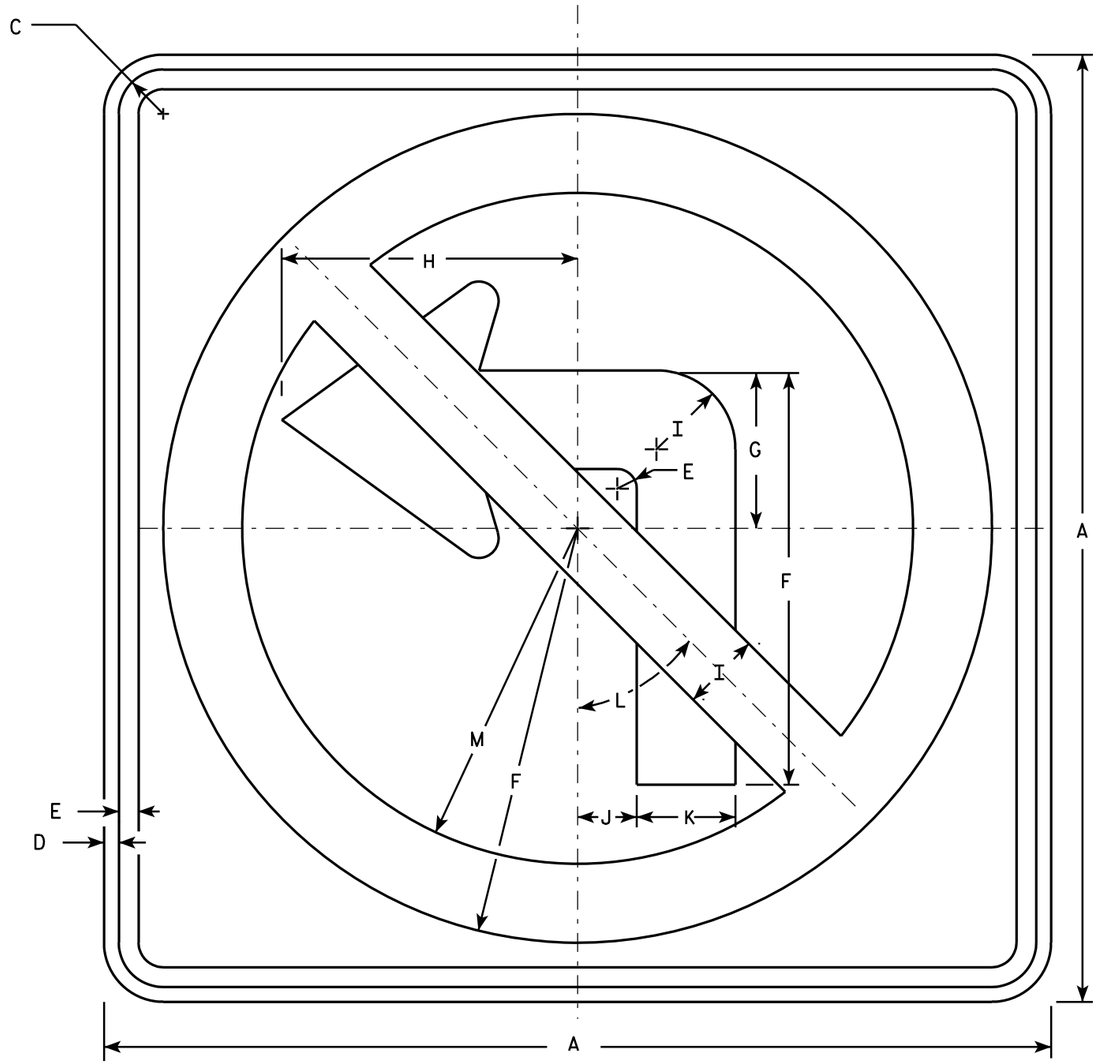
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

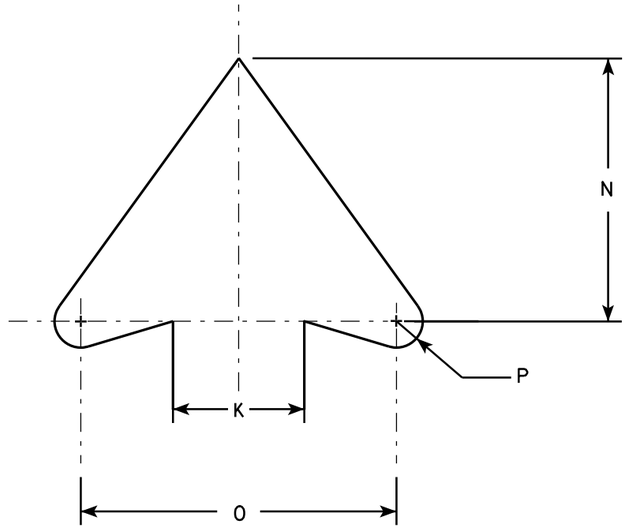
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 230	E



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

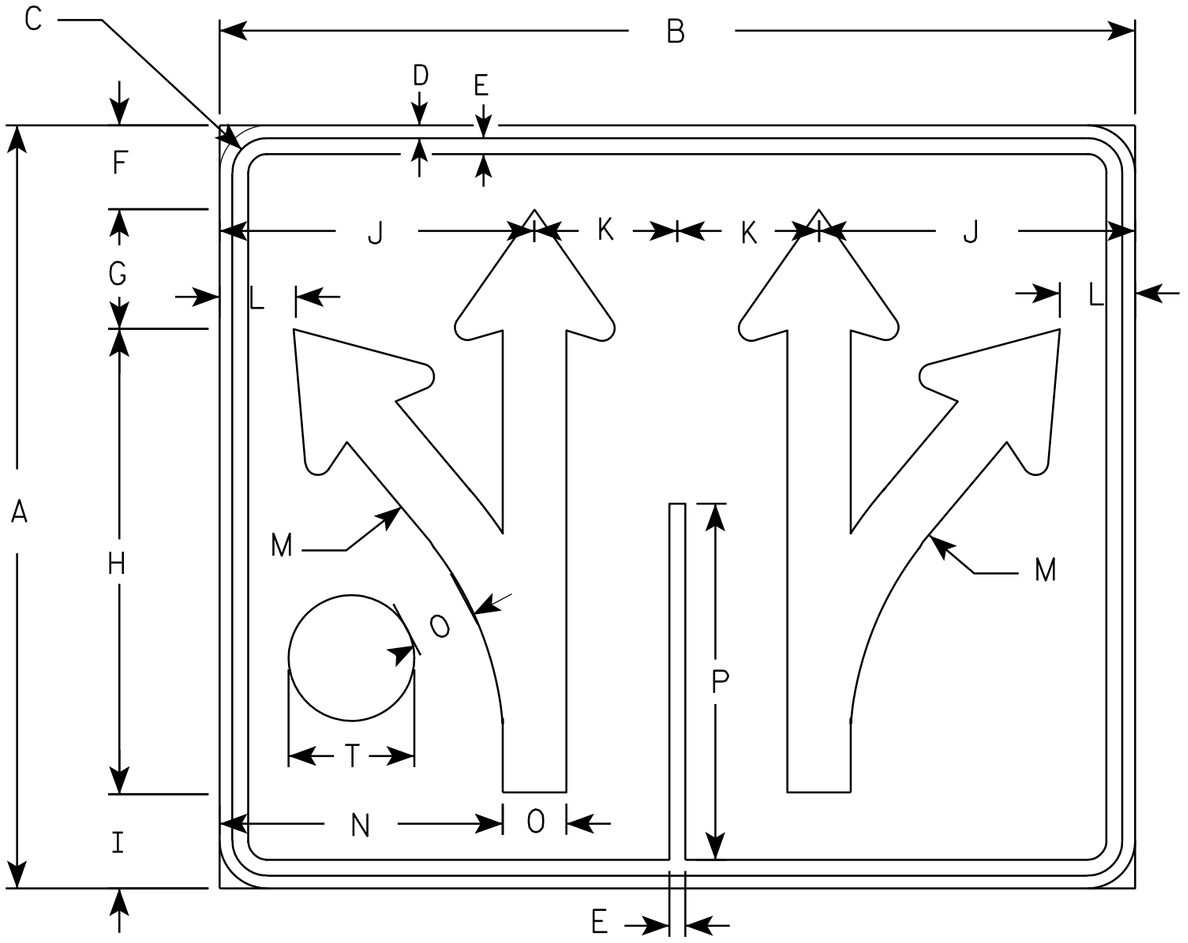
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

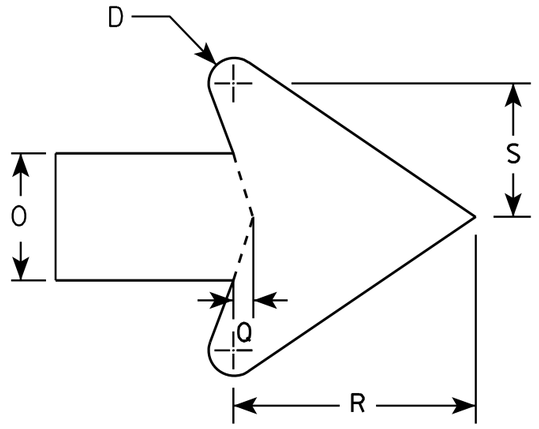
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 231	E



R3-8CC

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.



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	30	36	1 3/8	1/2	5/8	3 1/4	4 3/4	18 1/4	3 3/4	12 3/8	5 5/8	3	13 1/4	11 1/8	2 1/2	14	3/8	4 3/4	2 5/8	5							7.5
2M	30	36	1 3/8	1/2	5/8	3 1/4	4 3/4	18 1/4	3 3/4	12 3/8	5 5/8	3	13 1/4	11 1/8	2 1/2	14	3/8	4 3/4	2 5/8	5							7.5
3																											
4																											

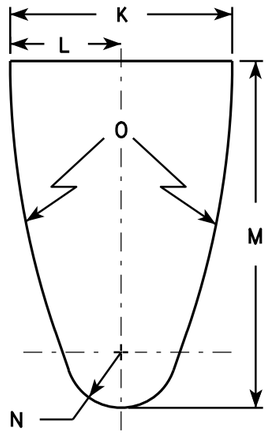
STANDARD SIGN
R3-8CC

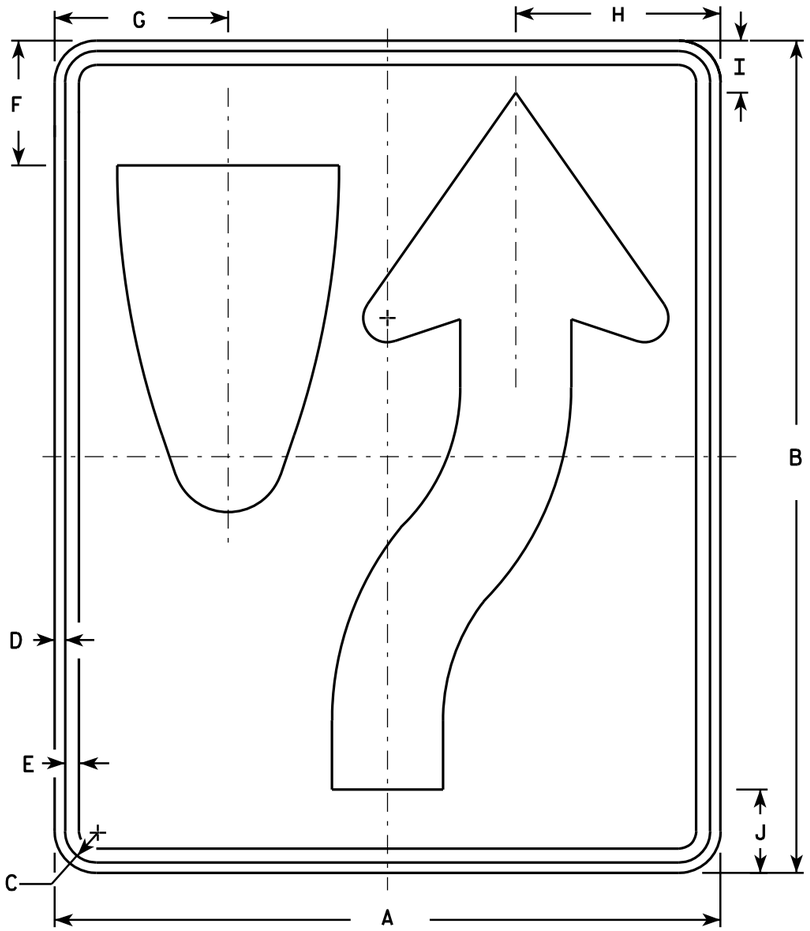
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8CC.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 232	E

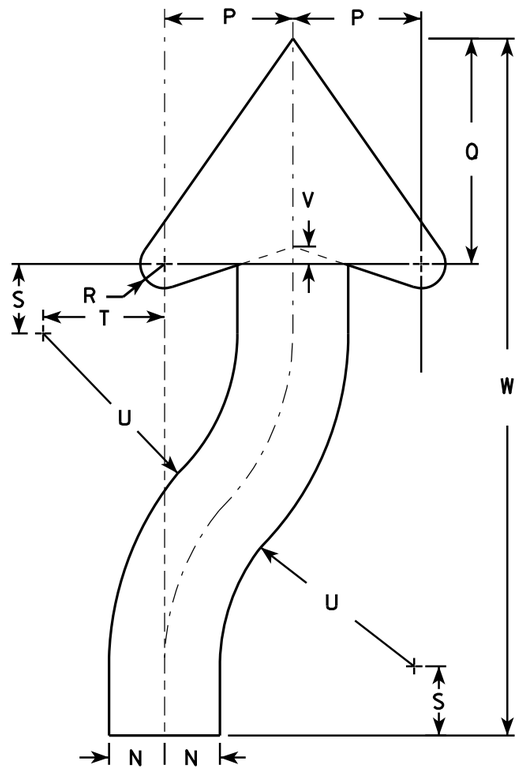




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

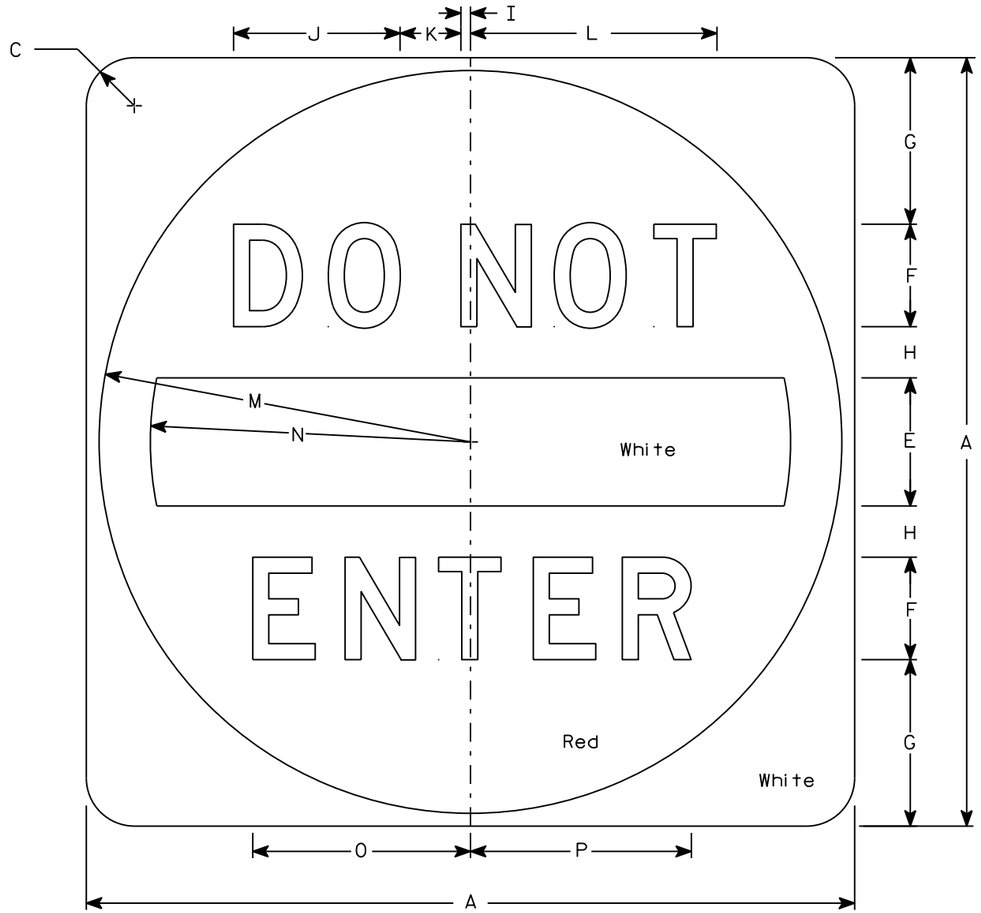
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 233	E



R5-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - See detail
   Message - White
3. Message Series - D

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											6.25
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

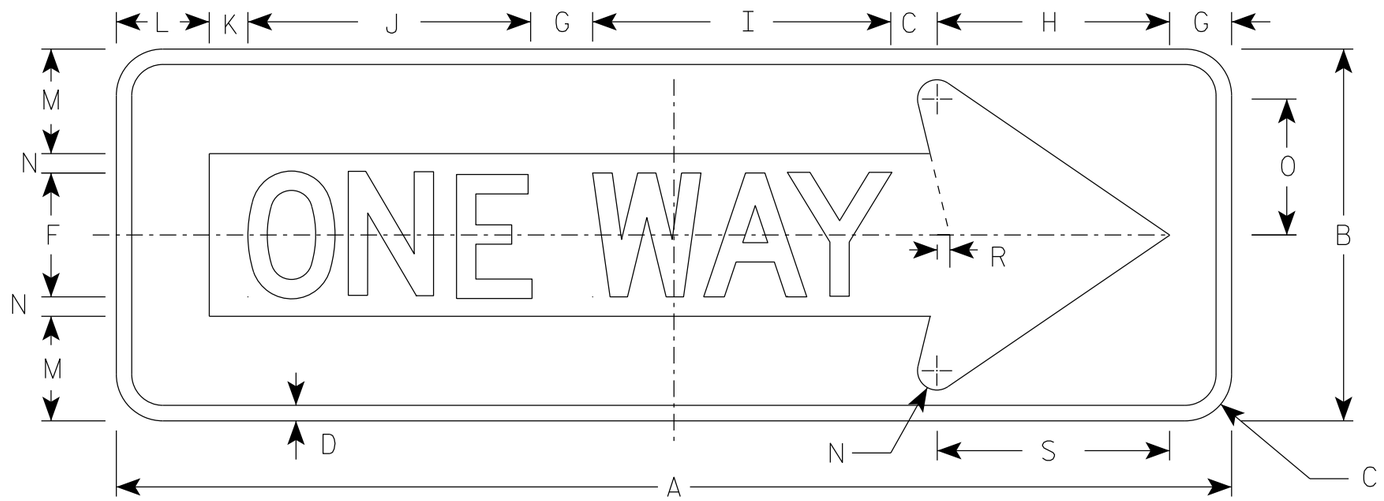
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/15/18 PLATE NO. R5-1.16

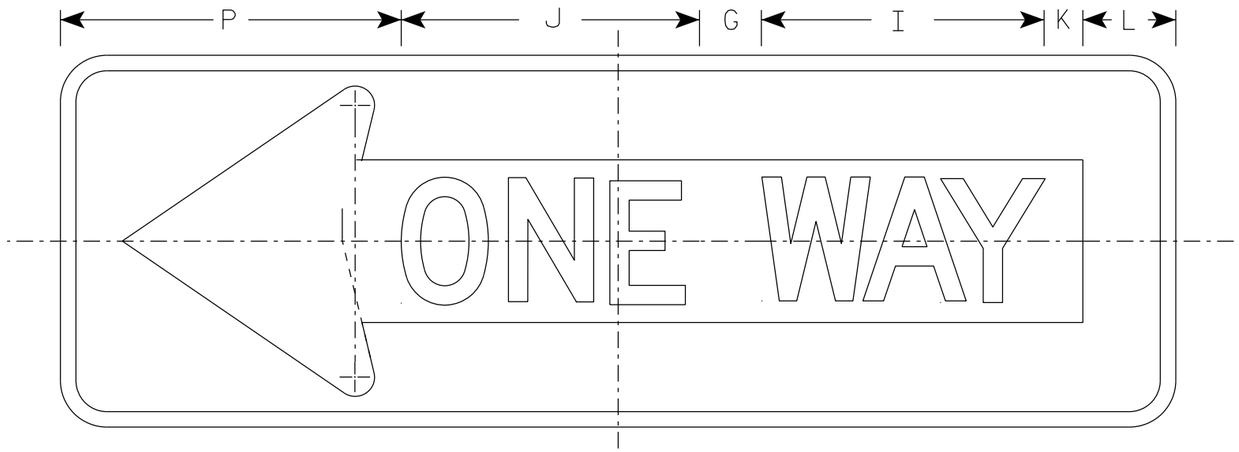
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 234 | E



R6-1R

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - BLACK
   Message - BLACK LEGEND & WHITE ARROW & BORDER
3. Message Series - D



R6-1L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	12	1 1/2	1/2		4	2	7 1/2	9 5/8	9 1/8	1 1/4	3	3 3/8	5/8	4 3/8	11		3/8	7 1/2								3.0
2M	54	18	2 1/4	3/4		6	3	11 1/4	13 5/8	14 1/2	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
3	54	18	2 1/4	3/4		6	3	11 1/4	13 5/8	14 1/2	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
4	54	18	2 1/4	3/4		6	3	11 1/4	13 5/8	14 1/2	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4								6.75
5																											

STANDARD SIGN
R6-1 L & R

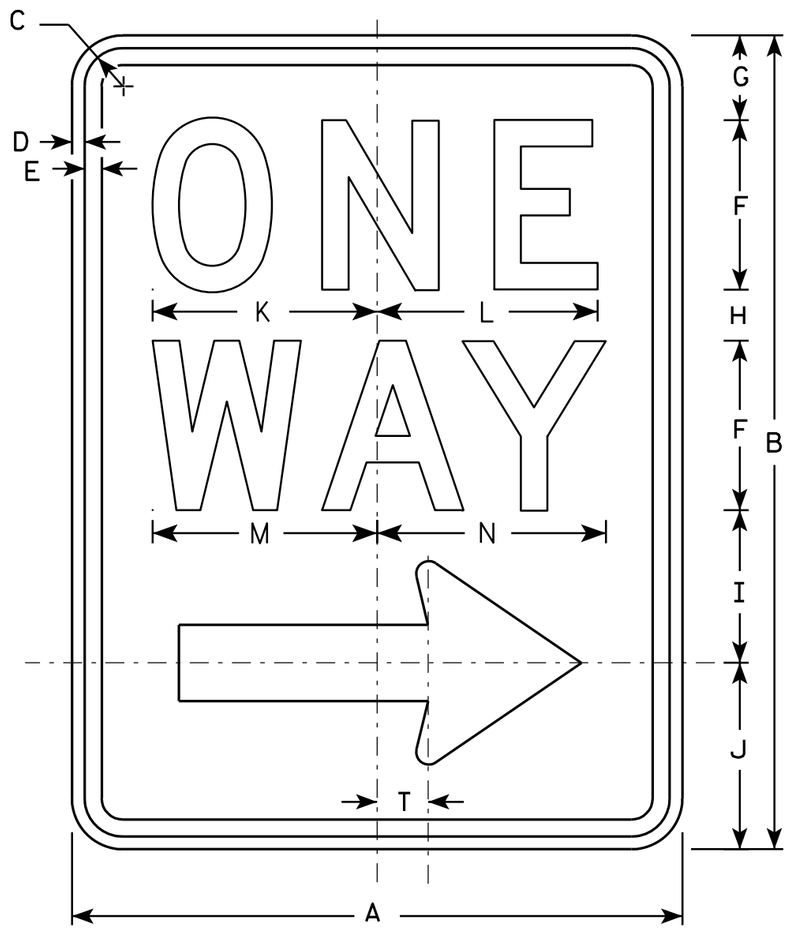
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 07/11/18 PLATE NO. R6-1.3

PROJECT NO:

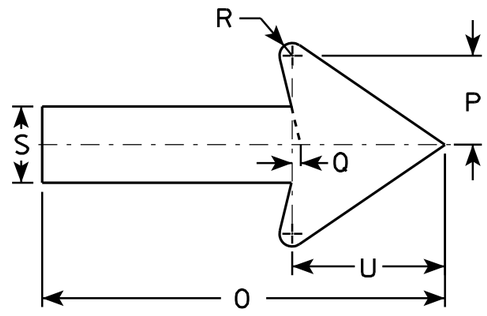
SHEET NO: 235 E



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

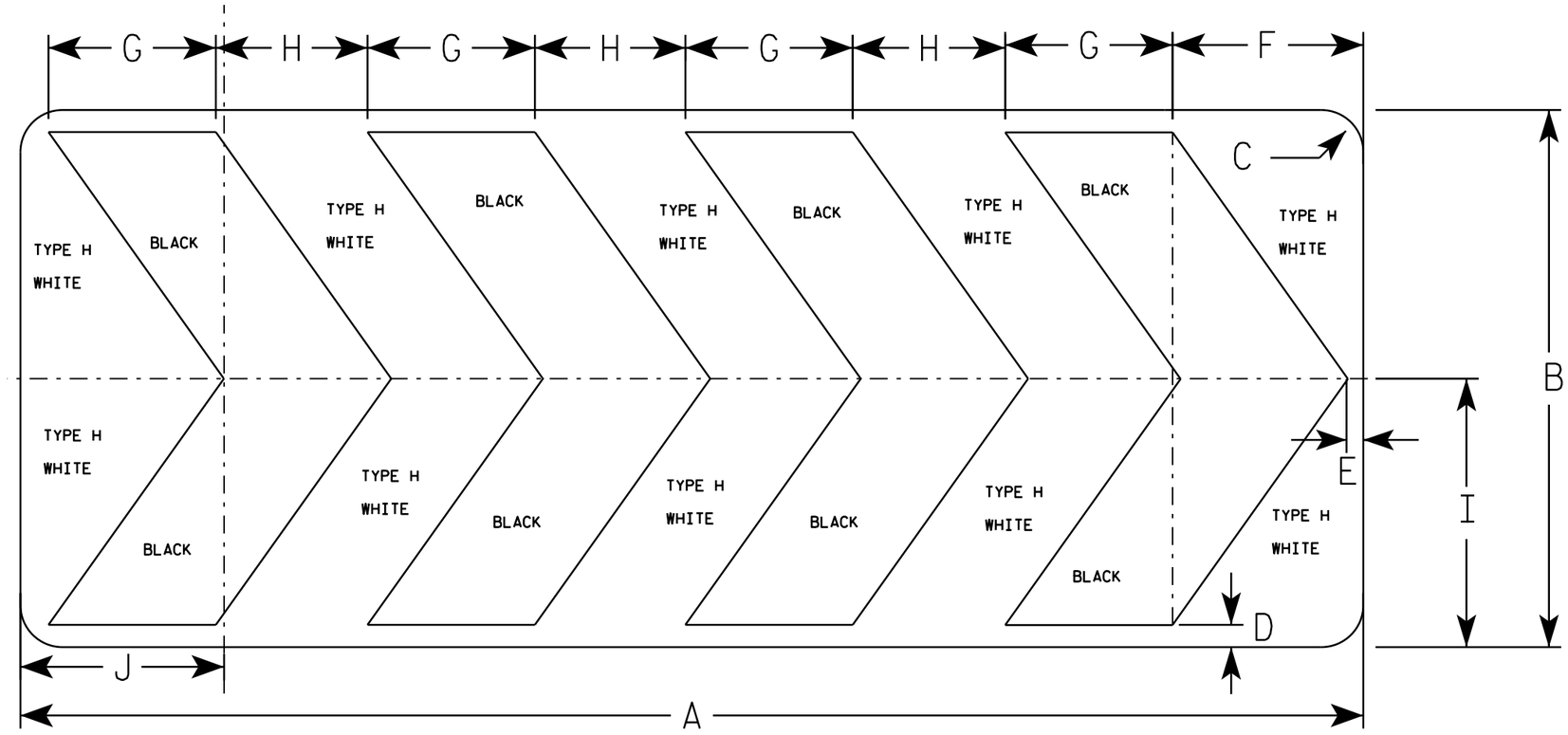
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 236	E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - WHITE
   Message - BLACK
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



R6-4B

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	60	24	1 7/8	1	3/4	8 1/2	7 1/2	6 3/4	12	9 1/8																	10.0
2M	60	24	1 7/8	1	3/4	8 1/2	7 1/2	6 3/4	12	9 1/8																	10.0
3																											
4																											
5																											

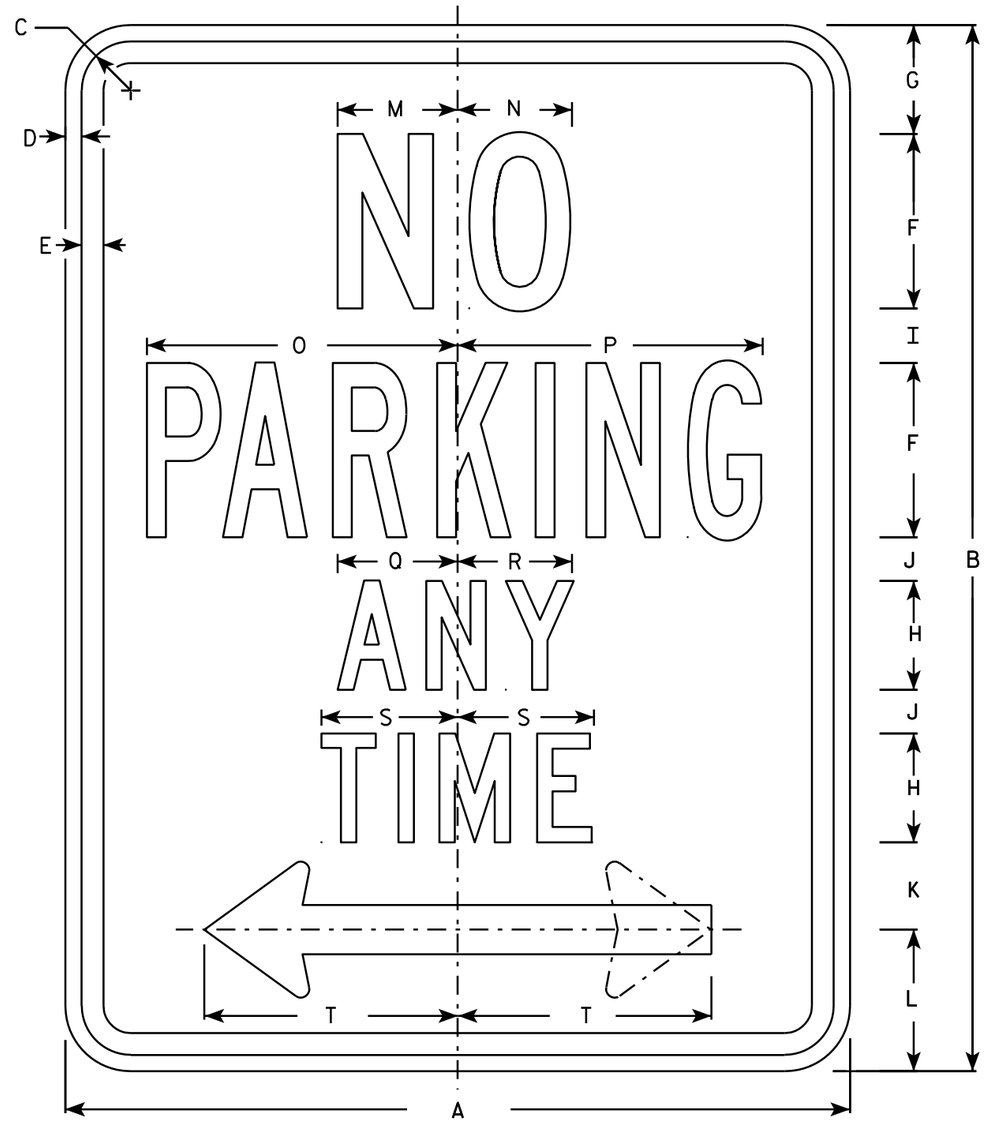
STANDARD SIGN
R6-4B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/14 PLATE NO. R6-4.3

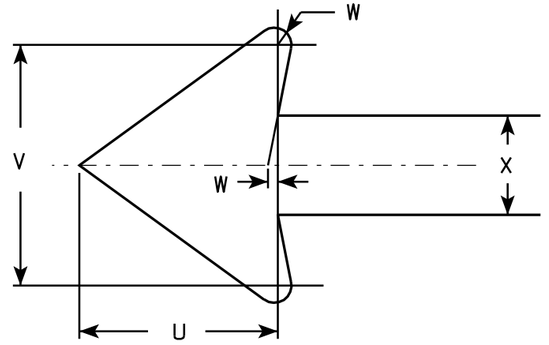
PROJECT NO: SHEET NO: E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
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. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

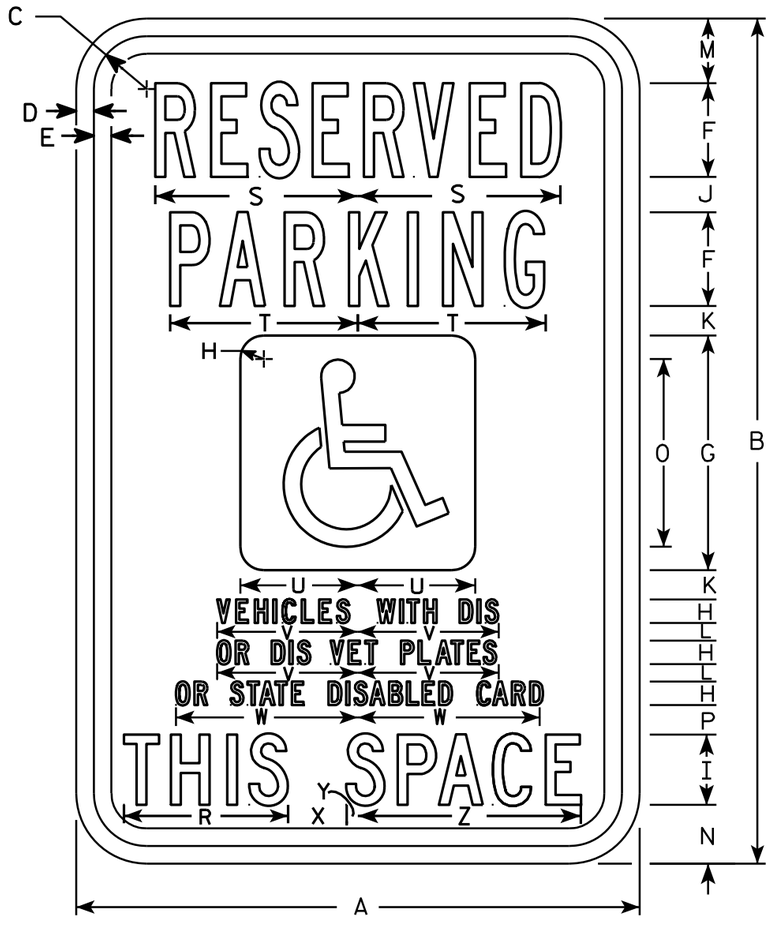
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 238 | E



R7-8A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Sign is white Type H Reflective; paraplegic background is blue.
   Message - Legend and border are green; paraplegic symbol is white
3. Message Series - Lines 1 & 2 are Series B
   Lines 3, 4, 5 & 6 are Series C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	18	1 1/8	3/8	3/8	2	5	1/2	1 1/2	3/4	5/8	3/8	1 3/8	1 1/4	4	5/8		3 1/2	4 3/8	4	2 1/2	3	3 7/8	1 1/4	1/4	4 3/4	1.5
2M	18	24	1 1/8	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
3	18	24	1 1/8	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
4																											
5																											

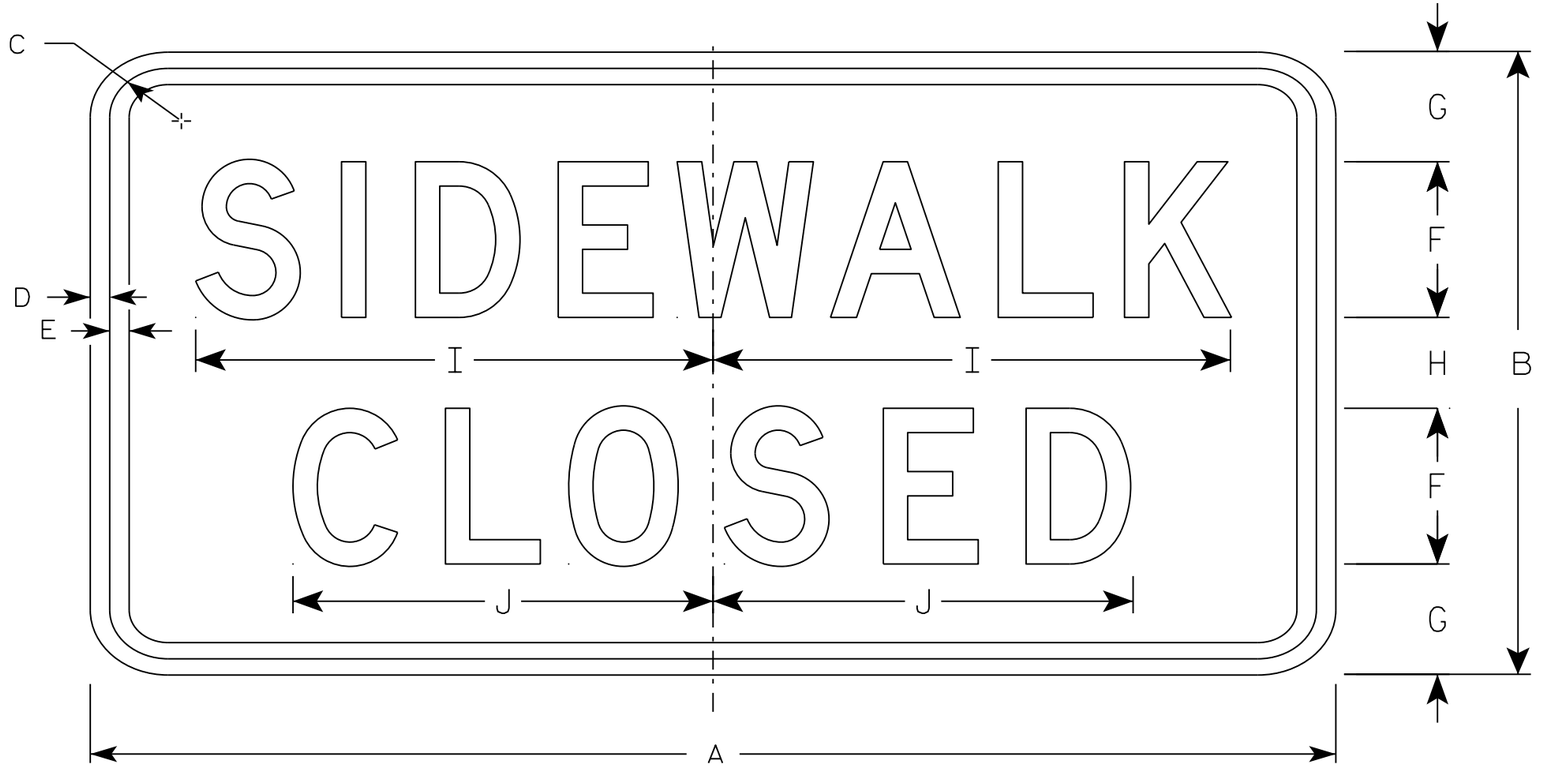
STANDARD SIGN
R7-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/25/2011 PLATE NO. R7-8A.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 239 | E



R9-9

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

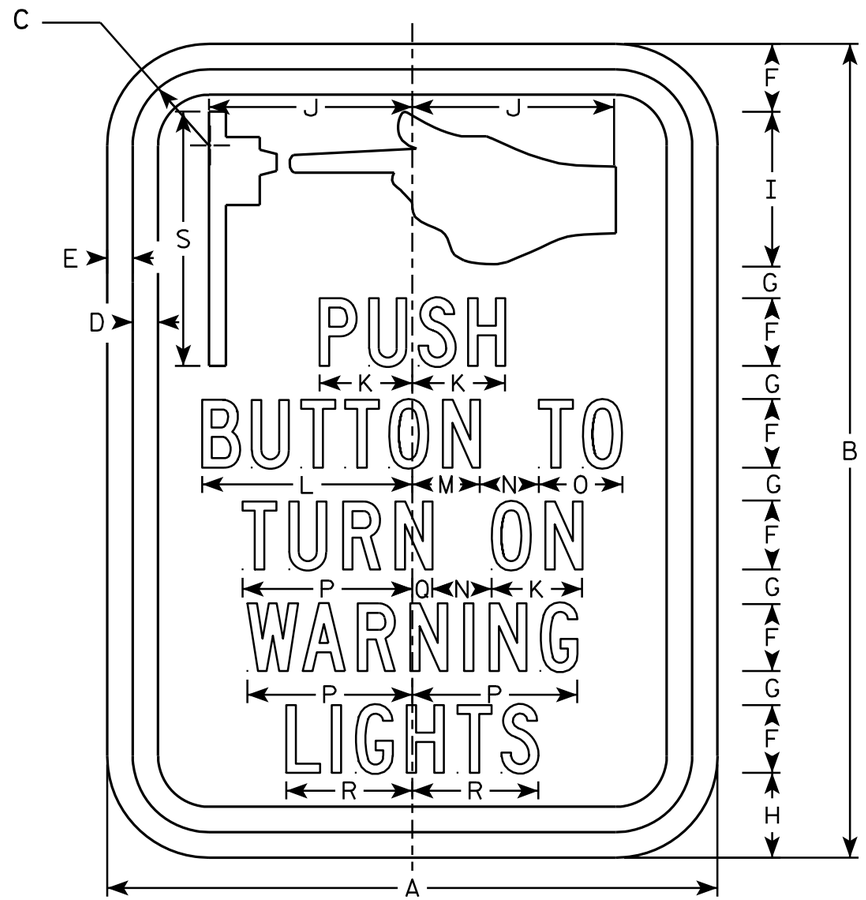
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 240 R9-9.6

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R99.DGN PLOT DATE : 11-AUG-2016 11:33 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 2.918761:1.000000



R10-25

NOTES

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

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	6	9	1 1/8	3/8	3/8	3/4	3/8	1	1 3/4	2	7/8	2 1/8	5/8	5/8	7/8	1 5/8	1/4	1 1/4	2 7/8								.38
2S	9	12	1 1/8	3/8	3/8	1	1/2	1 1/4	2 1/4	3	1 3/8	3 1/8	1	7/8	1 1/4	2 1/2	1/4	1 7/8	3 3/4								.75
2M	9	12	1 1/8	3/8	3/8	1	1/2	1 1/4	2 1/4	3	1 3/8	3 1/8	1	7/8	1 1/4	2 1/2	1/4	1 7/8	3 3/4								.75
3																											
4																											
5																											

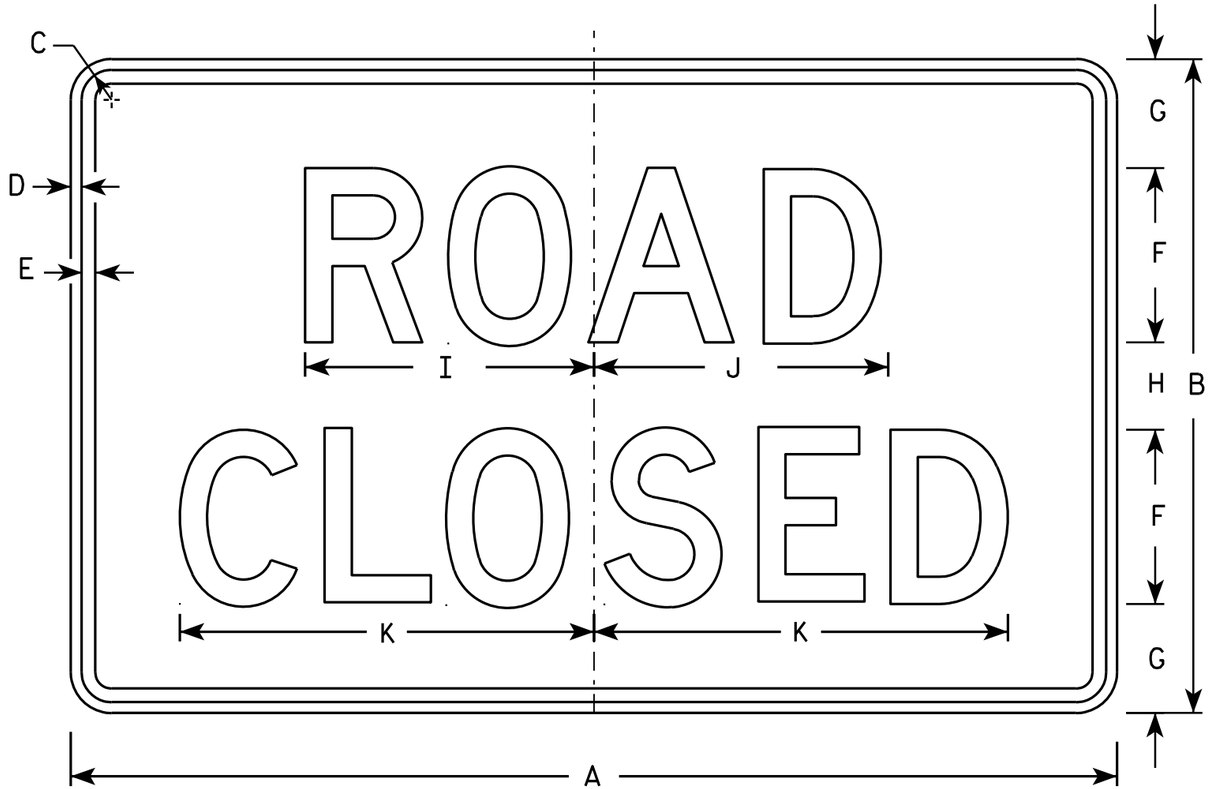
STANDARD SIGN
R10-25

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/8/10 PLATE NO. R10-25.1

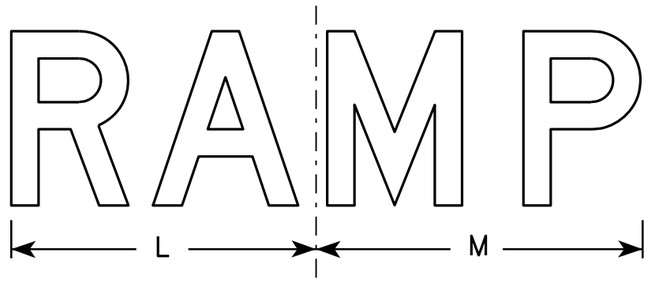
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 241	E



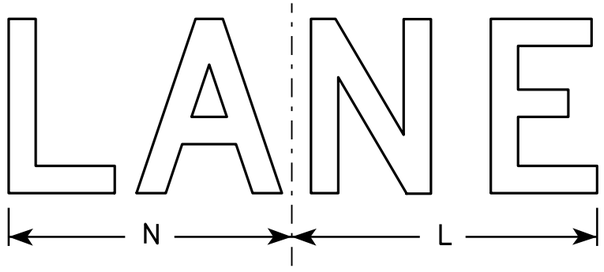
R11-2

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

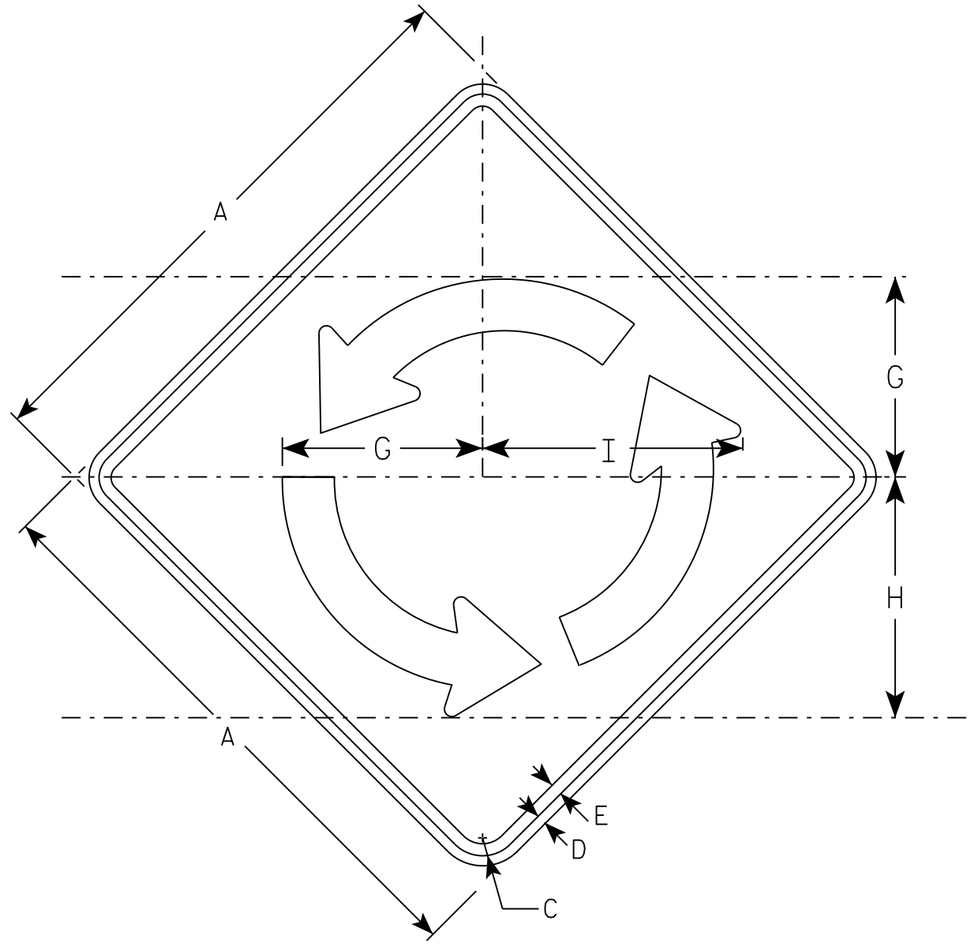
STANDARD SIGN
R11-2

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: 242	E



W2-6

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - YELLOW
   Message - BLACK

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	Area sq. ft.
1																									
2S	30		1 3/8	1/2	5/8		10 3/8	12 1/2	13 1/2																6.25
2M	30		1 3/8	1/2	5/8		10 3/8	12 1/2	13 1/2																6.25
3	36		1 5/8	5/8	3/4		12 1/2	15	16 1/4																9.00
4	48		2 1/4	3/4	1		16 5/8	20	16 1/4																16.0
5																									

STANDARD SIGN
W2-6

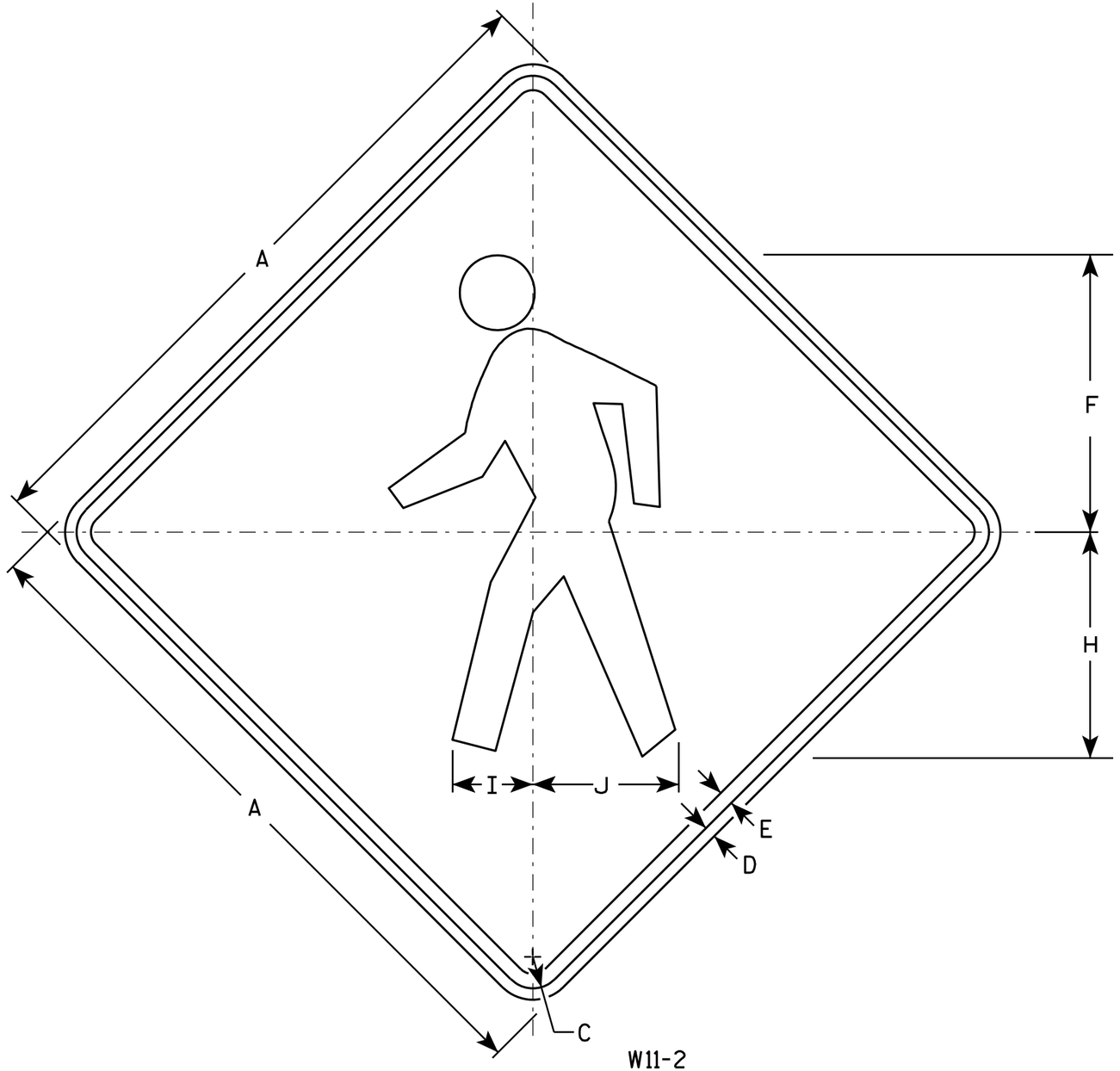
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/15/18 PLATE NO. W2-6.6

PROJECT NO:

SHEET NO: 243 E



W11-2

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

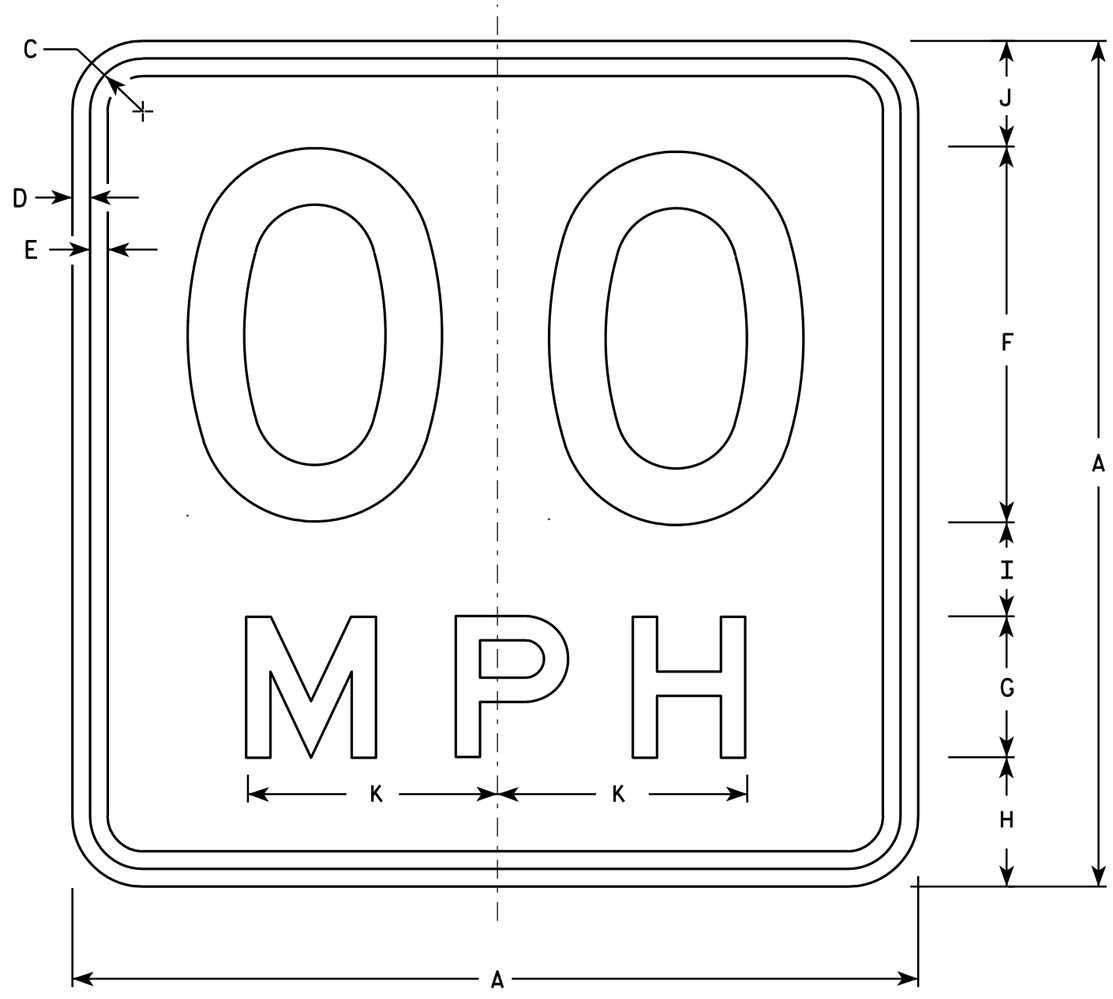
STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 244	E



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

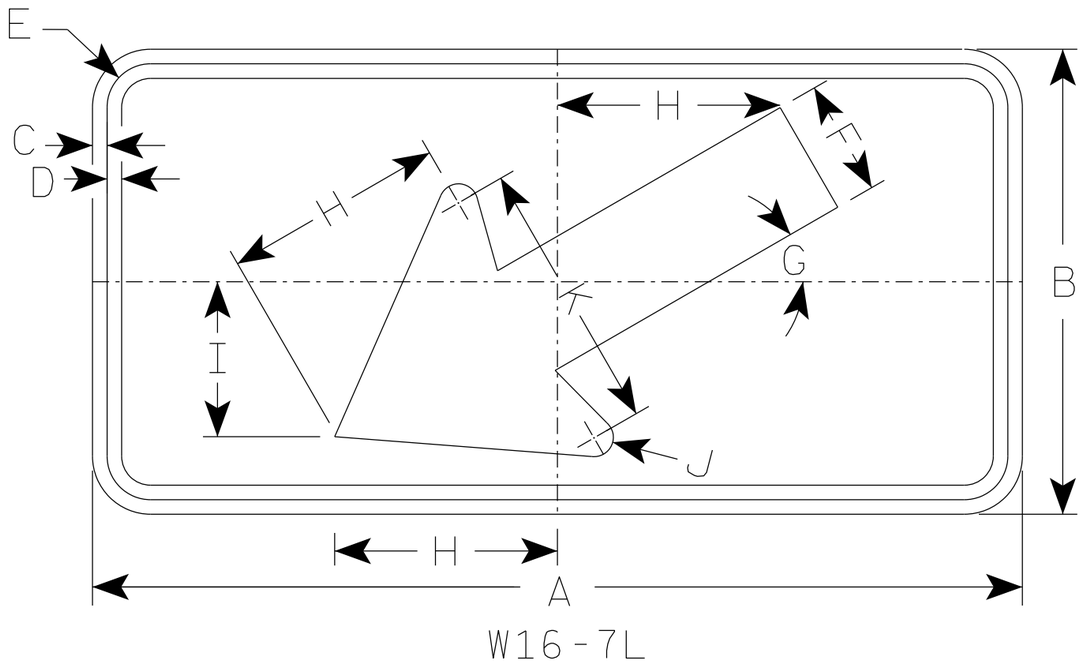
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 245 | E



W16-7L

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. W16-7R is the same as W16-L
   except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4	48	24	1/2	5/8	1 3/8	6	30°	11 1/2	8	1	14																8.0
5																											

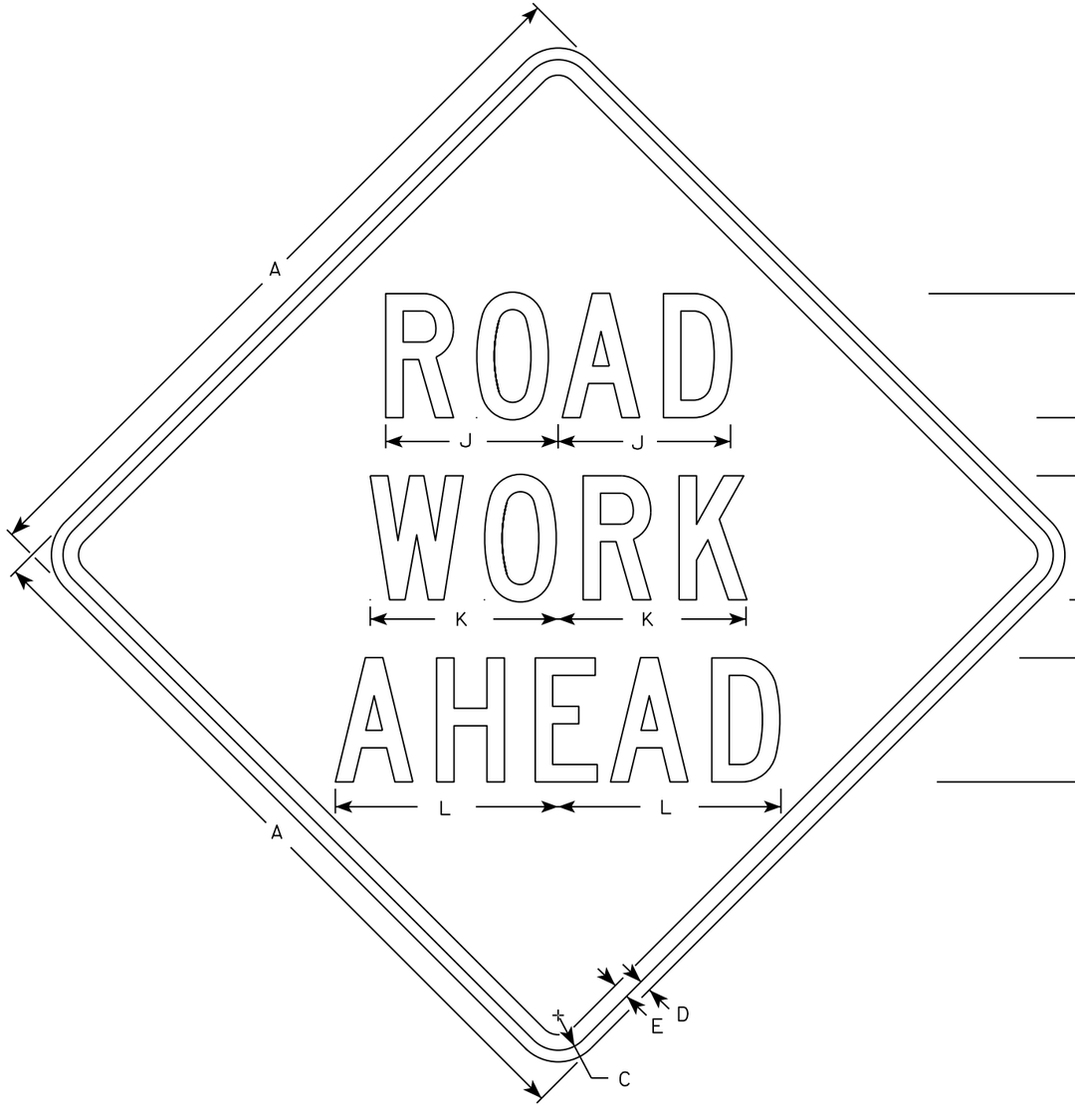
STANDARD SIGN
W16-7

WISCONSIN DEPT OF TRANSPORTATION

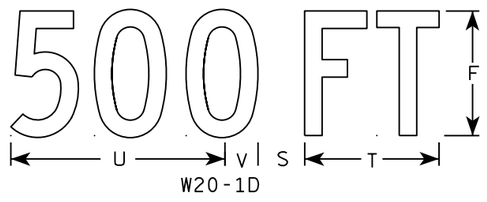
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 7/11/18 PLATE NO. W16-7.6

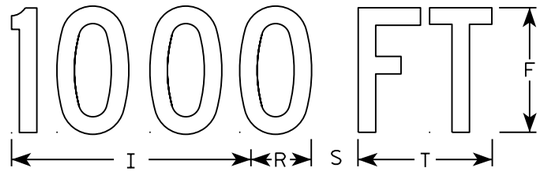
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 246 | E



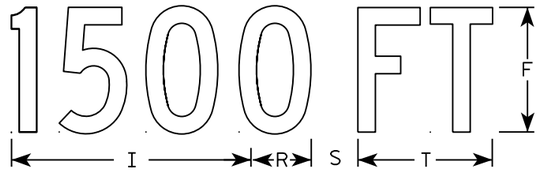
W20-1A



W20-1D

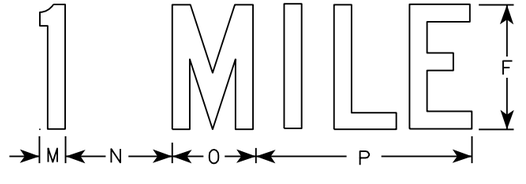


W20-1C

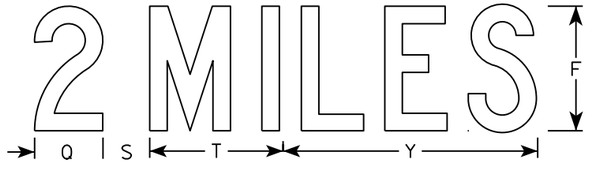


W20-1B

W20-1G



W20-1F



W20-1E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

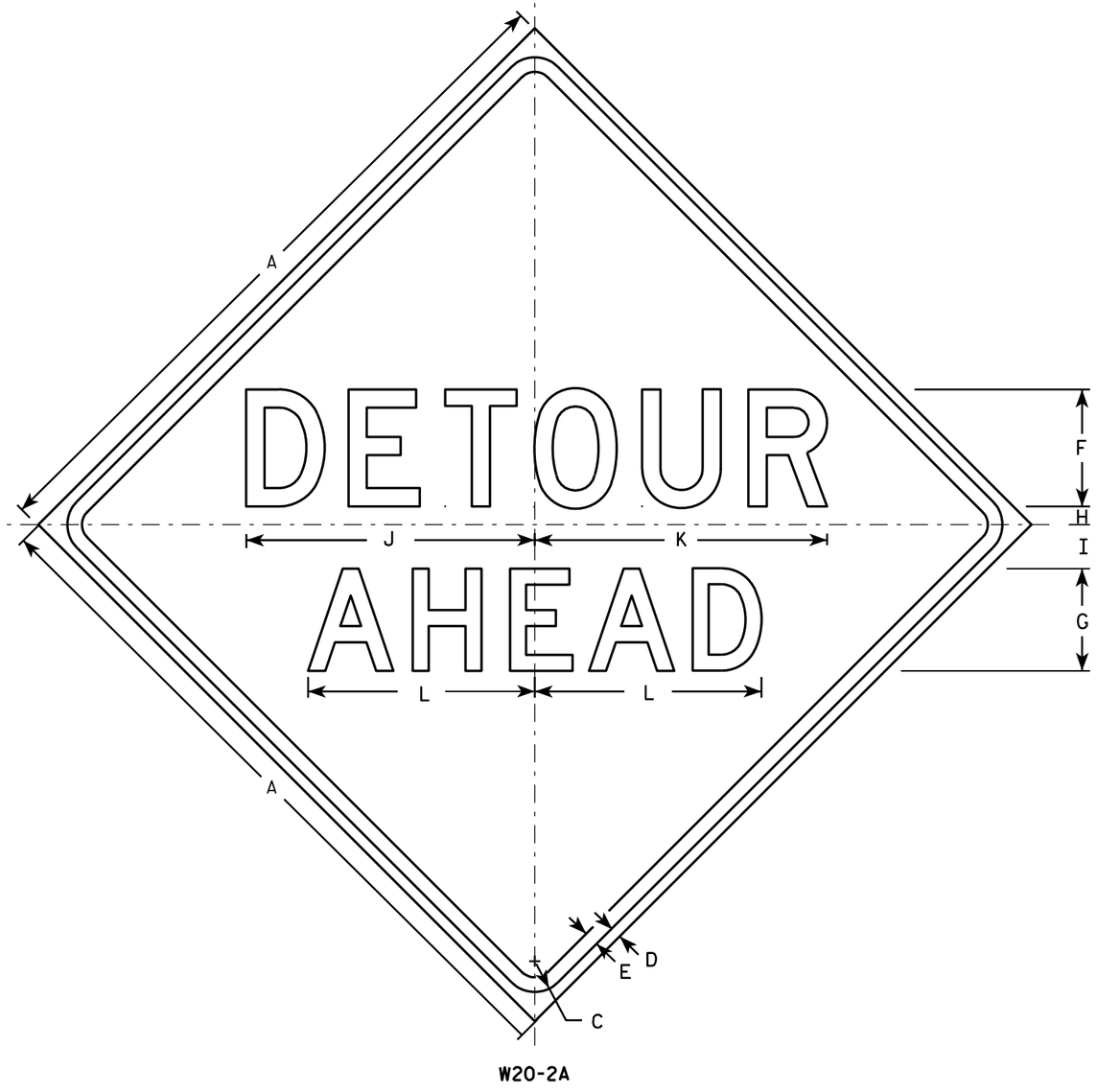
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

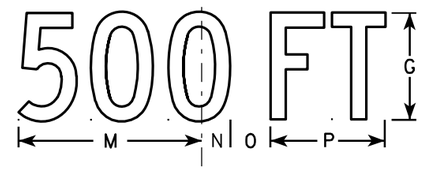
PROJECT NO:

SHEET NO: E

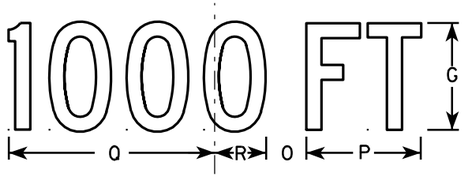
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



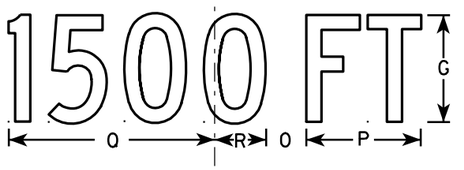
W20-2A



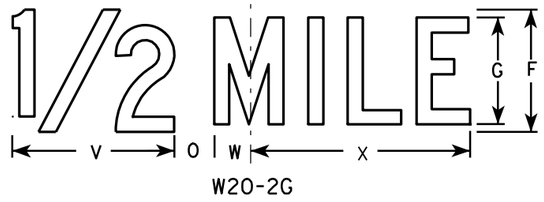
W20-2D



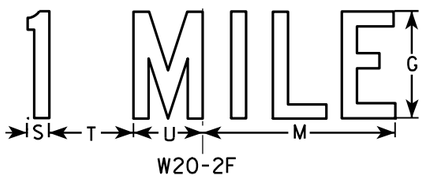
W20-2C



W20-2B



W20-2G



W20-2F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
   Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

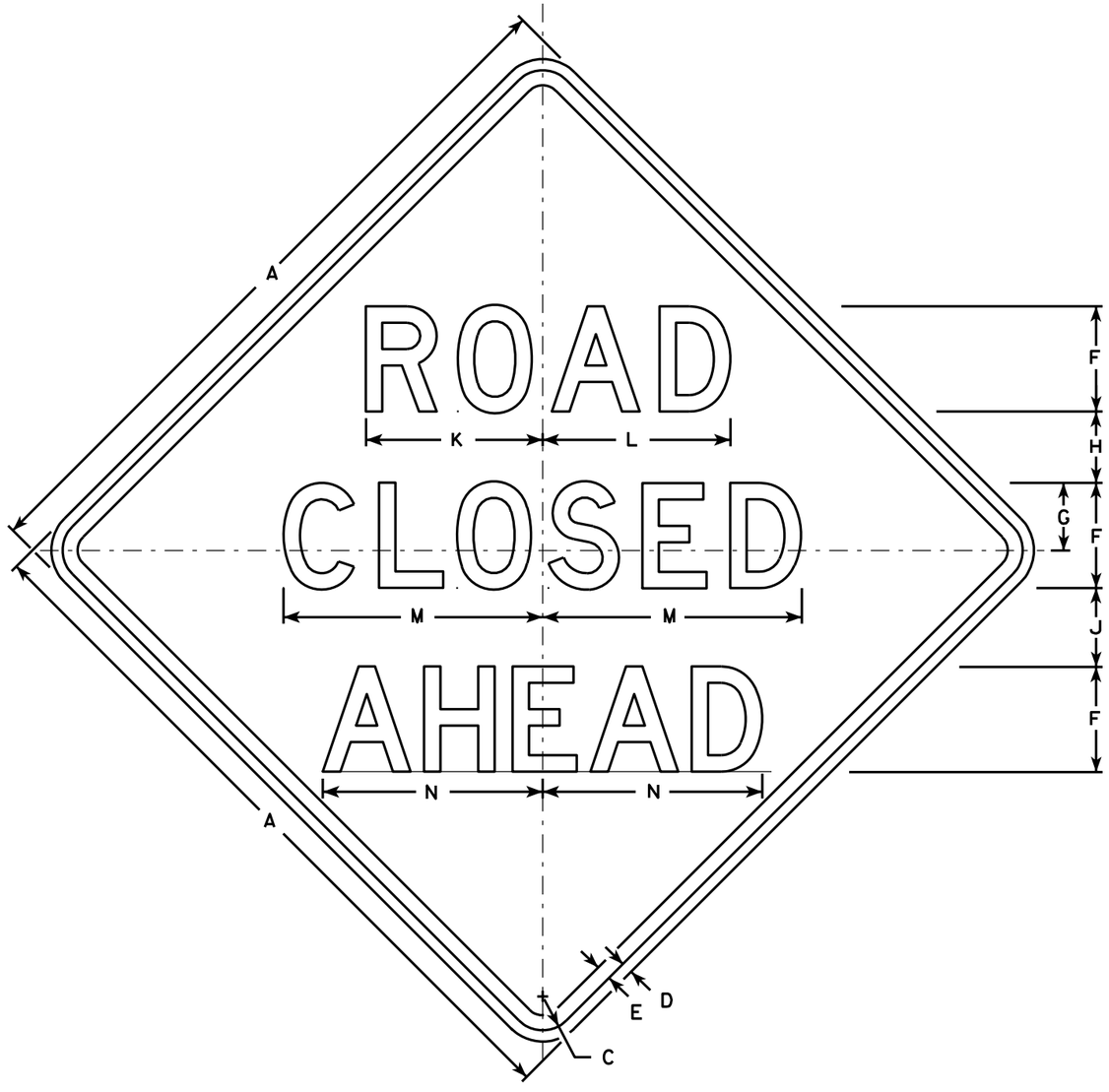
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

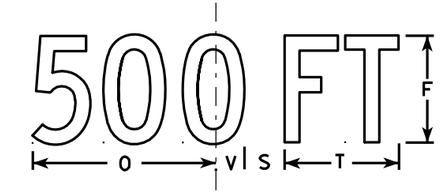
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

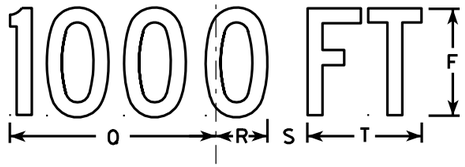
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 248	E



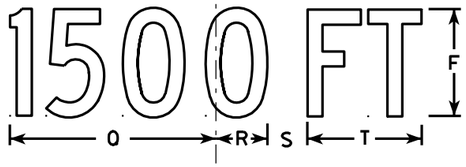
W20-3A



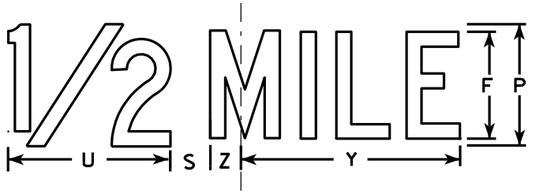
W20-3D



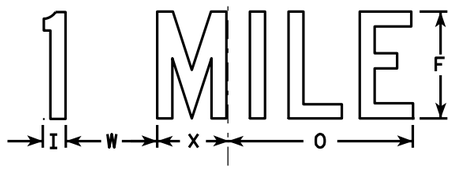
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 249 | E

SWAN BOULEVARD - WEST OF ROUNDABOUT

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
191+80.51 BV	19180.51	0.00	194.69	1.09	0	0	0	0	0
192+00 BV	19200.00	19.49	184.24	102.70	137	37	137	47	90
192+50 BV	19250.00	50.00	164.97	72.23	323	162	460	249	211
193+00 BV	19300.00	50.00	157.45	39.77	299	104	759	379	380
193+50 BV	19350.00	50.00	165.92	17.52	299	53	1,058	445	613
194+00 BV	19400.00	50.00	183.95	13.43	324	29	1,382	481	901
194+50 BV	19450.00	50.00	194.16	11.75	350	23	1,732	510	1,222
195+00 BV	19500.00	50.00	207.52	15.28	372	25	2,104	541	1,563
195+50 BV	19550.00	50.00	256.28	0.00	429	14	2,533	559	1,974
196+00 BV	19600.00	50.00	337.40	0.00	550	0	3,083	559	2,524
196+50 BV	19650.00	50.00	415.54	0.00	697	0	3,780	559	3,221
197+00 BV	19700.00	50.00	459.60	0.00	810	0	4,591	559	4,032
197+50 BV	19750.00	50.00	494.16	0.00	883	0	5,474	559	4,915
198+00 BV	19800.00	50.00	557.55	0.00	974	0	6,448	559	5,888
198+50 BV	19850.00	50.00	577.49	0.00	1,051	0	7,499	559	6,939
199+00 BV	19900.00	50.00	604.69	0.00	1,095	0	8,593	559	8,034
199+08.79 BV	19908.79	8.79	608.54	0.00	197	0	8,791	559	8,231
				SUBTOTAL =	8,791	447	8,791	559	8,231
199+08.79 BVWB	19908.79	0.00	277.74	0.00	0	0	0	0	0
199+50 BVWB	19950.00	41.21	278.39	0.00	424	0	424	0	424
200+00 BVWB	20000.00	50.00	273.09	0.00	511	0	935	0	935
200+50 BVWB	20050.00	50.00	256.18	0.00	490	0	1,425	0	1,425
201+00 BVWB	20100.00	50.00	209.80	0.00	431	0	1,857	0	1,857
201+50 BVWB	20150.00	50.00	141.12	0.70	325	1	2,181	1	2,181
201+67.53 BVWB	20167.53	17.53	113.08	6.63	83	2	2,264	4	2,260
201+67.54 BVWB	20167.54	0.01	129.02	6.64	0	0	2,264	4	2,260
202+00 BVWB	20200.00	32.46	78.35	41.05	125	29	2,389	40	2,349
202+50 BVWB	20250.00	50.00	15.30	133.56	87	162	2,475	242	2,234
202+69.03 BVWB	20269.03	19.03	6.57	198.01	8	117	2,483	388	2,095
202+84.68 BVWB	20284.68	15.64	0.00	253.38	2	131	2,485	551	1,934
				SUBTOTAL =	2,485	441	2,485	551	1,934
199+08.79 BVEB	19908.79	0.00	330.80	0.00	0	0	0	0	0
199+50 BVEB	19950.00	41.21	334.28	0.00	508	0	508	0	508
200+00 BVEB	20000.00	50.00	337.46	0.00	622	0	1,130	0	1,130
200+50 BVEB	20050.00	50.00	322.74	0.00	611	0	1,741	0	1,741
201+00 BVEB	20100.00	50.00	283.84	0.00	562	0	2,302	0	2,302
201+50 BVEB	20150.00	50.00	243.64	0.00	488	0	2,791	0	2,791
201+67.21 BVEB	20167.21	17.21	212.34	0.00	145	0	2,936	0	2,936
201+67.22 BVEB	20167.22	0.01	196.42	0.00	0	0	2,936	0	2,936
202+00 BVEB	20200.00	32.78	153.71	0.00	213	0	3,149	0	3,149
202+50 BVEB	20250.00	50.00	98.16	1.82	233	2	3,382	2	3,380
202+60.93 BVEB	20260.93	10.93	84.77	5.99	37	2	3,419	4	3,415
202+75.2 BVEB	20275.20	14.28	38.55	27.41	33	9	3,452	15	3,437
				SUBTOTAL =	3,452	12	3,452	15	3,437
				TOTAL =	14,727	900	14,727	1,126	13,602

SWAN BOULEVARD - EAST OF ROUNDABOUT

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
204+15.11 BVWB	20415.11	0.00	0.00	304.97	0	0	0	0	0
204+29.08 BVWB	20429.08	13.97	0.00	420.16	0	188	0	235	-235
204+50 BVWB	20450.00	20.92	0.00	386.81	0	313	0	625	-625
205+00 BVWB	20500.00	50.00	0.00	371.54	0	702	0	1,503	-1,503
205+24.99 BVWB	20524.99	24.99	0.00	345.20	0	332	0	1,918	-1,918
205+25 BVWB	20525.00	0.01	0.00	376.31	0	0	0	1,918	-1,918
205+50 BVWB	20550.00	25.00	0.00	322.15	0	323	0	2,322	-2,322
206+00 BVWB	20600.00	50.00	0.00	243.95	0	524	0	2,977	-2,977
206+50 BVWB	20650.00	50.00	0.00	170.05	0	383	0	3,456	-3,456
207+00 BVWB	20700.00	50.00	0.00	82.94	0	234	0	3,749	-3,749
207+50 BVWB	20750.00	50.00	0.61	25.09	1	100	1	3,874	-3,874
207+81.52 BVWB	20781.52	31.52	4.61	12.05	3	22	4	3,901	-3,898
				SUBTOTAL =	4	3,121	4	3,901	-3,898
204+05.63 BVEB	20405.64	0.00	0.00	121.26	0	0	0	0	0
204+21.71 BVEB	20421.71	16.07	0.00	226.52	0	104	0	129	-129
204+50 BVEB	20450.00	28.29	2.20	247.28	1	248	1	440	-439
204+80 BVEB	20480.00	30.00	0.00	233.05	1	267	2	773	-771
205+00 BVEB	20500.00	20.00	0.00	302.06	0	198	2	1,021	-1,019
205+24.68 BVEB	20524.68	24.68	0.00	305.65	0	278	2	1,368	-1,366
205+24.69 BVEB	20524.69	0.01	0.00	274.80	0	0	2	1,368	-1,366
205+50 BVEB	20550.00	25.31	0.00	277.17	0	259	2	1,692	-1,689
206+00 BVEB	20600.00	50.00	0.00	269.16	0	506	2	2,324	-2,322
206+50 BVEB	20650.00	50.00	0.48	172.48	0	409	3	2,835	-2,832
207+00 BVEB	20700.00	50.00	0.31	116.11	1	267	4	3,169	-3,166
207+50 BVEB	20750.00	50.00	1.71	63.32	2	166	5	3,377	-3,371
207+81.51 BVEB	20781.51	31.51	17.11	45.07	11	63	16	3,456	-3,440
				SUBTOTAL =	16	2,765	16	3,456	-3,440
207+81.51 BV	20781.51	0.00	21.72	57.12	0	0	0	0	0
208+00 BV	20800.00	18.49	57.01	45.66	27	35	27	44	-17
208+50 BV	20850.00	50.00	118.16	19.23	162	60	189	119	70
209+00 BV	20900.00	50.00	168.25	8.90	265	26	454	152	303
209+50 BV	20950.00	50.00	185.45	7.80	328	15	782	171	611
210+00 BV	21000.00	50.00	181.35	7.10	340	14	1,121	188	933
210+50 BV	21050.00	50.00	168.66	8.99	324	15	1,446	207	1,239
211+00 BV	21100.00	50.00	161.89	8.75	306	16	1,752	227	1,524
211+50 BV	21150.00	50.00	165.30	6.16	303	14	2,055	245	1,810
212+00 BV	21200.00	50.00	171.89	7.90	312	13	2,367	261	2,106
212+50 BV	21250.00	50.00	182.03	2.81	328	10	2,695	273	2,421
213+00 BV	21300.00	50.00	11.03	3.58	179	6	2,873	281	2,593
213+50 BV	21350.00	50.00	9.37	7.60	19	10	2,892	294	2,599
214+00 BV	21400.00	50.00	7.44	7.74	16	14	2,908	311	2,596
214+50 BV	21450.00	50.00	7.10	6.26	13	13	2,921	328	2,594
215+00 BV	21500.00	50.00	3.52	5.47	10	11	2,931	341	2,590
215+37.2 BV	21537.20	37.20	5.31	0.25	6	4	2,937	346	2,591
				SUBTOTAL =	2,937	277	2,937	346	2,591
				TOTAL =	2,957	6,163	2,957	7,703	-4,746

DISCOVERY PARKWAY

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
26+41.64 SB	2641.64	0.00	186.39	0.00	0	0	0	0	0
26+50 SB	2650.00	8.36	185.67	0.92	58	0	58	0	57
26+83.59 SB	2683.59	33.59	173.77	1.96	224	2	281	2	279
26+83.6 SB	2683.60	0.01	88.26	0.00	0	0	281	2	279
27+00 SB	2700.00	16.40	93.19	0.00	55	0	336	2	334
27+50 SB	2750.00	50.00	94.37	0.00	174	0	510	2	508
28+00 SB	2800.00	50.00	97.38	0.00	178	0	688	2	685
28+50 SB	2850.00	50.00	100.09	0.00	183	0	870	2	868
29+00 SB	2900.00	50.00	97.25	0.00	183	0	1,053	2	1,051
29+18.94 SB	2918.94	18.94	88.45	0.00	65	0	1,118	2	1,116
29+50 SB	2950.00	31.06	63.11	1.53	87	1	1,205	4	1,202
29+92.92 SB	2992.92	42.92	14.52	10.83	62	10	1,267	16	1,251
30+00 SB	3000.00	7.08	11.64	15.49	3	3	1,271	20	1,250
30+07.69 SB	3007.69	7.69	9.33	15.14	3	4	1,274	26	1,248
				SUBTOTAL =	1,274	20	1,274	26	1,248
26+83.59 NB	2683.59	0.00	85.52	1.96	0	0	0	0	0
27+00 NB	2700.00	16.41	89.56	2.32	53	1	53	2	52
27+04.03 NB	2704.03	4.03	89.88	2.31	13	0	67	2	65
27+50 NB	2750.00	45.97	93.07	2.66	156	4	222	7	215
27+85 NB	2785.00	35.00	97.96	0.21	124	2	346	10	336
28+00 NB	2800.00	15.00	100.89	0.10	55	0	401	10	392
28+50 NB	2850.00	50.00	107.05	0.16	193	0	594	10	584
29+00 NB	2900.00	50.00	95.39	1.26	187	1	781	12	770
29+30 NB	2930.00	30.00	63.38	10.66	88	7	870	20	850
29+50 NB	2950.00	20.00	46.76	9.85	41	8	910	30	881
29+67.1 NB	2967.10	17.10	31.00	5.27	25	5	935	35	900
29+92.14 NB	2992.14	25.04	13.02	25.70	20	14	955	53	902
30+00 NB	3000.00	7.86	9.59	29.60	3	8	959	64	895
30+00.44 NB	3000.44	0.44	9.54	29.48	0	0	959	64	895
				SUBTOTAL =	959	51	959	64	895
				TOTAL =	2,232	72	2,232	90	2,143

FOREST EXPLORATION DRIVE

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
31+76.96 SB	3176.96	0.00	0.00	315.78	0	0	0	0	0
31+91.95 SB	3191.95	14.99	0.00	428.17	0	207	0	258	-258
32+00 SB	3200.00	8.05	0.00	412.46	0	125	0	415	-415
32+07.39 SB	3207.39	7.39	0.00	391.54	0	110	0	552	-552
32+19.12 SB	3219.12	11.73	0.02	301.88	0	151	0	741	-741
32+30 SB	3230.00	10.88	0.00	200.58	0	101	0	867	-867
32+50 SB	3250.00	20.00	0.00	131.38	0	123	0	1,021	-1,021
33+00 SB	3300.00	50.00	0.00	37.55	0	156	0	1,216	-1,216
33+00.01 SB	3300.01	0.01	0.00	38.69	0	0	0	1,216	-1,216
33+50 SB	3350.00	49.99	7.48	15.77	7	50	7	1,279	-1,272
33+58.93 SB	3358.93	8.93	7.29	14.51	2	5	9	1,286	-1,276
				SUBTOTAL =	9	1,029	9	1,286	-1,276
31+62.87 NB	3162.87	0.00	13.33	17.13	0	0	0	0	0
32+00 NB	3200.00	37.13	8.12	97.58	15	79	15	99	-84
32+50 NB	3250.00	50.00	0.28	178.65	8	256	23	418	-396
33+00 NB	3300.00	50.00	0.00	139.53	0	295	23	787	-764
33+50 NB	3350.00	50.00	5.04	101.39	5	223	27	1,065	-1,038
33+78.44 NB	3378.44	28.44	35.81	2.96	22	55	49	1,134	-1,085
				SUBTOTAL =	49	907	49	1,134	-1,085
				TOTAL =	58	1,936	58	2,420	-2,361

ROUNDABOUT

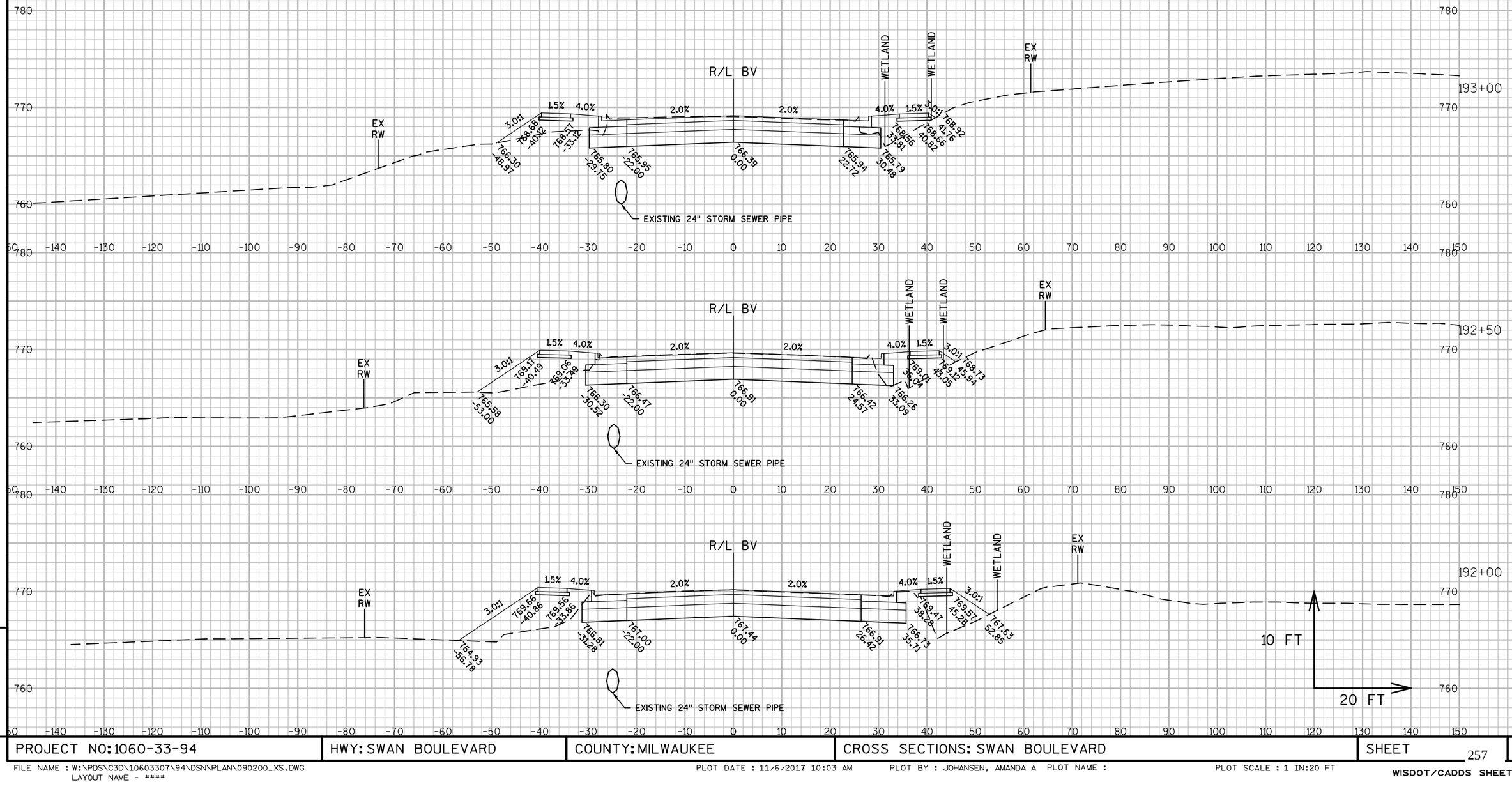
STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
01+14.02 C	114.02	0.00	0.00	68.22	0	0	0	0	0
01+32 C	132.00	17.98	0.00	63.08	0	44	0	55	-55
01+47.41 C	147.41	15.41	0.00	69.12	0	38	0	102	-102
01+62.66 C	162.66	15.25	9.27	85.56	3	44	3	156	-154
01+74 C	174.00	11.34	0.00	138.57	2	47	5	215	-211
01+81.07 C	181.07	7.07	0.00	185.38	0	42	5	268	-264
01+98.47 C	198.47	17.40	0.00	126.98	0	101	5	394	-390
02+21 C	221.00	22.53	0.00	150.75	0	116	5	539	-534
02+40.52 C	240.52	19.52	0.00	158.81	0	112	5	679	-674
02+60.2 C	260.20	19.68	0.00	355.27	0	187	5	913	-908
02+70 C	270.00	9.80	0.73	196.45	0	100	5	1,038	-1,033
02+77.95 C	277.95	7.95	15.41	151.89	2	51	7	1,102	-1,095
02+92.31 C	292.31	14.36	0.00	191.39	4	91	11	1,216	-1,205
03+14 C	314.00	21.69	0.00	212.53	0	162	11	1,419	-1,408
03+34.13 C	334.13	20.13	0.00	196.22	0	152	11	1,610	-1,598
03+51.74 C	351.74	17.60	0.00	442.05	0	208	11	1,870	-1,859
03+57.45 C	357.45	5.71	0.00	406.48	0	90	11	1,982	-1,971
03+77.53 C	377.53	20.08	0.00	73.07	0	178	11	2,205	-2,194
04+00 C	400.00	22.47	3.50	27.11	1	42	13	2,257	-2,244
04+19.59 C	419.59	19.59	10.88	21.82	5	18	18	2,279	-2,261
04+35.28 C	435.28	15.69	23.89	76.47	10	29	28	2,315	-2,287
04+50 C	450.00	14.72	9.51	67.63	9	39	37	2,364	-2,327
04+57.13 C	457.13	7.13	8.17	65.09	2	18	39	2,386	-2,346
				SUBTOTAL =	39	1,909	39	2,386	-2,346
CENTRAL ISLAND (GRASS)					0	1,328	0	1,660	-1,660
				TOTAL =	39	3,237	39	4,046	-4,007

WDNR SITE

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
33+78.46 NB	3378.46	0.00	0.00	109.87	0	0	0	0	0
34+00 NB	3400.00	21.54	0.00	84.19	0	77	0	97	-97
34+50 NB	3450.00	50.00	0.00	40.52	0	115	0	241	-241
35+00 NB	3500.00	50.00	2.04	17.73	2	54	2	309	-307
35+50 NB	3550.00	50.00	23.89	2.61	24	19	26	332	-306
35+79.99 NB	3579.99	29.99	30.92	2.56	30	3	56	336	-279
35+80.01 NB	3580.01	0.02	30.81	2.54	0	0	56	336	-279
36+00 NB	3600.00	19.99	47.70	0.00	29	1	85	337	-251
36+27.57 NB	3627.57	27.57	58.31	0.05	54	0	140	337	-197
36+50 NB	3650.00	22.43	43.19	0.07	42	0	182	337	-155
37+00 NB	3700.00	50.00	0.00	72.65	40	67	222	421	-199
37+50 NB	3750.00	50.00	0.00	74.94	0	137	222	592	-370
38+00 NB	3800.00	50.00	0.00	77.56	0	141	222	768	-547
38+33.93 NB	3833.93	33.93	0.00	82.27	0	100	222	894	-672
38+33.94 NB	3833.94	0.01	0.00	47.06	0	0	222	894	-672
38+50 NB	3850.00	16.06	0.00	50.61	0	29	222	930	-709
38+71.79 NB	3871.79	21.79	0.00	53.06	0	42	222	983	-761
39+00 NB	3900.00	28.21	0.00	83.38	0	65	222	1,064	-842
39+50 NB	3950.00	50.00	43.38	144.12	40	211	262	1,327	-1,065
39+88.84 NB	3988.84	38.84	192.28	179.98	169	233	431	1,619	-1,187
40+00 NB	4000.00	11.16	284.47	154.68	99	69	530	1,705	-1,175
40+28.09 NB	4028.09	28.09	273.61	87.40	290	126	820	1,863	-1,042
40+50 NB	4050.00	21.91	210.90	62.88	197	61	1,017	1,939	-922
40+77.63 NB	4077.63	27.63	123.52	60.91	171	63	1,188	2,018	-830
40+93.71 NB	4093.71	16.08	72.66	57.82	58	35	1,246	2,062	-816
41+00 NB	4100.00	6.29	59.67	53.67	15	13	1,262	2,078	-817
41+12.85 NB	4112.85	12.85	27.10	50.62	21	25	1,282	2,109	-827
41+12.86 NB	4112.86	0.01	194.16	55.82	0	0	1,282	2,109	-827
41+50 NB	4150.00	37.14	239.23	35.30	298	63	1,580	2,188	-607
42+00 NB	4200.00	50.00	286.91	6.01	487	38	2,068	2,236	-168
42+50 NB	4250.00	50.00	299.69	10.84	543	16	2,611	2,255	356
42+83.77 NB	4283.77	33.77	316.04	23.10	385	21	2,996	2,282	714
42+91.03 NB	4291.03	7.27	330.74	4.03	87	4	3,083	2,286	797
43+00 NB	4300.00	8.97	381.39	2.44	118	1	3,201	2,288	914
43+50 NB	4350.00	50.00	363.21	0.16	689	2	3,891	2,291	1,600
44+00 NB	4400.00	50.00	407.91	0.00	714	0	4,605	2,291	2,314
44+43.88 NB	4443.88	43.88	512.32	0.00	748	0	5,352	2,291	3,062
44+46.62 NB	4446.62	2.75	570.15	0.00	55	0	5,407	2,291	3,117
44+50 NB	4450.00	3.38	475.24	0.00	65	0	5,473	2,291	3,182
44+62.94 NB	4462.94	12.94	489.08	0.00	231	0	5,704	2,291	3,413
44+84.63 NB	4484.63	21.68	510.46	0.00	401	0	6,105	2,291	3,814
44+90.72 NB	4490.72	6.09	519.92	0.00	116	0	6,221	2,291	3,931
45+00 NB	4500.00	9.28	511.54	0.00	177	0	6,399	2,291	4,108
45+50 NB	4550.00	50.00	430.88	0.00	873	0	7,271	2,291	4,981

WDNR SITE CONTINUED

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.25	Mass Ordinate Note 8
45+67.97 NB	4567.97	17.97	390.17	0.00	273	0	7,545	2,291	5,254
45+70.49 NB	4570.49	2.52	368.76	0.00	35	0	7,580	2,291	5,289
45+82.89 NB	4582.89	12.40	335.89	0.00	162	0	7,742	2,291	5,451
46+00 NB	4600.00	17.11	251.01	0.00	186	0	7,928	2,291	5,637
46+09.36 NB	4609.36	9.36	211.02	0.42	80	0	8,008	2,291	5,717
46+09.37 NB	4609.37	0.01	30.05	0.00	0	0	8,008	2,291	5,717
46+50 NB	4650.00	40.63	5.93	9.04	27	7	8,035	2,299	5,736
46+62.87 NB	4662.87	12.87	2.70	42.02	2	12	8,037	2,315	5,722
46+81.51 NB	4681.51	18.65	0.90	155.19	1	68	8,038	2,400	5,639
47+00 NB	4700.00	18.49	0.14	127.27	0	97	8,039	2,521	5,518
47+50 NB	4750.00	50.00	0.00	70.68	0	183	8,039	2,750	5,289
48+00 NB	4800.00	50.00	0.00	40.93	0	103	8,039	2,879	5,160
48+14.48 NB	4814.48	14.48	0.00	42.29	0	22	8,039	2,907	5,132
				SUBTOTAL =	8,039	2,325	8,039	2,907	5,132
00+00 DR	0.00	0.00	10.44	0.04	0	0	0	0	0
00+50 DR	50.00	50.00	0.00	26.11	10	24	10	30	-21
00+70.84 DR	70.84	20.84	0.00	36.71	0	24	10	61	-51
01+00 DR	100.00	29.16	0.00	40.71	0	42	10	113	-103
01+25 DR	125.00	25.00	0.00	24.45	0	30	10	151	-141
01+50 DR	150.00	25.00	0.00	10.88	0	16	10	171	-161
01+74.46 DR	174.46	24.46	0.57	2.25	0	6	10	178	-169
				SUBTOTAL =	10	143	10	178	-169
POND OUTLET SWALE					43	0	43	0	43
				TOTAL =	8,092	2,468	8,092	3,085	5,007



9

9

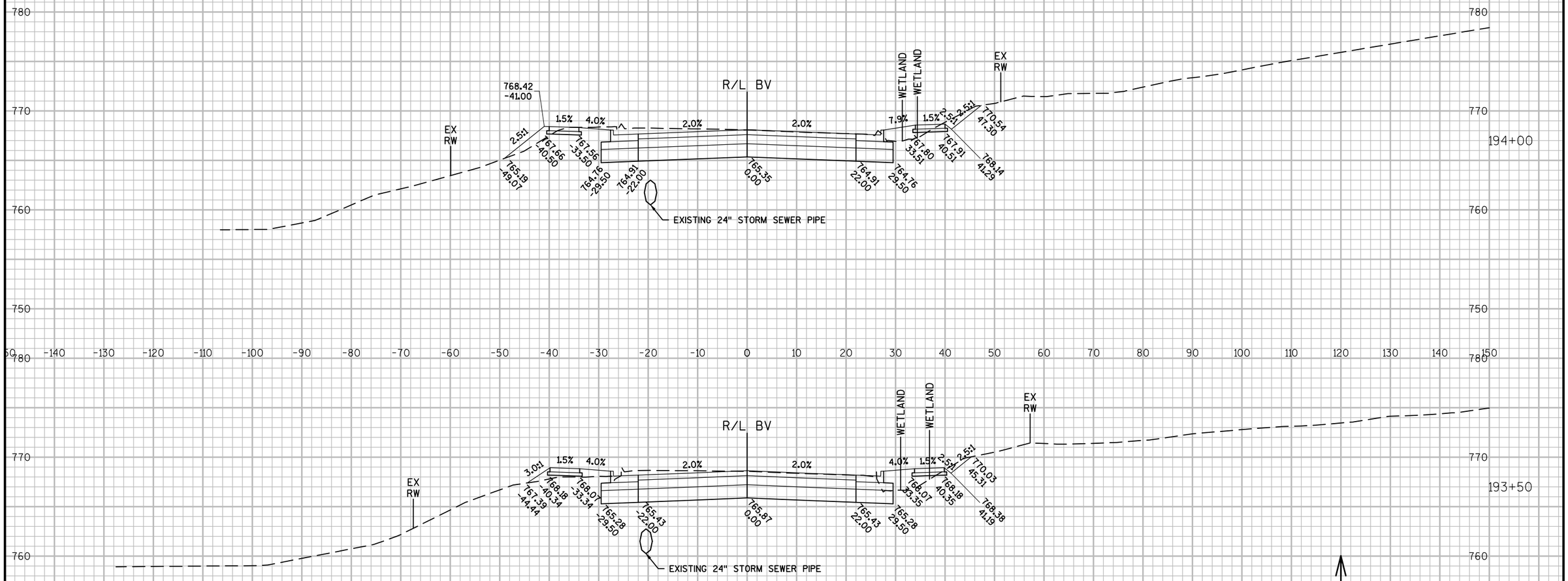
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 257 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:03 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

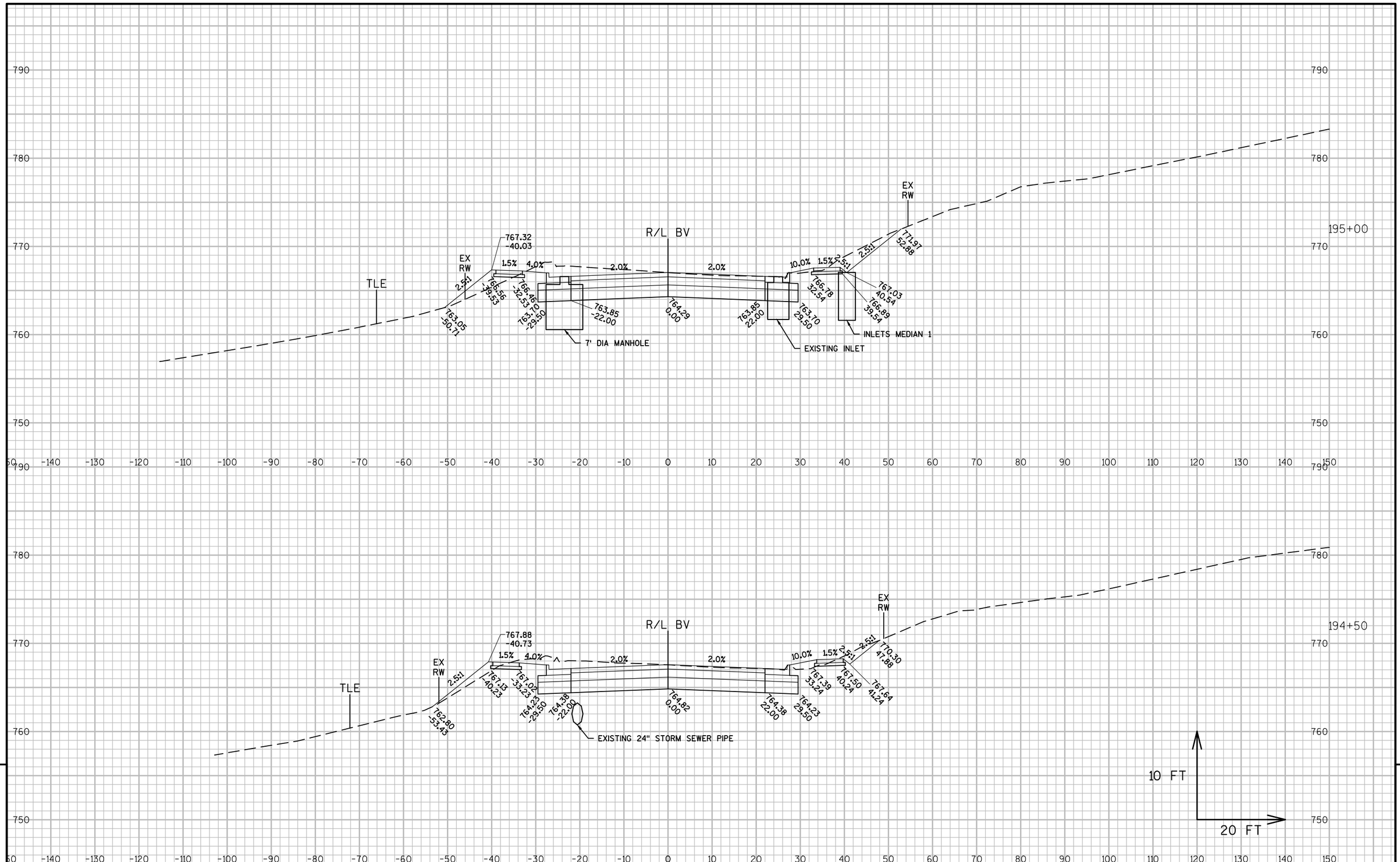


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 258	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:04 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



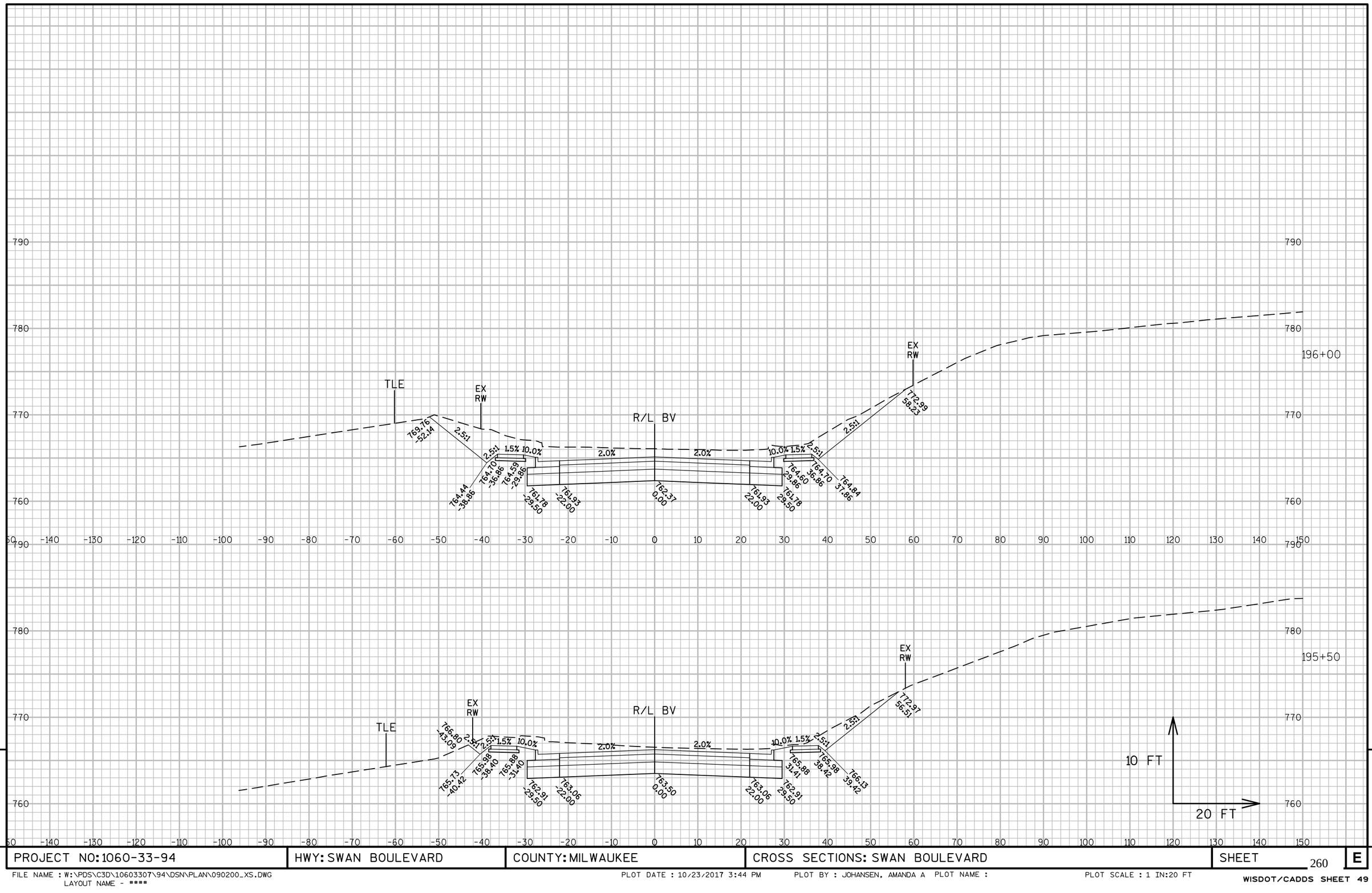
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 259 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2017 3:43 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

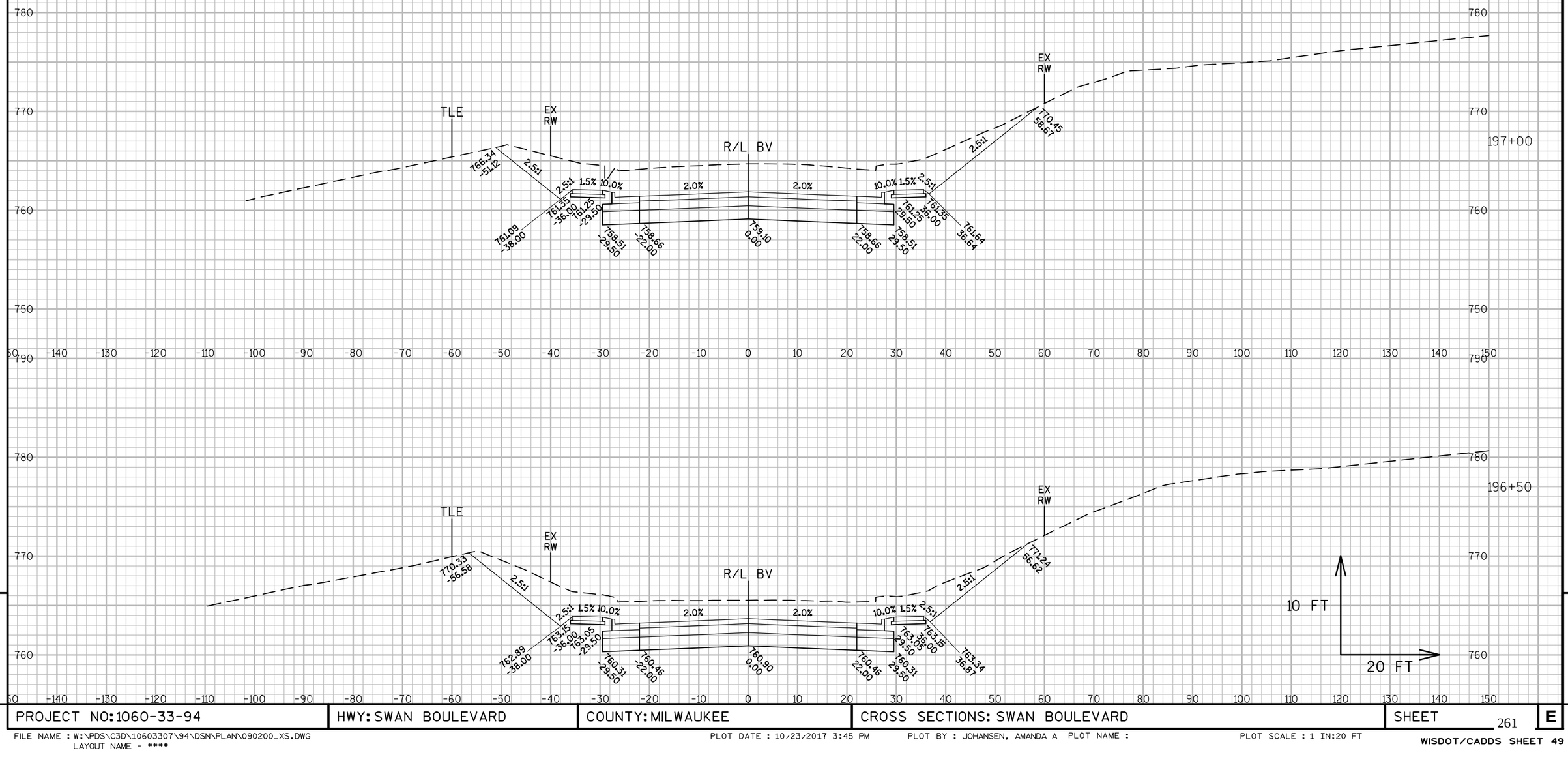


9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 260	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/23/2017 3:44 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 49

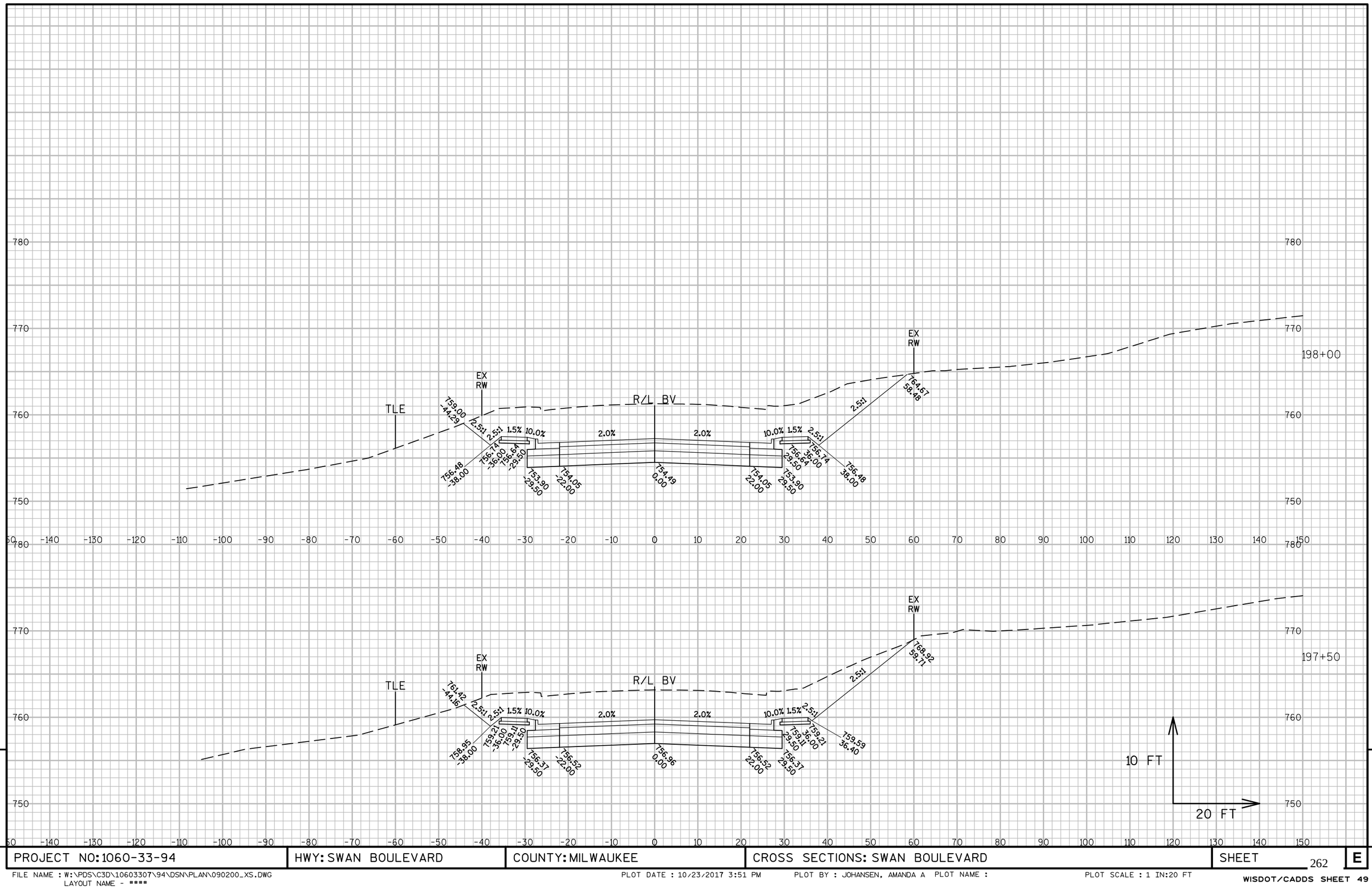


9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/23/2017 3:45 PM
PLOT BY : JOHANSEN, AMANDA A
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 49



9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 262	E

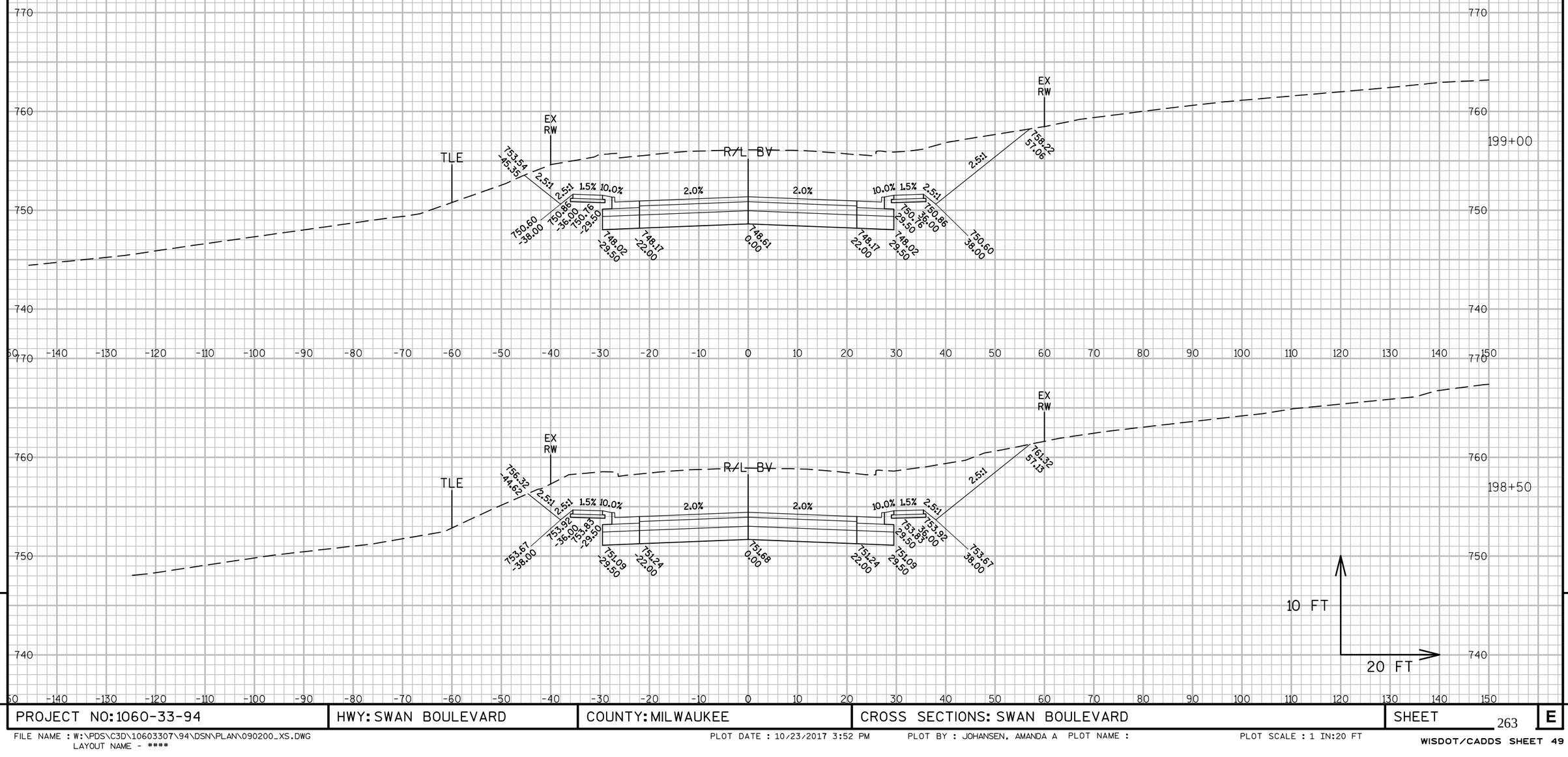
9

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2017 3:51 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

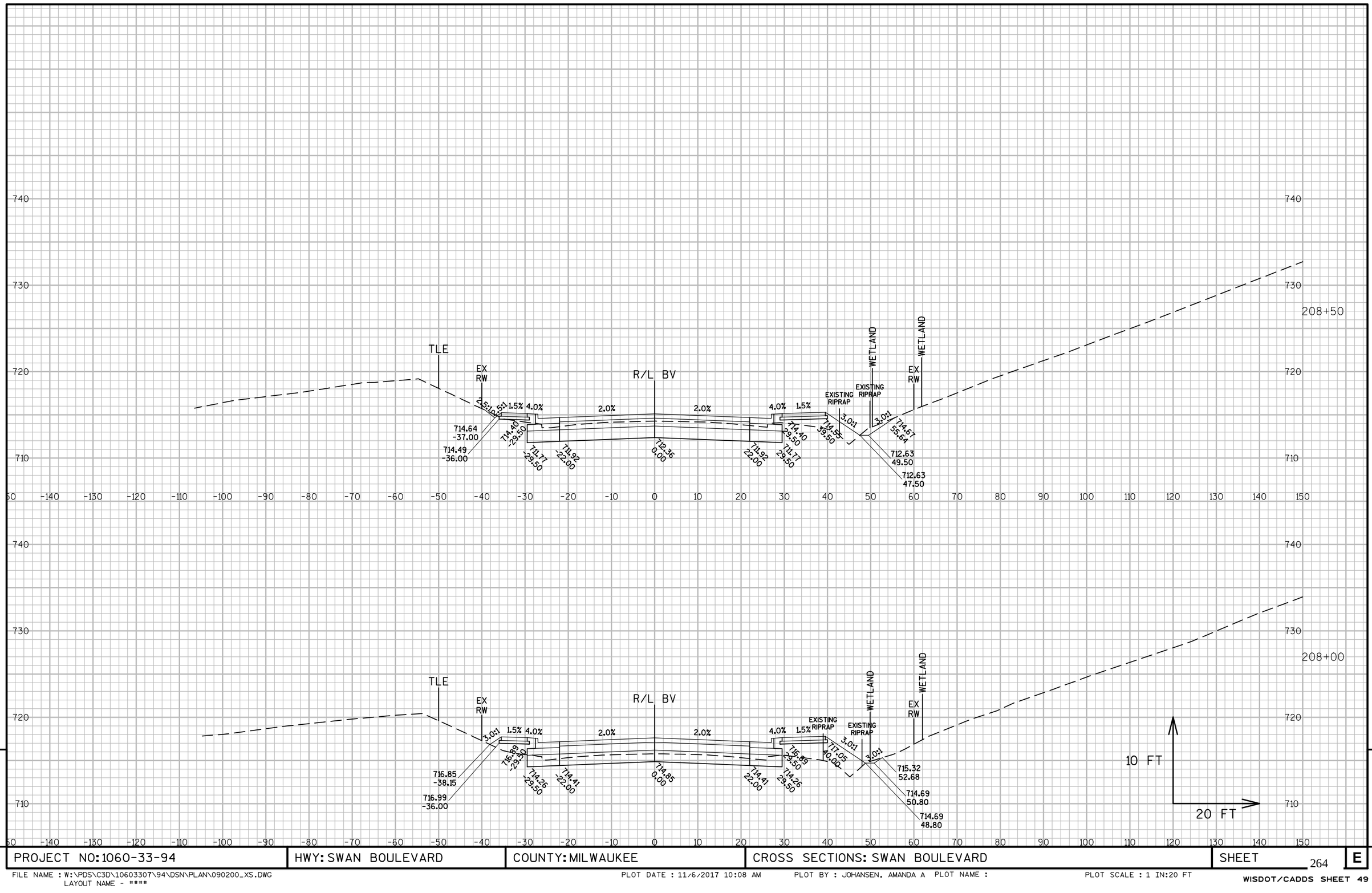
PLOT SCALE : 1 IN:20 FT

FOR CROSS-SECTIONS THROUGH THE ROUNDABOUT,
REFER TO "CROSS-SECTIONS: SWAN BOULEVARD - WB"
AND "CROSS-SECTIONS: SWAN BOULEVARD - EB"



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 263	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/23/2017 3:52 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :
PLOT SCALE : 1 IN:20 FT



9

9

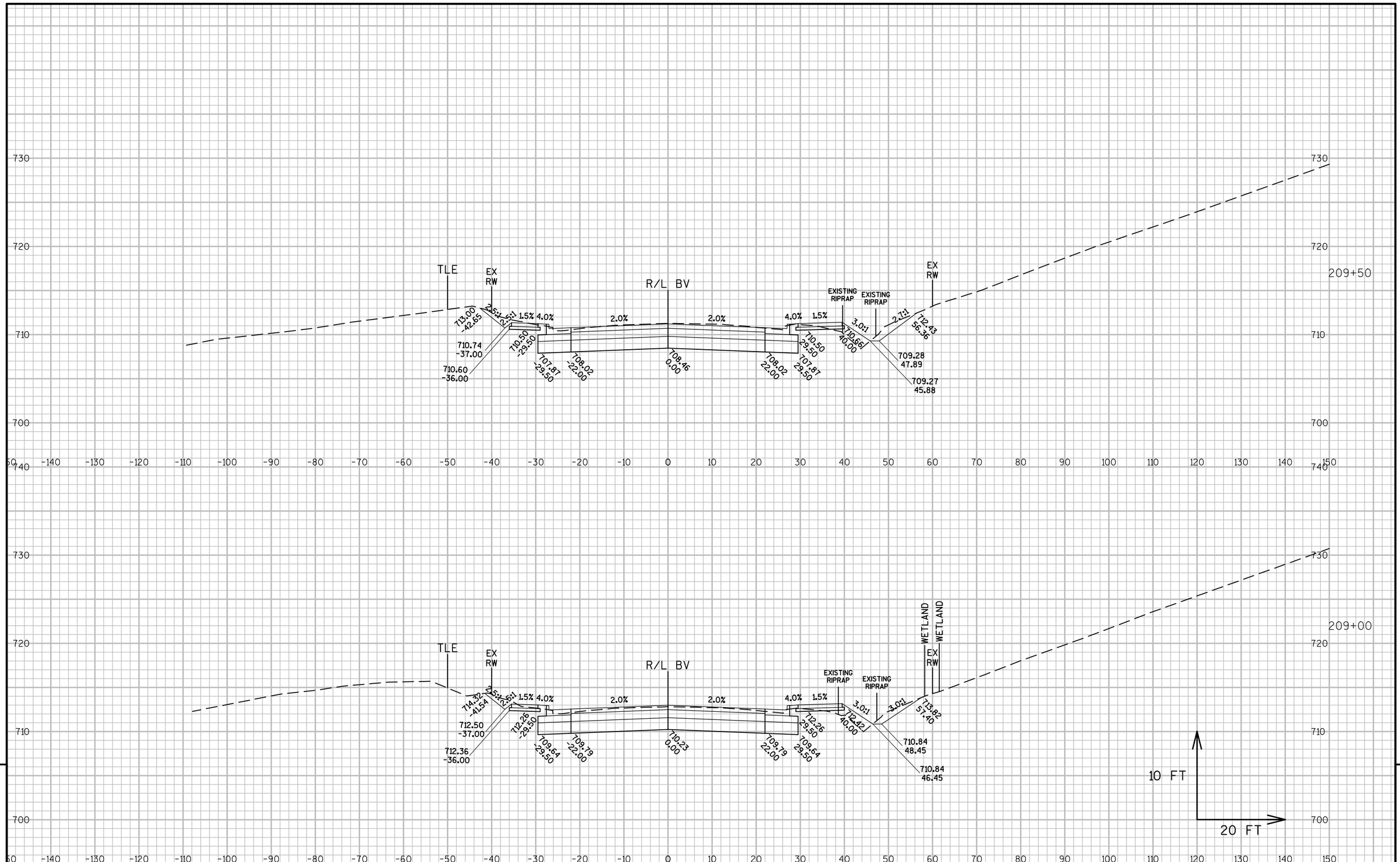
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 264	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:08 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

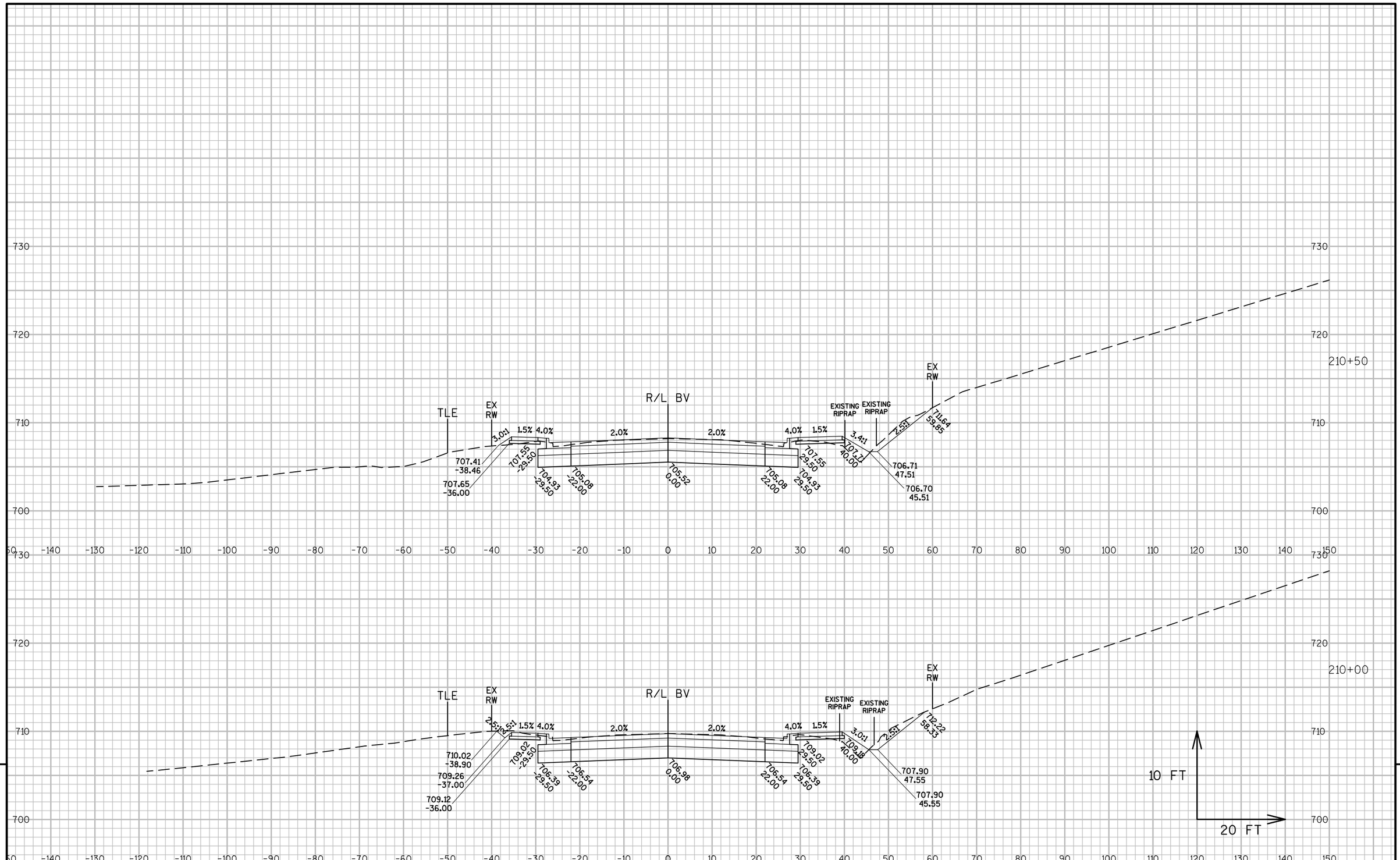
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 265	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:09 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

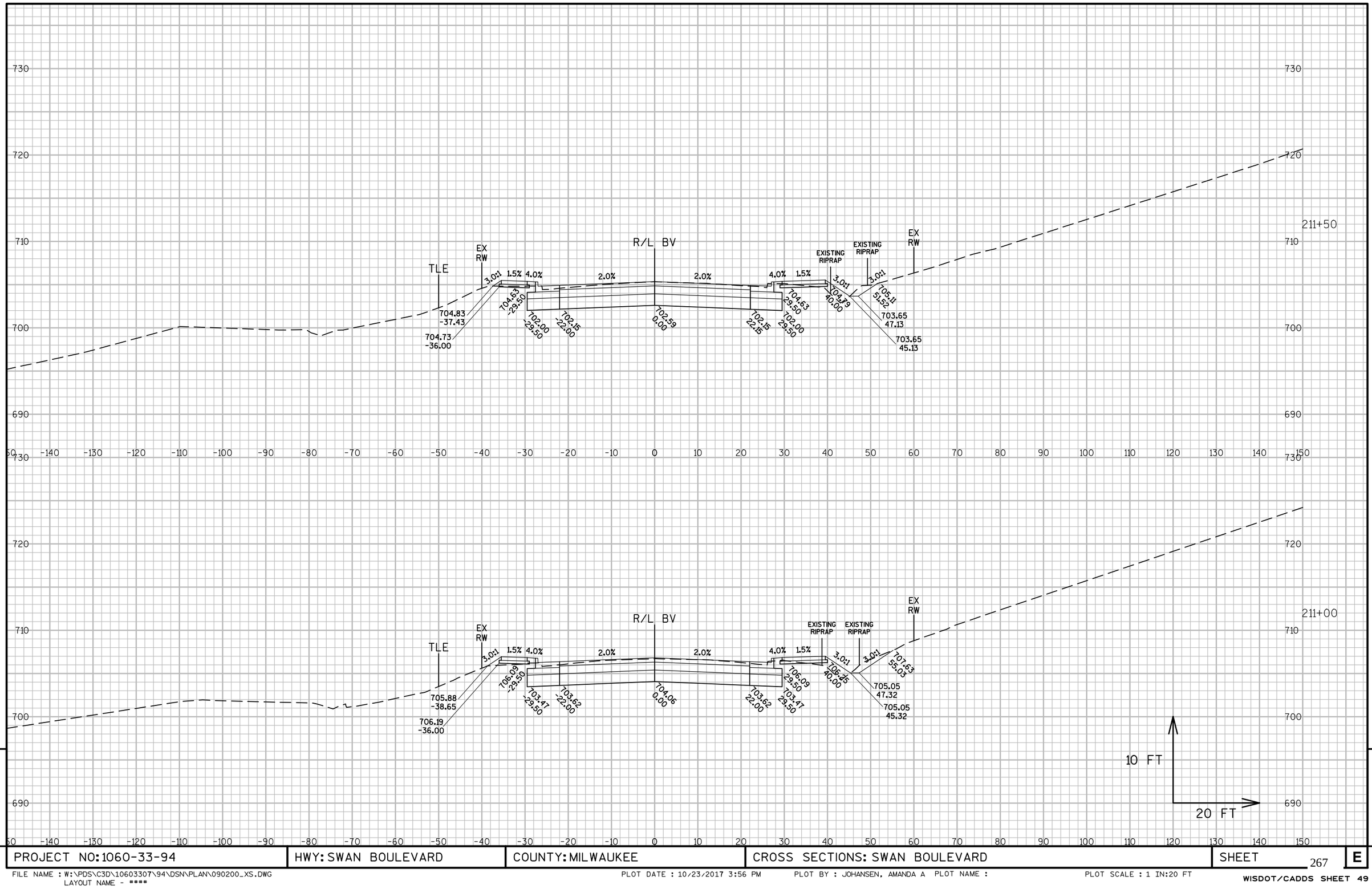
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 266	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2017 3:56 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

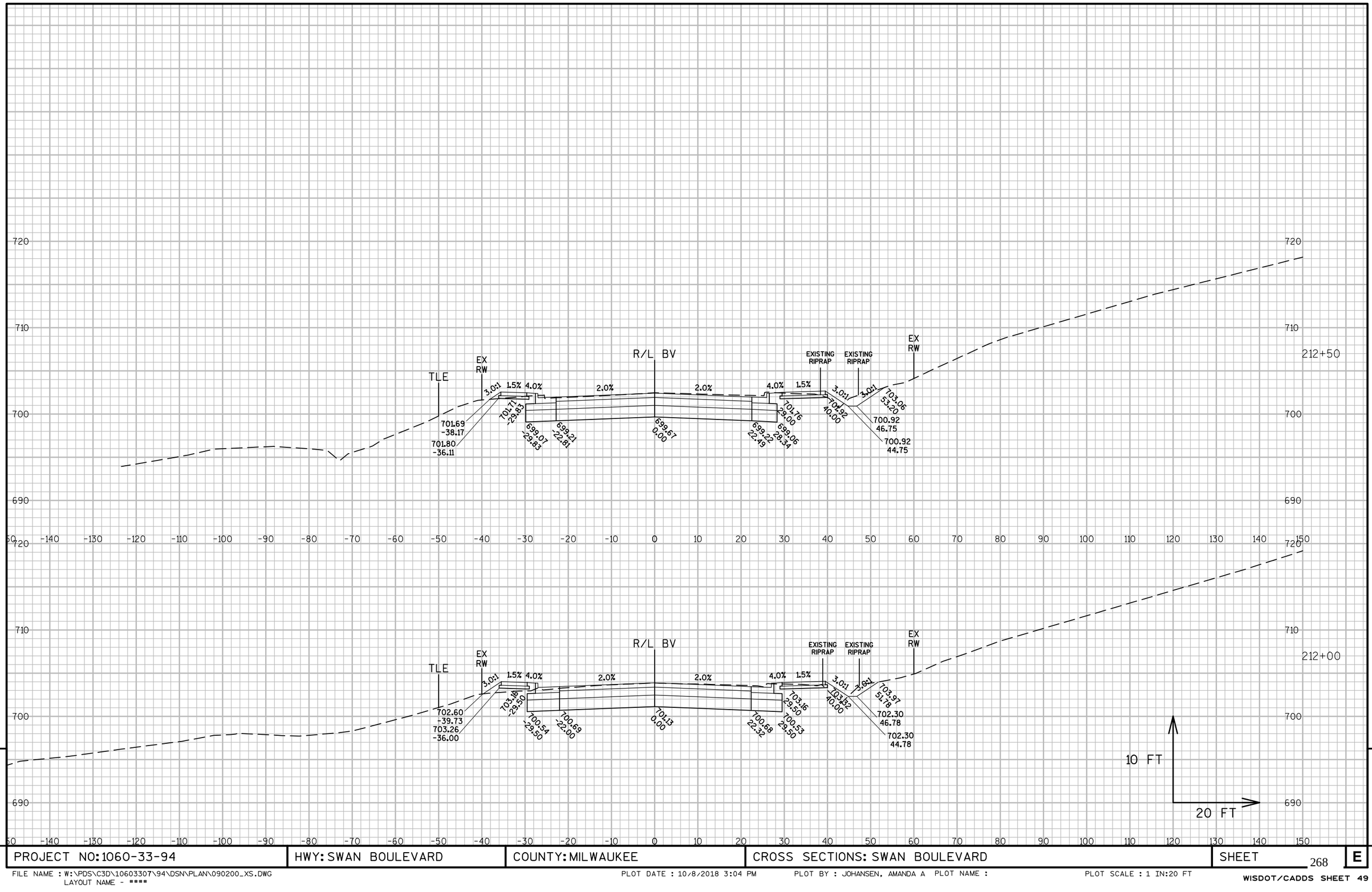


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 267 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2017 3:56 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

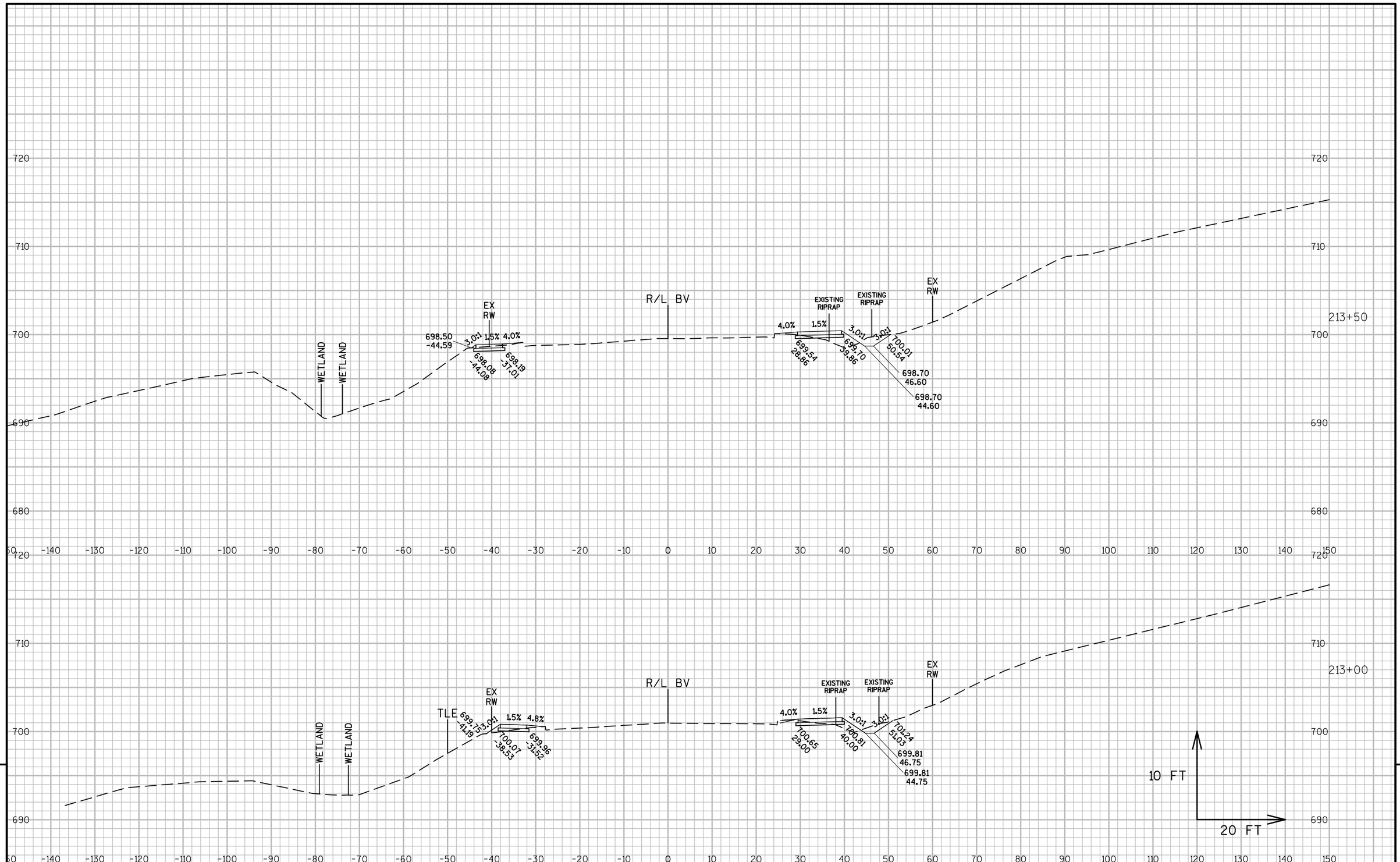
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 268	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 3:04 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

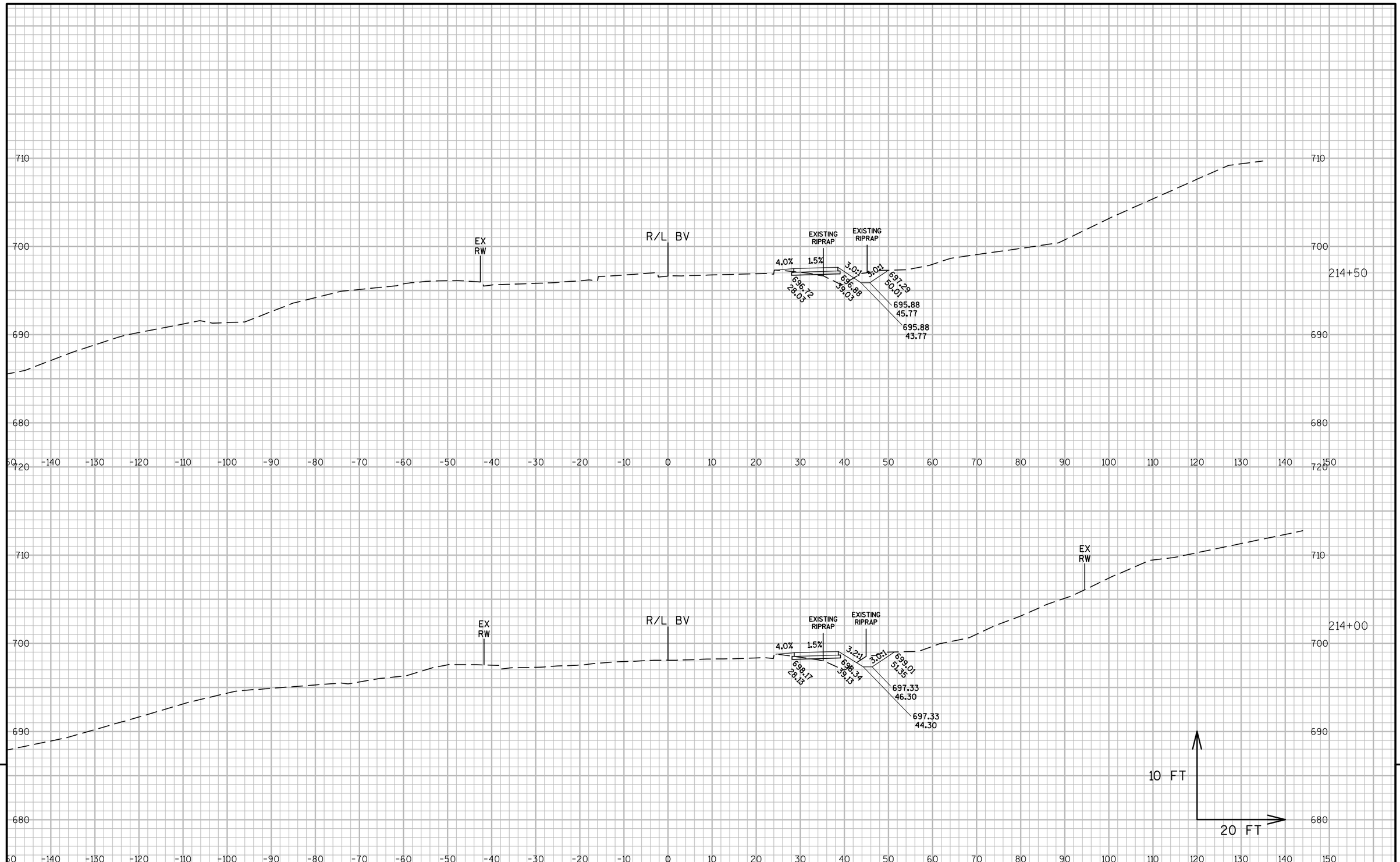
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 269 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:10 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

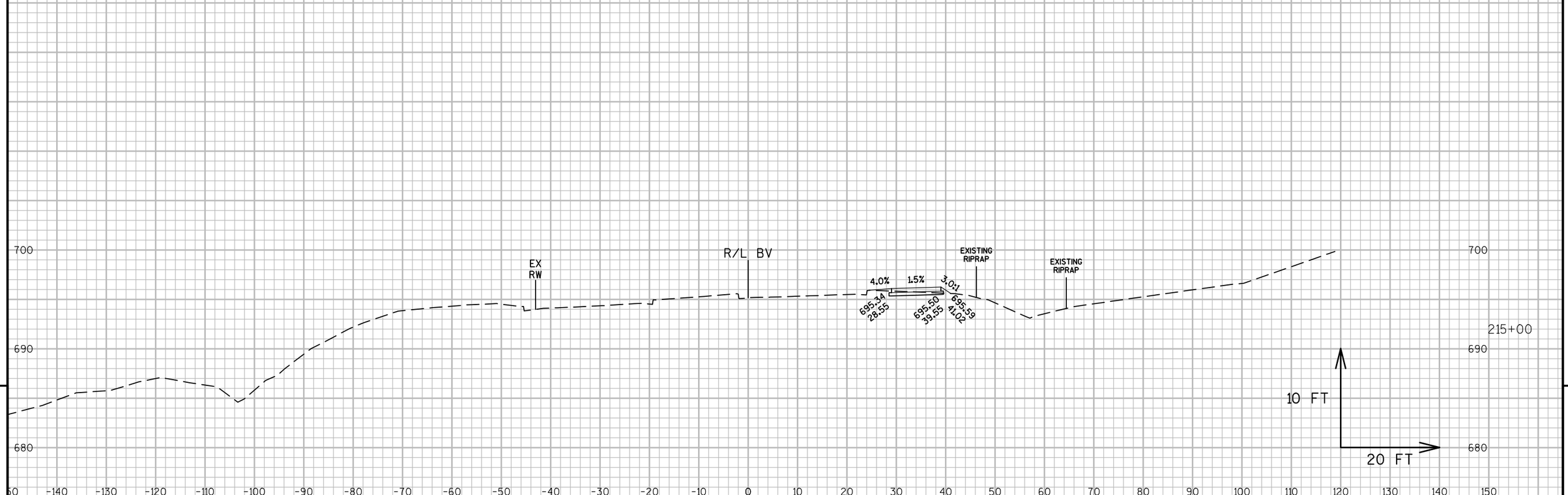


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 270	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2017 3:59 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

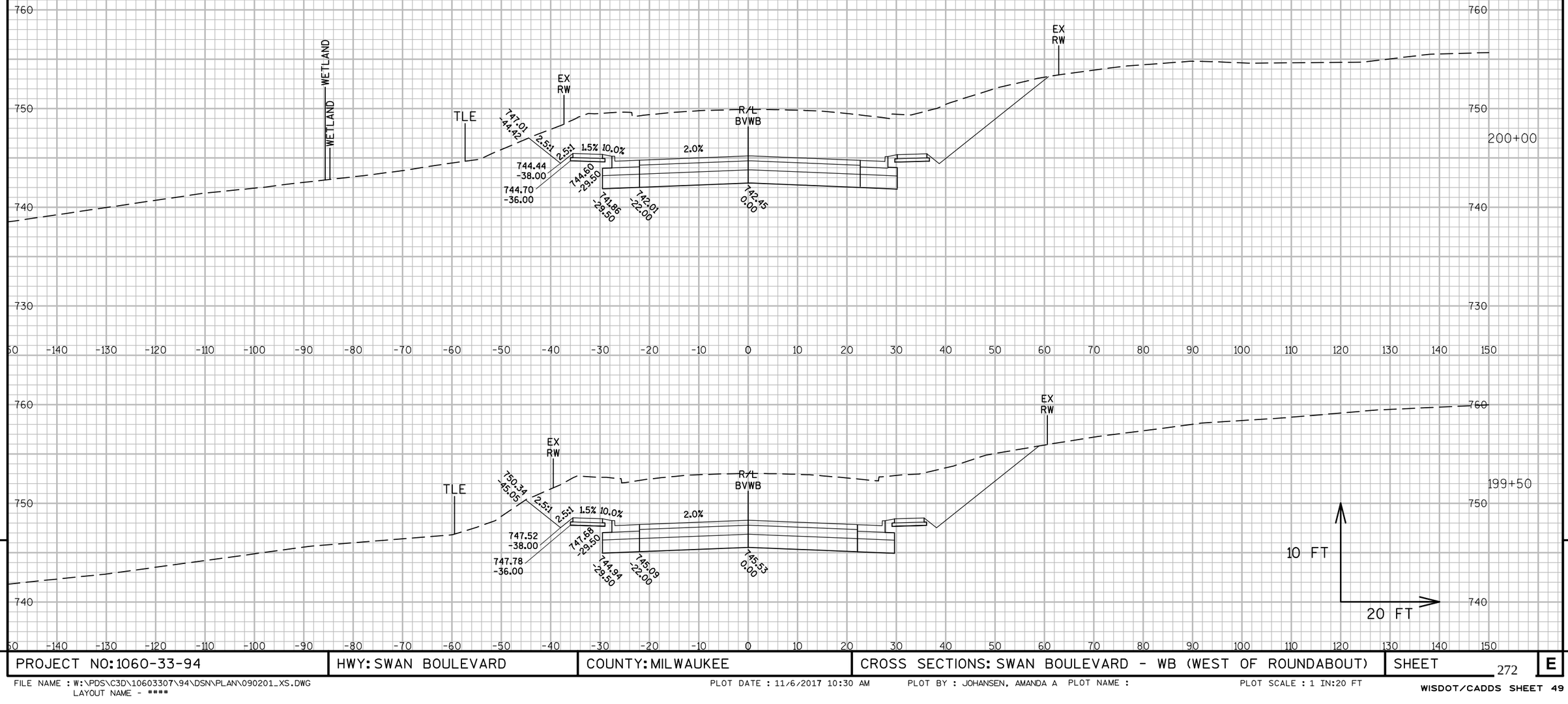
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD	SHEET 271	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090200_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/23/2017 4:00 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

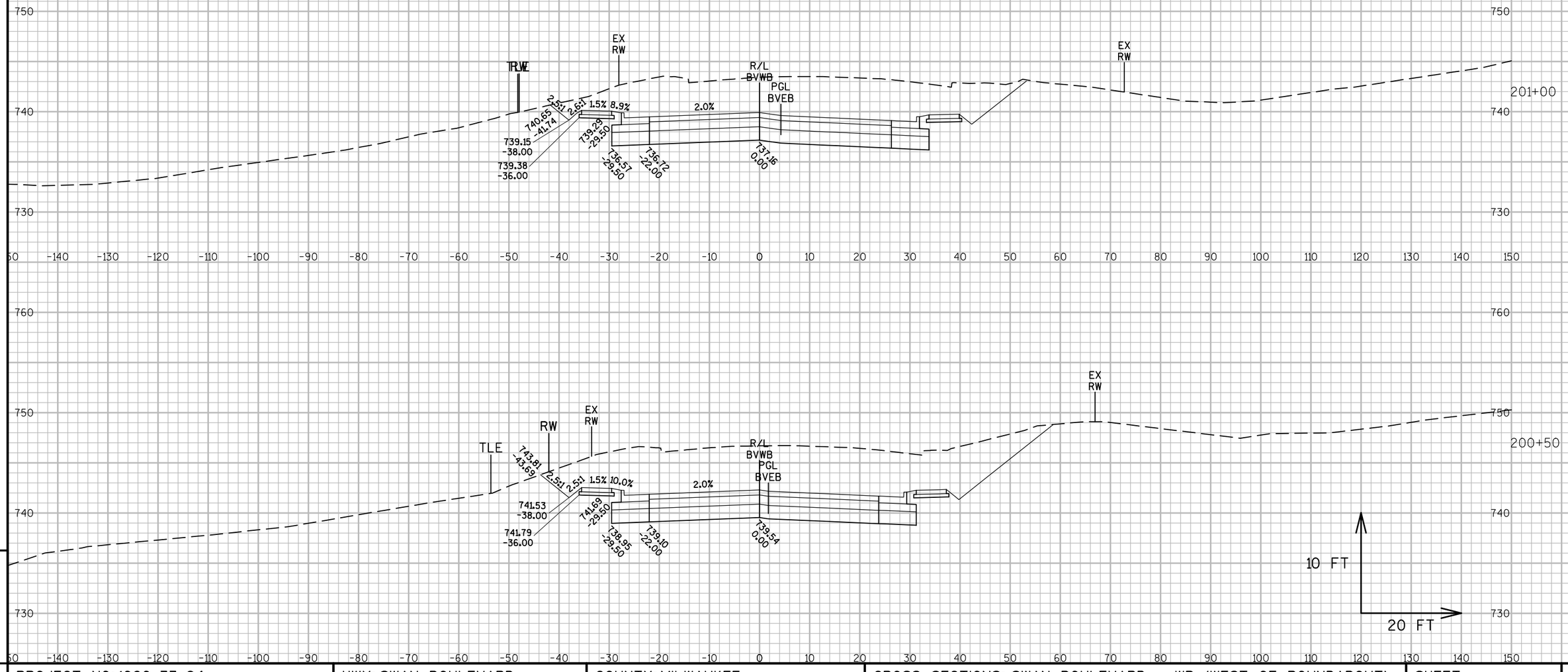
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (WEST OF ROUNDABOUT)	SHEET 272	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:30 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

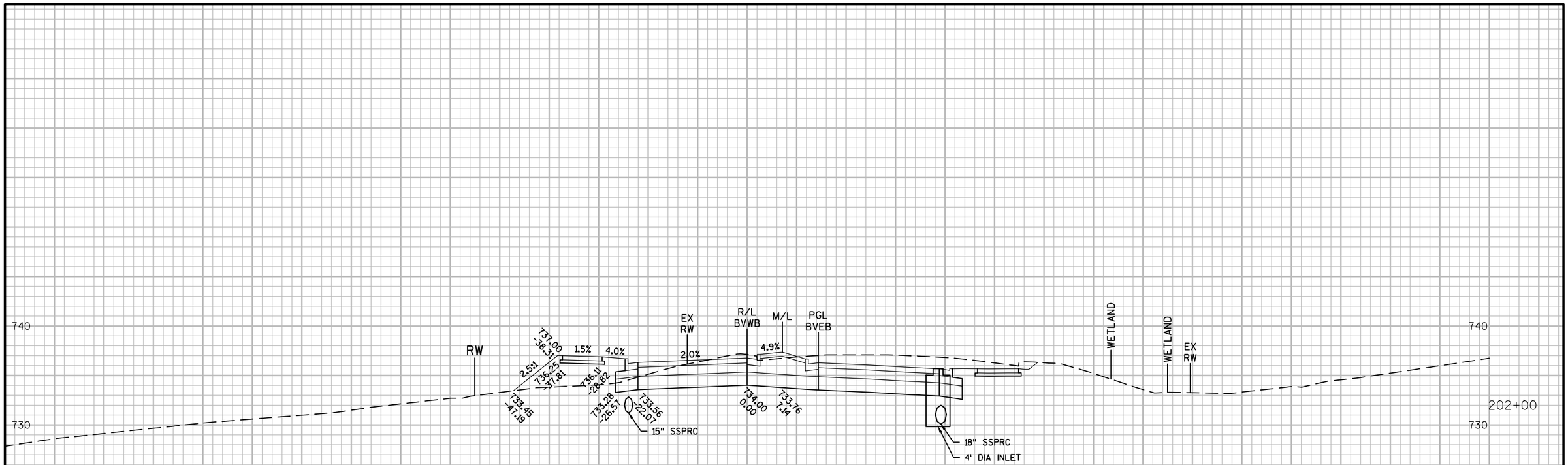
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (WEST OF ROUNDABOUT)	SHEET 273	E

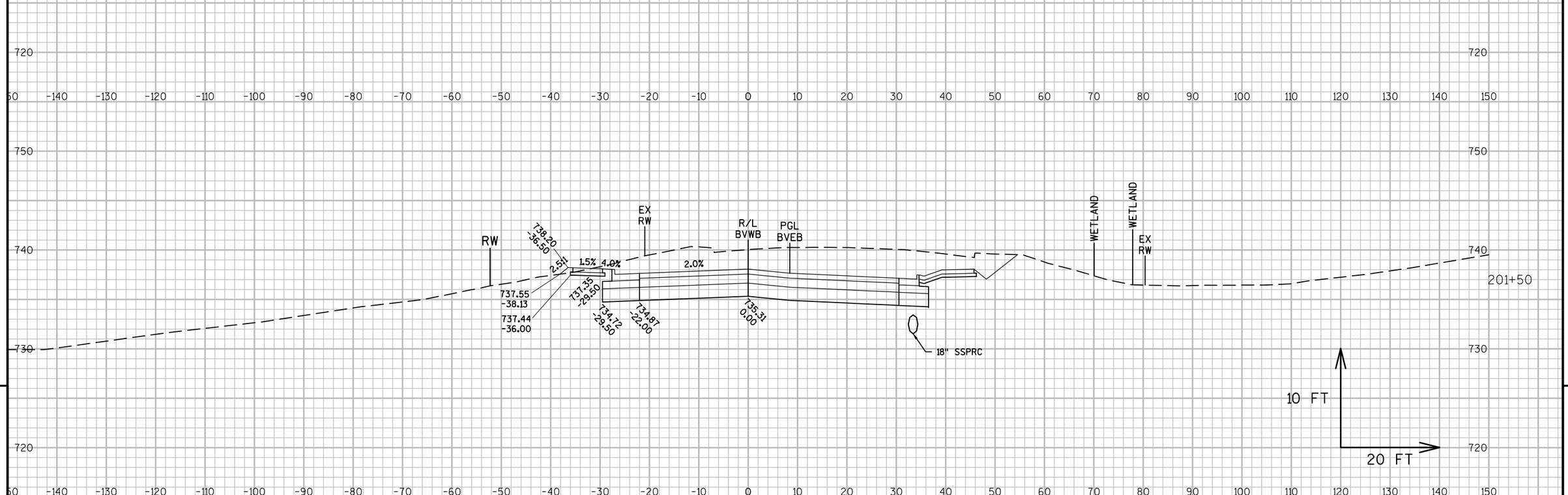
9

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:36 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49





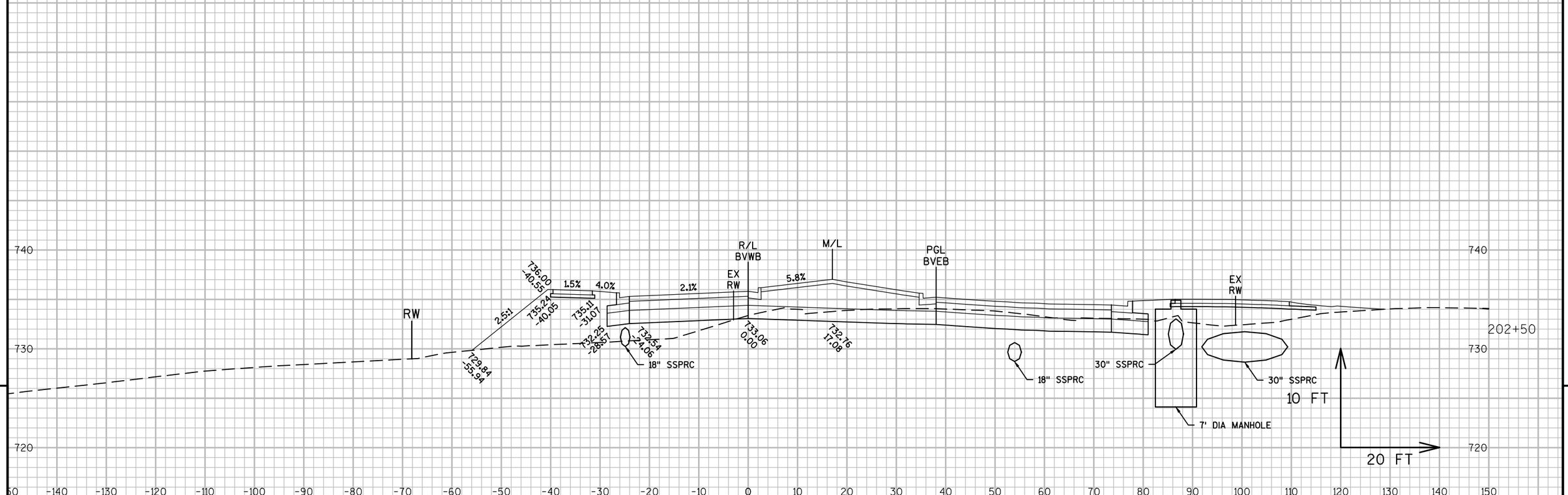
9	PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (WEST OF ROUNDABOUT)	SHEET 274 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:39 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



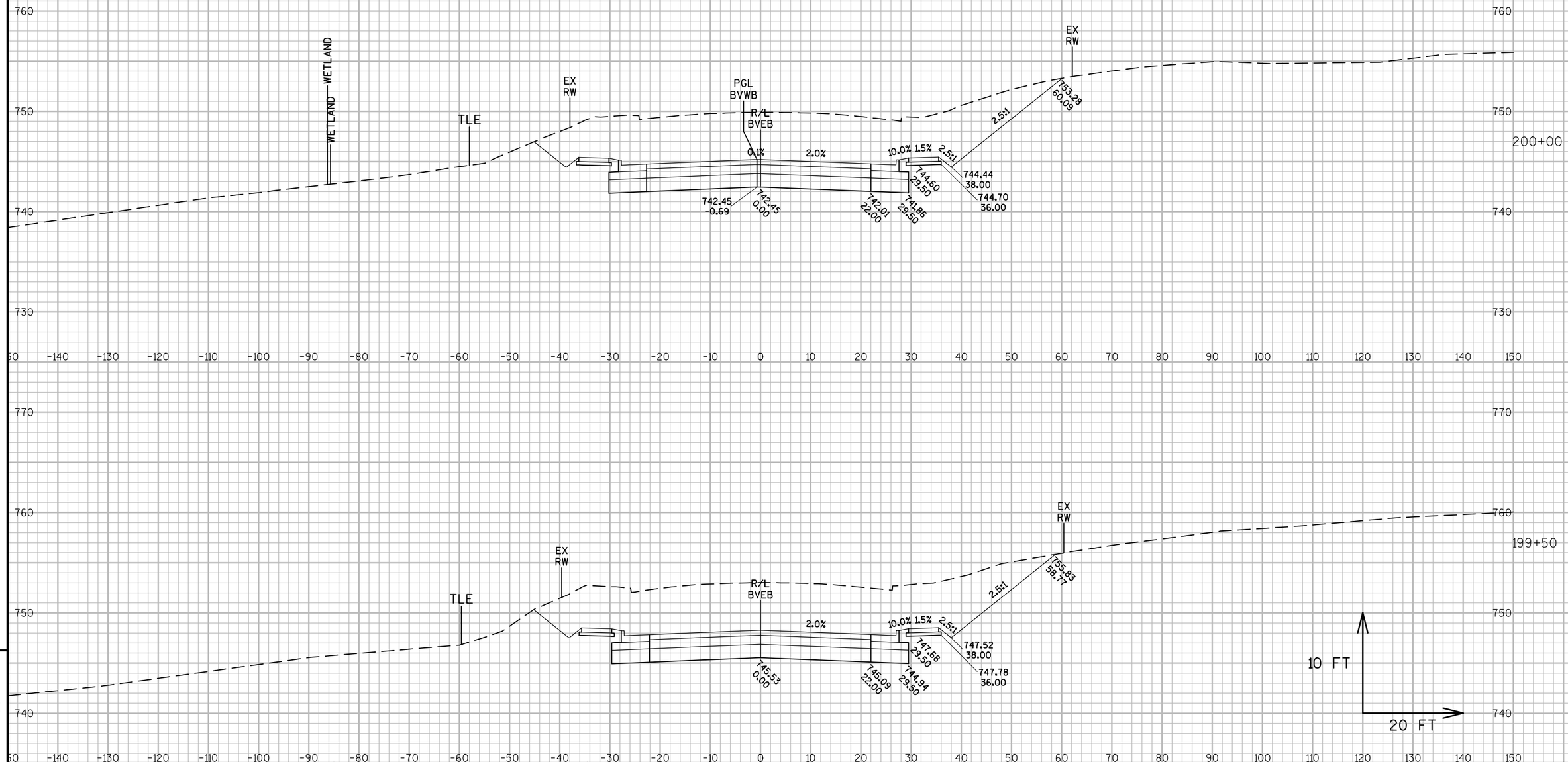
9 9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (WEST OF ROUNDABOUT)	SHEET 275	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:41 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT



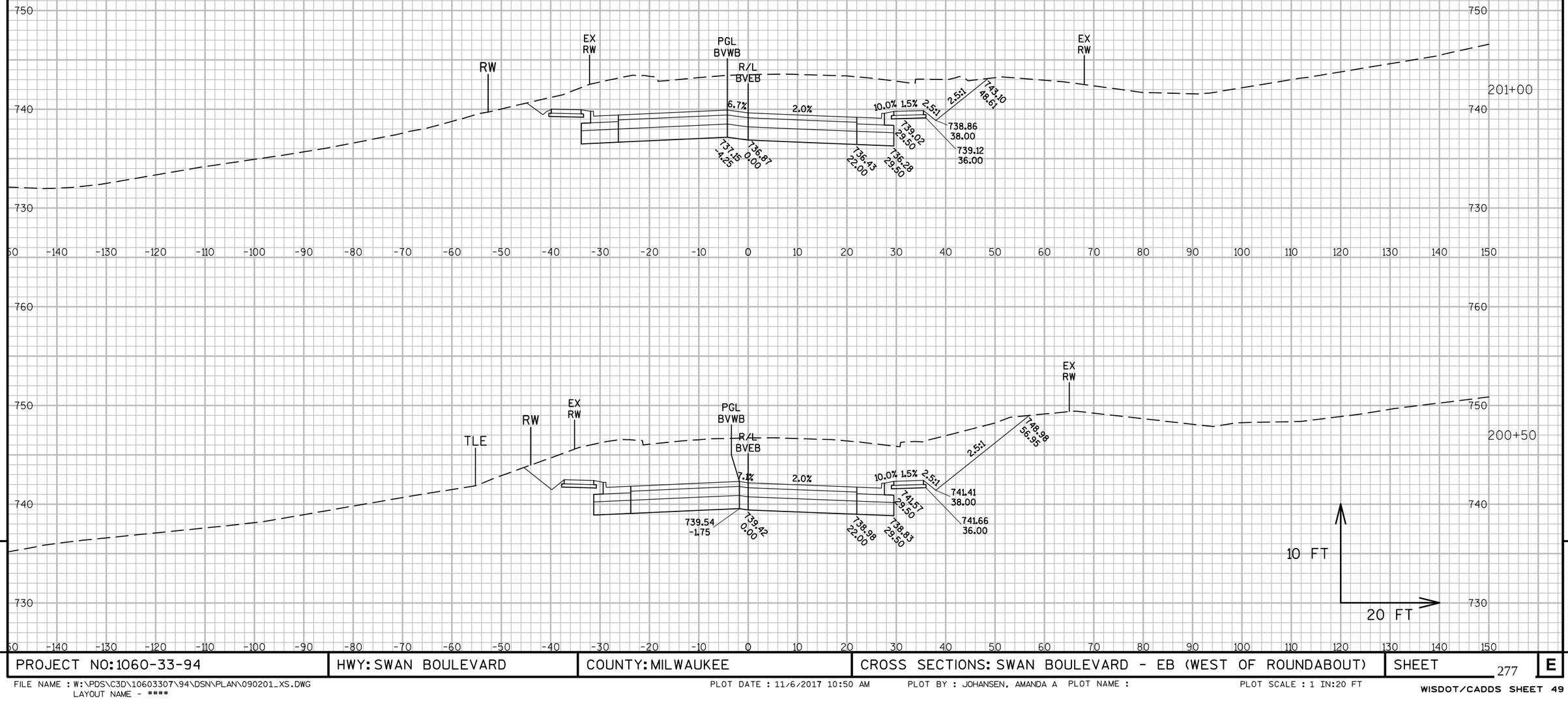
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (WEST OF ROUNDABOUT)	SHEET 276 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:48 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

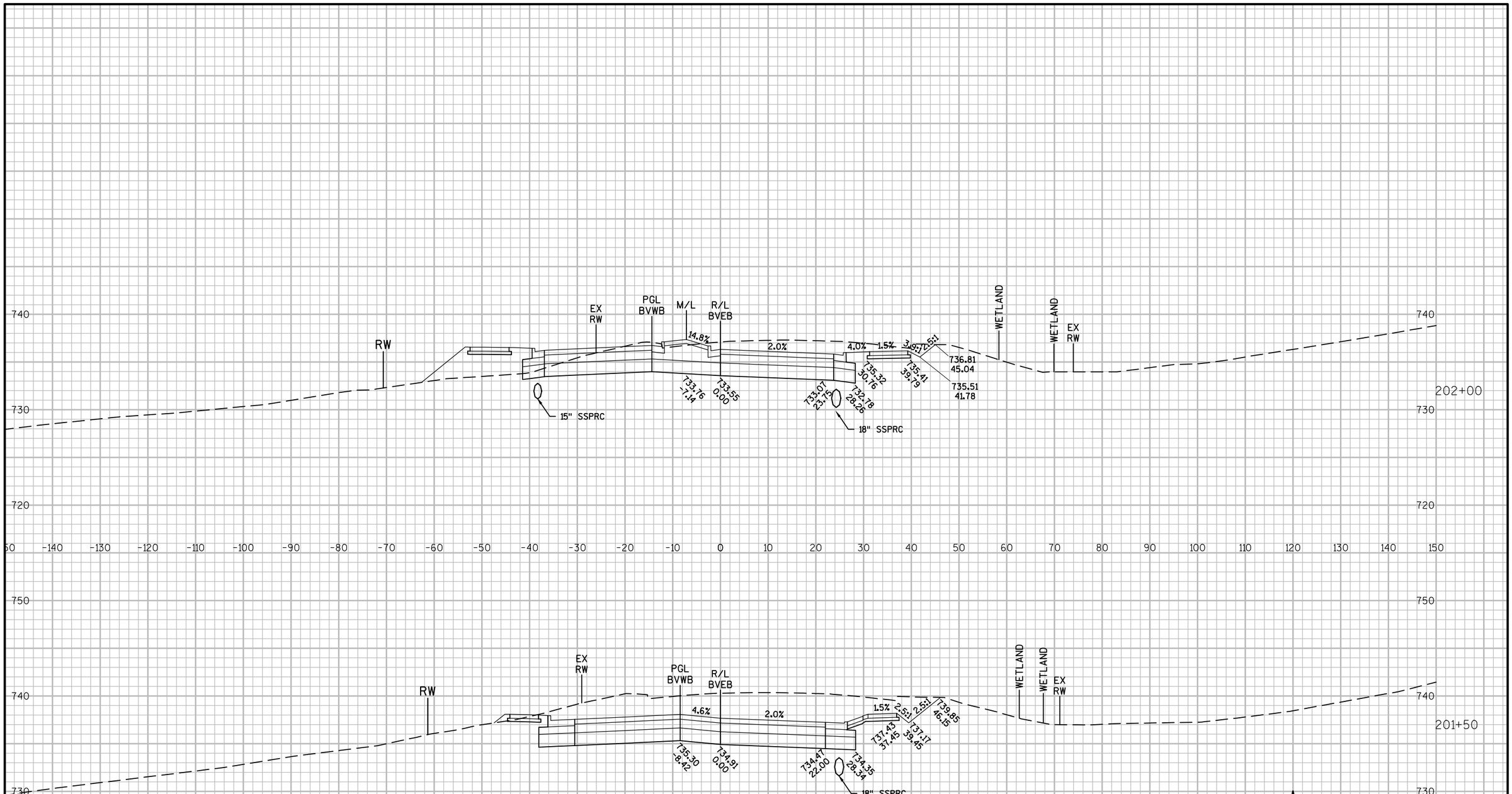
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (WEST OF ROUNDABOUT)	SHEET 277	E



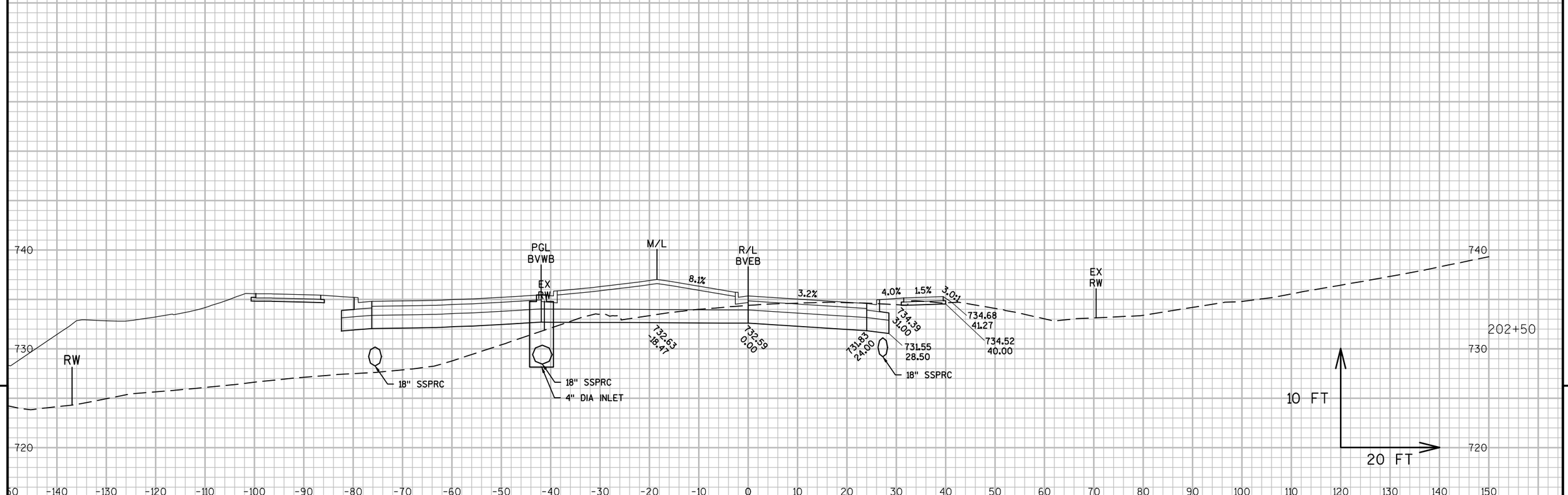
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (WEST OF ROUNDABOUT)	SHEET 278 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:52 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

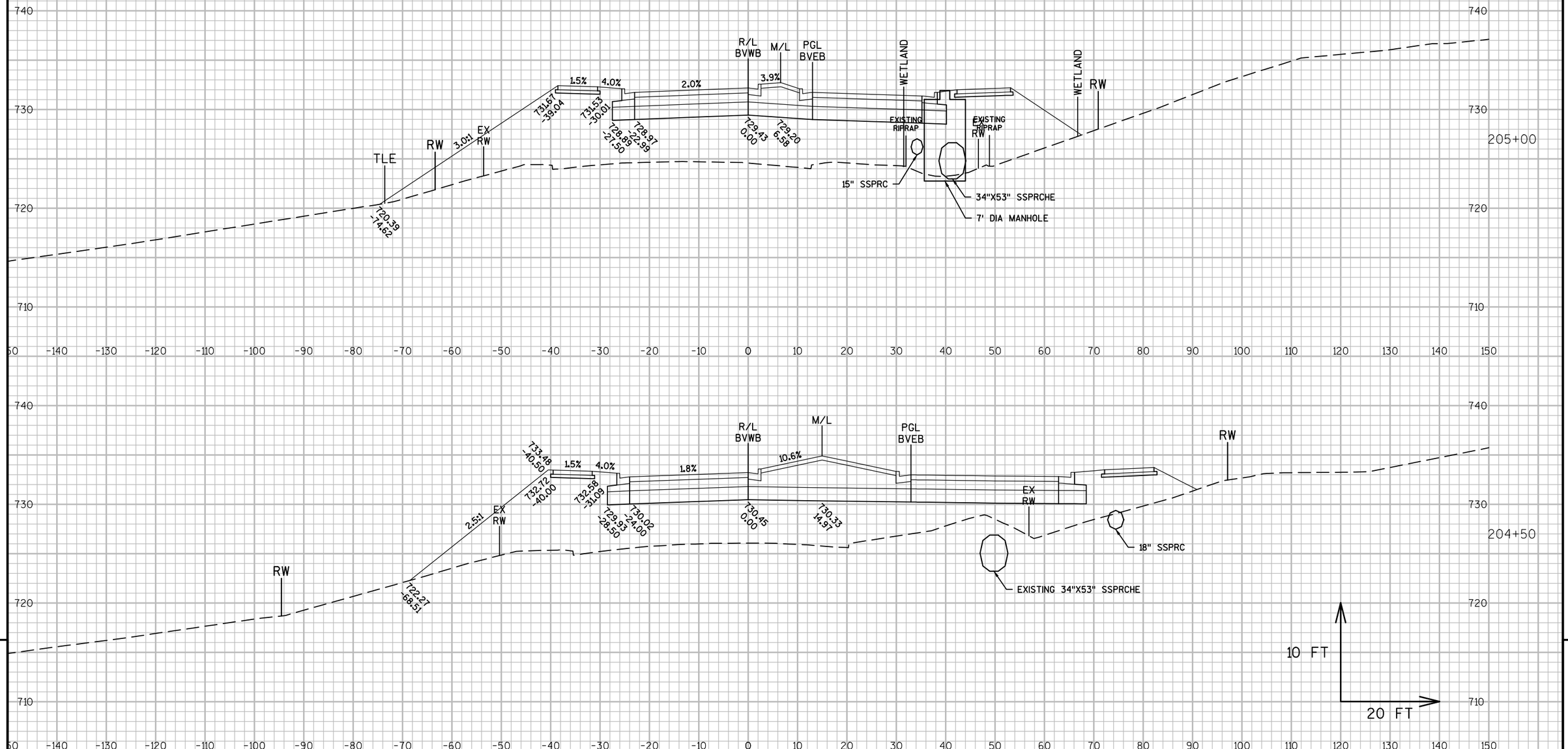
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (WEST OF ROUNDABOUT)	SHEET 279	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 10:55 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

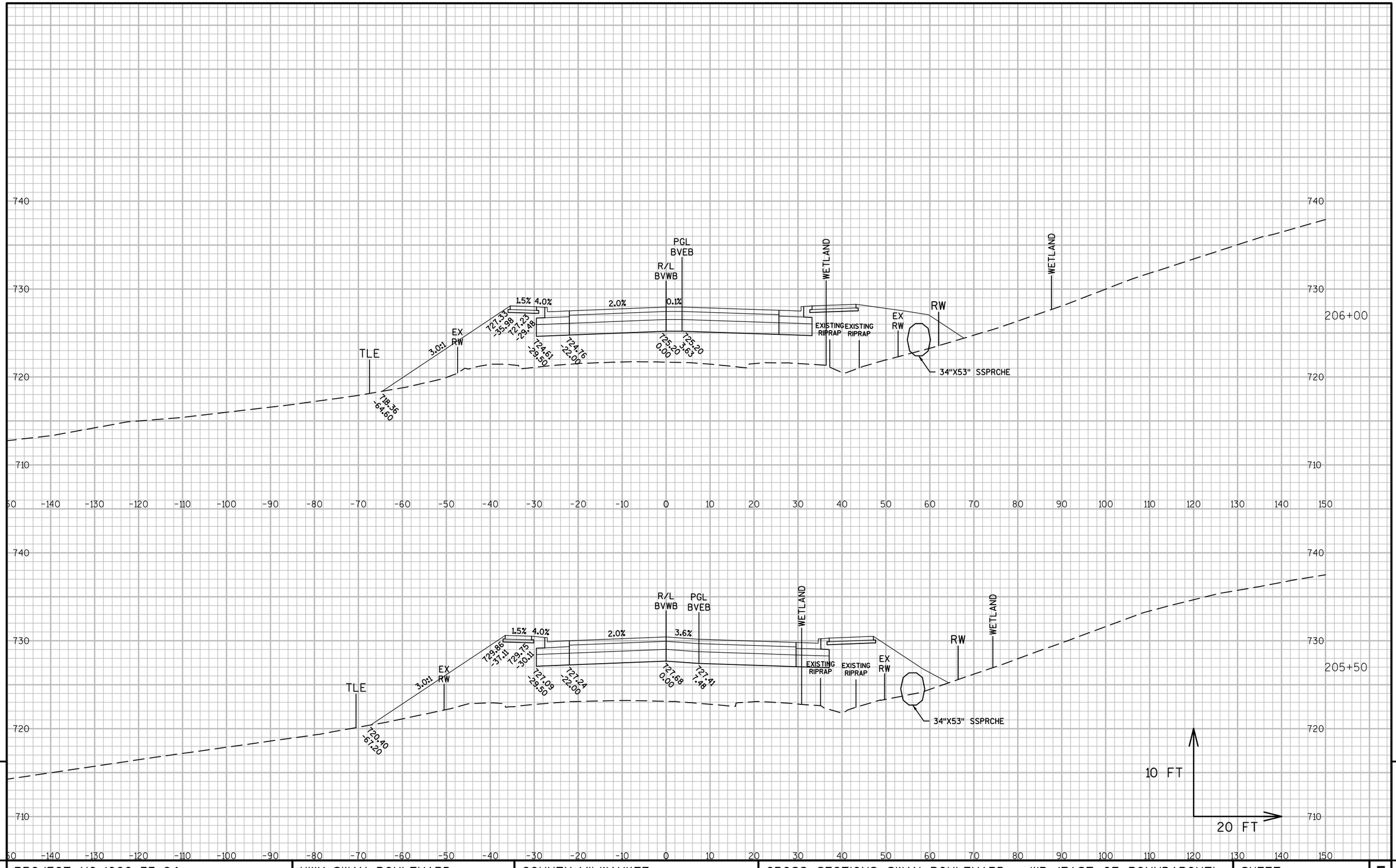
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (EAST OF ROUNDABOUT)	SHEET 280	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:01 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

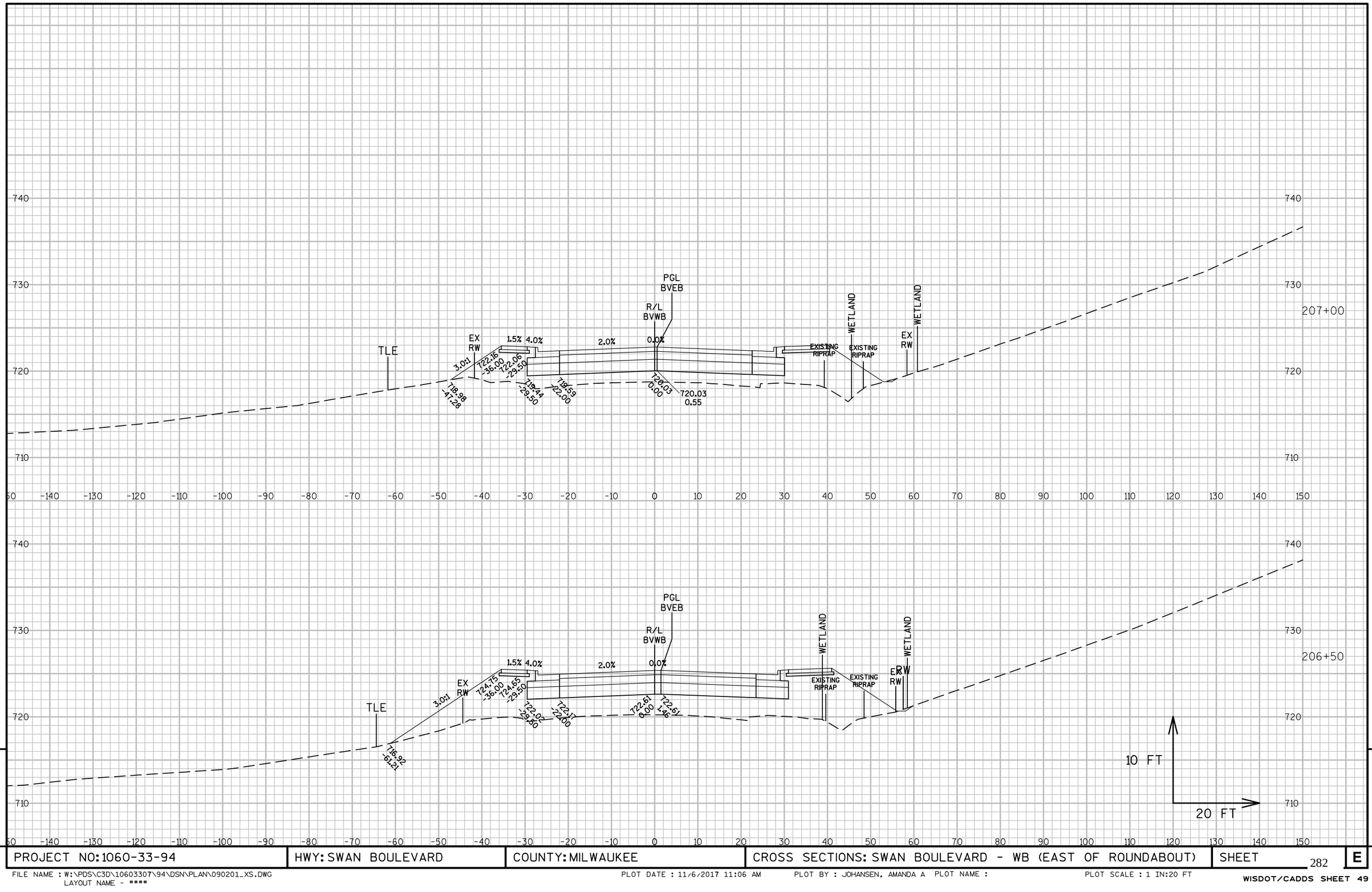


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (EAST OF ROUNDABOUT)	SHEET 281 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:04 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

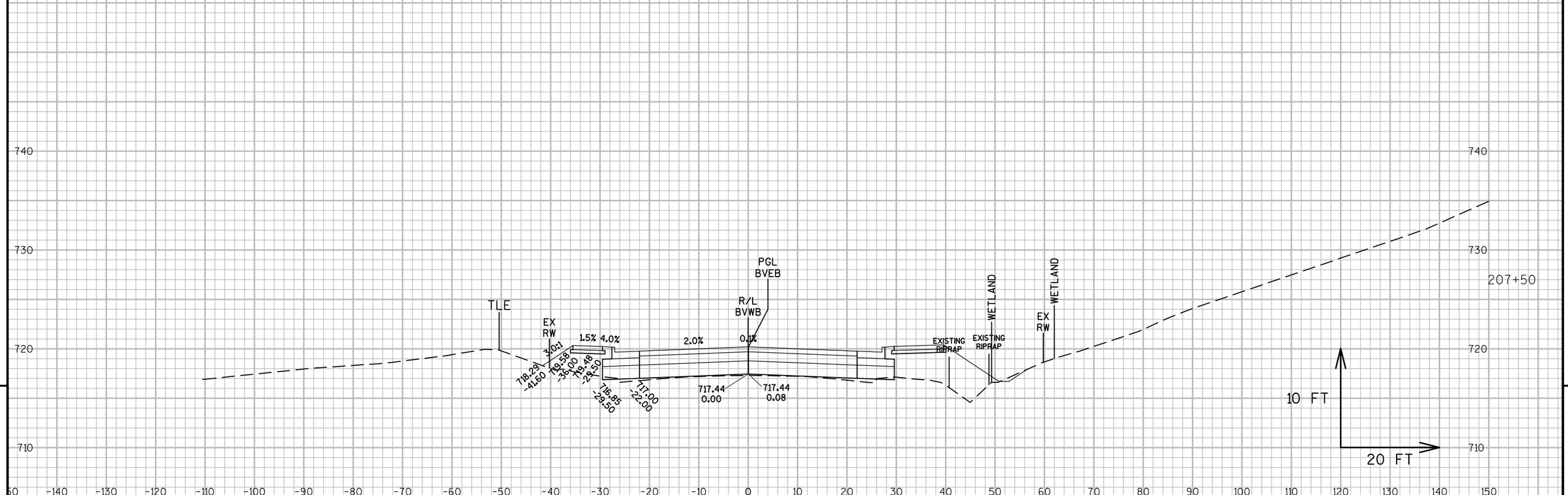


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (EAST OF ROUNDABOUT)	SHEET 282 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:06 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

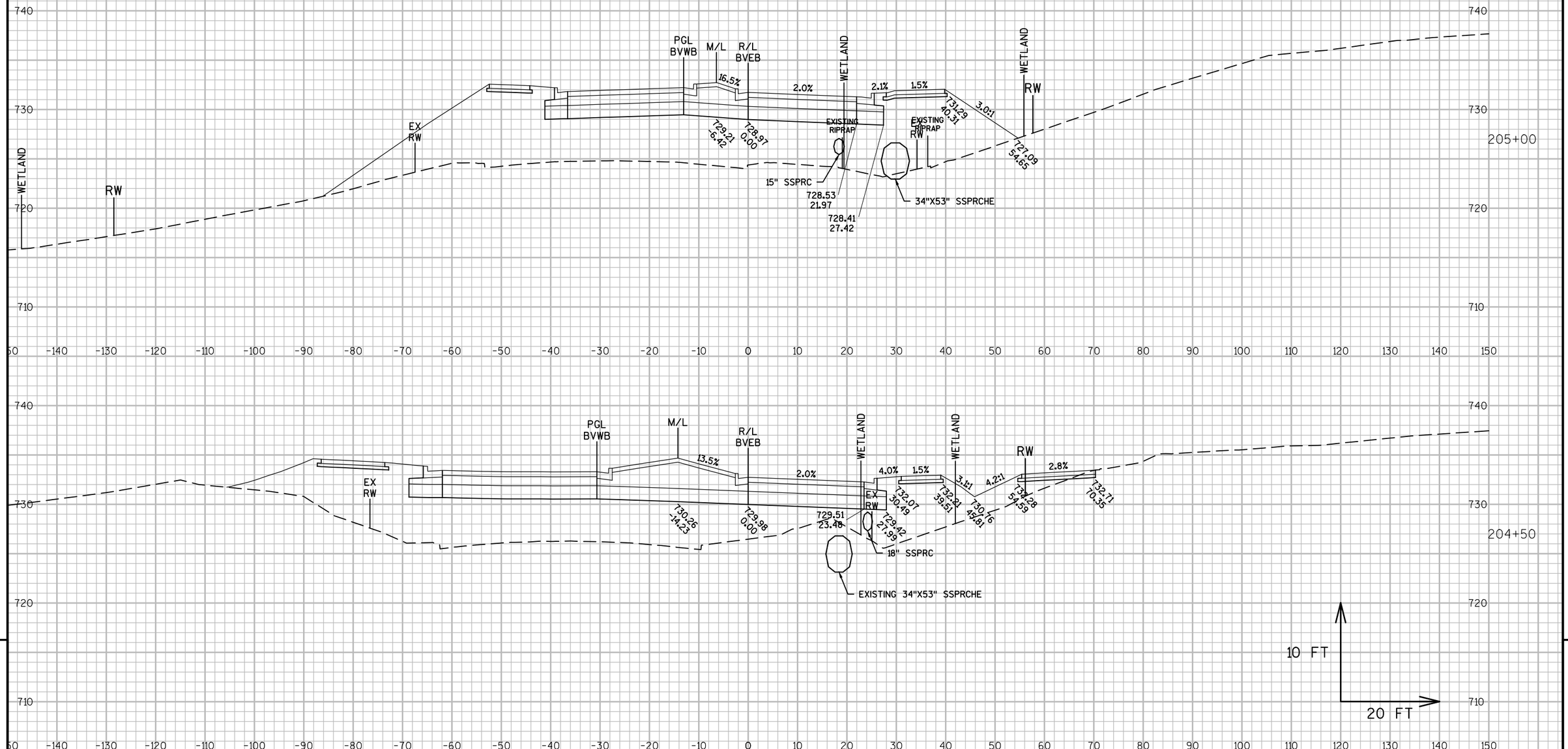
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - WB (EAST OF ROUNDABOUT)	SHEET 283	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:07 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



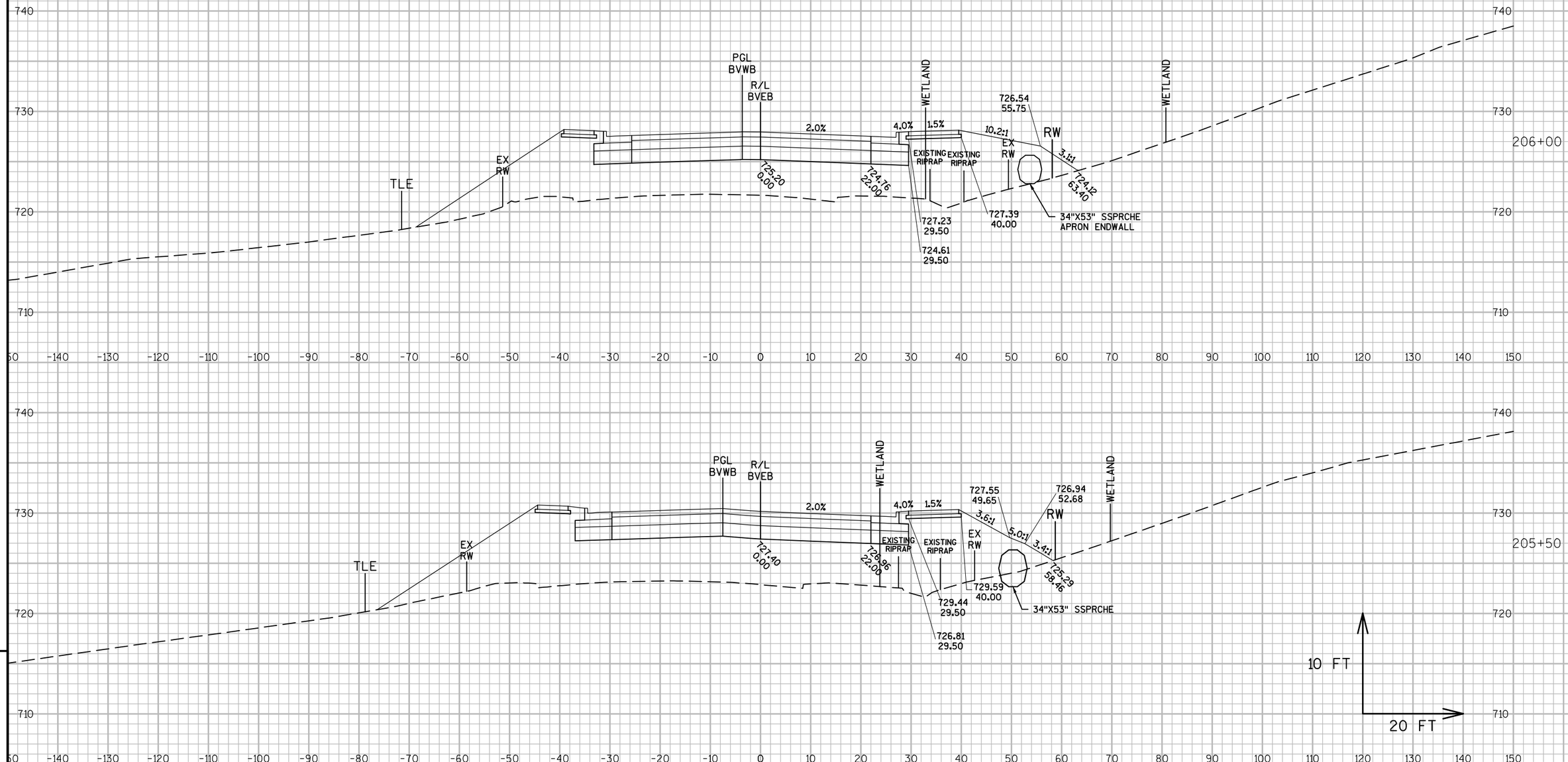
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (EAST OF ROUNDABOUT)	SHEET 284 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:21 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



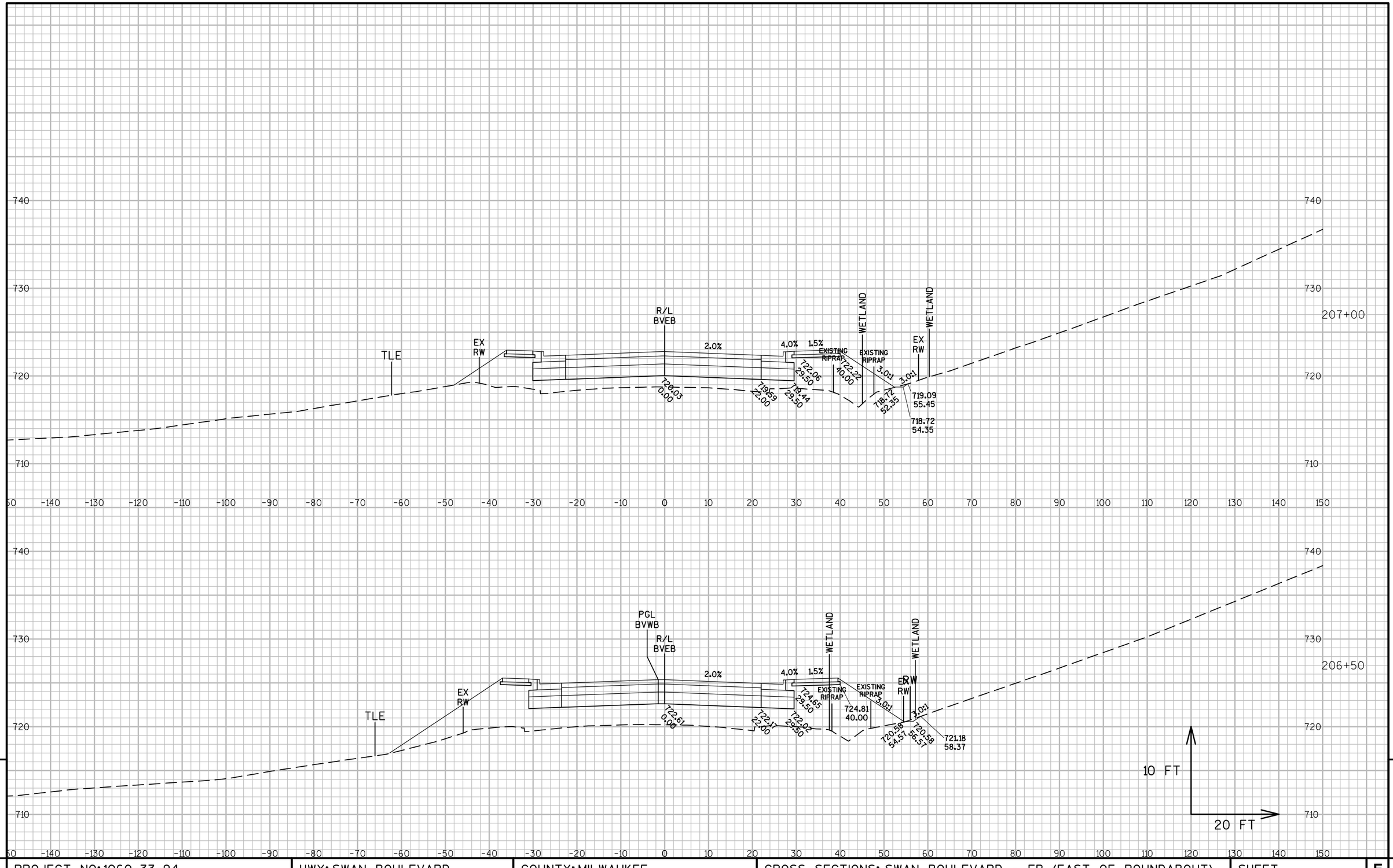
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (EAST OF ROUNDABOUT)	SHEET 285 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:18 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

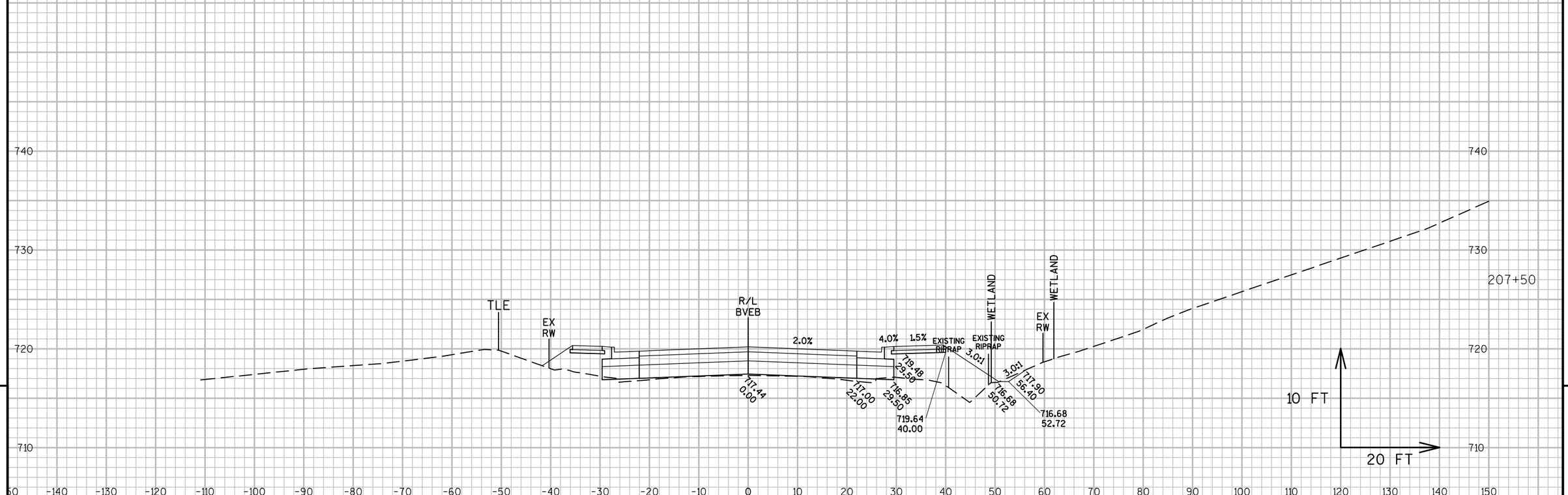


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (EAST OF ROUNDABOUT)	SHEET 286	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:17 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

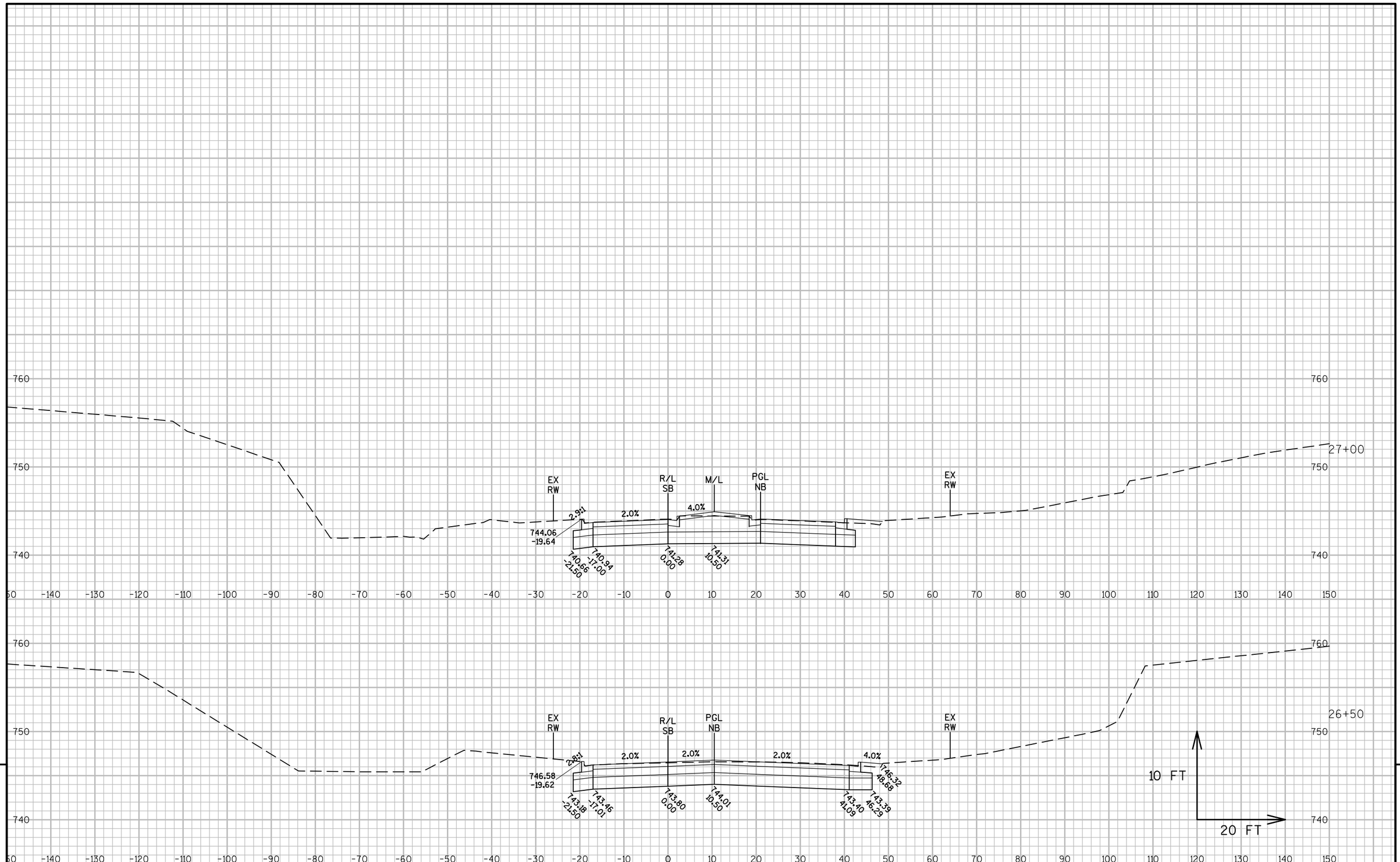
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: SWAN BOULEVARD - EB (EAST OF ROUNDABOUT)	SHEET 287	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:19 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

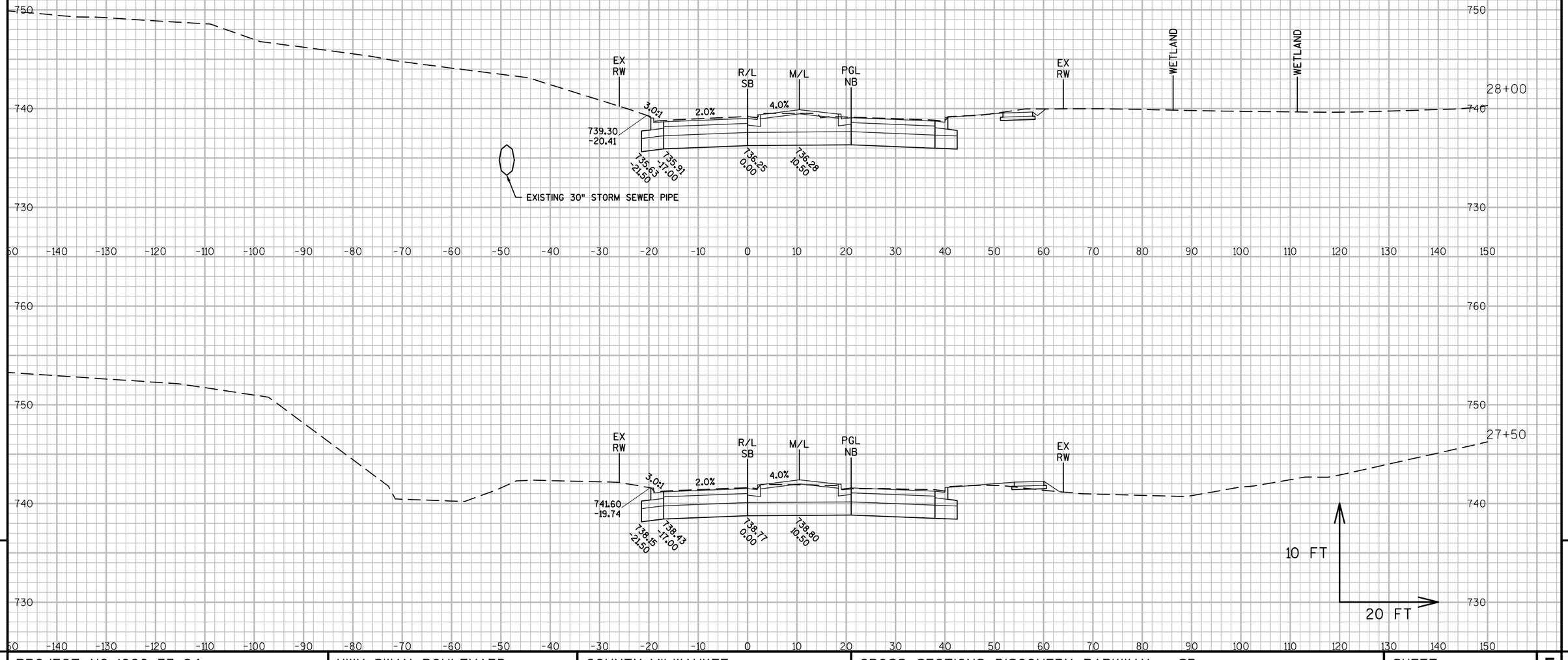
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - SB	SHEET 288	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:27 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

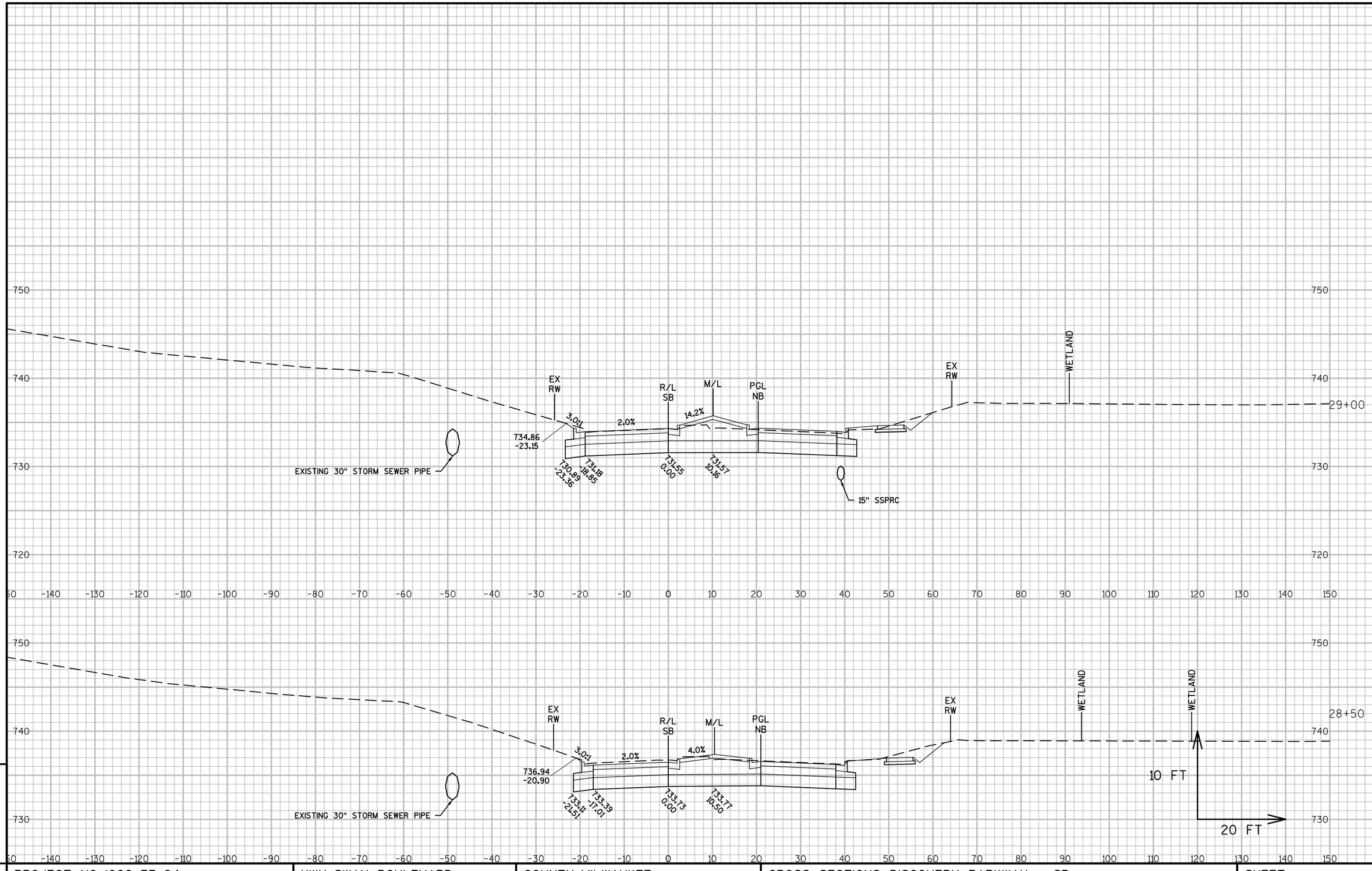


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - SB	SHEET 289	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 11:35 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

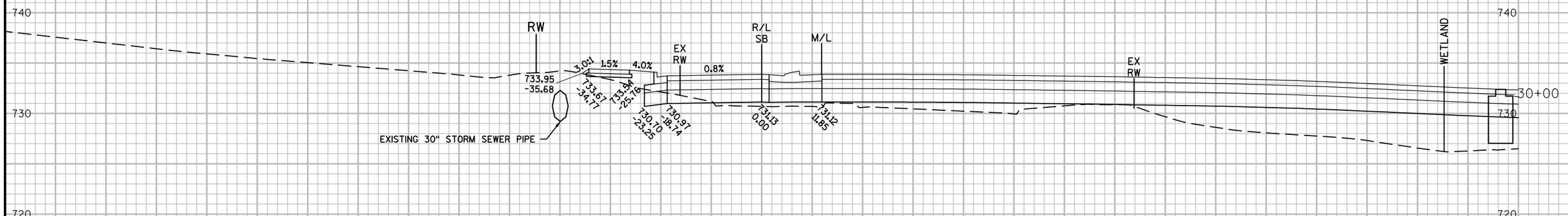
9

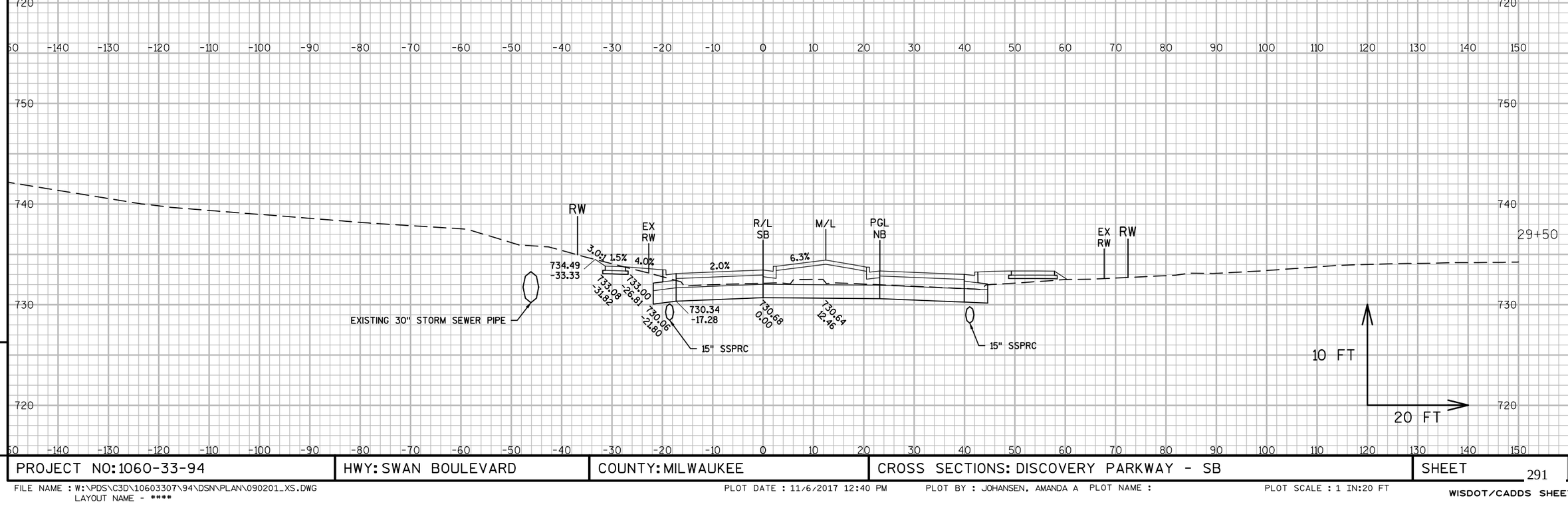
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - SB	SHEET 290	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 12:37 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49





9

9

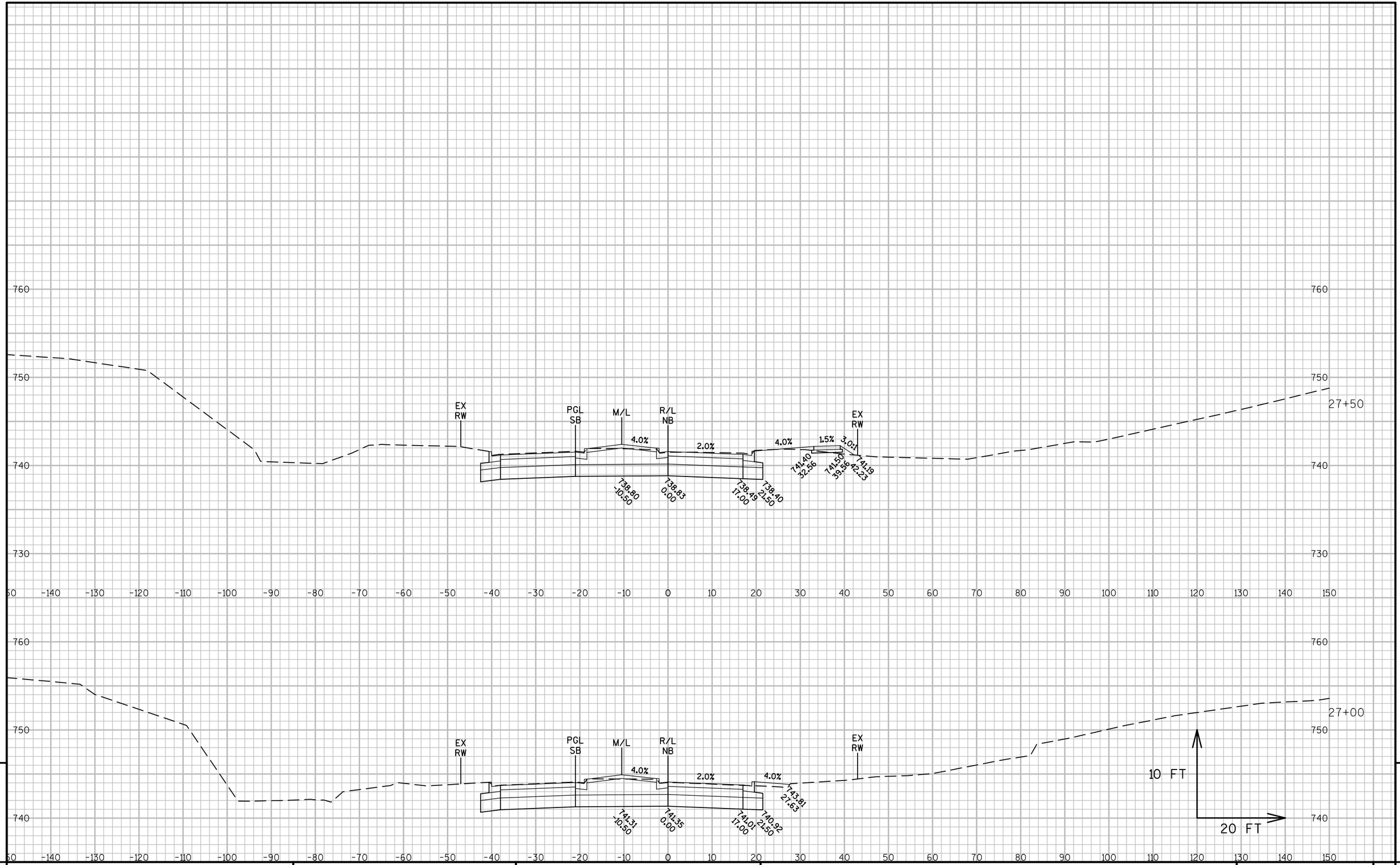
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - SB	SHEET 291	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 12:40 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

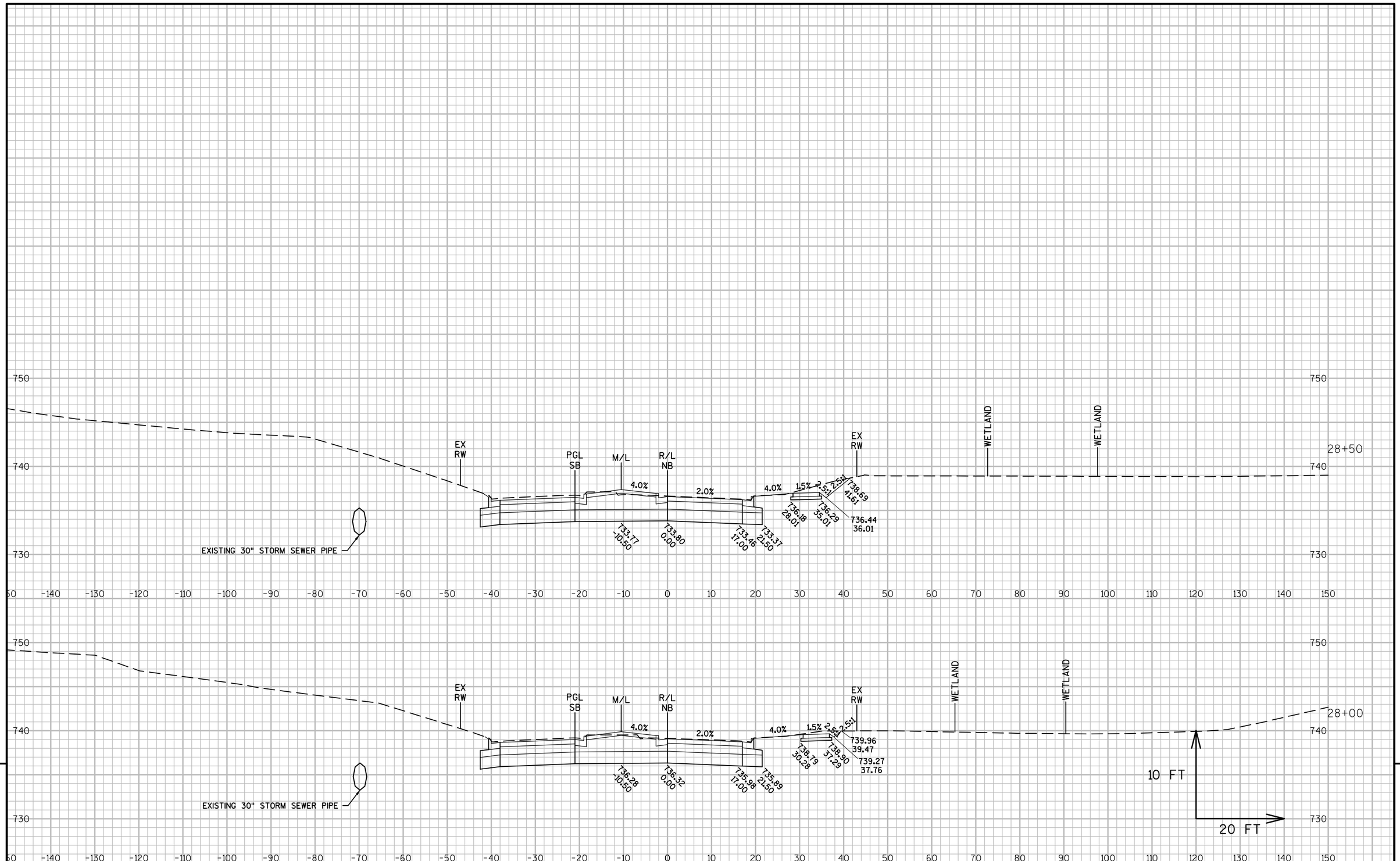
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - NB	SHEET 292	E



9

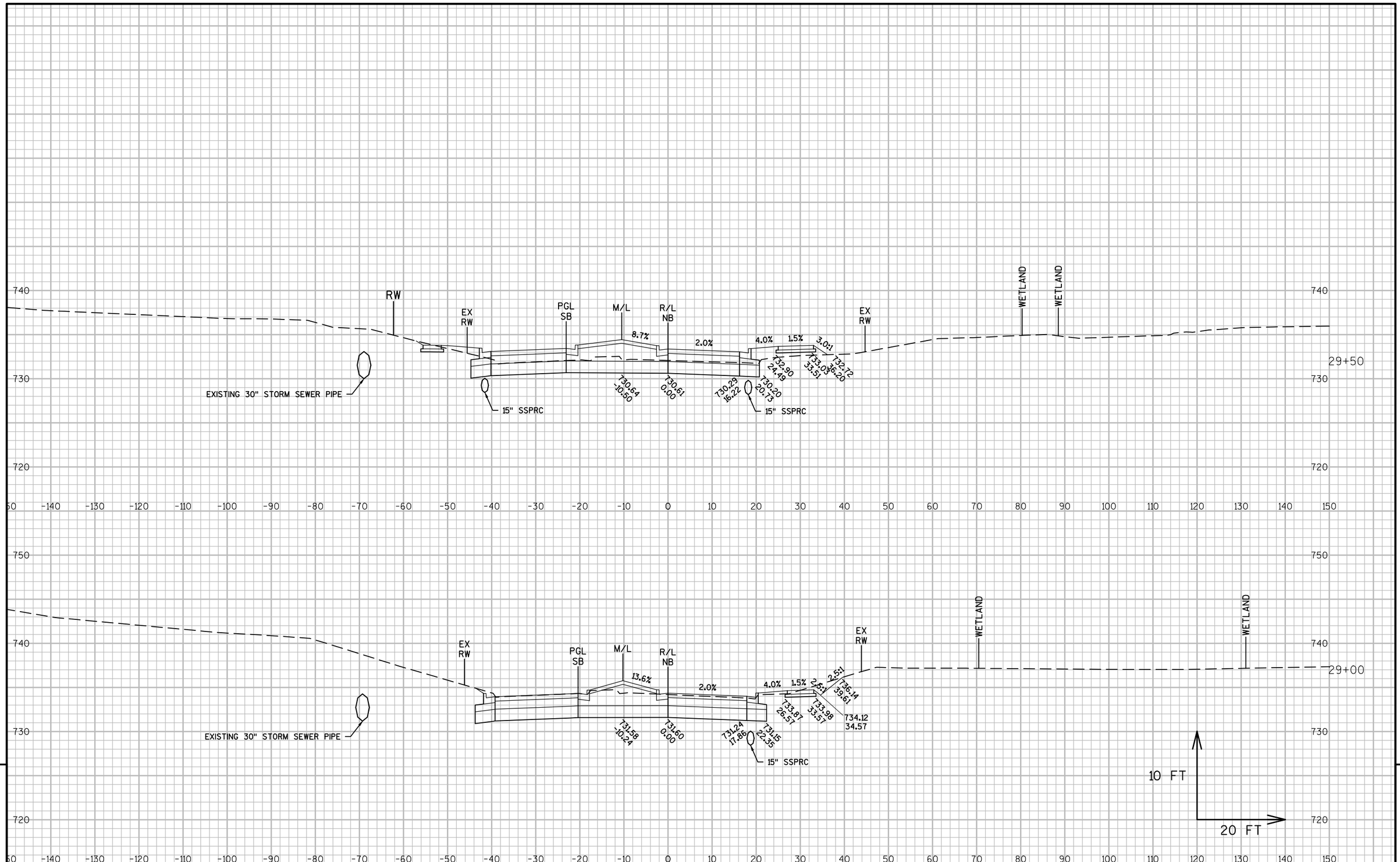
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - NB	SHEET 293	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 12:50 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

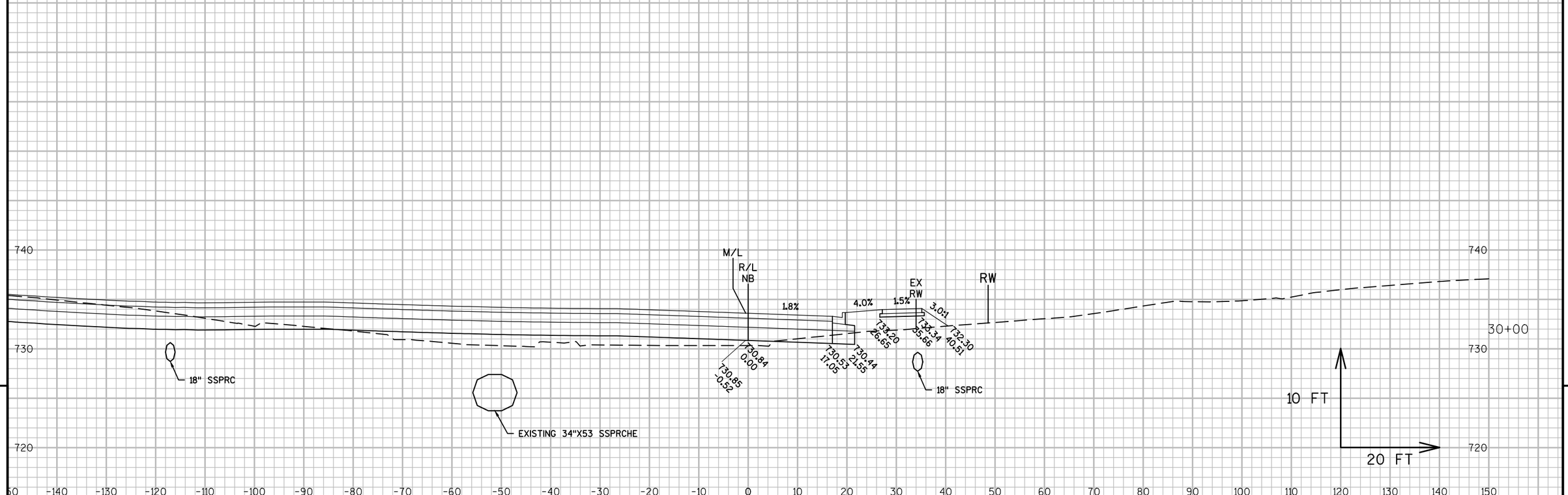
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - NB	SHEET 294	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 12:52 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

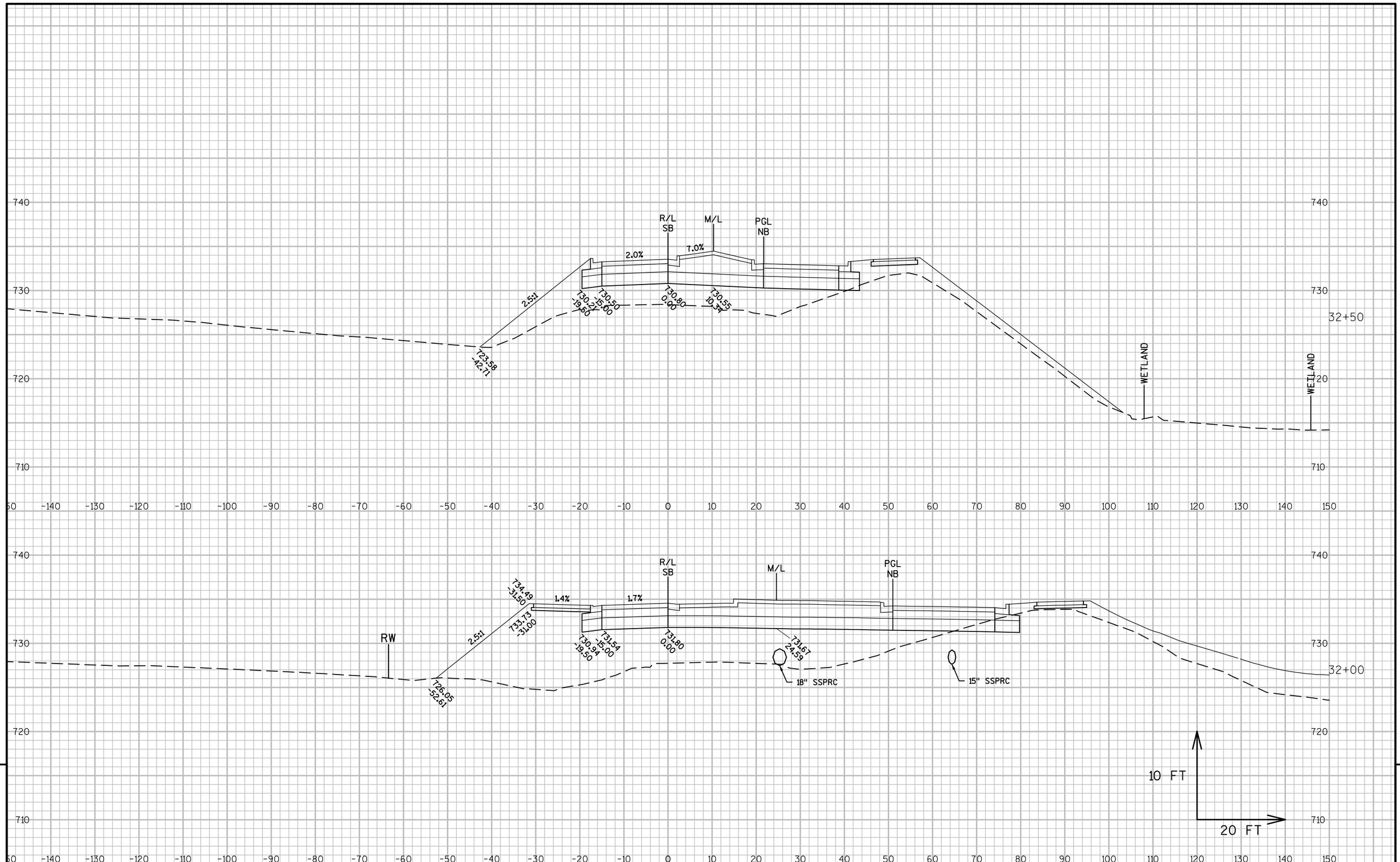
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: DISCOVERY PARKWAY - NB	SHEET 295	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 12:56 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

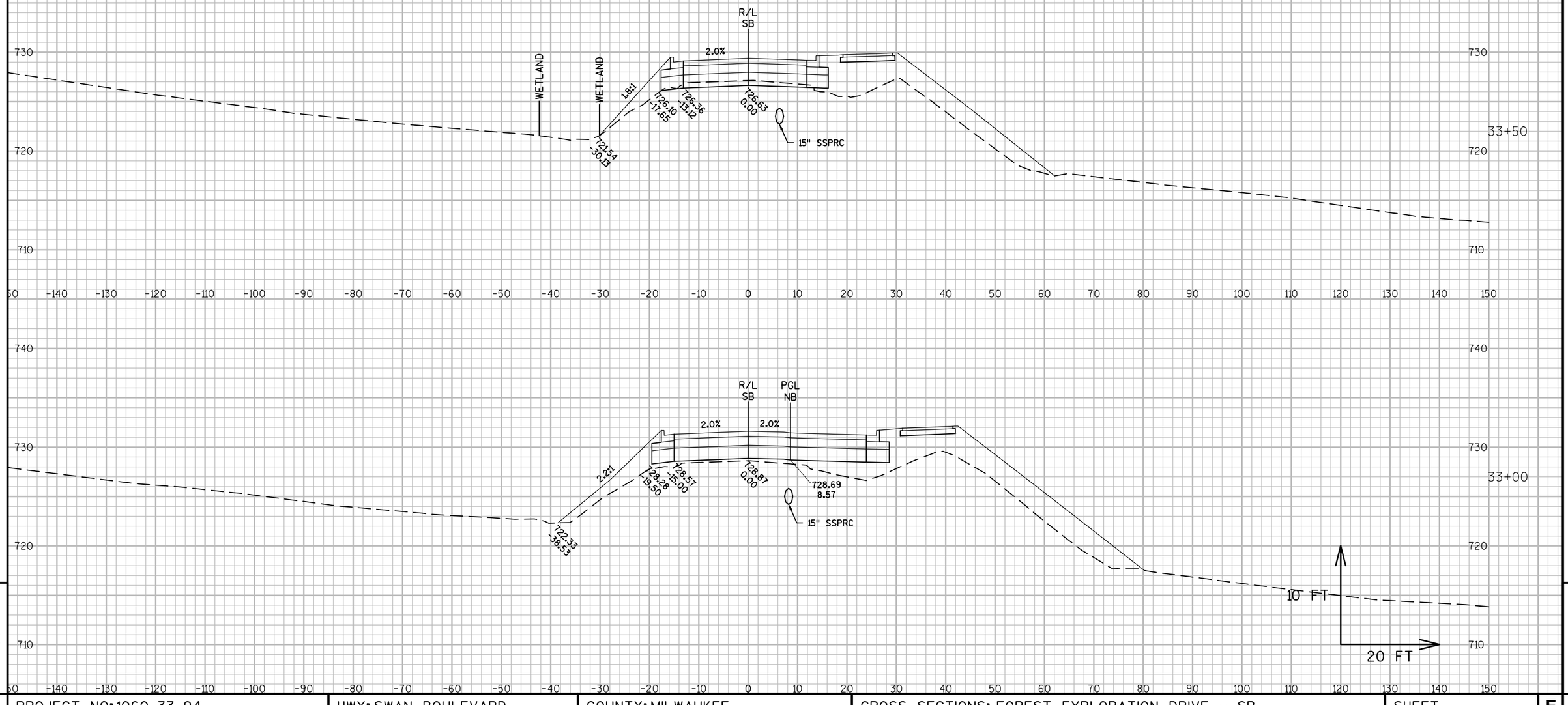


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE - SB	SHEET 296 E

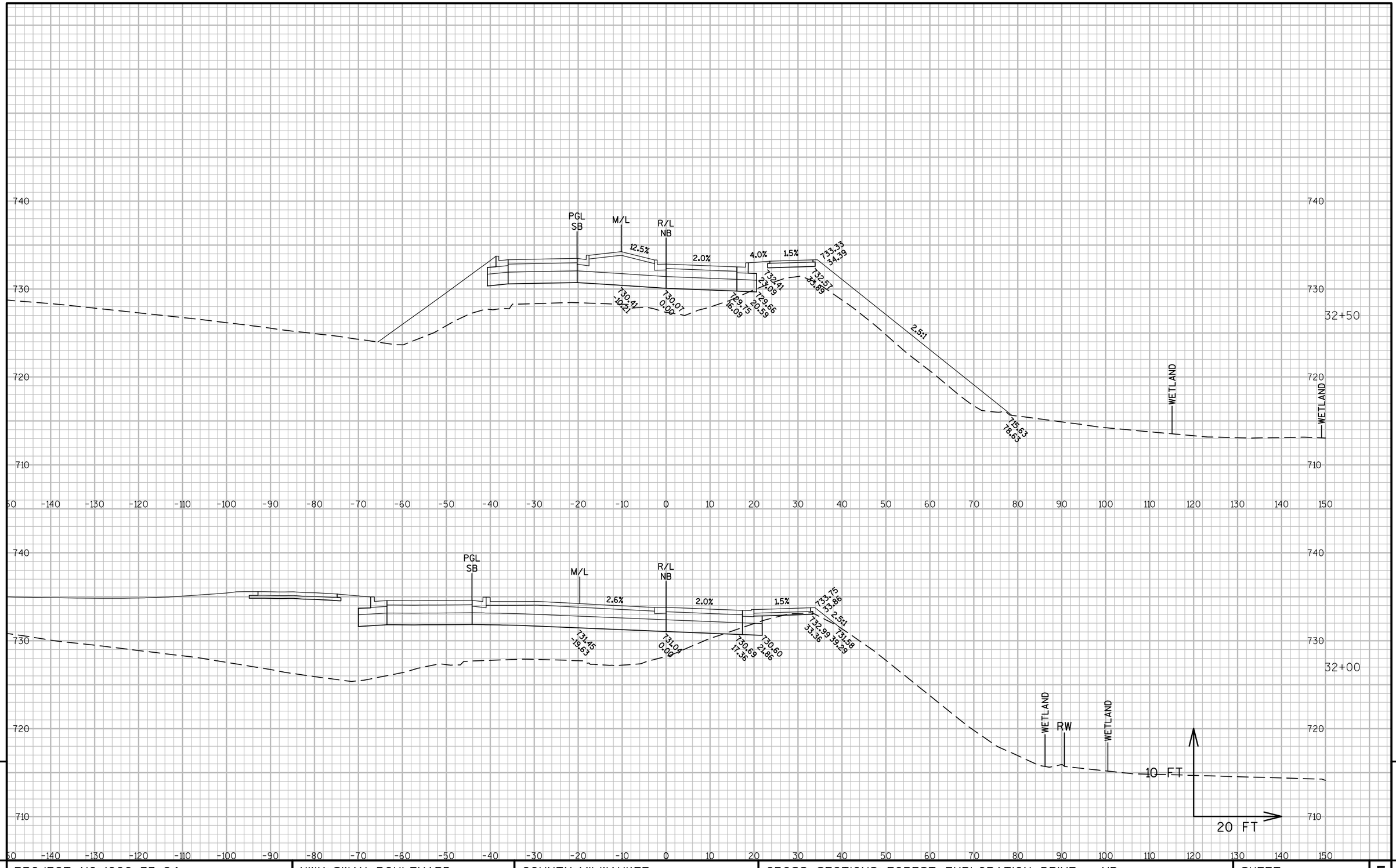
FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:03 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE - SB	SHEET 297	E



9

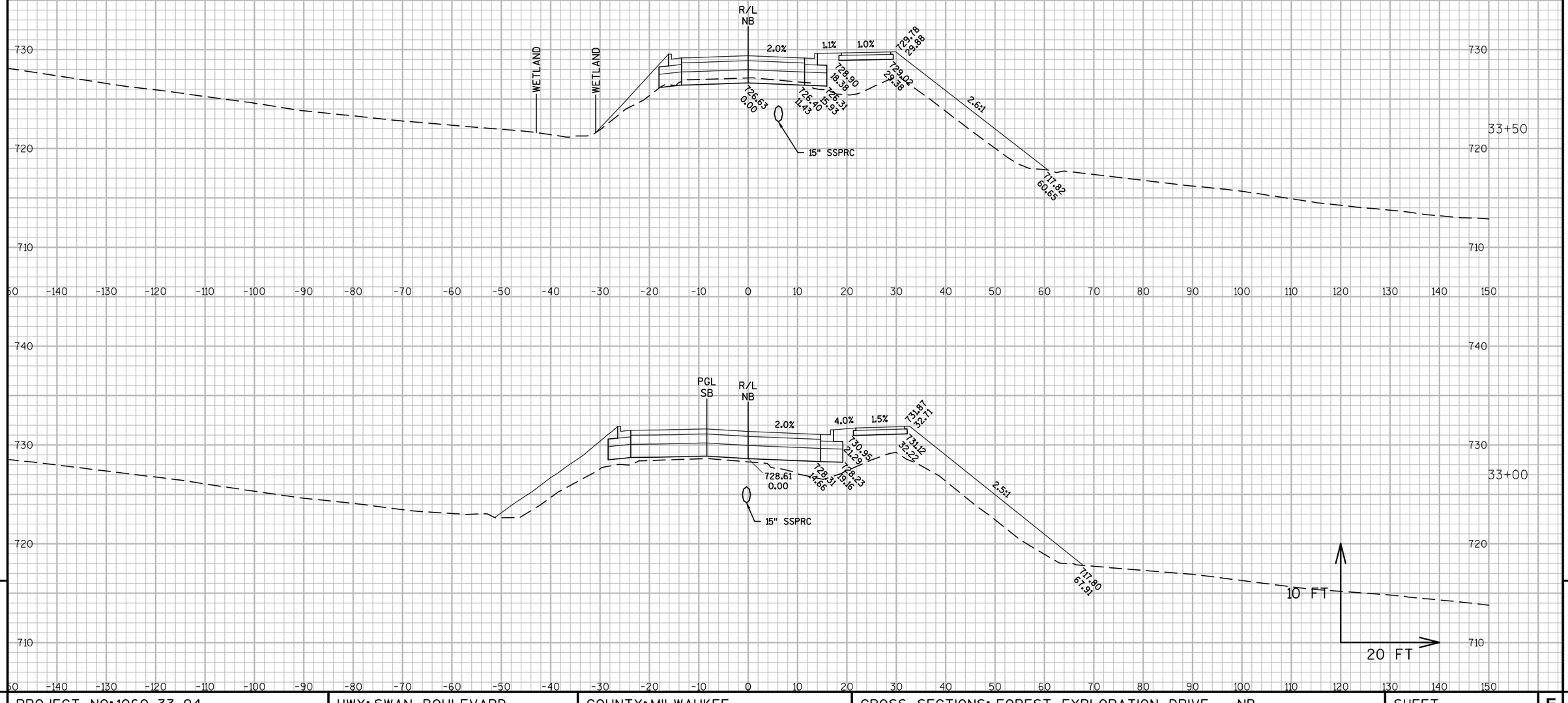
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE - NB	SHEET 298	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:12 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE - NB	SHEET 299	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090201_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:15 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

9

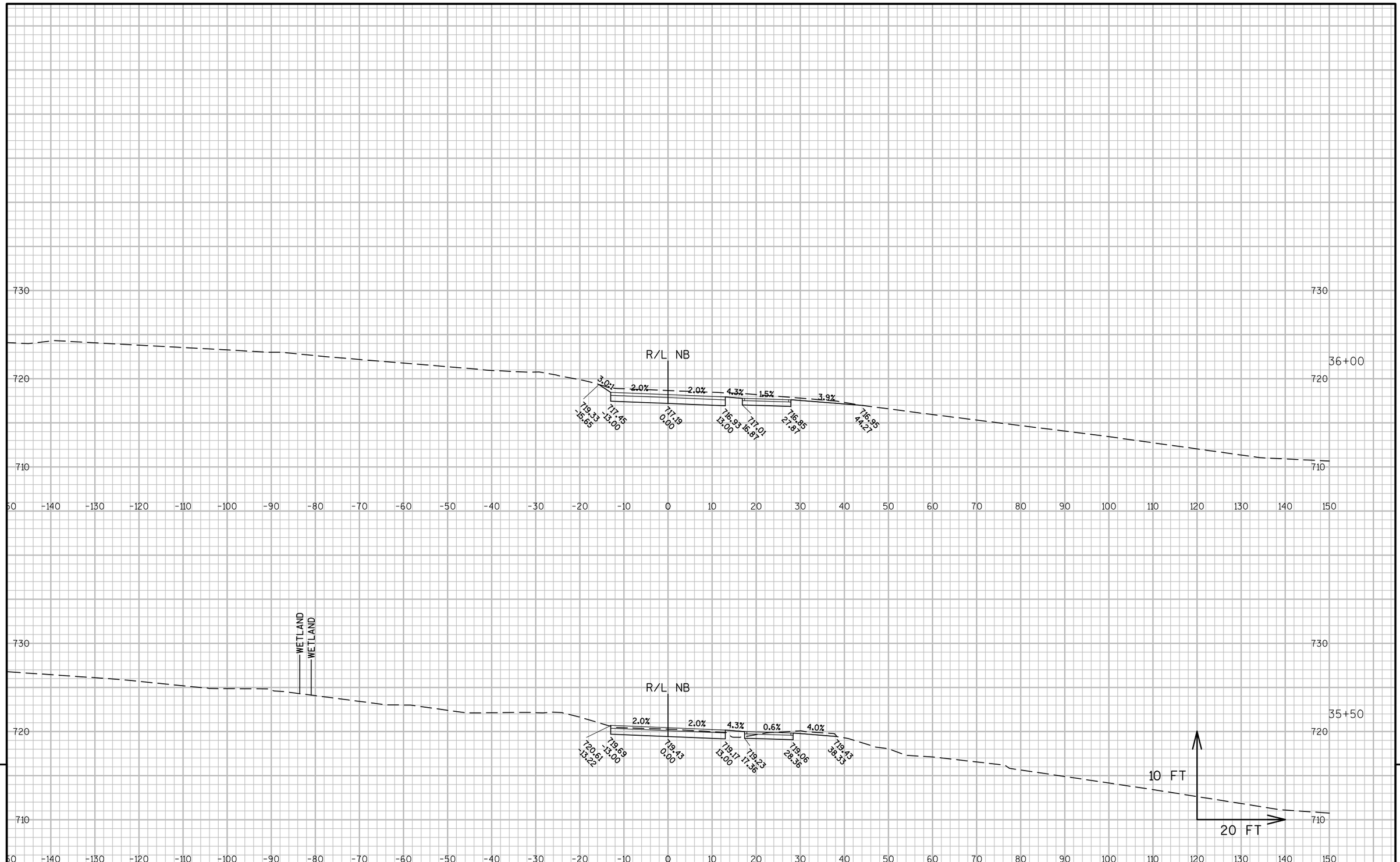
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 300	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090202_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 2:15 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

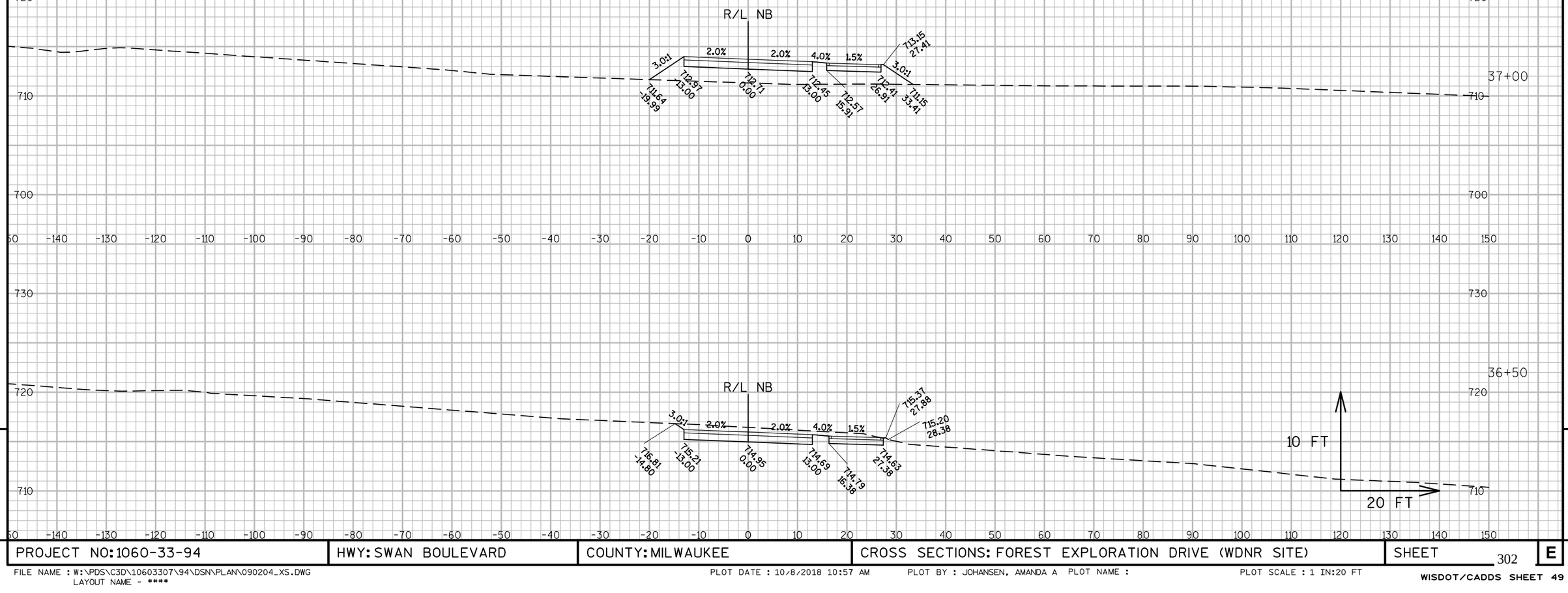


9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 301	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090202_XS.DWG
LAYOUT NAME - ****
PLOT DATE : 10/8/2018 2:23 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 49



9

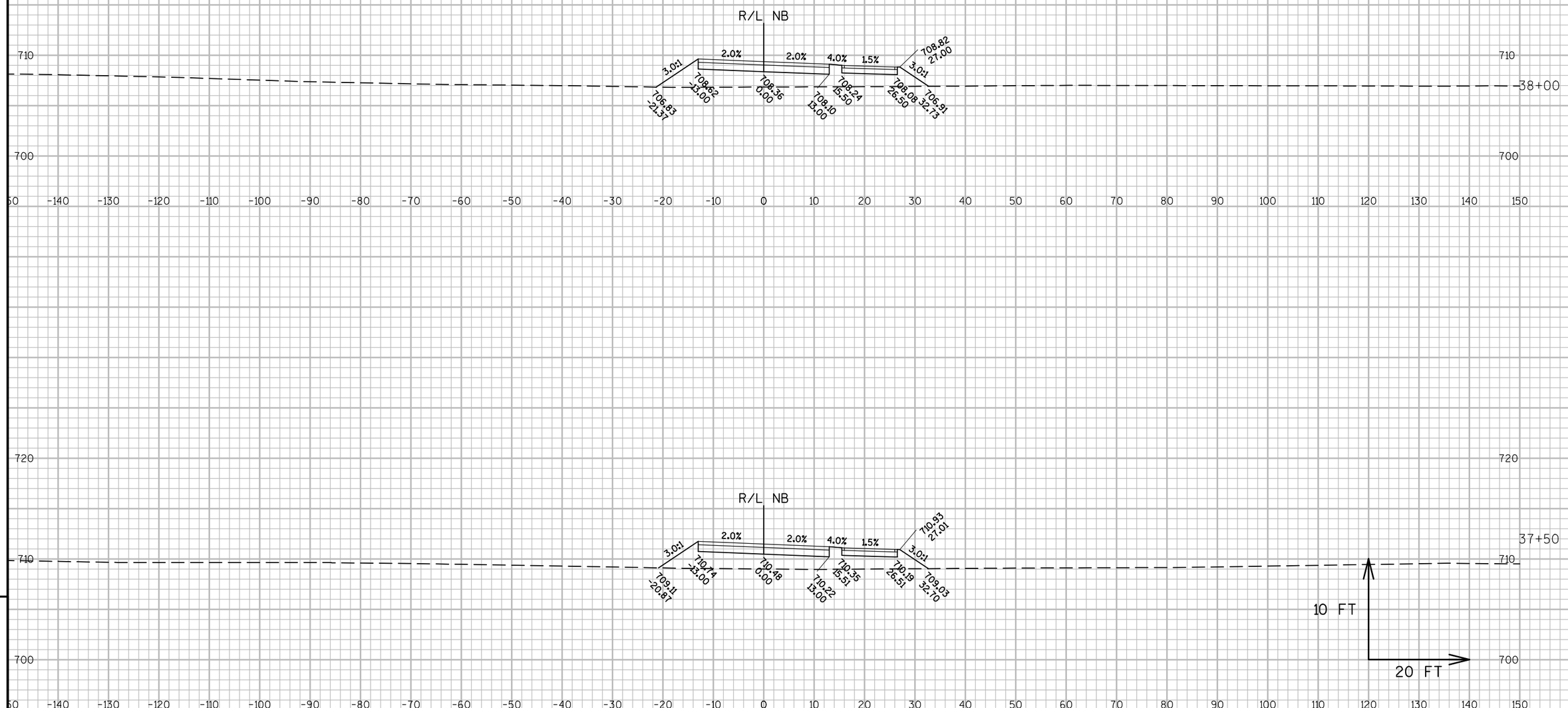
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 302	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 10:57 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

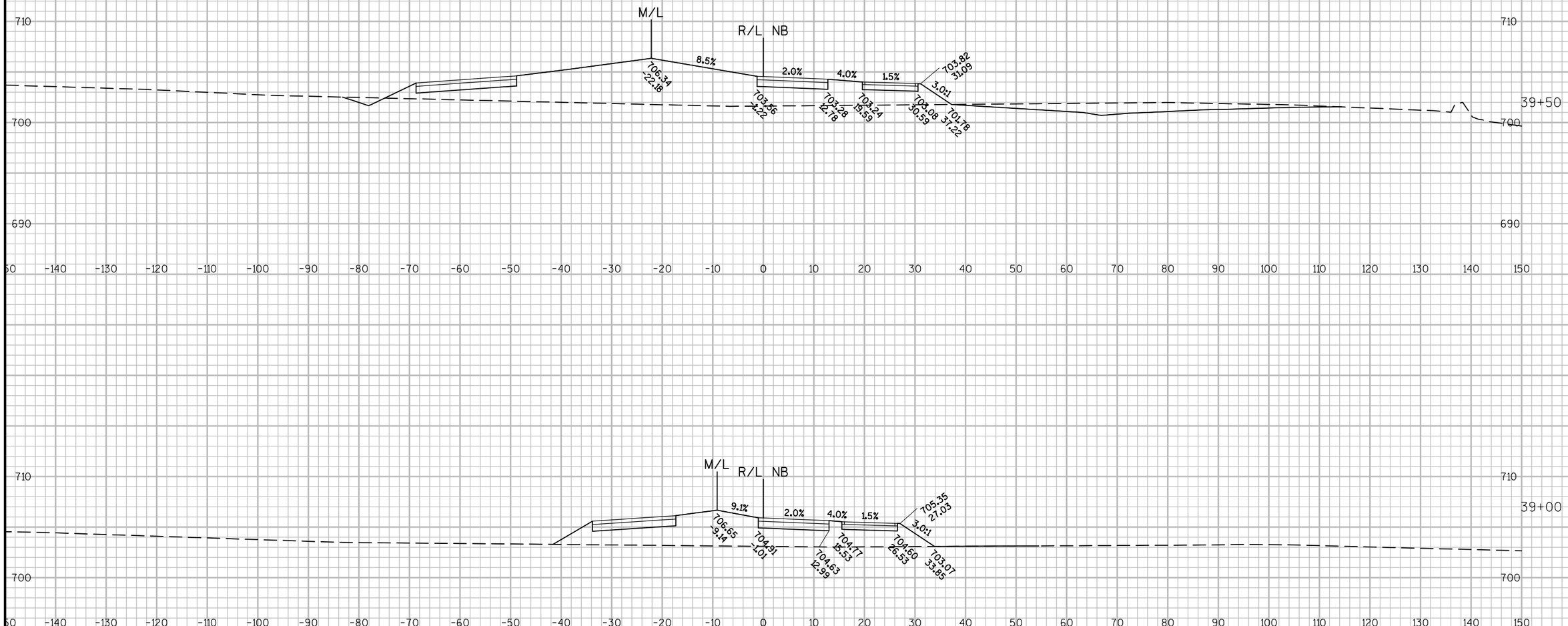
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 303	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 11:05 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT



9

9

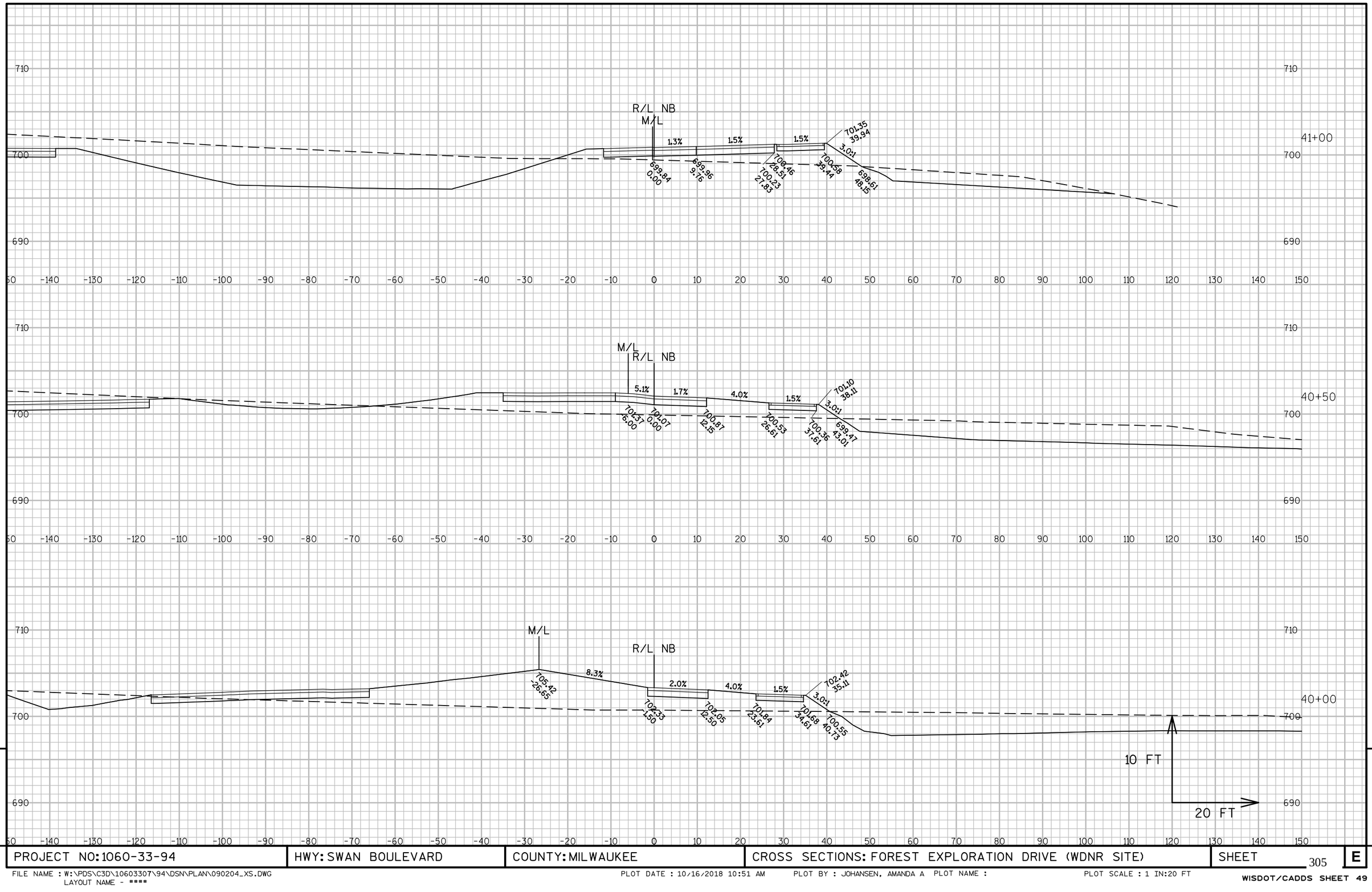
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 304	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/16/2018 10:50 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



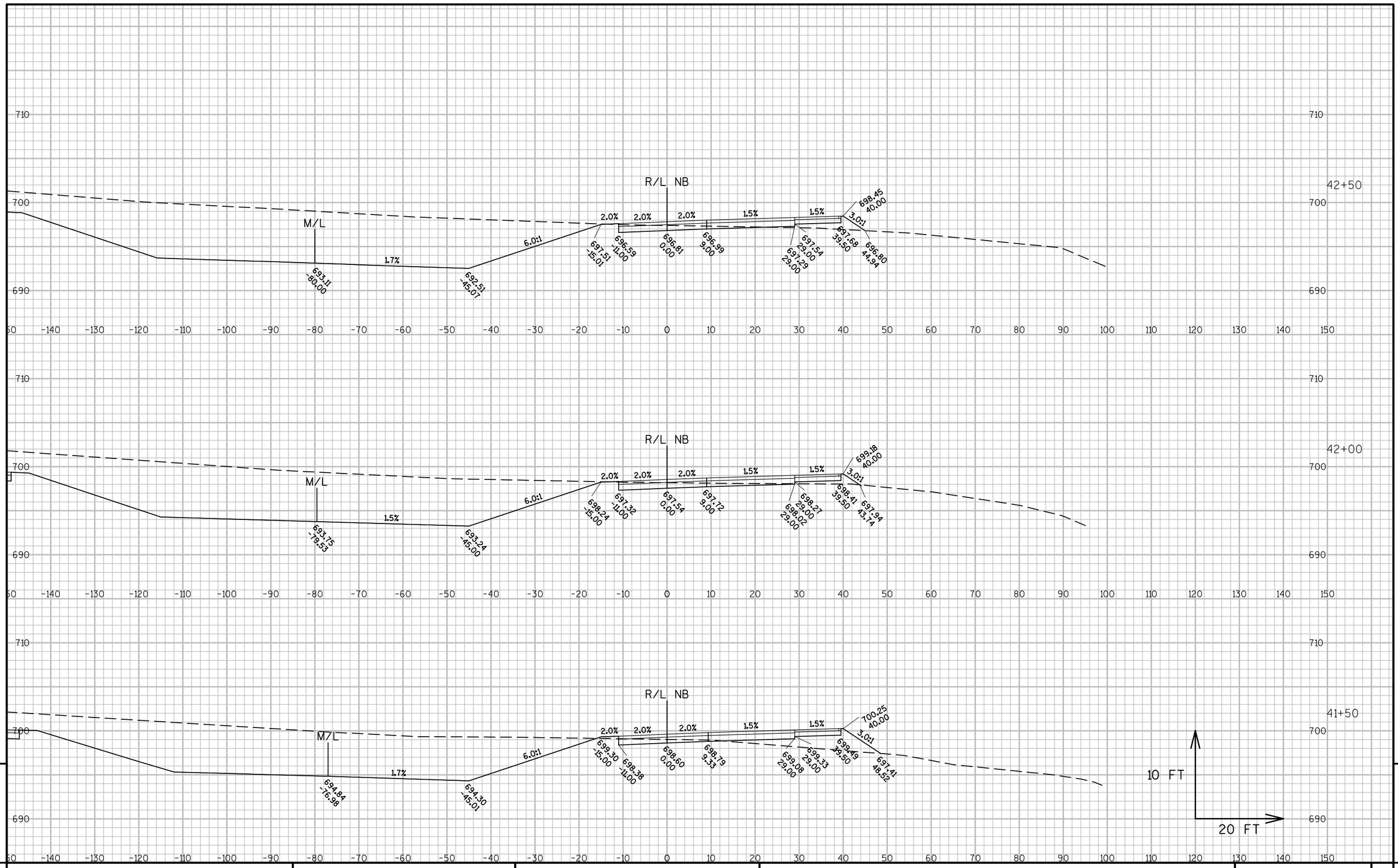
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 305	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/16/2018 10:51 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

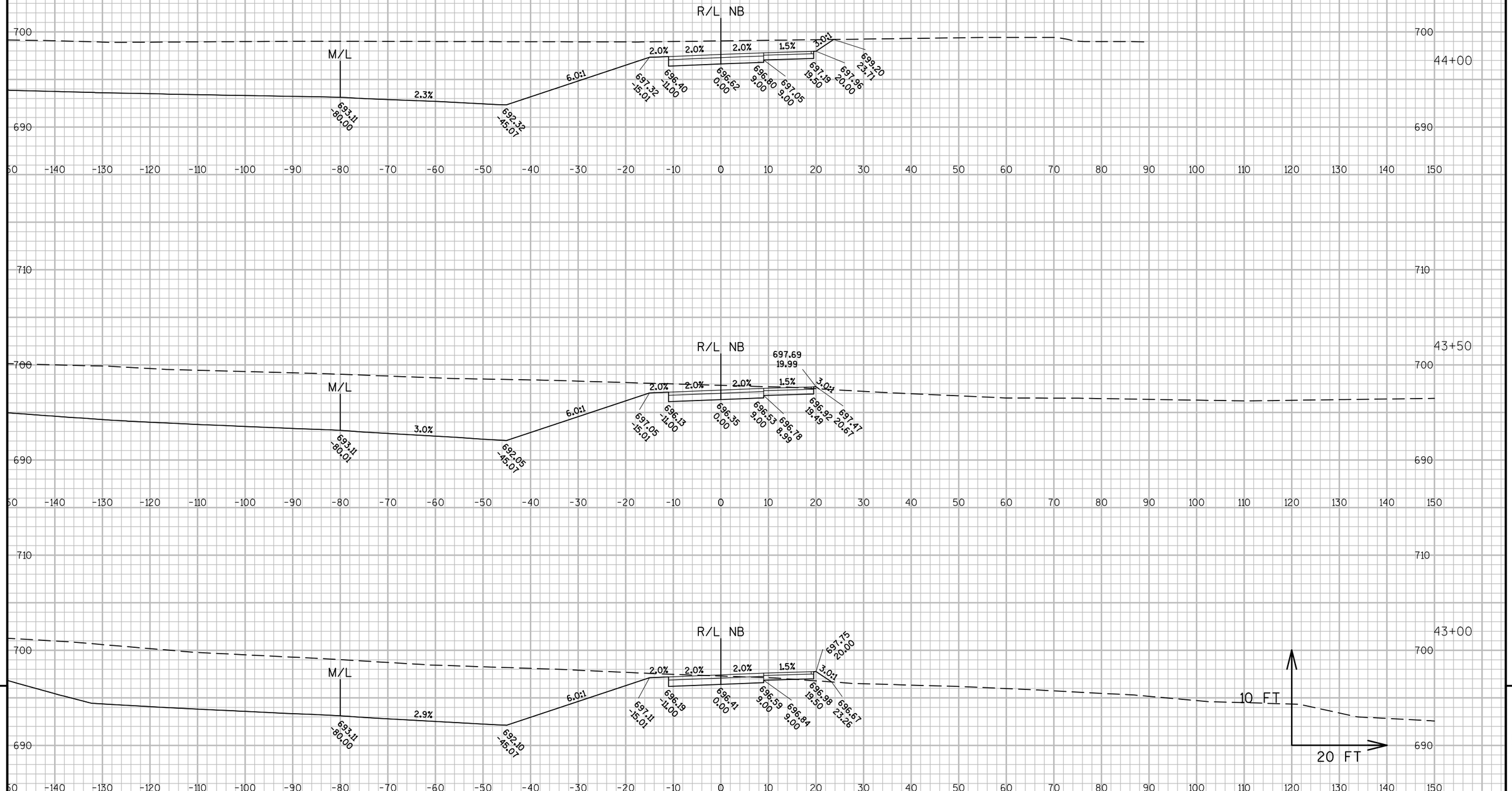
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 306	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 12:31 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 307 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 12:58 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

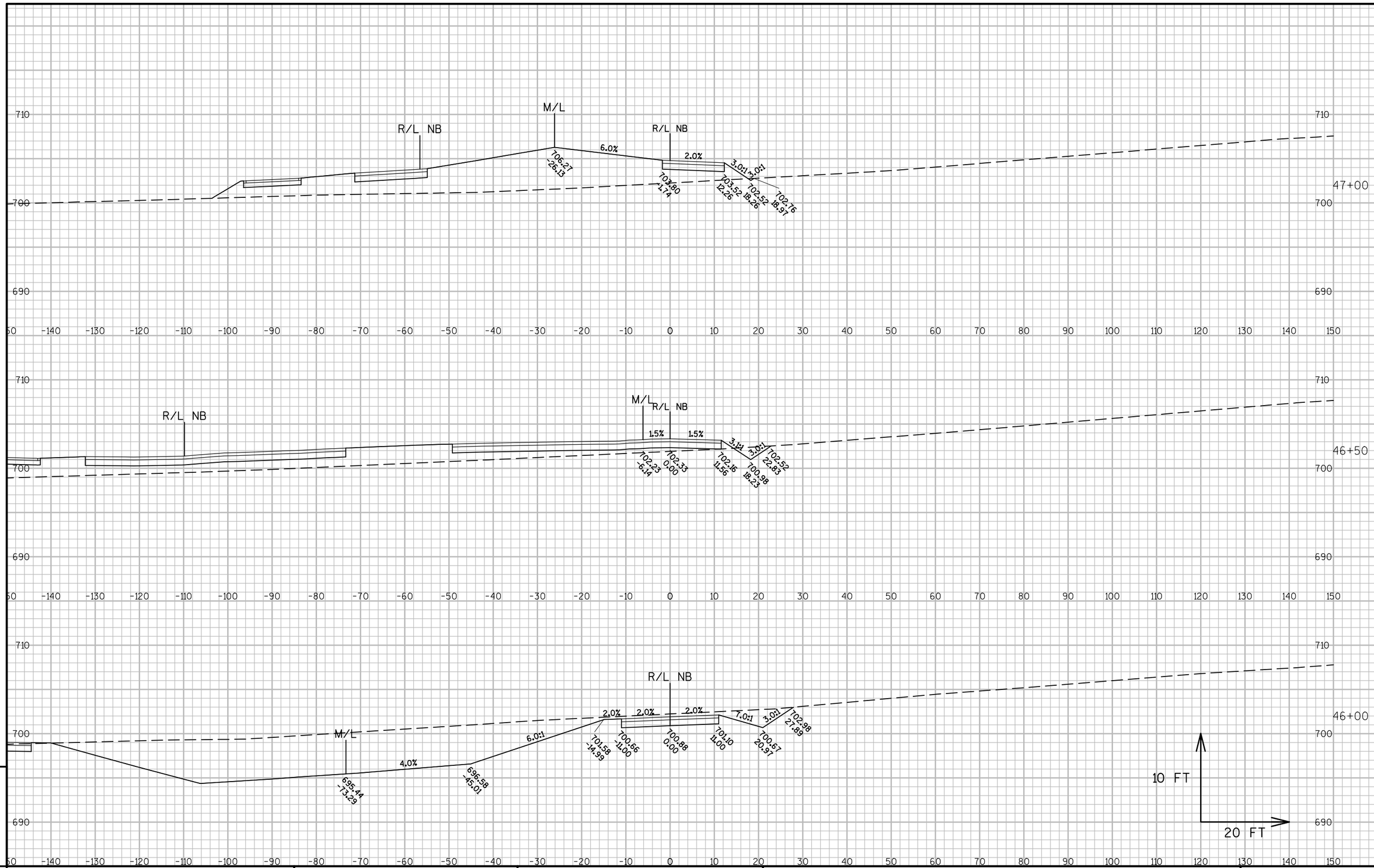
WISDOT/CADDS SHEET 49

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 308	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 1:19 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



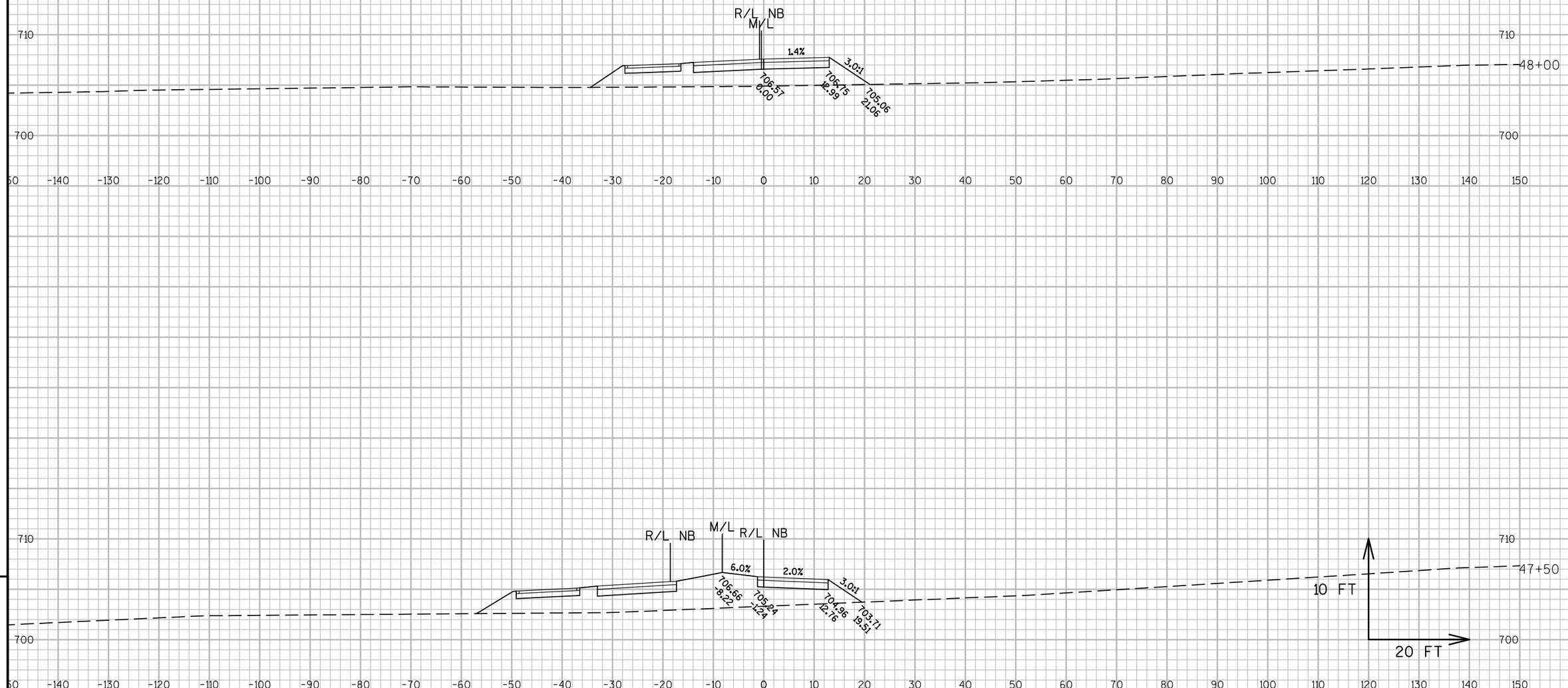
PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 309	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/10/2018 7:20 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

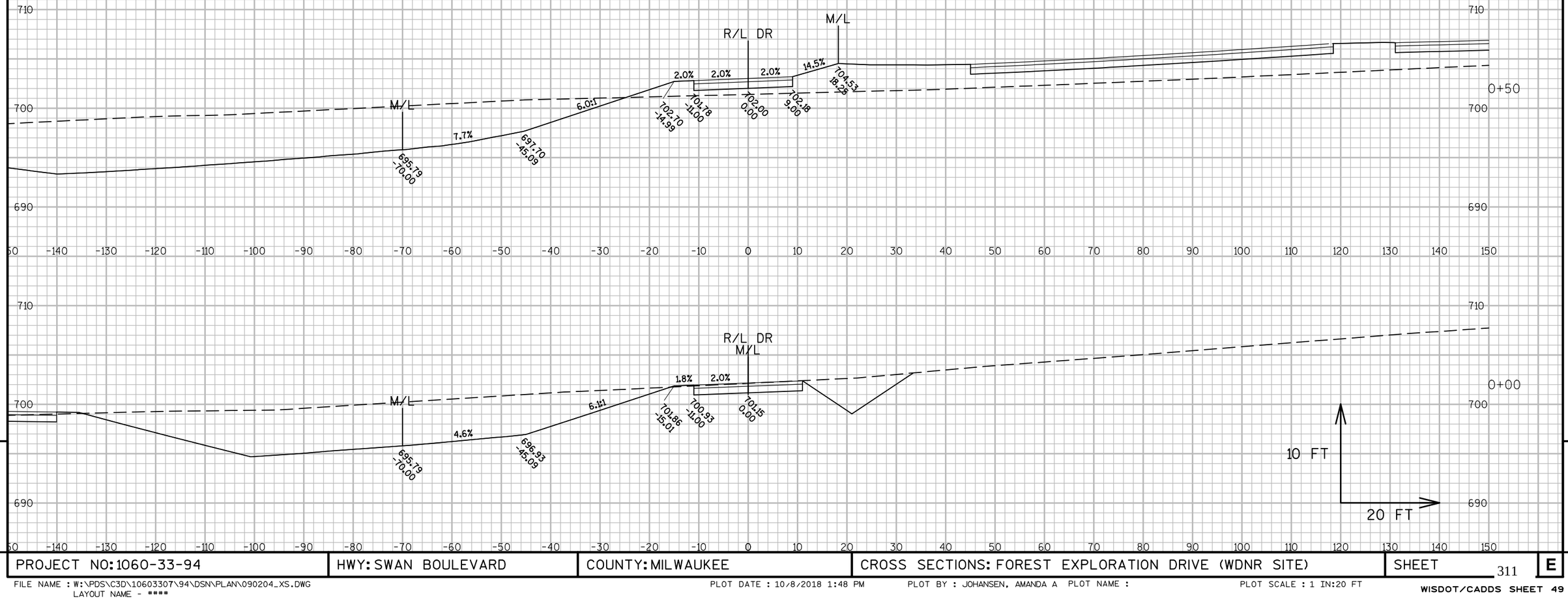
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 310	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 1:39 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

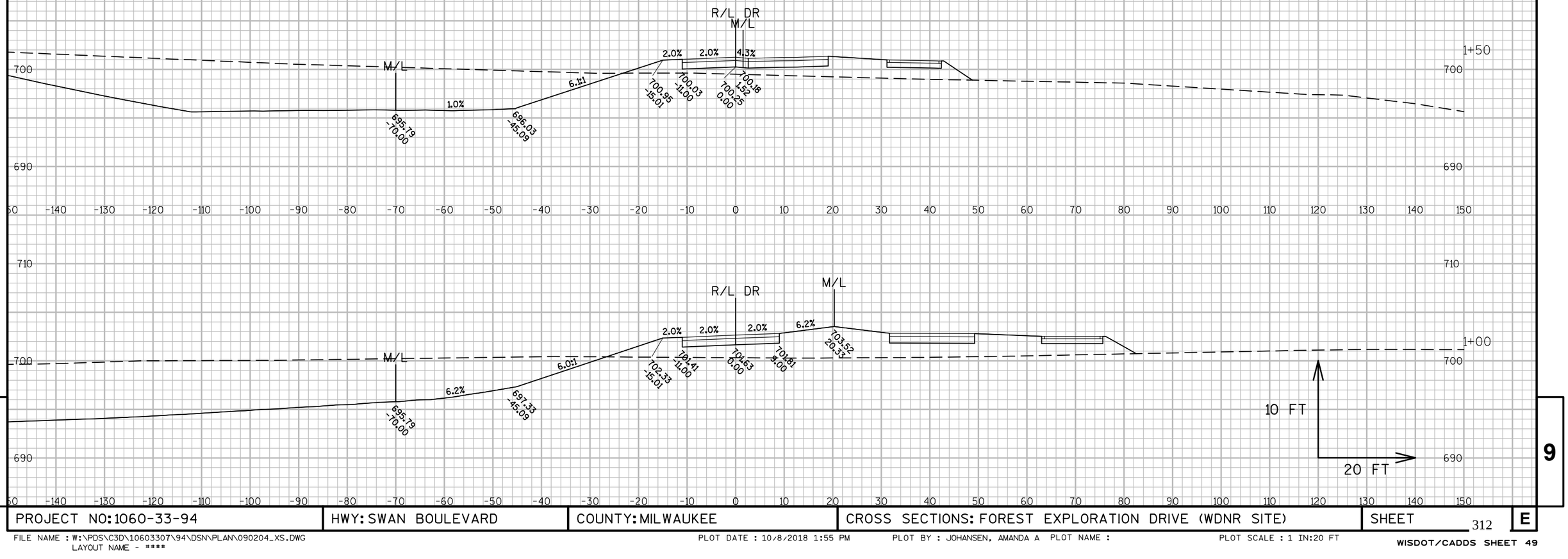
9

PROJECT NO:1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 311	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 1:48 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

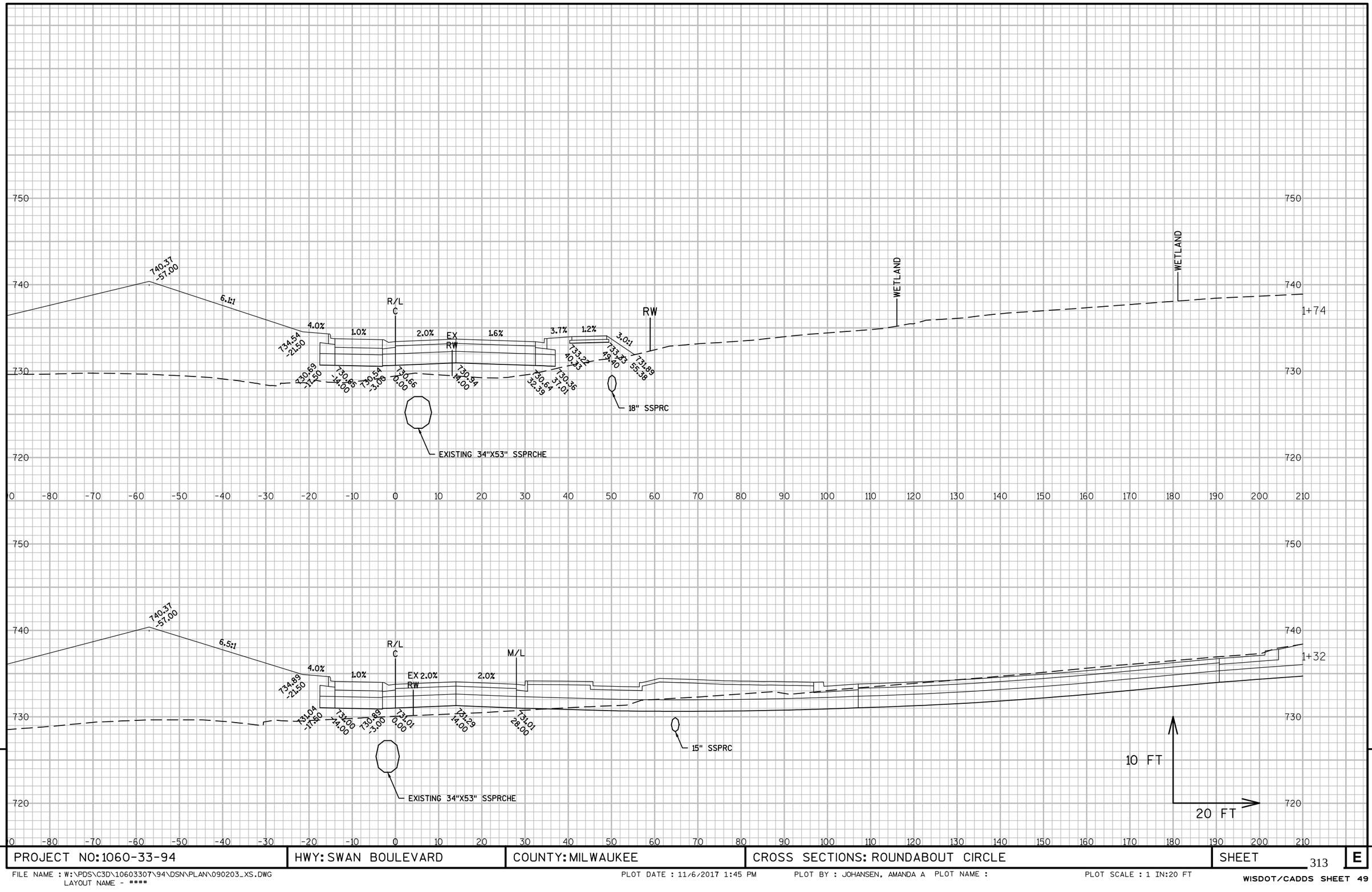
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: FOREST EXPLORATION DRIVE (WDNR SITE)	SHEET 312	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090204_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 10/8/2018 1:55 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

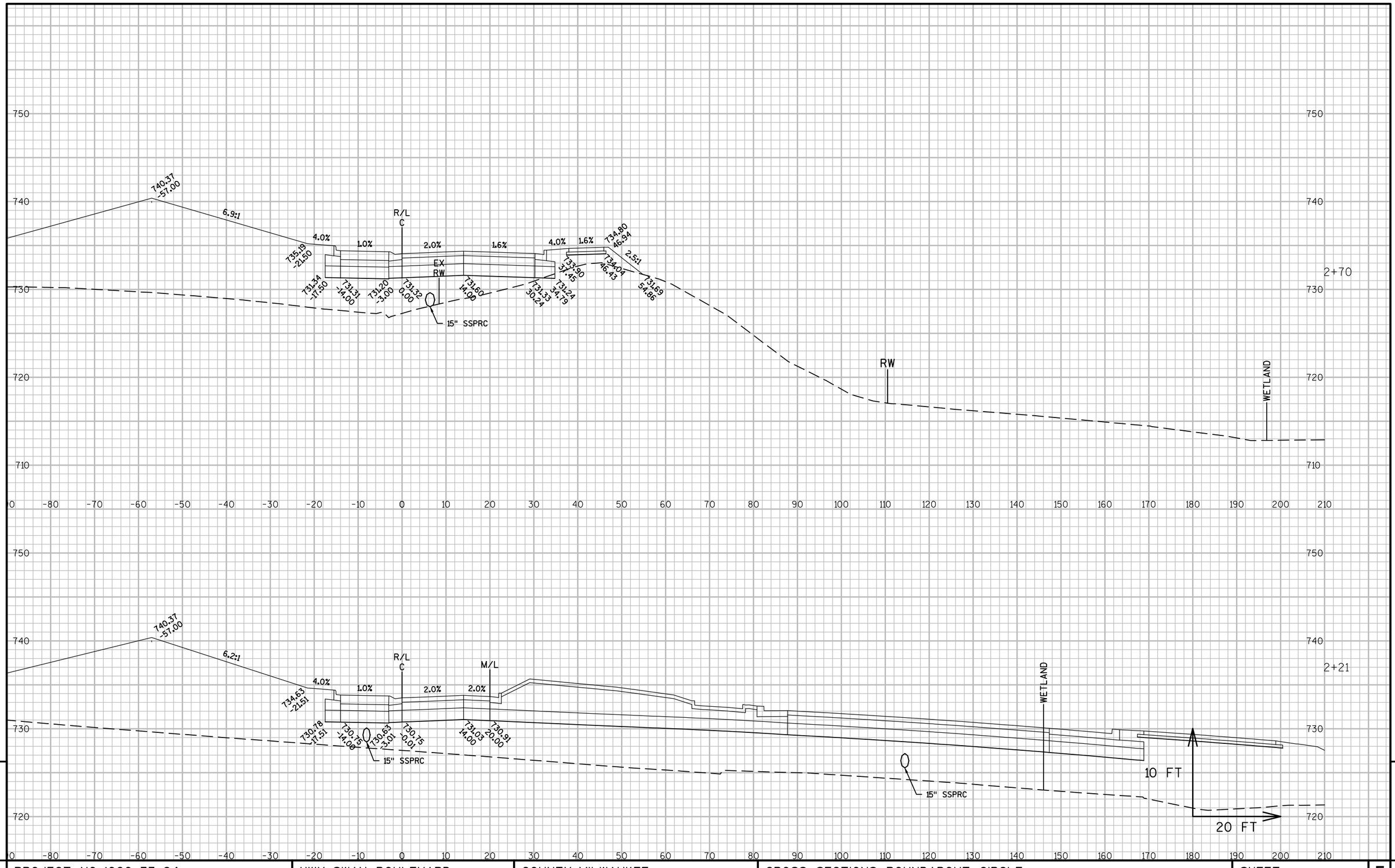


PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: ROUNDABOUT CIRCLE	SHEET 313	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090203_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:45 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

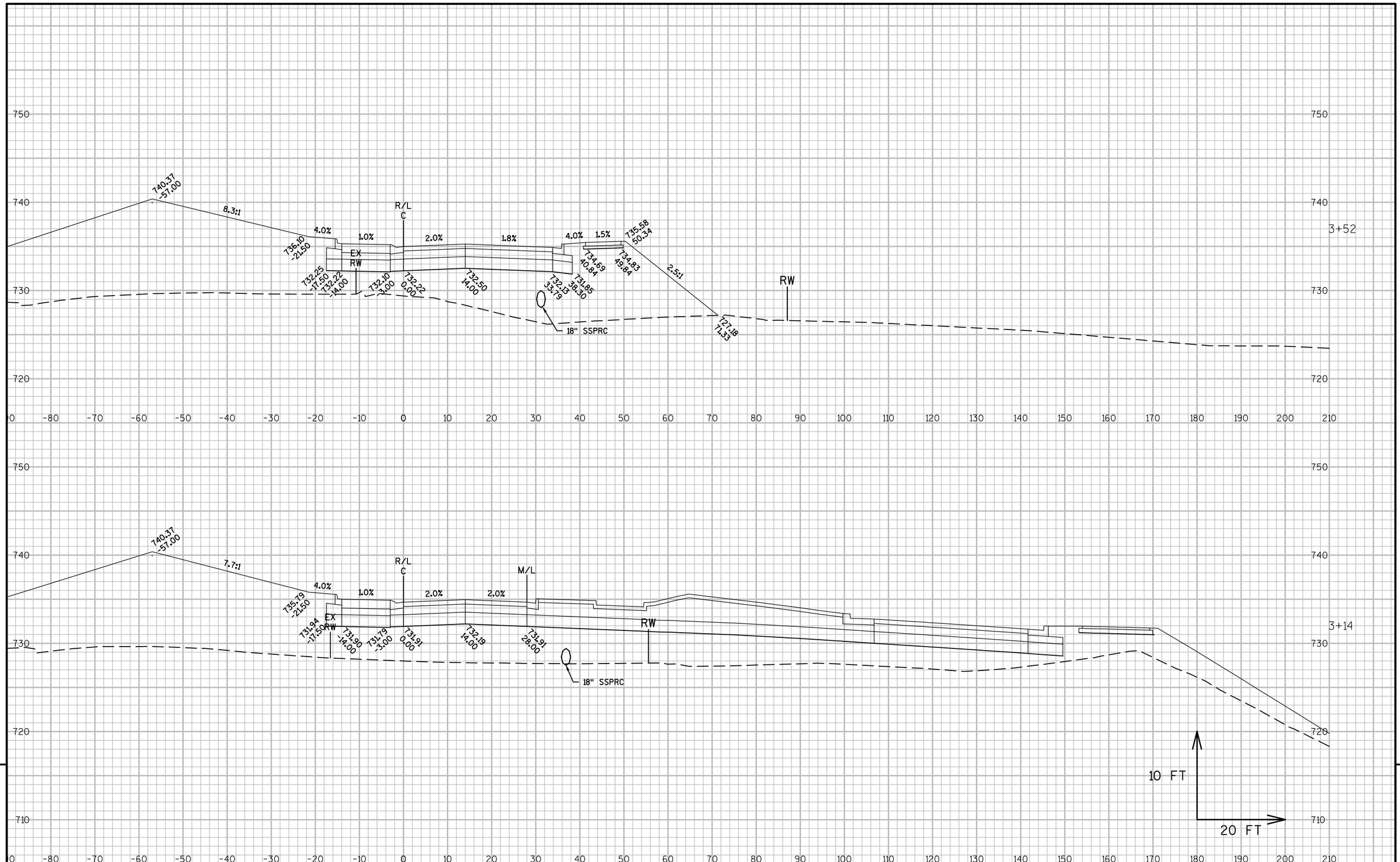
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: ROUNDABOUT CIRCLE	SHEET 314	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090203_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:46 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9

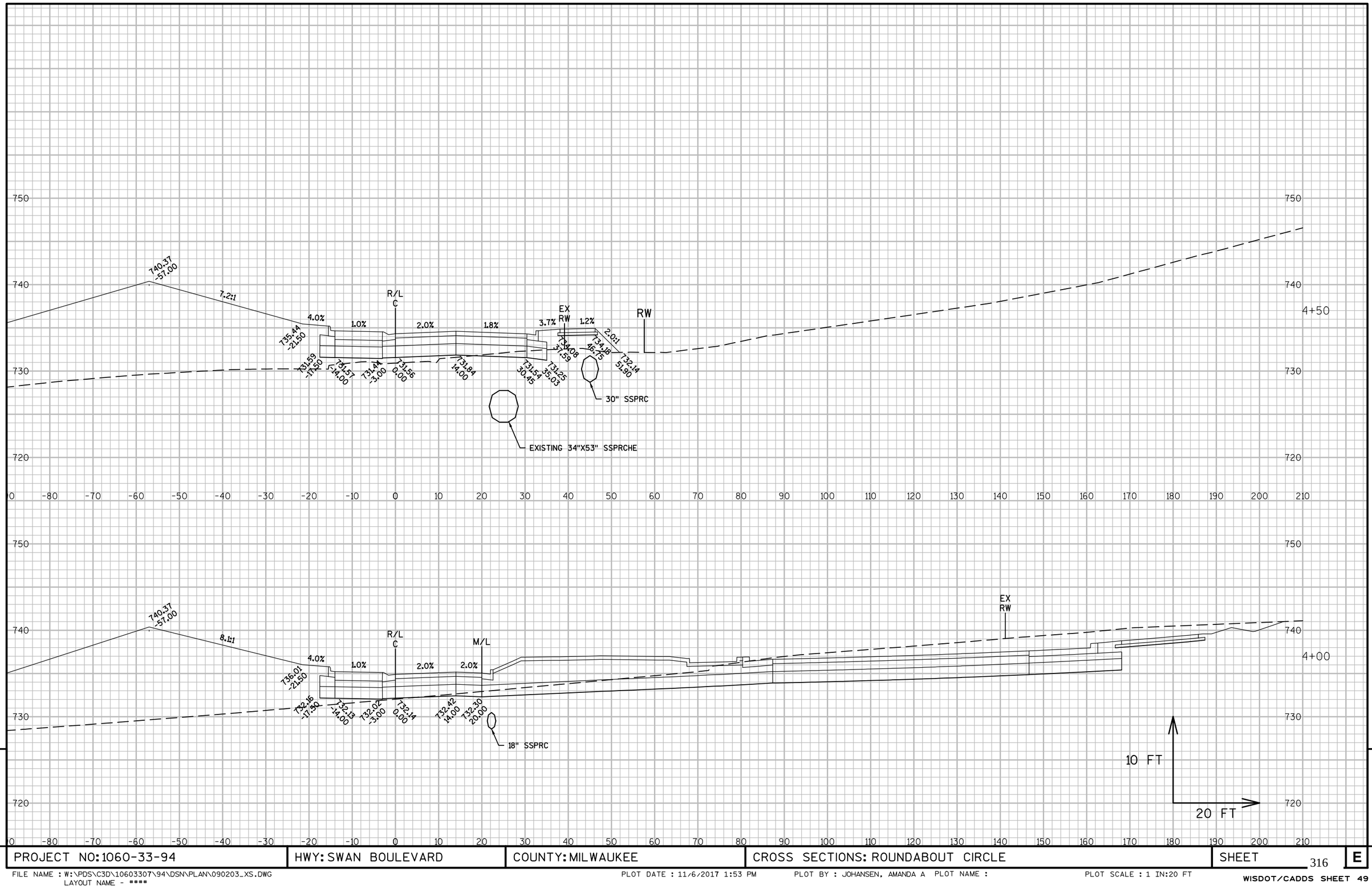
9

PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: ROUNDABOUT CIRCLE	SHEET 315 E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090203_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:49 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49



9	PROJECT NO: 1060-33-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	CROSS SECTIONS: ROUNDABOUT CIRCLE	SHEET 316 E

9

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\090203_XS.DWG
LAYOUT NAME - ****

PLOT DATE : 11/6/2017 1:53 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

WKE

MAY 2019

PROJECT ID: 1060-35-94

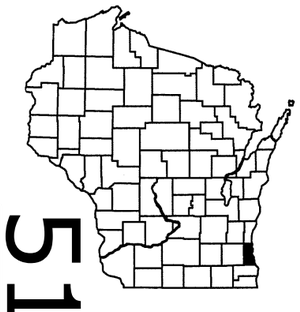
WITH: 1060-33-94 & 1693-37-74

COUNTY: MILWAUKEE

ORDER OF SHEETS

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

TOTAL SHEETS = 36



51

N

DESIGN DESIGNATION		SWAN BOULEVARD
A.A.D.T.	2014	= 13,490
A.A.D.T.	2035	= 14,970
D.H.V.	2035	= 2,115
D.D.		= 60% EB/40% WB
T.		= 2.85% EB/2.85% WB
DESIGN SPEED		= 35 MPH
ESALS		= 3,241,200

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
WOODED OR SHRUB AREA		OVERHEAD ELECTRIC	OH
		UTILITY PEDESTAL	
		POWER POLE	
		TELEPHONE POLE	
		LIGHT POLE	

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-35-94	———	———

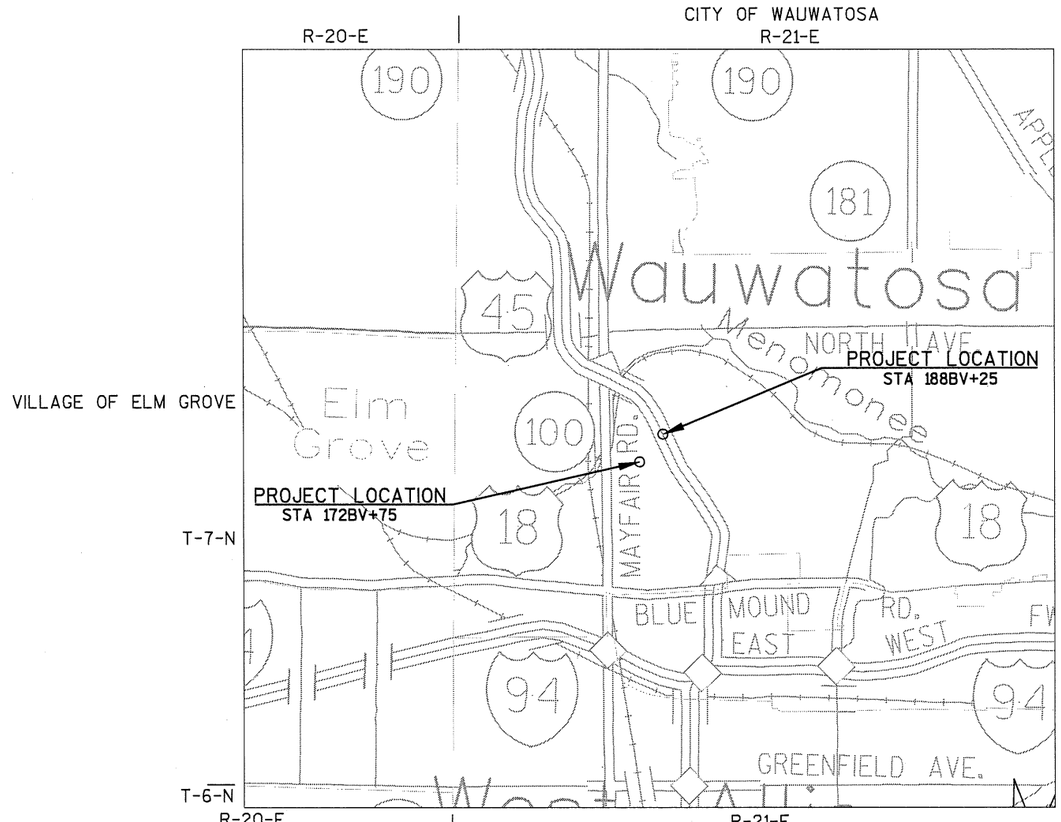
ZOO IC, SWAN BLVD ROADWAY MAINT

UNDERWOOD PARKWAY TO USH 45

LOCAL STREET

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1060-35-94



LAYOUT

SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE 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.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	KAPUR & ASSOCIATES
Designer	WISDOT
Project Manager	CHRISTOPHER HAGER
Regional Examiner	
Regional Supervisor	WAFA ELQAQ

APPROVED FOR THE DEPARTMENT

DATE: 3/12/19 (Signature)

E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\010101_TI-10603594.DWG

PLOT DATE : 3/12/2019 7:29 AM

PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

WISDOT/CADDS SHEET 10

UTILITY CONTACTS

AT&T WISCONSIN
MR. JAY BULANEK
2005 PEWAUKEE RD
WAUKESHA, WI 53188
PHONE: (262) 896-7669
CELL: (414) 491-2855
jb5175@att.com

CHARTER COMMUNICATIONS
MR. PETER KRUZELA
1320 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
PHONE: (414) 908-1339
CELL: (414) 688-5376
pete.kruzela@charter.com
wis.engineering@charter.com

MILWAUKEE COUNTY – WATER & SANITARY
MR. DANIEL MURPHY
633 W. WISCONSIN AVENUE
SUITE 1000
MILWAUKEE, WI 53203
PHONE: (414) 257-5942
daniel.murphy@milwaukeecountywi.gov

WAUWATOSA, CITY OF - LIGHTING
MR. RANDY MICHELZ
11100 W. WALNUT RD
WAUWATOSA, WI 53226
PHONE: (414) 479-8929
rmichelz@wauwatosa.net

WAUWATOSA, CITY OF - WATER
MR. ADAM.FLORIN
7725 W. NORTH AVENUE
WAUWATOSA, WI 53213
PHONE: (414) 831-0805
aflorin@wauwatosa.net

WAUWATOSA, CITY OF - SEWER
MR. CHRIS BENNETT
7725 W. NORTH AVENUE
WAUWATOSA, WI 53213
PHONE: (414) 479-8935
cbennett@wauwatosa.net

WE ENERGIES - ELECTRIC
SEND ALL CORRESPONDENCE TO:
MS. NICOLE SMULLEN
333 W. EVERETT STREET - A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
CELL: (414) 460-7190
nicole.smullen@we-energies.com

CONSTRUCTION FIELD CONTACT:
MR. NICHOLAS WELCH
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5765
CELL: (414) 791-0406
nicholas.welch@we-energies.com

WE ENERGIES - GAS
SEND ALL CORRESPONDENCE TO:
MS. NICOLE SMULLEN
333 W. EVERETT STREET - A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
CELL: (414) 460-7190
nicole.smullen@we-energies.com

CONSTRUCTION FIELD CONTACT:
MR. NICK ERNSTER
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5574
nicholas.ernster@we-energies.com

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MS. KRISTINA BETZOLD
DNR SERVICE CENTER
2925 COLUMBIA DR
PORTAGE, WI 53901-0950
PHONE: (414) 263-8517
CELL: (414) 507-4946
kristina.betzold@wisconsin.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MS. BRENDA RUENGER – ENVIRONMENTAL COORDINATOR
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
PHONE: (262) 548-6709
brenda.ruenger@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. CHRISTOPHER HAGER, PROJECT MANAGER MR. LANCE PARVE, DESIGN LEAD
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
PHONE: (414) 750-1487 – CHRIS HAGER
CELL NOS. (414) 731-5375 – LANCE PARVE
christopher.hager@dot.wi.gov
lance.parve@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. GREG BERRY – UTILITY COORDINATOR
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
CELL: (414) 750-7828
gregory.berry@dot.wi.gov

GENERAL NOTES

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

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.

DO NOT REMOVE TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

REFER TO PROJECT 1060-33-94 FOR TRAFFIC CONTROL AND DETOUR PLAN. ALL WORK UNDER THIS PROJECT TO BE CONSTRUCTED CONCURRENTLY WITH PROJECT 1060-33-94

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
PLAN DETAILS
PAVEMENT MARKING
TRAFFIC CONTROL
ALIGNMENT LAYOUT

OTHER AGENCIES

MILWAUKEE COUNTY DPW
MR. DANIEL MURPHY, HWY MAINT. MANAGER
10190 WATERTOWN PLANK ROAD
MILWAUKEE, WI 53226
PHONE: (414) 257-5942
daniel.murphy@milwaukeecountywi.gov

MILWAUKEE COUNTY PARK SYSTEM
MS. SARAH TOOMSEN
9480 WATERTOWN PLANK ROAD
WAUWATOSA, WI 53226
PHONE: (414) 257-7389
CELL: (414) 380-2052
sarah.toomsen@milwaukeecountywi.gov

MILWAUKEE COUNTY TRANSIT SYSTEM
MS. MELANIE FLYNN
1942 N. 17TH STREET
MILWAUKEE, WI 53205
PHONE: (414) 343-1764
mflynn@mcts.org

MILWAUKEE METRO SEWERAGE DIST
MR. LARRY ANDERSON
260 W. SEEBOTH STREET
MILWAUKEE, WI 53204
PHONE: (414) 225-2241
landerson@mmsd.com

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMISSION
MR. ROB MERRY
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953-4289
CELL: (920) 912-1086
rmerry@sewrpc.org

UWM TRUST
MR. DAVID H. GILBERT
1440 EAST NORTH AVENUE
MILWAUKEE, WI 53202
PHONE: (414) 906-4670
CELL: (414) 412-4140
dhg@uwmfdn.org

WAUWATOSA, CITY OF
MR. BILL WEHRLEY, CITY ENGINEER
7725 W. NORTH AVENUE
WAUWATOSA, WI 53213
PHONE: (414) 479-8929
wwehrley@wauwatosa.net

STANDARD ABBREVIATIONS

AGG	AGGREGATE
ASPH	ASPHALTIC
BM	BENCH MARK
C&G	CURB AND GUTTER
CONC	CONCRETE
CP	CULVERT PIPE
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
EB	EASTBOUND
L	LENGTH OF CURVE
LT	LEFT
NB	NORTHBOUND
PAVT	PAVEMENT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/W	RIGHT OF WAY
RT	RIGHT
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
WB	WESTBOUND

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

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

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

2

2

N

USH 45

UNDERWOOD PARKWAY

STH 100

SWAN BOULEVARD

DISCOVERY PARKWAY

W. WATERTOWN PLANK ROAD

170BV

173BV

180BV

185BV

190BV

195BV

210BV

215BV

220BV

225BV

PROJECT LOCATION 1060-35-94
STA. 186BV+50
CONCRETE REPAIR

PROJECT LOCATION 1060-35-94
STA. 173BV+50
CONCRETE REPAIR

CITY OF WAUWATOSA

PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 3	E

2

2

PAVEMENT DETAIL LEGEND

- (CP05) CONCRETE PAVEMENT 8-INCH, DOWELED AND TINED
- (CP06) CONCRETE PAVEMENT 8-INCH, RED AND DOWELED
- (CP07) CONCRETE SIDEWALK 5-INCH, RED AND DOWELED WITH FELT IN MEDIAN
- (CW01) CONCRETE SIDEWALK 5-INCH WITH FELT
- (CC01) CONCRETE CURB PEDESTRIAN
- (CM01) CONCRETE MEDIAN SLOPED NOSE, TYPE 1
- (CG16) CONCRETE CURB AND GUTTER 31-INCH
- XXX SAWING CONCRETE
- INLET PROTECTION, TYPE B

NOTE: SAWCUT AND CONCRETE REPLACEMENT ALONG JOINT UNLESS NOTED

UNDERWOOD PARKWAY

SWAN BOULEVARD

176+00BV

175+00BV

174+00BV

173+00BV

172+00BV

CP05 +51.16 -22.03'

+36.50 -22.03'

+65.94 13.00'

CP05 +80.79 13.01'

N

SEE DETAIL B

SEE DETAIL A

DETAIL A

+18.48 0.00'

+18.85 13.08'

CP06

173+00BV

+93.07 0.00'

CG16

CM01

CP07

+04.59 13.14'

+04.59 14.93'

CG16

+92.95 15.21'

DETAIL B

CC01

CW01

CC01

+42.82 22.79'

CP05

+38.18 23.34'

+38.39 28.11'

+43.57 26.39'

PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 4	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021201_PD-10603594.DWG
LAYOUT NAME - 021200-2

PLOT DATE : 1/23/2019 12:39 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

USH 45

B-40-775

SWAN BOULEVARD

184+00BV

185+00BV

186+00BV

187+00BV

188+00BV

189+00BV

+69.01
-22.00'

+84.62
-22.00'

CP05

+69.20
-11.00'

+84.37
-11.00'

+80.45
10.00'

+94.91
10.00'

CP05

+80.53
21.00'

+94.98
21.00'

+77.88
-27.00'

+90.51
-11.00'

+21.27
-27.00'

+77.63
-11.00'

CP05

+90.46
0.00'

+21.27
0.00'

+01.09
18.92'

+07.09
18.99'

+07.06
21.03'

+00.81
32.00'

+91.83
29.11'

CP05

+21.03
21.00'

+85.83
29.01'

+20.91
32.00'

+85.83
37.00'

+91.79
32.00'

+18.13
32.00'

+17.95
37.00'

USH 45

VLV

MP

MH

N

PAVEMENT DETAIL LEGEND

CP05 CONCRETE PAVEMENT 8-INCH, DOWELED AND TINED

CG16 CONCRETE CURB AND GUTTER 31-INCH

xxx SAWING CONCRETE

NOTE: SAWCUT AND CONCRETE REPLACEMENT ALONG JOINT UNLESS NOTED

PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 5	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\021201_PD-10603594.DWG
LAYOUT NAME - 021200-1

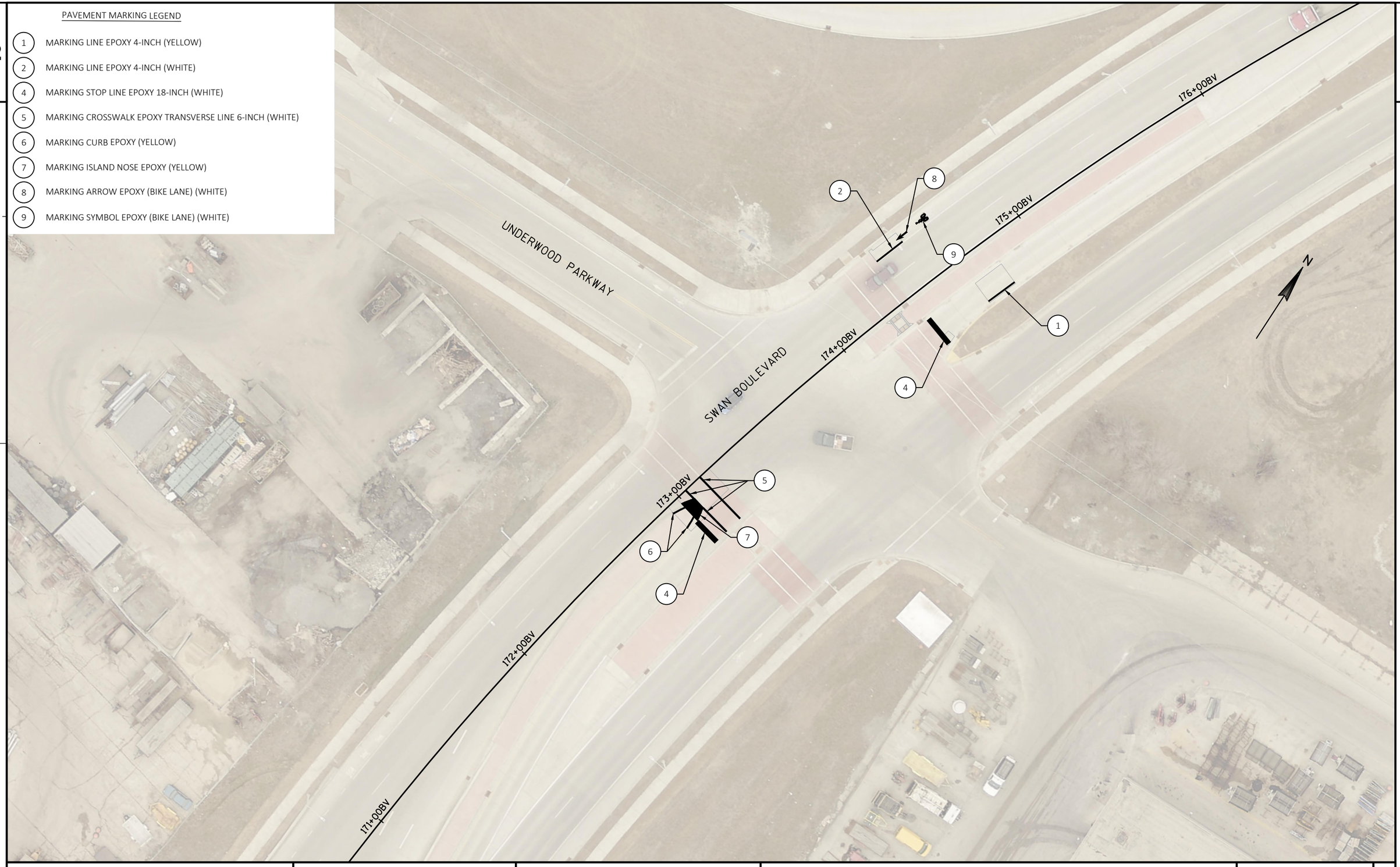
PLOT DATE : 11/1/2018 11:49 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

PAVEMENT MARKING LEGEND

1. MARKING LINE EPOXY 4-INCH (YELLOW)
2. MARKING LINE EPOXY 4-INCH (WHITE)
4. MARKING STOP LINE EPOXY 18-INCH (WHITE)
5. MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (WHITE)
6. MARKING CURB EPOXY (YELLOW)
7. MARKING ISLAND NOSE EPOXY (YELLOW)
8. MARKING ARROW EPOXY (BIKE LANE) (WHITE)
9. MARKING SYMBOL EPOXY (BIKE LANE) (WHITE)



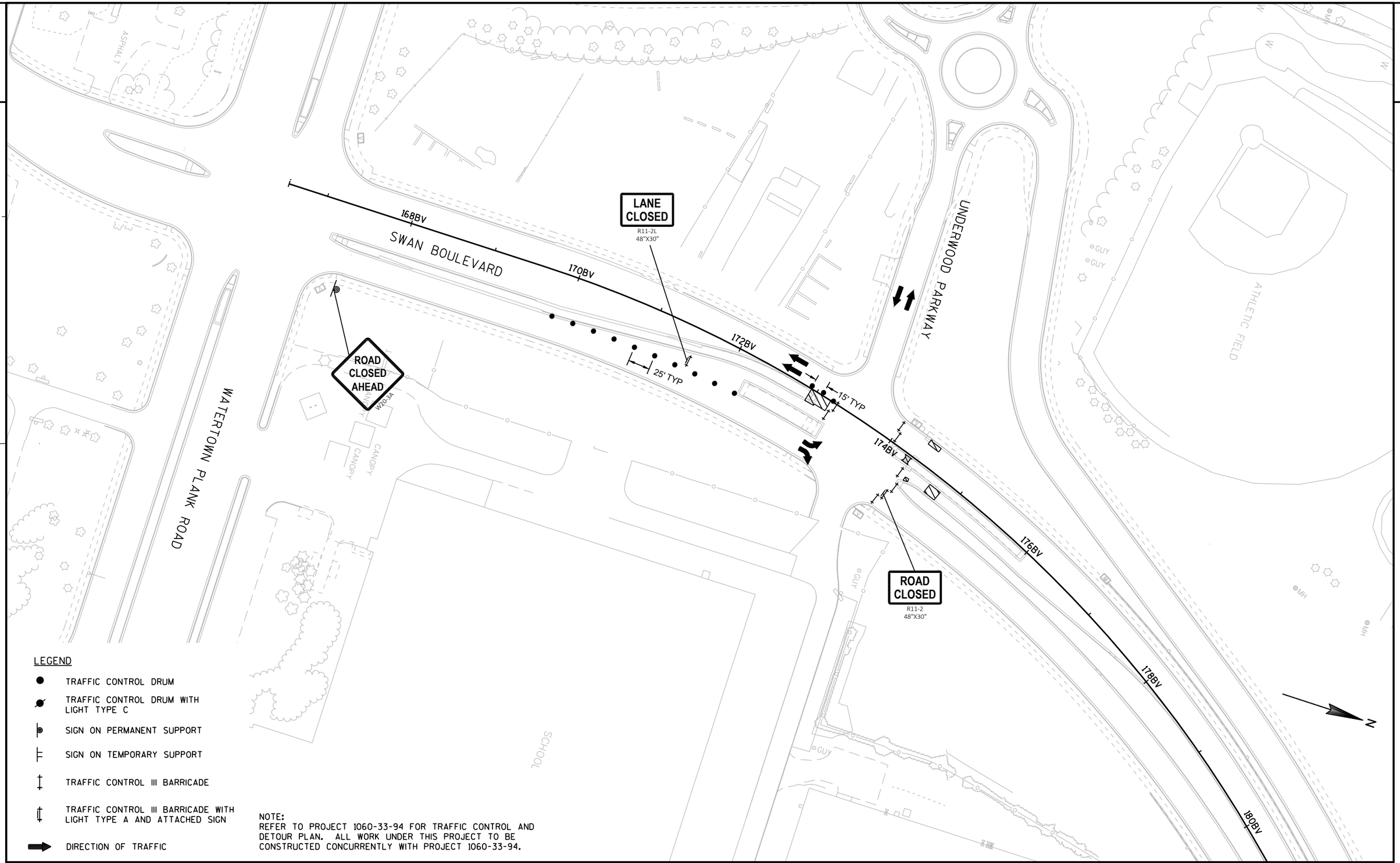
2

PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 6	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\024501_PM-10603594.DWG
LAYOUT NAME - 021200-2

PLOT DATE : 11/1/2018 10:03 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

2



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL III BARRICADE
- TRAFFIC CONTROL III BARRICADE WITH LIGHT TYPE A AND ATTACHED SIGN
- DIRECTION OF TRAFFIC

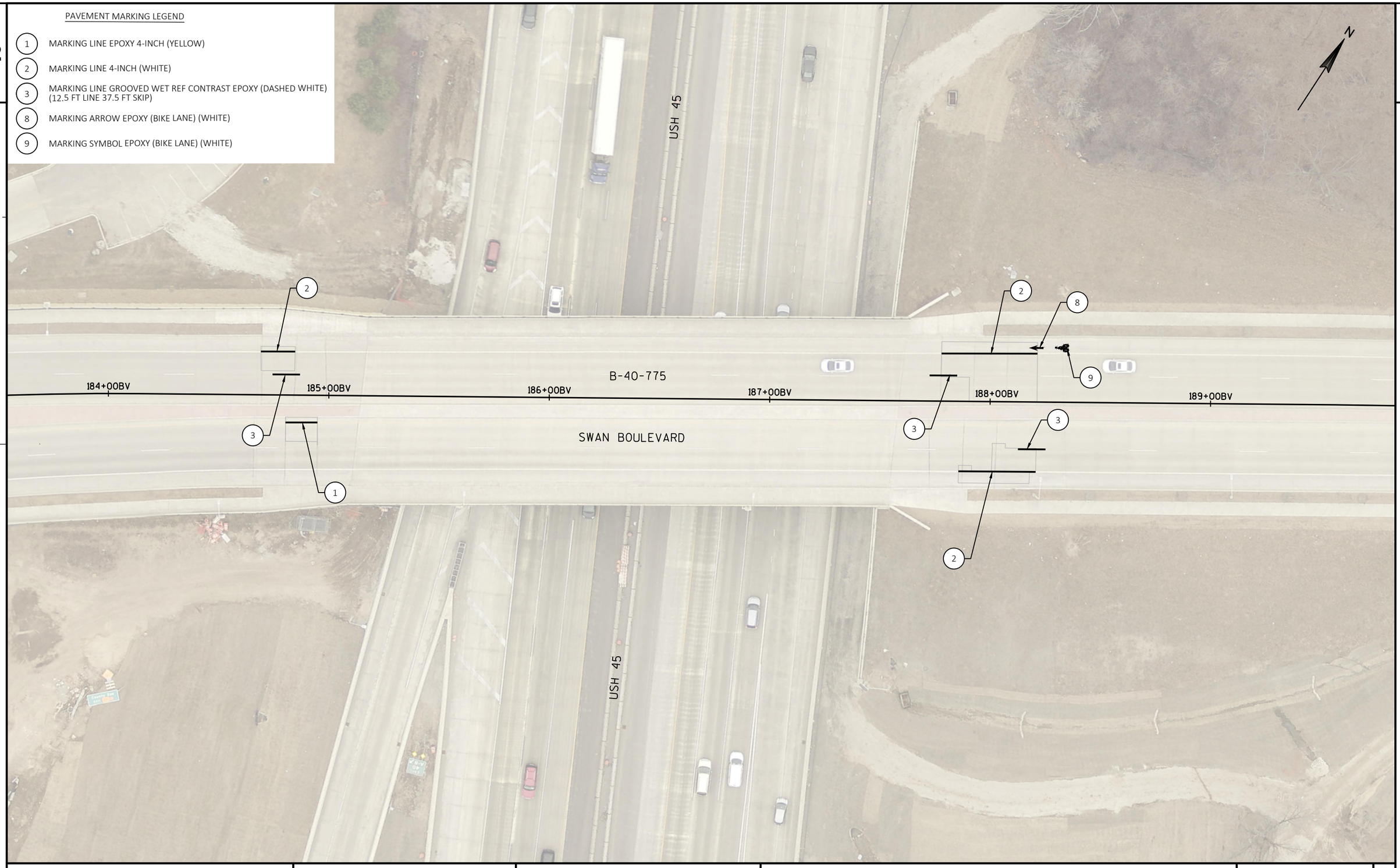
NOTE:
REFER TO PROJECT 1060-33-94 FOR TRAFFIC CONTROL AND DETOUR PLAN. ALL WORK UNDER THIS PROJECT TO BE CONSTRUCTED CONCURRENTLY WITH PROJECT 1060-33-94.

PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 7	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\025001_TC-10603594.DWG PLOT DATE : 1/23/2019 2:32 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1" = 100'_XREF

PAVEMENT MARKING LEGEND

1. MARKING LINE EPOXY 4-INCH (YELLOW)
2. MARKING LINE 4-INCH (WHITE)
3. MARKING LINE GROOVED WET REF CONTRAST EPOXY (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
8. MARKING ARROW EPOXY (BIKE LANE) (WHITE)
9. MARKING SYMBOL EPOXY (BIKE LANE) (WHITE)



PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 8	E

2

N

ATHLETIC FIELD

VLV VLV

GUY GUY

178BV

176BV

SWAN BOULEVARD

174BV

UNDERWOOD PARKWAY

BOLLARD

GUY

MH

BOLLARDS (4)

BOLLARD

BM943
BM 943 SE BOLT OF HYD
STA 173BV+09.60, 58.28' LT
N 302844.00
E 570207.00
ELEV. 741.706

172BV

W

W W W

170BV

BOLLARDS (4)

CANOPY

INL

MH

N

CP629
CP FENO 629
STA 185BV+16.24, 210.93' LT
N 303939.859
E 570862.909
ELEV. 751.986

MH

188BV

SWAN BOULEVARD

190BV

186BV

184BV

BM1000
BM N. SWAN BLVD. BRIDGE B-40-775 DISC IN SE PARAPET WALL
STA 185BV+11.13, 47.15' RT
N 303719.683
E 570997.643
ELEV. 773.199

MP

VLV

182BV

USH 45

MH

DOCK

W

INL

W

W

SIGN

2

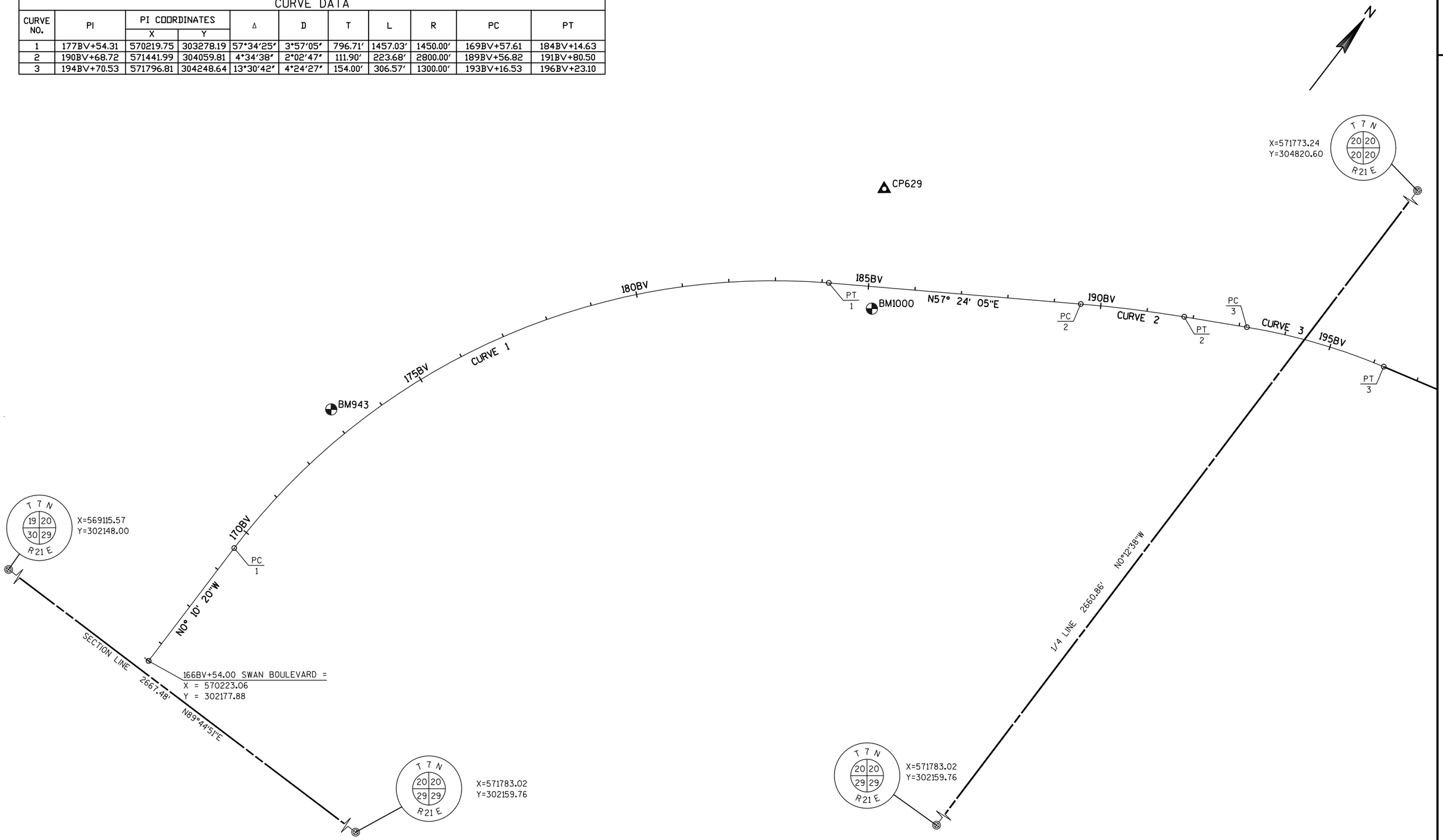
PROJECT NO:1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 9	E

FILE NAME : W:\PDS\C3D\10603307\94\DSN\PLAN\027200_AD-10603594.DWG
LAYOUT NAME - SHEET - (1)

PLOT DATE : 10/29/2018 7:10 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 42

CURVE DATA										
CURVE NO.	PI	PI COORDINATES		Δ	D	T	L	R	PC	PT
		X	Y							
1	177BV+54.31	570219.75	303278.19	57°34'25"	3°57'05"	796.71'	1457.03'	1450.00'	169BV+57.61	184BV+14.63
2	190BV+68.72	571441.99	304059.81	4°34'38"	2°02'47"	111.90'	223.68'	2800.00'	189BV+56.82	191BV+80.50
3	194BV+70.53	571796.81	304248.64	13°30'42"	4°24'27"	154.00'	306.57'	1300.00'	193BV+16.53	196BV+23.10



PROJECT NO: 1060-35-94	HWY: SWAN BOULEVARD	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET 10	E

1060-35-94

Line	Item	Item Description	Unit	Total	Qty
0006	204.0100	Removing Pavement	SY	252.000	252.000
0008	204.0150	Removing Curb & Gutter	LF	28.000	28.000
0010	204.0155	Removing Concrete Sidewalk	SY	10.000	10.000
0026	213.0100	Finishing Roadway (project) 02. 1060-35-94	EACH	1.000	1.000
0032	405.0100	Coloring Concrete WisDOT Red	CY	8.000	8.000
0034	415.0080	Concrete Pavement 8-Inch	SY	252.000	252.000
0038	416.0610	Drilled Tie Bars	EACH	153.000	153.000
0040	416.0620	Drilled Dowel Bars	EACH	149.000	149.000
0070	601.0331	Concrete Curb & Gutter 31-Inch	LF	12.000	12.000
0076	601.0600	Concrete Curb Pedestrian	LF	16.000	16.000
0078	602.0410	Concrete Sidewalk 5-Inch	SF	90.000	90.000
0080	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	16.000	16.000
0122	619.1000	Mobilization	EACH	0.050	0.050
0124	620.0300	Concrete Median Sloped Nose	SF	51.000	51.000
0144	628.7010	Inlet Protection Type B	EACH	4.000	4.000
0176	642.5401	Field Office Type D	EACH	0.050	0.050
0178	643.0300	Traffic Control Drums	DAY	81.000	81.000
0180	643.0420	Traffic Control Barricades Type III	DAY	19.000	19.000
0182	643.0705	Traffic Control Warning Lights Type A	DAY	38.000	38.000
0184	643.0900	Traffic Control Signs	DAY	6.000	6.000
0190	643.1050	Traffic Control Signs PCMS	DAY	6.000	6.000
0192	643.5000	Traffic Control	EACH	0.200	0.200
0196	646.1020	Marking Line Epoxy 4-Inch	LF	139.000	139.000
0198	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	37.500	37.500
0202	646.5020	Marking Arrow Epoxy	EACH	2.000	2.000
0206	646.5220	Marking Symbol Epoxy	EACH	2.000	2.000
0208	646.6120	Marking Stop Line Epoxy 18-Inch	LF	28.000	28.000
0214	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	53.000	53.000
0218	646.8120	Marking Curb Epoxy	LF	12.000	12.000
0220	646.8220	Marking Island Nose Epoxy	EACH	1.000	1.000
0240	690.0250	Sawing Concrete	LF	586.000	586.000
0242	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0304	SPV.0105	Special 1100. Survey Project 1060-35-94	LS	1.000	1.000

3

REMOVALS

CATEGORY	ROADWAY	STATION		TO STATION	204.0100 REMOVING PAVEMENT SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY
1000	SWAN BOULEVARD	172BV+79	-	173BV+05	--	12	4
	SWAN BOULEVARD	174BV+23	-	174BV+32	30	16	6
	SWAN BOULEVARD	174BV+38	-	174BV+53	9	--	--
	SWAN BOULEVARD	174BV+40	-	174BV+46	3	--	--
	SWAN BOULEVARD	174BV+68	-	174BV+83	18	--	--
	SWAN BOULEVARD	184BV+69	-	184BV+25	18	--	--
	SWAN BOULEVARD	184BV+81	-	184BV+95	18	--	--
	SWAN BOULEVARD	187BV+77	-	188BV+21	116	--	--
	SWAN BOULEVARD	187BV+88	-	188BV+18	40	--	--
	TOTAL				252	28	10

SAWING

CATEGORY	ROADWAY	STATION		TO STATION	690.0250 SAWING CONCRETE LF
1000	SWAN BOULEVARD	172BV+79	-	173BV+05	82
	SWAN BOULEVARD	174BV+23	-	174BV+32	33
	SWAN BOULEVARD	174BV+40	-	174BV+46	20
	SWAN BOULEVARD	174BV+38	-	174BV+53	42
	SWAN BOULEVARD	174BV+68	-	174BV+83	52
	SWAN BOULEVARD	184BV+69	-	184BV+25	53
	SWAN BOULEVARD	184BV+81	-	184BV+95	51
	SWAN BOULEVARD	187BV+77	-	188BV+21	141
	SWAN BOULEVARD	187BV+88	-	188BV+18	112
	TOTAL				586

FIELD OFFICE

CATEGORY	LOCATION	642.5401 FIELD OFFICE TYPE D EACH
1000		0.05
	TOTAL	0.05

3

CONCRETE ITEMS

CATEGORY	LOCATION	STATION		TO STATION	405.0100 COLORING CONCRETE WISDOT RED CY	415.0080 CONCRETE PAVEMENT 8-INCH SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	601.0331 CONCRETE CURB & GUTTER 31-INCH LF	601.0600 CONCRETE CURB PEDESTRIAN LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF	620.0300 CONCRETE MEDIAN SLOPED NOSE TYPE 1 SF
1000	SWAN BOULEVARD	172BV+79	-	173BV+05	1		5		12	--	38	--	51
	SWAN BOULEVARD	172BV+79	-	173BV+05	7	25	40	13	--	--	--	--	--
	SWAN BOULEVARD	174BV+23	-	174BV+32	--	--			--	16	52	16	--
	SWAN BOULEVARD	174BV+38	-	174BV+53	--	9	12	8	--	--	--	--	--
	SWAN BOULEVARD	174BV+40	-	174BV+46	--	3	4	7	--	--	--	--	--
	SWAN BOULEVARD	174BV+68	-	174BV+83	--	18	12	18	--	--	--	--	--
	SWAN BOULEVARD	184BV+69	-	184BV+25	--	19	11	16	--	--	--	--	--
	SWAN BOULEVARD	184BV+81	-	184BV+95	--	18	10	16	--	--	--	--	--
	SWAN BOULEVARD	187BV+77	-	188BV+21	--	115	34	41	--	--	--	--	--
	SWAN BOULEVARD	187BV+88	-	188BV+18	--	45	25	30	--	--	--	--	--
	TOTAL				8	252	153	149	12	16	90	16	51

FINISHING ROADWAY

CATEGORY	LOCATION	213.0100 FINISHING ROADWAY (1060-35-94) EACH
1000		1
	TOTAL	1

MOBILIZATION

CATEGORY	LOCATION	619.1000 MOBILIZATION EACH
1000		0.05
	TOTAL	0.05

3

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS
1000	1	SWAN BOULEVARD (SOUTH OF UNDERWOOD PKWY)	5	13	65	3	15	6	30	1	5	1	5
		UNDISTRIBUTED			16		4		8		1		1
		TOTAL			81		19		38		6		6

TRAFFIC CONTROL

CATEGORY	LOCATION	643.5000 TRAFFIC CONTROL EACH
1000		0.2
	TOTAL	0.2

INLET PROTECTION

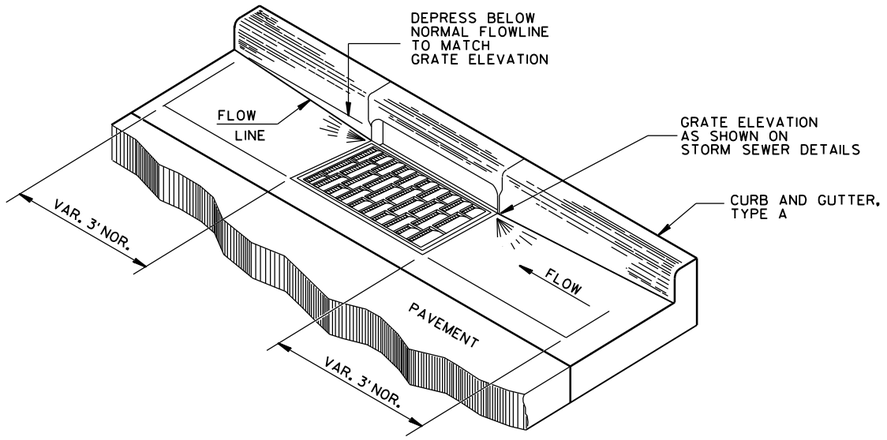
CATEGORY	ROADWAY	STATION	LOCATION	628.7010 INLET PROTECTION TYPE B EACH
1000	SWAN BOULEVARD	174BV+34	LT	1
	SWAN BOULEVARD	174BV+35	MEDIAN RT	1
	SWAN BOULEVARD	174BV+35	MEDIAN LT	1
	SWAN BOULEVARD	174BV+44	MEDIAN RT	1
	TOTAL			4

PAVEMENT MARKINGS

CATEGORY	LOCATION	STATION	TO	STATION	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	646.1545 MARKING LINE GROOVED WET REF CONTRAST EPOXY 4-INCH 12.5 FT LINE, 37.5 FT SKIP WHITE LF	646.5020 MARKING ARROW EPOXY (BIKE LANE) WHITE EACH	646.5220 MARKING SYMBOL EPOXY (BIKE LANE) WHITE EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH WHITE LF	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH WHITE LF	646.8120 MARKING CURB EPOXY YELLOW LF	646.8220 MARKING ISLAND NOSE EPOXY YELLOW EACH
1000	SWAN BOULEVARD	172+93BV	-	173+19BV	--	--	--	--	--	13	53	12	1
		174+38BV	-	174+83BV	15	15	--	1	1	15	--	--	--
		184+69BV	-	184+95BV	14	15	12.5	--	--	--	--	--	--
		187+77BV	-	188+22BV	--	80	25	1	1	--	--	--	--
	SUBTOTAL				29	110	37.5	2	2	28	53	12	1
	TOTAL				139		37.5	2	2	28	53	12	1

Standard Detail Drawing List

08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E10-02	INLET PROTECTION TYPE A, B, C AND D
11B02-02	CONCRETE MEDIAN NOSE
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C18-06A	CONCRETE PAVEMENT JOINTING
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C07-14E	PAVEMENT MARKING FOR BIKE LANES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

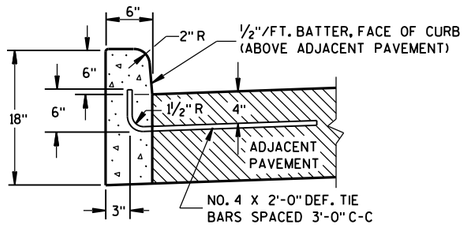
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

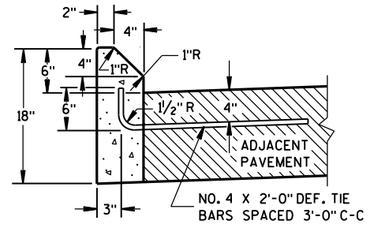
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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

(9) REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

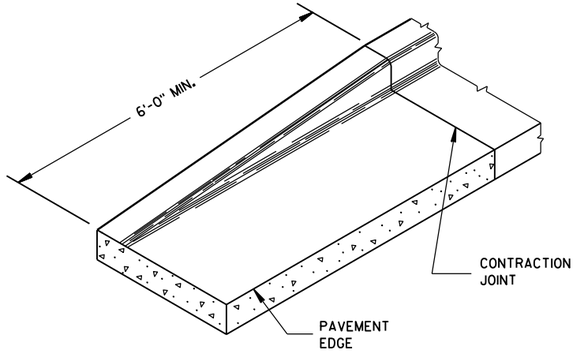


TYPES A(1) & D

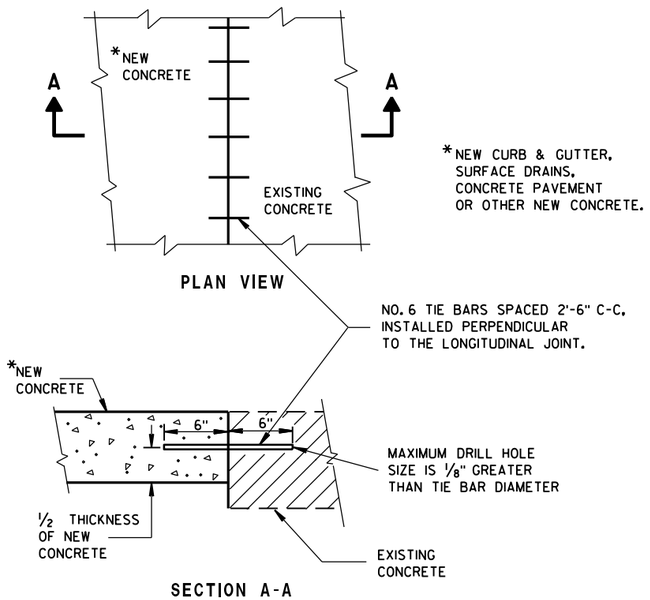


TYPES G(1) & J

CONCRETE CURB



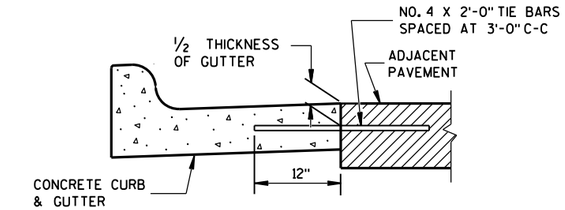
END SECTION CURB & GUTTER



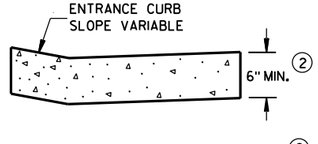
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

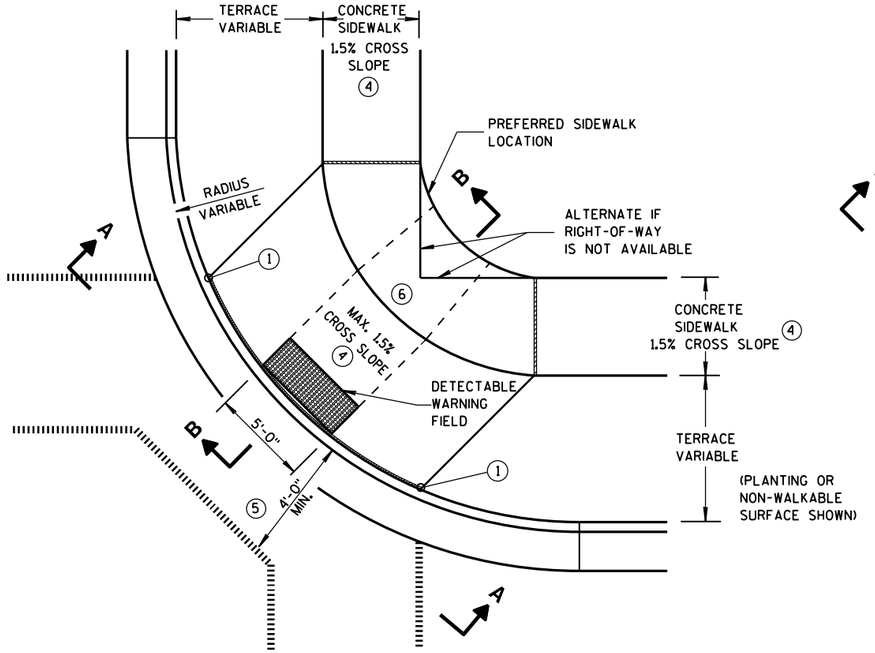
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
15
ENT
FHWA

6

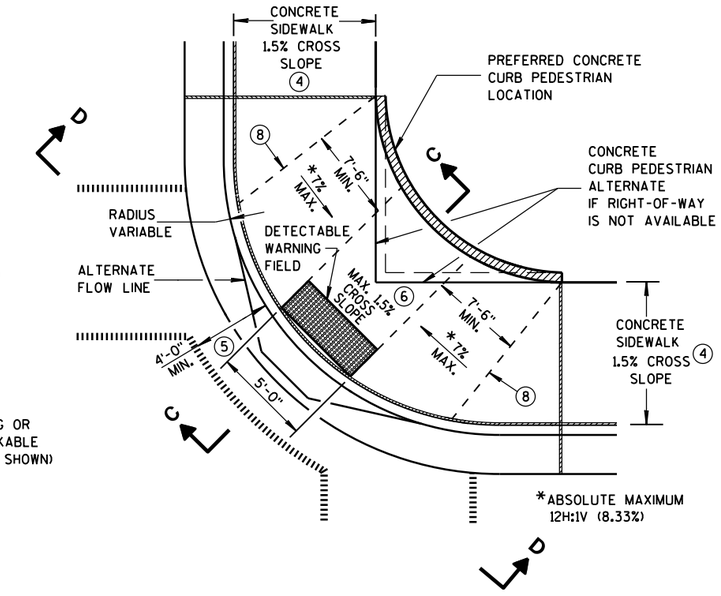
S.D.D. 8 D 1-20b



PLAN VIEW

TYPE 1 RAMP

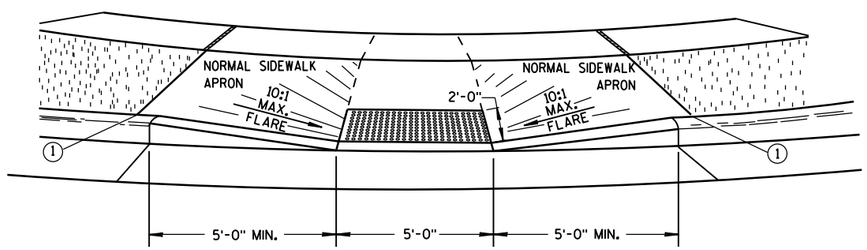
(CENTER OF CORNER RADIUS)



PLAN VIEW

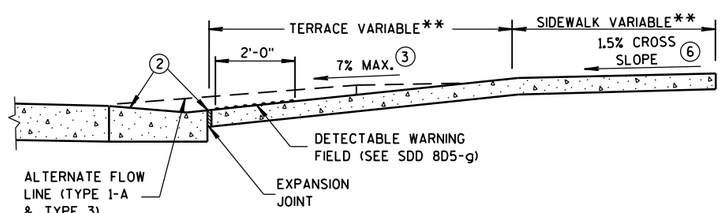
TYPE 1-A RAMP

(NO TERRACE)

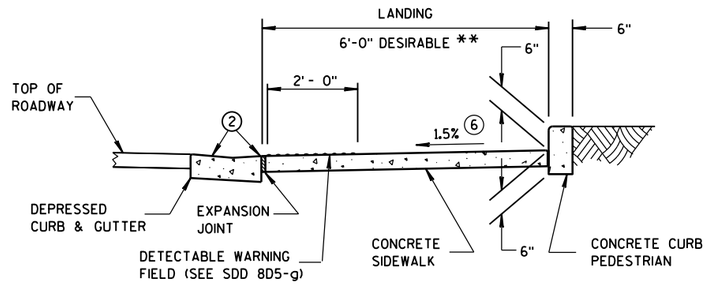


VIEW A-A

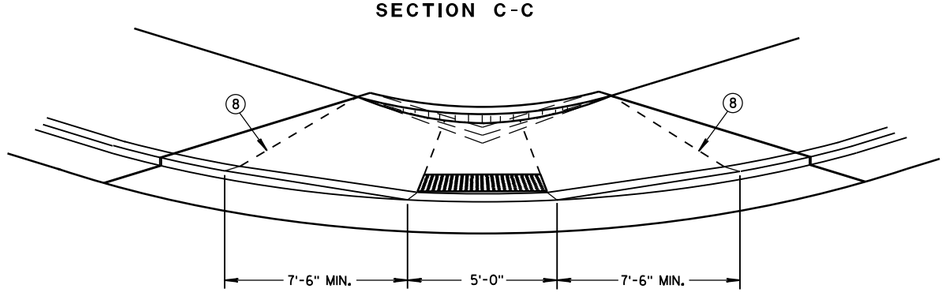
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

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

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

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

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

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

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

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

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

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

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

LEGEND

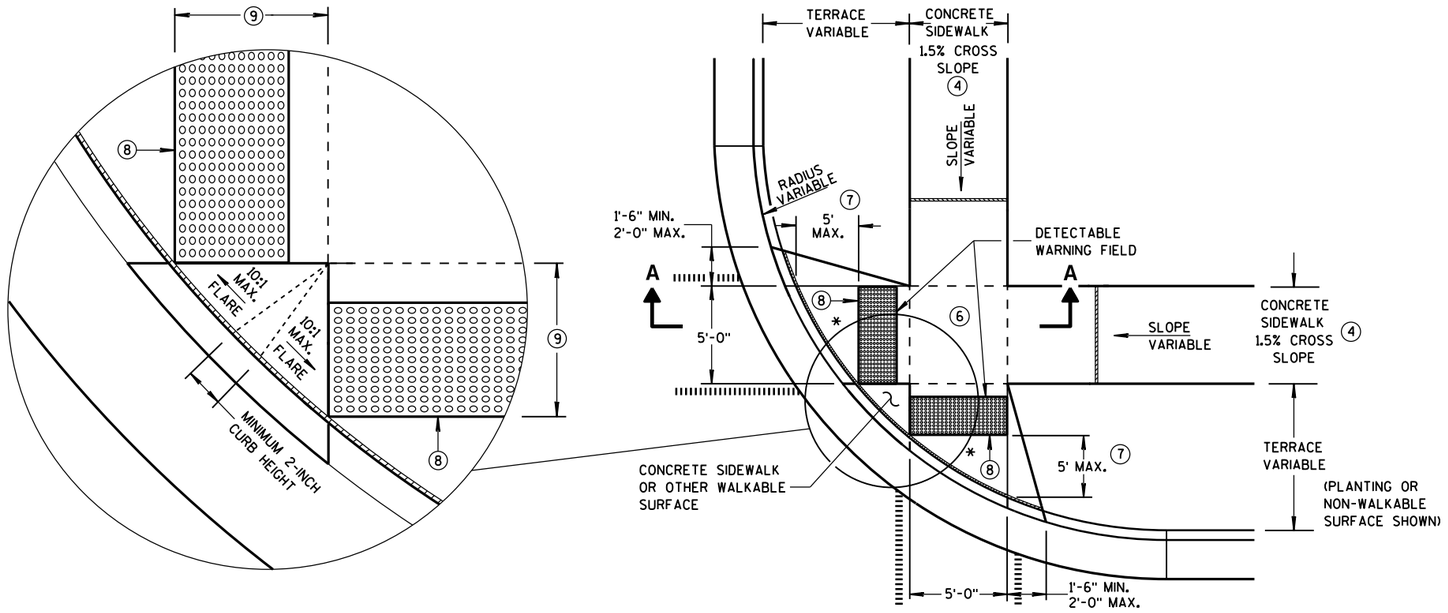
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

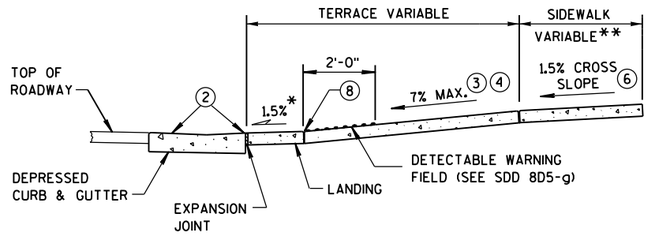
6

S.D.D. 8 D 5-19a



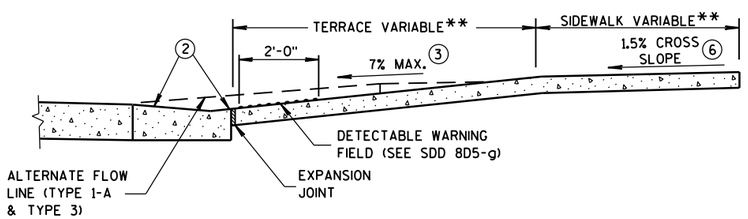
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

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



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

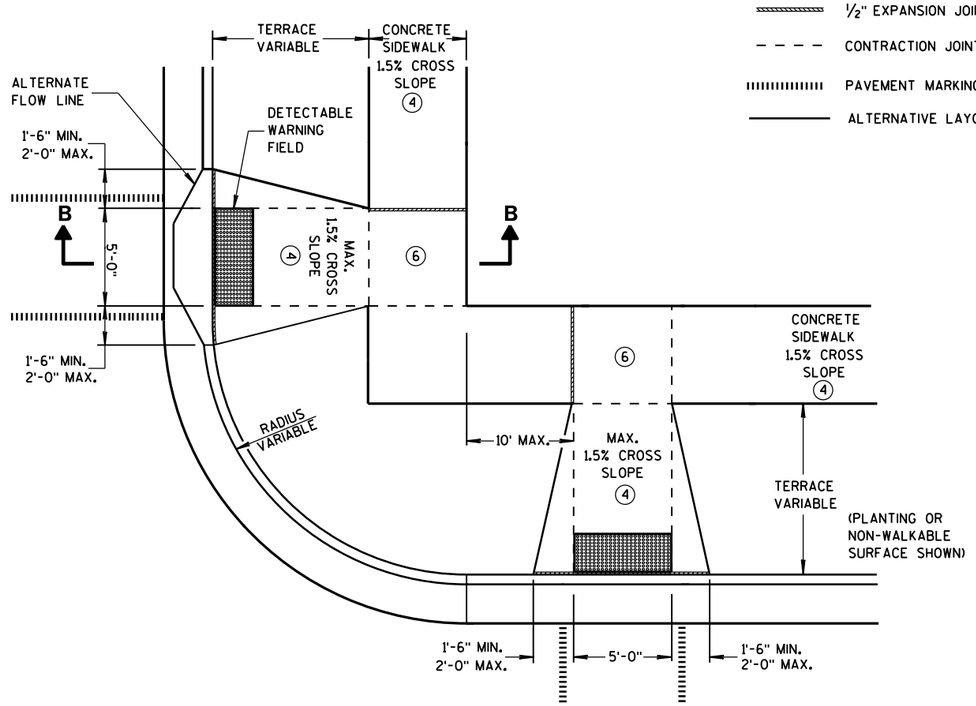
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

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

LEGEND

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



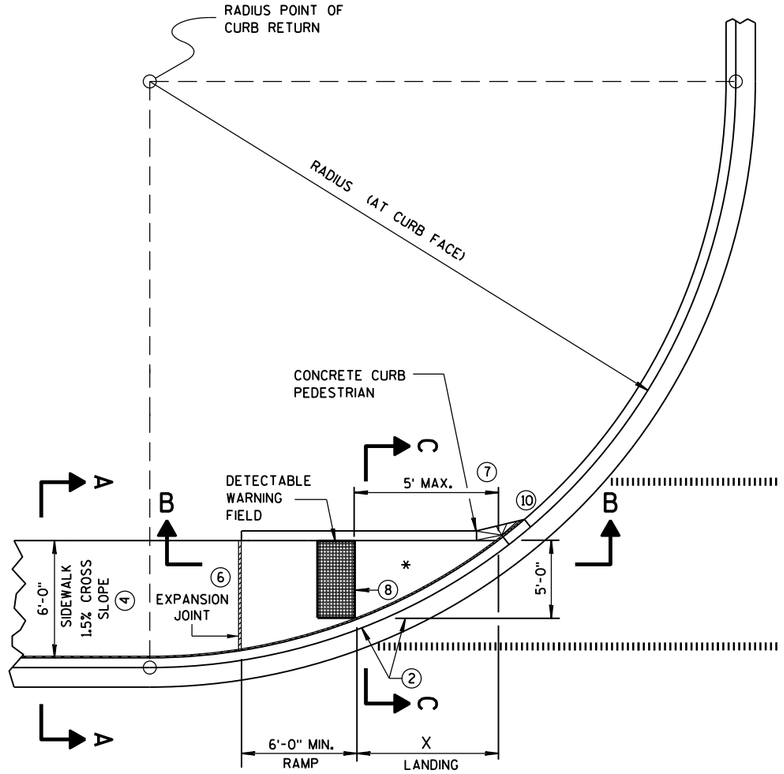
PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

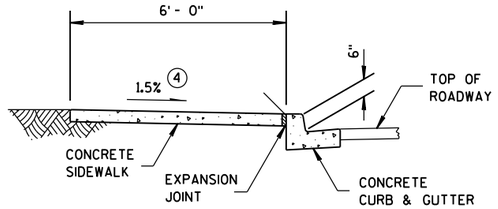
S.D.D. 8 D 5-19b



CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

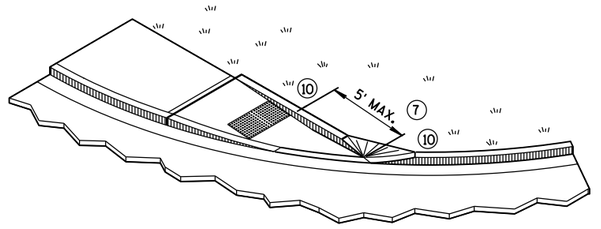
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

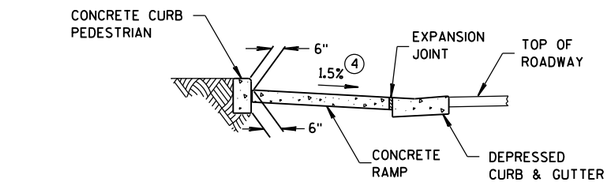
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

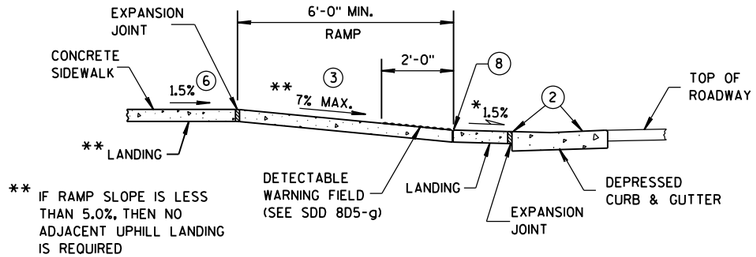
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



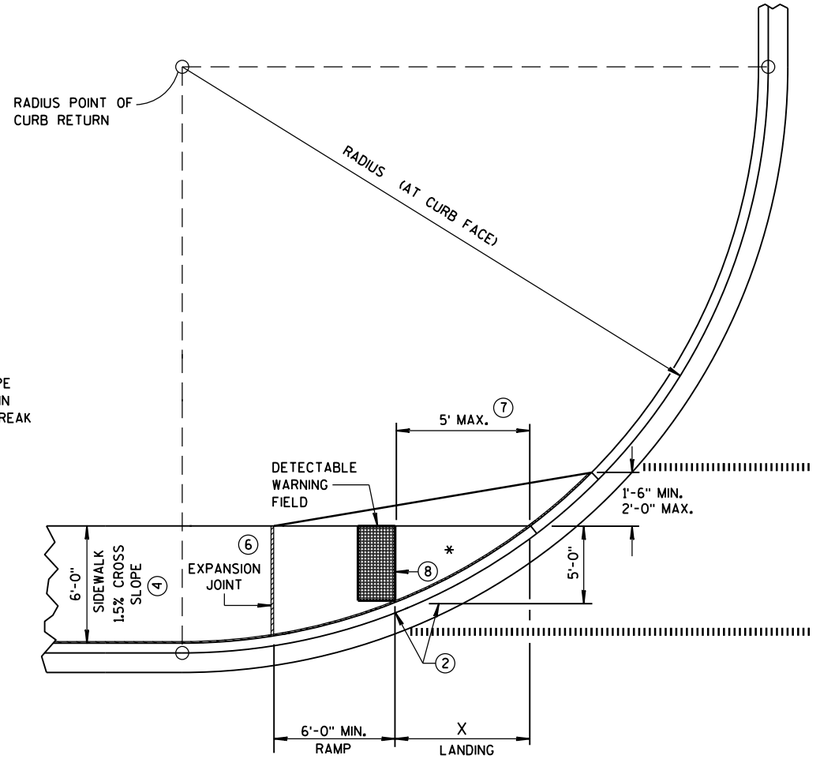
SECTION C-C FOR TYPE 4A



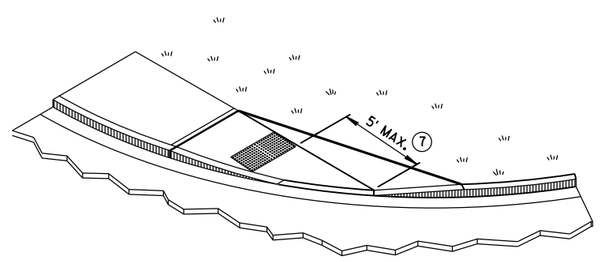
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B-B FOR TYPE 4A

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



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

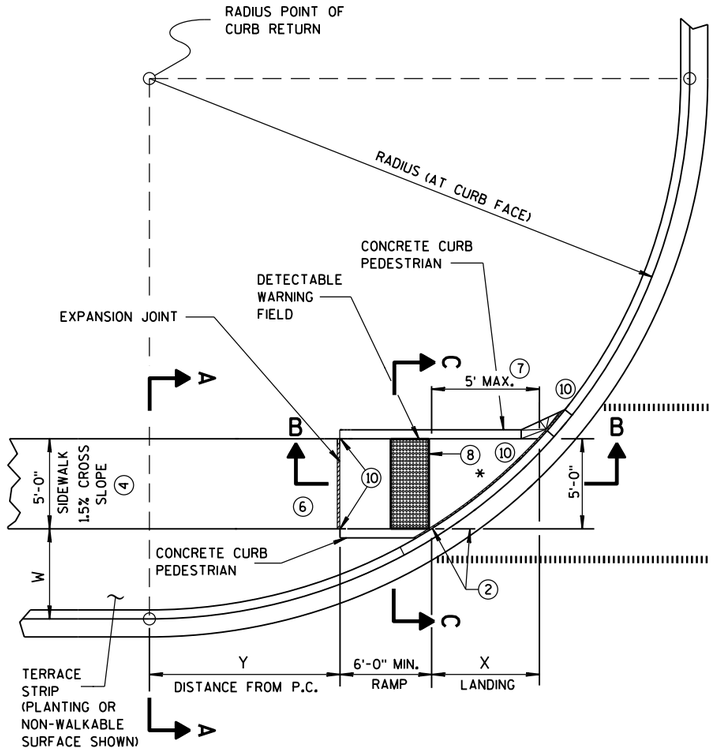
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

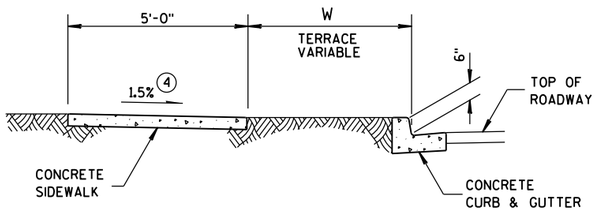
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

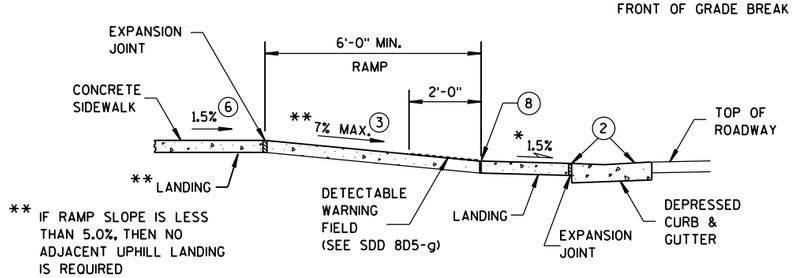
S.D.D. 8 D 5-19c



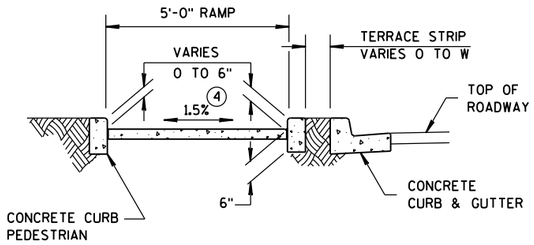
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"		W = 8'-0"		W = 9'-0"		W = 10'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10¼"	0'-5"	2'-1"	1'-4½"	1'-5"	2'-1"	0'-10"	2'-7½"	0'-3¼"	3'-0¼"						
15 FEET	4'-6¾"	2'-1¾"	3'-9"	3'-5¼"	3'-1¼"	4'-6"	2'-6¾"	5'-4½"	2'-1"	6'-1"	1'-8"	6'-8½"	1'-3¼"	7'-2½"	0'-10¾"	7'-7¼"
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-7"	3'-3"	8'-6½"	2'-10"	9'-4½"	2'-5½"	10'-1¼"	2'-1¼"	10'-9"
30 FEET			6'-9¼"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"	4'-5½"	13'-7¾"	4'-0¾"	14'-8½"	3'-8½"	15'-8¼"
40 FEET									6'-1¾"	15'-8½"	5'-8"	17'-2"	5'-3"	18'-5¾"	4'-10¾"	19'-8¼"
50 FEET															5'-10¼"	23'-2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

GENERAL NOTES

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

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

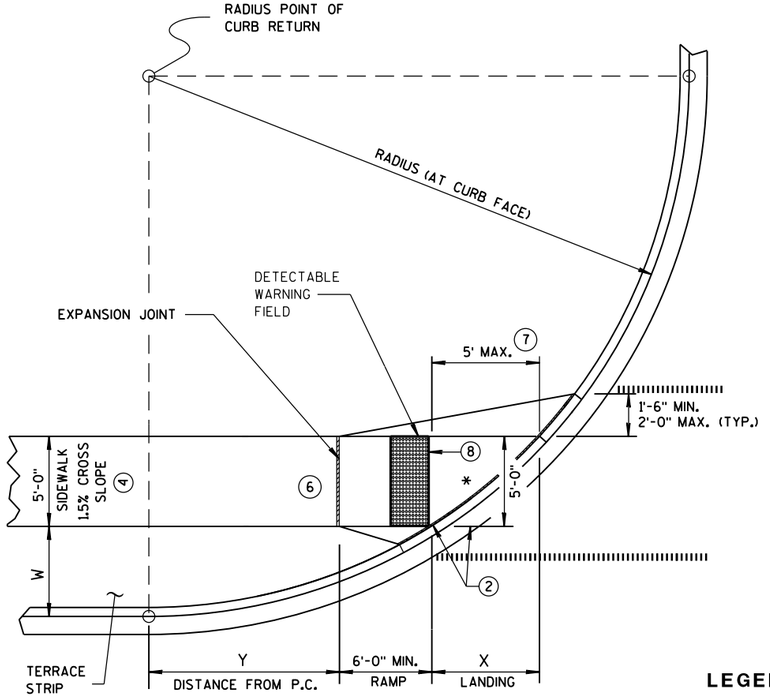
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

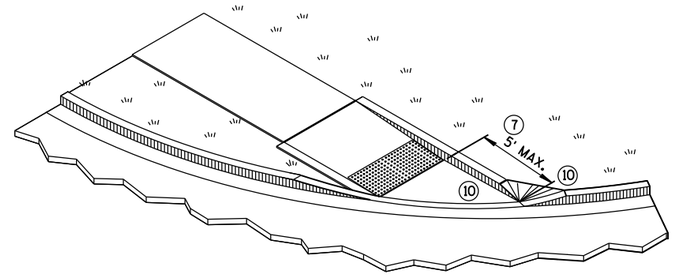
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

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

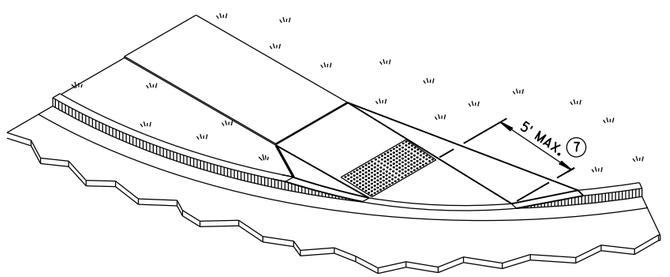
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

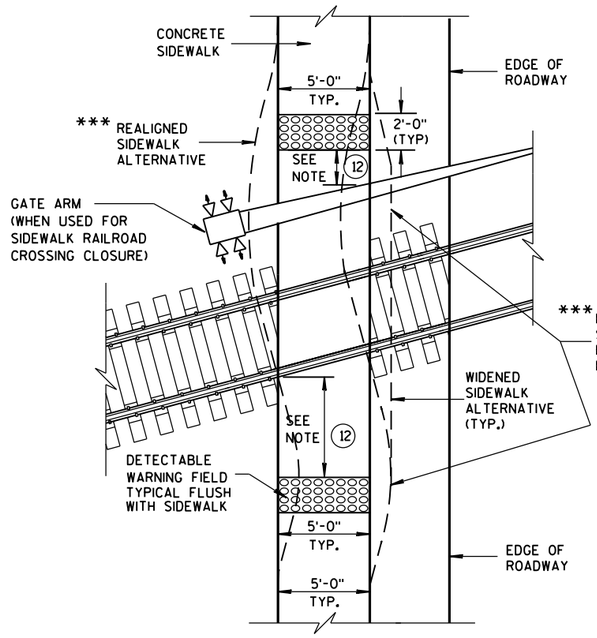
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

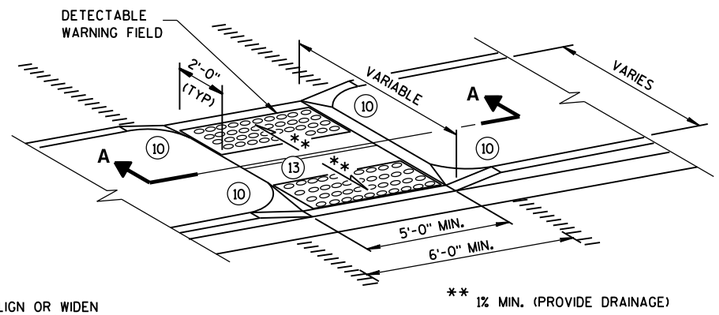
6

S.D.D. 8 D 5-19d



*** DETAILS TO BE DETERMINED BY DESIGNER

TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5

GENERAL NOTES

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

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

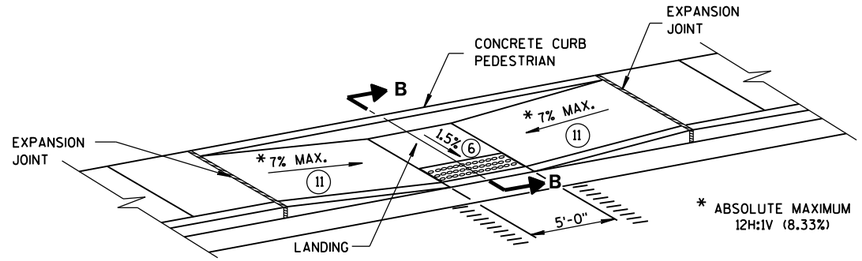
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

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

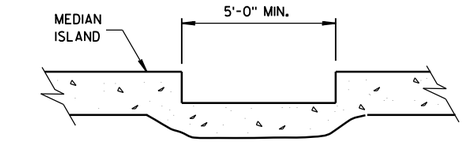
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

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

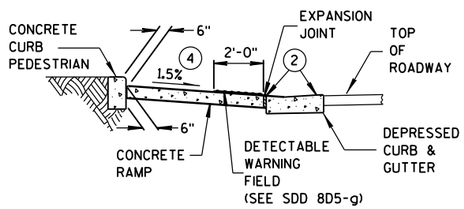
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



MID-BLOCK CROSSING
TYPE 7A

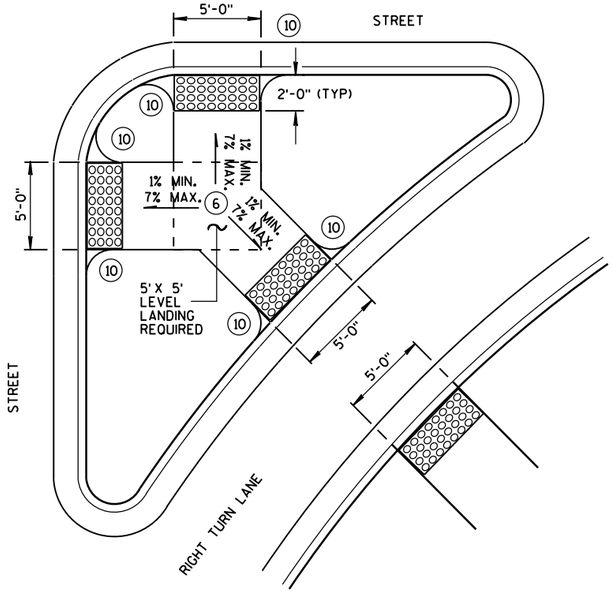


SECTION A-A

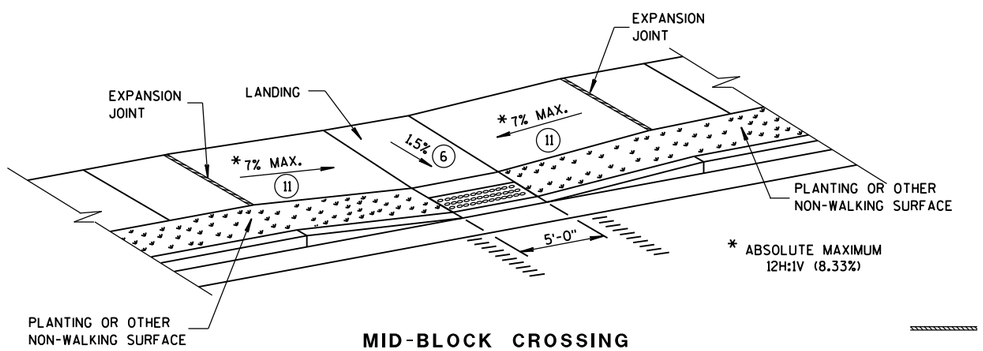


SECTION B-B

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



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

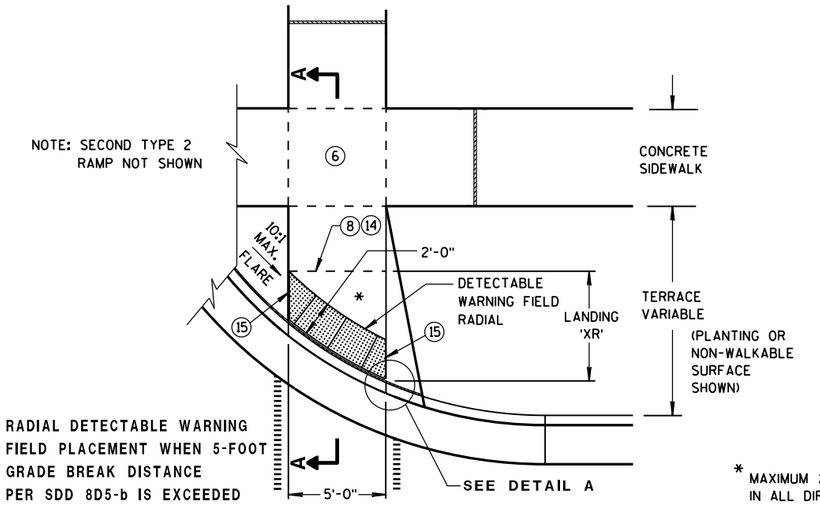
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

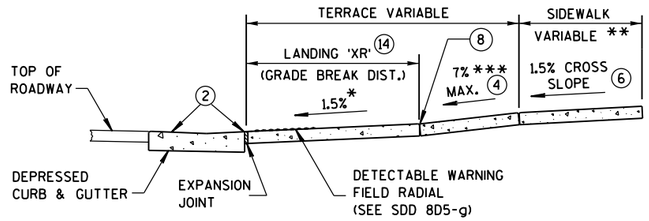
6

S.D.D. 8 D 5-19e



TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)

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



** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION A-A

LEGEND

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

GENERAL NOTES

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

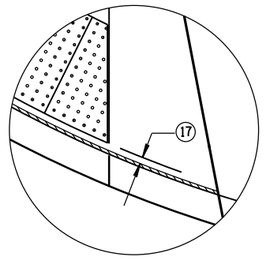
(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

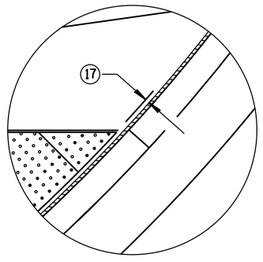
(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

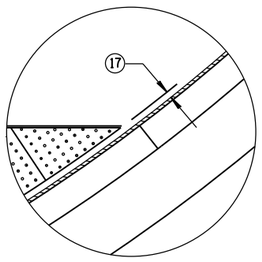
(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.



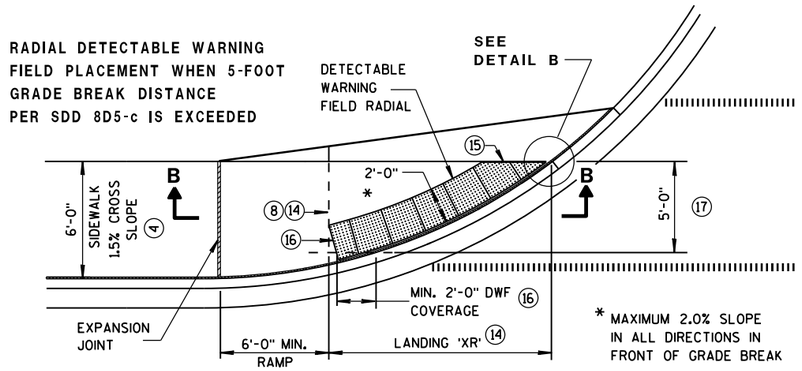
DETAIL A



DETAIL C

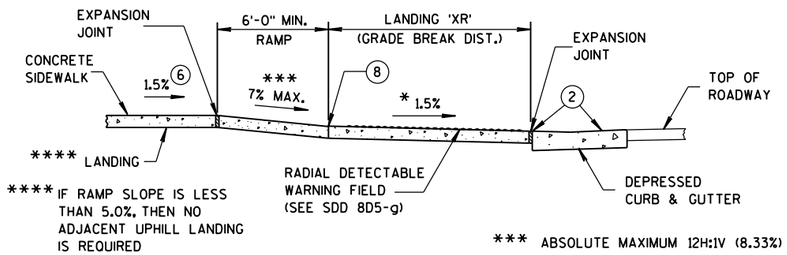


DETAIL B



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

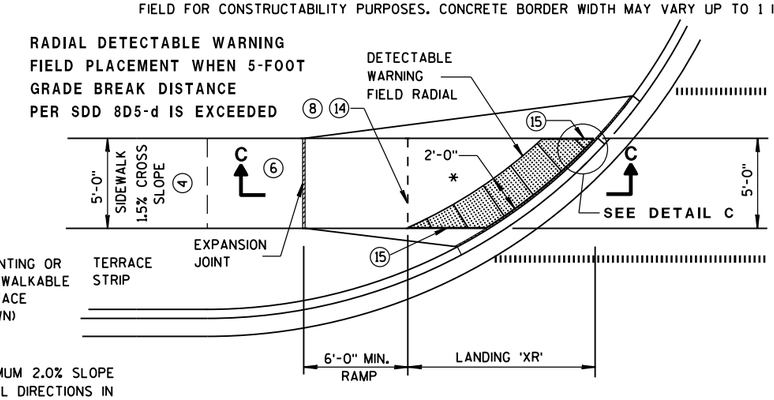
CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

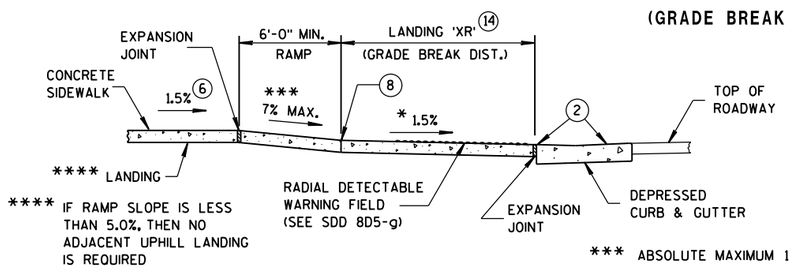
*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION B-B FOR TYPE 4A1



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

CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION C-C FOR TYPE 4B1

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

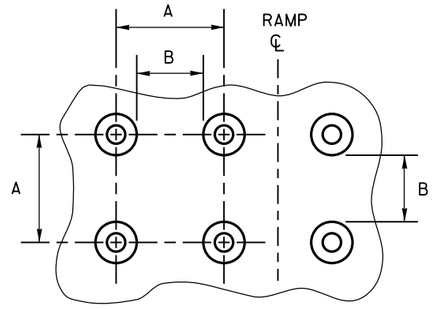
S.D.D. 8 D 5-19f

6

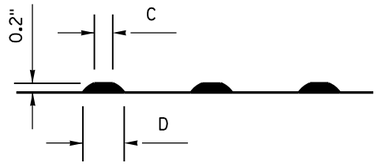
S.D.D. 8 D 5-19f

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

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



PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL

GENERAL NOTES

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

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

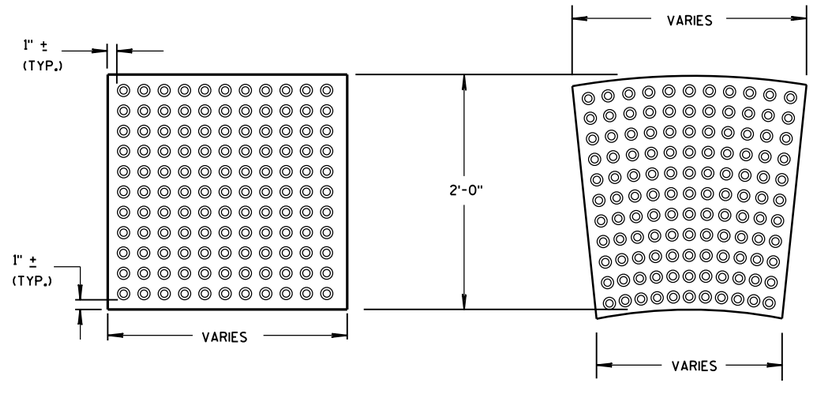
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

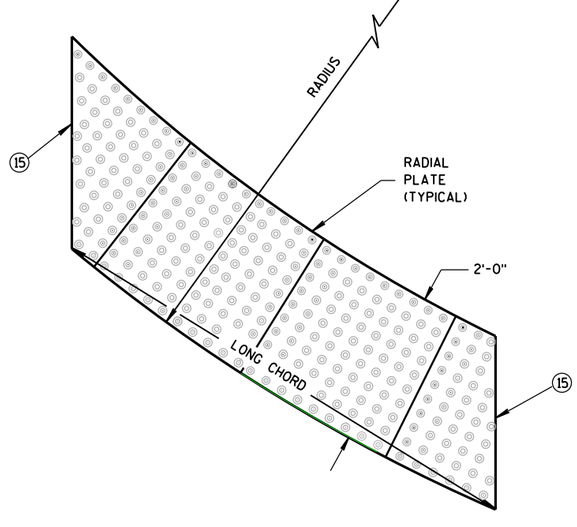


RECTANGULAR PLATES

RADIAL PLATES

DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

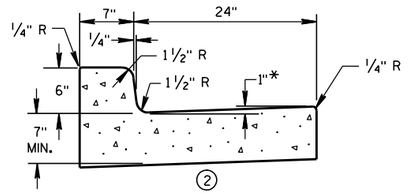
CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

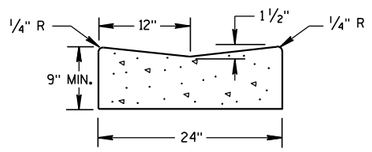
APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

6

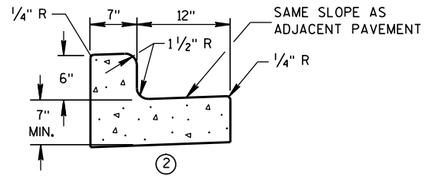
S.D.D. 8 D 5-19g



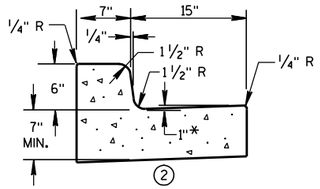
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

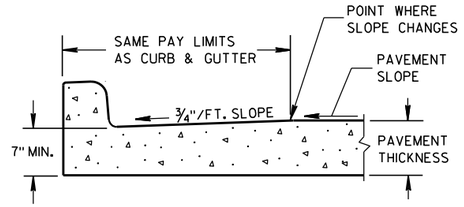


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

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.

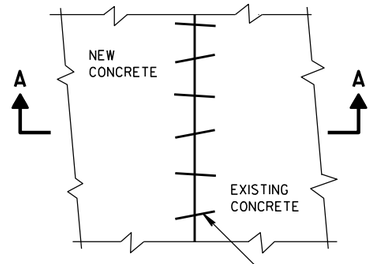
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.

① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".

② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MIMIMUM GUTTER THICKNESS IS MAINTAINED.

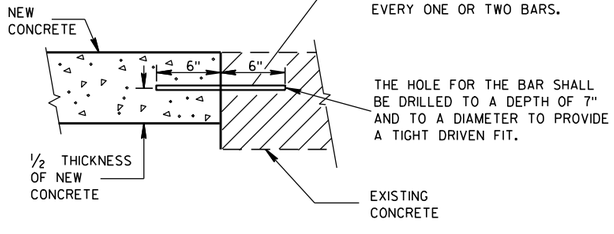
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

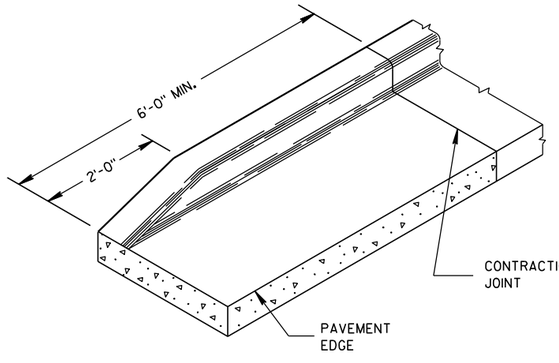
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



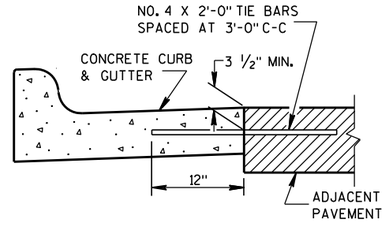
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

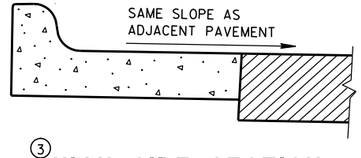
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

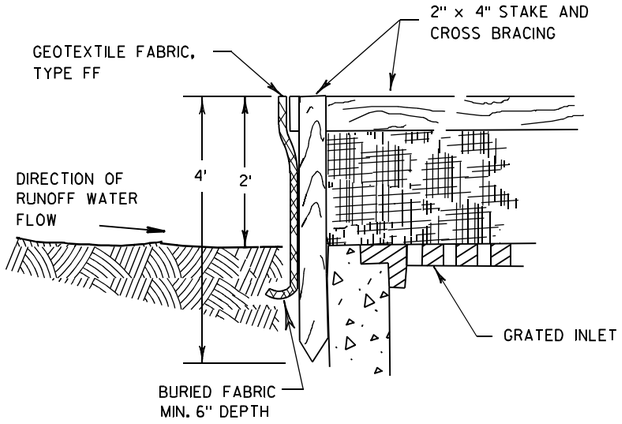
/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

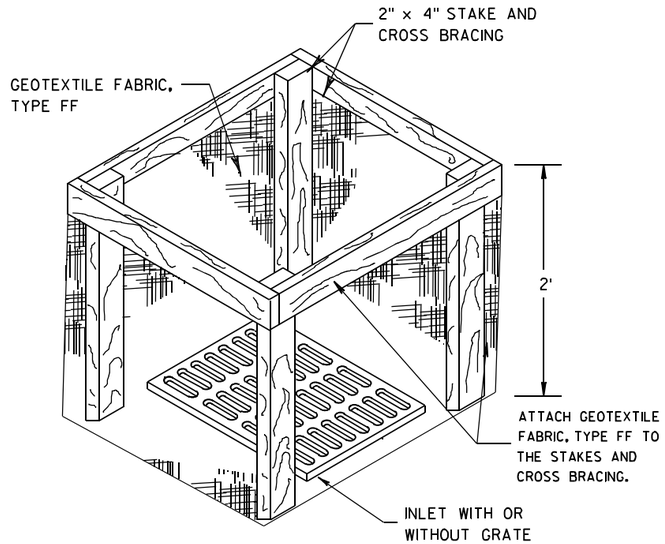
ENT

FHWA

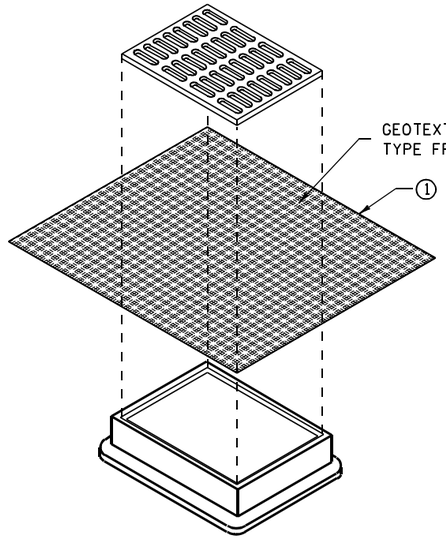
6

S.D.D. 8 D 16-10



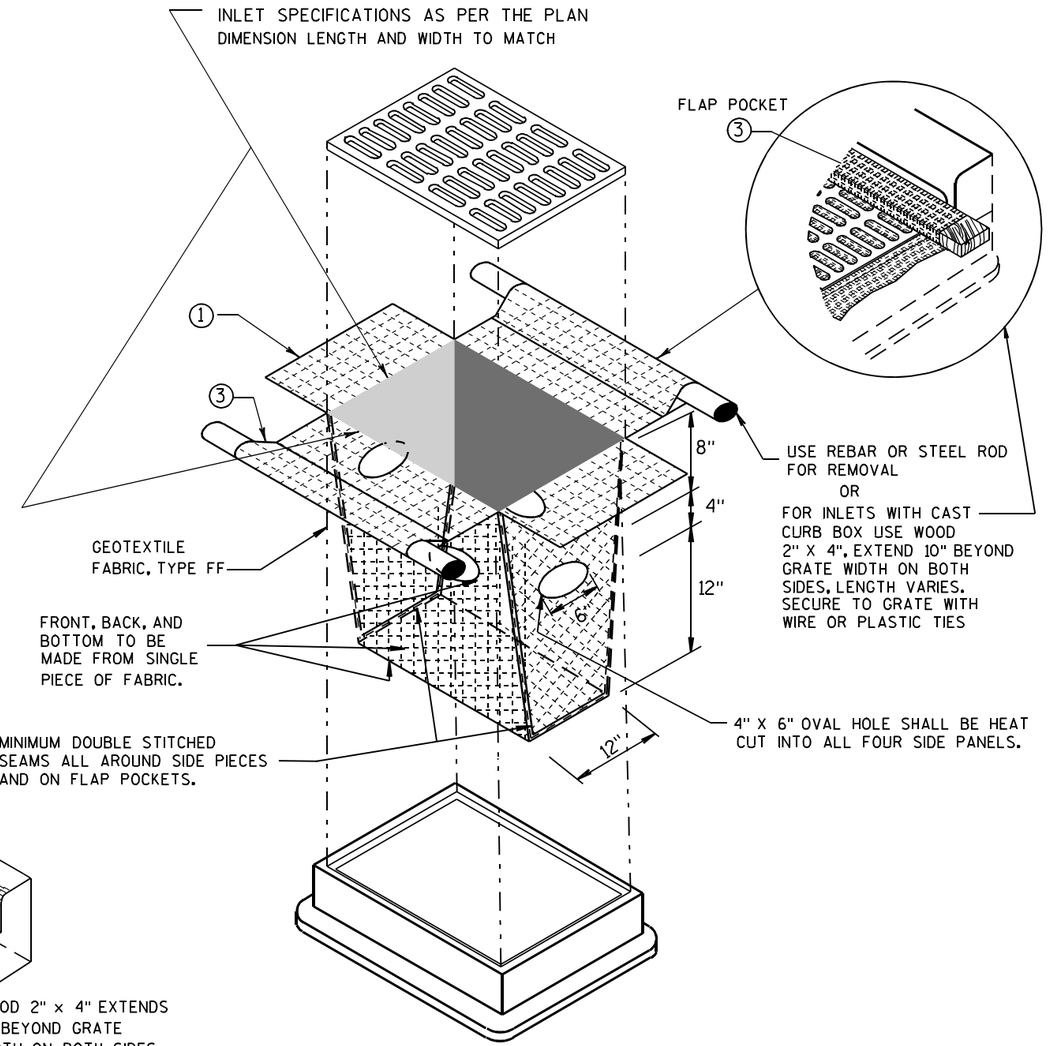


INLET PROTECTION, TYPE A



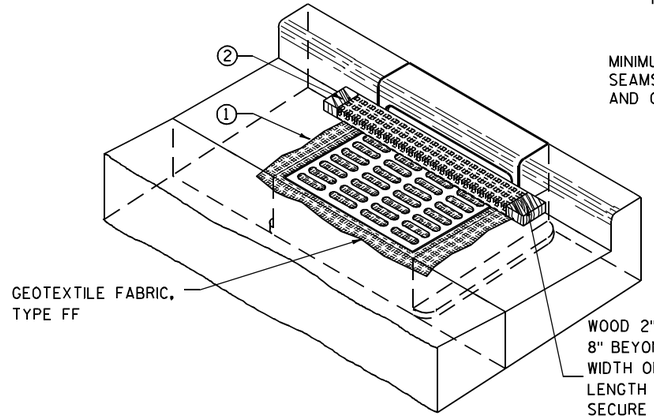
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

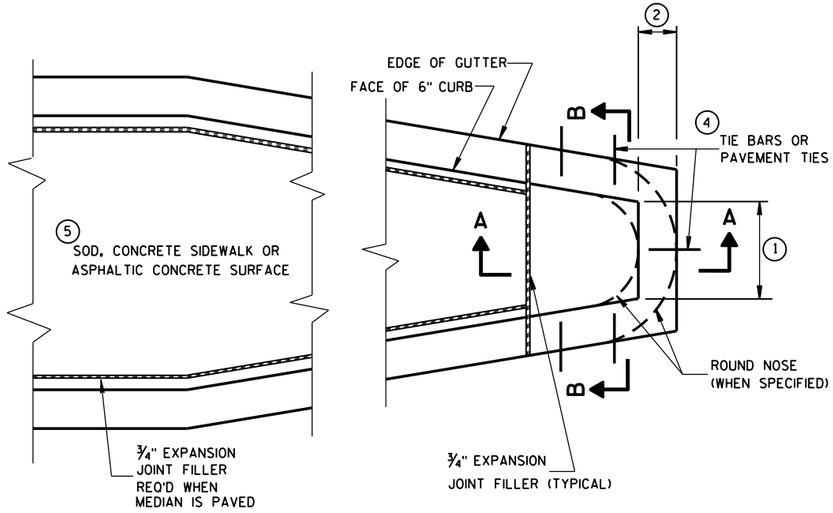
APPROVED

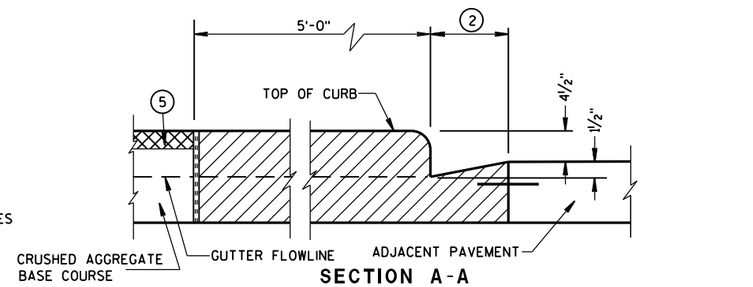
10/16/02
DATE

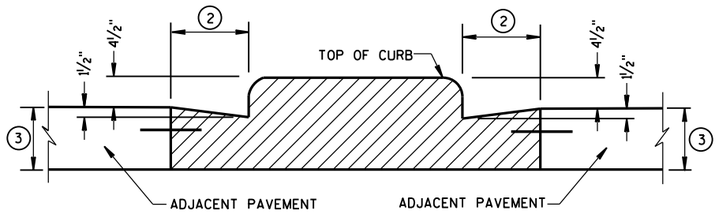
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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







CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

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

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

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

(1) NEW OR EXISTING CONCRETE PAVEMENT.

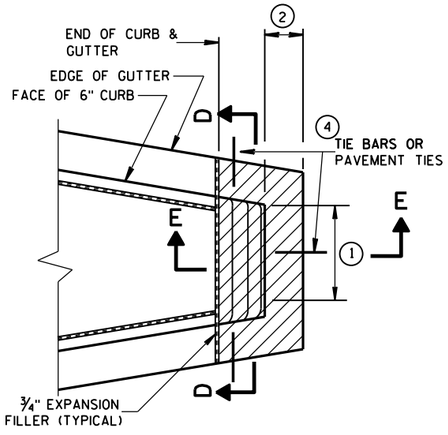
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

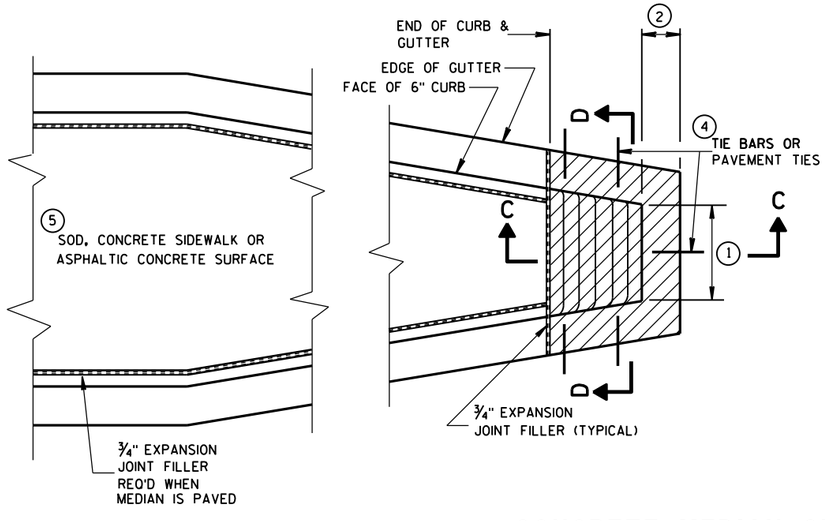
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

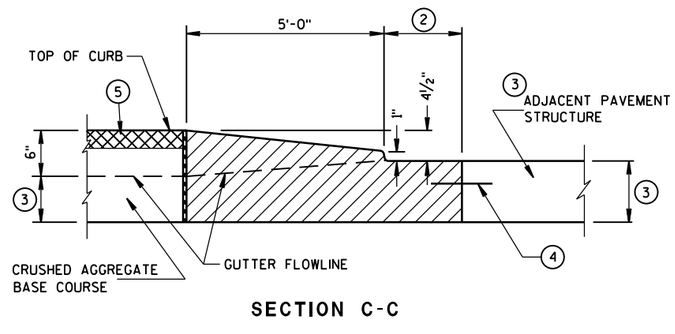
(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

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

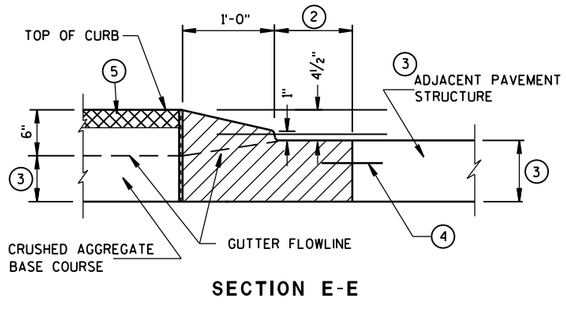
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



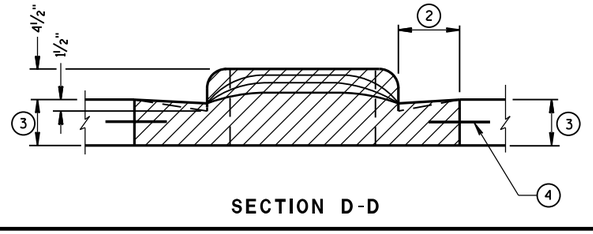




CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

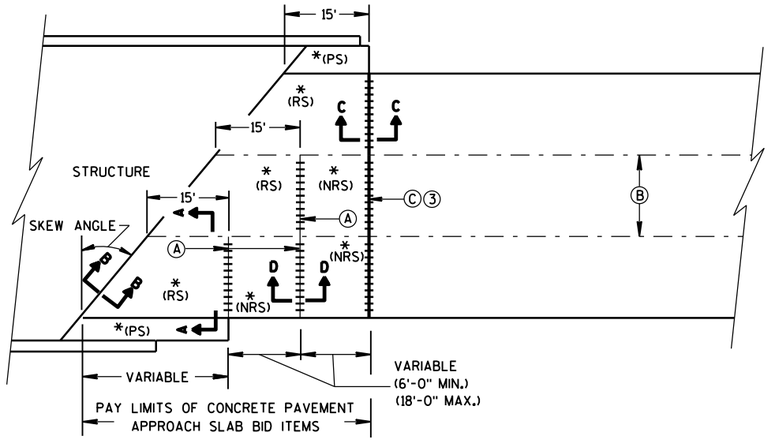
APPROVED
6/8/2006 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

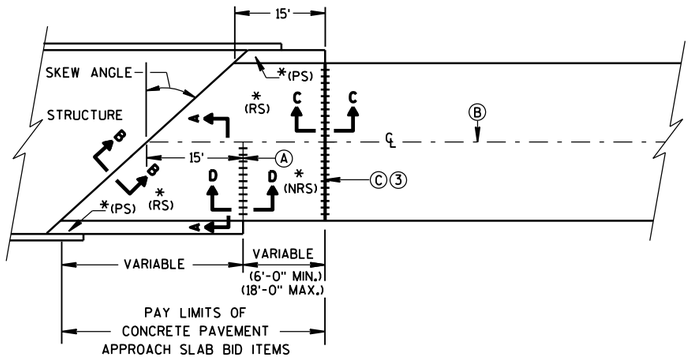
S.D.D. 11 B 2-2

6

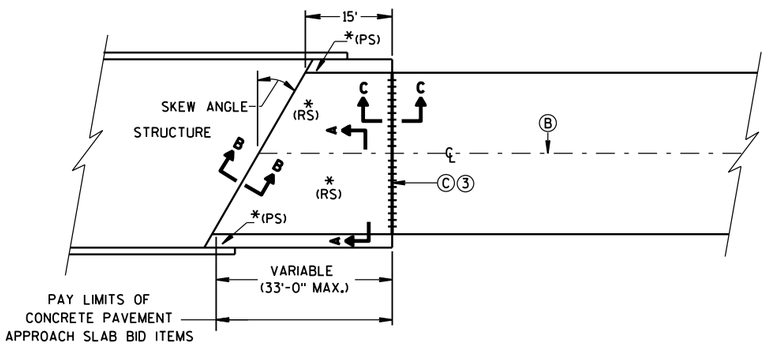
S.D.D. 11 B 2-2



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

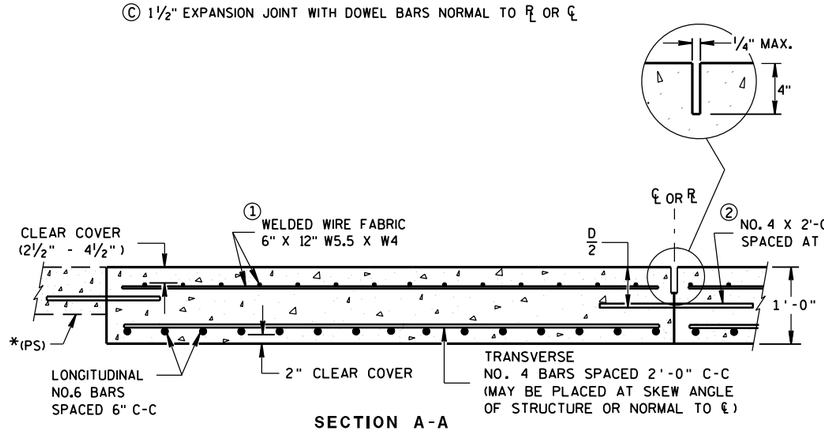
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

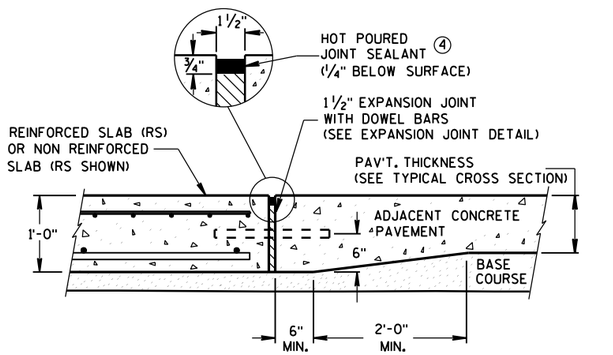
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

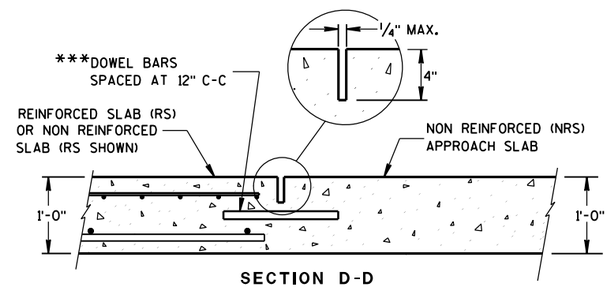
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

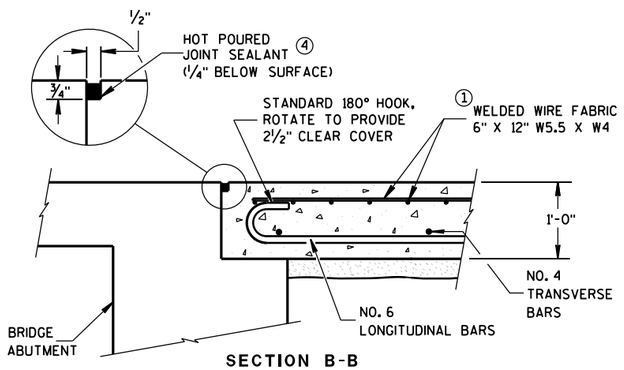
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

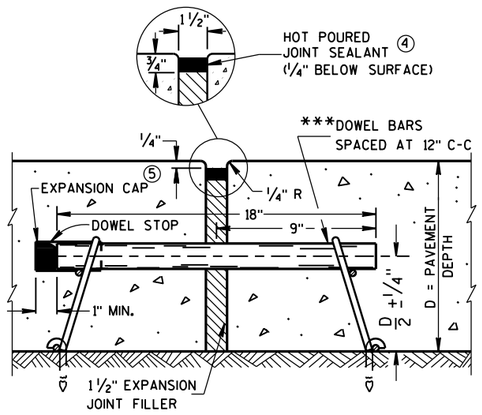
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

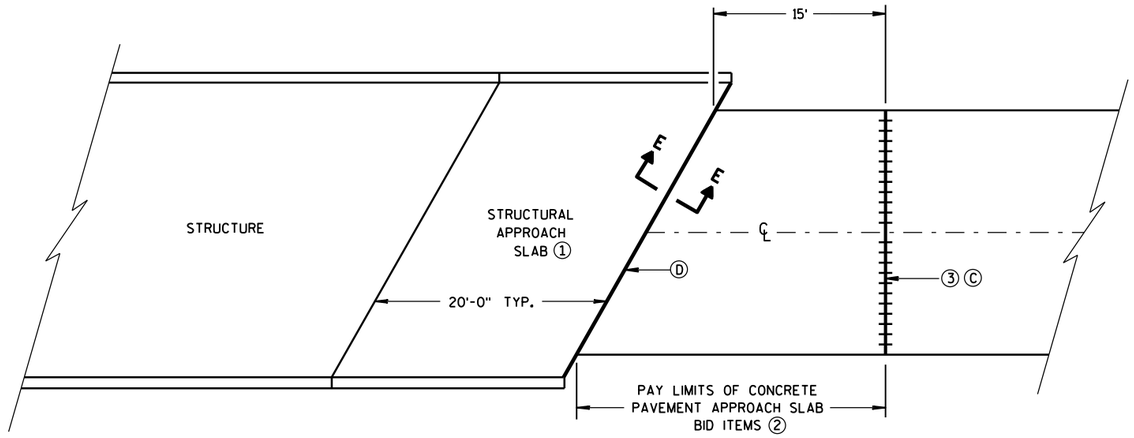
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 13 B 2-8a



GENERAL NOTES

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

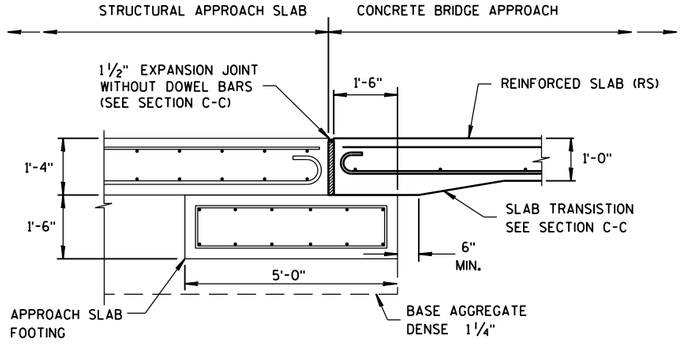
① SEE BRIDGE PLAN.

② CONFORM TO SHEET 13 B 2(A) FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS.

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

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION E-E

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

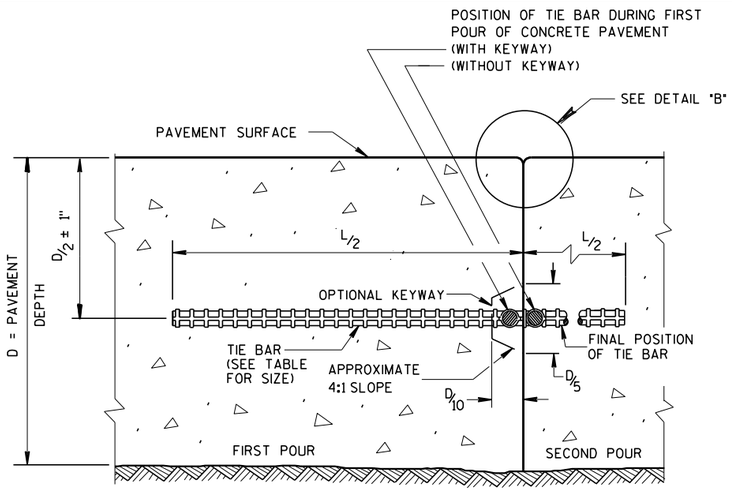
June, 2015
DATE

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

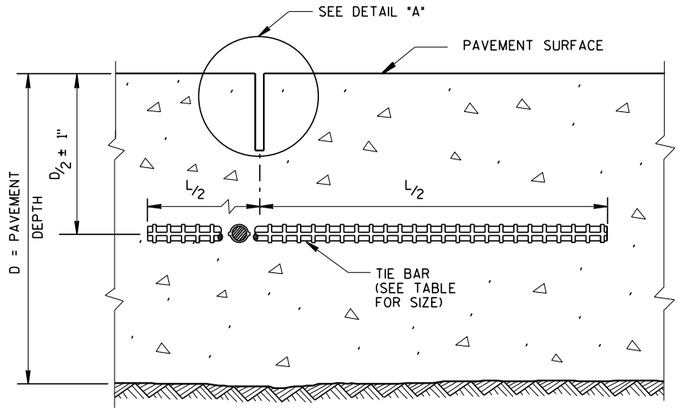
FHWA

6

S.D.D. 13 B 2-8b



CONSTRUCTION JOINT



SAWED JOINT

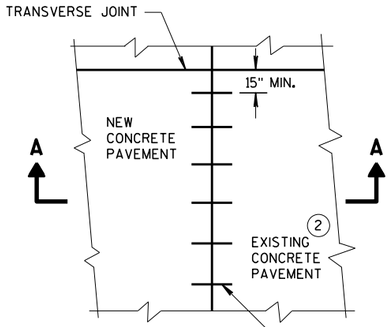
GENERAL NOTES

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

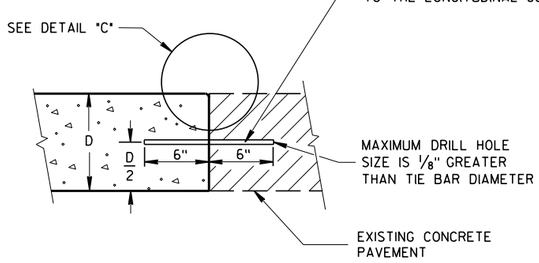
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

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

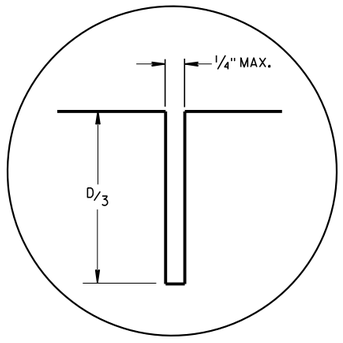


PLAN VIEW

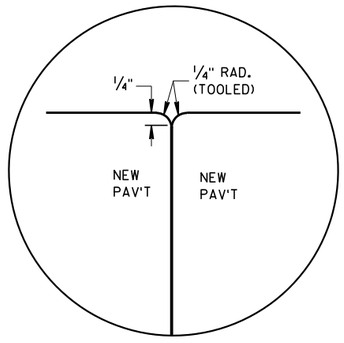


SECTION A-A

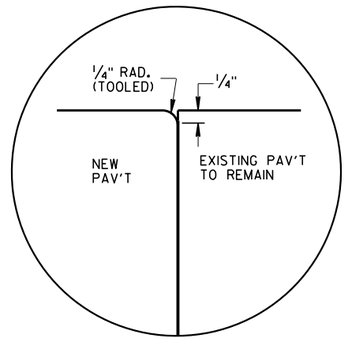
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



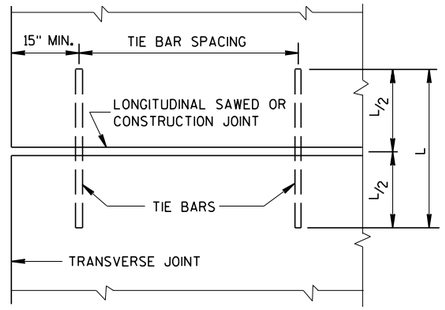
DETAIL "C"

TIE BAR TABLE

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

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

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



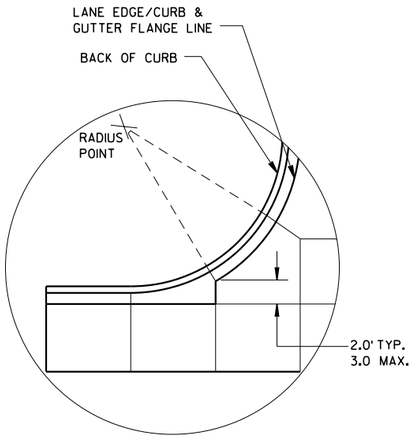
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

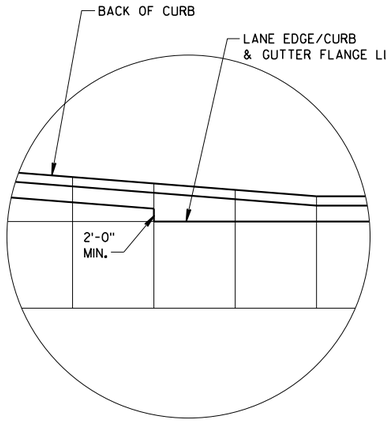
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

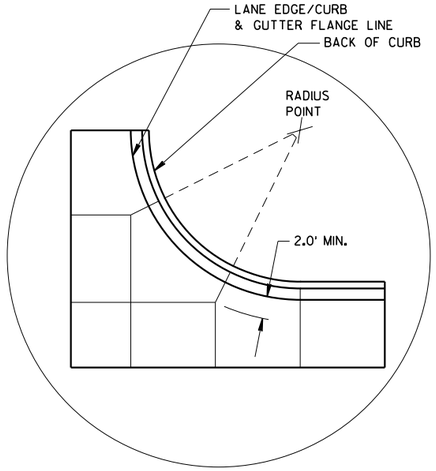
6
S.D.D. 13 C 1-19



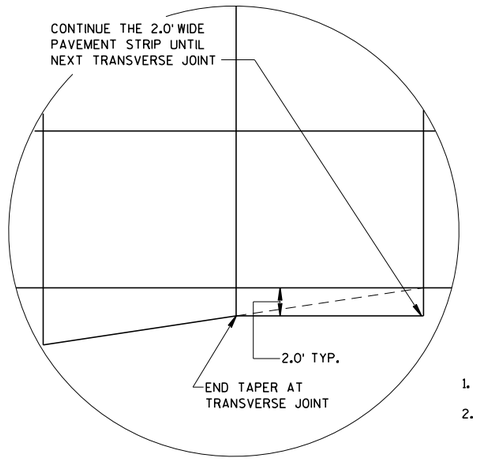
DETAIL "A"



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.

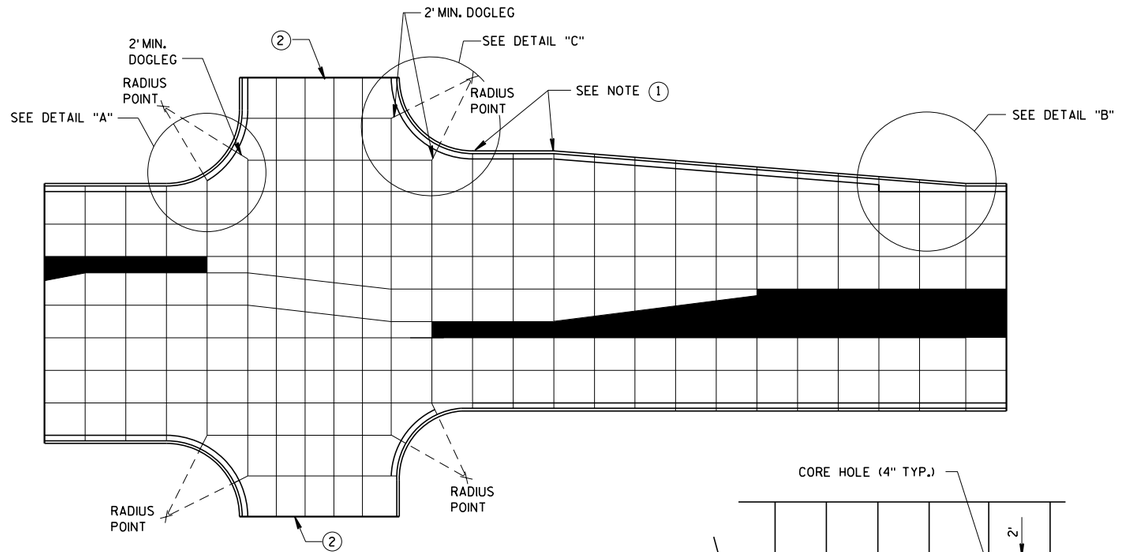
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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.

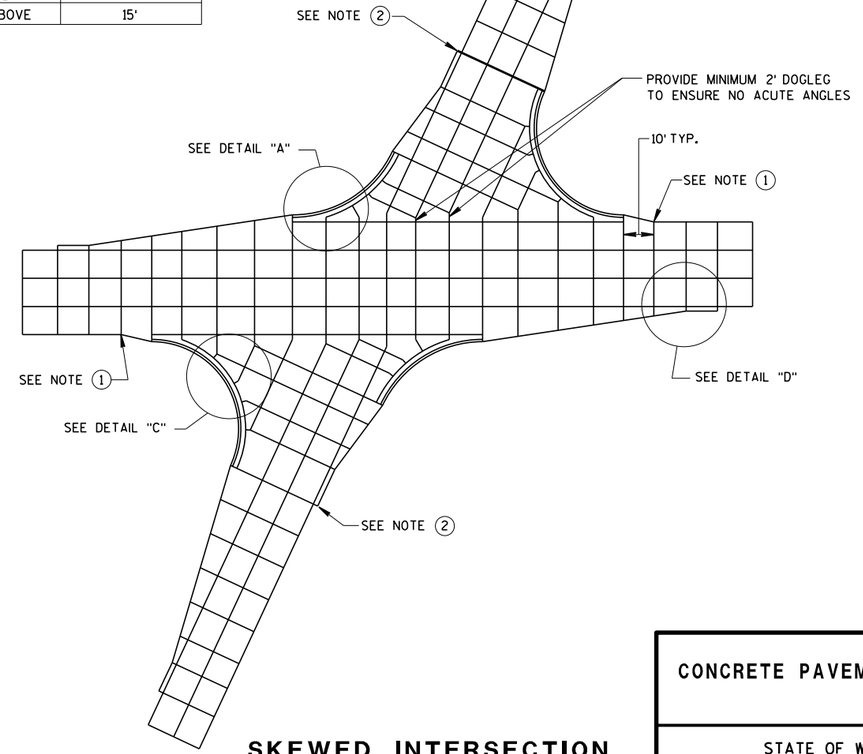
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



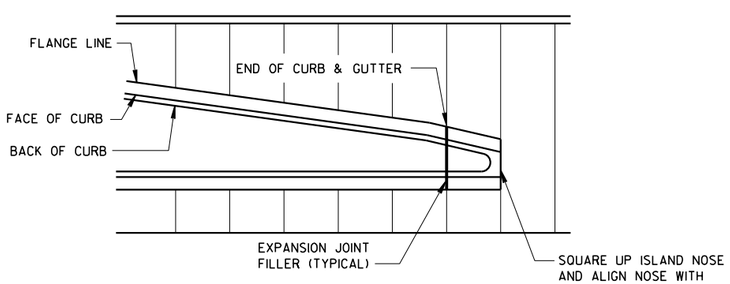
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

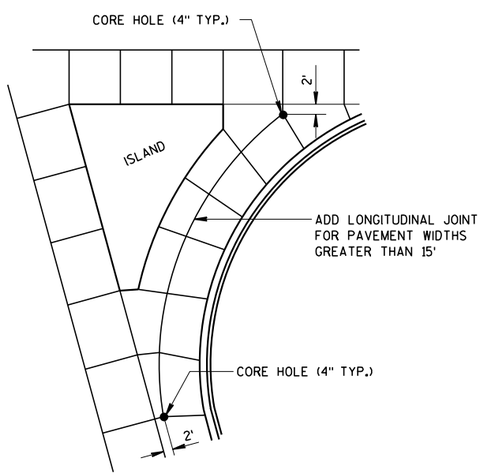
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN

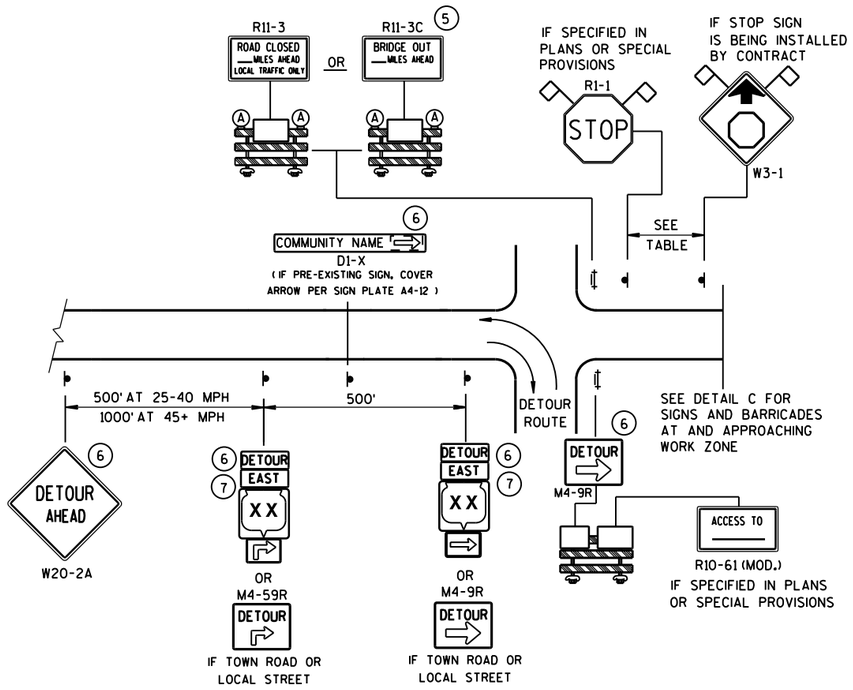


LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

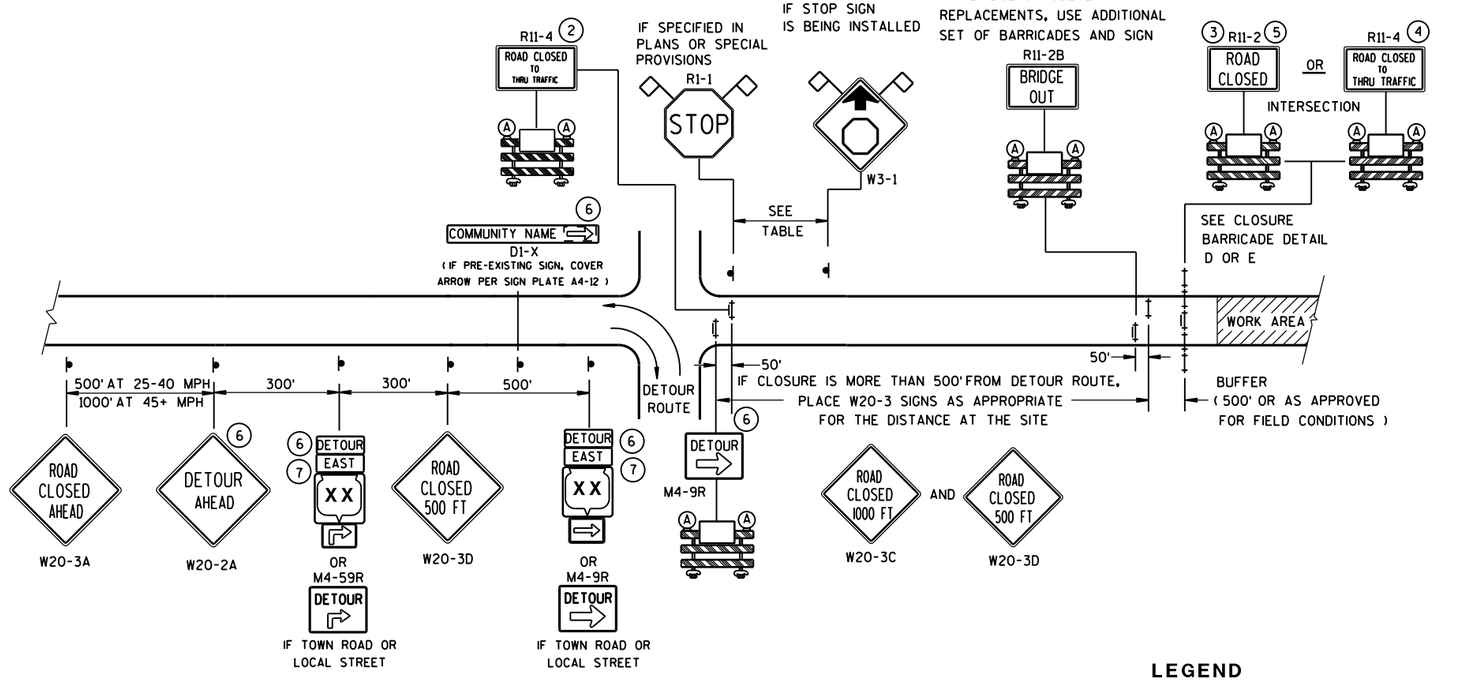
6
S.D.D. 13 C 18-6a



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

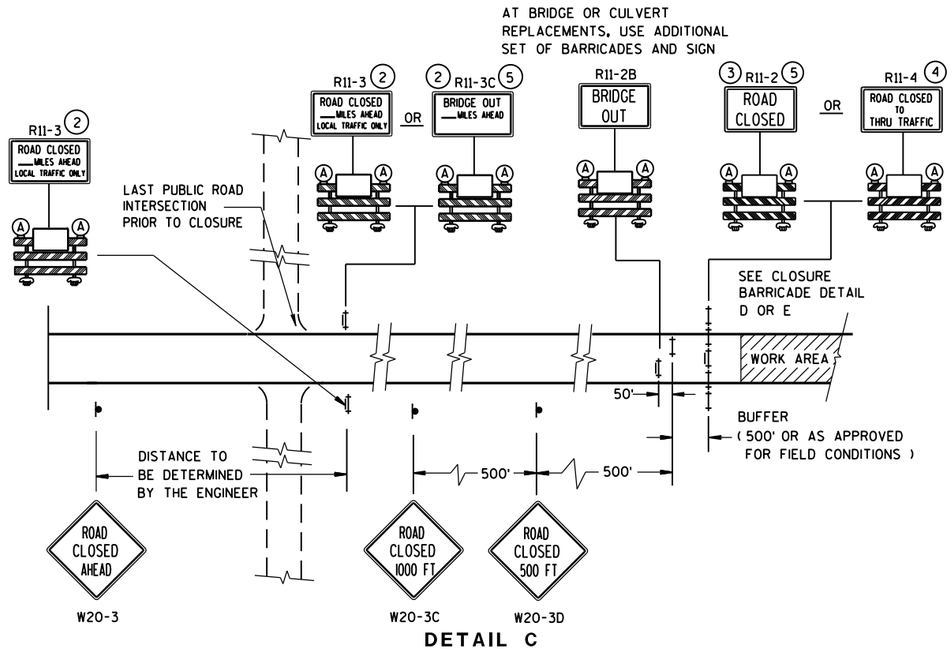
WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

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



DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

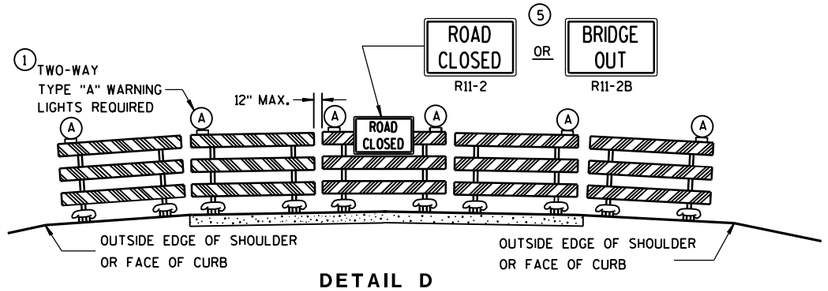
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

S.D.D. 15 C 2-6a

6

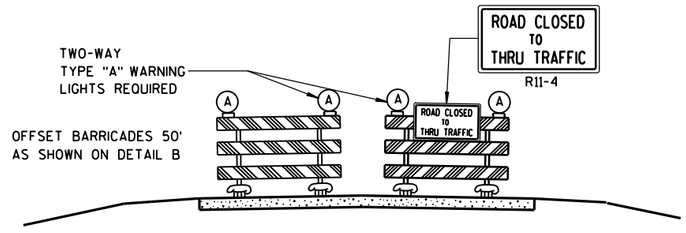
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

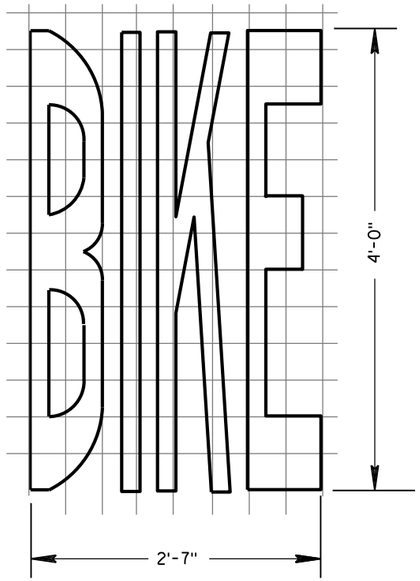
Sept. 2015 — DATE

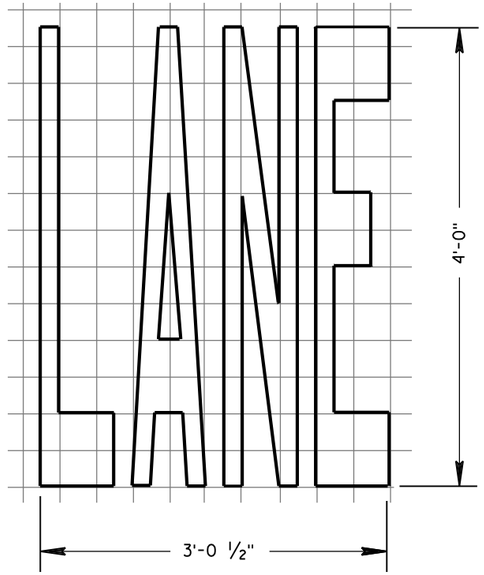
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FIC

FHWA

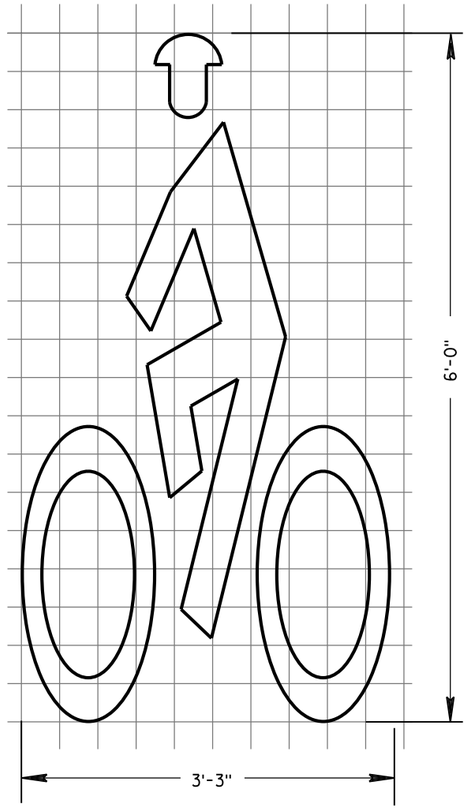
6

S.D.D. 15 C 2-6b

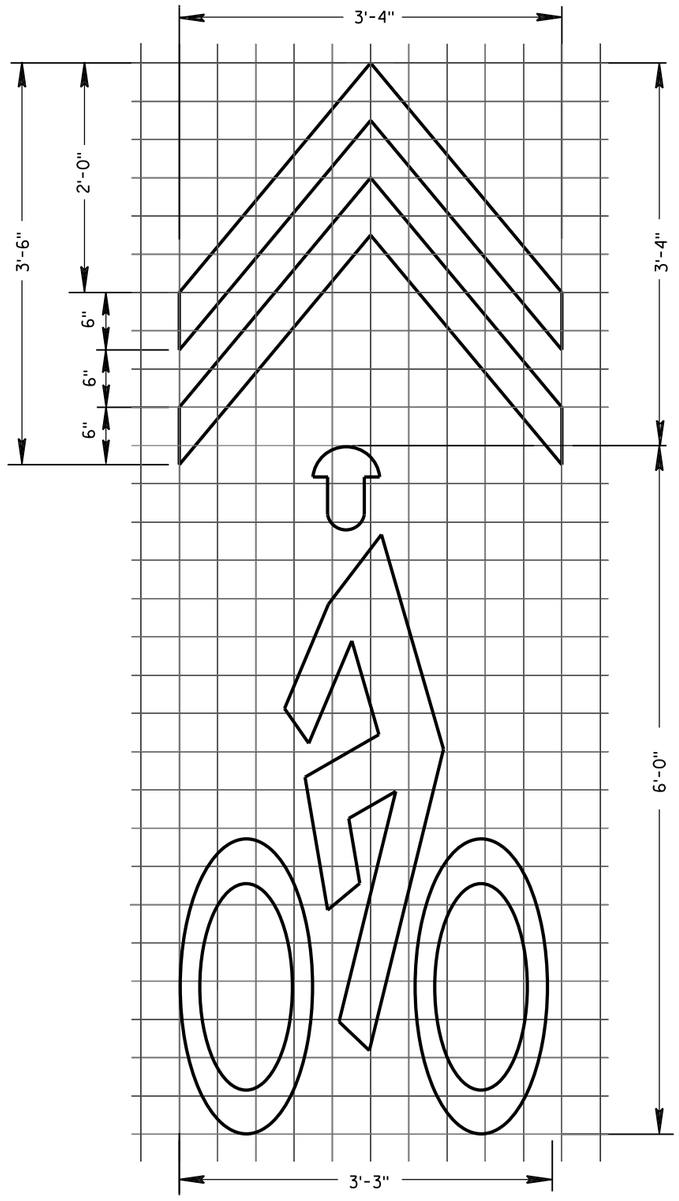




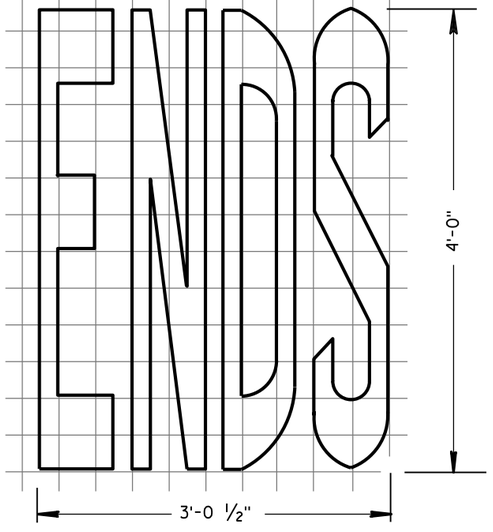
BIKE LANE WORDS



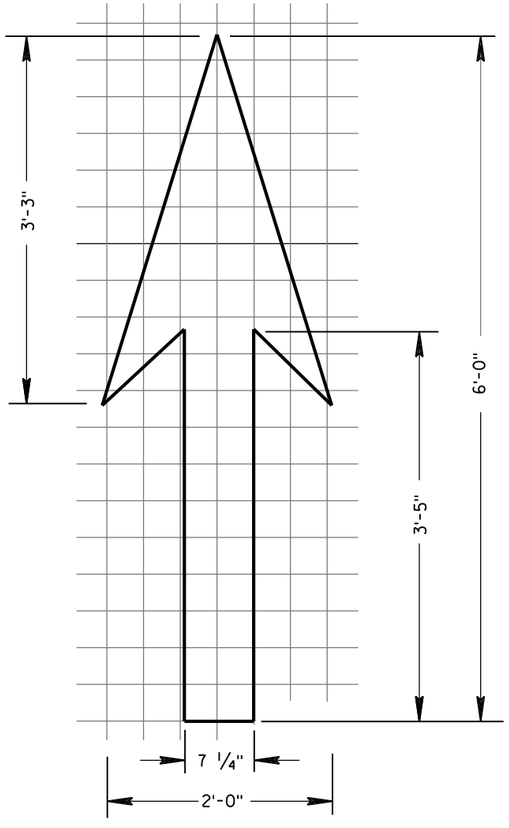
BIKE LANE SYMBOL



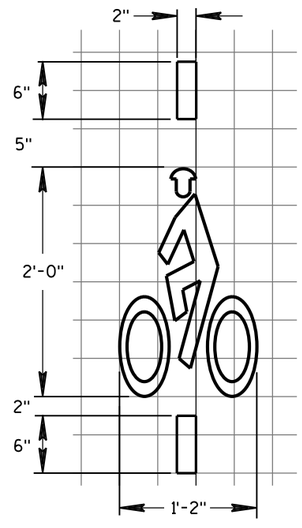
BIKE SYMBOL FOR SHARED LANE



BIKE LANE WORDS



BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING

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.

PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

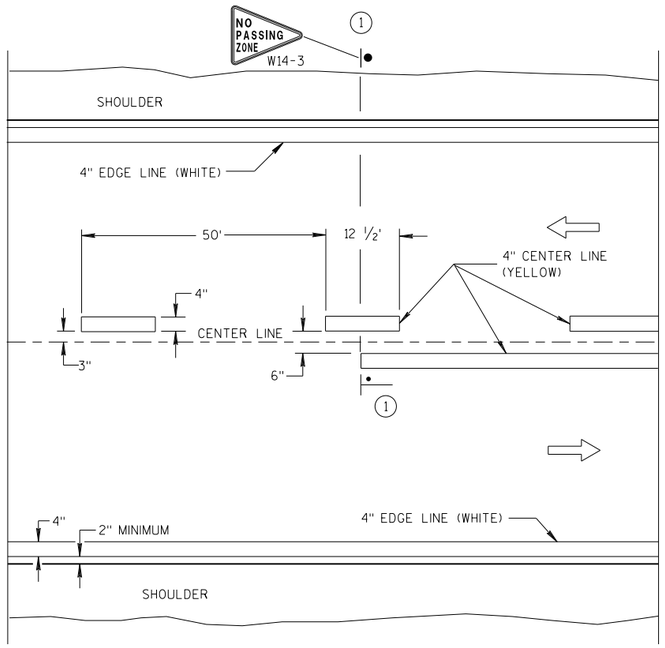
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

6

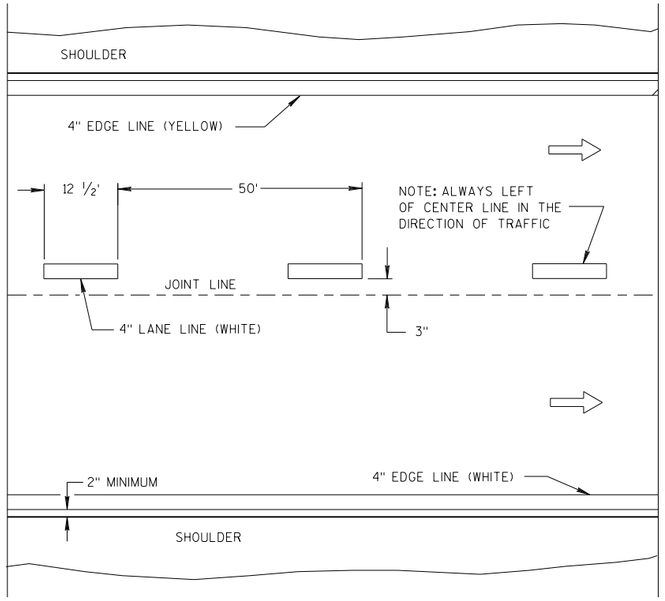
S.D.D. 15 C 7-14e

6

S.D.D. 15 C 7-14e



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

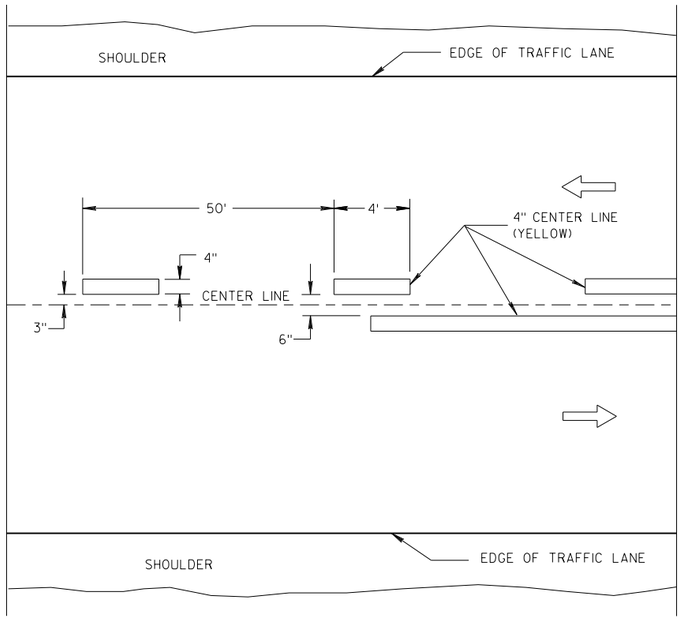
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

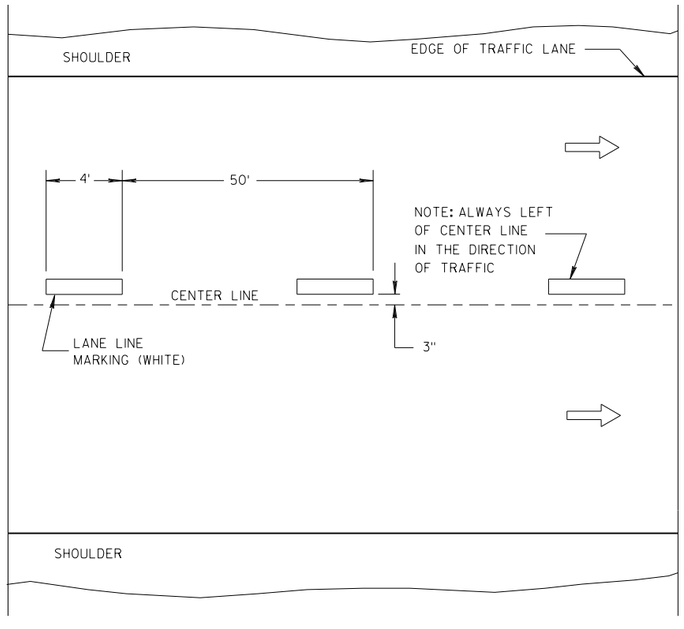
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

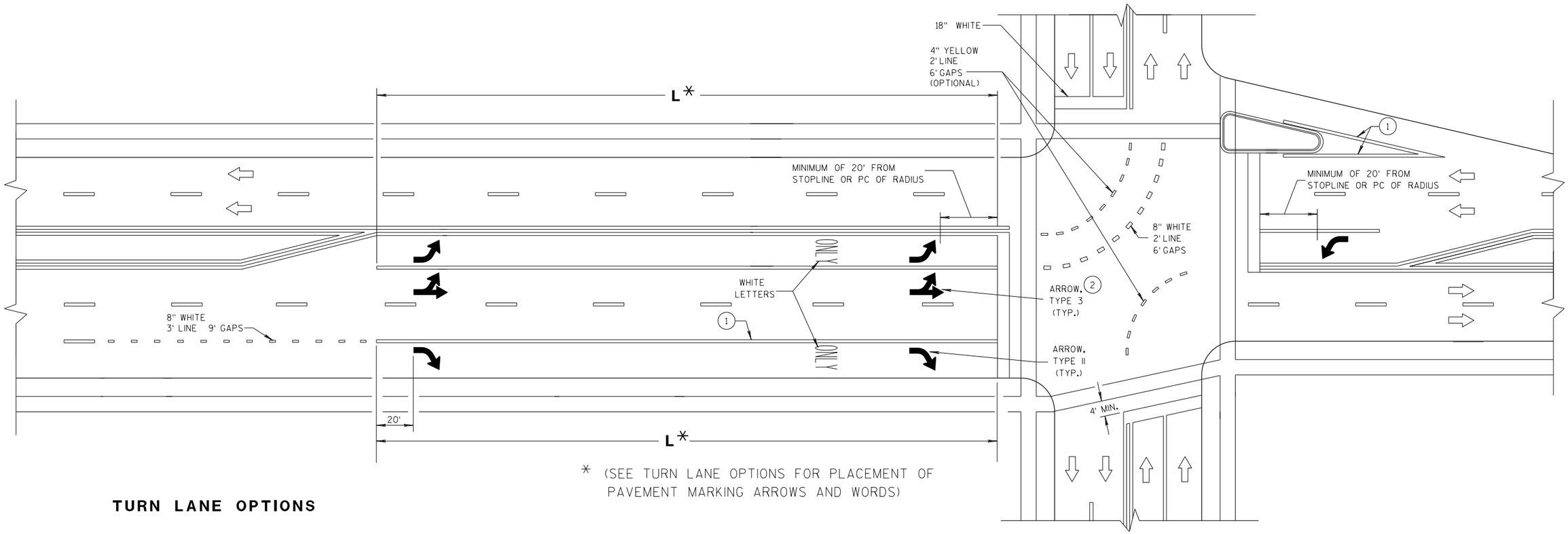
FHWA

6

S.D.D. 15 C 8-19a

6

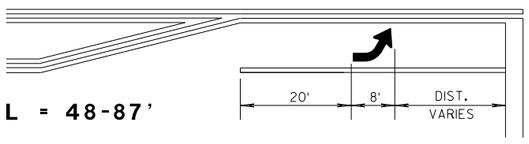
S.D.D. 15 C 8-19a



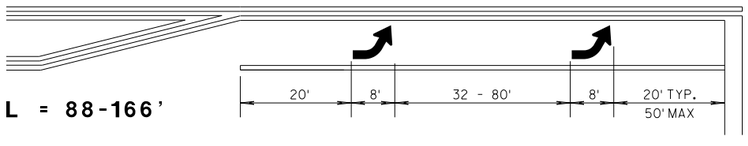
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

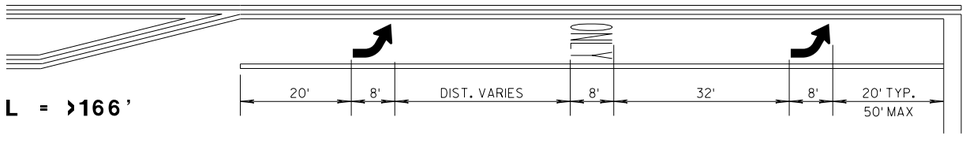
LENGTH OF TURN BAY (**L**) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48-87'



L = 88-166'



L = >166'

GENERAL NOTES

(1) 8" WHITE

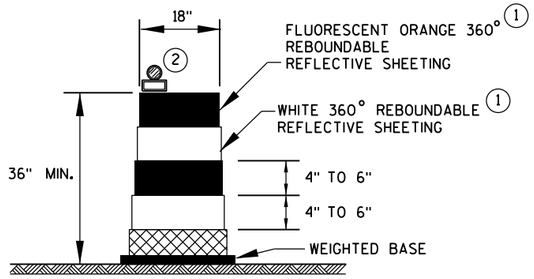
(2) QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.

⇨ DIRECTION OF TRAFFIC

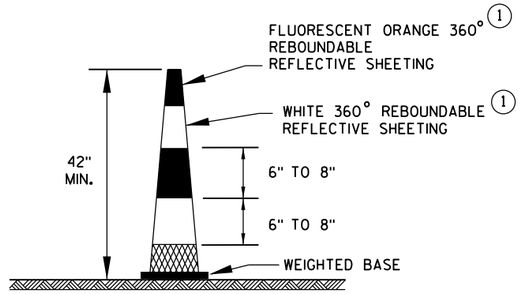
L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

6
S.D.D. 15 C 8-19c



DRUM

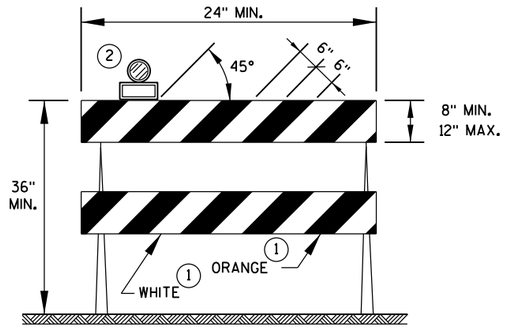


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

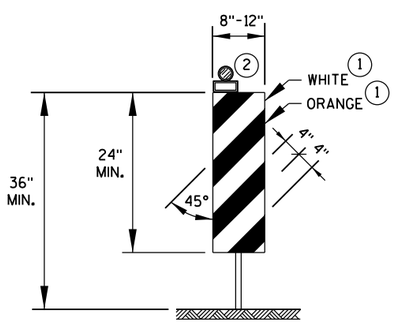
GENERAL NOTES

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



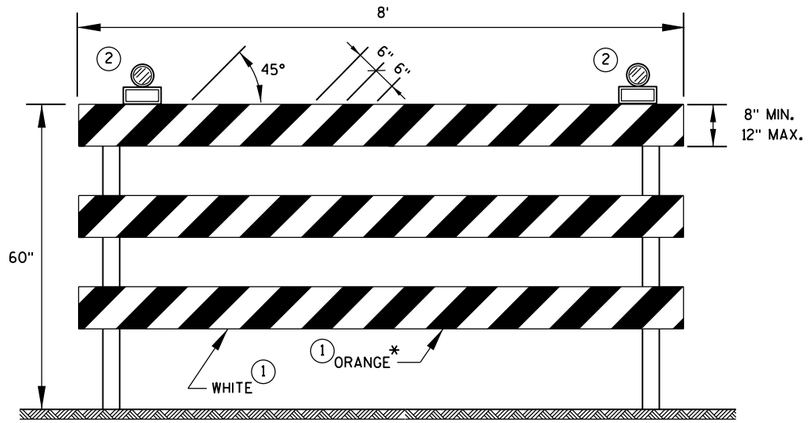
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 — DATE

/S/ Andrew Heidtke — WORK ZONE ENG

FHWA

6

S.D.D. 15 C 11-7b

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

WKE

MAY 2019

PROJECT ID: 1693-37-74

WITH: 1060-33-94 & 1060-35-94

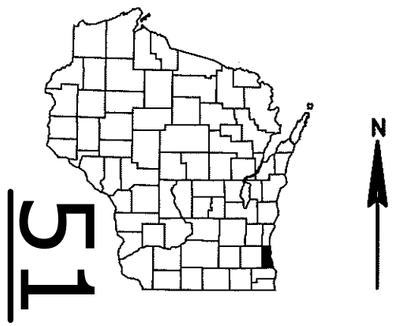
COUNTY: MILWAUKEE

51

ORDER OF SHEETS

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

TOTAL SHEETS = 102



N

DESIGN DESIGNATION

A.A.D.T.	=	N/A
A.A.D.T.	=	N/A
D.H.V.	=	N/A
D.D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	N/A
ESALS	=	N/A

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

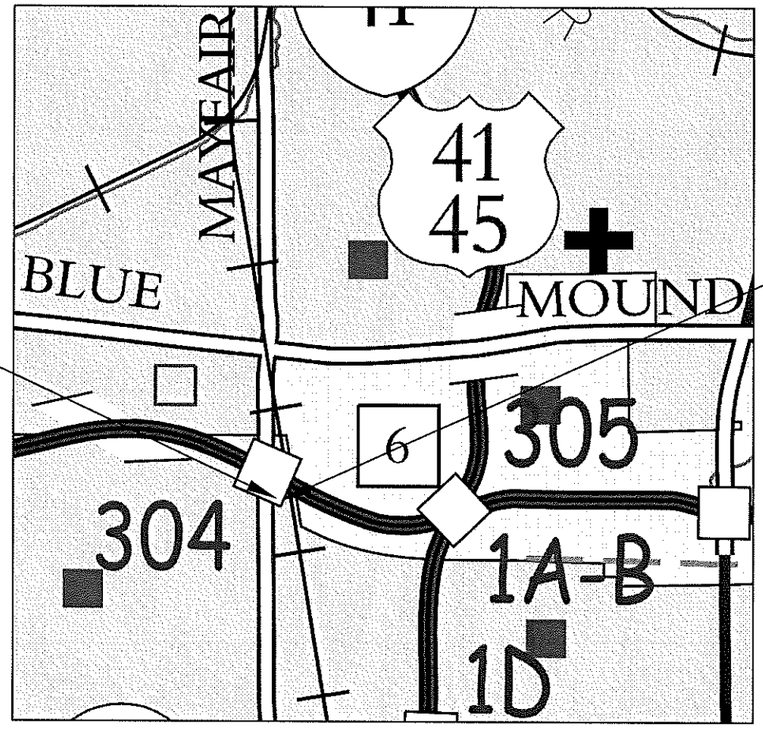
BIKE PATH B - HANK AARON STATE TRAIL

HWY 100 TO UPRR

NON HIGHWAY
MILWAUKEE COUNTY

STATE PROJECT NUMBER
1693-37-74

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1693-37-74	WISC 2019433	1



RETAINING WALLS:
R-40-631
R-40-655

BEGIN PROJECT
STA 10BPB+15.18
X=569231.63
Y=295726.50

END PROJECT
STA 17BPB+78.19

LAYOUT

SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2007). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	
Designer	WISDOT
Project Manager	JOSH LEVEQUE
Regional Examiner	
Regional Supervisor	BILL MOHR

APPROVED FOR THE DEPARTMENT
DATE: 3/11/19 (Signature)

E

FILE NAME : W:\PDS\C30\16933774\SHEETSPLAN\010101_TI.DWG

PLOT DATE : 2/26/2019 3:48 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME :

UTILITY CONTACTS

AT&T LEGACY - COMMUNICATION LINE
KENNETH COLWELL
222 W JACKSON
WOODSTOCK, IL 60098
(312) 734-2223
kc1298@att.com

AT&T LOCAL NETWORK - COMMUNICATION LINE
JENNIFER NAVARRO
6070 N FLINT RD
GLENDALE, WI 53209
(414) 459-3564
j.navarro@northwindtech.com

AT&T WISCONSIN - COMMUNICATION LINE
JAY BULANEK
2005 PEWAUKEE RD
WAUKESHA, WI 53188-2443
(262) 896-7669
jb5175@att.com

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

CITY OF MILWAUKEE – ROAD FACILITY
SAMIR AMIN
841 N BROADWAY
MILWAUKEE, WI 53202
(414) 286-3301
samin@milwaukee.gov

CITY OF WEST ALLIS – SEWER
PETER DANIELS
7525 W GREENFIELD AVE
WEST ALLIS, WI 53214
(414) 302-8374
pdaniels@westalliswi.gov

CITY OF WEST ALLIS - STREET LIGHTING
PETER DANIELS
7525 W GREENFIELD AVE
WEST ALLIS, WI 53214
(414) 302-8374
pdaniels@westalliswi.gov

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT – SEWER
MICKI KLAPPA-SULLIVAN
260 W SEEBOTH ST
MILWAUKEE, WI 53204
(414) 225-2178
MKlappaSullivan@mmsd.com

WISCONSIN DEPARTMENT OF TRANSPORTATION - COMMUNICATION LINE
JEFF MADSON
STE. 300
433 W. ST. PAUL AVE.
MILWAUKEE, WI 53203-3007
(414) 225-3723
Jeffrey.Madson@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION - STREET LIGHTING
ERIC PEREA
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 574-5422
Eric.Perea@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION - WISCONSIN SIGNAL
DERRIN WOLFORD
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 521-4409
derrin.wolford@dot.wi.gov

WISCONSIN INDEPENDENT NETWORK, LLC - COMMUNICATION LINE
DICK HAMMETTER
SUITE 219
800 WISCONSIN AVE
EAU CLAIRE, WI 54703
(715) 838-4406
Hammetter@WINS.net

WE ENERGIES – ELECTRICITY
NICOLE SMULLEN
A299
333 W EVERETT ST
MILWAUKEE, WI 53203
(414) 221-5617
Nicole.Smullen@wecenergygroup.com

WE ENERGIES - GAS/PETROLEUM
NICOLE SMULLEN
A299
333 W EVERETT ST
MILWAUKEE, WI 53203
(414) 221-5617
Nicole.Smullen@wecenergygroup.com

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MS. KRISTINA BETZOLD - ENVIRONMENTAL SPECIALIST
2300 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
CELL: (414) 507-4946
kristina.betzold@wisconsin.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. JOSH LEVEQUE - PROJECT MANAGER
141 NW BARSTOW ST.
WAUKESHA, WI 53187-0798
CELL: (414) 750-1468
Joshua.LeVeque@dot.wi.gov

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. GREG BERRY – UTILITY COORDINATOR
141 NW BARSTOW STREET
WAUKESHA, WI 53187-0798
CELL: (414) 750-7828
gregory.berry@dot.wi.gov

OTHER AGENCIES

MILWAUKEE COUNTY DPW
MR. GREG HEISEL, HWY MAINT. MANAGER
10190 W. WATERTOWN PLANK ROAD
MILWAUKEE, WI 53226
PHONE: (414) 257-6566
gheisel@milwcnty.com

MILWAUKEE COUNTY TRANSIT SYSTEM
MS. MELANIE FLYNN
1942 N. 17TH STREET
MILWAUKEE, WI 53205
PHONE: (414) 343-1764
mflynn@mcts.org

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
MR. ROB MERRY
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953-4289
CELL: (920) 912-1036
rmerry@sewrpc.org

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

2

GENERAL NOTES

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

ANY REINFORCEMENT LOCATED IN EXISTING CONCRETE PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE REMOVING PAVEMENT ITEM, AND NO ADDITIONAL COMPENSATION WILL BE GRANTED.

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.

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.

WHEN THE QUANTITY OF ASPHALTIC SURFACE OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

A SAWED JOINT IS REQUIRED WHERE NEW ASPHALTIC SURFACE MEETS EXISTING ASPHALTIC SURFACE.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

FERTILIZER SHALL NOT BE USED WITHIN 100' OF NAVIGABLE WATERWAYS OR WETLANDS.

WHEN DEFINING THE PAVEMENT STRUCTURE, THE BOTTOM OF THE BASE AGGREGATE DENSE IS CONSIDERED THE SUBGRADE LINE. THE SELECT CRUSHED MATERIAL LAYER IS A SUBGRADE IMPROVEMENT.

CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC) AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND EXISTING PAVEMENT ELEVATIONS, CONTRACTOR IS TO NOTIFY ENGINEER.

THE EXACT LOCATION OF EXCAVATION BELOW SUBGRADE (EBS) WILL BE DETERMINED BY THE ENGINEER.

ALL PRIVATE EXISTING UTILITIES ARE TO BE ADJUSTED BY THE UTILITIES CONCERNED.

A SOIL EXPANSION FACTOR OF 1.1 WAS USED TO GENERATE ESTIMATED EARTHWORK QUANTITIES. DUE TO POTENTIAL SOIL VARIABILITY, ACTUAL QUANTITIES MAY VARY. NO QUANTITY ADJUSTMENTS WILL BE MADE FOR DIFFERING SOIL EXPANSION FACTORS ENCOUNTERED IN THE FIELD.

CONSTRUCT ASPHALTIC SURFACE WITH THE FOLLOWING LAYERS AND GRADATIONS:

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	NOMINAL MAXIMUM SIZE GRADATION
ASPHALTIC SURFACE	3"	ONE 3" LAYER	12.5 MM

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
PAVING GRADES
CONTOUR MAP
CROSS SECTION MATCHLINES
EROSION CONTROL
STORM SEWER
PERMANENT SIGNING
LIGHTING PLANS
PAVEMENT MARKING
TRAFFIC CONTROL
FENCING
ALIGNMENT LAYOUT

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
ASPH	ASPHALTIC
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EB	EASTBOUND
ENB	EXISTING NOISE BARRIER
FE	FIELD ENTRANCE
FL	FLOW LINE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PGL	PROFILE GRADE LINE
PLE	PERMANENT LIMITED EASEMENT
PNB	PROPOSED NOISE BARRIER
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RRSP	RAILROAD SPIKE
RT	RIGHT
SALV	SALVAGED
SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COARSE
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND

2

2

N

CITY OF WEST ALLIS

STH 100/108TH STREET

IH 94

UNION PACIFIC RAILROAD

BEGIN PROJECT 1693-37-74
STA 10BPB+15.18

14BPB

R-40-631

R-40-655

13BPB

11BPB

12BPB

15BPB

16BPB

17BPB

HANK AARON STATE TRAIL

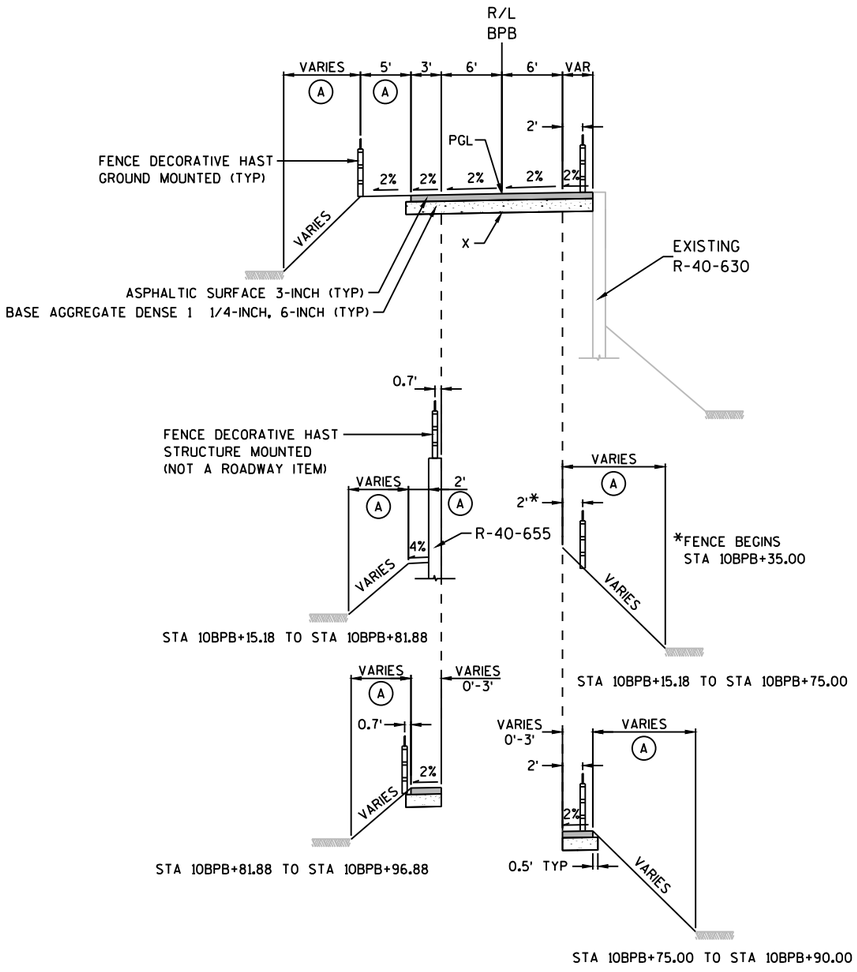
END PROJECT 1693-37-74
STA 17BPB+78.19

CITY OF WEST ALLIS

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\020201_PO.DWG
LAYOUT NAME - 020201

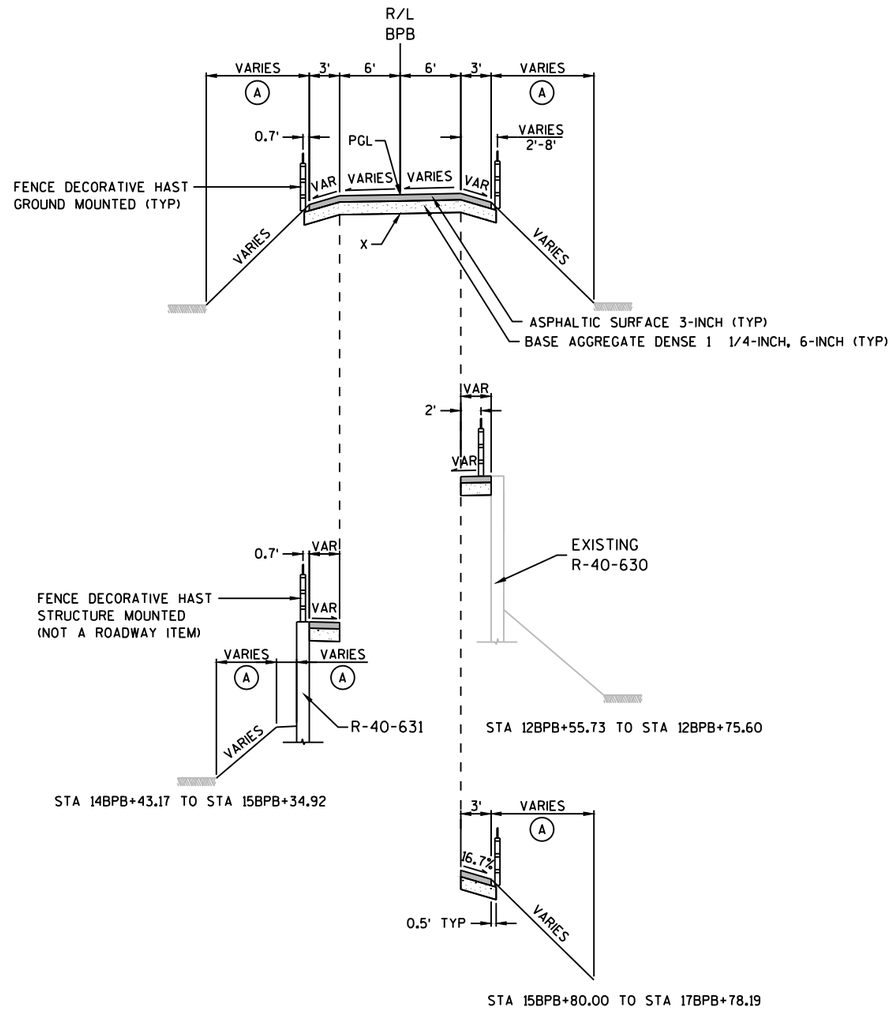
PLOT DATE : 2/26/2019 4:01 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:100 FT



TYPICAL FINISHED SECTION

BIKE PATH B

STA 10BPB+15.18 TO STA 12BPB+55.73



TYPICAL FINISHED SECTION

BIKE PATH B

STA 12BPB+55.73 TO STA 13BPB+05.93
STA 14BPB+43.17 TO STA 17BPB+78.19

NOTES

PGL = POINT REFERRED TO ON PROFILE AND PIVOT POINT FOR SUPERELEVATION
X = POINT REFERRED TO ON CROSS-SECTION
Y = CROWN POINT

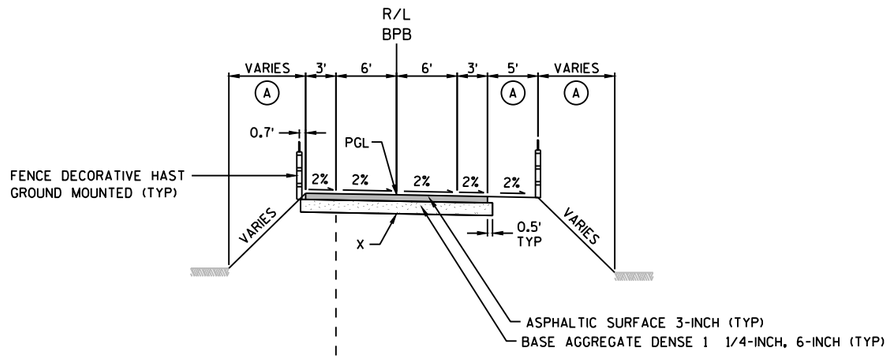
LEGEND

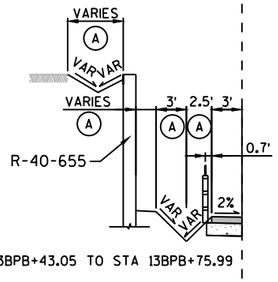
(A) 6" TOPSOIL SPECIAL, SEEDING MIXTURE NO. 75 & FERTILIZER TYPE B SPECIAL

NOTE

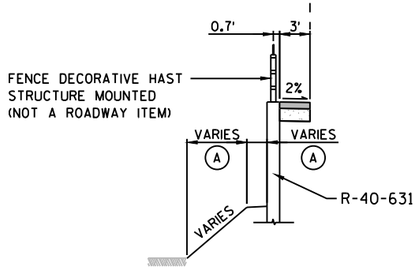
LOCATIONS OF EROSION MAT ARE SHOWN ON EROSION CONTROL PLANS

2





STA 13BPB+43.05 TO STA 13BPB+75.99



STA 13BPB+88.93 TO STA 14BPB+43.17

TYPICAL FINISHED SECTION

BIKE PATH B

STA 13BPB+05.93 TO STA 14BPB+43.17

NOTES

PGL = POINT REFERRED TO ON PROFILE AND PIVOT POINT FOR SUPERELEVATION
X = POINT REFERRED TO ON CROSS-SECTION
Y = CROWN POINT

LEGEND

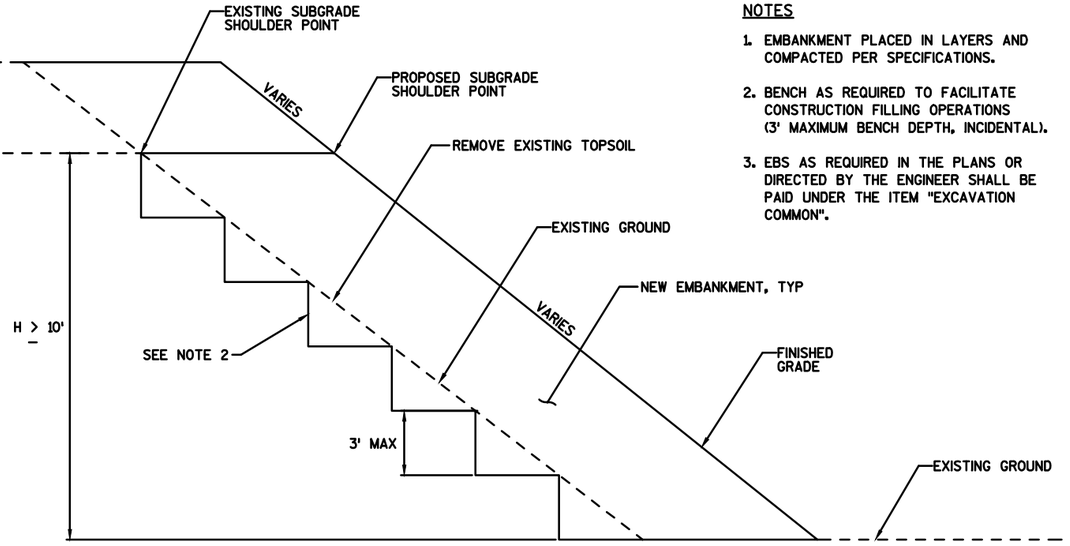
(A) 6" TOPSOIL SPECIAL, SEEDING MIXTURE NO. 75 & FERTILIZER TYPE B SPECIAL

NOTE

LOCATIONS OF EROSION MAT ARE SHOWN ON EROSION CONTROL PLANS

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 6	E

2

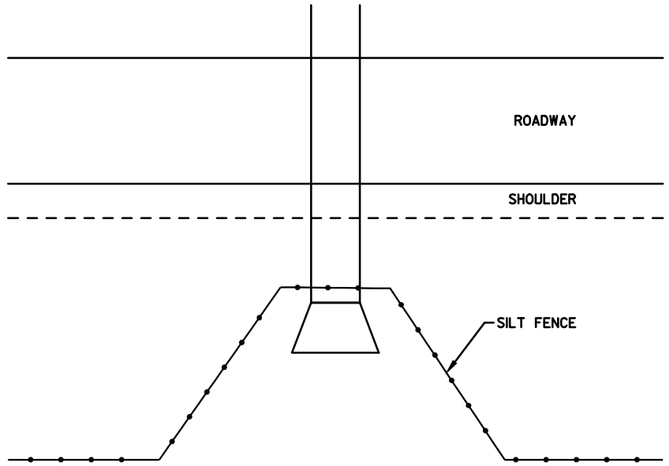


NOTES

1. EMBANKMENT PLACED IN LAYERS AND COMPACTED PER SPECIFICATIONS.
2. BENCH AS REQUIRED TO FACILITATE CONSTRUCTION FILLING OPERATIONS (3' MAXIMUM BENCH DEPTH, INCIDENTAL).
3. EBS AS REQUIRED IN THE PLANS OR DIRECTED BY THE ENGINEER SHALL BE PAID UNDER THE ITEM "EXCAVATION COMMON".

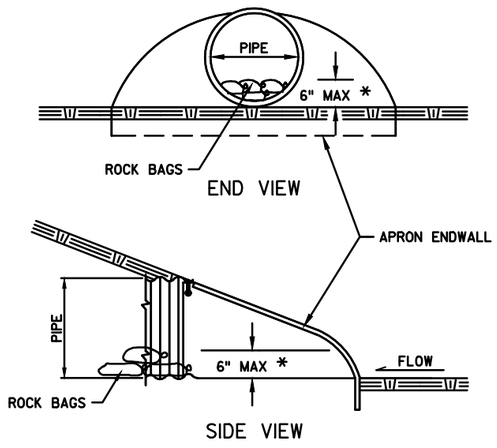
STEPPED EMBANKMENT

2



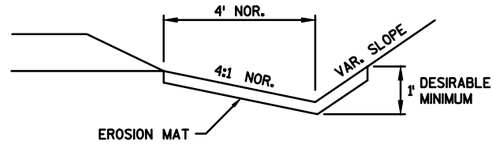
NOTE
SEE SILT FENCE SDD FOR ADDITIONAL INFORMATION.

TYPICAL SILT FENCE DETAIL AT PIPE INLET



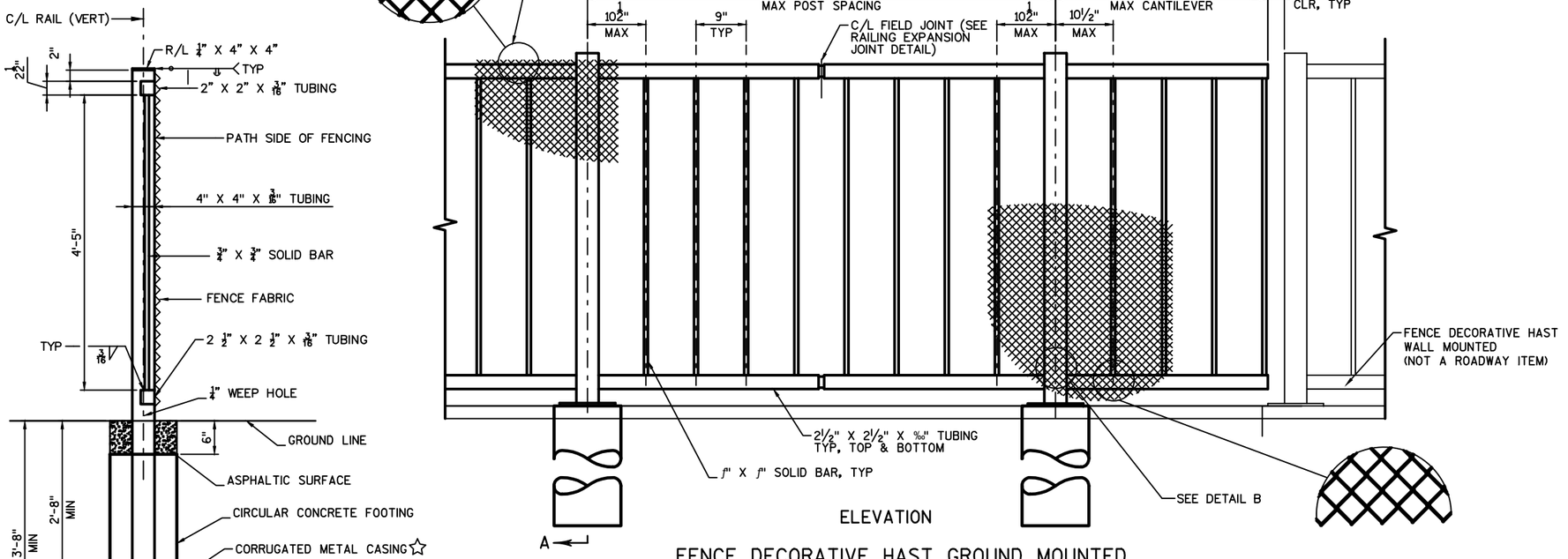
* OR AS DIRECTED BY THE ENGINEER

CULVERT PIPE CHECK, ROCK BAGS



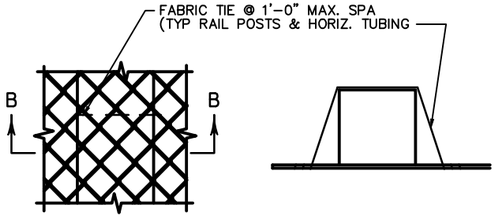
EROSION MAT DETAIL FOR DITCHES

2



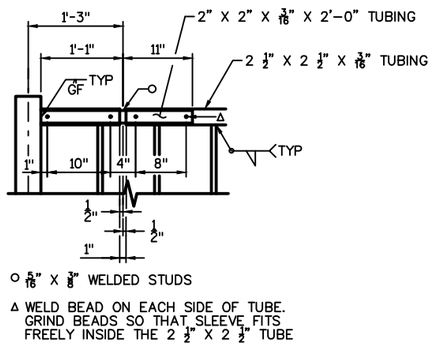
FENCE DECORATIVE HAST GROUND MOUNTED

SECTION A-A



DETAIL B

SECTION B-B



RAILING EXPANSION JOINT DETAIL

NOTES

ALL POST SPACINGS ARE TAKEN HORIZONTALLY ALONG CENTER LINE OF RAILING AT BASE OF POST.

MAXIMUM HORIZONTAL POST SPACING SHALL NOT EXCEED 10'-0".

INSTALL RAILING EXPANSION JOINT AT 50'-0" MAXIMUM SPACING.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

RAILING TO BE PAINTED AND FENCE FABRIC AND TIES TO BE VINYL COATED. FEDERAL COLOR NO 37038.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

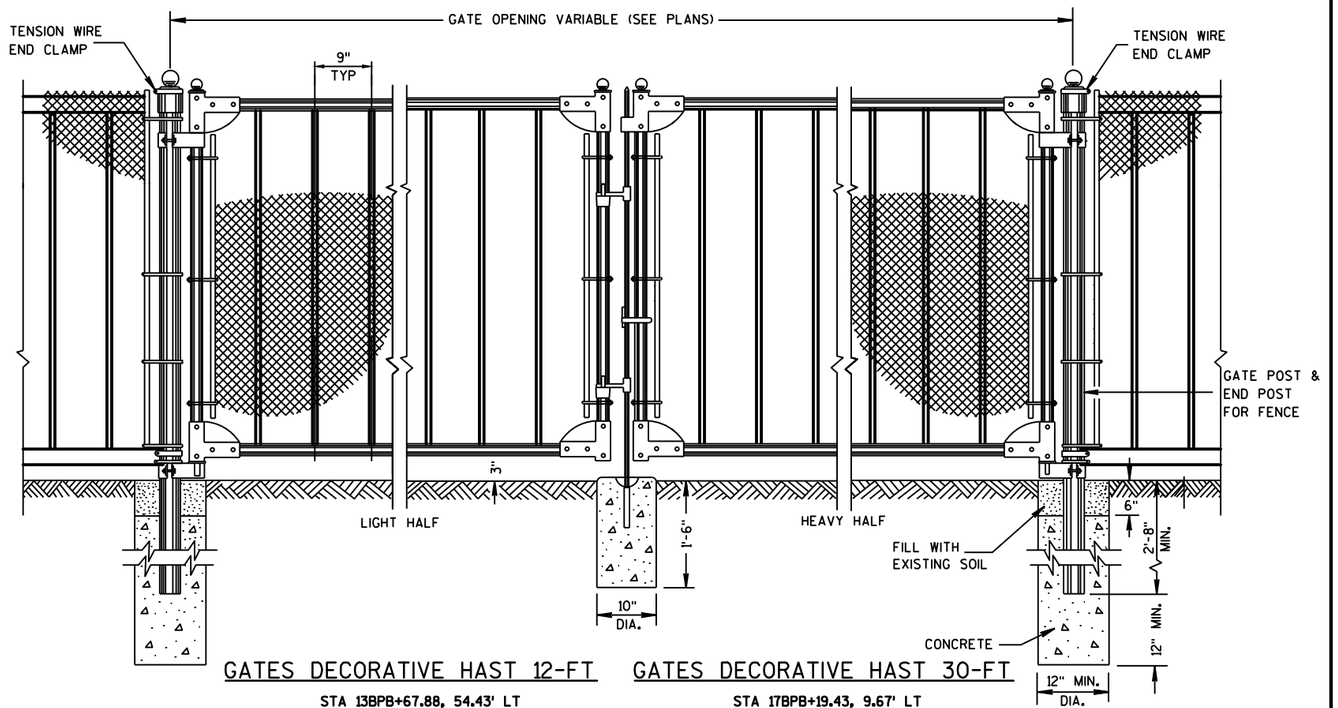
VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A #6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

LEGEND

☆ CORRUGATED METAL CASING REQUIRED TO BE INSTALLED PRIOR TO MSE REINFORCING STRIPS IN MSE BACKFILL ZONES. CORRUGATED METAL CASING NOT REQUIRED IN NON-MSE BACKFILL ZONES.



GATES DECORATIVE HAST 12-FT

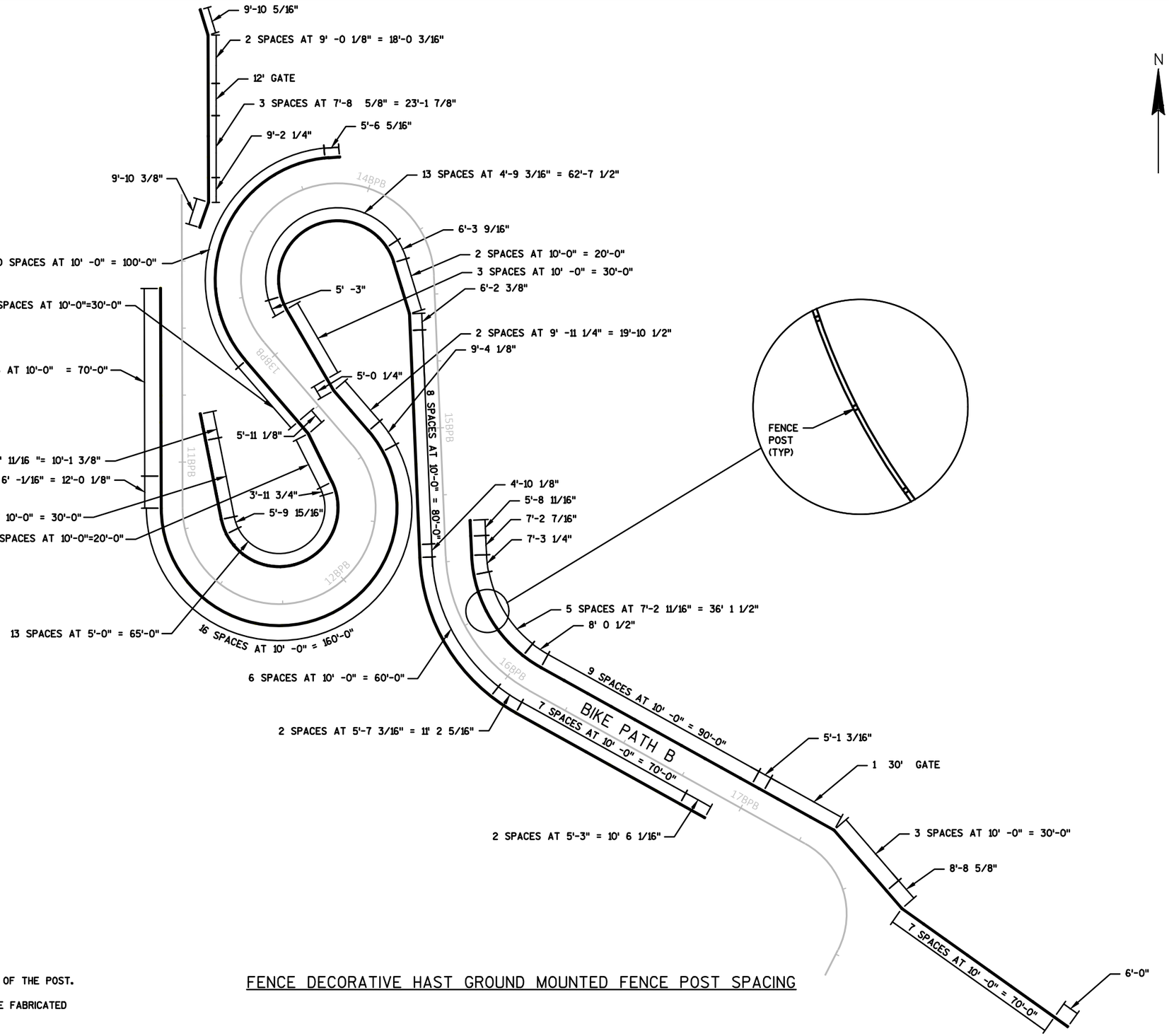
STA 13BPB+67.88, 54.43' LT

GATES DECORATIVE HAST 30-FT

STA 17BPB+19.43, 9.67' LT

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 9	E

2



NOTES

1. POST SPACING IS MEASURED ALONG THE CENTERLINE OF THE POST.
2. HORIZONTAL RAIL MEMBERS ALONG CURVES SHALL BE FABRICATED CURVILINEAR.

FENCE DECORATIVE HAST GROUND MOUNTED FENCE POST SPACING

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 10	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\021001_CD.DWG
LAYOUT NAME - 021004
PLOT DATE : 2/12/2019 8:58 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:2 FT
WISDOT/CADDS SHEET 42

2

RAMP SB

UNION PACIFIC RAILROAD

REMOVE CONCRETE BARRIER TEMPORARY PRECAST

END R-40-631
STA 13BPB+88.93

14BPB

R-40-631

R-40-655

END R-40-655
STA 13BPB+75.99

BPB+15.18
-6.00'LT

BPB+15.18
6.00'RT

13BPB

15BPB

BEGIN R-40-631
STA 15BPB+34.92

REMOVE CONCRETE BARRIER TEMPORARY PRECAST

BEGIN R-40-655
STA 10BPB+81.88

BPB+81.88
-6.00'LT

BPB+75.00
6.00'RT

BPB+96.88
-9.00'LT

BPB+90.00
9.00'RT

11BPB

12BPB

EXISTING R-40-630

STH 100/108TH STREET

BIKE PATH B

16BPB

17BPB

3'

6'

6'

3'

PV10

1

2

BPB+78.94
25.40'RT

BPB+78.94
-24.13'LT

HANK AARON STATE TRAIL

MH

MH

PLAN DETAIL LEGEND

PV10 ASPHALTIC SURFACE, 3-INCH

RADIUS TABLE

POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	17BPB+40.91	20.25' RT	11.25'	17BPB+40.91	9.00' RT	17BPB+75.94	25.40' RT
2	17BPB+65.51	26.00' LT	17'	17BPB+65.51	9.00' LT	17BPB+75.94	24.13' LT

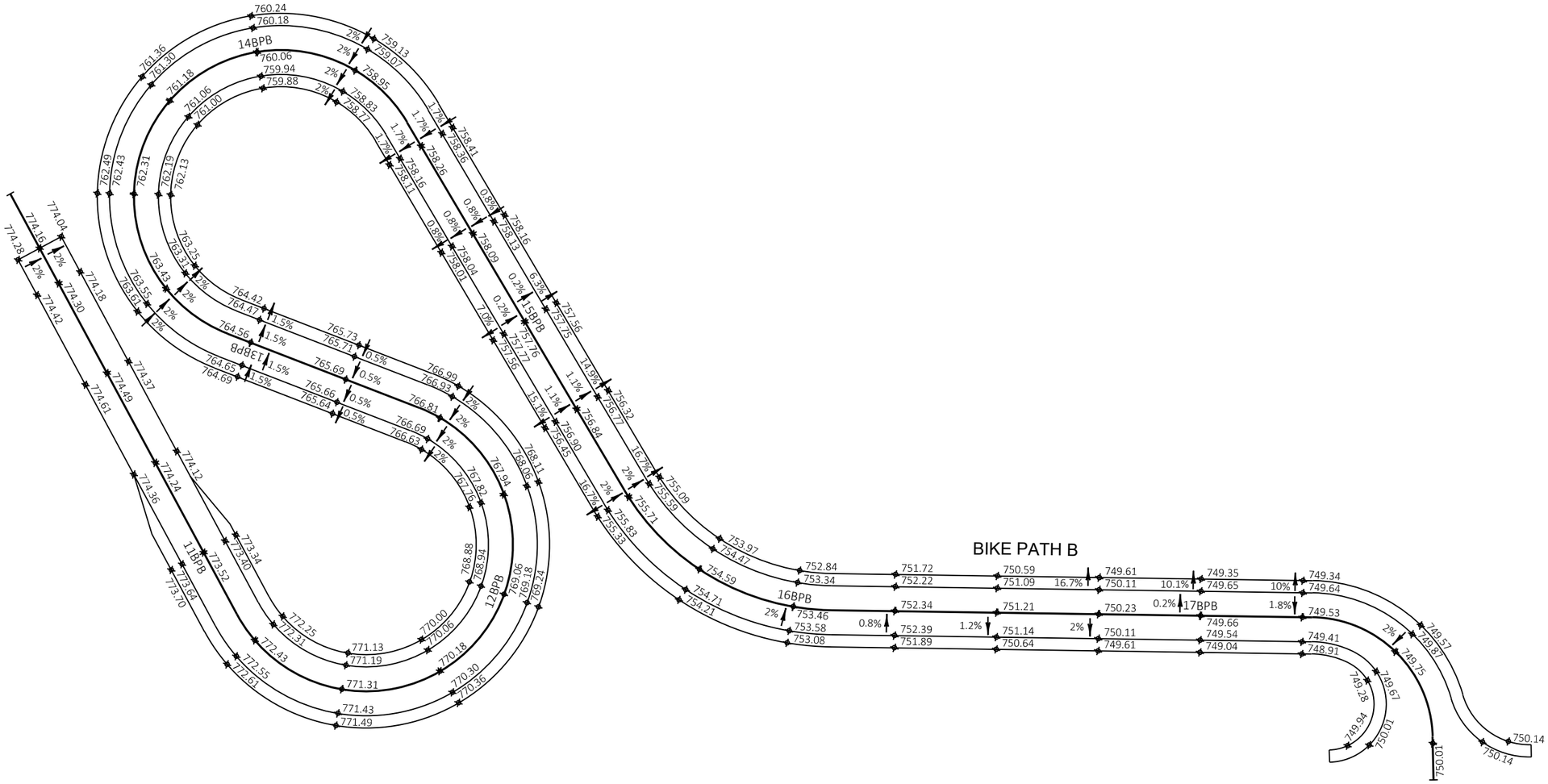
PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 11	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021201

PLOT DATE : 2/27/2019 7:23 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2



PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 12	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\021301_PG.DWG
LAYOUT NAME - 021301

PLOT DATE : 2/12/2019 9:05 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:30 FT

2

2

N

RAMP SB

R/W

UNION PACIFIC RAILROAD

14BPB

15BPB

13BPB

11BPB

12BPB

16BPB

17BPB

BIKE PATH B

HANK AARON STATE TRAIL

STH 100/108TH STREET

R/W

R/W

MH

MH

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CONTOUR MAP	SHEET 13	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\021601_CM.DWG
LAYOUT NAME - 021601

PLOT DATE : 2/27/2019 9:33 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

RAMP SB

UNION PACIFIC RAILROAD

50'

40'

40'

14BPB

36.02'

36.00'

27.58'

37.35'

13.75'

14.00'

13BPB

11.50'

17.11'

15.00'

15BPB

15.00'

39.43'

36.00'

11BPB

36.00'

36.00'

12BPB

R/L BPB

BIKE PATH B

16BPB

17BPB

STH 100/108TH STREET

HANK AARON STATE TRAIL

MH

MH

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTION MATCHLINES	SHEET 14	E

2

RAMP SB

UNION PACIFIC RAILROAD

STH 100/108TH STREET

BIKE PATH B

HANK AARON STATE TRAIL

14BPB

15BPB

13BPB

11BPB

12BPB

16BPB

17BPB

LEGEND

- EROSION MAT CLASS I TYPE B & FERTILIZER TYPE B SPECIAL (WITH SEEDING MIXTURE NO. 75)
- EROSION MAT URBAN CLASS I TYPE B & FERTILIZER TYPE B SPECIAL (WITH SEEDING MIXTURE NO. 75)
- EROSION MAT CLASS II TYPE C, MULCH & FERTILIZER TYPE B SPECIAL (WITH SEEDING MIXTURE NO. 75)
- SILT FENCE
- INLET PROTECTION (TYPE)
- SLOPE INTERCEPT
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 15	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022001

PLOT DATE : 3/11/2019 12:40 PM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

RAMP SB

ZE5130
STA 13+64, 11.5' LT
REMOVE COVER PLATE
INLET COVER TYPE X

14BPB
15BPB
13BPB
11BPB
12BPB
16BPB
17BPB

BIKE PATH B

UNION PACIFIC RAILROAD

STH 100/108TH STREET

ZE5130

EXISTING PROFILE AT
STORM SEWER TRUNKLINE

760.86

EXIST 15" PIPE
757.97

EXIST 18" PIPE
744.70

770
765
760
755
750
745
740
735
730

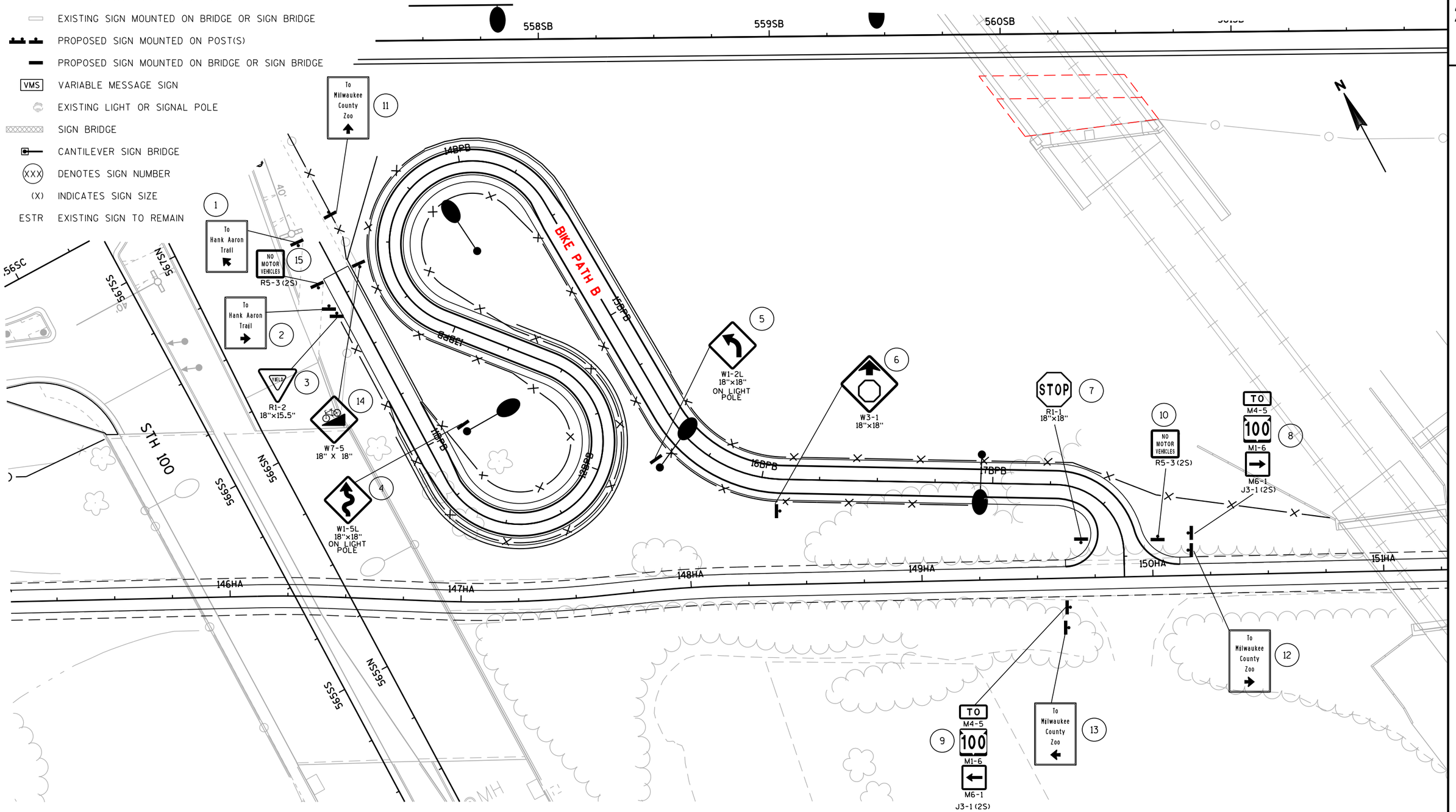
PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	STORM SEWER	SHEET 16	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\022501_SS.DWG
LAYOUT NAME - 022501

PLOT DATE : 2/19/2019 8:12 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:50 FT

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
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE
- ESTR — EXISTING SIGN TO REMAIN



SHEET 1 OF 1

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PERMANENT SIGNING	SHEET 17	E

2

GENERAL NOTES

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

THE CONTRACTOR IS RESPONSIBLE FOR NOT BACKFEEDING CIRCUITS PRIOR TO DISCONNECTING ANY BRANCH CIRCUITS FROM OLD SOURCE.

LOCATIONS OF THE PVC CONDUITS ARE IDENTIFIED IN THE PLANS WHERE THEY ARE REQUIRED. APPROPRIATE ADJUSTMENT ON CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. FIELD MARK EACH CONDUIT LOCATION IN RED.

ALL CONDUITS SHALL BE CAPPED OR PLUGGED WITH ENGINEER APPROVED FITTINGS IMMEDIATELY AFTER INSTALLATION. THE TRENCH SHALL NOT BE BACK FILLED PRIOR TO INSPECTION OF THE CONDUIT.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR IMMERSION 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 ALL CONDUITS.

PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT, BUT EASILY REMOVED IN THE FUTURE. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.

CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX-TO-PULL BOX OR JUNCTION BOX OR BASE-TO-BASE, ETC.) UNLESS OTHERWISE NOTED ON PLANS.

PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUITS.

CONTRACTOR SHALL SUPPLY AS-BUILT DRAWING FOR ALL THE WORK BEING DONE.

INSTALLATION OF LATERAL UNDERGROUND CONDUIT UNDER PAVEMENT SHALL BE INSTALLED MINIMUM 30 INCHES BELOW PROPOSED GRADE AND A MINIMUM OF 3 INCHES BELOW ALL PAVEMENT BASE MATERIALS. CONDUIT LATERALS SHALL BE TRENCHED UNDER PAVEMENT BEFORE PAVEMENT CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ROADWAY CONSTRUCTION FOR CONDUIT LATERALS INSTALLATION.

PITCH ALL CONDUITS TOWARD PULL BOXES. INSTALL A 2" DRAIN DUCT TO STORM SEWER OR DRAIN SUMP AS REQUIRED FOR DRAINAGE. THE 2" DRAIN DUCT OR SUMP IS INCIDENTAL TO THE PULL BOX BID ITEM AND IS NOT SHOWN.

THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE, IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

HAND DIGGING MAY BE REQUIRED FOR LOCATIONS ADJACENT TO EXISTING GAS AND POWER LINES. HAND EXCAVATION SHOULD BE ANTICIPATED & WILL BE CONSIDERED INCIDENTAL TO THE CONCRETE BASES BID ITEM. COORDINATE ALL WORK NEAR GAS LINE WITH WE ENERGIES.

EXISTING CONDUIT AND CID NO LONGER BEING USED IS ABANDONED IN PLACE. THE CONTRACTOR MAY REMOVE ABANDONED WIRING AT THE CONTRACTOR'S EXPENSE. ABANDONED PULL BOX REMOVAL IS INCIDENTAL TO THE ROAD CONSTRUCTION.

ALL UNDERGROUND WIRING AND CONDUIT FOR POLES BEING REMOVED IS ABANDONED IN PLACE UNLESS NOTED OTHERWISE. CONTRACTOR MAY SALVAGE ABANDONED WIRING AT HIS OWN EXPENSE.

IF CID CONTAINS PHASE CONDUCTOR(S) THAT WILL NOT BE USED FOR SUBSEQUENT POLES, I.E. AT THE END OF A CIRCUIT, DO NOT ENERGIZE THE RESPECTIVE CONDUCTOR(S) PAST THE LAST POLE THE PHASE WAS UTILIZED. REMOVE UNUSED CONDUCTOR(S) EXPOSED BEYOND THE CID RACEWAY IN ALL SUBSEQUENT POLES.

SEAL THE ENDS OF ALL CID RACEWAY WITH A UL RECOGNIZED FOAM CONDUIT SEALANT. PROVIDE A 1/2" NYLON ROPE EXTENDING BEYOND THE PLUG TO ASSIST IN REMOVING THE PLUG IN THE FUTURE.

SEE DETAIL "CONDUIT DETAILS AT STRUCTURE PARAPET TO ROADWAY BARRIER INTERFACE" WHEN CONDUIT EXITS TO GRADE FROM A BRIDGE PARAPET OR RETAINING WALL. RIGID METALLIC CONDUIT IN THE CONCRETE BARRIER IS INCIDENTAL TO THE RIGID NONMETALLIC CONDUIT.

PROVIDE MINIMUM CABLE SLACK AS NOTED BELOW:

PULL BOXES:	10-FT	LIGHTING CONTROL CENTERS:	10-FT
EMBEDDED JUNCTION BOXES:	3-FT	POLES:	5-FT IN AND 5-FT OUT

INSTALLATION OF THE LIGHTING SYSTEM MAY NEED TO BE ACCOMPLISHED BENEATH AND/OR ADJACENT TO ENERGIZED OVERHEAD 138kV TRANSMISSION LINES OWNED AND OPERATED BY THE AMERICAN TRANSMISSION CO (ATC). THE HORIZONTAL AND VERTICAL LOCATION OF THESE LINES CAN VARY WITH WIND, AMBIENT TEMPERATURE AND POWER LOADING. THE CONTRACTOR IS ADVISED THAT LOW OVERHEAD EQUIPMENT AND INSTALLATION TECHNIQUES MAY BE REQUIRED TO MAINTAIN SAFE CLEARANCE FROM THESE LINES. SEE ALSO THE UTILITY DRAWINGS FOR THE LOCATION OF THESE LINES. REFER TO THE LATEST REVISION OF OSHA CRANE REGULATIONS WHEN WORKING AROUND ENERGIZED CONDUCTORS.

SIGN STRUCTURES WHICH HAVE A BASE THAT EXTENDS THE COMPLETE WIDTH OF THE MEDIAN TYPICALLY HAVE A 4" SLEEVE FOR LIGHTING.

WIRE AND CONDUIT IS LISTED IN THE MISCELLANEOUS QUANTITIES BASED UPON THE EARLIEST STAGE SHOWN. CONTRACTOR MAY INSTALL LATER WHEN LOAD NEEDS TO BE ENERGIZED.

CONDUCTOR COLORS: 240/480V, 1 PHASE - BLACK / RED / WHITE (NEUTRAL) / BARE OR GREEN (GROUND)
277/480V, 3 PHASE - BROWN / ORANGE / YELLOW / GREY (NEUTRAL) / BARE OR GREEN (GROUND)

STAGING NOTES

MAINTAIN LIGHTING AT ALL TIMES DURING CONSTRUCTION USING EXISTING LIGHTING, PROPOSED TEMPORARY, FINAL LIGHTING OR COMBINATIONS.

DO NOT REMOVE EXISTING LIGHTING UNTIL THE NEW OR TEMPORARY LIGHTING IS OPERATIONAL. REFER TO DRAWINGS FOR STAGING INFORMATION.

MAINTAINING SYSTEM CONTINUITY SHALL BE INCIDENTAL TO THE "REMOVE EXISTING STREET LIGHTS" BID ITEM.

DUE TO THE PHASING OF CONSTRUCTION SOME FINAL LIGHTING UNITS MAY BE ORPHANED UNTIL A LATER STAGE IS COMPLETE. IT IS AT THE DISCRETION OF THE CONTRACTOR TO SCHEDULE THESE ITEMS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE PLACEMENT OF RACEWAY THAT SPANS TWO DIFFERENT PHASES OF CONSTRUCTION. MISCELLANEOUS QUANTITIES SHOW WIRING ADDED WHEN CONDUIT IS INSTALLED. WIRING INSTALLATION MAY BE DEFERRED SUBJECT TO THE LIMITATIONS NOTED HEREIN.

TEMPORARY OR FINAL LIGHTING MUST ILLUMINATE AN AREA BEFORE EXISTING LIGHTING UNITS IN AN AREA CAN BE REMOVED. THE SCHEDULING OF REMOVAL IS AT THE DISCRETION OF THE CONTRACTOR WITH THE PROVISION THAT LIGHTING OF THE ROADWAY IS PROVIDED AT ALL TIMES. COORDINATE POLE REMOVAL WITH TRAFFIC CONTROL.

LEGEND - LIGHTING REMOVALS

- CONDUIT - 2" UNLESS OTHERWISE SHOWN
- XX — DENOTES THE REMOVAL STAGE NUMBER
- XYYZ — EXISTING SINGLE ARM FREEWAY LIGHTING UNIT
  X - CIRCUIT
  YY - DISTRIBUTION CENTER
  Z - POLE/LUMINAIRE ID NUMBER
- XYYZ / XYYZ — EXISTING TWIN ARM FREEWAY LIGHTING UNIT
  X - CIRCUIT
  YY - DISTRIBUTION CENTER
  Z - POLE/LUMINAIRE ID NUMBER
- XXYZ — EXISTING SINGLE ARM LOCAL LIGHTING UNIT
  XX - DISTRIBUTION CENTER
  Y - CIRCUIT (AS NOTED)
  Z - POLE/LUMINAIRE ID NUMBER
- DISTRIBUTION CENTER
- TRANSFORMER
- ELECTRIC METER SOCKET
- EXISTING HANDHOLE
- EXISTING PULLBOX
- EXISTING UDL (UNDER DECK LIGHTING)
- PHOTOCELL
- X/Y/ZZ — HIGH MAST LIGHTS
  HML-40-W
  X/Y/ZZ
  X&Y-CKT
  ZZ-LIGHTING CABINET
  W-ID NUMBER
- CAUTION — DANGER/CAUTION (THIS SYMBOL TYPICAL FOR ALL STAGES/PHASES OF WORK)

LEGEND - TEMPORARY LIGHTING

- LIGHTING CONTROL CABINET
- V, W / T-XYYZ — FLOOD LIGHT ON WOOD POLE
  V - STATION, W - OFFSET
  T - TEMPORARY LIGHTING
  X - CIRCUIT, YY - DISTRIBUTION CENTER,
  Z - POLE NUMBER
- V, W / WP-XX-Y — WOOD POLE
  V - STATION, W - OFFSET
  WP - WOOD POLE
  XX - DISTRIBUTION CENTER
  Y - POLE NUMBER
- V, W / T-PB-XX-YY — PULL BOX, 24" x 36"
  V - STATION, W - OFFSET
  T - TEMPORARY
  PB - PULLBOX
  XX - DISTRIBUTION CENTER
  YY - PULLBOX NUMBER
- EXISTING SINGLE ARM LOCAL LIGHTING UNIT
- EXISTING SINGLE ARM FREEWAY LIGHTING UNIT
- EXISTING TWIN ARM FREEWAY LIGHTING UNIT
- —OH— OVERHEAD CABLE (AERIAL ALUMINUM)
- CONDUIT, 2" UNLESS OTHERWISE NOTED
- X/Y — DENOTES THE CONSTRUCTION STAGE FOR INSTALLATION/REMOVAL
- E/Y — EXISTING TO BE REMOVED IN STAGE "Y"

UNLESS NOTES OTHERWISE TEMPORARY LIGHTS/POLES ARE 1000W HPS FLOODLIGHTS ON A 60' POLE (50' MH). 35=35' POLE (30' MH); 400W=400W HPS FLOODLIGHT; MH=MOUNTING HEIGHT.

LEGEND - FINAL LIGHTING

- CID (CABLE IN DUCT)
- CABLE IN CONDUIT - SIZE AS NOTED
- PROPOSED SINGLE ARM FREEWAY LIGHTING UNIT
- PROPOSED TWIN ARM FREEWAY LIGHTING UNIT
- EXISTING FREEWAY LIGHTING UNIT TO REMAIN
- LIGHTING CONTROL CABINET
- PULL BOX 24" x 36"
- PULL BOX 24" x 42"
- PROBEAM LUMINAIRE WITH BASE & ARM
  STATION - OFFSET
  PRO - X YY Z
  - LUMINAIRE NUMBER
  - LIGHTING CONTROL CABINET
  - CIRCUIT
  (PLAQUE SEQUENCE IDENTIFICATION)
- ELECTRIC METER SOCKET
- SM — DENOTES STRUCTURE MOUNTED
- XX — DENOTES THE CONSTRUCTION STAGE FOR INSTALLATION
- STUBOUT
- LUMINAIRE IDENTIFICATION
  STATION - OFFSET (TWO CALLOUTS IF TWIN)
  LED-X-X(T)-4-XYYZ
  - LUMINAIRE NUMBER
  - LIGHTING CONTROL CABINET
  - CIRCUIT
  (PLAQUE SEQUENCE IDENTIFICATION)
  - LUMINAIRE ARM LENGTH
  - POLE TYPE, (T) WITH TRANSFORMER BASE BREAKAWAY
  - LUMINAIRE UTILITY CATEGORY
  - LUMINAIRE TYPE SOURCE
- UNDERDECK LUMINAIRE

RAMP SB

STA. 13BPB+84.2, 39.6' RT
LED-B-5(T)-ZMW9 (2)

14BPB

15BPB

13BPB

11BPB

12BPB

CAUTION

UNION PACIFIC RAILROAD

STA. 16BPB+95.0, 12.4' LT
LED-B-5(T)-YMW10 (2)

BIKE PATH B

16BPB

17BPB

STA. 15BPB+63.4, 17.4' RT
LED-B-5(T)-XMW10 (2)

HANK AARON STATE TRAIL

EXISTING PB-MW-13
WET SPLICE

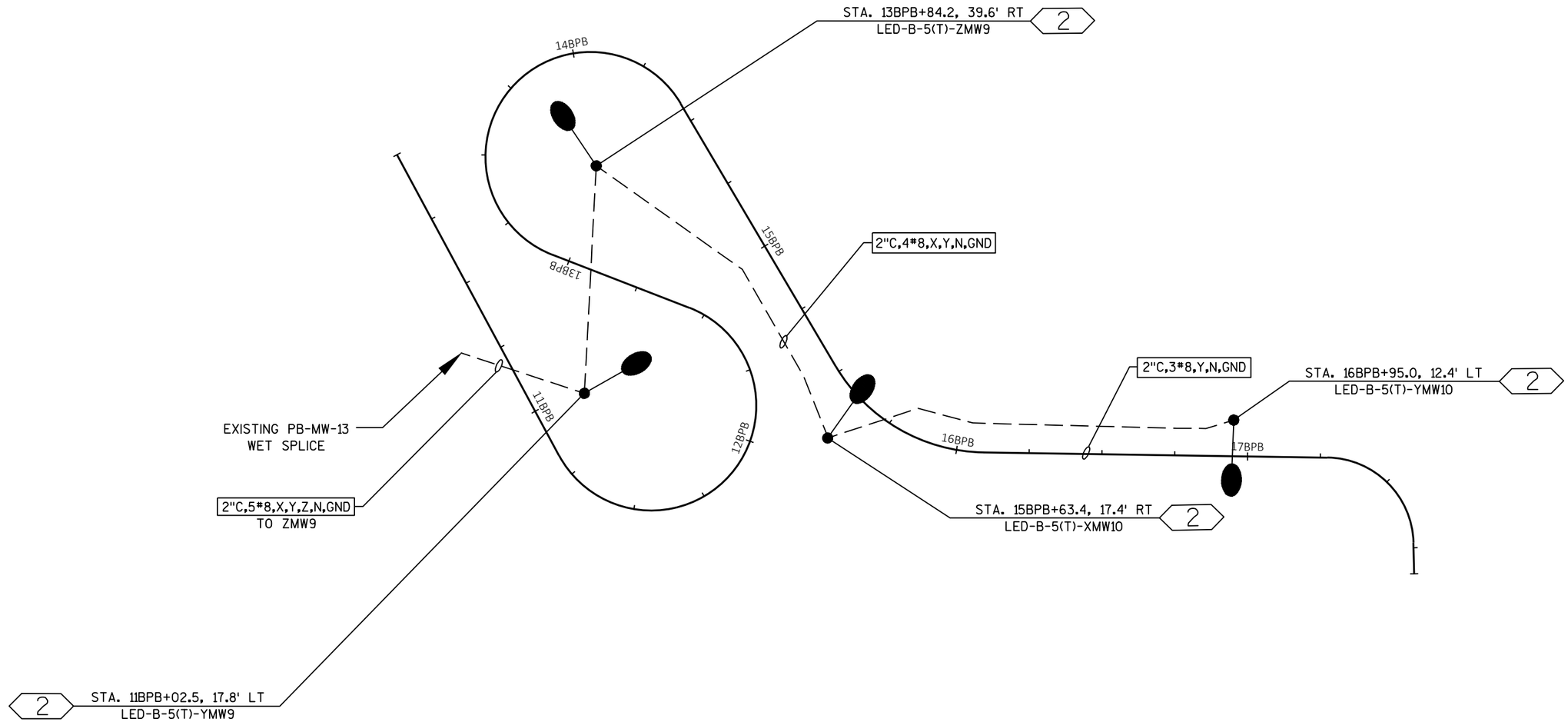
CAUTION

(2) STA. 11BPB+02.5, 17.8' LT
LED-B-5(T)-YMW9

STH 100/108TH STREET

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	LIGHTING PLANS - FINAL LIGHTING	SHEET 19	E

NOTES
1. WET SPLICES REQUIRED.



PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	LIGHTING PLANS - SCHEMATIC	SHEET 20	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\023503_LP.DWG
LAYOUT NAME - 023503
PLOT DATE : 2/12/2019 9:32 AM
PLOT BY : JOHANSEN, AMANDA A
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

2

N

RAMP SB

PAVEMENT MARKING LEGEND

1 MARKING LINE EPOXY 4-INCH (YELLOW)

2 MARKING LINE EPOXY 4-INCH (WHITE)

UNION PACIFIC RAILROAD

BPB+40

BPB+53

BPB+40

BPB+53

6'

6'

BPB+15

14BPB

15BPB

BPB+82

6'

BPB+75

6'

BPB+07

BPB+20

BPB+07

BPB+20

5'

5'

16BPB

17BPB

1

BIKE PATH B

2

BPB+79

BPB+79

BPB+79

STH 100/108TH STREET

HANK AARON STATE TRAIL

MH

MH

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 21	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\024501_PM.DWG
LAYOUT NAME - 024501

PLOT DATE : 2/12/2019 9:34 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

RAMP SB

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE WITH ATTACHED SIGN

WORK AREA

R11-2 (MOD)
48"X30"

TRAIL CLOSED

R-40-655

R-40-631

14BPB

15BPB

16BPB

17BPB

18BPB

19BPB

BIKE PATH B

UNION PACIFIC RAILROAD

HANK AARON STATE TRAIL

STH 100/108TH STREET

50'

40'

40'

REFER TO SDD, "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON FREEWAY/EXPRESSWAY" AS NEEDED FOR VEHICLE ACCESS (NIGHT TIME ONLY)

SHORT TERM FLAGGING OPERATIONS MAY BE REQUIRED FOR CRANE MOBILIZATION. REFER TO SDD, "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION"

R11-2 (MOD)
48"X30"

TRAIL CLOSED

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.

ALL TRAFFIC CONTROL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER (INCIDENTAL TO ITEM 643.5000, TRAFFIC CONTROL).

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.

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 22	E

2

2

RAMP SB

MATCH EXISTING STRUCTURE
BPB+71.23
-77.16'LT

LEGEND

STATE-FURNISHED FENCE DECORATIVE HAST GROUND MOUNTED

BPB+70.63
-67.32'LT

BPB+67.88
-54.43'LT

STATE FURNISHED GATES DECORATIVE HAST GROUND MOUNTED 12-FT

BPB+03.06
-10.00'LT

BPB+12.49
-6.67'LT

BPB+35.00
8.00'RT

BPB+88.90
-9.85'LT

BPB+85.56
-9.67'LT

R45.67'

14BPB

BPB+33.99
14.00'RT

BPB+56.98
9.67'RT

R22.00'

BPB+12.62
14.00'RT

BPB+55.73
8.00'RT

BPB+75.60
8.00'RT

15BPB

13BPB

BPB+06.04
-9.67'LT

BPB+81.88
-6.67'LT

BPB+69.53
-9.67'LT

BPB+46.55
-14.00'LT

R22.00'

BPB+24.14
-14.00'LT

11BPB

12BPB

BPB+17.18
8.00'RT

R44.00'

R/W

UNION PACIFIC RAILROAD

BPB+34.92
-9.67'LT

BPB+48.01
9.67'RT

BPB+48.01
-9.67'LT

R50.33'

BPB+09.33
-9.67'LT

BIKE PATH B

STATE FURNISHED GATES DECORATIVE HAST GROUND MOUNTED 30-FT
BPB+19.43
-9.67'LT

BPB+32.66
-10.28'LT

BPB+58.14
-20.77'LT

16BPB

17BPB

R69.67'

BPB+09.33
9.67'RT

BPB+90.00
9.67'RT

BPB+70.05
-90.29'LT
MATCH EXISTING WINGWALL

STH 100/108TH STREET

HANK AARON STATE TRAIL

R/W

MH

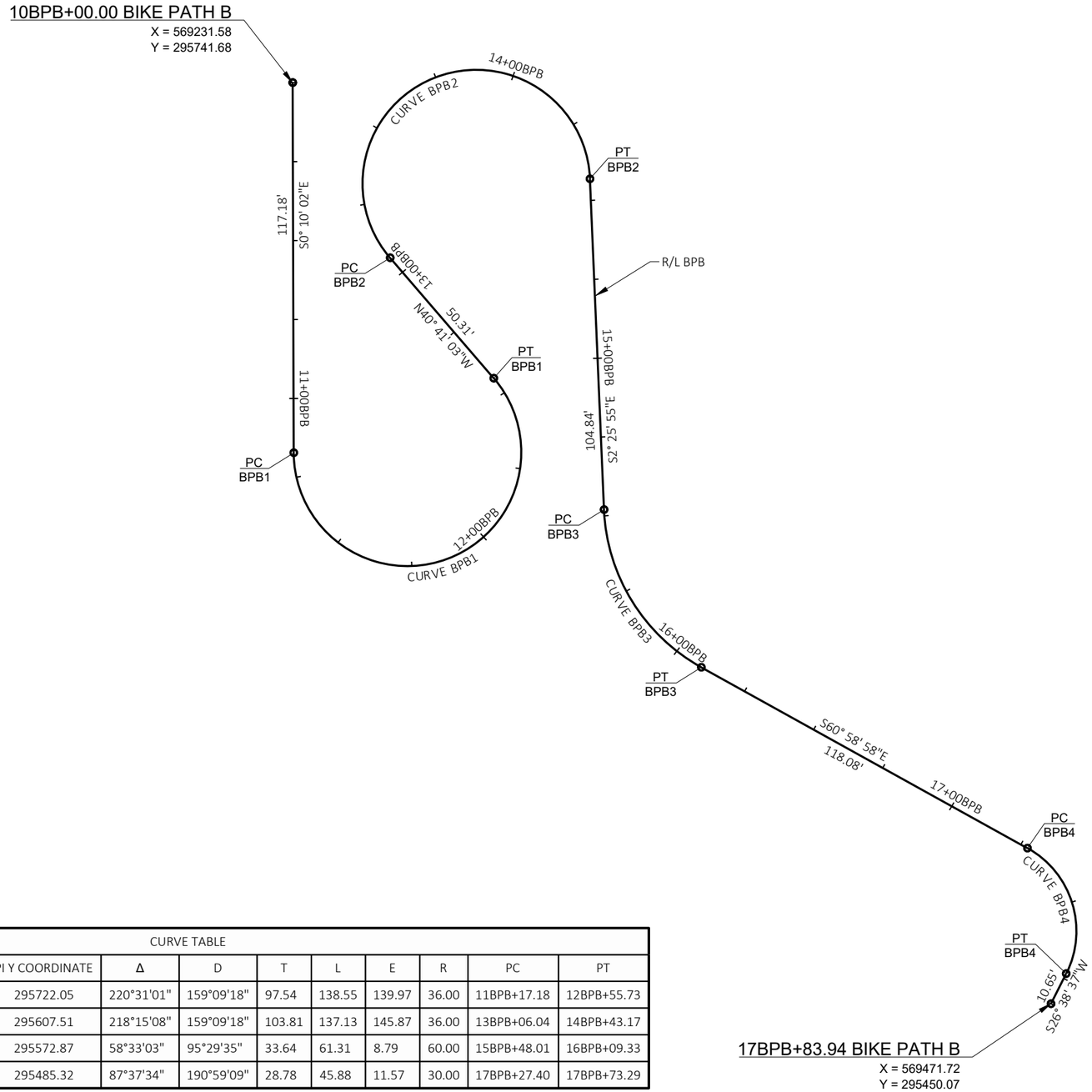
MH

50'

40'

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	FENCING	SHEET 23	E

2



N

CURVE TABLE											
CURVE	PI	PI X COORDINATE	PI Y COORDINATE	Δ	D	T	L	E	R	PC	PT
BPB1	10BPB+19.64	569231.64	295722.05	220°31'01"	159°09'18"	97.54	138.55	139.97	36.00	11BPB+17.18	12BPB+55.73
BPB2	12BPB+02.23	569330.10	295607.51	218°15'08"	159°09'18"	103.81	137.13	145.87	36.00	13BPB+06.04	14BPB+43.17
BPB3	15BPB+81.65	569331.57	295572.87	58°33'03"	95°29'35"	33.64	61.31	8.79	60.00	15BPB+48.01	16BPB+09.33
BPB4	17BPB+56.19	569489.41	295485.32	87°37'34"	190°59'09"	28.78	45.88	11.57	30.00	17BPB+27.40	17BPB+73.29

2

2

N

STH 100/108TH STREET

IH 94

14BPB

MH

12BPB

16BPB

HANK AARON STATE TRAIL

CP653
BERNTSEN FENO MON. W/ ALUMINUM CAP WEST SIDE OF STH 100, SOUTH OF BRIDGE OVER HANK AARON STATE TRAIL, 25' SOUTH OF LIGHT POLE, 0.5' BEHIND BACK OF WALK
STA 11BPB+44.04, 177.33' RT
N 295479.338
E 569111.701
ELEV. 773.760

UNION PACIFIC RAILROAD

INL

W

SIGN

SCALE

GUY

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 25	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\027202_AD.DWG
LAYOUT NAME - 027202

PLOT DATE : 2/12/2019 9:40 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:100 FT

1693-37-74

Line	Item	Item Description	Unit	Total	Qty
0020	204.9090.S	Removing (item description) 0001. Removing Concrete Barrier Temporary Precast	LF	100.000	100.000
0022	205.0100	Excavation Common	CY	1,809.000	1,809.000
0024	206.3000	Excavation for Structures Retaining Walls (structure) 0006. R-40-631	LS	1.000	1.000
0026	206.3000	Excavation for Structures Retaining Walls (structure) 0007. R-40-655	LS	1.000	1.000
0034	213.0100	Finishing Roadway (project) 03. 1693-37-74	EACH	1.000	1.000
0036	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	526.000	526.000
0058	465.0105	Asphaltic Surface	TON	248.000	248.000
0060	504.0500	Concrete Masonry Retaining Walls	CY	114.000	114.000
0062	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	11,655.000	11,655.000
0064	506.0605	Structural Steel HS	LB	78,960.000	78,960.000
0066	506.3010	Welded Stud Shear Connectors 7/8x5-Inch	EACH	406.000	406.000
0068	513.2001	Railing Pipe	LF	47.000	47.000
0070	516.0500	Rubberized Membrane Waterproofing	SY	2.000	2.000
0072	517.0600	Painting Epoxy System (structure) 0005. R-40-631	LS	1.000	1.000
0074	517.0600	Painting Epoxy System (structure) 0006. R-40-655	LS	1.000	1.000
0076	517.1010.S	Concrete Staining (structure) 0109. R-40-631	SF	1,690.000	1,690.000
0078	517.1010.S	Concrete Staining (structure) 0110. R-40-655	SF	1,205.000	1,205.000
0080	517.1050.S	Architectural Surface Treatment (structure) 0032. R-40-631	SF	1,485.000	1,485.000
0082	517.1050.S	Architectural Surface Treatment (structure) 0033. R-40-655	SF	1,040.000	1,040.000
0136	611.0663	Inlet Covers Type X	EACH	1.000	1.000
0156	612.0206	Pipe Underdrain Unperforated 6-Inch	LF	65.000	65.000
0158	616.0700.S	Fence Safety	LF	500.000	500.000
0160	619.1000	Mobilization	EACH	0.150	0.150
0168	627.0200	Mulching	SY	410.000	410.000
0170	628.1504	Silt Fence	LF	323.000	323.000
0172	628.1520	Silt Fence Maintenance	LF	323.000	323.000
0174	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0176	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0178	628.2004	Erosion Mat Class I Type B	SY	2,066.000	2,066.000
0180	628.2008	Erosion Mat Urban Class I Type B	SY	356.000	356.000
0184	628.2027	Erosion Mat Class II Type C	SY	513.000	513.000
0186	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0192	628.7504	Temporary Ditch Checks	LF	206.000	206.000
0194	628.7555	Culvert Pipe Checks	EACH	1.000	1.000
0196	628.7560	Tracking Pads	EACH	2.000	2.000
0200	630.0175	Seeding Mixture No. 75	LB	15.000	15.000

1693-37-74

Line	Item	Item Description	Unit	Total	Qty
0202	630.0200	Seeding Temporary	LB	63.000	63.000
0210	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0212	634.0816	Posts Tubular Steel 2x2-Inch X 16-FT	EACH	12.000	12.000
0214	637.2210	Signs Type II Reflective H	SF	57.830	57.830
0216	637.2230	Signs Type II Reflective F	SF	9.000	9.000
0218	638.2102	Moving Signs Type II	EACH	1.000	1.000
0222	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0224	642.5401	Field Office Type D	EACH	0.150	0.150
0226	643.0300	Traffic Control Drums	DAY	250.000	250.000
0228	643.0420	Traffic Control Barricades Type III	DAY	688.000	688.000
0230	643.0705	Traffic Control Warning Lights Type A	DAY	1,375.000	1,375.000
0232	643.0715	Traffic Control Warning Lights Type C	DAY	100.000	100.000
0234	643.0800	Traffic Control Arrow Boards	DAY	13.000	13.000
0236	643.0900	Traffic Control Signs	DAY	413.000	413.000
0244	643.5000	Traffic Control	EACH	0.150	0.150
0248	646.1020	Marking Line Epoxy 4-Inch	LF	2,182.000	2,182.000
0276	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	440.000	440.000
0278	654.0105	Concrete Bases Type 5	EACH	4.000	4.000
0280	655.0610	Electrical Wire Lighting 12 AWG	LF	540.000	540.000
0286	655.0630	Electrical Wire Lighting 4 AWG	LF	1,894.000	1,894.000
0288	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	4.000	4.000
0290	657.0322	Poles Type 5-Aluminum	EACH	4.000	4.000
0292	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	4.000	4.000
0294	659.1120	Luminaires Utility LED B	EACH	4.000	4.000
0308	SPV.0030	Special 1000. Fertilizer Type B Special	CWT	2.300	2.300
0312	SPV.0035	Special 4010. Concrete Masonry Soldier Pile Footings	CY	131.000	131.000
0334	SPV.0060	Special 2000. Removing Cover Plate Left in Place	EACH	1.000	1.000
0336	SPV.0060	Special 2001. State-Furnished Gates Decorative HAST Ground Mounted 12-Ft	EACH	1.000	1.000
0338	SPV.0060	Special 2002. State-Furnished Gates Decorative HAST Ground Mounted 30-Ft	EACH	1.000	1.000
0342	SPV.0075	Special 4210. Obstructions Foundation Drilling	HRS	8.000	8.000
0346	SPV.0090	Special 0126. Pipe Underdrain 6-Inch Special	LF	285.000	285.000
0350	SPV.0090	Special 2000. State-Furnished Fence Decorative HAST Ground Mounted	LF	1,306.000	1,306.000
0352	SPV.0090	Special 4411. State-Furnished Fence Decorative HAST Wall Mounted	LF	232.000	232.000
0354	SPV.0090	Special 4420. Foundation Drilling Special	LF	810.000	810.000
0382	SPV.0105	Special 1200. Survey Project 1693-37-74	LS	1.000	1.000
0384	SPV.0110	Special 4600. Timber Lagging	MBM	10.000	10.000
0386	SPV.0165	Special 4780. Geocomposite Drain Board	SF	3,085.000	3,085.000

					1693-37-74
0388	SPV.0180	Special 1001. Topsoil Special	SY	2,348.000	2,348.000

3

REMOVING CONCRETE BARRIER TEMPORARY PRECAST

CATEGORY	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.9090.S.0001 REMOVING CONCRETE BARRIER TEMPORARY PRECAST LF
1000	BIKE PATH B	10BPB+68.88	26' RT	13BPB+71.23	77' LT	100
	TOTAL					100

REMOVING COVER PLATE LEFT IN PLACE

CATEGORY	ROADWAY	STRUCTURE ID	STATION	OFFSET	SPV.0060.2000 REMOVING COVER PLATE LEFT IN PLACE EACH
1000	BIKE PATH B	ZE5130	13BPB+64	12' LT	1
	TOTAL				1

3

Division	From/To Station	Location	205.0100 Excavation Common (CY) (1)	EBS Excavation (2)	Salvaged/ Unusable Pavement Material (CY)	Available Material (3)	EBS Backfill (CY) (3)	Unexpanded Fill	Expanded Fill (4)	Mass Ordinate +/- (5)	Waste	Borrow
			Cut (2)				Factor 1.30		Factor 1.10			(item #208.0100)
1	10BPB+15 to 17BPB+79	Bike Path B	1809	0	0	1809	0	552	607	1202	1202	
Division 1 Subtotal			1809	0	0	1809	0	552	607	1202	1202	
Grand Total			1809	0	0	1809	0	552	607	1202	1202	0
Total Common Excavation			1809									

1) Salvaged/Unusable Pavement Material is included in Cut
2) EBS Excavation to be backfilled with EBS Backfill.
3) Available Material = Cut - Salvaged/Unusuable Pavement Material
4) Expanded Fill. Factor = 1.1
   Expanded Fill = Unexpanded Fill * Fill Factor
5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

3

BASE AGGREGATE ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
1000	BIKE PATH B	10BPB+15	-	17BPB+78	526
	TOTAL				526

AGGREGATE UNIT WEIGHTS USED	
Base Aggregate Dense (TONS/CY)	2.0

ASPHALTIC ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	465.0105 ASPHALTIC SURFACE TON
1000	BIKE PATH B	10BPB+15	-	17BPB+78	248
	TOTALS				248

MATERIAL UNIT WEIGHTS USED		
HMA Pavement	110	LB/(SY*IN)

FENCE SAFETY

CATEGORY	LOCATION	616.0700.S FENCE SAFETY LF
1000	UNDISTRIBUTED	500
	TOTAL	500

3

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	YELLOW LF
1000	BIKE PATH B	10BPB+15	-	17BPB+78 LT/RT	1418	764
	SUBTOTAL				1418	764
	TOTAL				2182	

FENCING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	OFFSET	SPV.0060.2001 STATE-FURNISHED GATES DECORATIVE HAST GROUND MOUNTED 12-FT EACH	SPV.0060.2002 STATE-FURNISHED GATES DECORATIVE HAST GROUND MOUNTED 30-FT EACH	SPV.0090.2000 STATE-FURNISHED FENCE DECORATIVE HAST GROUND MOUNTED LF
1000	BIKE PATH B	13BPB+12	-	13BPB+71	LT	1	--	82
		10BPB+35	-	16BPB+90	RT	--	--	643
		10BPB+82	-	13BPB+89	LT	--	--	277
		15BPB+35		17BPB+70	LT	--	1	304
	TOTAL					1	1	1,306

MOBILIZATION

CATEGORY	LOCATION	619.1000 MOBILIZATION EACH
1000	BIKE PATH B	0.15
	TOTAL	0.15

TRAFFIC CONTROL

CATEGORY	LOCATION	643.5000 TRAFFIC CONTROL EACH
1000	BIKE PATH B	0.15
	TOTAL	0.15

FIELD OFFICE

CATEGORY	LOCATION	642.5401 FIELD OFFICE TYPE D EACH
1000	BIKE PATH B	0.15
	TOTAL	0.15

SURVEY PROJECT

CATEGORY	LOCATION	SPV.0105.1200 SURVEY PROJECT 1693-37-74 LS
1000	BIKE PATH B	1
	TOTAL	1

3

EROSION CONTROL ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2004 EROSION MAT CLASS I TYPE B SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.2027 EROSION MAT CLASS II TYPE C SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
1000	BIKE PATH B	10BPB+15	-	17BPB+78 LT/RT	258	258	--	--	1653	285	410	165	1
	UNDISTRIBUTED				65	65	2	2	413	71	103	41	--
	TOTAL				323	323	2	2	2066	356	513	206	1

TRACKING PADS

CATEGORY	LOCATION	628.7560 TRACKING PADS EACH
1000	BIKE PATH B	2
	TOTAL	2

3

RESTORATION ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	627.0200 MULCHING SY	630.0175 SEEDING MIXTURE NO. 75 LB	630.0200 SEEDING TEMPORARY LB	SPV.0030.1000 FERTILIZER TYPE B SPECIAL CWT	SPV.0180.1001 TOPSOIL SPECIAL SY
6000	BIKE PATH B	10BPB+15	-	17BPB+78 LT/RT	410	15	63	2.3	2348
	TOTAL				410	15	63	2.3	2348

INLET COVERS

CATEGORY	ROADWAY	STRUCTURE ID	STATION	OFFSET	611.0663 INLET COVERS TYPE X EACH
1000	BIKE PATH B	ZE5130	13BPB+64	12' LT	1
	TOTAL				1

TRAFFIC CONTROL

CATEGORY	DESCRIPTION/LOCATION	DAYS	643.0300 TRAFFIC CONTROL DRUMS *EACH	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III *EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A *EACH	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C *EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0800 TRAFFIC CONTROL ARROW BOARDS *EACH	643.0800 TRAFFIC CONTROL ARROW BOARDS DAY	643.0900 TRAFFIC CONTROL SIGNS *EACH	643.0900 TRAFFIC CONTROL SIGNS DAY
1000	FLAGGING OPERATION - STH 100	5	--	--	--	--	--	--	--	--	--	--	8	40
	LANE CLOSURE - STH 100	10	20	200	1	10	2	20	8	80	1	10	11	110
	BIKE PATH B	90	--	--	6	540	12	1080	--	--	--	--	2	180
	UNDISTRIBUTED			50		138		275		20		3		83
	TOTAL			250		688		1375		100		13		413

INLET PROTECTION

CATEGORY	ROADWAY	STRUCTURE ID	STATION	OFFSET	628.7005 INLET PROTECTION TYPE A EACH
1000	BIKE PATH B	ZE5130	13BPB+64	12' LT	1
	TOTAL				1

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : W:\PDS\C3D\16933774\SheetsPlan\030201_mq.pptx

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

TYPE I & II PERMANENT SIGNING -

1693-37-74

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.]	x	H [IN.]	**637.2210** SIGNS TYPE II REFLC H [SF]	**637.2230** SIGNS TYPE II REFLC F [SF]	**634.0618** WOOD POSTS 4"X 6"x18' [EA]	**634.0816** TUBULAR STEEL POSTS 2"x2"x16' [EA]	**638.3000** REM SMALL SIGN SUP [EA]	**638.2102** MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	NONE	TO HANK AARON TRAIL	24	X	30	5.000			1				SEE DETAIL
2	NONE	TO HANK AARON TRAIL	24	X	30	5.000			1				SEE DETAIL
3	R1-2		18	X	15.5	0.970			1				
4	W1-5L		18	X	18		2.250		1				
5	W1-2L		18	X	18		2.250		1				
6	W3-1		18	X	18		2.250		1				
7	R1-1		18	X	18	1.860			1				
8	J3-1		24	X	57	9.500		1					
	M4-5		24	X	12								
	M1-6	STH 100	24	X	24								
	M6-1		21	X	21								
9	J3-1		24	X	57	9.500		1					
	M4-5		24	X	12								
	M1-6	STH 100	24	X	24								
	M6-1		21	X	21								
10	R5-3(2S)		24	X	24	4.000							
11	NONE	TO MILWAUKEE COUNTY ZOO	24	X	36	6.000			1				
12	NONE	TO MILWAUKEE COUNTY ZOO	24	X	36	6.000			1				
13	NONE	TO MILWAUKEE COUNTY ZOO	24	X	36	6.000			1				
14	W7-5		18	x	18		2.250		1				
15	R5-3(2S)		24	x	24	4.000			1				
		UNDISTRIBUTED								2	1		
TOTALS						57.830	9.000	2	12	2	1		

SHEET 1 OF 1

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PERMANENT SIGNING QUANTITIES	SHEET:	E

3

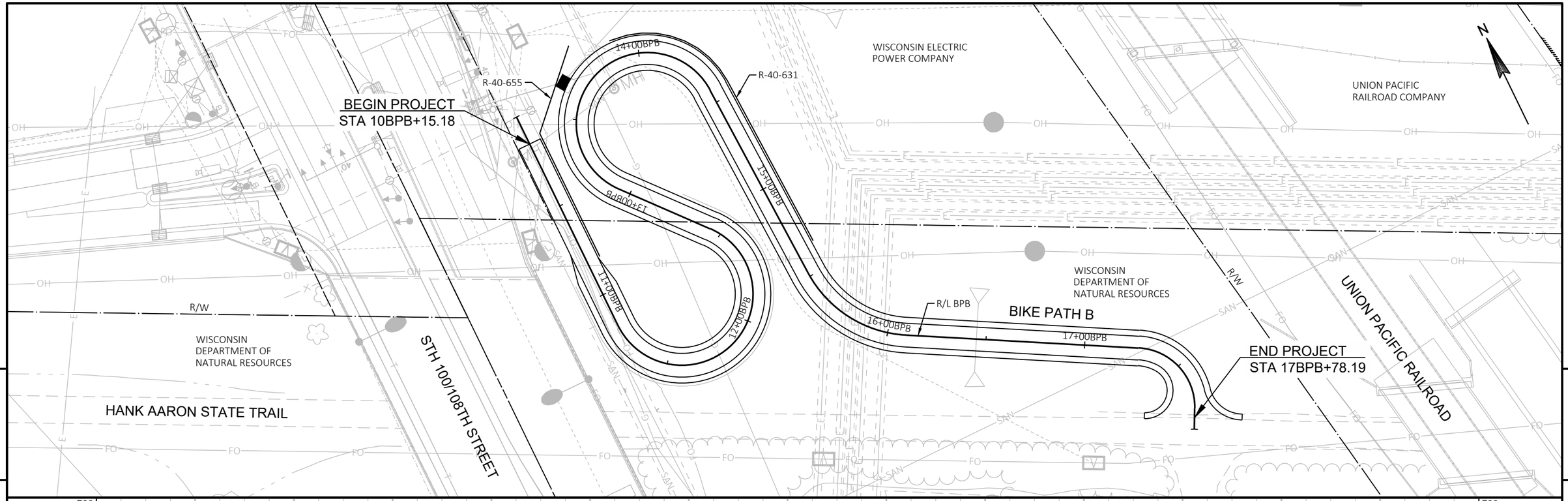
3

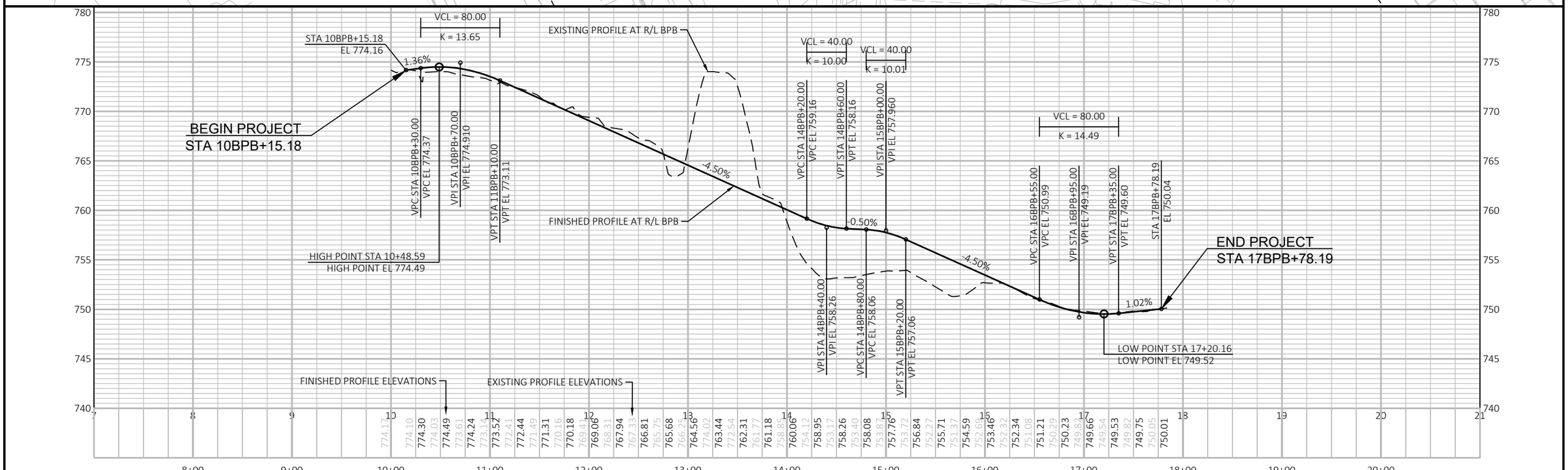
LIGHTING AND MISCELLANEOUS

CATEGORY	STAGE	DESCRIPTION	LOCATION	654.0105 CONCRETE BASES TYPE 5 EACH	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5-ALUMINUM EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	659.1120 LUMINAIRE UTILITY LED B EACH
1100		YMW9	STA. 11BPB+02.5, 17.8' LT	1	135	1	1	1	1
		ZMW9	STA. 13BPB+84.2, 39.6' RT	1	135	1	1	1	1
		XMW10	STA. 15BPB+63.4, 17.4' RT	1	135	1	1	1	1
		YMW10	STA. 16BPB+95.0, 12.4' LT	1	135	1	1	1	1
			TOTALS	4	540	4	4	4	4

LIGHTING - WIRE AND CONDUIT

CATEGORY	STAGE	FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 -INCH LF	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG LF
1100		YMW10	XMW10	145	456
		XMW10	ZMW9	135	568
		ZMW9	YMW9	95	510
		YMW9	PB-MW-13	65	360
			TOTAL	440	1894

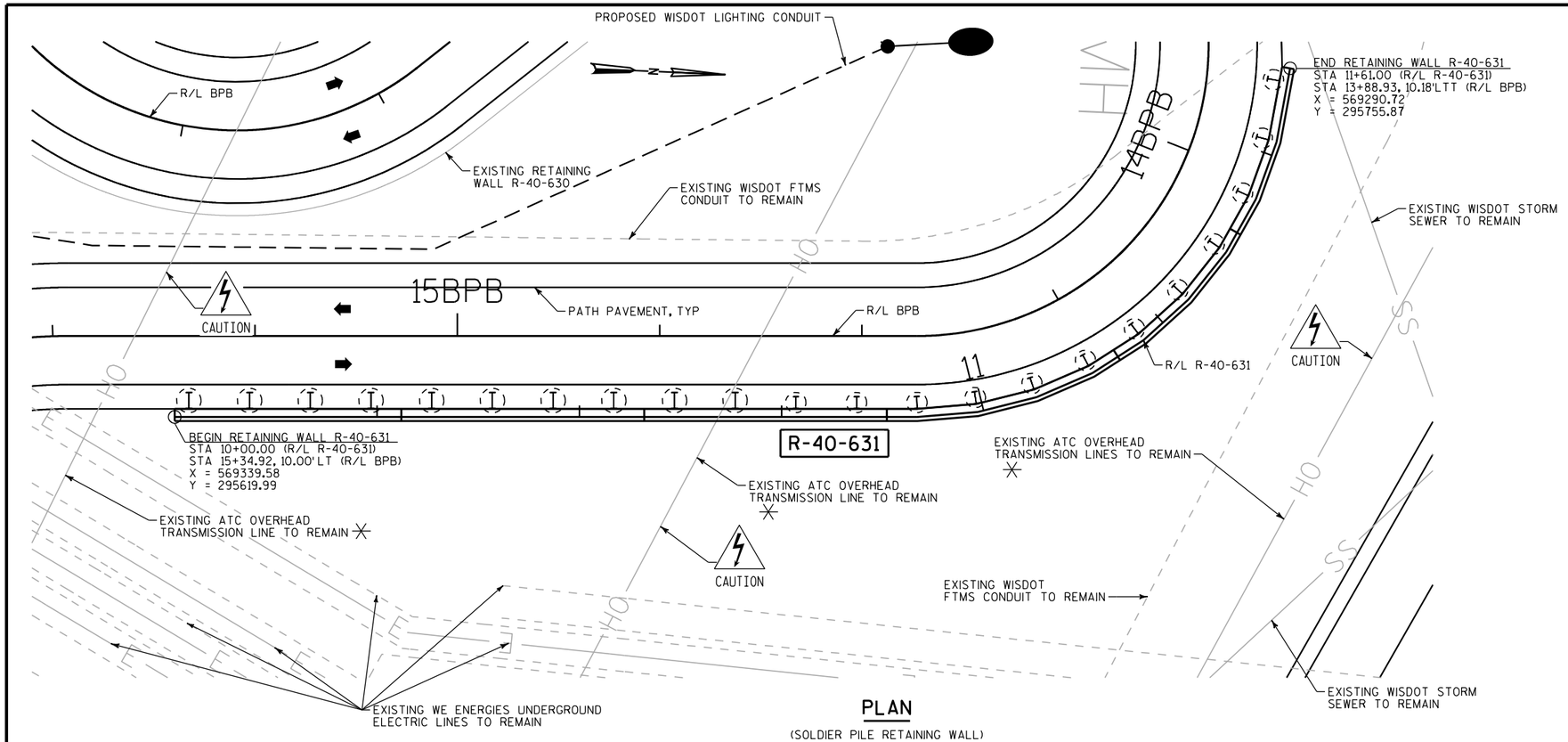




PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	PLAN AND PROFILE: BIKE PATH B	SHEET 34 E

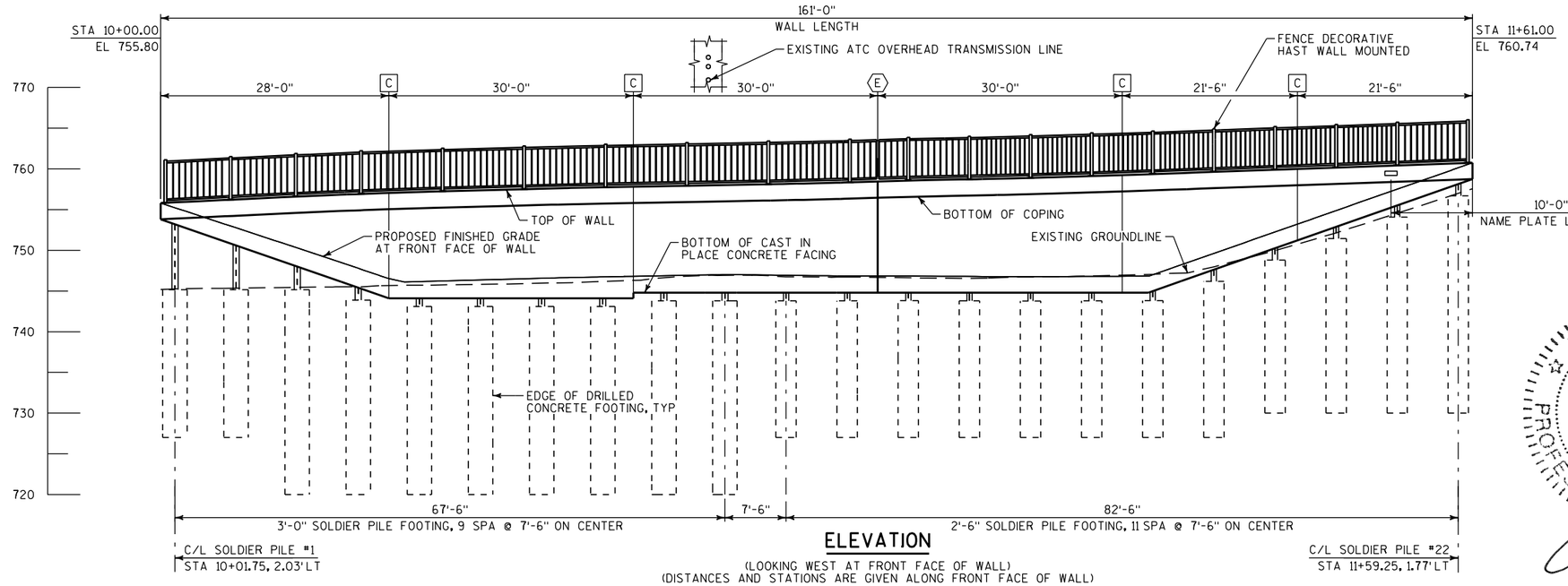
Standard Detail Drawing List

08D17-06	MANHOLES, MANHOLE & INLET COVERS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
09B02-10	CONDUIT
09C02-08	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
10A02-03	IDENTIFICATION PLAQUES LIGHT POLES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



PLAN

(SOLDIER PILE RETAINING WALL)



ELEVATION

(LOOKING WEST AT FRONT FACE OF WALL)
(DISTANCES AND STATIONS ARE GIVEN ALONG FRONT FACE OF WALL)

STATE PROJECT NUMBER

1693-37-74

DESIGN DATA

DESIGN SPECIFICATION
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, 2012

LIVE LOAD:
LIVE LOAD SURCHARGE: 100 PSF

MATERIAL PROPERTIES:

CIP WALL PANEL	f'c = 4,000 PSI
BAR STEEL REINFORCEMENT	fy = 60,000 PSI
STRUCTURAL STEEL CARBON (ASTM A709 GRADE 50) *	Fy = 50,000 PSI
CONCRETE MASONRY SOLDIER PILE FOOTINGS	f'c = 3,500 PSI
TIMBER LAGGING	Fb = 1,000 PSI
	E = 1,700,000 PSI

* MATERIAL VALUES BASED ON DOUGLAS FIR-LARCH NO. 1, >2" WIDE, REFERENCE AASHTO LRFD SPECIFICATION TABLE 8.4.1.1.4-1

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. QUANTITIES, PROFILES & GENERAL NOTES
3. TYPICAL WALL SECTION & DETAILS
4. DATA TABLES & REINFORCEMENT
5. COPING & WALL ELEVATIONS
6. DECORATIVE FENCE ELEVATION
7. DECORATIVE FENCE DETAILS
8. AESTHETIC WALL TREATMENT DETAILS
9. SUBSURFACE EXPLORATION

LEGEND

(E) WALL FACING EXPANSION JOINT

[C] WALL FACING CONTRACTION JOINT

➡ FINAL PATH LANE AND DIRECTION OF TRAVEL

NOTE

✳ CONSTRUCTION OF R-40-631 MAY NEED TO BE ACCOMPLISHED BENEATH AND/OR ADJACENT TO ENERGIZED OVERHEAD 138KV ELECTRIC TRANSMISSION LINES OWNED AND OPERATED BY THE AMERICAN TRANSMISSION COMPANY (ATC). THE HORIZONTAL AND VERTICAL LOCATION OF THESE LINES CAN VARY WITH WIND, AMBIENT TEMPERATURE AND POWER LOADING. THE CONTRACTOR IS ADVISED THAT LOW OVERHEAD EQUIPMENT AND INSTALLATION TECHNIQUES MAY BE REQUIRED TO MAINTAIN SAFE CLEARANCES FROM THESE LINES.

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
ED MCCRIGHT (414) 272-2426

NO.	DATE	REVISION	BY

FORWARD 45

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 03/14/19
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN ANDREW S. WAHR E-43954 NEW BERLIN WI 3/11/19 PROFESSIONAL ENGINEER

STRUCTURE R-40-631

SOLDIER PILE RETAINING WALL ALONG PATH BPB

COUNTY	CITY
MILWAUKEE	WEST ALLIS

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ASW	KES	ASW	KES

GENERAL PLAN & ELEVATION

SHEET 1 OF 9

8

8

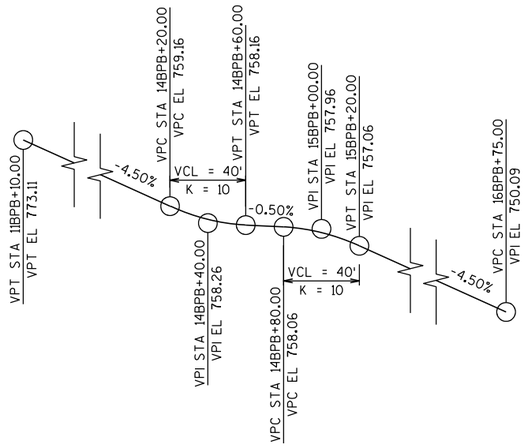
FILE NAME : W:\Cadd\Final\10603381_Z2\Structs\R-40-631\1693-37-74\cds\R631_080101_gp.dgn PLOT DATE : 13-MAR-2019 14:05 PLOT BY : mscekm PLOT NAME : R631_080101_gp PLOT SCALE : 16.666667:1

STATE PROJECT NUMBER
1693-37-74

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
206.3000.0006	EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-631	LS	1
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	66
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	6,875
506.0605	STRUCTURAL STEEL HS	LB	54,590
506.3010	WELDED STUD SHEAR CONNECTORS 7/8 X 5-INCH	EACH	238
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1
517.0600.0005	PAINTING EPOXY SYSTEM R-40-631	LS	1
517.1010.S.0109	CONCRETE STAINING R-40-631	SF	1,690
517.1050.S.0032	ARCHITECTURL SURFACE TREATMENT R-40-631	SF	1,485
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	55
SPV.0035.4010	CONCRETE MASONRY SOLDIER PILE FOOTINGS	CY	100
SPV.0075.4210	OBSTRUCTIONS FOUNDATION DRILLING	HRS	2
SPV.0090.0126	PIPE UNDERDRAIN 6-INCH SPECIAL	LF	165
SPV.0090.4411	STATE-FURNISHED FENCE DECORATIVE HAST WALL MOUNTED	LF	162
SPV.0090.4420	FOUNDATION DRILLING SPECIAL	LF	500
SPV.0110.4600	TIMBER LAGGING	MBM	6
SPV.0165.4780	GEOCOMPOSITE DRAIN BOARD	SF	1,805
	NON-BID ITEMS		
	PREFORMED JOINT FILLER	SIZE	¾"
	NON-BITUMINOUS JOINT FILLER	SIZE	¾"
	NAME PLATE	EACH	1

ALL ITEMS ARE CATEGORY 3000



PROFILE GRADE LINE

RAMP BPB

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL EXPOSED EDGES OF CONCRETE ¾", UNLESS NOTED OTHERWISE.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ALL STATIONS ARE ALONG R/L OF R-40-631 (ALONG FINISHED WALL FACE) UNLESS NOTED OTHERWISE.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

USE 2" CLEAR CONCRETE COVER FOR ALL REINFORCEMENT UNLESS OTHERWISE SHOWN.

ALL STEEL REINFORCEMENT SHALL BE EPOXY COATED.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-631".

COMMON EXCAVATION IN FRONT OF THE RETAINING WALL AND FILL BEHIND MAY NOT BEGIN UNTIL THE SOLDIER PILE TIMBER LAGGING IS IN PLACE.

HIGH STRENGTH BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

RETAINING WALL R-40-631 IS A SOLDIER PILE RETAINING WALL AND INCLUDES THE INSTALLATION OF NON-OVERLAPPING, INDEPENDENT CONCRETE DRILLED FOOTINGS BETWEEN THE STATIONS INDICATED. THE RETAINING WALL WILL BE FINISHED WITH A FULL HEIGHT CIP CONCRETE FACING AND A CIP CONCRETE COPING.

THE QUANTITY OF CAST-IN-PLACE CONCRETE MASONRY FOR THE COPING AND CONCRETE FACING IS PAID FOR UNDER THE ITEM "CONCRETE MASONRY RETAINING WALLS".

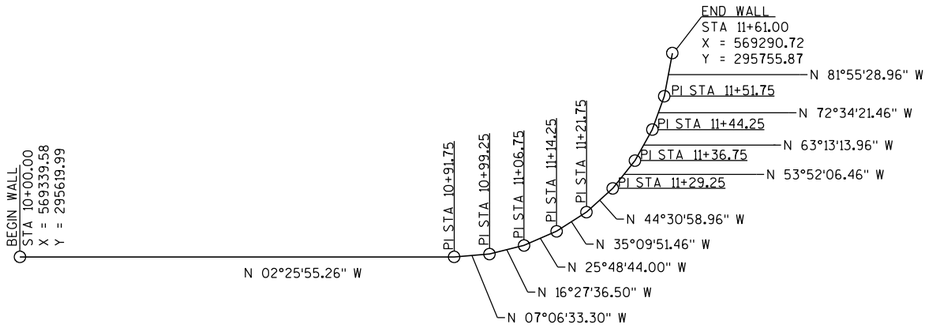
THE VOLUME OF REMOVED EARTHWORK REQUIRED TO INSTALL WALL LAGGING IS INCLUDED IN ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-631"

SURFACE PREP AND PAINT SOLDIER PILES FROM TOP OF PILE TO 1'-0" BELOW TOP OF FOOTING WITH ONE COAT OF ZINC-RICH PRIMER AS SPECIFIED IN SECTION 517 OF THE STANDARD SPECIFICATIONS. WELDED STUD SHEAR CONNECTORS ARE NOT REQUIRED TO BE PAINTED. PAINTING OF PILES IS MEASURED AND PAID FOR AS BID ITEM NUMBER 517.0060.0005 "PAINTING EPOXY SYSTEM R-40-631".

WALL R-40-631 IS TO BE BUILT AT THE BEGINNING OF THE ZOO PHASE 2 CONTRACT. SEE ROADWAY STAGING PLANS FOR DETAILS.

SOLIDIER PILE WALL ANALYSIS SOIL PARAMETERS

SOIL UNIT	TOTAL UNIT WEIGHT, PCF	UNDRAINED		DRAINED	
		UNDRAINED SHEAR STRENGTH, SU, PSF	FRICTION ANGLE, Φ, DEG	COHESION C', PSF	FRICTION ANGLE, Φ, DEG
STIFF COHESIVE FILL	130	1,500	0	50	30
STIFF COHESIVE & ORGANIC FILL	125	500	0	0	28
VERY STIFF TO HARD COHESIVE	135	2,000	0	100	34



HORIZONTAL ALIGNMENT - R/L R-40-631

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

DRAWN BY ASW | PLANS CK'D. KES

QUANTITIES, PROFILES & GENERAL NOTES

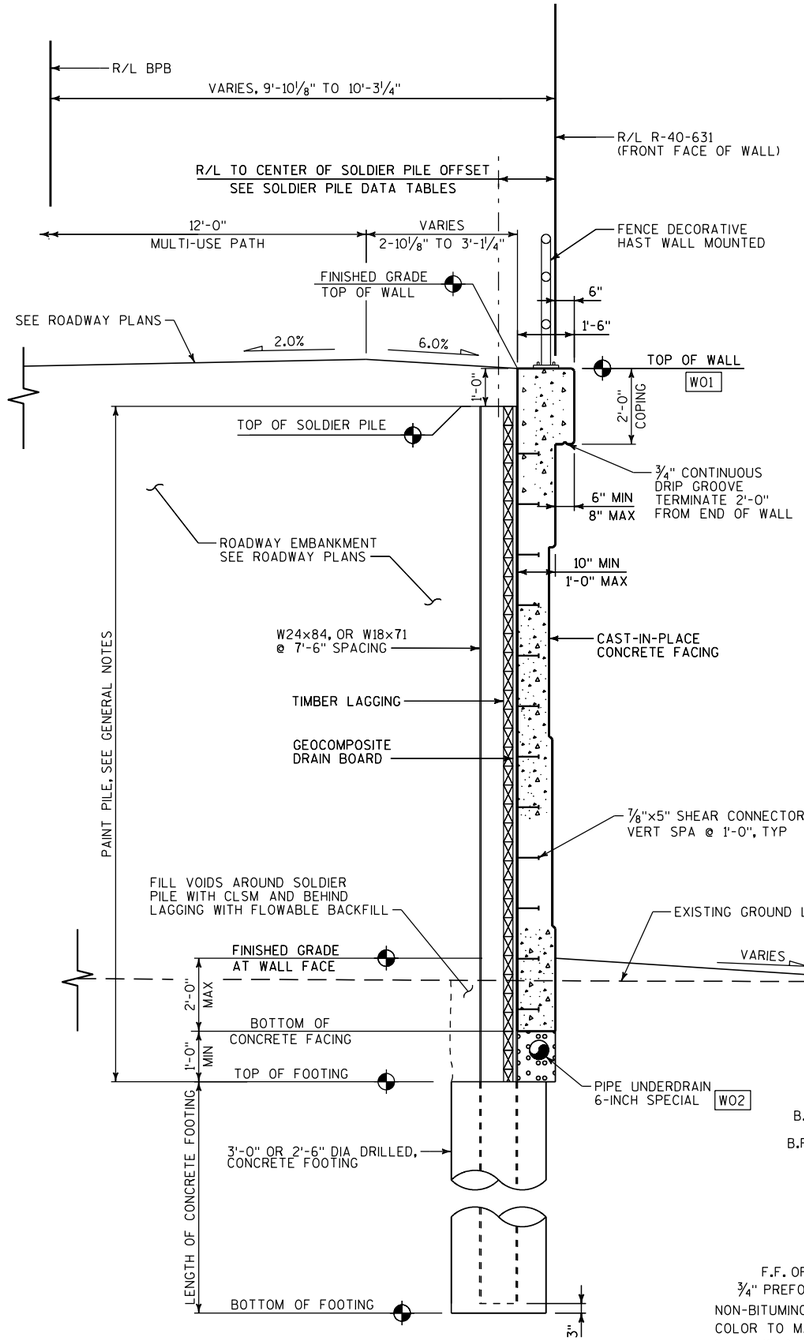
SHEET 2 OF 9

8

8

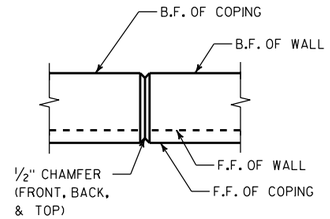
STATE PROJECT NUMBER

1693-37-74



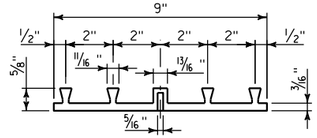
TYPICAL SECTION

(LOOKING NORTH)



COPING CONTRACTION JOINT

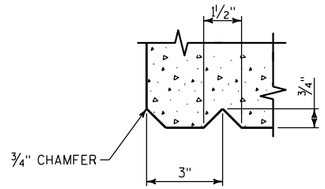
(DO NOT RUN BAR STEEL THRU JOINT)



P.C.W. "TYPE B" DETAIL

(POLYVINYL CHLORIDE WATERSTOP)

(INCLUDED IN BID ITEM "CONCRETE MASONRY RETAINING WALLS")
P.C.W. SHALL BE BUTT SPLICED AT ANY INTERSECTIONS BY USING A HEATED SPLICING IRON. HOLD P.C.W. FLUSH WITH CONCRETE. SEAL ALL VERTICAL ENDS OF P.C.W. WITH NON-STAINING BITUMINOUS JOINT SEALER.



3/4" CONTINUOUS DRIP GROOVE

TERMINATE 2'-0" FROM END OF WALL

NOTES:

W01 SEE "DATA TABLES & REINFORCEMENT" SHEET FOR ELEVATIONS

W02 ENCLOSE PIPE IN 1'-0" X 1'-0" AREA OF NO. 1 COARSE AGGREGATE WRAPPED IN GEOTEXTILE FABRIC TYPE DF.
NO. 1 COARSE AGGREGATE AND GEOTEXTILE FABRIC TYPE DF INCIDENTAL TO BID ITEM "PIPE UNDERDRAIN 6-INCH SPECIAL"
CONNECT PIPE UNDERDRAIN TO INLET *Z5132 USING PIPE UNDERDRAIN UNPERFORATED PAID FOR UNDER "PIPE UNDERDRAIN UNPERFORATED 6-INCH"

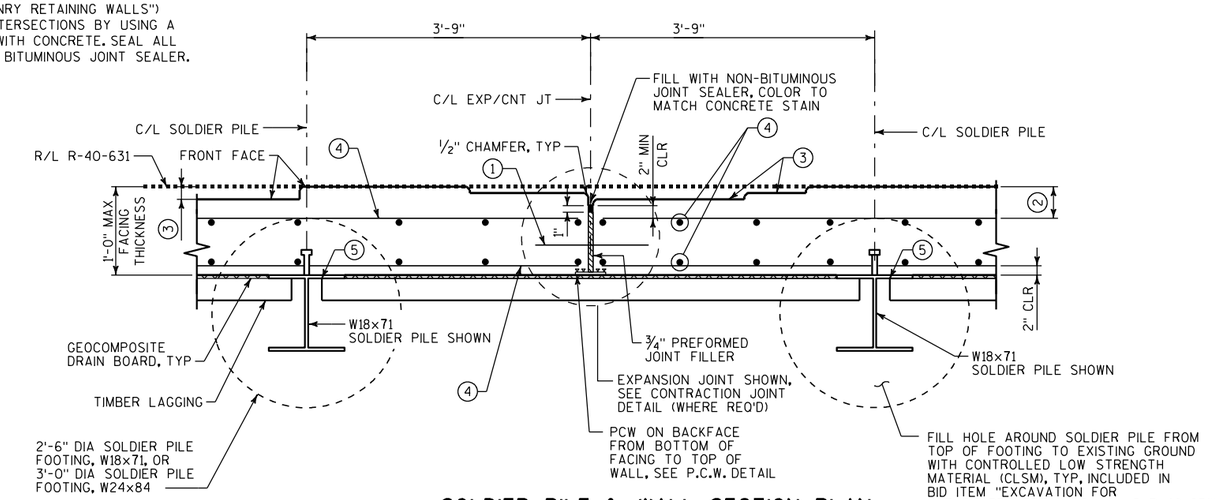
(1) 3/4" DIA X 1'-6" SMOOTH EPOXY COATED DOWELS PLACED AT 2'-0" CENTERS MID-DEPTH IN THE WALL. DOWELS SHALL BE LIGHTLY COATED WITH A DEBONDING SURFACE TREATMENT OVER 1/2 THE DOWEL LENGTH. EMBED 9" INTO ADJACENT WALL PANEL. DOWELS INCLUDED IN THE BID ITEM "CONCRETE MASONRY RETAINING WALLS".

(2) 5" CLEAR FROM MAX. WALL THICKNESS.

(3) SEE AESTHETIC WALL TREATMENT DETAILS SHEET.

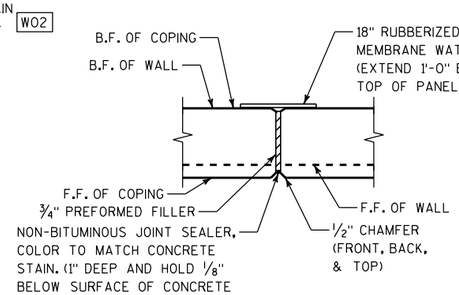
(4) SEE COPING & WALL ELEVATION SHEET FOR REINFORCING DETAILS.

(5) ANCHOR LAGGING TO PILES AS NECESSARY TO RETAIN MATERIAL AND AS A LEFT-IN-PLACE CONCRETE FACING FORM BACK FACE.

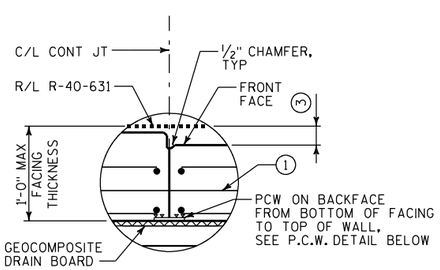


SOLDIER PILE & WALL SECTION PLAN

(SEE GENERAL PLAN & ELEVATION SHEETS FOR LOCATION OF CONTRACTION & EXPANSION JOINTS)



COPING EXPANSION JOINT



FACING CONTRACTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

DRAWN BY ASW | PLANS CK'D. KES

TYPICAL WALL SECTION & DETAILS

SHEET 3 OF 9

SOLDIER PILE DATA TABLE

PILE NO.	WALL R/L STA.	OFFSET LT	APPROX. EXISTING GRADE	FINISHED GRADE AT WALL FACE	FINISHED GRADE TOP OF WALL	FOUNDATION DRILLING LENGTH	TOP OF WALL	TOP OF SOLDIER PILE	TOP OF FOOTING	BOTTOM OF FOOTING	FOOTING LENGTH	FOOTING DIAMETER	SOLDIER PILE SECTION	SOLDIER PILE LENGTH
1	10+01.75	2'-0⅜" LT	745.23	755.23	755.89	18.23	755.89	754.89	745.15	727.00	18.15	3'-0"	W24x84	27'-9"
2	10+09.25	2'-0⅜" LT	745.34	752.81	756.28	18.34	756.28	755.28	745.15	727.00	18.15	3'-0"	W24x84	28'-0"
3	10+16.75	2'-0⅜" LT	745.44	750.41	756.72	25.44	756.72	755.72	745.15	720.00	25.15	3'-0"	W24x84	35'-6"
4	10+24.25	2'-0⅜" LT	745.51	747.98	757.11	25.51	757.11	756.11	743.88	720.00	23.88	3'-0"	W24x84	35'-9"
5	10+31.75	2'-0⅜" LT	745.69	746.43	757.43	25.69	757.43	756.43	743.10	720.00	23.10	3'-0"	W24x84	36'-3"
6	10+39.25	2'-0⅜" LT	745.80	746.71	757.71	25.80	757.71	756.71	743.10	720.00	23.10	3'-0"	W24x84	36'-6"
7	10+46.75	2'-0⅜" LT	745.94	746.93	757.93	25.94	757.93	756.93	743.10	720.00	23.10	3'-0"	W24x84	36'-9"
8	10+54.25	2'-0⅜" LT	746.16	747.11	758.11	26.16	758.11	757.11	743.10	720.00	23.10	3'-0"	W24x84	36'-9"
9	10+61.75	2'-0⅜" LT	746.62	747.18	758.18	26.62	758.18	757.18	743.80	720.00	23.80	3'-0"	W24x84	37'-0"
10	10+69.25	2'-0⅜" LT	746.91	747.23	758.23	26.91	758.23	757.23	743.80	720.00	23.80	3'-0"	W24x84	37'-0"
11	10+76.75	1'-9¼" LT	746.73	747.07	758.30	19.73	758.30	757.30	743.80	727.00	16.80	2'-6"	W18x71	30'-0"
12	10+84.25	1'-9¼" LT	746.70	746.92	758.41	19.70	758.41	757.41	743.80	727.00	16.80	2'-6"	W18x71	30'-3"
13	10+91.72	1'-9⅜" LT	746.60	746.84	758.57	19.60	758.57	757.57	743.80	727.00	16.80	2'-6"	W18x71	30'-3"
14	10+99.10	1'-9½" LT	746.52	746.79	758.71	19.52	758.71	757.71	743.80	727.00	16.80	2'-6"	W18x71	30'-6"
15	11+06.60	1'-9½" LT	746.69	746.77	758.89	19.69	758.89	757.89	743.80	727.00	16.80	2'-6"	W18x71	30'-9"
16	11+14.10	1'-9½" LT	746.82	746.79	759.10	19.82	759.10	758.10	743.80	727.00	16.80	2'-6"	W18x71	30'-9"
17	11+21.60	1'-9½" LT	747.04	746.94	759.35	20.04	759.35	758.35	743.80	727.00	16.80	2'-6"	W18x71	31'-0"
18	11+29.10	1'-9½" LT	747.93	749.56	759.61	20.93	759.61	758.61	746.18	727.00	19.18	2'-6"	W18x71	31'-3"
19	11+36.60	1'-9½" LT	749.90	752.20	759.88	19.90	759.88	758.88	748.81	730.00	18.81	2'-6"	W18x71	28'-9"
20	11+44.10	1'-9½" LT	752.10	754.82	760.14	22.10	760.14	759.14	751.43	730.00	21.43	2'-6"	W18x71	29'-0"
21	11+51.60	1'-9½" LT	754.46	757.45	760.40	24.46	760.40	759.40	754.06	730.00	24.06	2'-6"	W18x71	29'-3"
22	11+59.25	1'-9¼" LT	756.98	760.13	760.68	26.98	760.68	759.68	756.69	730.00	26.69	2'-6"	W18x71	29'-6"

BILL OF BARS

NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	SERIES	LOCATION
A401	X	161	6'-7"	X		COPING - VERTICAL
A402	X	8	27'-8"	-		HORZ - PANEL 1
A403	X	128	29'-8"	-		HORZ - PANELS 2-4
A404	X	30	21'-2"	-		HORZ - PANELS 5-6
A405	X	4	29'-3"	-		HORZ - BOTTOM - PANEL 1
A406	X	26	14'-3"	-	⚠	HORZ - MID - PANEL 1 (SERIES)
A407	X	4	22'-2"	X		HORZ - BOTTOM - PANEL 5
A408	X	18	13'-9"	-	⚠	HORZ - MID - PANEL 5 (SERIES)
A409	X	4	22'-4"	-		HORZ - BOTTOM - PANEL 6
A410	X	18	11'-0"	-	⚠	HORZ - MID - PANEL 6 (SERIES)
A411	X	54	7'-3"	-	⚠	VERT - PANEL 1
A412	X	124	12'-6"	-		VERT - PANELS 2-3
A413	X	62	13'-0"	-		VERT - PANEL 4
A414	X	8	14'-0"	-		VERT - SOUTH - PANEL 5
A415	X	36	10'-8"	-	⚠	VERT - NORTH - PANEL 5 (SERIES)
A416	X	38	5'-3"	-	⚠	VERT - PANEL 6 (SERIES)
A417	X	5	5'-4"	X		COPING - VERTICAL - ENDS

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

WALL ELEVATIONS TABLE

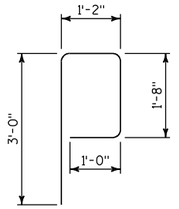
WALL STATION	TOP OF WALL ELEVATIONS	FINISHED GRADE ELEVATIONS	EXISTING GROUND ELEVATIONS
10+00.00	755.80	755.80	745.20
10+01.75	755.89	755.23	745.23
10+09.25	756.28	752.81	745.34
10+14.00	756.55	751.29	745.41
10+16.75	756.72	750.41	745.44
10+24.25	757.11	747.98	745.51
10+28.00	757.27	746.75	745.66
10+31.75	757.43	746.43	745.69
10+39.25	757.71	746.71	745.80
10+43.00	757.83	746.83	745.85
10+46.75	757.93	746.93	745.94
10+54.25	758.11	747.11	746.16
10+58.00	758.14	747.14	746.29
10+61.75	758.18	747.18	746.62
10+69.25	758.23	747.23	746.91
10+73.00	758.27	747.17	746.93
10+76.75	758.30	747.07	746.73
10+84.25	758.41	746.92	746.70
10+88.00	758.48	746.88	746.65
10+91.75	758.57	746.84	746.60
10+99.25	758.71	746.79	746.52
11+06.75	758.89	746.77	746.69
11+14.25	759.10	746.79	746.82
11+18.00	759.23	746.81	746.92
11+21.75	759.36	746.99	747.05
11+29.25	759.62	749.61	747.96
11+36.75	759.88	752.25	749.94
11+39.50	759.98	753.21	750.75
11+44.25	760.15	754.87	752.14
11+51.75	760.41	757.51	754.51
11+59.25	760.68	760.13	756.98
11+61.00	760.74	760.74	757.55

THE CONTRACTOR MAY LINEARLY INTERPOLATE BETWEEN POINTS.

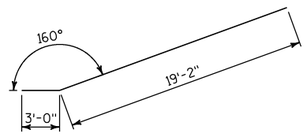
BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
A406	2 SERIES OF 13	3'-0" TO 25'-6"
A408	2 SERIES OF 9	6'-3" TO 21'-2"
A410	2 SERIES OF 9	3'-3" TO 18'-8"
A411	2 SERIES OF 27	2'-6" TO 12'-0"
A415	2 SERIES OF 18	8'-0" TO 13'-3"
A416	2 SERIES OF 19	2'-6" TO 8'-0"

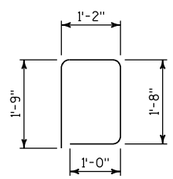
BUNDLE AND TAG EACH SERIES SEPARATELY



A401



A407



A417

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

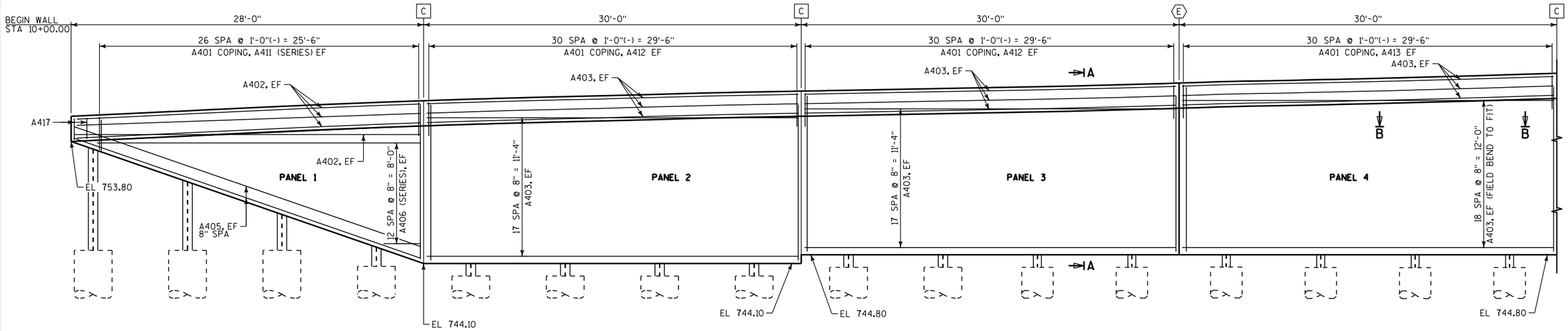
DRAWN BY ASW | PLANS CK'D. KES

DATA TABLES & REINFORCEMENT

SHEET 4 OF 9

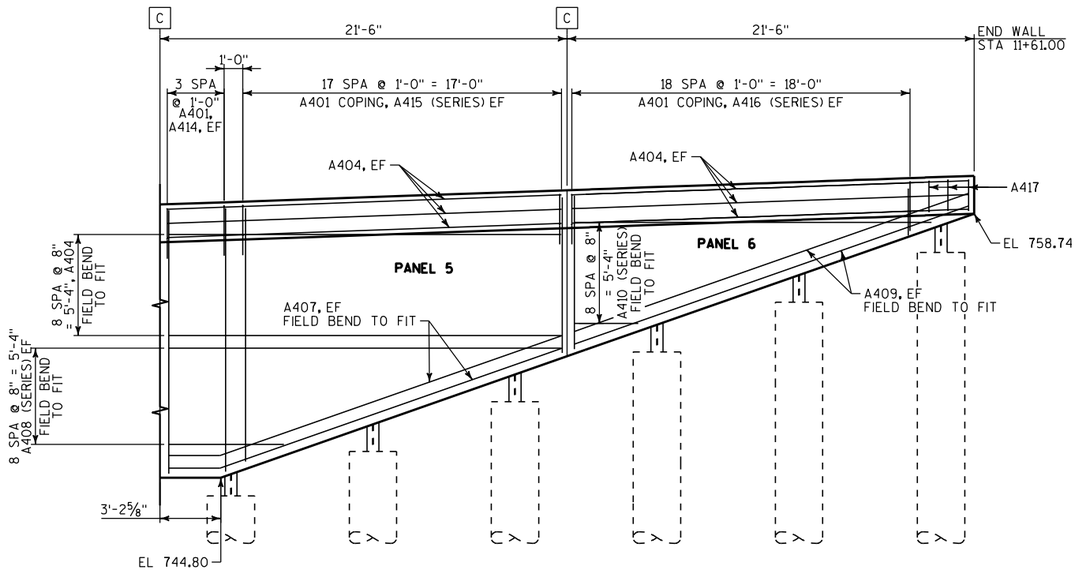
FILE NAME : W:\Cadd\Final\10603381_Z2\Structs\R-40-631\1693-37-74\cds\R631_080201_de.dgn
PLOT DATE : 28-FEB-2019 12:27
PLOT BY : mscekm
PLOT NAME : R631_080201_de
PLOT SCALE : 3:1

STATE PROJECT NUMBER
1693-37-74



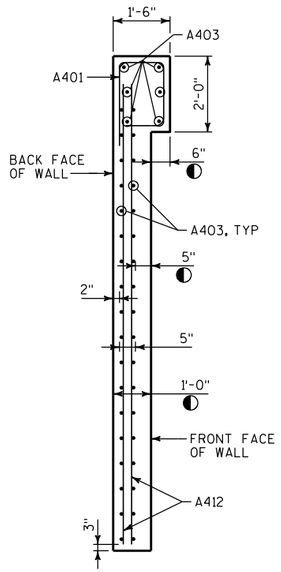
WALL FACE ELEVATION

LOOKING AT FRONT FACE OF WALL

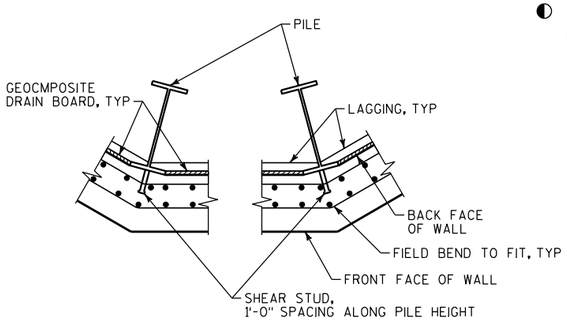


WALL FACE ELEVATION

LOOKING AT FRONT FACE OF WALL



SEC A-A



SEC B-B

HORIZONTAL ANGLE SHOWN EXAGGERATED

LEGEND

- (E) EXPANSION JOINT
- [C] CONTRACTION JOINT
- ◐ WALL THICKNESS SHOWN AS CONSTANT 1'-0". WALL THICKNESS (AND CLEAR TO FRONT STEEL) WILL VARY BASED ON AESTHETICS PATTERN. SEE AESTHETIC WALL TREATMENT DETAILS SHEET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

DRAWN BY ASW | PLANS CK'D. KES

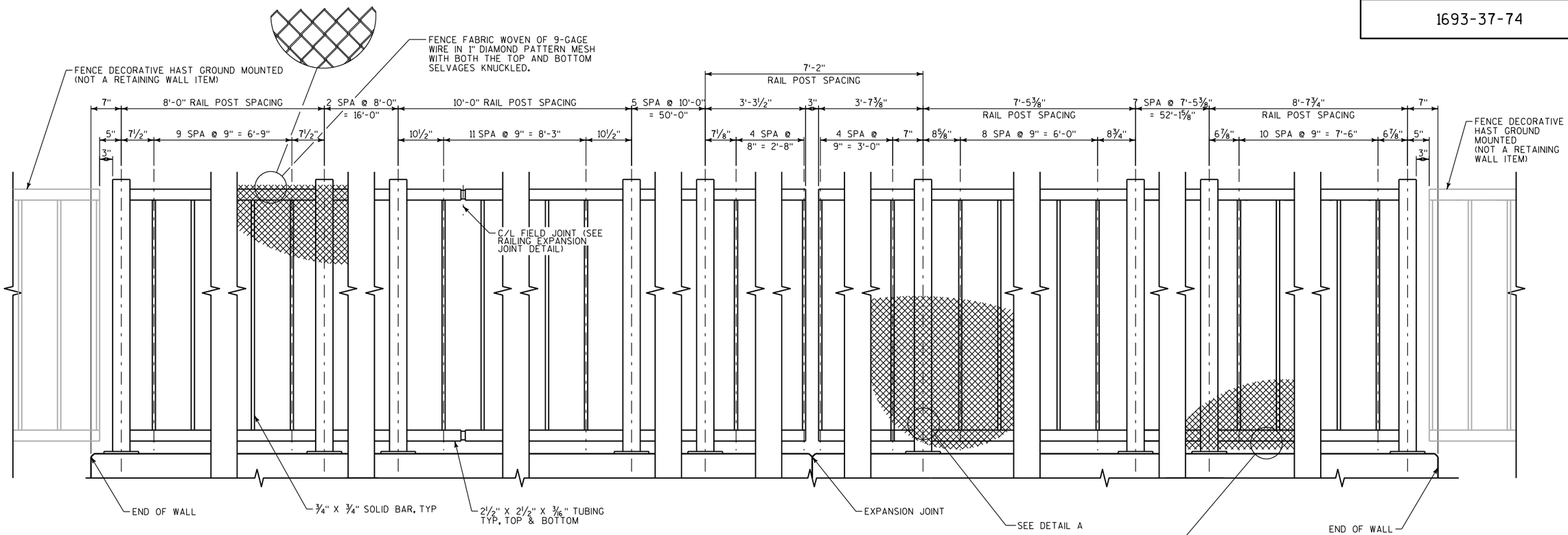
COPING & WALL ELEVATIONS

SHEET 5 OF 9

8

8

STATE PROJECT NUMBER
1693-37-74



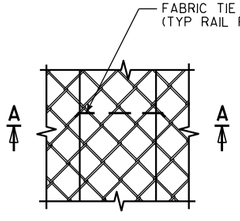
WALL FENCE ELEVATION

LOOKING AT FACE OF WALL
(DIMENSIONS ALONG C/L OF FENCE - OFFSET FROM WALL R/L 4" LT)
(ELEVATION CHANGE NOT SHOWN, SEE DECORATIVE FENCE TABLE)

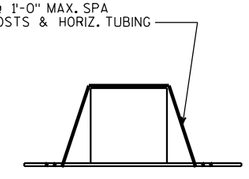
DECORATIVE FENCE TABLE

RAIL PANEL	LENGTH	RAIL POST STA (START)	RAIL POST STA (END)	TOP OF WALL START EL	TOP OF WALL END EL	EXPANSION JT ◐
1	8'-0"	10+00.58, 0.33' LT	10+08.58, 0.33' LT	755.83	756.25	-
2	8'-0"	10+08.58, 0.33' LT	10+16.58, 0.33' LT	756.25	756.71	-
3	8'-0"	10+16.58, 0.33' LT	10+24.58, 0.33' LT	756.71	757.12	-
4	10'-0"	10+24.58, 0.33' LT	10+34.58, 0.33' LT	757.12	757.55	FJ
5	10'-0"	10+34.58, 0.33' LT	10+44.58, 0.33' LT	757.55	757.88	-
6	10'-0"	10+44.58, 0.33' LT	10+54.58, 0.33' LT	757.88	758.11	-
7	10'-0"	10+54.58, 0.33' LT	10+64.58, 0.33' LT	758.11	758.20	FJ
8	10'-0"	10+64.58, 0.33' LT	10+74.58, 0.33' LT	758.20	758.28	-
9	10'-0"	10+74.58, 0.33' LT	10+84.58, 0.33' LT	758.28	758.41	-
10	7'-2"	10+84.58, 0.33' LT	10+91.75, 0.33' LT	758.41	758.57	EJ
11	7'-5⅜"	10+91.75, 0.33' LT	10+99.25, 0.33' LT	758.57	758.71	-
12	7'-5⅜"	10+99.25, 0.33' LT	11+06.75, 0.33' LT	758.71	758.89	-
13	7'-5⅜"	11+06.75, 0.33' LT	11+14.25, 0.33' LT	758.89	759.10	-
14	7'-5⅜"	11+14.25, 0.33' LT	11+21.75, 0.33' LT	759.10	759.36	FJ
15	7'-5⅜"	11+21.75, 0.33' LT	11+29.25, 0.33' LT	759.36	759.62	-
16	7'-5⅜"	11+29.25, 0.33' LT	11+36.75, 0.33' LT	759.62	759.88	-
17	7'-5⅜"	11+36.75, 0.33' LT	11+44.25, 0.33' LT	759.88	760.15	FJ
18	7'-5⅜"	11+44.25, 0.33' LT	11+51.75, 0.33' LT	760.15	760.41	-
19	8'-7¾"	11+51.75, 0.33' LT	11+60.42, 0.33' LT	760.41	760.72	-

◐ - = RAIL PANEL DOES NOT REQUIRE ANY EXPANSION JOINT.
FJ = RAIL PANEL REQUIRES A FIELD JOINT (SLEEVE EXPANSION JT).
EJ = RAIL PANEL REQUIRES AN EXPANSION JOINT (BREAK IN RAIL).



DETAIL A



SECTION A-A

NO.	DATE	REVISION	BY

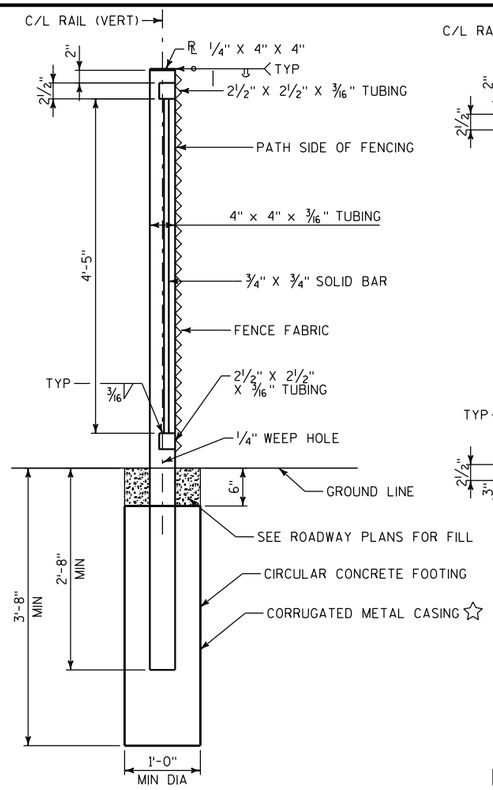
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

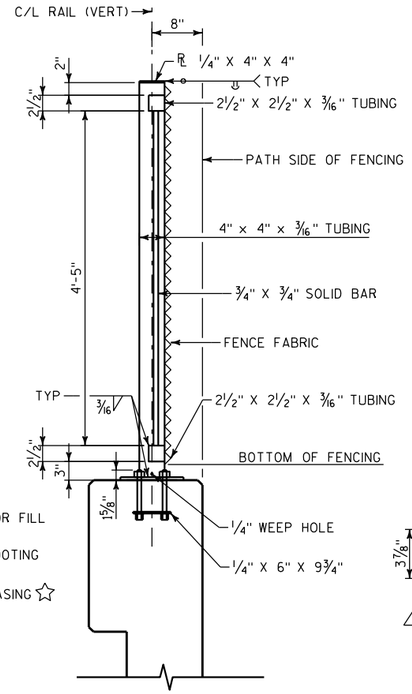
DRAWN BY ASW | PLANS CK'D. KES

DECORATIVE FENCE ELEVATION

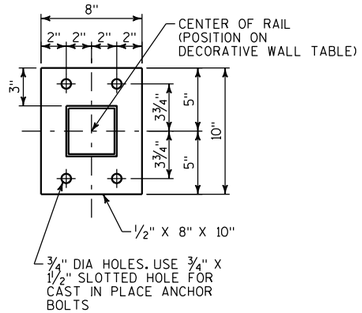
SHEET 6 OF 9



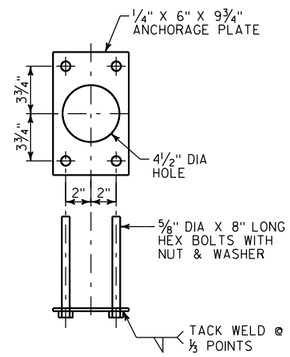
GROUND MOUNTED DECORATIVE FENCE



WALL MOUNTED DECORATIVE FENCE



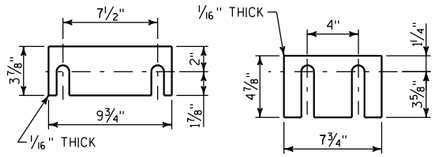
BASE PLATE



ANCHORAGE DETAIL

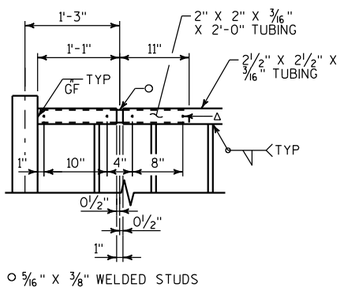
⅝" CAST-IN-PLACE ANCHOR BOLTS. MASONRY ANCHORS MAY BE SUBSTITUTED FOR CIP ANCHOR BOLTS. ANCHORAGE PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.

MASONRY ANCHOR TYPE S ⅝"-INCH. EMBED 7" IN CONCRETE.



SHIM PLATE DETAILS

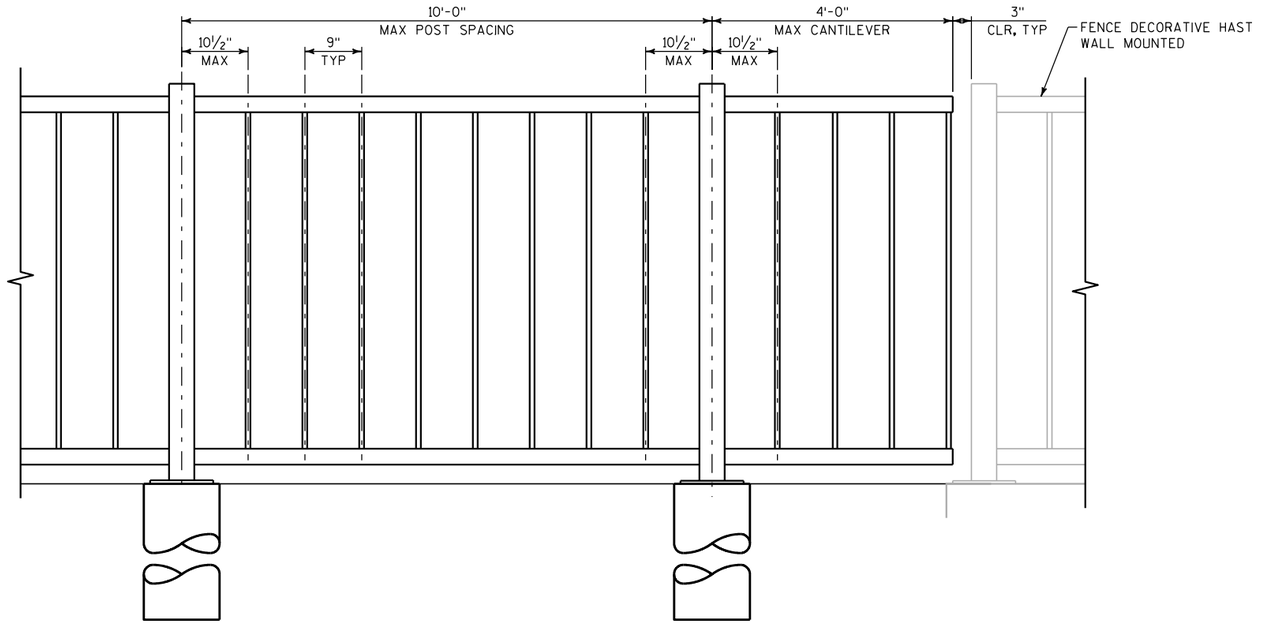
TWO SHIMS OF EACH SIZE REQUIRED PER POST



○ 5/16" X ⅜" WELDED STUDS

△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2½" X 2½" TUBE

RAILING EXPANSION JOINT DETAIL



GROUND MOUNTED DECORATIVE FENCE ELEVATION

STATE PROJECT NUMBER

1693-37-74

GENERAL, DECORATIVE FENCE NOTES

ALL POST SPACINGS ARE TAKEN HORIZONTALLY ALONG CENTER LINE OF RAILING AT BASE OF POST.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

RAILING TO BE PAINTED AND FENCE FABRIC AND TIES TO BE VINYL COATED. FEDERAL COLOR NO 37038.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A #6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

SEE SHEET 6 FOR FENCE DETAILS (APPLIES TO WALL AND GROUND MOUNTED FENCE)

WALL MOUNTED NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

SHIMS SHALL BE USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING, GRAY, NON-BITIMINOUS JOINT SEALER.

THE BID ITEM SHALL BE "FENCE DECORATIVE HAST WALL MOUNTED" WHICH SHALL INCLUDE ALL WALL MOUNTED ITEMS SHOWN.

GROUND MOUNTED NOTES

MAXIMUM HORIZONTAL POST SPACING SHALL NOT EXCEED 10'-0"

INSTALL RAILING EXPANSION JOINT AT 50'-0" MAXIMUM SPACING

THE BID ITEM SHALL BE "FENCE DECORATIVE HAST GROUND MOUNTED" WHICH SHALL INCLUDE ALL GROUND MOUNTED ITEMS SHOWN.

LEGEND

☆ CORRUGATED METAL CASING REQUIRED TO BE INSTALLED PRIOR TO MSE REINFORCING STRIPS IN MSE BACKFILL ZONES. CORRUGATED METAL CASING NOT REQUIRED IN NON-MSE BACKFILL ZONES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

DRAWN BY ASW | PLANS CK'D. KES

DECORATIVE FENCE DETAILS

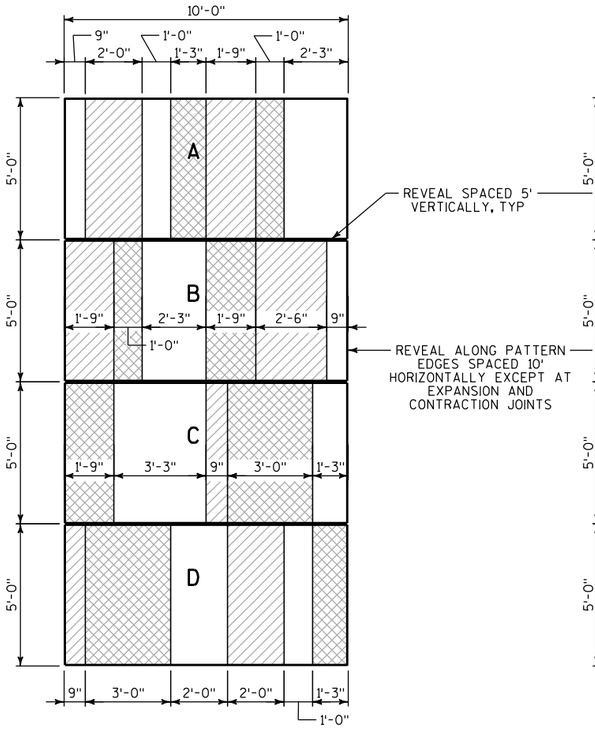
SHEET 7 OF 9

8

8

STATE PROJECT NUMBER

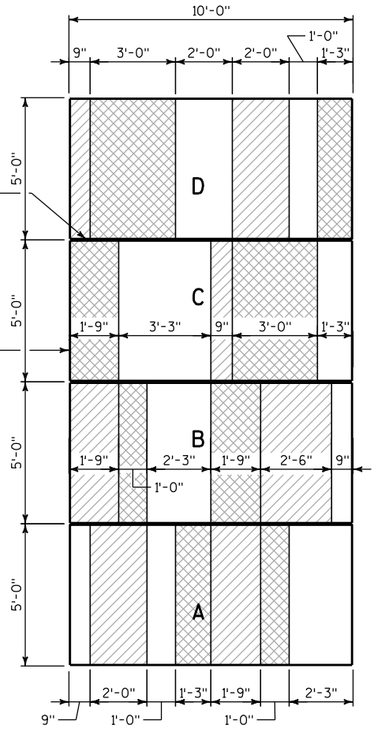
1693-37-74



REVEAL SPACED 5' VERTICALLY, TYP

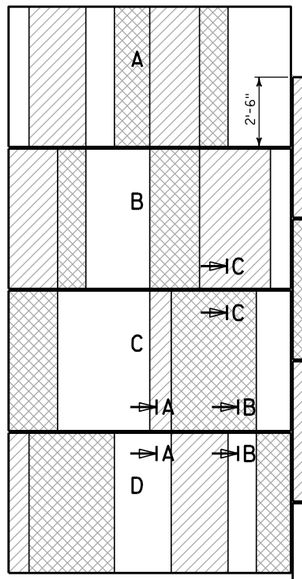
REVEAL ALONG PATTERN EDGES SPACED 10' HORIZONTALLY EXCEPT AT EXPANSION AND CONTRACTION JOINTS

CAST-IN-PLACE PATTERN 1

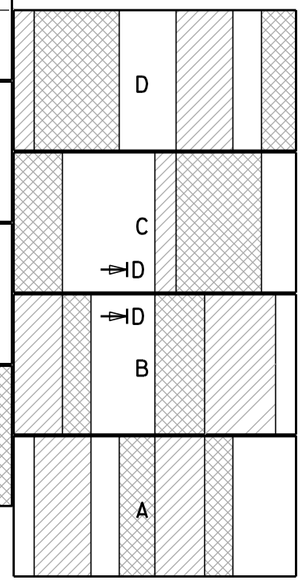


CAST-IN-PLACE PATTERN 2

PATTERN 1



PATTERN 2

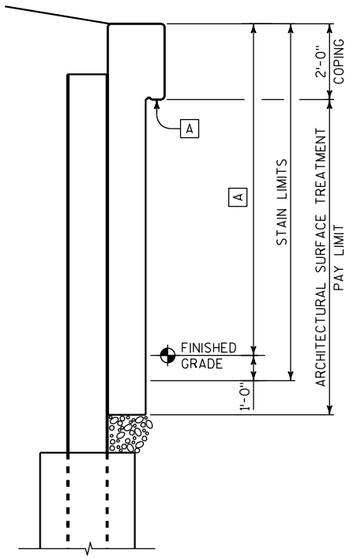


TYPICAL CAST-IN-PLACE PATTERN

PATTERN REPEATS 10' HORIZONTALLY, STAGGERED 2'-6" VERTICALLY REPEAT VERTICALLY AS REQUIRED

LEGEND

FACING THICKNESS	
	10"
	11"
	12"



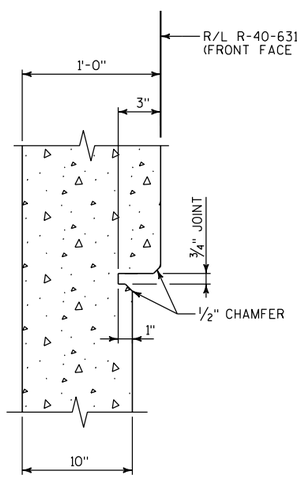
WALL STAINING DIAGRAM

CONCRETE STAINING SCHEDULE

MARK	COLOR	LOCATION	NOTES
A	BASE COLOR	WALLS	EXPOSED FACES TO 1'-0" BELOW FINISHED GRADE
		COPING	FACE AND UNDERSIDE

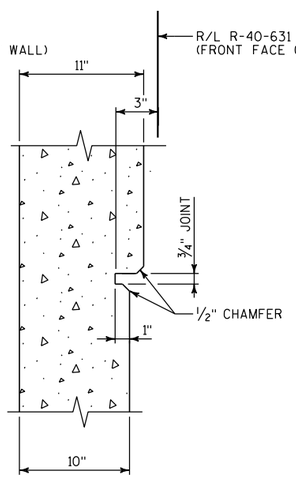
STAIN COLORS

THE FINAL COLORING OF THE CONCRETE FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW.
BASE COLOR - 33564



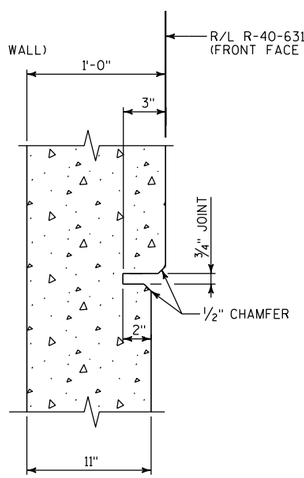
REVEAL SECTION A-A

CONCRETE FACING THICKNESS ADJACENT TO REVEAL VARIES BY 2"



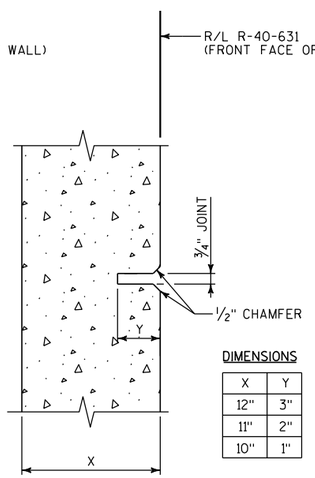
REVEAL SECTION B-B

CONCRETE FACING THICKNESS ADJACENT TO REVEAL VARIES BY 1"



REVEAL SECTION C-C

CONCRETE FACING THICKNESS ADJACENT TO REVEAL VARIES BY 1"



REVEAL SECTION D-D

CONCRETE FACING THICKNESS ADJACENT TO REVEAL IS EQUAL

DIMENSIONS

X	Y
12"	3"
11"	2"
10"	1"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-631

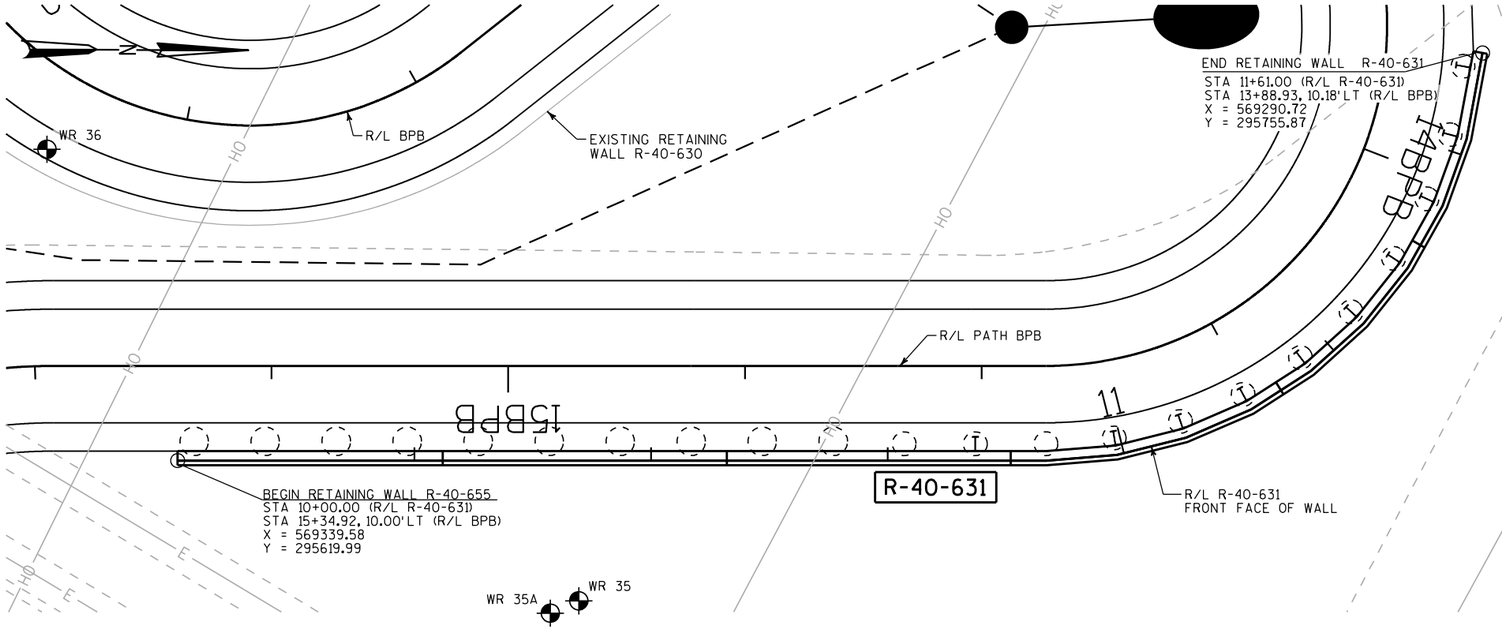
DRAWN BY ASW | PLANS CK'D. KES

AESTHETIC WALL TREATMENT DETAILS

SHEET 8 OF 9

8

8



NOTE

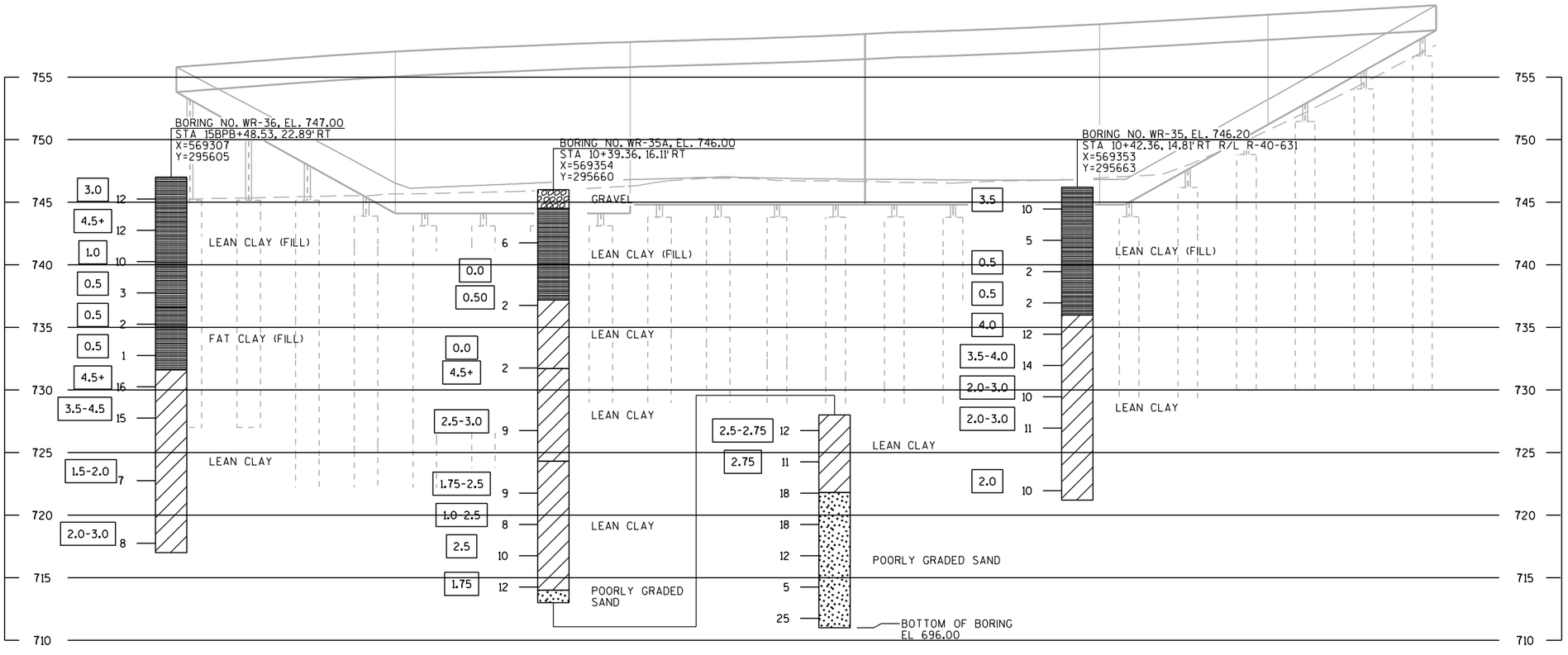
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R/L R-40-631 OR R/L BPB.

DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
GESTRA ENGINEERING, INC.

SOIL BORING TAKEN:
JULY 10, 2014 - BORING WR-35
JANUARY 13, 2015 - BORING WR-35A
JULY 10, 2014 - BORING WR-36



LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH → 7.7 7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

STATE PROJECT NUMBER

1693-37-74

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL / FILL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

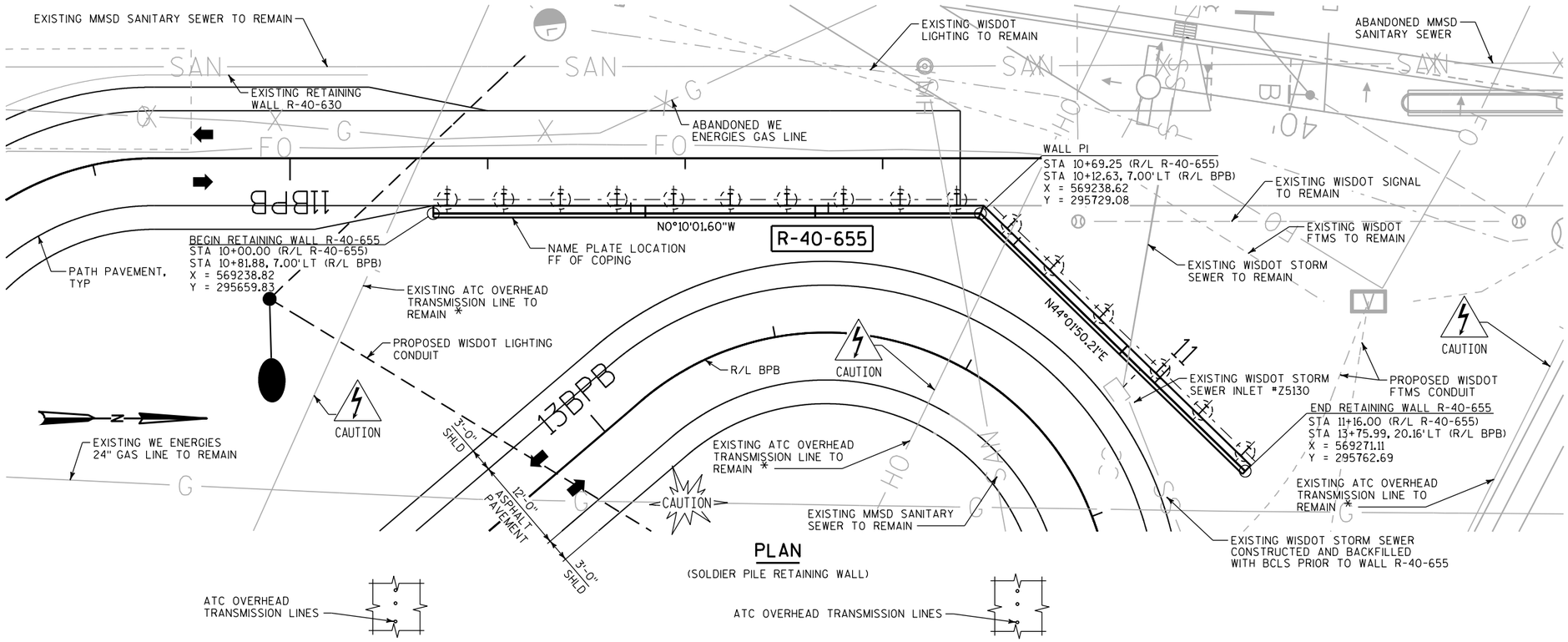
STRUCTURE R-40-631

DRAWN BY PRK | PLANS CK'D. KES

SUBSURFACE EXPLORATION

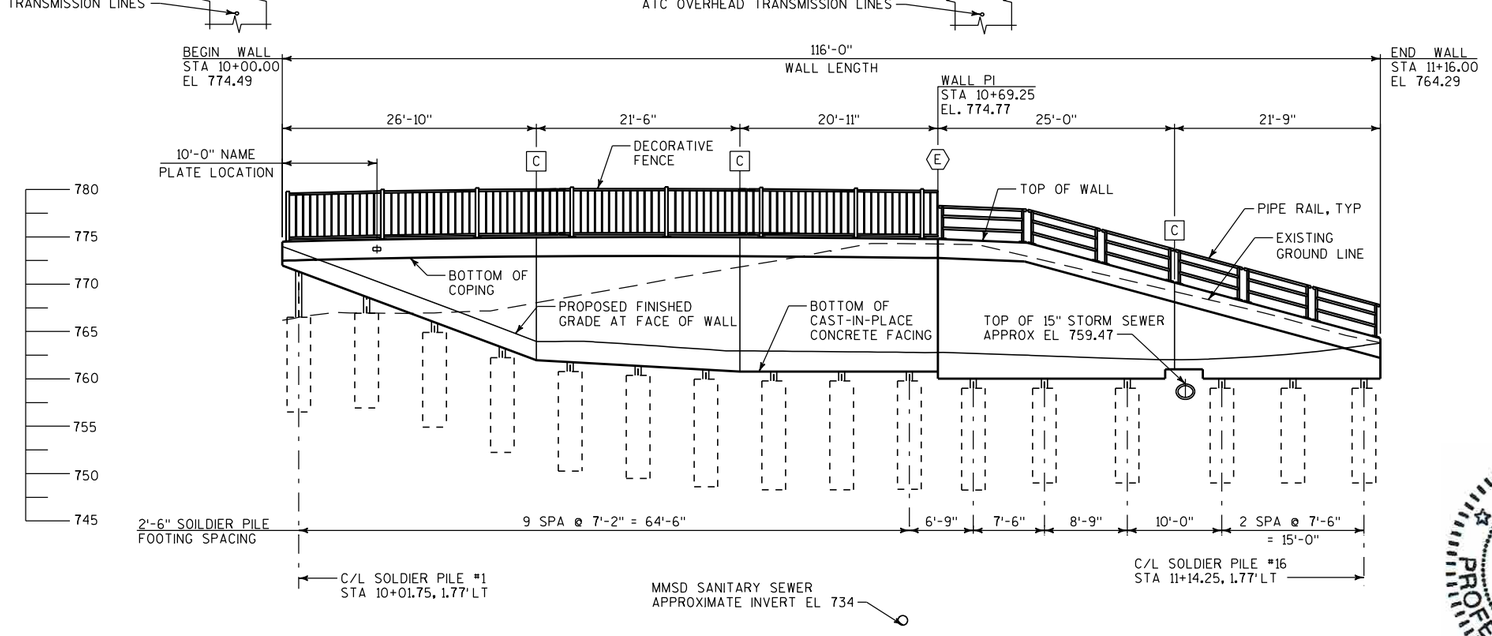
SHEET 9 OF 9

STATE PROJECT NUMBER
1693-37-74



PLAN

(SOLDIER PILE RETAINING WALL)



ELEVATION

(LOOKING WEST AT FRONT FACE OF WALL)
(DISTANCES AND STATIONS ARE GIVEN ALONG FRONT FACE OF WALL)

NOTE

* CONSTRUCTION OF R-40-655 MAY NEED TO BE ACCOMPLISHED BENEATH AND/OR ADJACENT TO ENERGIZED OVERHEAD 138KV ELECTRIC TRANSMISSION LINES OWNED AND OPERATED BY THE AMERICAN TRANSMISSION COMPANY (ATC). THE HORIZONTAL AND VERTICAL LOCATION OF THESE LINES CAN VARY WITH WIND, AMBIENT TEMPERATURE AND POWER LOADING. THE CONTRACTOR IS ADVISED THAT LOW OVERHEAD EQUIPMENT AND INSTALLATION TECHNIQUES MAY BE REQUIRED TO MAINTAIN SAFE CLEARANCES FROM THESE LINES.

DESIGN DATA

DESIGN SPECIFICATION:
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, 2012

LIVE LOAD:
LIVE LOAD SURCHARGE: 100 PSF

MATERIAL PROPERTIES:

CIP WALL PANEL	f'c = 4,000 PSI
BAR STEEL REINFORCEMENT	fy = 60,000 PSI
STRUCTURAL STEEL CARBON * (ASTM A709 GRADE 50)	Fy = 50,000 PSI
CONCRETE MASONRY SOLDIER PILE FOOTINGS	f'c = 3,500 PSI
TIMBER LAGGING	Fb = 1,000 PSI
	E = 1,700,000 PSI

* MATERIAL VALUES BASED ON DOUGLAS FIR-LARCH NO. 1, > 2" WIDE, REFERENCE AASHTO LRFD SPECIFICATION TABLE 8.4.1.1.4-1

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. QUANTITIES & GENERAL NOTES
3. TYPICAL WALL SECTIONS
4. DATA TABLES & WALL DETAILS
5. COPING AND WALL ELEVATION
6. RAILING PIPE
7. DECORATIVE FENCE
8. AESTHETIC WALL TREATMENT DETAILS
9. SUBSURFACE EXPLORATION

LEGEND

(E) WALL FACING EXPANSION JOINT

[C] WALL FACING CONTRACTION JOINT

FINAL PATH LANE & DIRECTION OF TRAVEL

RUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
ED MCCRIGHT (414) 272-2426

NO.	DATE	REVISION	BY

FORWARD 45

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 03/14/19
CHIEF STRUCTURES DESIGN ENGINEER DATE

WISCONSIN PAUL R. KRUM E-43964-6 WAUKESHA WI PROFESSIONAL ENGINEER
3/13/2019

STRUCTURE R-40-655

SOILDER PILE RETAINING WALL ALONG PATH BPB

COUNTY	CITY
MILWAUKEE	WEST ALLIS

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
PRK	KES	PRK	KES

GENERAL PLAN & ELEVATION

SHEET 1 OF 9

8 8

FILE NAME : W:\Cadd\Final\10603381_Z2\Structs\R-40-655\1693-37-74\cds\R655_080101_gp.dgn PLOT DATE : 13-MAR-2019 13:46 PLOT BY : mscekm PLOT NAME : R655_080101_gp PLOT SCALE : 16:1

STATE PROJECT NUMBER
1693-37-74

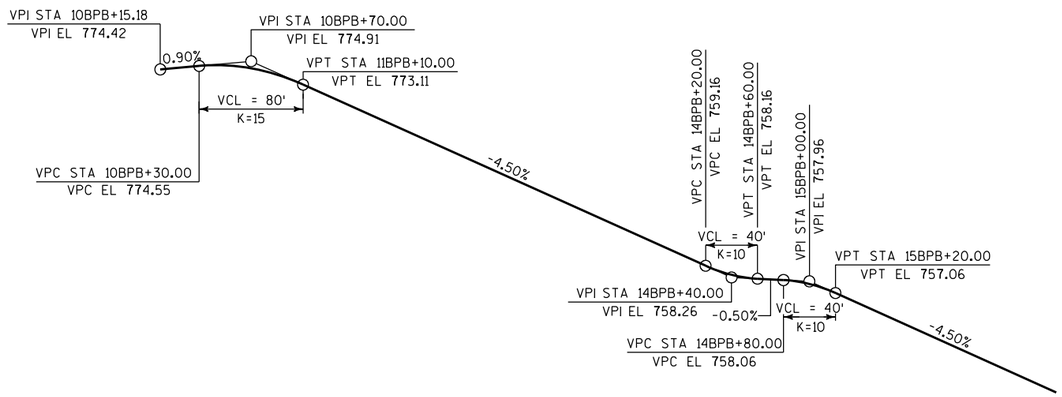
TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	TOTAL
206.3000.0007	EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-655	LS	1
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	48
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	4,780
506.0605	STRUCTURAL STEEL HS	LB	24,370
506.3010	WELDED STUD SHEAR CONNECTORS 7/8 X 5-INCH	EACH	168
513.2001	RAILING PIPE	LF	47
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	1
517.0600.0006	PAINTING EPOXY SYSTEM R-40-655	LS	1
517.1010.S.0110	CONCRETE STAINING R-40-655	SF	1,205
517.1050.S.0033	ARCHITECTURL SURFACE TREATMENT R-40-655	SF	1,040
612.0206	PIPE UNDERDRAIN UNPERFORATED 6-INCH	LF	10
SPV.0035.4010	CONCRETE MASONRY SOLDIER PILE FOOTINGS	CY	31
SPV.0075.4210	OBSTRUCTIONS FOUNDATION DRILLING	HRS	6
SPV.0090.0126	PIPE UNDERDRAIN 6-INCH SPECIAL	LF	120
SPV.0090.4411	STATE-FURNISHED FENCE DECORATIVE HAST WALL MOUNTED	LF	70
SPV.0090.4420	FOUNDATION DRILLING SPECIAL	LF	310
SPV.0110.4600	TIMBER LAGGING	MBM	4
SPV.0165.4780	GEOCOMPOSITE DRAIN BOARD	SF	1,280
	NON-BID ITEMS		3/4"
	PREFORMED JOINT FILLER		3/4"
	NON-BITUMINOUS JOINT FILLER		1
	NAME PLATE		

ALL ITEMS ARE CATEGORY 3100

SOLIDIER PILE WALL ANALYSIS SOIL PARAMETERS

SOIL UNIT	TOTAL UNIT WEIGHT, PCF	UNDRAINED		DRAINED	
		UNDRAINED SHEAR STRENGTH, SU, PSF	FRICTION ANGLE, Φ, DEG	COHESION C', PSF	FRICTION ANGLE, Φ, DEG
COHESIVE FILL	125	2,000	0	0	30
STIFF TO VERY STIFF COHESIVE	133	2,000	0	0	28
VERY STIFF TO HARD COHESIVE	135	3,500	0	200	34



PROFILE GRADE LINE BPB

R/L BPB

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ALL STATIONS ARE ALONG R/L OF R-40-655 (ALONG FINISHED WALL FACE) UNLESS NOTED OTHERWISE.

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

USE 2" CLEAR CONCRETE COVER FOR ALL REINFORCEMENT UNLESS OTHERWISE SHOWN.

ALL STEEL REINFORCEMENT SHALL BE EPOXY COATED.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-655".

COMMON EXCAVATION IN FRONT OF THE RETAINING WALL MAY NOT BEGIN UNTIL THE SOLDIER PILE TIMBER LAGGING IS IN PLACE.

HIGH STRENGTH BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

RETAINING WALL R-40-655 IS A SOLDIER PILE RETAINING WALL AND INCLUDES THE INSTALLATION OF NON-OVERLAPPING, INDEPENDENT CONCRETE DRILLED FOOTINGS AT THE STATIONS INDICATED. THE RETAINING WALL WILL BE FINISHED WITH A FULL HEIGHT CIP CONCRETE FACING AND A CIP CONCRETE COPING.

THE QUANTITY OF CAST-IN-PLACE CONCRETE MASONRY FOR THE COPING AND CONCRETE FACING IS PAID FOR UNDER THE ITEM "CONCRETE MASONRY RETAINING WALLS".

THE VOLUME OF REMOVED EARTHWORK REQUIRED TO INSTALL WALL LAGGING IS INCLUDED IN ITEM "EXCAVATION FOR STRUCTURES RETAINING WALLS R-40-655"

SURFACE PREP AND PAINT SOLDIER PILES FROM TOP OF PILE TO 1'-0" BELOW TOP OF FOOTING WITH ONE COAT OF ZINC-RICH PRIMER AS SPECIFIED IN SECTION 517 OF THE STANDARD SPECIFICATIONS. WELDED STUD SHEAR CONNECTORS ARE NOT REQUIRED TO BE PAINTED. PAINTING OF PILES IS MEASURED AND PAID FOR AS BID ITEM NUMBER 517.0600.0006 "PAINTING EPOXY SYSTEM R-40-655".

ANY FILL BEHIND WALL SHALL BE PAID AS "ROADWAY EMBANKMENT" (NOT A RETAINING WALL ITEM).

WALL R-40-655 IS TO BE BUILT AT THE BEGINNING OF THE ZOO PHASE 2 CONTRACT. SEE ROADWAY STAGING PLANS FOR DETAILS.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

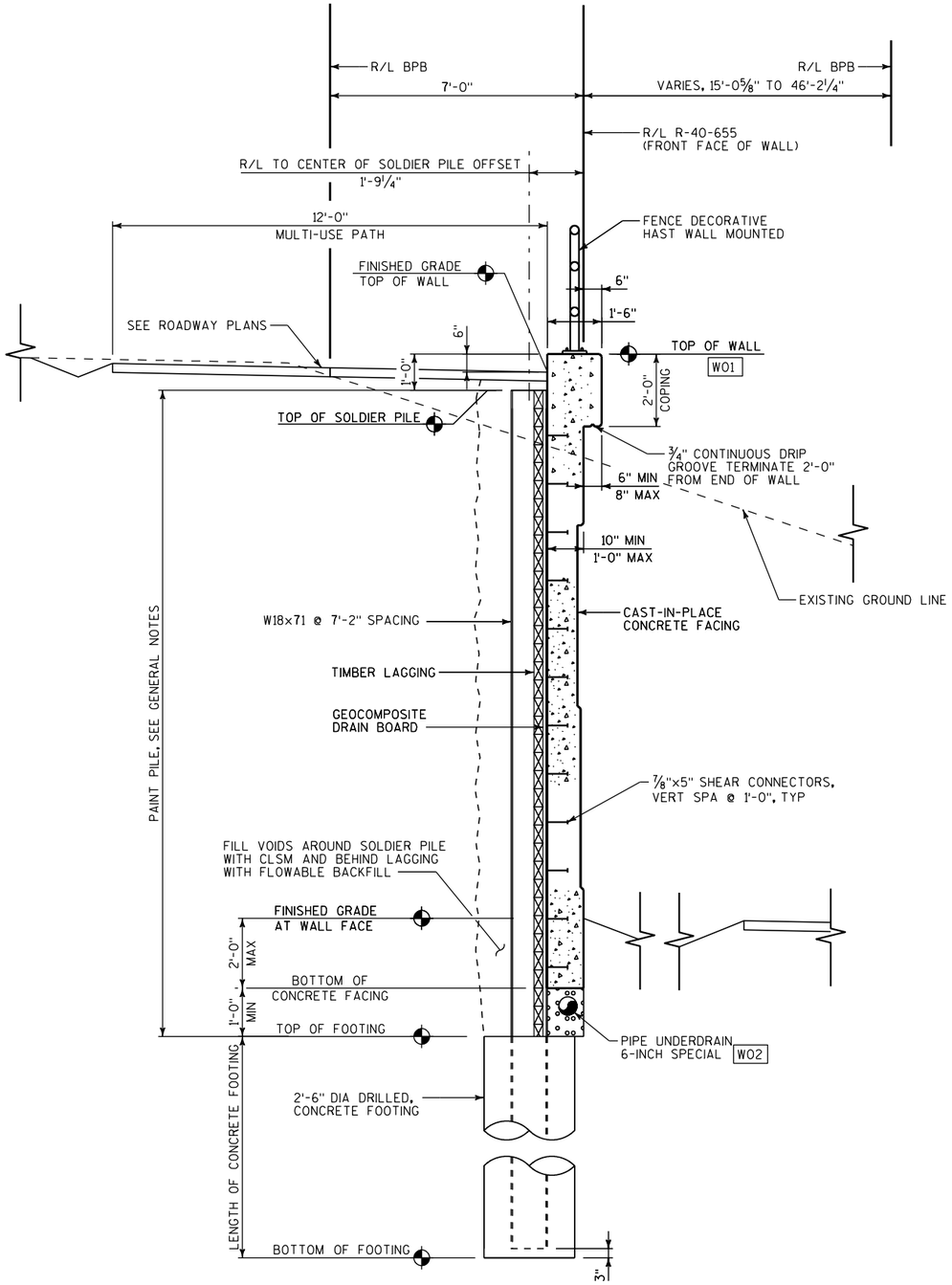
STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

QUANTITIES & GENERAL NOTES

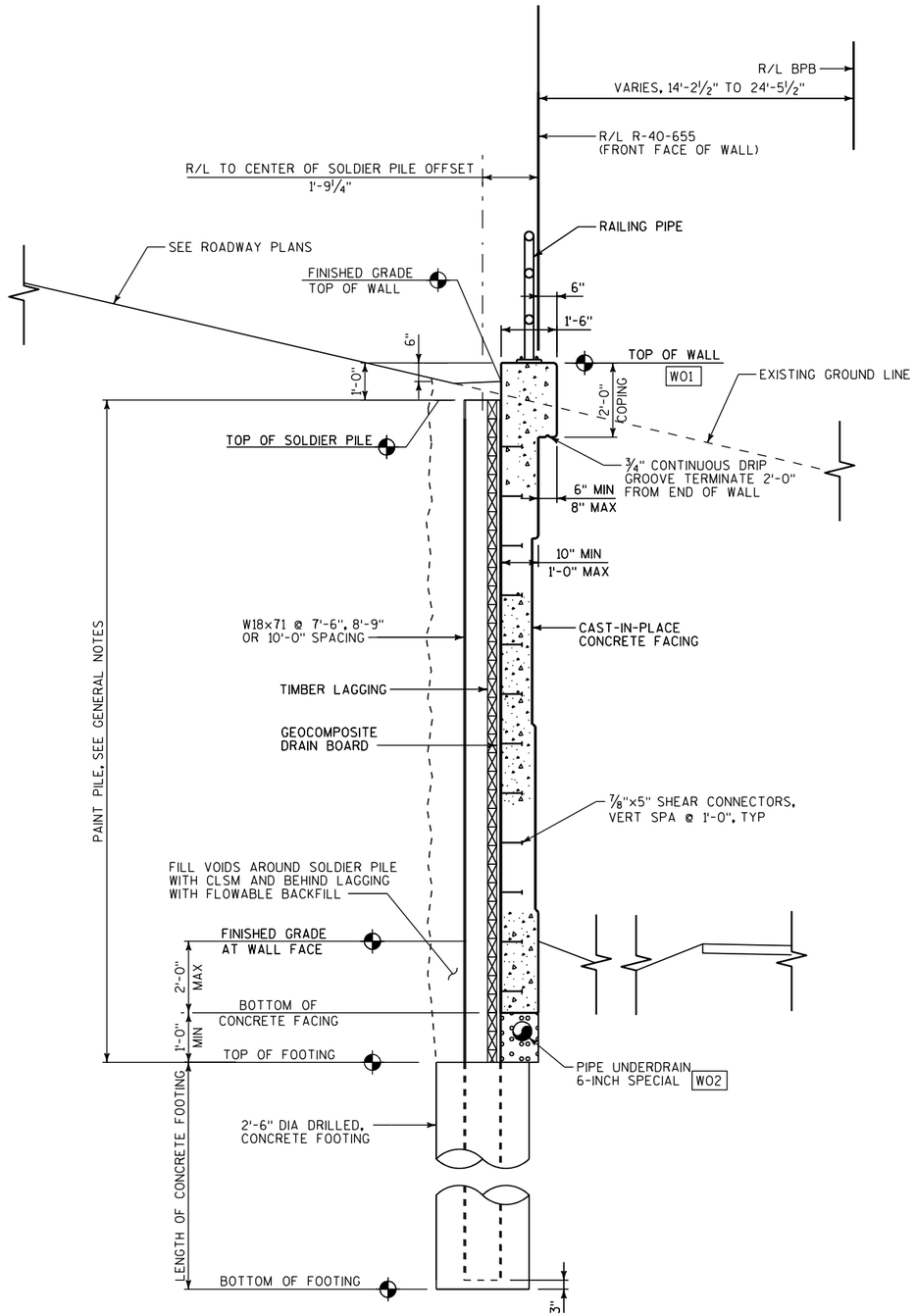
SHEET 2 OF 9

STATE PROJECT NUMBER
1693-37-74



TYPICAL SECTION

STA 10+00.00 TO STA 10+69.25
(LOOKING NORTH)



TYPICAL SECTION

STA 10+69.25 TO STA 11+16.00
(LOOKING NORTH)

NOTES:

W01 SEE "DATA TABLES & WALL DETAILS" SHEET FOR ELEVATIONS

W02 ENCLOSE PIPE IN 1'-0" X 1'-0" AREA OF NO. 1 COARSE AGGREGATE WRAPPED IN GEOTEXTILE FABRIC TYPE DF. NO. 1 COARSE AGGREGATE AND GEOTEXTILE FABRIC TYPE DF INCIDENTAL TO BID ITEM "PIPE UNDERDRAIN 6-INCH SPECIAL". CONNECT PIPE UNDERDRAIN TO INLET Z5130 USING PIPE UNDERDRAIN UNPERFORATED PAID FOR UNDER "PIPE UNDERDRAIN UNPERFORATED 6-INCH"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

TYPICAL WALL SECTIONS

SHEET 3 OF 9

8

8

STATE PROJECT NUMBER
1693-37-74

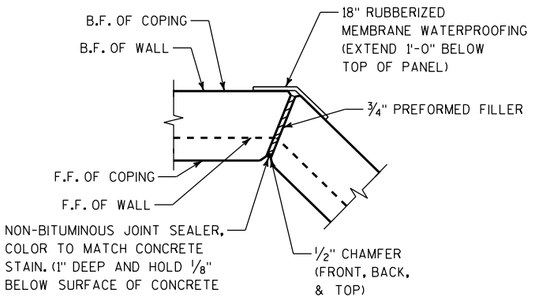
SOLDIER PILE DATA TABLE

PILE NO.	WALL R/L STA.	OFFSET LT	APPROX. EXISTING GRADE	FINISHED GRADE AT WALL FACE	FINISHED GRADE TOP OF WALL	FOUNDATION DRILLING LENGTH	TOP OF WALL	TOP OF SOLDIER PILE	TOP OF FOOTING	BOTTOM OF FOOTING	FOOTING LENGTH	FOOTING DIAMETER	SOLDIER PILE SECTION	SOLDIER PILE LENGTH
1	10+01.75	1'-9¼" LT	766.51	773.35	774.03	10'-0"	774.53	773.53	766.51	756.51	10'-0"	2'-6"	W18x71	16'-9"
2	10+08.92	1'-9¼" LT	766.94	770.71	774.19	10'-0"	774.69	773.69	766.94	756.94	10'-0"	2'-6"	W18x71	16'-6"
3	10+16.08	1'-9¼" LT	766.96	768.03	774.32	12'-1"	774.82	773.82	764.91	754.91	10'-0"	2'-6"	W18x71	18'-9"
4	10+23.25	1'-9¼" LT	767.40	765.33	774.41	15'-2"	774.91	773.91	762.23	752.23	10'-0"	2'-6"	W18x71	21'-6"
5	10+30.42	1'-9¼" LT	768.63	763.96	774.46	18'-4"	774.96	773.96	760.76	750.26	10'-6"	2'-6"	W18x71	23'-6"
6	10+37.58	1'-9¼" LT	769.90	763.61	774.49	20'-5"	774.99	773.99	760.37	749.49	10'-11"	2'-6"	W18x71	24'-3"
7	10+44.75	1'-9¼" LT	771.18	763.12	774.48	22'-7"	774.98	773.98	759.98	748.62	11'-4"	2'-6"	W18x71	25'-0"
8	10+51.92	1'-9¼" LT	772.41	762.93	774.43	24'-2"	774.93	773.93	759.78	748.28	11'-6"	2'-6"	W18x71	25'-6"
9	10+59.08	1'-9¼" LT	773.69	762.87	774.37	25'-5"	774.87	773.87	759.78	748.28	11'-6"	2'-6"	W18x71	25'-3"
10	10+66.25	1'-9¼" LT	774.27	762.80	774.30	26'-0"	774.80	773.80	759.78	748.28	11'-6"	2'-6"	W18x71	25'-3"
11	10+73.00	1'-9¼" LT	774.18	762.69	774.11	26'-7"	774.61	773.61	759.02	747.59	11'-5"	2'-6"	W18x71	25'-9"
12	10+80.50	1'-9¼" LT	772.50	762.43	773.40	24'-5"	773.90	772.90	759.02	748.06	11'-0"	2'-6"	W18x71	24'-6"
13	10+89.25	1'-9¼" LT	770.41	762.12	771.03	21'-5"	771.53	770.53	759.02	749.02	10'-0"	2'-6"	W18x71	21'-3"
14	10+99.25	1'-9¼" LT	768.03	762.17	768.32	19'-0"	768.82	767.82	759.02	749.02	10'-0"	2'-6"	W18x71	18'-6"
15	11+06.75	1'-9¼" LT	766.13	762.64	766.29	17'-1"	766.79	765.79	759.02	749.02	10'-0"	2'-6"	W18x71	16'-6"
16	11+14.25	1'-9¼" LT	764.19	763.53	764.26	15'-2"	764.76	763.76	759.02	749.02	10'-0"	2'-6"	W18x71	14'-6"

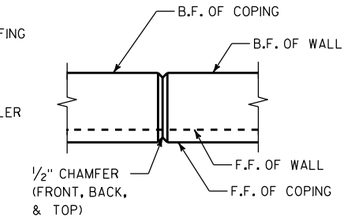
WALL ELEVATIONS TABLE

STATION	TOP OF WALL ELEVATIONS	FINISHED GRADE ELEVATIONS	EXISTING GROUND ELEVATIONS
10+00.00	774.49	773.99	766.19
10+13.42	774.78	769.04	766.91
10+26.83	774.94	763.97	768.01
10+37.58	774.99	763.61	769.90
10+48.33	774.96	762.96	771.79
10+58.79	774.87	762.87	773.63
10+69.25	774.77	762.80	774.25
10+78.71	774.38	762.51	772.93
10+86.48	772.28	762.21	771.08
10+94.25	770.17	762.02	769.23
11+05.13	767.23	762.51	766.58
11+16.00	764.29	763.78	763.81

CONTRACTOR MAY LINEARLY INTERPOLATE BETWEEN STATIONS

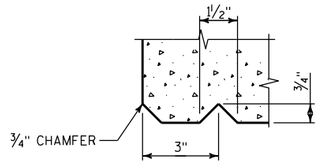


COPING EXPANSION JOINT



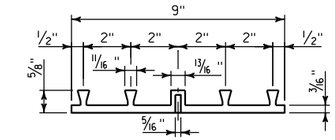
COPING CONTRACTION JOINT

(DO NOT RUN BAR STEEL THRU JOINT)



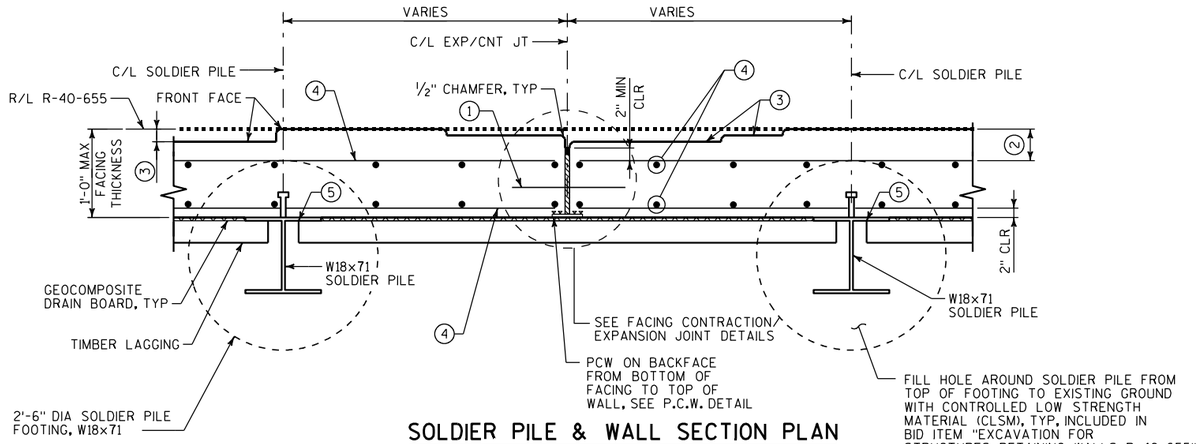
¾" CONTINUOUS DRIP GROOVE

TERMINATE 2'-0" FROM END OF WALL



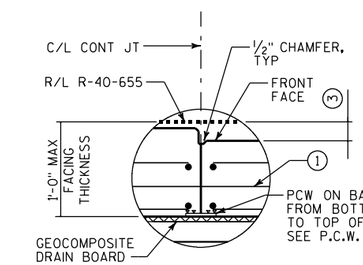
P.C.W. "TYPE B" DETAIL

(POLYVINYL CHLORIDE WATERSTOP)
(INCLUDED IN BID ITEM "CONCRETE MASONRY RETAINING WALLS")
P.C.W. SHALL BE BUTT SPLICED AT ANY INTERSECTIONS BY USING A HEATED SPLICING IRON. HOLD P.C.W. FLUSH WITH CONCRETE. SEAL ALL VERTICAL ENDS OF P.C.W. WITH NON-STAINING BITUMINOUS JOINT SEALER.

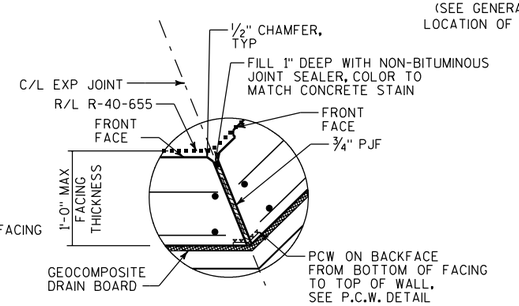


SOLDIER PILE & WALL SECTION PLAN

(SEE GENERAL PLAN & ELEVATION SHEET FOR LOCATION OF CONTRACTION & EXPANSION JOINTS)



FACING CONTRACTION JOINT DETAIL



FACING EXPANSION JOINT DETAIL

NOTES:

1. ¾" DIA X 1'-6" SMOOTH EPOXY COATED DOWELS PLACED AT 2'-0" CENTERS MID-DEPTH IN THE WALL. DOWELS SHALL BE LIGHTLY COATED WITH A DEBONDING SURFACE TREATMENT OVER ½ THE DOWEL LENGTH. EMBED 9" INTO ADJACENT WALL. DOWELS INCLUDED IN THE BID ITEM "CONCRETE MASONRY RETAINING WALLS".
2. 5" CLEAR FROM MAX. WALL THICKNESS.
3. SEE "AESTHETIC WALL TREATMENT DETAILS" SHEET.
4. SEE "COPING & WALL ELEVATION" SHEET FOR DETAILS.
5. ANCHOR LAGGING TO PILES AS NECESSARY TO RETAIN MATERIAL AND AS A LEFT-IN-PLACE CONCRETE FACING FORM BACK FACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

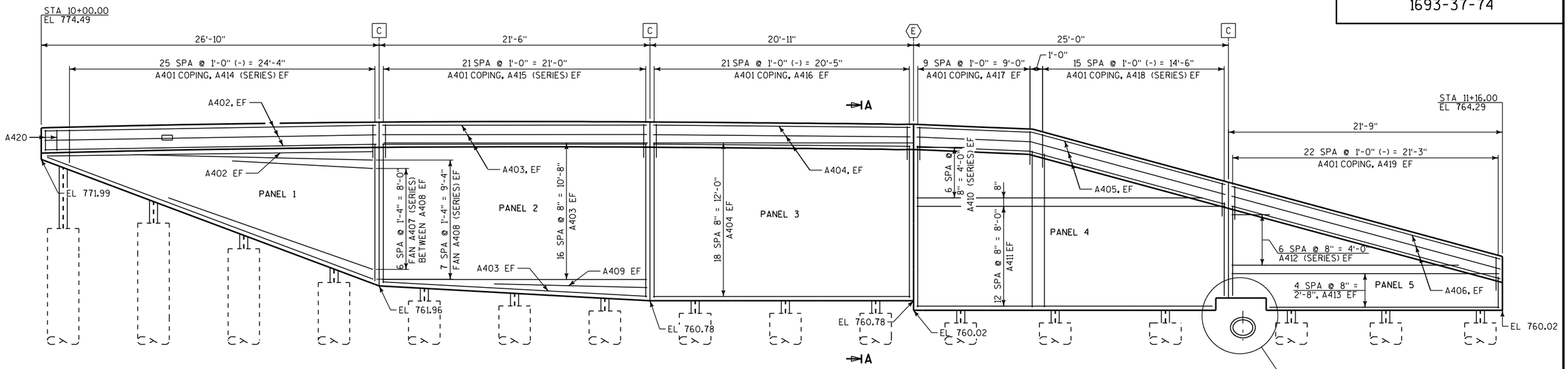
STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

DATA TABLES & WALL DETAILS

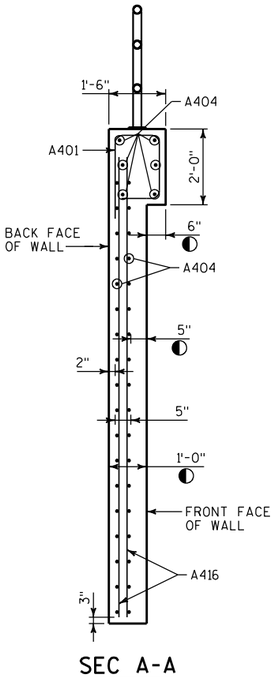
SHEET 4 OF 9

STATE PROJECT NUMBER
1693-37-74

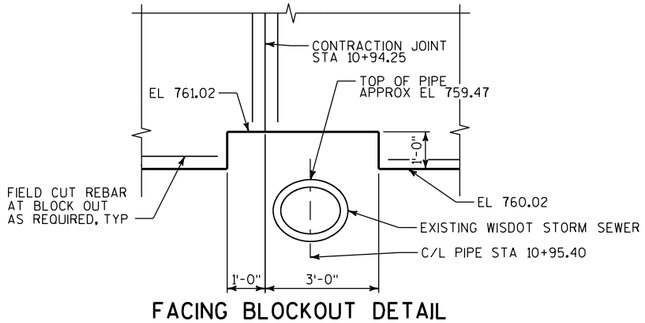


WALL FACE ELEVATION

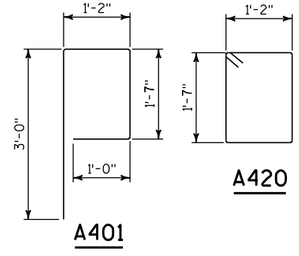
LOOKING AT FRONT FACE OF WALL



SEC A-A

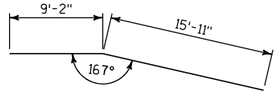


FACING BLOCKOUT DETAIL



A420

A401



A405

BILL OF BARS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	SERIES	LOCATION
A401	X	119	6'-7"	X		COPING - TIE
A402	X	8	26'-5"	-		COPING - HORIZONTAL
A403	X	42	21'-1"	-		COPING - HORIZONTAL
A404	X	44	20'-6"	-		COPING - HORIZONTAL
A405	X	6	25'-1"	X		COPING - HORIZONTAL
A406	X	6	22'-1"	-		COPING - HORIZONTAL
A407	X	14	14'-2"	-	◭	FACING - HORIZONTAL
A408	X	16	23'-4"	-	◭	FACING - HORIZONTAL
A409	X	2	12'-2"	-		FACING - HORIZONTAL
A410	X	14	16'-0"	-	◭	FACING - HORIZONTAL
A411	X	26	24'-7"	-		FACING - HORIZONTAL
A412	X	14	10'-6"	-	◭	FACING - HORIZONTAL
A413	X	10	21'-5"	-		FACING - HORIZONTAL
A414	X	52	7'-0"	-	◭	FACING - VERTICAL
A415	X	44	11'-9"	-	◭	FACING - VERTICAL
A416	X	44	12'-3"	-		FACING - VERTICAL
A417	X	20	12'-10"	-		FACING - VERTICAL
A418	X	32	10'-5"	-	◭	FACING - VERTICAL
A419	X	46	5'-4"	-	◭	FACING - VERTICAL
A420	X	2	5'-10"	X		COPING - STIRRUP

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

NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

LEGEND

(E) EXPANSION JOINT

C CONTRACTION JOINT

◐ WALL THICKNESS SHOWN AS CONSTANT 1'-0". WALL THICKNESS (AND CLEAR TO FRONT STEEL) MAY VARY BASED ON AESTHETICS PATTERN. SEE AESTHETIC WALL TREATMENT DETAILS SHEET.

BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
A407	2 SERIES OF 7	11'-2" TO 17'-2"
A408	2 SERIES OF 8	18'-11" TO 27'-8"
A410	2 SERIES OF 7	9'-3" TO 22'-8"
A412	2 SERIES OF 7	3'-0" TO 18'-0"
A414	2 SERIES OF 26	3'-0" TO 11'-0"
A415	2 SERIES OF 22	11'-1" TO 12'-4"
A418	2 SERIES OF 16	8'-5" TO 12'-6"
A419	2 SERIES OF 23	2'-6" TO 8'-2"

BUNDLE AND TAG EACH SERIES SEPARATELY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

COPING & WALL ELEVATION

SHEET 5 OF 9

FILE NAME : W:\Cadd\Final\10603381_Z2\Structs\R-40-655\1693-37-74\cds\R655_080202_el.dgn PLOT DATE : 28-FEB-2019 13:52 PLOT BY : mscekm PLOT NAME : R655_080202_el PLOT SCALE : 8:1

STATE PROJECT NUMBER
1693-37-74

NOTES

BID ITEM SHALL BE "RAILING PIPE R-40-655", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN, CONCRETE MASONRY ANCHORS, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO. 1A SHALL CONFORM TO A.S.T.M. A709 GRADE 36. STANDARD PIPE RAIL SHALL CONFORM TO A.S.T.M. A500 GRADE B (NO. 5C).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

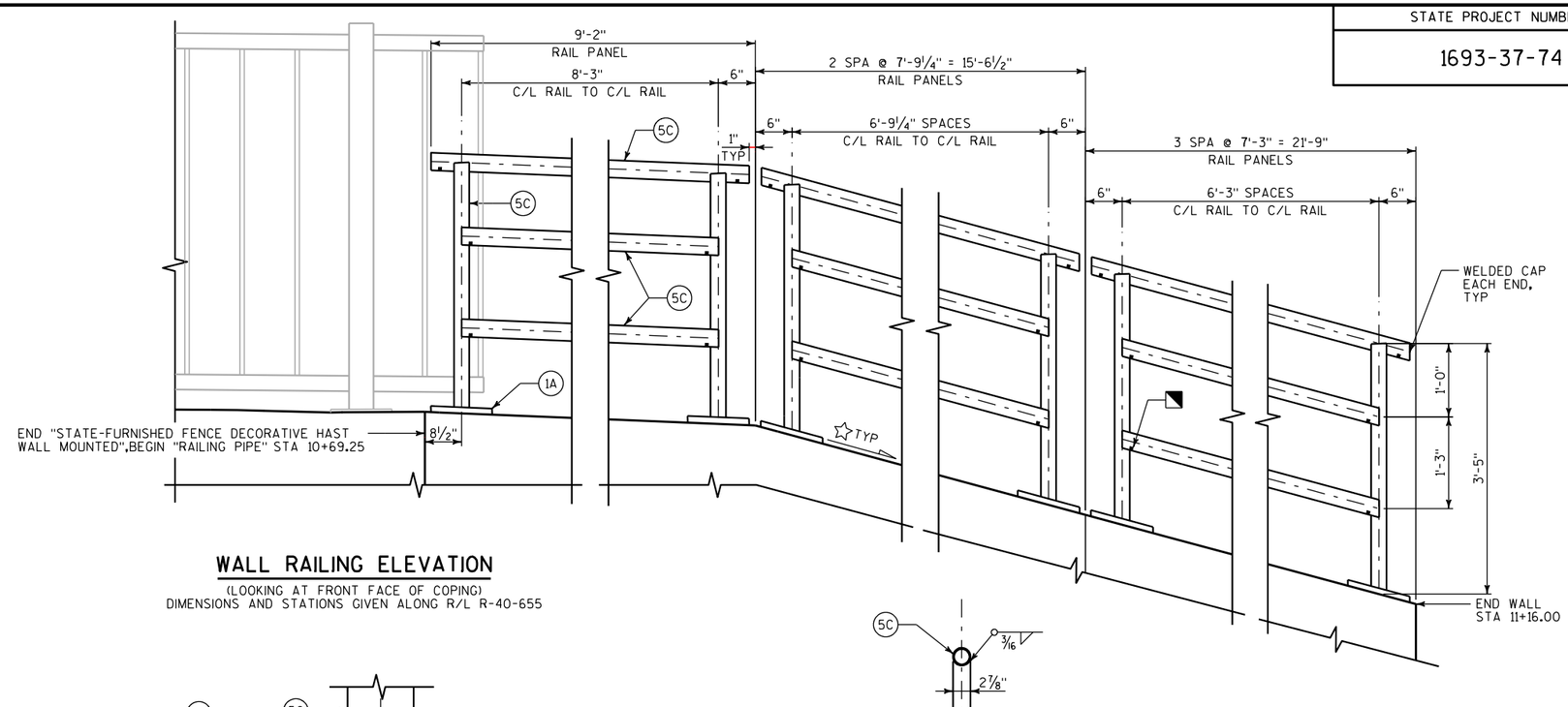
FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO. 1A AND CAULK AROUND PERIMETER OF PLATE NO. 1A WITH NON-STAINING BLACK NON-BITUMINOUS JOINT SEALER.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

GALVANIZE AFTER FABRICATION AND THEN PAINT GALVANIZED RAILING ASSEMBLIES WITH A TWO COAT SYSTEM SPECIFICALLY INTENDED FOR PAINTING OF GALVANIZED SURFACES PER THE SPECIAL PROVISIONS. SHIMS SHALL BE GALVANIZED PER ASTM 123. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 27038 BLACK.

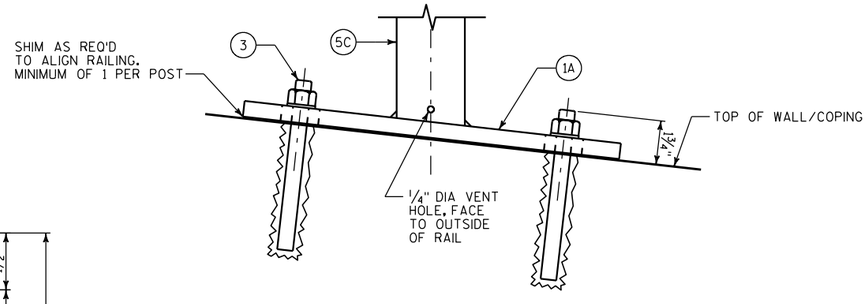
RAILING SHALL BE FABRICATED IN PANEL LENGTHS OF 2 POSTS.

PAINT TOUCH-UP TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

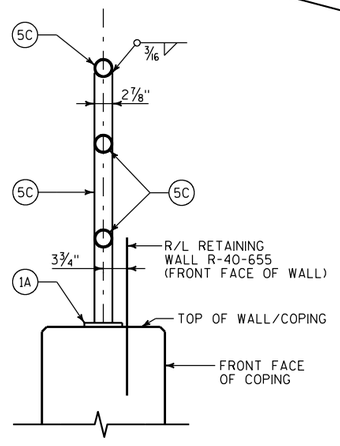


WALL RAILING ELEVATION

(LOOKING AT FRONT FACE OF COPING)
DIMENSIONS AND STATIONS GIVEN ALONG R/L R-40-655

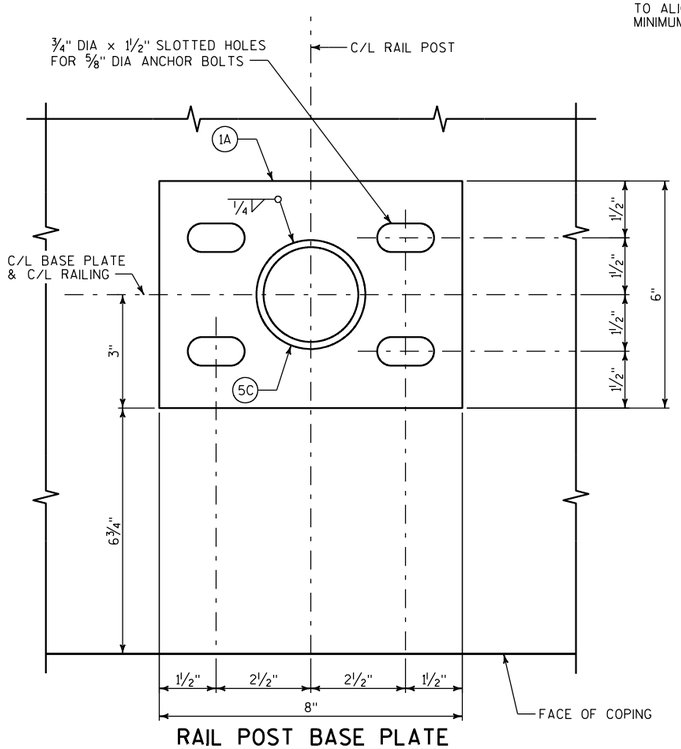


ANCHOR BOLTS FOR RAIL POST

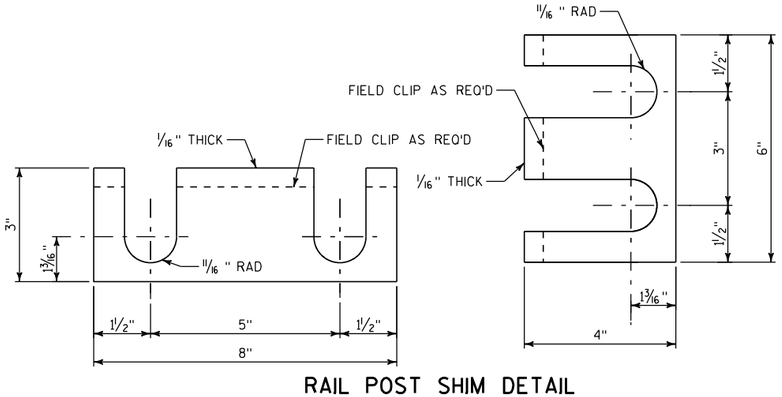


WALL RAILING PIPE SECTION

(LOOKING NORTH)



RAIL POST BASE PLATE



RAIL POST SHIM DETAIL

(2 SETS PER POST)

LEGEND

- (1A) PLATE ⅝" x 6" x 8" WITH ¾" x 1½" SLOTTED HOLES.
- (3) STAINLESS STEEL CONCRETE MASONRY ANCHORS, TYPE S (EPOXY), ⅝" DIA, EMBED A MINIMUM OF 7".
- (5C) 2½" DIA STANDARD PIPE RAIL (2.875" O.D.). PLACE POSTS VERTICAL. WELD TO 1A. PLACE RAILS PARALLEL TO TOP OF COPING. WELD TO 5C.
- ½" DIA DRAIN HOLE @ BOTTOM OF EACH RAIL END.
- ☆ SEE WALL ELEVATION TABLE TO CALCULATE SLOPE - SHEET 4.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

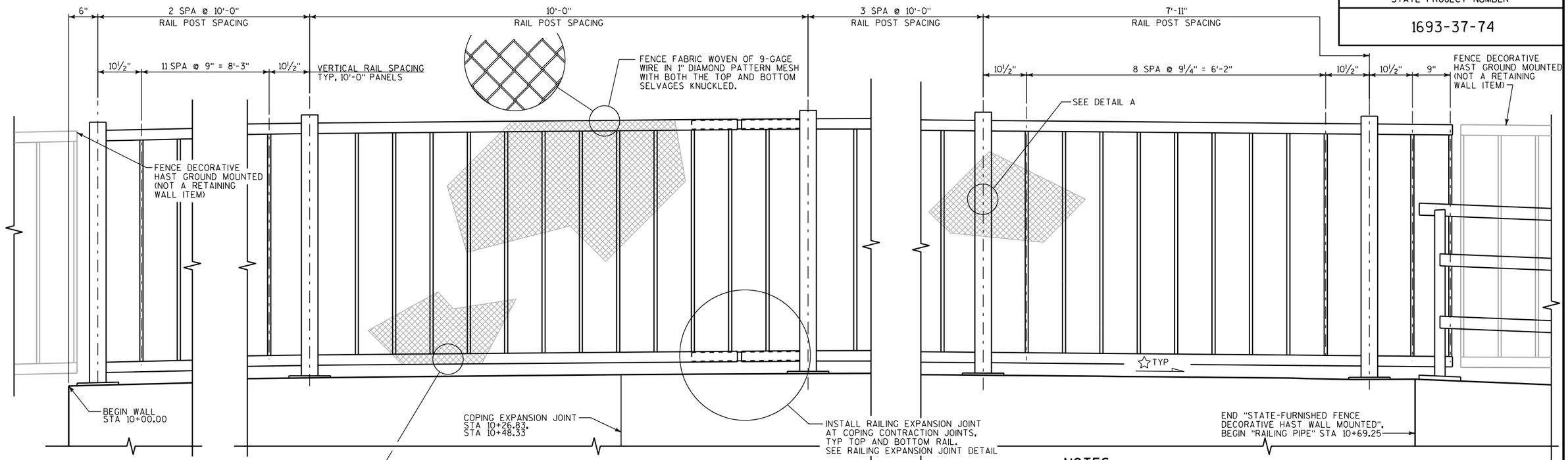
RAILING PIPE

SHEET 6 OF 9

8

8

STATE PROJECT NUMBER
1693-37-74



WALL RAILING ELEVATION

(LOOKING AT FRONT FACE OF COPING)
DIMENSIONS AND STATIONS GIVEN ALONG R/L R-40-655

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTALLY ALONG CENTER LINE OF RAILING AT BASE OF POST.

SHIMS SHALL BE USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING, GRAY, NON-BITIMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

RAILING TO BE PAINTED AND FENCE FABRIC AND TIES TO BE VINYL COATED. FEDERAL COLOR NO 37038.

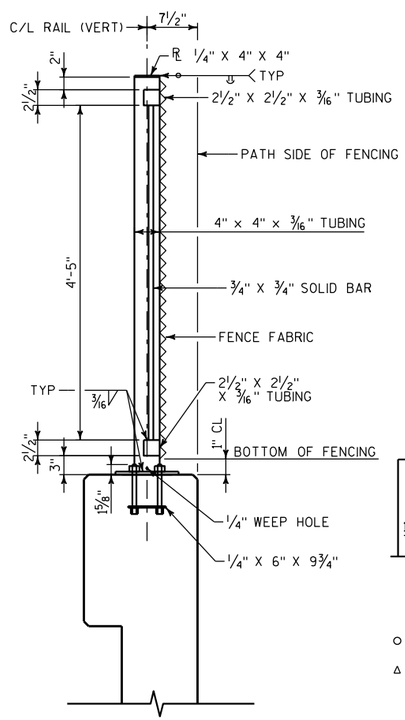
THE BID ITEM SHALL BE "FENCE DECORATIVE HAST WALL MOUNTED" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

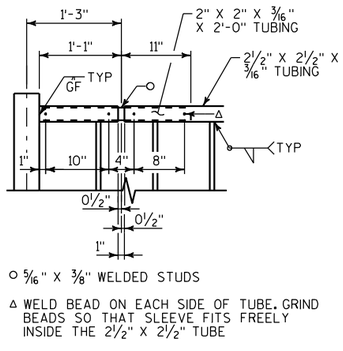
VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A #6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.



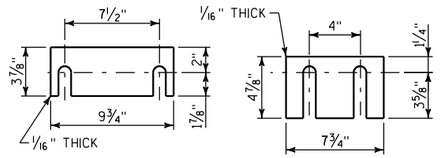
SECTION THRU RAILING



○ 5/16" X 3/8" WELDED STUDS

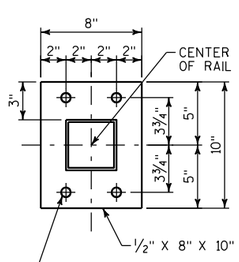
△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2½" X 2½" TUBE

RAILING EXPANSION JOINT DETAIL

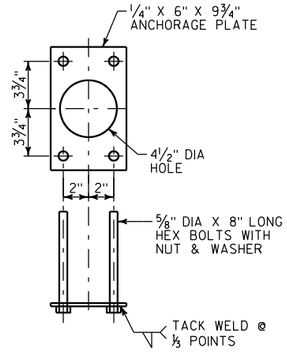


SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST



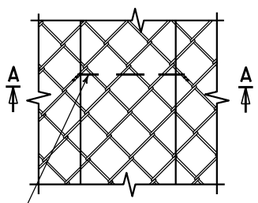
BASE PLATE



ANCHORAGE DETAIL

⅝" CAST-IN-PLACE ANCHOR BOLTS. MASONRY ANCHORS MAY BE SUBSTITUTED FOR CIP ANCHOR BOLTS. ANCHORAGE PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.

MASONRY ANCHOR TYPE S ⅝"-INCH. EMBED 7" IN CONCRETE.



DETAIL A

SECTION A-A

LEGEND

☆ SEE WALL ELEVATION TABLE TO CALCULATE SLOPE - SHEET 4.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

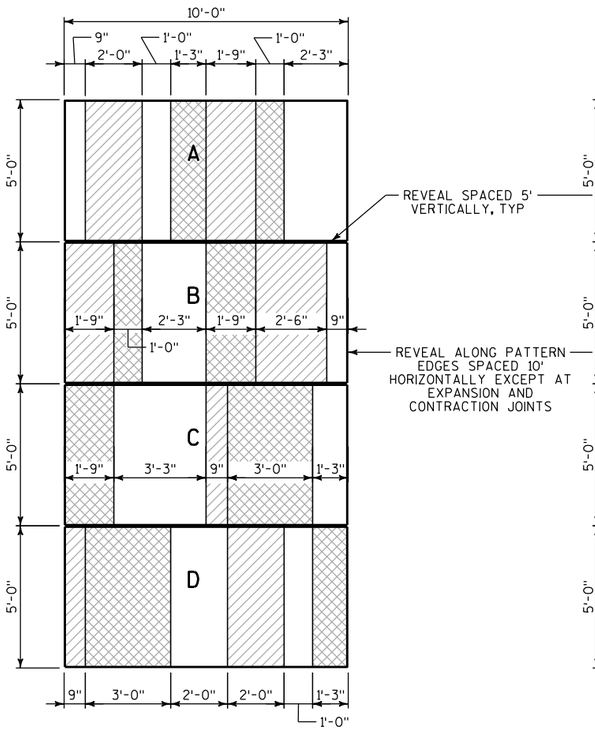
DECORATIVE FENCE

SHEET 7 OF 9

FILE NAME : W:\Cadd\Final\10603381_Z2\Structs\R-40-655\1693-37-74\cds\R655_080302_rp.dgn PLOT DATE : 28-FEB-2019 14:08 PLOT BY : mscekm PLOT NAME : R655_080302_rp PLOT SCALE : 2:1

STATE PROJECT NUMBER

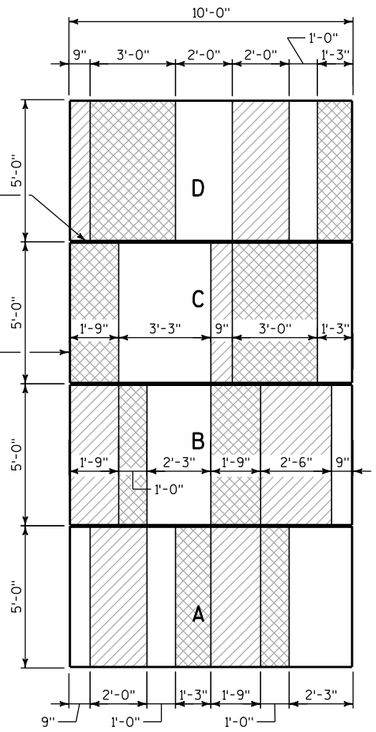
1693-37-74



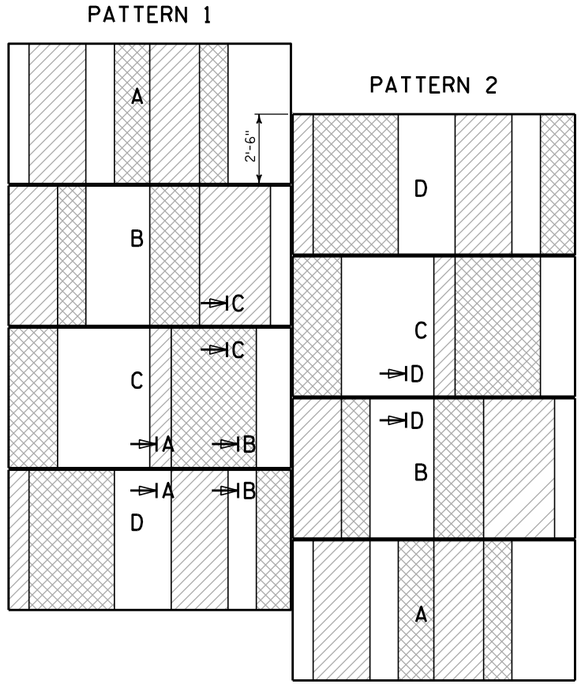
REVEAL SPACED 5' VERTICALLY, TYP

REVEAL ALONG PATTERN EDGES SPACED 10' HORIZONTALLY EXCEPT AT EXPANSION AND CONTRACTION JOINTS

CAST-IN-PLACE PATTERN 1



CAST-IN-PLACE PATTERN 2

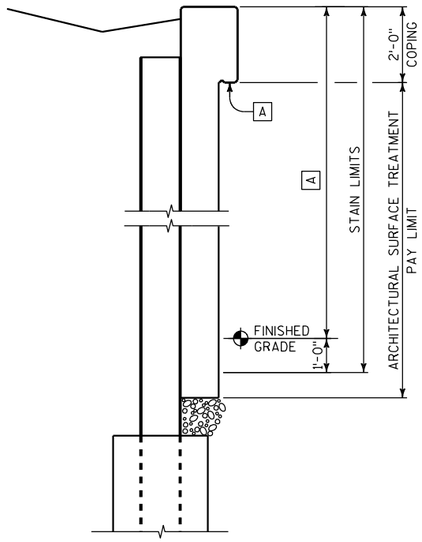


TYPICAL CAST-IN-PLACE PATTERN

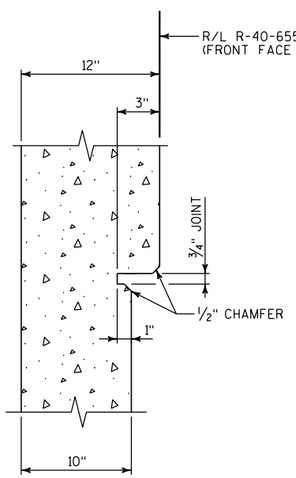
PATTERN REPEATS 10' HORIZONTALLY,
STAGGERED 2'-6" VERTICALLY
REPEAT VERTICALLY AS REQUIRED

LEGEND

FACING THICKNESS	
	10"
	11"
	12"

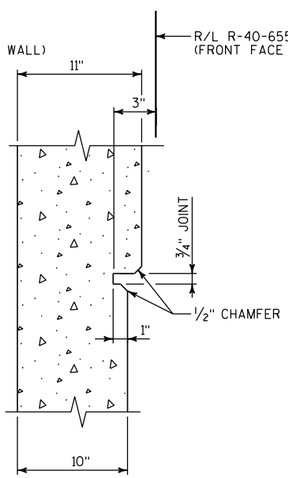


WALL STAINING DIAGRAM



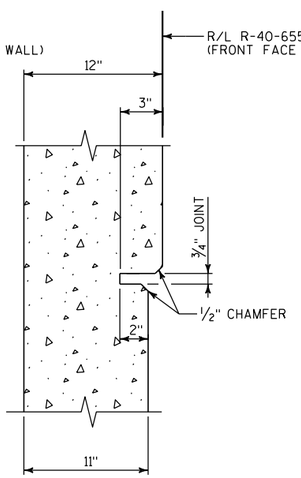
REVEAL SECTION A-A

CONCRETE FACING THICKNESS ADJACENT
TO REVEAL VARIES BY 2"



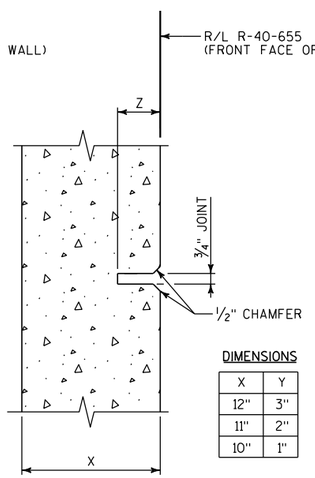
REVEAL SECTION B-B

CONCRETE FACING THICKNESS ADJACENT
TO REVEAL VARIES BY 1"



REVEAL SECTION C-C

CONCRETE FACING THICKNESS ADJACENT
TO REVEAL VARIES BY 1"



DIMENSIONS

X	Y
12"	3"
11"	2"
10"	1"

REVEAL SECTION D-D

CONCRETE FACING THICKNESS ADJACENT
TO REVEAL IS EQUAL

CONCRETE STAINING SCHEDULE

MARK	COLOR	LOCATION	NOTES
A	BASE COLOR	WALLS	EXPOSED FACES TO 1'-0" BELOW FINISHED GRADE
		COPING	FACE AND UNDERSIDE

STAIN COLORS

THE FINAL COLORING OF THE CONCRETE FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW.
BASE COLOR - 33564

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-655

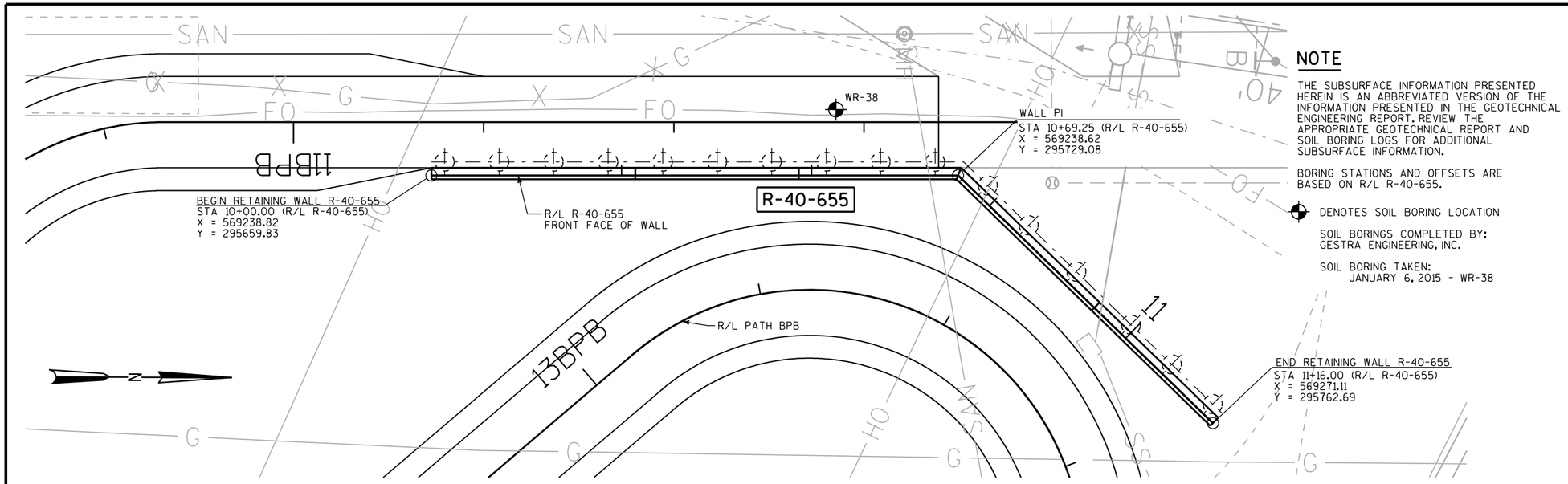
DRAWN BY PRK | PLANS CK'D. KES

AESTHETIC WALL TREATMENT DETAILS

SHEET 8 OF 9

8

8



NOTE

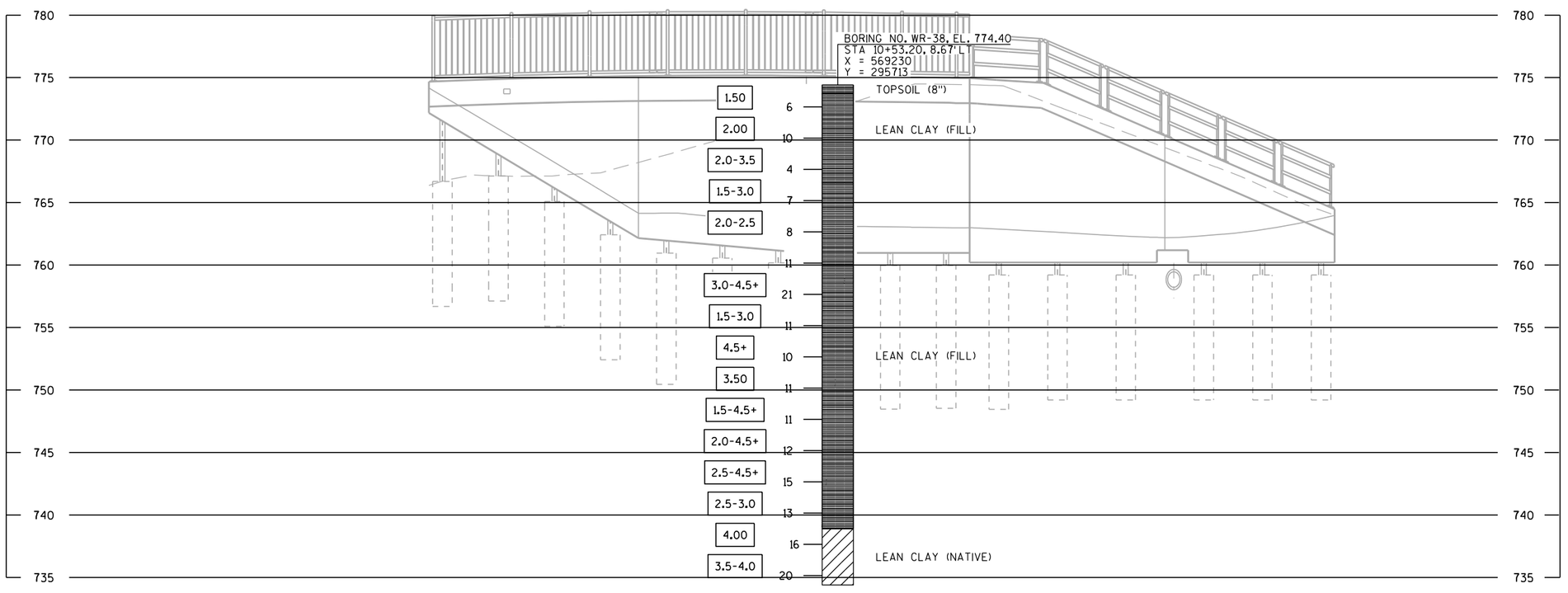
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R/L R-40-655.

DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
GESTRA ENGINEERING, INC.

SOIL BORING TAKEN:
JANUARY 6, 2015 - WR-38



STATE PROJECT NUMBER

1693-37-74

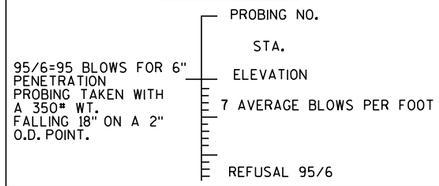
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

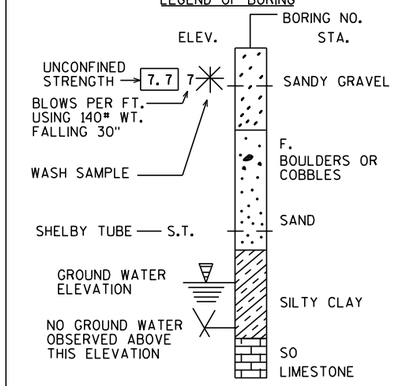
MATERIAL SYMBOLS

TOPSOIL / FILL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE R-40-655

DRAWN BY PRK | PLANS CK'D. KES

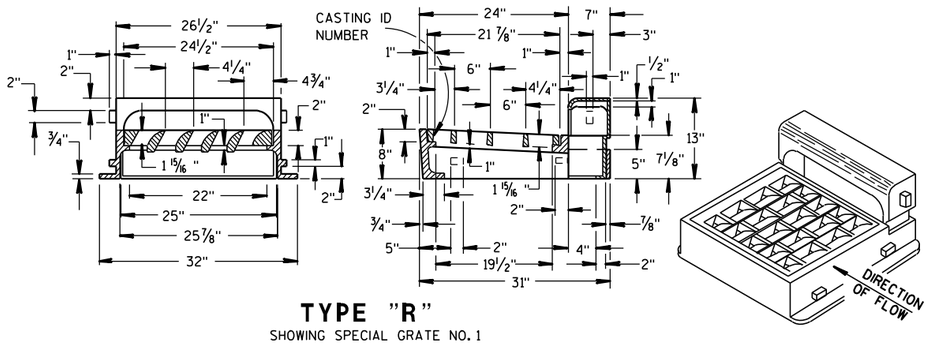
SUBSURFACE EXPLORATION

SHEET 9 OF 9

8

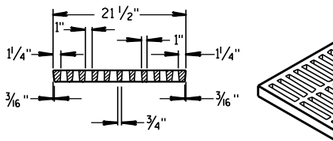
8

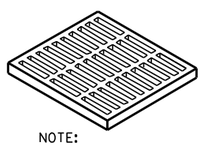
INLET COVERS



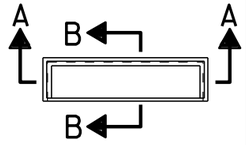
TYPE "R"

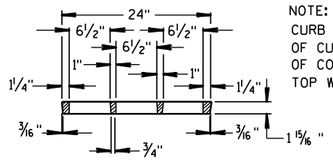
SHOWING SPECIAL GRATE NO. 1
(TO BE NOTED AS R-1 IN DRAINAGE TABLE)



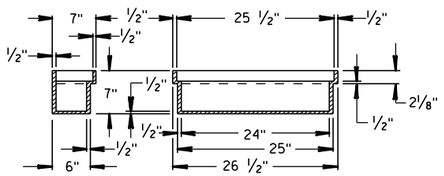


(APPROX. WEIGHT - 510 LBS.)
FRAME..... 245 LBS.
CURB..... 120 LBS.
GRATE..... 145 LBS.





NOTE:
CURB PLUG USED IN PLACE OF CURB BOX IN ABSENCE OF CONC. CURB. FILL TO TOP WITH CONCRETE.



SECTION B-B SECTION A-A

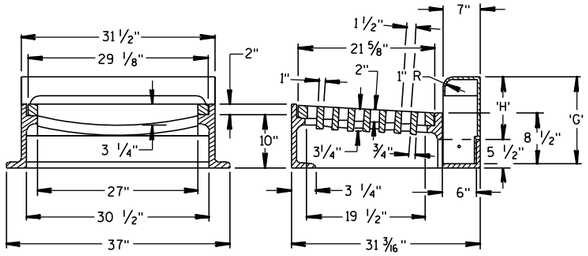
GRATE FOR TYPE "R" INLET COVER

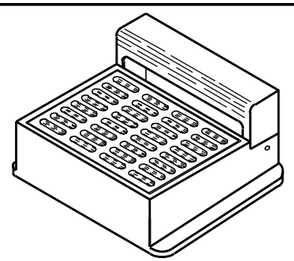
(GRATE..... 150 LBS.)
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)

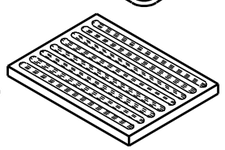
SPECIAL CURB PLUG "P"

(CURB PLUG..... 85 LBS.)
(TO BE NOTED AS R-P IN DRAINAGE TABLE)

'H' = 9" FOR 6" CURB
'H' = 11" FOR 8" CURB
'G' = 13 3/4" FOR 6" CURB
'G' = 15 3/4" FOR 8" CURB



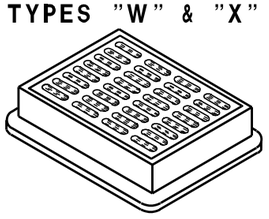


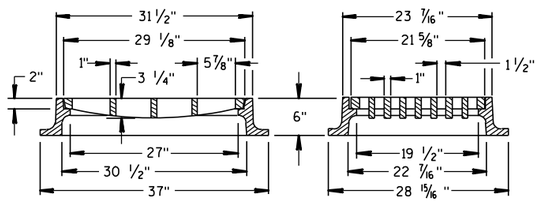


(APPROX. WEIGHT - 670 LBS.)
FRAME..... 350 LBS.
CURB BOX..... 135 LBS.
GRATE..... 185 LBS.

TYPE "W"

ALTERNATE GRATE
(FOR EXPRESSWAY RAMPS)
TYPES "W" & "X"

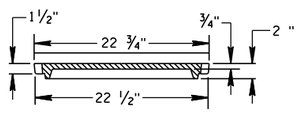




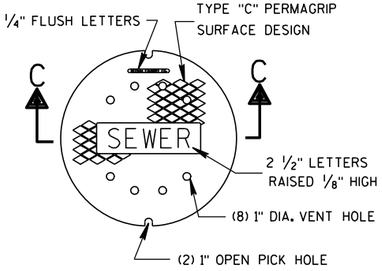
TYPE "X"

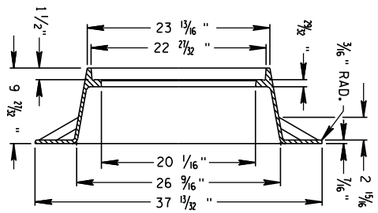
(APPROX. WEIGHT - 470 LBS.)

MANHOLE COVER



SECTION C-C





TYPE "Q"

(APPROX. WEIGHT - 290 LBS.)

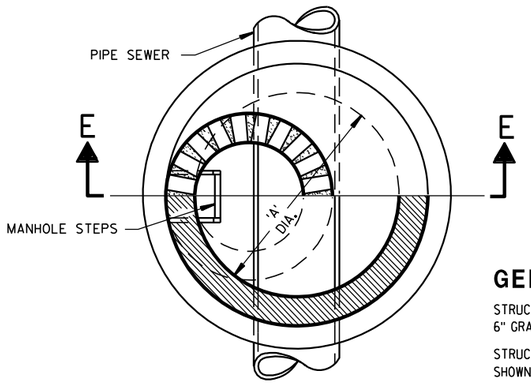
TABLE OF DIMENSIONS

TYPE	'A'	'B'	'C'
11	3'-6"	2'-8"	12" - 36"*
12	4'-0"	3'-8"	12" - 42"**
13	5'-0"	5'-8"	42" - 48"
14	6'-0"	7'-8"	54" - 60"

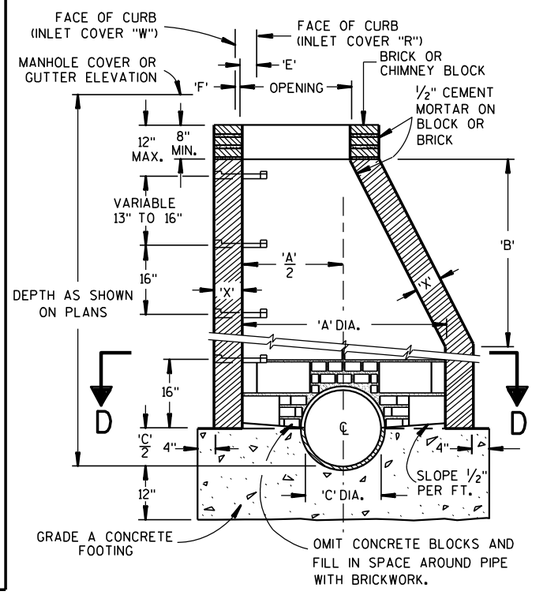
* 12" - 21" FOR PRECAST MANHOLES
** 12" - 24" FOR PRECAST MANHOLES

THE FIRST STEP SHALL BE PLACED 16" ABOVE THE BENCH.

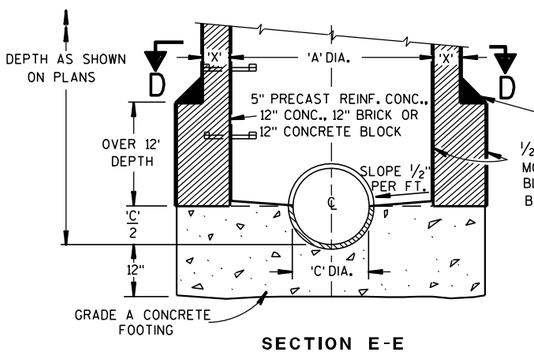
MANHOLE



HALF SECTION D-D



SECTION E-E



SECTION E-E

TYPES 11, 12, 13 & 14

TABLE OF OPENING DIMENSIONS

COVER TYPE	COVER DESCRIPTION	OPENING	'E'	'F'
"O"	ROUND	2'-2" DIA.	—	—
"W"	CURB BOX	1'-8" X 2'-6"	—	1"
"X"	INLET	1'-10" X 2'-6"	—	—
"R"	CURB BOX	2'-0" X 2'-1"	4"	—

GENERAL NOTES

STRUCTURE WALL THICKNESS 'X' TO BE 8" BRICK, 6" CONCRETE BLOCK, 6" GRADE A CONCRETE OR 5" PRECAST REINFORCED CONCRETE.

STRUCTURE FOOTINGS ARE TO BE GRADE A CONCRETE OF THE THICKNESS SHOWN IN THE DETAIL OR 5" PRECAST REINFORCED CONCRETE.

REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6" W16 X W16 WELDED SREEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.

PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

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

SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON THE PLANS.

THE CONTRACTOR MAY FORM AND POUR MONOLITHIC CONCRETE INVERT PROVIDED THE PIPE ENDS ARE EXTENDED INTO THE M.H. AND NOT TERMINATED WITHIN THE M.H. WALLS.

MANHOLE STEPS

STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAX. SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM WALL EMBEDMENT OF 3 INCHES IN PRECAST MANHOLE AND 6 INCHES IN 8 INCH BRICK OR 6 INCH BLOCK MANHOLE; TREAD OF STEP SHALL HAVE A NON-SKID SURFACE AND BE FLANKED BY CLEATS, WITH A MINIMUM OF 10 INCHES CLEAR BETWEEN CLEATS, TO PREVENT FOOT SLIPPING OFF THE EDGE CLEATS SHALL BE A MINIMUM OF 3/4 INCH HIGH BY 3/4 INCH WIDE HAVING A MINIMUM THICKNESS OF 5/8 INCH. STEPS SHALL BE CAPABLE OF SUPPORTING A CONCENTRATED LOAD OF 300 LBS. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCING BAR WILL BE ACCEPTABLE.

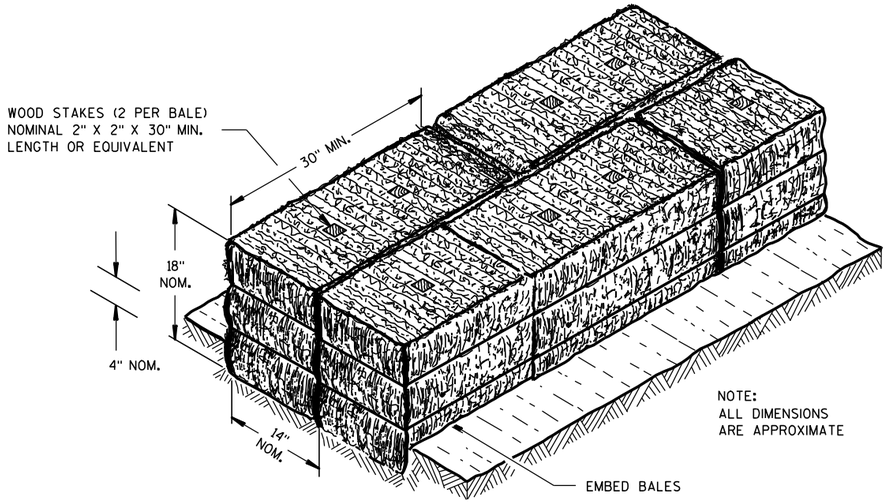
MANHOLES, MANHOLE & INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

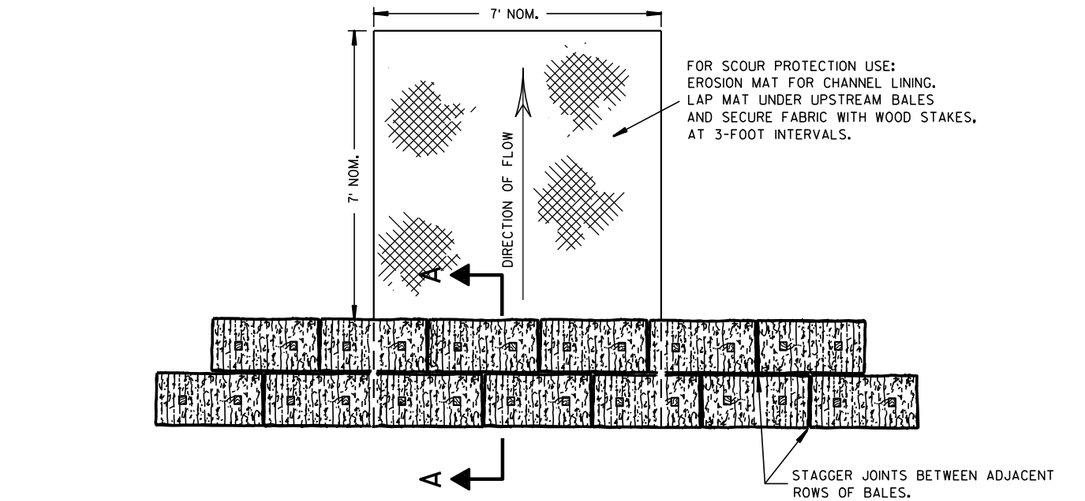
APPROVED
4/12/2011 — DATE
/S/ Jerry H. Zogg — ROADSIDE STANDARDS ENGINEER
FHWA

6

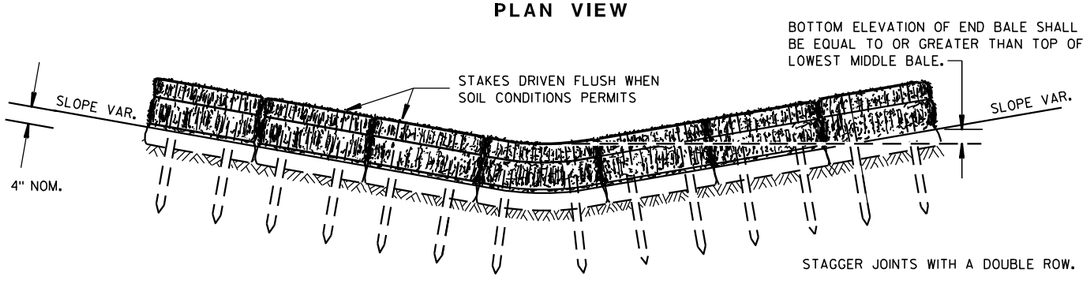
S.D.D. 8 D 17-6



SECTION A-A



PLAN VIEW



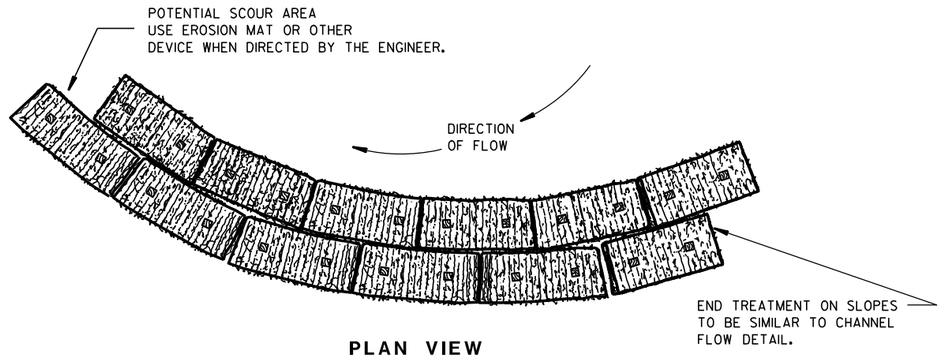
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

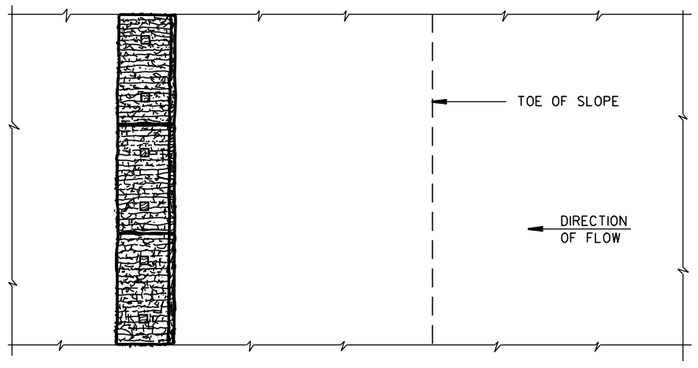
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

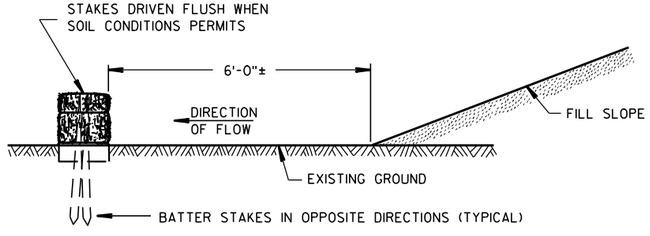


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

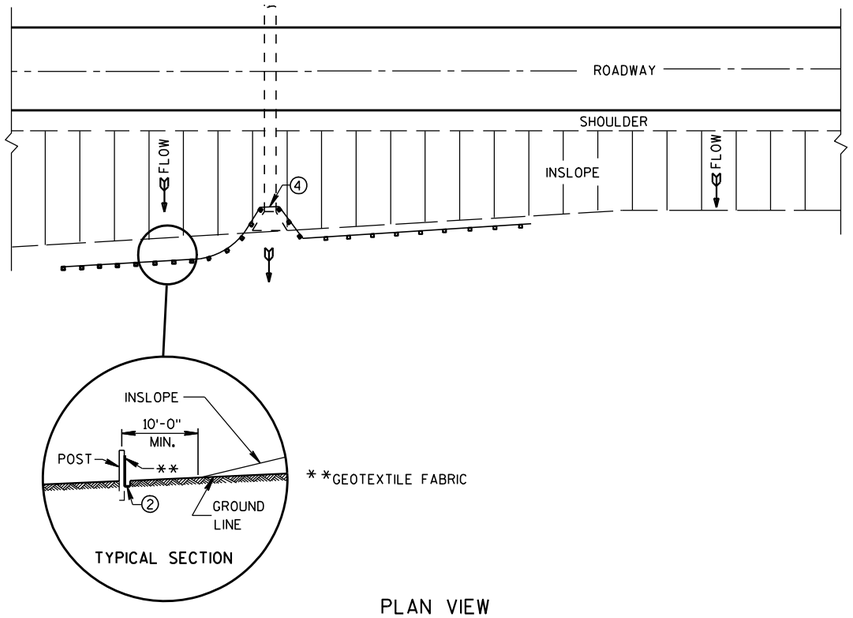
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

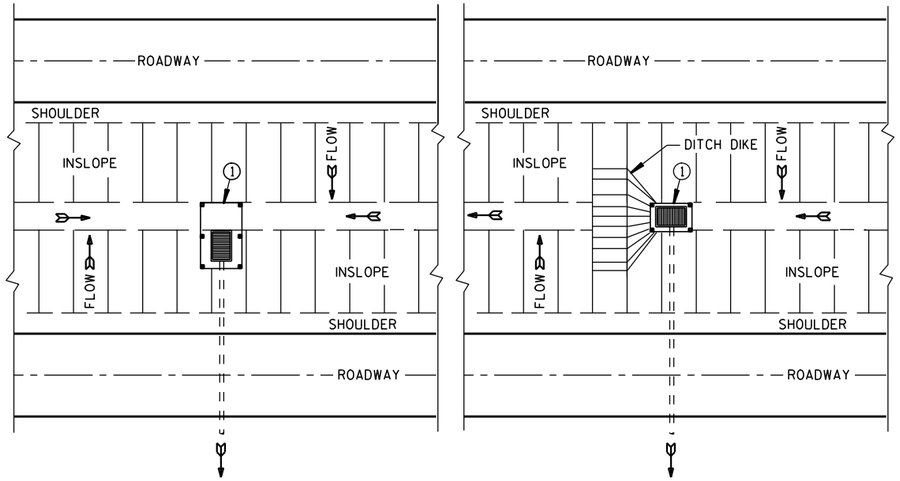
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



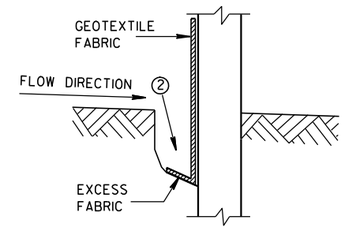
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

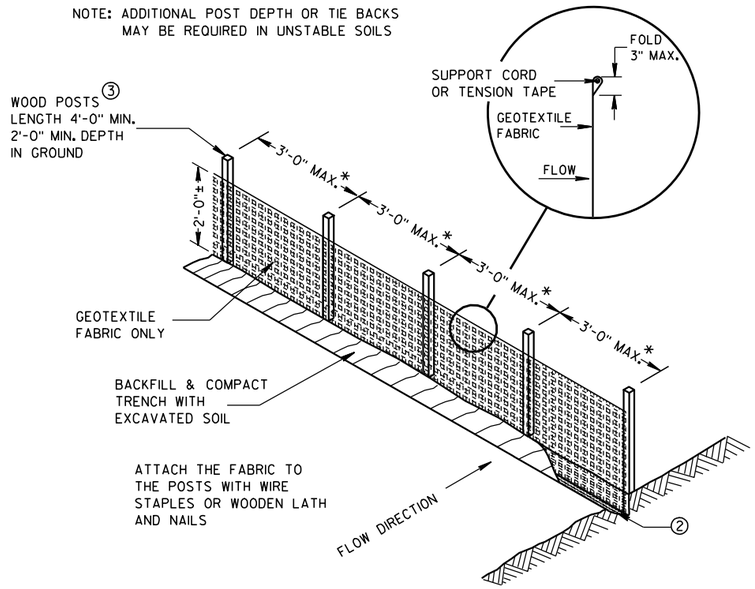
GENERAL NOTES

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

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

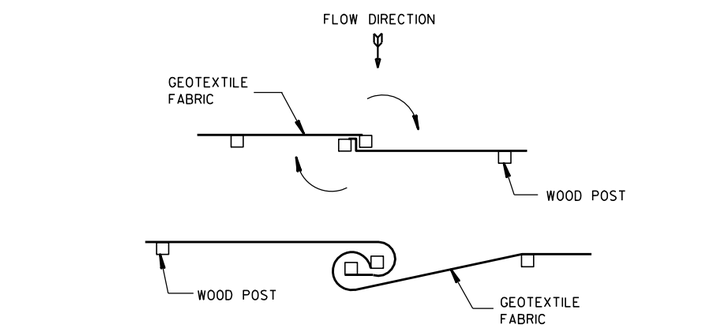


TRENCH DETAIL

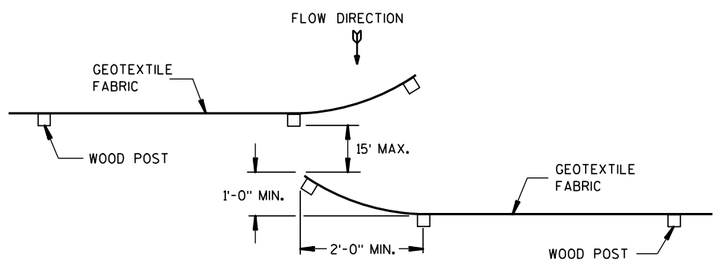


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

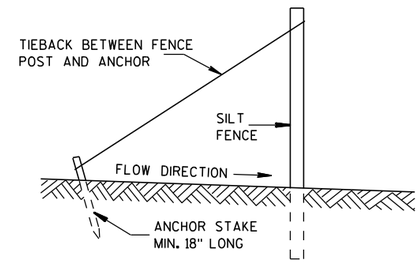


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

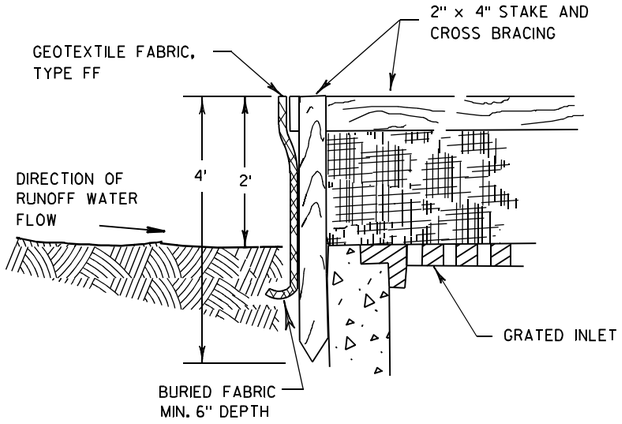
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

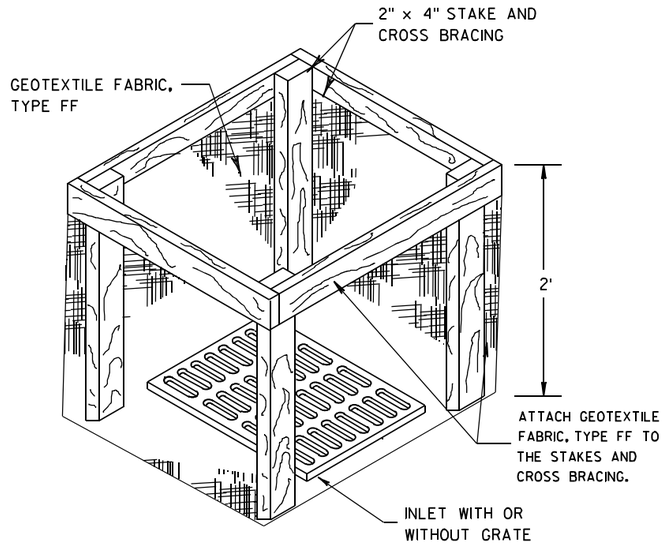
6

S.D.D. 8 E 9-6

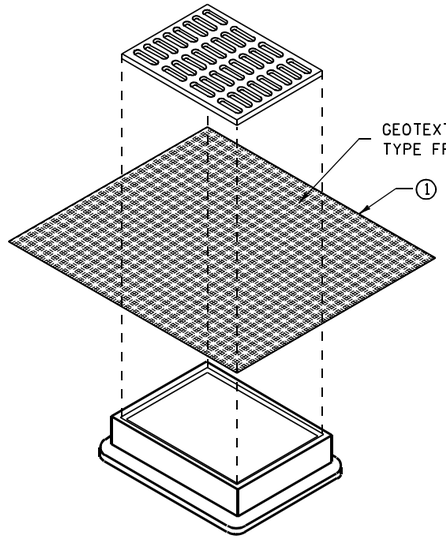
6

S.D.D. 8 E 9-6



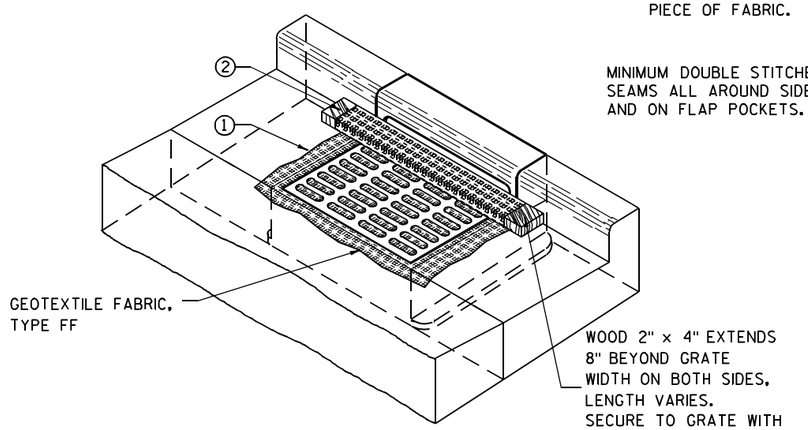


INLET PROTECTION, TYPE A

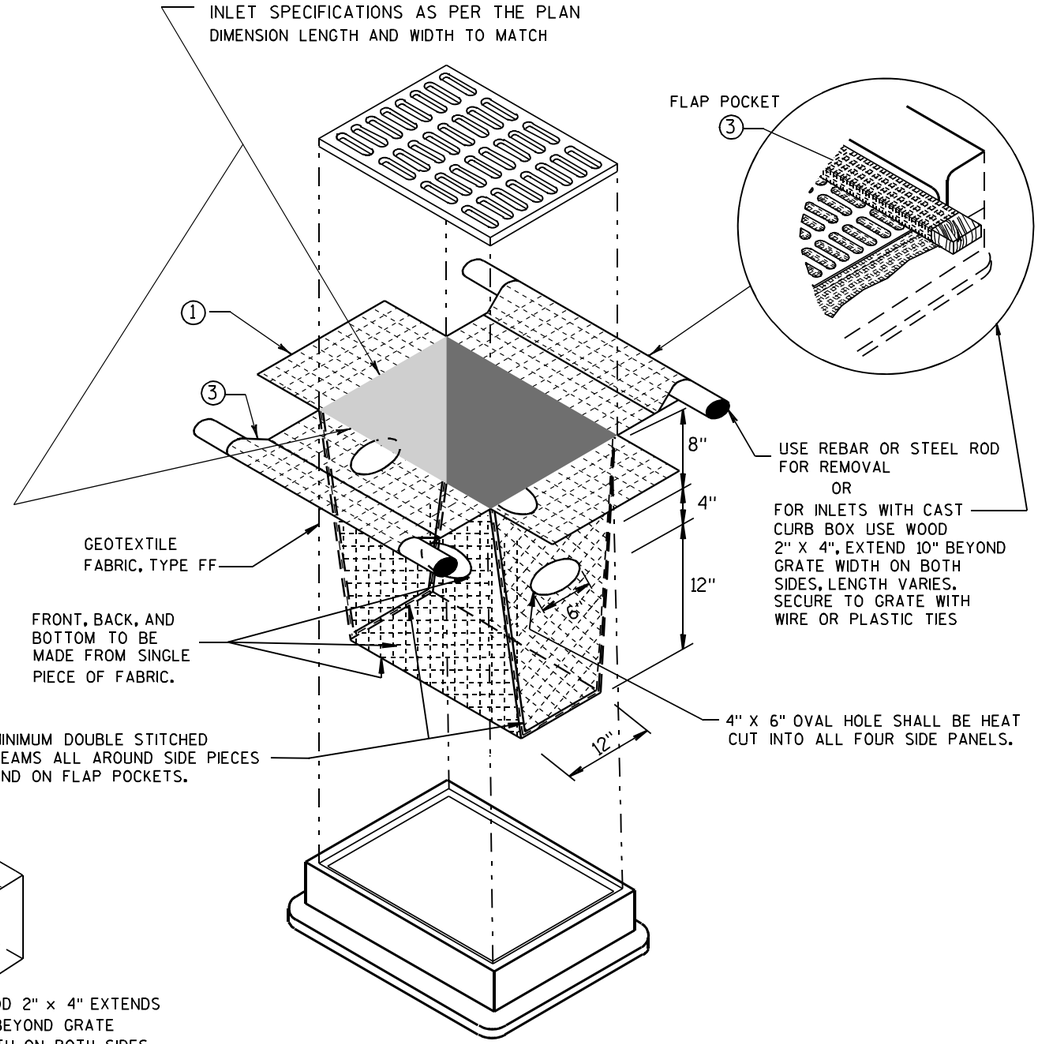


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

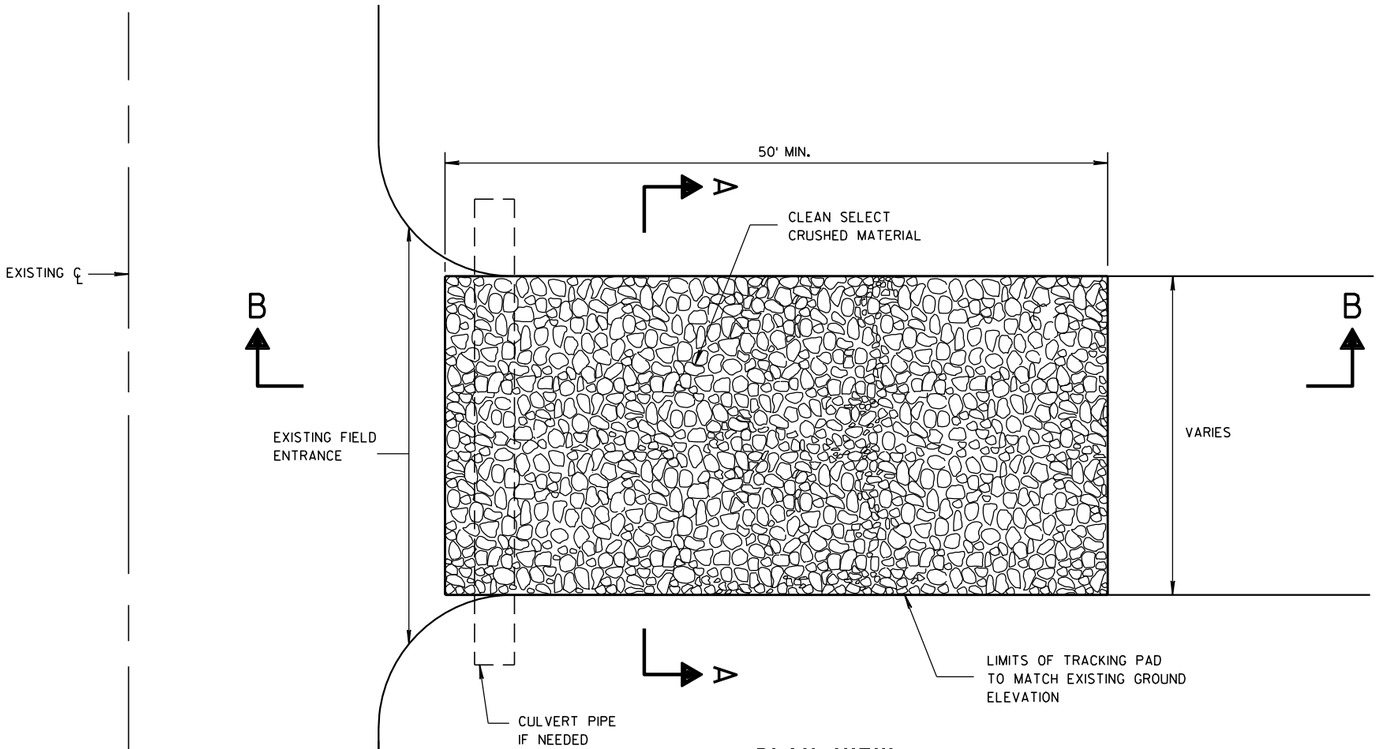
APPROVED

10/16/02
DATE

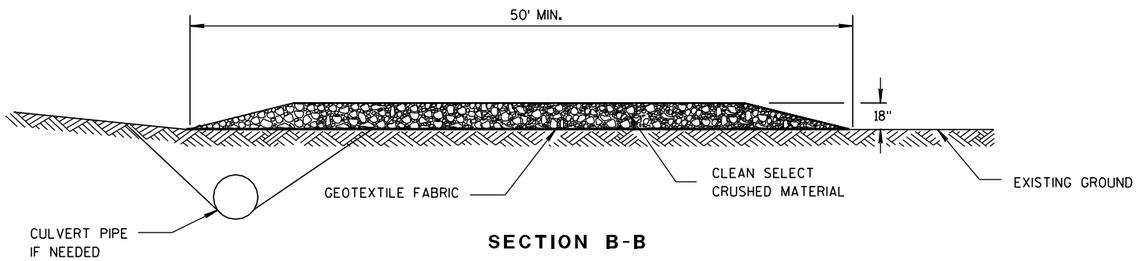
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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



PLAN VIEW



SECTION B-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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

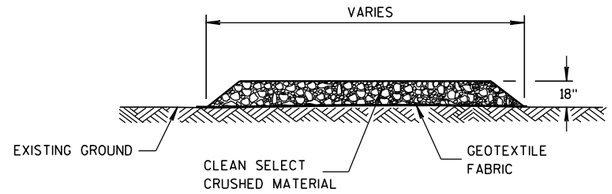
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.

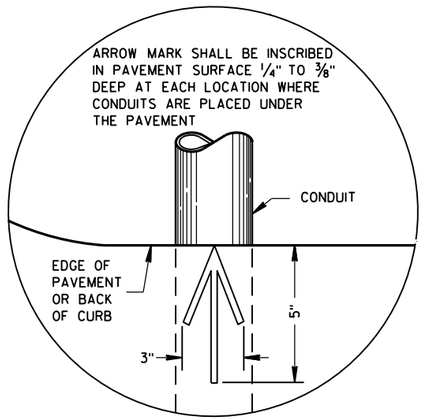


SECTION A-A

TRACKING PAD

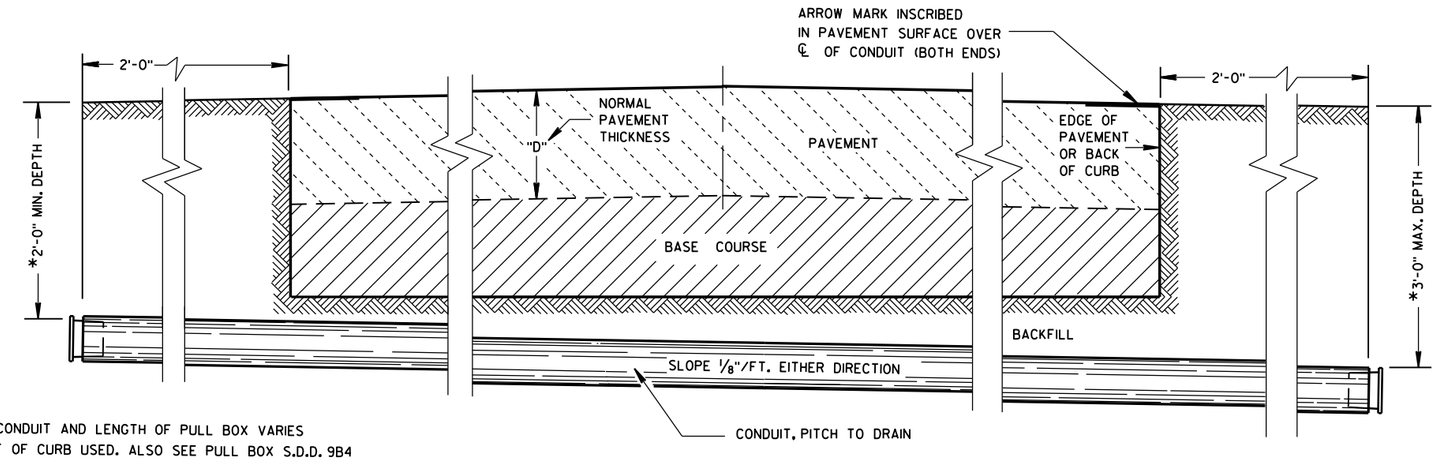
TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER
	58
	ENT

S.D.D. 8 E 14-1
6



PLAN VIEW

ARROW MARK



*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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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

CONDUIT

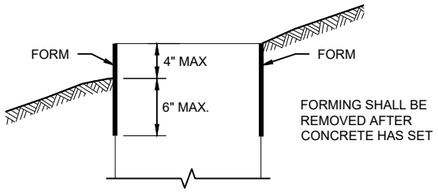
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 B 2-10

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



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 DRAWINGSHALL 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 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 A THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FRO FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X 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 NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL BENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC 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 ALL BASE TYPES 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.

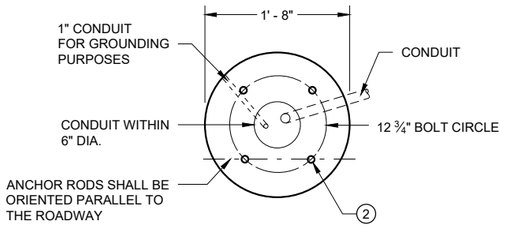
WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

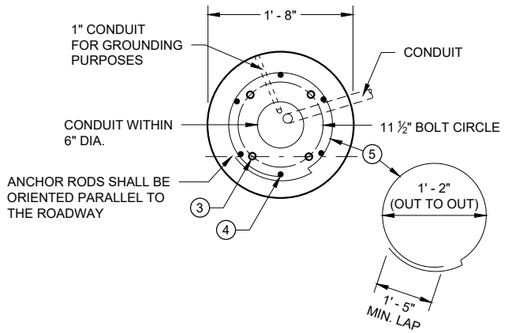
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

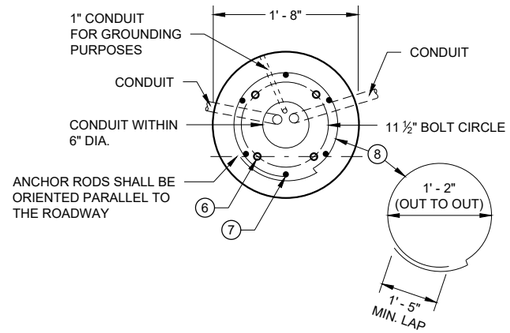
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

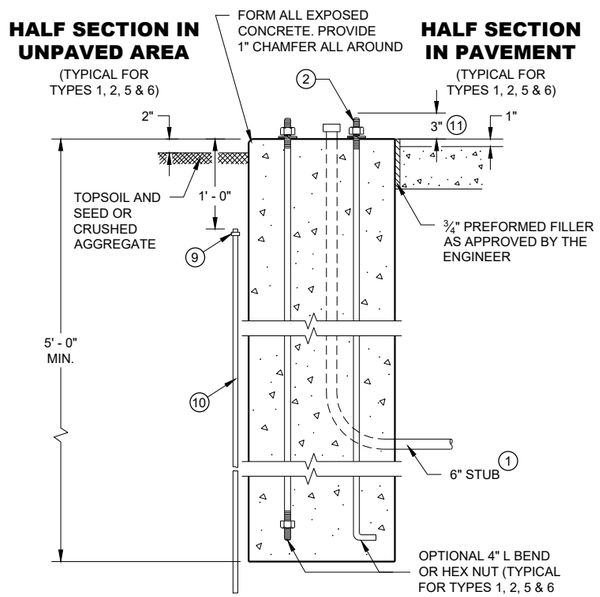
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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

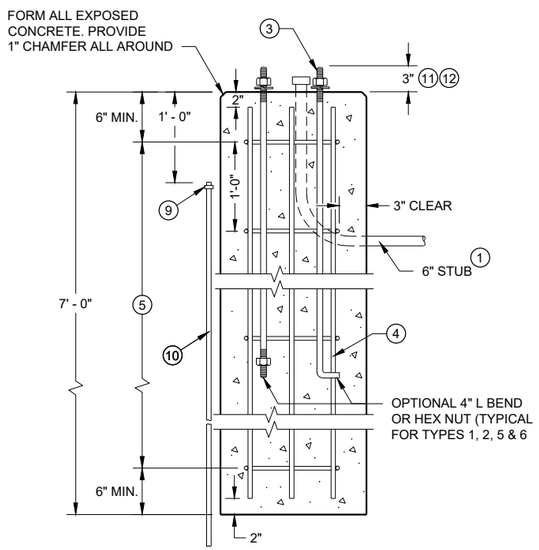




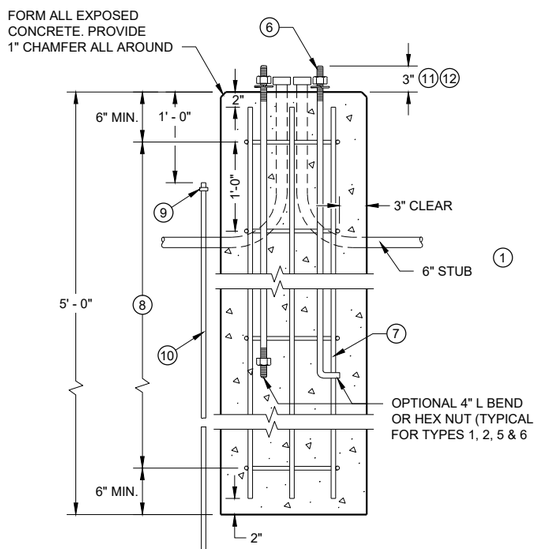




TYPE 1



TYPE 2



TYPE 5 & 6

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 OF 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 STELL REINFORCEMENT @ 1' - 0" C -C.

9 EXOTHERMIC CONNECTION TO EUIPMENT GROUNDING CONDUCTOR

10 ⅝" DIA. X 8' -0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

11 ANY ANCHOR ROD PROJECTION SHORTER THAN 2 ¾" OR LONGER THAN 3 ¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

12 FOR NON - BREAKAWAY INSTALLATIONS, 4 ½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES

CONCRETE BASES TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI
FHWA

6
SDD 09C02 - 08

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

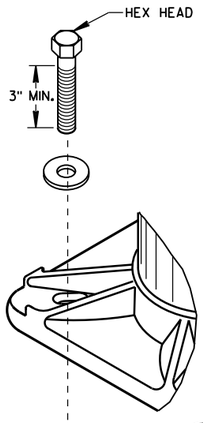
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

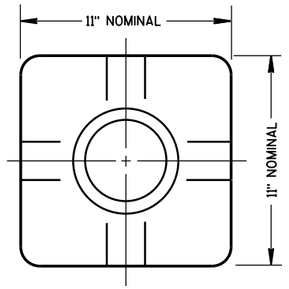
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

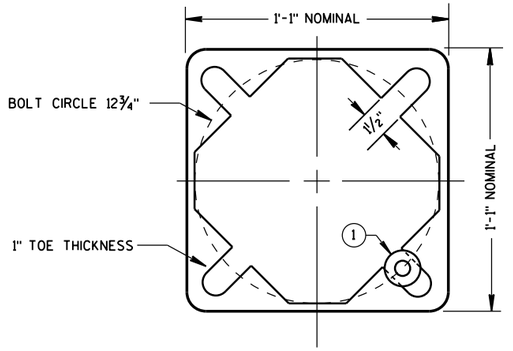
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

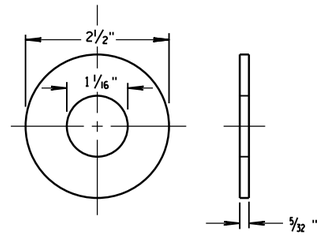




TOP VIEW
(PEDESTAL BASE)

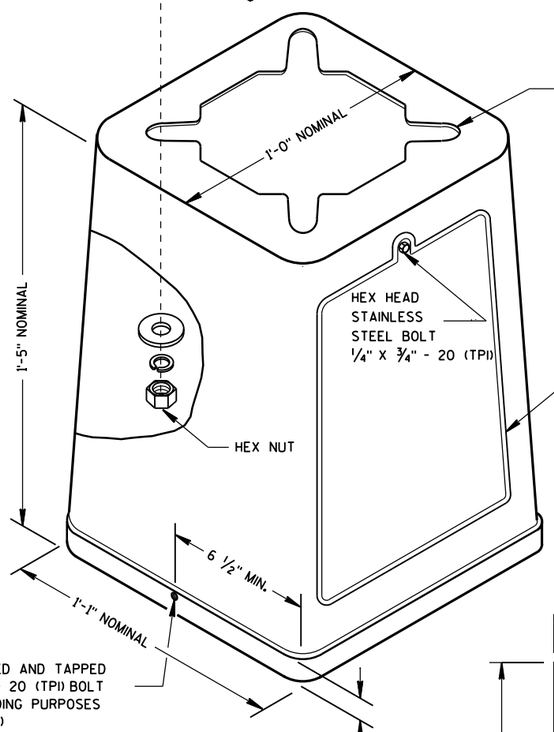


BOTTOM VIEW
(PEDESTAL BASE)

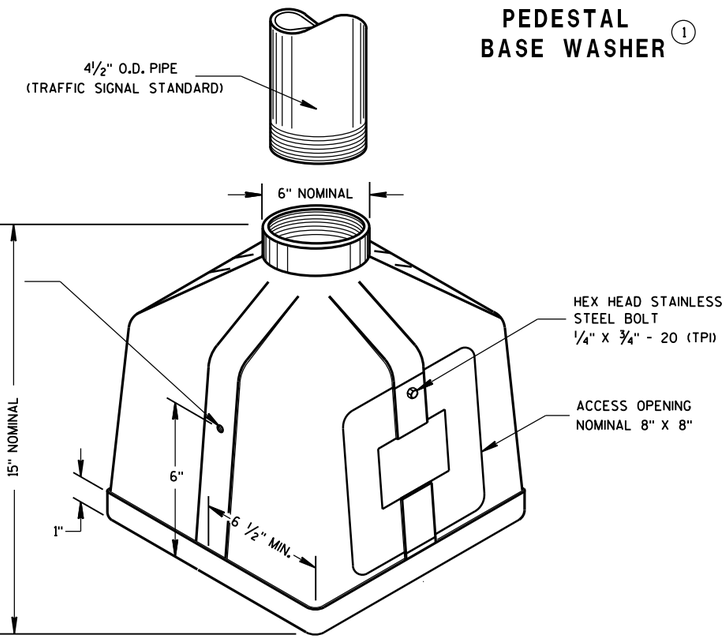


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

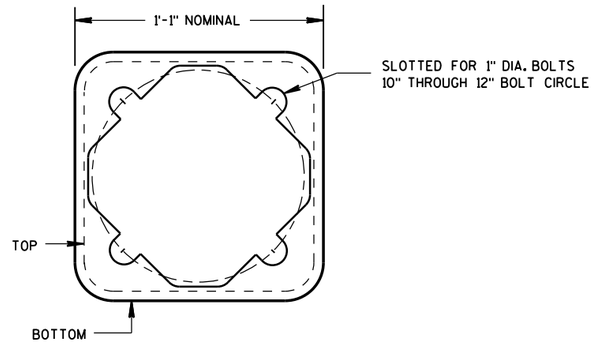


ISOMETRIC VIEW

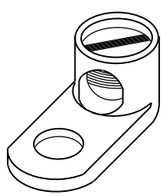


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

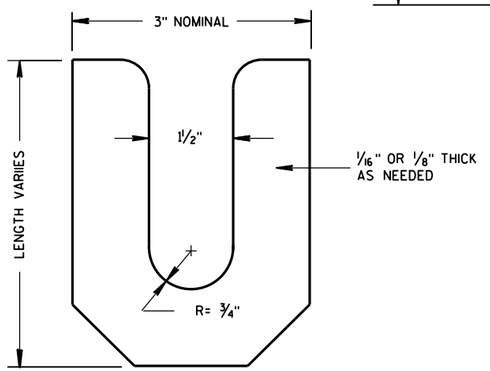


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

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



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

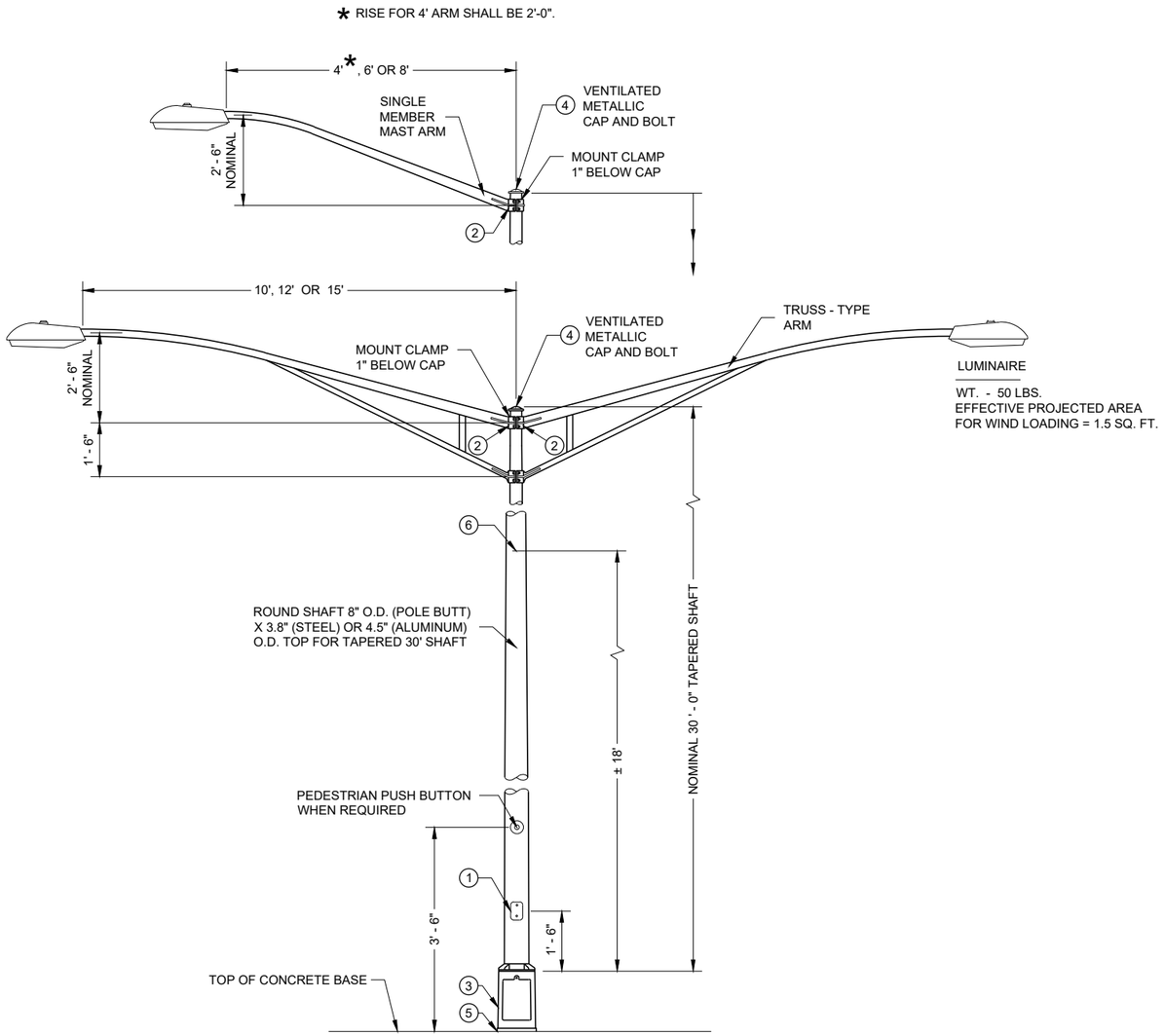
APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 C 3-4

6

S.D.D. 9 C 3-4



TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

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

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

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.

TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 ⅜ 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 AND COVER ASSEMBLY WITH TWO (2) ¼" X ¾" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.

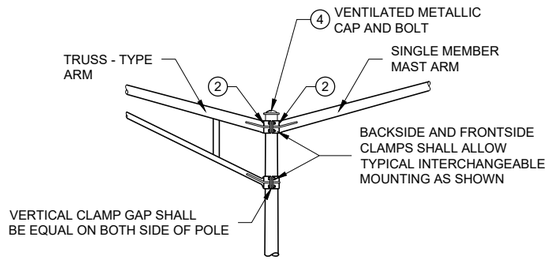
(2) GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 ⅜" HOLE IN POLE SHAFT FOR WIRING.

(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 POLE.

(6) INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.

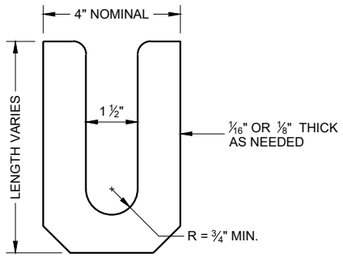


INTERCHANGEABLE MOUNTING DETAIL

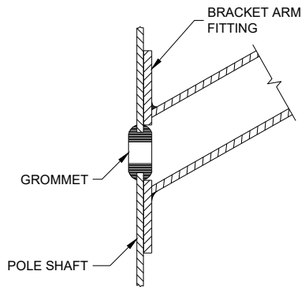
POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

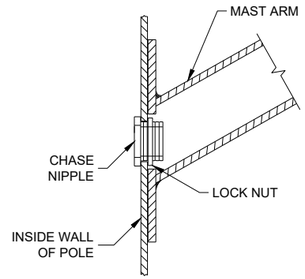
SDD 09E01 - 15d



LEVELING SHIM (1)
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.

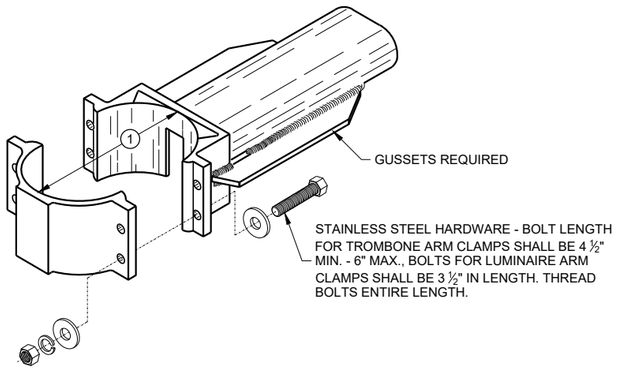
(1) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

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

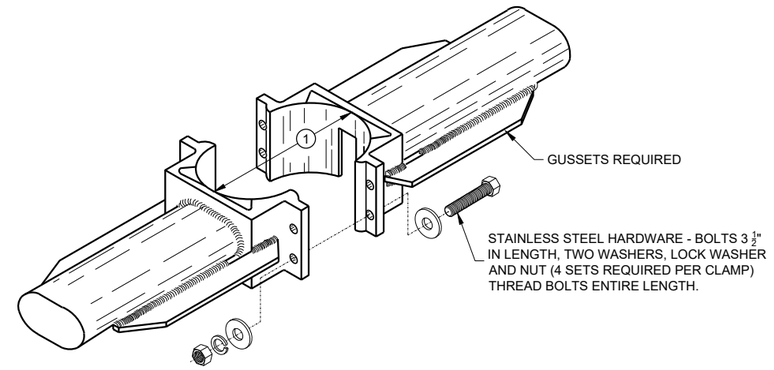
(3) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

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

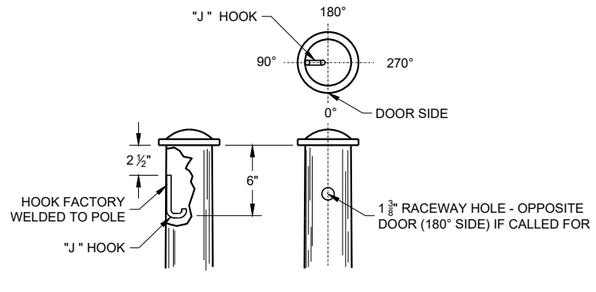
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



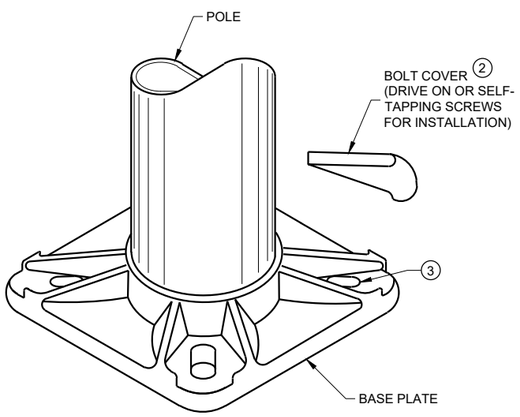
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



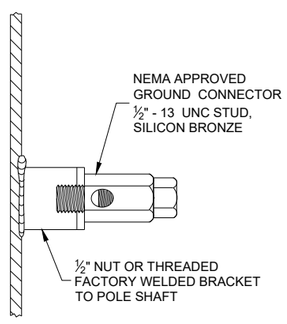
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

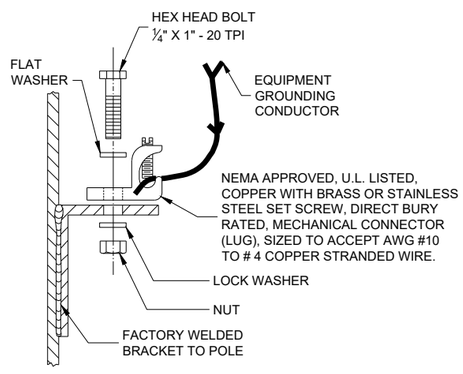


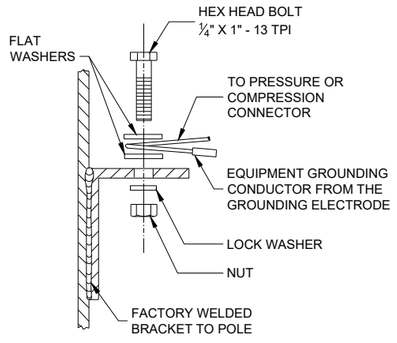
TYPICAL "J" HOOK LOCATION



BASE PLATE







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

HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

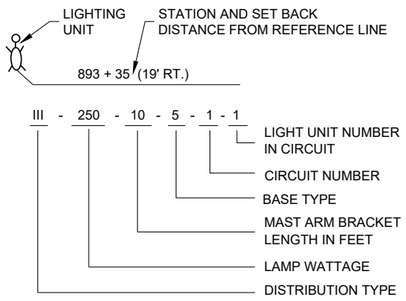
FHWA

GENERAL NOTES

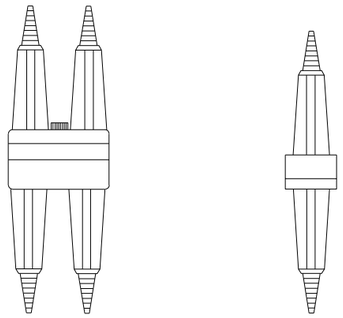
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 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.

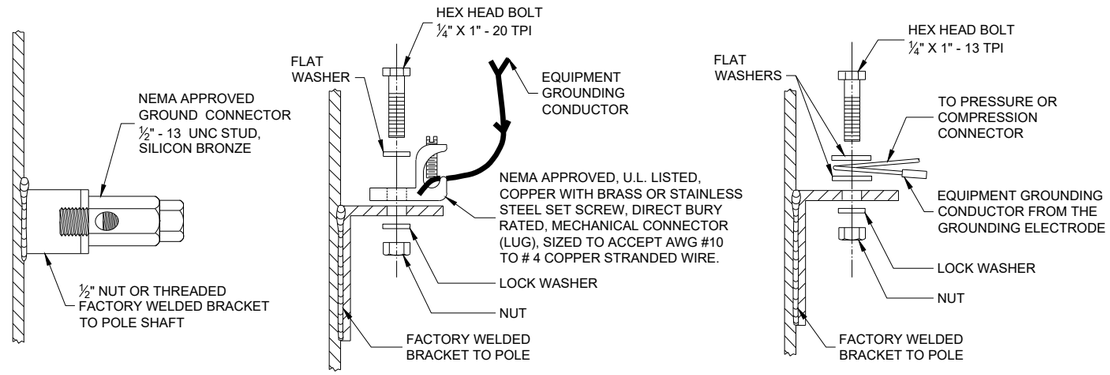


LIGHTING UNIT CODE
(TYPICAL)

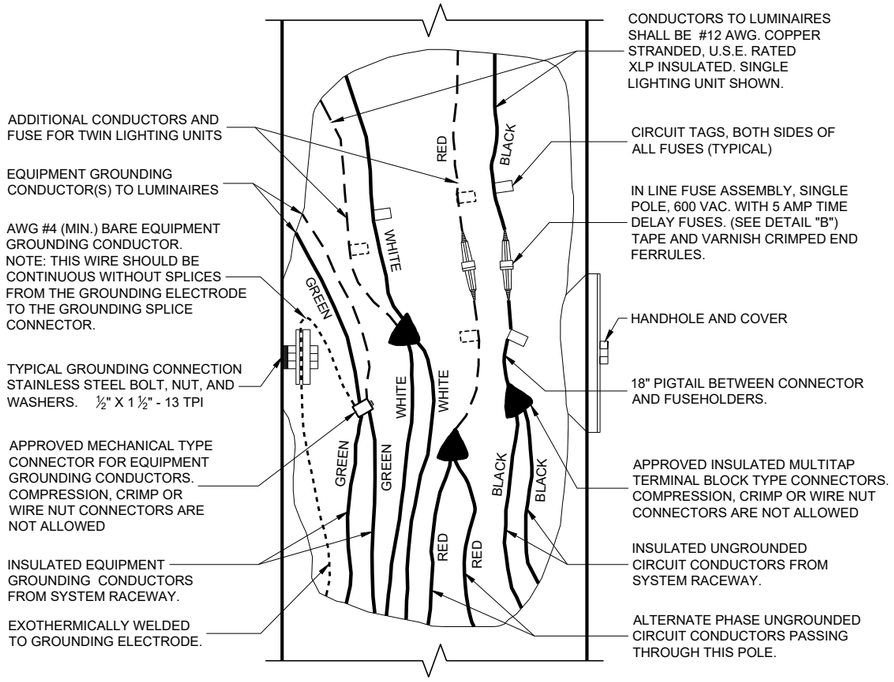


DETAIL "A"
BREAKAWAY DOUBLE POLE WITH WATERPROOF INSULATING BOOT

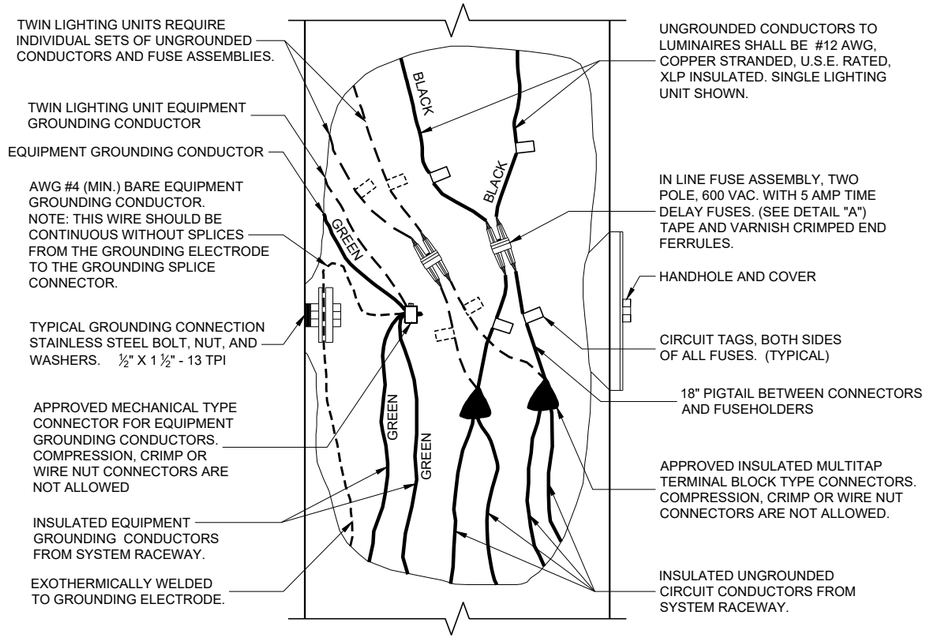
DETAIL "B"
BREAKAWAY SINGLE POLE WITH WATERPROOF INSULATING BOOT



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



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



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

NON - FREEWAY LIGHTING UNIT POLE WIRING

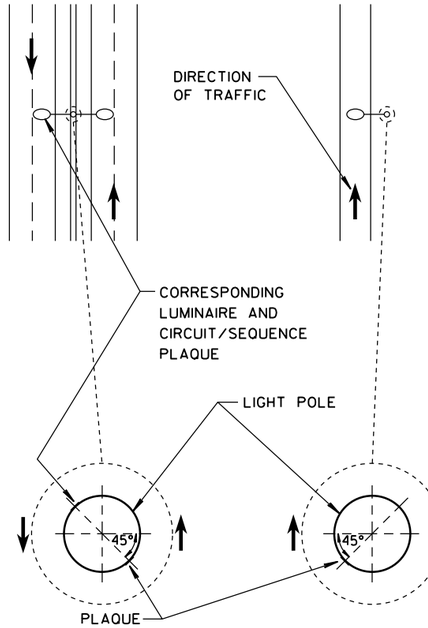
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI

FHWA

SDD 09E03 - 06

SDD 09E03 - 06



MEDIAN POLE SINGLE ARM POLE

LOCATION OF LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

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

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

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

ALUMINUM SHAFTS - ALUMINUM POP RIVETS

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

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

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

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

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

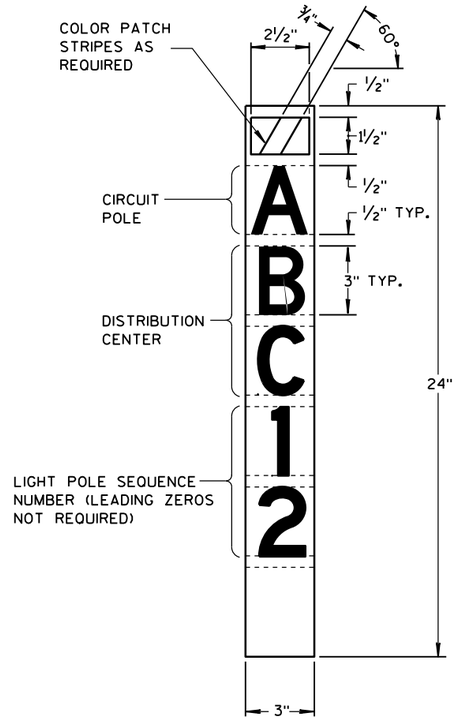
COLOR PATCHES - VARIOUS COLORS, SELF-ADHESIVE VINYL SHEETING

WITH THE APPROVAL OF THE ENGINEER, THE BASE MATERIAL MAY BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE SURFACE, IN CASES SUCH AS SMOOTH, CLEAN ALUMINUM POLES.

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.

COLOR PATCH CODE FOR HPS AND LED LUMINAIRES

HPS	LED	COLOR PATCH CODE
1000 WATT		NO PATCH
400 WATT	CATEGORY D	ORANGE
310 WATT		BLUE
250 WATT	CATEGORY C	ORANGE WITH WHITE STRIPE
200 WATT		RED
150 WATT	CATEGORY B	GREEN
100 WATT	CATEGORY A	BROWN
70 WATT	CATEGORY UDL	BROWN WITH WHITE STRIPE



LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

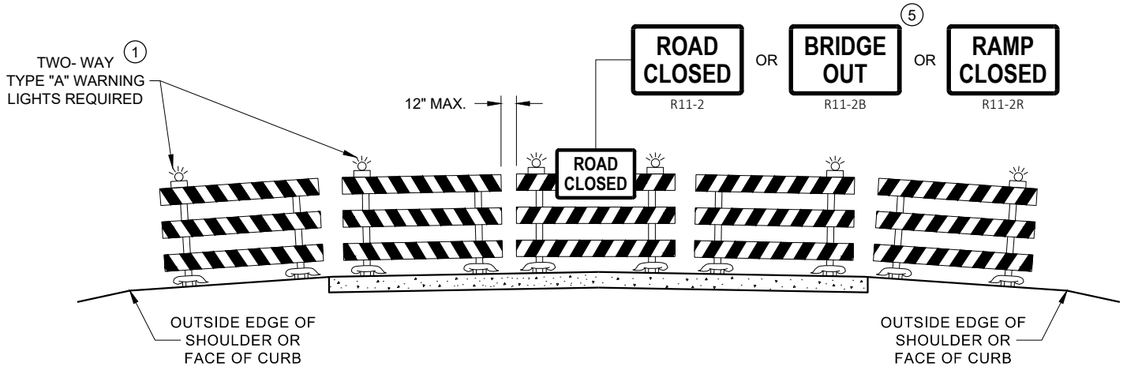
IDENTIFICATION PLAQUES LIGHT POLES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

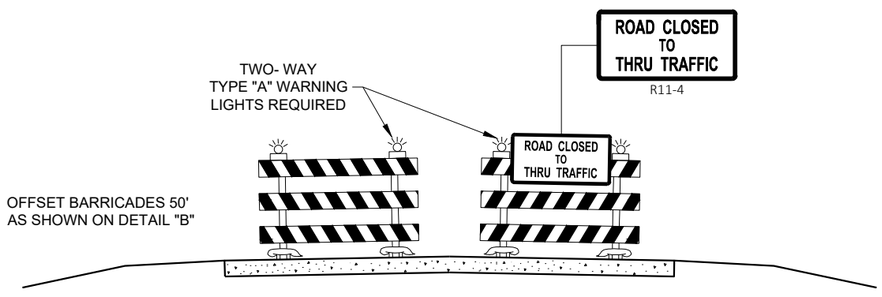
APPROVED
Feb. 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 10 A 2-3



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 15" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDIANAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

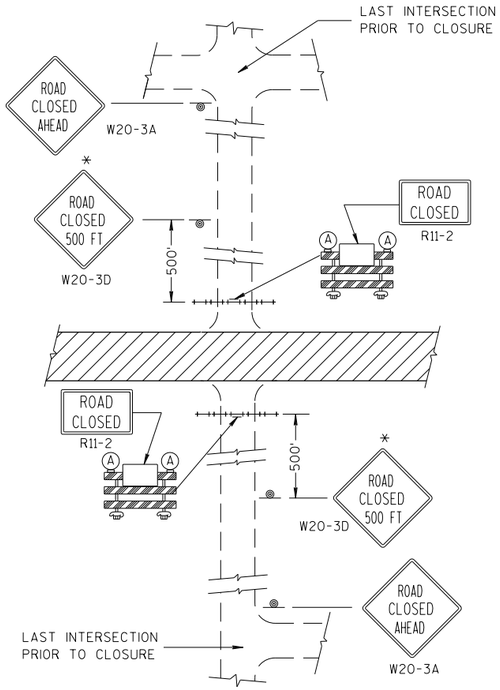
FHWA

6

SDD 15C02 - 07b

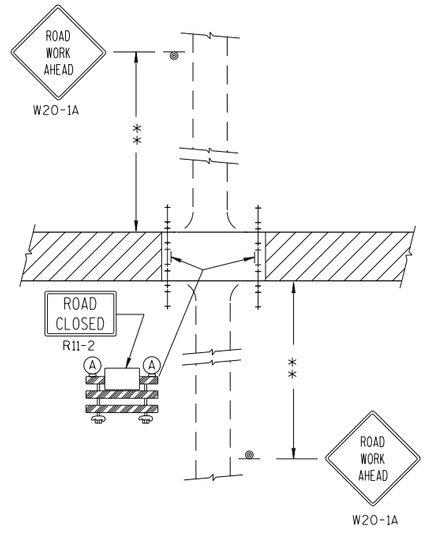
6

SDD 15C02 - 07b



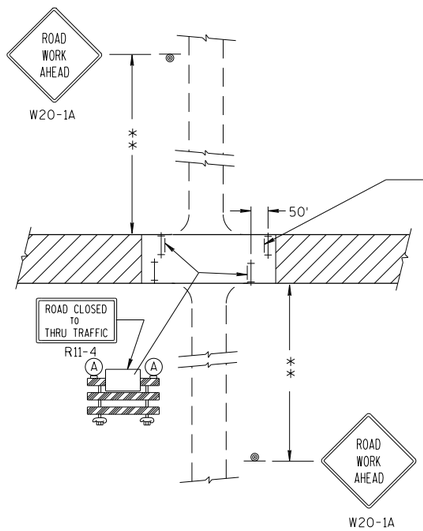
DETAIL 1

(NO ACCESS TO PROJECT)



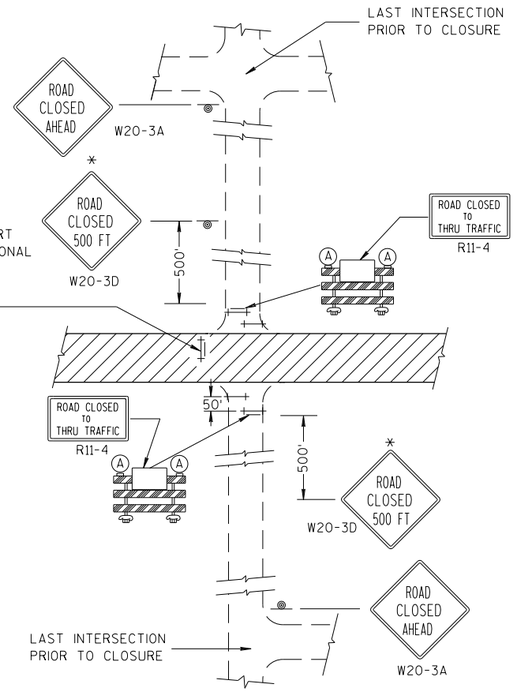
DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

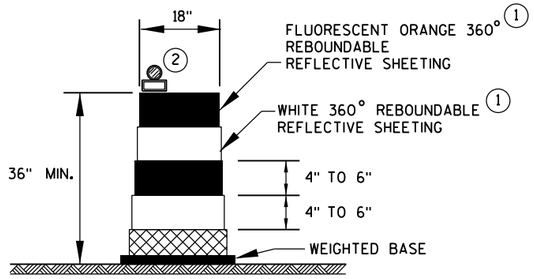
7/2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGI

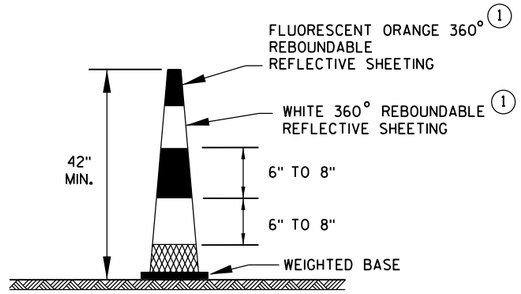
FHWA

6

S.D.D. 15 C 3-5



DRUM

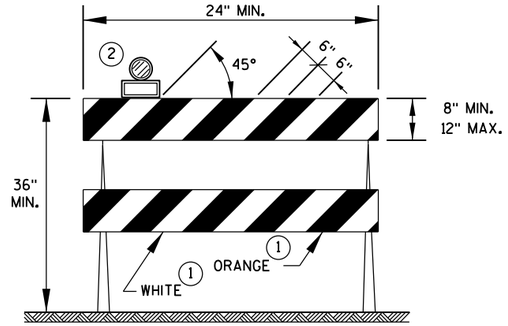


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

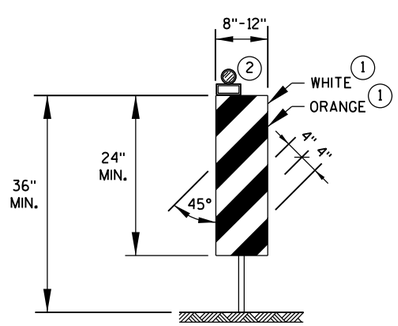
GENERAL NOTES

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



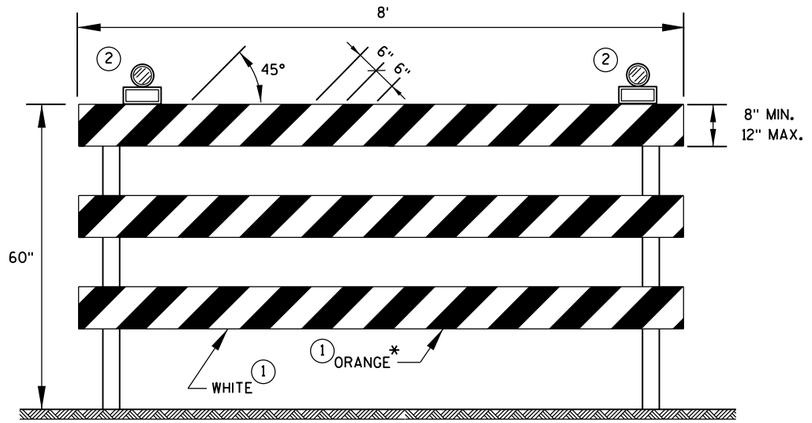
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 — DATE

/S/ Andrew Heidtke — WORK ZONE ENG

FHWA

6

S.D.D. 15 C 11-7b

LEGEND

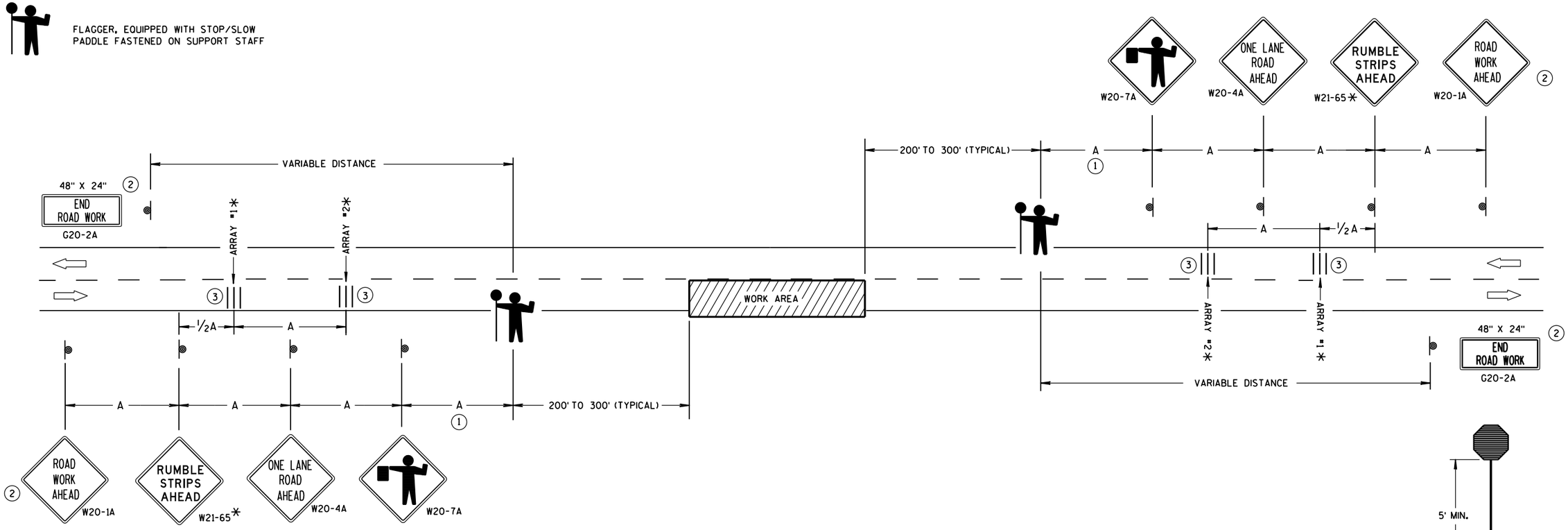
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

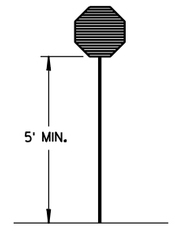
SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

W03-4

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





STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

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

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

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

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

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

(1) FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

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

(3) EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

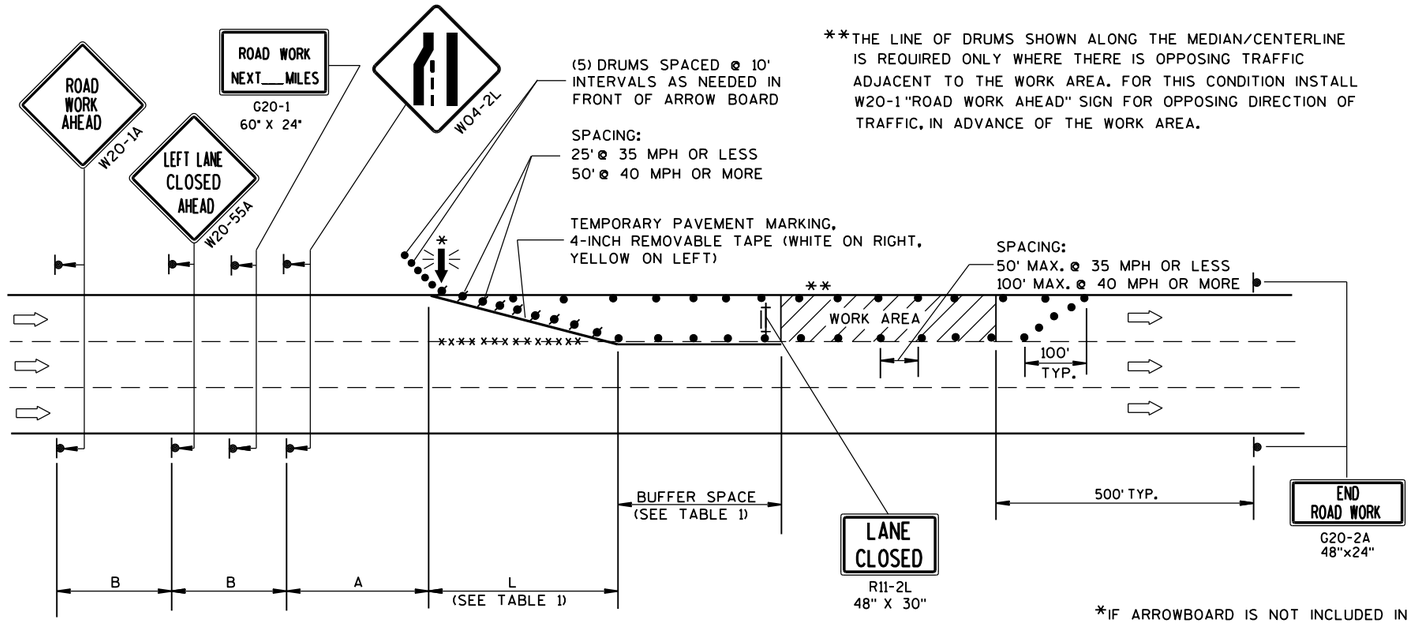
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Andrew Heldtke — WORK ZONE ENG
FHWA

6

S.D.D. 15 C 12-6



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

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

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

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

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

W01-6
48"x24"

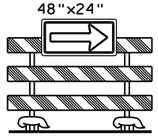


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

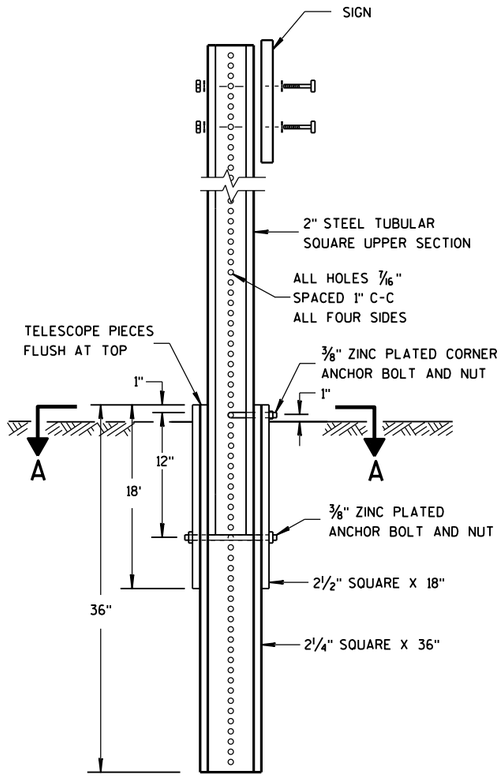
TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

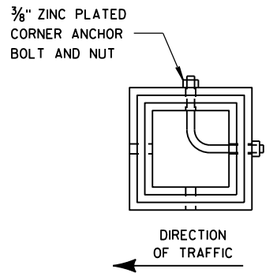
APPROVED
June 2016 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6

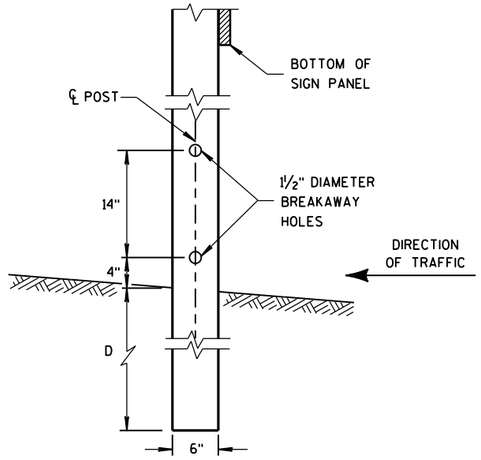
S.D.D. 15 D 20-4



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



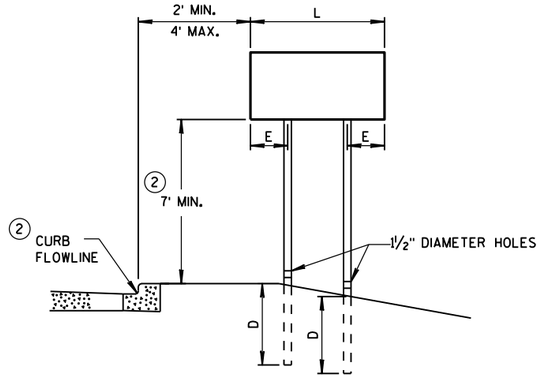
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

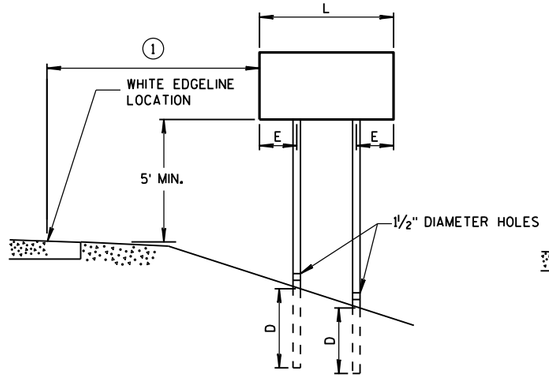
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

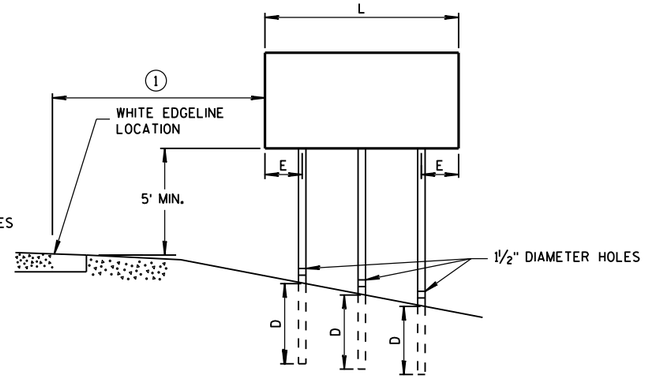
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

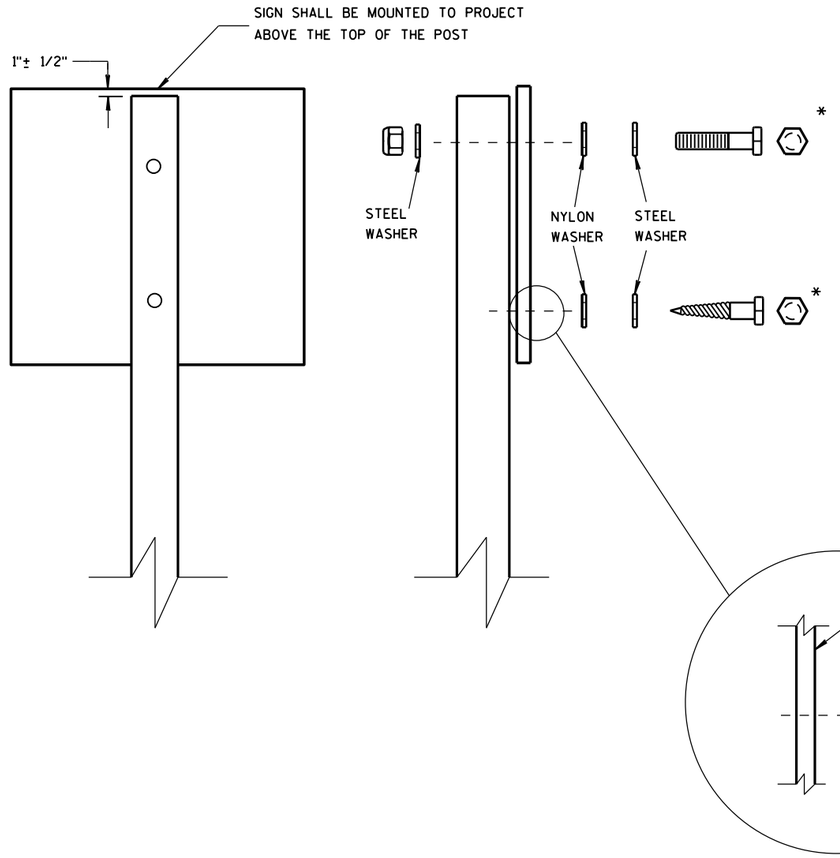
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

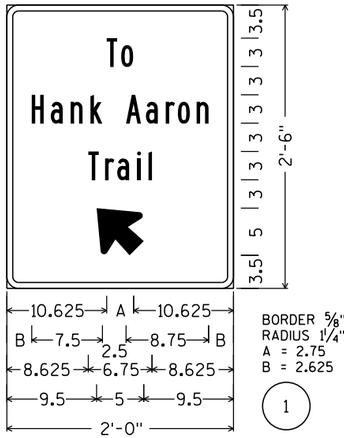
APPROVED

June 2017
DATE

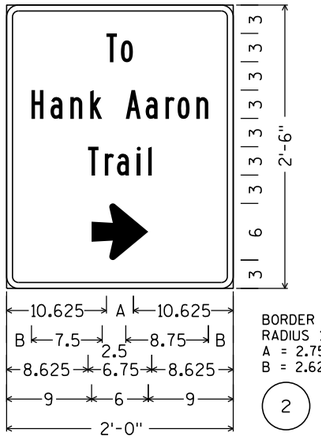
/S/ Andrew Heldtke
WORK ZONE ENG

FHWA

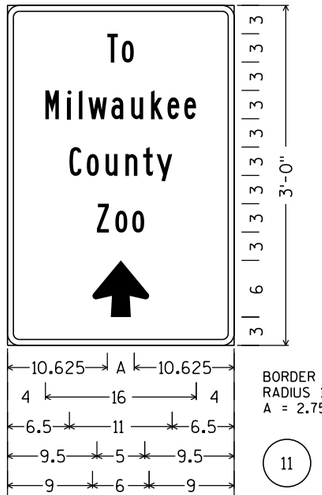
1. All Signs Type II - Type H Reflective
2. Color:
   Background - Green
   Message - White



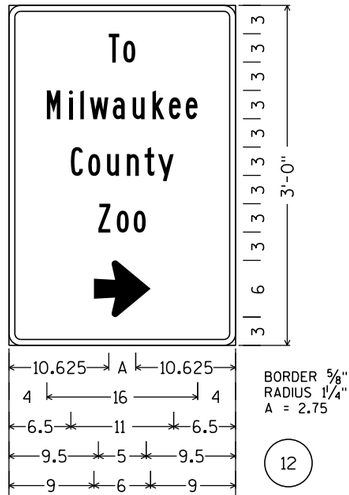
SERIES B LETTERS



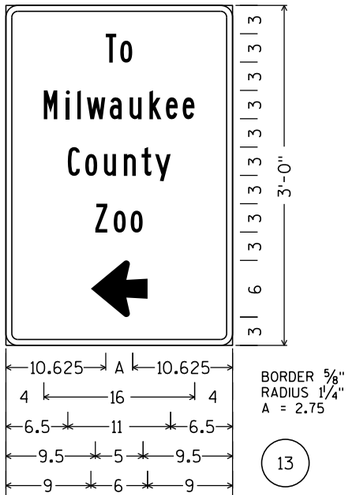
SERIES B LETTERS



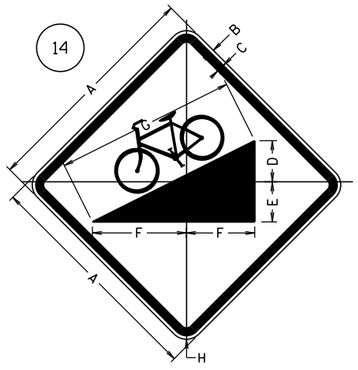
SERIES B LETTERS



SERIES B LETTERS



SERIES B LETTERS



W7-5
BICYCLE HILL PLAQUE

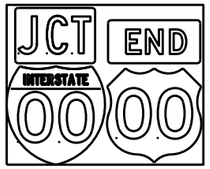
A	B	C	D	E	F	G	H
18	.375	.625	1.75	4	5.625	12.625	1.5
24	.375	.625	2.3	5.3	7.5	16.833	1.5

Colors:
Legend - Black
Background - Yellow Type F Sheeting

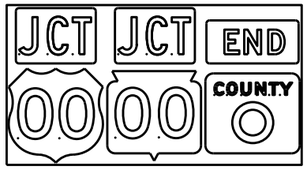
PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE II SIGNS	SCALE: 0 ½" 1"	SHEET 73	E

TYPICAL ASSEMBLIES

J1-1

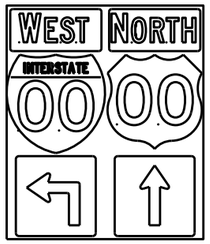


J1-2

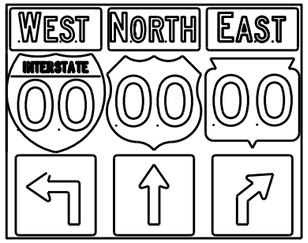


J1-3

J2-1



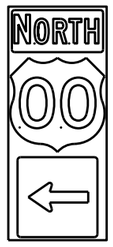
J2-2



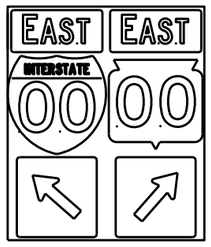
J2-3

JV

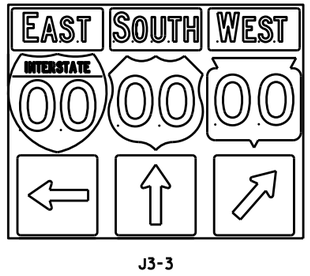
(Typical Vertical J-Assembly
See Note 10 and 11)



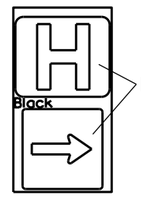
J3-1



J3-2



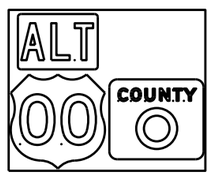
J3-3



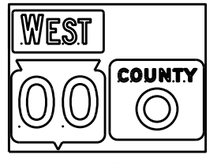
Blue Background

JH-1

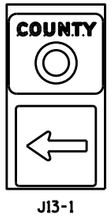
J4-1



J4-2



J4-2



J13-1

J12-1

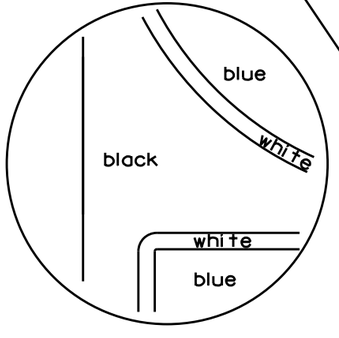
J32-1

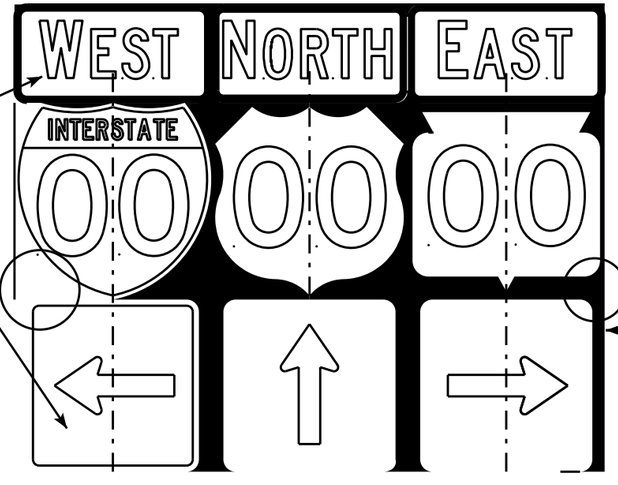
J33-1

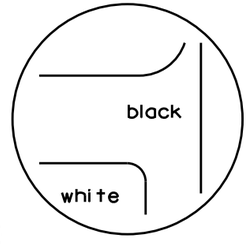
J23-1

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

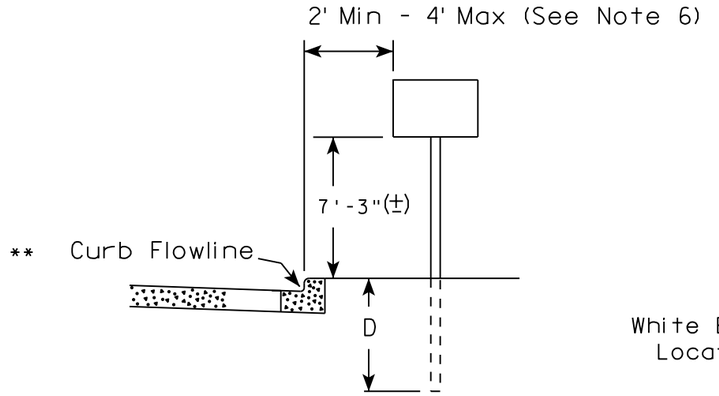
DATE 2/06/14 PL... A2-1S.8

PROJECT NO: | SHEET NO: E

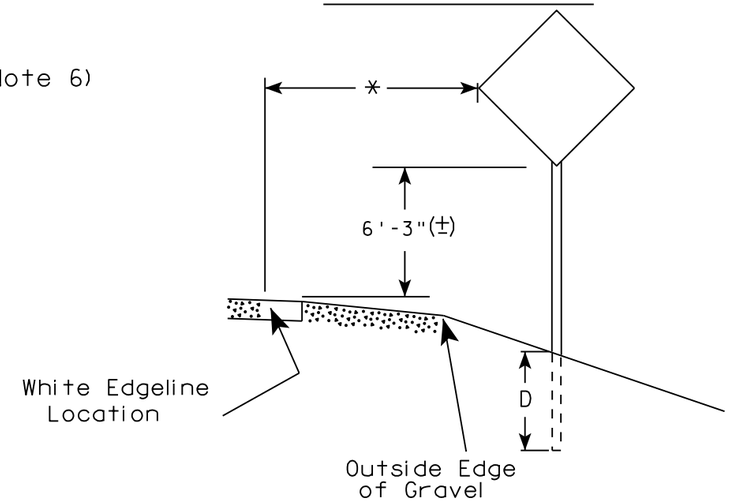
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :

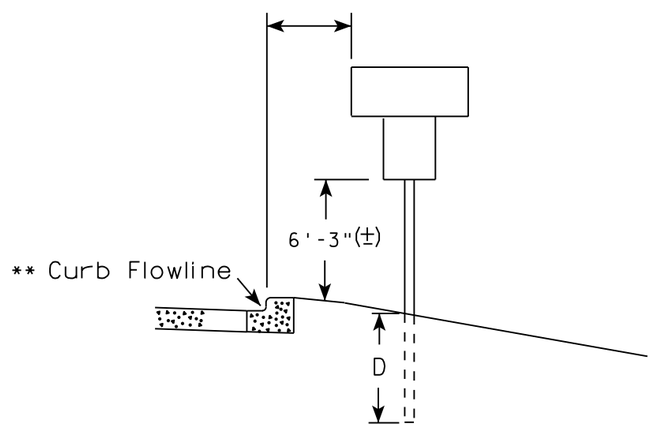
WISDOT/CADDS SHEET 42

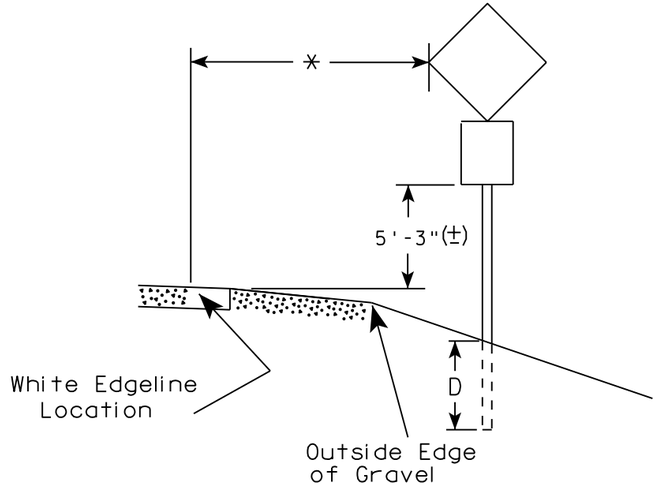
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
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" (±).

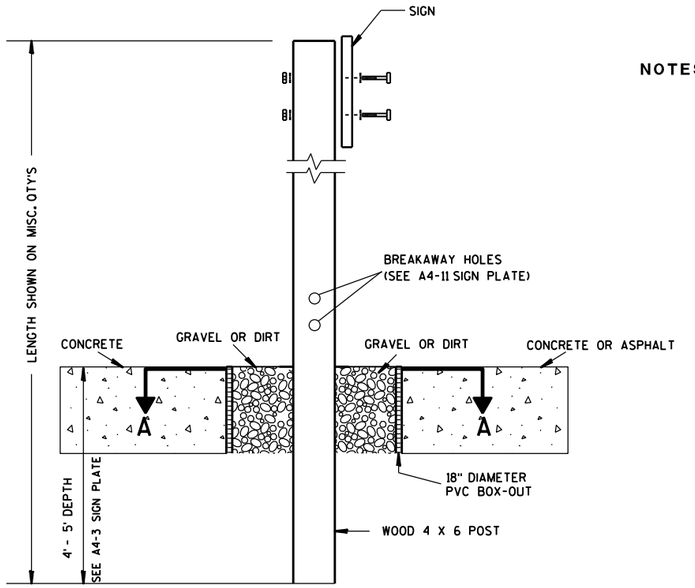
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

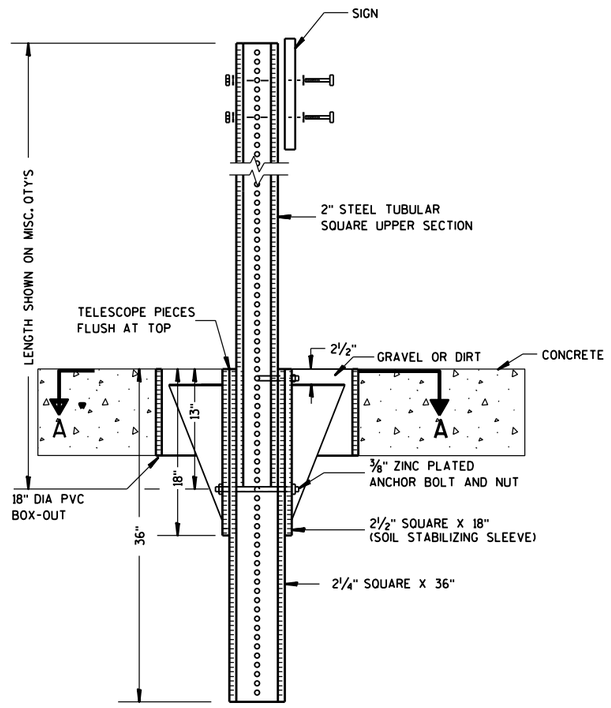
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 75	E



ELEVATION VIEW

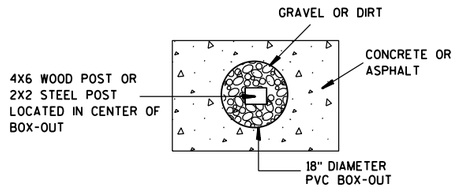
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

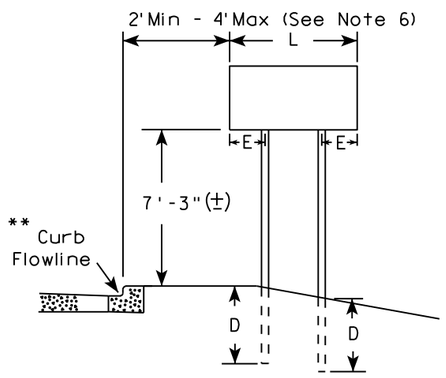
APPROVED Matthew R Rauch
for State Traffic Engineer

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

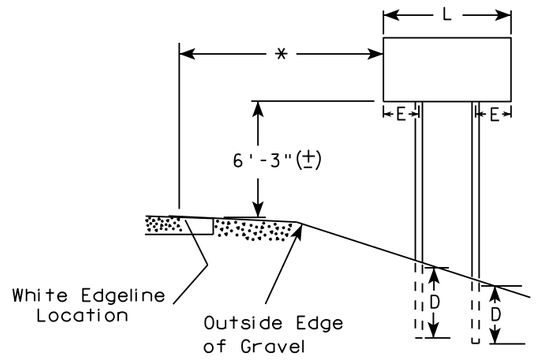
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

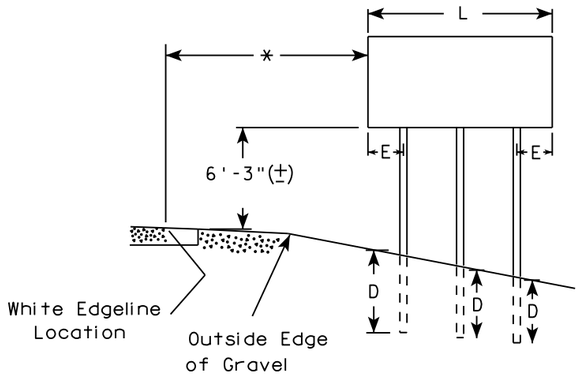
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

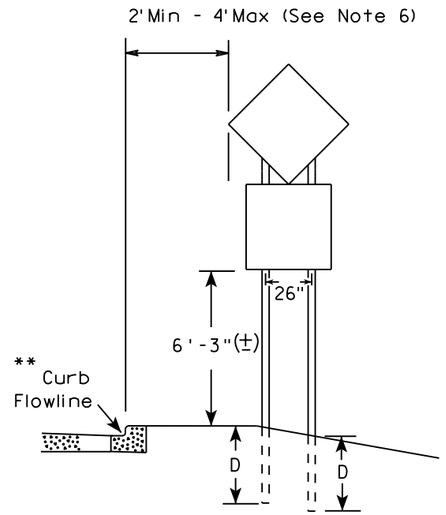
URBAN AREA



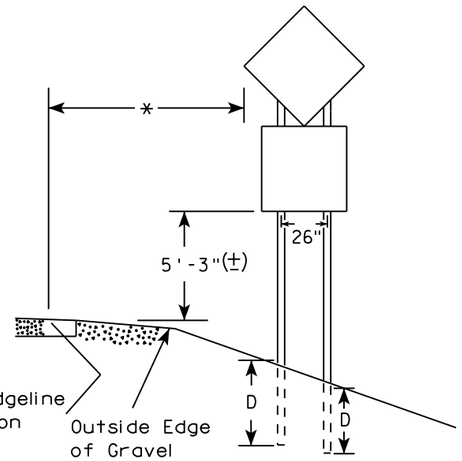
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

***	SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
	L	E
	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

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

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. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

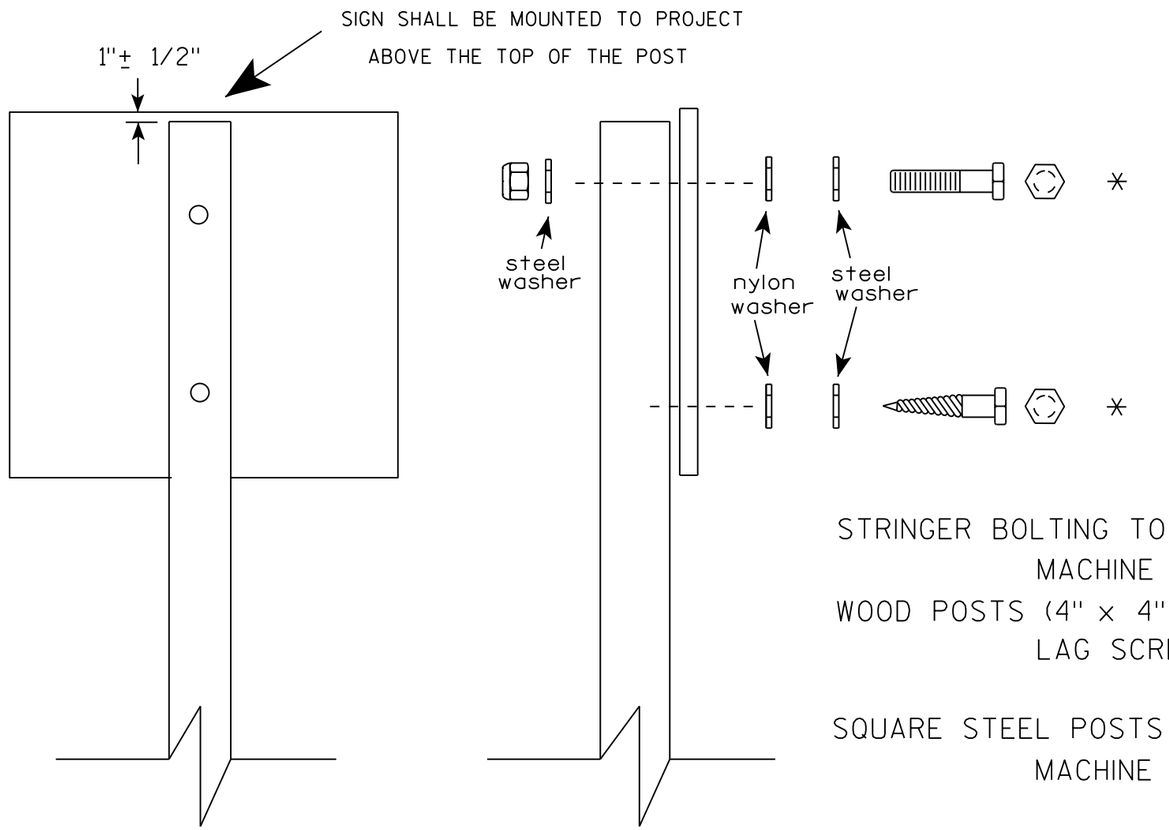
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

7

7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 77 | 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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)
SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

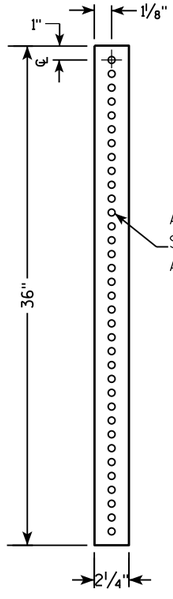
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

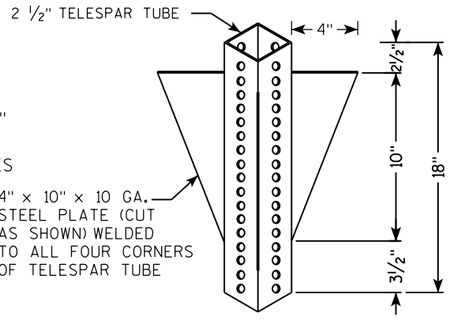
FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

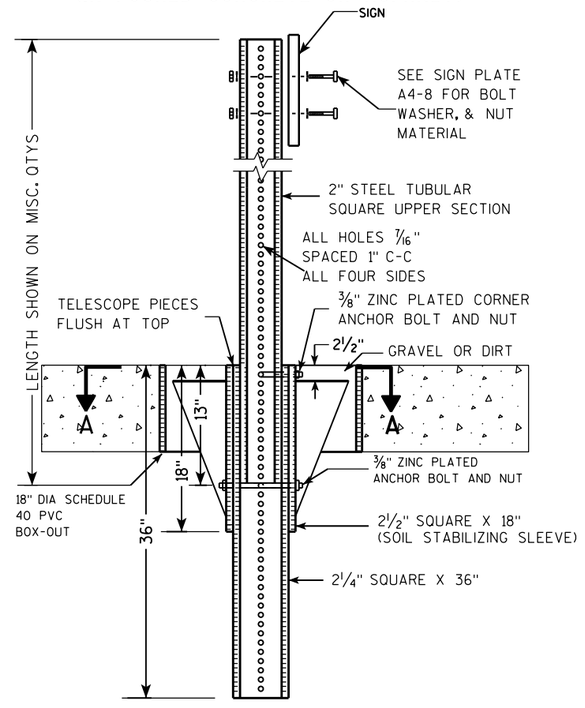
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



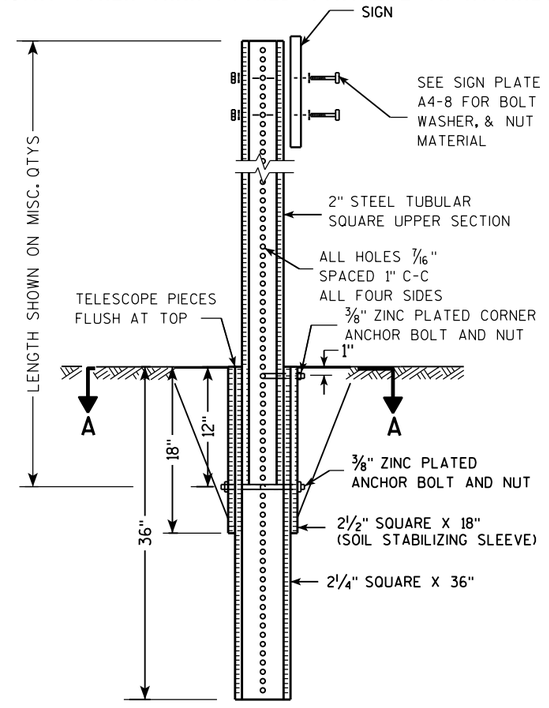
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

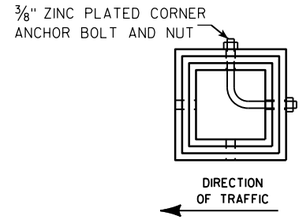


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

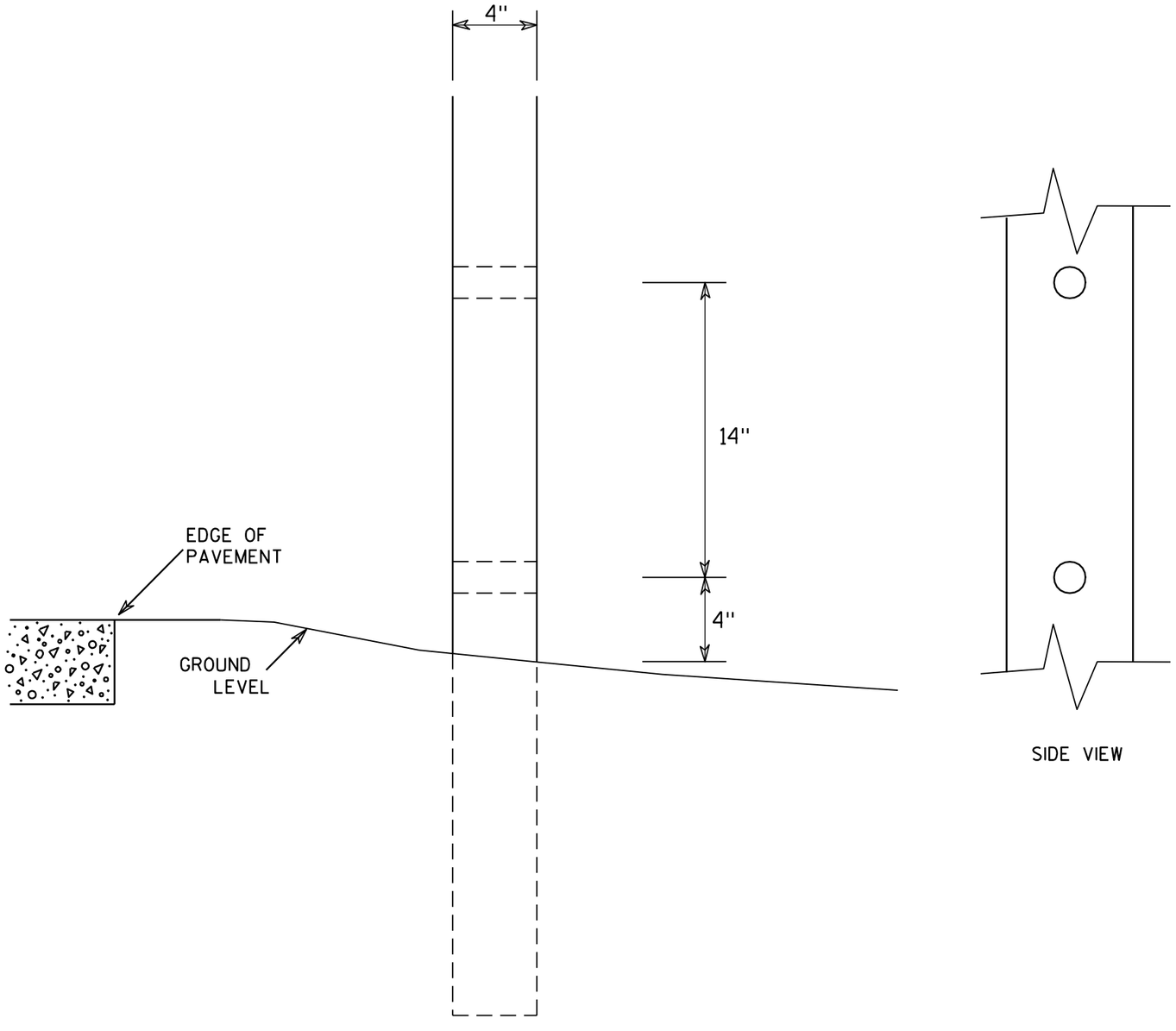
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 79 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



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

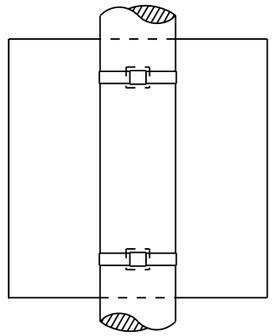
APPROVED Chester J Spang for State Traffic Engineer

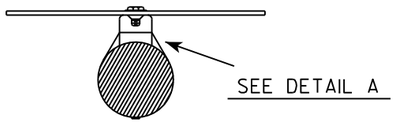
DATE 3/27/97 PLATE NO. A4-11.2

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

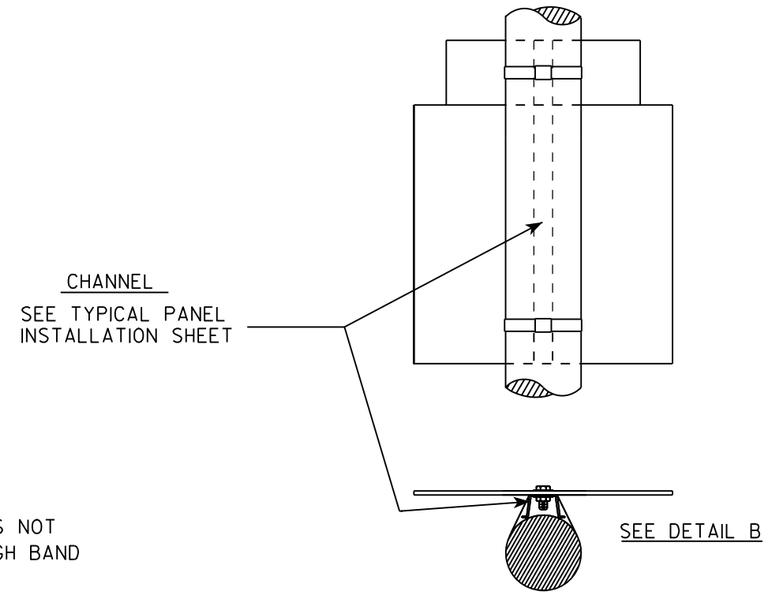
BANDING

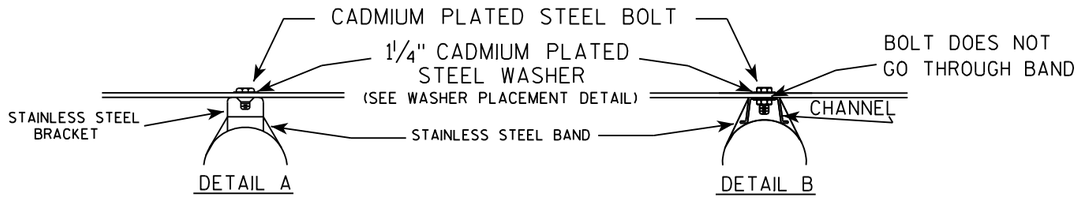
SINGLE SIGN



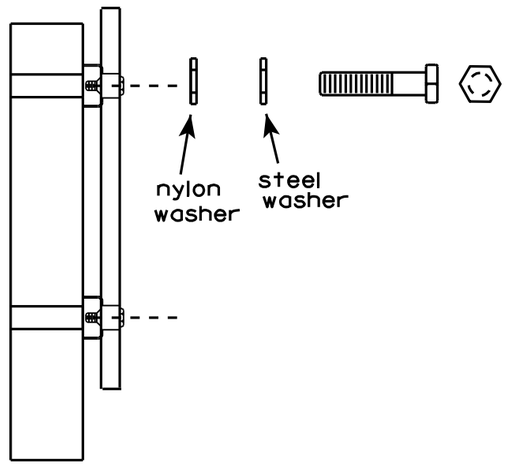


"J" ASSEMBLY





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.

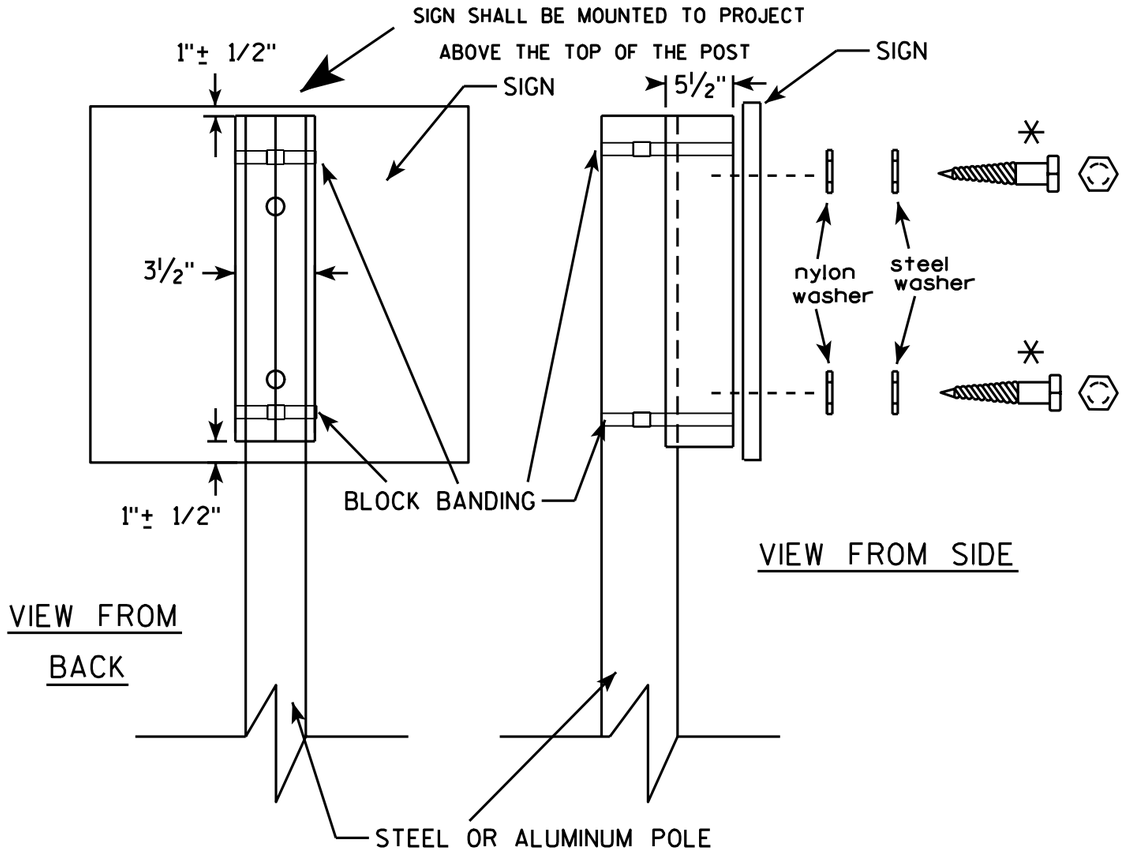
STANDARD SIGN
SIGN BANDING DETAILS

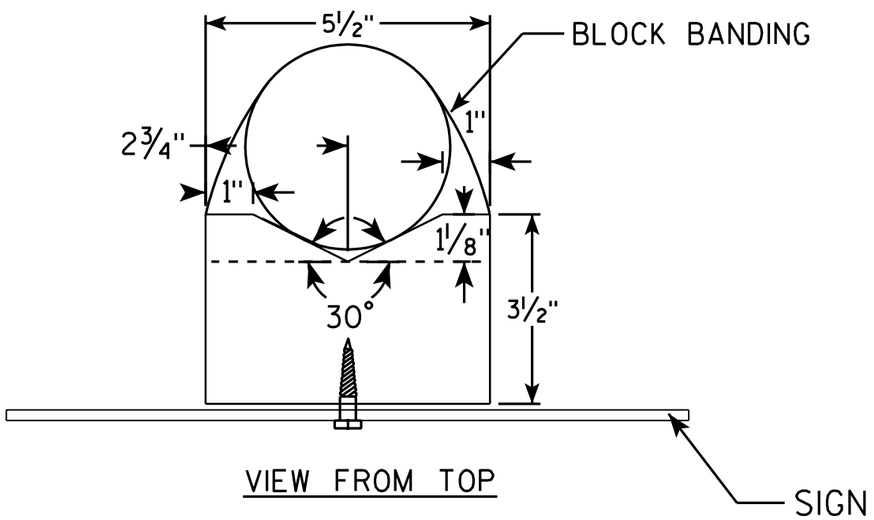
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

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





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"

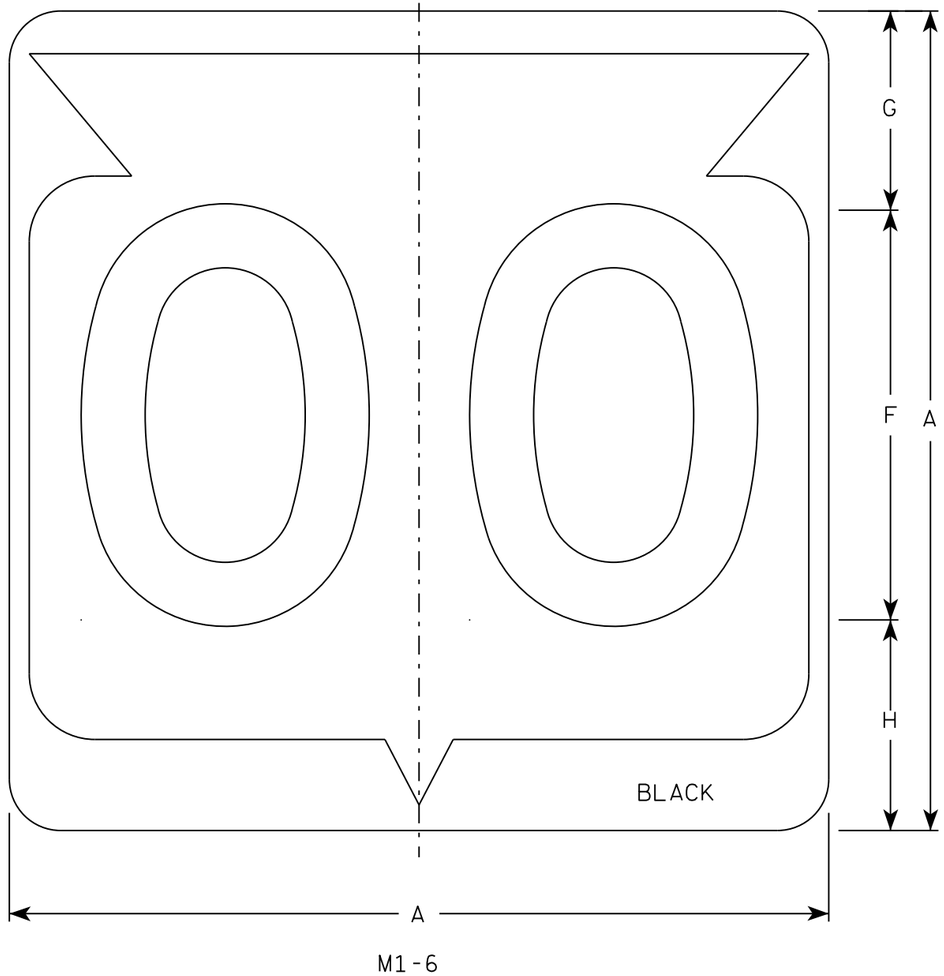
BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/12/07 PLATE NO. A5-10.1

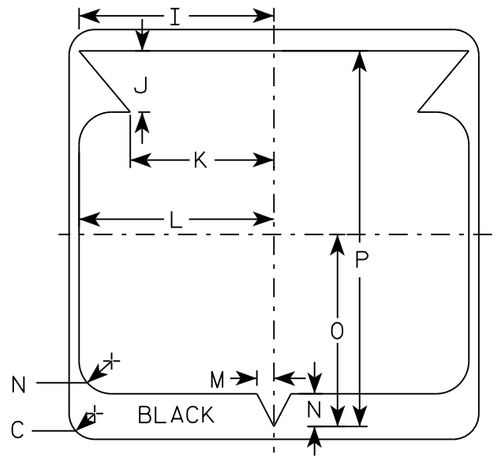
PROJECT NO: | SHEET NO: 82 | E



M1-6

NOTES

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

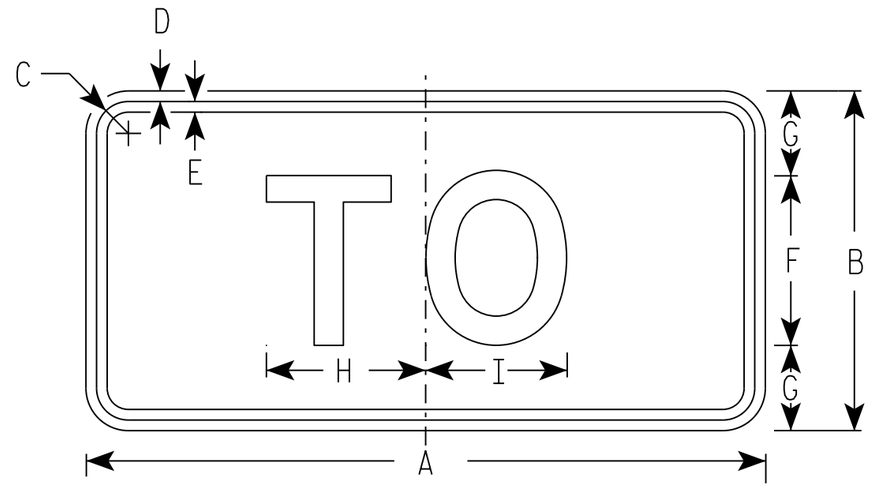
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

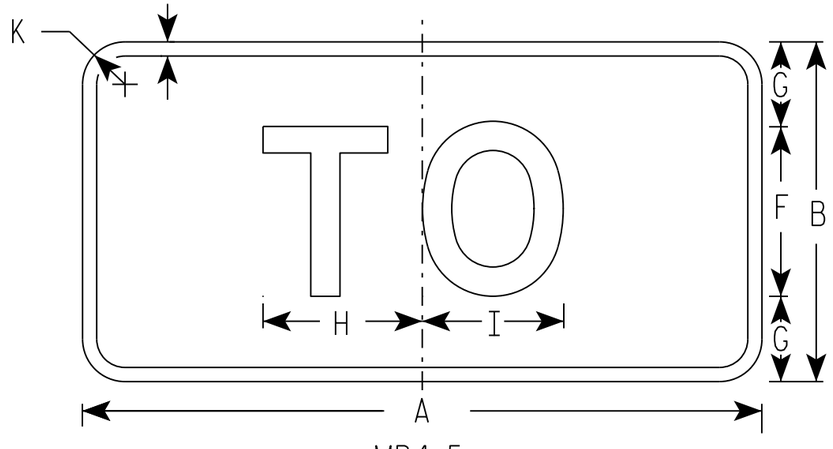
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

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



M4-5
MM4-5
MP4-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

   MP4-5 Background - White
   Message - Blue

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

STANDARD SIGN
M4-5

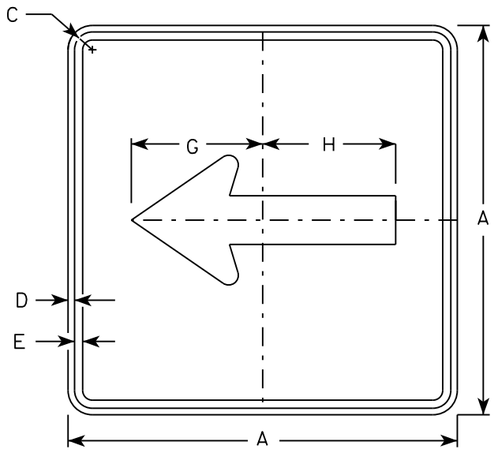
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

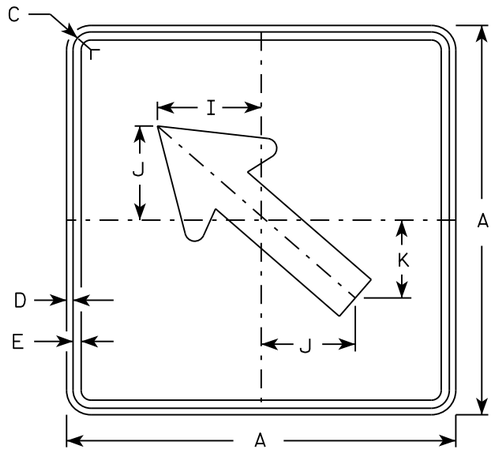
DATE 10/15/15 PLATE 84 M4-5.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M45.DGN PLOT DATE : 01-DEC-2015 17:55 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 5.351066:1.000000



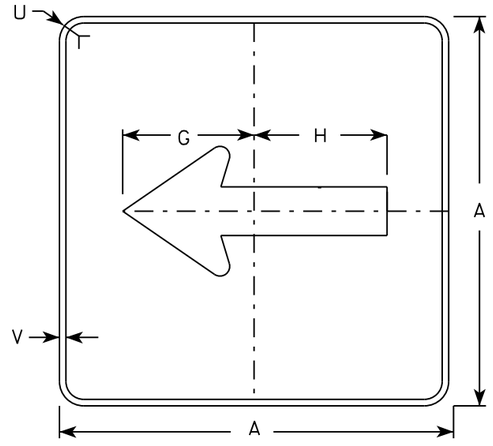
M6-1
MM6-1
MO6-1
MP6-1



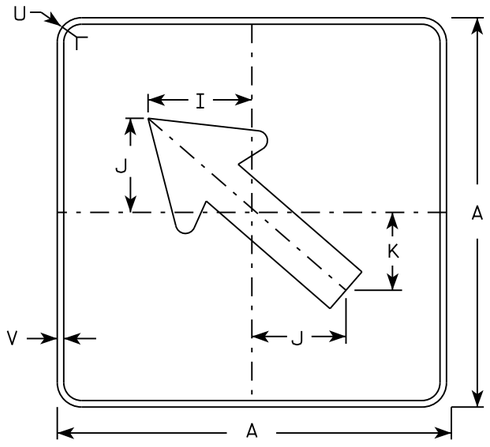
M6-2
MM6-2
MO6-2
MP6-2

NOTES

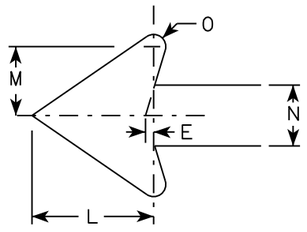
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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

STANDARD SIGN
M6-1 & M6-2
SERIES

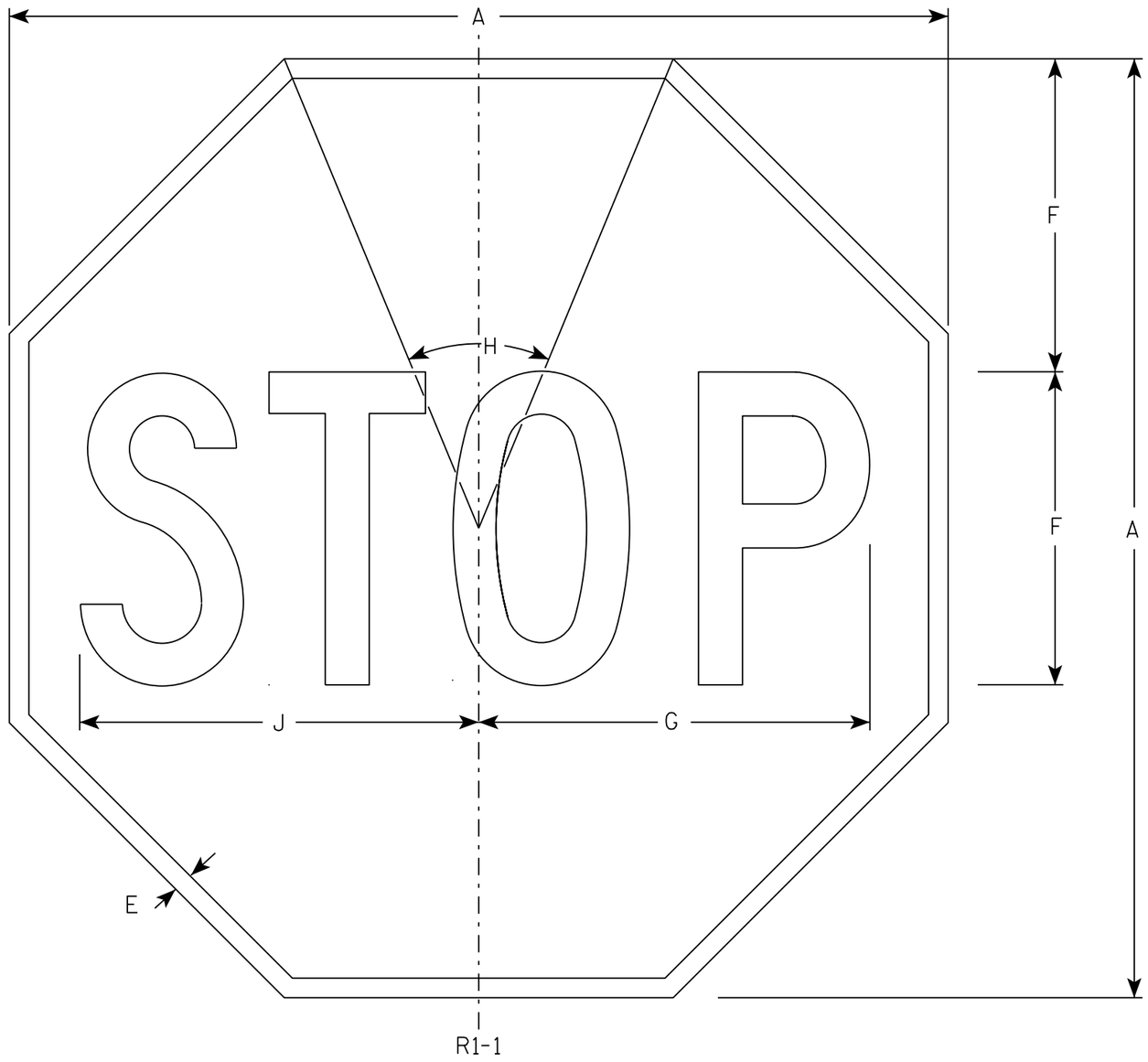
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 85 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



NOTES

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

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

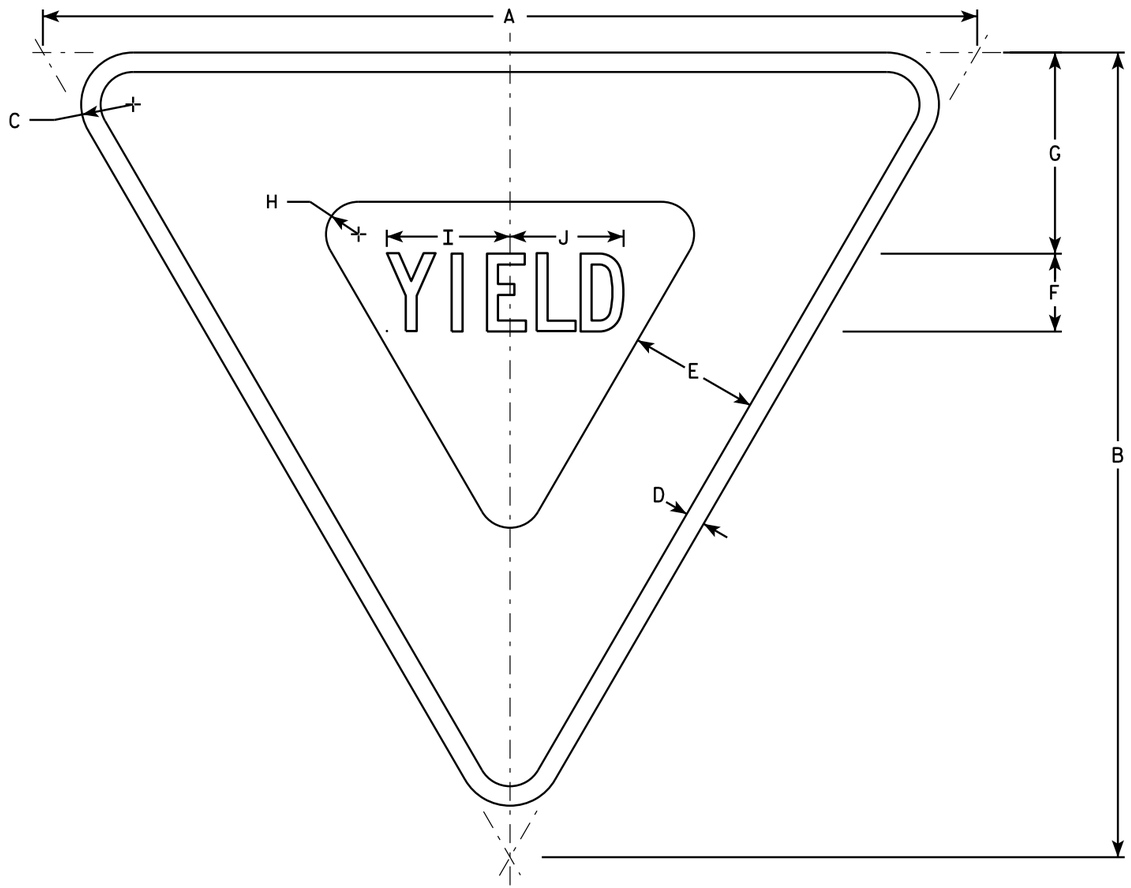
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

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



R1-2

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

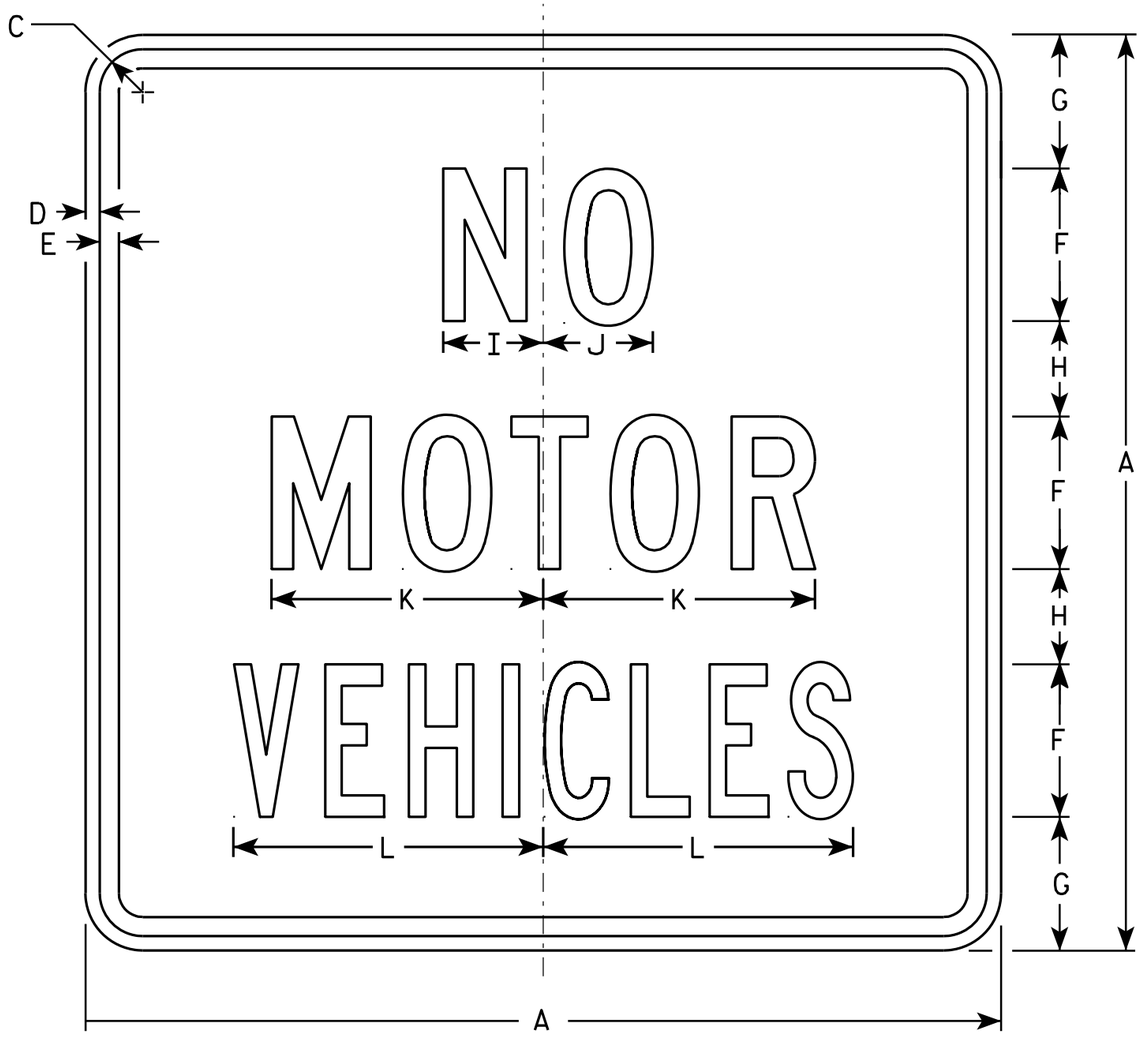
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE R1-2.12

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42



R5-3

NOTES

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

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

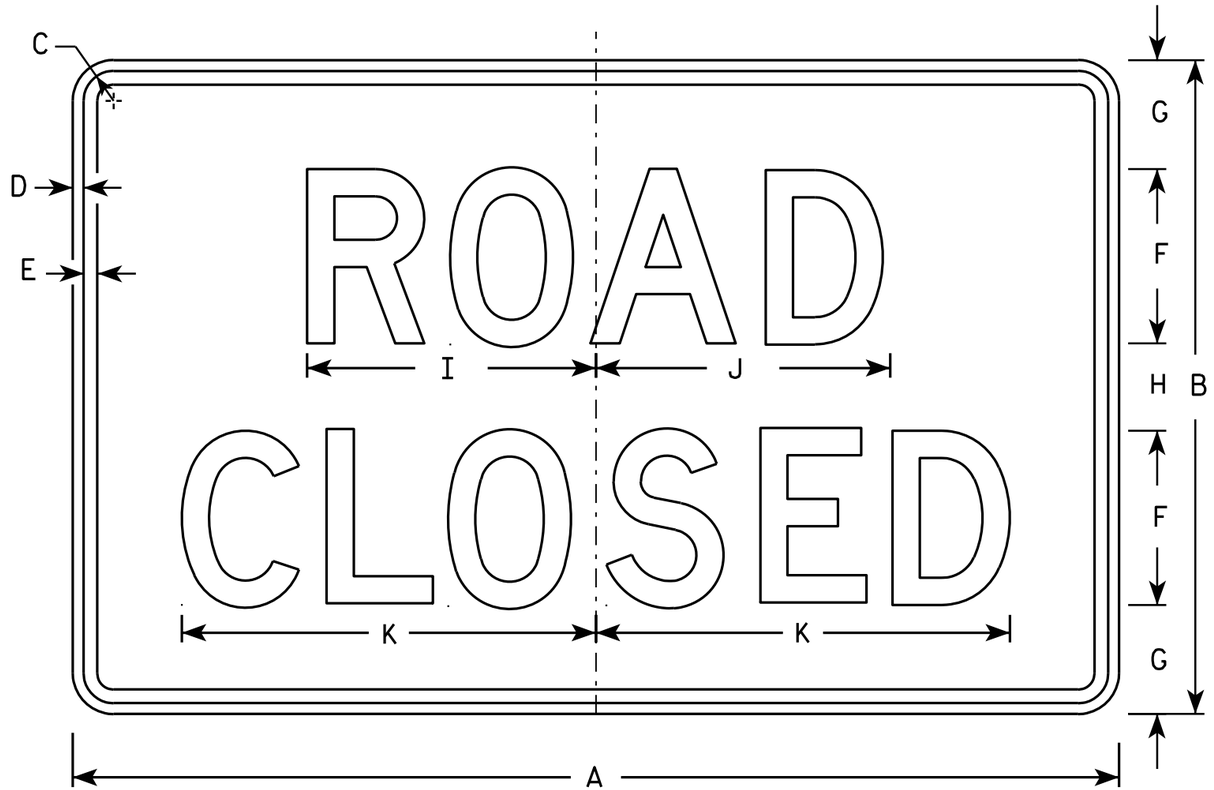
STANDARD SIGN
R5-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-3.2

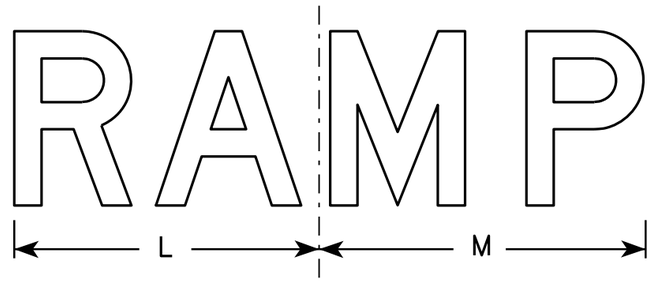
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 88	E



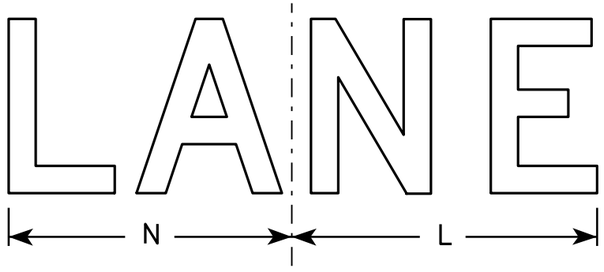
R11-2

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

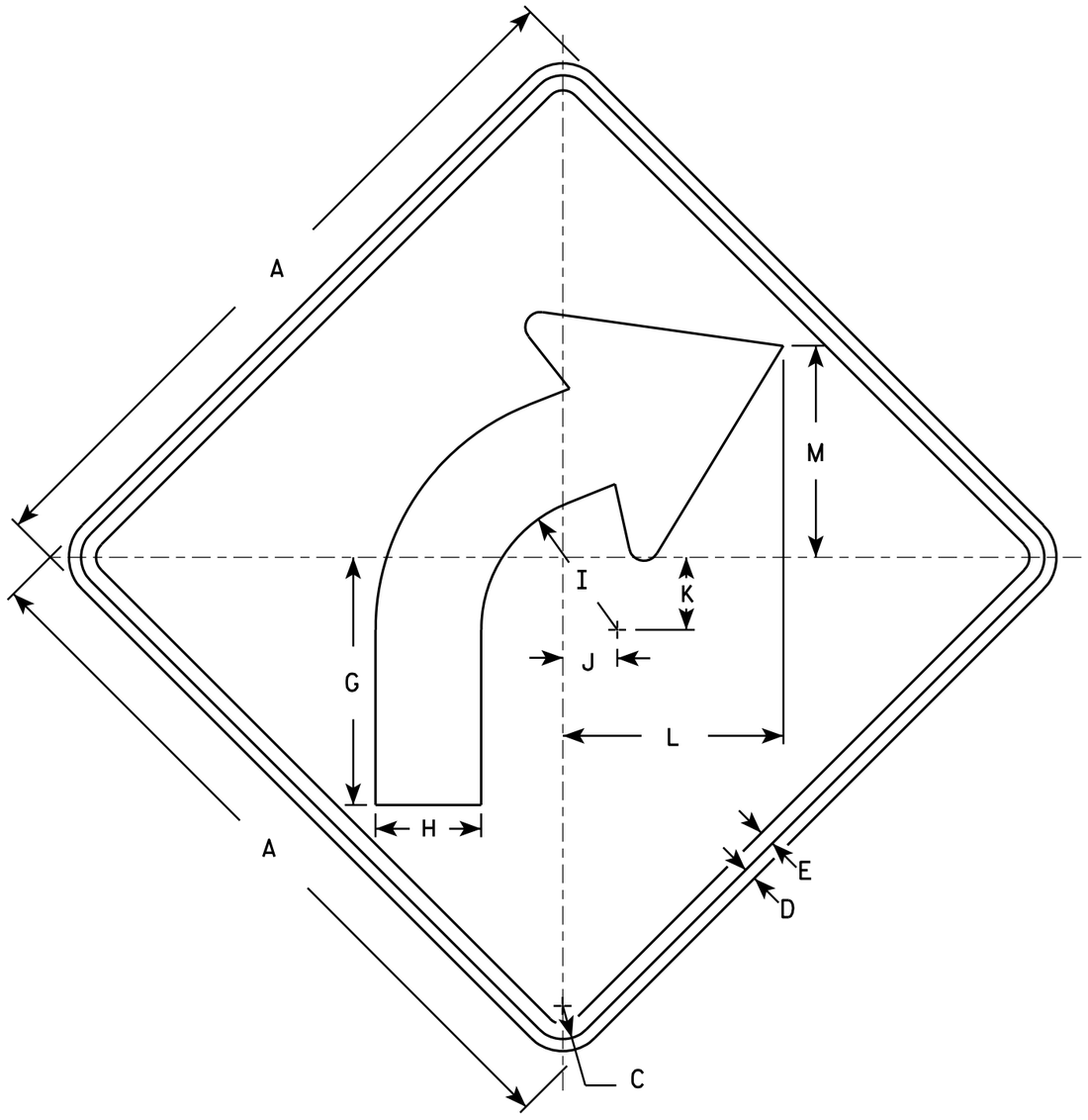
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

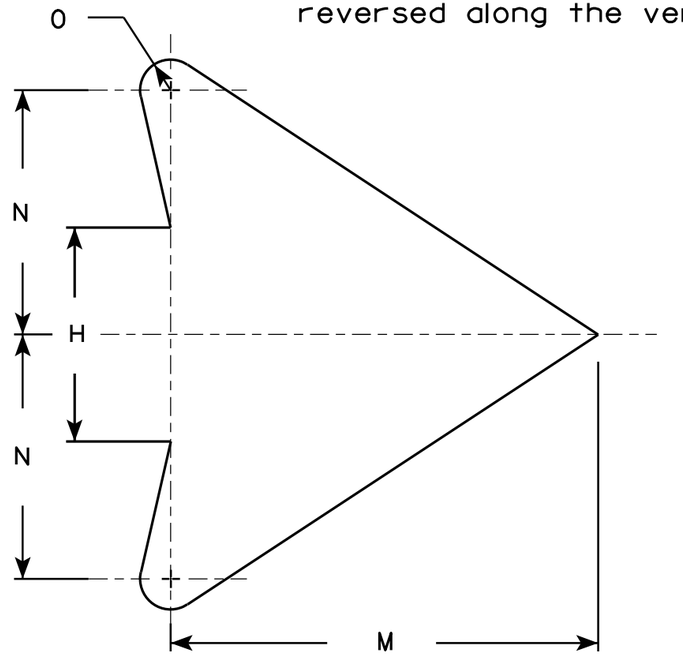
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 89	E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



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		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

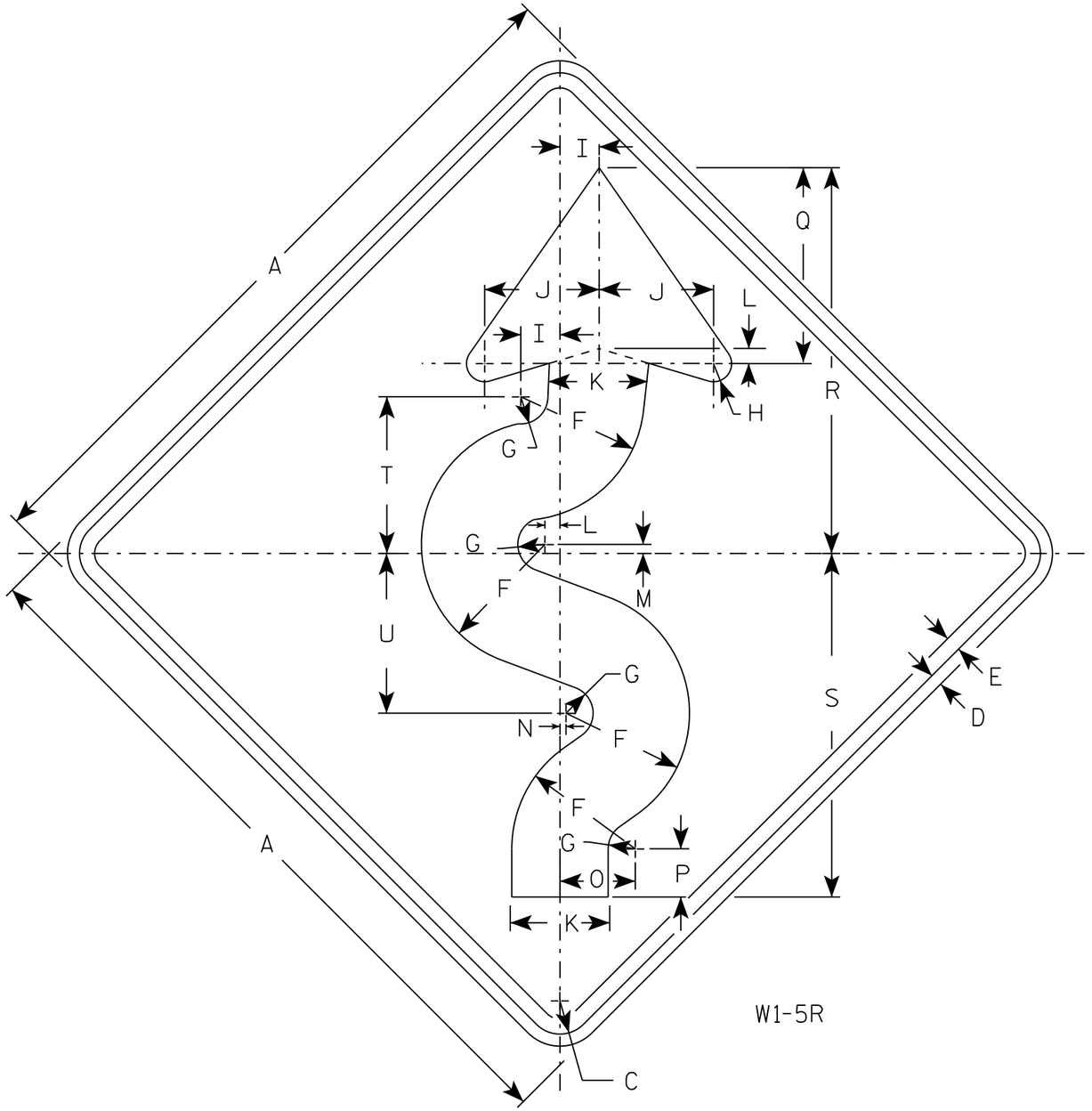
STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

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



W1-5R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. W1-5L is the same as W1-5R except the arrow is reversed along the vertical centerline.
4. If used with W13-1 of 30 MPH or less, use 36" sign for Size 2S.

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	4 1/8	7/8	5/8	1 1/4	3 3/4	3 1/4	1/2	1/4	1/8	2 1/2	1 5/8	6 1/2	12 3/4	11 3/8	5 1/4	5 1/4						4.0
2S	30		1 3/8	1/2	5/8	5 1/8	1 1/8	3/4	1 5/8	4 3/4	4 1/8	5/8	3/8	1/4	3 1/8	2	8 1/8	16	14 1/4	6 1/2	6 5/8						6.25
2M	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
3	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
4	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
5	48		2 1/4	3/4	1	8 1/4	1 3/4	1 1/4	2 1/2	7 1/2	6 1/2	1	1/2	3/8	5	3 1/4	13	25 1/2	22 3/4	10 3/8	10 1/2						16.0

STANDARD SIGN
W1-5

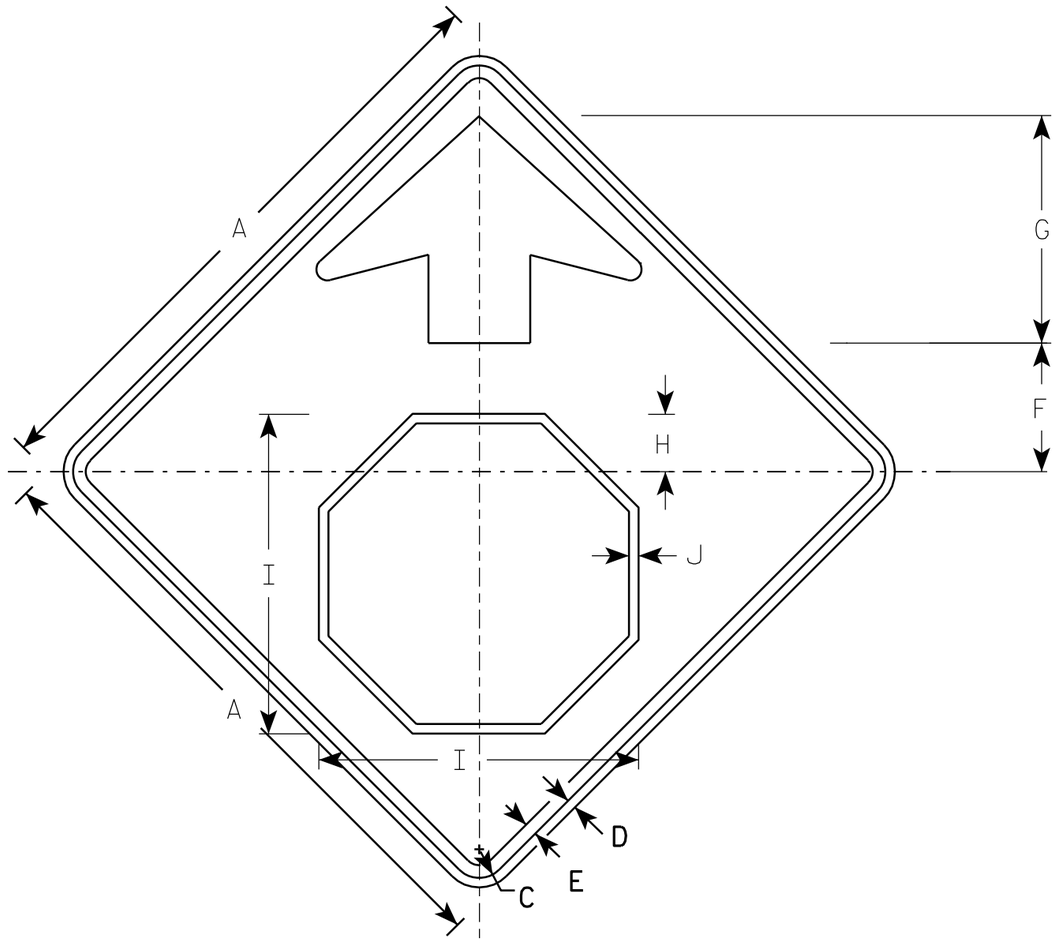
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/1/16 PLATE NO. W1-5.9

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

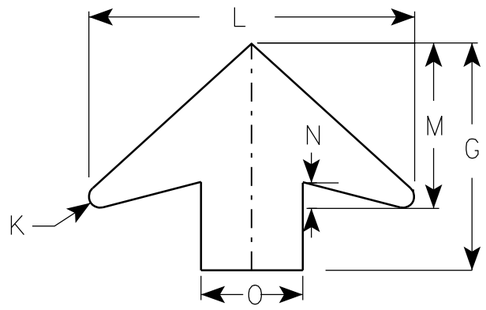
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W15.DGN PLOT DATE : 01-AUG-2016 09:34 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 5.594294:1.000000



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

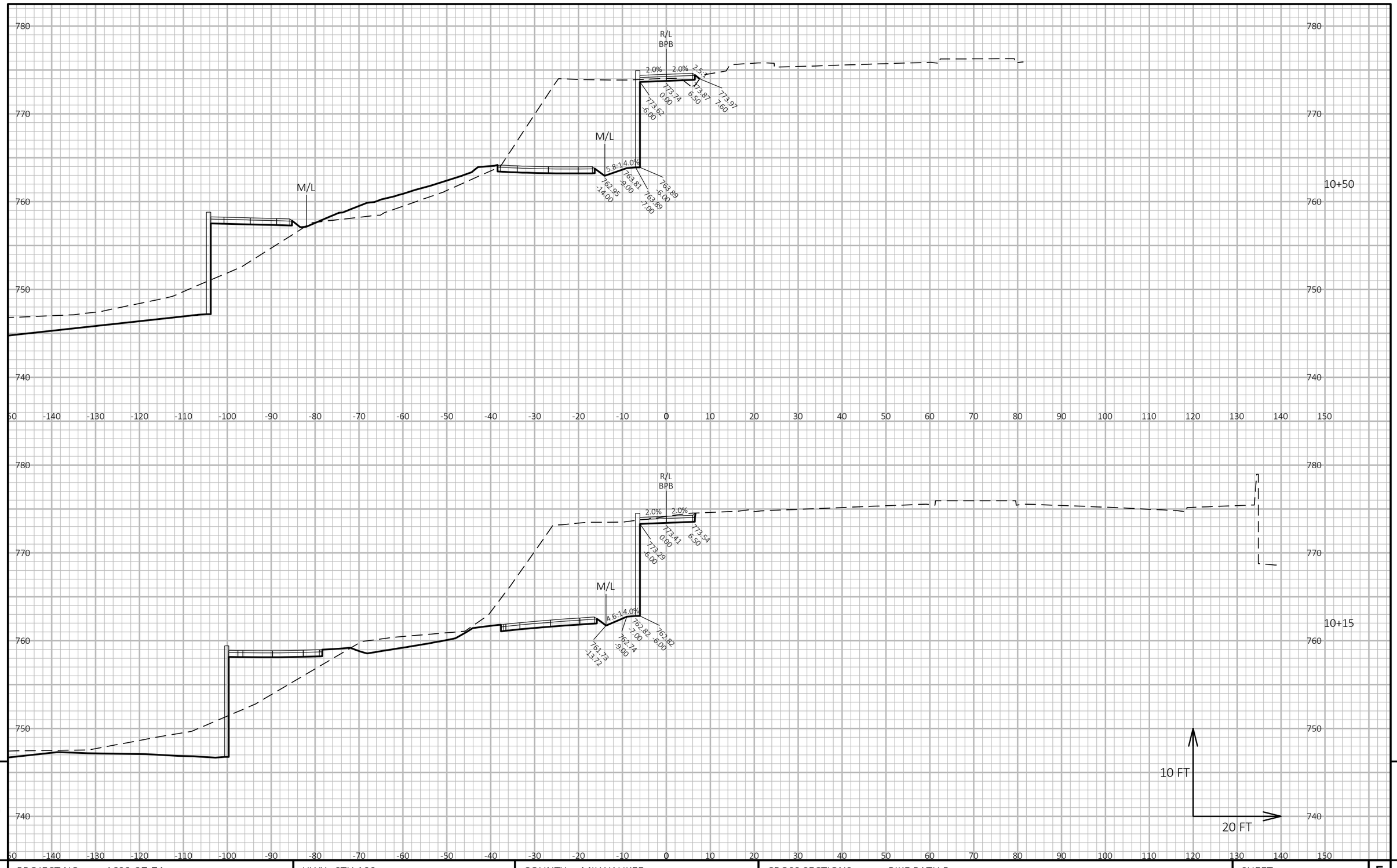
SHEET NO: 92 E

Division - Bike Path B

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Salvaged/ Unusable Pavement Material	AREA (SF) Fill	AREA (SF) EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Salvaged/Unusable Pavement Material Note 2	Incremental Vol (CY) (Unadjusted) Fill Note 3	Incremental Vol (CY) (Unadjusted) EBS	Cumulative Vol (CY) Cut 1.0 Note 1	Cumulative Vol (CY) Expanded Fill 1.1	Cumulative Vol (CY) Expanded EBS Backfill 1.3 Note 5	Cumulative Vol (CY) Reduced EBS in Fill 0.8 Note 7	Mass Ordinate Note 8
10+15 AH	1015.25	0.00	95.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10+50	1050.00	34.75	89.21	0.00	2.05	0.00	118.86	0.00	1.32	0.00	118.86	1.45	0.00	0.00	117.41
11+00	1100.00	50.00	10.93	0.00	26.34	0.00	92.72	0.00	26.28	0.00	211.58	30.36	0.00	0.00	181.22
11+50	1150.00	50.00	25.51	0.00	0.23	0.00	33.74	0.00	24.60	0.00	245.32	57.42	0.00	0.00	187.90
12+00	1200.00	50.00	34.03	0.00	0.00	0.00	55.12	0.00	0.21	0.00	300.44	57.66	0.00	0.00	242.79
12+50	1250.00	50.00	45.99	0.00	0.00	0.00	74.09	0.00	0.00	0.00	374.54	57.66	0.00	0.00	316.88
13+00	1300.00	50.00	67.51	0.00	18.10	0.00	105.09	0.00	16.76	0.00	479.63	76.09	0.00	0.00	403.54
13+50	1350.00	50.00	316.11	0.00	2.26	0.00	355.20	0.00	18.85	0.00	834.82	96.83	0.00	0.00	738.00
14+00	1400.00	50.00	30.67	0.00	17.11	0.00	321.09	0.00	17.93	0.00	1,155.92	116.55	0.00	0.00	1,039.36
14+50	1450.00	50.00	158.76	0.00	79.61	0.00	175.40	0.00	89.56	0.00	1,331.32	215.07	0.00	0.00	1,116.25
15+00	1500.00	50.00	80.56	0.00	62.62	0.00	221.59	0.00	131.70	0.00	1,552.91	359.94	0.00	0.00	1,192.97
15+50	1550.00	50.00	0.00	0.00	80.33	0.00	74.59	0.00	132.37	0.00	1,627.50	505.54	0.00	0.00	1,121.97
16+00	1600.00	50.00	2.16	0.00	9.02	0.00	2.00	0.00	82.73	0.00	1,629.50	596.55	0.00	0.00	1,032.96
16+50	1650.00	50.00	12.16	0.00	0.57	0.00	13.26	0.00	8.88	0.00	1,642.76	606.32	0.00	0.00	1,036.44
17+00	1700.00	50.00	26.97	0.00	0.00	0.00	36.23	0.00	0.53	0.00	1,678.99	606.90	0.00	0.00	1,072.09
17+50	1750.00	50.00	57.90	0.00	0.00	0.00	78.58	0.00	0.00	0.00	1,757.57	606.90	0.00	0.00	1,150.67
17+79 BK	1778.94	28.94	37.18	0.00	0.00	0.00	50.95	0.00	0.00	0.00	1,808.53	606.90	0.00	0.00	1,201.63
					Column Totals		1,808.53	0.00	551.73	0.00					

Notes:

1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections nor is it shown in these sheets. Refer to Summary Table for this roadway's quantitiy.
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded EBS	Will be backfilled with Borrow
5 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
6 - Mass Ordinate	If EBS to be backfilled with Cut or Borrow: [(Cut + EBS) - ((Fill) - (Reduced EBS in Fill)) * Fill Factor)]



9

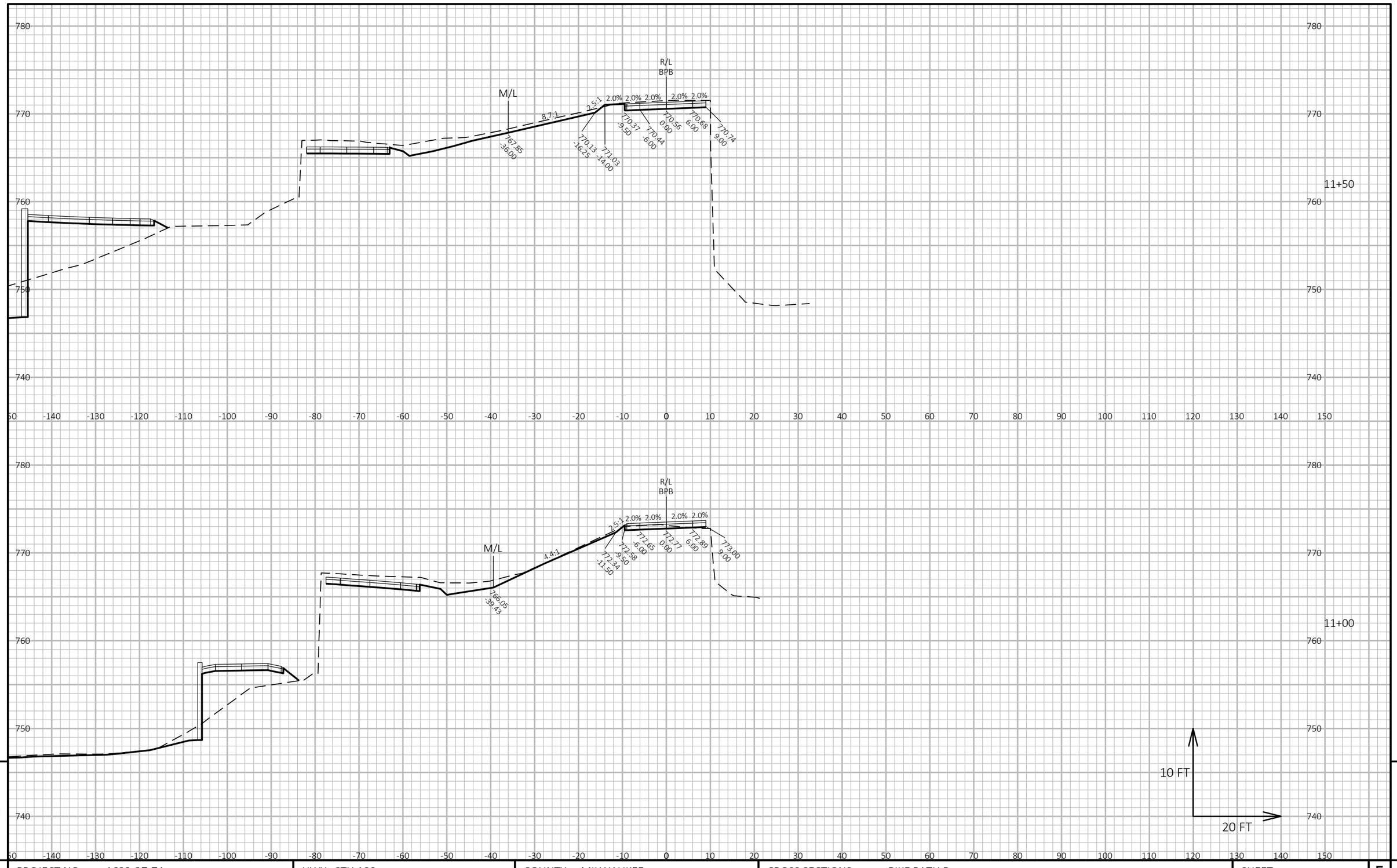
9

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 94	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090201

PLOT DATE : 2/12/2019 10:00 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49



9

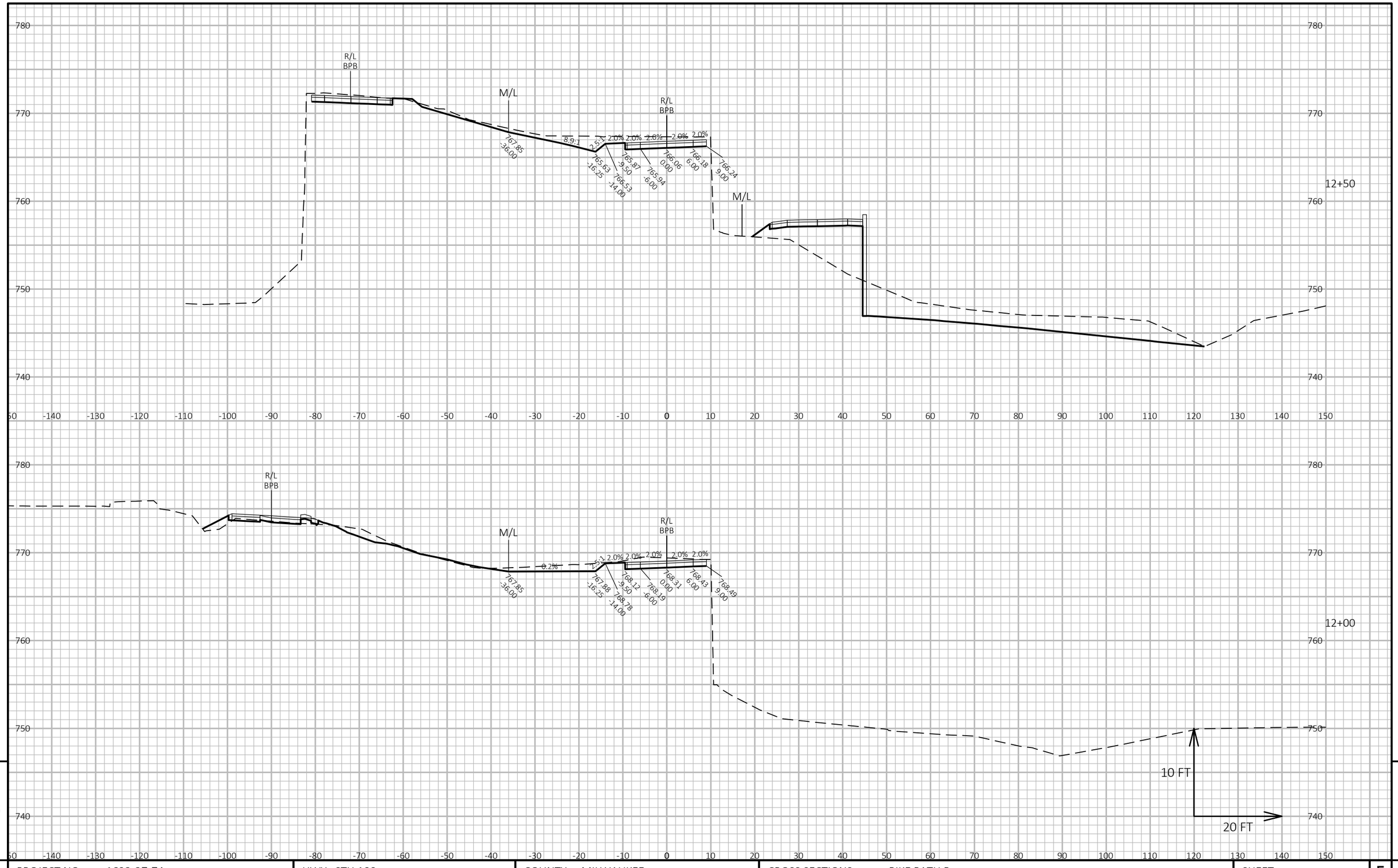
9

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 95	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090202

PLOT DATE : 2/12/2019 10:02 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

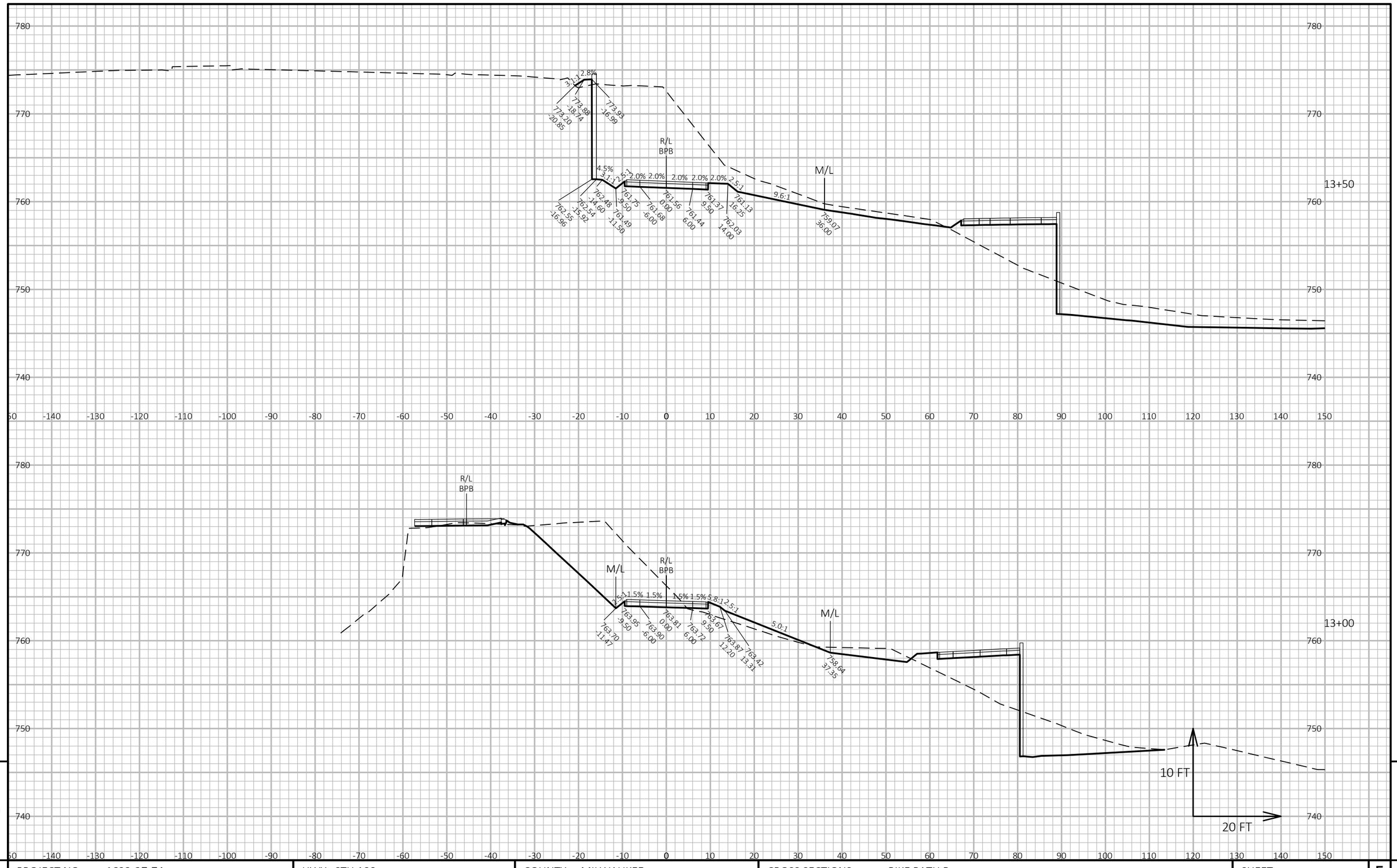
WISDOT/CADDS SHEET 49



PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 96	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090203

PLOT DATE : 2/12/2019 10:03 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

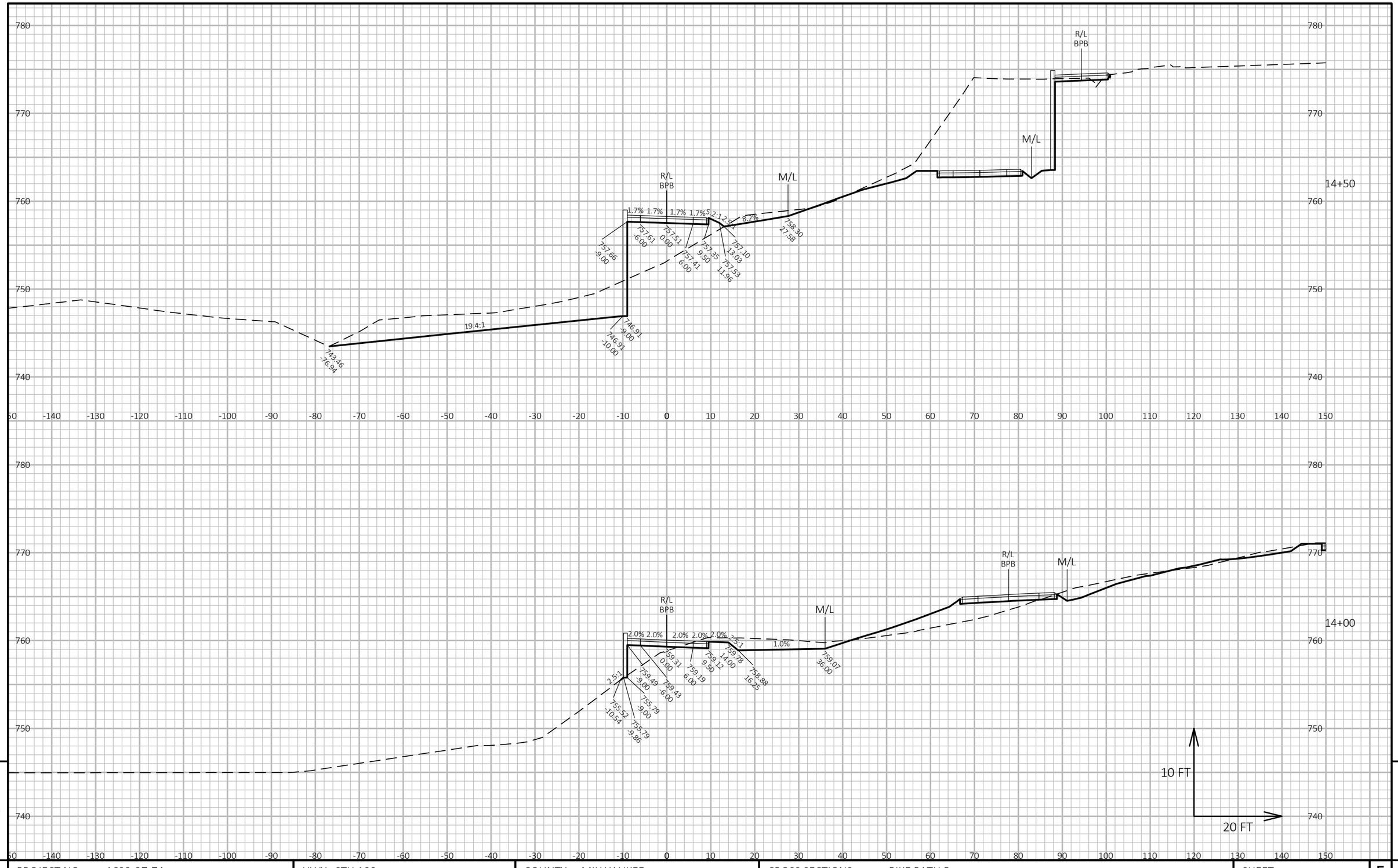


PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 97 E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090204

PLOT DATE : 2/12/2019 10:04 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

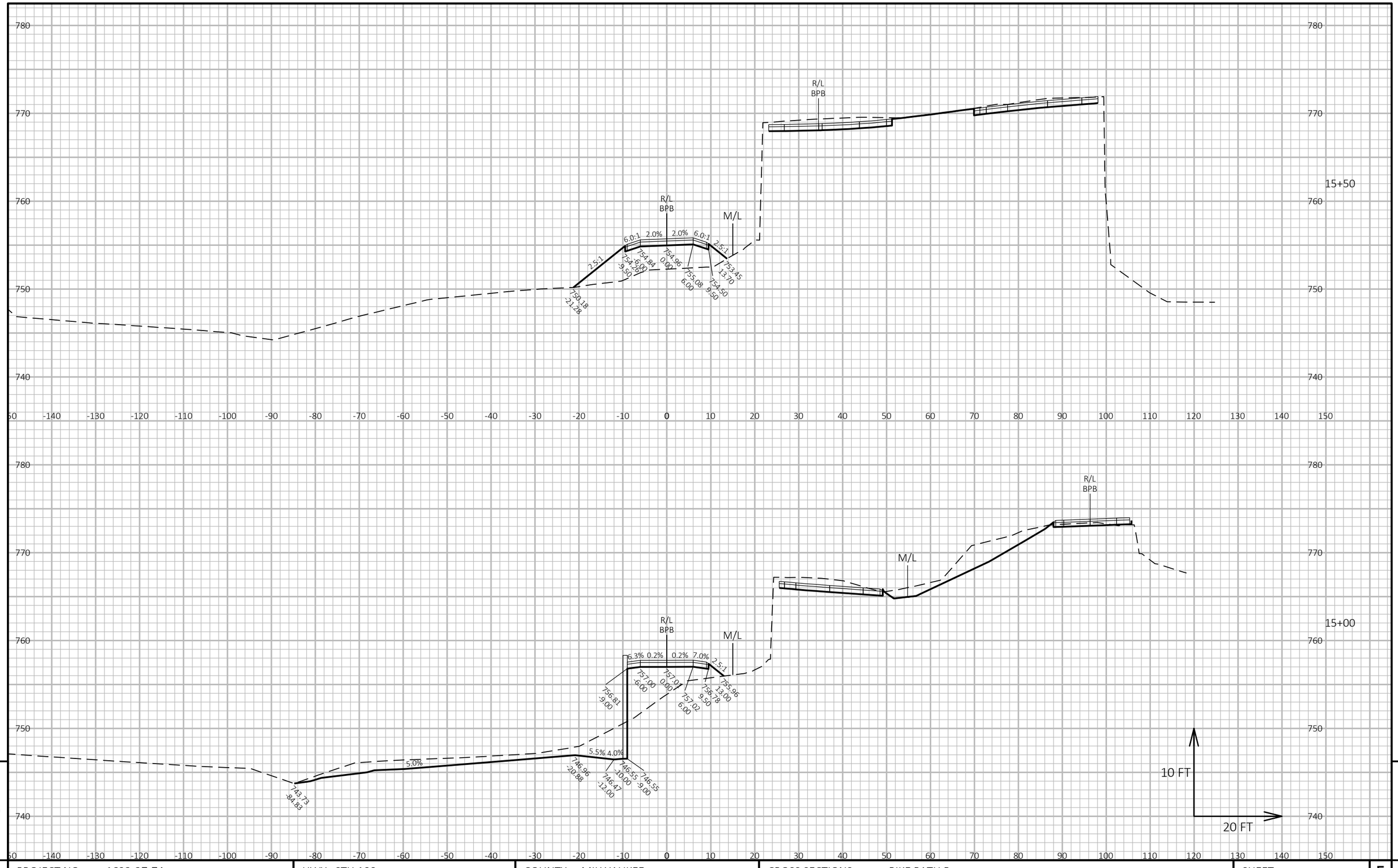
WISDOT/CADDS SHEET 49



PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 98	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090205

PLOT DATE : 2/12/2019 10:06 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



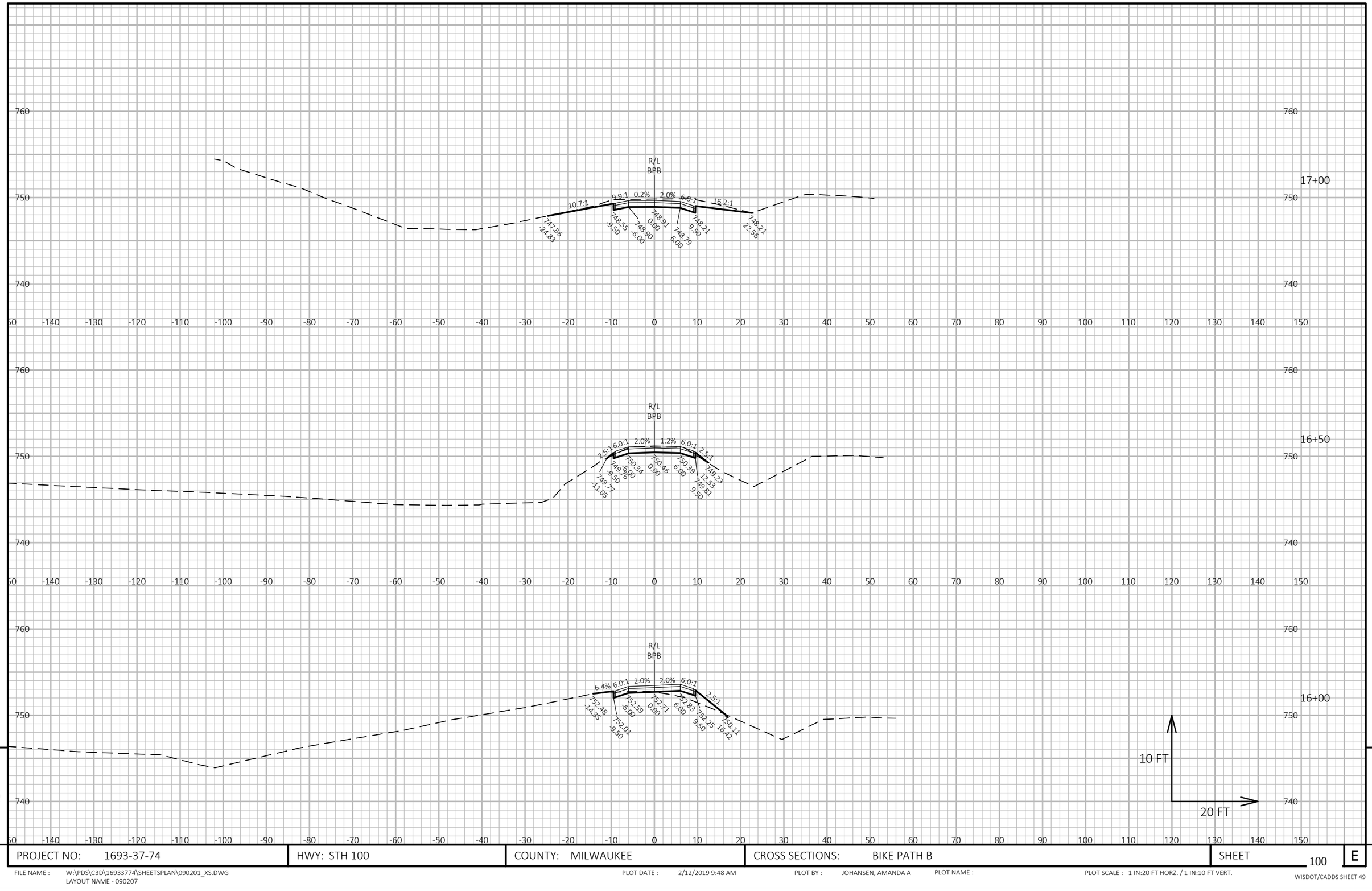
9

9

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 99	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090206

PLOT DATE : 2/12/2019 10:07 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



9

9

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 100	E

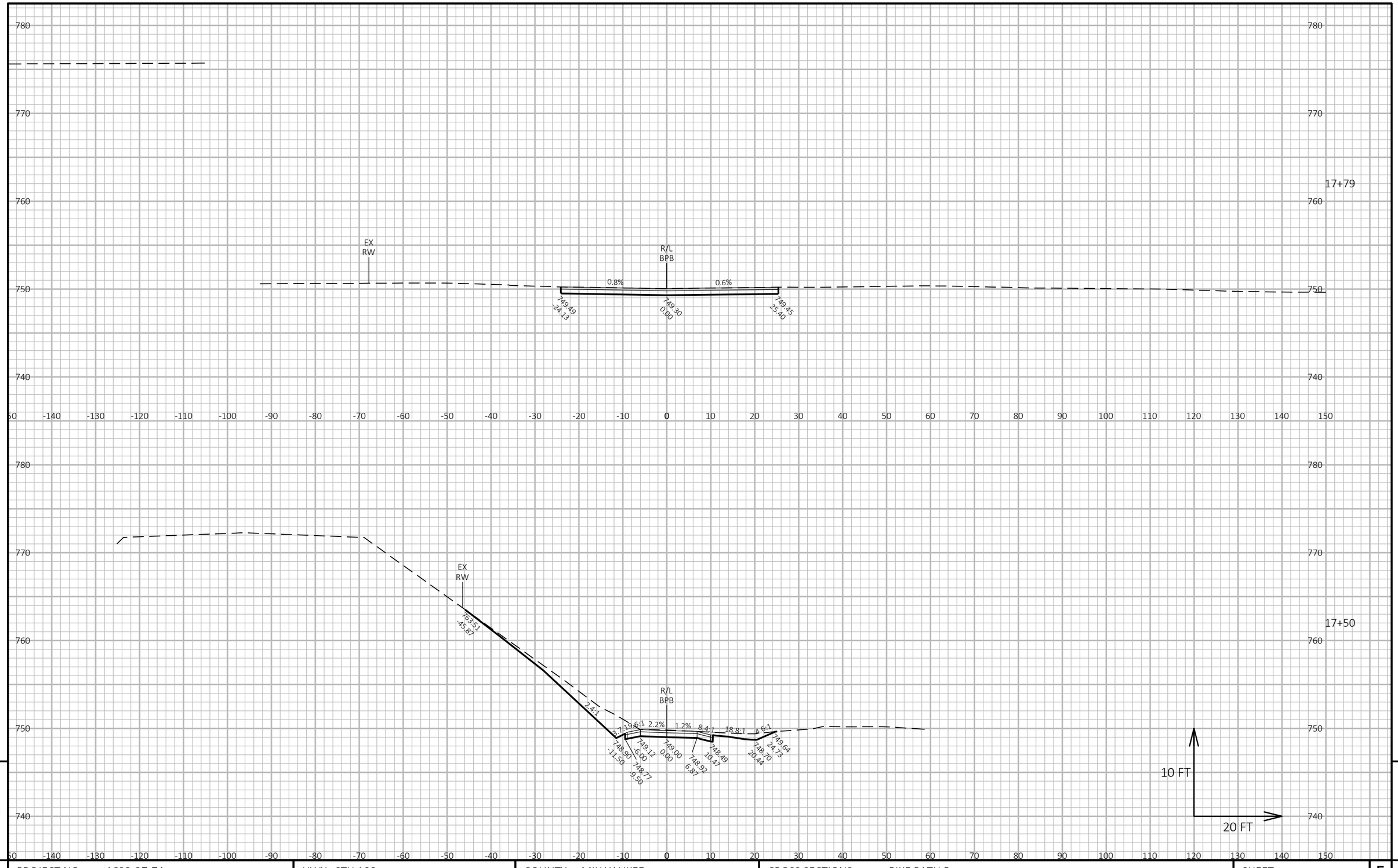
FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090207

PLOT DATE : 2/12/2019 9:48 AM

PLOT BY : JOHANSEN, AMANDA A

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



9

9

PROJECT NO: 1693-37-74	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: BIKE PATH B	SHEET 101	E

FILE NAME : W:\PDS\C3D\16933774\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 090208

PLOT DATE : 2/12/2019 9:48 AM PLOT BY : JOHANSEN, AMANDA A PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov