SEL

PROJECT ID: 2753-01-70

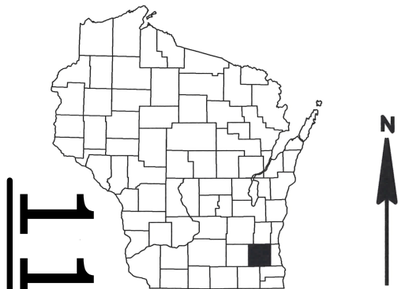
WITH: N/A

COUNTY: WAUKESHA

JULY 2017

ORDER OF SHEETS

TOTAL SHEETS = 118



N

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

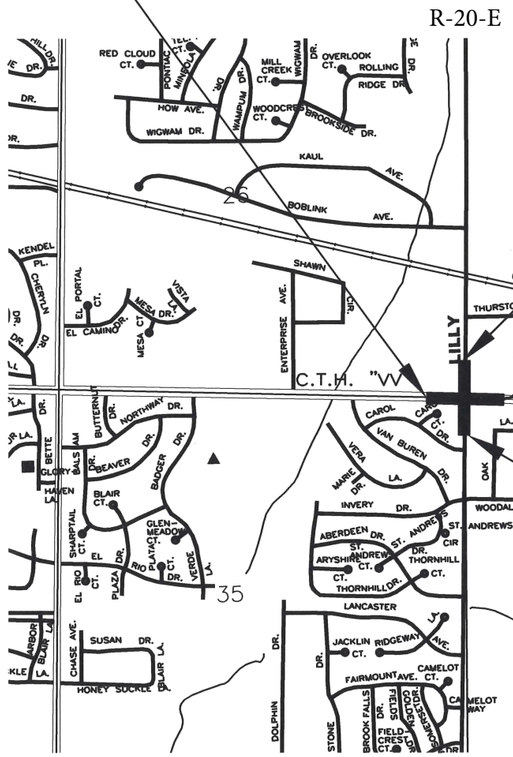
PLAN OF PROPOSED IMPROVEMENT

CTH VV
INTERSECTION WITH LILLY ROAD
CTH VV
WAUKESHA COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2753-01-70	WISC 2017344	1

BEGIN PROJECT
STA 14+39.85
Y = 200,393.62
X = 721,717.62

STATE PROJECT NUMBER
2753-01-70



END CONSTRUCTION
STA 56+58.69

END PROJECT
STA 26+10.96

BEGIN CONSTUCTION
STA 52+03.18

LAYOUT
SCALE 0 1/4 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.222 MILES

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

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

1-20-17 Date — Director

1/20/17 Date — Engineering Services Manager

ORIGINAL PLANS PREPARED BY

WISCONSIN
GARY M. EVANS
E-25441
Milwaukee, WI
PROFESSIONAL ENGINEER

1/20/17. Date — Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WAUK. CO. DEPT. OF PUBLIC WORKS
Designer	WAUK. CO. DEPT. OF PUBLIC WORKS
Management Consultant	DAAR ENGINEERING CO
County Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 1/23/17 (Signature)

E

DESIGN DESIGNATION

A.A.D.T.	2017	= 27,400
A.A.D.T.	2037	= 27,800
D.H.V.	2032	= 3720
D.D.		= 59-41
T.		= 5.3%
DESIGN SPEED		= 45
ESALS		= 2,168,100

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	300'EB'	ELECTRIC	E
EXISTING CULVERT		OVERHEAD UTILITY	OH
PROPOSED CULVERT (Box or Pipe)		FIBER OPTIC	FO
COMBUSTIBLE FLUIDS	CAUTION	GAS	G
		SANITARY SEWER	SAN
MARSH AREA		STORM SEWER	SS
		TELEPHONE	T
		WATER	W
WOODED OR SHRUB AREA		UTILITY PEDESTAL	
		POWER POLE	
		TELEPHONE POLE	

UTILITIES CONTACTS

A.T. & T., INC.
MR. CHRIS DUNCAN
MANAGER– OSP ENGINEERING
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
262.896.7678
CD8946@ATT.COM

PLANS TO:
WE–ENERGIES
PAVING COORDINATOR
LATROY BRUMFIELD
500 S. 116TH ST.
WEST ALLIS, WI 53214
we–utlity–relocations@we–energies.com

WE–ENERGIES ELECTRIC & STREET LIGHTING
MR. AL SCHMITT
WEST BEND SERVICE CENTER
245 SAND DR.
262.338.7662
WEST BEND, WI 53095
al.schmitt@we–energies.com

WE–ENERGIES GAS
MR. NICHOLAS ERNSTER
500 S. 116TH ST.
WEST ALLIS, WI 53214
414.944.5574
nicholas.ernster@we–energies.com

MIDWEST FIBER NETWORKS
MR. RICH TRGOVEC
6070 N. FLINT RD.
GLENDALE, WI 53209
414.459.3554
rtrgovec@midwestfigernetworks.com

CHARTER COMMUNICATIONS/TIME WARNER CABLE
MR. STEVE CRAMER, UTILITY COORDINATION SUPERVISOR
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
PHONE: 414.277.4045
steve.cramer@twcable.com

LEVEL 3 COMMUNICATIONS
MR. BRAHIM GADDOUR
3235 INTERTECH DR., SUITE 600
BROOKFIELD, WI 53045
414.908.1027
relo@level3.com

VILLAGE OF MENOMONEE FALLS
MR. TOM HOFFMAN, VILLAGE ENGINEER
SANITARY SEWER AND WATER
W156 N 8480 PILGRIM ROAD
MENOMONEE FALLS, WI 53051
262.532.4415
thoffman@menomoenee–falls.org

WAUKESHA COUNTY
MR. DAVID BENTFIELD
1641 WOODBURN RD
WAUKESHA WI, 53188
262.424.9129
dbentfield@waukeshacounty.gov

WDNR LIAISON

MR. CRAIG WEBSTER
ENVIRONMENTAL COORDINATOR – SOUTHEAST REGION
141 NW BARSTOW ROOM 180
WAUKESHA, WI 53188
262.574.2141
craig.webster@wisconsin.gov

OTHER CONTACTS

MR. GARY EVANS, ENG. SERVICES MGR.
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
262.548.7740
gevans@waukeshacounty.gov

MR. KEVIN YANNY, PROJECT MANAGER
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
262.548.7740
kyanny@waukeshacounty.gov

VILLAGE OF MENOMONEE FALLS
MR. ARLYN JOHNSON, DIRECTOR OF PUBLIC WORKS
W156 N8480 PILGRIM ROAD
MENOMONEE FALLS, WI 53051
262.532.4701

2

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

2

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

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

EXCAVATION BELOW SUBGRADE (EBS) SHALL NOT BE USED TO BALANCE YARDAGE. EBS IS NOT SHOWN ON THE CROSS SECTIONS, BUT WILL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE PRECISE LOCATION OF THE EBS WILL BE DETERMINED BY THE ENGINEER.

PAVEMENTS ARE TO BE SAWCUT, AS INDICATED ON THE PLANS, TO PROVIDE A BUTT JOINT AT THE PROJECT LIMITS AND AT ALL ASPHALTIC DRIVEWAYS.

ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN PLACE UNTIL SUCH TIME AS THE ENGINEER DETERMINES THAT THEY ARE NO LONGER REQUIRED.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE. THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE CRUSHED AGGREGATE FOR SHOULDERS ADJACENT TO THE HMA PAVEMENT SHALL NOT BE PLACED UNTIL AFTER THE SURFACE LAYER OF THE HMA PAVEMENT HAS BEEN LAID.

NEW 7–INCH HMA PAVEMENT, SHALL BE CONSTRUCTED WITH A 2.50–INCH 9.5 mm HMA PAVEMENT 4MT 58–28S, AS UPPER LAYER AND AN 2.25–INCH 19.0 mm HMA PAVEMENT 3MT 58–28S, AS LOWER AND MIDDLE LAYER.

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE COVERED WITH SALVAGED TOPSOIL OR TOPSOIL, FERTILIZER, AND SEED OR SODDED AS NOTED ON THE PLANS OR AS DETERMINED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY DIGGER'S HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK TO DETERMINE THE LATEST STATUS OF UTILITY RELOCATIONS. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF A ONE–CALL SYSTEM MUST BE CONTACTED SEPARATELY.

AT START OF CONSTRUCTION, WAUKESHA COUNTY SHALL REMOVE AND SALVAGE ANY POST MOUNTED SIGNS THAT CONFLICT WITH GRADING OPERATIONS. REMAINING SIGNS THAT CONFLICT WITH TRAFFIC CONTROL SHALL BE COVERED, AS DIRECTED BY ENGINEER. PERMANENT SIGNING WILL BE PROVIDED AND INSTALLED BY WAUKESHA COUNTY.

INDEX OF SECTION 2 DRAWINGS

2

STANDARD ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
AC.	ACRE(S)
ASPH.	ASPHALT
BM	BENCH MARK
C & G	CURB & GUTTER
CB	CATCH BASIN
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE
C.Y.	CUBIC YARDS
℄	CENTERLINE
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
CWT.	HUNDREDWEIGHT
D	DEGREE OF CURVE
D.H.V.	DESIGN HOURLY VOLUME
DISCH.	DISCHARGE
E	EAST
EA.	EACH
E.B.	EASTBOUND
ESALS	EQUIVALENT SINGLE AXLE LOADS
ESMT.	EASEMENT
F.E.	FIELD ENTRANCE
FT.	FOOT (FEET)
G	GAS
I.P.	IRON PIPE
K	RATE OF VERTICAL CURVATURE
L	LENGTH
LB.	POUND(S)
L.F.	LINEAR FEET
LHF	LEFT HAND FORWARD
LS	LUMP SUM
LT.	LEFT
MH	MANHOLE
N	NORTH
N.B.	NORTHBOUND
NO.	NUMBER
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.L.	PROPERTY LINE
P.R.C.	POINT OF REVERSE CURVATURE
P.T.	POINT OF TANGENCY
PAV'T.	PAVEMENT
R	RADIUS
C.P.R.C.	CULVERT PIPE REINFORCED CONCRETE
RHF	RIGHT HAND FORWARD
RT.	RIGHT
R/W	RIGHT OF WAY
S	SOUTH
SAN	SANITARY
S.B.	SOUTHBOUND
S.D.D.	STANDARD DETAIL DRAWING
S.F.	SQUARE FEET
S.S.P.R.C.	STORM SEWER PIPE REINFORCED CONCRETE
STA.	STATION
S.Y.	SQUARE YARDS
T	TANGENT
T	TELEPHONE
T.L.E.	TEMPORARY LIMITED EASEMENT
VAR.	VARIES
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
W	WATER MAIN
W	WEST
W.B.	WESTBOUND
WV	WATER VALVE
YD.	YARDS

2

2

END CONSTRUCTION
STA 57+58.69

℄ OF LILLY RD

LILLY RD

STA 20+00 CTH VV
STA 54+00 LILLY RD

BEGIN PROJECT
STA 14+39.85
Y=200,395.62
X=721,717.62

PGL

PI 54+58.00

SILVER SPRING DR

C.T.H. "VV"

END PROJECT
STA 26+10.96

PC 19+98.99

PT 20+01.01

℄ OF SILVER
SPRING DR

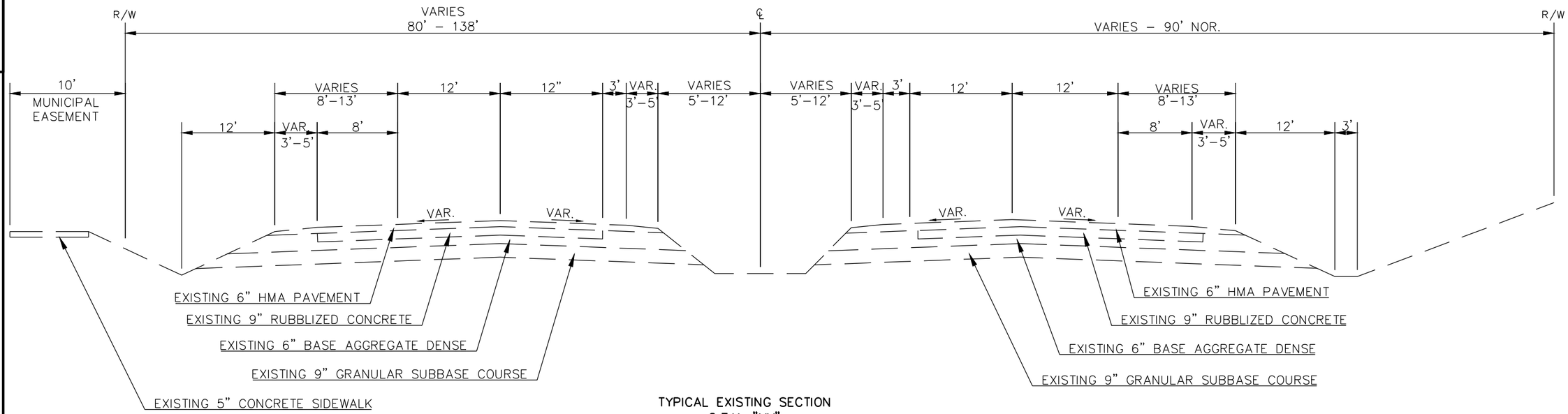
BEGIN CONSTRUCTION
STA 52+03.18

R/W

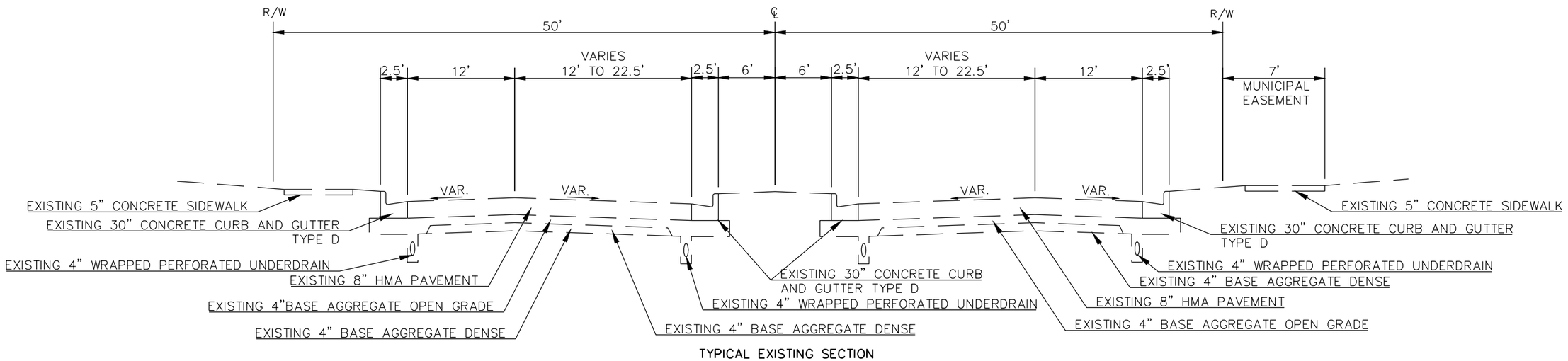
PL

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 4	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\020201-PO.DWG PLOT DATE : 1/30/2017 8:47 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=100'

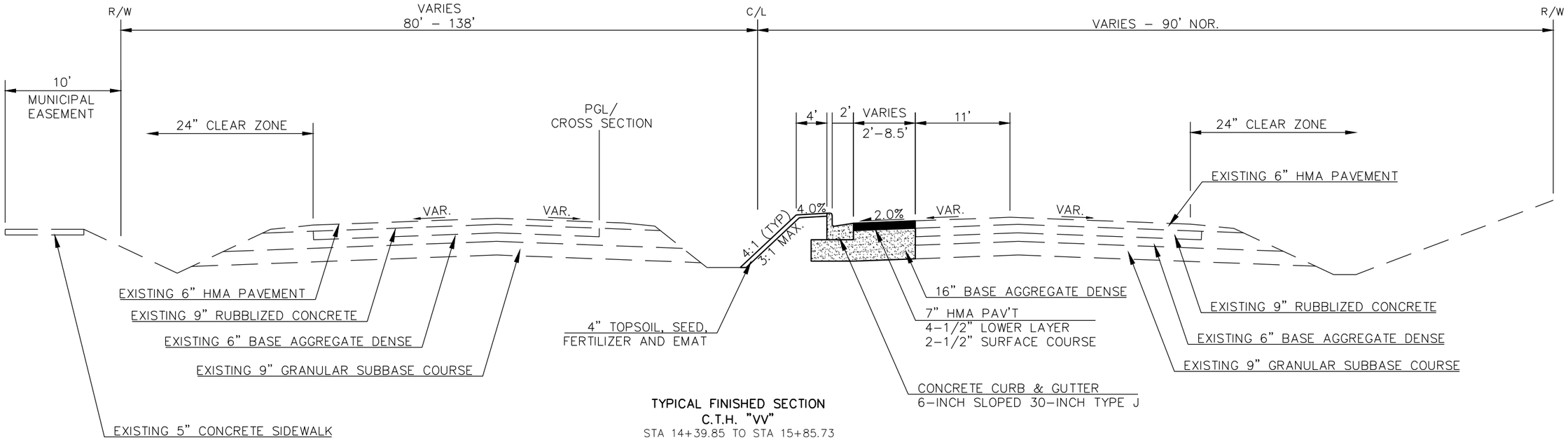


TYPICAL EXISTING SECTION
C.T.H. "VV"
STA 14+39.85 TO STA 26+10.96

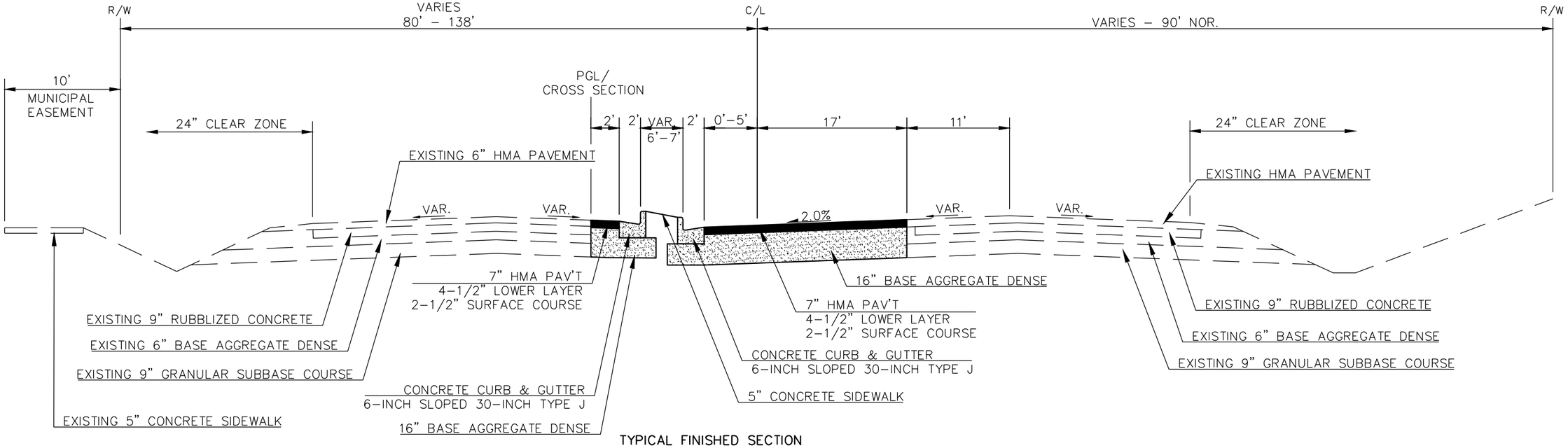


TYPICAL EXISTING SECTION
LILLY RD
STA 52+03.18 TO STA 56+18.59

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	EXISTING TYPICAL SECTIONS	SHEET 5	E

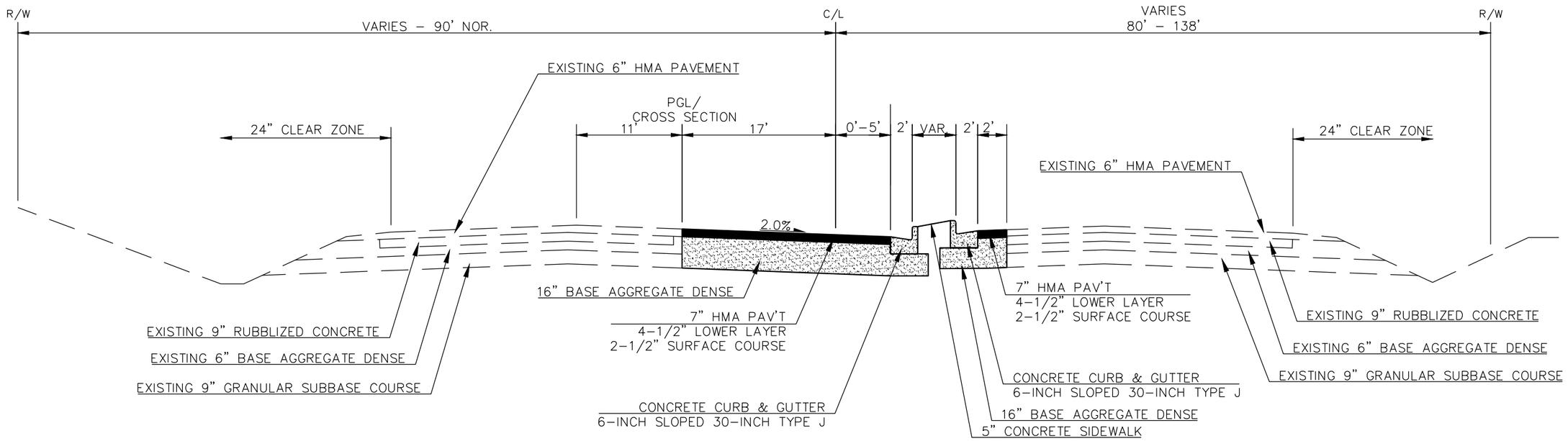


TYPICAL FINISHED SECTION
C.T.H. "VV"
STA 14+39.85 TO STA 15+85.73



TYPICAL FINISHED SECTION
C.T.H. "VV"
STA 15+85.73 TO STA 19+31.95

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	FINISHED TYPICAL SECTIONS	SHEET 6	E



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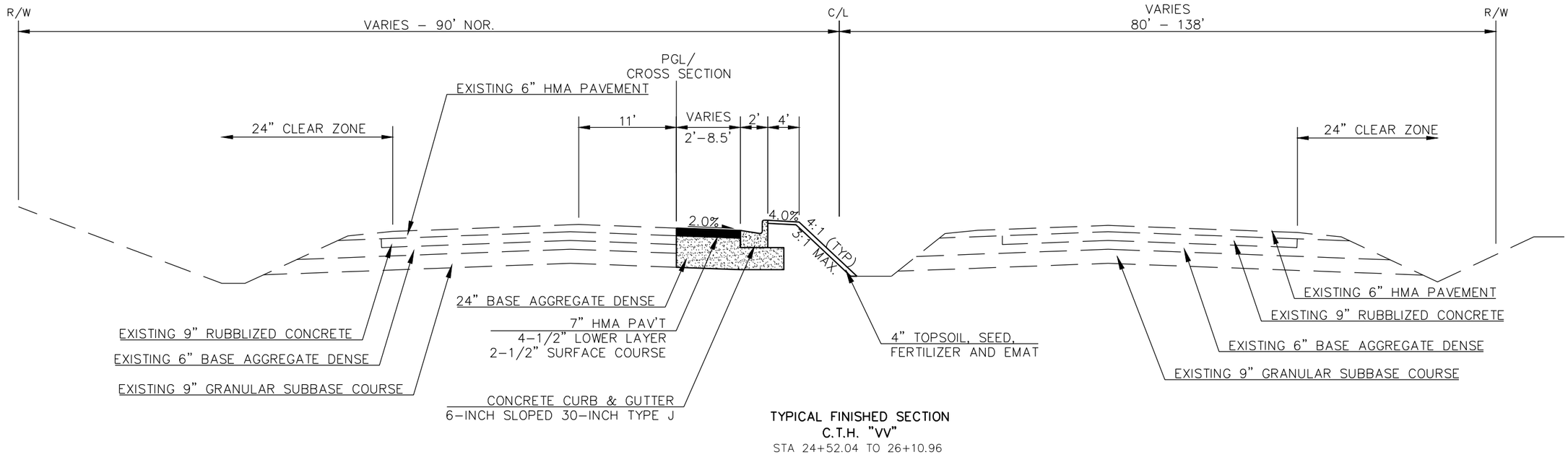
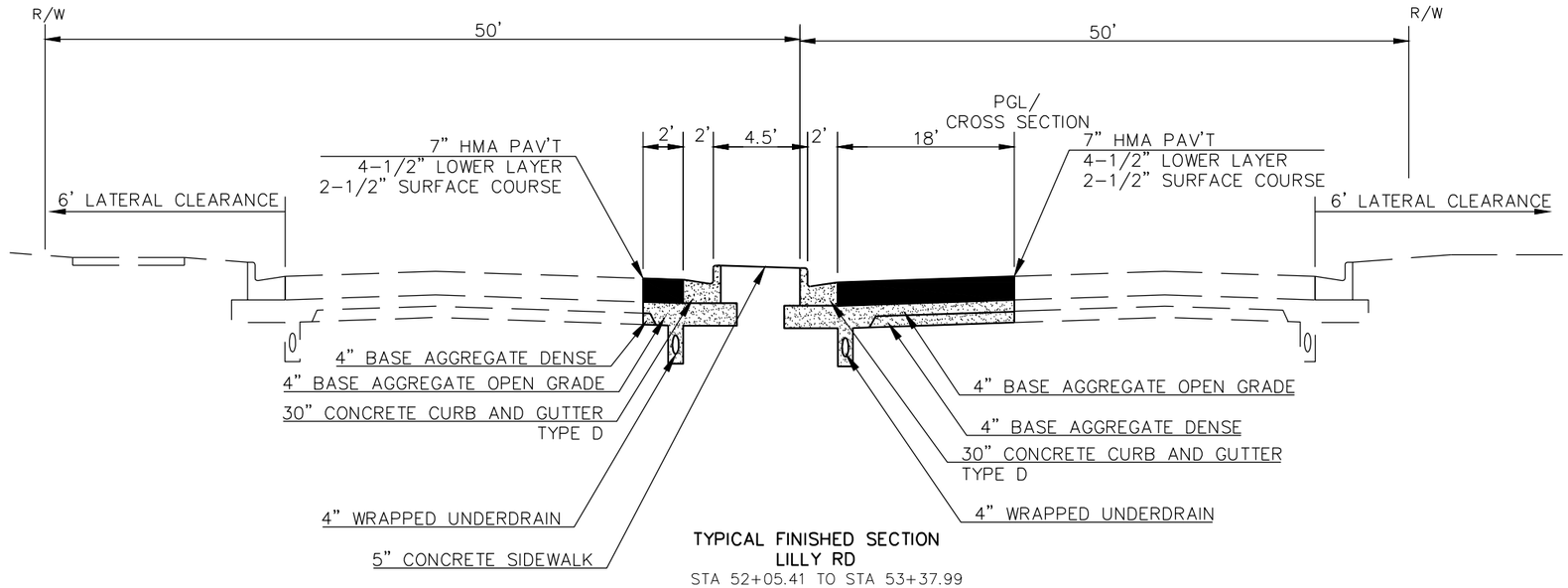
STA 20+62.38 TO STA 24+52.04

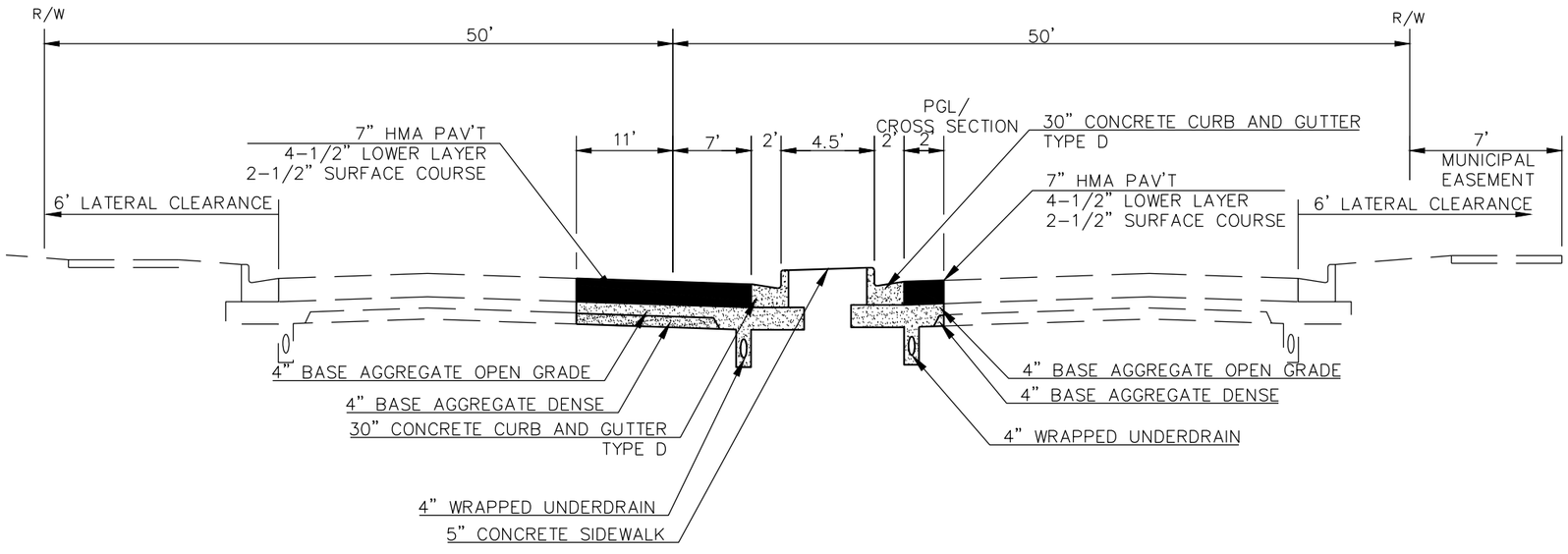


TYPICAL FINISHED SECTION
C.T.H. "VV"
STA 24+52.04 TO 26+10.96

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	FINISHED TYPICAL SECTIONS	SHEET 7	E



TYPICAL FINISHED SECTION
LILLY RD
STA 52+05.41 TO STA 53+37.99



TYPICAL FINISHED SECTION
LILLY RD
STA 54+71.34 TO STA 57+59.29

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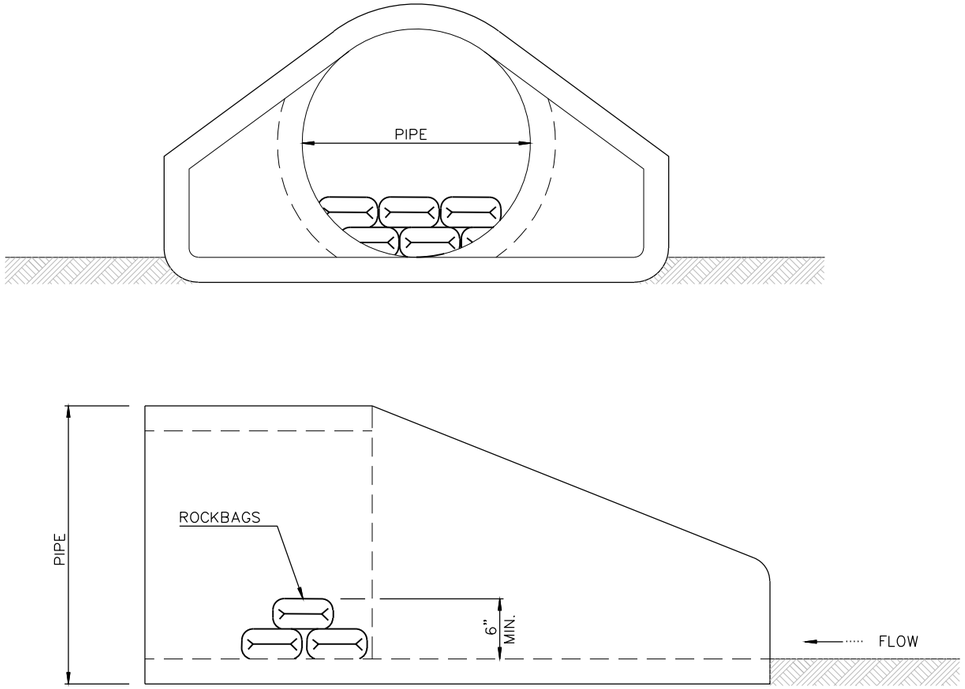
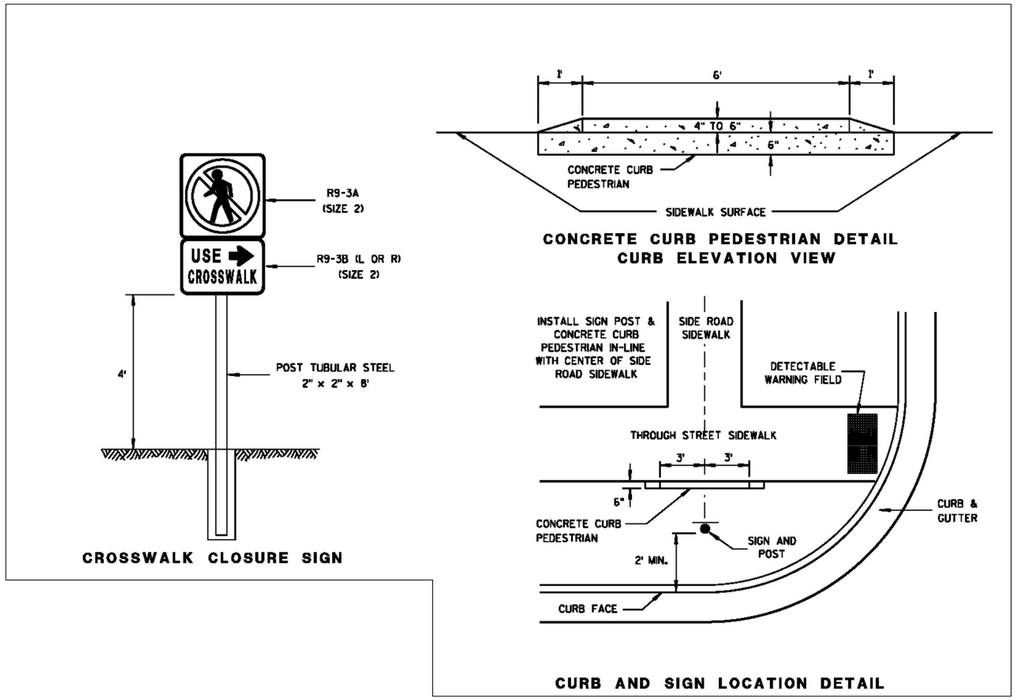
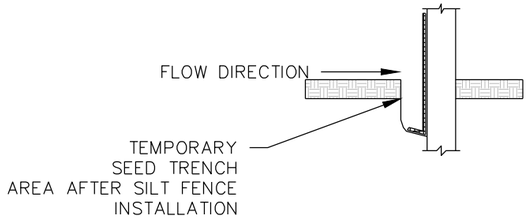


CULVERT PIPE CHECK DETAILS



CROSSWALK CLOSURE FIGURE



TEMPORARY SEEDING AT SILT FENCE

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 9	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\021001-CD.DWG

PLOT SCALE :

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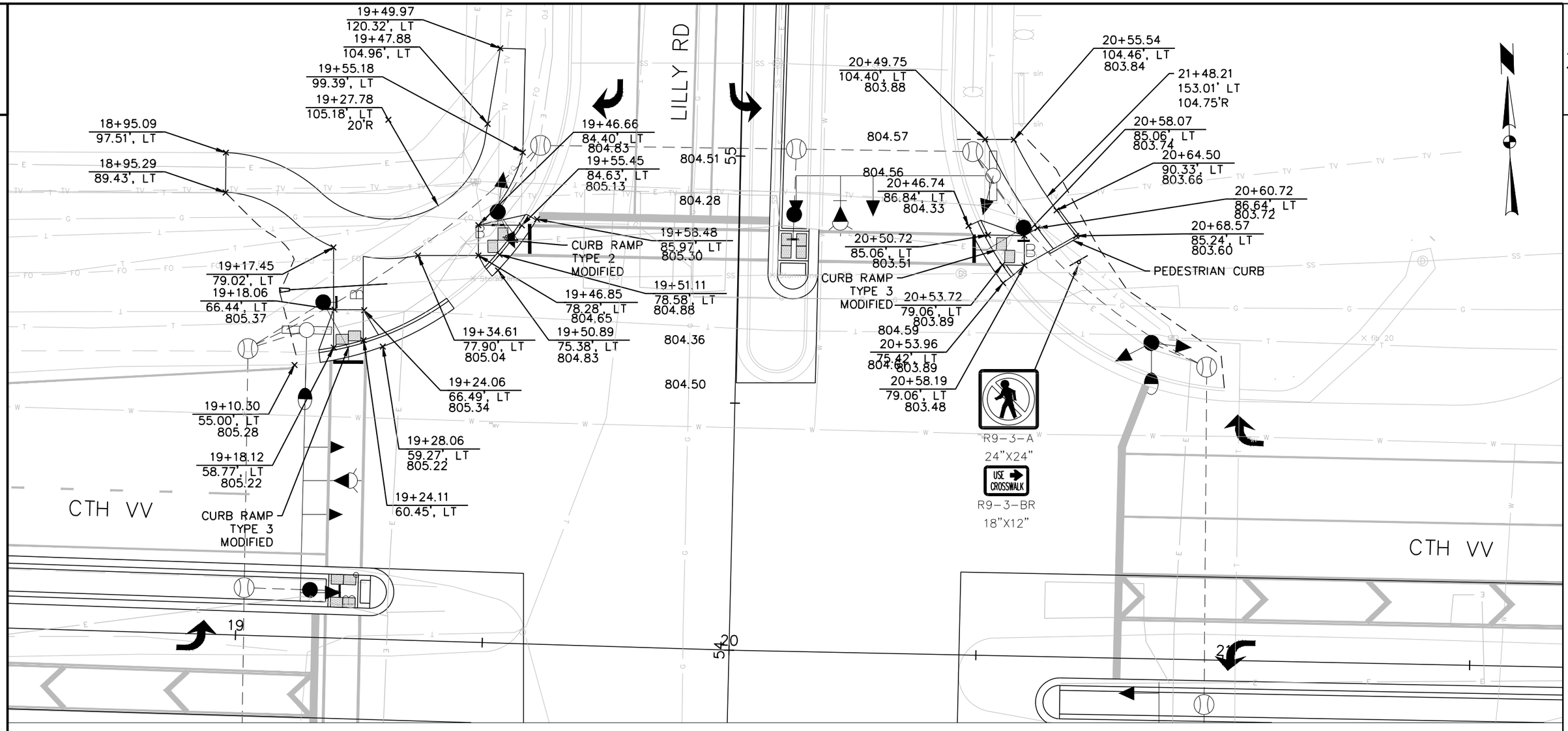


GENERAL NOTES

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

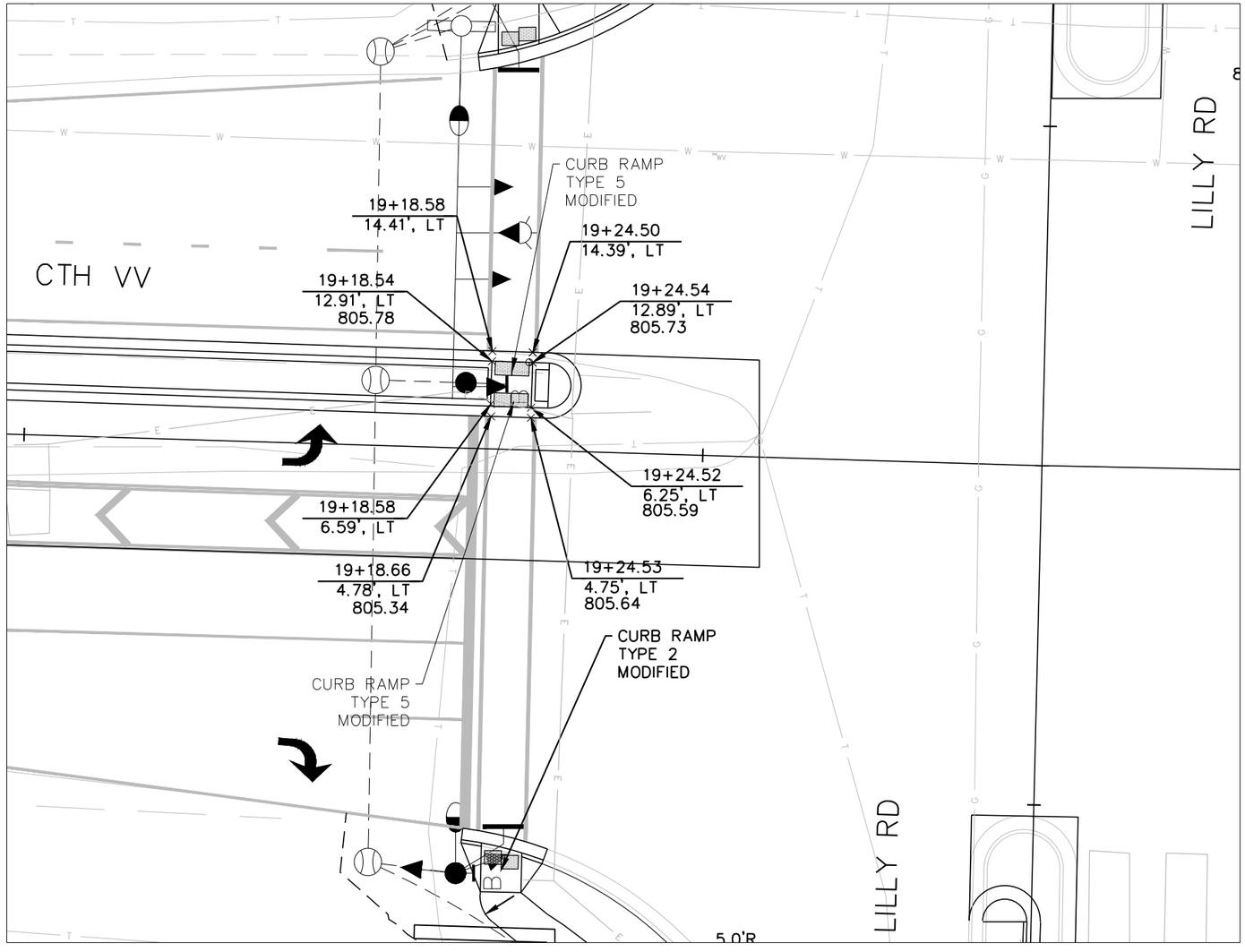
RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1

SIDEWALK CROSS SLOPE SHALL BE 1.5%

SLOPE SIDEWALK TOWARDS LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

SEE DETAIL FOR SIDEWALK CLOSURE INFORMATION

PERMANENT SIGNS R9-3-A AND R9-3-BR WILL BE PROVIDED AND INSTALLED BY WAUKESHA COUNTY.



GENERAL NOTES

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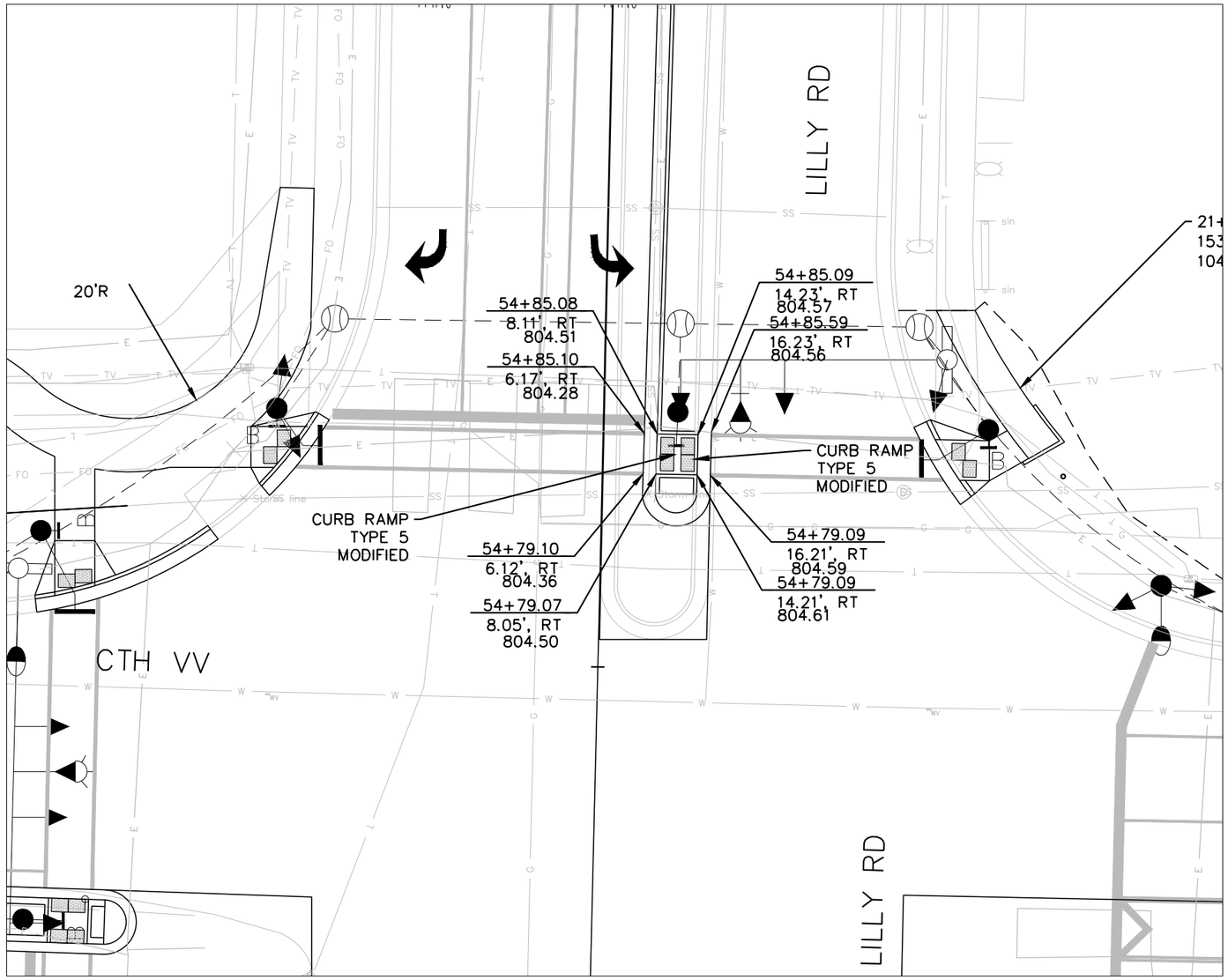
SEE DETAIL FOR SIDEWALK CLOSURE INFORMATION

2



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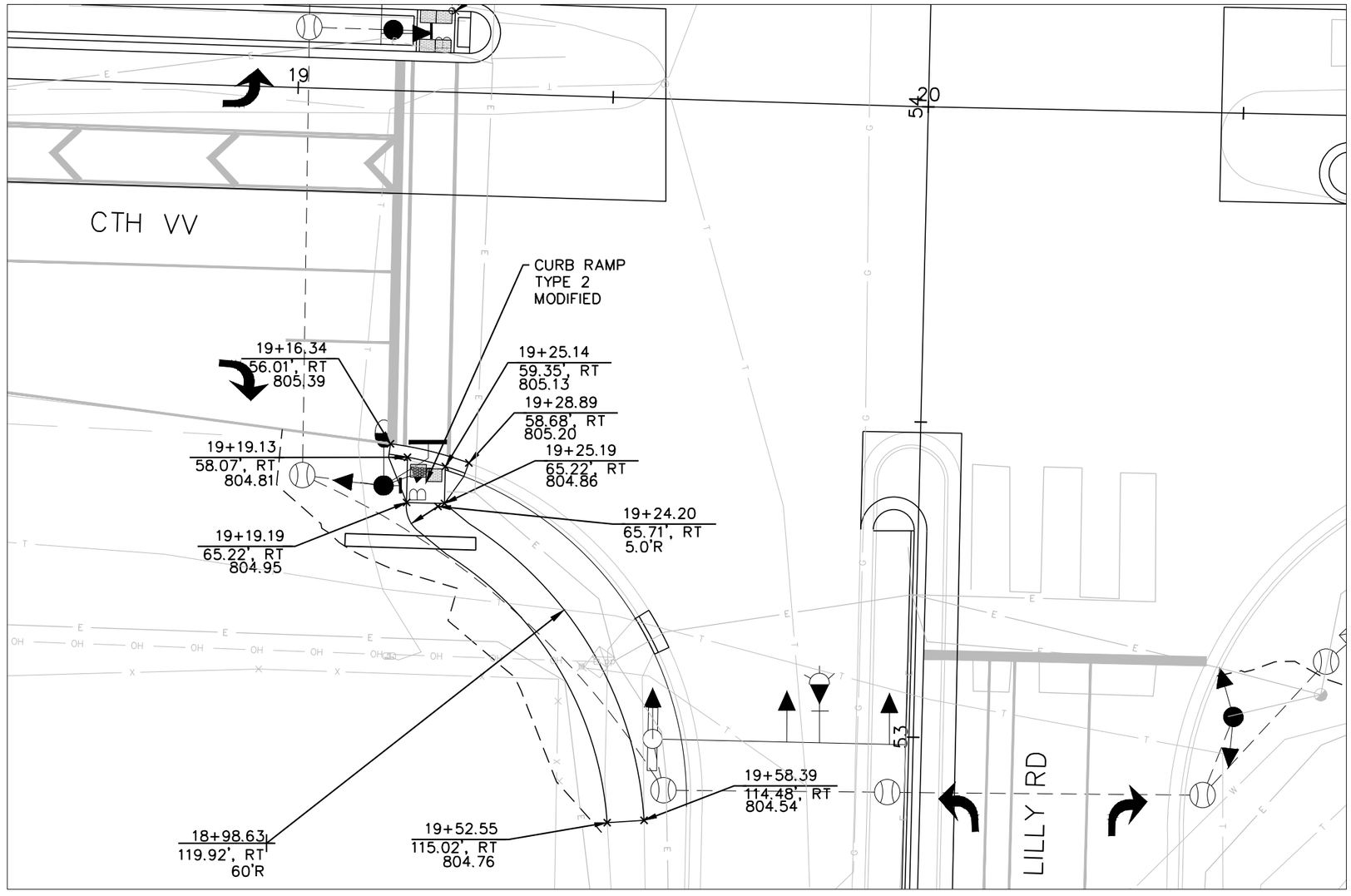
SEE DETAIL FOR SIDEWALK CLOSURE INFORMATION



GENERAL NOTES

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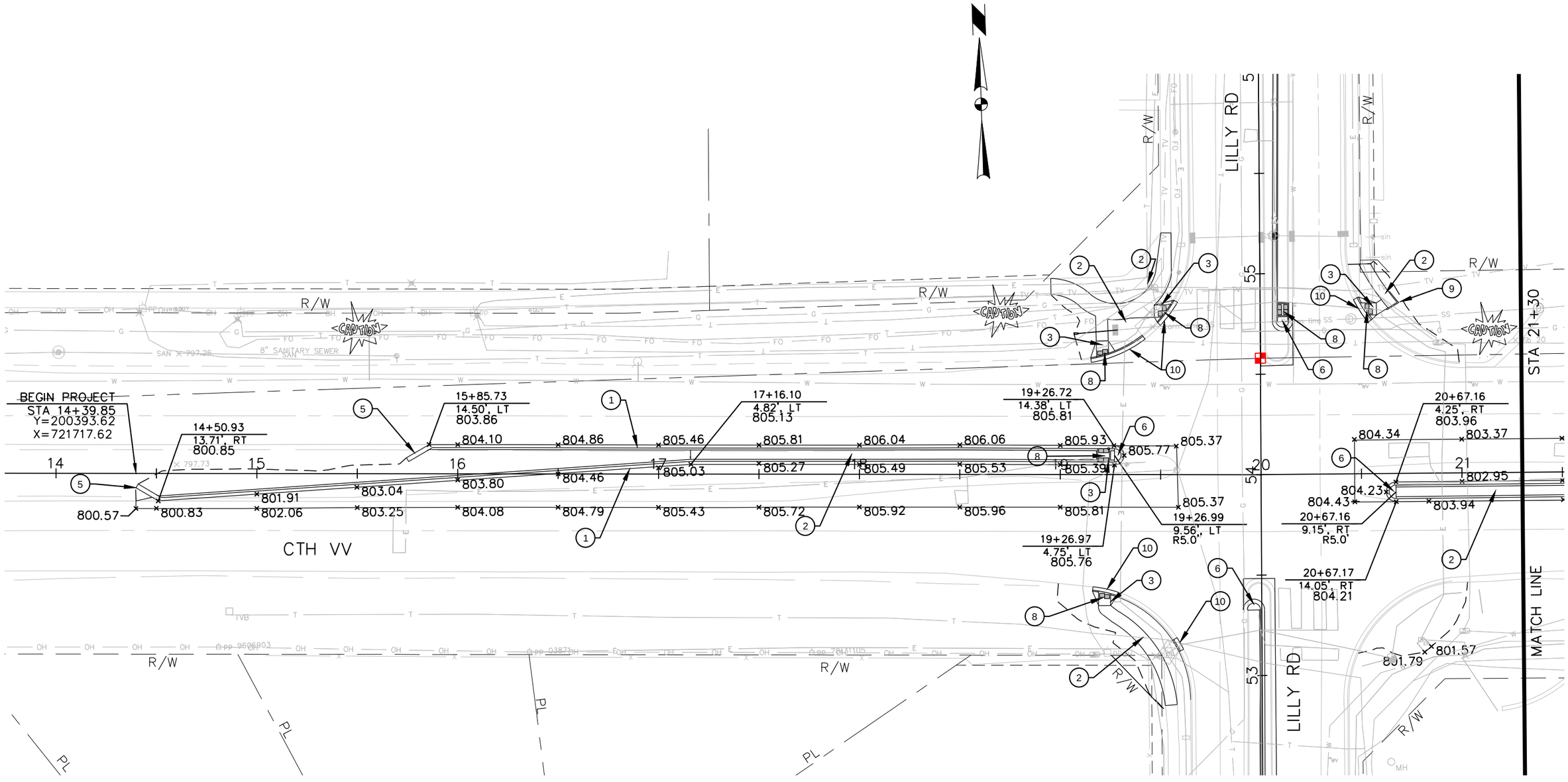
SLOPE SIDEWALK TOWARDS LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

SEE DETAIL FOR SIDEWALK CLOSURE INFORMATION

2



LEGEND

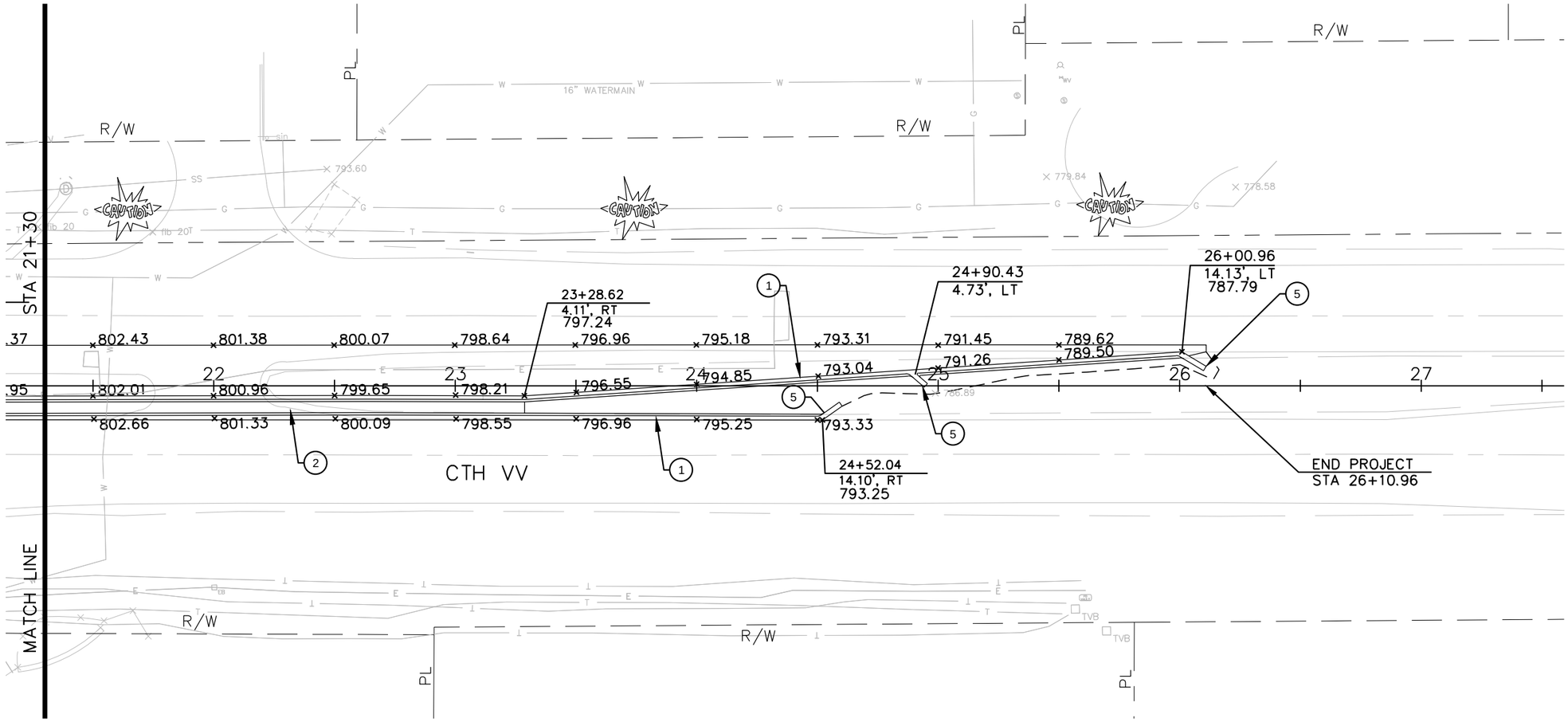
1. CONCRETE CURB & GUTTER 6–INCH SLOPED 30–INCH TYPE J
2. CONCRETE SIDEWALK 5–INCH
3. CURB RAMP (SEE DETAILS)
4. TRANSITION CURB & GUTTER OVER 10 FEET
5. ASPHALT FLUME
6. CONCRETE MEDIAN SLOPE NOSE
8. DETECTABLE WARNING FIELD
9. PEDESTRIAN CURB
10. CONCRETE CURB & GUTTER 30–INCH TYPE D

NOTE:

1. CURB DIMENSIONS ARE MEASURED TO FLANGE.
2. SEE CONSTRUCTION DETAILS FOR RAMP DETAILS.

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	PLAN DETAILS – STA 14+00 – 21+30	SHEET 14	E

2



LEGEND

1. CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J
2. CONCRETE SIDEWALK 5-INCH
3. CURB RAMP (SEE DETAIL)
4. TRANSITION CURB & GUTTER OVER 10 FEET
5. ASPHALT FLUME
6. CONCRETE MEDIAN SLOPE NOSE
8. DETECTABLE WARNING FIELD
9. PEDESTRIAN CURB

NOTE:

1. CURB DIMENSIONS ARE MEASURED TO FLANGE.
2. SEE CONSTRUCTION DETAILS FOR RAMP DETAILS.

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 15	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\021201-PD.DWG PLOT DATE : 5/9/2017 10:54 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

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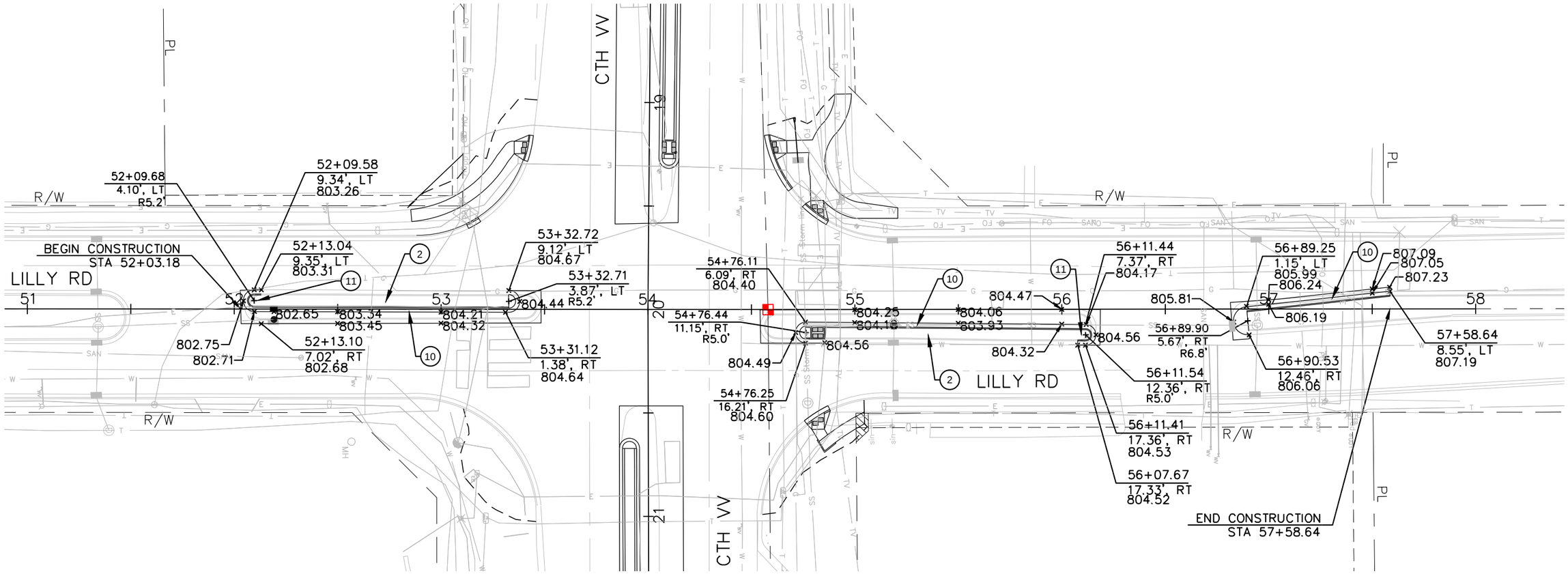


LEGEND

1. CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J
2. CONCRETE SIDEWALK 5-INCH
3. CURB RAMP (SEE DETAIL)
4. TRANSITION CURB & GUTTER OVER 10 FEET
5. ASPHALT FLUME
6. CONCRETE MEDIAN SLOPE NOSE
8. DETECTABLE WARNING FIELD
9. PEDESTRIAN CURB
10. CONCRETE CURB & GUTTER 30-INCH TYPE D
11. PROVIDE SIGN BOXOUT, INCIDENTAL TO ITEM CONCRETE SIDEWALK 5-INCH

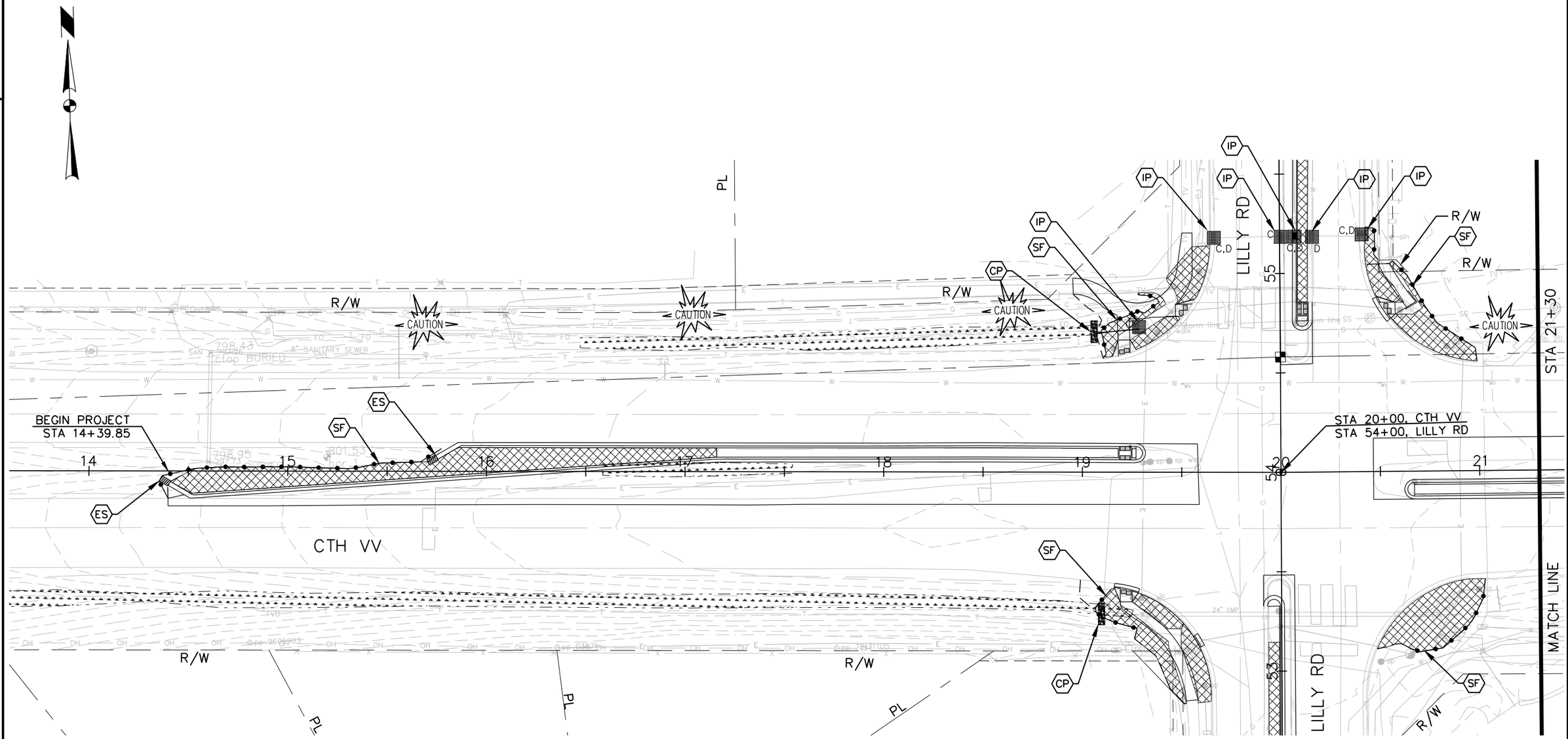
NOTE:

1. CURB DIMENSIONS ARE MEASURED TO FLANGE.
2. SEE CONSTRUCTION DETAILS FOR RAMP DETAILS.

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 16	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\021201-PD.DWG PLOT DATE : 5/9/2017 10:54 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

2



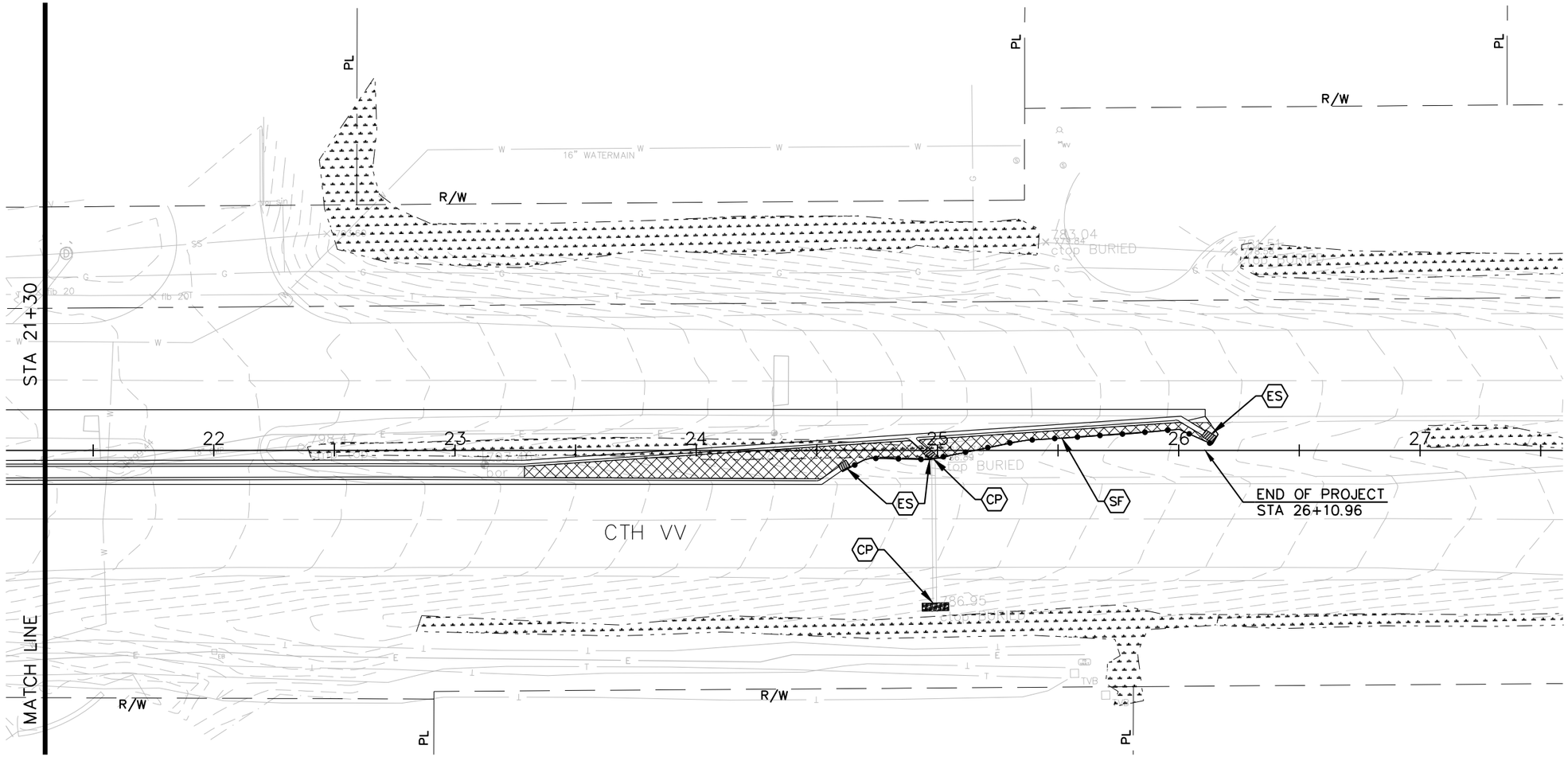
LEGEND

- SILT FENCE (SF)
- EROSION SOD (ES)
- INLET PROTECTION TYPE A, B, C OR D (IP)
- SEED, FERTILIZER, AND EROSION MAT URBAN CLASS I TYPE A
- CULVERT PIPE CHECK (CP)
- DIRECTION OF FLOW

ALL DISTURBED AREAS TO BE RESTORED WITH 4–INCH TOPSOIL, SEED, FERTILIZER AND EMAT UNLESS NOTED AS SOD.

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	EROSION CONTOL PLAN – STA 14+00 – 21+30	SHEET 17	E

2



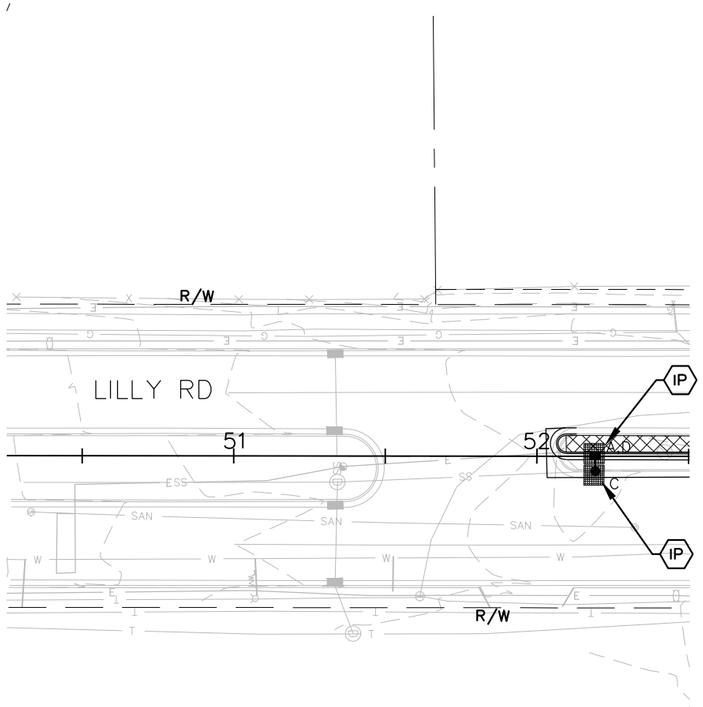
LEGEND

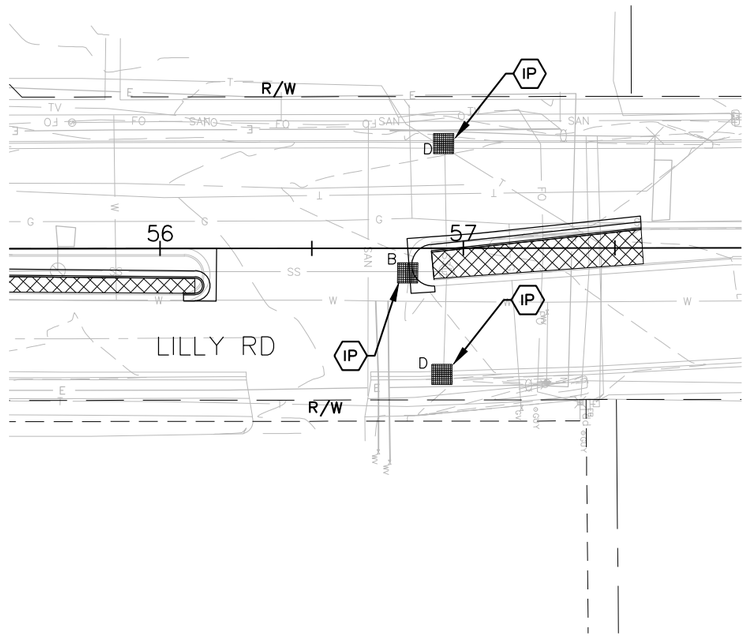
- SILT FENCE (SF)
- EROSION SOD (ES)
- INLET PROTECTION TYPE A, B, C OR D (IP)
- SEED, FERTILIZER, AND EROSION MAT URBAN CLASS I TYPE A
- CULVERT PIPE CHECK (CP)
- DIRECTION OF FLOW

ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH TOPSOIL, SEED, FERTILIZER AND EMAT UNLESS NOTED AS SOD.

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	EROSION CONTROL – STA 21+30 TO 27+50	SHEET 18	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\022001-EC.DWG PLOT DATE : 1/26/2017 11:31 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'





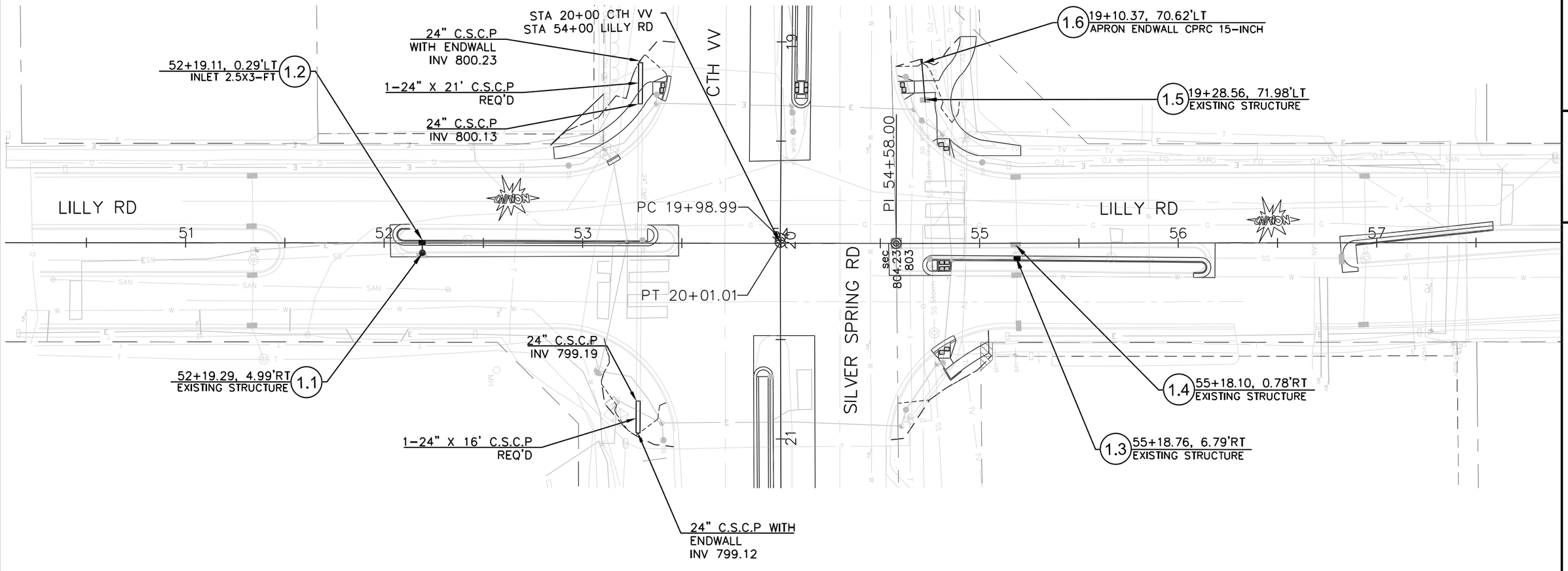
LEGEND

- SILT FENCE (SF)
- INLET PROTECTION TYPE A, B, C OR D (IP)
- SEED, FERTILIZER, AND EROSION MAT URBAN CLASS I TYPE A
- CULVERT PIPE CHECK (CP)
- DIRECTION OF FLOW

ALL DISTURBED AREAS TO BE RESTORED WITH 4-INCH TOPSOIL, SEED, FERTILIZER AND EMAT UNLESS NOTED AS SOD.

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	EROSION CONTROL PLAN – LILLY RD	SHEET 19	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\022001-EC.DWG PLOT DATE : 1/26/2017 11:31 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	STORM SEWER PLAN	SHEET 20

LEGEND

- WORK AREA
- CLASS 4 WOOD POLE
- CABLE - OVERHEAD
- SIGNAL HEAD, OVERHEAD MOUNT
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RA RED ARROW
- YA YELLOW ARROW
- GA GREEN ARROW
- TEMPORARY LUMINAIRE
- WALK/DON'T WALK INDICATOR

NOTE: ALL LENSES ARE 12-INCH

TEMPORARY SIGNAL QUANTITIES FOR INFORMATION ONLY	
SPAN WIRE	645 LF
CLASS 4 WOOD POLES	6 EA
TEMPORARY LUMINAIRES 250W HPS OR LED C	4 EA

N

R/W

POSTED SPEED LIMIT = 40MPH

LILLY RD

POSTED SPEED LIMIT = 45MPH

CTH VV (SILVER SPRING DR)

16" WATERMAIN

18" CMP INV 799.44

24" RCP INV 799.19

WP1 WP2 WP3 WP4 WP5 WP6

OH

WET

CONSTRUCTION NOTES

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, AND HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
5. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED, OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON TEMPORARY SIGNALS.
6. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF 2 FEET FROM THE FACE OF CURB TO THE SIDE OF THE POLE OR POST.
7. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
8. MAINTAIN CROSSWALK ACCESS ACROSS INTERSECTION AT ALL TIMES. SEE STAGING PLANS FOR DETAILS. COVER & DE-ENERGIZE PEDESTRIAN HEADS WHEN NOT IN USE.

TRAFFIC CONTROL SIGNAL
CTH VV & LILLY ROAD
WAUKESHA COUNTY
WAUKESHA

DATE: 10/16
SIGNAL NO.
CONTROLLER TYPE: TEMP

COUNTY CONTACT: BRUCE BARNES
DESIGNED BY: GRAEF
REVISED BY:

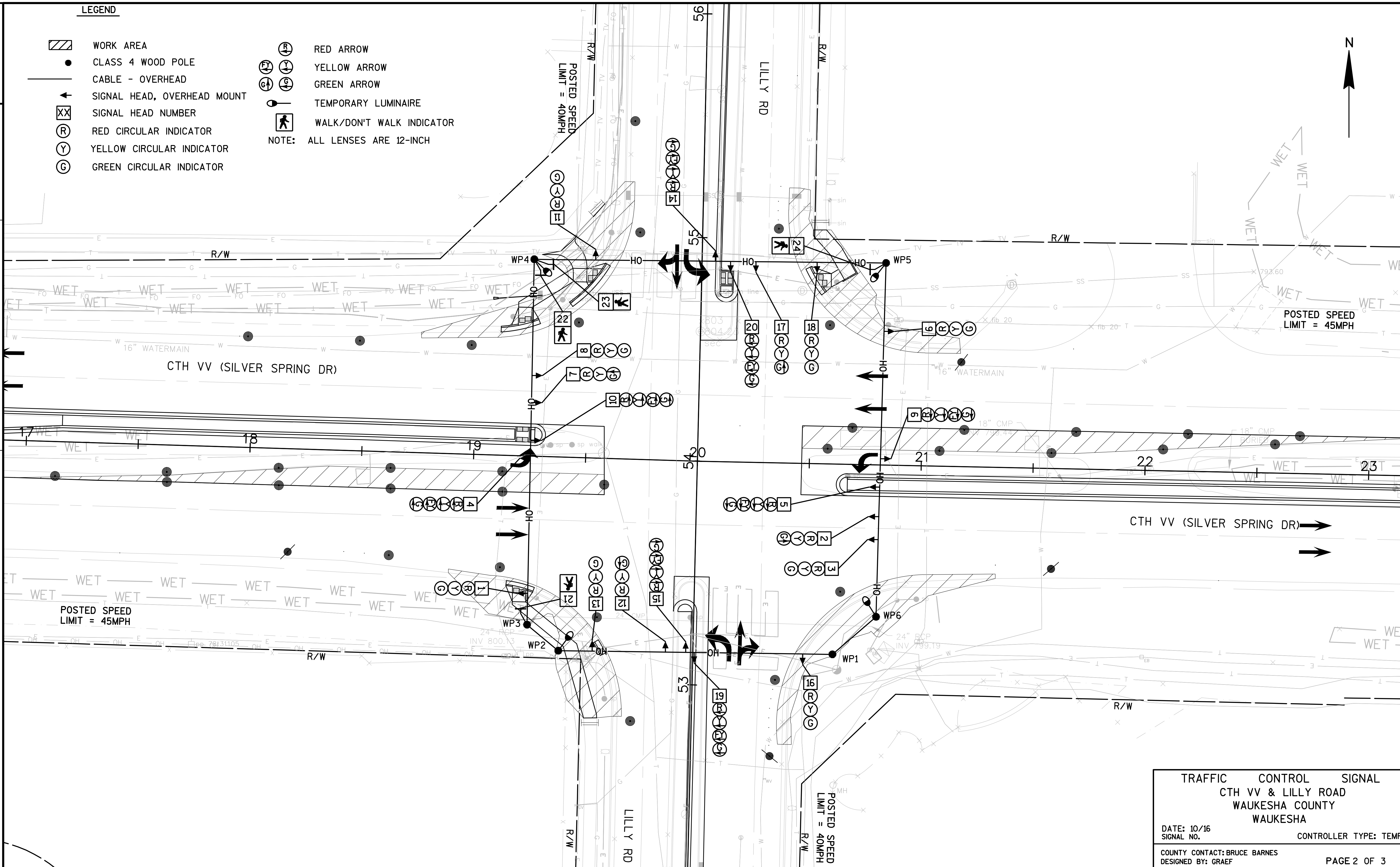
PAGE 1 OF 3

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 1	SHEET 21	E

FILE NAME : L:\JOBS2015\20150520\CAD\TRANSPORTATION\DWG\SHEETSPLAN\024011_SP.DWG
LAYOUT NAME - ****

PLOT DATE : 10/24/2016 10:38 AM PLOT BY : SANCHEZ, ANGEL PLOT NAME : PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42



LEGEND
WORK AREA
CLASS 4 WOOD POLE
CABLE - OVERHEAD
SIGNAL HEAD, OVERHEAD MOUNT
SIGNAL HEAD NUMBER
RED CIRCULAR INDICATOR
YELLOW CIRCULAR INDICATOR
GREEN CIRCULAR INDICATOR
RED ARROW
YELLOW ARROW
GREEN ARROW
TEMPORARY LUMINAIRE
WALK/DON'T WALK INDICATOR
NOTE: ALL LENSES ARE 12-INCH
N
POSTED SPEED LIMIT = 40MPH
POSTED SPEED LIMIT = 45MPH
LILLY RD
CTH VV (SILVER SPRING DR)
R/W
WP1
WP2
WP3
WP4
WP5
WP6
16" WATERMAIN

TRAFFIC CONTROL SIGNAL
CTH VV & LILLY ROAD
WAUKESHA COUNTY
WAUKESHA

DATE: 10/16
SIGNAL NO.
CONTROLLER TYPE: TEMP

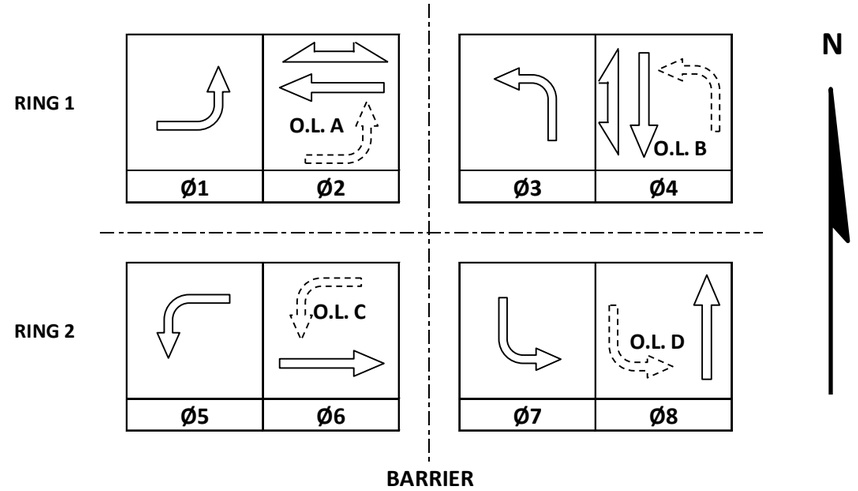
COUNTY CONTACT: BRUCE BARNES
DESIGNED BY: GRAEF
REVISED BY:
PAGE 2 OF 3

PROJECT NO:2753-01-70	HWY:CTH VV	COUNTY:WAUKESHA	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2	SHEET 22	E

FILE NAME : L:\JOBS2015\20150520\CAD\TRANSPORTATION\DWG\SHEETSPLAN\024012_SP.DWG
LAYOUT NAME - ####
PLOT DATE : 10/24/2016 10:48 AM
PLOT BY : SANCHEZ, ANGEL
PLOT NAME :
PLOT SCALE : 1" = 40'_XREF
WISDOT/CADDS SHEET 42

2

	HEAD NUMBERS	FLASH
Ø1	4,5	-
Ø2	6,7,8	R
Ø3	19,20	-
Ø4	11,12,13	R
Ø5	9,10	-
Ø6	1,2,3	R
Ø7	14,15	-
Ø8	16,17,18	R
Ø2P	23,24	--
Ø4P	21,22	--
Ø6P		--
Ø8P		--
OLA	4,5	R ←
OLB	19,20	R ←
OLC	9,10	R ←
OLD	14,15	R ←



CONTROLLER LOGIC

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

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

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

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

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

CTH VV & LILLY ROAD
WAUKESHA
WAUKESHA COUNTY

SIGNAL NO: CABINET TYPE: TEMP
CONTROLLER TYPE: TEMP
DATE: 10/16 PAGE NO. 3 OF 3

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- NON-INTRUSIVE DETECTION ZONE
- VX VIDEO OR MULTI-SENSOR DETECTION UNITS
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- WALK/DON'T WALK INDICATOR 16" WITH COUNTDOWN TIMER
- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- LUMINAIRE LED TYPE C
- MUNICIPAL LUMINAIRE

- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- FY Y YELLOW ARROW
- G GREEN ARROW
- OVERHEAD STREET NAME SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

N

CTH VV (SILVER SPRING DR)

LILLY RD

POSTED SPEED LIMIT = 40MPH

POSTED SPEED LIMIT = 45MPH

290' TO NEAR RIGHT SIGNAL

220' TO NEAR RIGHT SIGNAL

150'

ONLY

R/W

16" WATERMAIN

24" RCP

18" CMP

PB1 PB2 PB3 PB4 PB5 PB6 PB7 PB8 PB9 PB10 PB11 PB12 PB13

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB9 SB10 SB11 SB12 SB13

CB1

V1 V2 V3 V4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

31 32 33 41 42 43 51 52 53

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOW.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. THE CONDUIT EMBEDDED IN A TYPE 10 OR 13 CONCRETE BASE SHALL BE 3" CONDUIT.
5. INSTALL CABINET BASE 6" ABOVE ROADWAY ELEVATION
6. VIDEO DETECTION ZONES TO BE PROGRAMMED IN THE FIELD.
7. REFER TO SIGNING PLAN FOR SIGNS TO BE MOUNTED ON SIGNAL EQUIPMENT.

TRAFFIC CONTROL SIGNAL
CTH VV & LILLY ROAD
WAUKESHA COUNTY
WAUKESHA

DATE: 10/16
SIGNAL NO.

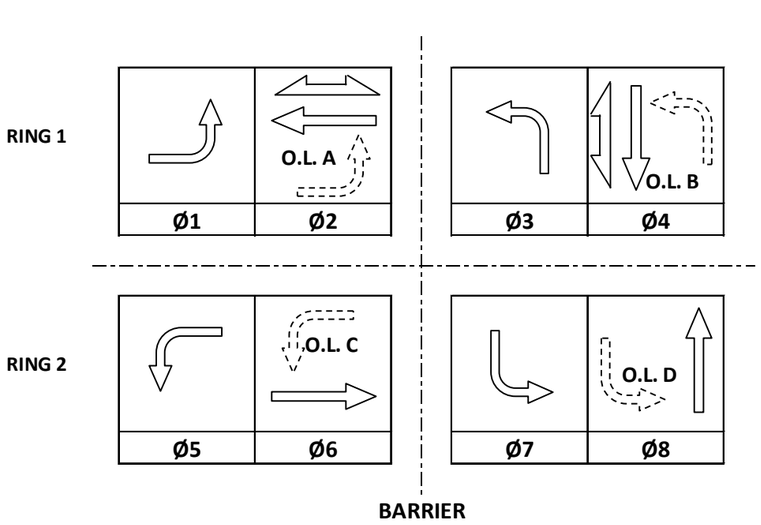
CABINET TYPE: TS-2
CONTROLLER TYPE: EPAC

COUNTY CONTACT: BRUCE BARNES
DESIGNED BY: GRAEF
REVISED BY:

PAGE 1 OF 2

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 24	E

	HEAD NUMBERS	FLASH
Ø1	4,5	-
Ø2	6,7,8	R
Ø3	19,20	-
Ø4	11,12,13	R
Ø5	9,10	-
Ø6	1,2,3	R
Ø7	14,15	-
Ø8	16,17,18	R
Ø2P	23,24	--
Ø4P	21,22	--
Ø6P		--
Ø8P		--
OLA	4,5	R ←
OLB	19,20	R ←
OLC	9,10	R ←
OLD	14,15	R ←



CONTROLLER LOGIC

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

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

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

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

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

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

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13	19	17	23	21	27	25	31	29	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	11	31	42	51	71	82											PLAN LOOP DETECTOR*(S)
ASSIGNED PHASE	1	3	4	5	7	8											ASSIGNED PHASE
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OPERATION MODE
SWITCH																	SWITCH
EXTEND																	EXTEND
DELAY			X			X											DELAY

DETECTOR INPUT	4	2	8	6	12	10	16	14	20	18	24	22	28	26	32	30	DETECTOR INPUT
PLAN LOOP DETECTOR*(S)	21	41	43	61	81	83											PLAN LOOP DETECTOR*(S)
ASSIGNED PHASE	2	4	4	6	8	8											ASSIGNED PHASE
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OPERATION MODE
SWITCH																	SWITCH
EXTEND																	EXTEND
DELAY																	DELAY

CTH VV & LILLY ROAD
WAUKESHA
WAUKESHA COUNTY

SIGNAL NO:	CABINET TYPE: TS2
	CONTROLLER TYPE: EPAC
DATE: 10/16	PAGE NO. 2 OF 2

PROJECT ID:	2753-01-70
INTERSECTION:	CTH VV & LILLY ROAD

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

CB1 TO	AWG14 # OF CONDUCTORS	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	
SB1	12											
		14				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		16	RED	ORG	GRN							
SB2	12											
		12	RED	ORG	GRN							
		13	RED	ORG	GRN							
		15				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
SB3	12											
		1	RED	ORG	GRN							
		9				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		21								BLK	BLU	
		B										WHT/BLK
SB4	7											
		B										WHT/BLK
SB5	12											
		7	RED	ORG	GRN							
		8	RED	ORG	GRN							
		10				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
SB6	7											
		22								BLK	BLU	
		B										WHT/BLK
SB7	7											
		23								BLK	BLU	
		B										WHT/BLK
SB8	12											
		11	RED/BLK	ORG/BLK	GRN/BLK							
		19				RED	ORG	GRN	BLK/WHT			
SB9	7											
		B										WHT/BLK
SB10	12											
		17	RED	ORG	GRN							
		18	RED	ORG	GRN							
		20				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
SB11	7											
		24								BLK	BLU	
		B										WHT/BLK
SB12	12											
		4				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			
		6	RED	ORG	GRN							
SB13	12											
		2	RED	ORG	GRN							
		3	RED	ORG	GRN							
		5				RED/BLK	ORG/BLK	GRN/BLK	BLK/WHT			

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	SB13
SB13	CB1

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	HEAD A (SB5)
CB1	HEAD B (SB13)
CB1	HEAD C (SB2)
CB1	HEAD D (SB10)

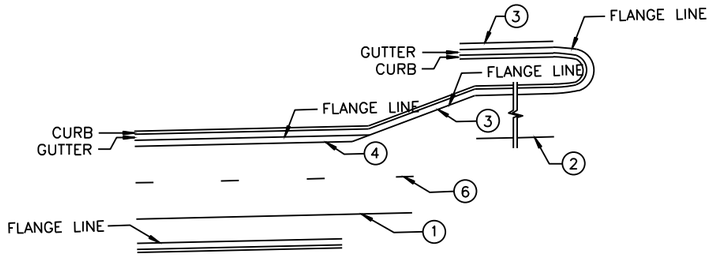
PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	CB1
PB2	SB1
PB3	SB2
PB4	SB2
PB5	SB3
PB6	SB4
PB7	SB5
PB8	SB8
PB9	SB9
PB10	SB10
PB11	SB12
PB12	SB13
PB13	SB13
PB14	CB1

LIGHTING UF 10 AWG W/ GROUND	
FROM	TO
CB1	SB3
SB3	SB5
CB1	SB13
SB13	SB12

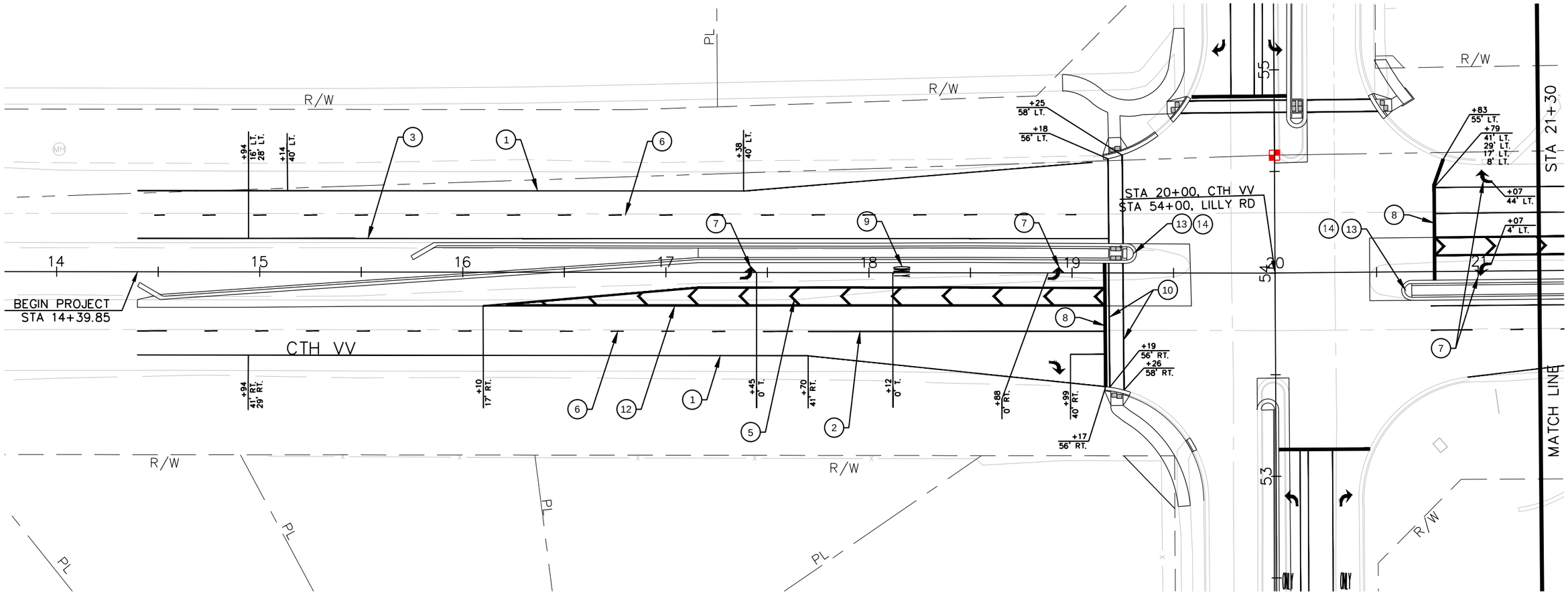
NOTES:
*USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
*ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
*RECONNECT THE GROUNDING CONDUCTORS WHENEVER THE CIRCUIT HAS BEEN INTERRUPTED TO ENSURE THE GROUNDING CIRCUIT IS COMPLETE.

TRAFFIC CONTROL SIGNAL
CTH VV & LILLY ROAD
WAUKESHA COUNTY
WAUKESHA
DATE: 10/16 CABINET TYPE: TS-2
SIGNAL NO. CONTROLLER TYPE: EPAC
COUNTY CONTACT: BRUCE BARNES
DESIGNED BY: GRAEF PAGE 1 OF 1
REVISED BY:

FILE NAME : L:\JOBS2015\20150520\CAD\TRANSPORTATION\DWG\SHEETSPLAN\024021_SP.DWG
LAYOUT NAME - 024021_SP - 024201_CR
PLOT DATE : 10/25/2016 2:32 PM PLOT BY : SANCHEZ, ANGEL PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 42



TYPICAL MARKING DETAIL – TURN LANE

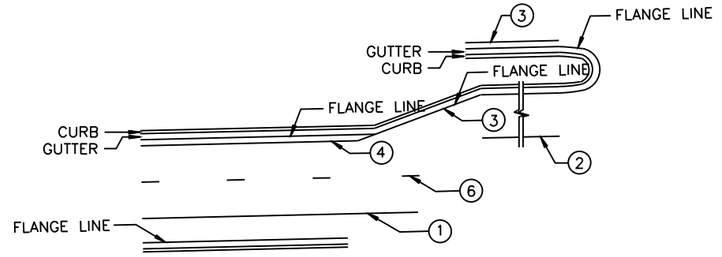


LEGEND

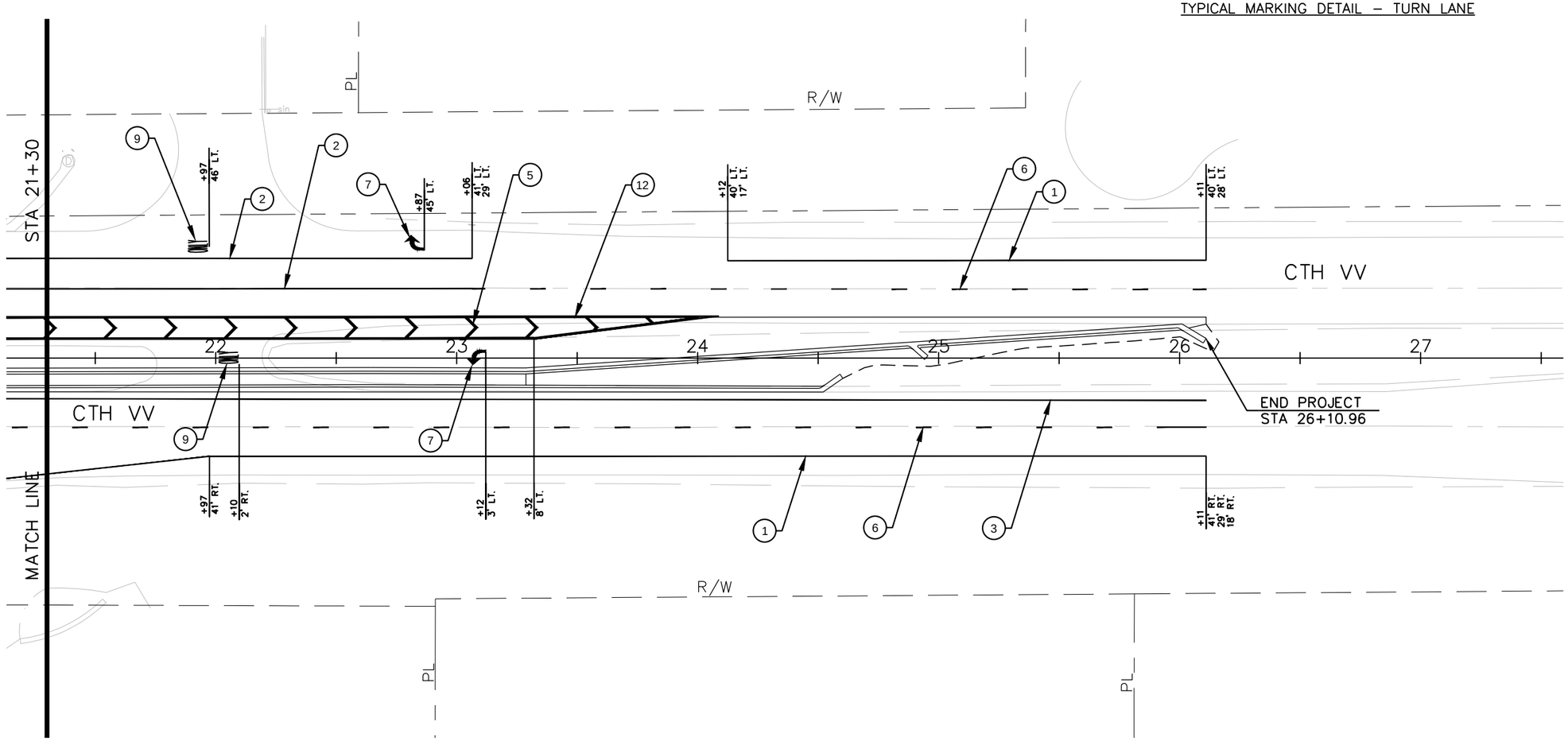
1. PAVEMENT MARKING, EPOXY, 4–INCH WHITE, (SOLID), EDGE LINE
2. PAVEMENT MARKING, EPOXY 8–INCH WHITE, (SOLID), CHANNELIZING
3. PAVEMENT MARKING, EPOXY, 4–INCH YELLOW, (SOLID), MEDIAN
4. PAVEMENT MARKING, EPOXY, 4–INCH YELLOW, (SOLID), MEDIAN EDGE
5. PAVEMENT MARKING, EPOXY, 12–INCH WHITE, (SOLID), DIAGONAL
6. PAVEMENT MARKING EPOXY, 4–INCH WHITE DASHED (12.5' LINE 37.5' GAP)
7. PAVEMENT MARKING ARROWS, EPOXY, TYPE 2 WHITE
8. PAVEMENT MARKING, EPOXY, 18–INCH WHITE, STOP LINE
9. PAVEMENT MARKING, EPOXY, WORDS, WHITE
10. PAVEMENT MARKING, EPOXY, 6–INCH WHITE, CROSSWALK
11. CURB RAMP DETECTABLE WARNING FIELD YELLOW
12. PAVEMENT MARKING, EPOXY, 4–INCH WHITE, (SOLID), DOUBLE
13. PAVEMENT MARKING, EPOXY, ISLAND NOSE (SEE S.D.D.)
14. PAVEMENT MARKING, EPOXY, CURB (SEE S.D.D.)

*NOTE: SEE STANDARD DETAIL DRAWINGS FOR PAVEMENT MARKINGS (LEFT TURN LANE, WORKS, ARROWS)

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	PAVEMENT MARKING – STA 14+00 – 21+30	SHEET 27	E



TYPICAL MARKING DETAIL – TURN LANE



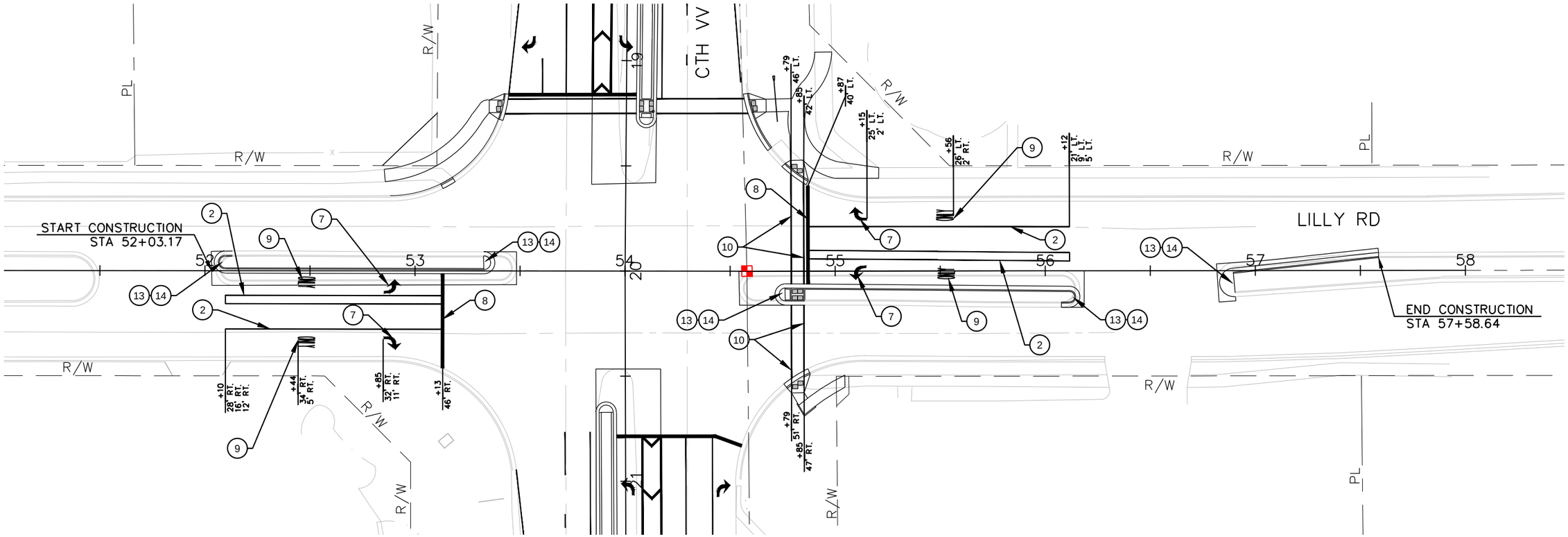
LEGEND

1. PAVEMENT MARKING, EPOXY, 4–INCH WHITE, (SOLID), EDGE LINE
2. PAVEMENT MARKING, EPOXY 8–INCH WHITE, (SOLID), CHANNELIZING
3. PAVEMENT MARKING, EPOXY, 4–INCH YELLOW, (SOLID), MEDIAN
4. PAVEMENT MARKING, EPOXY, 4–INCH YELLOW, (SOLID), MEDIAN EDGE
5. PAVEMENT MARKING, EPOXY, 12–INCH WHITE, (SOLID), DIAGONAL
6. PAVEMENT MARKING EPOXY, 4–INCH WHITE DASHED (12.5' LINE 37.5' GAP)
7. PAVEMENT MARKING ARROWS, EPOXY, TYPE 2 WHITE
8. PAVEMENT MARKING, EPOXY, 18–INCH WHITE, STOP LINE
9. PAVEMENT MARKING, EPOXY, WORDS, WHITE
10. PAVEMENT MARKING, EPOXY, 6–INCH WHITE, CROSSWALK
11. CURB RAMP DETECTABLE WARNING FIELD YELLOW
12. PAVEMENT MARKING, EPOXY, 4–INCH WHITE, (SOLID), DOUBLE
13. PAVEMENT MARKING, EPOXY, ISLAND NOSE (SEE S.D.D.)
14. PAVEMENT MARKING, EPOXY, CURB (SEE S.D.D.)

*NOTE: SEE STANDARD DETAIL DRAWINGS FOR PAVEMENT MARKINGS (LEFT TURN LANE, WORKS, ARROWS)

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	PAVEMENT MARKING – STA 21+30 TO 27+50	SHEET 28	E

2



LEGEND

1. PAVEMENT MARKING, EPOXY, 4–INCH WHITE, (SOLID), EDGE LINE
2. PAVEMENT MARKING, EPOXY 8–INCH WHITE, (SOLID), CHANNELIZING
3. PAVEMENT MARKING, EPOXY, 4–INCH YELLOW, (SOLID), MEDIAN
4. PAVEMENT MARKING, EPOXY, 4–INCH YELLOW, (SOLID), MEDIAN EDGE
5. PAVEMENT MARKING, EPOXY, 12–INCH WHITE, (SOLID), DIAGONAL
6. PAVEMENT MARKING EPOXY, 4–INCH WHITE DASHED (12.5' LINE 37.5' GAP)
7. PAVEMENT MARKING ARROWS, EPOXY, TYPE 2 WHITE
8. PAVEMENT MARKING, EPOXY, 18–INCH WHITE, STOP LINE
9. PAVEMENT MARKING, EPOXY, WORDS, WHITE
10. PAVEMENT MARKING, EPOXY, 6–INCH WHITE, CROSSWALK
11. CURB RAMP DETECTABLE WARNING FIELD YELLOW
12. PAVEMENT MARKING, EPOXY, 4–INCH WHITE, (SOLID), DOUBLE
13. PAVEMENT MARKING, EPOXY, ISLAND NOSE (SEE S.D.D.)
14. PAVEMENT MARKING, EPOXY, CURB (SEE S.D.D.)

*NOTE: SEE STANDARD DETAIL DRAWINGS FOR PAVEMENT MARKINGS (LEFT TURN LANE, WORKS, ARROWS)

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	pavement marking 52+00 – 58+00	SHEET 29	E

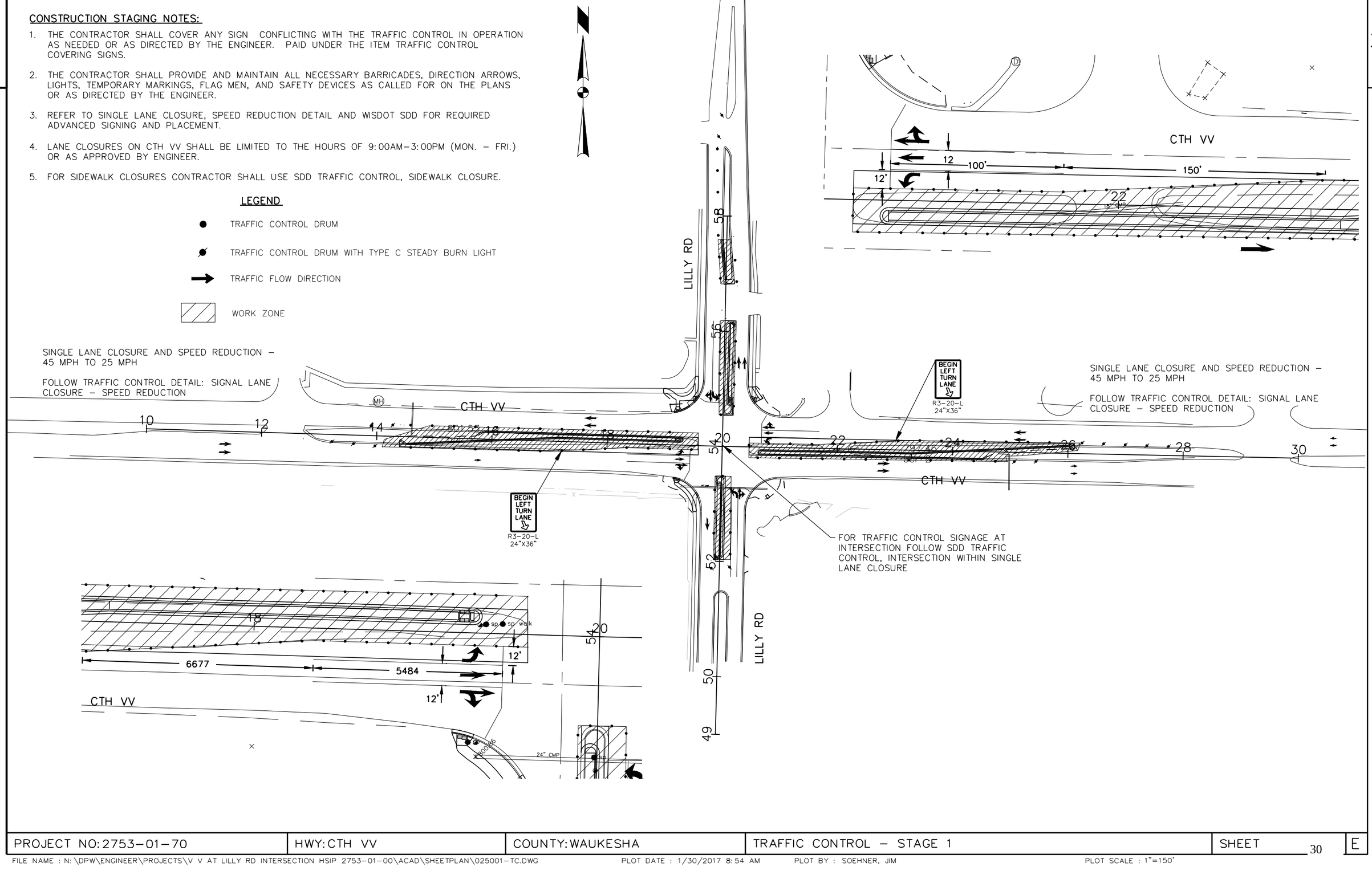
2

CONSTRUCTION STAGING NOTES:

1. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.
2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY BARRICADES, DIRECTION ARROWS, LIGHTS, TEMPORARY MARKINGS, FLAG MEN, AND SAFETY DEVICES AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. REFER TO SINGLE LANE CLOSURE, SPEED REDUCTION DETAIL AND WISDOT SDD FOR REQUIRED ADVANCED SIGNING AND PLACEMENT.
4. LANE CLOSURES ON CTH VV SHALL BE LIMITED TO THE HOURS OF 9:00AM–3:00PM (MON. – FRI.) OR AS APPROVED BY ENGINEER.
5. FOR SIDEWALK CLOSURES CONTRACTOR SHALL USE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC FLOW DIRECTION
- WORK ZONE



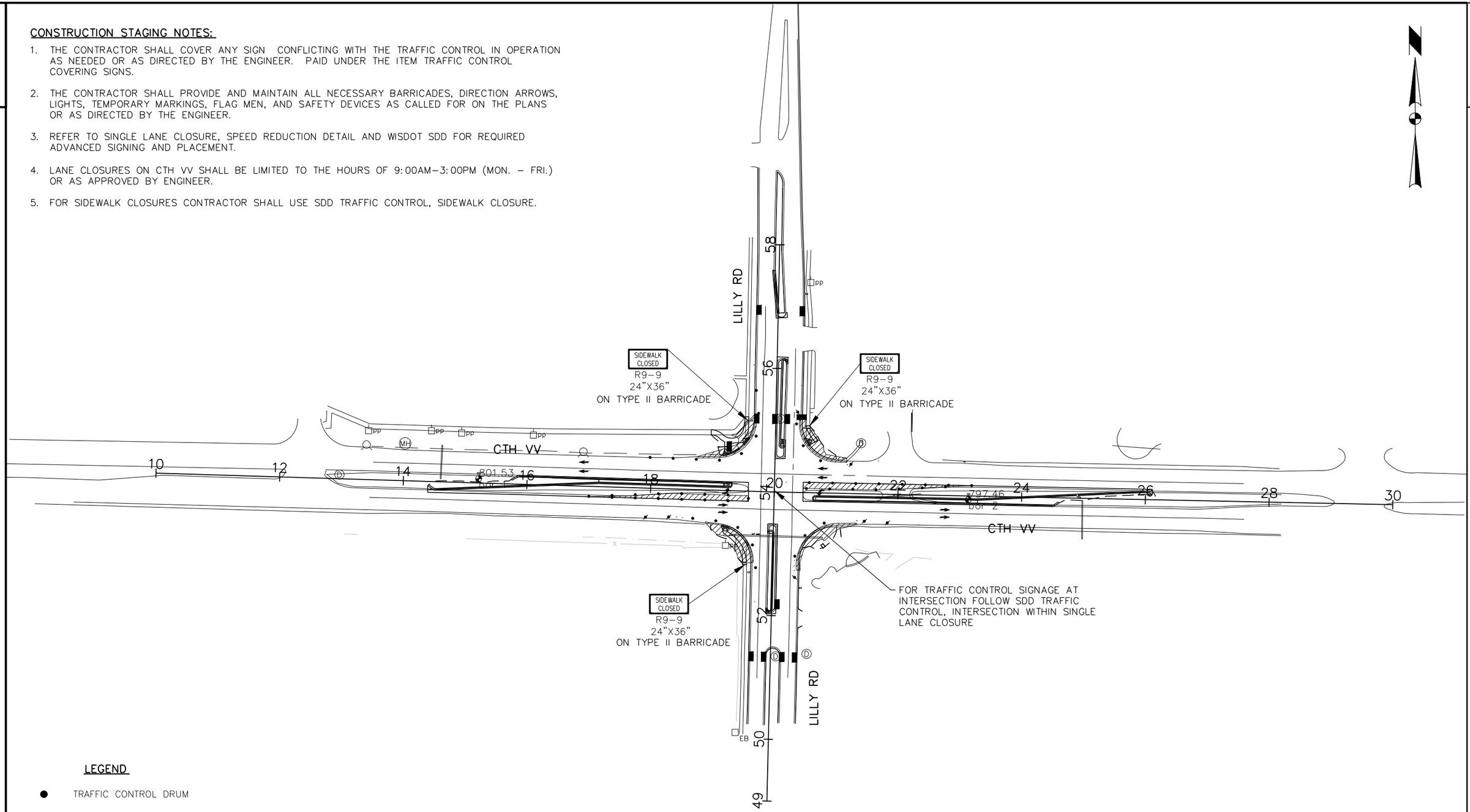
PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	TRAFFIC CONTROL – STAGE 1	SHEET 30	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753–01–00\ACAD\SHEETPLAN\025001–TC.DWG PLOT DATE : 1/30/2017 8:54 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=150'

2

CONSTRUCTION STAGING NOTES:

1. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.
2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL NECESSARY BARRICADES, DIRECTION ARROWS, LIGHTS, TEMPORARY MARKINGS, FLAG MEN, AND SAFETY DEVICES AS CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
3. REFER TO SINGLE LANE CLOSURE, SPEED REDUCTION DETAIL AND WISDOT SDD FOR REQUIRED ADVANCED SIGNING AND PLACEMENT.
4. LANE CLOSURES ON CTH VV SHALL BE LIMITED TO THE HOURS OF 9:00AM–3:00PM (MON. – FRI.) OR AS APPROVED BY ENGINEER.
5. FOR SIDEWALK CLOSURES CONTRACTOR SHALL USE SDD TRAFFIC CONTROL, SIDEWALK CLOSURE.

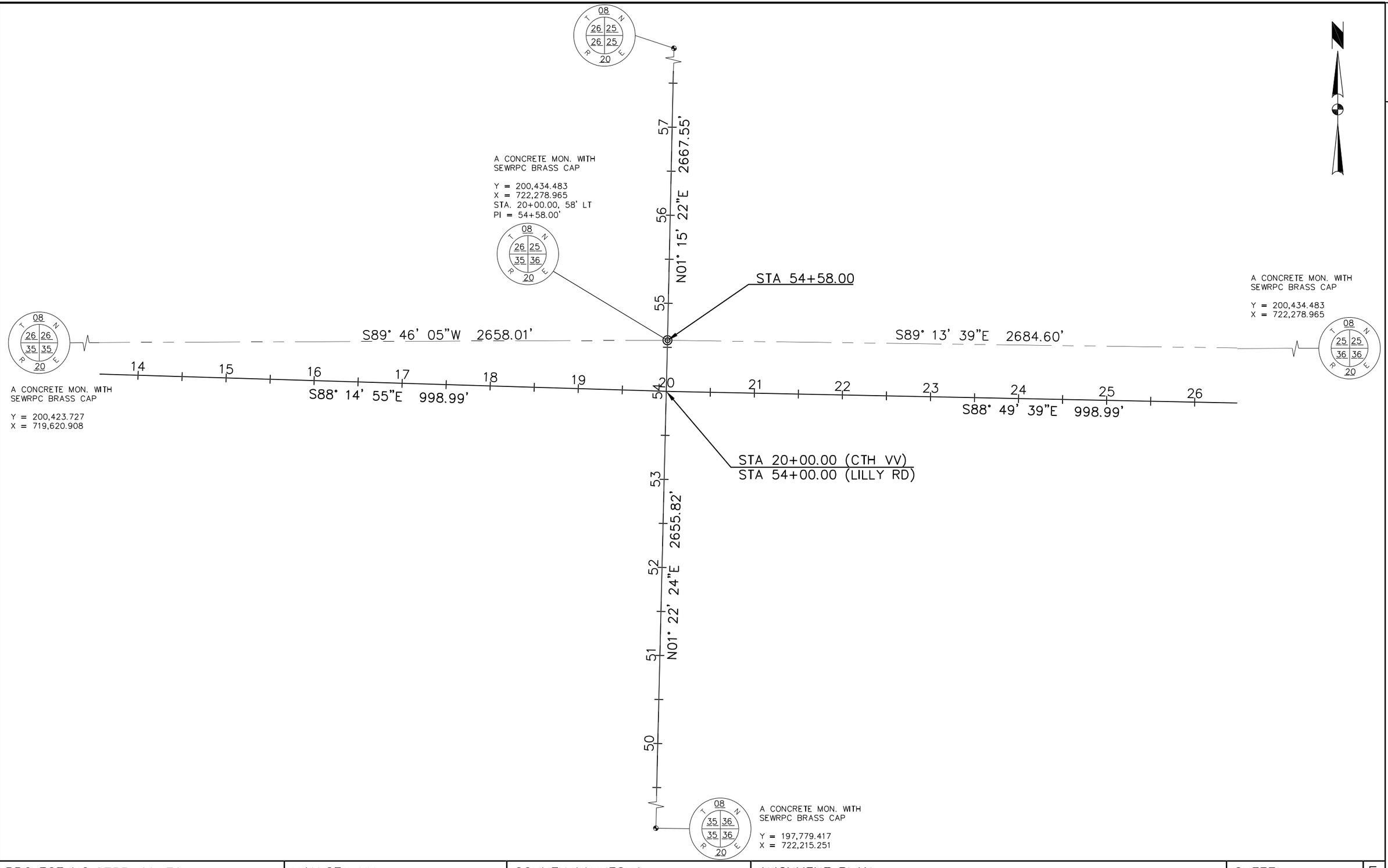


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC FLOW DIRECTION
- WORK ZONE

PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	TRAFFIC CONTROL – STAGE 2	SHEET 31	E

2



PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	ALIGNMENT PLAN	SHEET 32	E

2753-01-70

Line	Item	Item Description	Unit	Total	Qty
0010	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0020	204.0150	Removing Curb & Gutter	LF	518.000	518.000
0030	204.0170	Removing Fence	LF	50.000	50.000
0040	205.0100	Excavation Common	CY	1,526.000	1,526.000
0050	213.0100	Finishing Roadway (project) 01. 2753-01-70	EACH	1.000	1.000
0060	305.0110	Base Aggregate Dense 3/4-Inch	TON	7.000	7.000
0070	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,887.000	3,887.000
0080	310.0110	Base Aggregate Open-Graded	TON	8.000	8.000
0090	455.0605	Tack Coat	GAL	128.000	128.000
0100	460.6223	HMA Pavement 3 MT 58-28 S	TON	589.000	589.000
0110	460.6224	HMA Pavement 4 MT 58-28 S	TON	328.000	328.000
0120	465.0125	Asphaltic Surface Temporary	TON	5.000	5.000
0130	465.0315	Asphaltic Flumes	SY	45.000	45.000
0140	521.0124	Culvert Pipe Corrugated Steel 24-Inch	LF	37.000	37.000
0150	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	2.000	2.000
0160	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	1.000	1.000
0170	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	400.000	400.000
0180	601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF	1,738.000	1,738.000
0190	601.0600	Concrete Curb Pedestrian	LF	15.000	15.000
0200	602.0410	Concrete Sidewalk 5-Inch	SF	5,038.000	5,038.000
0210	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	96.000	96.000
0220	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	5.000	5.000
0230	608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	19.000	19.000
0240	611.0410	Reconstructing Catch Basins	EACH	2.000	2.000
0250	611.0420	Reconstructing Manholes	EACH	2.000	2.000
0260	611.0530	Manhole Covers Type J	EACH	2.000	2.000
0270	611.3253	Inlets 2.5x3-FT	EACH	1.000	1.000
0280	611.9705	Salvaged Manhole Covers	EACH	1.000	1.000
0290	611.9710	Salvaged Inlet Covers	EACH	2.000	2.000
0300	612.0404	Pipe Underdrain Wrapped 4-Inch	LF	406.000	406.000
0310	619.1000	Mobilization	EACH	1.000	1.000
0320	620.0300	Concrete Median Sloped Nose	SF	120.000	120.000
0330	621.0100	Landmark Reference Monuments	EACH	1.000	1.000
0340	625.0100	Topsoil	SY	244.000	244.000
0350	625.0500	Salvaged Topsoil	SY	772.000	772.000
0360	628.1504	Silt Fence	LF	730.000	730.000
0370	628.1520	Silt Fence Maintenance	LF	730.000	730.000

2753-01-70

Line	Item	Item Description	Unit	Total	Qty
0380	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0390	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0400	628.2006	Erosion Mat Urban Class I Type A	SY	1,051.000	1,051.000
0410	628.7010	Inlet Protection Type B	EACH	1.000	1.000
0420	628.7015	Inlet Protection Type C	EACH	9.000	9.000
0430	628.7020	Inlet Protection Type D	EACH	8.000	8.000
0440	628.7555	Culvert Pipe Checks	EACH	3.000	3.000
0450	629.0210	Fertilizer Type B	CWT	0.760	0.760
0460	630.0130	Seeding Mixture No. 30	LB	31.000	31.000
0470	630.0200	Seeding Temporary	LB	5.000	5.000
0480	631.1100	Sod Erosion Control	SY	11.000	11.000
0490	642.5201	Field Office Type C	EACH	1.000	1.000
0500	643.0100	Traffic Control (project) 01. 2753-01-70	EACH	1.000	1.000
0510	643.0300	Traffic Control Drums	DAY	9,250.000	9,250.000
0520	643.0420	Traffic Control Barricades Type III	DAY	950.000	950.000
0530	643.0705	Traffic Control Warning Lights Type A	DAY	1,900.000	1,900.000
0540	643.0900	Traffic Control Signs	DAY	1,400.000	1,400.000
0550	643.0920	Traffic Control Covering Signs Type II	EACH	15.000	15.000
0560	643.1050	Traffic Control Signs PCMS	DAY	12.000	12.000
0570	646.0106	Pavement Marking Epoxy 4-Inch	LF	3,406.000	3,406.000
0580	646.0126	Pavement Marking Epoxy 8-Inch	LF	2,609.000	2,609.000
0590	646.0600	Removing Pavement Markings	LF	500.000	500.000
0600	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	11.000	11.000
0610	647.0356	Pavement Marking Words Epoxy	EACH	7.000	7.000
0620	647.0456	Pavement Marking Curb Epoxy	LF	70.000	70.000
0630	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	213.000	213.000
0640	647.0606	Pavement Marking Island Nose Epoxy	EACH	7.000	7.000
0650	647.0726	Pavement Marking Diagonal Epoxy 12-Inch	LF	266.000	266.000
0660	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	384.000	384.000
0670	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	147.000	147.000
0680	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	614.000	614.000
0690	652.0615	Conduit Special 3-Inch	LF	830.000	830.000
0700	653.0140	Pull Boxes Steel 24x42-Inch	EACH	14.000	14.000
0710	654.0101	Concrete Bases Type 1	EACH	7.000	7.000
0720	654.0102	Concrete Bases Type 2	EACH	2.000	2.000
0730	654.0113	Concrete Bases Type 13	EACH	4.000	4.000
0740	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	1.000	1.000
0750	655.0230	Cable Traffic Signal 5-14 AWG	LF	511.000	511.000
0760	655.0240	Cable Traffic Signal 7-14 AWG	LF	2,388.000	2,388.000
0770	655.0260	Cable Traffic Signal 12-14 AWG	LF	2,140.000	2,140.000

2753-01-70

Line	Item	Item Description	Unit	Total	Qty
0780	655.0315	Cable Type UF 2-10 AWG	LF	802.000	802.000
0790	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	2,174.000	2,174.000
0800	655.0610	Electrical Wire Lighting 12 AWG	LF	486.000	486.000
0810	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. CTH VV & Lilly Road	LS	1.000	1.000
0820	657.0100	Pedestal Bases	EACH	7.000	7.000
0830	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	2.000	2.000
0840	657.0315	Poles Type 4	EACH	2.000	2.000
0850	657.0405	Traffic Signal Standards Aluminum 3.5-FT	EACH	2.000	2.000
0860	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	2.000	2.000
0870	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	3.000	3.000
0880	657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT	EACH	2.000	2.000
0890	658.0110	Traffic Signal Face 3-12 Inch Vertical	EACH	12.000	12.000
0900	658.0115	Traffic Signal Face 4-12 Inch Vertical	EACH	8.000	8.000
0910	658.0215	Backplates Signal Face 3 Section 12-Inch	EACH	12.000	12.000
0920	658.0220	Backplates Signal Face 4 Section 12-Inch	EACH	8.000	8.000
0930	658.0416	Pedestrian Signal Face 16-Inch	EACH	4.000	4.000
0940	658.0500	Pedestrian Push Buttons	EACH	6.000	6.000
0950	658.0600	Led Modules 12-Inch Red Ball	EACH	12.000	12.000
0960	658.0605	Led Modules 12-Inch Yellow Ball	EACH	12.000	12.000
0970	658.0610	Led Modules 12-Inch Green Ball	EACH	12.000	12.000
0980	658.0615	Led Modules 12-Inch Red Arrow	EACH	8.000	8.000
0990	658.0620	Led Modules 12-Inch Yellow Arrow	EACH	16.000	16.000
1000	658.0625	Led Modules 12-Inch Green Arrow	EACH	8.000	8.000
1010	658.0635	Led Modules Pedestrian Countdown Timer 16-Inch	EACH	4.000	4.000
1020	658.5069	Signal Mounting Hardware (location) 01. CTH VV & Lilly Road	LS	1.000	1.000
1030	659.1125	Luminaires Utility LED C	EACH	4.000	4.000
1040	661.0200	Temporary Traffic Signals for Intersections (location) 01. CTH VV & Lilly Road	LS	1.000	1.000
1050	661.0300	Generators	DAY	2.000	2.000
1060	690.0150	Sawing Asphalt	LF	1,185.000	1,185.000
1070	690.0250	Sawing Concrete	LF	18.000	18.000
1080	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000
1090	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,300.000	1,300.000
1100	SPV.0060	Special 01. Traffic Signal Controller & Cabinet CTH VV & Lilly Road	EACH	1.000	1.000
1110	SPV.0060	Special 02. Monotube Poles Type 12	EACH	2.000	2.000
1120	SPV.0060	Special 03. Monotube Poles Type 13	EACH	2.000	2.000
1130	SPV.0060	Special 04. Monotube Arms 40-FT	EACH	2.000	2.000
1140	SPV.0060	Special 05. Monotube Arms 55-FT	EACH	2.000	2.000

2753-01-70

Line	Item	Item Description	Unit	Total	Qty
1150	SPV.0060	Special 06. Luminaire Arms Steel 15-FT	EACH	2.000	2.000
1160	SPV.0060	Special 70. Utility Line Opening (ULO)	EACH	10.000	10.000
1170	SPV.0105	Special 01. Remove Traffic Signals CTH VV & Lilly Road	LS	1.000	1.000
1180	SPV.0105	Special 02. Video Detection System	LS	1.000	1.000
1190	SPV.0105	Special 03. Spread Spectrum Radio Interconnect System	LS	1.000	1.000

3

REMOVING SMALL PIPE CULVERTS
203.0100

LOCATION	STA	SIZE	EACH
CTH VV	22+00.80	18"	1
		TOTAL	1

REMOVING CURB & GUTTER
204.0150

LOCATION	STATION-STATION	LF
CTH VV	18+75 - 25+50	76
LILLY	52+03 - 57+59	442
	TOTAL	518

REMOVING FENCE
204.0170

LOCATION	STA-STA	LF
CTH VV	19+10 - 19+44	50
	TOTAL	50

BASE AGGREGATE

LOCATION	LOCATION	STATION - STATION	305.0110 BASE AGGREGATE DENSE 3/4 TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	310.0110 BASE AGGREGATE OPEN GRADES TON
CTH VV	CTH VV	14+39.85 - 21+30	3	1539	-
		21+30 - 26+10	3	1305	-
		UNDISTRUBTED	1	427	-
LILLY	LILY RD	52+03.18 - 57+58.64	-	480	6
		UNDISTRUBTED	-	136	2
		TOTAL	7	3887	8

ASPHALT FLUME
465.0315

LOCATION	STATION	SY
CTH VV	14+51, 11.6' RT	9
	15.86, 12.6' LT	9
	24.52, 14.1' RT	9
	24+88, 4.2' LT	9
	26+00, 14.1 LT	9
	TOTAL	45

ASPHALT ITEM

LOCATION	STA - STA	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3-MT PG58-28S TON	460.6224 HMA PAVEMENT 4-MT PG58-28S TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON
CTH VV	14+39 - 21+30	64	310	172	-
	21+30 - 26+10.96	52	215	120	-
LILY RD	52+03.18 - 57+58.64	12	64	36	-
	UNDISTRUBUTED	-	-	-	5
	TOTAL	128	589	328	5

CONCRETE MEDIAN SLOPED NOSE
620.0300

STATION	LOCATION	O/S	SF
19+27.01	CTH VV	LT	36
20+67.16	CTH VV	RT	38
20+06.32	LILLY	LT	38
19+91.33	LILLY	RT	44
		TOTAL	120

CONCRETE CURB

LOCATION	LOCATION	STATION - STATION	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0415 CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J LF	601.0600 CONCRETE CURB PEDESTRAIN LF	612.0104 PIPE UNDERDRAIN WRAPPED 4-INCH LF
CTH VV	CTH VV	14+39.85 - 21+30	76	944	15	-
		21+30 - 26+10.96	-	794	-	-
LILLY	LILY RD	52+03.18 - 57+58.64	324	-	-	406
		TOTAL	400	1738	15	406

CONCRETE SIDEWALK 5-INCH
601.0410

LOCATION	LOCATION	STATION - STATION	SF
CTH VV	CTH VV	14+39.85 - 21+30	984
		21+30 - 26+10.96	1230
LILLY	LILY RD	52+03.18 - 57+58.64	2824
		Total	5038

CURB RAMP DETECTABLE WARNING FIELD YELLOW
602.0505

LOCATION	STATION	OFFSET	LF
CTH VV	19+21	59.2 LT	12
	19+22	11.9 LT	12
	19+22	7.2 LT	12
	19+23	59.9 RT	12
	19+52	80.6 LT	12
	20+08	81.9 LT	12
	20+14	81.9 LT	12
	20+53	81.1 LT	12
		TOTAL	96

MOBILIZATION
619.1000

PROJECT	EA
2753-01-70	1
TOTAL	1

UTILITY OPENING (ULO)
SPV.0060.70

LOCATION	EA
UNDISTIBUTED	10
TOTAL	10

CULVERT PIPE

FROM	TO	LOCATION	521.0124 CULVERT PIPE CORRIGATED STEEL 24-INCH LF	521.1024 APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH EACH
15+50	21+00	CTH VV	37	2
		TOTAL	37	2

EARTHWORKS SUMMARY

	From/To Station	Location	Common Excavation (1) (item # 205.0100)		Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6)	Reduced Marsh in Fill (8)	Reduced EBS in Fill (9)	Expanded Marsh Backfill (10)	Expanded EBS Backfill (11)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	Select Borrow	Comment:
			Cut (2)	EBS Excavation (3)			(item #205.0500)	Factor 0.60	Factor 0.80	Factor 1.50	Factor 1.30		Factor 1.25			(item #208.0100)	
1	14+39.85 - 26+19.76	CTH VV	1346	0	0	1346	0	0	0	0	0	204	255	1092	0		
2	52+02.95 - 57+84.64	Lilly Rd	179	0	0	179	0	0	0	0	0	0	0	179			
Subtotal			179	0	0	1526	0	0	0	0	0	0	0	1271		0	
Grand Total			1526	0	0	1526	0	0	0	0	0	204	255	1271	0	0	
Total Common Exc			1526														

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 Select Borrow material
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material.
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.0100
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.0100
13) Expanded Fill. Factor = 1.25
14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
15) Mass Ordinate = Available Material + Reduced Marsh in Fill + Reduced EBS in Fill - Expanded Marsh Backfill - Expanded EBS Backfill - Expanded Fill
16) Waste = 15% Common Excavation

STORM SEWER PIPES

FROM	TO	LOCATION	608.0412 STORM SEWER PIPE CLASS IV 12-INCH LF	608.0415 STORM SEWER PIPE CLASS IV 15-INCH LF	INLET ELEVATION	DISCARGE ELEVATION	SLOPE FT/FT
1.1	1.2	LILLY RD	5	-	798.03	797.98	0.01
1.5	1.6	LILLY RD	-	19	801.41	801.32	0.005
		TOTAL	5	19			

RECONSTRUCT

STRUCT. NO.	STATION	OFFSET	611.0410 RECONSTRUCTING MANHOLES EACH	611.0420 RECONSTUCTING CATCH BASINS EACH
1.1	52+19.29	4.99' RT	1	-
1.3	55+18.75	6.79' RT	1	-
1.4	55+18.10	0.78'RT	-	1
1.5	19+28.56	71.98' LT	-	1
		TOTAL	2	2

STORM SEWER STUCTURES

STRUCT.	LOCATION	STATION	OFFSET	522.1015 APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	611.3253 INLETS 2.5X3-FT EACH	611.0530 MANHOLE COVERS TYPE J EACH	611.9705 SALVAGED MANHOLE COVERS EACH	611.9710 SALVAGED INLET COVERS EACH	RIM ELEVATION	INVERT ELEVATION	NOTES
1.1	LILLY RD	52+19.29	4.99' RT	-	-	1	-	-	802.76	797.88	EXSITING STRUCTURE
1.2	LILLY RD	52+19.11	0.29' LT	-	1	-	-	1	802.65	798.03	SALVAGED FRAME AND GRATE FROM 1.1
1.3	LILLY RD	55+18.75	6.79' RT	-	-	-	-	1	804.01	-	SALVAGED FRAME AND GRATE FROM 1.4
1.4	LILLY RD	55+18.10	0.78' RT	-	-	-	1	-	804.16	-	SALVAGED FRAME AND GRATE FROM 1.3
1.5	CTH VV	19+28.56	71.98' LT	-	-	1	-	-	805.16	801.32	EXISTING STRUCTURE NEW INVERT
1.6	CTH VV	19+10.37	70.62' LT	1	-	-	-	-	-	801.41	-
			TOTAL	1	1	2	1	2			

3

LANDSCAPING

LOCATION	STATION - STATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LBS	630.0200 SEEDING TEMPORARY LBS
CTH VV	14+39.85 - 21+30	203	416	0.39	11	-
	14+39.85 - 21+30	-	214	0.13	5	-
	UNDISTUBUTED	41	-	0.13	4	4
LILY RD	52+03.18 - 57+58.64	-	141	0.09	10	-
	UNDISTUBUTED	-	-	0.02	1	1
	TOTAL	244	772	0.76	31	5

MOBILIZATIONS EROSION CONTROL

PROJECT	628.1905 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
2753-01-70	2	4
TOTAL	2	4

INLET PROTECTION

STATION	OFFSET	LOCATION	628.7010 TYPE B EACH	628.7015 TYPE C EACH	628.7020 TYPE D EACH
19+62.69	114.55' LT	CTH VV	-	1	1
19+96.36	115.10' LT	CTH VV	-	1	-
20+04.56	115.14' LT	CTH VV	-	1	1
20+38.29	116.02' LT	CTH VV	-	1	1
19+97.00	184.48' RT	CTH VV	-	1	1
20+02.24	184.49' RT	CTH VV	-	1	-
19+25.10	69.67' LT	CTH VV	-	1	-
20+13.26	115.00' LT	CTH VV	-	-	1
52+19.29	0' RT	LILLY RD	-	1	-
52+19.29	4.99' RT	LILLY RD	-	1	1
52+19.29'	7.77' RT	LILLY RD	1	-	-
52+19.29'	33.72' LT	LILLY RD	-	-	1
52+19.29'	41.62' RT	LILLY RD	-	-	1
		TOTALS	1	9	8

EROSION CONTROL

LOCATION	STATION - STATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.7555 CULVERT PIPE CHECKS EACH	631.1100 SOD EROSION CONTROL SY
CTH VV	14+39.85 - 21+30	431	431	517	2	4
	14+39.85 - 21+30	177	177	214	1	5
	UNDISTUBUTED	122	122	146	-	2
LILY RD	52+03.18 - 57+58.64	-	-	145	-	-
	UNDISTUBUTED	-	-	29	-	-
	TOTAL	730	730	1051	3	11

FIELD OFFICE - TYPE C
642.5201

PROJECT	EACH
2753-01-70	1
TOTAL	1

LANDMARK REFERENCE MONUMENTS
621.0100

LOCATION	STA-STA	EACH
LILLY RD	54+58.00	1
TOTAL		1

SAWING

LOCATION	STA-STA	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
CTH VV	14+39.85 - 21+30	590	12
	21+30 - 26+10	595	-
LILLY RD	52+03.18 - 57+58.64		6
	TOTAL	1185	18

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TRAFFIC CONTROL

	SERVICE DAYS	643.0100 PROJECT 2753-01-70 EA	643.0300 DRUMS NO.	DAYS	643.0420 BARRICADES TYPE III NO.	DAYS	643.0705 WARNING LIGHTS TYPE A NO.	DAYS	643.0900 TRAFFIC CONTROL SIGNS NO.	DAYS	643.1050 SIGNS PORTABLE CHANGEABLE MESSAGE NO.	643.0920 COVERING SIGNS TYPE II EACH	COVER/UNCOVER
STAGE 1	60	-	100	6000	10	600	35	1200	15	900	4	5	1
STAGE 2	30	-	100	3000	10	300	13	600	15	450	4	5	1
UNDISTRIBUTED	10	1	25	250	5	50	11	100	5	50	4	5	1
TOTAL		1		9250		950		1900		1400	12	15	3

PAVEMENT MARKING

LOCATION	STATION - STATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH LF	646.0126 PAVEMENT MARKING EPOXY 8-INCH LF	646.0600 REMOVING PAVEMENT MARKING LF	647.0166 PAVEMENT MARKING ARROWS EPOXY TYPE 2 EACH	647.0356 PAVEMENT MARKING WORDS EPOXY EACH	647.0456 PAVEMENT MARKING CURB EPOXY LF	647.0566 PAVEMENT MARKING STOP LINE EPOXY 18-INCH LF	647.0606 PAVEMENT MARKING ISLAND NOSE EPOXY EA	647.0726 PAVEMENT MARKING DIAGONAL EPOXY 12-INCH LF	647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH LF
CTH VV	14+39.85 - 21+30	1513	1424	-	5	1	20	122	2	144	212
	21+30 - 26+10	1893	493	-	2	2	-	-	-	122	-
	UNDISTRUBITED	-	-	400	-	-	-	-	-	-	-
LILLY	52+03.18 - 57+58.64	-	692	-	4	4	50	91	5	-	172
	UNDISTRUBITED	-	-	100	-	-	-	-	-	-	-
	TOTAL	3406	2609	500	11	7	70	213	7	266	384

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CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH
CONDUIT SPECIAL 3-INCH

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH L.F.	652.0615 CONDUIT SPECIAL 3-INCH L.F.
CB1	PB1	--	21	--
PB1	PB2	--	58	--
PB2	PB3	--	--	100
PB3	PB4	--	--	72
PB4	PB5	--	152	--
PB5	PB6	--	--	142
PB6	PB7	--	--	96
PB7	PB8	--	144	--
PB8	PB9	--	--	104
PB9	PB10	--	--	72
PB10	PB11	--	128	--
PB11	PB12	--	--	136
PB12	PB13	--	--	108
PB13	PB14	--	50	--
PB14	CB1	--	24	--
PB2	SB1	13	--	--
PB4	SB2	--	8	--
PB5	SB3	16	--	--
PB6	SB4	15	--	--
PB7	SB5	--	13	--
PB7	SB6	19	--	--
PB8	SB7	28	--	--
PB8	SB8	4	--	--
PB9	SB9	15	--	--
PB10	SB10	--	6	--
PB10	SB11	18	--	--
PB11	SB12	19	--	--
PB13	SB13	--	10	--
	TOTALS	147	614	830

PULL BOXES STEEL 24X42-INCH

PULL BOX NO.	STATION	OFFSET	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	20+64.9	86.7 RT	1
PB2	52+91.9	46.1 RT	1
PB3	52+91.2	3.9 LT	1
PB4	52+90.6	39.4 LT	1
PB5	19+02.6	61.4 RT	1
PB6	19+01.5	9.6 LT	1
PB7	19+00.8	58.0 LT	1
PB8	55+01.3	40.5 LT	1
PB9	55+01.7	11.3 RT	1
PB10	55+01.9	47.0 RT	1
PB11	20+95.6	59.2 LT	1
PB12	20+96.4	9.1 RT	1
PB13	20+97.6	62.6 RT	1
PB14	20+77.3	77.3 RT	1
		TOTALS	14

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

CONCRETE BASES TYPE 1
CONCRETE BASES TYPE 2
CONCRETE BASES TYPE 13
CONCRETE CONTROL CABINET BASE TYPE 9 SPECIAL

BASE NO.	STATION	OFFSET	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0113 CONCRETE BASES TYPE 13 EACH	654.0217 CONCRETE CONTROL CABINET BASE TYPE 9 SPECIAL EACH
CB1	20+70.4	81.8 RT	--	--	--	1
SB1	53+04.4	50.7 RT	1	--	--	--
SB2	52+98.7	41.3 LT	--	--	1	--
SB3	19+18.2	66.5 RT	--	1	--	--
SB4	19+16.5	9.6 LT	1	--	--	--
SB5	19+12.6	62.1 LT	--	--	1	--
SB6	19+16.5	67.9 LT	1	--	--	--
SB7	54+77.5	55.4 LT	1	--	--	--
SB8	54+97.6	42.8 LT	1	--	--	--
SB9	54+87.1	11.2 RT	1	--	--	--
SB10	54+97.1	51.3 RT	--	--	1	--
SB11	54+89.8	57.7 RT	1	--	--	--
SB12	20+78.6	68.7 LT	--	1	--	--
SB13	20+88.3	59.6 RT	--	--	1	--
		TOTALS	7	2	4	1

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

3

CABLE TRAFFIC SIGNAL 5-14 AWG
CABLE TRAFFIC SIGNAL 7-14 AWG
CABLE TRAFFIC SIGNAL 12-14 AWG

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG L.F.	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.
CB1	SB1	--	--	92
SB1	HEAD 14	--	22	--
SB1	HEAD 16	21	--	--
CB1	SB2	--	--	205
SB3	HEAD 12	46	--	--
SB3	HEAD 13	21	--	--
SB3	HEAD 15	--	63	--
CB1	SB3	--	--	305
SB5	HEAD 1	21	--	--
SB5	HEAD 9	--	22	--
SB5	HEAD 21	18	--	--
CB1	SB4	--	391	--
CB1	SB5	--	--	453
SB5	HEAD 7	62	--	--
SB5	HEAD 8	49	--	--
SB5	HEAD 10	--	80	--
CB1	SB6	--	459	--
SB6	HEAD 22	18	--	--
CB1	SB7	--	458	--
SB7	HEAD 23	18	--	--
CB1	SB8	--	--	434
SB8	HEAD 11	21	--	--
SB8	HEAD 19	--	22	--
CB1	SB9	--	377	--
CB1	SB10	--	--	316
SB10	HEAD 17	49	--	--
SB10	HEAD 18	21	--	--
SB10	HEAD 20	--	65	--
CB1	SB11	--	328	--
SB11	HEAD 24	18	--	--
CB1	SB12	--	--	249
SB12	HEAD 4	--	22	--
SB12	HEAD 6	21	--	--
CB1	SB13	--	--	86
SB13	HEAD 2	61	--	--
SB13	HEAD 3	46	--	--
SB13	HEAD 5	--	79	--
	TOTALS	511	2,388	2,140

CABLE TYPE UF 2-10 AWG
ELECTRICAL WIRE LIGHTING 12 AWG

		655.0315 CABLE TYPE UF 2-10 AWG (W/ GROUND) L.F.	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG L.F.
CB1	SB3	305	--
SB3	LUMIN	--	117
SB3	SB5	204	--
SB5	LUMIN	--	126
CB1	SB13	86	--
SB13	LUMIN	--	126
SB13	SB12	207	--
SB12	LUMIN	--	117
	TOTALS	802	486

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 ELECTRIC WIRE TRAFFIC SIGNAL 10 AWG L.F.
CB1	SB1	92
SB1	SB2	163
SB2	SB3	140
SB3	SB4	142
SB4	SB5	116
SB5	SB6	56
SB6	SB7	159
SB7	SB8	56
SB8	SB9	111
SB9	SB10	97
SB10	SB11	48
SB11	SB12	141
SB12	SB13	207
SB13	CB1	86
PB1	CB1	30
PB2	SB1	33
PB3	SB2	80
PB4	SB2	28
PB5	SB3	36
PB6	SB4	35
PB7	SB5	33
PB8	SB8	24
PB9	SB9	35
PB10	SB10	26
PB11	SB12	39
PB12	SB13	100
PB13	SB13	30
PB14	CB1	31
	TOTAL	2174

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ELECTRICAL SERVICE METER BREAKER PEDESTAL

LOCATIION	656.0200.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL L.S.
CB1 (CTH VV & LILLY ROAD)	1
TOTAL	1

PEDESTAL BASES
TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE
POLES TYPE 4
TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT
TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT
TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT
LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT
PEDESTRIAN PUSH BUTTONS
LUMINAIRES UTILITY LED C
MONOTUBE POLES TYPE 12
MONOTUBE POLES TYPE 13
MONOTUBE ARMS 40-FT
MONOTUBE ARMS 55-FT
LUMINAIRE ARMS STEEL 15-FT

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE EACH	657.0315 POLES TYPE 4 EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	657.0609 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	659.1125 LUMINAIRES UTILITY LED C EACH	SPV.0060.02 MONOTUBE POLES TYPE 12 EACH	SPV.0060.03 MONOTUBE POLES TYPE 13 EACH	SPV.0060.04 MONOTUBE ARMS 40-FT EACH	SPV.0060.05 MONOTUBE ARMS 55-FT EACH	SPV.0060.06 LUMINAIRE ARMS STEEL 15-FT EACH
SB1	1	--	--	--	1	--	--	--	--	--	--	--	--	--
SB2	--	--	--	--	--	--	--	--	--	1	--	1	--	--
SB3	--	1	1	--	--	--	1	1	1	--	--	--	--	--
SB4	1	--	--	1	--	--	--	1	--	--	--	--	--	--
SB5	--	--	--	--	--	--	--	--	1	--	1	--	1	1
SB6	1	--	--	--	--	1	--	1	--	--	--	--	--	--
SB7	1	--	--	--	--	1	--	1	--	--	--	--	--	--
SB8	1	--	--	--	1	--	--	--	--	--	--	--	--	--
SB9	1	--	--	1	--	--	--	1	--	--	--	--	--	--
SB10	--	--	--	--	--	--	--	--	--	1	--	1	--	--
SB11	1	--	--	--	--	1	--	1	--	--	--	--	--	--
SB12	--	1	1	--	--	--	1	--	1	--	--	--	--	--
SB13	--	--	--	--	--	--	--	--	1	--	1	--	1	1
TOTALS	7	2	2	2	2	3	2	6	4	2	2	2	2	2

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

TRAFFIC SIGNAL QUANTITIES
INTERSECTION OF
CTH VV & LILLY ROAD

3

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TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL
TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL
BACKPLATES SIGNAL FACE 3 SECTION 12-INCH
BACKPLATES SIGNAL FACE 4 SECTION 12-INCH
PEDESTRIAN SIGNAL FACE 16-INCH
LED MODULES 12-INCH RED BALL
LED MODULES 12-INCH YELLOW BALL
LED MODULES 12-INCH GREEN BALL
LED MODULES 12-INCH RED ARROW
LED MODULES 12-INCH YELLOW ARROW
LED MODULES 12-INCH GREEN ARROW
LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0110 TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL EACH	658.0115 TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL EACH	658.0215 BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	658.0220 BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0615 LED MODULES 12-INCH RED ARROW EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1	SB3	1	--	1	--	--	1	1	1	--	--	--	--
2	SB13	1	--	1	--	--	1	1	1	--	--	--	--
3	SB13	1	--	1	--	--	1	1	1	--	--	--	--
4	SB12	--	1	--	1	--	--	--	--	1	2	1	--
5	SB13	--	1	--	1	--	--	--	--	1	2	1	--
6	SB12	1	--	1	--	--	1	1	1	--	--	--	--
7	SB5	1	--	1	--	--	1	1	1	--	--	--	--
8	SB5	1	--	1	--	--	1	1	1	--	--	--	--
9	SB3	--	1	--	1	--	--	--	--	1	2	1	--
10	SB5	--	1	--	1	--	--	--	--	1	2	1	--
11	SB8	1	--	1	--	--	1	1	1	--	--	--	--
12	SB2	1	--	1	--	--	1	1	1	--	--	--	--
13	SB2	1	--	1	--	--	1	1	1	--	--	--	--
14	SB1	--	1	--	1	--	--	--	--	1	2	1	--
15	SB2	--	1	--	1	--	--	--	--	1	2	1	--
16	SB1	1	--	1	--	--	1	1	1	--	--	--	--
17	SB10	1	--	1	--	--	1	1	1	--	--	--	--
18	SB10	1	--	1	--	--	1	1	1	--	--	--	--
19	SB8	--	1	--	1	--	--	--	--	1	2	1	--
20	SB10	--	1	--	1	--	--	--	--	1	2	1	--
21	SB5	--	--	--	--	1	--	--	--	--	--	--	1
22	SB6	--	--	--	--	1	--	--	--	--	--	--	1
23	SB7	--	--	--	--	1	--	--	--	--	--	--	1
24	SB11	--	--	--	--	1	--	--	--	--	--	--	1
	TOTALS	12	8	12	8	4	12	12	12	8	16	8	4

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

TRAFFIC SIGNAL QUANTITIES
INTERSECTION OF
CTH VV & LILLY ROAD

3

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SIGNAL MOUNTING HARDWARE
TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS
GENERATORS

LOCATION	658.5069.01 SIGNAL MOUNTING HARDWARE L.S.	661.0200.01 TEMPORARY TRAFFIC TRAFFIC SIGNALS FOR INTERSECTION L.S.	661.0300 GENERATORS DAYS
CTH VV & LILLY ROAD	1	1	2
TOTAL	1	1	2

TRAFFIC SIGNAL CONTROLLER & CABINET (CTH VV & LILLY ROAD)

BASE NO.	SPV.0060.01 TRAFFIC SIGNAL CONTROLLER & CABINET EACH
CB1	1
TOTAL	1

REMOVE TRAFFIC SIGNALS (CTH VV & LILLY ROAD)

LOCATION	SPV.0105.01 REMOVE TRAFFIC SIGNALS L.S.
CTH VV & LILLY ROAD	1
TOTAL	1

VIDEO DETECTION SYSTEM (CTH VV & LILLY ROAD)

LOCATION	SPV.0105.02 VIDEO DETECTION SYSTEM L.S.
CTH VV & LILLY ROAD	1
TOTAL	1

CAMERA NO.	SIGNAL BASE	MOUNTING LOCATION
V1	SB13	LUMINAIRE ARM
V2	SB5	LUMINAIRE ARM
V3	SB2	6' EXTENSION BRACKET
V4	SB10	6' EXTENSION BRACKET

SPREAD SPECTRUM RADIO INTERCONNECT SYSTEM

LOCATION	SPV.0105.03 L.S.
CTH VV	1
TOTAL	1

RADIO ANTENNA LOCATIONS	POLE LOCATION
CTH VV & LILLY RD	SB5
CTH VV & PILGRIM RD	EAST MEDIAN POLE

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	MISCELLANEOUS QUANTITIES	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ PLOT SCALE : 1:1

R/W PROJECT NUMBER 2753-01-00	SHEET NUMBER	TOTAL SHEETS
FEDERAL PROJECT NUMBER	1	2

PLAT OF RIGHT OF WAY REQUIRED FOR

C.T.H. "VV"
INTERSECTION WITH LILLY ROAD

C.T.H. "VV" — WAUKESHA CO.

CONSTRUCTION PROJECT NUMBER 2753-01-00

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE (P.L.)
LOT, TIE & OTHER MINOR LINES
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC) (W (TYPE))
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT

SECTION CORNER (18 / 23 24 / 16 15)
NOTATION FOR COMBUSTABLE FLUIDS (CAUTION)
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES (CAUTION)
BRIDGE

R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN (IP)
VALVE (GAS, WATER, ETC.) (TYPE)
SIGN (SIGN)
OFF-PREMISE SIGN (41-25) (SIGN)

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE	■	□
TELEPHONE POLE	⌀	⌀
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)	⌘	⌗

ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

PARCEL NUMBER (25)
UTILITY NUMBER (40)

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED EASEMENT	TLE
GAS VALVE	GV	TRANSPORTATION PROJECT PLAT	TPP
GRID NORTH	GN	UNITED STATES HIGHWAY	USH
HIGHWAY EASEMENT	HE	VOLUME	V
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA

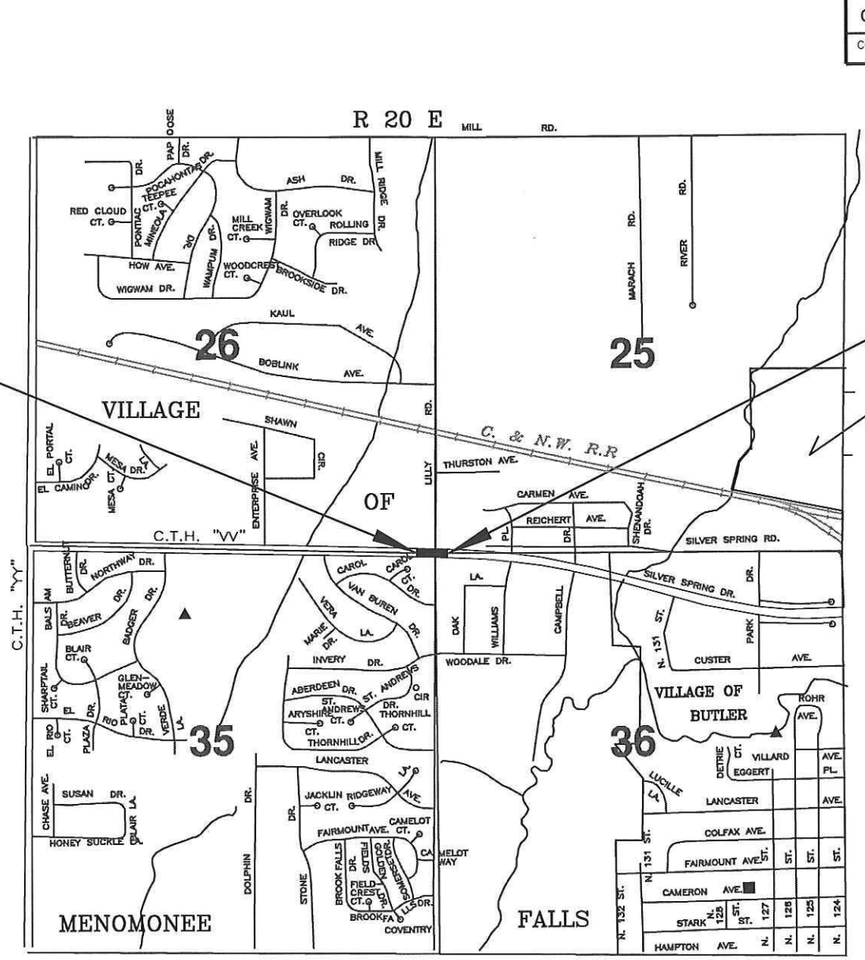
LONG CHORD	LC
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	Δ
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD TRANSMISSION LINES	OH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS

BEGIN RELOCATION ORDER
PROJECT I.D. 2753-01-00
STA. 18+00.00
Y = 200,382.608
X = 722,077.600
51.87 FEET SOUTH OF AND 201.36 FEET WEST OF THE NORTHEAST 1/4 CORNER OF SEC. 35, T 8 N, R 20 E

T 8 N



(BROOKFIELD TWP)

END RELOCATION ORDER
PROJECT I.D. 2753-01-00
STA. 22+00.00
Y = 200,372.320
X = 722,477.463
62.16 FEET SOUTH OF AND 198.50 FEET EAST OF THE NORTHEAST 1/4 CORNER OF SEC. 35, T 8 N, R 20 E

Layout
0 0.25 0.50 MI.
Scale

TOTAL NET LENGTH OF CENTERLINE = 0.0758 MI. (URBAN)

ORIGINAL PLAT PREPARED BY

WISCONSIN — JASON T. MAYER — S-2844 — Menomonee Falls WI — LAND SURVEYOR

DATE: 10-12-16 (Signature)

APPROVED FOR WAUKESHA COUNTY DEPARTMENT OF PUBLIC WORKS

DATE: 10-12-16 DIRECTOR

DATE: 10/13/16 ENGINEERING SERVICES MANAGER

REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
	APPROVED FOR THE DEPARTMENT
	DATE: N/A (Signature)

NOTES

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

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD

THE EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREON IS BASED ON THE RIGHT OF WAY PLAT FOR C.T.H. "VV" PROJECT 96-2753(12), S0822(10), EXISTING CERTIFIED SURVEY MAPS, SUBDIVISION PLATS, AND OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING TO THE NEW RIGHT OF WAY IS MEASURED ALONG AND PERPENDICULAR TO THE CENTERLINE OF CONSTRUCTION.

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\RW\ROW_BASE.DWG PLOT DATE : 10/12/2016 1:18 PM PLOT BY : MAYER, JASON PLOT NAME :

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL AREA MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NO.	SHEET NO.	OWNERS	INTEREST REQ'D.	TOTAL AREA ACRES	EASEMENT ACRES REQUIRED T.L.E.	EASEMENT ACRES REQUIRED P.L.E.	R/W NEW	ACRES EXIST.	REQUIRED TOTAL	TOTAL ACRES REM.
1	4.2	CHRISTOPHER AND LESIE HAASE	FEE	0.580	--	--	0.008	-	0.008	0.572
2	4.2	MORT 3 LLC	P.L.E.	1.180	-	0.002	-	-	-	1.180
100	4.2	VILLAGE OF MENOMONEE FALLS	CONVEYANCE OF RIGHTS							
101	4.2	WE ENERGIES (ELECTRIC)	CONVEYANCE OF RIGHTS							
102	4.2	(AMERITECH CATV)	CONVEYANCE OF RIGHTS							

LOT 2

C.S.M. NO. 10634

BEGIN RELOCATION ORDER
PROJECT I.D. 2753-01-00
STA. 18+00.00
Y = 200,382.608
X = 722,077.600
51.87 FEET SOUTH OF AND 201.36 FEET WEST OF THE NORTHEAST ¼ CORNER OF SEC. 35, T.8N, R.20E.

P.L.

R/W

R/W VARIES

I.P.

N 89°46'05" E = SECTION LINE

50' 50'

56

55 R/L LILLY RD.

N 01°15'22" E = SECTION LINE

R/W

(2)
MORT 3 LLC
DOC NO. 4091487
TAX KEY NO. MNFV.0099.982
1.180 AC.

(100)
7' MUNICIPAL EASE.
DOC. NO. 1832208

PERMANENT LIMITED EASE. TABLE
A-B = N 01°15'22" E 6.00'
B-C = S 89°13'40" E 8.50'
C-D = S 41°28'23" E 8.10'
D-A = N 89°13'40" W 14.00'

B C I.P. D A

SLOPE LIMITS

42'

R/W

I.P.

P.L.

C.S.M. NO. 7878
PARCEL 1

16" WATERMA

S 89°13'40" E = SECTION LINE

08
26 25
35 36
20

A CONCRETE MON. WITH SEWRPC BRASS CAP
Y = 200,434.483
X = 722,278.965
STA. 20+00.00, 58.00' LT
PI = 54+58.00'

R/L C.T.H. "VV"
S 88°49'39" E

16 17 18 19 20 21 22 23

54

R/L C.T.H. "VV"
S 88°14'55" E

90'

P.I.=STA. 20+00.00 (C.T.H. VV)
P.I.=STA. 54+00.00 (LILLY RD.)

END RELOCATION ORDER
PROJECT I.D. 2753-01-00
STA. 22+00.00
Y = 200,372.320
X = 722,477.463
62.16 FEET SOUTH OF AND 198.50 FEET EAST OF THE NORTHEAST ¼ CORNER OF SEC. 35, T.8N, R.20E.

SLOPE LIMITS

R/W

I.P.

25.00'

26.00'

S 42°20'58" E
36.20'

(101) 5' WEPCO & (102) TELEPHONE EASE.
VOL. 694, P. 502

R/W VARIES

I.P.

I.P.

BRICK WALL ENCROACHING
STA. 21+53.1', 100.0' RT

53

52 R/L LILLY RD.

N 01°22'24" E = SECTION LINE

w I.P.

MH

LILLY SPRING HEIGHTS

P.L.

P.L.

LOT 10 LOT 11

(1)
CHRISTOPHER & LESLIE HAASE
DOC NO. 3376134
TAX KEY NO. MNFV.0137.012
0.580 AC.
0.572 REM.

CT.

LOT 12

C.S.M. NO. 8486
PARCEL 1

REVISION DATE	DATE: 10/12/2016		HWY: VV	CONSTRUCTION PROJECT NO.: 2753-01-00	
	SCALE: 1" = 50'	0 25 50	COUNTY: WAUKESHA	R/W PROJECT NO.: 2753-01-00	PLAT SHEET NO.: 4.46 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\RW\ROW_BASE.DWG PLOT DATE : 10/12/2016 1:18 PM PLOT BY : MAYER, JASON

CONTROL POINT

LOCATION	DESCRIPTION	NORTHING	EASTING	ELEV.
57+28.57, 44.3' RT	CHSLD. CROSS ON TOP OF HYD NOZZLE	200,703.01	722,329.05	809.27

PROJECT NO: 2753-01-70	**HWY:** CTH VV	**COUNTY: WAUKESHA**	PLAN AND PROFILE	**SHEET** 47	**E**

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\050101-PP.DWG PLOT DATE : 1/26/2017 12:20 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

STA 18+75

STA 25+50

MATCH LINE

MATCH LINE

LILLY RD

LILLY RD

SILVER SPRING DR

C.T.H. "VV"

MORT 3 LLC

HERKER SCREW PRODUCTS INC

CHRISTOPHER J HAASE
LESLIE P HAASE

GREDE II LLC

R/W

PGL

SLOPE LIMITS

SLOPE LIMITS

SLOPE LIMITS

SLOPE LIMITS

SAWCUT REQ'D

SAWCUT REQ'D

STA 20+00.07 CTH VV
STA 54+00.06 LILLY RD

1-24" X 21' C.S.C.P REQ'D

24" C.S.C.P INV 800.13

24" C.S.C.P WITH ENDWALL INV 800.23

1-24" X 16' C.S.C.P REQ'D

24" C.S.C.P INV 799.19

24" C.S.C.P WITH ENDWALL INV 799.12

℄ OF SILVER SPRING DR

STA 22+00.80
REMOVE EXISTING 18" C.S.C.P

CONTROL POINT

LOCATION	DESCRIPTION	NORTHING	EASTING	ELEV.
57+28.57, 44.3' RT	CHSLD. CROSS ON TOP OF HYD NOZZLE	200,703.01	722,329.05	809.27

PROFILE FINISHED GRADE ON PGL CTH VV

PROFILE EXISTING GRADE ON PGL CTH VV

ELEVATION FINISHED GRADE ON PGL CTH VV

ELEVATION EXISTING GRADE ON PGL CTH VV

806 804 802 800 798 796 794 792 790 788

805.9 805.91 805.8 805.80 805.8 805.76 805.7 805.65 805.4 805.44 805.2 805.19 805.0 804.93 804.8 804.66 804.4 804.39 804.1 804.06 803.7 803.71 803.2 803.22 802.7 802.73 802.0 802.03 801.4 801.42 800.7 800.77 800.1 800.17 799.4 799.42 798.6 798.62 797.8 797.83 797.0 797.03 796.2 796.23 795.3 795.29 794.3 794.32 793.3 793.35 792.4 791.4 790.5 789.6 788.8 788.0

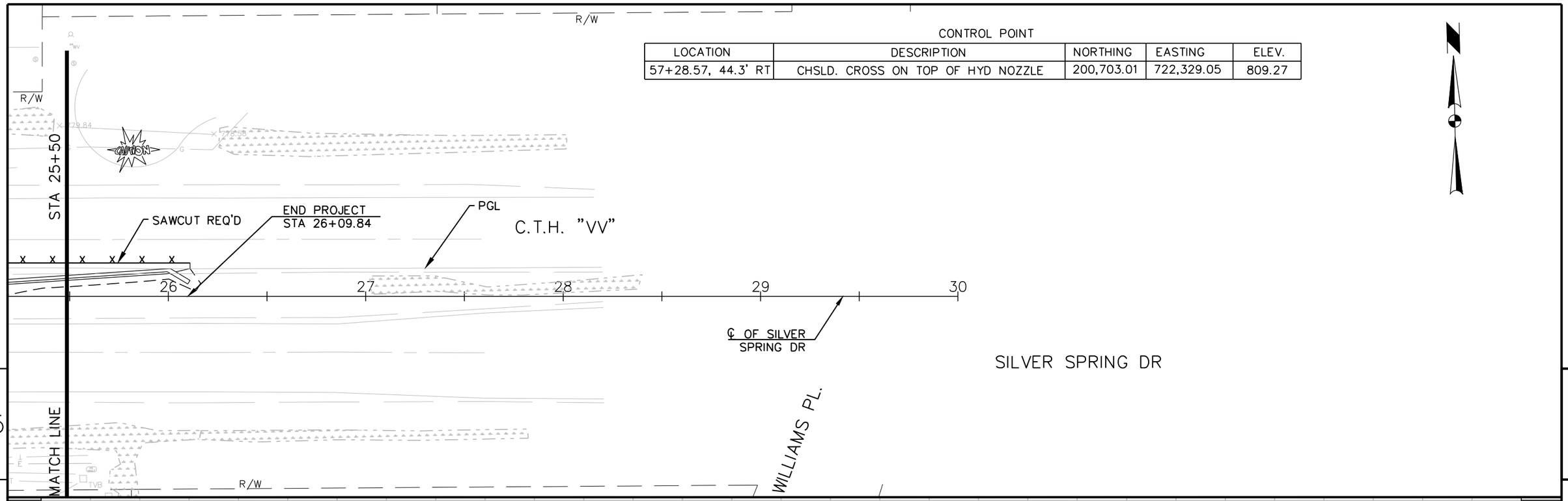
18+50 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 48	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\050101-PP.DWG PLOT DATE : 1/26/2017 12:20 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

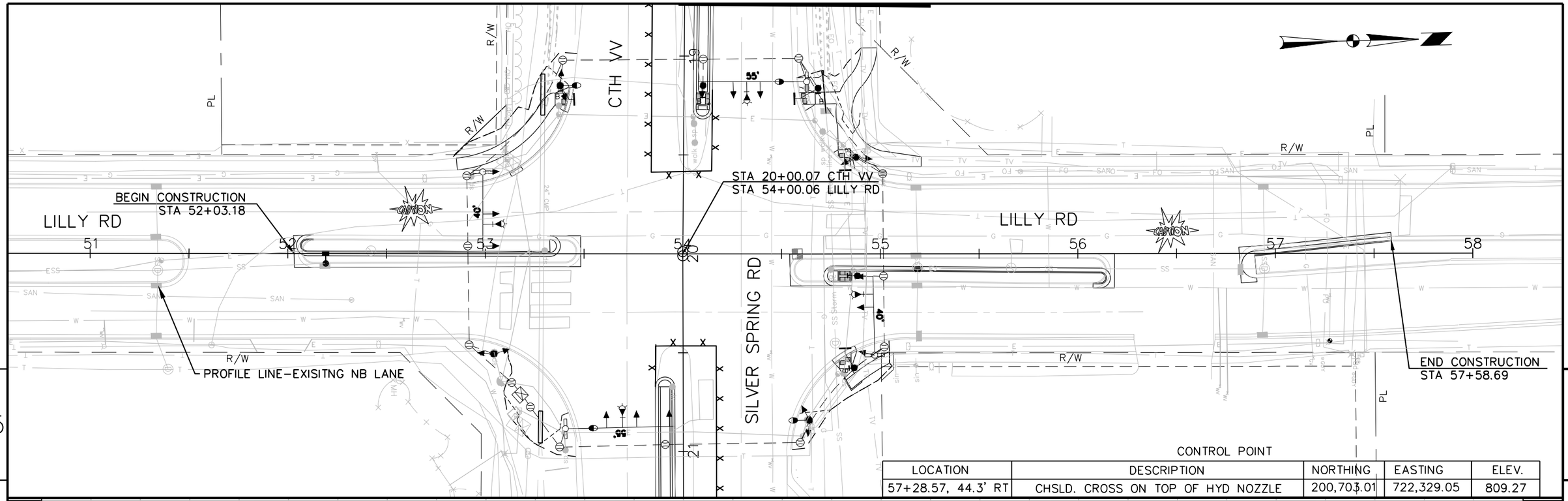
CONTROL POINT

LOCATION	DESCRIPTION	NORTHING	EASTING	ELEV.
57+28.57, 44.3' RT	CHSLD. CROSS ON TOP OF HYD NOZZLE	200,703.01	722,329.05	809.27



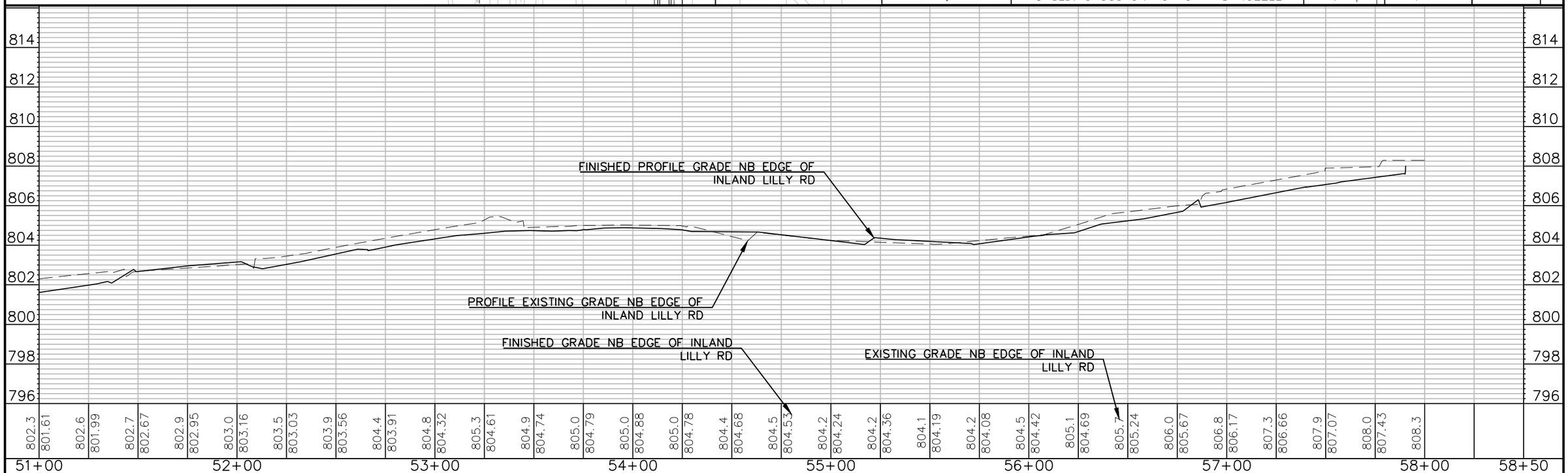
PROJECT NO: 2753-01-70	HWY: VV	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 49	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\SHEETPLAN\050101-PP.DWG PLOT DATE : 1/26/2017 12:20 PM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



CONTROL POINT

LOCATION	DESCRIPTION	NORTHING	EASTING	ELEV.
57+28.57, 44.3' RT	CHSLD. CROSS ON TOP OF HYD NOZZLE	200,703.01	722,329.05	809.27

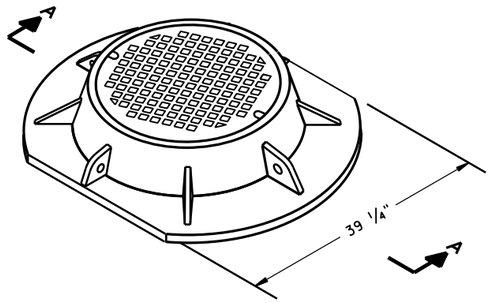


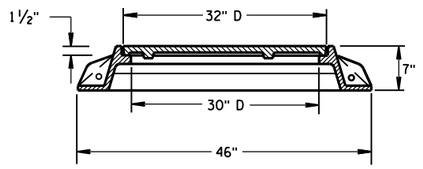
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 50	E

Standard Detail Drawing List

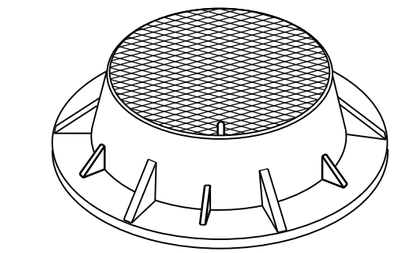
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-18A	CURB RAMPS TYPES 1 AND 1-A
08D05-18B	CURB RAMPS TYPES 2 AND 3
08D05-18C	CURB RAMPS TYPES 4A AND 4A1
08D05-18D	CURB RAMPS TYPE 4B AND 4B1
08D05-18E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-09	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-09	CONCRETE BASE TYPE 10
09C12-08A	CONCRETE BASE TYPE 13
09C12-08B	CONCRETE BASE TYPE 13
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-14C	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4
09E01-14G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-08C	TYPE 12 POLE 35'-55' MONOTUBE ARM
09E08-08D	TYPE 13 POLE 35'-55' MONOTBE ARM
09E08-08E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09G01-04G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
11B02-02	CONCRETE MEDIAN NOSE
15C05-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-13B	PAVEMENT MARKING WORDS
15C07-13C	PAVEMENT MARKING ARROWS
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C08-17B	PAVEMENT MARKING (TURN LANES)
15C08-17C	PAVEMENT MARKING (ISLANDS)
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D21-04	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

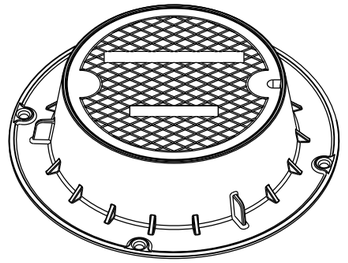
6

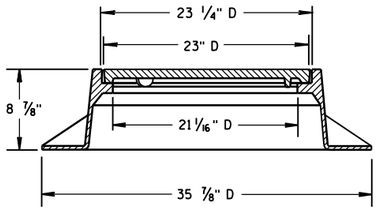


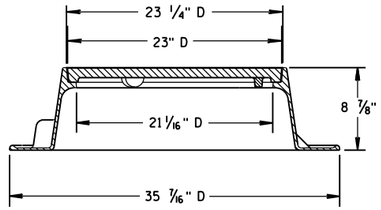


SECTION A-A
TYPE "K"









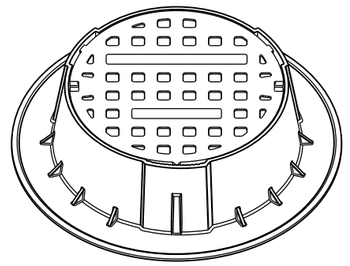
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

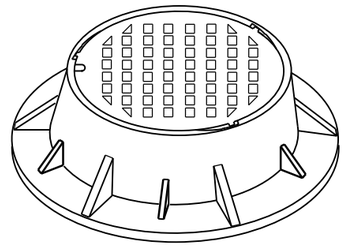
GENERAL NOTES

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.

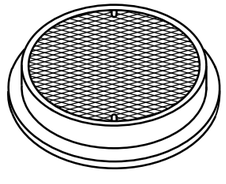
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

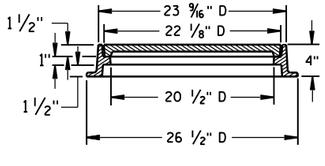
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



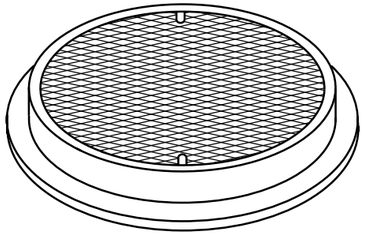


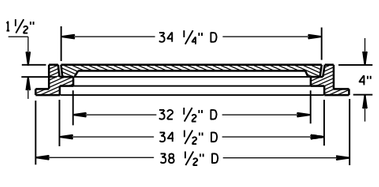
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE





TYPE "L"





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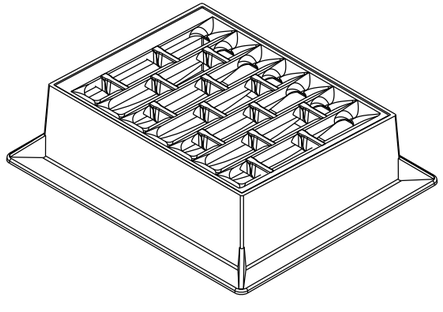
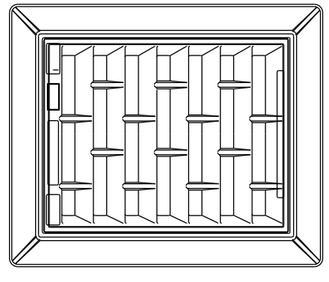
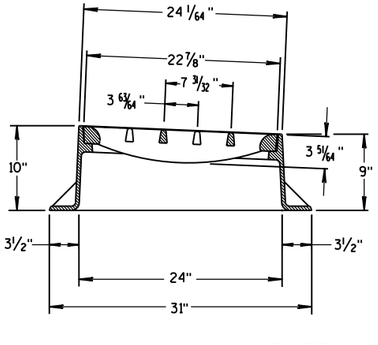
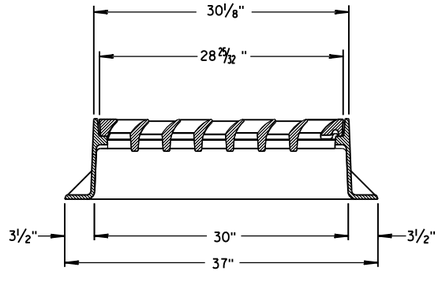








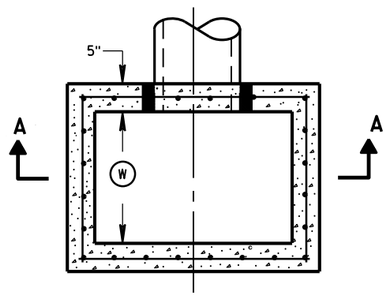
INLET COVER TYPE "BW"

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

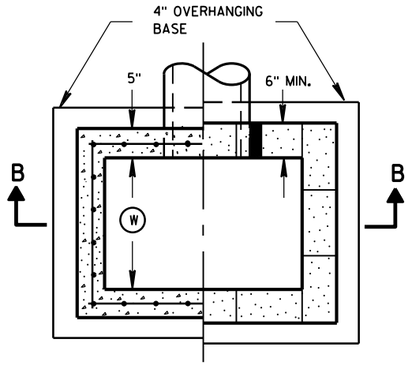
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

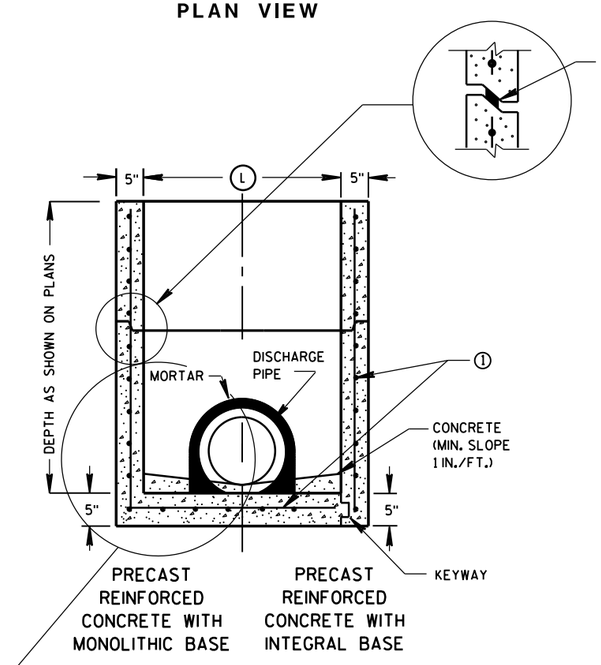
6
S.D.D. 8 A 5-19d



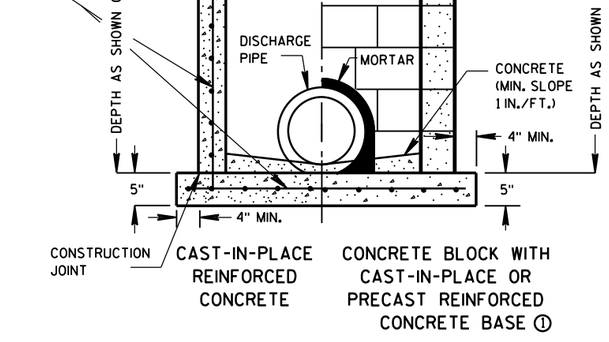
PLAN VIEW



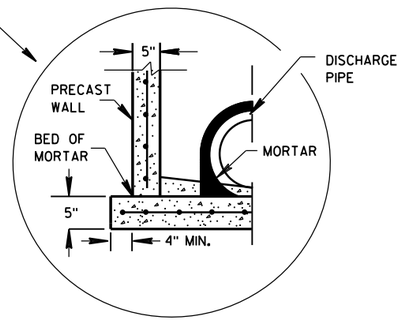
PLAN VIEW



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.

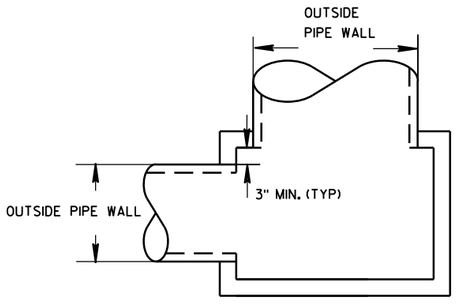
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

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

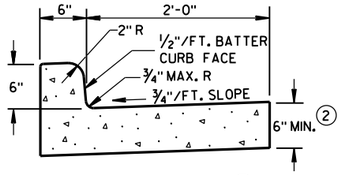


DETAIL "A"

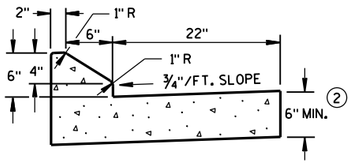
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

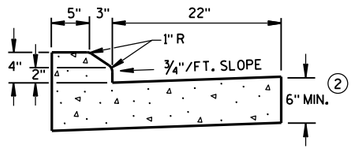
APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT UNIT SUPERVIS
FHWA



TYPES A & D ①

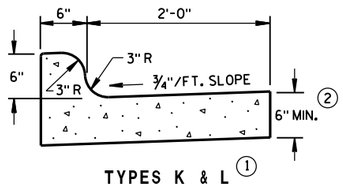


6" SLOPED CURB TYPES G & J ①

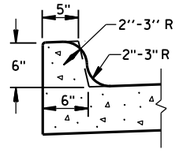


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

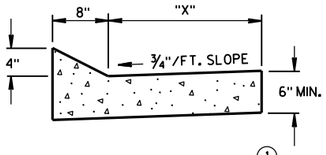


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

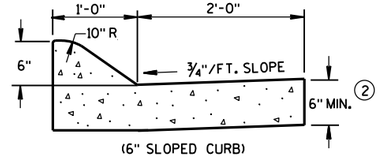
CONCRETE CURB & GUTTER 30"



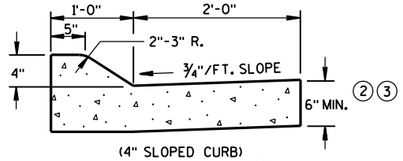
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

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

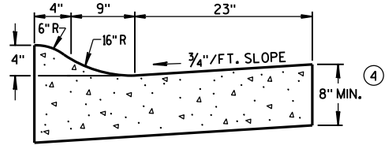


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ①⑤

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

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

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

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

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

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

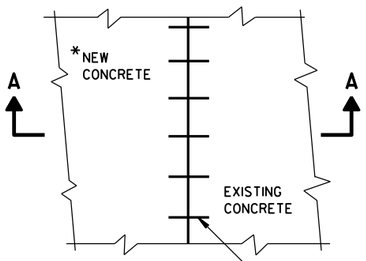
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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.

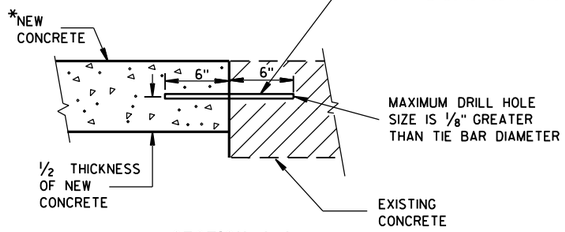
⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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



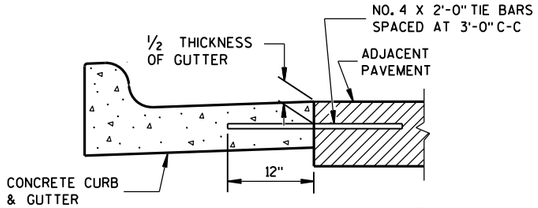
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

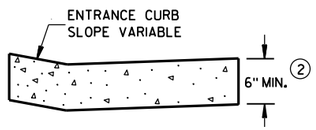


SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT

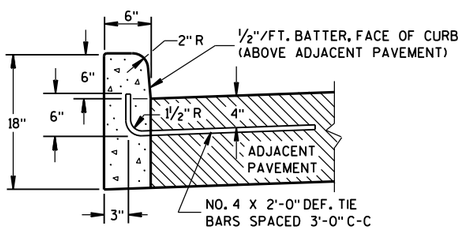


TYPICAL TIE BAR LOCATION ①

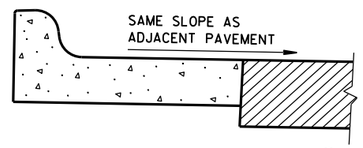


DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)

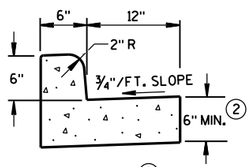


① TYPES A & D



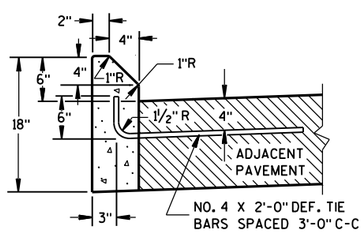
⑥ REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)



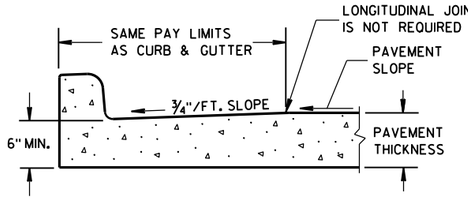
① TYPES A & D

CONCRETE CURB & GUTTER 18"

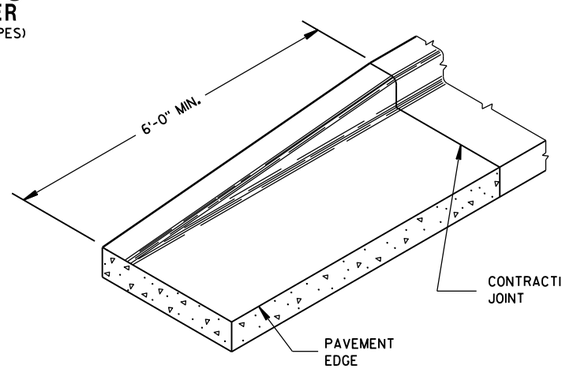


① TYPES G & J

CONCRETE CURB



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2016 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

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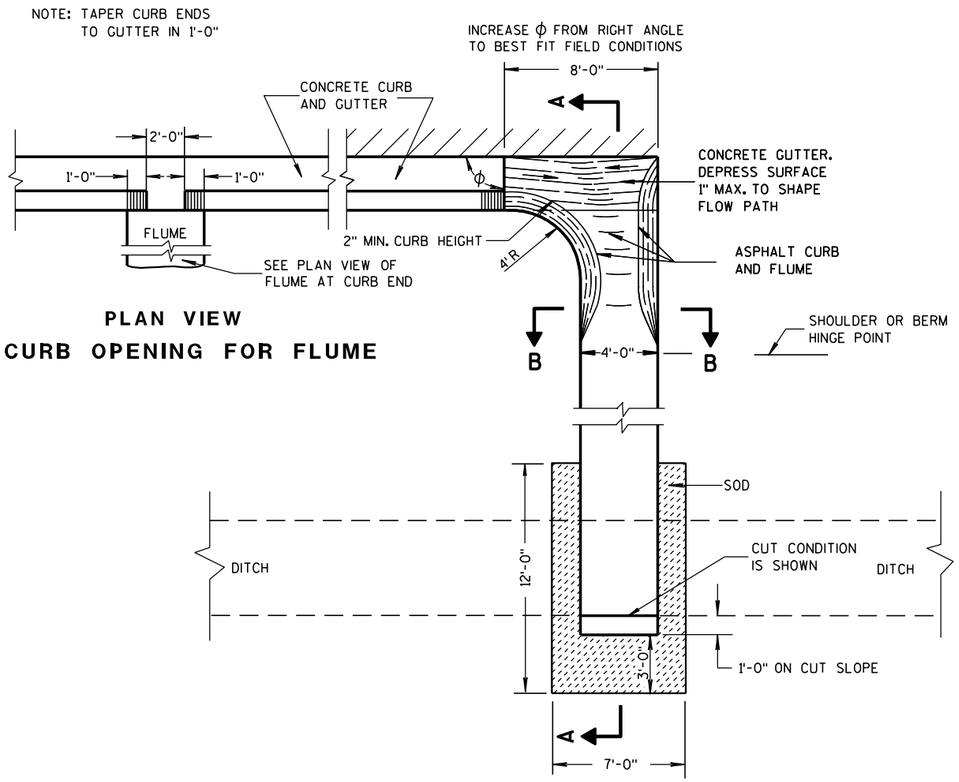
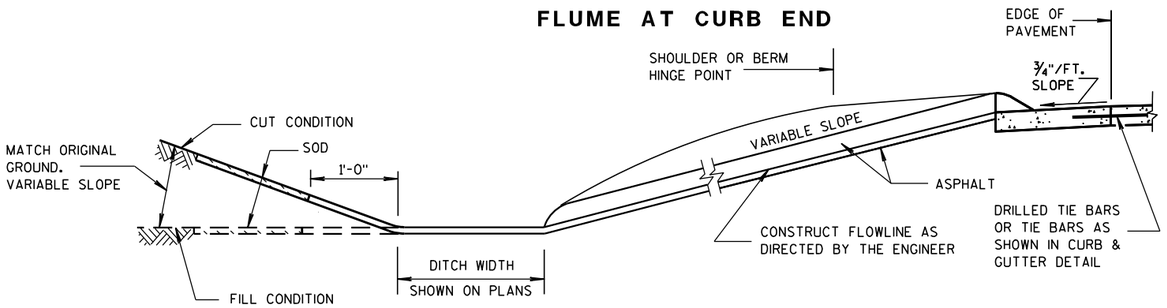
ASPHALTIC FLUME

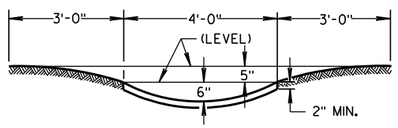


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

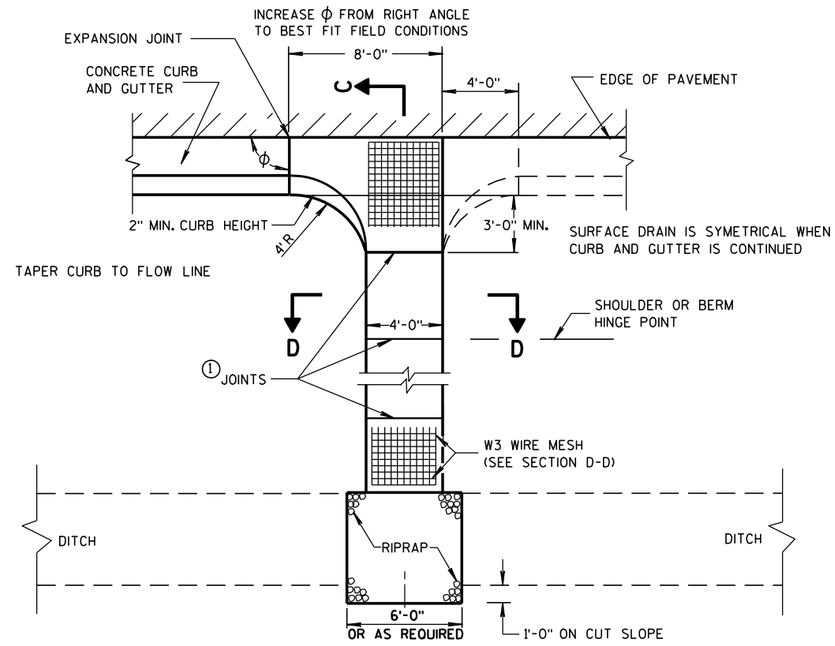
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

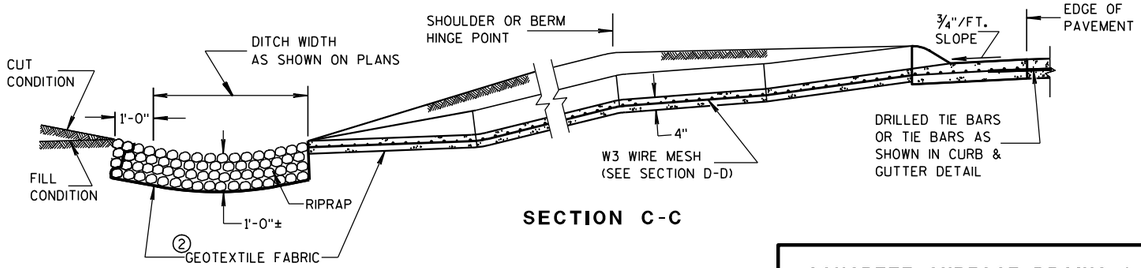
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

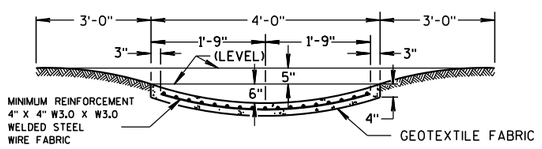
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
55
MENT
FHWA

6

S.D.D. 8 D 4-5

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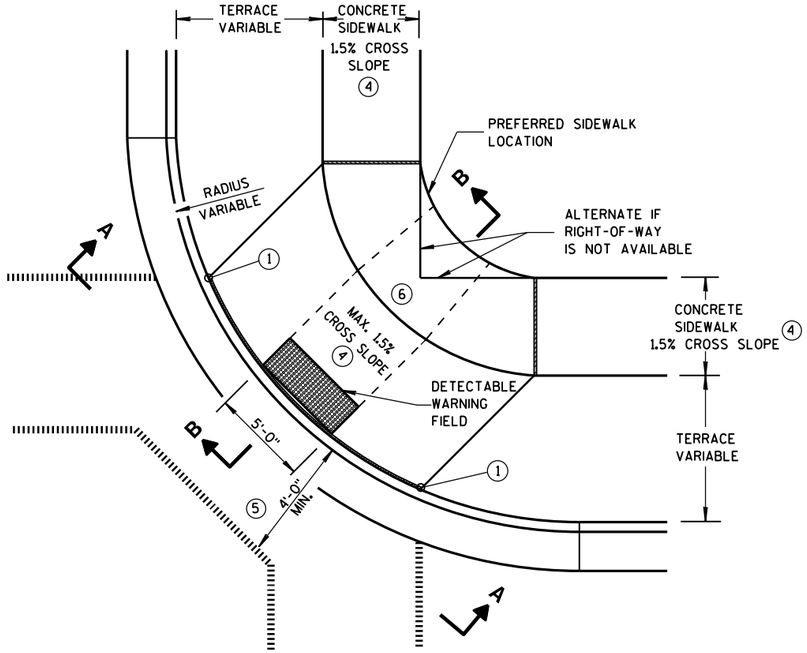
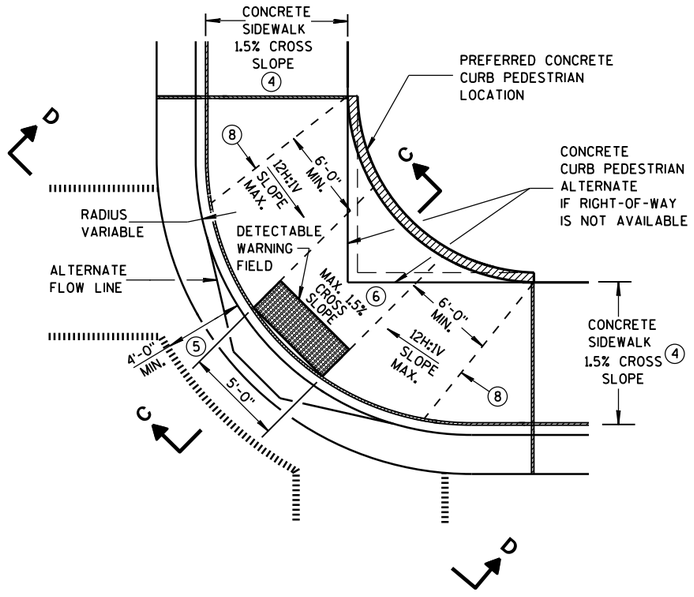
S.D.D. 8 D 4-5



PLAN VIEW

TYPE 1 RAMP

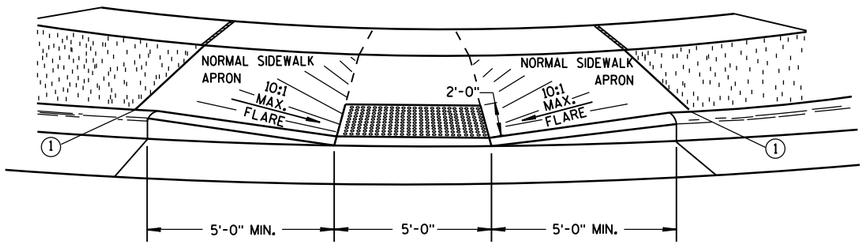
(CENTER OF CORNER RADIUS)



PLAN VIEW

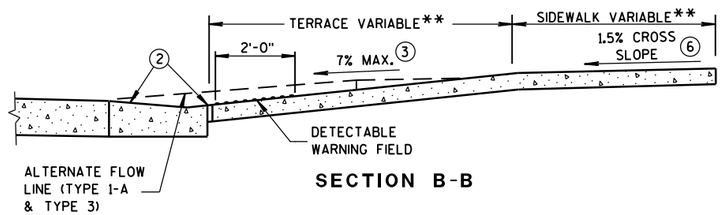
TYPE 1-A RAMP

(NO TERRACE)

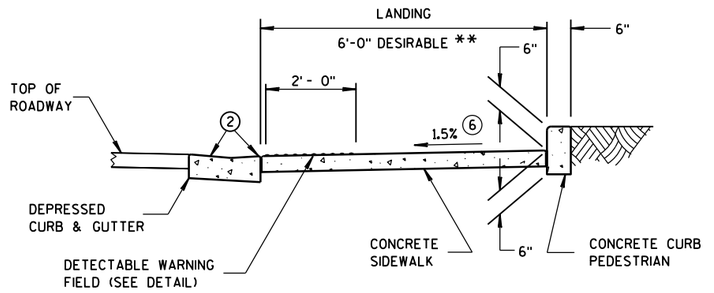


VIEW A-A

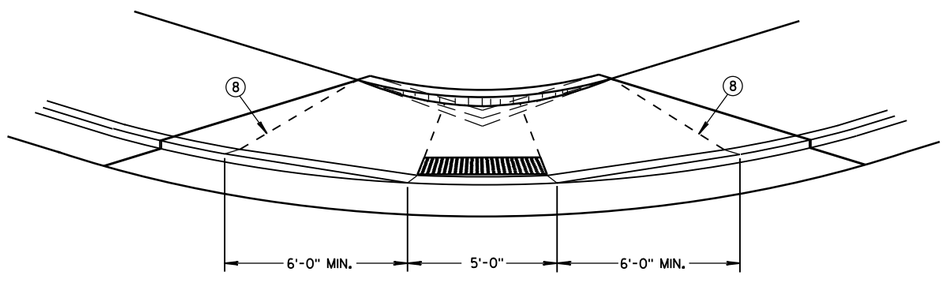
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

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 NOT EXCEED 7%.

(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

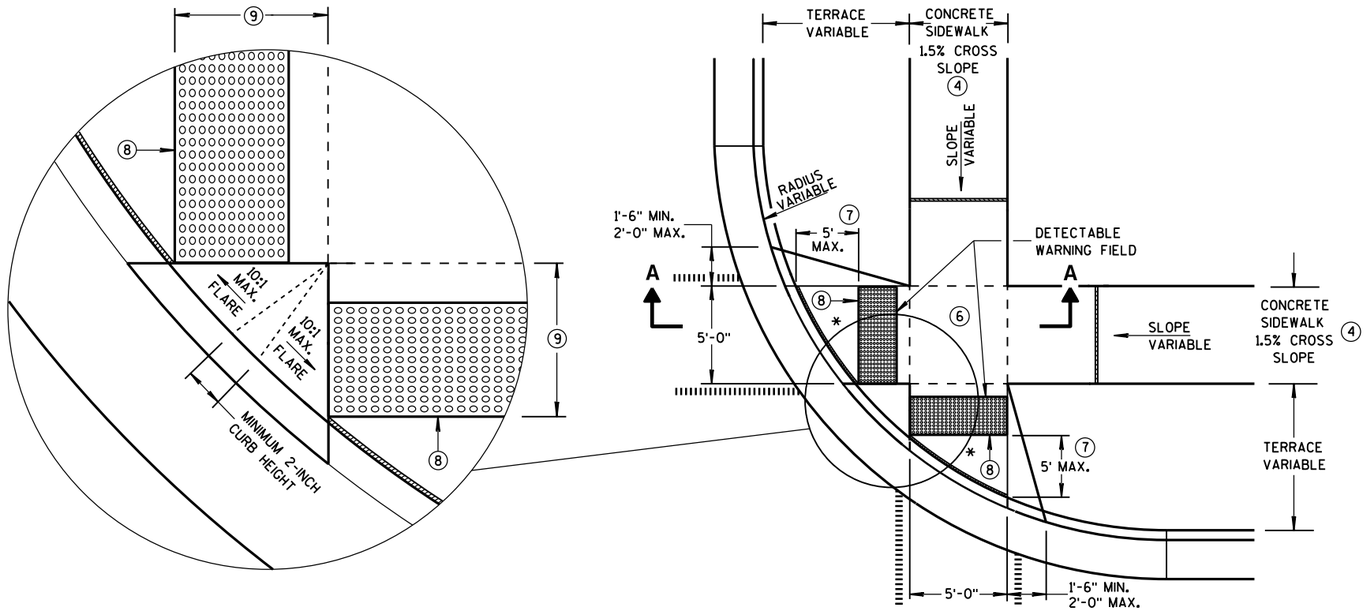
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-18a

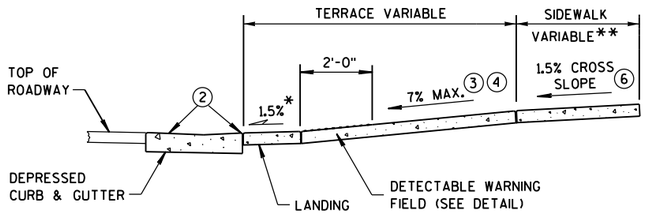


PLAN VIEW

TYPE 2 RAMP

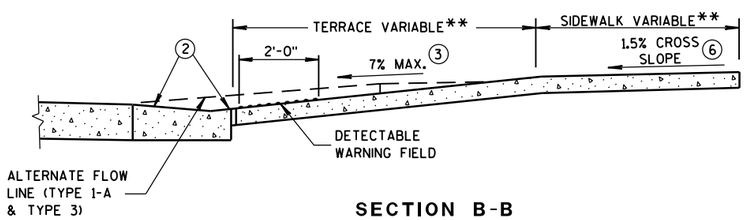
(ON LINE WITH SIDEWALK)

* 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

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 NOT EXCEED 7%.

(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.

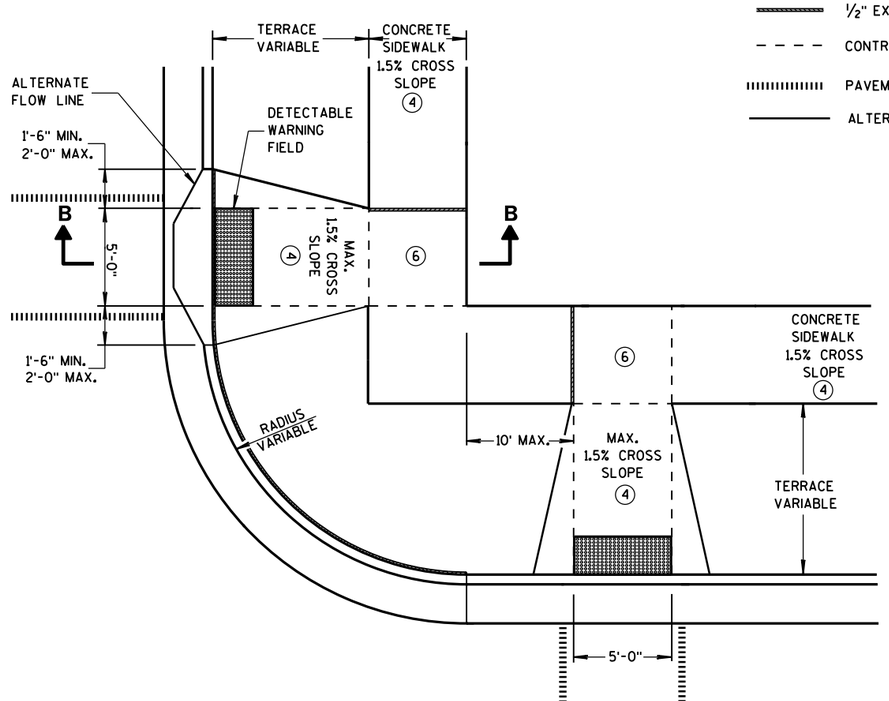
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. USE EQUAL-SIZE PANELS TO DEVELOP OVERLAPPING, STAGGERED ROWS. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(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

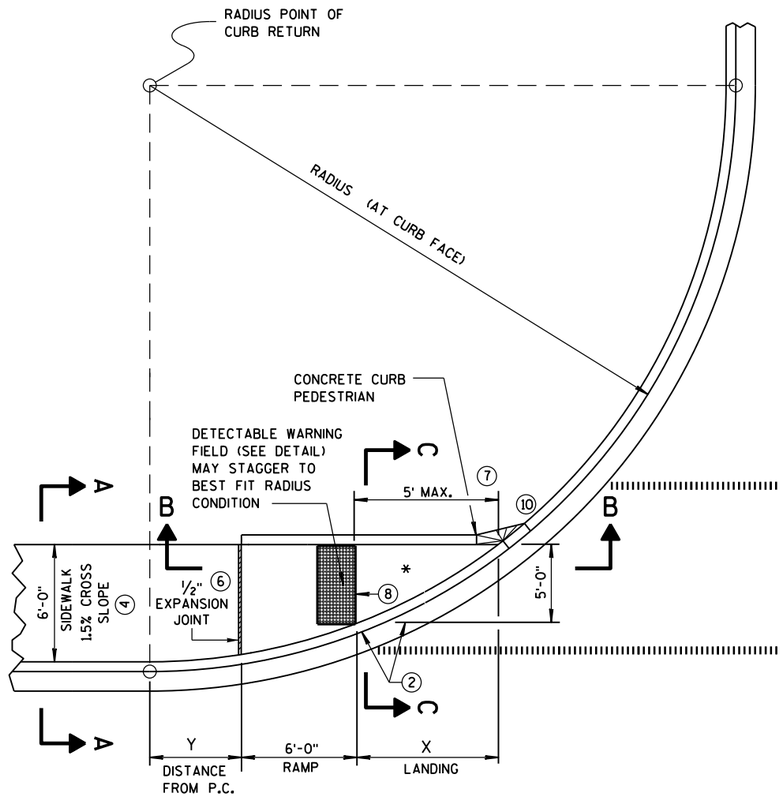
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

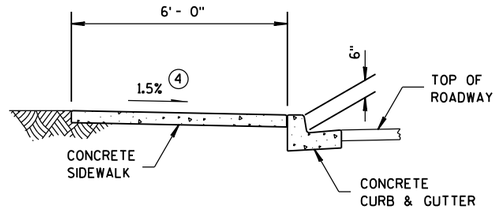
S.D.D. 8 D 5-18b



CURB RAMP TYPE 4A
PLAN VIEW

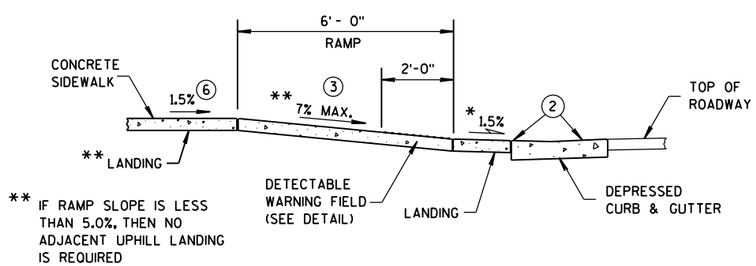
RADIUS (AT CURB FACE)	X	Y
20 FEET	7'-11"	0'-2"
30 FEET	10'-2¾"	1'-7½"
40 FEET	12'-1¼"	2'-10"
50 FEET	13'-8¾"	3'-10¾"
60 FEET	15'-2"	4'-10¼"

INTERMEDIATE RADII CAN BE INTERPOLATED



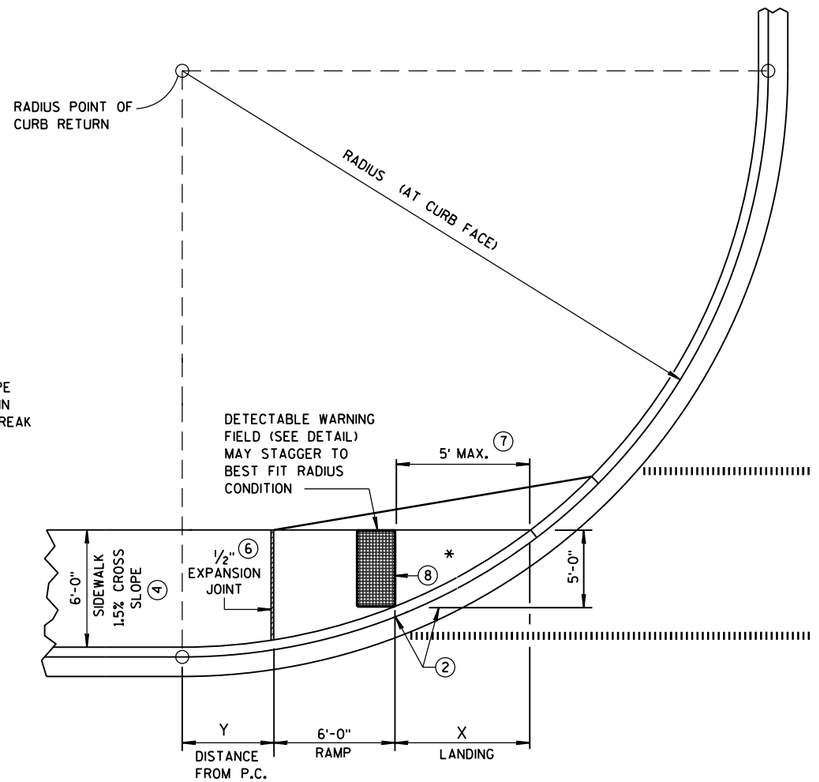
SECTION A-A FOR TYPE 4A

SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

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



CURB RAMP TYPE 4A1
PLAN VIEW

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 NOT EXCEED 7%.

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

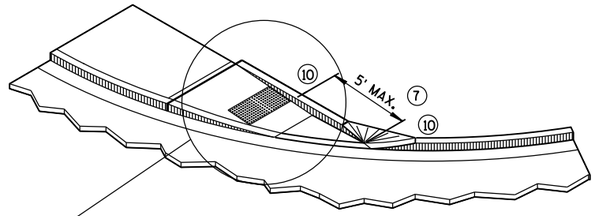
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

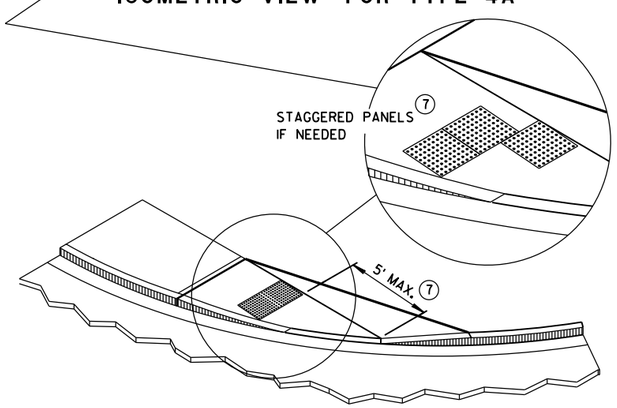
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. USE EQUAL-SIZE PANELS TO DEVELOP OVERLAPPING, STAGGERED ROWS. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(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



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

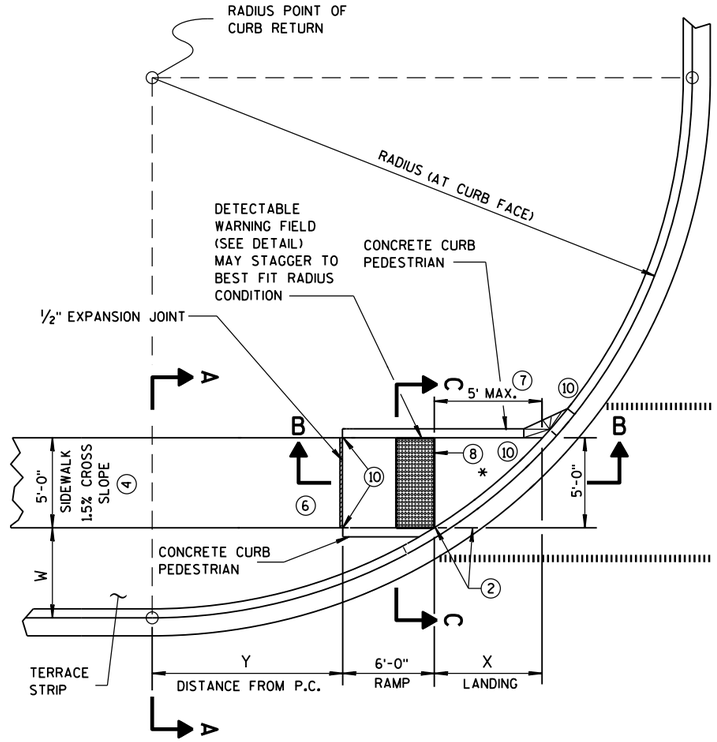
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

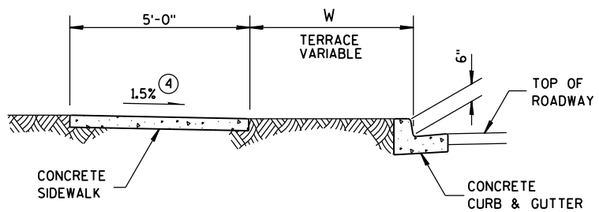
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

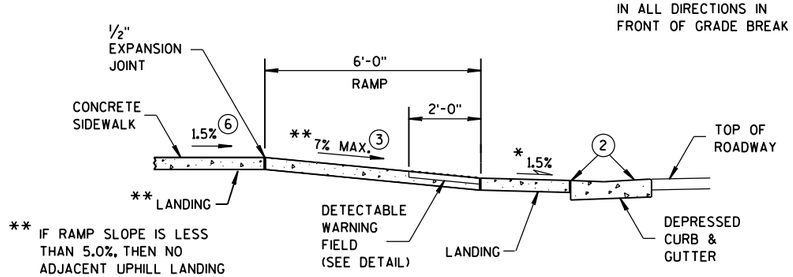
S.D.D. 8 D 5-18c



CURB RAMP TYPE 4B
PLAN VIEW



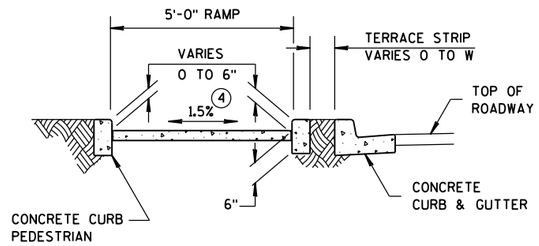
SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B

LEGEND

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



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"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-6¾"	3'-3"	8'-6¼"
30 FEET	7'-9¼"	5'-10½"	6'-9½"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"
40 FEET	9'-4"	7'-10"	8'-2¾"	10'-3"	7'-4¾"	12'-3¾"	6'-8½"	14'-1¼"	6'-1¾"	15'-8½"
50 FEET	10'-8"	9'-6½"	9'-5½"	12'-3¼"	8'-6½"	14'-7½"	7'-9¾"	16'-8¼"	7'-2½"	18'-6¼"
60 FEET	11'-10¼"	11'-0¾"	10'-6½"	14'-1¼"	9'-6½"	16'-8½"	8'-9¼"	18'-11¾"	8'-1½"	21'-0½"

INTERMEDIATE RADII CAN BE INTERPOLATED

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 NOT EXCEED 7%.

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

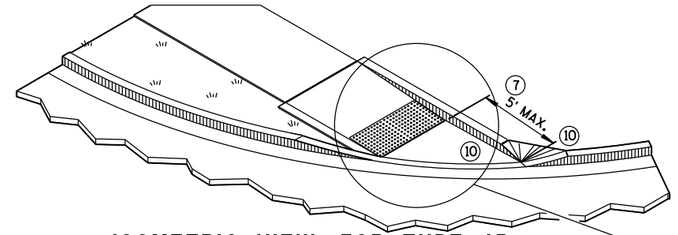
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

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

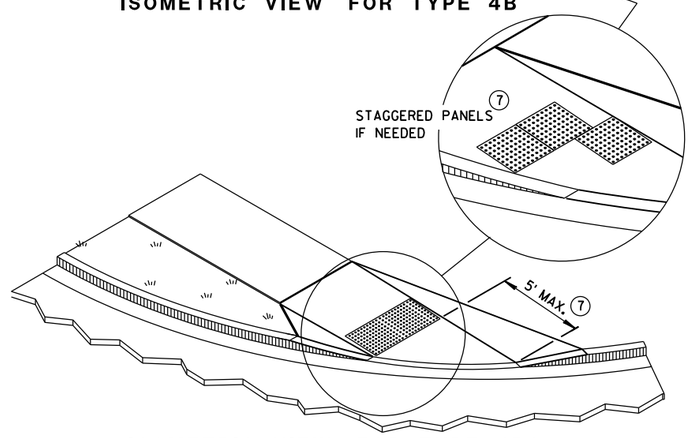
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. USE EQUAL-SIZE PANELS TO DEVELOP OVERLAPPING, STAGGERED ROWS. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

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

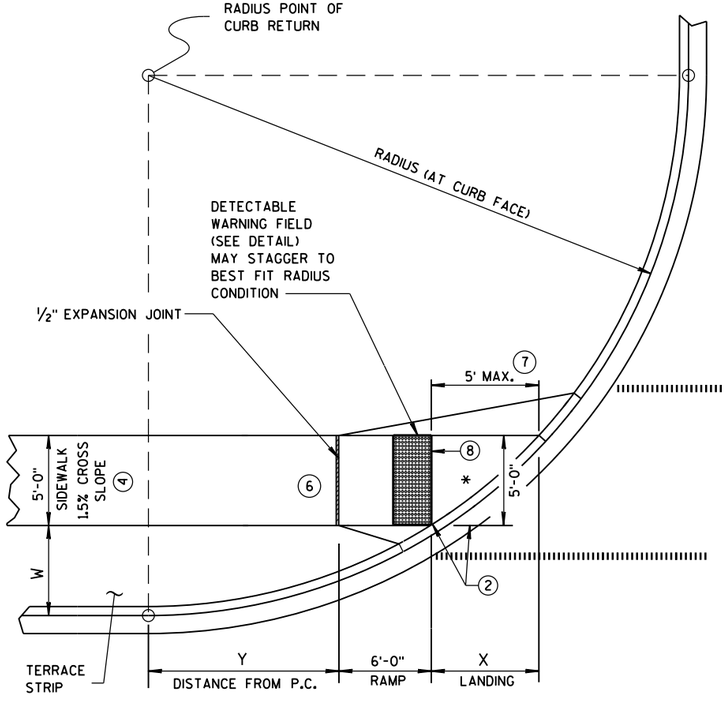
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1



CURB RAMP TYPE 4B1
PLAN VIEW

CURB RAMPS TYPE 4B AND 4B1

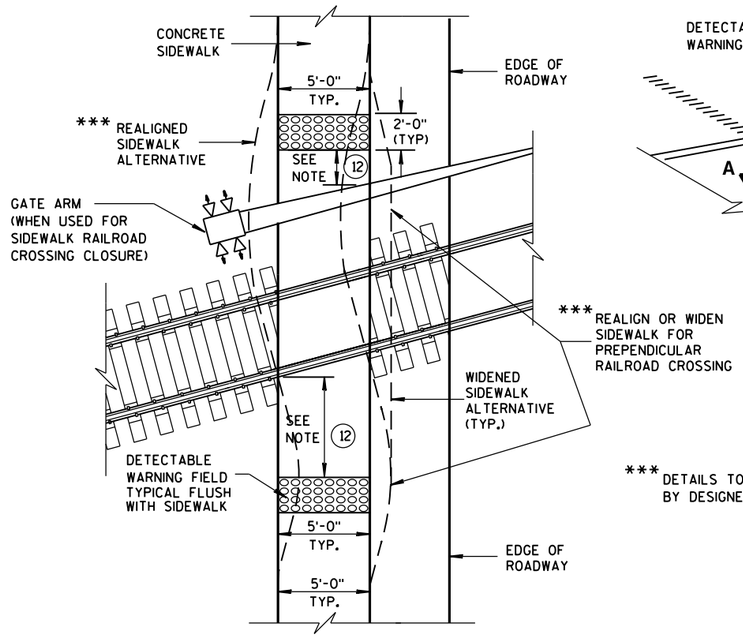
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-18d

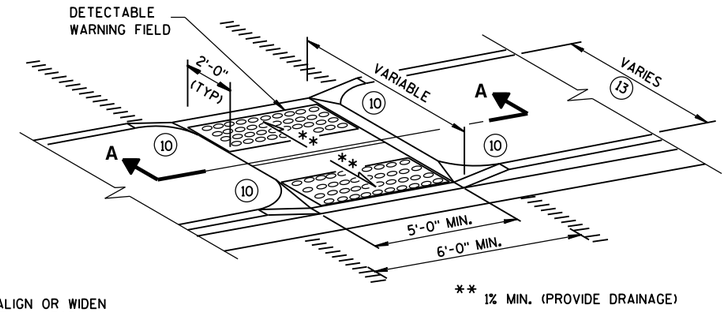
6

S.D.D. 8 D 5-18d



*** DETAILS TO BE DETERMINED BY DESIGNER

TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

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 NOT EXCEED 7%.

(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.

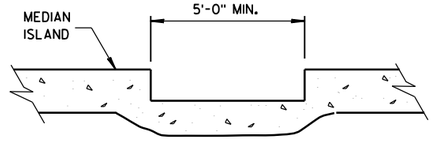
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(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.

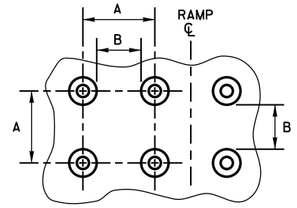
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



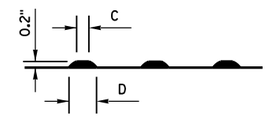
SECTION A-A

	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.

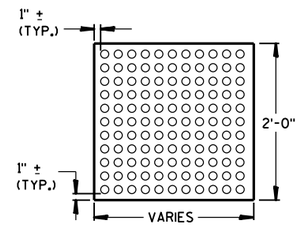


PLAN VIEW



ELEVATION VIEW

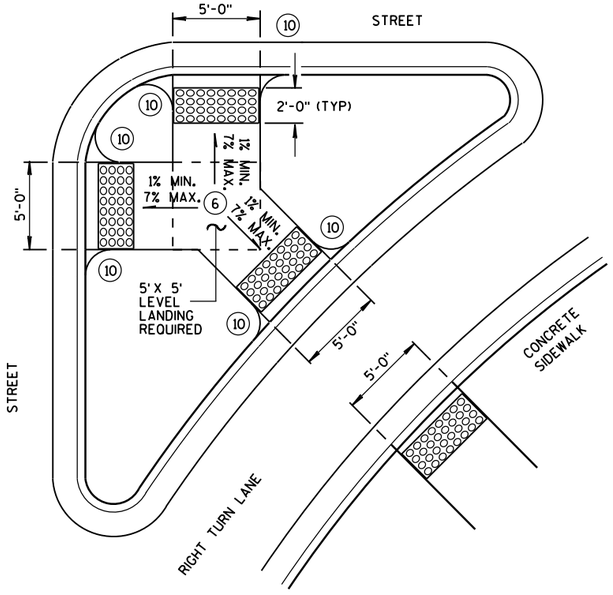
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



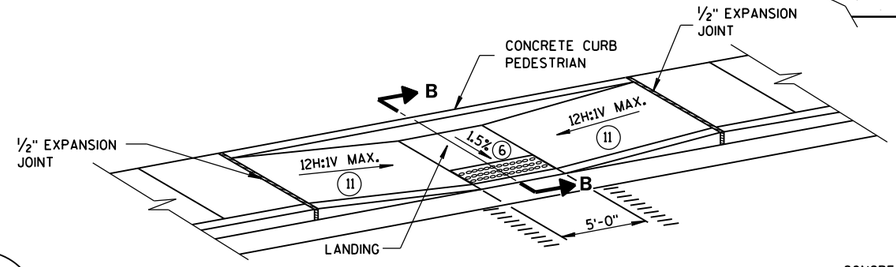
PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)

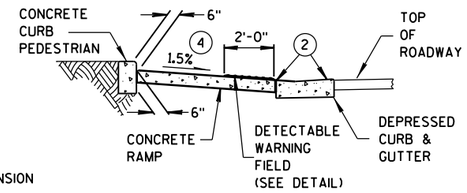
REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



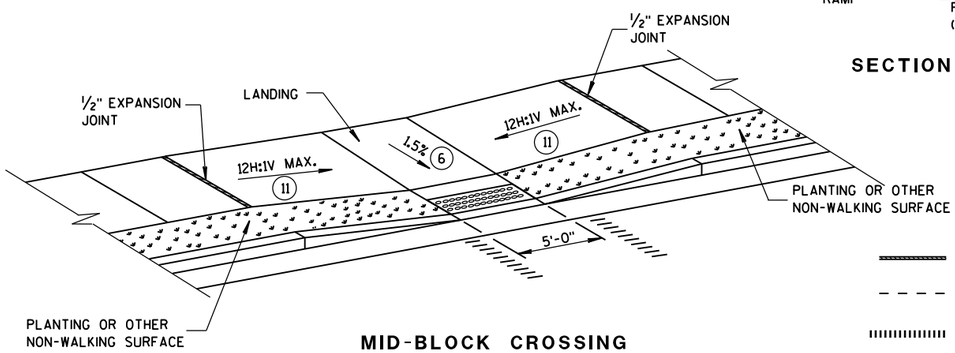
TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7A



SECTION B-B



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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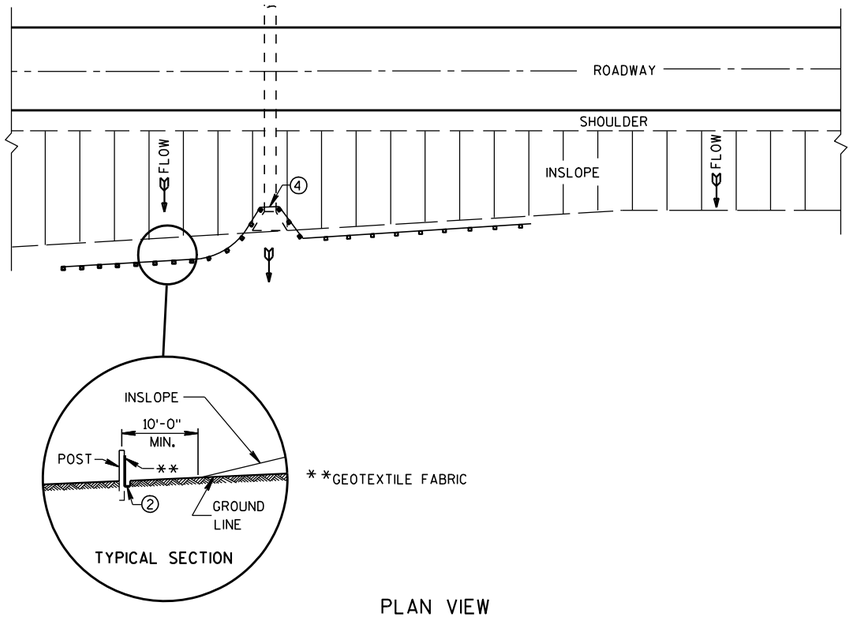
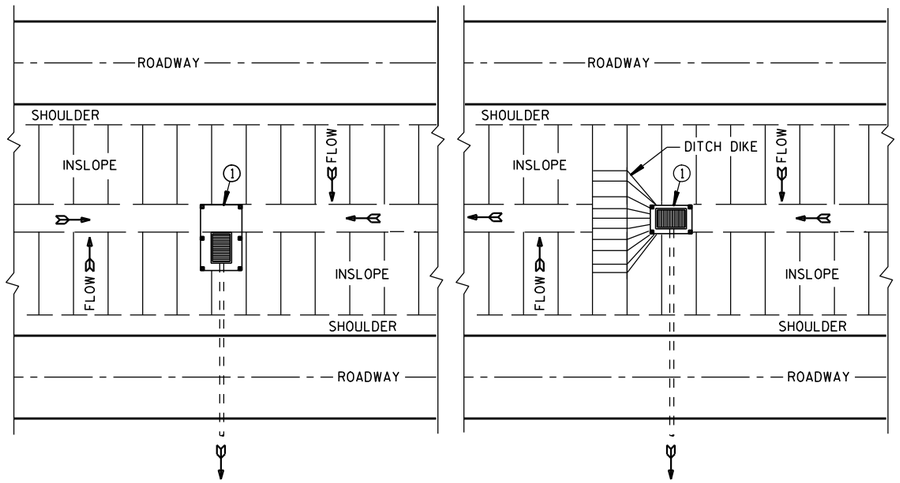
S.D.D. 8 D 5-18e



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



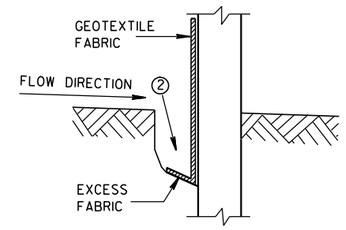
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

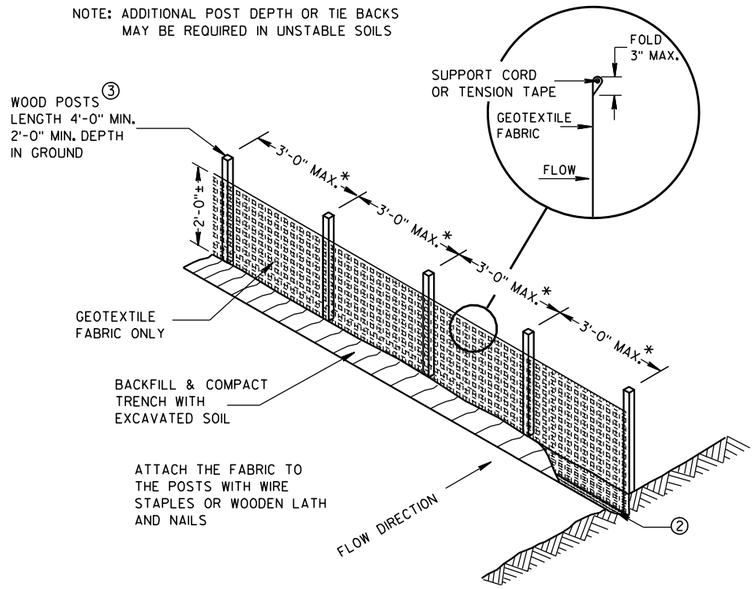
GENERAL NOTES

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.

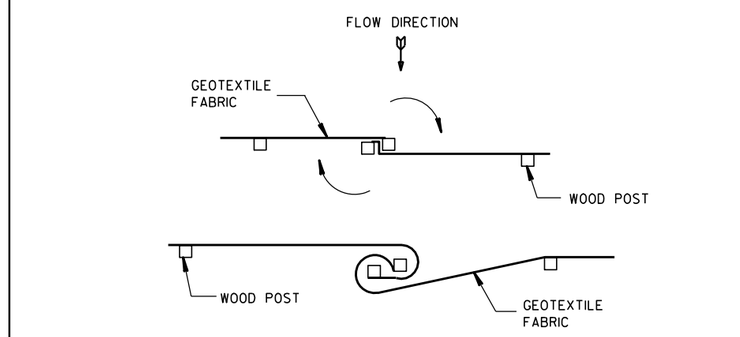


TRENCH DETAIL

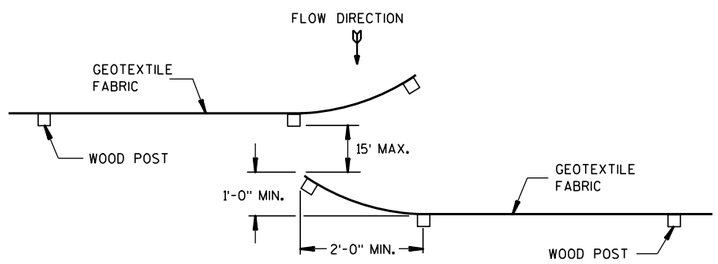


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

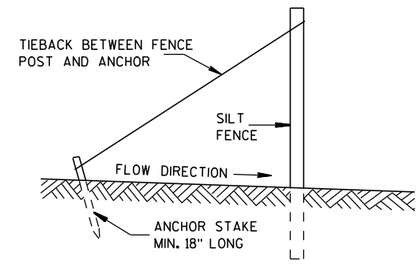


TWIST METHOD



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

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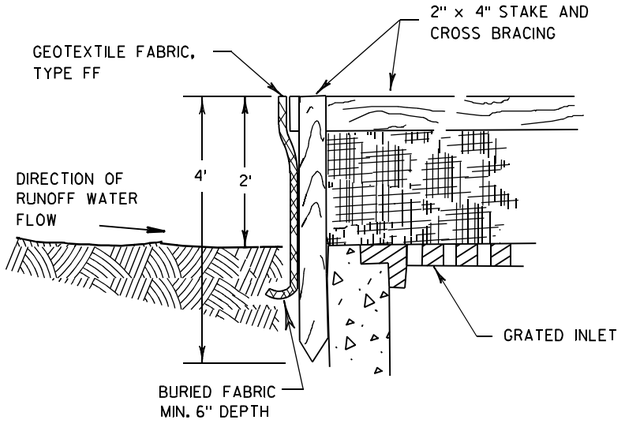
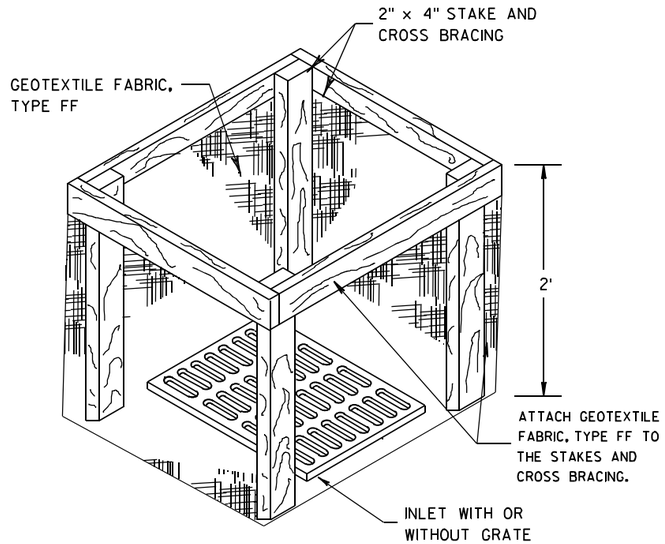
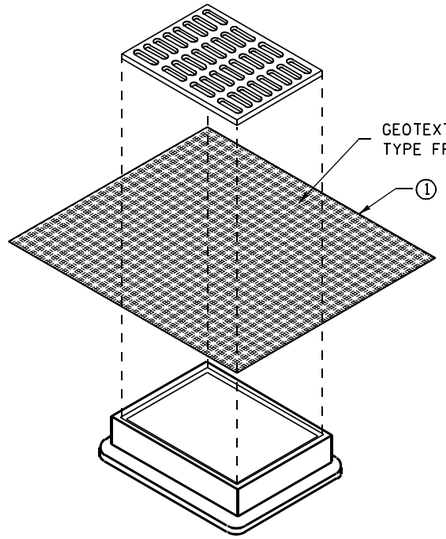
S.D.D. 8 E 9-6



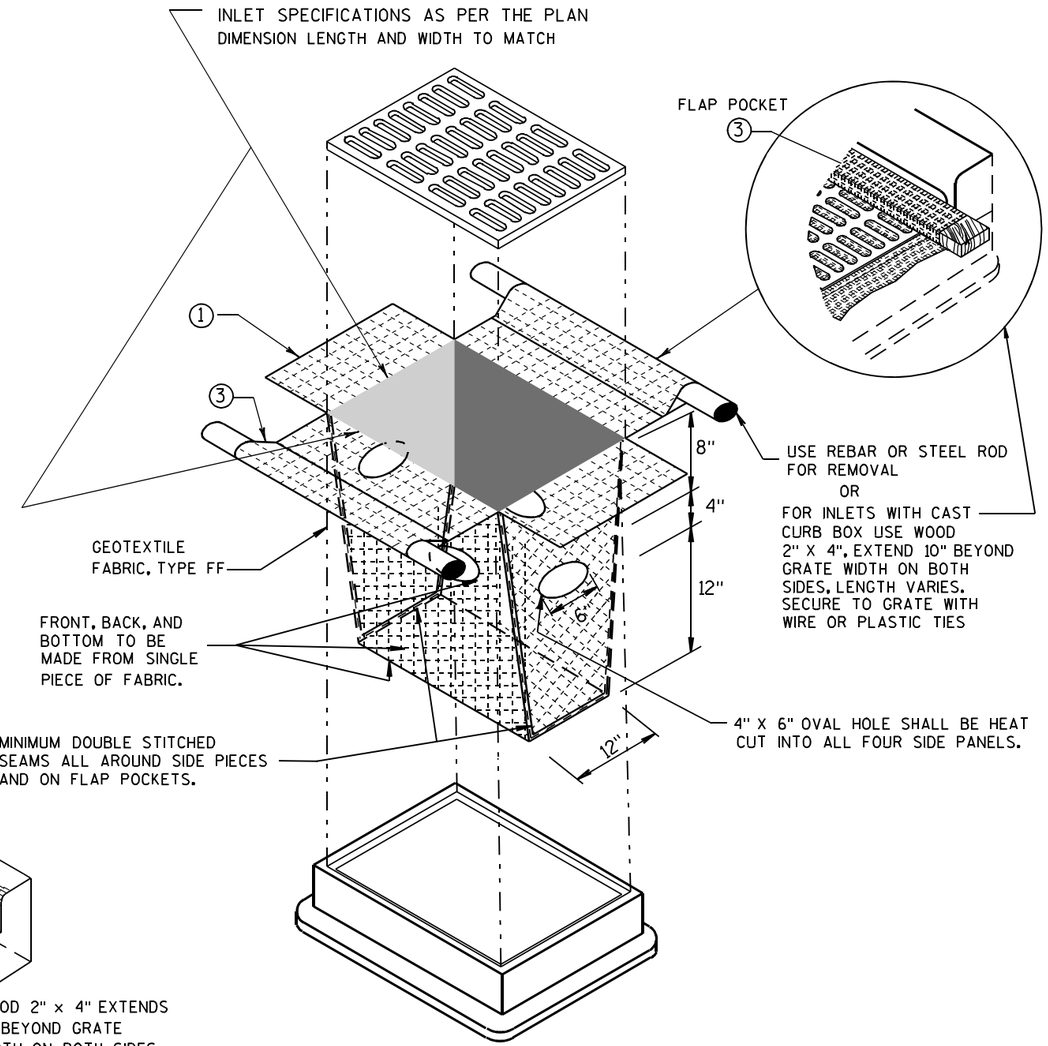


INLET PROTECTION, TYPE A



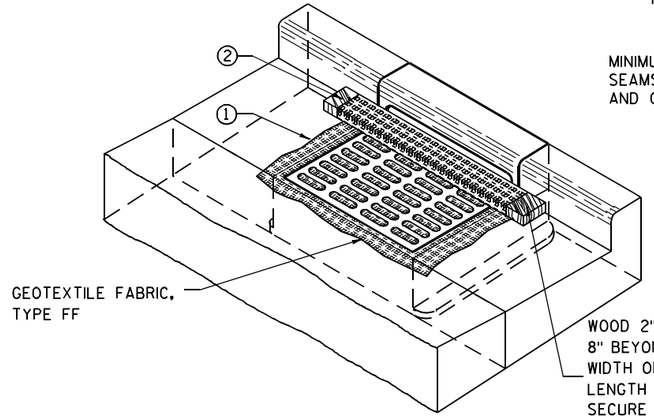
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE 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

METAL APRON ENDWALLS

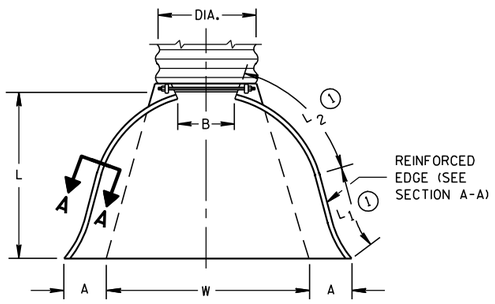
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

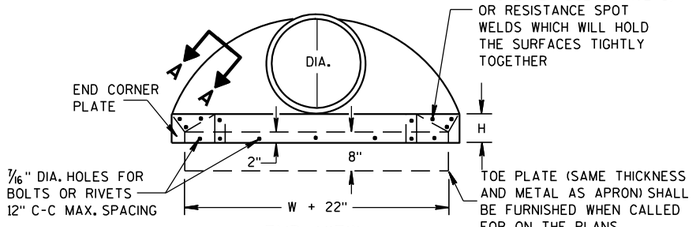
REINFORCED CONCRETE APRON ENDWALLS

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

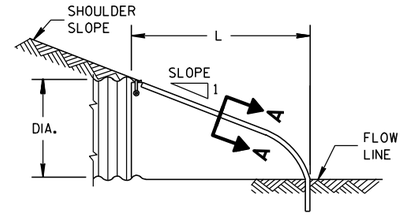
*MINIMUM
**MAXIMUM



PLAN VIEW

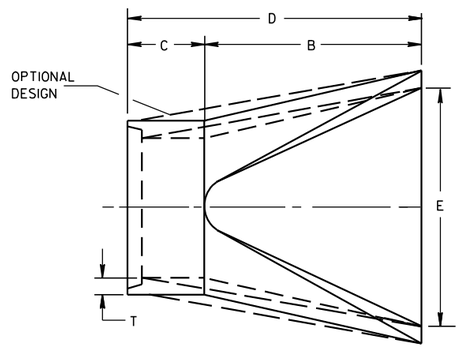


END VIEW

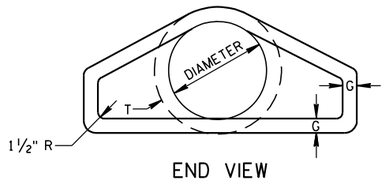


SIDE ELEVATION

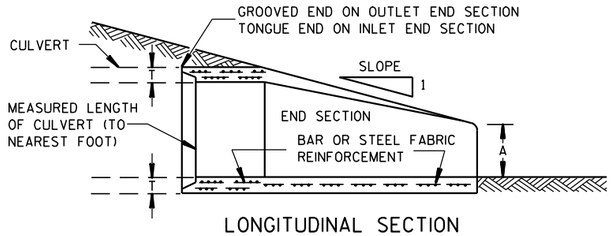
METAL ENDWALLS



PLAN

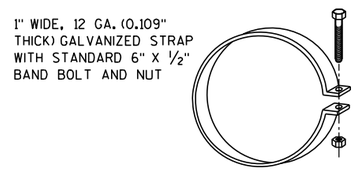


END VIEW



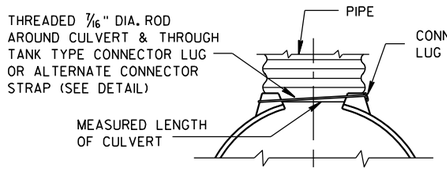
LONGITUDINAL SECTION

CONCRETE ENDWALLS

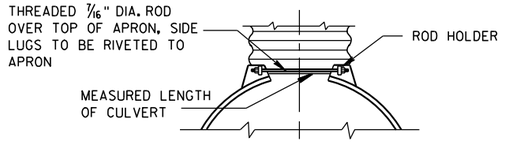


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

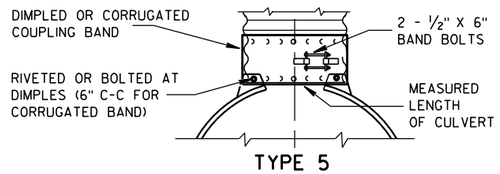


TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE

TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

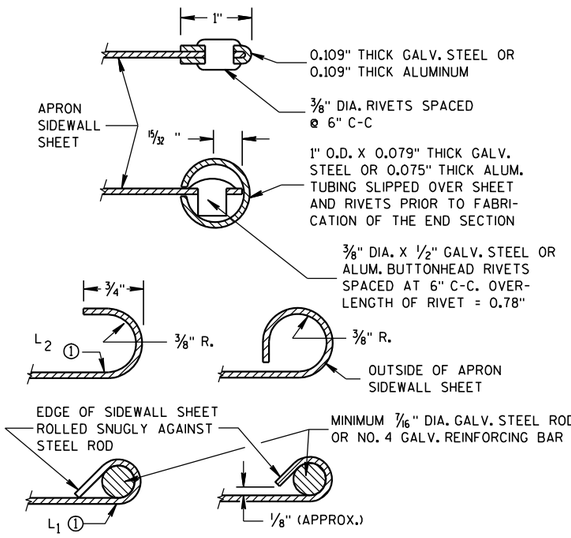
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

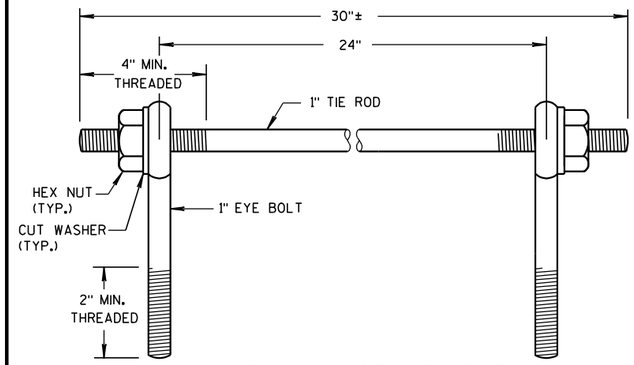
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

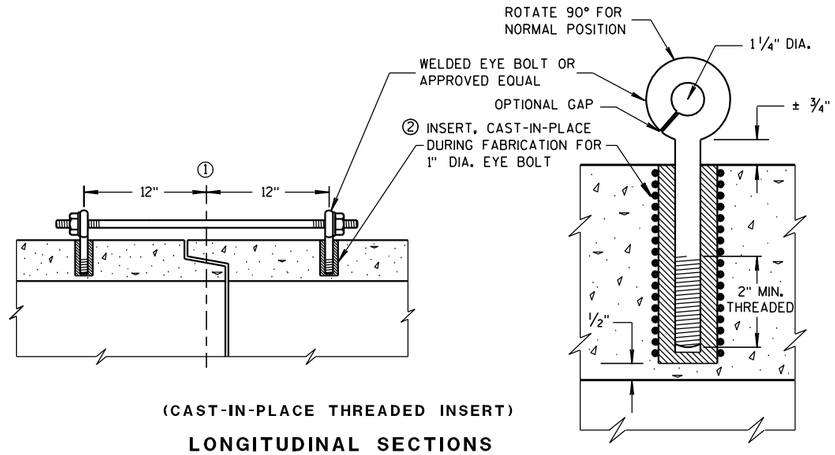
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

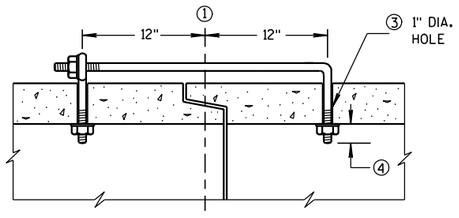
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

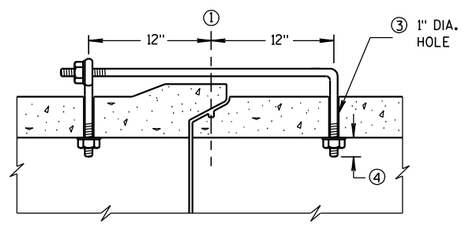
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

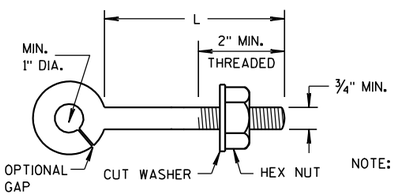


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

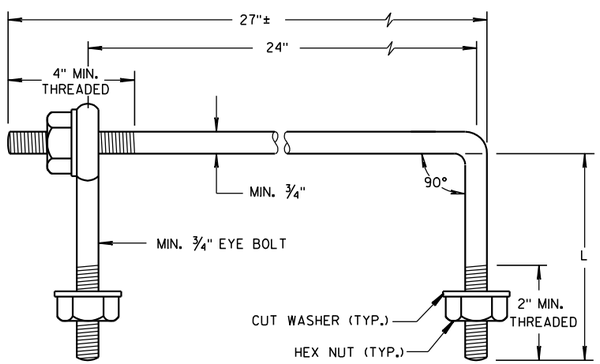
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

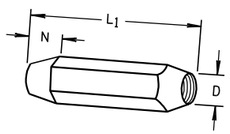
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

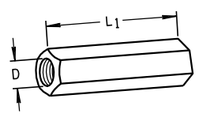
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES



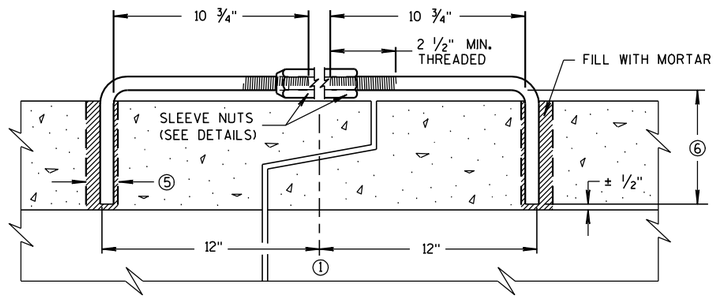
TAPERED



PLAIN

RIGHT AND LEFT THREADS

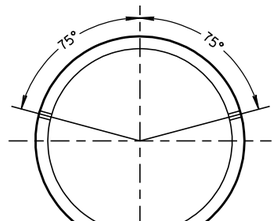
SLEEVE NUTS



LONGITUDINAL SECTION

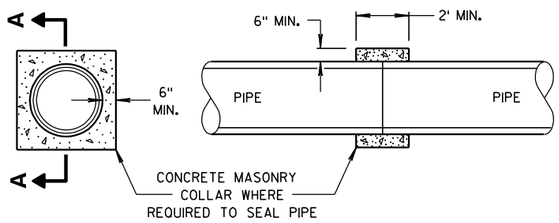
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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
64 — 'MENT
FHWA

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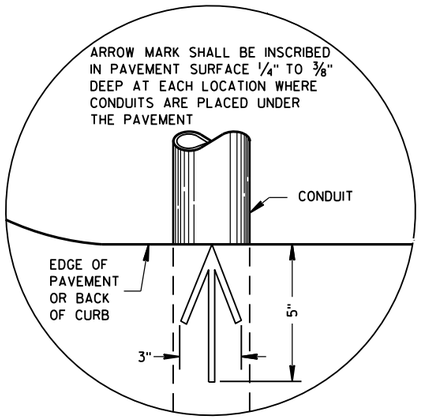
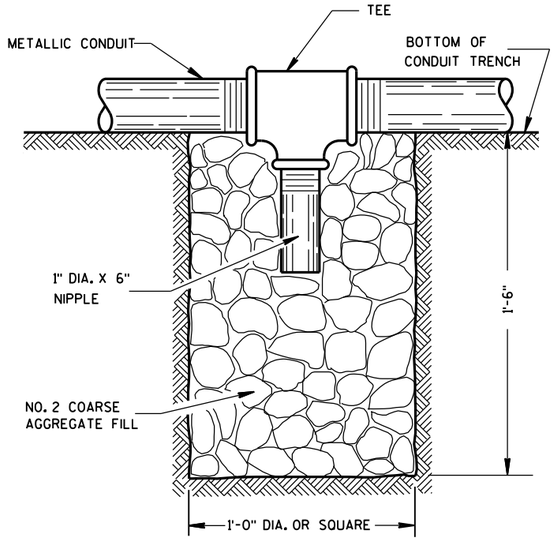


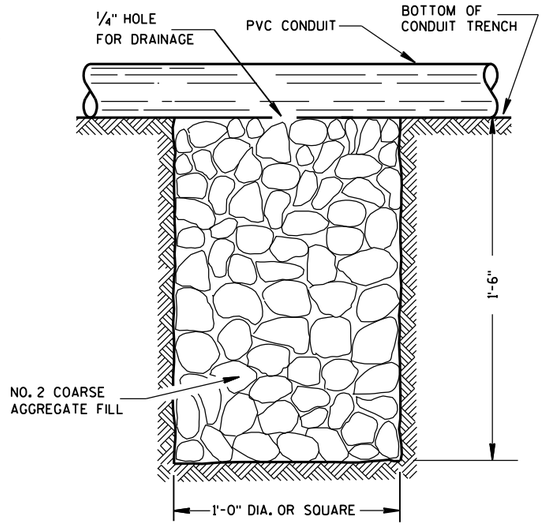
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

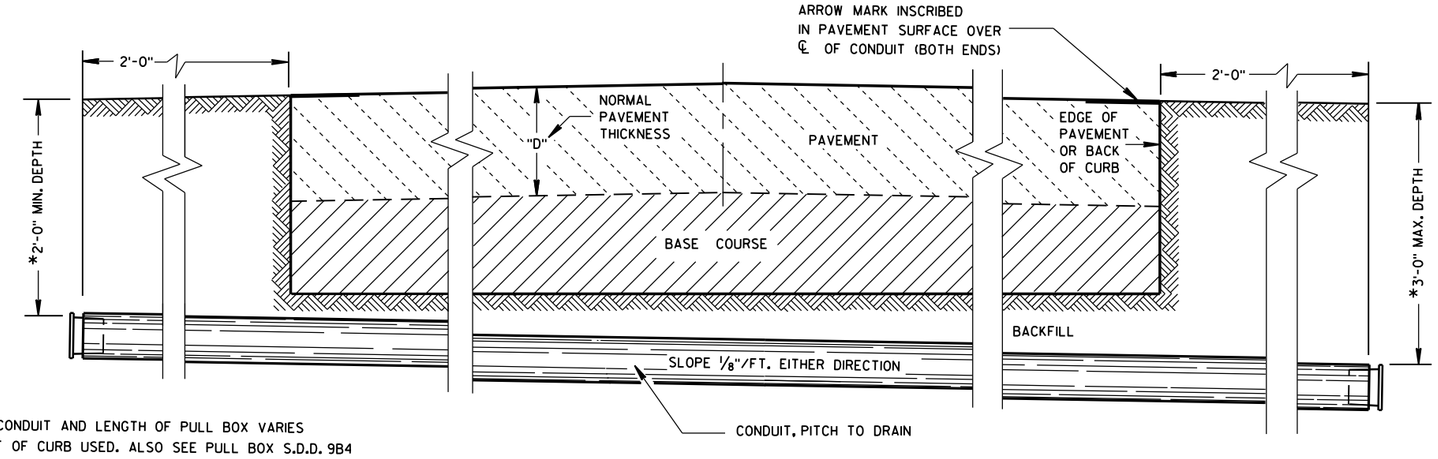
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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.



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 9 B 2-9

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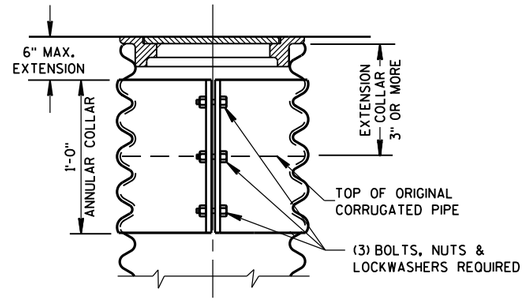
S.D.D. 9 B 2-9

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

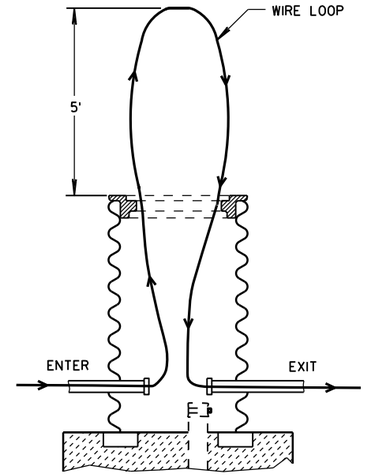
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

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

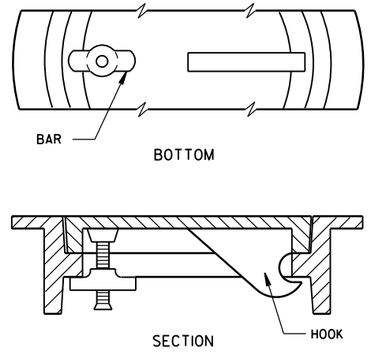
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

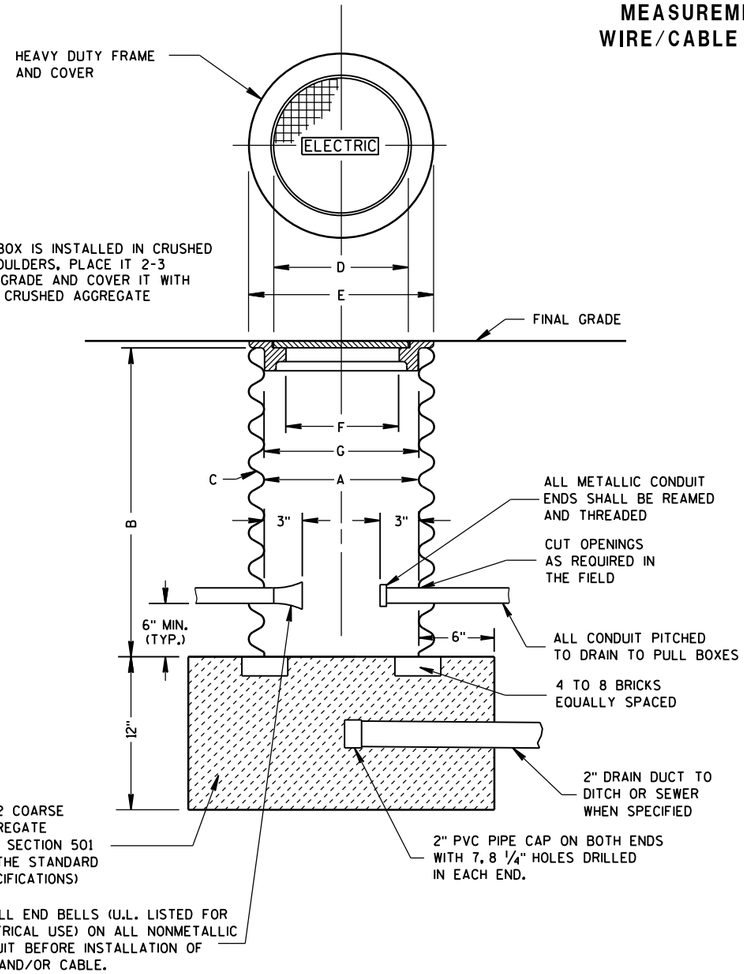


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



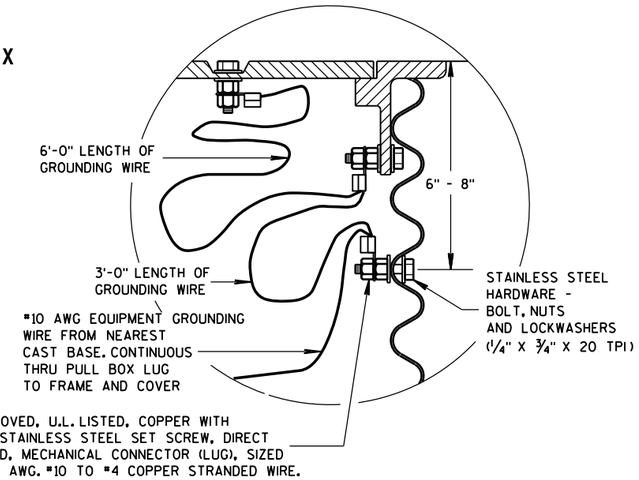
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

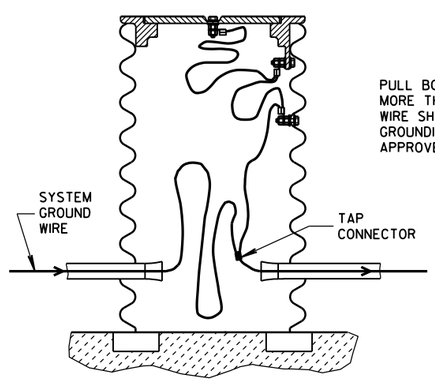


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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

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

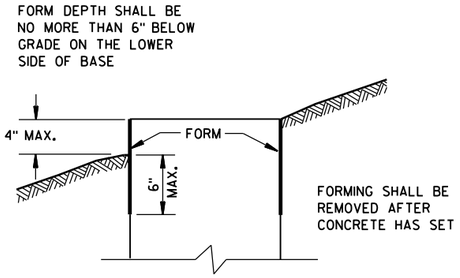
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 B 4-11



FORMING DETAIL

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

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

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

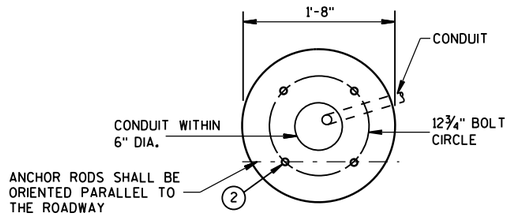
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

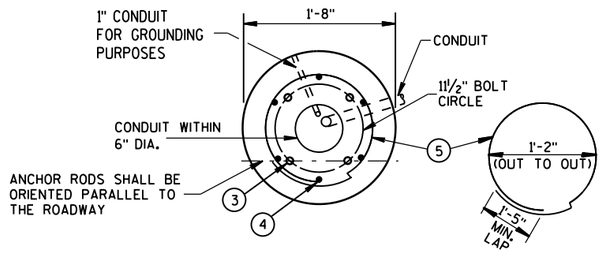
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

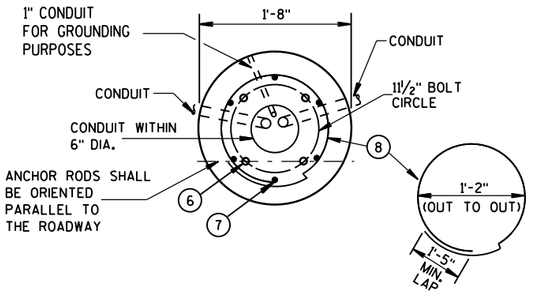
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

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

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

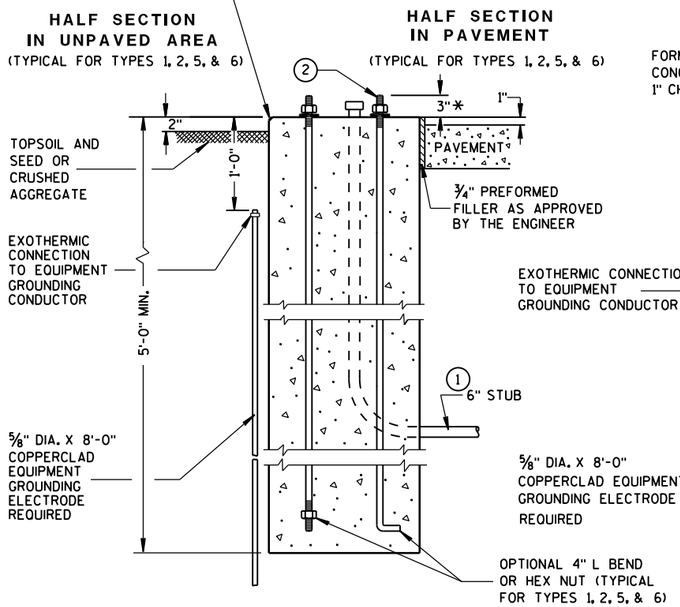






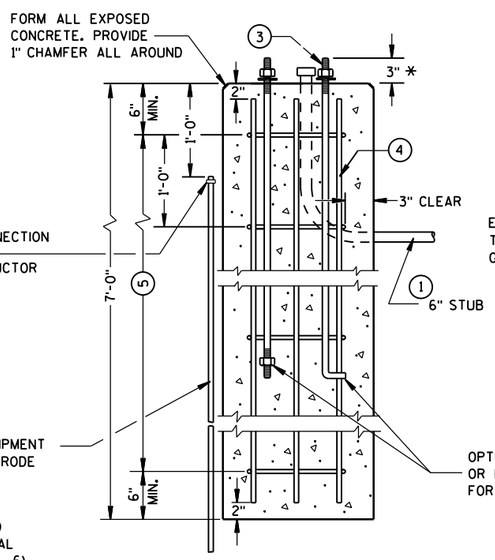
HALF SECTION IN UNPAVED AREA

(TYPICAL FOR TYPES 1, 2, 5, & 6)

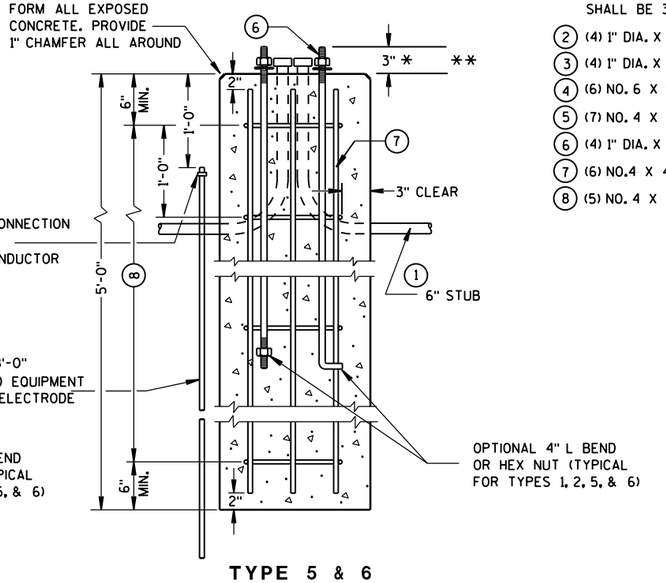


HALF SECTION IN PAVEMENT

(TYPICAL FOR TYPES 1, 2, 5, & 6)



TYPE 2



TYPE 5 & 6

CONCRETE BASES

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 C 2-7

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S.D.D. 9 C 2-7

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.

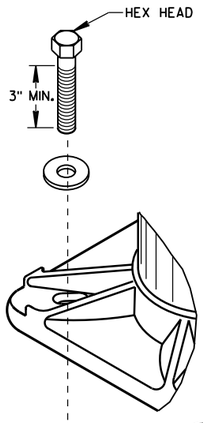
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

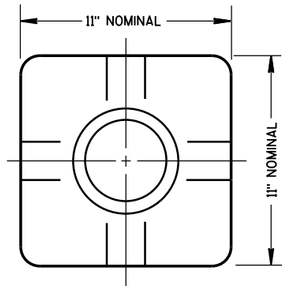
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

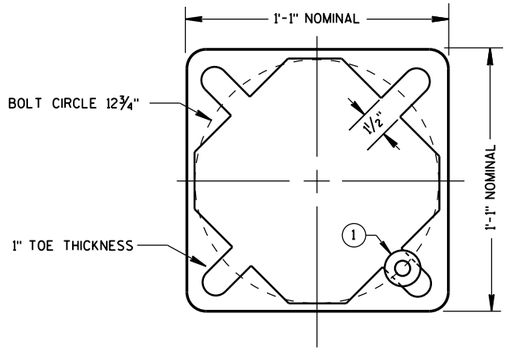
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

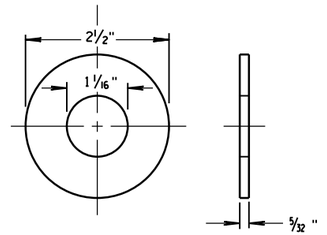




TOP VIEW
(PEDESTAL BASE)

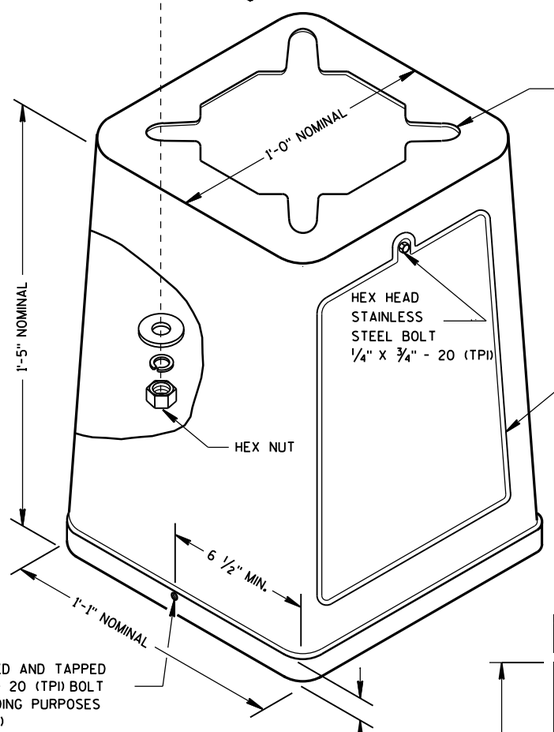


BOTTOM VIEW
(PEDESTAL BASE)

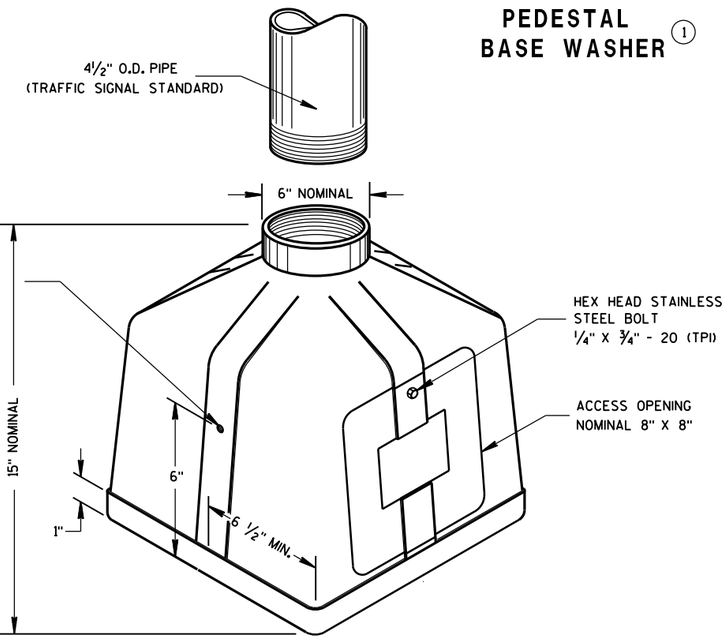


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

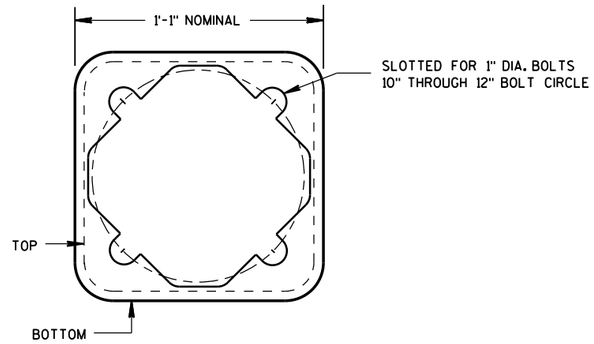
PEDESTAL BASE WASHER (1)



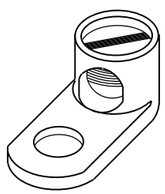
ISOMETRIC VIEW



ISOMETRIC VIEW
PEDESTAL BASE

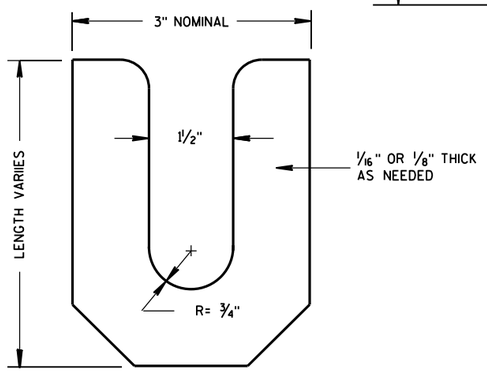


BOTTOM VIEW
(TRANSFORMER BASE)



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

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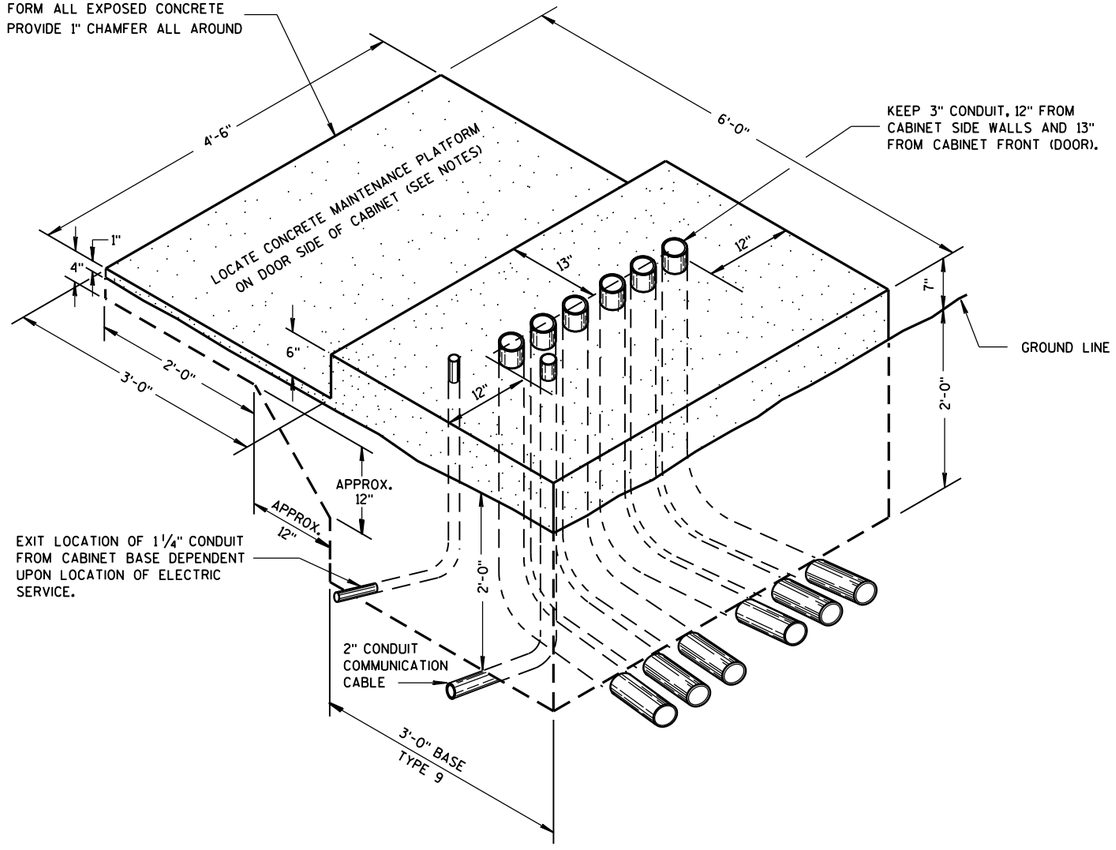
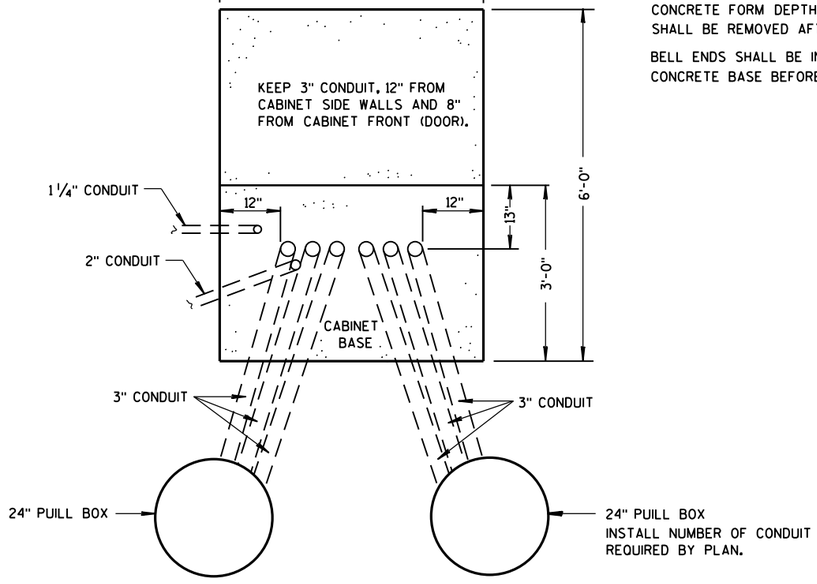
S.D.D. 9 C 3-4



ISOMETRIC VIEW

TYPE 9, SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

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

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

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

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

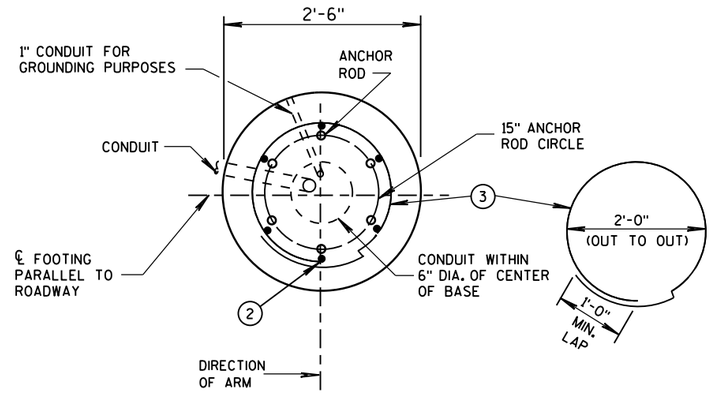
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

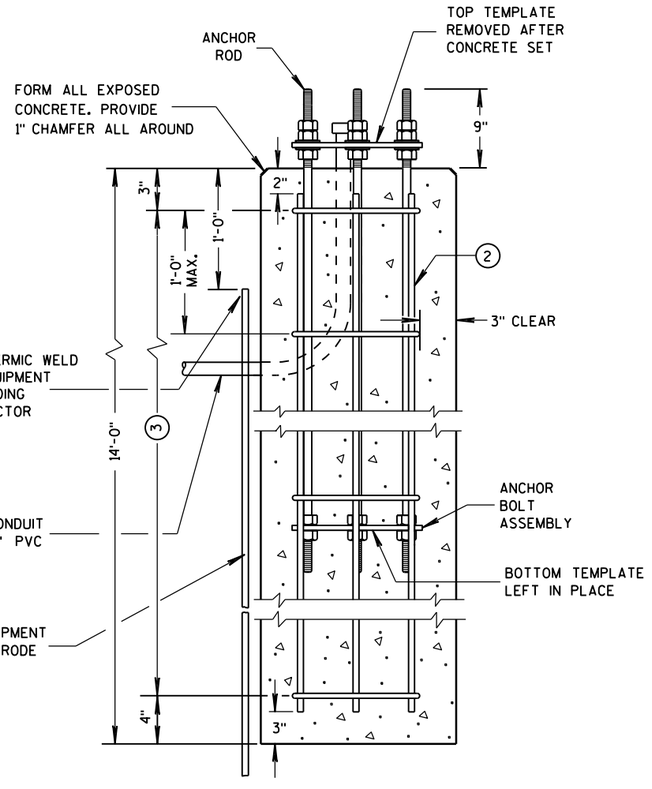
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN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

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

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

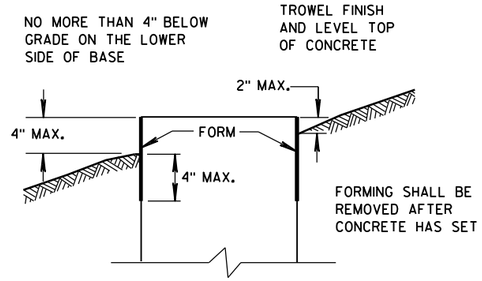
CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATION)	fy=55,000 p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000 p.s.i.



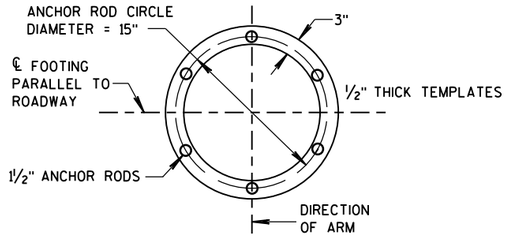


CONCRETE BASE TYPE 10
(FOR TYPE 9 & 10 POLES)

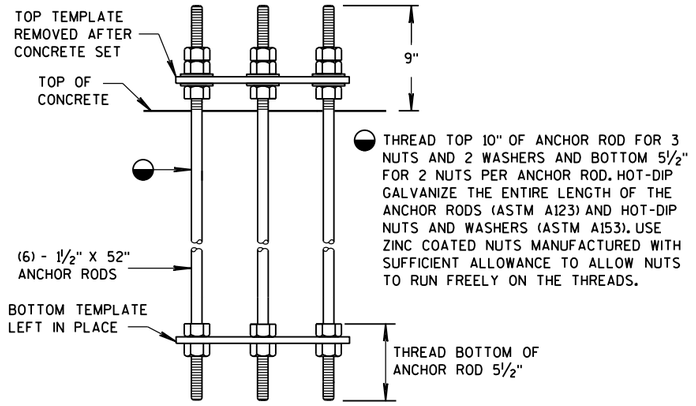
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10
ANCHOR ASSEMBLY

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

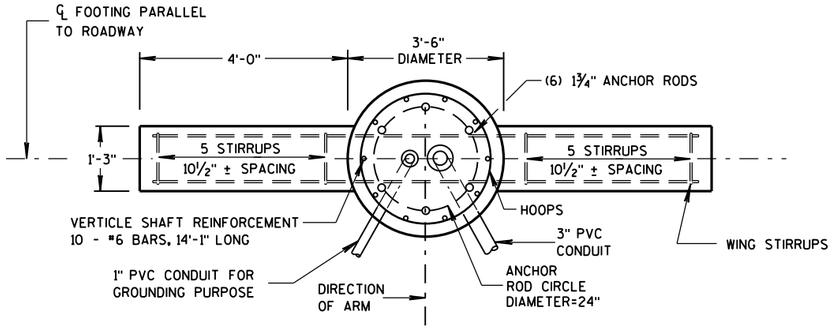
CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

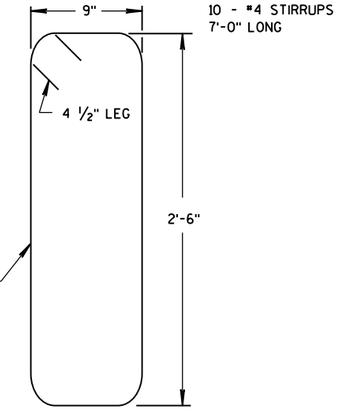
APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

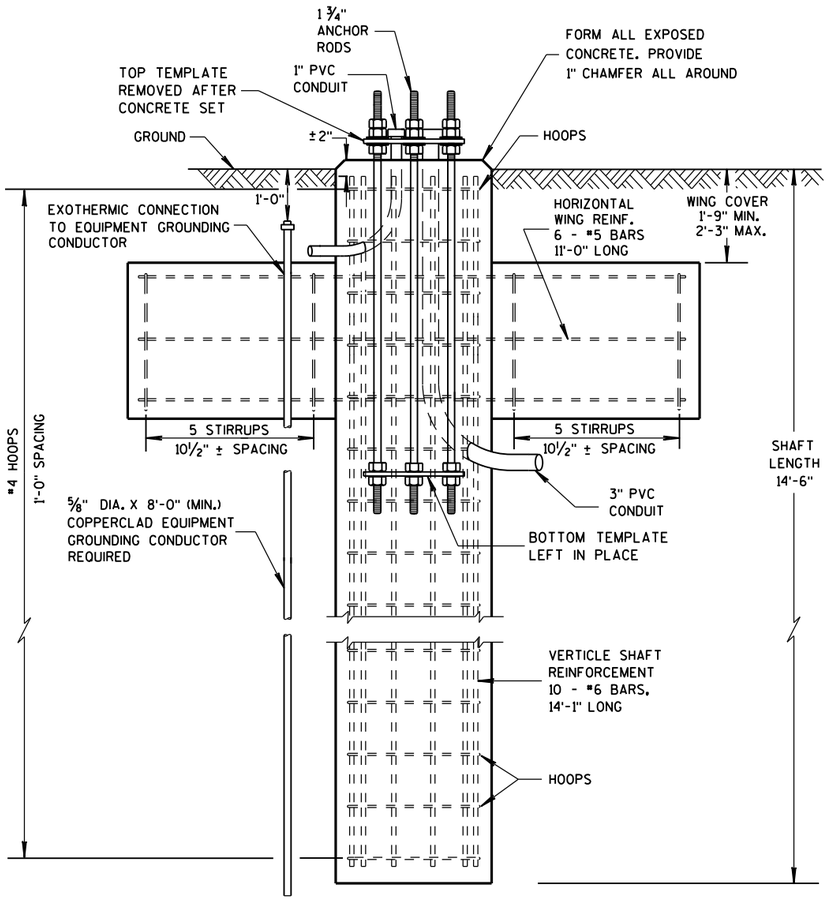
S.D.D. 9 C 11-9



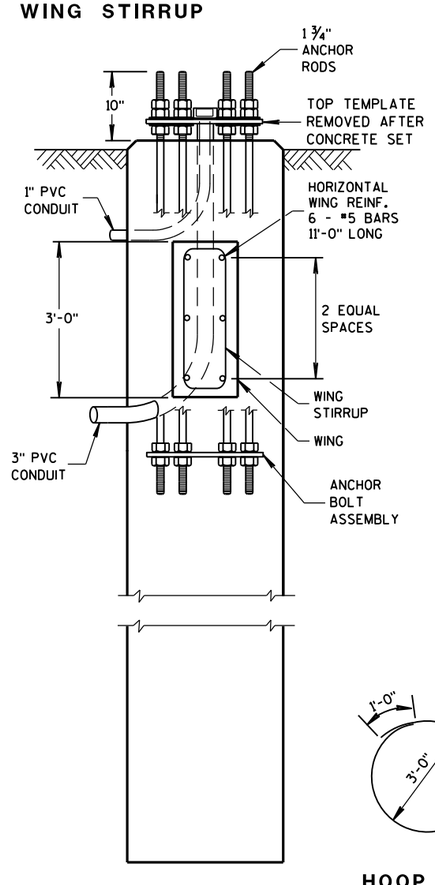
PLAN VIEW



WING STIRRUP

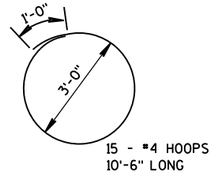


ELEVATION VIEW



SIDE VIEW

DOES NOT SHOW HOOPS OR VERTICAL SHAFT REINFORCEMENT



15 - #4 HOOPS 10'-6" LONG

HOOP DETAIL

GENERAL NOTES

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

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

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATIONS	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

(FOR TYPE 12 & 13 POLES)

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

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

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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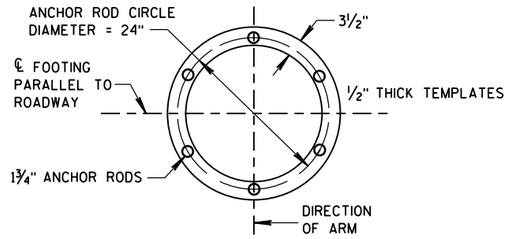
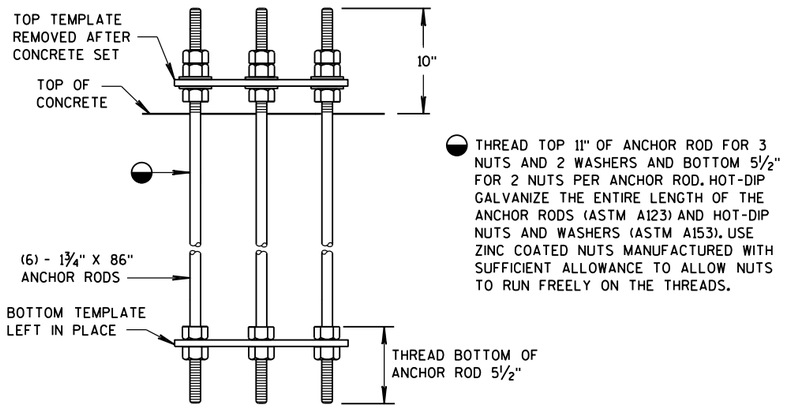
S.D.D. 9 C 12-8a

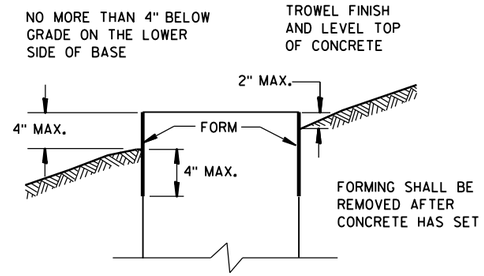


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY

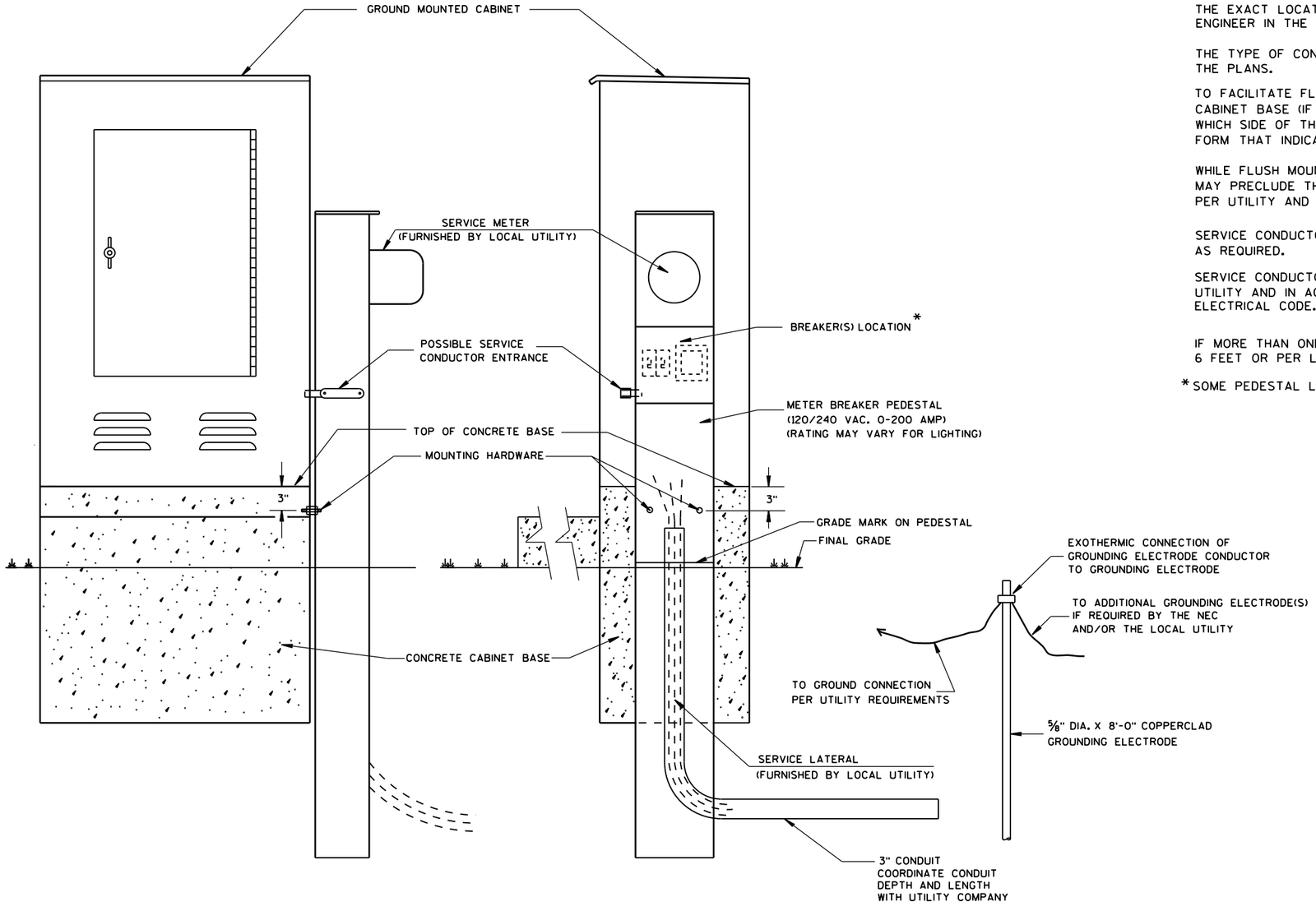


FORMING DETAIL

CONCRETE BASE TYPE 13	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2016 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA	

6

S.D.D. 9 C 12-8b



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

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

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

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

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

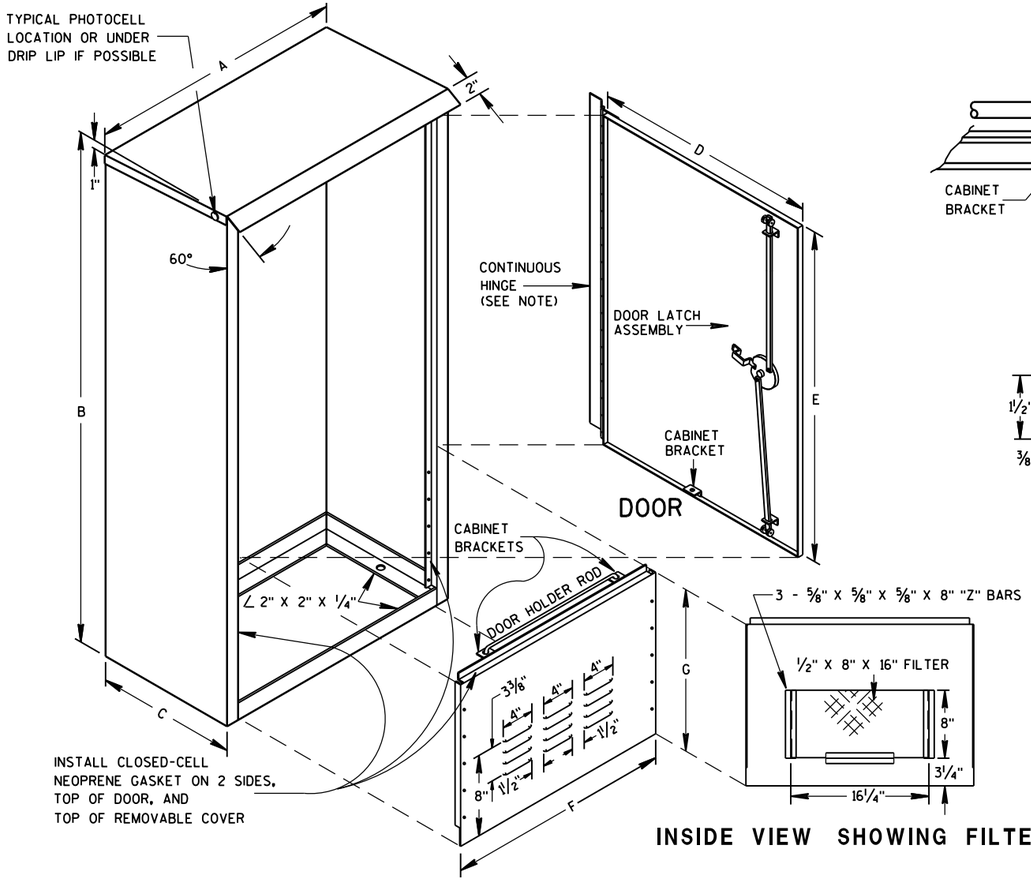
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

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

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

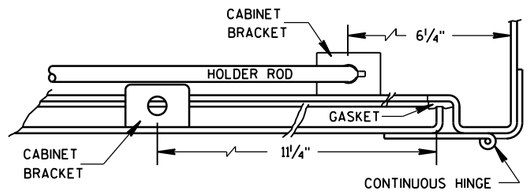
* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL

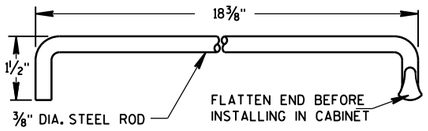


REMOVABLE COVER

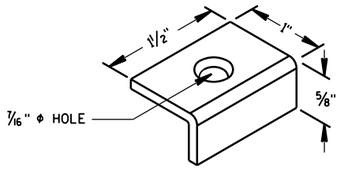
INSIDE VIEW SHOWING FILTER



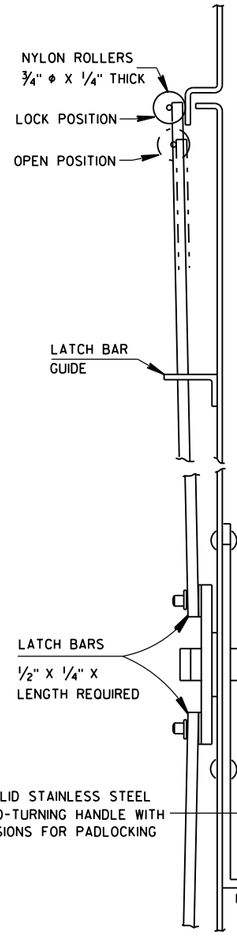
HINGE & DOOR HOLDER



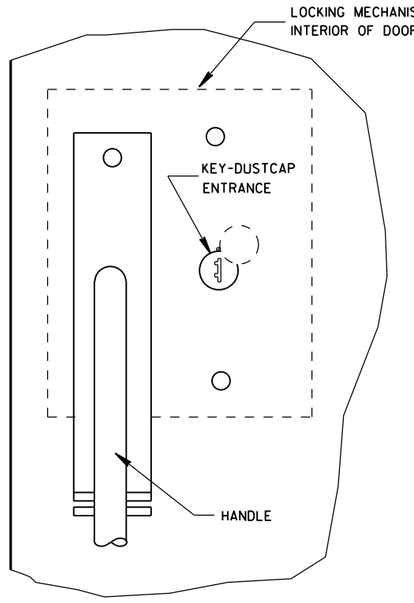
HOLDER ROD



CABINET BRACKET

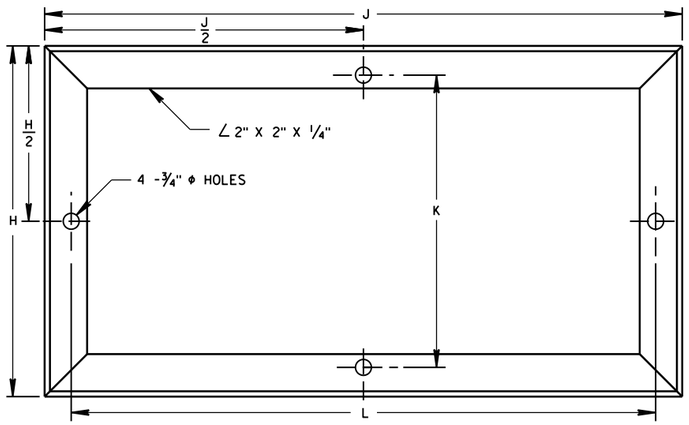


SIDE VIEW



FRONT VIEW

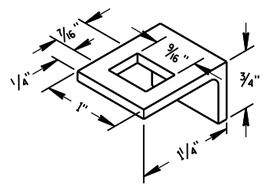
LATCH ASSEMBLY



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

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



LATCH BAR GUIDE

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

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

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

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

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

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

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

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

SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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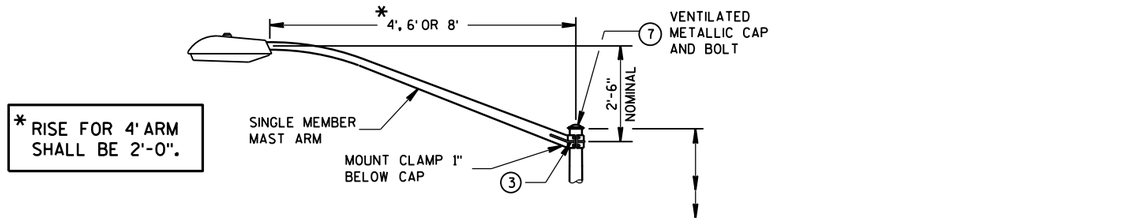
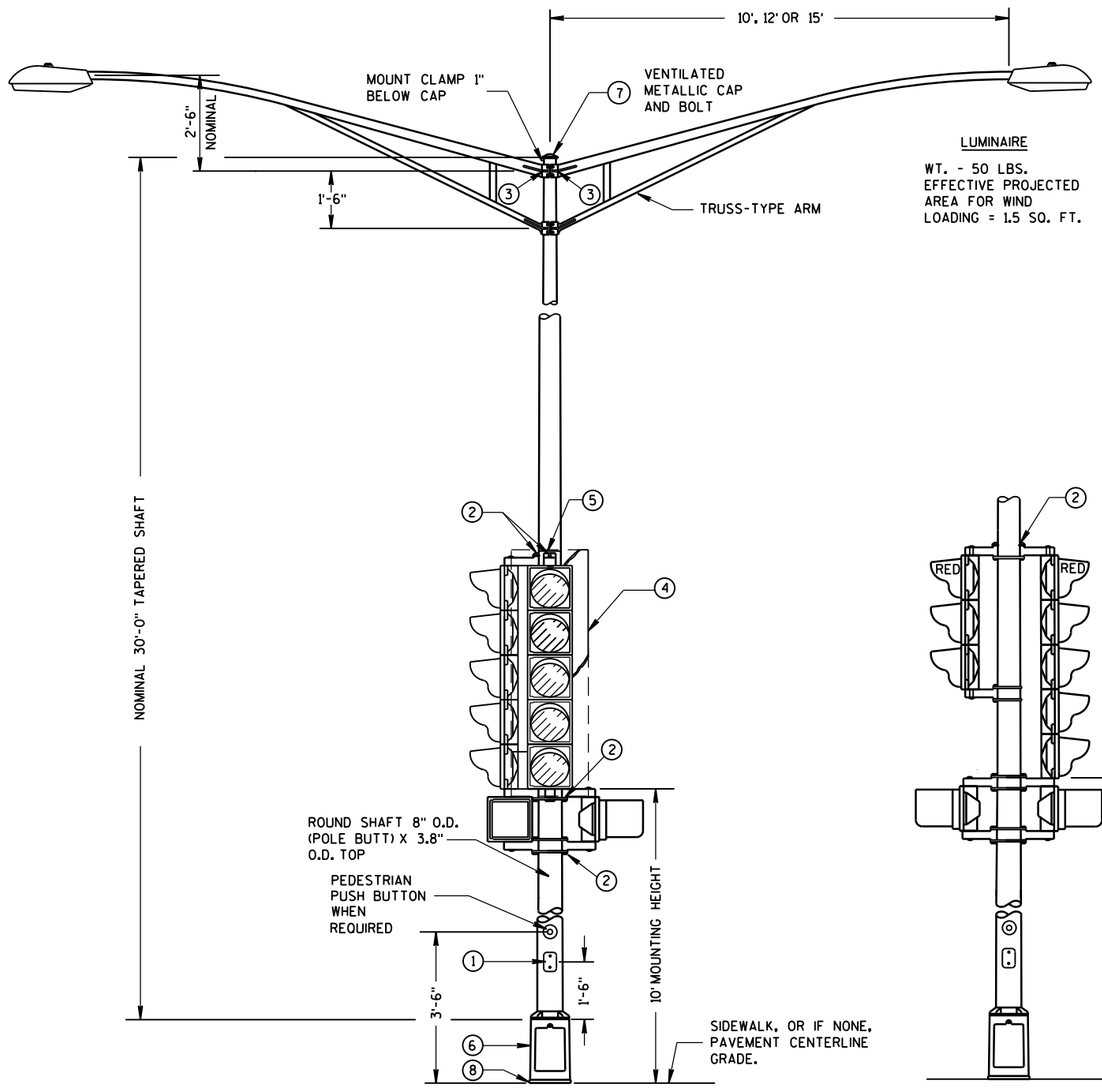
S.D.D. 9 D 2-3

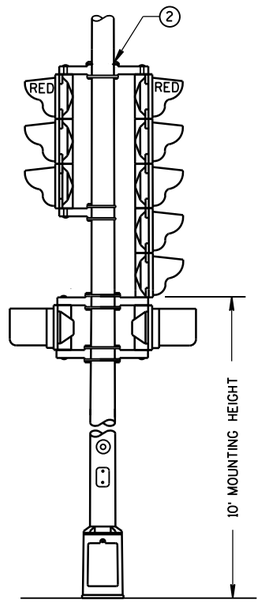




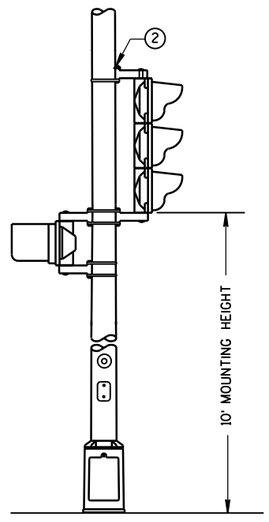
LUMINAIRE

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

(MAXIMUM LOAD)

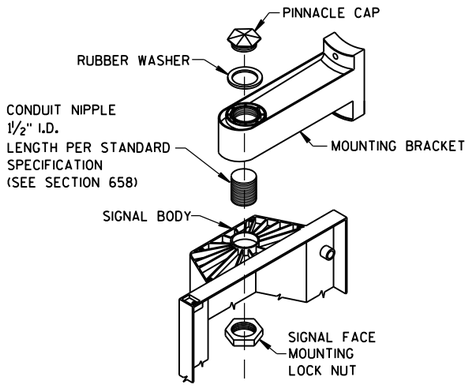


TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 4 POLE MOUNTING CONFIGURATION



SIGNAL FACE MOUNTING DETAIL
(BANDED)

GENERAL NOTES

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

ALL TYPE 4 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL WITH A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

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

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

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

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

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

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

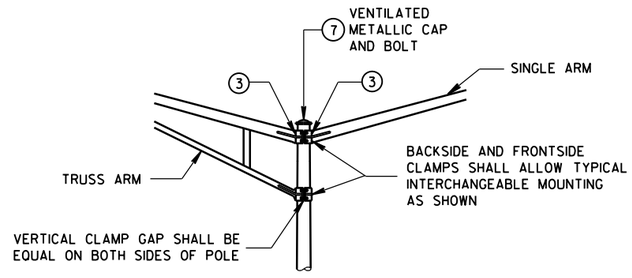
(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

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

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

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

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



INTERCHANGEABLE MOUNTING DETAIL

POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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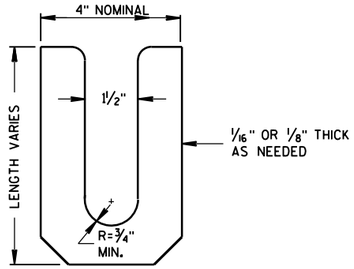
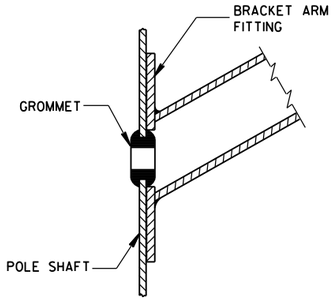
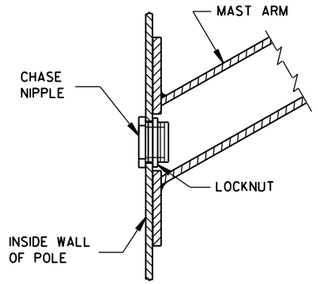


LEVELING SHIM (13)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

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

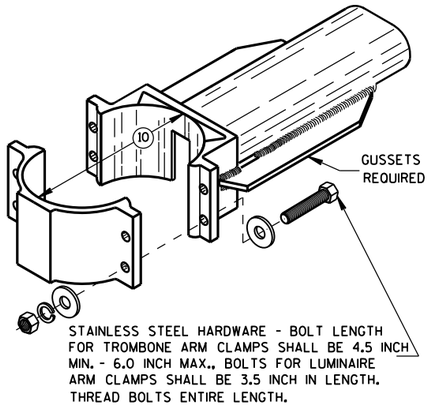
(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

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

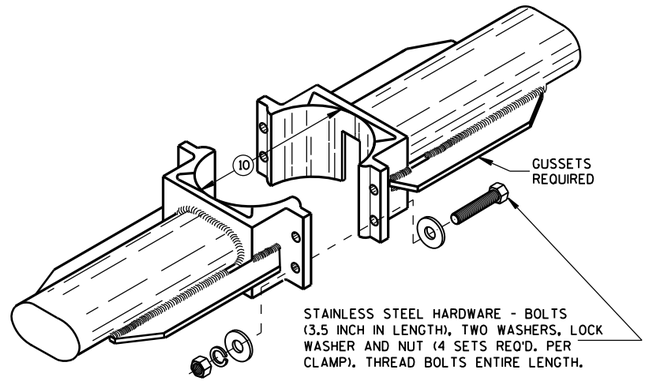
(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) 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.

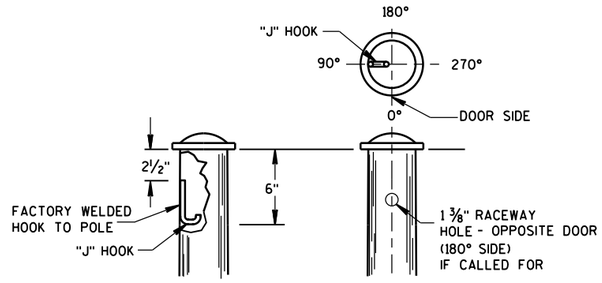
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



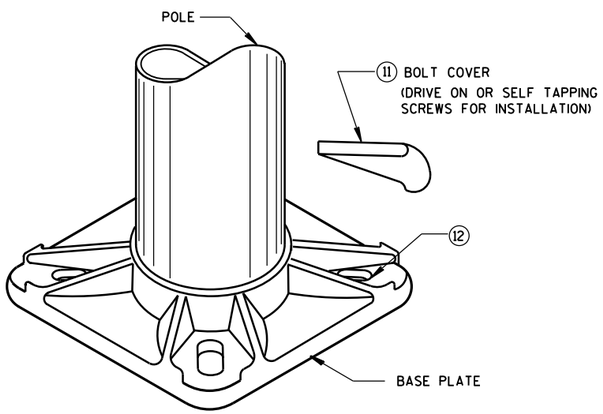
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



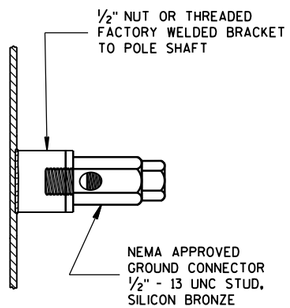
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

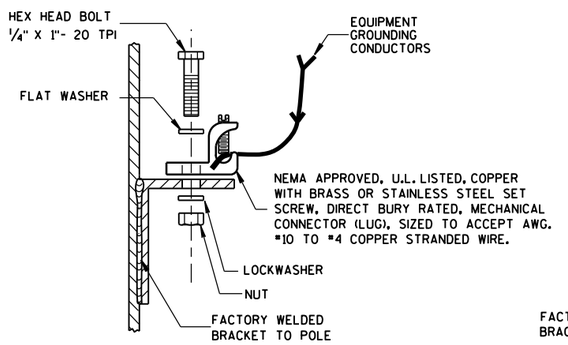


TYPICAL "J" HOOK LOCATION



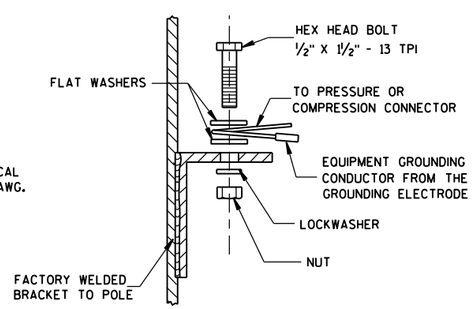
BASE PLATE





TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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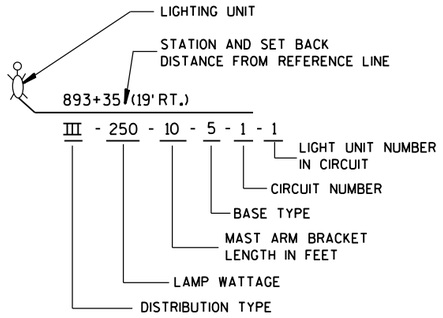
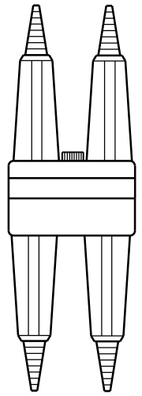
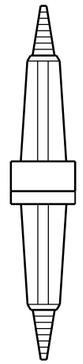


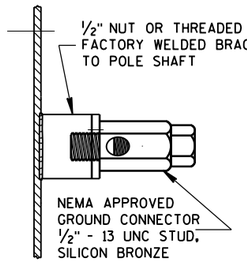
LIGHTING UNIT CODE
(TYPICAL)

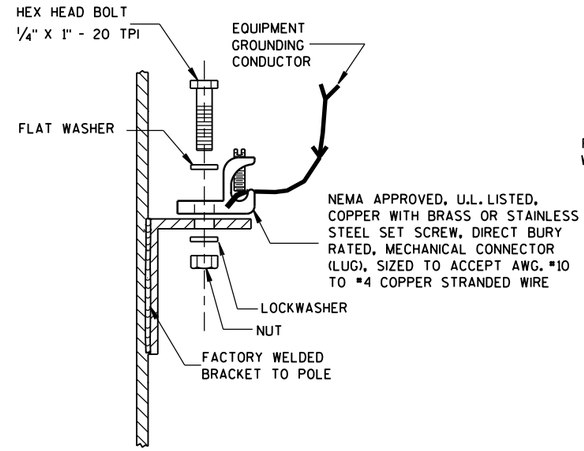


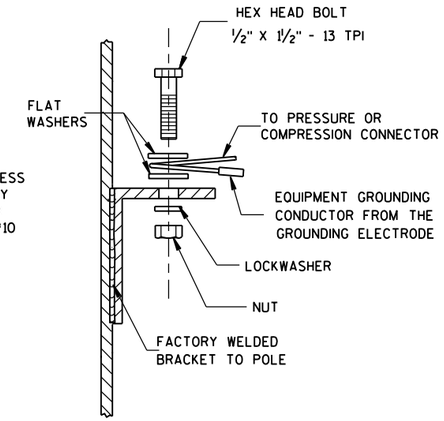
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



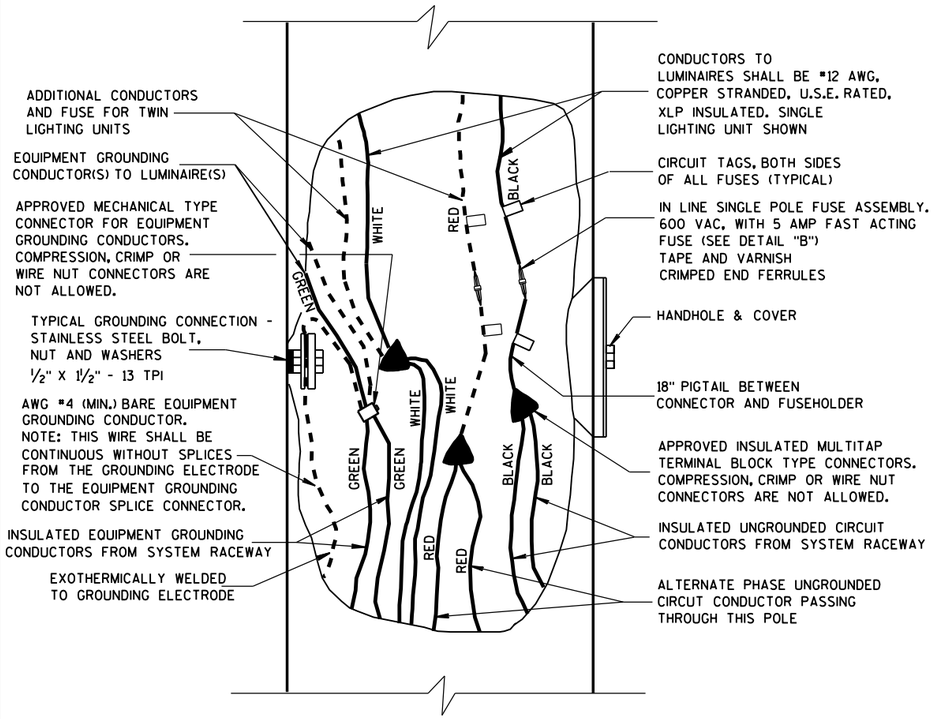
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



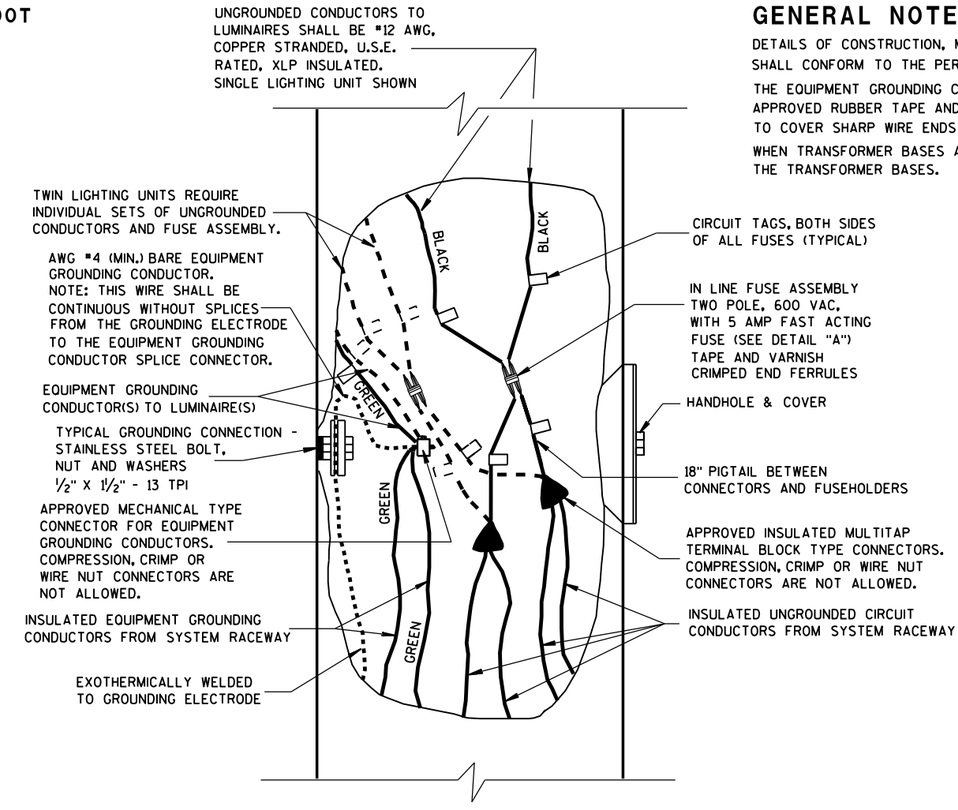




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



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



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

GENERAL NOTES

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

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

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

NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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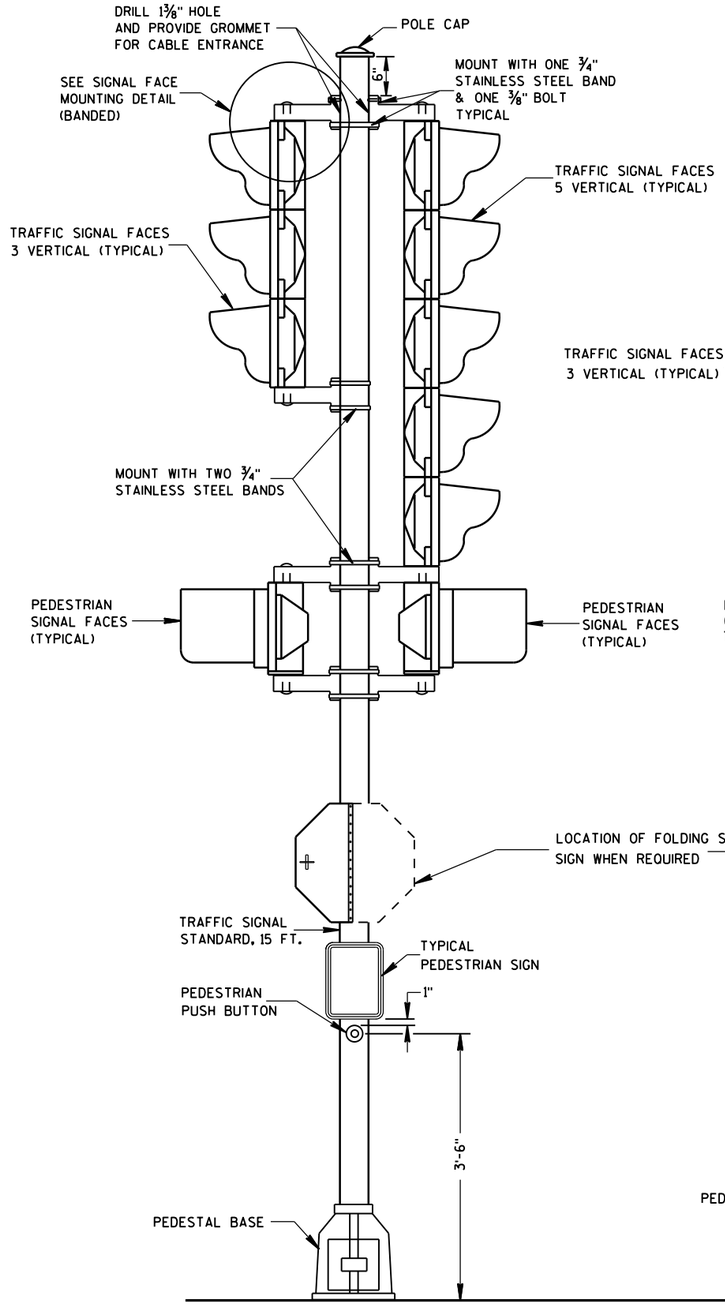
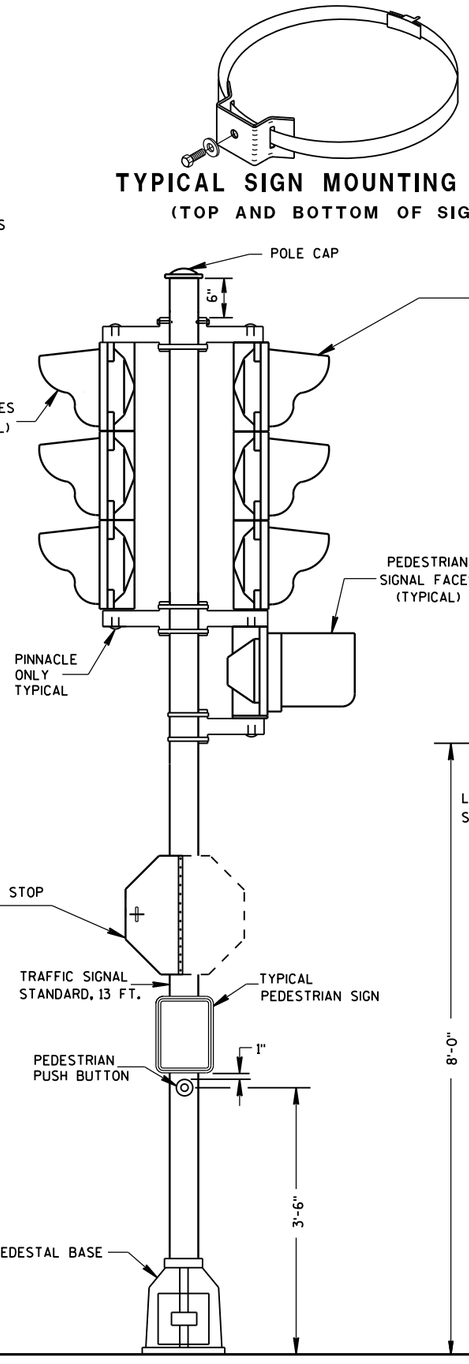
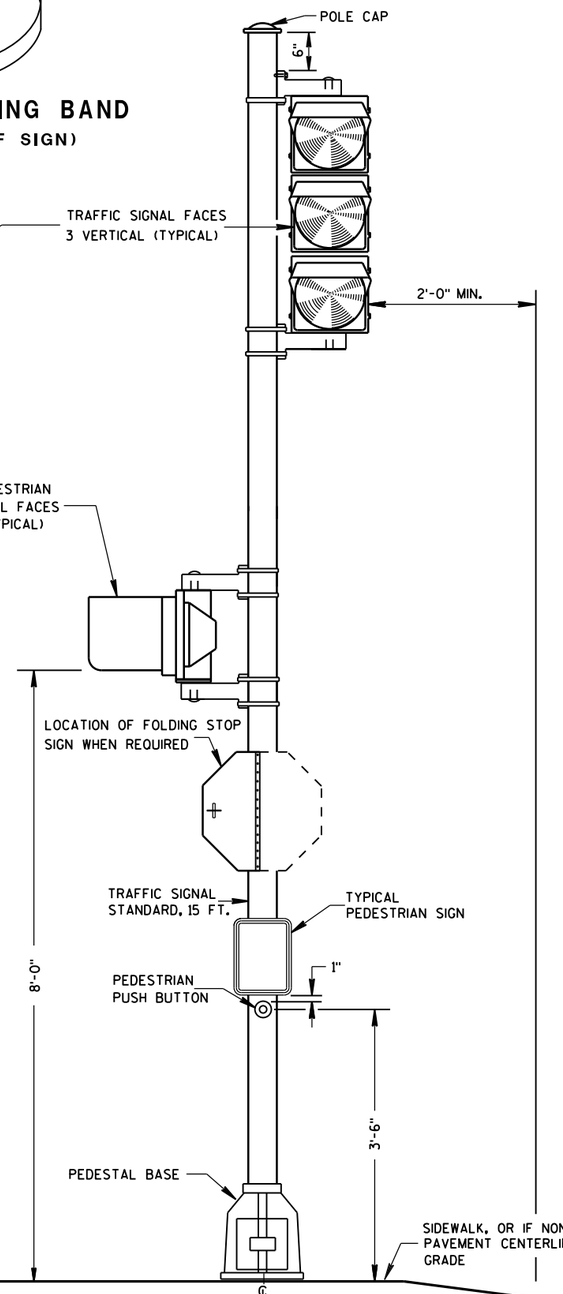


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



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

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

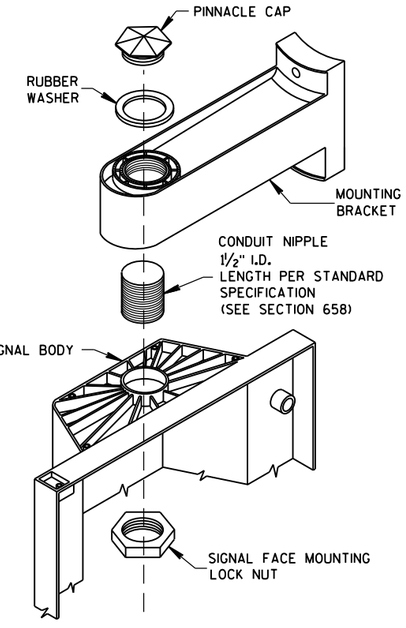
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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

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

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

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



SIGNAL FACE MOUNTING DETAIL
(BANDED)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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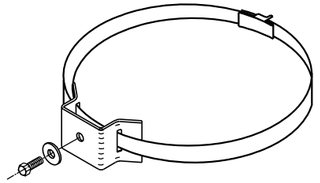
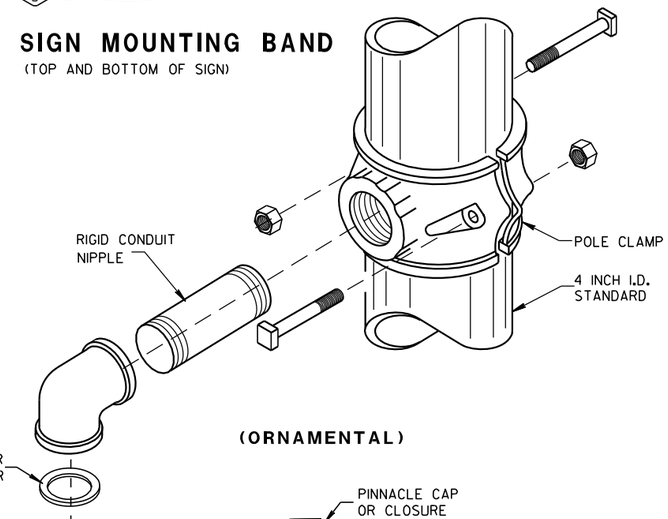


TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



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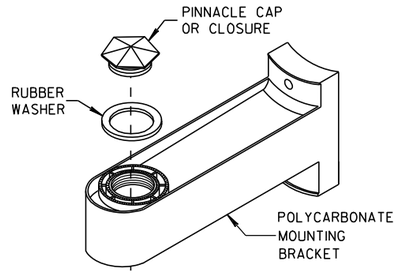
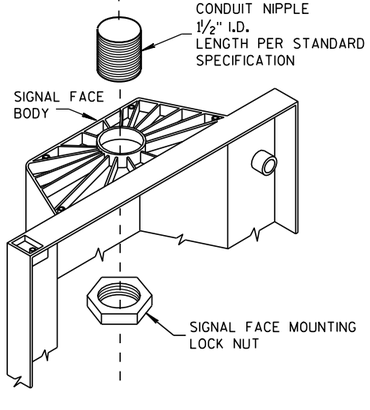
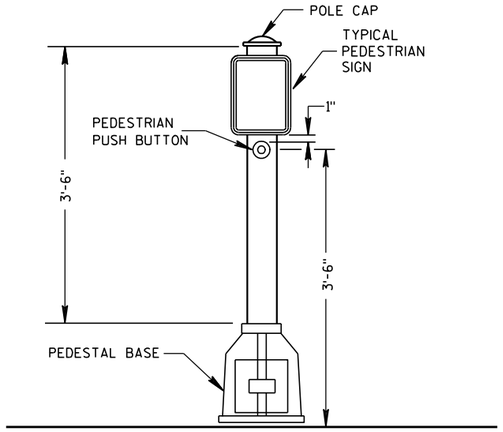


(BANDED)



SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

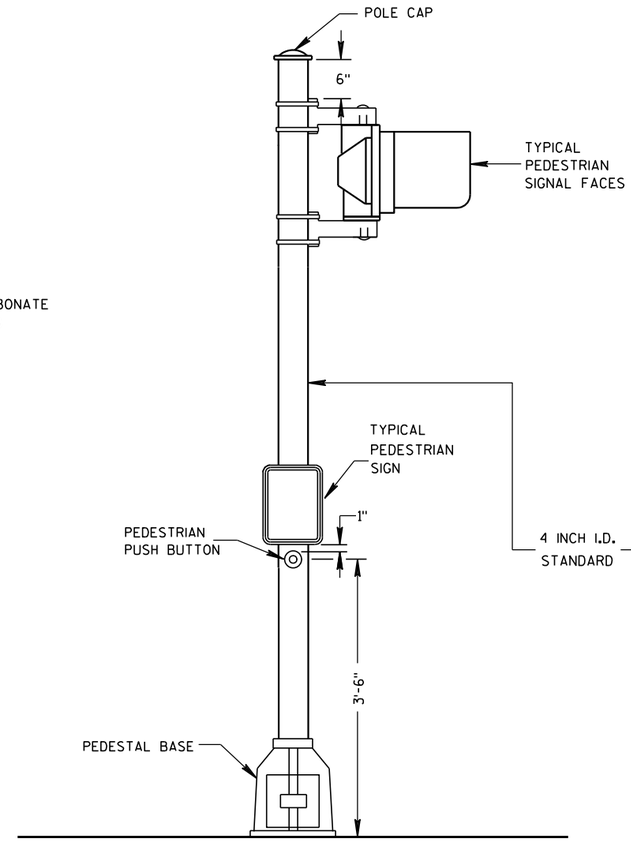
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

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

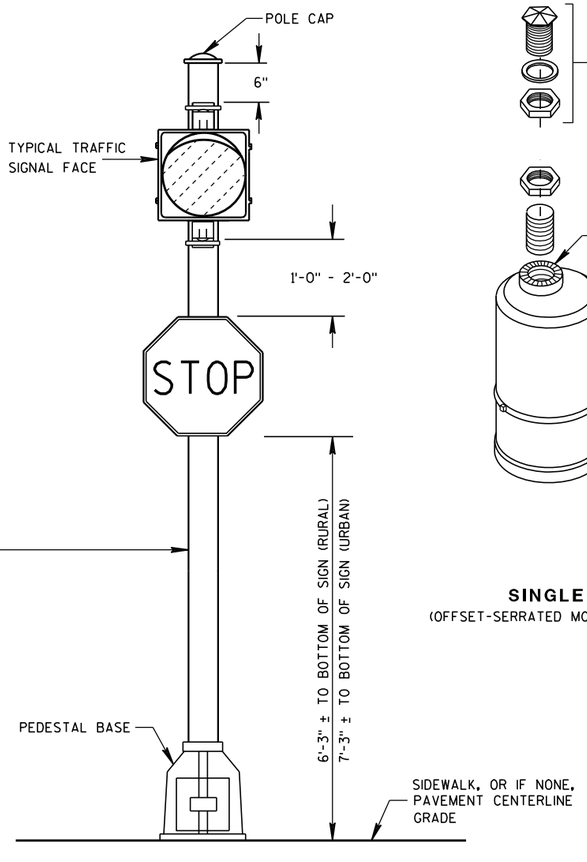
MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

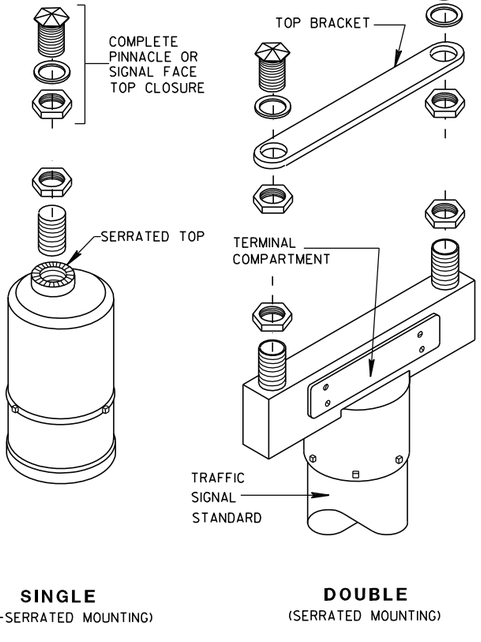
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)



STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED



SINGLE
(OFFSET-SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/11/10
DATE

/S/ John Corbin
STATE ELECTRICAL ENGI

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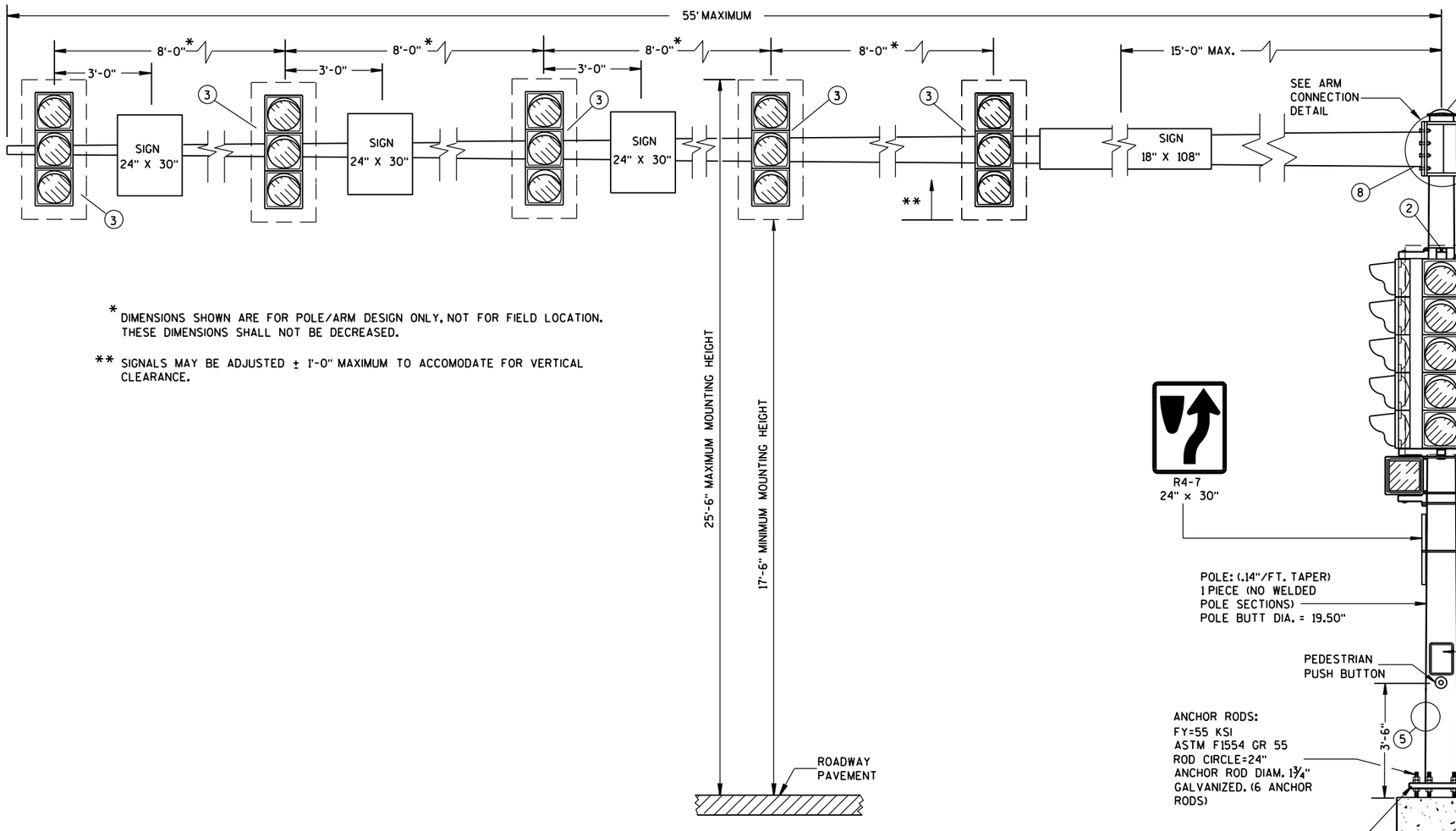
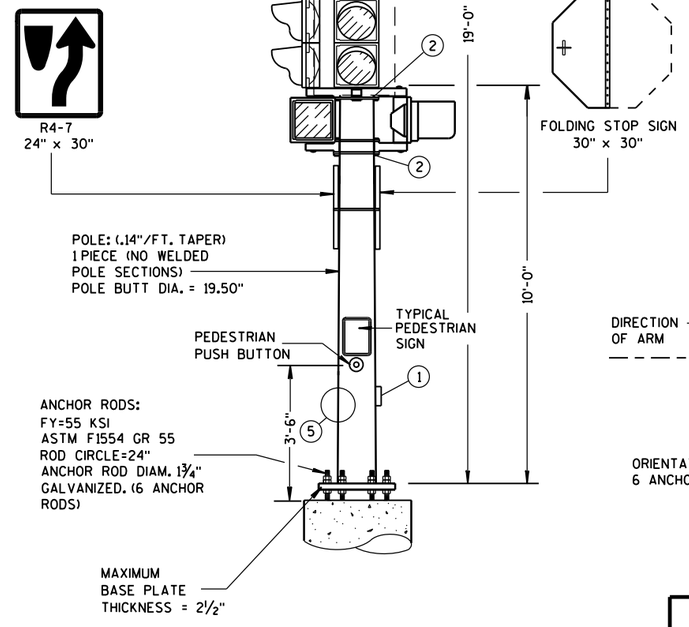
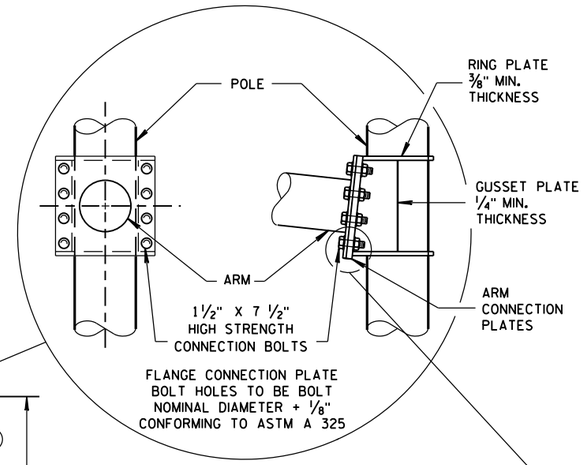


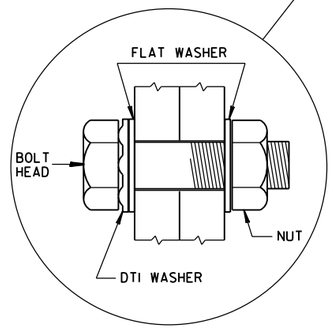
* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

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

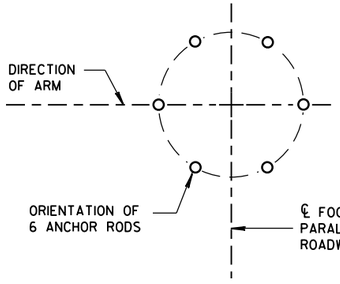




8 BOLT ARM CONNECTION DETAIL



RECOMMENDED
BOLT ASSEMBLY
DETAIL



ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 12 POLE 35'- 55' MONOTUBE ARM

TYPE 12 POLE 35' - 55' MONOTUBE ARM
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED May, 2015 — DATE /S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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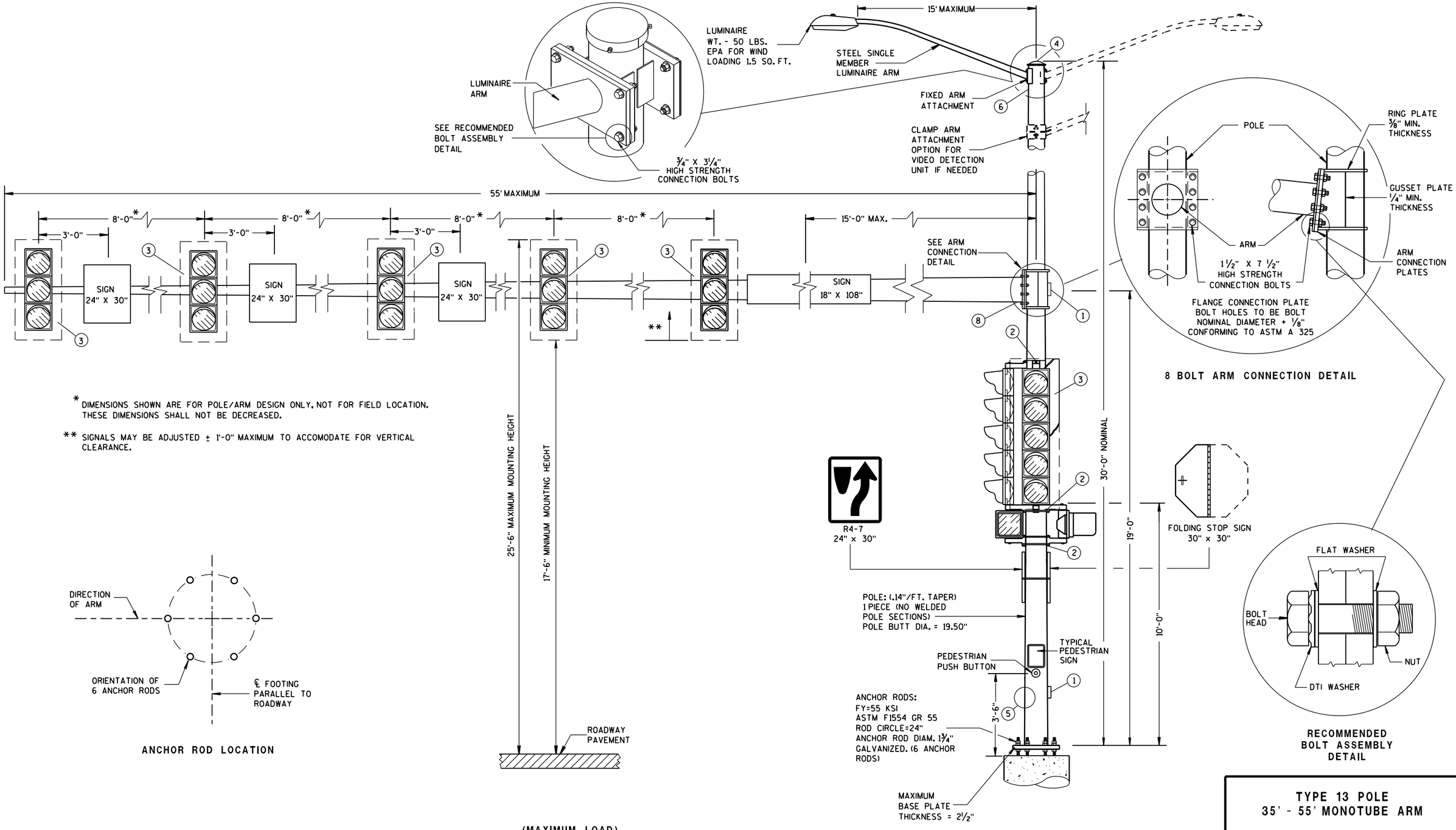
S.D.D. 9 E 8-8c



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

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

8 BOLT ARM CONNECTION DETAIL

RECOMMENDED BOLT ASSEMBLY DETAIL

ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 13 POLE 35'- 55' MONOTUBE ARM

TYPE 13 POLE
35' - 55' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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GENERAL NOTES

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

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

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

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

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

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

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

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

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

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

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

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

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

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

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

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

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

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

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

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

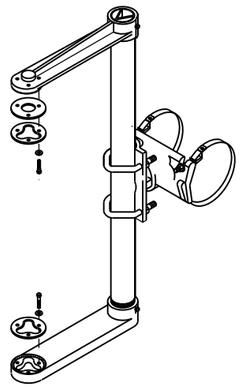
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

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

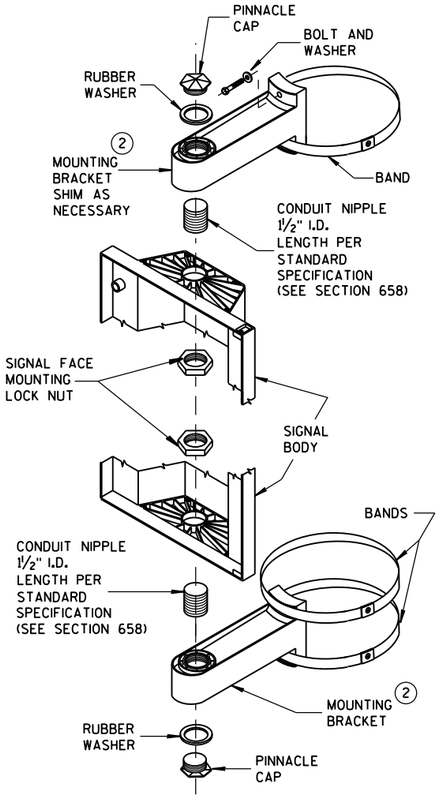
MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

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

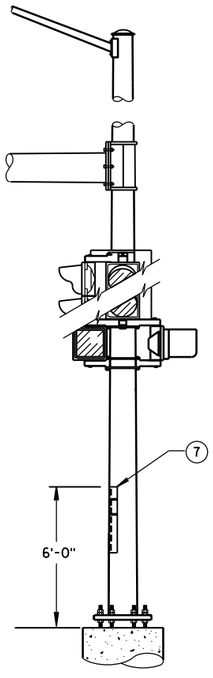


SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM

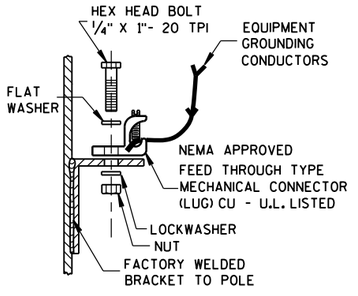
(MOUNT PER MANUFACTURER'S RECOMMENDATION)



SIGNAL FACE
VERTICAL MOUNTING DETAIL

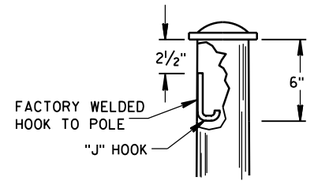


STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



"J" HOOK WIRE SUPPORT (6)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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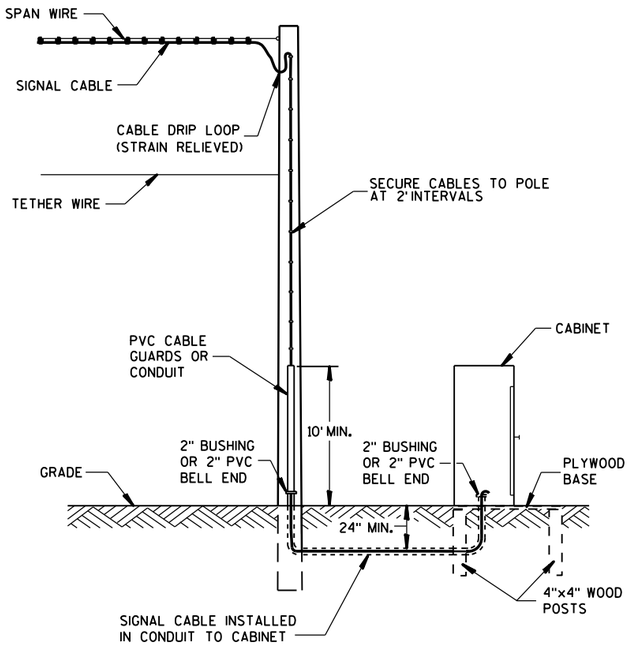
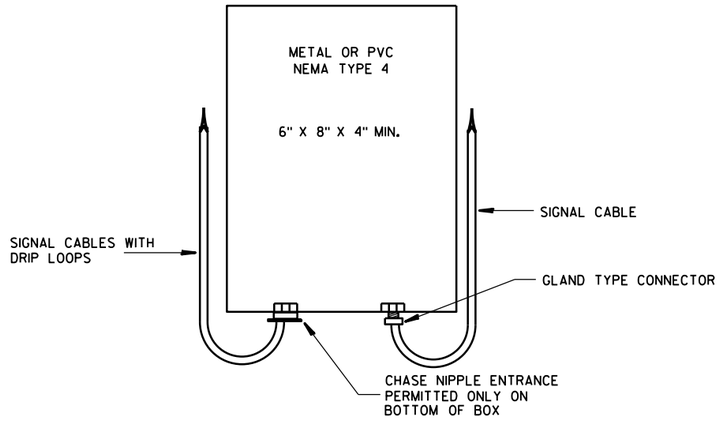
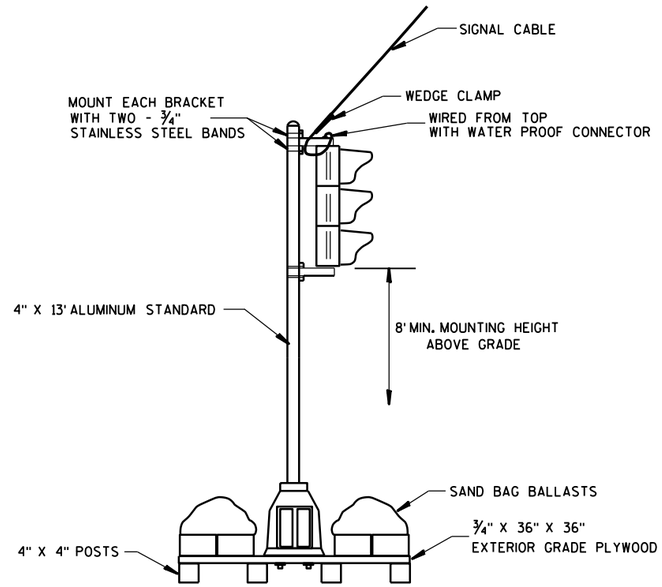
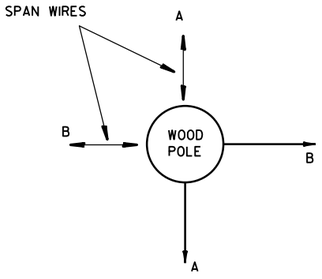




SPLICE BOX

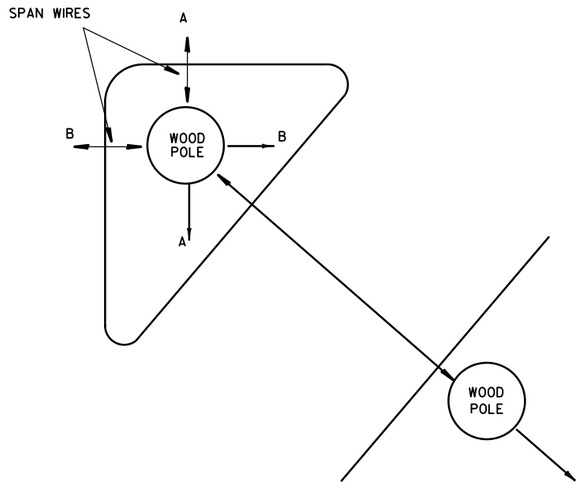


TYPICAL SKID TYPE TEMPORARY

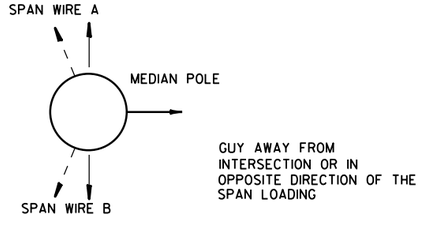


ALL DOWN OR SIDEWALK GUYS
SHALL BE INSTALLED IN THE
OPPOSITE DIRECTION OF THE
STRAIN OF THE SPAN WIRE

CORNER POLES



ISLAND POLES



MEDIAN POLES

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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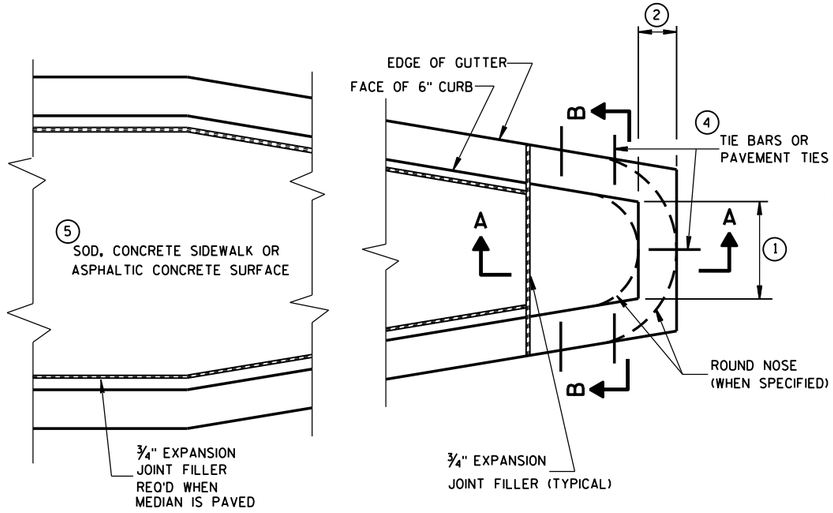
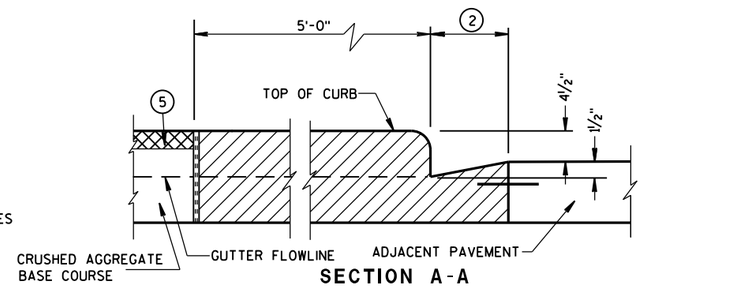
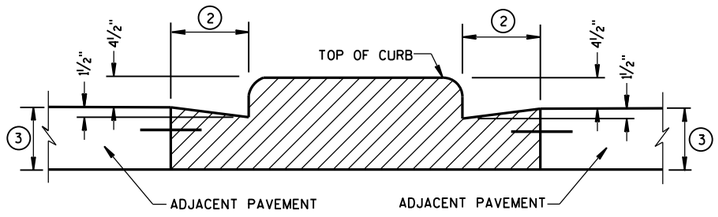






CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

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

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

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

(1) NEW OR EXISTING CONCRETE PAVEMENT.

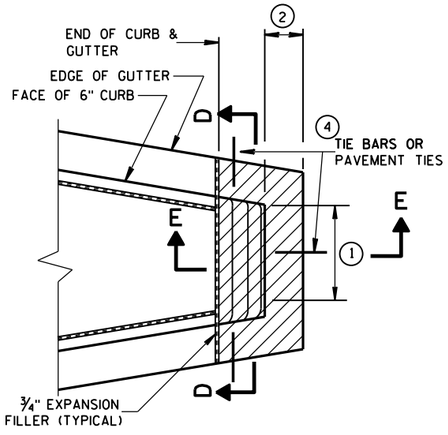
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

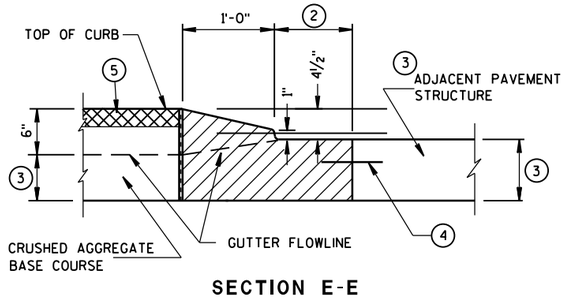
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

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

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

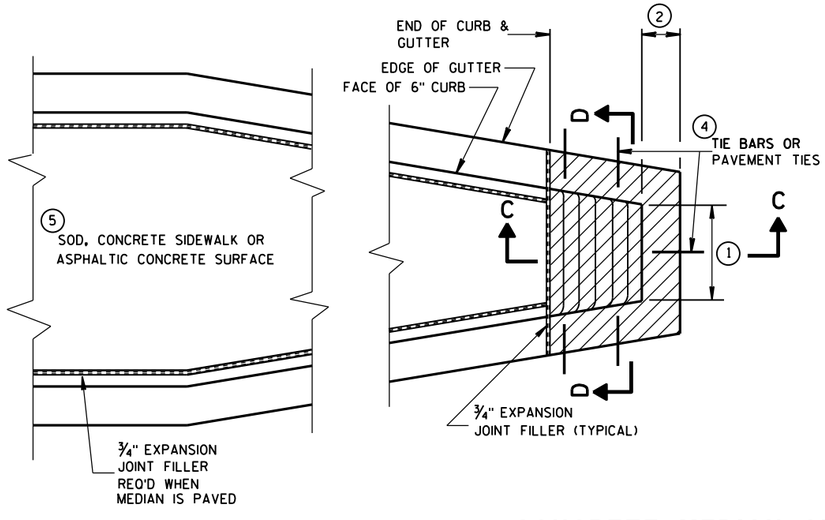
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



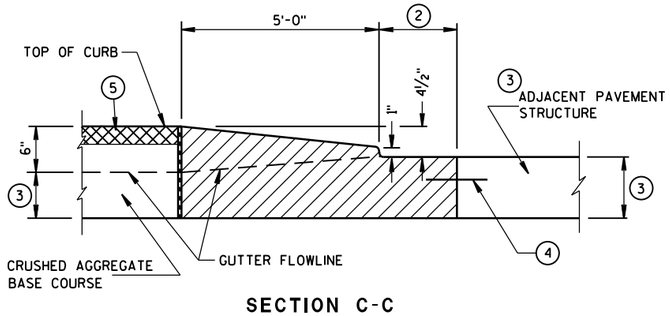


SECTION E-E

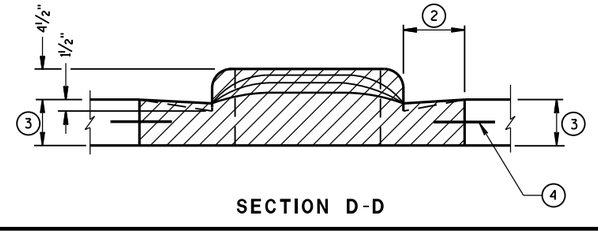
CONCRETE MEDIAN SLOPED NOSE TYPE 2



CONCRETE MEDIAN SLOPED NOSE TYPE 1



SECTION C-C



SECTION D-D

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/8/2006
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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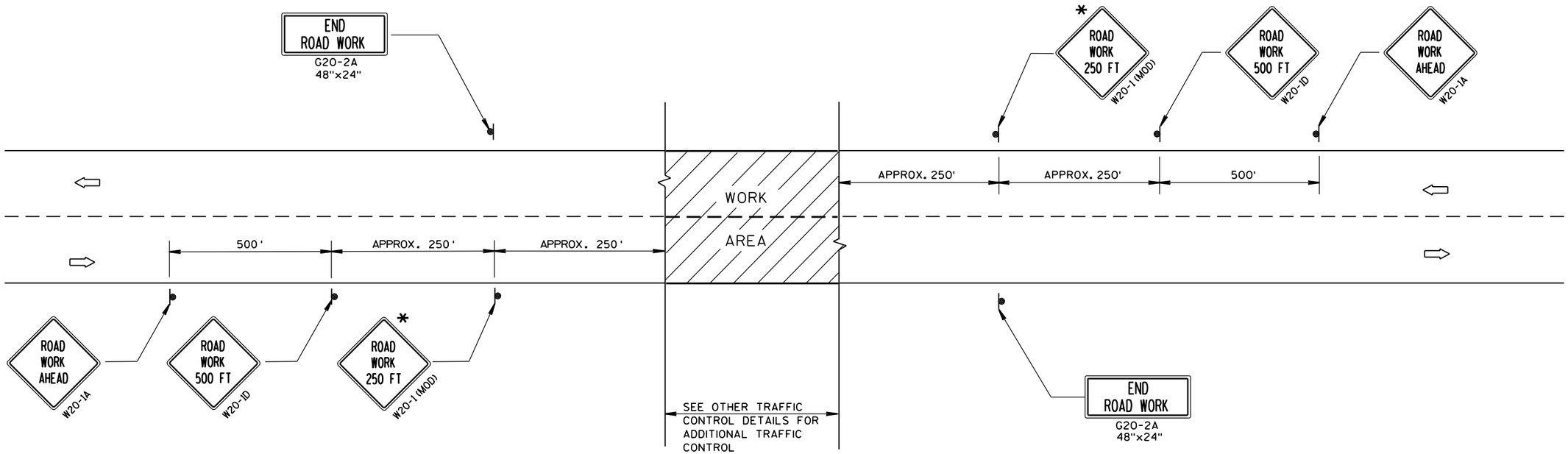
S.D.D. 11 B 2-2

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

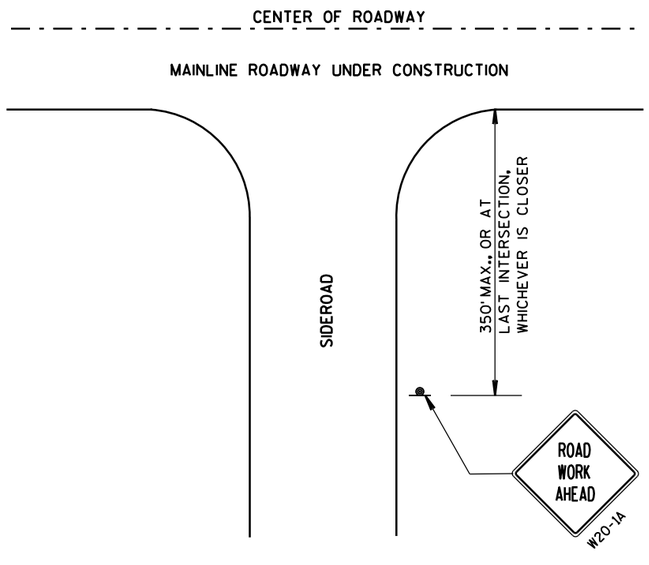
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

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.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

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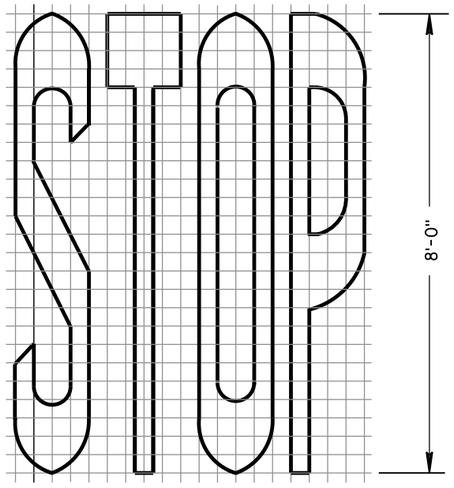
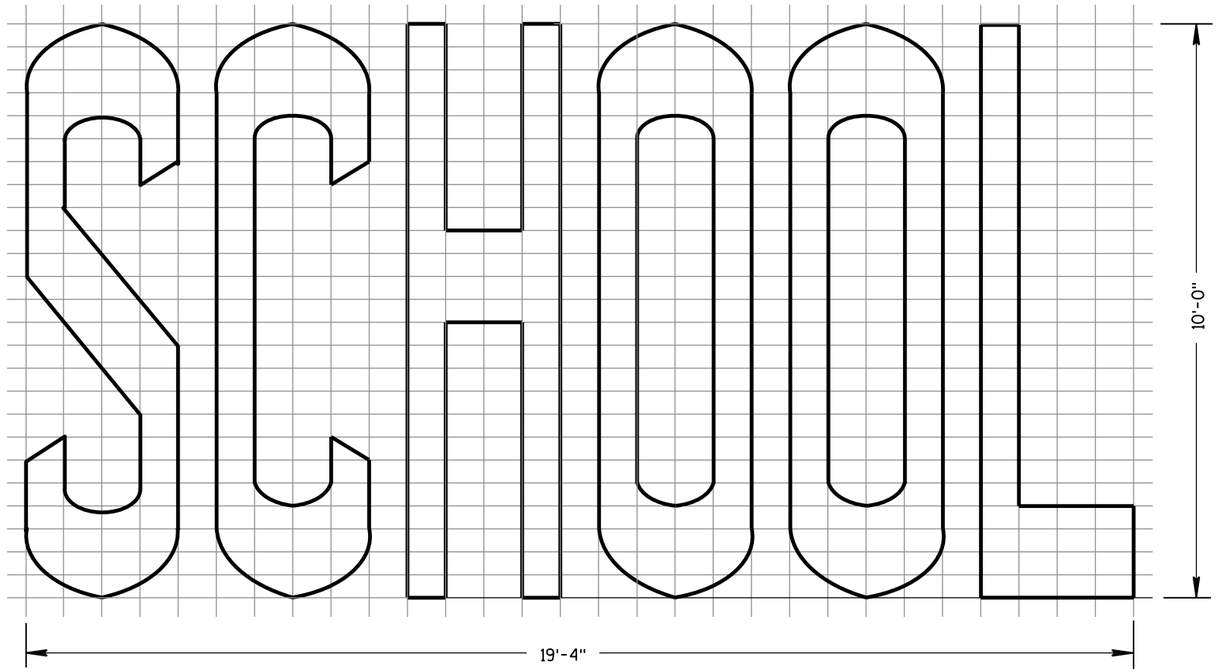
S.D.D. 15 C 5-3

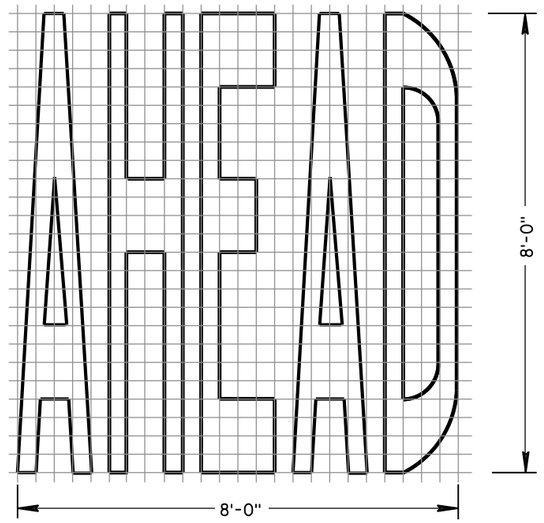
GENERAL NOTES

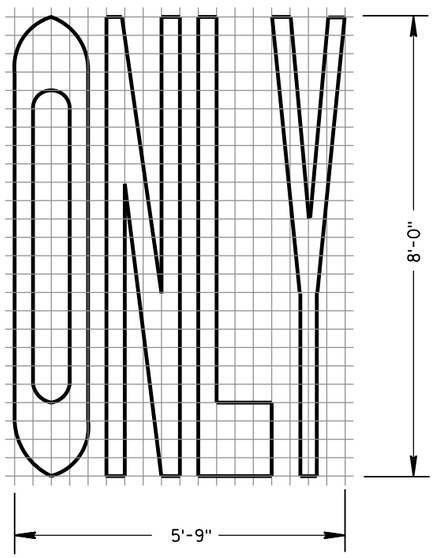
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

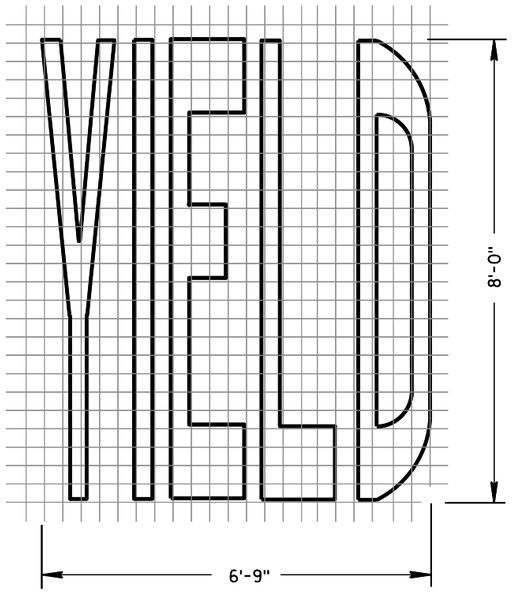


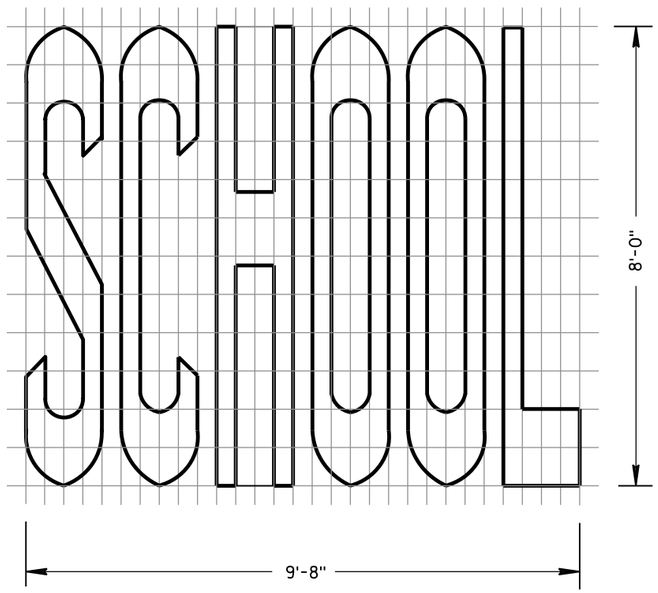


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-16	/S/ Matthew R. Rauch	
DATE	STATE SIGNING AND MARK	EER

FHWA

6

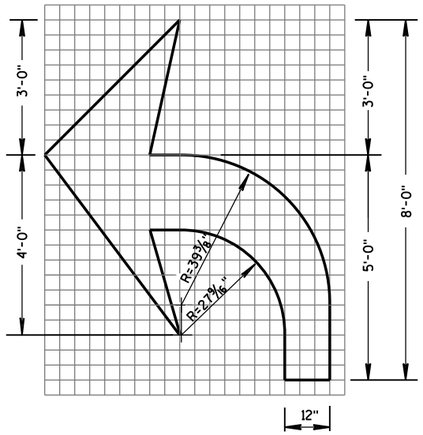
S.D.D. 15 C 7-13b

6

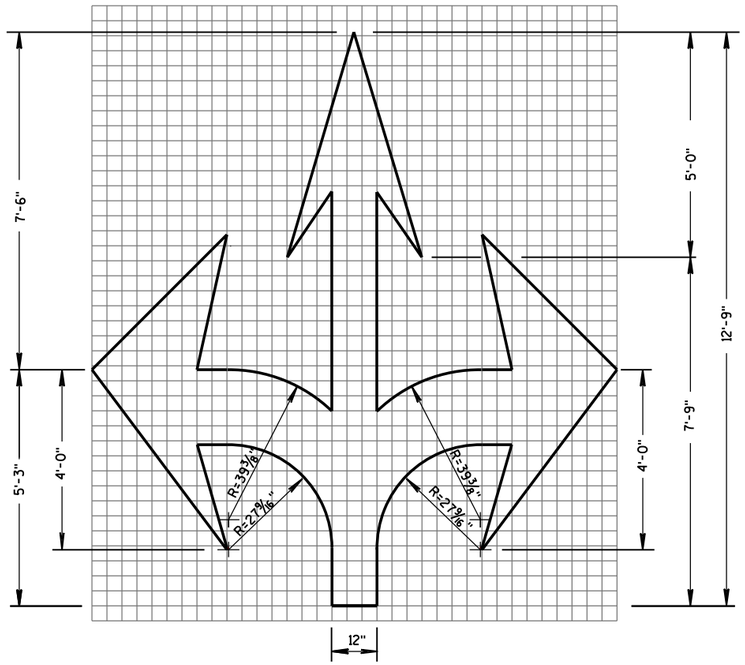
S.D.D. 15 C 7-13b

GENERAL NOTES

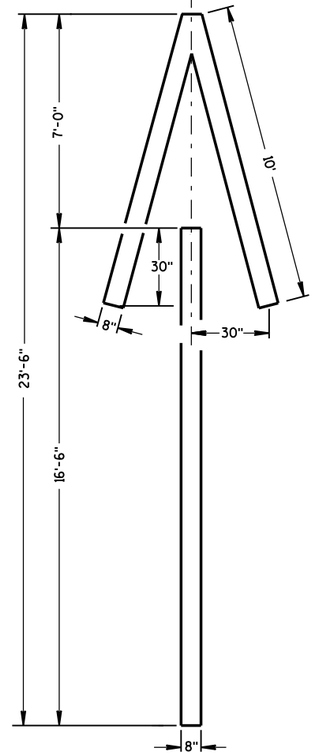
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



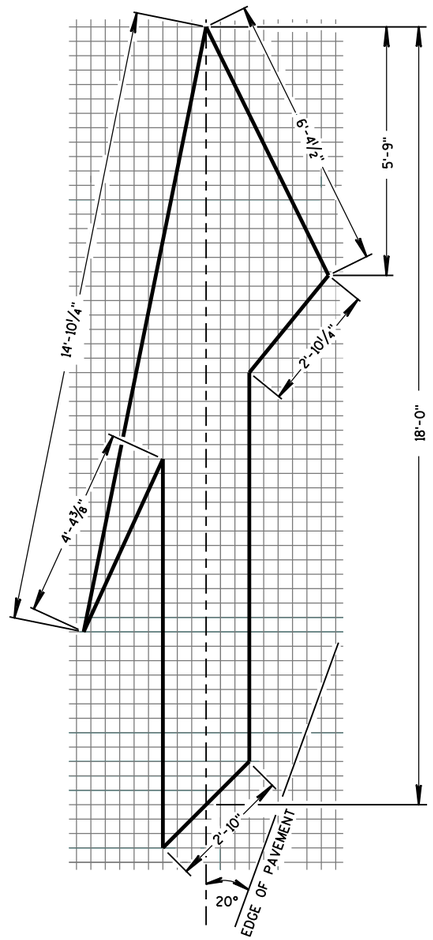
TYPE 2



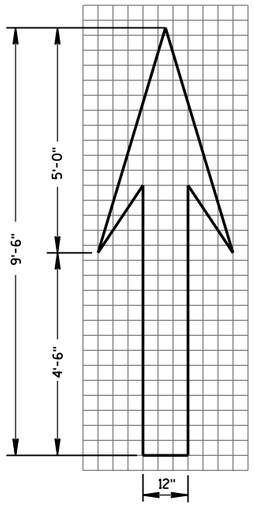
TYPE 6



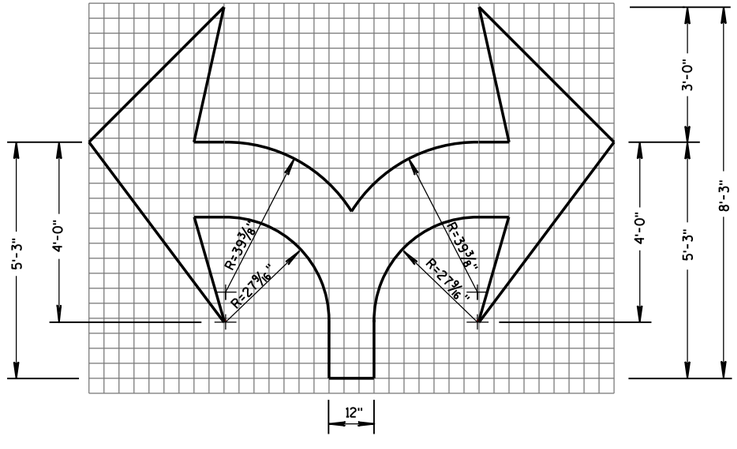
TYPE 4



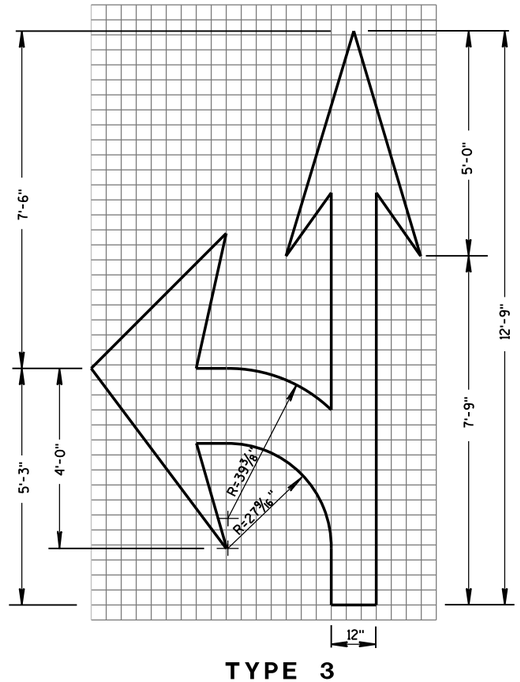
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

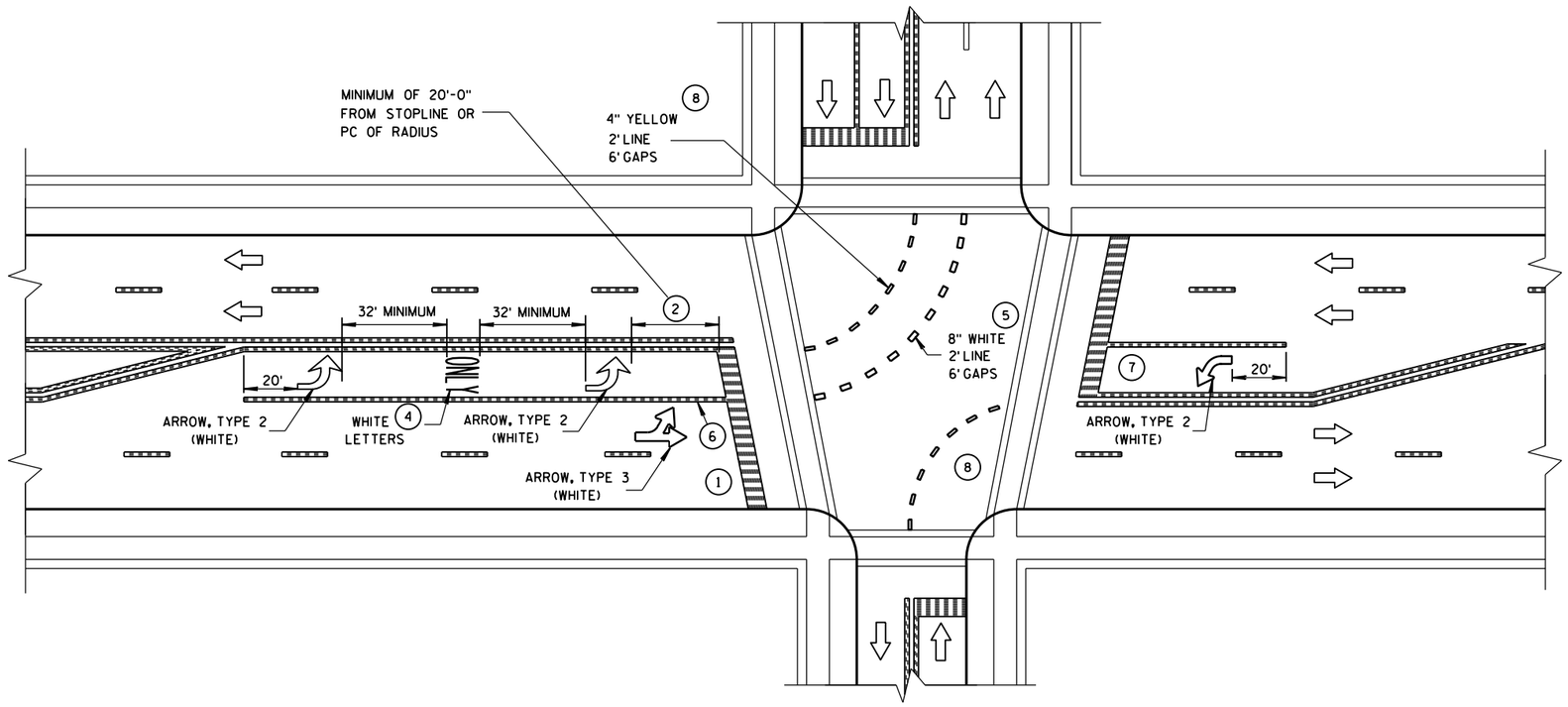
APPROVED
4-18-16 DATE
/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA

6

S.D.D. 15 C 7-13c

6

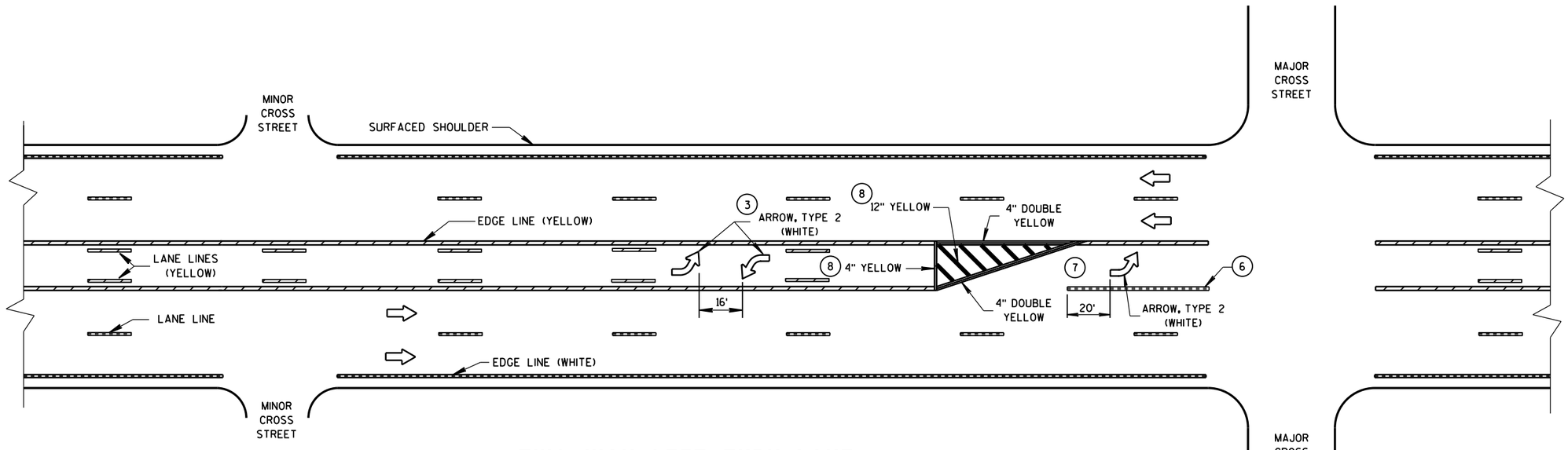
S.D.D. 15 C 7-13c



GENERAL NOTES

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

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

PAVEMENT MARKING (LEFT TURN LANE)

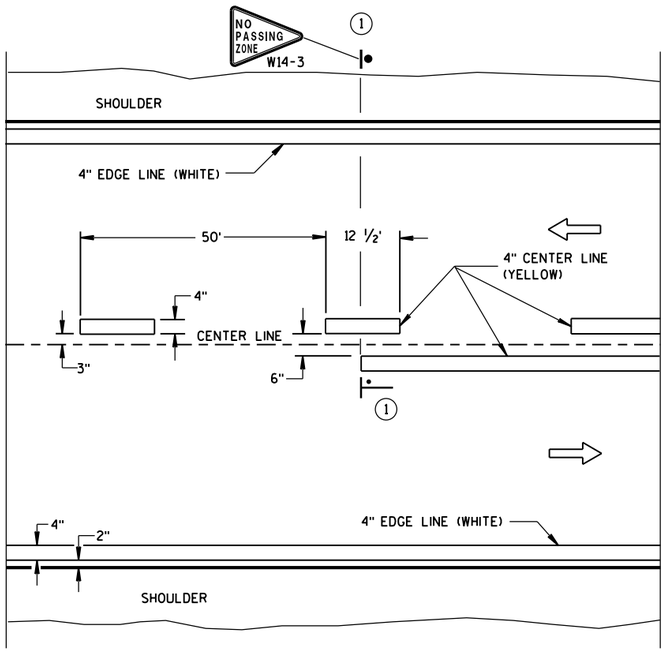
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

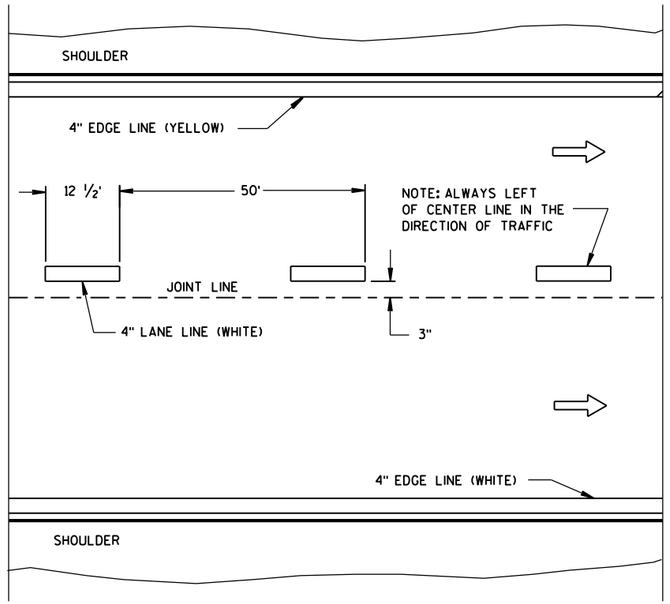
S.D.D. 15 C 8-16e

6

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

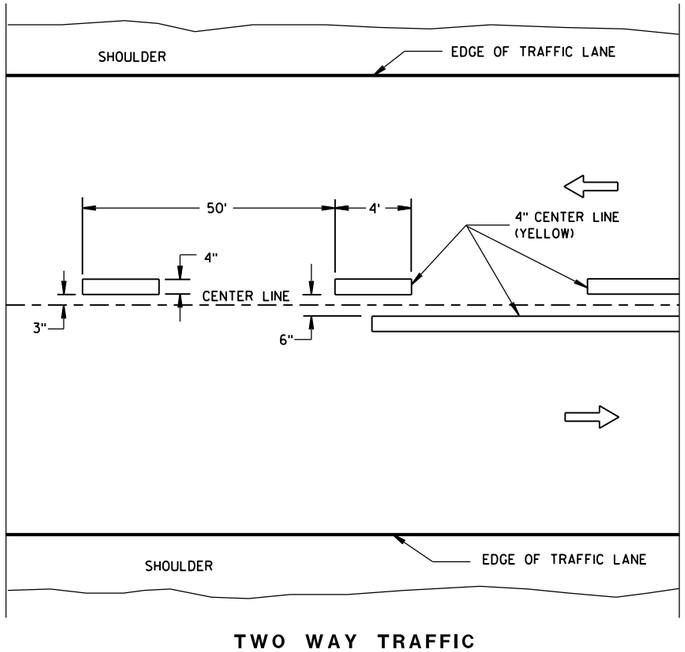
GENERAL NOTES

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

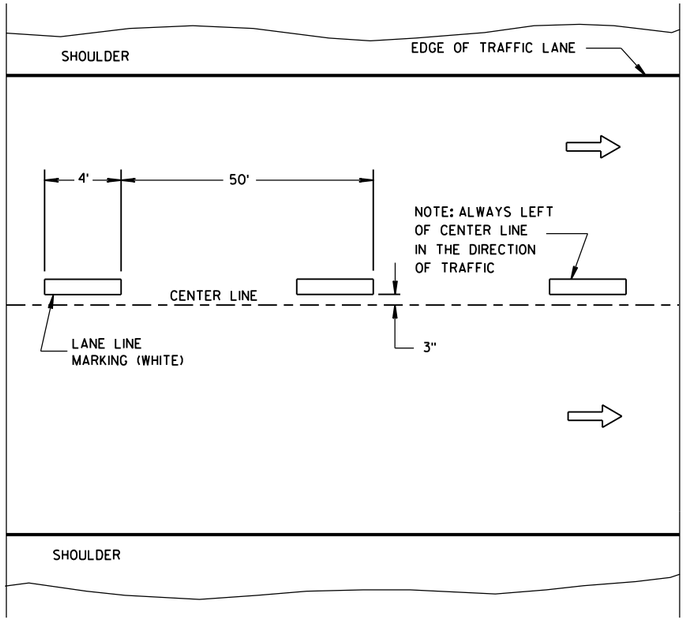
(1) NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LEGEND

"T" MARKING

POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

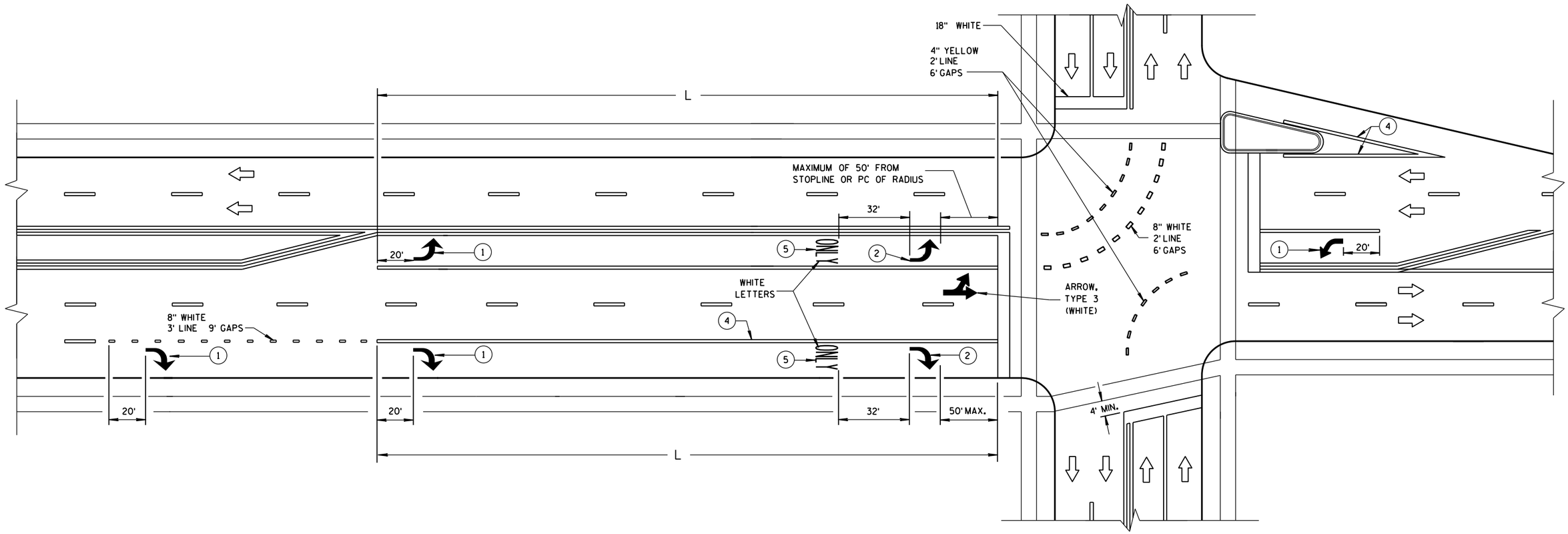
APPROVED
Sept., 2016 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

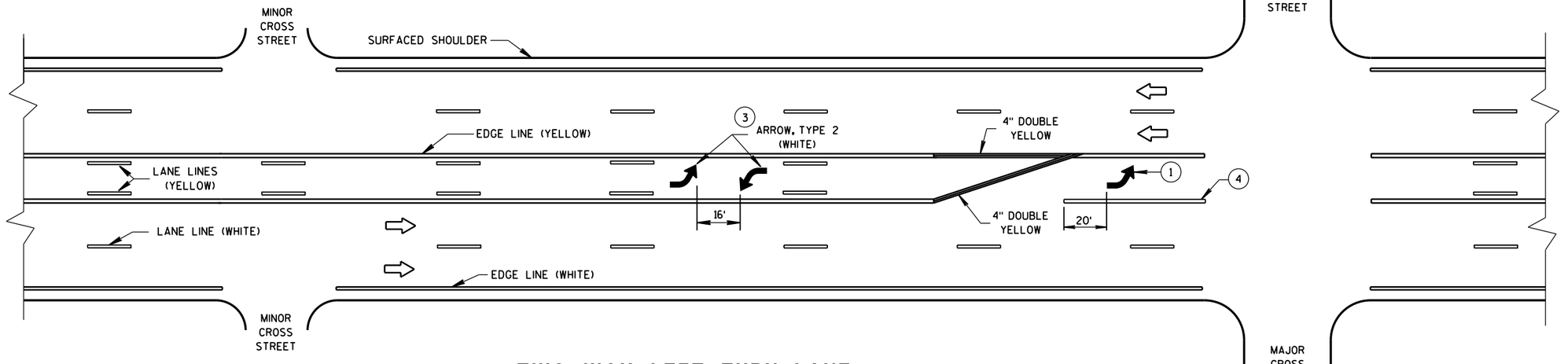
6

S.D.D. 15 C 8-17a

6

S.D.D. 15 C 8-17a





GENERAL NOTES

(1) REQUIRED ARROW, TYPE 2 (WHITE).

(2) REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.

(3) A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

(4) 8" WHITE

(5) REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL

L = LENGTH OF TURN BAY

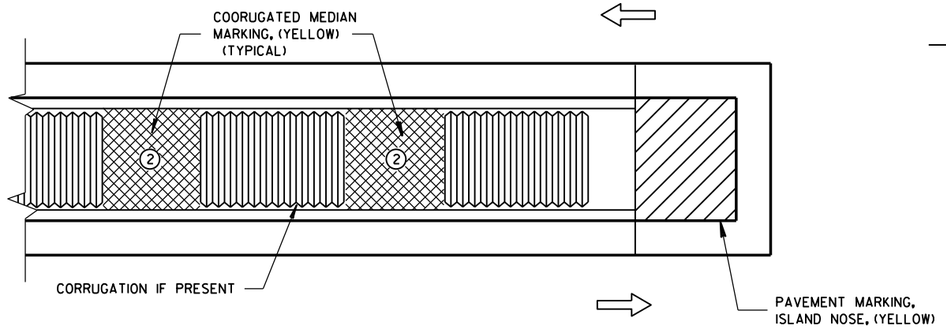
TWO WAY LEFT TURN LANE

PAVEMENT MARKING (TURN LANES)

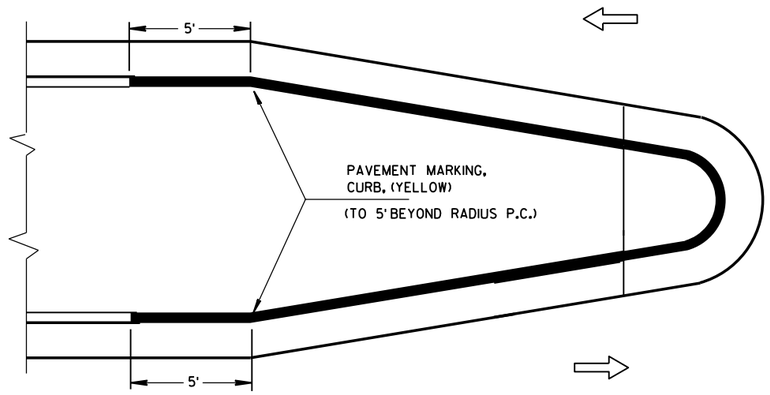
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

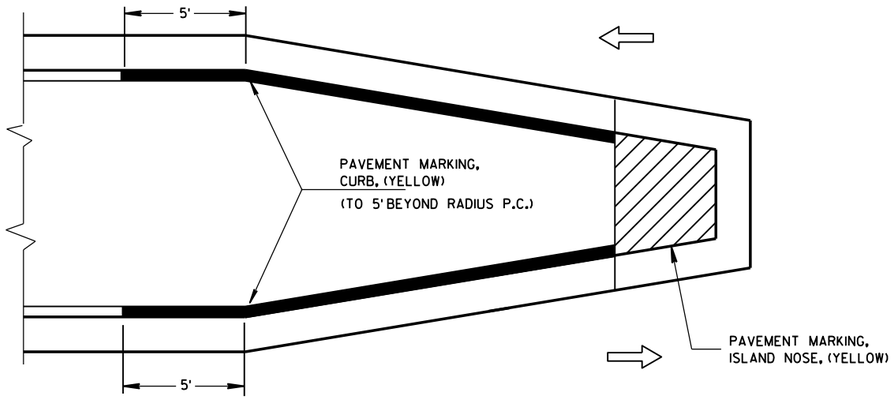
S.D.D. 15 C 8-17b



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

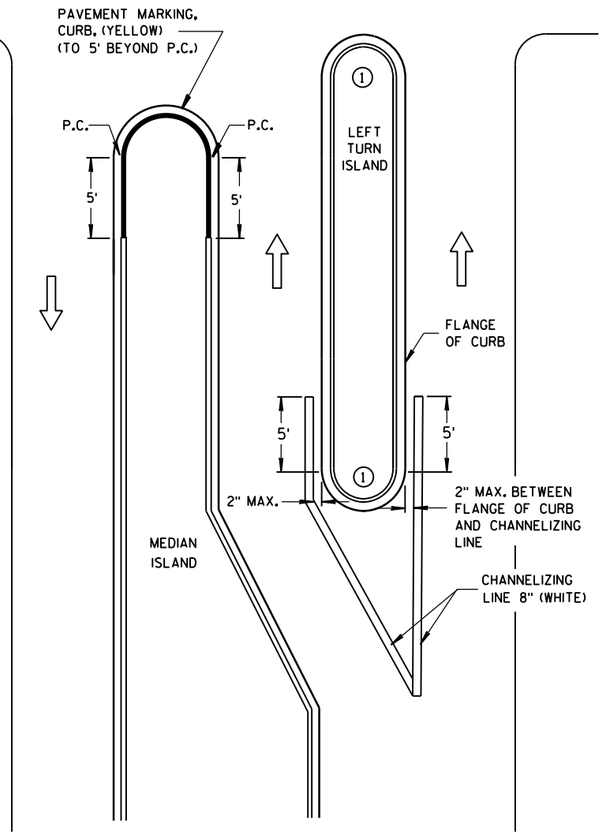


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

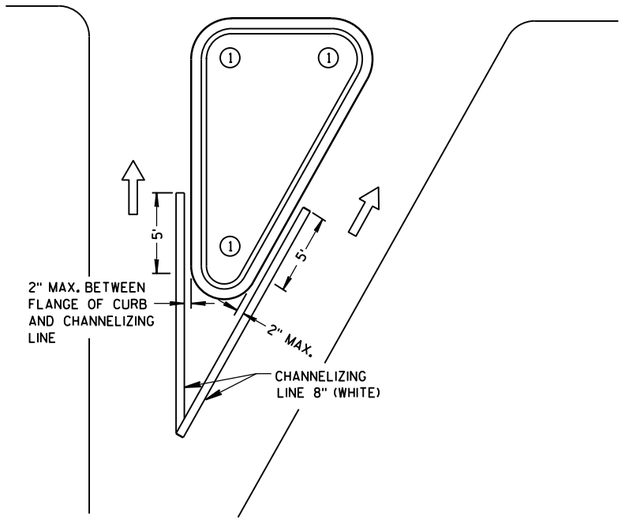


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

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

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



RIGHT TURN ISLAND

LEGEND

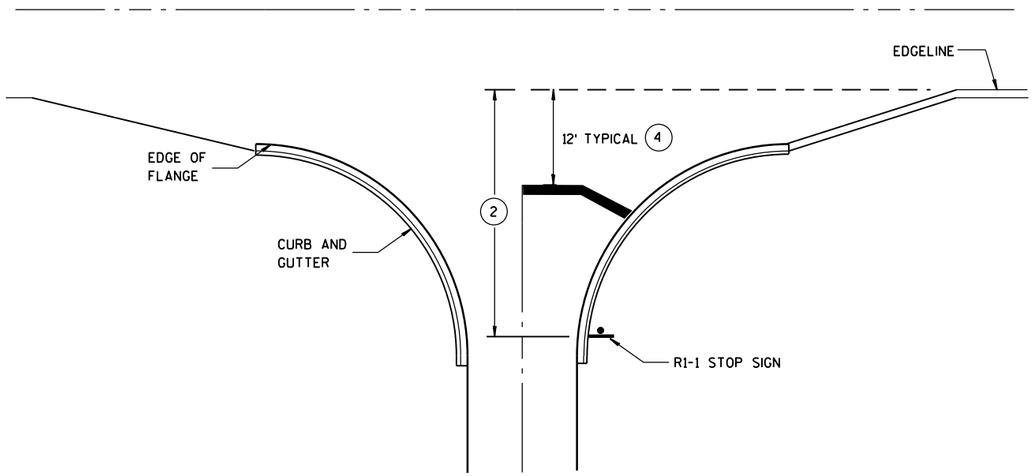
- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

6

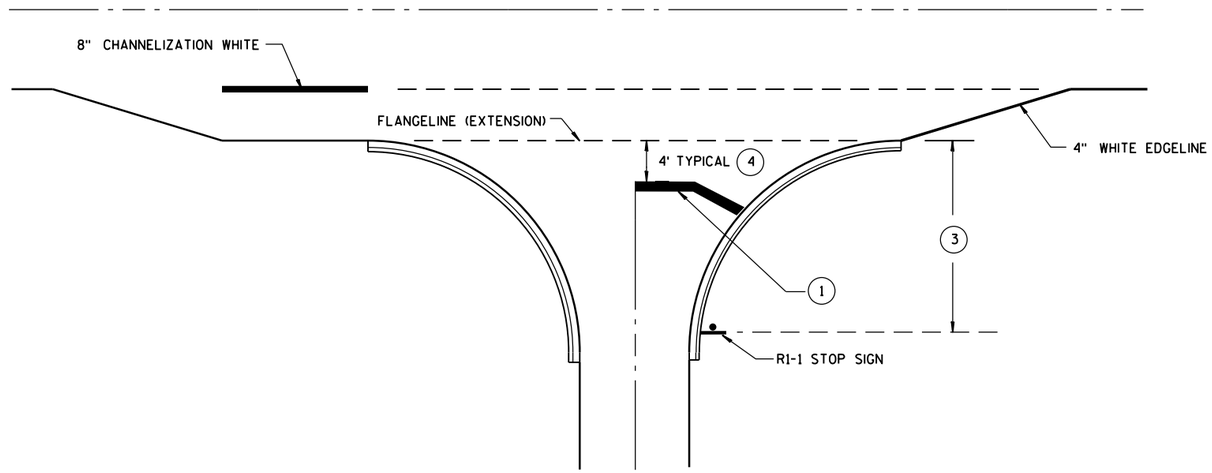
S.D.D. 15 C 8-17c

PAVEMENT MARKING
(ISLANDS)

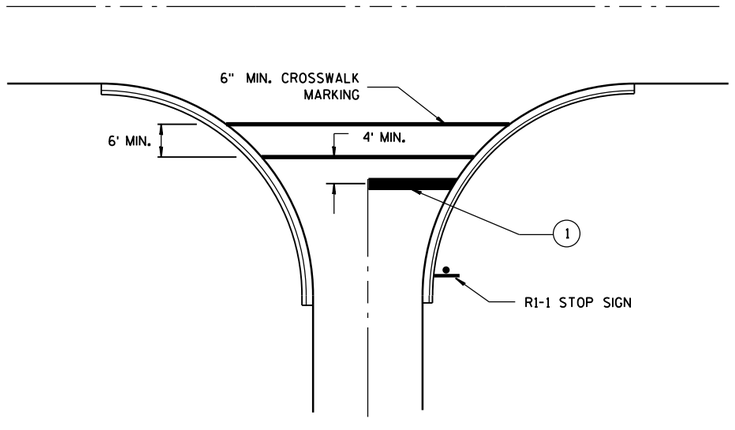
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR



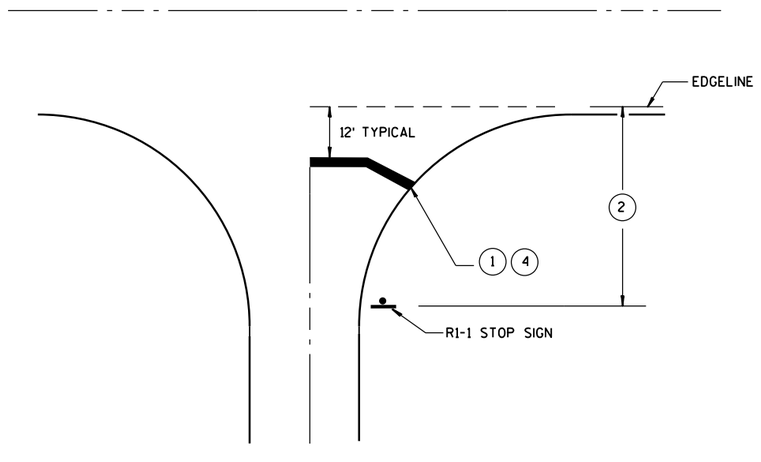
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

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

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

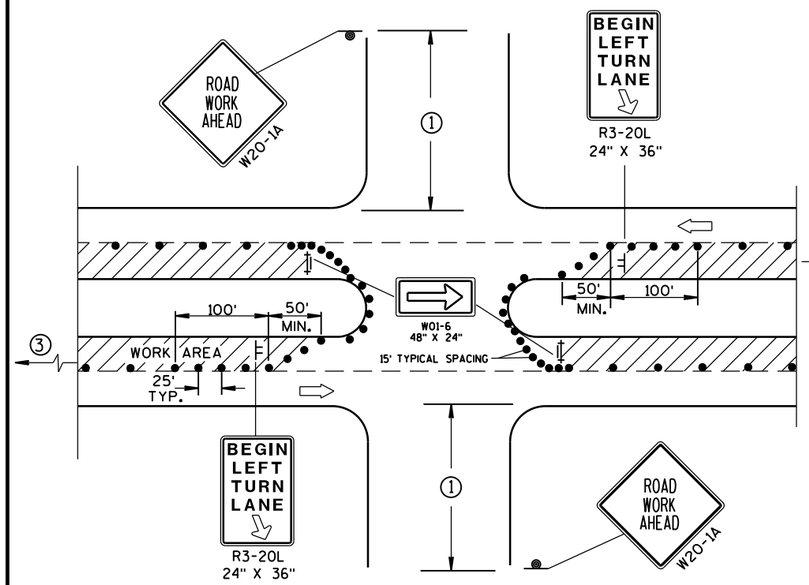
/S/ Matthew R. Rauch
STATE SIGNING AND MAR

NEER

FHWA

6

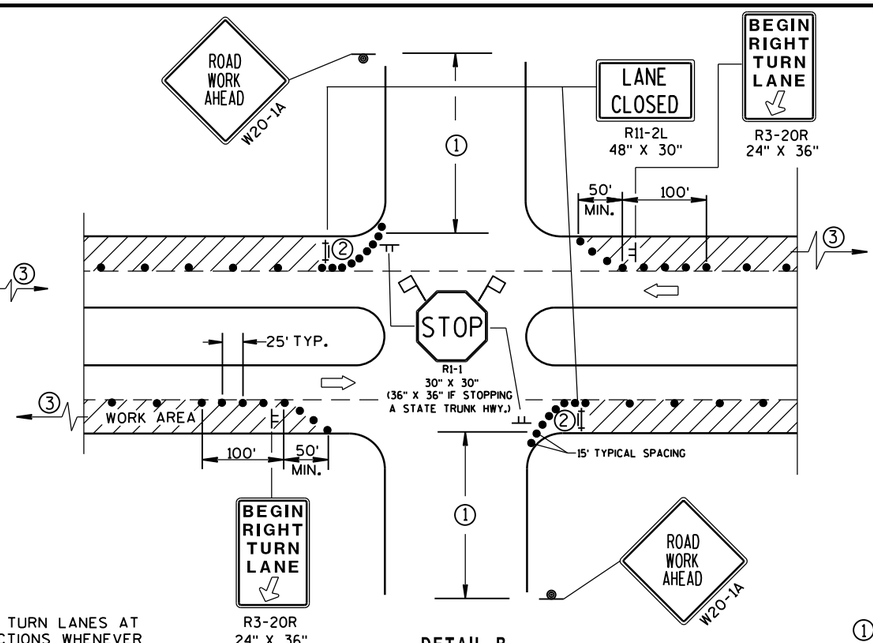
S.D.D. 15 C 33-2



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

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



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

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

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

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

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

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

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

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

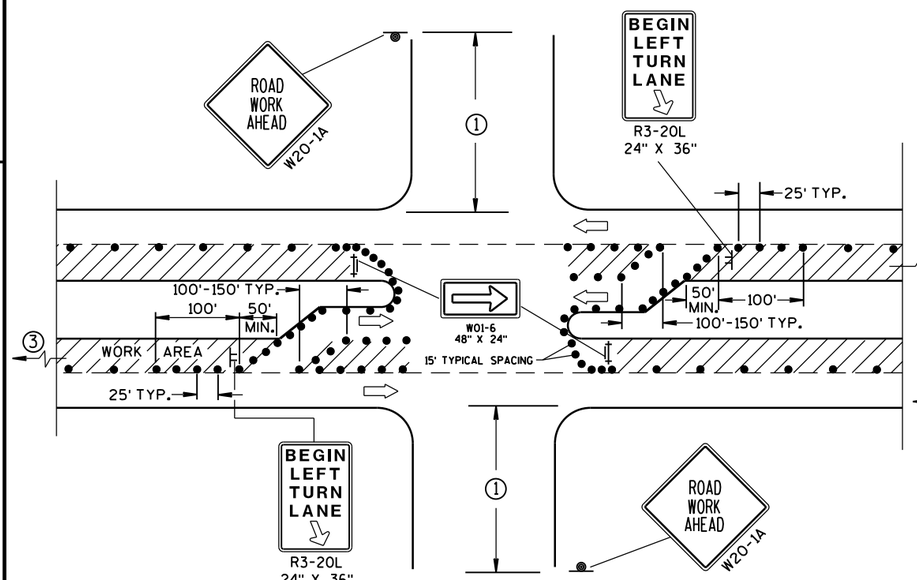
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

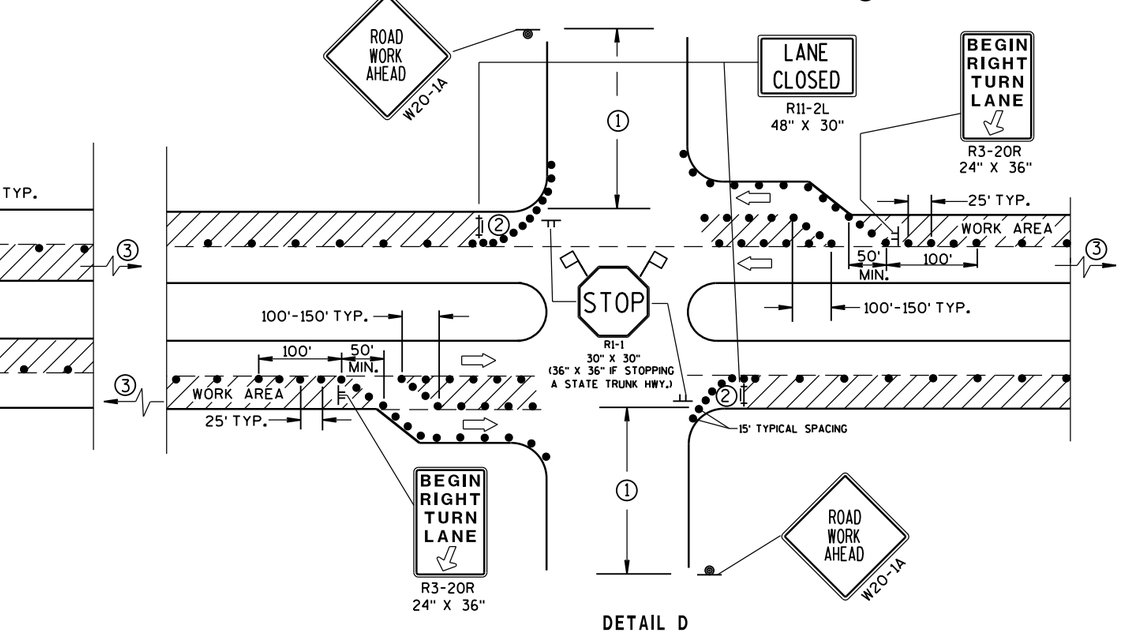
(2) ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

(3) SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

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



DETAIL D

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

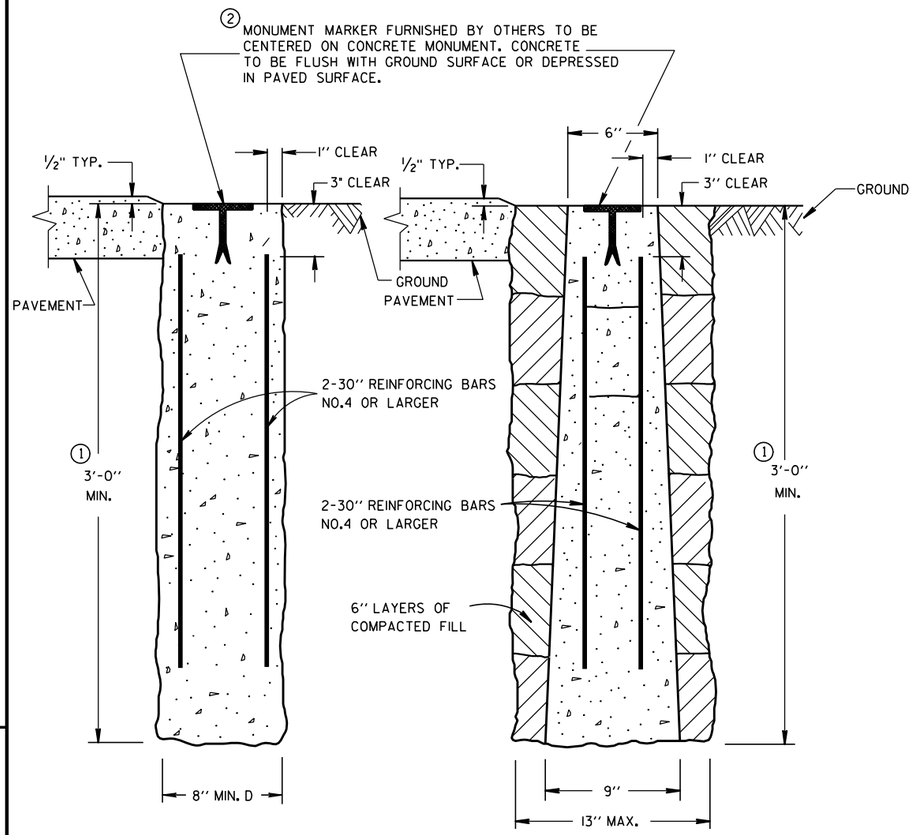
LEGEND

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

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

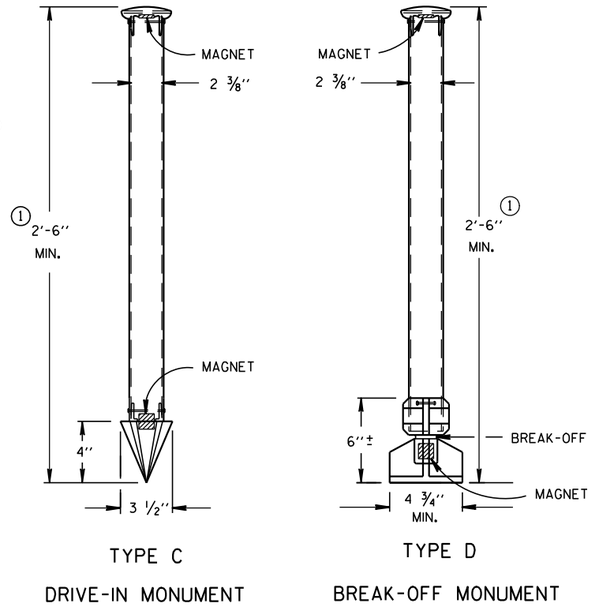
APPROVED
June 2016 — DATE
/S/ Peter Anakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C DRIVE-IN MONUMENT

TYPE D BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

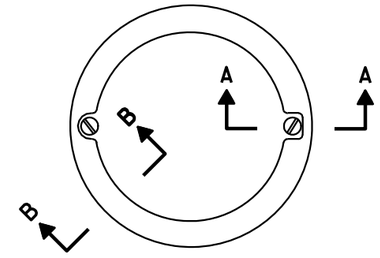
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

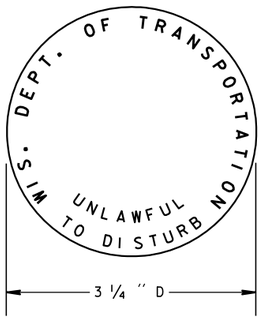
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

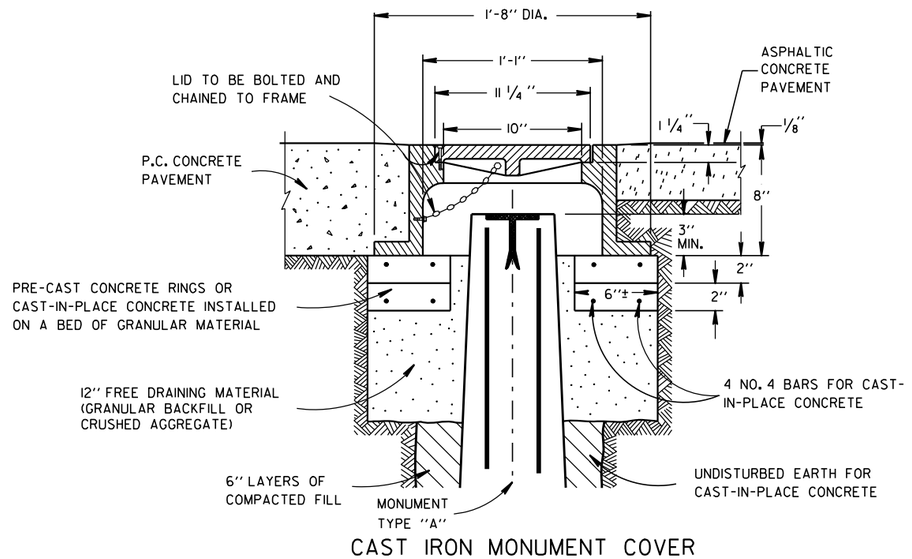
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

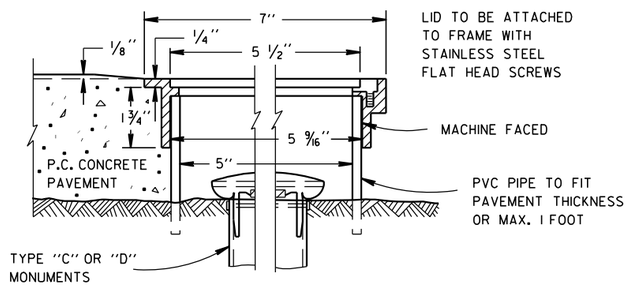


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

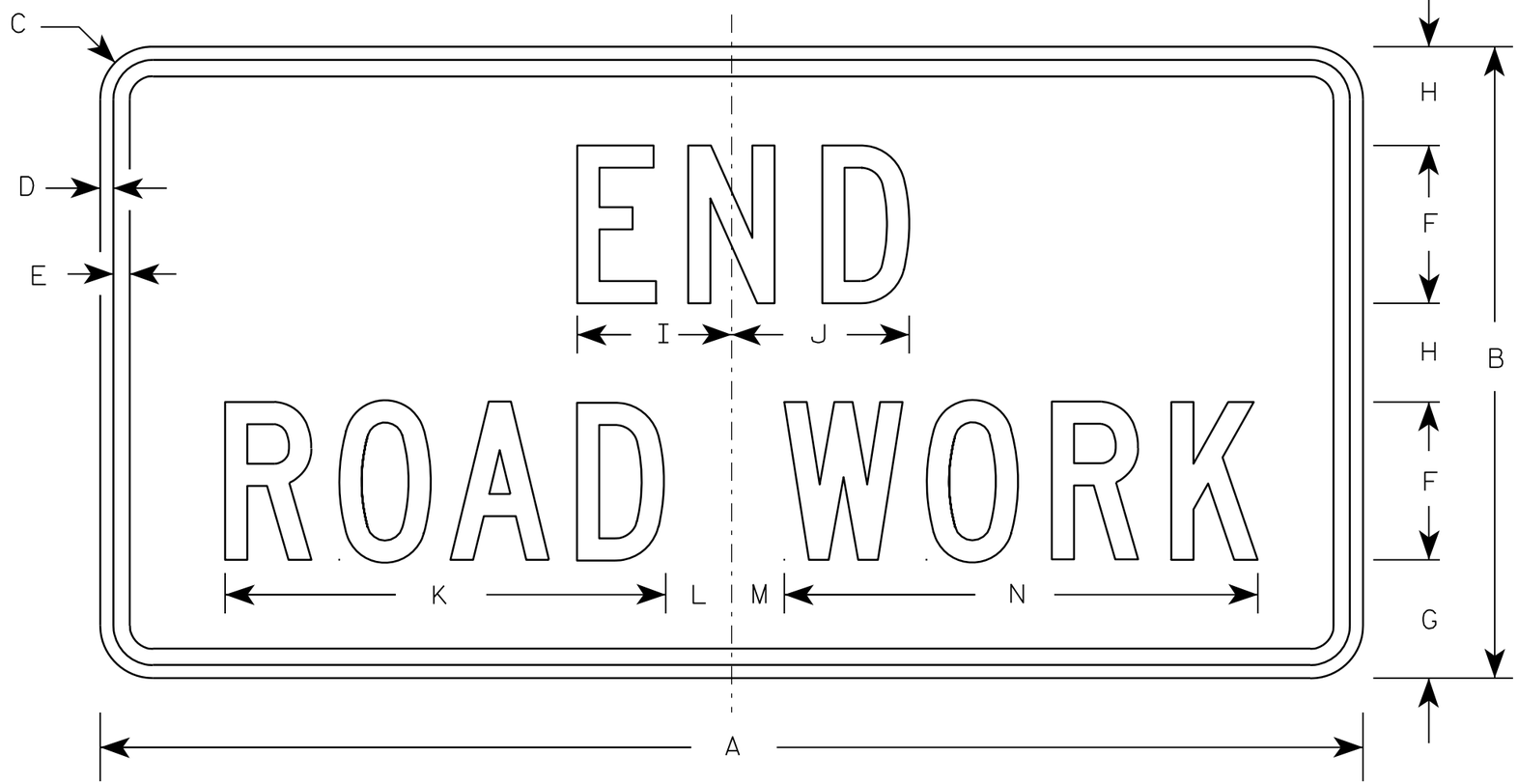
(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/22/1999 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 16 A 1-6



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

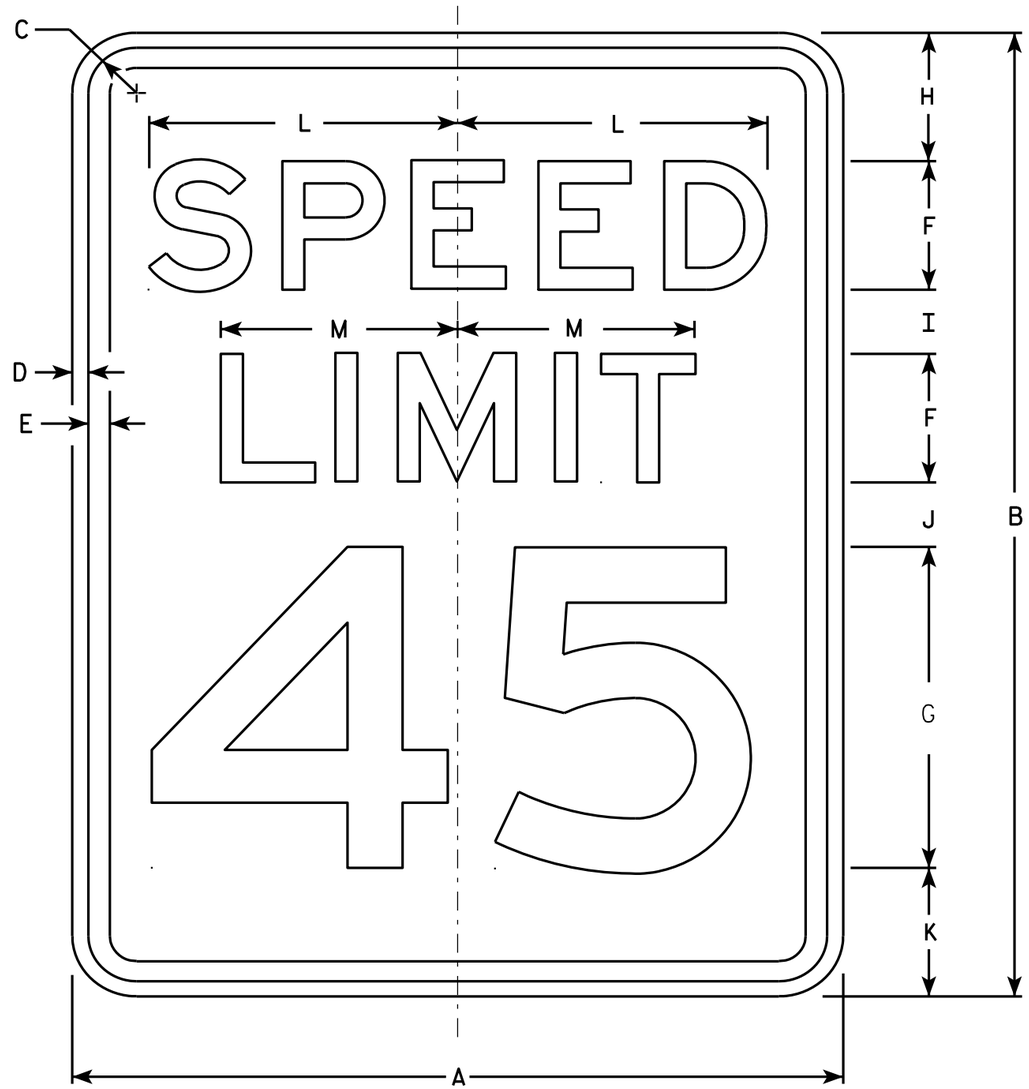
STANDARD SIGN
G20-2A

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: 95	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

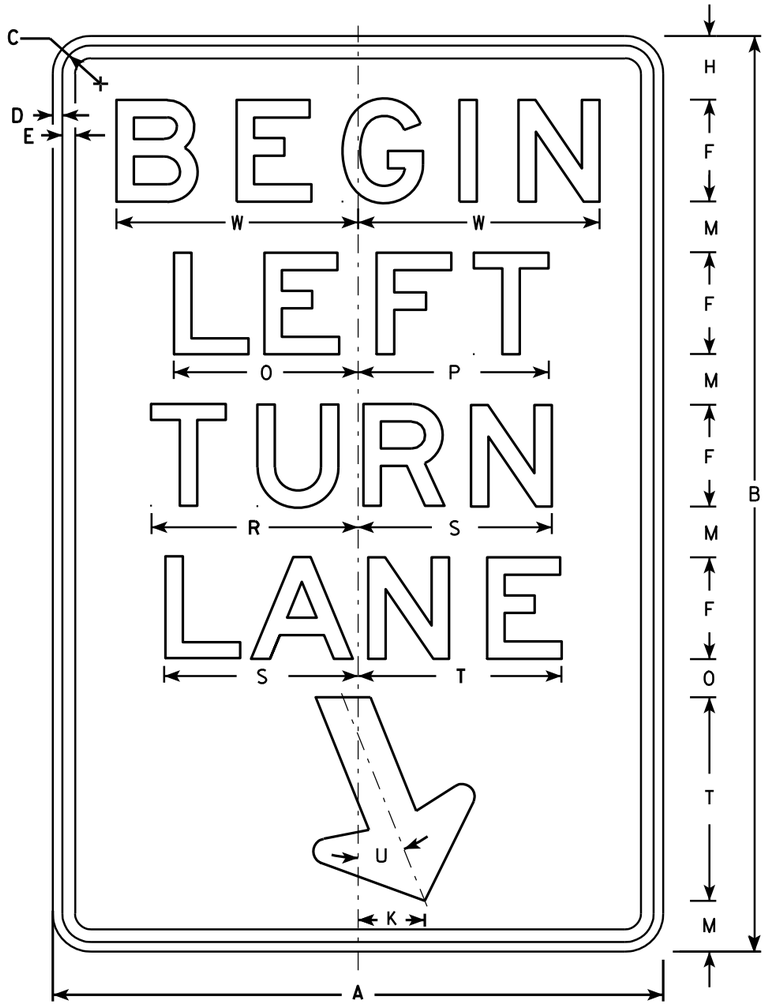
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

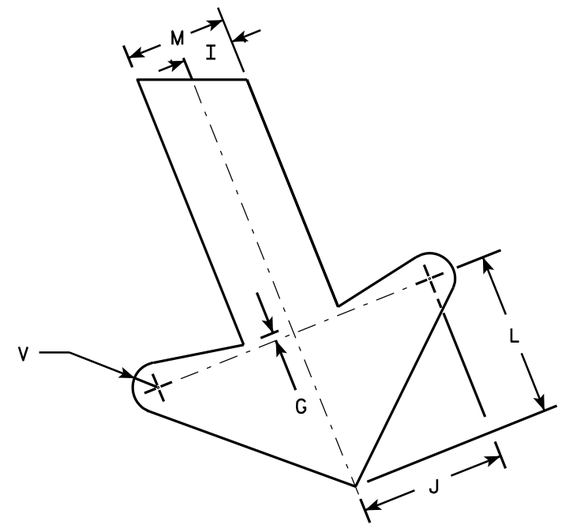
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 96 | E



R3-20L

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

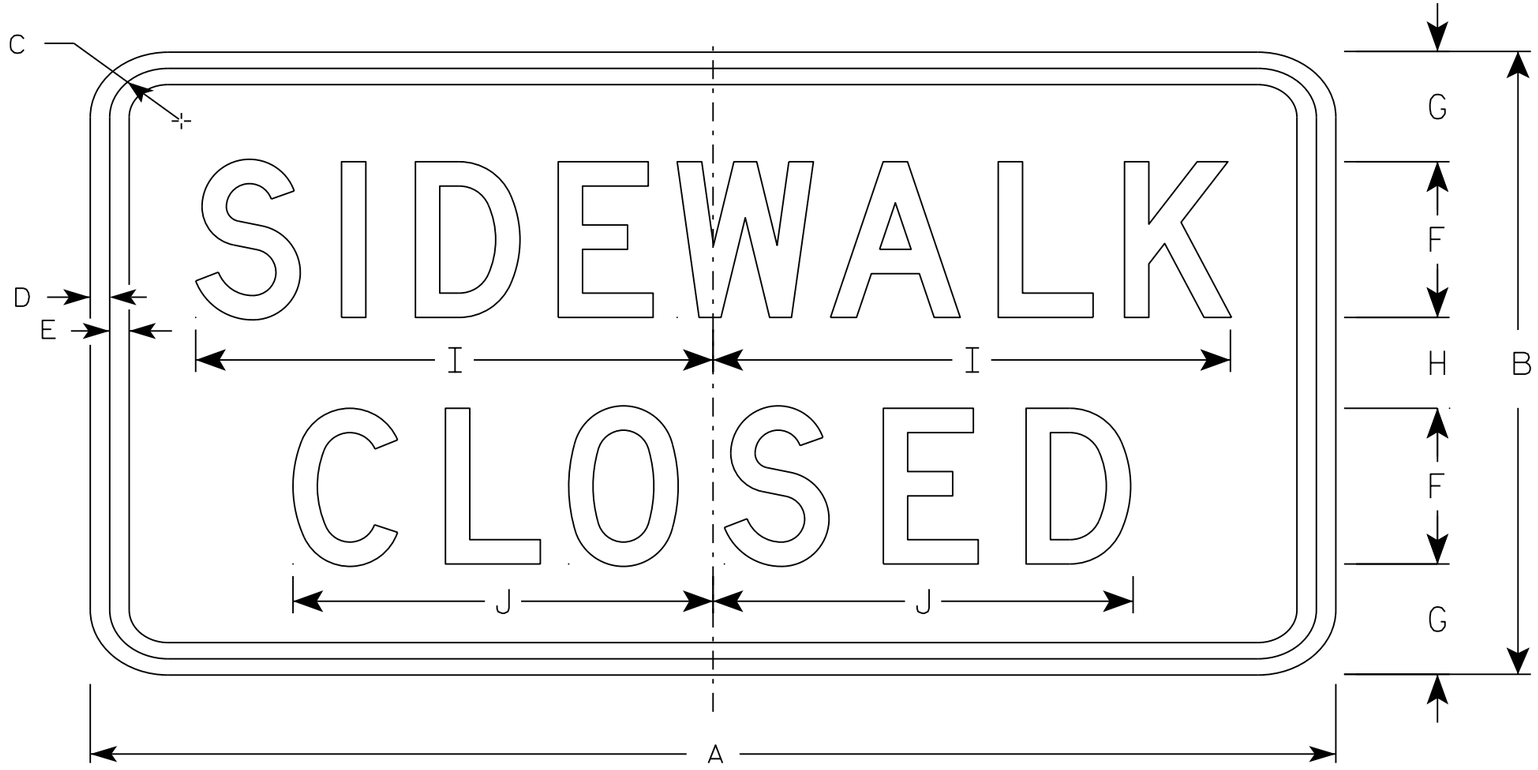
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 97 | 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

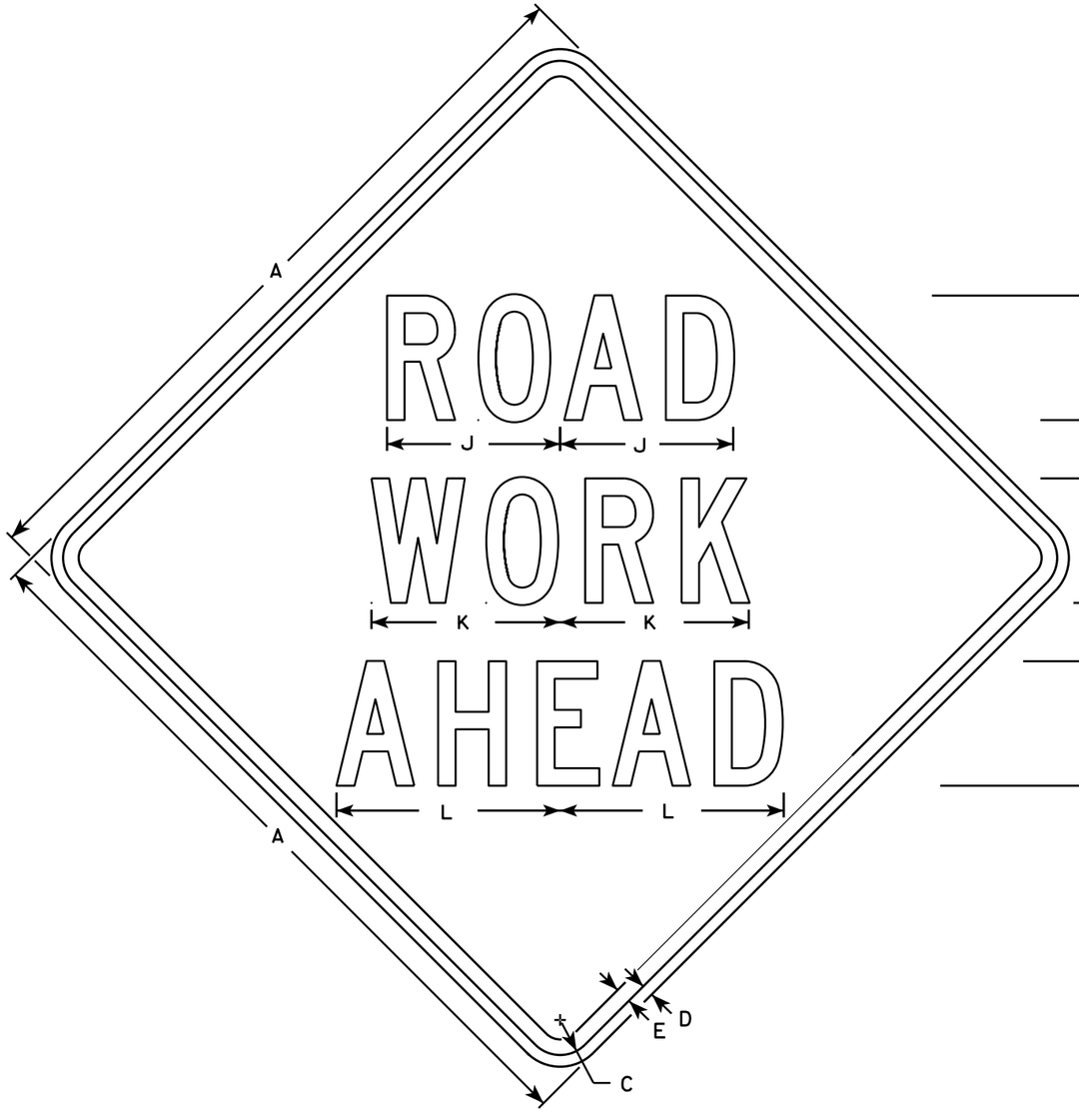
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

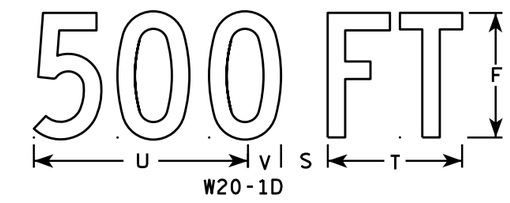
DATE 8/11/16 PLATE 98 R9-9.6

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

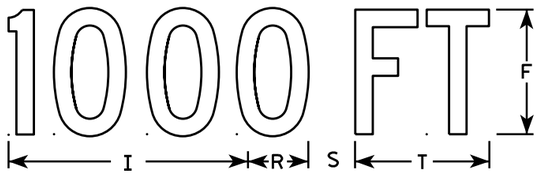
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R99.DGN PLOT DATE : 11-AUG-2016 11:33 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 2.918761:1.000000



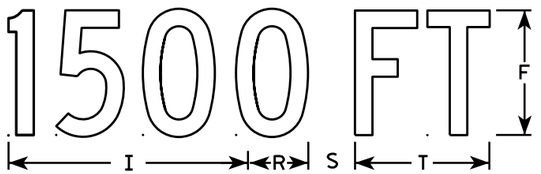
W20-1A



W20-1D



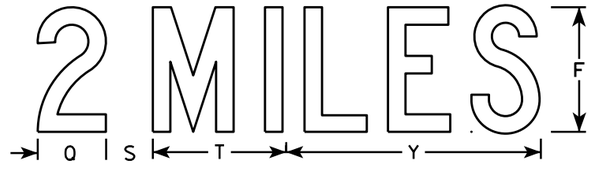
W20-1C



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

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 : 27-MAY-2015 15:58 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

EARTHWORK TABLE FOR CTH VV 2753-01-70

2753-01-70 STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Exponded Marsh Backfill 1.50 Note 4	Exponded Rock 1.10	Exponded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
14+50	1450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15+00	1500	50	18	0	11	0	0	0	16	0	10	0	0	0	16	12	0	0	0	0	0	4
15+50	1550	50	19	0	7	0	0	0	34	0	16	0	0	0	51	33	0	0	0	0	0	14
16+00	1600	50	31	0	16	0	0	0	47	0	21	0	0	0	98	59	0	0	0	0	0	34
16+50	1650	50	34	0	10	0	0	0	60	0	24	0	0	0	144	89	0	0	0	0	0	65
17+00	1700	50	43	0	5	0	0	0	71	0	13	0	0	0	216	106	0	0	0	0	0	119
17+50	1750	50	49	0	2	0	0	0	85	0	6	0	0	0	301	114	0	0	0	0	0	197
18+00	1800	50	52	0	2	0	0	0	93	0	4	0	0	0	395	118	0	0	0	0	0	286
18+50	1850	50	54	0	2	0	0	0	98	0	4	0	0	0	493	123	0	0	0	0	0	379
19+00	1900	50	55	0	2	0	0	0	101	0	4	0	0	0	594	128	0	0	0	0	0	476
19+50	1950	50	0	0	0	0	0	0	51	0	2	0	0	0	645	130	0	0	0	0	0	524
20+00	2000	50	0	0	0	0	0	0	0	0	0	0	0	0	645	130	0	0	0	0	0	524
20+50	2050	50	0	0	0	0	0	0	0	0	0	0	0	0	645	130	0	0	0	0	0	524
21+00	2100	50	59	0	2	0	0	0	54	0	2	0	0	0	699	132	0	0	0	0	0	576
21+50	2150	50	49	0	6	0	0	0	99	0	7	0	0	0	798	141	0	0	0	0	0	666
22+00	2200	50	60	0	2	0	0	0	60	0	7	0	0	0	858	150	0	0	0	0	0	758
22+50	2250	50	40	0	3	0	0	0	92	0	4	0	0	0	950	592	0	0	0	0	0	845
23+00	2300	50	38	0	4	0	0	0	72	0	6	0	0	0	1022	600	0	0	0	0	0	909
23+50	2350	50	37	0	5	0	0	0	70	0	8	0	0	0	1092	610	0	0	0	0	0	969
24+00	2400	50	36	0	10	0	0	0	68	0	14	0	0	0	1160	627	0	0	0	0	0	1020
24+50	2450	50	31	0	15	0	0	0	62	0	23	0	0	0	1222	656	0	0	0	0	0	1054
25+00	2500	50	22	0	6	0	0	0	49	0	19	0	0	0	1272	680	0	0	0	0	0	1079
25+50	2550	50	18	0	2	0	0	0	37	0	7	0	0	0	1309	689	0	0	0	0	0	1108
26+00	2600	50	7	0	1	0	0	0	24	0	2	0	0	0	1333	692	0	0	0	0	0	1128
								Column totals	1346	0	204	0	0	0								

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Exponded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 - Exponded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Exponded Rock) * Fill Factor)]

EARTHWORK TABLE FOR LILLY RD 2753-01-70

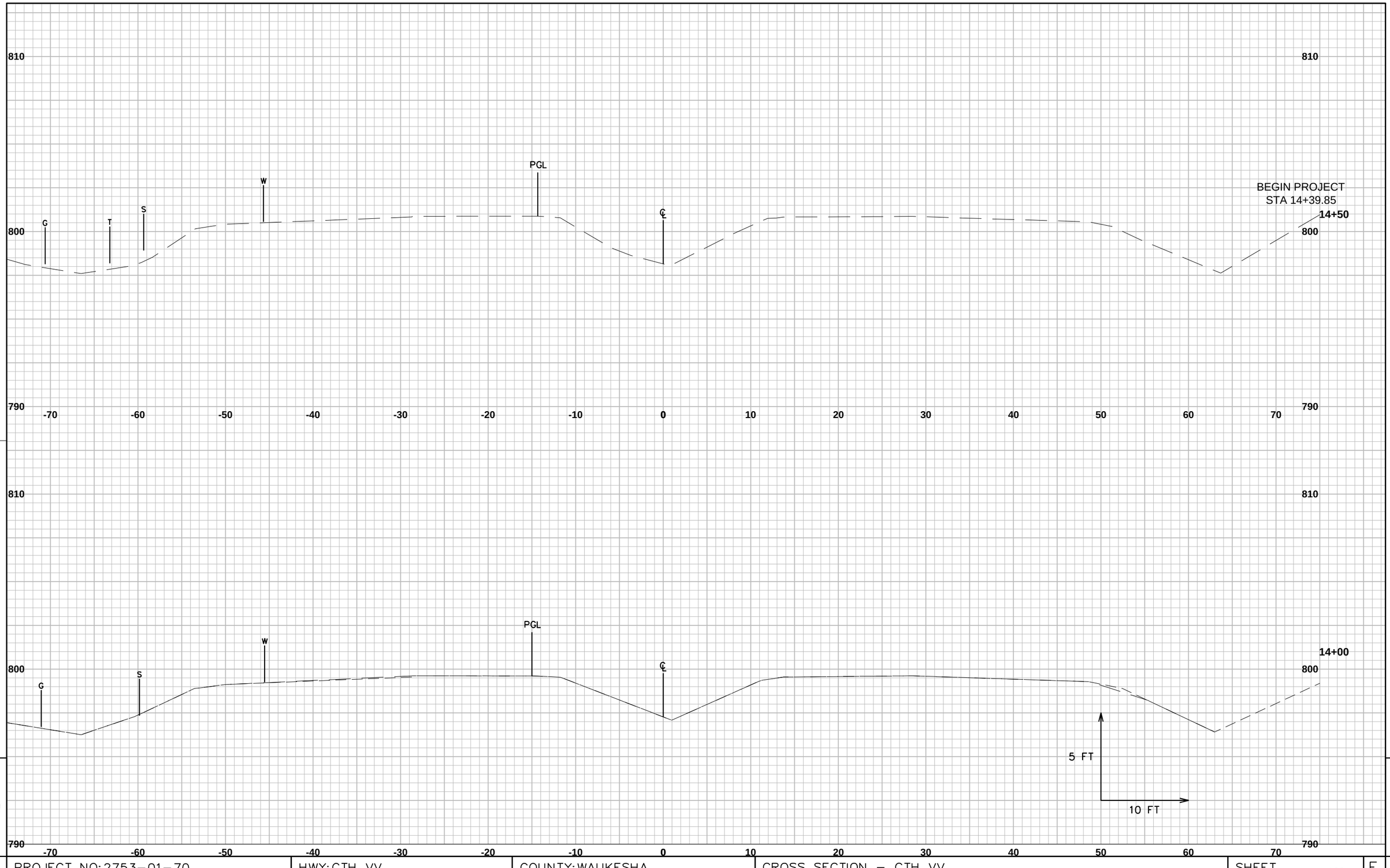
STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut	Exponded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	Mass Ordinate
									Note 1	Note 2	Note 3				Note 1	1.25	1.50	1.10	1.30	0.60	0.80	
52+00	5200	0	0	0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	Note 4 0	0	Note 5 0	Note 6 0	Note 7 0	Note 8 0
52+50	5250	50	14	0	0	0.0	0.0	0.0	13	0	0	0	0	0	13	0	0	0	0	0	0	13
53+00	5300	50	17	0	0	0.0	0.0	0.0	29	0	0	0	0	0	42	0	0	0	0	0	0	42
53+50	5350	50	0	0	0	0.0	0.0	0.0	15	0	0	0	0	0	57	0	0	0	0	0	0	57
54+00	5400	50	0	0	0	0.0	0.0	0.0	0	0	0	0	0	0	57	0	0	0	0	0	0	57
54+50	5450	50	0	0	0	0.0	0.0	0.0	0	0	0	0	0	0	57	0	0	0	0	0	0	57
55+00	5500	50	17	0	0	0.0	0.0	0.0	16	0	0	0	0	0	73	0	0	0	0	0	0	73
55+50	5550	50	17	0	0	0.0	0.0	0.0	32	0	0	0	0	0	105	0	0	0	0	0	0	105
56+00	5600	50	17	0	0	0.0	0.0	0.0	32	0	0	0	0	0	137	0	0	0	0	0	0	137
56+50	5650	50	0	0	0	0.0	0.0	0.0	16	0	0	0	0	0	152	0	0	0	0	0	0	152
57+00	5700	50	9	0	0	0.0	0.0	0.0	8	0	0	0	0	0	161	0	0	0	0	0	0	161
57+50	5750	50	10	0	0	0.0	0.0	0.0	18	0	0	0	0	0	178	0	0	0	0	0	0	178
								Column totals	178	0	0	0	0	0								

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]

9

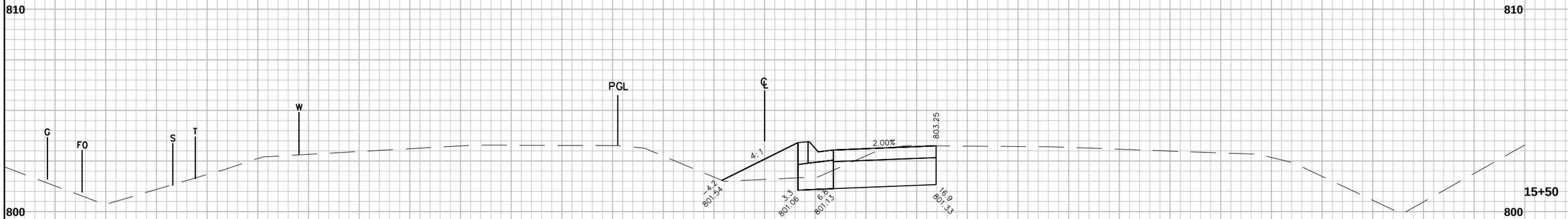
9

PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	COMPUTER EARTHWORK	SHEET 101	E



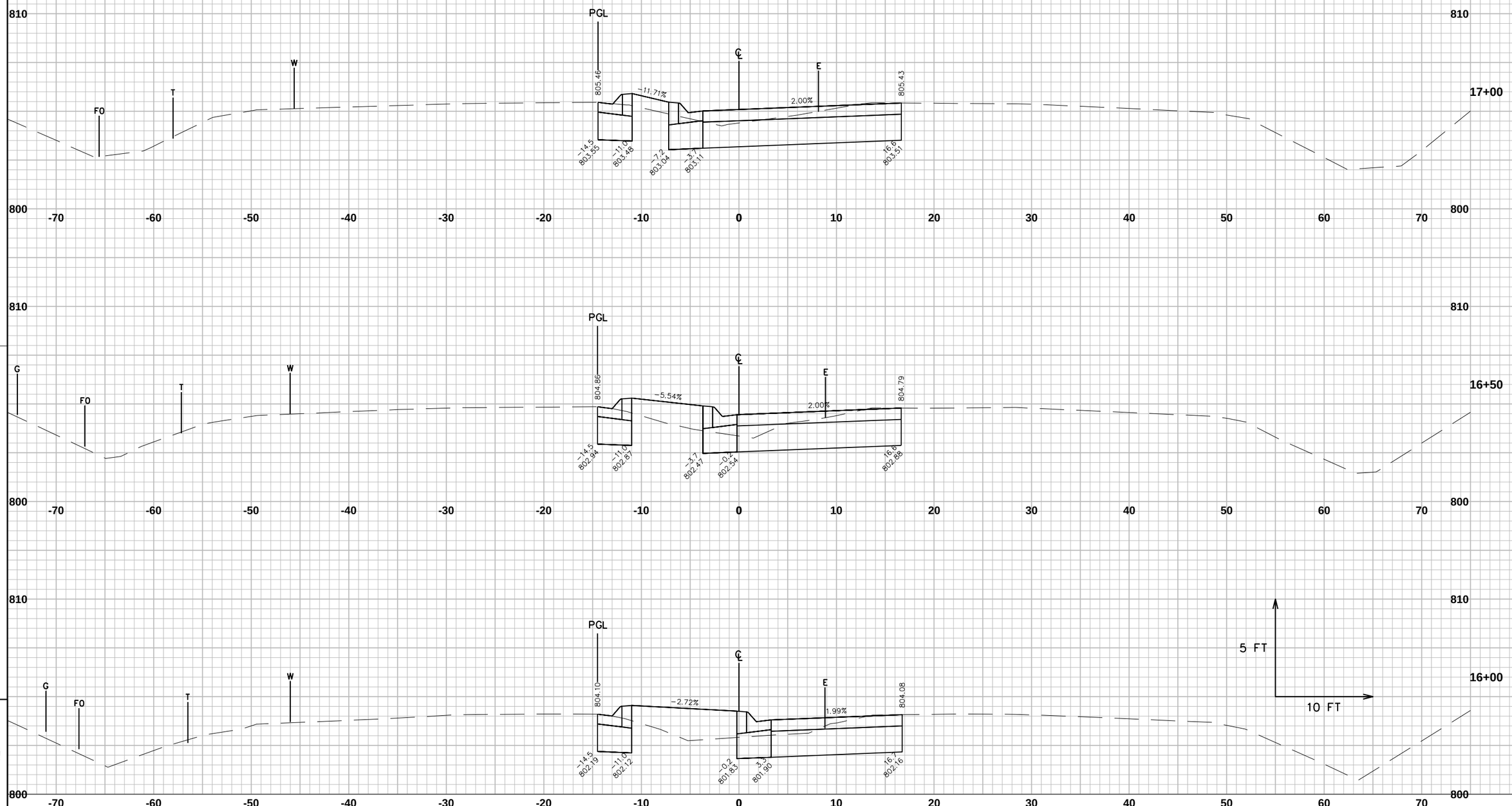
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:19 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



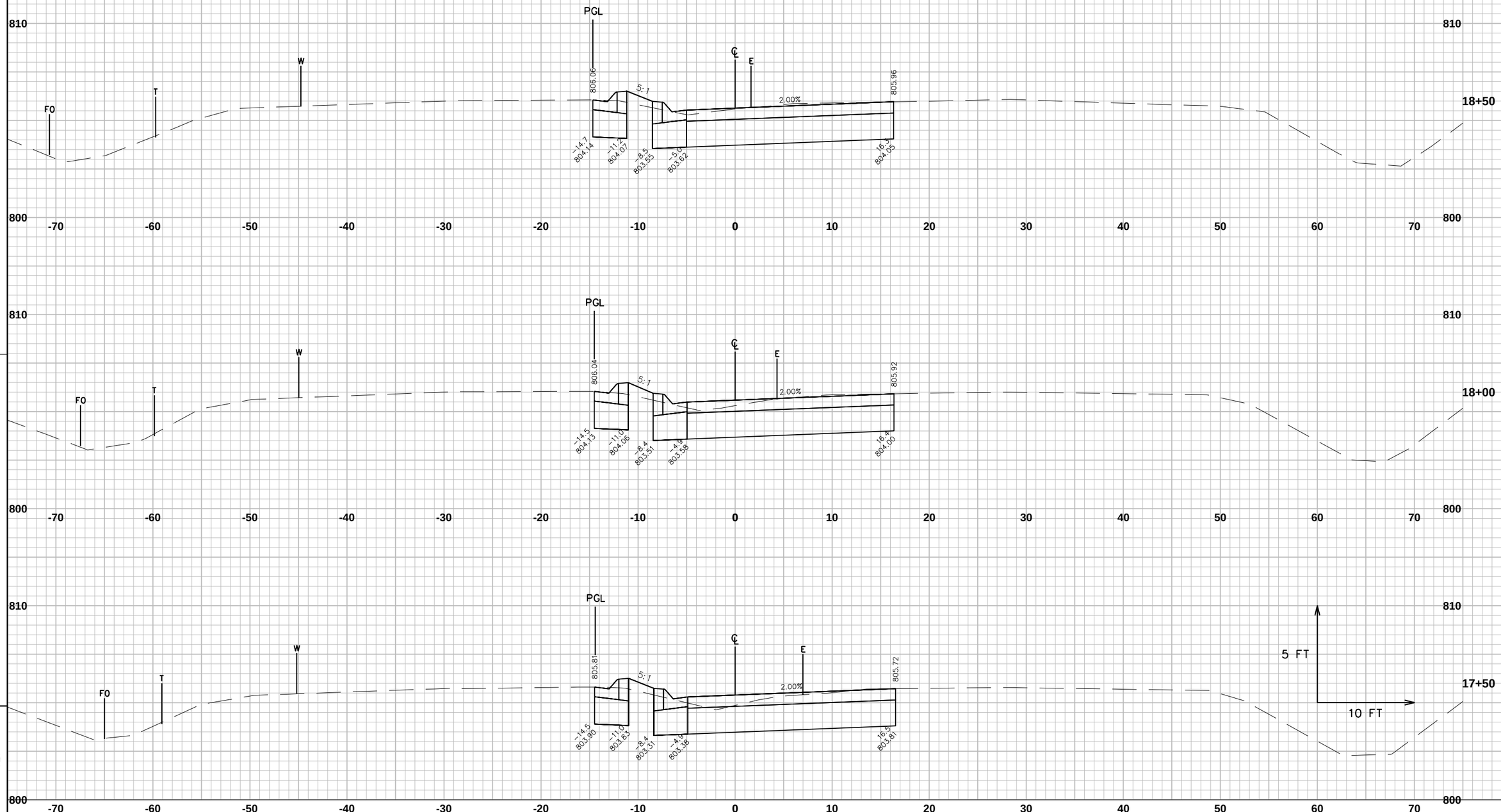
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET 103 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:19 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



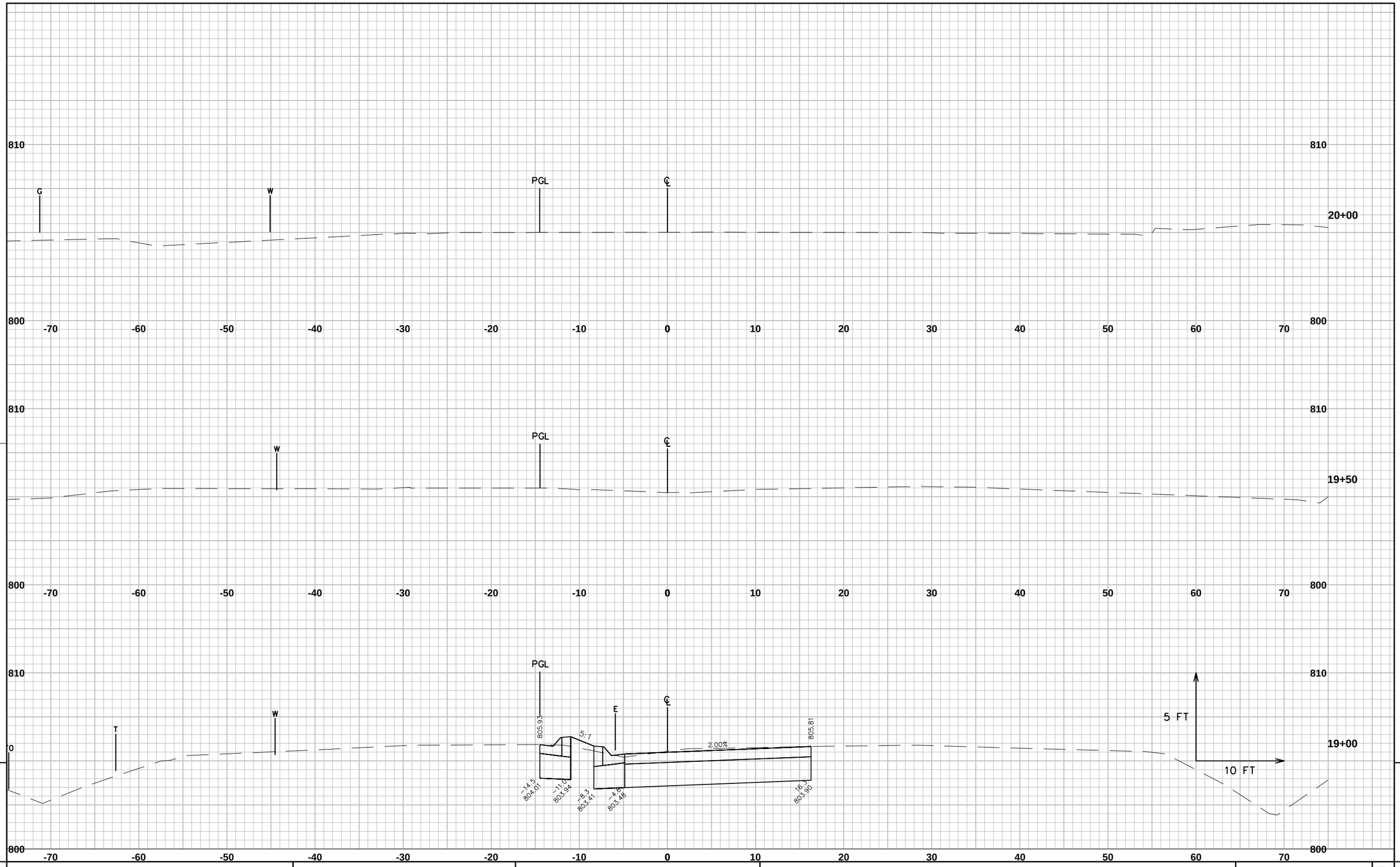
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET 104 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:19 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



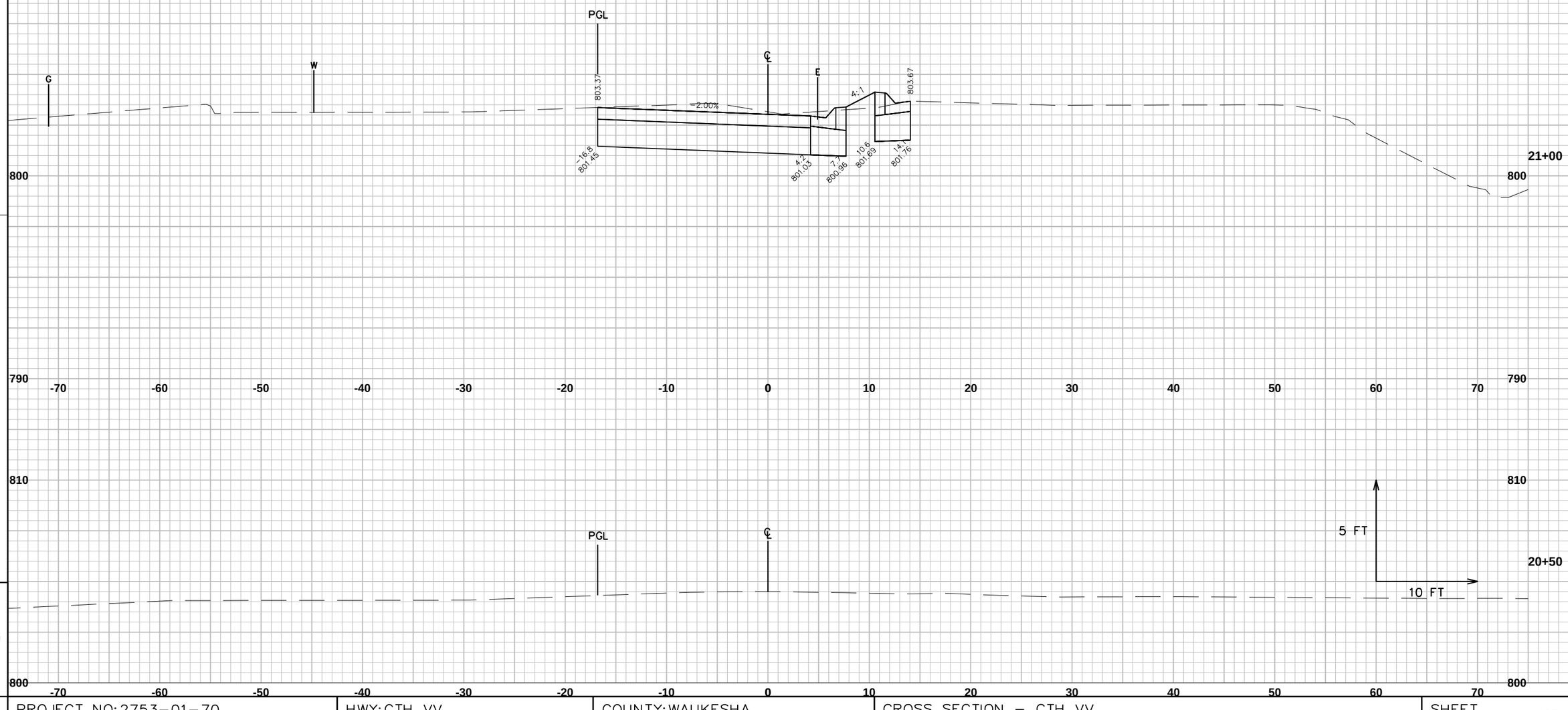
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET 105	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:19 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



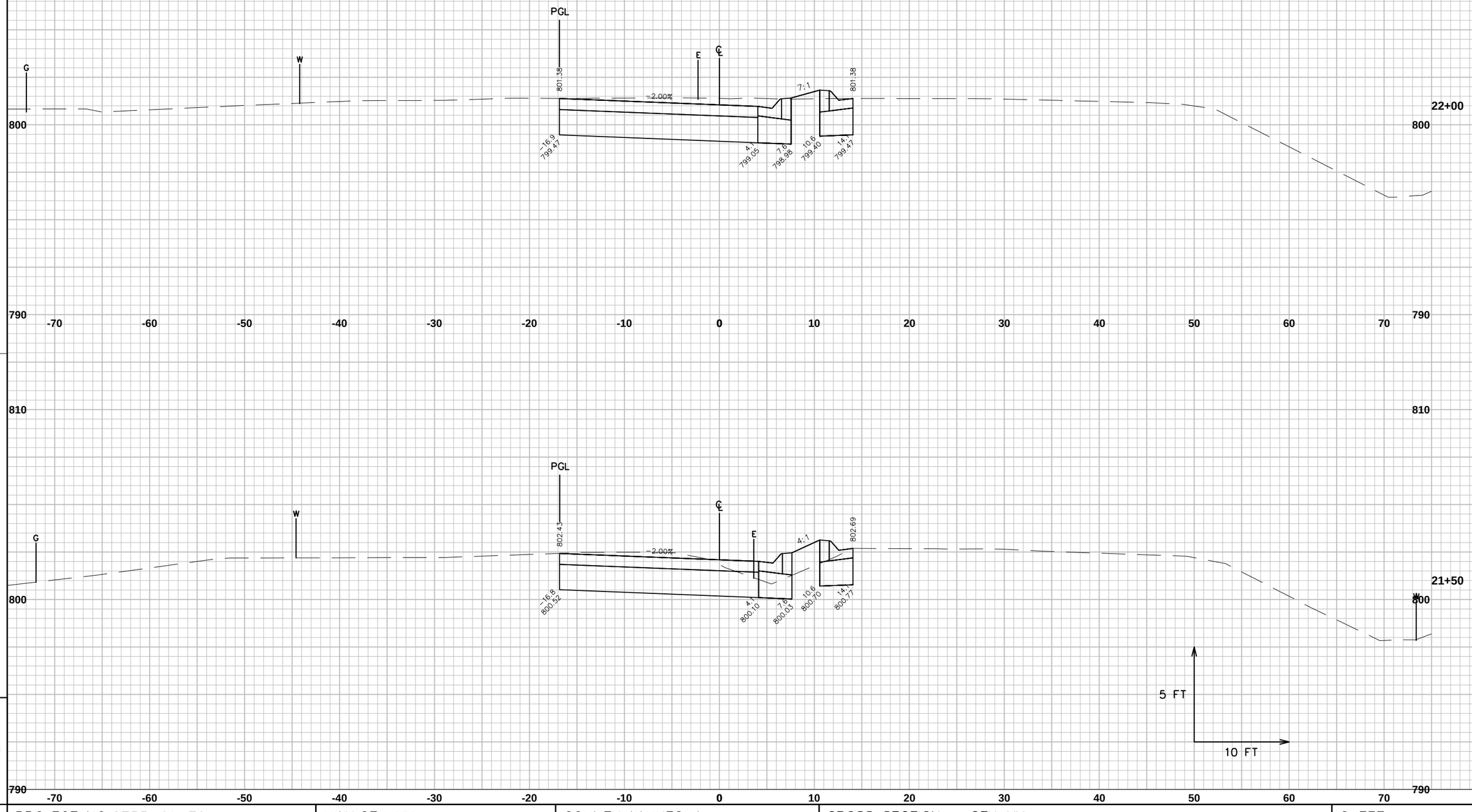
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:19 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



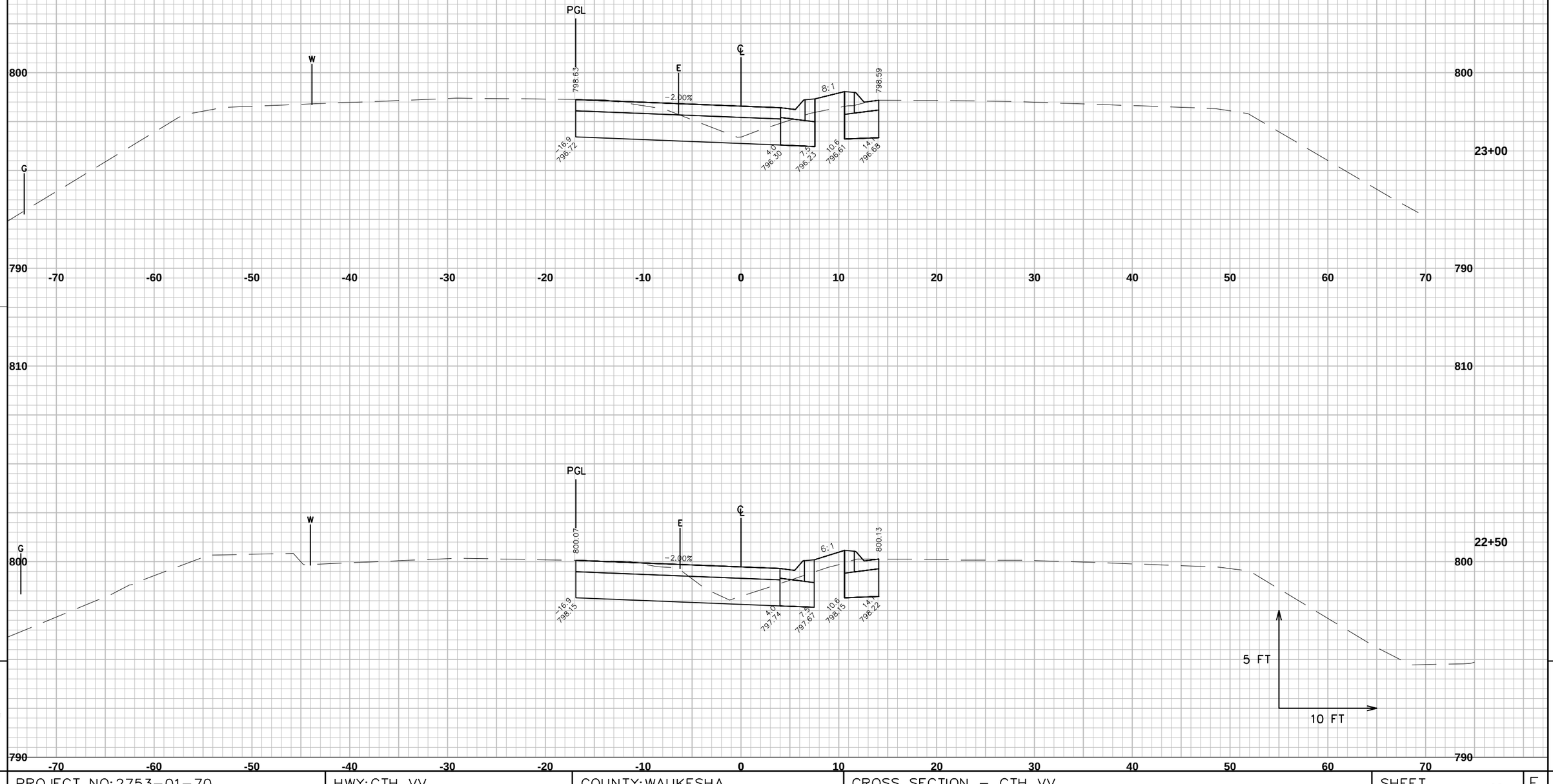
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET 107	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:19 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



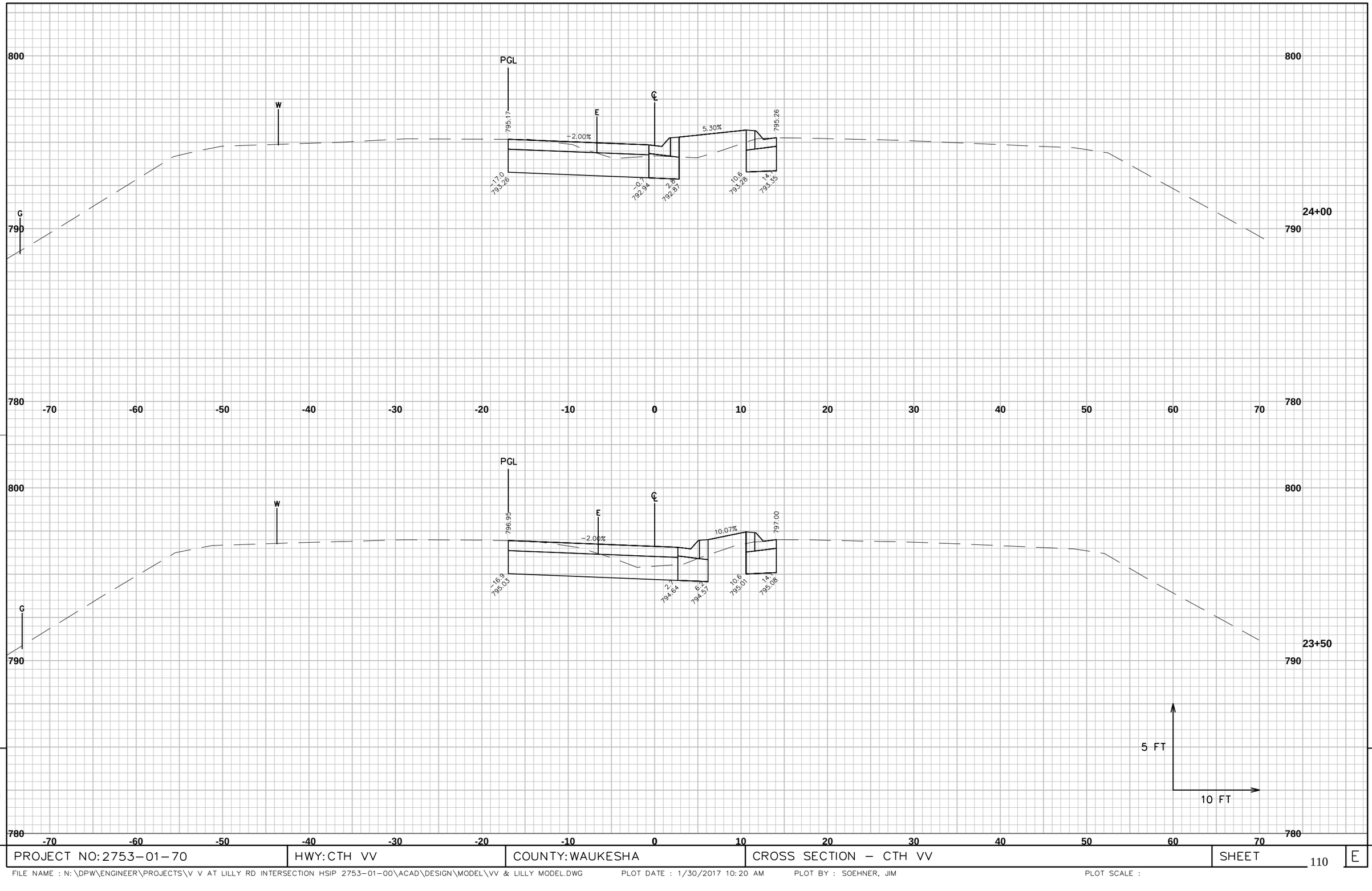
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET 108	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



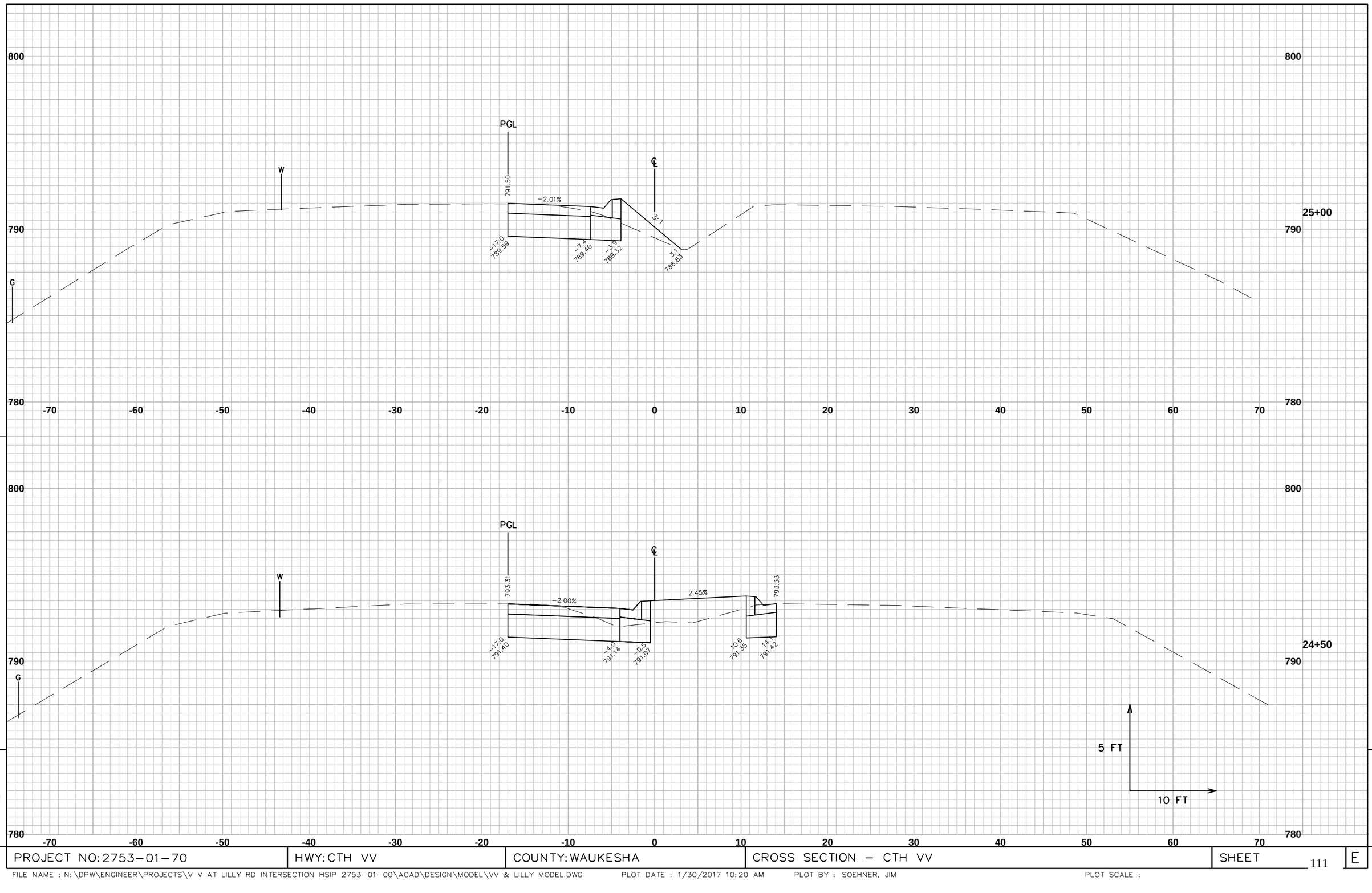
PROJECT NO: 2753−01−70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION − CTH VV	SHEET 109 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753−01−00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET 110	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

END PROJECT
STA 26+19.76

26+50

26+00

25+50

PGL

W

℄

787.83
-2.04%
2:1
-8.3
767.35
-17.0
785.92
-14.0
785.86
-10.5
785.79

789.62
-1.99%
2:1
-4.8
788.95
-17.0
787.71
-10.7
787.58
-7.2
787.51

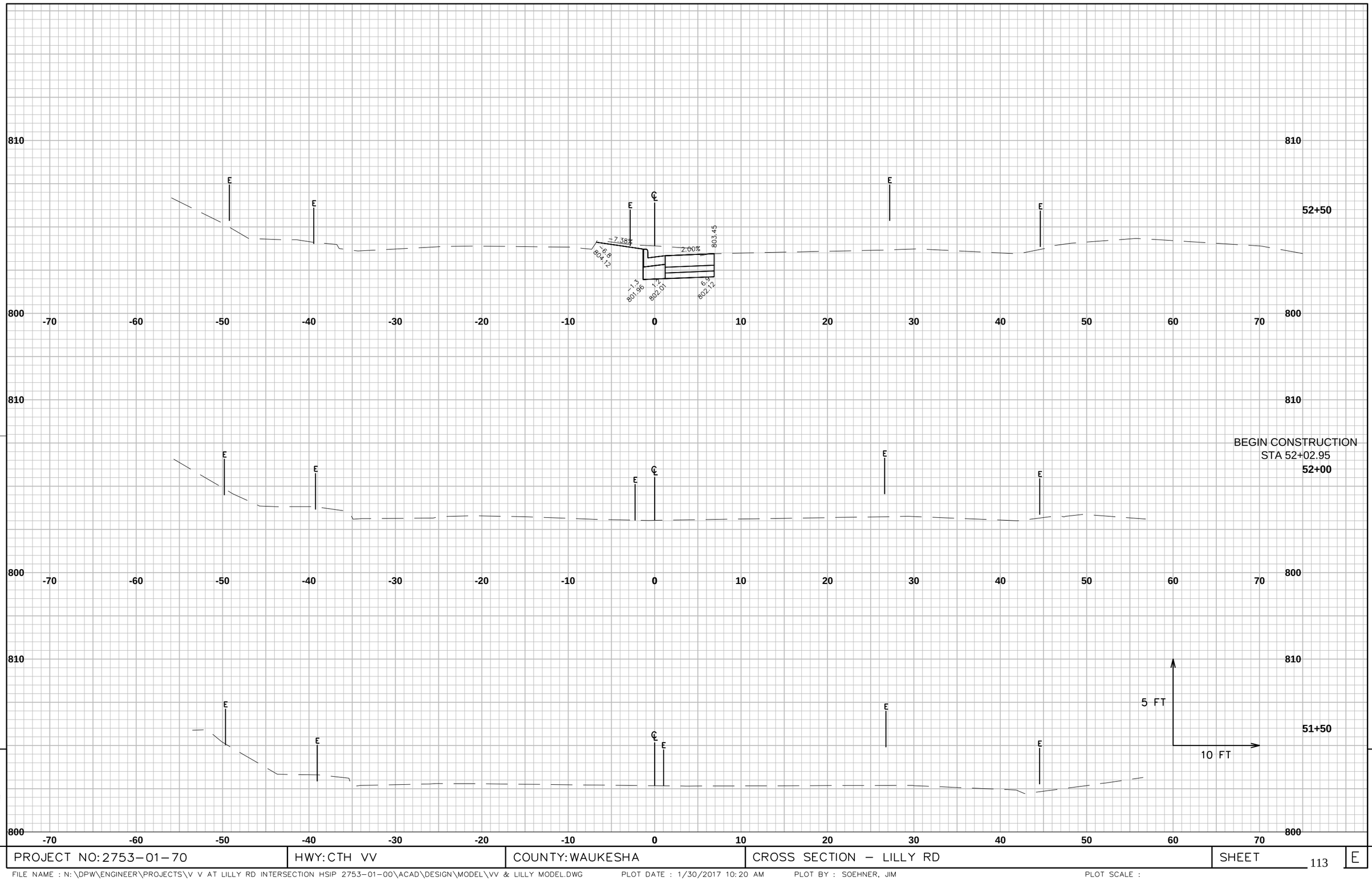
790
780
775
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

5 FT
10 FT

9

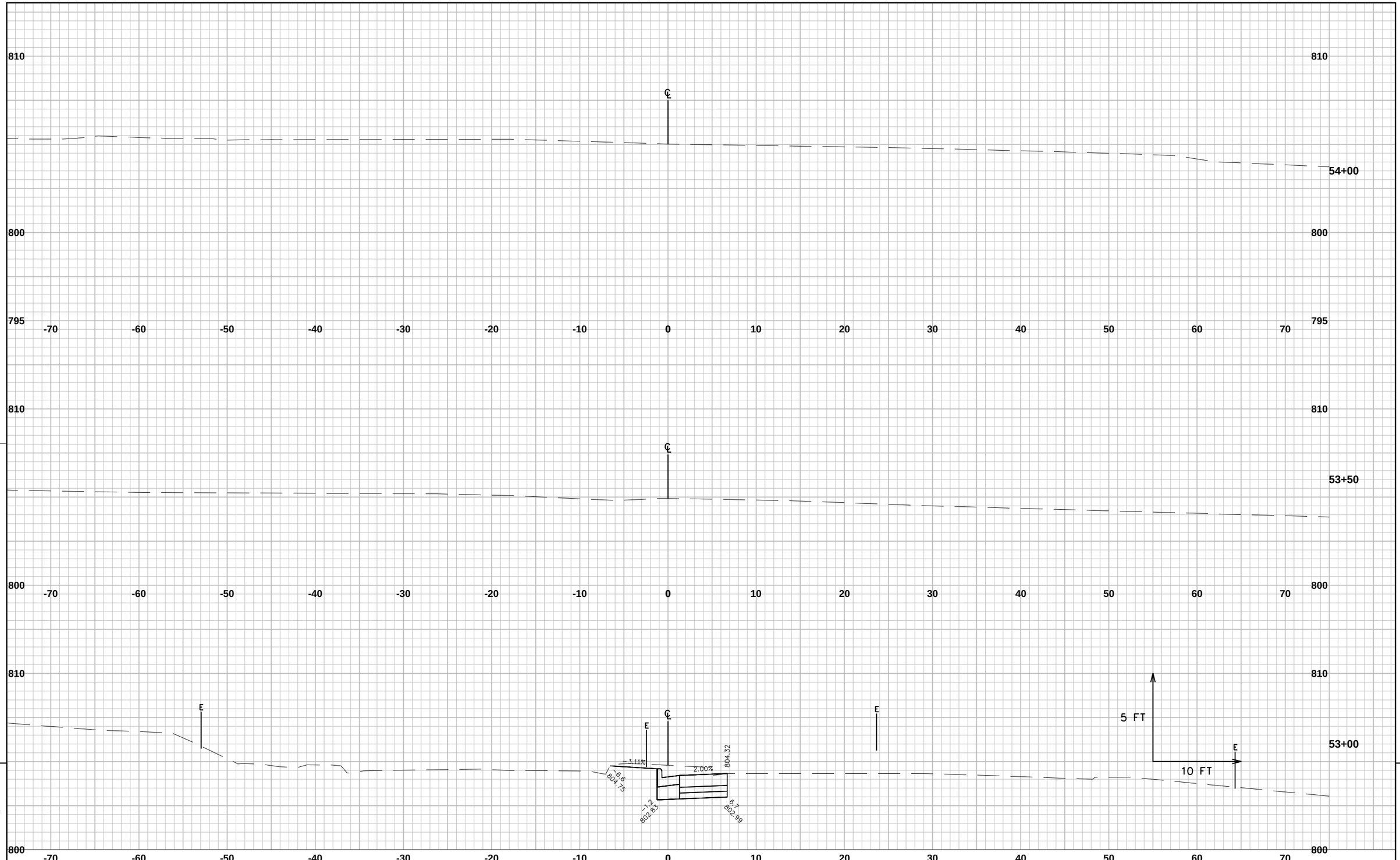
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – CTH VV	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



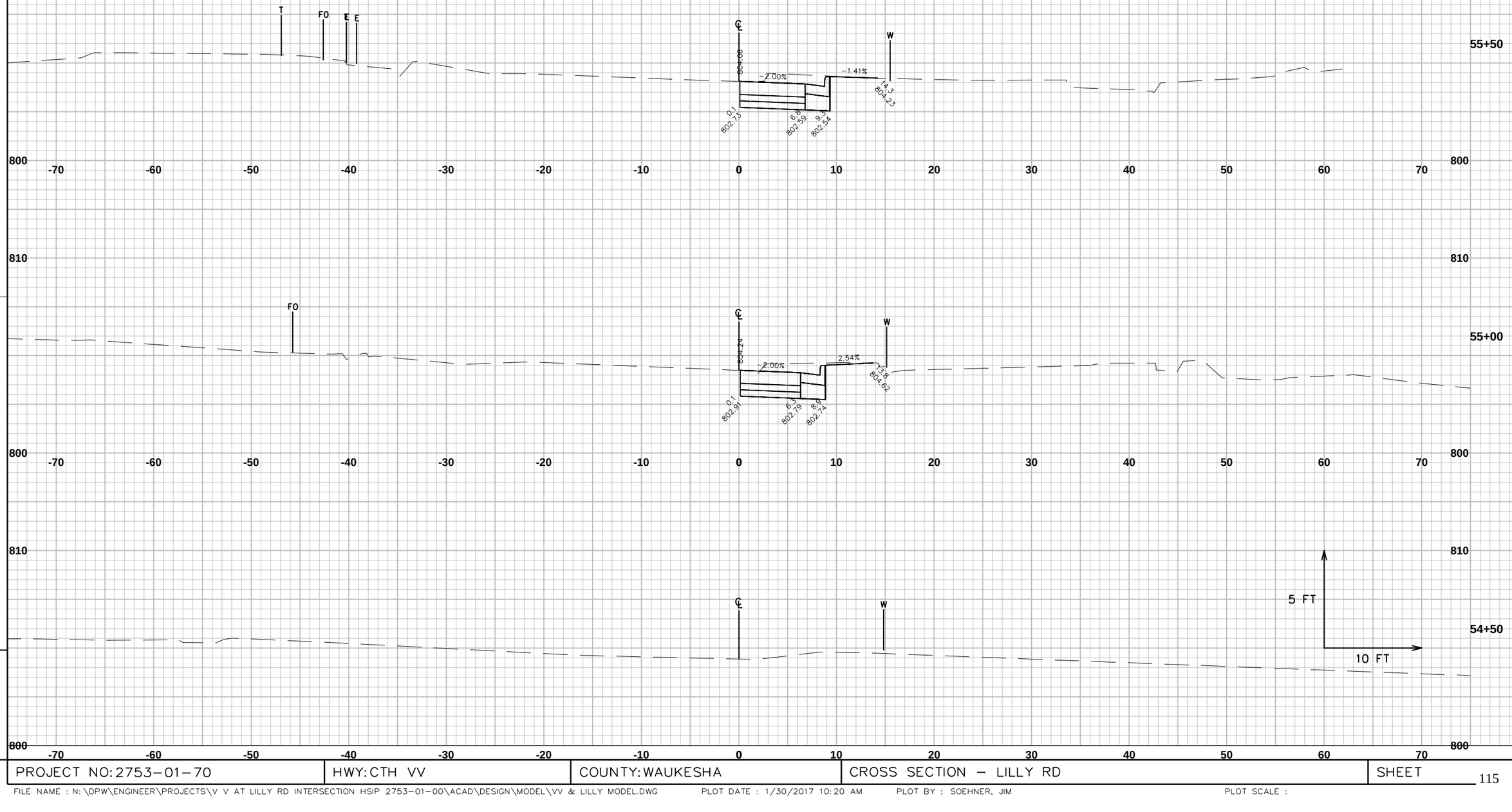
PROJECT NO: 2753–01–70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – LILLY RD	SHEET 113 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753–01–00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



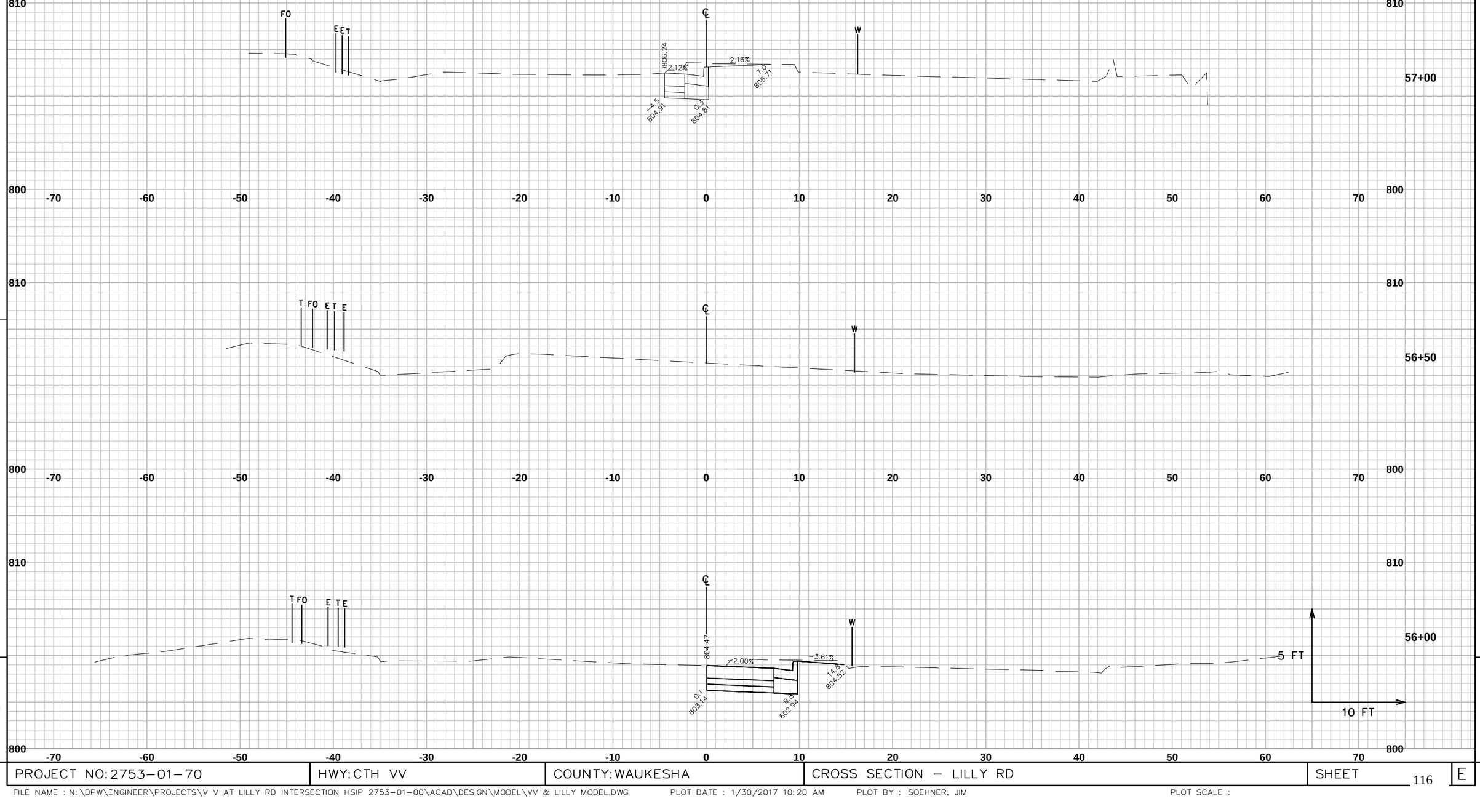
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – LILLY RD	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



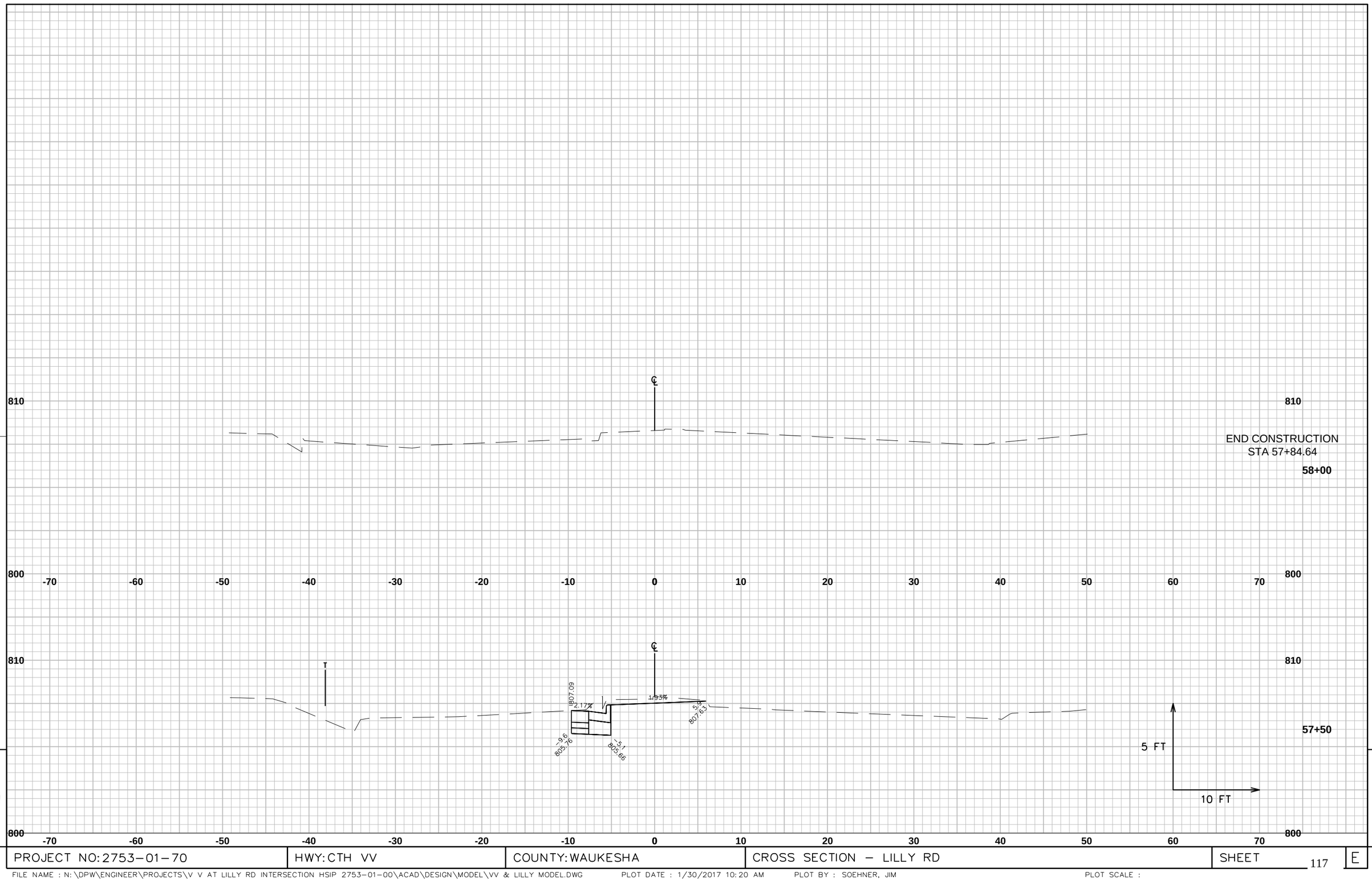
PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – LILLY RD	SHEET E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – LILLY RD	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2753-01-70	HWY: CTH VV	COUNTY: WAUKESHA	CROSS SECTION – LILLY RD	SHEET 117	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\V V AT LILLY RD INTERSECTION HSIP 2753-01-00\ACAD\DESIGN\MODEL\VV & LILLY MODEL.DWG PLOT DATE : 1/30/2017 10:20 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
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