WKE

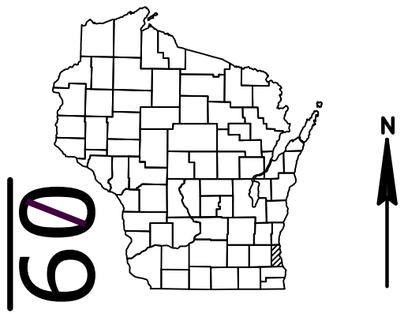
JULY 2015

PROJECT ID: 1060-35-84

COUNTY: MILWAUKEE

ORDER OF SHEETS

TOTAL SHEETS = 104



N

DESIGN DESIGNATION

A.A.D.T.	=	N/A
A.A.D.T.	=	N/A
D.H.V.	=	N/A
D.D.	=	N/A
T.	=	N/A
DESIGN SPEED	=	N/A
ESALS	=	N/A

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1060-35-84		

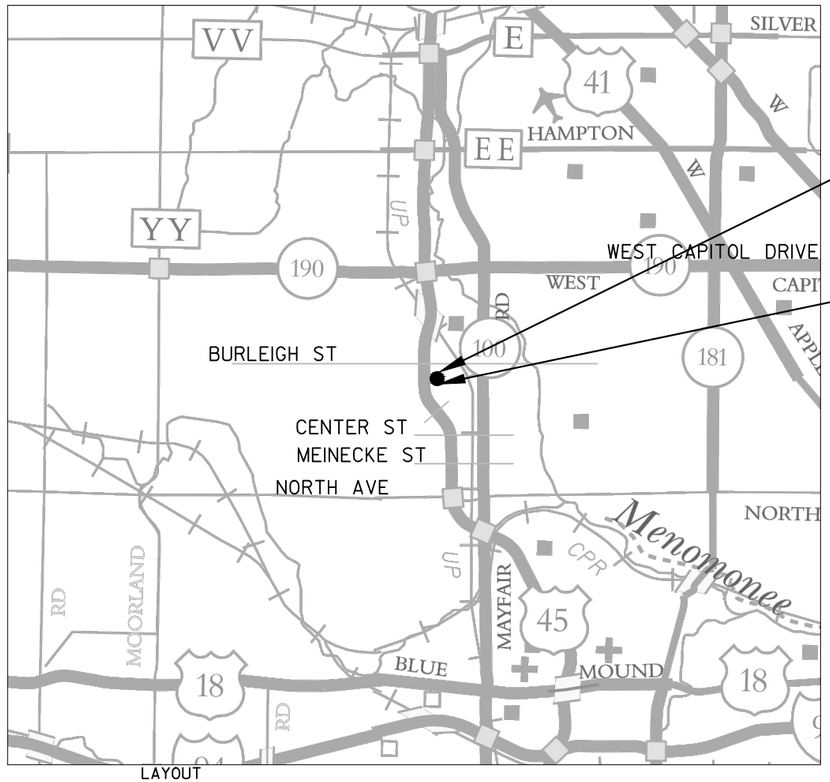
ZOO IC, LOCUST ST PARKING LOT

PARKING LOT AT USH 45 AND LOCUST ST

USH 45

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1060-35-84



END PROJECT 1060-35-84
STA. 9+70.84

BEGIN PROJECT 1060-35-84
STA. 6+53.00
X=567,293.94
Y=311,181.08

LAYOUT

SCALE 0 2 MILES

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	FORWARD 45
Designer	
Project Manager	CHRIS ZACHARIAS, P.E.
Regional Examiner	
Regional Supervisor	WILLIAM S. MOHR, P.E.

APPROVED FOR THE DEPARTMENT

DATE: 4/1/15 (Signature)

E

UTILITY CONTACTS

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WE ENERGIES - GAS/PETROLEUM

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WAUWATOSA, WI 53226
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CELL: (262) 349-5356
NETTESME@WAUWATOSA.K12.WI.US

WAUWATOSA SCHOOL DISTRICT
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WAUWATOSA SCHOOL DISTRICT – FISHER BUILDING
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WAINSCLA@WAUWATOSA.K12.WI.US

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COORDINATOR OF STREET SUPERVISION
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DZIAREK@MCTS.ORG

SOUTHEASTERN WISONSIN REGIONAL PLANNING COMMISSION
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DSIMON@SEWRPC.ORG

CITY OF WAUWATOSA – DEPARTMENT OF PUBLIC WORKS
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BPORTER@WAUWATOSA.NET

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

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

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

GENERAL NOTES

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

ANY REINFORCEMENT LOCATED IN EXISTING CONCRETE PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE REMOVING PAVEMENT ITEM, AND NO ADDITIONAL COMPENSATION WILL BE GRANTED.

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

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

CURB HEIGHTS AT THE END OF CURB AND GUTTER SHALL BE TAPERED FROM 0 TO 6 INCHES IN 8 FEET.

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

PROVIDE A TYPICAL PEDESTRIAN PATH AND SIDEWALK CROSS SLOPE OF 1.5% WITH A CONSTRUCTION TOLERANCE OF +/- 0.5%.

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

A SAWED JOINT IS REQUIRED WHERE NEW HMA PAVEMENT MEETS EXISTING HMA PAVEMENT.

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

VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND THE EXISTING PAVEMENT ELEVATIONS, CONTRACTOR IS TO NOTIFY THE ENGINEER.

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

PROVIDE A CONCRETE JOINT DETAIL 14 DAYS PRIOR TO PAVING FOR APPROVAL BY THE ENGINEER. 15' MAXIMUM SPACING FOR LONGITUDINAL JOINTS. 15' MAXIMUM SPACING FOR TRANSVERSE JOINTS.

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

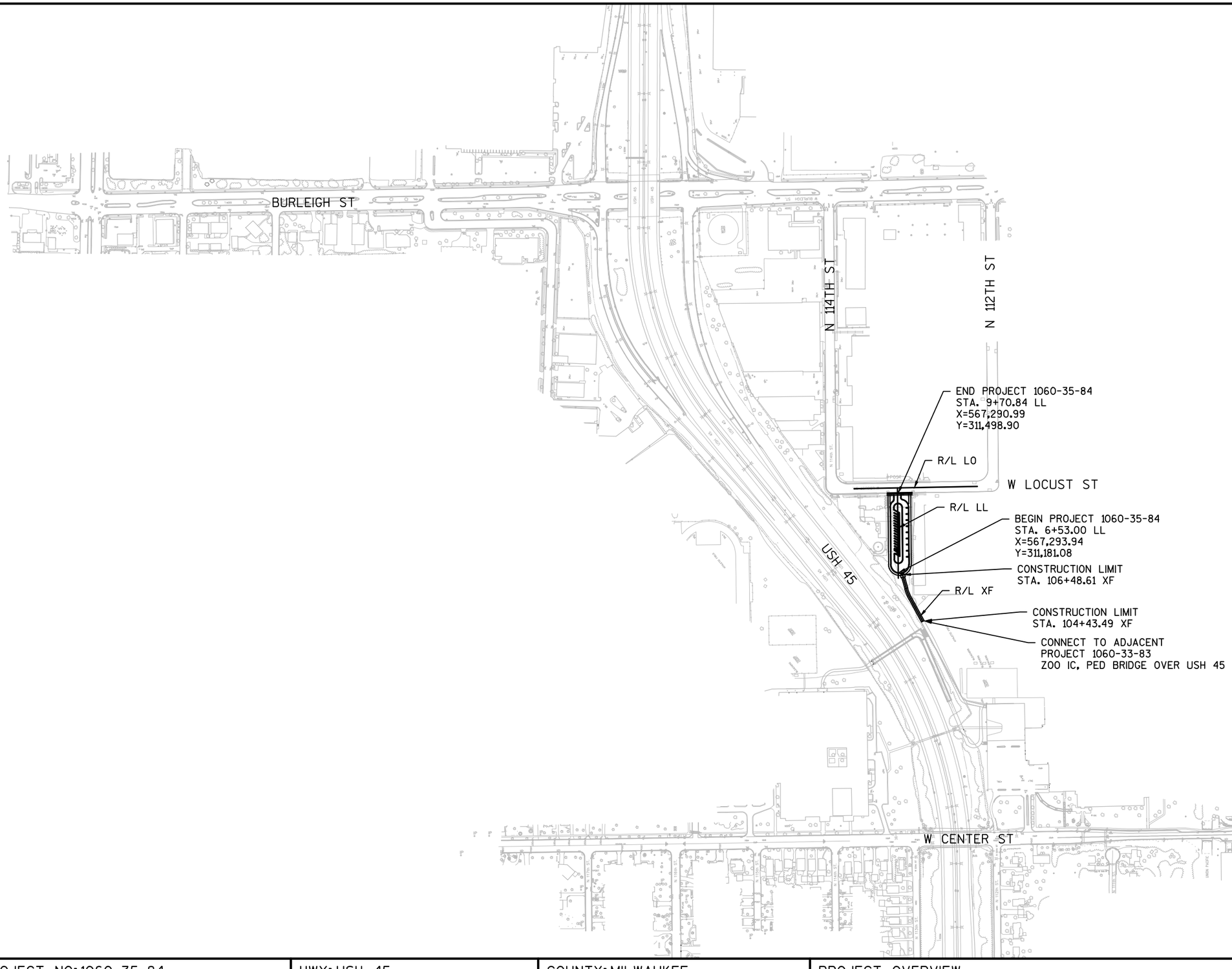
INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER.

STANDARD ABBREVIATIONS

AEW	APRON ENDWALL
AGG	AGGREGATE
ASPH	ASPHALTIC
BAD	BASE AGGREGATE DENSE
BM	BENCHMARK
BMP	BEST MANAGEMENT PRACTICE
C&G	CURB AND GUTTER
CL OR $^{C}_{L}$	CENTER LINE OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EB	EASTBOUND
ECIP	EROSION CONTROL IMPLEMENTATION PLAN
FE	FIELD ENTRANCE
FL	FLOW LINE
HMA	HOT MIX ASPHALTIC
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PGL	PROFILE GRADE LINE
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON END WALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RRSP	RAILROAD SPIKE
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SI	SLOPE INTERCEPT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT

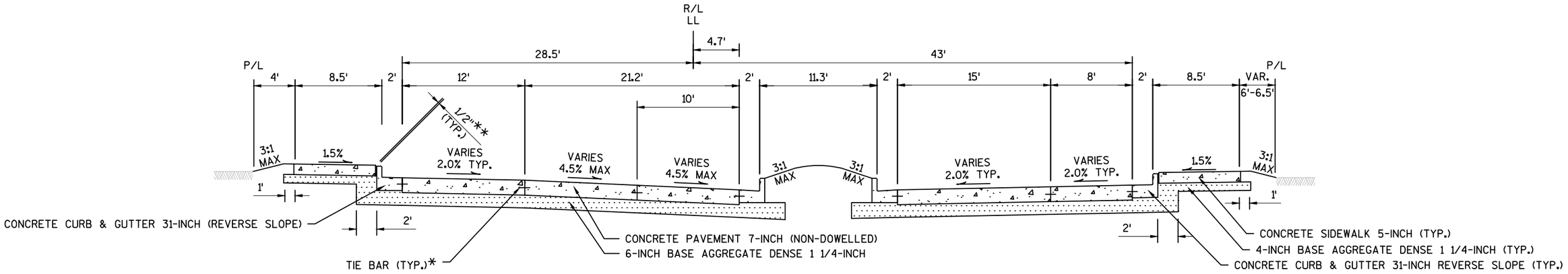
ORDER OF SECTION 2 DETAIL SHEETS

2



PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E

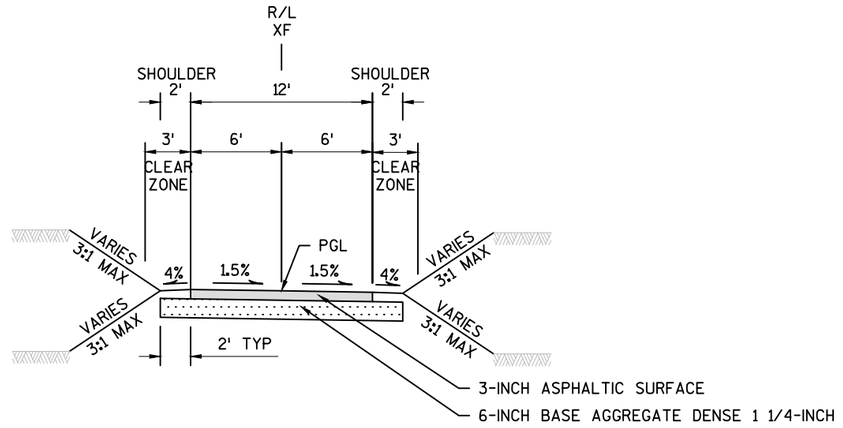
2



*TIE BARS TO BE PLACED AT ALL LONGITUDINAL JOINTS

**FINISH CONCRETE SIDEWALK 1/2" HIGHER THAN TOP-OF-CURB. PLACE 1/2" EXPANSION JOINT FILLER ALONG BACK OF CURB

TYPICAL FINISHED SECTION
LOCUST STREET PARKING LOT
STA. 6+53.00LL TO STA. 9+70.84LL

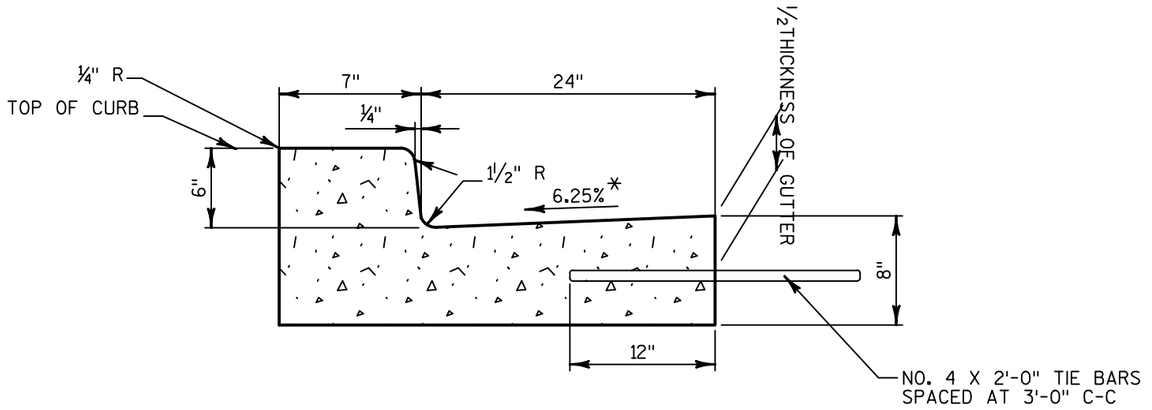


TYPICAL FINISHED SECTION
PEDESTRIAN PATH (XF)
STA. 104+43.49XF TO STA. 106+48.61XF

NOTES:
PGL = POINT REFERRED TO ON PROFILE

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 5	E

2



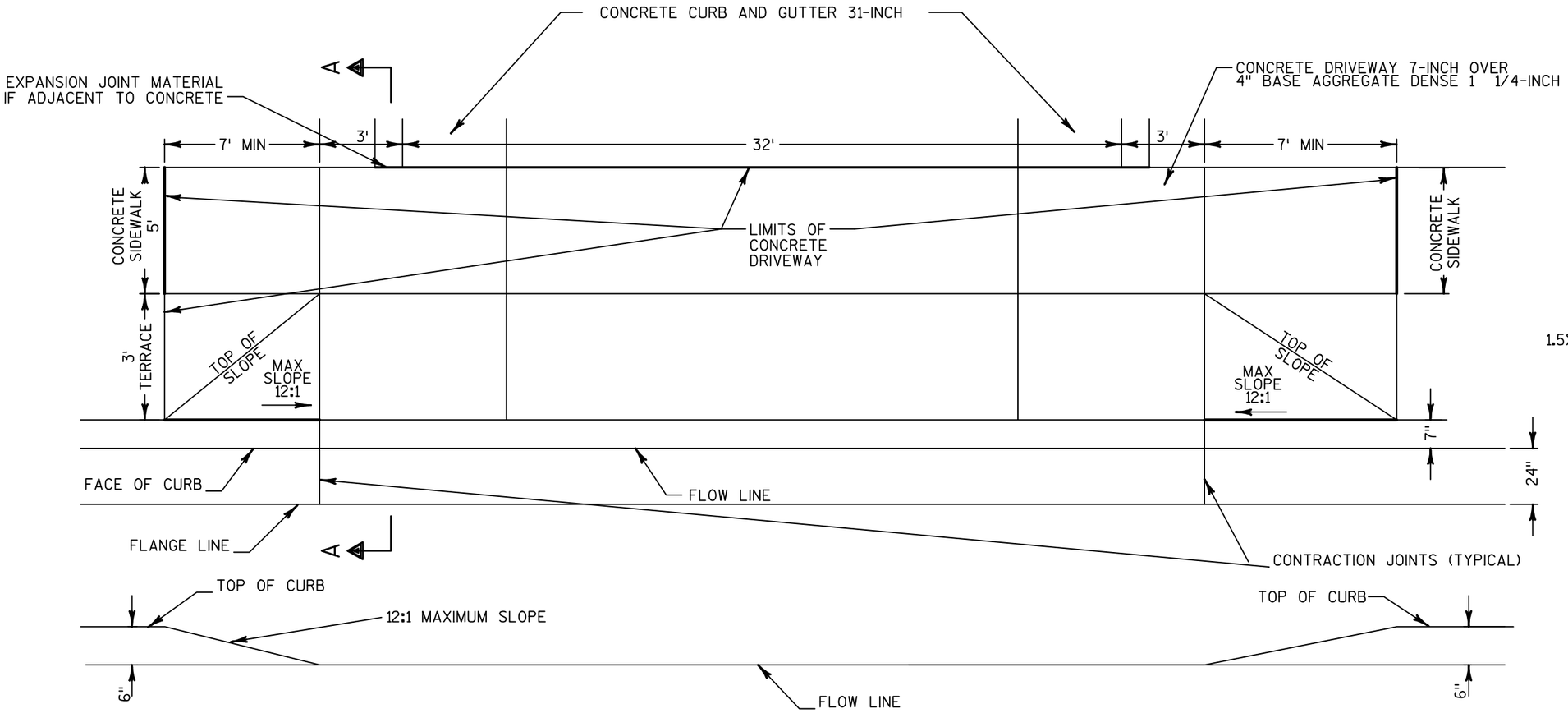
CONCRETE CURB AND GUTTER 31-INCH

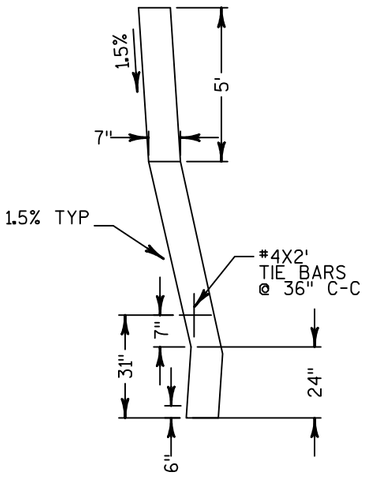
NOTES

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

*CONCRETE CURB AND GUTTER 31-INCH REVERSE SLOPE TO BE CONSTRUCTED WITH A PAN SLOPE OF 2.0%

2





SECTION A-A

URBAN COMMERCIAL DRIVEWAY DETAIL

DRIVEWAY CONSTRUCTION NOTES

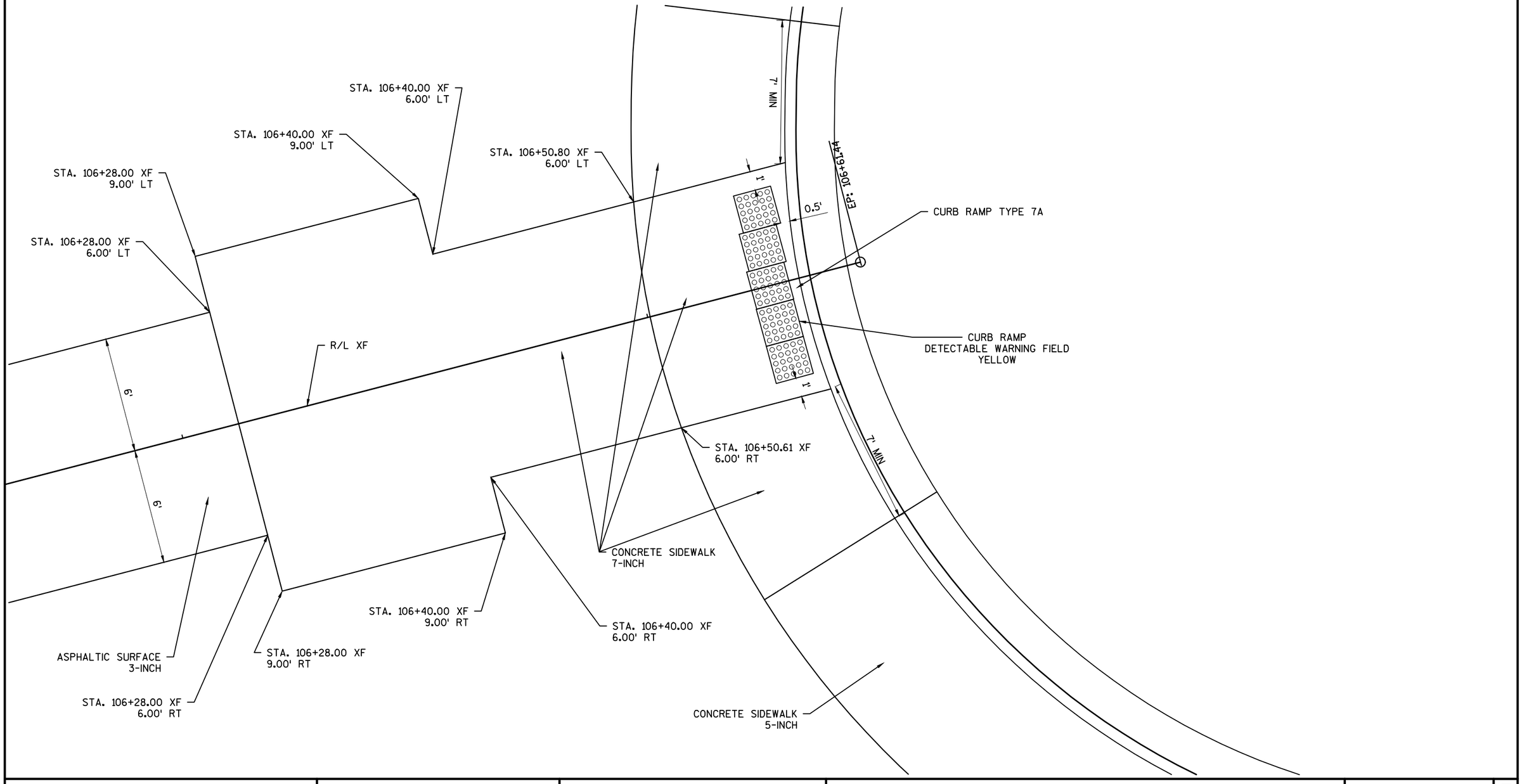
PLACE DUMMY JOINT AT CENTER OF DRIVEWAY WHEN DRIVEWAY IS 14 FEET OR MORE IN WIDTH

——— INDICATES ½" EXPANSION JOINT MATERIAL

2

N

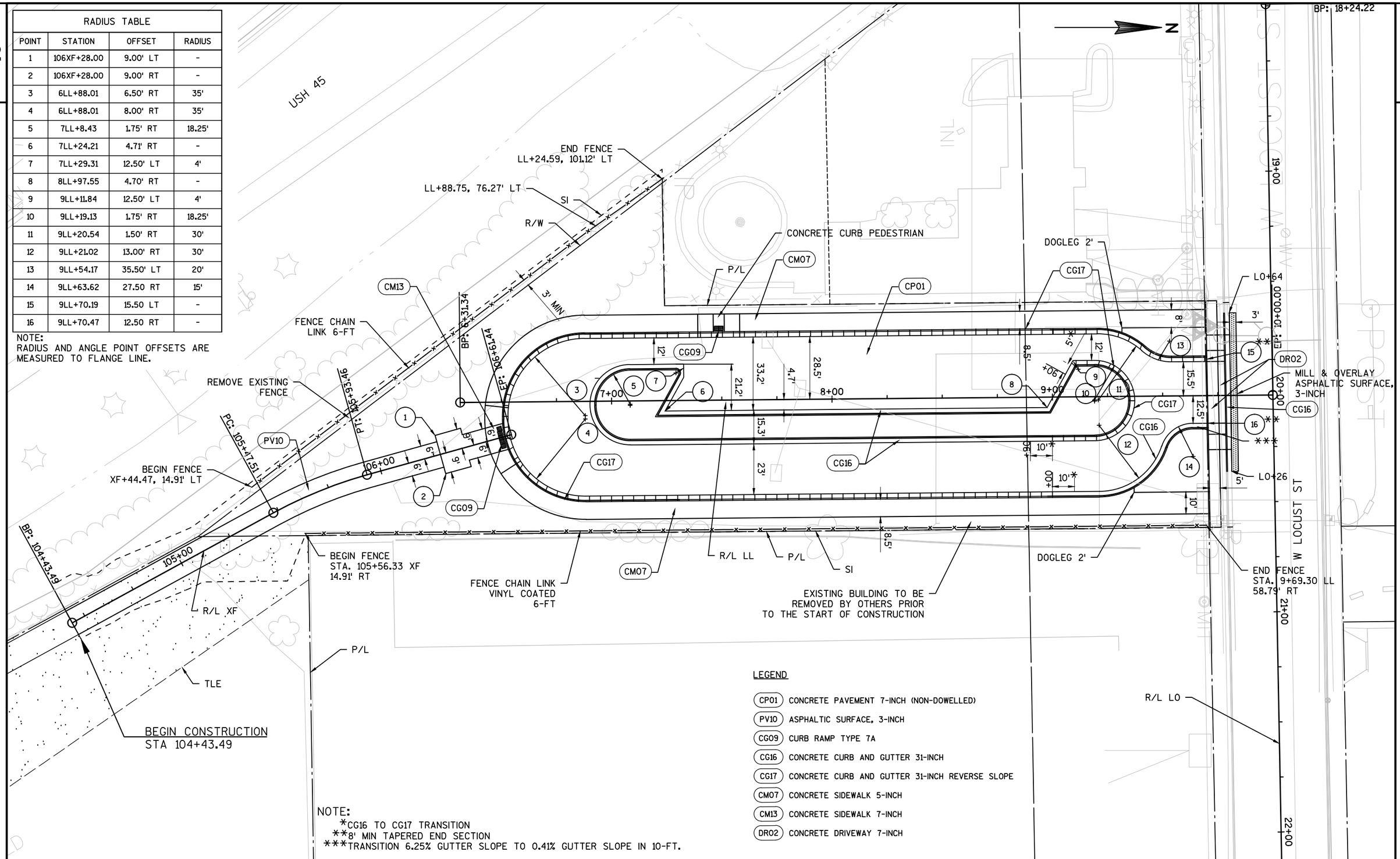
PATCH CONNECTION AND DETECTABLE WARNING FIELD LAYOUT
LOCUST PARKING LOT



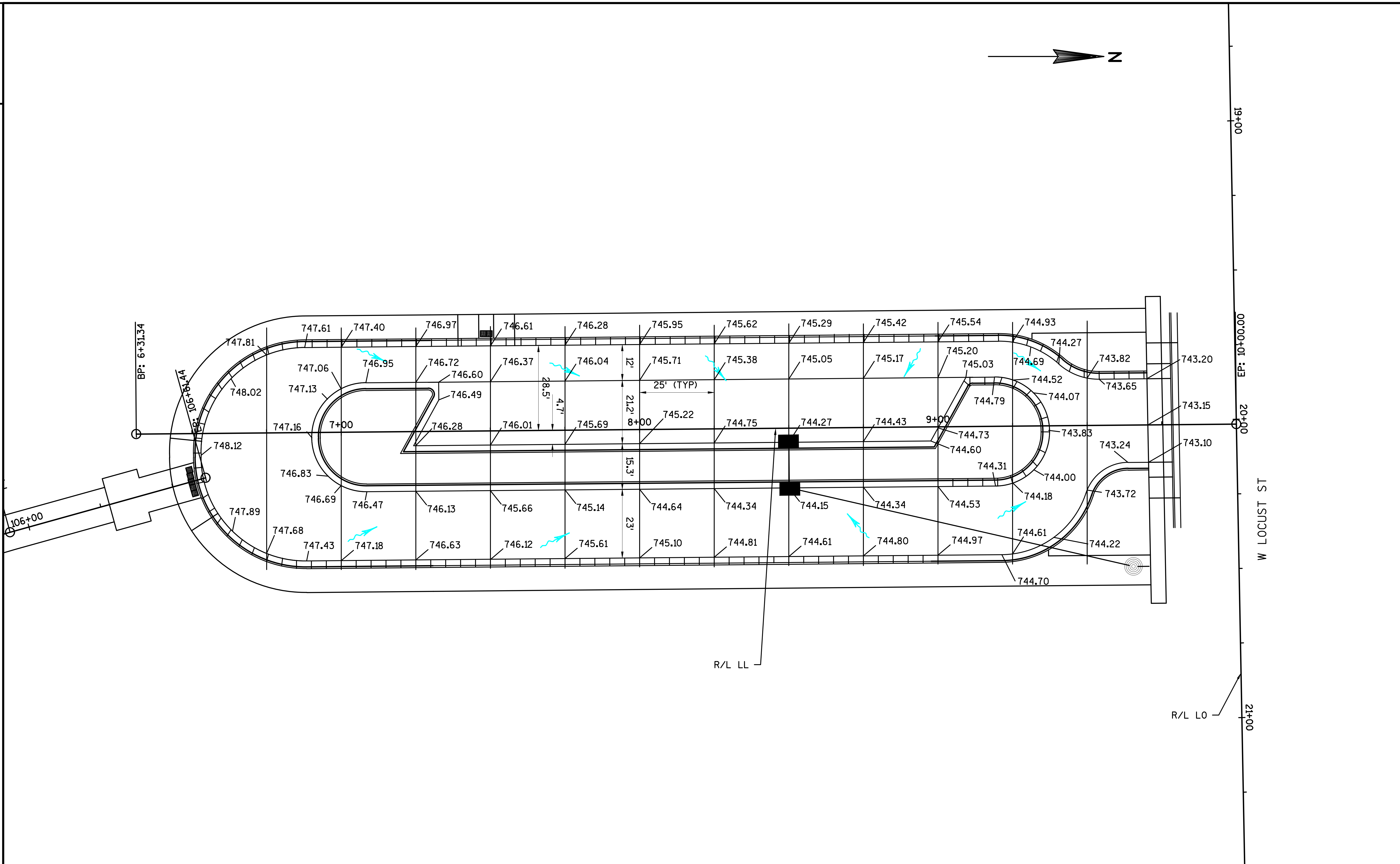
PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 8	E

RADIUS TABLE			
POINT	STATION	OFFSET	RADIUS
1	106XF+28.00	9.00' LT	-
2	106XF+28.00	9.00' RT	-
3	6LL+88.01	6.50' RT	35'
4	6LL+88.01	8.00' RT	35'
5	7LL+8.43	1.75' RT	18.25'
6	7LL+24.21	4.71' RT	-
7	7LL+29.31	12.50' LT	4'
8	8LL+97.55	4.70' RT	-
9	9LL+11.84	12.50' LT	4'
10	9LL+19.13	1.75' RT	18.25'
11	9LL+20.54	1.50' RT	30'
12	9LL+21.02	13.00' RT	30'
13	9LL+54.17	35.50' LT	20'
14	9LL+63.62	27.50 RT	15'
15	9LL+70.19	15.50 LT	-
16	9LL+70.47	12.50 RT	-

NOTE:
RADIUS AND ANGLE POINT OFFSETS ARE MEASURED TO FLANGE LINE.



PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	PLAN DETAIL: LOCUST PARK AND PARK AND RIDE LOT	SHEET 9	E


N
19+00
EP: 10+00.00
20+00
21+00
W LOCUST ST
R/L LL
R/L LO
BP: 6+31.34
106+81.44
106+00
7+00
8+00
9+00
25' (TYP)
12'
21.2'
15.3'
23'
28.5'
4.7'
747.61
747.40
746.97
746.61
746.28
745.95
745.62
745.29
745.42
745.54
744.93
747.81
748.02
747.06
746.95
746.72
746.60
746.49
746.37
746.04
745.71
745.38
745.05
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745.03
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743.20
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743.10
746.83
746.69
746.47
746.13
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743.72
747.89
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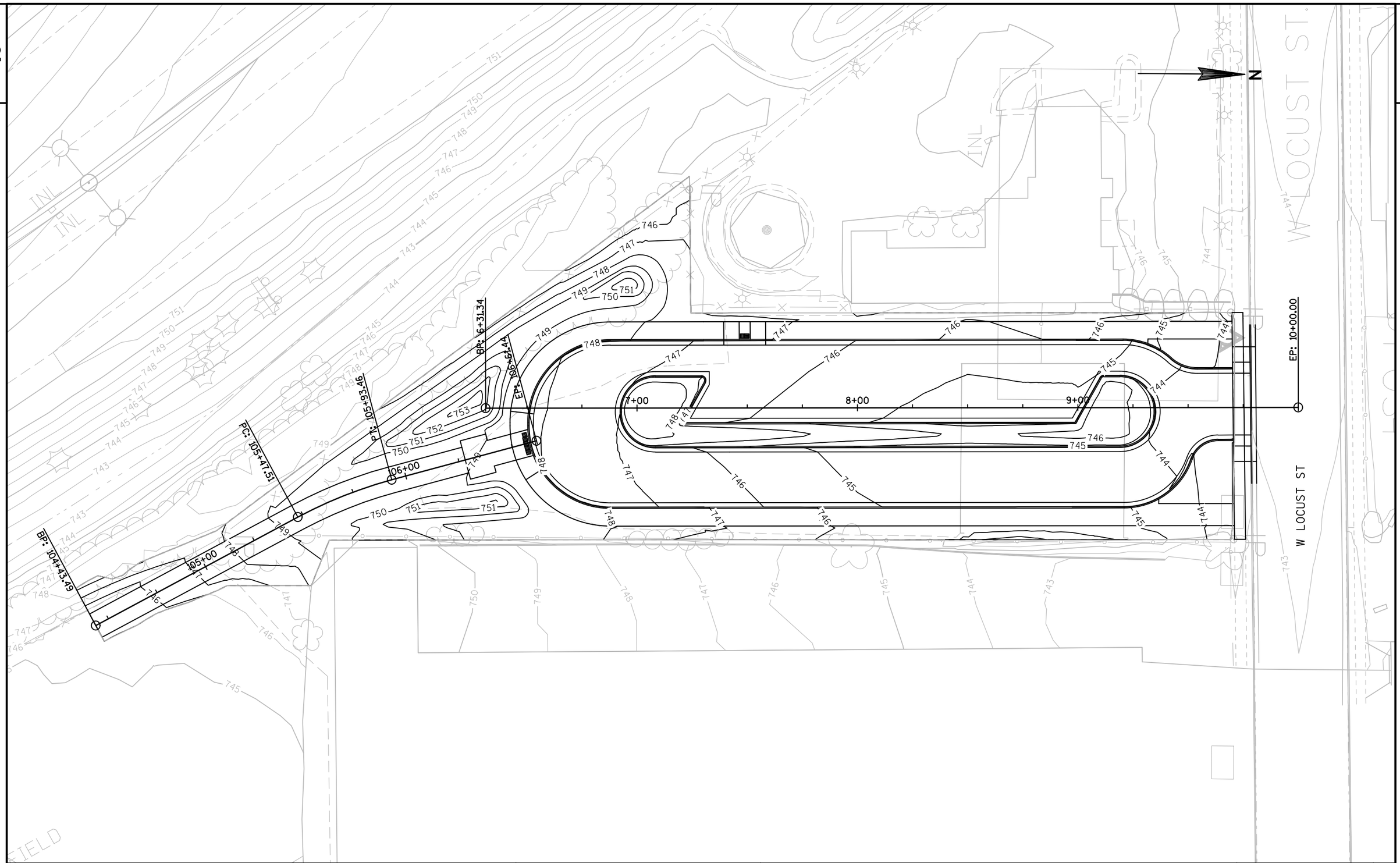
747.43
747.18
746.63
746.12
745.61
745.10
744.81
744.61
744.80
744.97
744.61
744.22
744.70

PROJECT NO:1060-35-84	HWY:USH 45	COUNTY:MILWAUKEE	PAVEMENT GRADES	SHEET 10	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\021301_GR.DWG
LAYOUT NAME - ####
PLOT DATE : 3/26/2015 1:11 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1:30_XREF

2



PROJECT NO: 106-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CONTOUR MAP	SHEET 11	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\021601_CM.DWG
LAYOUT NAME - ****

PLOT DATE : 3/31/2015 9:49 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N

W LOCUST ST

INL

POST

R/W

P/L

BP: 105+31.34

EP: 106+61.44

PC: 105+47.51

PT: 105+93.46

105+43.49

105+00

106+00

7+00

8+00

9+00

EP: 10+00.00

A C

A C

R/L LL

P/L

R/L XF

TLE

P/L

LEGEND

EROSION MAT URBAN CLASS I TYPE B

SILT FENCE

SURFACE WATER FLOW

A INLET PROTECTION TYPE A

C INLET PROTECTION TYPE C

SLOPE INTERCEPT

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 12	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\022001_EC.DWG
LAYOUT NAME - ****

PLOT DATE : 3/26/2015 3:30 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

GENERAL DRAINAGE NOTES

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

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

ADJUSTMENT RINGS MAY BE USED TO A COMBINED MAXIMUM THICKNESS OF 6-INCHES.

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

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

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

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

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

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

STORM SEWER LEGEND

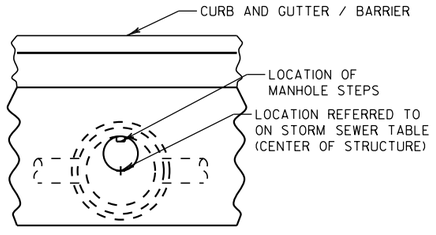
N***	PROPOSED DRAINAGE STRUCTURE
■	PROPOSED INLET
●	PROPOSED MANHOLE
——◄——	PROPOSED STORM SEWER
EXISTING PE***	EXISTING STORM SEWER PIPE
P***	PROPOSED STORM SEWER PIPE
✱	REMOVING INLETS
–RM———RM–	REMOVING STORM SEWER

2

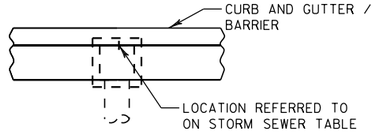
NOTE

1) LOCATION OF STRUCTURE MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

2) LOCATION AND SIZE OF STRUCTURE COVER OPENINGS DEPENDS ON TYPE OF CASTING. CASTING TYPES ARE SHOWN ON THE STORM SEWER TABLE.

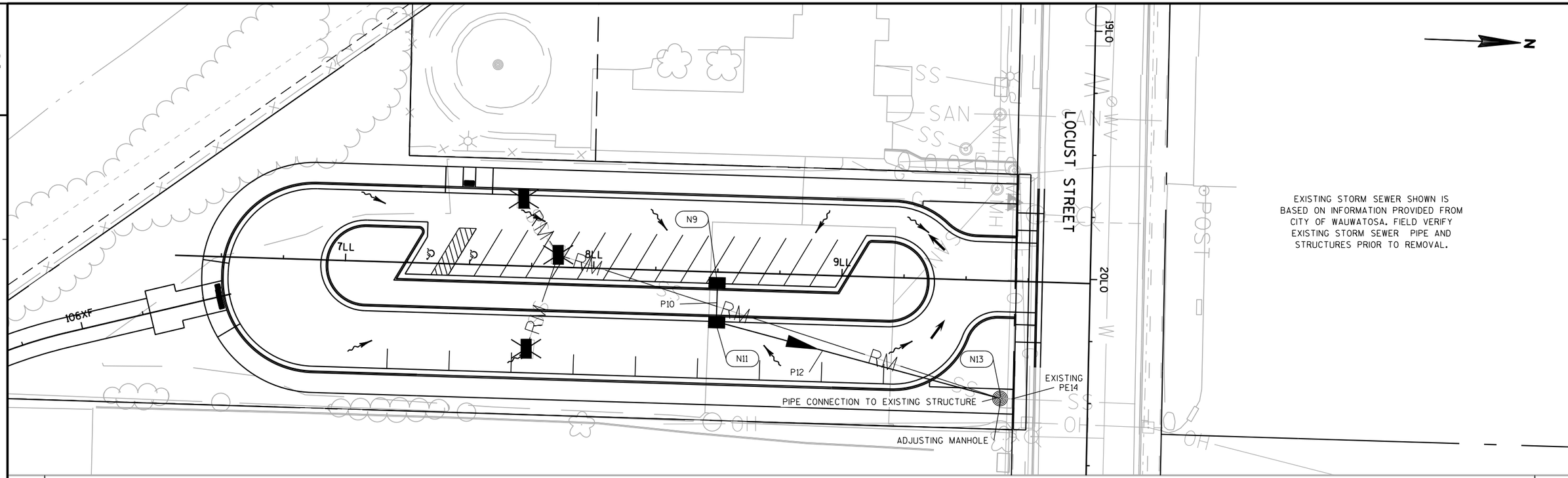


MANHOLE NOT IN CURB AND GUTTER / NOT AT BARRIER



INLET IN CURB AND GUTTER / AT BARRIER

STRUCTURE LOCATION DETAIL



PROJECT NO:1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	STORM SEWER	SHEET	E

2

N

LOCUST ST

1 K
10 PDG
SEE DETAIL A
7 PDG
3 SC
6 MM
3 SC
BENCH & TRASH RECEPTACLE, SEE DETAIL
SEE DETAIL C
1 RB
SEE DETAIL B
3 MJ
3 SB
1 SWO
1 K
3 SB
5 MJ
2 SB
1 SWO

PLANT KEY

SYM.	ABBR.	COMMON NAME
DECIDUOUS TREES (SHADE)		
+	RB	BIRCH, RIVER
	K	KATSURATREE
	SWO	OAK, SWAMP WHITE
	MM	MAPLE, MIYABE
DECIDUOUS TREES (ORNAMENTAL)		
	SC	CRABAPPLE, 'SPRING SNOW'
	SB	SERVICEBERRY, SHADBLOW
EVERGREEN		
	MJ	JUNIPER, MOUNTBATTEN
PERENNIALS, GRASSES & GROUNDCOVERS		
	AP	ASTER, PROFESSOR KIPPENBURG
	PC	CONEFLOWER, PURPLE
	SSC	COREOPSIS, 'SIENNA SUNSET'
	RG	GERANIUM, ROZANNE
	PDG	GRASS, PRAIRIE DROPSEED
	LBG	GRASS, LITTLE BLUESTEM
	KFG	GRASS, KARL FOERSTER REED
	BES	SUSAN, BLACK EYED

LEGEND

EXISTING TREE

SEED MIX - BUFFALO GRASS

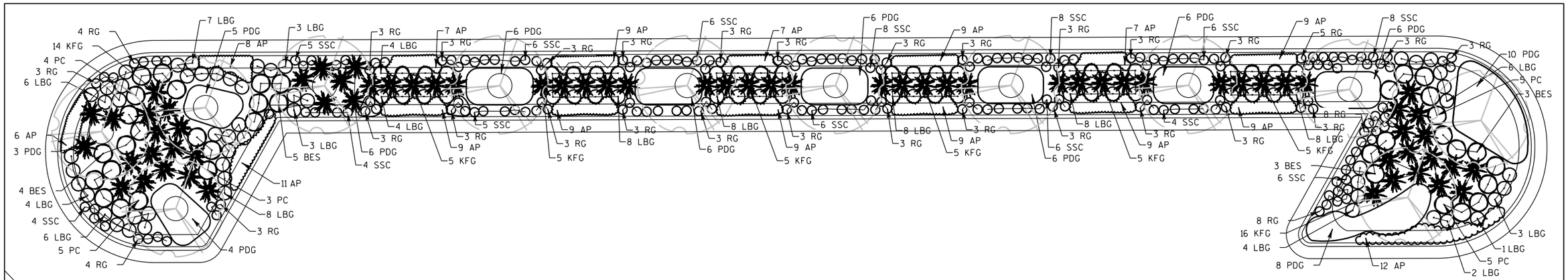
NOTE:
1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB
2. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART
3. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTINGS SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	LOCUST PARK AND RIDE LOT - PLANTING DESIGN	SHEET 15	E

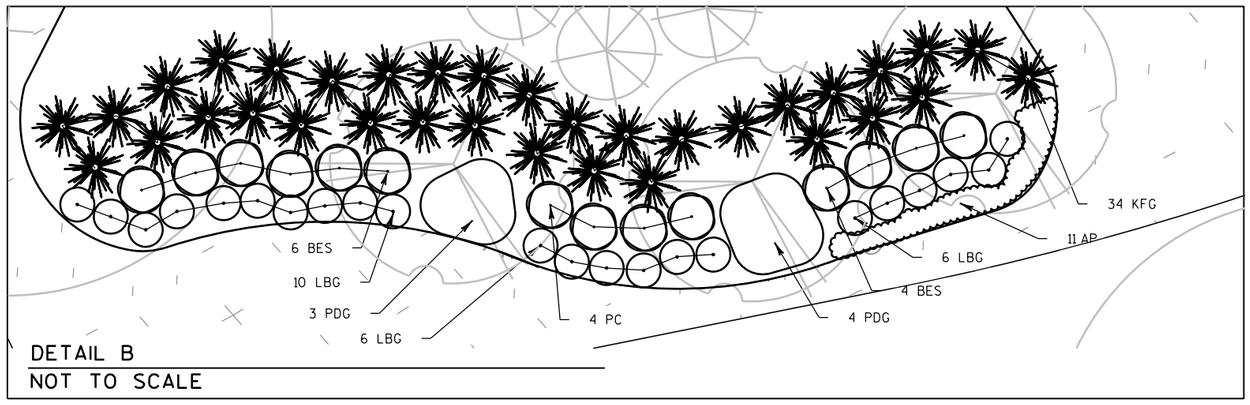
FILE NAME : P:\49371 Zoo Int\Special Studies\Locust Parking Lot\cd\023101_pl.dgn PLOT DATE : 3/17/2015 4:52:11 PM PLOT BY : cstuessy PLOT NAME : $FILE$ PLOT SCALE : 30:1

WISDOT/CADDS SHEET 42

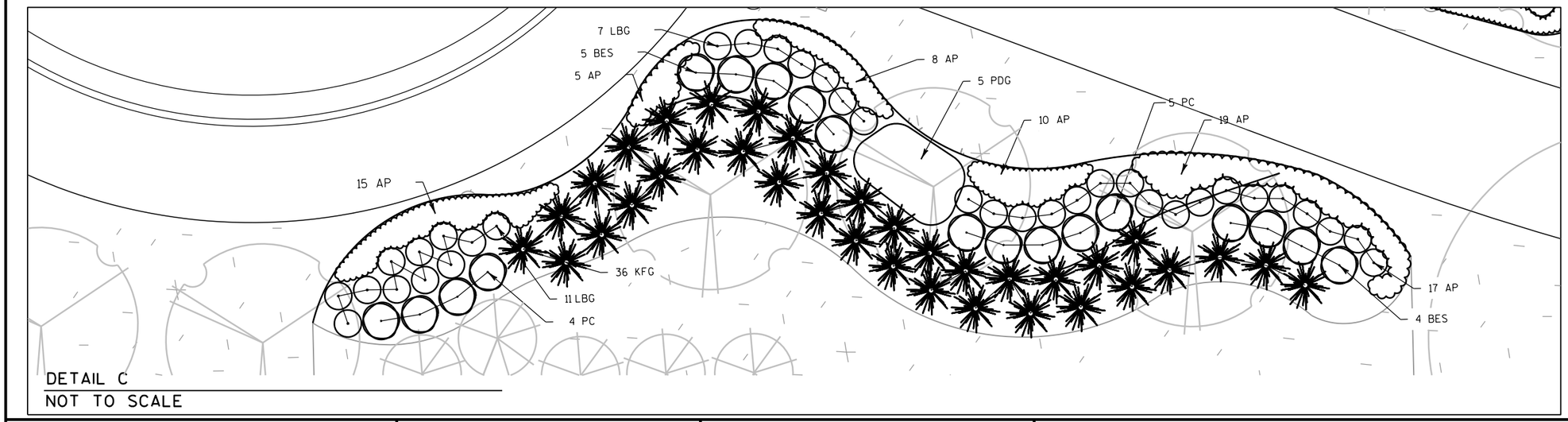
2



DETAIL A
NOT TO SCALE



DETAIL B
NOT TO SCALE



DETAIL C
NOT TO SCALE

PLANT KEY

SYM.	ABBR.	COMMON NAME
DECIDUOUS TREES (SHADE)		
+	RB	BIRCH, RIVER
	K	KATSURATREE
	SWO	OAK, SWAMP WHITE
	MM	MAPLE, MIYABE
DECIDUOUS TREES (ORNAMENTAL)		
	SC	CRABAPPLE, 'SPRING SNOW'
	SB	SERVICEBERRY, SHADBLOW
EVERGREEN		
	MJ	JUNIPER, MOUNTBATTEN
PERENNIALS, GRASSES & GROUNDCOVERS		
○	AP	ASTER, PROFESSOR KIPPENBURG
⊙	PC	CONEFLOWER, PURPLE
	SSC	COREOPSIS, 'SIENNA SUNSET'
	RG	GERANIUM, ROZANNE
	PDG	GRASS, PRAIRIE DROPSEED
	LBG	GRASS, LITTLE BLUESTEM
	KFG	GRASS, KARL FOERSTER REED
	BES	SUSAN, BLACK EYED

LEGEND

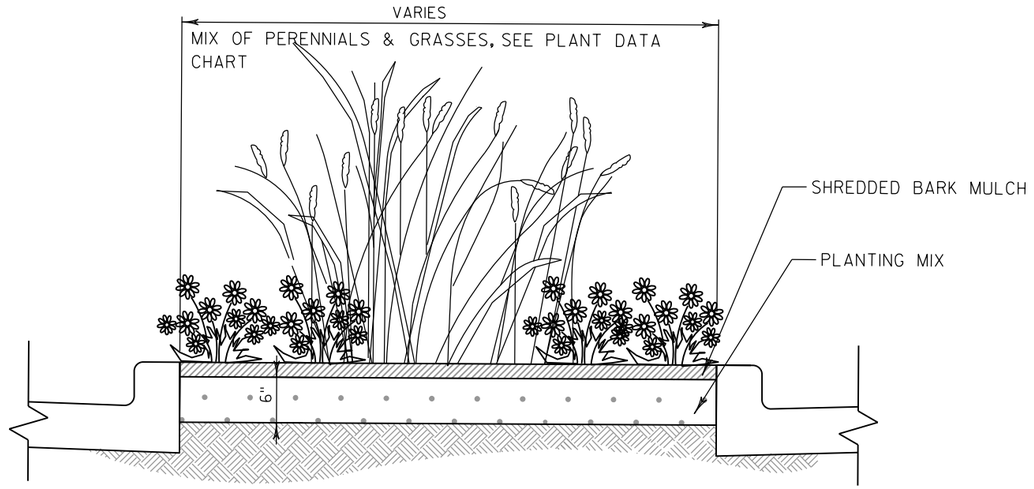
EXISTING TREE

SEED MIX - BUFFALO GRASS

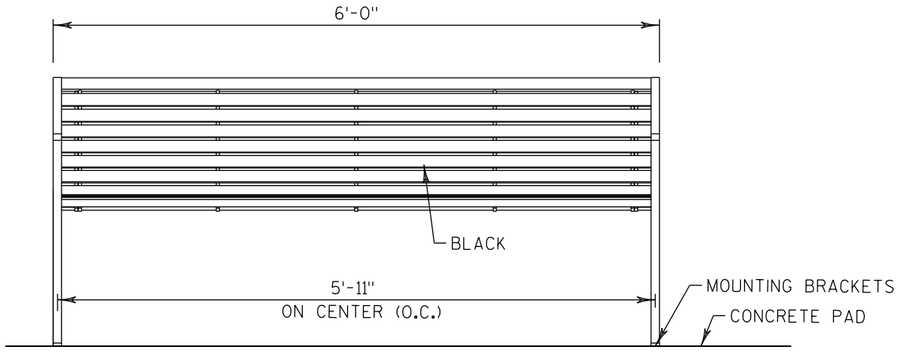
NOTE:
1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB
2. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART
3. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTINGS SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	LOCUST PARK AND RIDE LOT - PLANTING DESIGN	SHEET 16	E

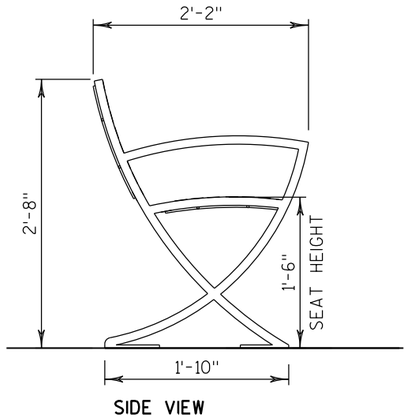
2



CROSS SECTION OF ISLAND PLANTING
NOT TO SCALE

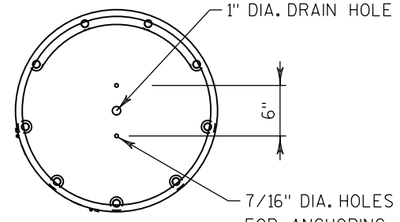


ELEVATION

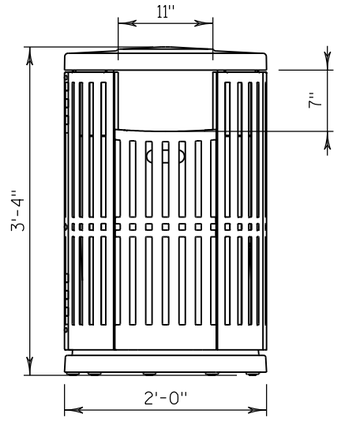


SIDE VIEW

BENCH



BOTTOMVIEW



TRASH RECEPTACLE

PLANT KEY

SYM.	ABBR.	COMMON NAME
DECIDUOUS TREES (SHADE)		
+	RB	BIRCH, RIVER
	K	KATSURATREE
	SWO	OAK, SWAMP WHITE
	MM	MAPLE, MIYABE
DECIDUOUS TREES (ORNAMENTAL)		
	SC	CRABAPPLE, 'SPRING SNOW'
	SB	SERVICEBERRY, SHADBLOW
EVERGREEN		
	MJ	JUNIPER, MOUNTBATTEN
PERENNIALS, GRASSES & GROUNDCOVERS		
○	AP	ASTER, PROFESSOR KIPPENBURG
⊙	PC	CONEFLOWER, PURPLE
	SSC	COREOPSIS, 'SIENNA SUNSET'
	RG	GERANIUM, ROZANNE
	PDG	GRASS, PRAIRIE DROPSEED
	LBG	GRASS, LITTLE BLUESTEM
	KFG	GRASS, KARL FOERSTER REED
	BES	SUSAN, BLACK EYED

LEGEND

EXISTING TREE

SEED MIX - BUFFALO GRASS

NOTE:
1. ADJUST PLANTING LOCATION MIN. 2'-0" LATERAL CLEARANCE FROM ALL MARKED UTILITY LINES AND FACE OF CURB
2. MULCH IS INCIDENTAL TO TREE PLANTING, SEE PLANT DATA CHART
3. CONTRACTOR SHALL MARK PLANT LOCATIONS. PLANTINGS SHALL NOT PROCEED WITHOUT APPROVAL OF THE ENGINEER.

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	LOCUST PARK AND RIDE LOT - PLANTING DESIGN	SHEET 17	E

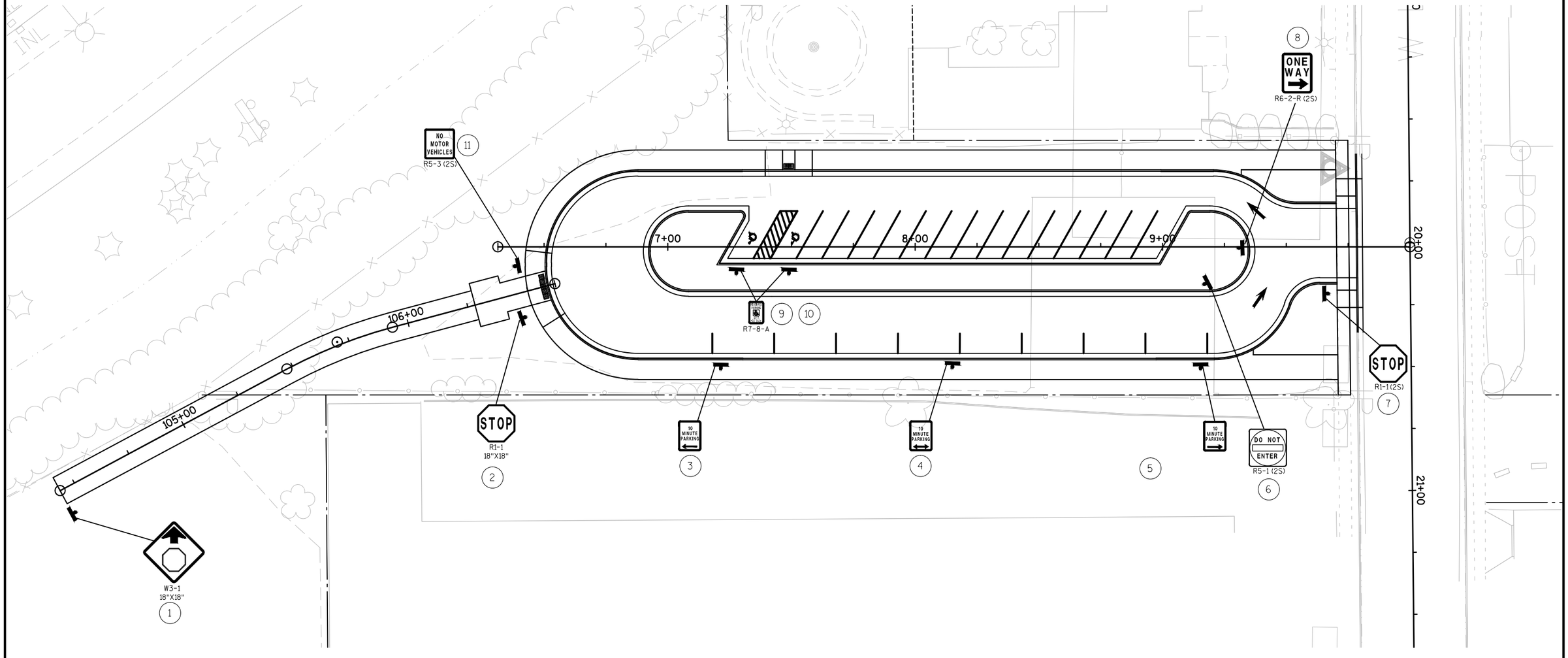
SYM.	COMMON NAME	SCIENTIFIC NAME	AVE. MATURE HEIGHT	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM BALL OR POT SIZE		MINIMUM HOLE SIZE		BRACE OR GUY	FERT. UNITS REQ'D	RODENT PROT'CT REQ'D	MULCH RING DIAM.
						DIAM.	DEPTH	DIAM.	DEPTH				
	DECIDUOUS TREES (SHADE)												
RB	Birch, River	Betula nigra	60'	2 1/2" CAL	B&B	28"	17"	52"	17"	BRACE	4	NO	64"
K	Katsuratree - single stem, tree form	Cercidiphyllum japonicum	60'	2 1/2" CAL	B&B	28"	17"	52"	17"	BRACE	4	NO	64"
SWO	Oak, Swamp White	Quercus bicolor	60'	2 1/2" CAL	B&B	28"	17"	52"	17"	BRACE	4	NO	64"
MM	Maple, Miyabe	Acer miyabei	35'	2 1/2" CAL	B&B	28"	17"	52"	17"	BRACE	4	NO	64"
	DECIDUOUS TREES (ORNAMENTAL)												
SC	Crabapple, Spring Snow	Malus 'Spring Snow'	15'	2" CAL	B&B	24"	14"	48"	14"	BRACE	3	YES	60"
SB	Serviceberry, Shadblow	Amelianchier canadensis	15'	2" CAL	B&B	24"	14"	48"	14"	BRACE	3	YES	60"
	EVERGREEN												
MJ	Juniper, Mountbatten	Juniperus chinensis 'Mountbatten'	30'	6 FT. HT.	B&B	22"	13"	46"	13"	NO	2	NO	58"
	PERENNIALS, GRASSES & GROUNDCOVERS												
AP	Aster, Professor Kippenburg	Aster nov-belgii 'Professor Kippenburg'	1'-5"	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
PC	Coneflower, Purple	Echinacea purpurea	4'	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
SSC	Coreopsis, 'Sienna Sunset'	Coreopsis 'Sienna Sunset'	16"	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
RG	Geranium, Rozanne	Geranium x 'Rozanne'	15"	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
PDG	Grass, Prairie Dropseed	Sporobolus heterolepis	2'	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
LBG	Grass, Little bluestem	Schizachyrium scoparium 'Carousel'	1'-5"	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
KFG	Grass, Karl Foerster Reed	Calamagrostis x acutiflora 'Karl Foerster'	4'	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS
BES	Susan, Black Eyed	Rudbeckia hirta	3'	#1	Cont.	9"	6"	18"	6"	NO	NO	NO	BEDLIMITS

2

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- CANTILEVER SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- [XX] INDICATES YEAR OF SIGN



SHEET 1 OF 1

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	PERMANENT SIGNING PLAN	SHEET 19	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\023201_PS.DWG
LAYOUT NAME - 023201_PS

PLOT DATE : 3/20/2015 9:15 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

W CENTER STREET

WAUWATOSA
WEST
HIGH SCHOOL

N 114TH STREET

USH 45 NB

USH 45 SB

N 114TH STREET

W LOCUST STREET

N 113TH STREET

USH 45 NB

USH 45 SB

N 112TH STREET

N 112TH STREET

W CENTER STREET

TENNIS COURT

ATHLETIC FIELD

WHITMAN
MIDDLE
SCHOOL

LIGHTING CONTROL
CABINET 240/480
WAUWATOSA

PB	
A,C,E	RED
B,D,F	BLACK
N	WHITE
GND	GREEN OR BARE
A,B,C,D,E,F 240/480V ISOLATED NEUTRAL	40A 1 PHASE
LOCAL/WAUWATOSA	

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	LIGHTING PLAN OVERVIEW	SHEET 20	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\023500_LP.DWG PLOT DATE : 3/23/2015 2:58 PM PLOT BY : LAROSA, PHILIP P PLOT NAME : PLOT SCALE : 1" = 40'

WISDOT/CADDS SHEET 42

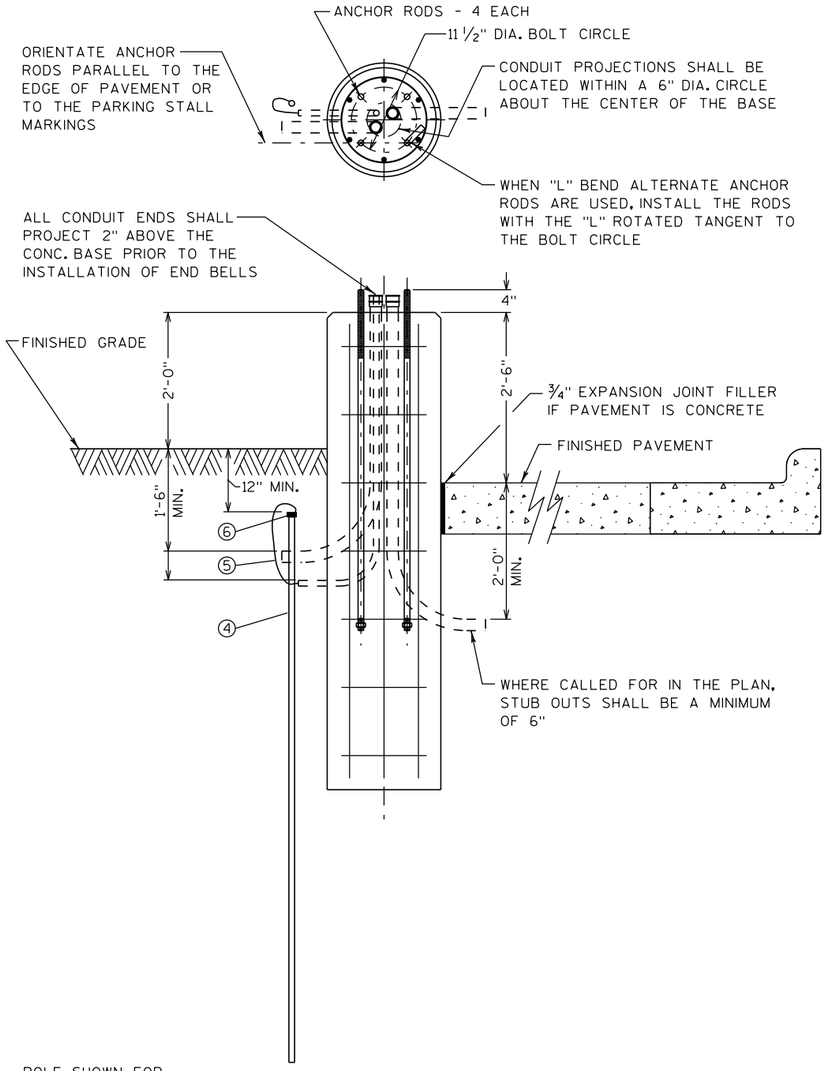
2

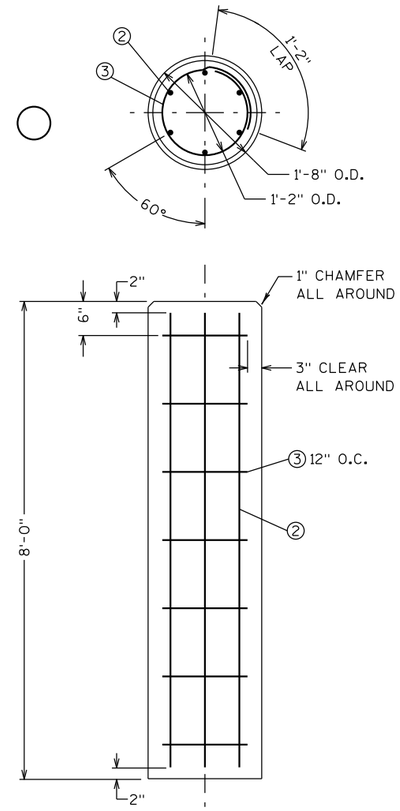
GENERAL NOTES:

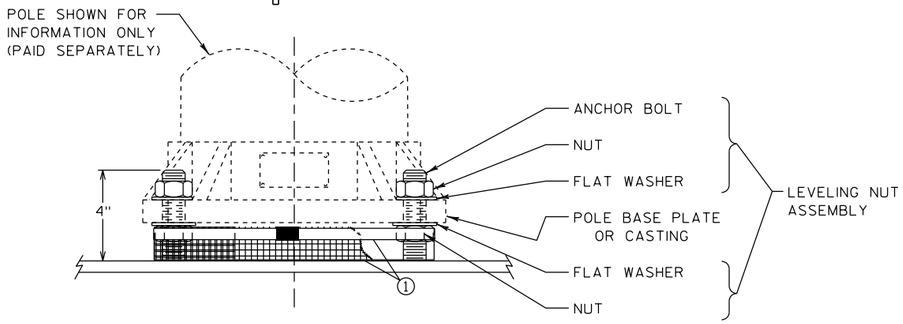
FREEWAY LIGHTING SHALL BE INSTALLED IN COMPLIANCE WITH WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 652 TO 657 AND 659 EXCEPT:

1. DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THESE DRAWINGS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
2. LOCATIONS OF THE PVC CONDUITS ARE INDENTIFIED IN THE PLANS WHERE THEY ARE REQUIRED. HOWEVER, INSTALLATION WILL REQUIRE INTEGRATION WITH EXISTING FIELD CONDITIONS. UNDER THE APPROVAL OF THE ENGINEER, APPROPRIATE ADJUSTMENT OF CONDUIT LOCATIONS MAY BE MADE IF THE FIELD CONDITIONS ARE SUCH THAT THE CONDUIT CANNOT BE INSTALLED AT THE SPECIFIED LOCATIONS. FIELD MARK EACH CONDUIT LOCATION IN RED TO ILLUSTRATE AS BUILT CONDITIONS.
3. THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.
4. ALL OPEN AND UNTERMINATED CONDUITS SHALL BE CAPPED OR PLUGGED WITH ENGINEER APPROVED FITTINGS IMMEDIATLY AFTER INSTALLATION.
5. BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR IMMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.
6. ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON ALL CONDUITS.
7. PRIOR TO CONDUIT ACCEPTANCE, ALL CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND BE CAPPED WITH THE APPROPRIATE CAST PLASTIC CAP WHICH FITS SNUGGLY ON THE CONDUIT THAT CAN BE EASILY REMOVED. DUCT TAPE OR ANY OTHER CAPPING METHOD IS NOT ACCEPTABLE.
8. CONDUIT RUNS SHALL BE THE SAME SIZE PIPE FROM ONE END TO THE OTHER (FROM PULL BOX-TO-PULL BOX, JUNCTION BOX OR BASE-TO-BASE, ETC.) UNLESS OTHERWISE NOTED ON PLANS.
9. PULL ROPE (3/8-INCH NYLON) SHALL BE INSTALLED IN ALL NEW CONDUITS.
10. CONTRACTOR SHALL SUPPLY AS-BUILT DRAWINGS (PDF FORMAT) FOR ALL THE WORK BEING DONE.
11. CONDUIT LATERALS SHALL BE TRENCHED UNDER PAVEMENT BEFORE PAVEMENT CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ROADWAY CONSTRUCTION FOR CONDUIT LATERALS INSTALLATION.
12. PITCH ALL CONDUITS TOWARD PULL BOXES. INSTALL A 2" DRAIN DUCT TO STORM SEWER OR DRAIN SUMP AS REQUIRED FOR DRAINAGE. THE 2" DRAIN DUCT OR SUMP IS INCIDENTAL TO THE PULL BOX BID ITEM AND IS NOT SHOWN.
13. EXISTING CONDUIT AND CID NO LONGER BEING USED IS ABANDONED IN PLACE. THE CONTRACTOR MAY REMOVE ABANDONED WIRING AT THE CONTRACT'S EXPENSE.
14. UNDERGROUND WIRE & CONDUIT SHOWN ON REMOVAL PLANS FOR REMOVAL SHALL BE ABANDONED IN PLACE UNLESS DIRECTED BY THE ENGINEER. CONTRACTOR MAY CHOOSE TO REMOVE CONDUCTOR AT THEIR OWN EXPENSE.
15. THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE, IN ADDITION, THERE MAYBE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.
16. HAND DIGGING MAYBE REQUIRED FOR LOCATIONS ADJACENT TO EXISTING GAS AND POWER LINES. HAND EXCAVATION SHOULD BE ANTICIPATED & WILL BE CONSIDERED INCIDENTAL TO THE CONCRETE BASE BID ITEM. COORDINATE ALL WORK NEAR GAS LINE WITH WE ENERGIES.
17. PROVIDE MINIMUM CABLE SLACK AS MENTIONED BELOW:

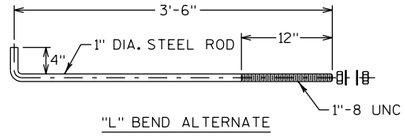
PULL BOXES:	10-FT
EMBEDDED JUCTION BOXES:	3-FT
DISTRIBUTION CENTER/LOAD CENTER:	10-FT
POLES:	5-FT IN AND 5-FT OUT



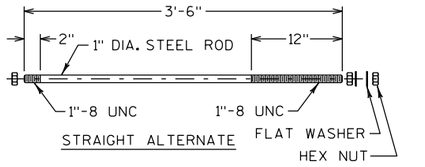




RAT SCREEN & LEVELING NUT DETAIL
(RAT SCREEN AND BANDING INCIDENTAL TO POLE, LEVELING NUT ASSEMBLIES INCIDENTAL TO CONCRETE BASE)



"L" BEND ALTERNATE



STRAIGHT ALTERNATE

ANCHOR ROD ASSEMBLY DETAIL
(INCIDENTAL TO CONCRETE BASE - 4 EACH PER BASE)

GENERAL NOTES:

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF SECTION 654 OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.

CONCRETE BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

FORMING SHALL BE LIMITED TO 6" BELOW THE EXISTING GRADE. UNLESS LOOSE SOIL OR FILL IS ENCOUNTERED. FORMING SHALL BE STRIPPED AFTER CONCRETE HAS SET.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL OR FILL, THE FORM SHALL BE STRIPPED BEFORE BACK FILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE STRIPPED CONCRETE BASE IN LAYERS OF 6" OR LESS.

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

THE NUMBER, SIZE, AND LOCATION OF LINE AND LOAD SIDE CONDUITS WILL BE SHOWN IN THE PLANS. NOTE, SOME BASES MAY HAVE MORE THAN ONE LOAD SIDE CONDUIT REQUIRED (SEE THE PLAN). ALL BASES SHALL HAVE A 1" CONDUIT FOR THE EQUIPMENT GROUNDING CONDUCTOR.

CONDUIT ENDS PROJECTING ABOVE THE BASE SHALL BE SUITABLY PLUGGED BEFORE THE CONCRETE IS POURED, TO PREVENT DEBRIS CONTAMINATION OF THE RACEWAY.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE (STUB OUTS) SHALL BE PLUGGED.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED WITH A MINIMUM OF 6'-6" OF SLACK MEASURED FROM THE TOP OF THE CONCRETE BASE TO THE END OF THE CONDUCTOR. THE SLACK SHALL BE NEATLY TIED IN A COIL THAT FITS INSIDE THE ANCHOR BOLT CIRCLE UNTIL THE LIGHT POLE IS INSTALLED. GREAT CARE SHALL BE EXERCISED TO AVOID DAMAGE TO THE CONDUCTOR.

THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24". THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18". THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36". THE MAXIMUM DEPTH MAY ONLY BE EXCEEDED WITH THE WRITTEN APPROVAL OF THE ENGINEER.

ANCHOR RODS SHALL NOT BE WELDED TO THE BAR STEEL REINF. HOWEVER, TIE WIRES MAY BE USED.

BAR STEEL REINF. SHALL BE "COATED HIGH STRENGTH BAR STEEL REINFORCEMENT".

① STAINLESS STEEL MESH (RAT SCREEN) AND ¾" STAINLESS STEEL BANDING

② NO. 6 BAR STEEL REINF., 6'-8" LONG (6 EACH)

③ NO. 4 BAR STEEL REINF., 5'-0" LONG (7 EACH)

④ ⅝" × 8'-0" COPPER CLAD EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) TOP OF ROD 12" MIN. BELOW FINISHED GRADE OR FINISHED PAVEMENT.

⑤ A NO. 4 AWG, STRANDED COPPER GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUNDING ROD)

⑥ EXOTHERMIC WELD (CAD WELD)

CONCRETE BASE, TYPE 5, SPECIAL

(1" ANCHOR RODS, 11.5" BOLT CIRCLE, 4" PROJECTION)

USH 45 SB

472NS

INL

INL

USH 45 NB

N

EXISTING LIGHT
85-5-69, 70W
TO REMAIN

7+38.98, 44.03' LT
LED-C-5-6-D

9+13.90, 44.08' LT
LED-C-5-6-C

*6 C,D,N
*8 GND

*8 C,N,GND

2*6 C,D,N
2*8 GND

7+00

8+00

9+00

LPB102

LPB101

106+00XE

105+00XE

104XE

EXISTING LIGHT
(1060-33-83)
104+22.91, 20.3' LT

*6 C,D,N
*8 GND

106+30.37, 13.0' RT
LED-11-D

105+58.92, 10.0' RT
LED-11-D

7+37.32, 58.58' RT
LED-C-5-6-C

9+12.91, 58.58' RT
LED-C-5-6-D

*8 D,N,GND

*6 C,D,N
*8 GND

104+88.46, 10.0' RT
LED-11-D

*6 C,D,N
*8 GND

EXISTING LIGHT
(1060-33-83)
104+18.46, 10.0' RT

19+00

20+00

21+00

22+00

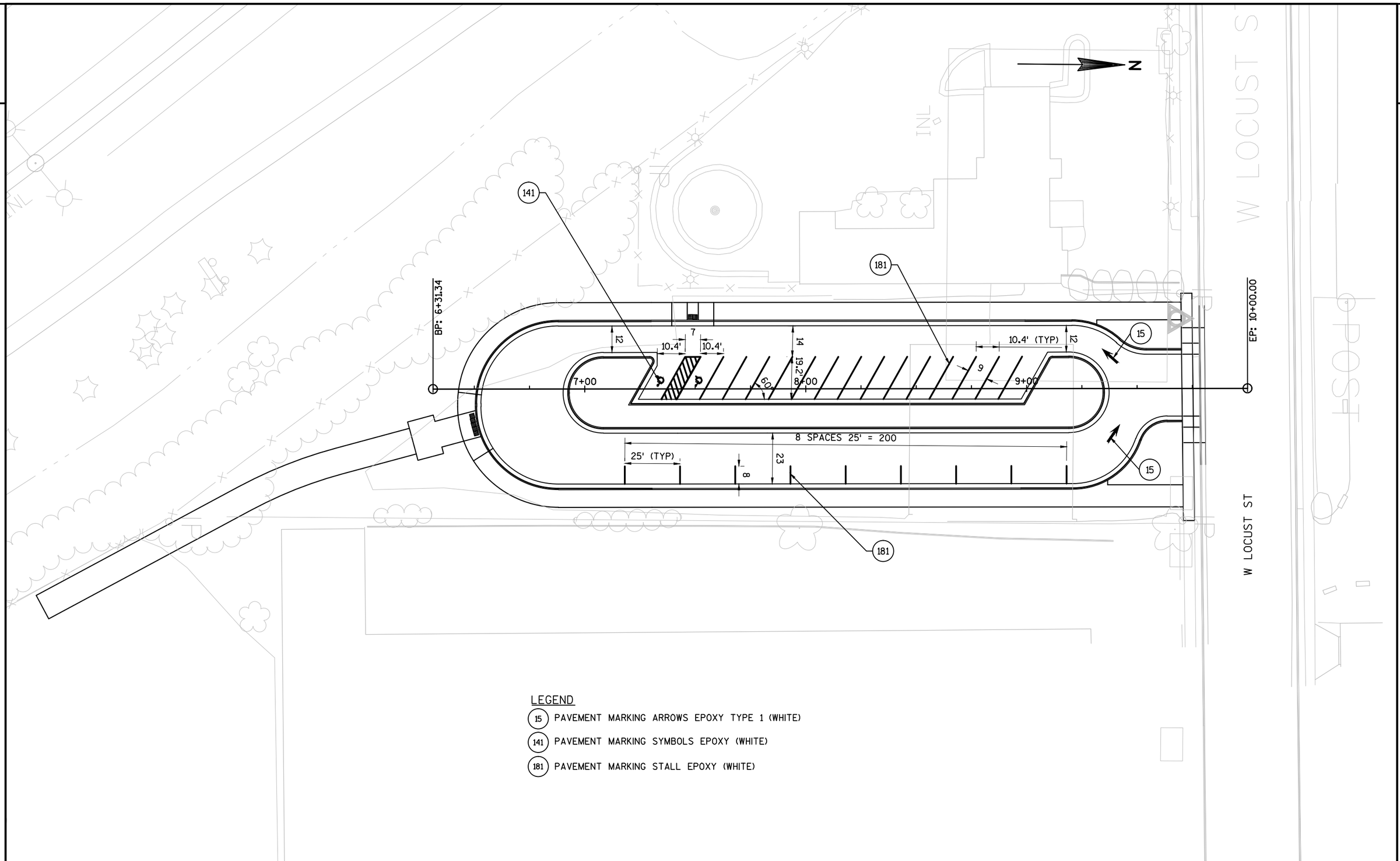
W LOCUST STREET

LIGHTING PLAN LEGEND

PROPOSED	EXISTING		PROPOSED	EXISTING	
⊠	⊠	DISTRIBUTION CENTER	◎	◎	LIGHT POLE, POST-TOP UNIT
◍	◍	PULL BOX- 24" UNLESS OTHERWISE NOTED)	●—	—○	LIGHT POLE, ARM MOUNTED LUMINAIRE
⊖	⊖	LIGHTING SYSTEM MANHOLE	==▸	==▸	CONDUIT STUBOUT
▭	▭	JUNCTION BOX	●—✳	—○✳	LOCAL MUNI. POLE
- - - -	- - - -	CONDUIT- 2" UNLESS OTHERWISE NOTED)	—OH—	—OH—	OVER HEAD UTILITY

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	LIGHTING PLAN - LOCUST ST PARKING LOT	SHEET 23	E

2



LEGEND

(15) PAVEMENT MARKING ARROWS EPOXY TYPE 1 (WHITE)

(141) PAVEMENT MARKING SYMBOLS EPOXY (WHITE)

(181) PAVEMENT MARKING STALL EPOXY (WHITE)

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 24	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\024501_PM.DWG
LAYOUT NAME - ****

PLOT DATE : 3/26/2015 8:55 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

GENERAL NOTES FOR TRAFFIC CONTROL

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

2) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER.

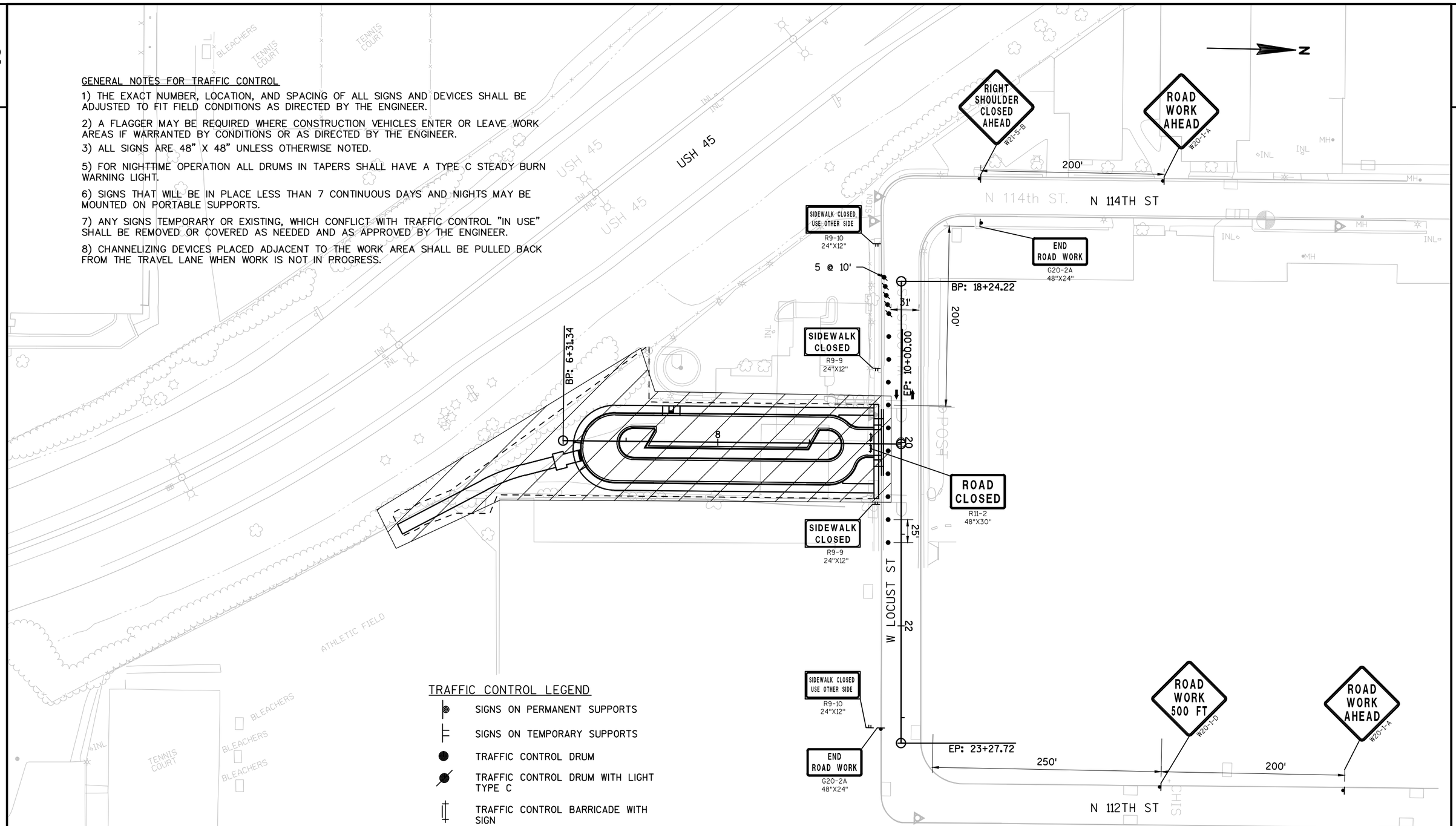
3) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

5) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C STEADY BURN WARNING LIGHT.

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

7) 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.

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

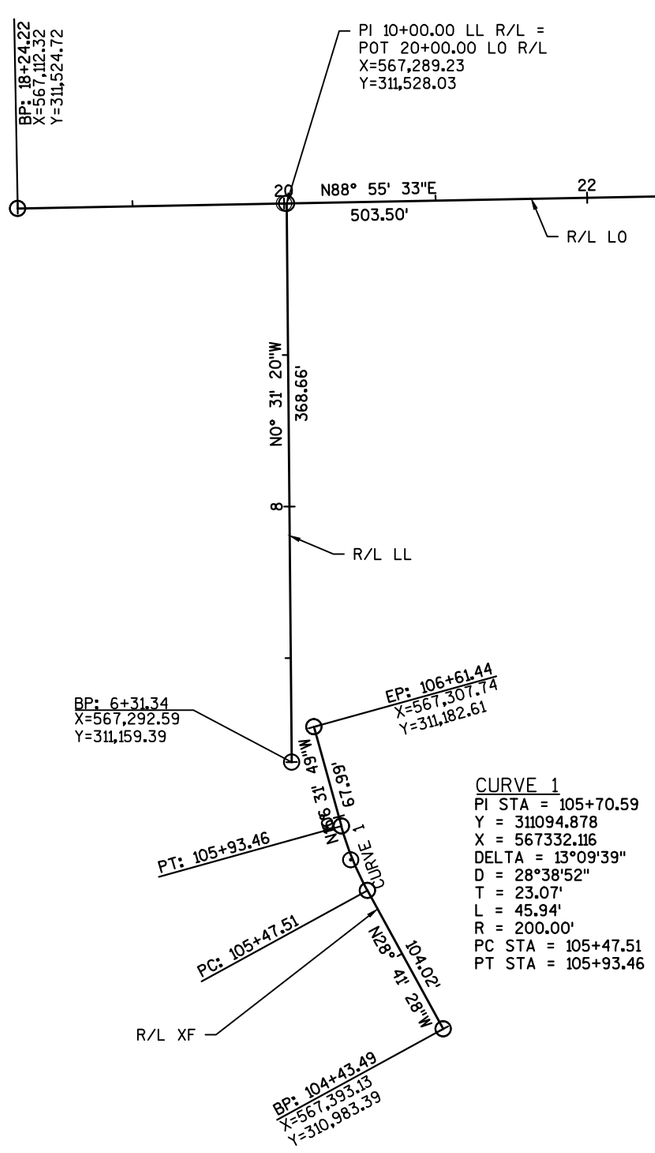


TRAFFIC CONTROL LEGEND

- SIGNS ON PERMANENT SUPPORTS
- SIGNS ON TEMPORARY SUPPORTS
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- TRAFFIC CONTROL BARRICADE WITH SIGN
- WORK ZONE

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	TRAFFIC CONTROL	SHEET 25	E

2



PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT	SHEET 26	E

2

LEGEND

XXX
CONTROL POINT

646
765.484
CP

644
760.513
CP

645
759.850
CP

705
734.822
CP

643
778.061
CP

N 114TH ST

BP: 18+24.22

EP: 23+27.72

N 112TH ST

LOCUST ST

EP: 10+00.00

BP: 6+31.34

CENTER ST.

113TH ST

USH 45

112TH ST

N

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL OVERVIEW	SHEET 27	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\027278_AD.DWG PLOT DATE : 3/26/2015 9:06 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : ---------- PLOT SCALE : 1 IN:400 FT

WISDOT/CADDS SHEET 42

2

N

N. 113TH ST.

USH 45 SB

EP: 754+25.78

754NOD

M738497

643
778.061
CP

CP643
BERNTSEN FENO F1000 SPK MONUMENT
W/ ALUMINUM CAP, NORTHWEST QUAD. OF
N. 113TH ST. AND W. CLARKE ST.,
5.3' WEST OF WEST BACK OF CURB, 7.0'
NORTH OF NORTH BACK OF CURB.
STA. 28TA+22.22, 21.7' LT
N=309,256.49
E=567,351.17
ELEV. 778.06

28TA

W. CLARK ST.

PC: 753+08.98

M728107

CP644
BERNTSEN FENO F1000 SPK MONUMENT
W/ ALUMINUM CAP, NORTHWEST QUAD.
OF N. 113TH ST. AND W. CENTER ST.,
20' NORTH OF NORTH EDGE OF SIDEWALK,
100' EAST OF EAST BACK OF CURB ON
DRIVEWAY
STA. 18CE+30.25, 63.1' LT
N=310,153.26
E=567,349.14
ELEV. 760.51

644
760.513
CP

W. CENTER ST.

EP: 36+55.97

36TA

N. 113TH ST.

CP645
BERNTSEN FENO F1000 SPK MONUMENT
W/ ALUMINUM CAP, NORTHWEST QUAD.
OF N. 112TH ST. AND W. CENTER ST.,
6.5' NORTH OF NORTH EDGE OF SIDEWALK,
5.7' WEST OF WEST BACK OF CURB ON
WEST DRIVEWAY
STA. 21CE+57.65, 40.7' LT
N=310,136.35
E=567,676.87
ELEV. 759.85

645
759.850
CP

EP: 36+56.54

36TB

W. CENTER ST.

N. 112TH ST.

MK511

N

BURLEIGH ENTRANCE RAMP

78480C

USH 45 SB

CP646
BERNTSEN FENO F1000 SPK MONUMENT
W/ ALUMINUM CAP, WEST OF USH 45 SB
ENTRANCE RAMP AT BURLEIGH ST., WEST
OF RAMP GORE AREA, 6.5' SOUTH WEST OF
OUTSIDE EDGE OF PAVED SHOULDER ON SB
ENTRANCE RAMP, 9.7' NORTHWEST OF LIGHT POLE.
STA. 483NS+11.04, 116.1' LT
N=311,806.37
E=566,380.64
ELEV. 765.48

646
765.484
CP

PC: 482+23.56

78280C

N

N. MAYFAIR RD.

EP: 34+96.15

705
734.822
CP

CP705
BERNTSEN FENO F1000 SPK
MONUMENT W/ ALUMINUM
CAP, NORTHWEST QUAD. OF
MAYFAIR RD. & W. CENTER ST.
STA. 34CE+31.92, 46.5' LT
N=310,163.33
E=568,950.86
ELEV. 734.82

PI: 638+25.59

W. CENTER ST.

638M

2

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 28	E

FILE NAME : W:\PDS\C3D\CAD\10603317\84\027280_AD.DWG
LAYOUT NAME - 027280_AD

PLOT DATE : 12/4/2014 2:05 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : **********

WISDOT/CADDS SHEET 42

DATE 27MAY15 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-35-84 QUANTITY
0010	201.0105	Clearing	STA	4.000	4.000
0020	201.0205	Grubbing	STA	4.000	4.000
0030	204.0100	Removing Pavement	SY	10.000	10.000
0040	204.0120	Removing Asphaltic Surface Milling	SY	24.000	24.000
0050	204.0150	Removing Curb & Gutter	LF	72.000	72.000
0060	204.0155	Removing Concrete Sidewalk	SY	54.000	54.000
0070	204.0170	Removing Fence	LF	233.000	233.000
0080	204.0220	Removing Inlets	EACH	3.000	3.000
0090	204.0245	Removing Storm Sewer (size) 0001. 8-INCH	LF	253.000	253.000
0100	205.0100	Excavation Common **P**	CY	1,409.000	1,409.000
0110	213.0100	Finishing Roadway (project) 0001. 1060-35-84	EACH	1.000	1.000
0120	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,107.000	1,107.000
0130	312.0110	Select Crushed Material	TON	250.000	250.000
0140	415.0070	Concrete Pavement 7-Inch	SY	1,772.000	1,772.000
0150	416.0170	Concrete Driveway 7-Inch	SY	46.000	46.000
0160	416.0610	Drilled Tie Bars	EACH	24.000	24.000
0170	465.0105	Asphaltic Surface	TON	48.000	48.000
0180	601.0331	Concrete Curb & Gutter 31-Inch	LF	1,340.000	1,340.000
0190	601.0600	Concrete Curb Pedestrian	LF	19.000	19.000
0200	602.0410	Concrete Sidewalk 5-Inch	SF	5,688.000	5,688.000
0210	602.0420	Concrete Sidewalk 7-Inch	SF	577.000	577.000
0220	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	28.000	28.000
0230	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	133.000	133.000
0240	611.0535	Manhole Covers Type J-Special	EACH	1.000	1.000
0250	611.0624	Inlet Covers Type H	EACH	2.000	2.000
0260	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0270	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0280	616.0206	Fence Chain Link 6-FT	LF	233.000	233.000
0290	616.0700.S	Fence Safety	LF	1,000.000	1,000.000
0300	619.1000	Mobilization	EACH	1.000	1.000
0310	628.1504	Silt Fence	LF	916.000	916.000
0320	628.1520	Silt Fence Maintenance	LF	916.000	916.000
0330	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0340	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0350	628.2008	Erosion Mat Urban Class I Type B	SY	872.000	872.000
0360	628.7005	Inlet Protection Type A	EACH	2.000	2.000
0370	628.7015	Inlet Protection Type C	EACH	2.000	2.000
0380	628.7560	Tracking Pads	EACH	1.000	1.000
0390	629.0210	Fertilizer Type B	CWT	0.700	0.700
0400	630.0140	Seeding Mixture No. 40	LB	14.000	14.000
0410	630.0200	Seeding Temporary	LB	21.000	21.000
0420	632.0101	Trees (species) (size) (root) 0001. BIRCH, RIVER B&B 2 1/2 - INCH CAL	EACH	1.000	1.000
0430	632.0101	Trees (species) (size) (root) 0003. KATSURATREE B&B 2 1/2 - INCH CAL	EACH	2.000	2.000
0440	632.0101	Trees (species) (size) (root) 0005. OAK, SWAMP WHITE B&B 2 1/2 - INCH CAL	EACH	2.000	2.000
0450	632.0101	Trees (species) (size) (root) 0007. MAPLE, MIYABE B&B 2 1/2 - INCH CAL	EACH	6.000	6.000
0460	632.0101	Trees (species) (size) (root) 0009. CRABAPPLE, SPRING SNOW B&B 2 INCH CAL	EACH	6.000	6.000

3

DATE 27MAY15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-35-84 QUANTITY
0470	632.0101	Trees (species) (size) (root) 0011. SERVICEBERRY, SHADBLOW B&B 2 INCH CAL	EACH	8.000	8.000
0480	632.0101	Trees (species) (size) (root) 0013. JUNIPER, MOUNTBATTEN B&B - 6 FT HT	EACH	8.000	8.000
0490	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	24.000	24.000
0500	634.0816	Posts Tubular Steel 2x2-Inch X 16-FT	EACH	11.000	11.000
0510	637.2210	Signs Type II Reflective H	SF	30.180	30.180
0520	637.2230	Signs Type II Reflective F	SF	2.250	2.250
0530	643.0100	Traffic Control (project) 0001. 1060-35-84	EACH	1.000	1.000
0540	643.0300	Traffic Control Drums	DAY	915.000	915.000
0550	643.0420	Traffic Control Barricades Type III	DAY	122.000	122.000
0560	643.0715	Traffic Control Warning Lights Type C	DAY	305.000	305.000
0570	643.0900	Traffic Control Signs	DAY	610.000	610.000
0580	647.0156	Pavement Marking Arrows Epoxy Type 1	EACH	2.000	2.000
0590	647.0256	Pavement Marking Symbols Epoxy	EACH	2.000	2.000
0600	647.0656	Pavement Marking Parking Stall Epoxy	LF	498.000	498.000
0610	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	863.000	863.000
0620	653.0140	Pull Boxes Steel 24x42-Inch	EACH	2.000	2.000
0630	654.0111	Concrete Bases Type 11	EACH	3.000	3.000
0640	655.0610	Electrical Wire Lighting 12 AWG	LF	639.000	639.000
0650	655.0620	Electrical Wire Lighting 8 AWG	LF	2,063.000	2,063.000
0660	655.0625	Electrical Wire Lighting 6 AWG	LF	1,989.000	1,989.000
0670	657.0322	Poles Type 5-Aluminum	EACH	4.000	4.000
0680	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	4.000	4.000
0690	659.1125	Luminaires Utility LED C	EACH	4.000	4.000
0700	690.0150	Sawing Asphalt	LF	12.000	12.000
0710	690.0250	Sawing Concrete	LF	77.000	77.000
0720	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0730	SPV.0035	Special 7000. PLANTING MIX	CY	42.000	42.000
0740	SPV.0060	Special 1001. CONCRETE BASES TYPE 5 SPECIAL	EACH	4.000	4.000
0750	SPV.0060	Special 1002. LIGHTING UNITS WALKWAY LED	EACH	3.000	3.000
0760	SPV.0060	Special 7001. ASTER, PROFESSOR KIPPENBURG CG #1	EACH	224.000	224.000
0770	SPV.0060	Special 7003. CONEFLOWER, PURPLE CG #1	EACH	35.000	35.000
0780	SPV.0060	Special 7005. COREOPSIS, SIENNA SUNSET CG #1	EACH	82.000	82.000
0790	SPV.0060	Special 7007. GERANIUM, ROZANNE CG #1	EACH	110.000	110.000
0800	SPV.0060	Special 7009. GRASS, PRAIRIE DROPSEED CG #1	EACH	101.000	101.000
0810	SPV.0060	Special 7011. GRASS, LITTLE BLUESTEM CG #1	EACH	141.000	141.000
0820	SPV.0060	Special 7013. GRASS, KARL FOERSTER CG #1	EACH	130.000	130.000
0830	SPV.0060	Special 7015. SUSAN, BLACK EYED CG #1	EACH	34.000	34.000
0840	SPV.0060	Special 7017. BENCH	EACH	2.000	2.000
0850	SPV.0060	Special 7018. TRASH RECEPTACLE	EACH	2.000	2.000
0860	SPV.0060	Special 8015. PIPE CONNECTION TO EXISTING STRUCTURE	EACH	1.000	1.000
0870	SPV.0085	Special 7019. SEEDING, BUFFALO GRASS	LB	8.400	8.400
0880	SPV.0090	Special 0001. FENCE CHAIN LINK VINYL-COATED 6-FT	LF	409.000	409.000
0890	SPV.0105	Special 0001. SURVEY PROJECT 1060-35-84	LS	1.000	1.000

3

DATE 27MAY15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1060-35-84 QUANTITY
0900	SPV.0105	Special 0002. PAVEMENT CLEANUP PROJECT 1060-35-84	LS	1.000	1.000
0910	SPV.0105	Special 1001. LIGHTING SYSTEM SURVEY	LS	1.000	1.000
0920	SPV.0105	Special 1002. LIGHTING SYSTEM INTEGRATOR	LS	1.000	1.000
0930	SPV.0165	Special 7020. MULCH, SHREDDED BARK	SF	5,100.000	5,100.000
0940	SPV.0180	Special 0001. TOPSOIL SPECIAL	SY	1,841.000	1,841.000

3

CLEARING AND GRUBBING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
1000	LOCUST PARKING LOT	6+30 LL		7+25 LL	LT	2	2
	PATH	105+00 XF		106+40 XF	LT	2	2
	TOTALS:					4	4

REMOVING PAVEMENT

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	204.0100 REMOVING PAVEMENT SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY
1000	LOCUST ST	19+60 LO		20+60 LO	RT	10	24	72	54
	TOTALS:					10	24	72	54

REMOVING FENCE

CATEGORY	ROADWAY	STA	TO	STA	OFFSET	204.0170 REMOVING FENCE LF
1000	LOCUST PARKING LOT/ PATH	105+44 XF		7+24 LL	LT	233
	TOTAL:					233

STORM SEWER REMOVALS

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	204.0220 REMOVING INLETS EACH	204.0245.0001 REMOVING STORM SEWER 8-INCH LF
1000	LOCUST STREET PARKING LOT	7LL+71		---	27' LT	1	---
		7LL+71		7LL+86	LT	---	26
		7LL+74		---	33' RT	1	---
		7LL+74		7LL+86	RT/LT	---	40
		7LL+86		---	5' LT	1	---
		7LL+86		9LL+65	LT/RT	---	187
	TOTALS:					3	253

FINISHING ROADWAY PROJECT ID 1060-35-84

CATEGORY	STAGE	LOCATION	213.0100 FINISHING ROADWAY (1060-35-84) EACH
1000	ALL	PROJECT	1
	TOTAL:		1

Division	From/To Station	Location	Common Excavation (1)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow
			Cut		Factor 1.20			
Division 1								
LL_RL	6+53.00 TO 9+70.84		1,051	36	43	1,008	1,008	0
XF_RL	104+43.49 TO 106+47.62		358	60	71	287	287	0
Division 1 Subtotal			1,409	96	114	1,295	1,295	0
Grand Total			1,409	96	114	1,295	1,295	0
Total Common Exc			1,409					

1) Common Excavation is the sum of the Cut column. Item number 205.0100
2) Expanded Fill. Factor = 1.20
Expanded Fill = (Unexpanded Fill) * Fill Factor
3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

3

BASE AGGREGATE ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON
1000	LOCUST PARKING LOT	6+53 LL		9+71 LL	998	--
	PATH	104+43 XF		106+48 XF	109	--
	EBS UNDISTRIBUTED	--		--	--	250
	TOTALS:				1,107	250

ASPHALTIC PAVEMENT ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	465.0105 ASPHALTIC SURFACE TON
1000	PATH	104+43 XF		106+28 XF	44
	LOCUST ST	19+64 LO		20+36 LO	4
	TOTALS:				48

CONCRETE ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	415.0070 CONCRETE PAVEMENT 7-INCH SY	416.0170 CONCRETE DRIVEWAY 7-INCH SY	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT DOL
1000	LOCUST PARKING LOT	6+53 LL		9+71 LL	1772	46	500
	TOTAL:				1,772	46	500

CURB & GUTTER

CATEGORY	ROADWAY	STATION	TO STATION	OFFSET	601.0331 CONCRETE CURB & GUTTER 31-INCH LF	416.0610 DRILLED TIE BARS EACH
1000	LOCUST PARKING LOT	6+53 LL	9+71 LL	OUTSIDE	699	--
		6+53 LL	9+71 LL	ISLAND	569	--
	LOCUST ST	19+64 LO	20+36 LO	RT	72	24
	TOTAL:				1,340	24

SAWING

CATEGORY	ROADWAY	STATION	TO STATION	OFFSET	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
1000	LOCUST ST	19+64 LO	20+36 LO	RT	--	77
	PATH	104+43 XF			12	--
	TOTAL:				12	77

CONCRETE SIDEWALK

CATEGORY	LOCATION	STATION	TO STATION	OFFSET	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0420 CONCRETE SIDEWALK 7-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	601.0600 CONCRETE CURB PEDESTRIAN LF
1000	LOCUST PARKING LOT	6+53 LL	9+71 LL		5688	--	--	--
	LOCUST PARKING LOT	7+39 LL	7+58 LL		--	--	8	19
	PATH CONNECTION	106+28 XF	106+59 XF		--	577	20	--
	TOTALS:				5,688	577	28	19

STORM SEWER STRUCTURES										STORM SEWER PIPES										
ROADWAY	STRUCTURE NO.	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH[1] (FT)	STRUCTURE COMMENTS	PIPE ID	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE[A] %	PIPE LENGTH[B] (FT)	PLAN LENGTH[C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	PIPE COMMENTS
LOCUST STREET PARKING LOT	N9	8LL+50.01	6.7	RT	744.14	INLETS 4-FT DIAMETER	H	3.91	---	P10	N9	N11	740.23	740.06	1.50	11	15	III	12	---
LOCUST STREET PARKING LOT	N11	8LL+50.01	18.0	RT	744.02	INLETS 4-FT DIAMETER	H	3.96	---	P12	N11	N13	740.06	738.34	1.50	115	118	III	12	---
LOCUST STREET PARKING LOT	N13	9LL+65.14	47.4	RT	743.59	---	J	5.25	EXISTING STRUCTURE; ADJUSTING MANHOLE & NEW COVER ONLY	PE14	N13	---	738.34	---	---	---	---	---	12	EXIST PIPE INTERPOL ELEV FOR STR

[1]DEPTH = RIM OR FLOW ELEV - LOWEST PIPE INVERT ELEVATION

[A] SLOPE CALCULATED BASED ON PIPE LENGTH. PIPE LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE

[B]PIPE LENGTH SHOWN FOR SLOPE CALCULATION ONLY. NOT INTENDED FOR PAY QUANTITY.

[C]PLAN LENGTH SHOWN FOR PAY QUANTITY.

STORM SEWER STRUCTURES SUMMARY

	611.3004	611.0535	611.0624
	INLETS 4-FT DIAMETER	MANHOLE COVERS TYPE J SPECIAL	INLET COVERS TYPE H
	EACH	EACH	EACH
TOTAL	2	1	2

STORM SEWER PIPES SUMMARY

	608.0312
	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH
	LF
TOTAL	133

PIPE CONNECTION TO EXISTING STRUCTURE

ROADWAY	STATION	OFFSET	SPV.0060.8015 PIPE CONNECTION TO EXISTING STRUCTURE EACH
LOCUST STREET PARKING LOT			
	9LL+65	47' RT	1
TOTAL			1

ADJUSTING STRUCTURES

LOCATION	STATION	OFFSET FT	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	611.8110 ADJUSTING MANHOLE COVERS EACH
LOCUST STREET PARKING LOT						
	9LL+65	47' RT	743.23		743.59	1
TOTALS						1

ALL ITEMS CATEGORY 1000

3

FENCING ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	OFFSET	616.0206 FENCE CHAIN LINK 6-FT LF	616.0700.S FENCE SAFETY LF	SPV.0090.0001 FENCE CHAIN LINK VINYL COATED 6-FT LF
1000	LOCUST PARKING LOT/ PATH	105+56 XF		9+69 LL	RT	--	--	409
		105+44 XF		7+24 LL	LT	233	--	--
	UNDISTRIBUTED					--	1000	--
	TOTALS:					233	1,000	409

MOBILIZATION

CATEGORY	STAGE	LOCATION	619.1000 MOBILIZATION EACH
1000	ALL	PROJECT	1
		TOTAL:	1

3

EROSION CONTROL ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7560 TRACKING PAD EACH
1000	LOCUST PARKING LOT/ PATH	104+43XF		106+00XF	RT	165	165	--	--	--
		105.50XF		8+00LL	LT	367	367	--	--	--
		6+50LL		8+00LL	RT	150	150	--	--	--
		9+40LL		9+71LL	RT	31	31	--	--	--
		9+50LL		9+70LL	LT	20	20	--	--	--
	UNDISTRIBUTED					183	183	5	3	1
	TOTALS:					916	916	5	3	1

3

3

INLET PROTECTION

CATEGORY	ROADWAY	STATION	OFFSET	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH
1000	LOCUST PARKING LOT	8+50	6.7' RT	1	1
		8+50	18.0' RT	1	1
	TOTALS:			2	2

RESTORATION ITEMS

CATEGORY	ROADWAY	STATION	TO	STATION	LOCATION	SPV.0180.0001 TOPSOIL SPECIAL SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0140 SEEDING MIXTURE NO. 40 LB	630.0200 SEEDING TEMPORARY LB
1000	LOCUST PARKING LOT	6+31LL		9+78LL	LT	--	182	0.2	3	5
		6+90LL		9+79LL	RT	--	209	0.2	4	6
	PATH	104+43XF		106+53XF	LT	--	155	0.1	3	4
		104+43XF		106+48XF	RT	--	151	0.1	3	4
		104+43 XF		9+79LL	LT/RT	1,674	--	--	--	--
	UNDISTRIBUTED	--		--	--	167	174	0.1	1	2
	TOTALS:					1,841	872	0.7	14	21

STREETSCAPING ITEMS

CATEGORY	PROJECT NUMBER	632.9101 LANDSCAPE PLANTING SURVEILLANCE AND CARE CYCLES EACH	SPV.0035.7000 PLANTING MIX CY	SPV.0060.7017 BENCH EACH	SPV.0060.7018 TRASH RECEPTACLE EACH	SPV.0085.7019 BUFFALO GRASS SEED LB	SPV.0165.7020 MULCH SHREDDED BARK SF
6000	1060-35-84	24	42	2	2	8.4	5100
	TOTALS	24	42	2	2	8.4	5100

BID ITEMS	SYM.	COMMON NAME	PLANTING LAYOUT SHEET NUMBERS 1 EACH	PLANTING LAYOUT SHEET NUMBERS 2 EACH	TOTALS EACH
		DECIDUOUS TREES (SHADE)			
632.0101.0001	RB	Birch, River	1		1
632.0101.0003	K	Katsuratree - single stem, tree form	2		2
632.0101.0005	SWO	Oak, Swamp White	2		2
632.0101.0007	MM	Maple, Miyabe	6		6
		DECIDUOUS TREES (ORNAMENTAL)			
632.0101.0009	SC	Crabapple, Spring Snow	6		6
632.0101.0011	SB	Serviceberry, Shadblow	8		8
		EVERGREEN			
632.0101.0013	MJ	Juniper, Mountbatten	8		8
		PERENNIALS, GRASSES & GROUNDCOVERS			
SPV.0060.7001	AP	Aster, Professor Kippenburg		224	224
SPV.0060.7003	PC	Coneflower, Purple		35	35
SPV.0060.7005	SSC	Coreopsis, 'Sienna Sunset'		82	82
SPV.0060.7007	RG	Geranium, Rozanne		110	110
SPV.0060.7009	PDG	Grass, Prairie Dropseed	17	84	101
SPV.0060.7011	LBG	Grass, Little bluestem		141	141
SPV.0060.7013	KFG	Grass, Karl Foerster Reed		130	130
SPV.0060.7015	BES	Susan, Black Eyed		34	34

TYPE I&II PERMANENT SIGNING -

1060-35-84 PARKING LOT

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVING SIGNS TYPE II [EA]	634.0618 WOOD POSTS 4"X 6"x18' [EA]	634.0816 POSTS TUBULAR STEEL 2" X 2" X 16' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	W3-1	STOP AHEAD	18	X	18	--	2.250				1		
2	R1-1	STOP	18	X	18	2.250					1		
3	NONE	10 MIN PARKING [A]	12	X	18	1.500					1		MOUNT IN SIDEWALK - SEE STATE PLATE FOR SLEEVE REQUIREMENTS
4	NONE	10 MIN PARKING [A]	12	X	18	1.500					1		MOUNT IN SIDEWALK - SEE STATE PLATE FOR SLEEVE REQUIREMENTS
5	NONE	10 MIN PARKING [A]	12	X	18	1.500					1		MOUNT IN SIDEWALK - SEE STATE PLATE FOR SLEEVE REQUIREMENTS
6	R5-1 (2S)	DO NOT ENTER	30	X	30	6.250					1		
7	R1-1 (2S)	STOP	30	X	30	5.180					1		
8	R6-2R (2S)	ONE WAY RIGHT ARROW	24	X	30	5.000					1		
9	R7-8 (2S)	HANDICAP PARKING	12	X	18	1.500					1		
10	R7-8 (2S)	HANDICAP PARKING	12	X	18	1.500					1		
11	R5-3 (2S)	NO MOTOR VEHICLE	24	X	24	4.000					1		
UNDISTRIBUTED						--						--	--
TOTALS						30.180	2.250	0	0	0	11	--	--

SHEET: 1 OF 1

PROJECT NO:1060-35-84	HWY: NONE	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES – PERMANENT SIGNING	SHEET: E

TRAFFIC CONTROL ID 1060-35-84

CATEGORY	STAGE	LOCATION	643.0100 TRAFFIC CONTROL (1060-35-84) EACH
1000	ALL	PROJECT	1
		TOTAL:	1

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	647.0156 PAVEMENT MARKING ARROWS EPOXY TYPE 1 EACH	647.0256 PAVEMENT MARKING SYMBOLS EPOXY WHITE EACH	647.0656 PAVEMENT MARKING PARKING STALL EPOXY WHITE LF
1000	LOCUST PARKING LOT		2	2	498
	TOTALS:		2	2	498

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 TRAFFIC CONTROL SIGNS DAYS
1000	LOCUST ST	61	15	915	2	122	5	305	10	610
	TOTALS:			915		122		305		610

SURVEY PROJECT

CATEGORY	STAGE	LOCATION	SPV.0105.0001 SURVEY PROJECT 1060-35-84 LS
1000	ALL	PROJECT	1
		TOTAL:	1

PAVEMENT CLEANUP

CATEGORY	STAGE	LOCATION	SPV. 0105.0002 PAVEMENT CLEANUP PROJECT 1060-35-84 LS
1000	ALL	PROJECT	1
		TOTAL:	1

3

CATEGORY 1100
LIGHTING SYSTEM ITEMS

SPV.0105.1001 LIGHTING SYSTEM SURVEY
SPV.0105.1002 LIGHTING SYSTEM INTEGRATOR

SYSTEM	LOCATION	SPV.0105.1001 LIGHTING SYSTEM SURVEY	SPV.0105.1002 LIGHTING SYSTEM INTERGRATOR
		LS	LS
WAUWATOSA	LOCUST STREET PARKING LOT	1	1
	TOTAL (1100)	**1**	**1**

CATEGORY 1100
LIGHTING BRANCH CIRCUIT CONDUIT

652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH

SYSTEM	LOCATION TO LOCATION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	COMMENTS
		LF	
WAUWATOSA	EXISTING POLE 104+16XE TO POLE 104+88.46XE	75	INTERCEPT EXISTING (I.D. 1060-33-83) CONDUIT
WAUWATOSA	POLE 104+88.46XE TO POLE 105+58.92XE	71	--
WAUWATOSA	POLE 105+58.92XE TO POLE 106+30.37XE	72	--
WAUWATOSA	POLE 106+30.37XE TO LPB101	20	--
WAUWATOSA	LPB101 TO POLE 7+37.32	100	--
WAUWATOSA	POLE 7+37.32 TO POLE 9+12.91	175	--
WAUWATOSA	POLE 9+12.91 TO STUBOUT NORTH	15	--
WAUWATOSA	LPB101 TO LPB102	30	--
WAUWATOSA	LPB102 TO POLE 7+38.98	115	--
WAUWATOSA	POLE 7+38.98 TO POLE 9+13.90	175	--
WAUWATOSA	POLE 9+13.90 TO STUBOUT NORTH	15	--
	TOTAL (1100)	**863**	

CATEGORY 1100
PULL BOXES

653.0140 PULL BOXES STEEL 24X42-INCH

SYSTEM	LOCATION	OFFSET	ITEM	653.0140 PULL BOXES STEEL 24X42-INCH EACH
WAUWATOSA	106+46XE	15.00' RT	LPB101	1
WAUWATOSA	106+46XE	15.00' LT	LPB102	1
TOTAL (1100)				**2**

CATEGORY 1100
LIGHTING WIRE QUANTITIES
240/480 VAC 3-WIRE ISOLATED NEUTRAL SYSTEM

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

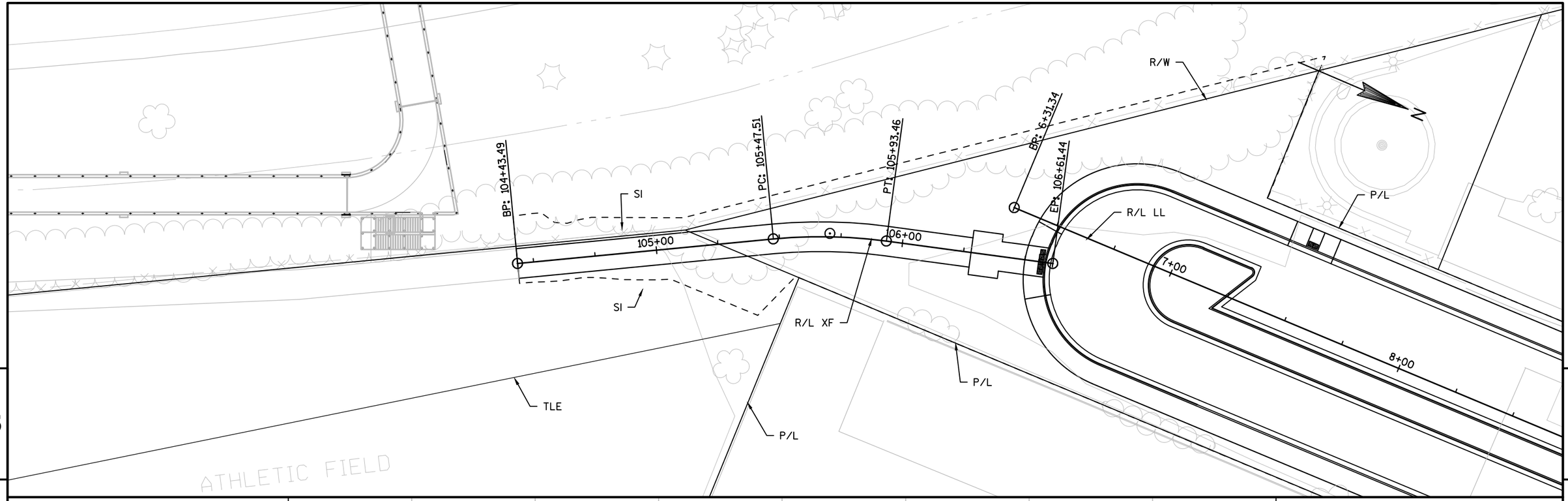
SYSTEM	NETWORK	LOCATION TO LOCATION	DISTANCE	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF
WAUWATOSA	C/D/N/G	EXISTING POLE 104+16XE TO POLE 104+88.46XE	75	85	285
WAUWATOSA	C/D/N/G	POLE 104+88.46XE TO POLE 105+58.92XE	71	81	273
WAUWATOSA	C/D/N/G	POLE 105+58.92XE TO POLE 106+30.37XE	72	82	276
WAUWATOSA	C/D/N/G	POLE 106+30.37XE TO LPB101 TO POLE 7+37.32	120	140	480
WAUWATOSA	C/D/N/G	POLE 7+37.32 TO POLE 9+12.91	175	740	--
WAUWATOSA	C/D/N/G	POLE 106+30.37 TO LPB101 TO LPB102 TO POLE 7+38.98	165	195	675
WAUWATOSA	C/D/N/G	POLE 7+38.98 TO POLE 9+13.90	175	740	--
TOTAL (1100)				**2,063**	**1,989**

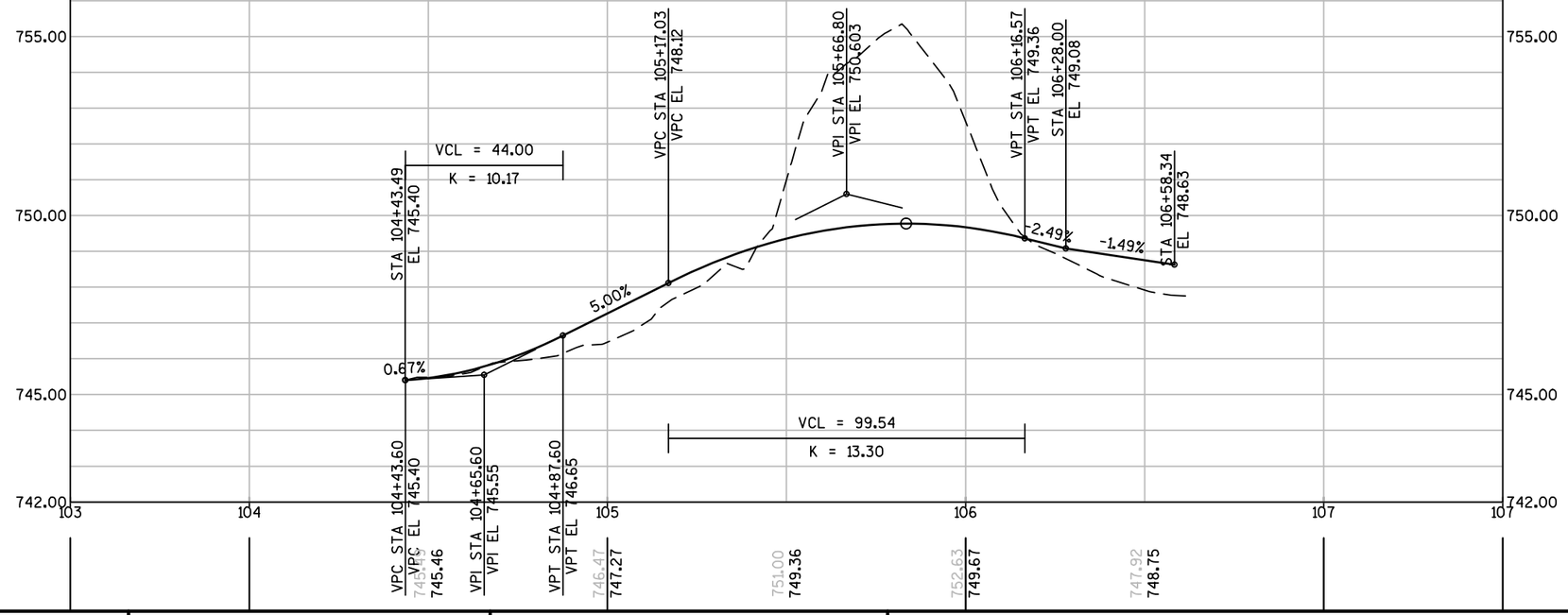
3

CATEGORY 1100
LIGHT POLE QUANTITIES

654.0111	CONCRETE BASES TYPE 11
655.0610	ELECTRICAL WIRE LIGHTING 12 AWG
657.0322	POLES TYPE 5-ALUMINUM
657.0610	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT
659.1125	LUMINAIRES UTILITY LED C
SPV.0060.1001	CONCRETE BASES TYPE 5 SPECIAL
SPV.0060.1002	LIGHTING UNITS WALKWAY LED

SYSTEM	STATION	OFFSET	654.0111 CONCRETE BASES TYPE 11 EACH	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG L.F.	657.0322 POLES TYPE 5 ALUMINUM EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	659.1125 LUMINAIRES UTILITY LED C EACH	SPV.0060.1001 CONCRETE BASES TYPE 5 SPECIAL EACH	SPV.0060.1002 LIGHTING UNITS WALKWAY LED EACH
WAUWATOSA	104+88.46XE	10.00' RT	1	45	--	--	--	--	1
WAUWATOSA	105+58.92XE	10.00' RT	1	45	--	--	--	--	1
WAUWATOSA	106+30.37XE	10.00' RT	1	45	--	--	--	--	1
WAUWATOSA	7+37.32	58.58' RT	--	126	1	1	1	1	--
WAUWATOSA	7+38.98	44.03' LT	--	126	1	1	1	1	--
WAUWATOSA	9+12.91	58.58' RT	--	126	1	1	1	1	--
WAUWATOSA	9+13.90	44.08' LT	--	126	1	1	1	1	--
TOTAL (1100)			**3**	**639**	**4**	**4**	**4**	**4**	**3**



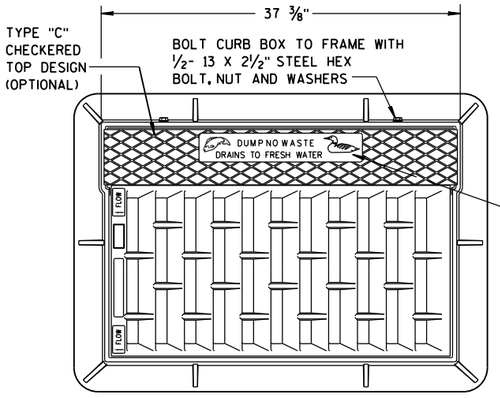


PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	PLAN AND PROFILE: PATH EXTENSION	SHEET 45	E

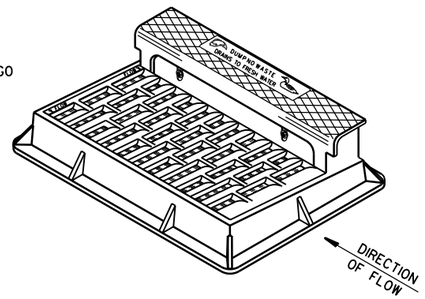
FILE NAME : W:\PDS\C3D\CAD\10603317\84\050100_PP.DWG
LAYOUT NAME - 050100_PP
PLOT DATE : 3/26/2015 9:31 AM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1:40_XREF

Standard Detail Drawing List

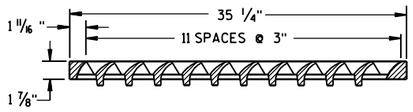
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
09B02-08	CONDUIT
09B04-11	PULL BOX
09E01-13D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-13G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E04-06	WALKWAY LIGHTING UNIT AND CONCRETE BASE, TYPE 11
10A01-03	ELECTRICAL HANDHOLE WIRING
10A05-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES ISOLATED NEUTRAL SYSTEMS
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C04-16	URBAN NON-DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14A02-01	TREE PLANTING DETAIL
15B03-14A	FENCE CHAIN LINK
15B03-14B	FENCE CHAIN LINK
15C07-12A	PAVEMENT MARKING SYMBOLS
15C07-12C	PAVEMENT MARKING ARROWS
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

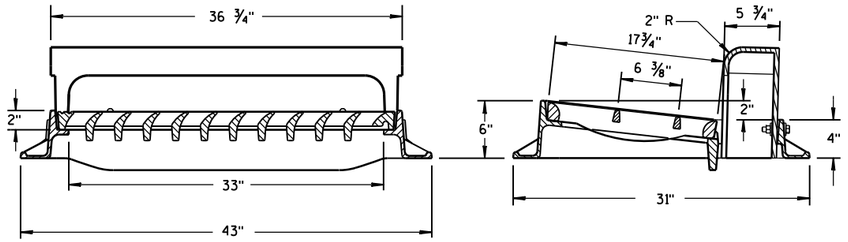


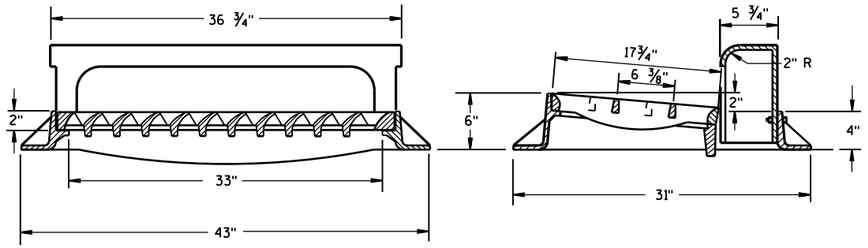
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

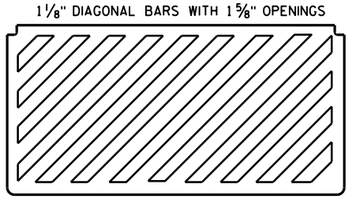






TYPE "H"

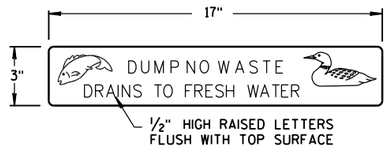
NOTE: EITHER CASTING IS ACCEPTABLE



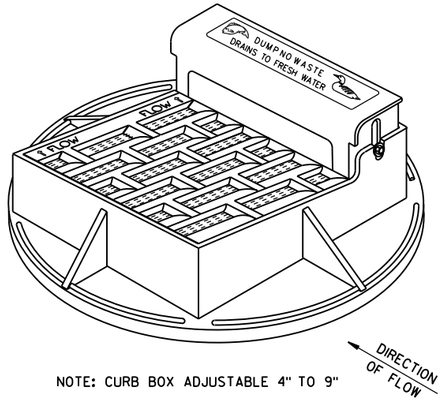
SPECIAL GRATE FOR TYPE "H" COVER

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

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

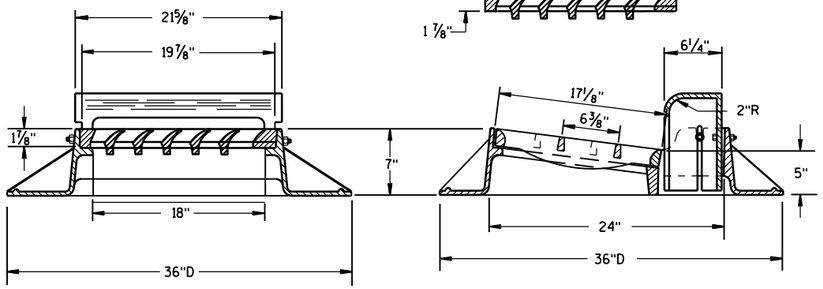


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



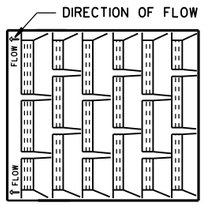
TYPE "A"

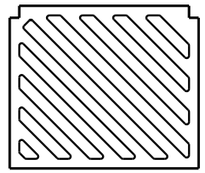
GENERAL NOTES

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

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

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

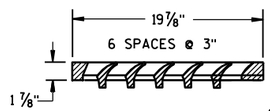


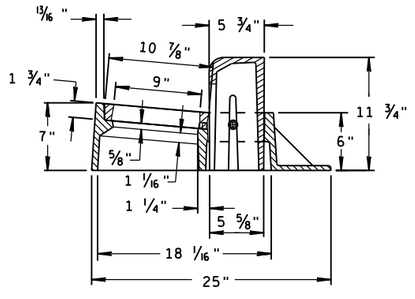


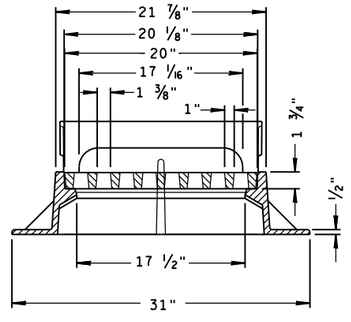
SPECIAL GRATE FOR TYPE "A" COVER

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

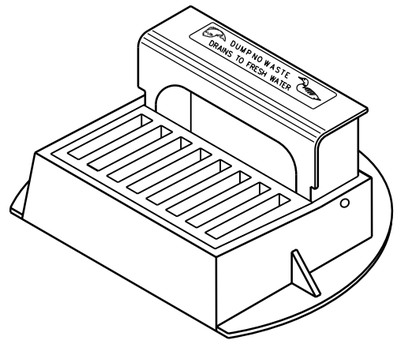
(NOTED AS TYPE A-S ON DRAINAGE TABLE)







TYPE "Z"



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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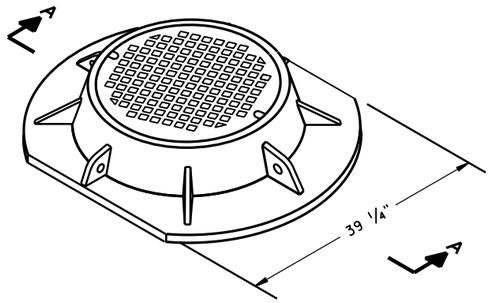
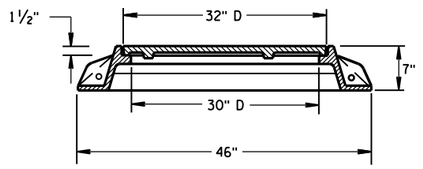
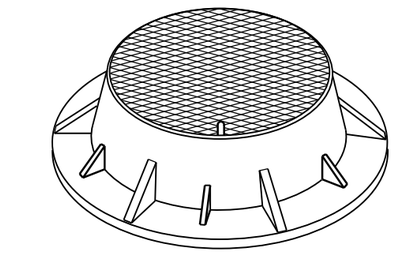
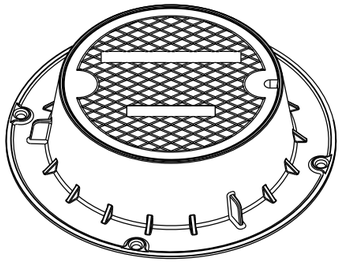
S.D.D. 8 A 5-19a

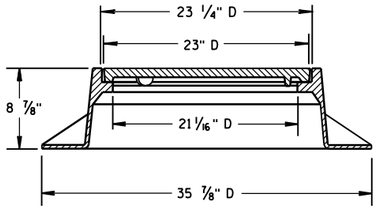


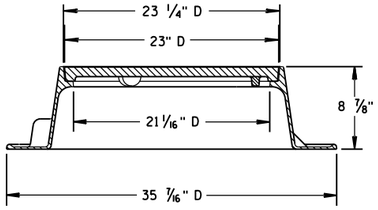


SECTION A-A
TYPE "K"









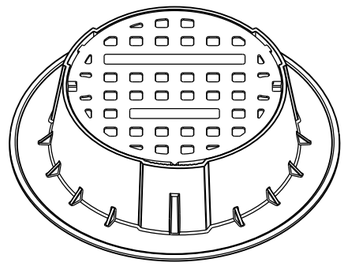
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

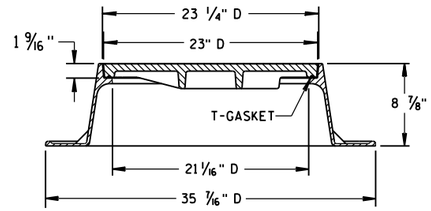
GENERAL NOTES

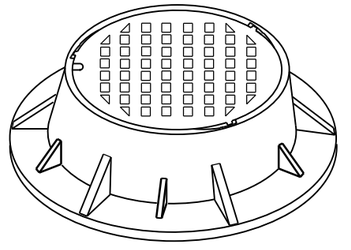
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

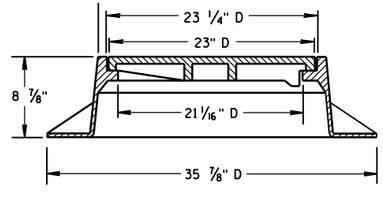
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

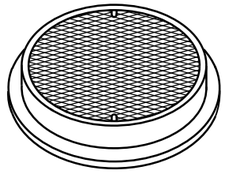


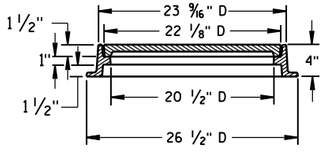




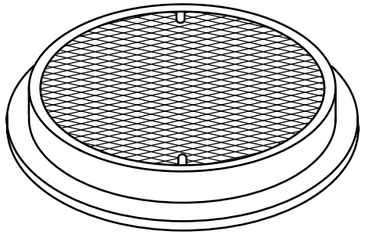


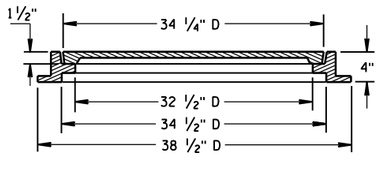
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



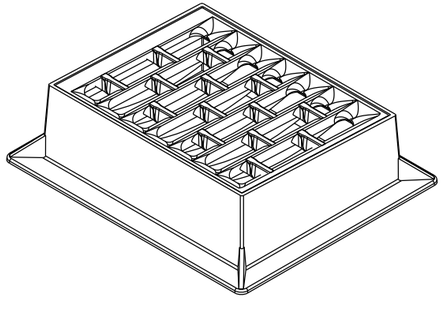


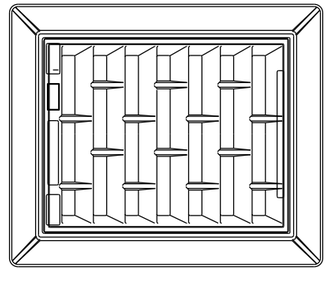
TYPE "L"

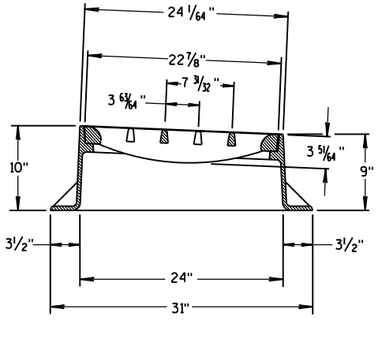


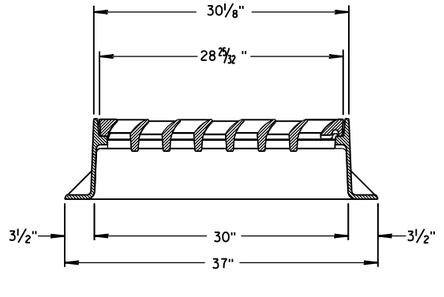


TYPE "M"









INLET COVER TYPE "BW"

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

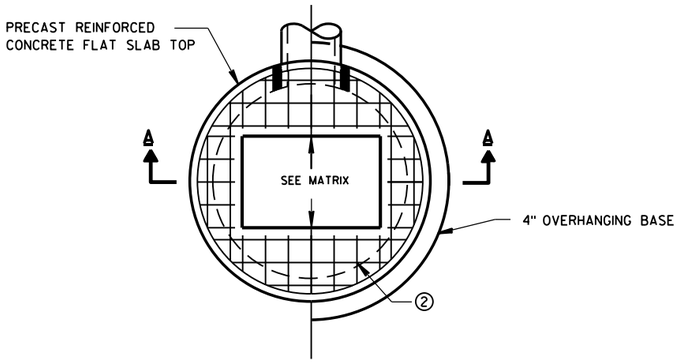
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

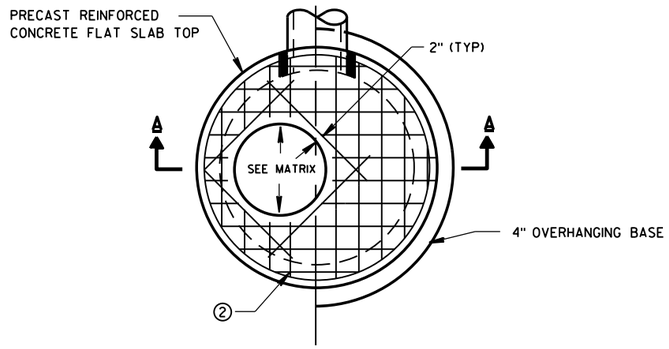
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

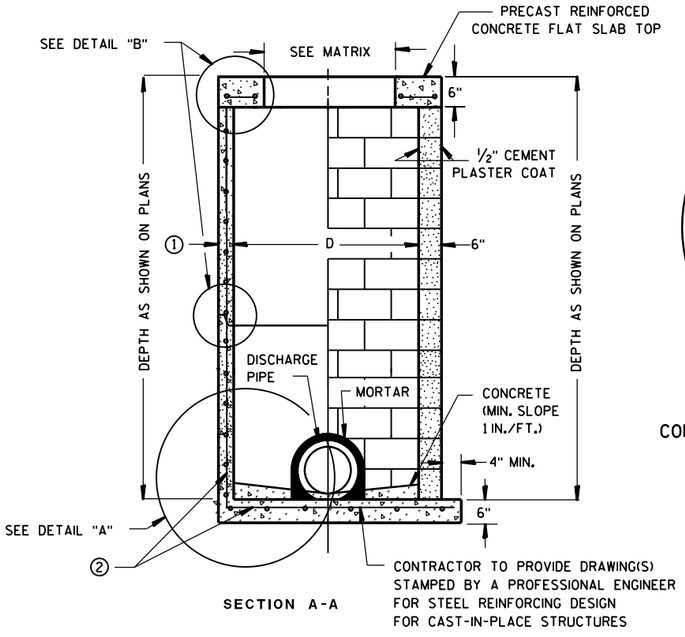
S.D.D. 8 A 5-19d



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

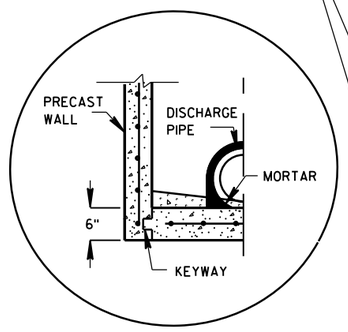


SECTION A-A

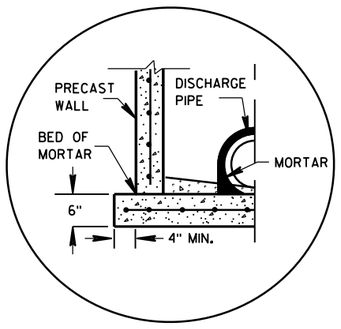
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

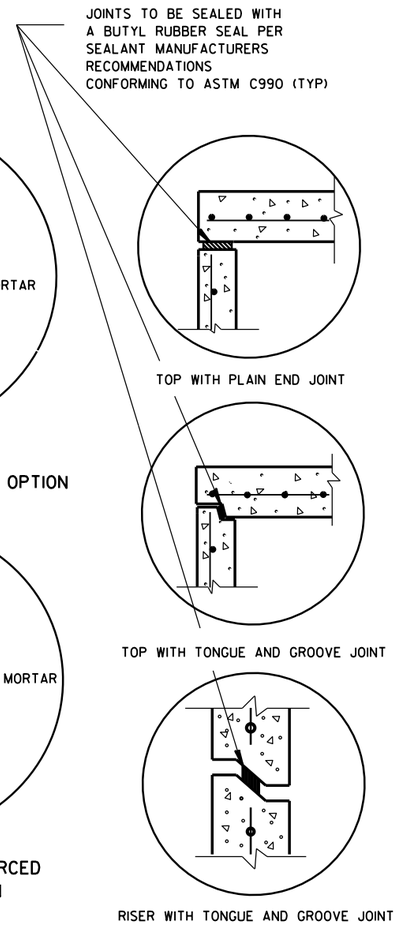


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

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

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

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

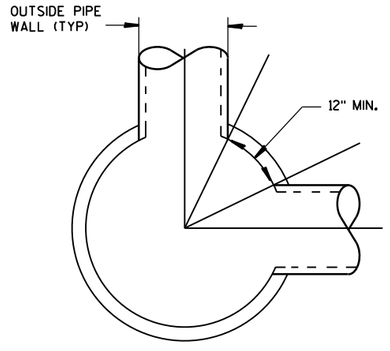
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

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

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

INLET COVER OPENING MATRIX

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



DETAIL "C"

PIPE MATRIX

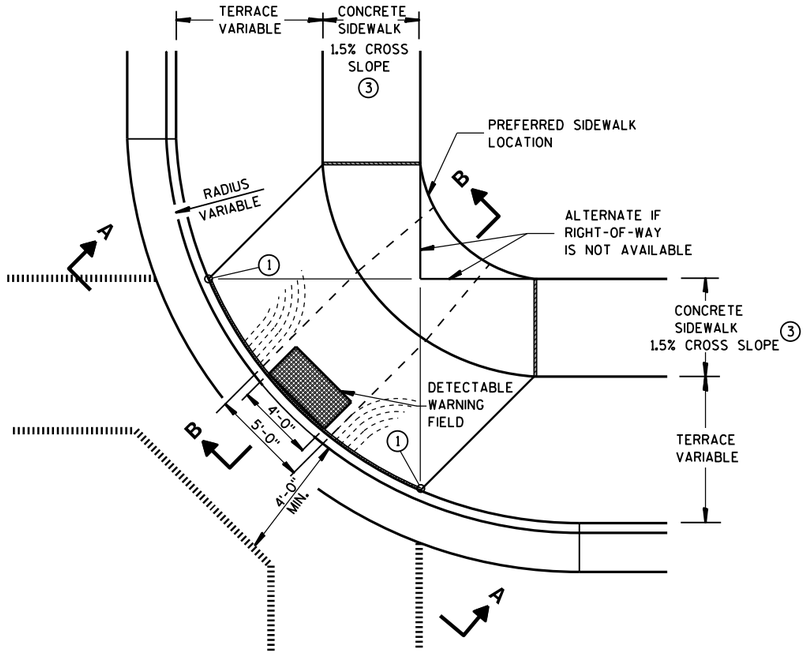
INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

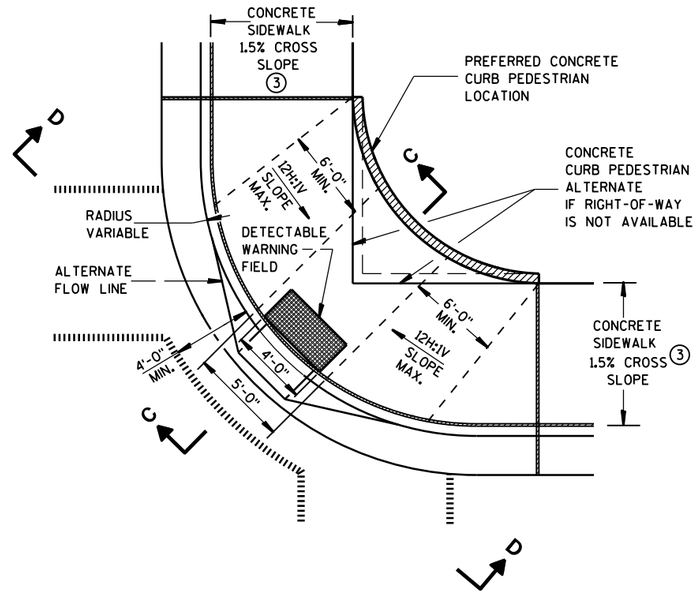
INLETS 3-FT AND 4-FT DIAMETER



PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

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.

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. 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.

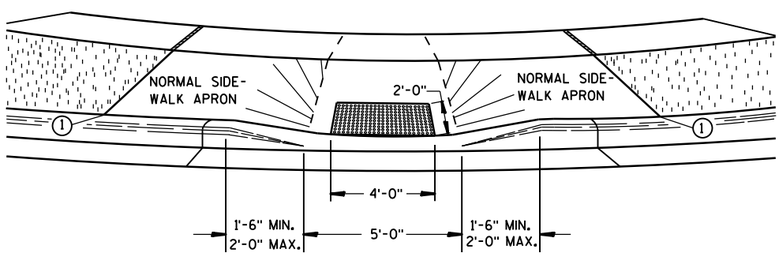
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

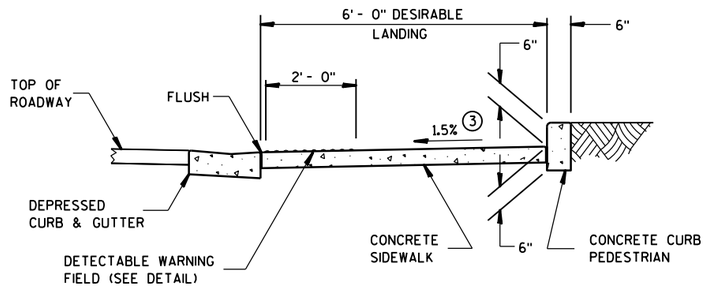
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

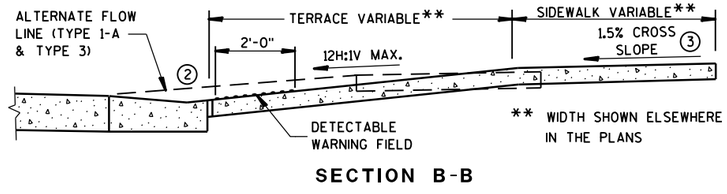
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



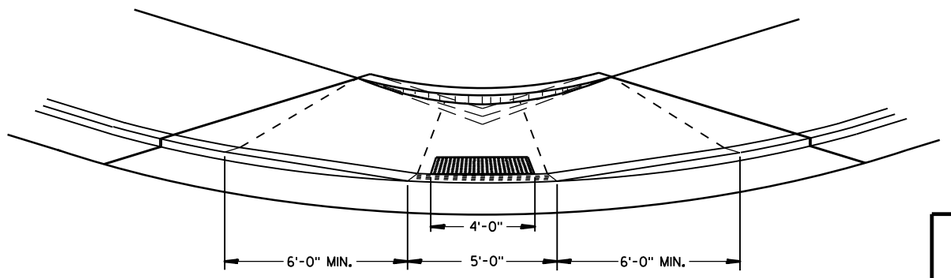
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

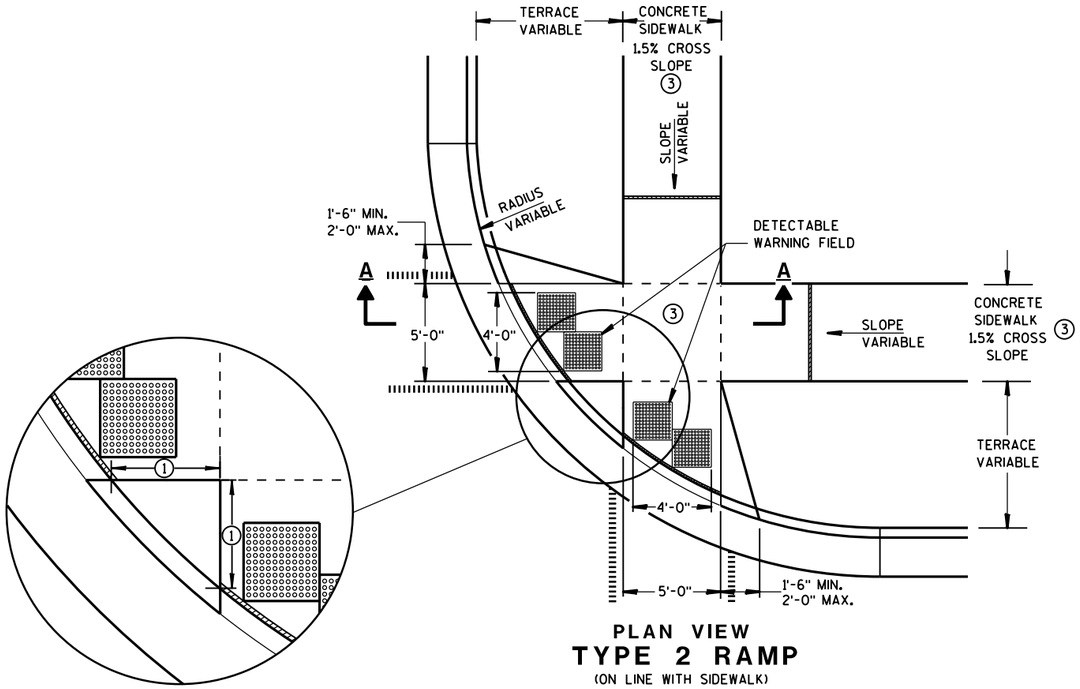
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

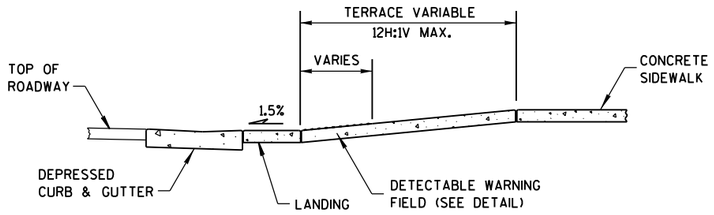
S.D.D. 8 D 5-15a



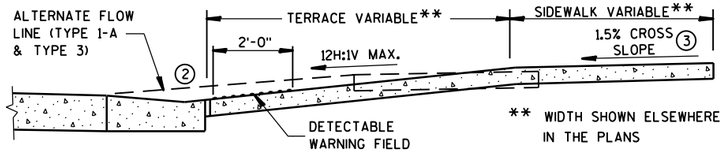
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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

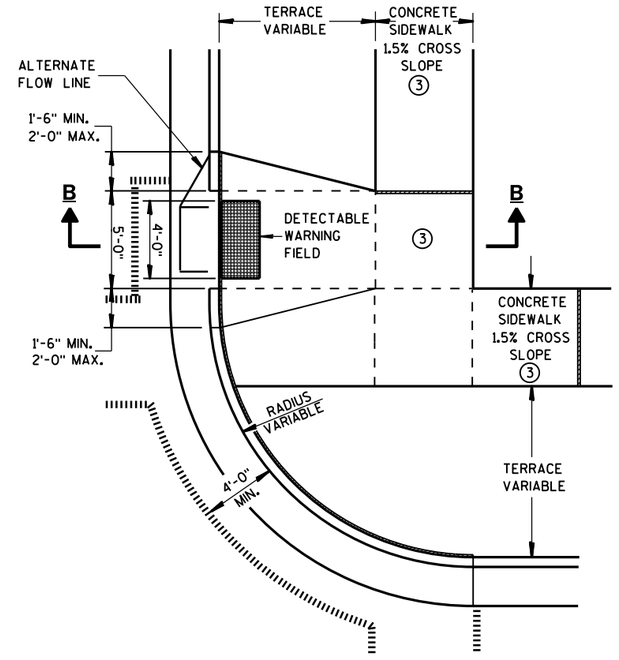
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

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



PLAN VIEW

TYPE 3 RAMP

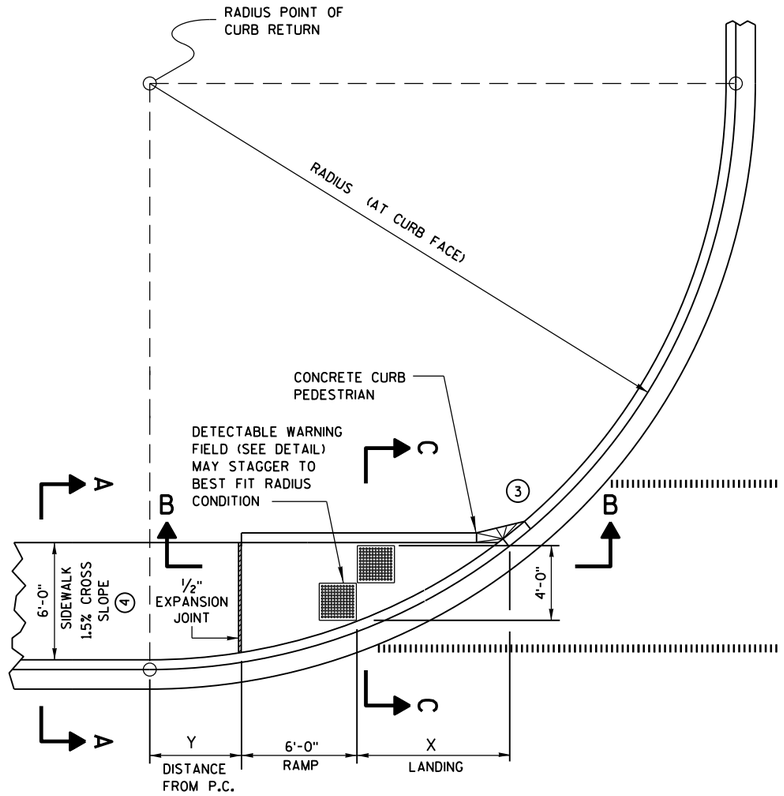
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

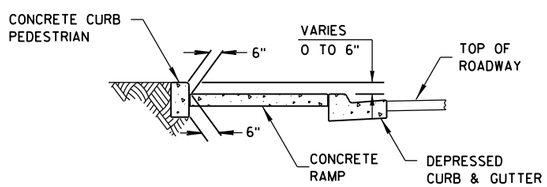
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

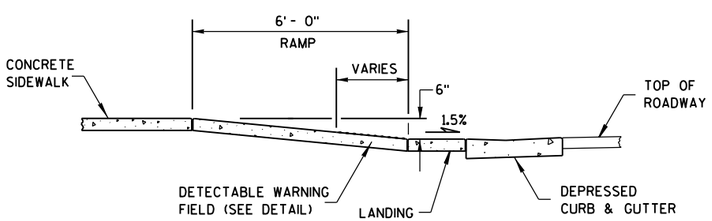
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



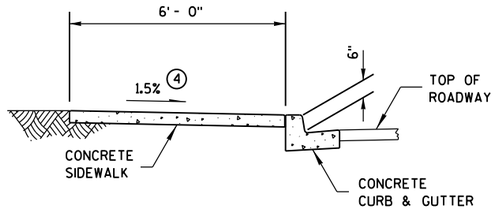
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

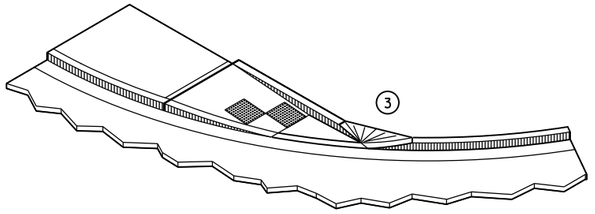
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

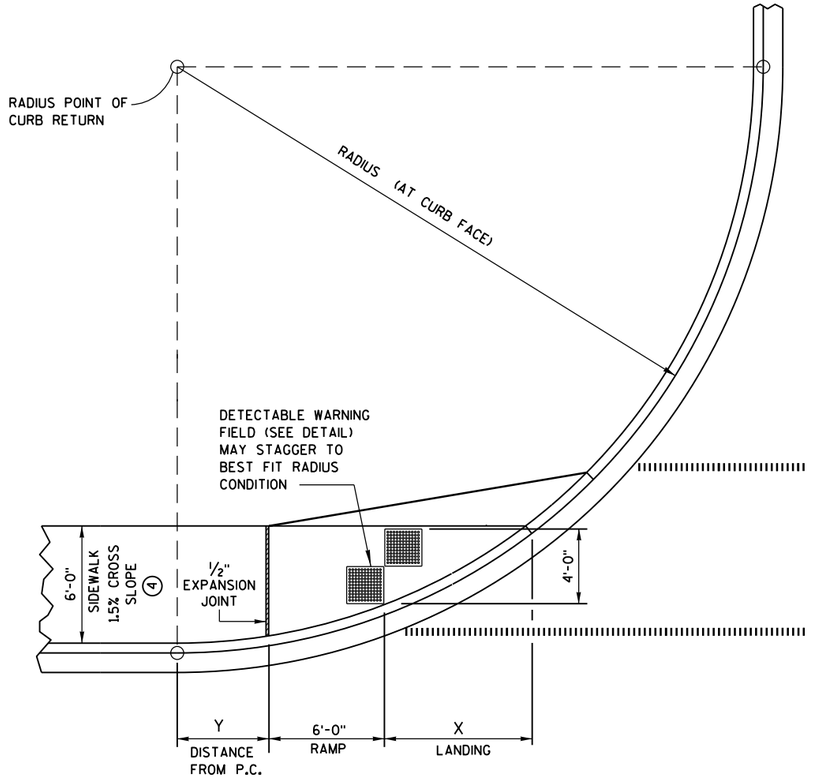
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

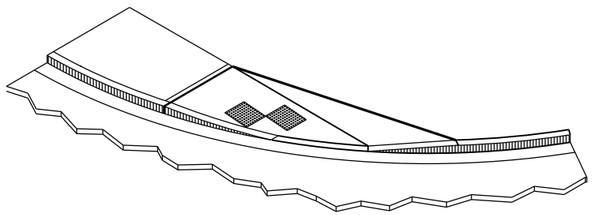
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

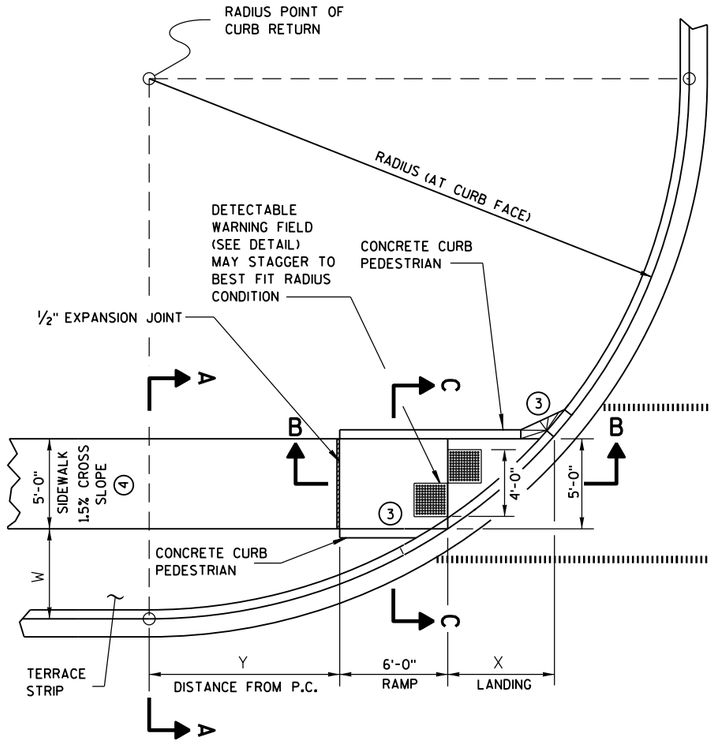
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

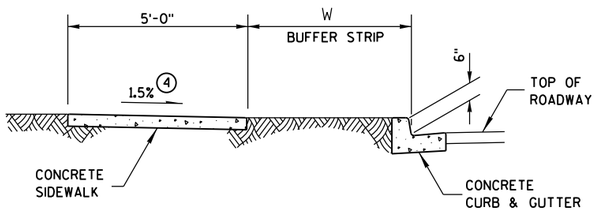
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

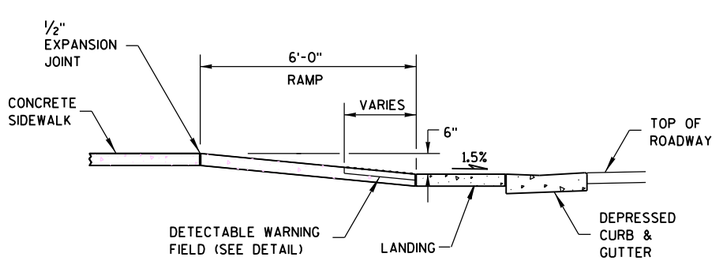
S.D.D. 8 D 5-15c



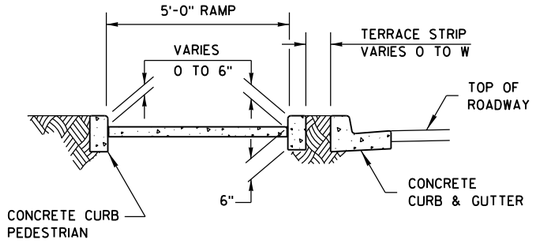
CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

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'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

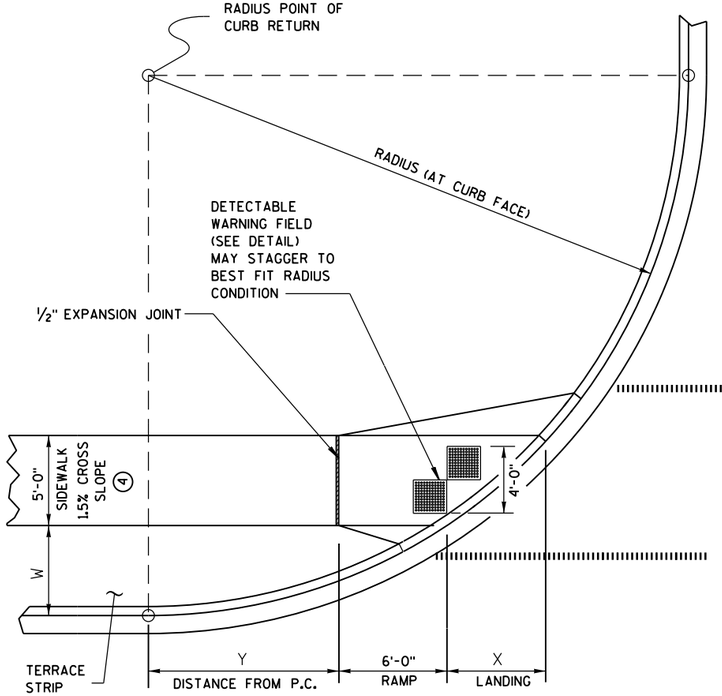
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

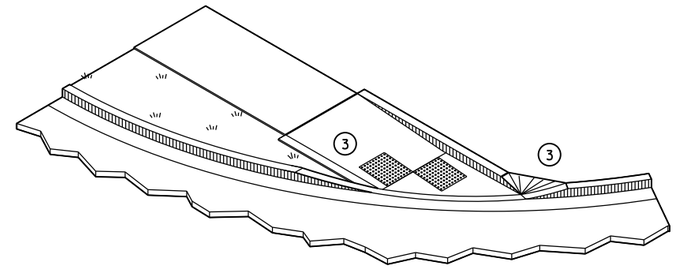
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

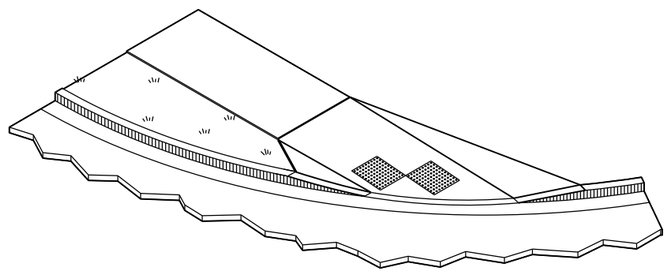
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



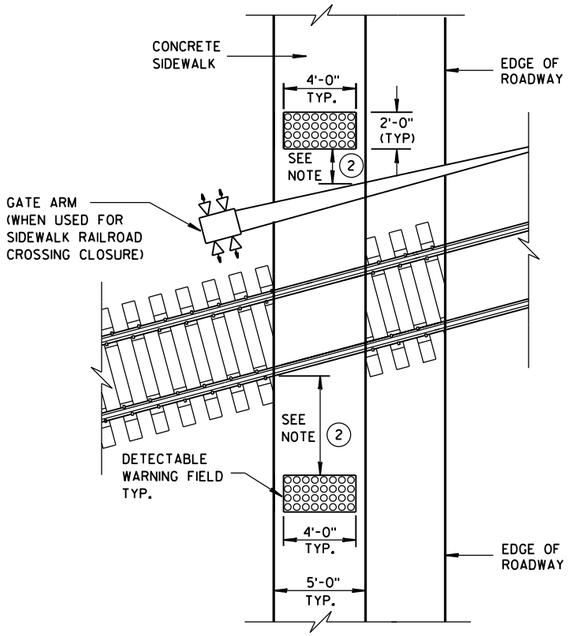
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

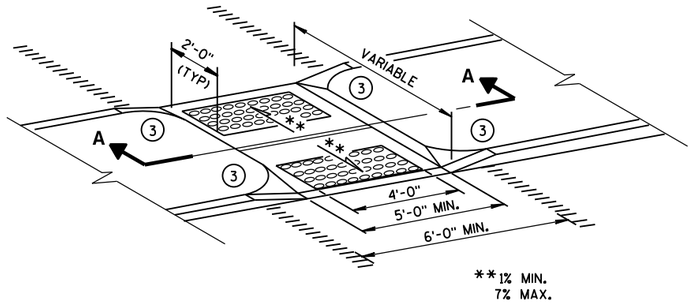
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

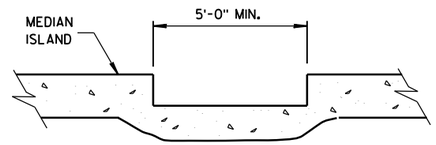
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

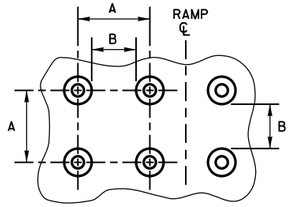
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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

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

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



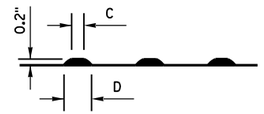
SECTION A-A



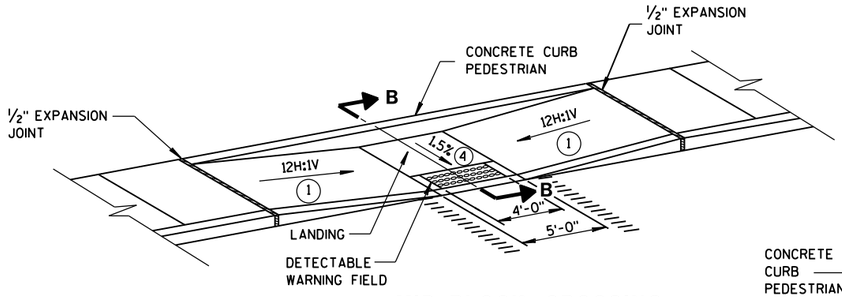
PLAN VIEW

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

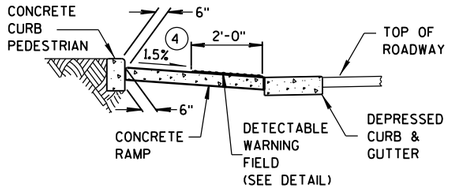
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

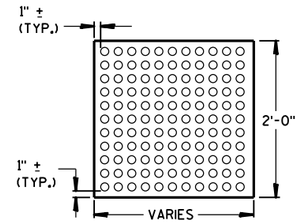


MID-BLOCK CROSSING
TYPE 7A



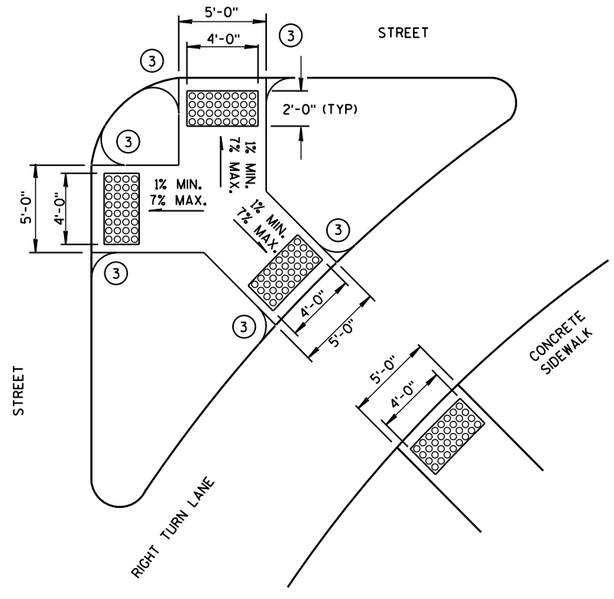
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

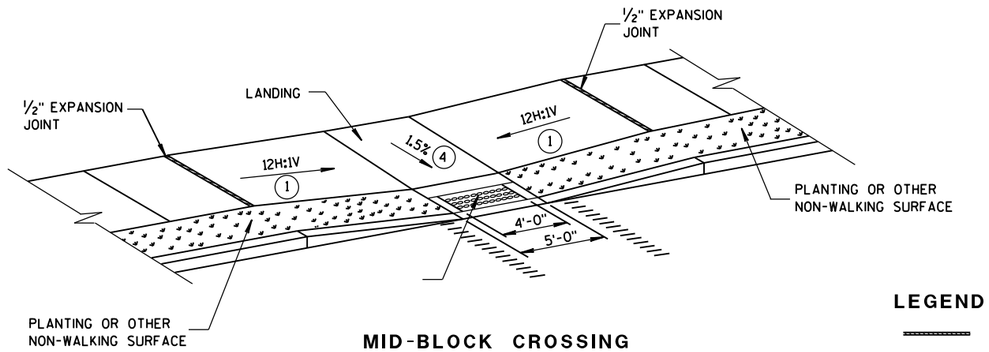


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

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

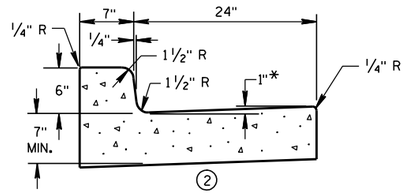
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

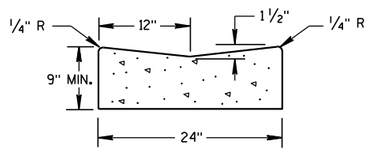
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

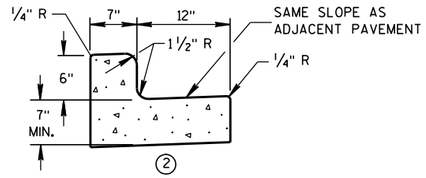
S.D.D. 8 D 5-15e



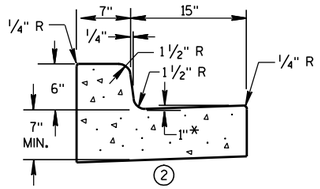
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

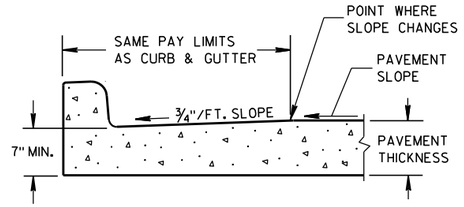


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

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

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

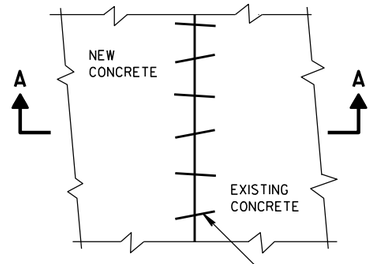
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

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

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

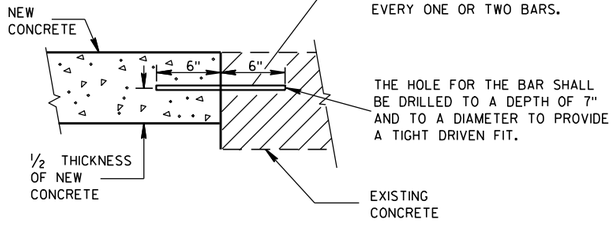
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

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

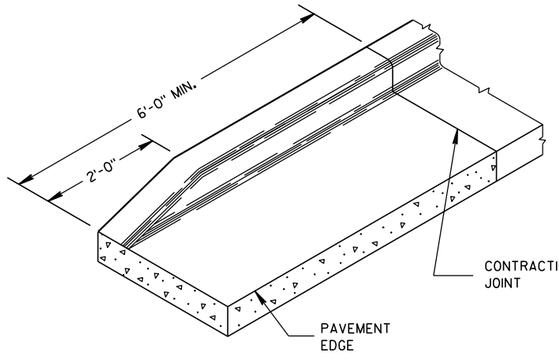
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



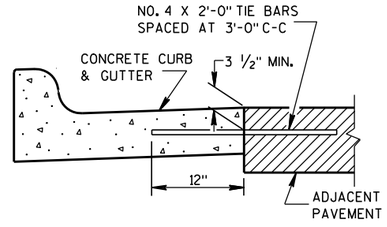
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

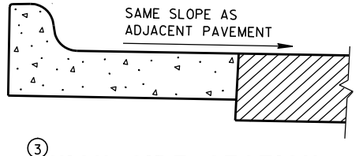
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

55 — ENT

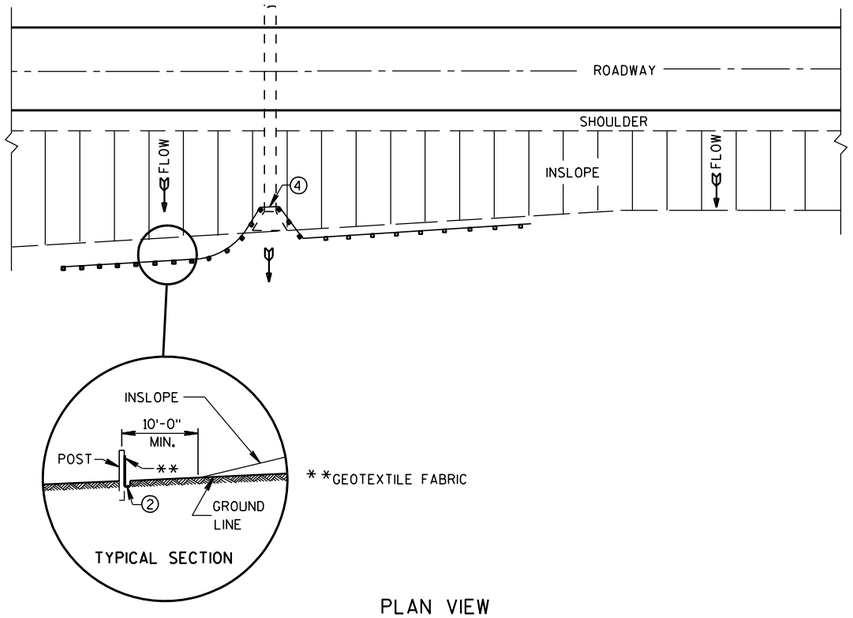
FHWA

6

S.D.D. 8 D 16-10

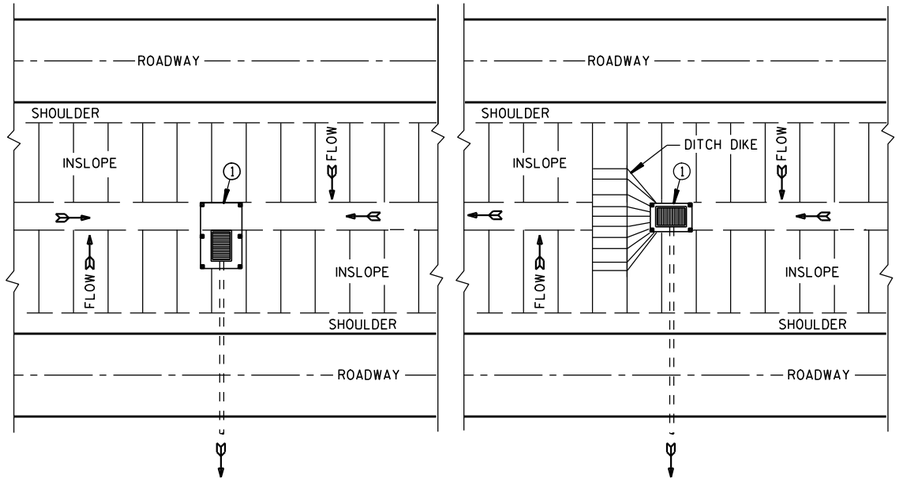
6

S.D.D. 8 D 16-10



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



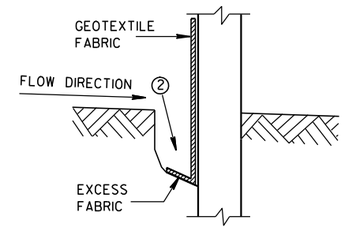
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

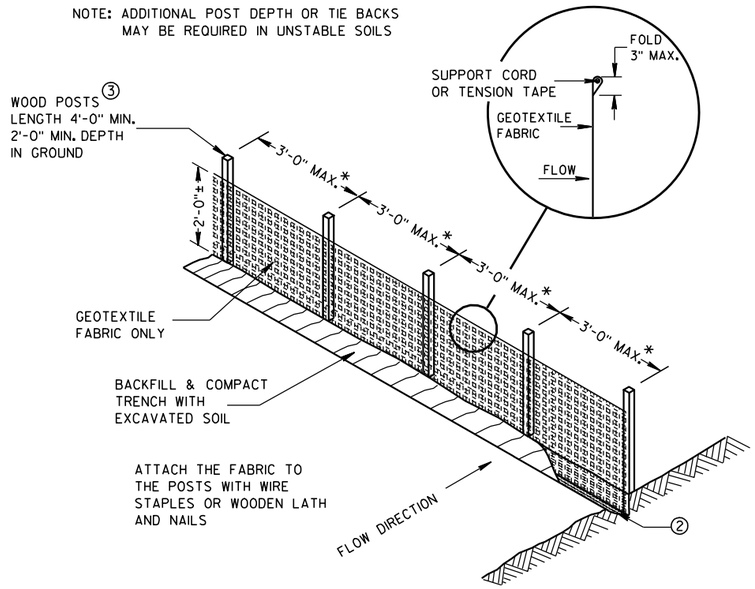
GENERAL NOTES

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.

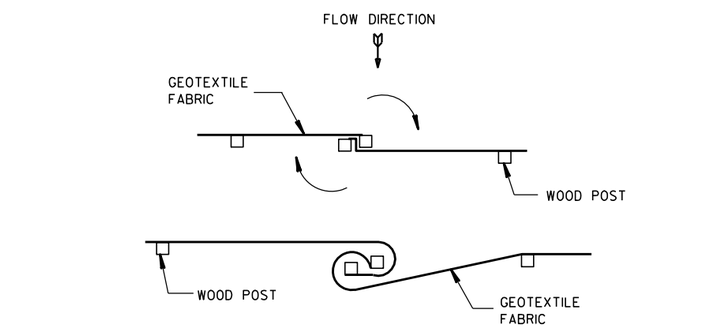


TRENCH DETAIL

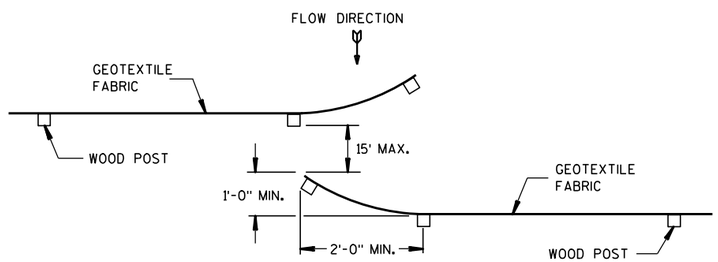


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

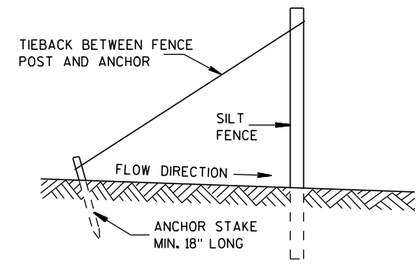


TWIST METHOD



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

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S.D.D. 8 E 9-6

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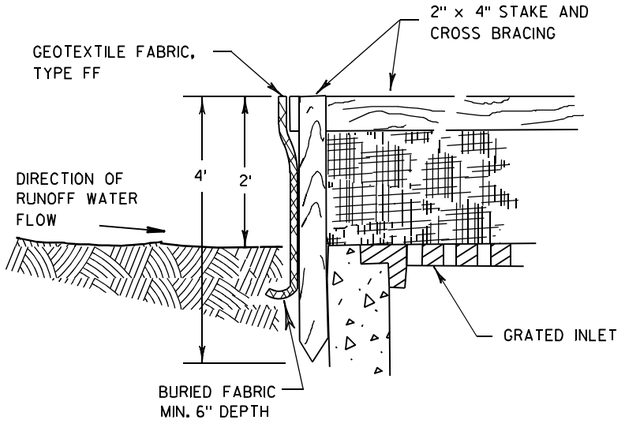
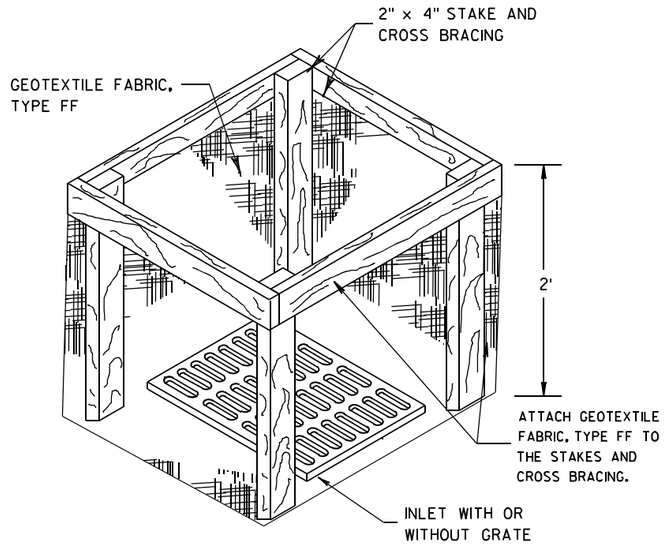
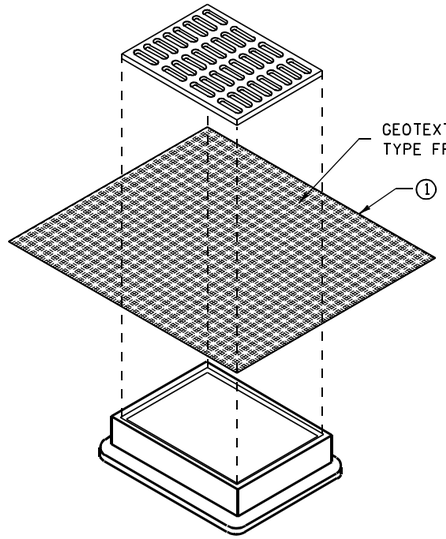


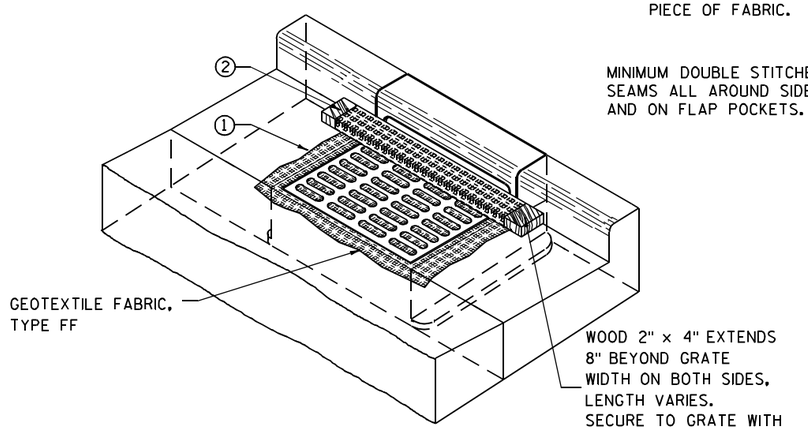


INLET PROTECTION, TYPE A

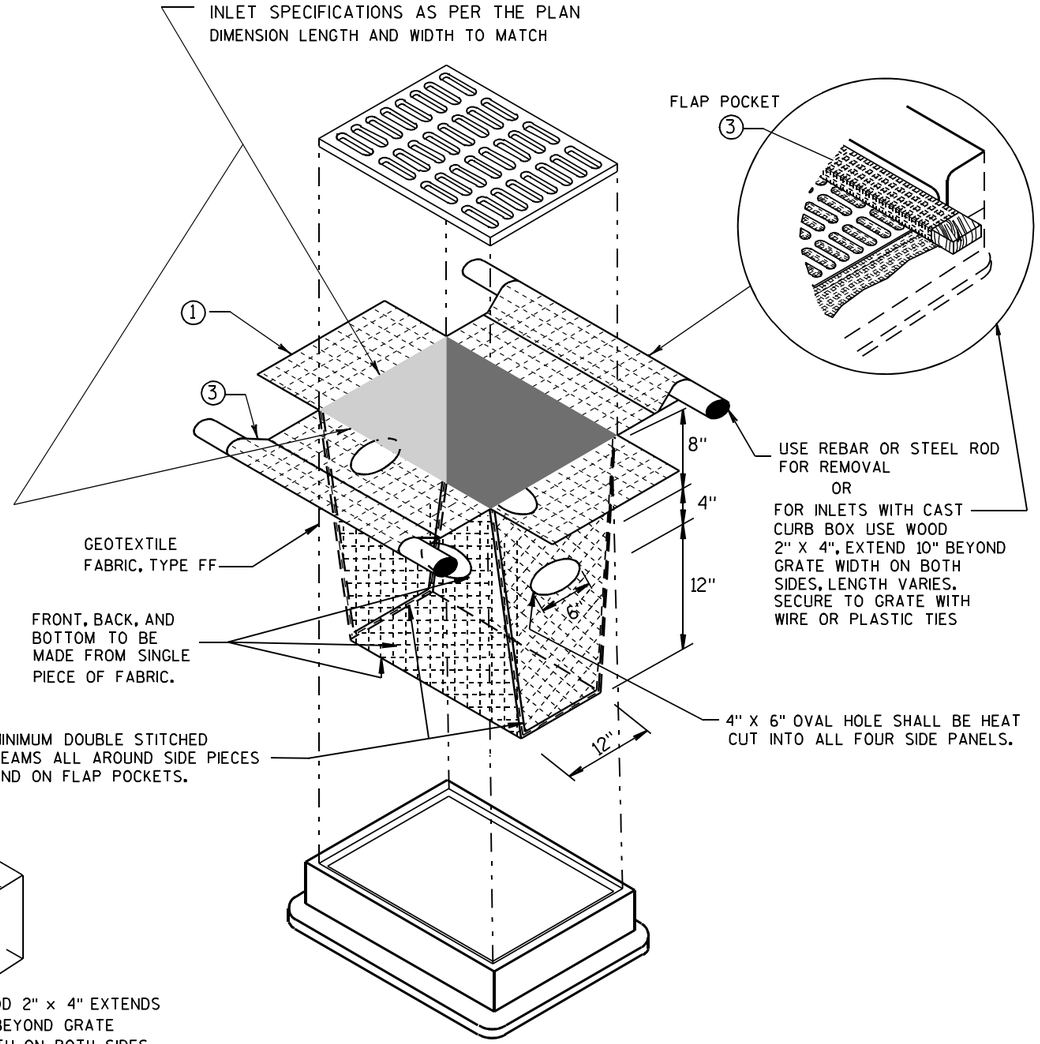


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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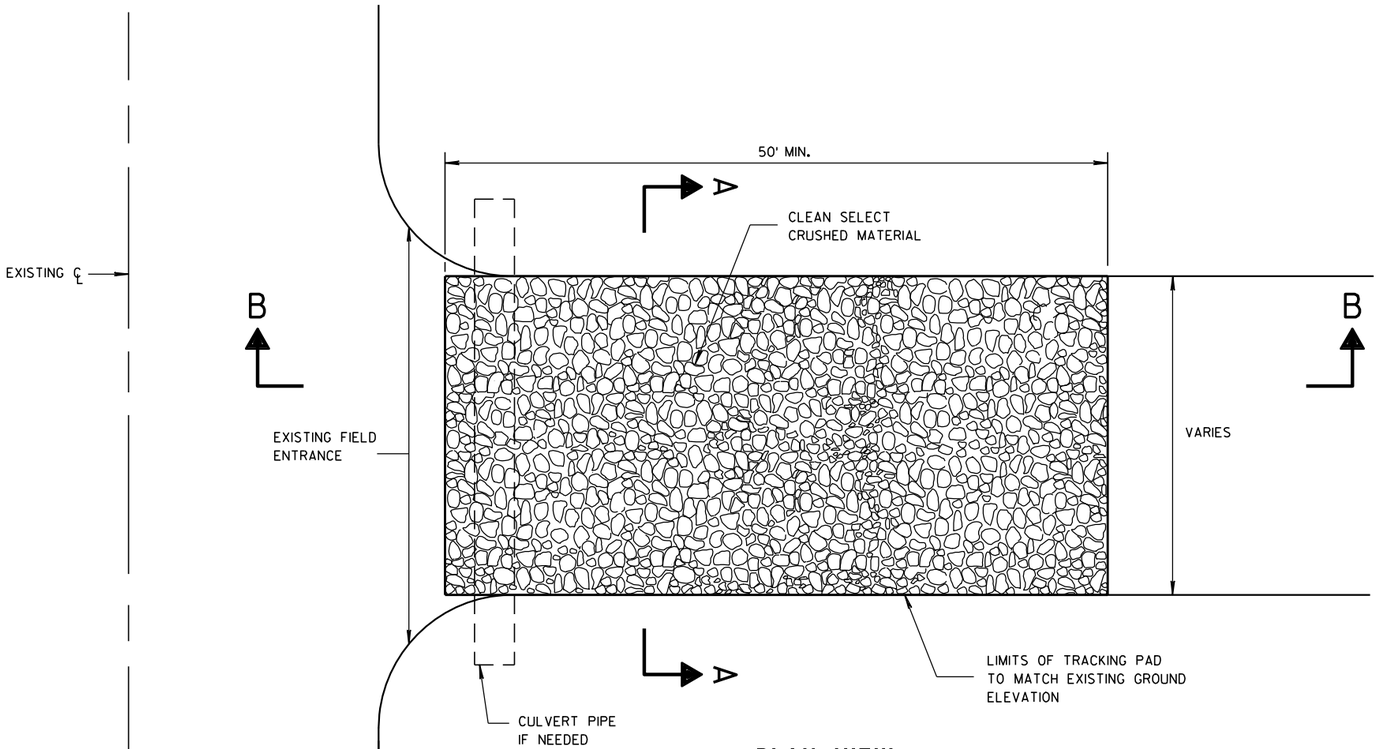
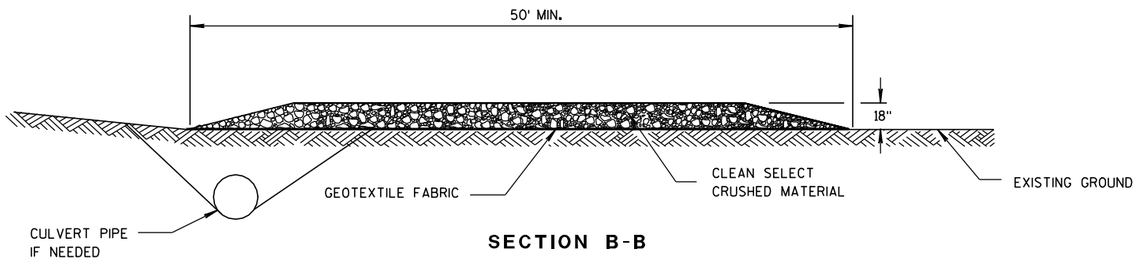
S.D.D. 8 E 10-2



PLAN VIEW



SECTION B-B

GENERAL NOTES

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

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

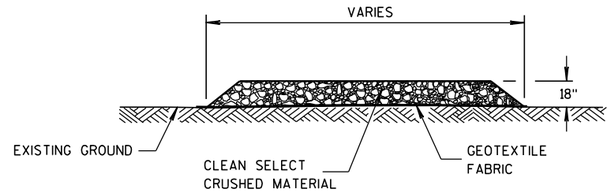
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER
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S.D.D. 8 E 14-1
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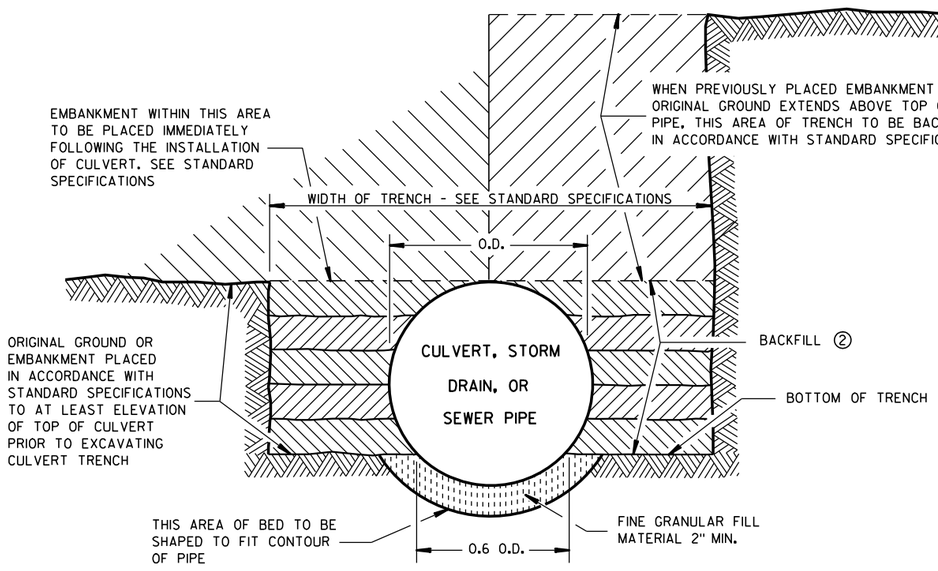
GENERAL NOTES

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

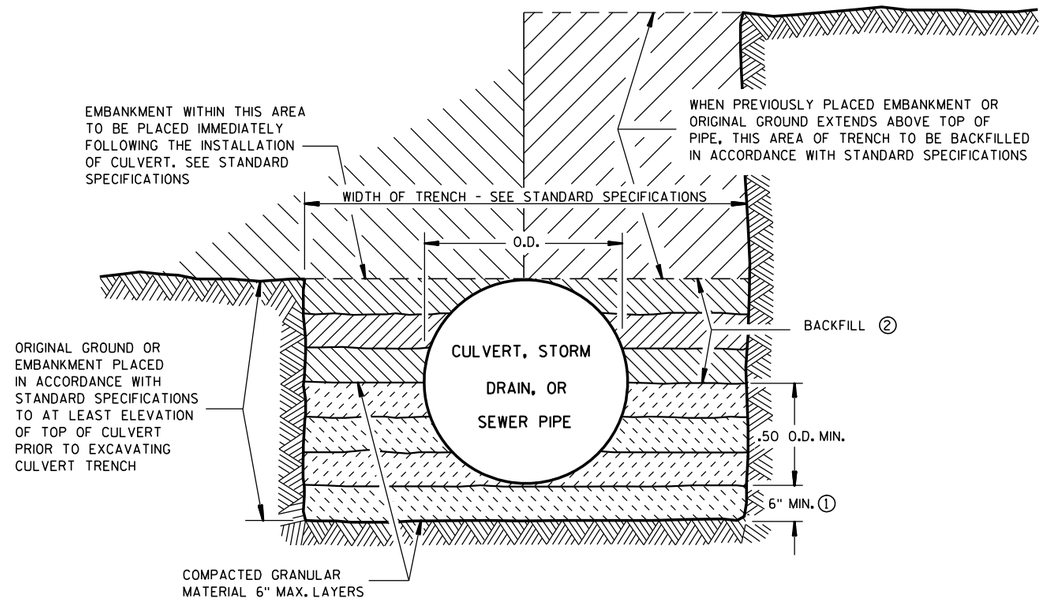
THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO ½ INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.

② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.



SHAPED SUBGRADE WITH GRANULAR FOUNDATION



GRANULAR FOUNDATION

CLASS "B" BEDDING

CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4/7/83 DATE	/S/ D. L. Strand STATE DESIGN ENGINEER
FHWA	HWYS

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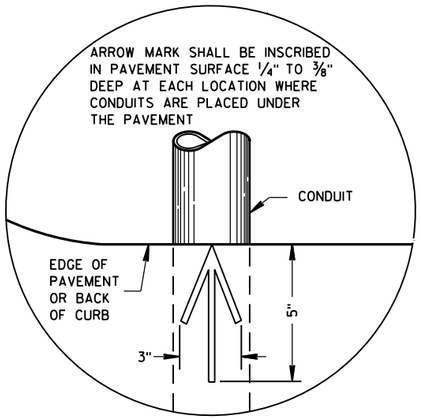
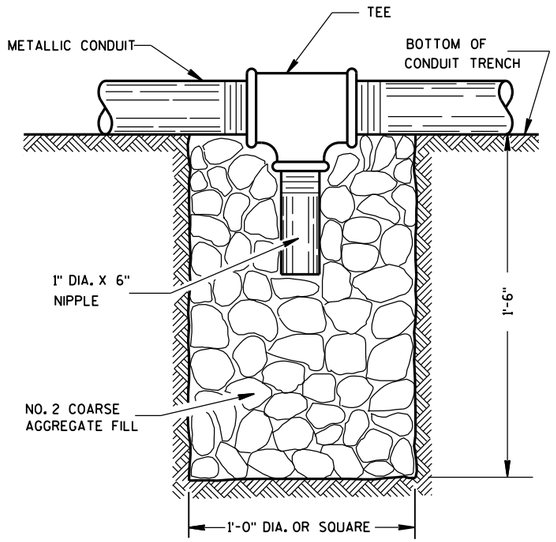


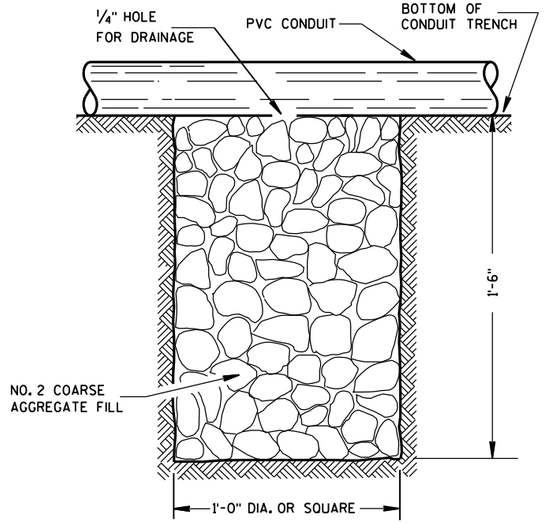
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

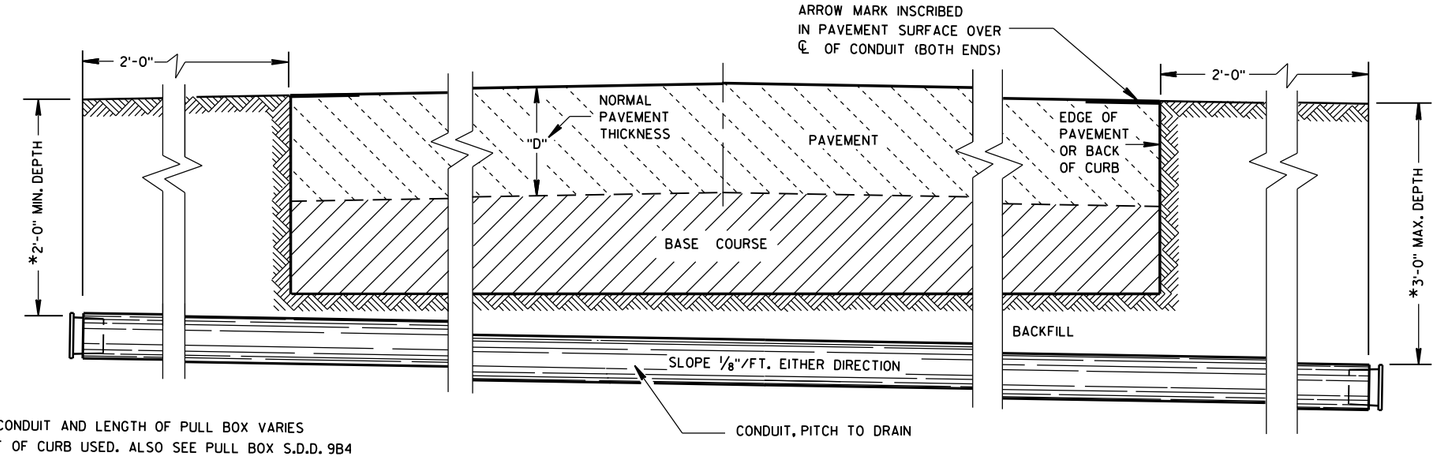
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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

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



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014 — DATE

/S/ Ahmet Demirbilek — STATE ELECTRICAL

FHWA

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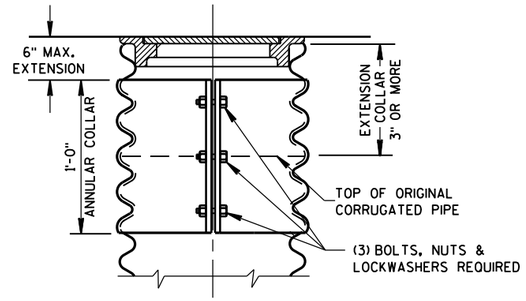
S.D.D. 9 B 2-8

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

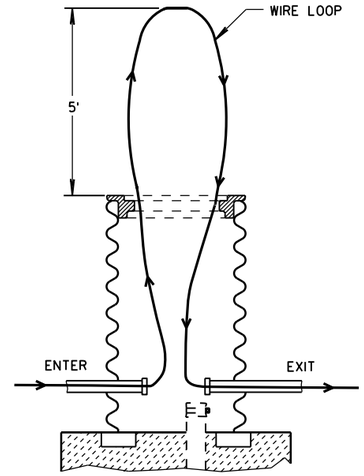
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

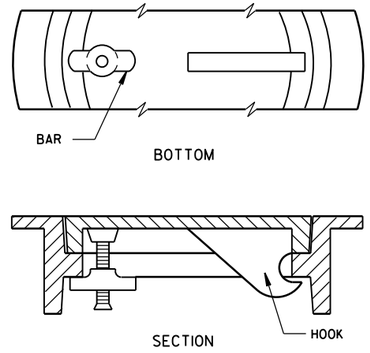
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

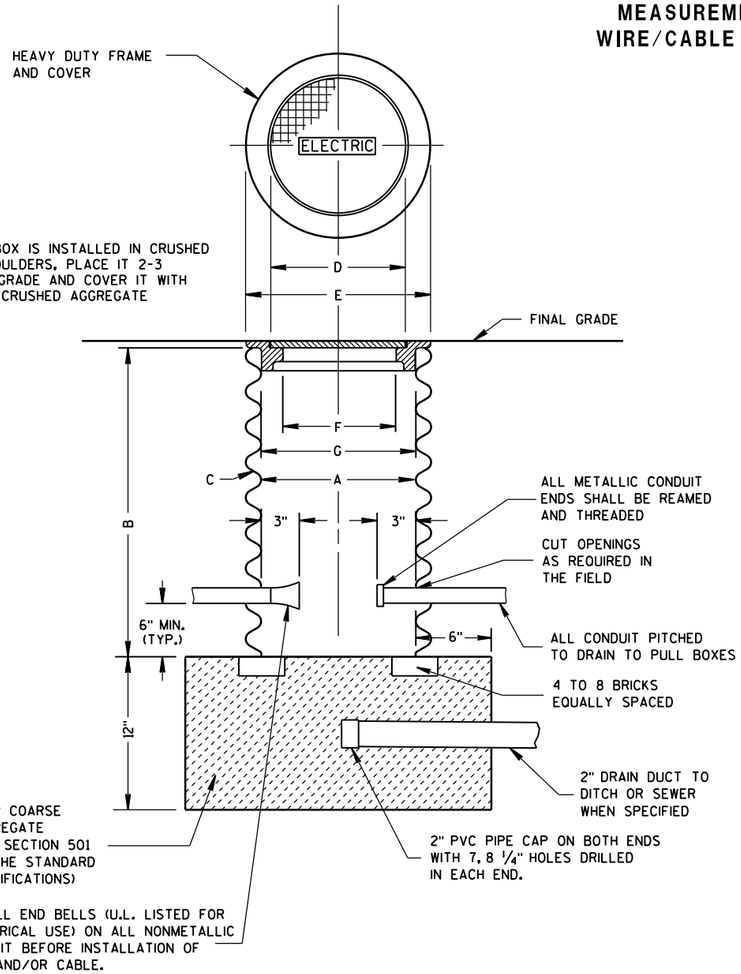


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



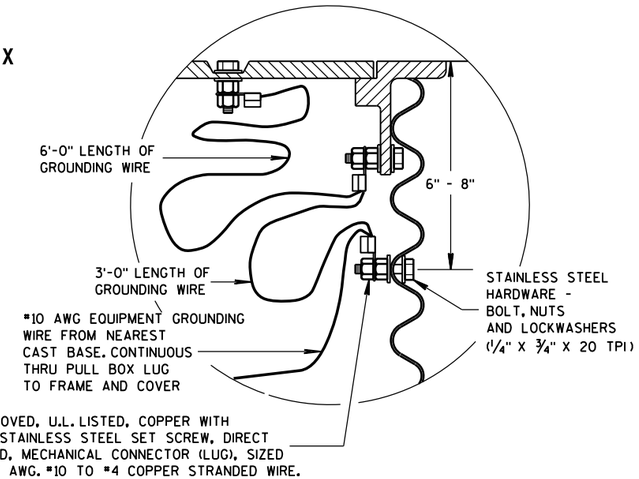
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

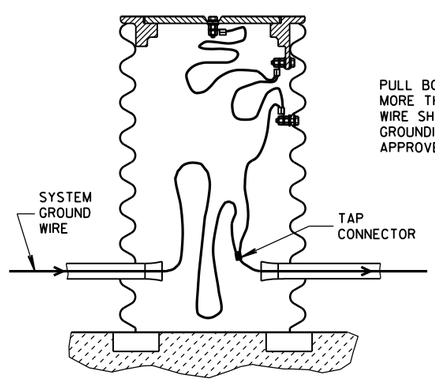


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

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

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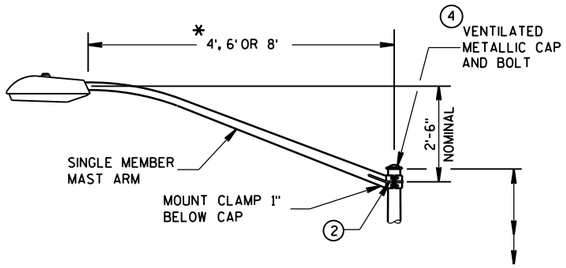
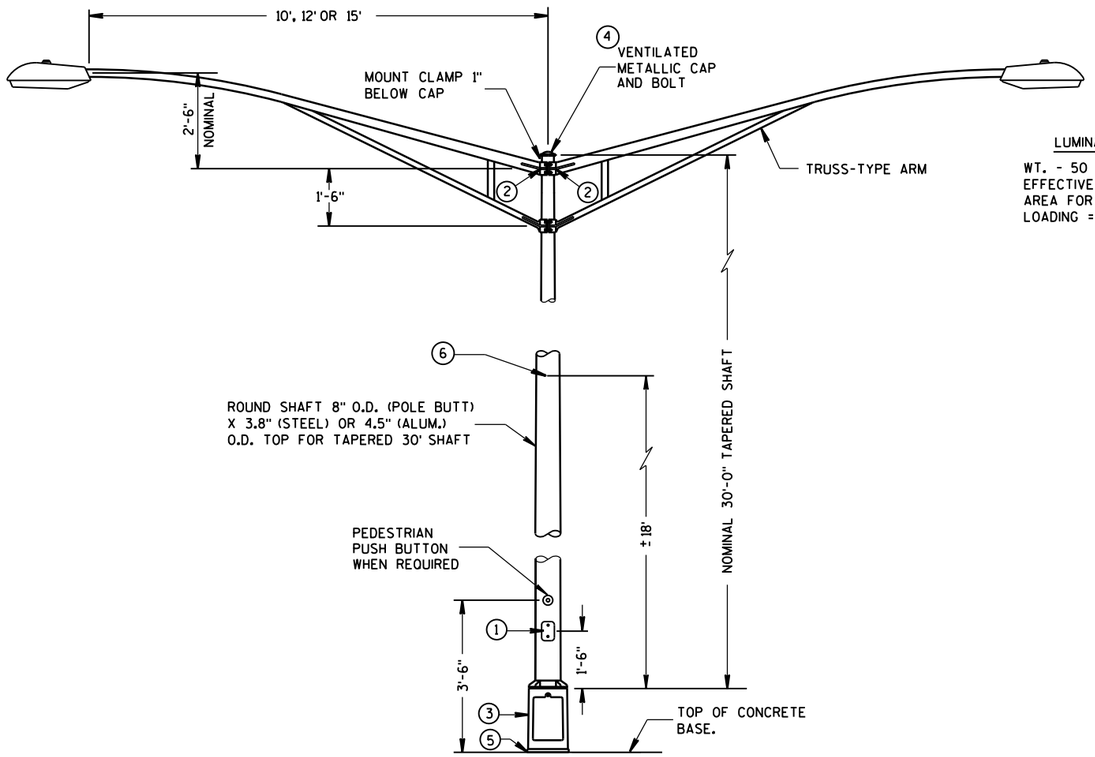
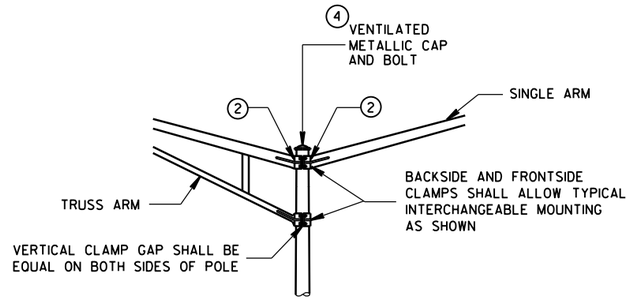
S.D.D. 9 B 4-11

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





TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY



INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

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

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

(6) INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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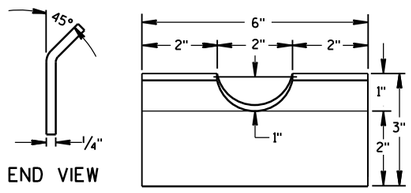
S.D.D. 9 E 1-13d

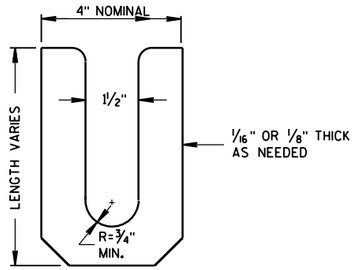


END VIEW

FRONT VIEW

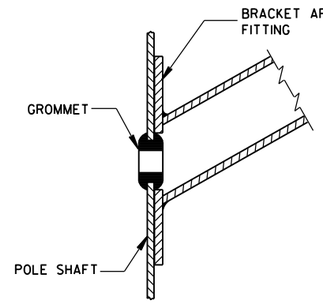
RECTANGULAR CLAMP SHIM

(4 TO A SET)

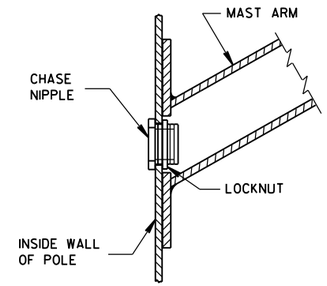


LEVELING SHIM (15)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

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

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

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

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

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

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

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

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

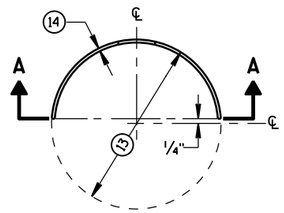
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

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

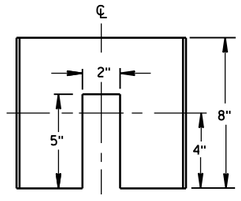
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

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

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



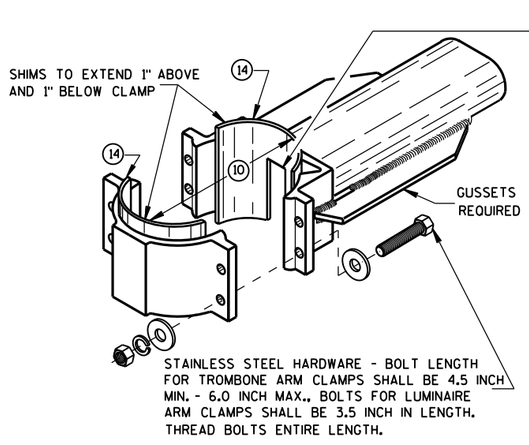
PLAN VIEW



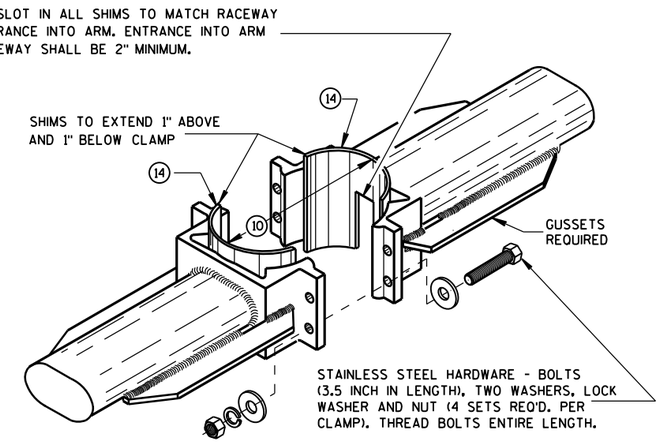
SECTION A-A

CIRCULAR CLAMP SHIM

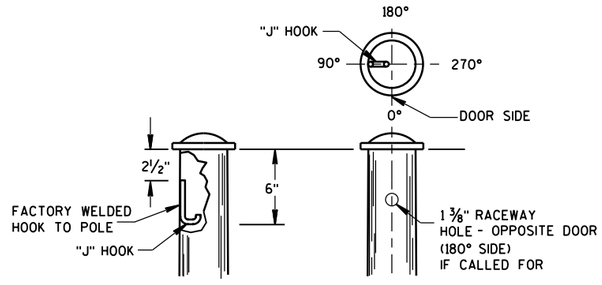
(2 TO A SET)



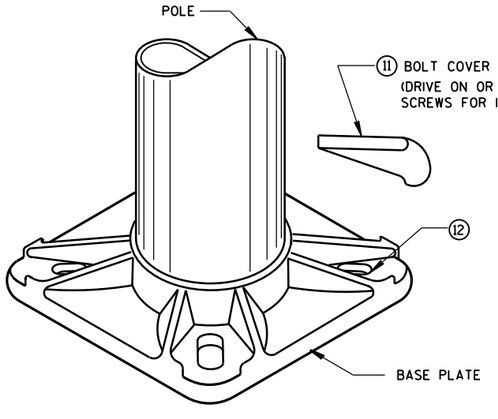
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



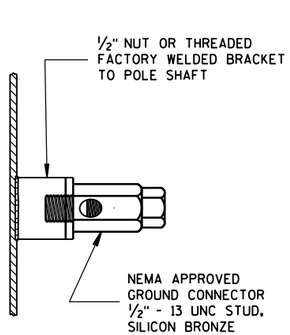
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

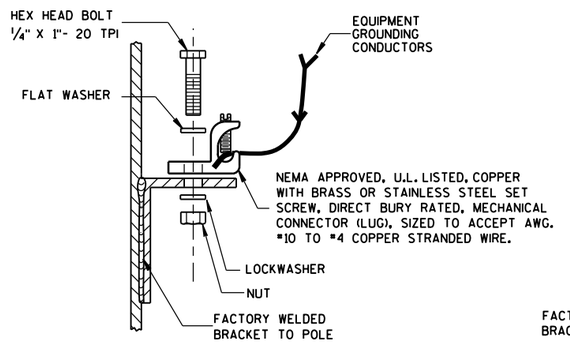


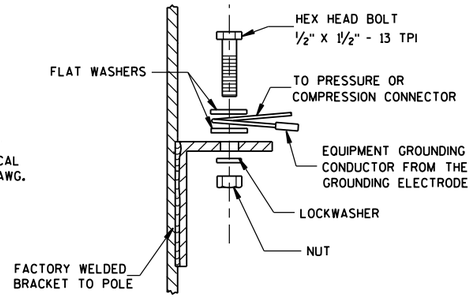
TYPICAL "J" HOOK LOCATION



BASE PLATE







TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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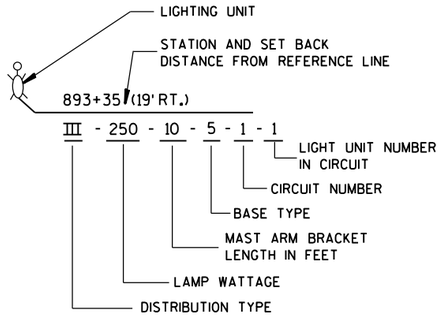
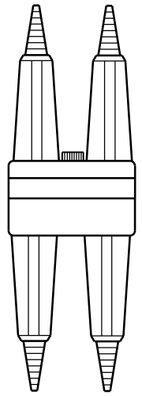
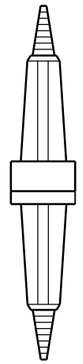
S.D.D. 9 E 1-13g



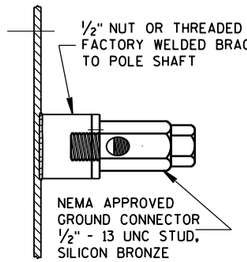
LIGHTING UNIT CODE
(TYPICAL)

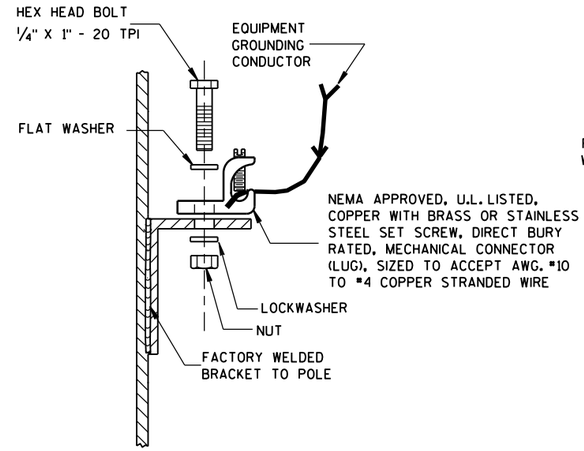


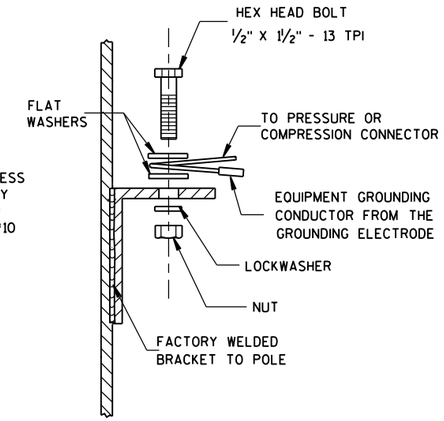
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



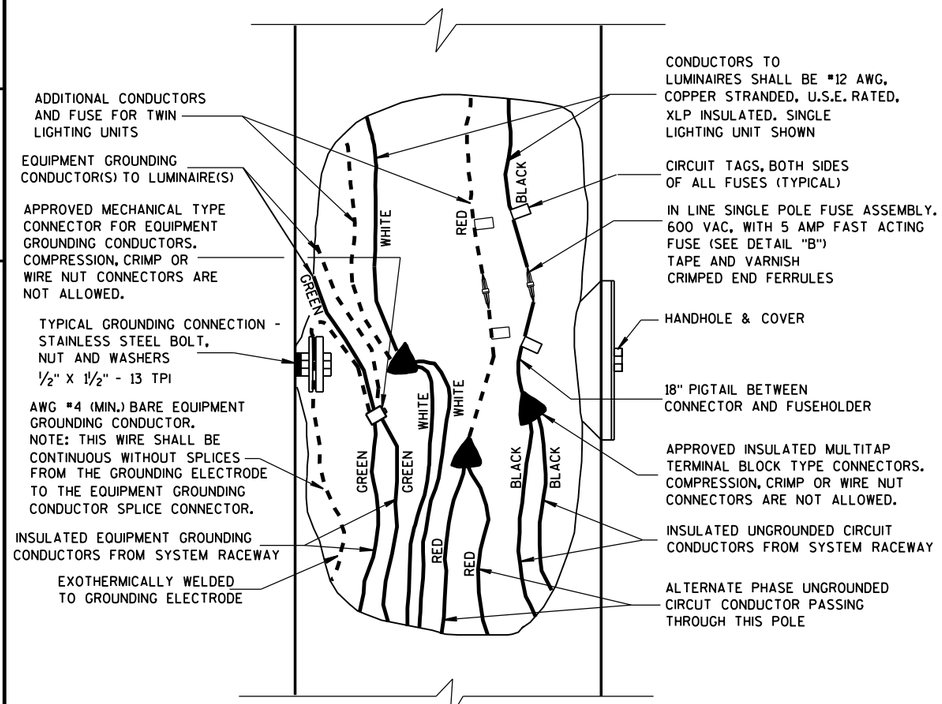
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



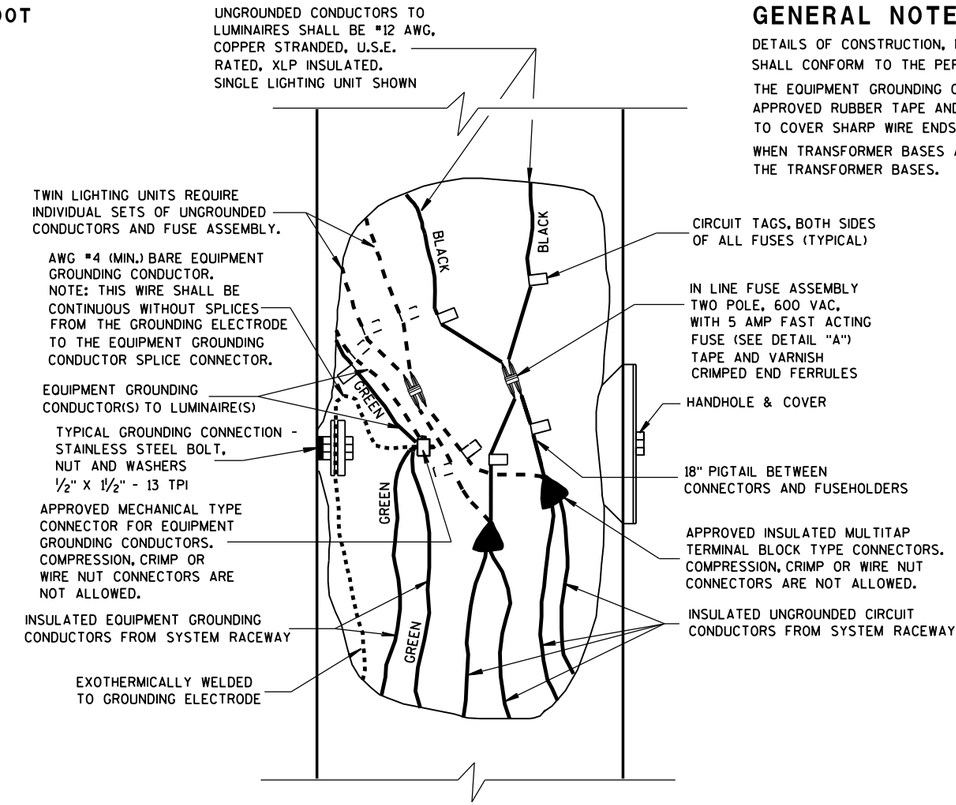




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



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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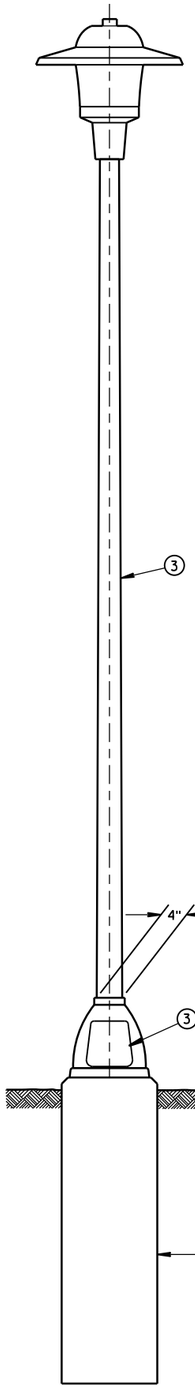


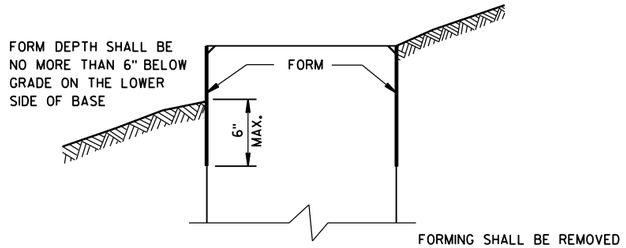
LUMINAIRE

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

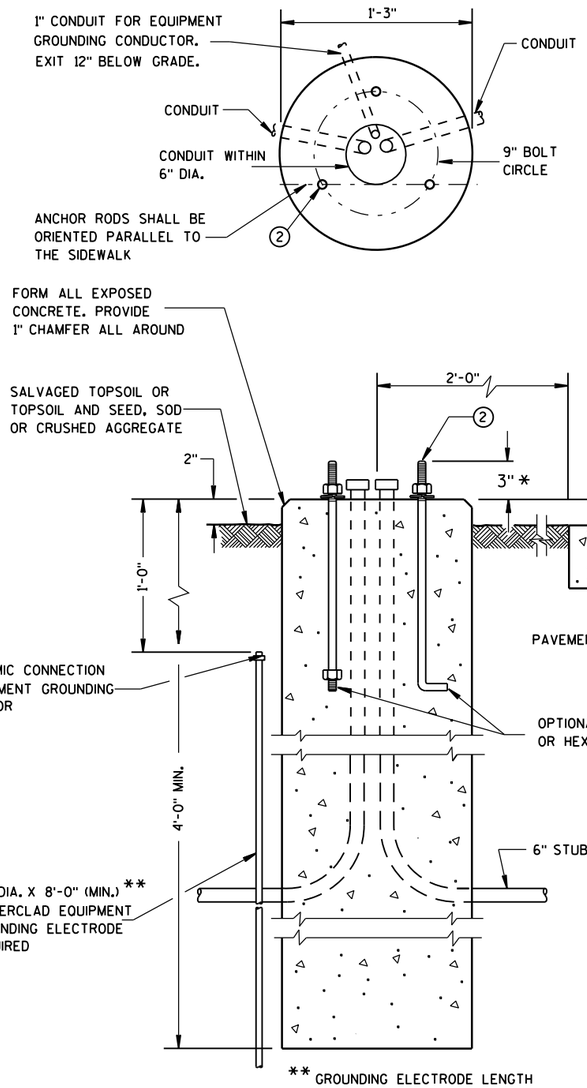
USE LUMINAIRE FROM DEPARTMENT APPROVED PRODUCTS LIST OR ENGINEER APPROVED EQUAL.

CONCRETE BASE TYPE 11

WALKWAY LIGHTING UNIT DETAIL



FORMING DETAIL



** GROUNDING ELECTRODE LENGTH MAY VARY, SEE SPECIAL PROVISIONS.

CONCRETE BASE, TYPE 11

GENERAL NOTES

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

CONCRETE BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT RUNS, NUMBER OF CONDUITS IN EACH CONCRETE BASE AND CONDUIT SIZE IS AS SHOWN ON THE PLANS. THE 1-INCH CONDUIT IS USED IN ALL BASES.

MINIMUM BENDING RADIUS OF CONDUIT SHALL BE SIX TIMES THE DIAMETER OF THE CONDUIT.

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

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.

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

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.

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

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NO. 4 AWG, BARE, STRANDED COPPER. IT SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED LEAVING A 2-FOOT LENGTH OF WIRE ABOVE THE CONCRETE BASE. THE 2-FOOT LENGTH OF EQUIPMENT GROUNDING CONDUCTOR ABOVE THE BASE SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL PER SECTION 5.17.6.3, AASHTO 2001 4TH EDITION STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS.

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

GENERAL NOTES (CONTINUED)

(1) DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24-INCHES MIN. DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES MIN. DEPTH OF ALL CONDUITS SHALL NOT EXCEED 36-INCHES.

(2) THREE - ¾-INCH DIA. X 15-INCH ANCHOR RODS OR ¾-INCH DIA. X 19-INCH ANCHOR RODS INCLUDING THE 4-INCH "L" BEND. THE "L" BEND SHALL NOT BE THREADED. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

(3) PEDESTAL BASE-STANDARD:

THE PEDESTAL BASE-STANDARD SHALL BE A ONE PIECE WELDED UNIT, WITH AN OVERALL HEIGHT OF TEN FEET.

THE POLE SHALL BE ROUND, TAPERED, ALUMINUM WITH A 3-INCH OUTSIDE DIAMETER TOP AND 0.125 INCH WALL THICKNESS.

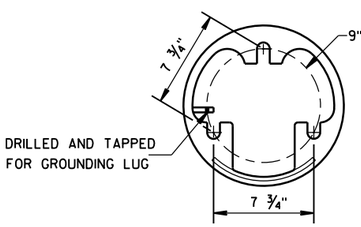
THE BELL SHAPED BASE SHALL BE 12 ½ INCHES IN DIAMETER AND HAVE A 9-INCH BOLT CIRCLE. ANCHOR RODS SHALL BE INCLUDED WITH THE BASE.

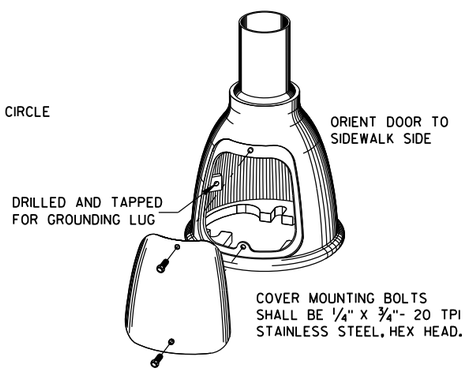
THE ACCESS DOOR OPENING SHALL BE APPROXIMATELY 7½ X 5¼ X 7½-INCHES.

THE FIXTURE AND PEDESTAL BASE-STANDARD SHALL BE PAINTED WITH AN EARTH COLORED THERMOSET POWDER COAT, ACRYLIC ENAMEL. THE ENAMEL SHALL BE FORMULATED TO SHOW NO APPRECIABLE FADING WITHIN FIVE YEARS.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED BRASS OR COPPER TYPE. CONNECTION HARDWARE SHALL BE STAINLESS STEEL (BOLT, NUT, LOCKWASHER - ¼" X ¾" - 20 TPI).

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





WALKWAY PEDESTAL BASE STANDARD DETAIL

WALKWAY LIGHTING UNIT AND CONCRETE BASE, TYPE 11

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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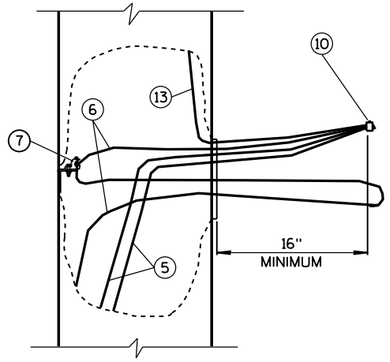
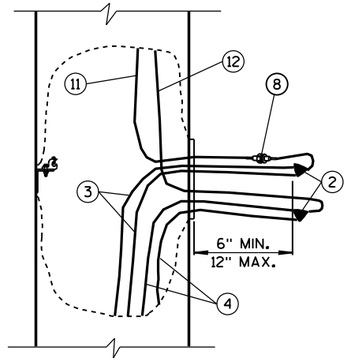
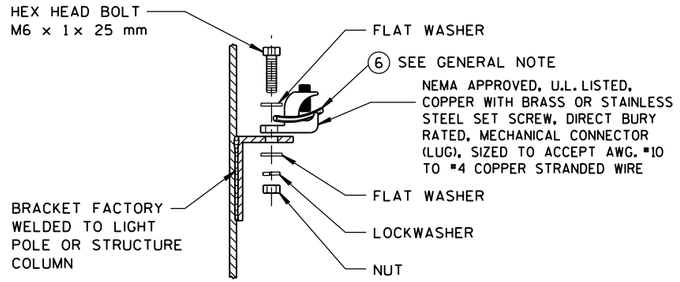


EQUIPMENT GROUNDING CONDUCTOR SLACK



UNGROUNDED CONDUCTOR SLACK (AND GROUNDED NEUTRAL SLACK IN GROUNDED NEUTRAL SYSTEM)

TYPICAL CONDUCTOR SLACK AT HANDHOLES



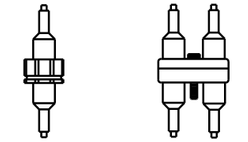
HANDHOLE GROUNDING LUG

(NUT, BOLT, WASHERS, AND LOCK WASHERS SHALL BE STAINLESS STEEL)

CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUNDED LINE WIRE	*
4	GROUNDED LINE WIRE	WHITE
5	SYSTEM GROUNDING LINE WIRE	GREEN
6	GROUNDING ELECTRODE CONDUCTOR	BARE
11	UNGROUNDED POLE WIRE	*
12	GROUNDED POLE WIRE	WHITE
13	EQUIPMENT GROUNDING POLE WIRE	GREEN

* FOLLOW COLOR CODING SHOWN IN THE PLANS. WHERE THE PLANS DO NOT SHOW COLOR CODING, USE BLACK FOR SINGLE LUMINAIRE POLES; BLACK AND RED FOR TWIN LUMINAIRE POLES.



1 POLE (1P) 2 POLE (2P)

FUSE ASSEMBLIES

GENERAL NOTES

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

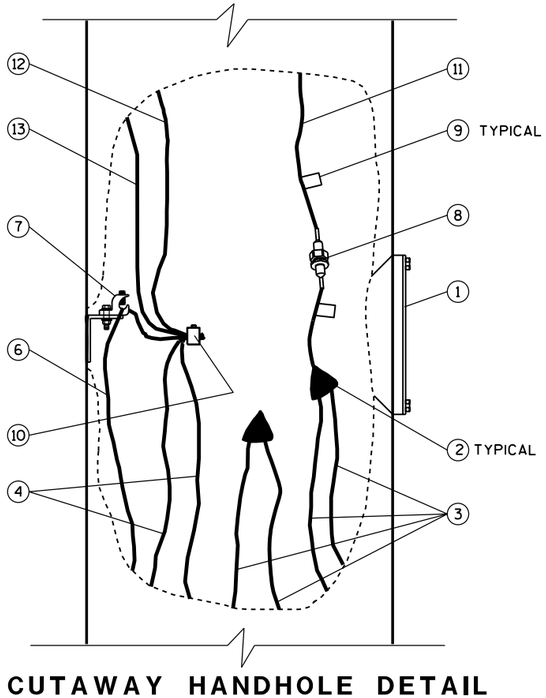
USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

THREE POLE WIRES ARE SHOWN FOR A SINGLE LUMINAIRE LIGHT POLE. THREE ADDITIONAL POLE WIRES REQUIRED FOR TWIN LUMINAIRE LIGHT POLES ARE OMITTED FROM THE DRAWING FOR CLARITY. IN THE TWIN POLE CASE, BUNDLE EACH SET OF THREE WIRES WITH A NYLON CABLE TIE.

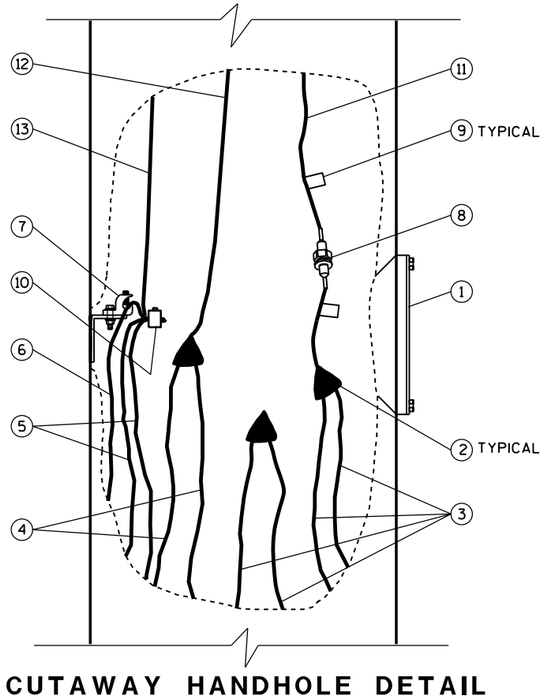
IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE, WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

CIRCUIT TAGS SHALL BE INSTALLED ONLY WHERE REQUIRED IN THE SPECIAL PROVISIONS.



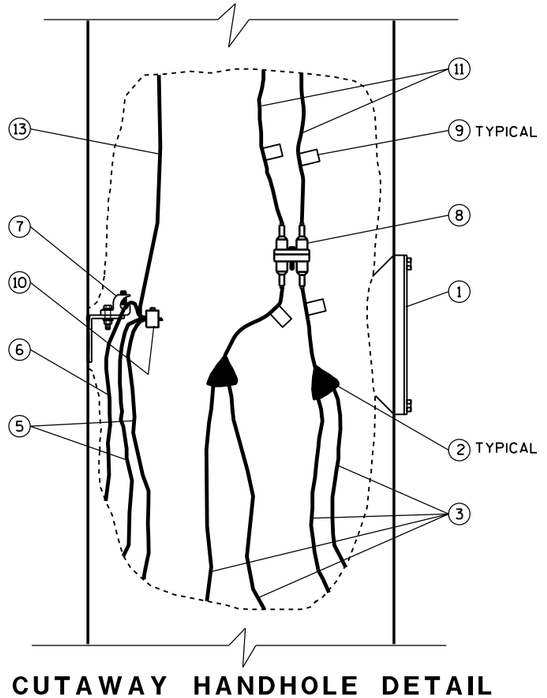
CUTAWAY HANDHOLE DETAIL

GROUNDED NEUTRAL SYSTEMS
1-Φ



CUTAWAY HANDHOLE DETAIL

ISOLATED NEUTRAL SYSTEMS
1-Φ SHOWN; 3-Φ WYE SIMILAR
(SEE GENERAL NOTE)



CUTAWAY HANDHOLE DETAIL

PHASE-TO-PHASE SYSTEMS
1-Φ SHOWN; 3-Φ DELTA SIMILAR
(SEE GENERAL NOTE)

NOTE: REQUIRED CONDUCTOR SLACK NOT SHOWN ON "CUTAWAY HAND HOLE" DETAILS FOR DRAWING CLARITY, SEE "TYPICAL CONDUCTOR SLACK AT HANDHOLES" ON THIS SHEET.

1. HANDHOLE AND COVER
2. INSULATED SPLICE
3. UNGROUNDED LINE WIRE
4. GROUNDED LINE WIRE
5. SYSTEM GROUNDING LINE WIRE
6. GROUNDING ELECTRODE CONDUCTOR
7. HANDHOLE GROUNDING LUG
8. FUSE ASSEMBLY, 1P OR 2P AS REQUIRED
9. CIRCUIT TAG (SEE GENERAL NOTE)
10. REVERSIBLE PRESSURE OR COMPRESSION GROUNDING CONNECTOR (NOT INSULATED)
11. UNGROUNDED POLE WIRE
12. GROUNDED POLE WIRE
13. EQUIPMENT GROUNDING POLE WIRE

ELECTRICAL HANDHOLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 10 A 1-3

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

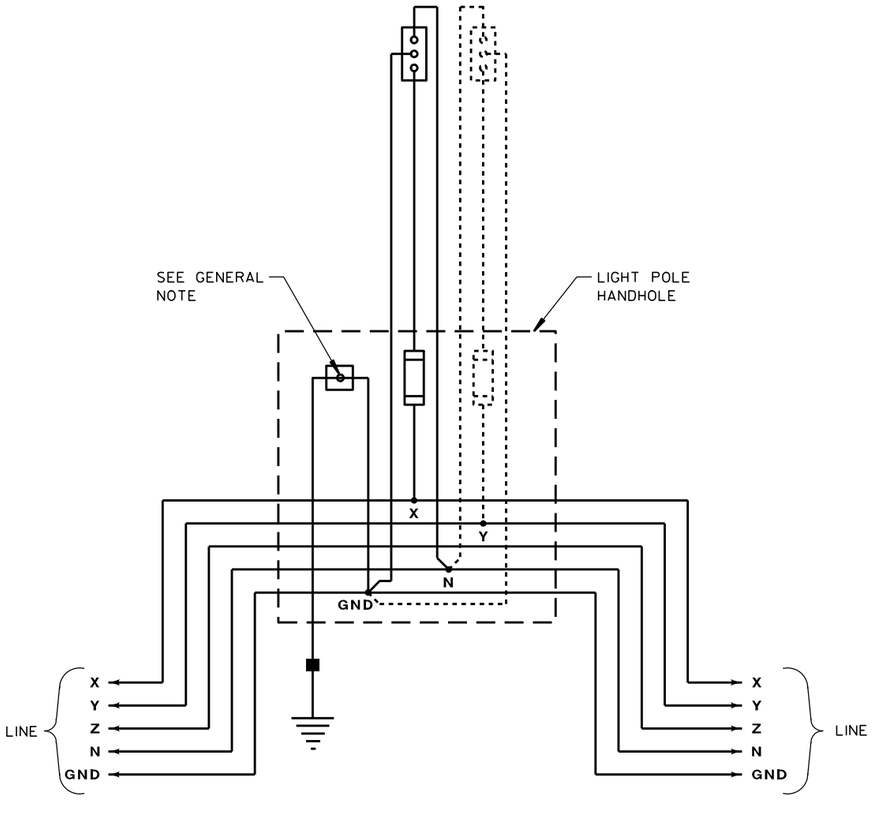
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

HANDHOLE FUSE SCHEDULES

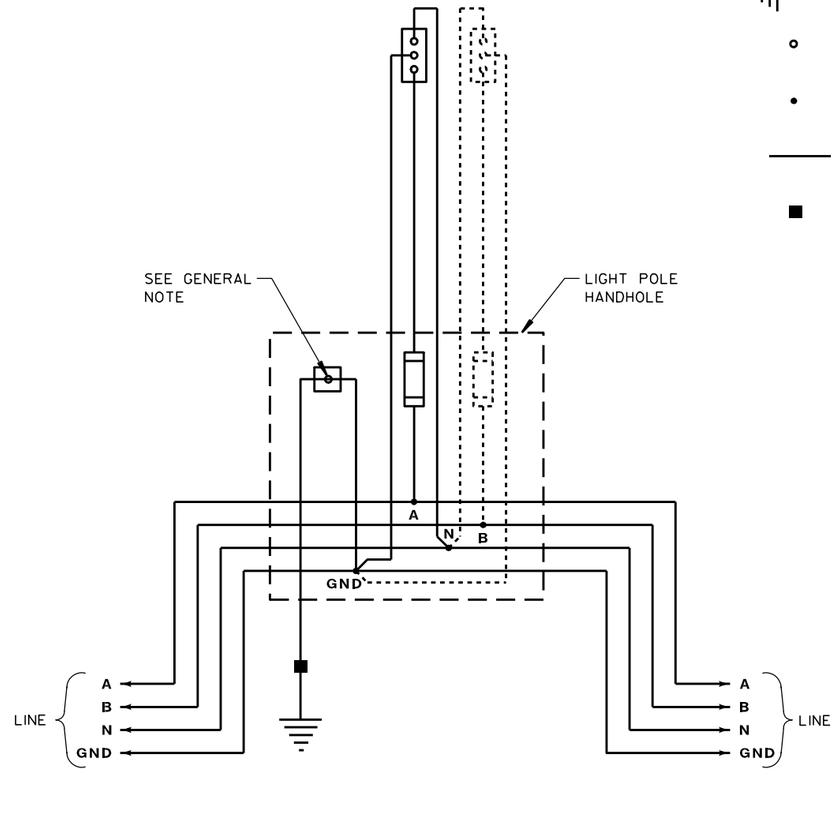
LINE VOLTAGE	BALLAST WATTAGE	
φ-GROUND	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
φ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
3-φ 208Y/120VAC OR 480Y/277VAC 4 WIRE



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
1-φ 120/240VAC OR 240/480VAC 3 WIRE

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
ISOLATED NEUTRAL SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 — DATE
/S/ John Corbin — STATE ELECTRICAL ENGI
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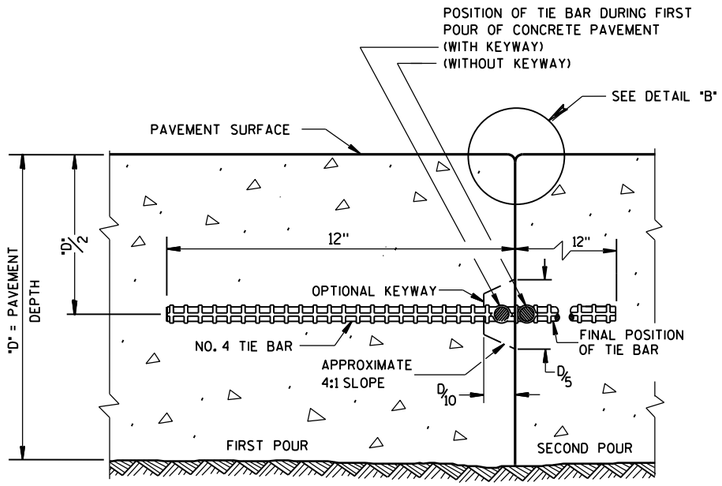
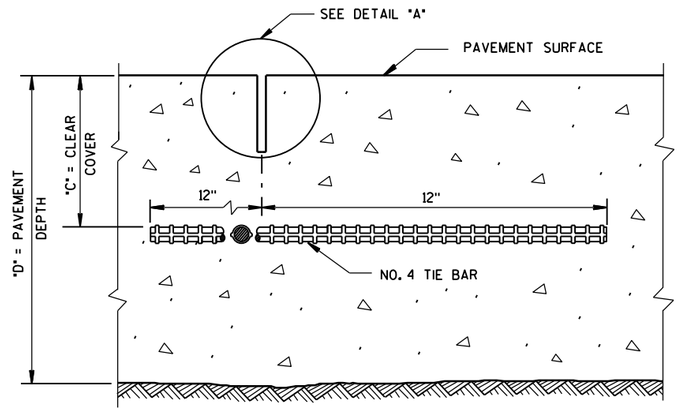
S.D.D. 10 A 5-2



CONSTRUCTION JOINT



SAWED JOINT

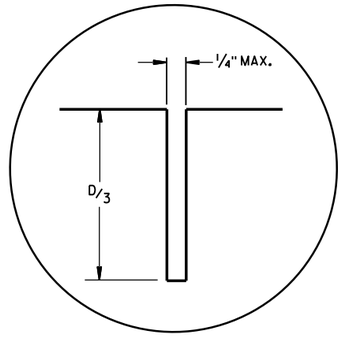
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

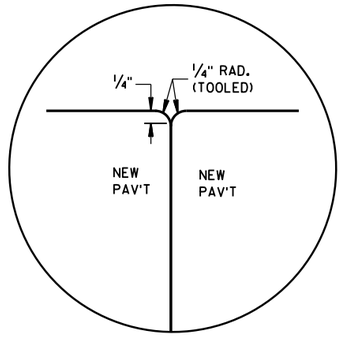
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

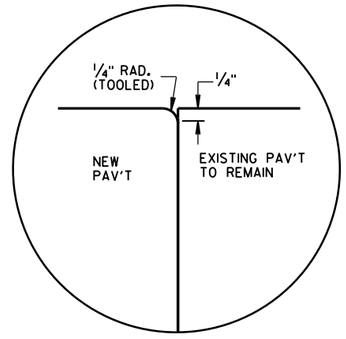
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



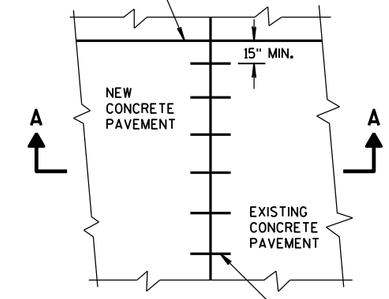
DETAIL "A"



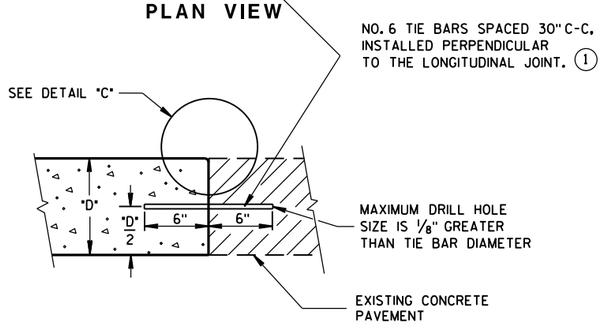
DETAIL "B"



DETAIL "C"



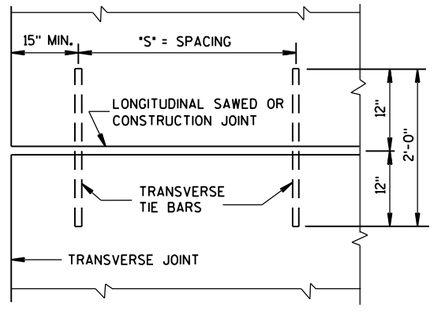
PLAN VIEW



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

TIE BAR TABLE

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/2014 — DATE

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

FHWA

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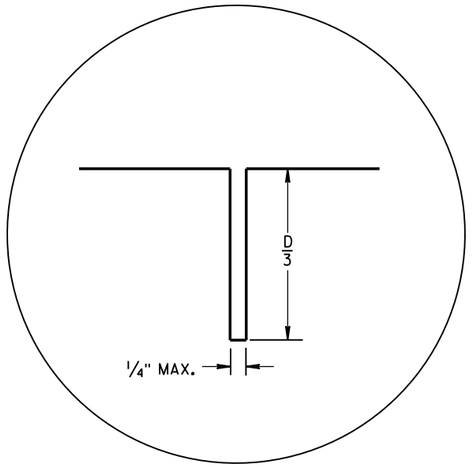
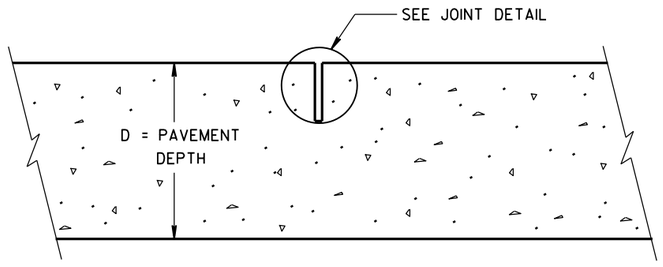
S.D.D. 13 C 1-17



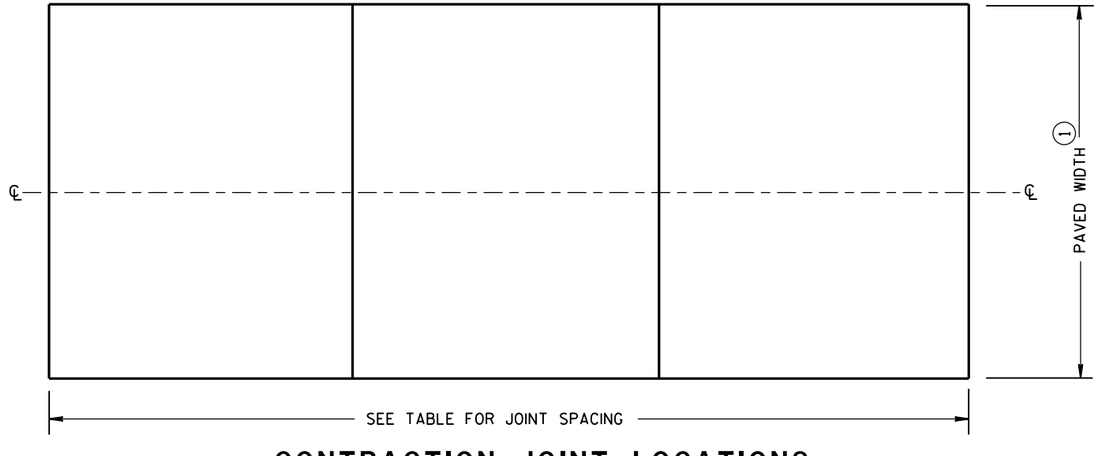
JOINT DETAIL



CONTRACTION JOINT

PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE.

LOCATE AND ORIENT CONTRACTION JOINTS THROUGH INTERSECTIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

CONSTRUCTION JOINTS

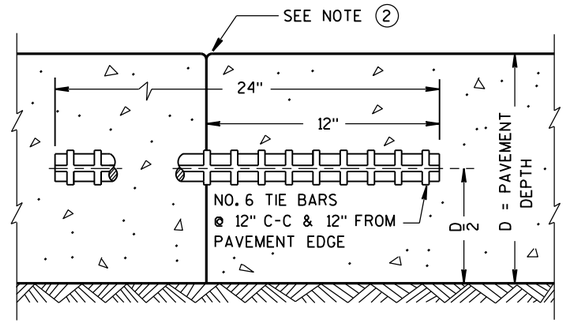
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.

FORM OR SAW CONSTRUCTION JOINTS.

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

(1) REFER TO TYPICAL CROSS SECTIONS FOR PAVED WIDTH AND LOCATION OF LONGITUDINAL JOINTS.

(2) PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.



TIED TRANSVERSE CONSTRUCTION JOINT

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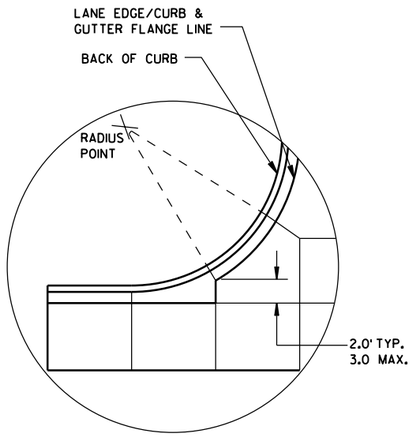
S.D.D. 13 C 4-16

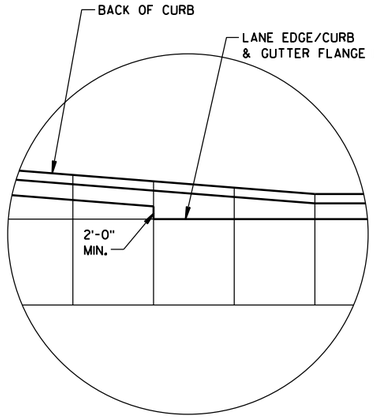
URBAN
NON-DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-3-2013 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
IEER
FHWA



DETAIL "A"



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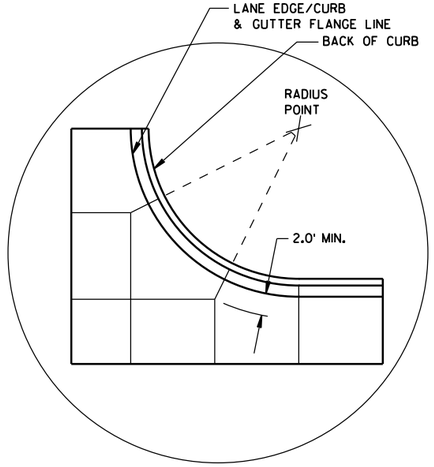

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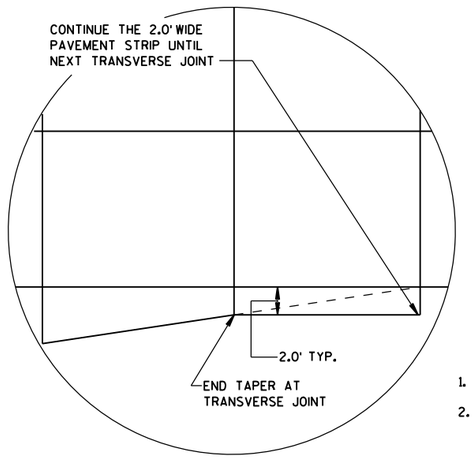


DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

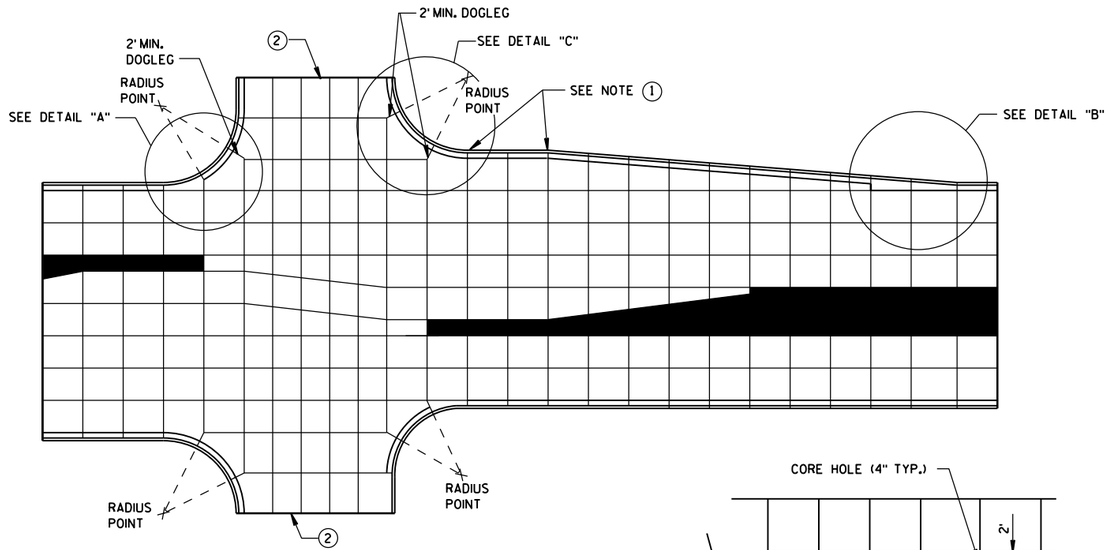
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

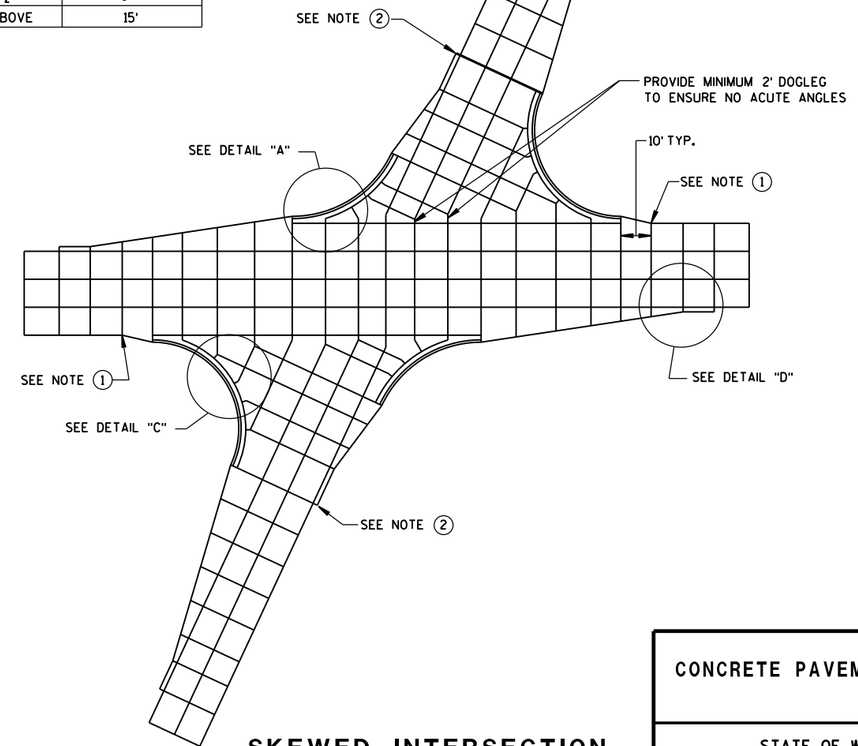
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



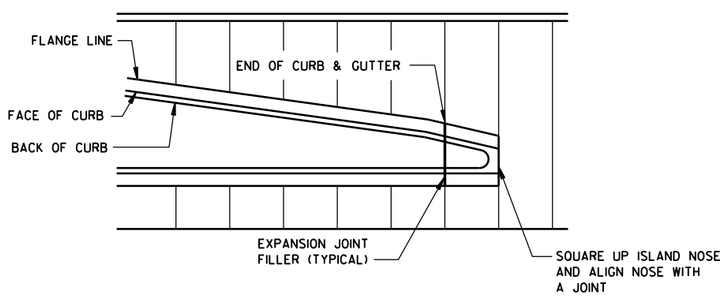
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

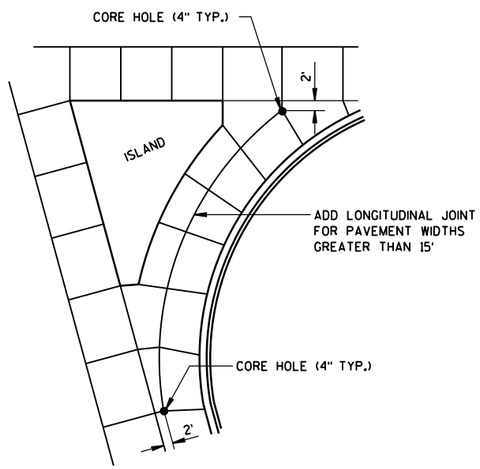
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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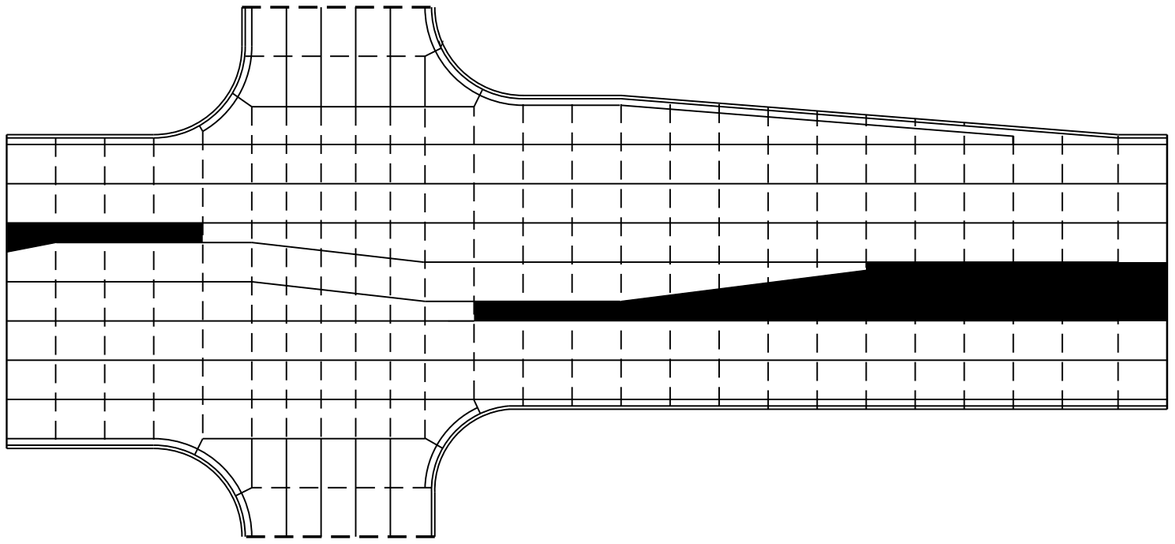
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

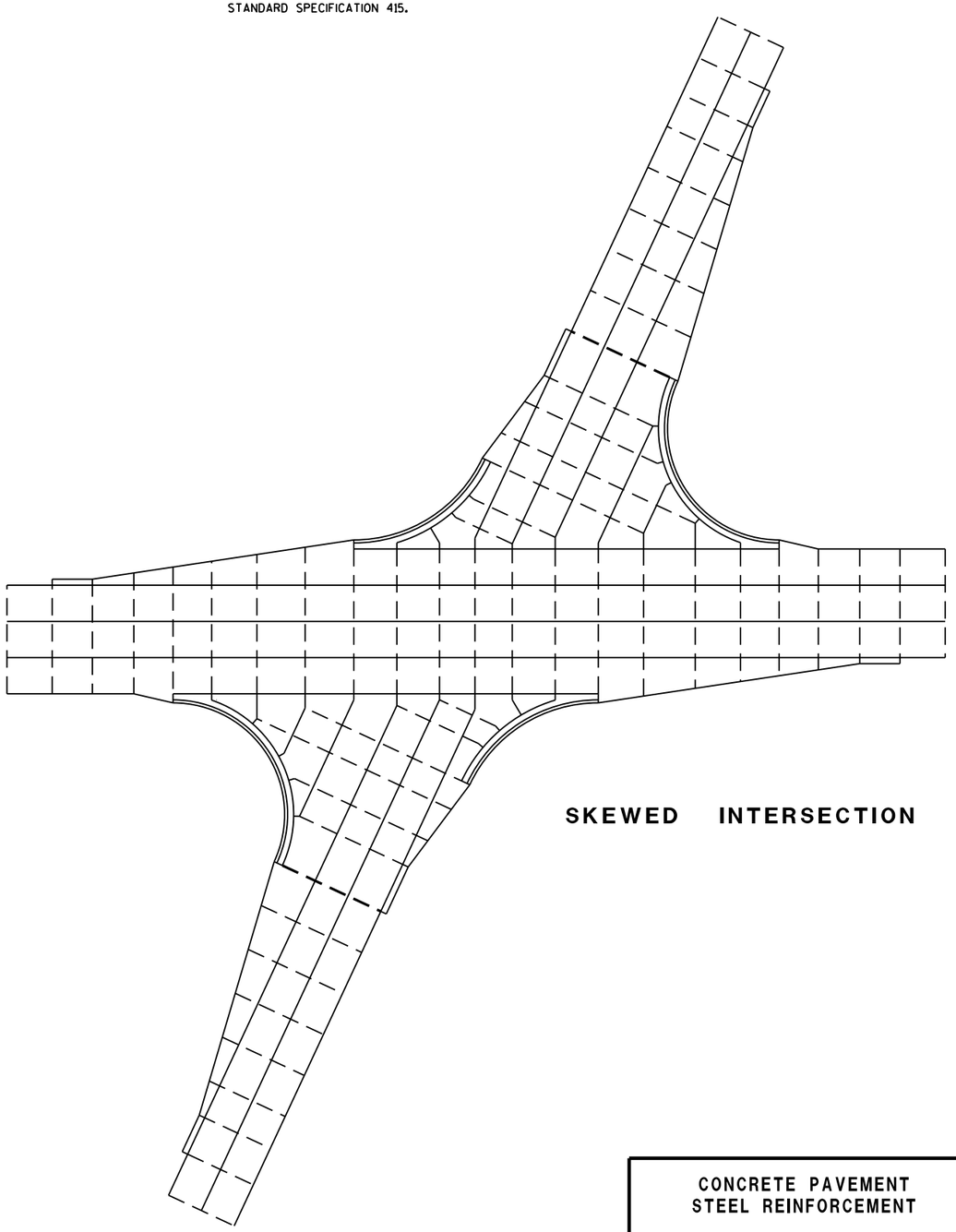
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

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



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

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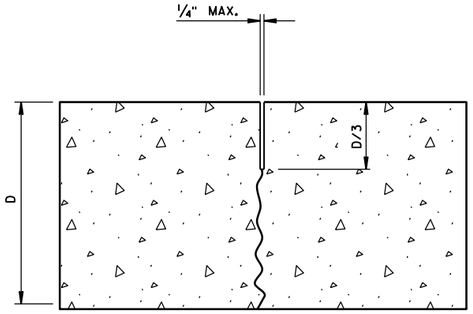
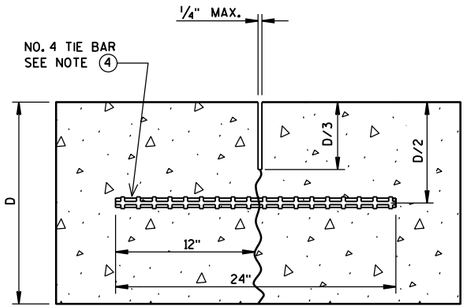
S.D.D. 13 C 18-2b



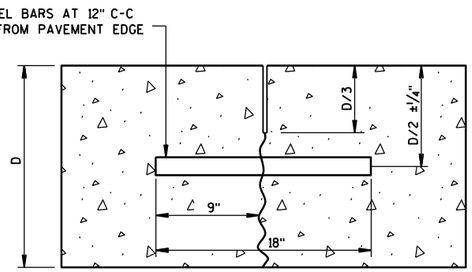
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

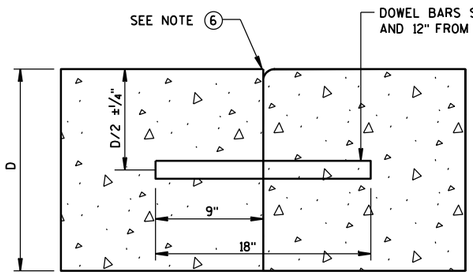
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF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



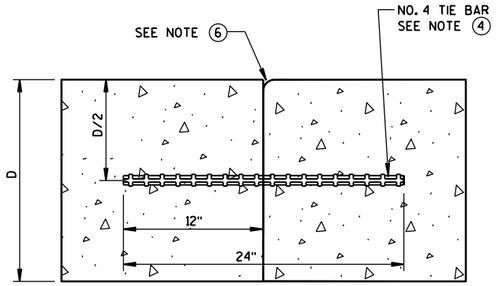
DOWELED-TRANSVERSE

CONTRACTION JOINTS

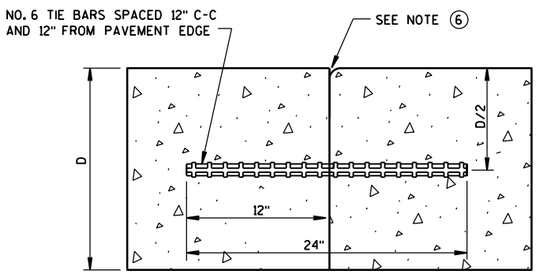
SEE NOTE (2)



DOWELED TRANSVERSE

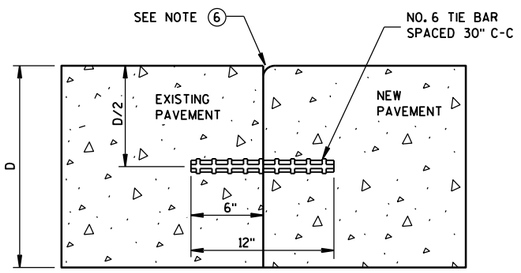


TIED LONGITUDINAL



TIED TRANSVERSE

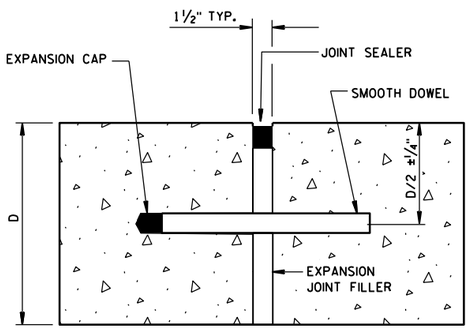
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

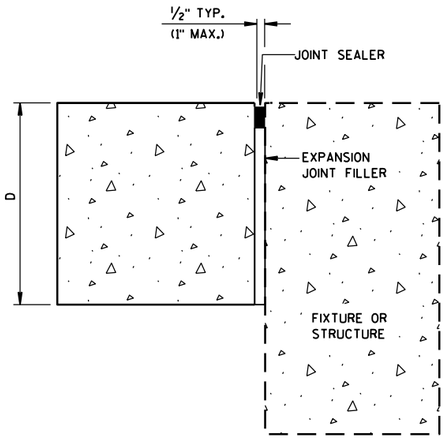
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

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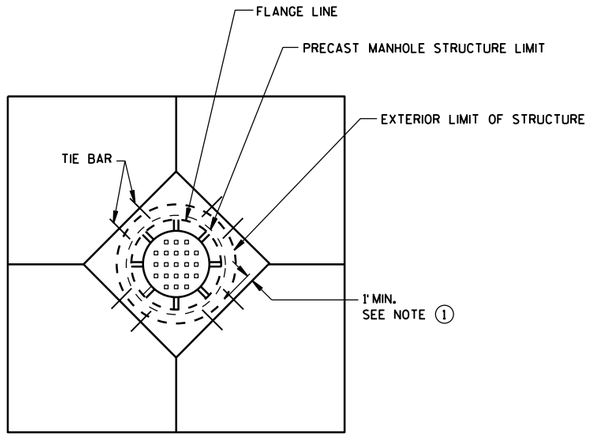
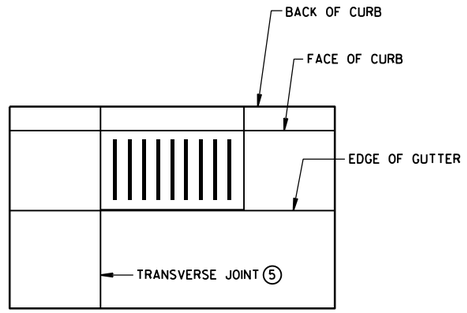
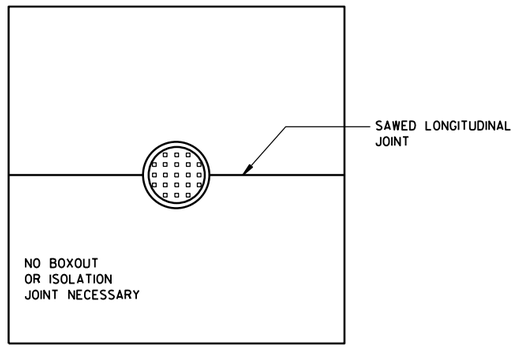
S.D.D. 13 C 18-2c



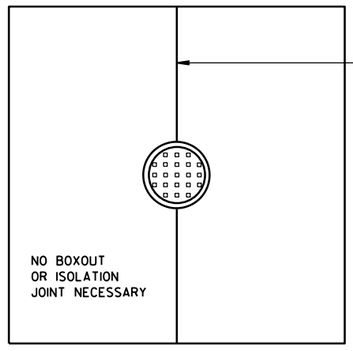
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



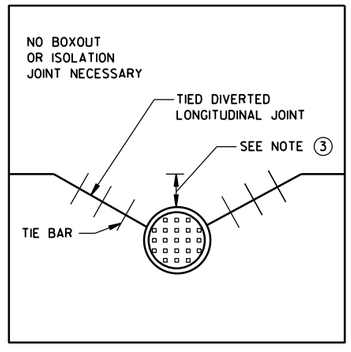
INLET WITH TRANSVERSE JOINT



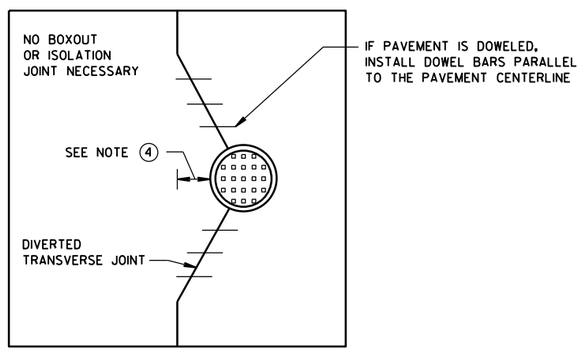
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

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

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

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

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

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

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013 DATE

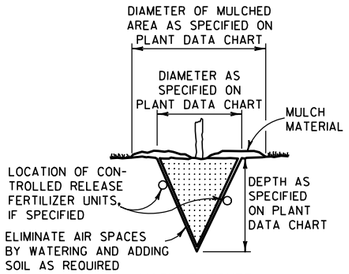
/S/ Deb Bischoff PAVEMENT POLICY & DE

NEER

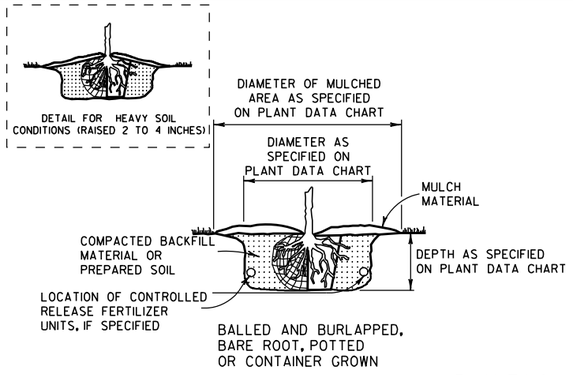
FHWA

6

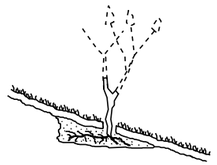
S.D.D. 13 C 18-2d



MACHINE MOVED

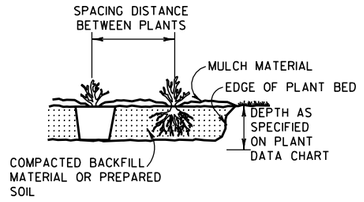


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



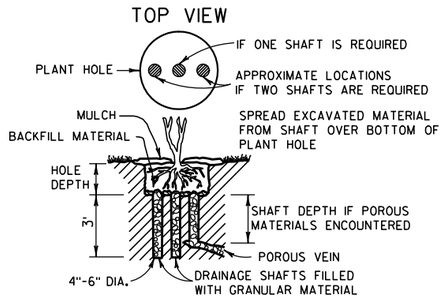
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING



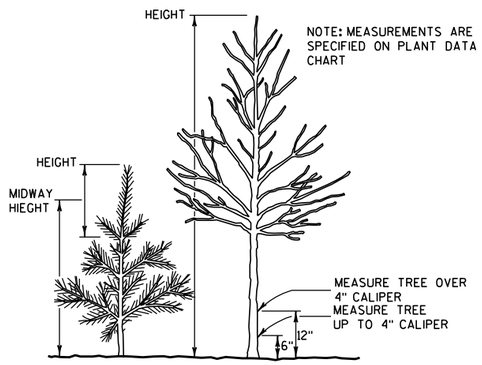
PREPARED BED (BARE ROOT AND POTTED)

PLANTING

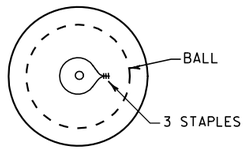


NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

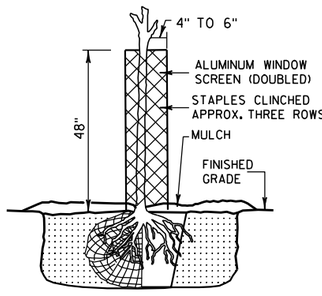
DRAINING



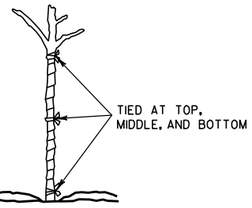
MEASURING



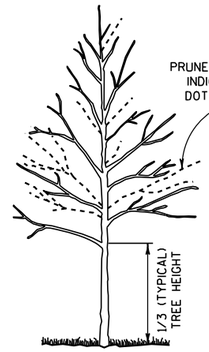
TOP VIEW



RODENT PROTECTION



WRAPPING



TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)

SINGLE STEMMED LOW DECIDUOUS TREES (CRABS AND OTHER SINGLE STEM TYPE)

MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

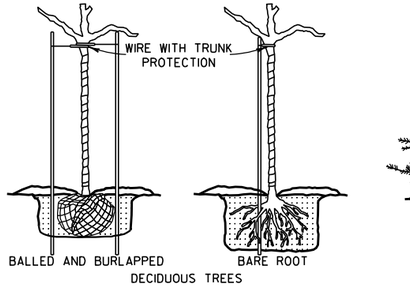
NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

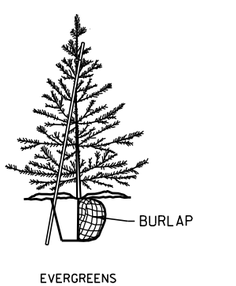
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

SUMAC

TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

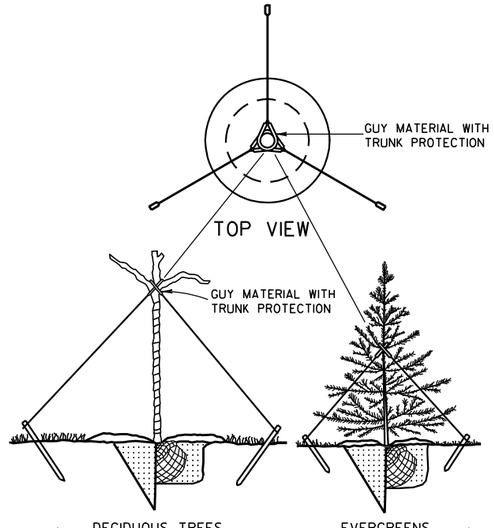
PRUNING





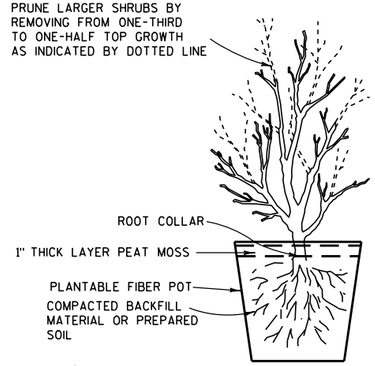
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

BRACING



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

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

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

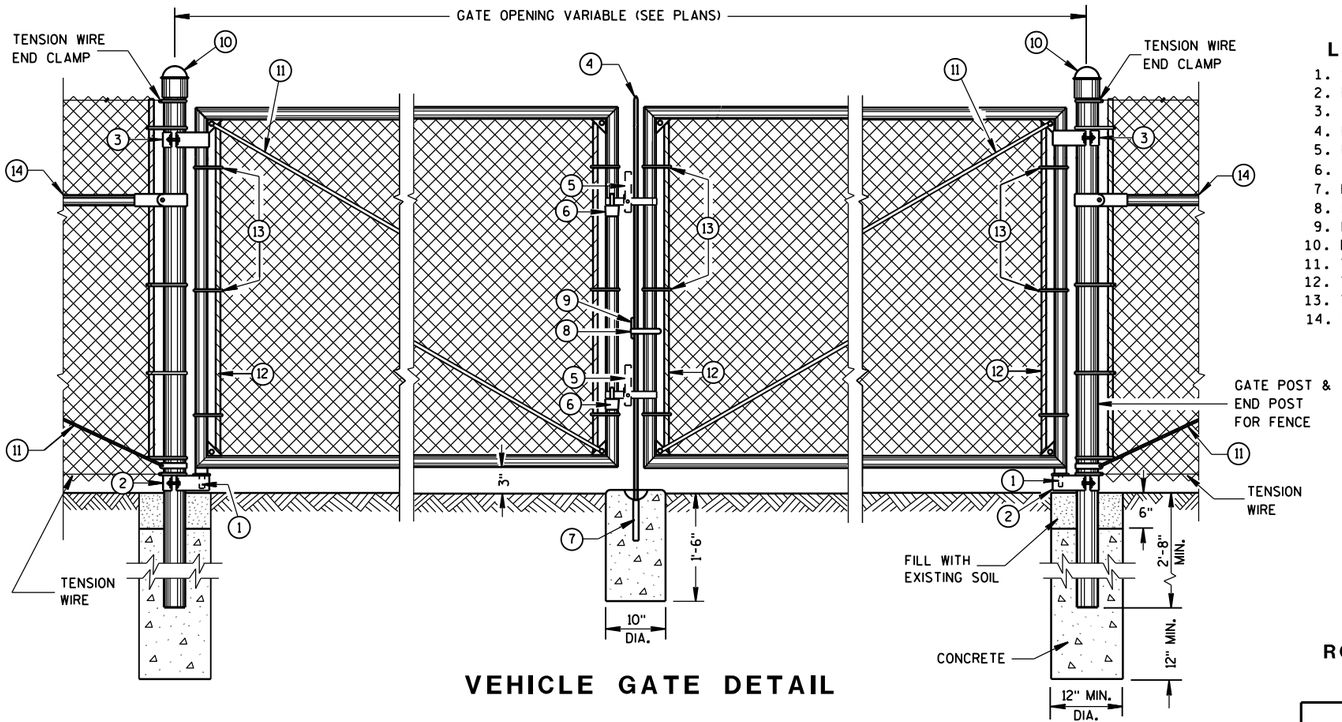
TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

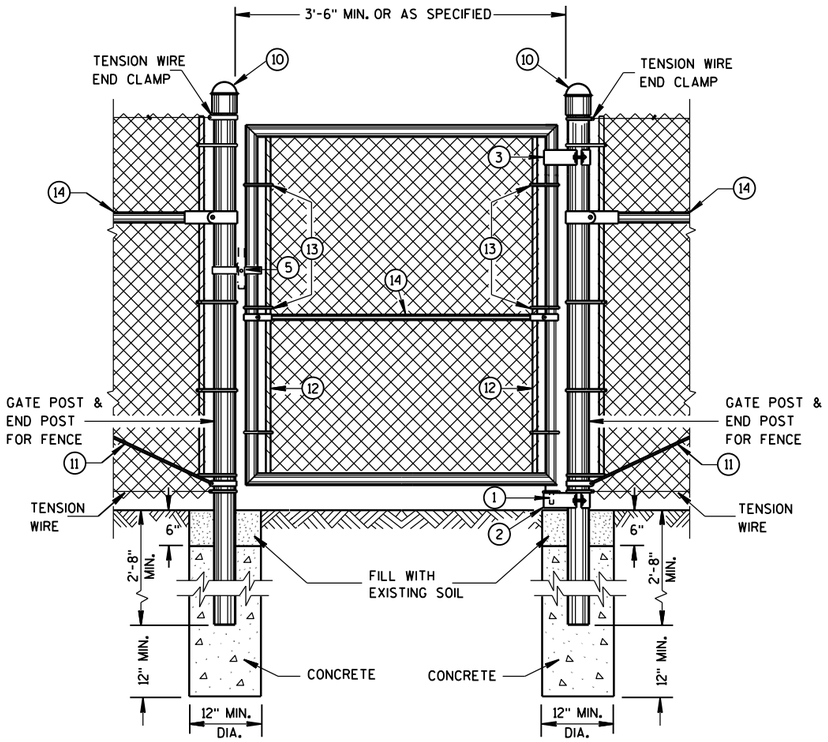
APPROVED
4/11/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

S.D.D. 14 A 2-1

6
S.D.D. 14 A 2-1



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

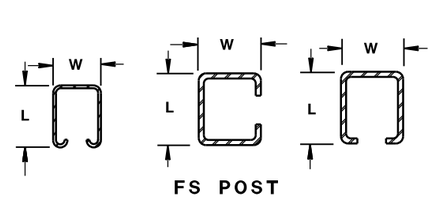
FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

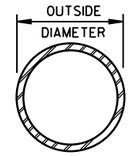
FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.



FS POST



SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 B 3-14a

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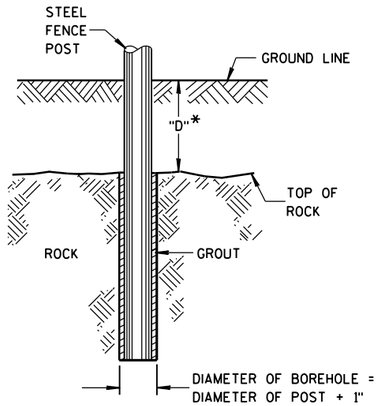
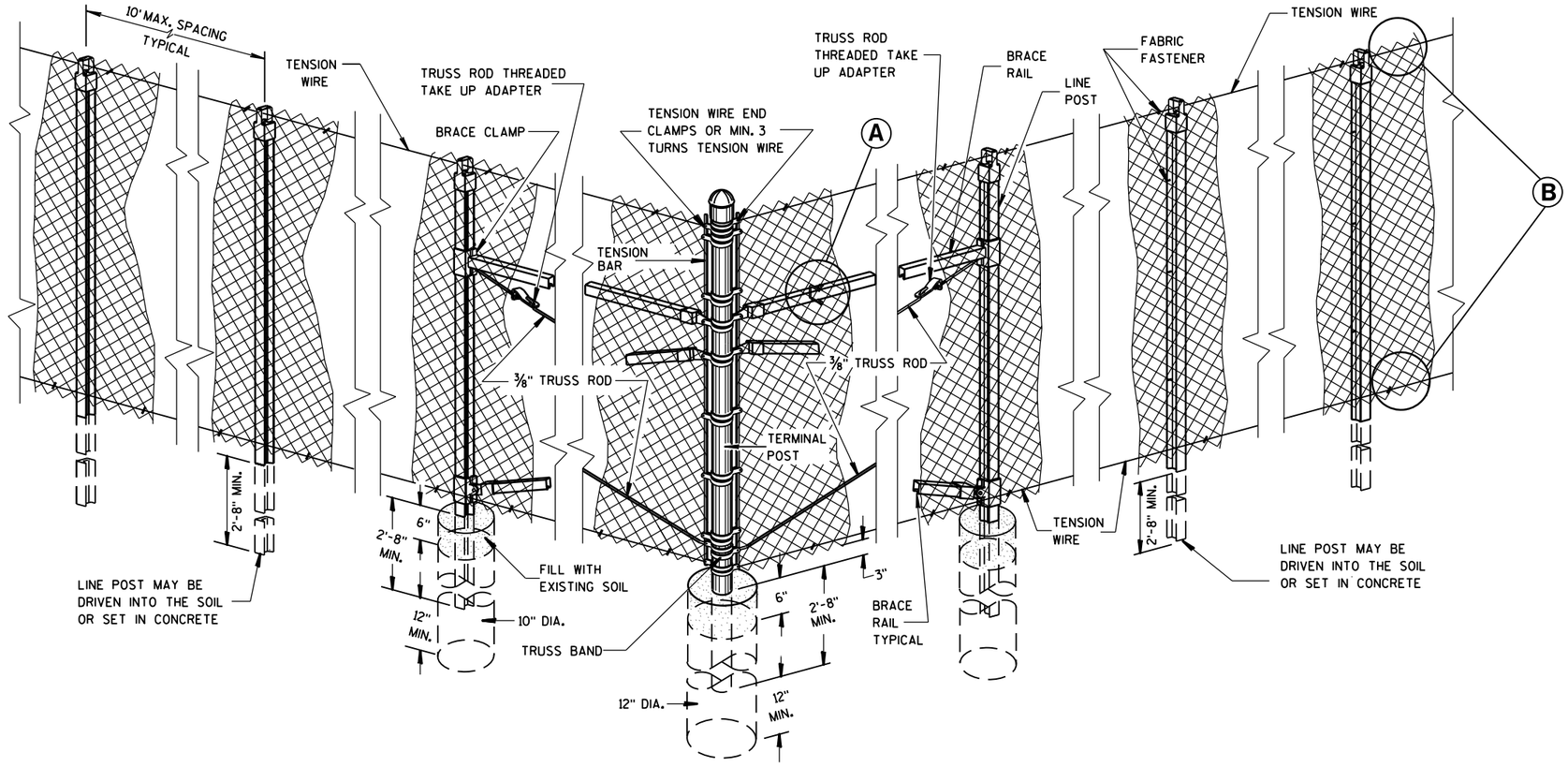
S.D.D. 15 B 3-14a

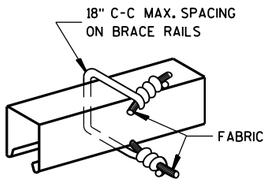


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST



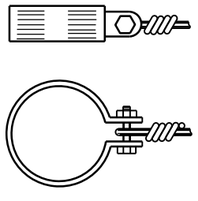
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



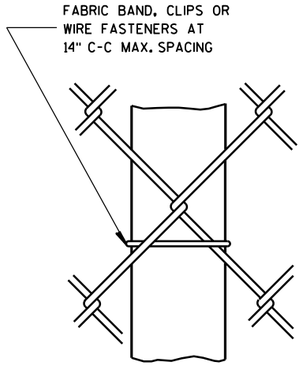
BRACE RAIL

FABRIC FASTENER

Ⓐ



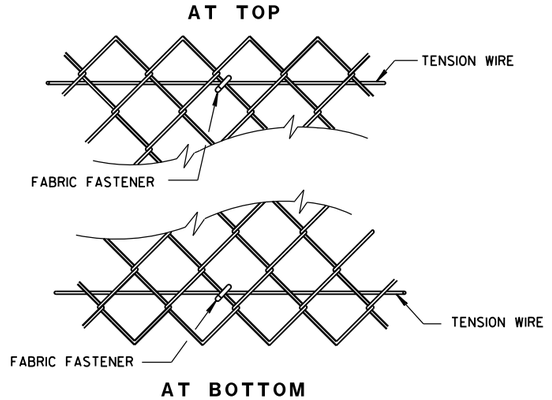
TENSION WIRE END CLAMP



LINE POST

FABRIC FASTENER

AT TOP



AT BOTTOM

SELVAGES

Ⓑ

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

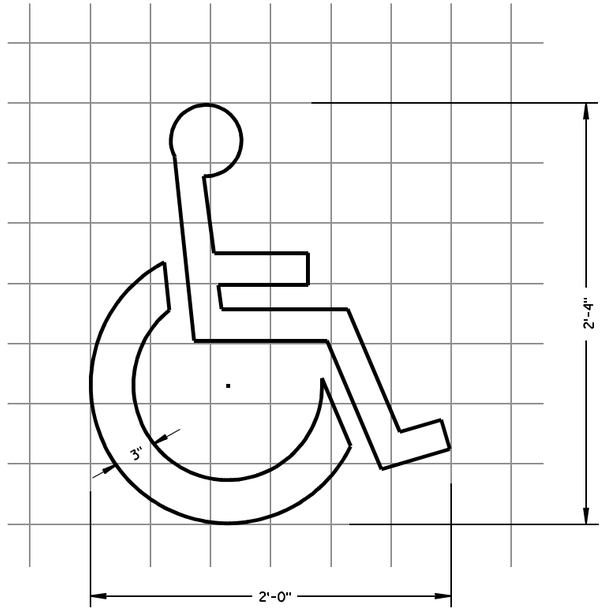
S.D.D. 15 B 3-14b

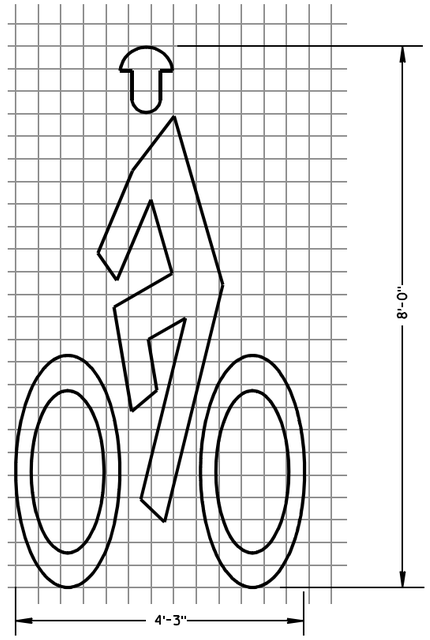
GENERAL NOTES

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

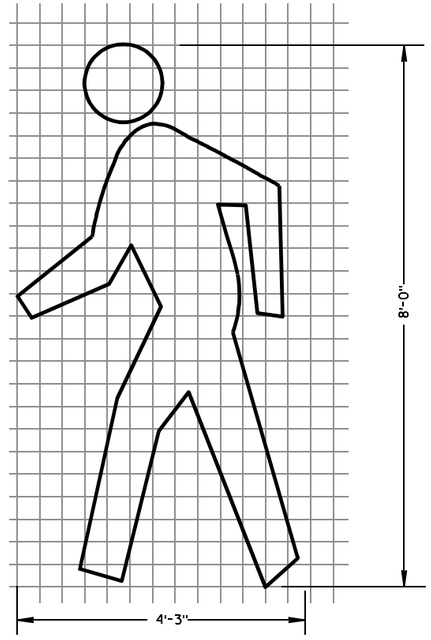
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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

A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.

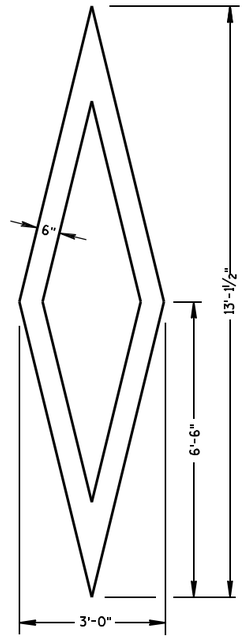




BIKE CROSSING SYMBOL



PEDESTRIAN SYMBOL



PREFERENTIAL LANE SYMBOL

6

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

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

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11
DATE

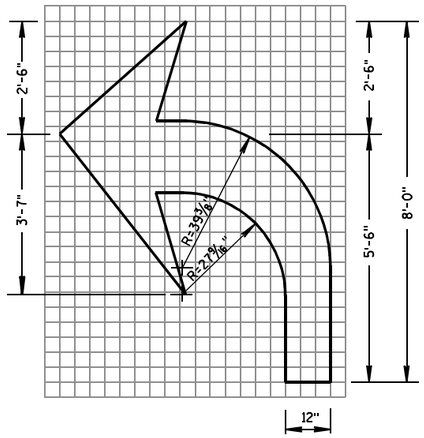
/S/ Thomas N Nathan
STATE TRAFFIC ENGINEER

FHWA

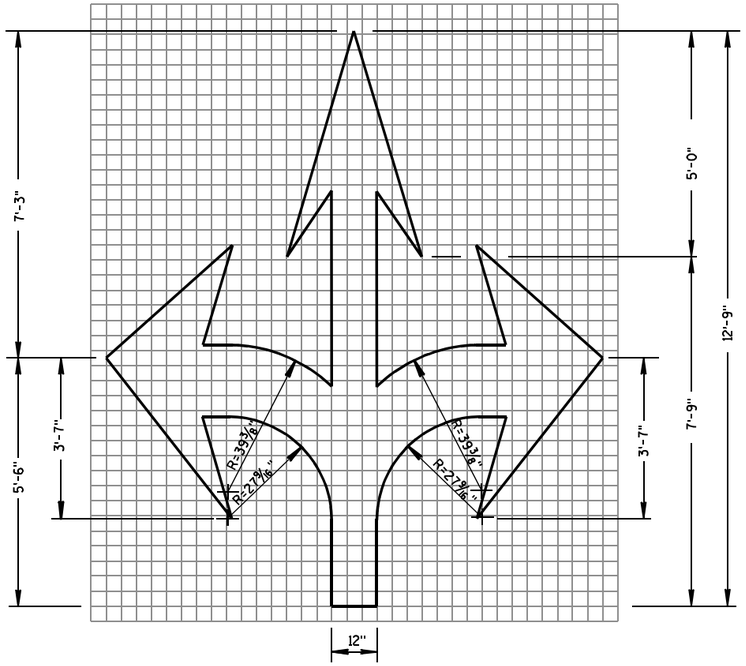
GENERAL NOTES

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

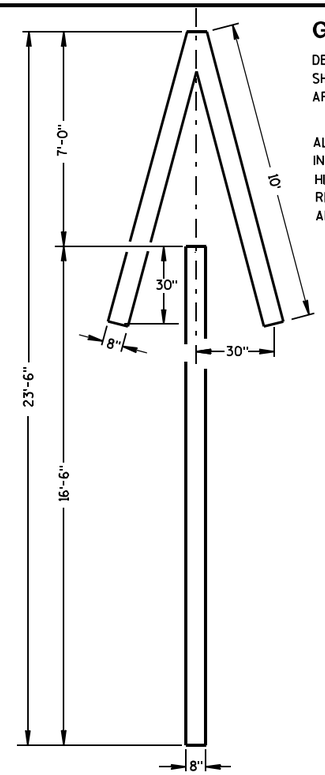
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



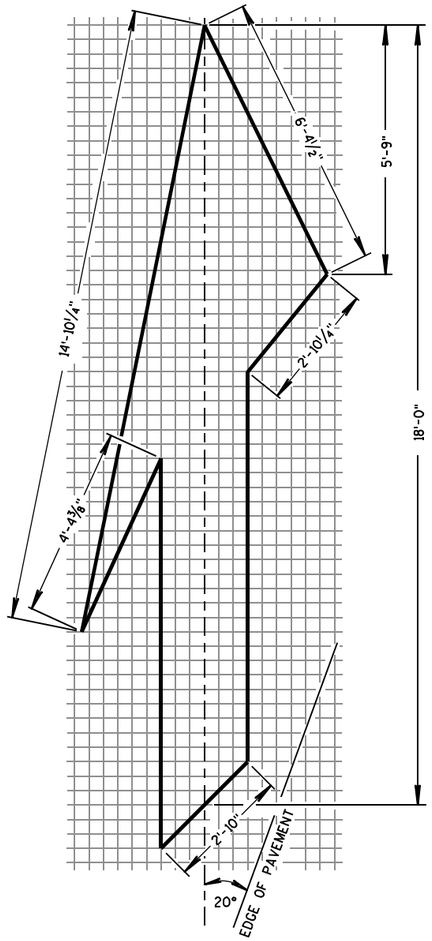
TYPE 2



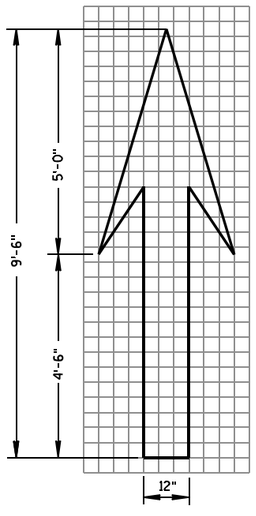
TYPE 6



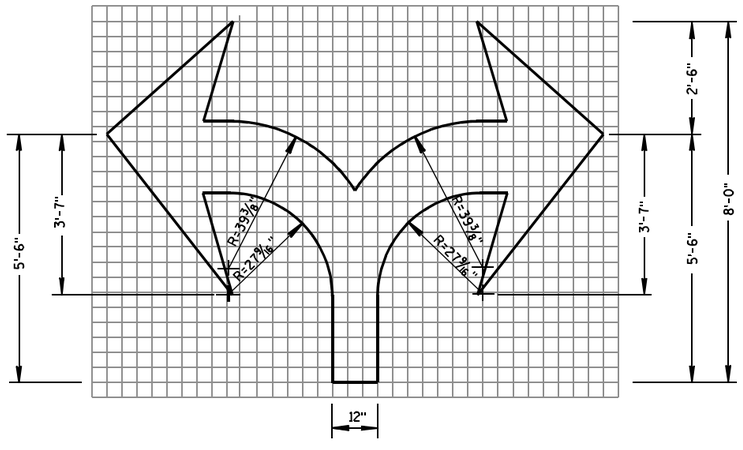
TYPE 4



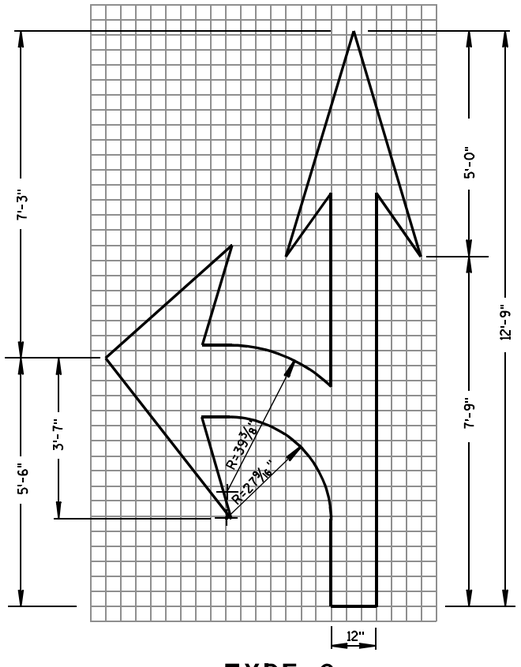
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

6

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

6

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

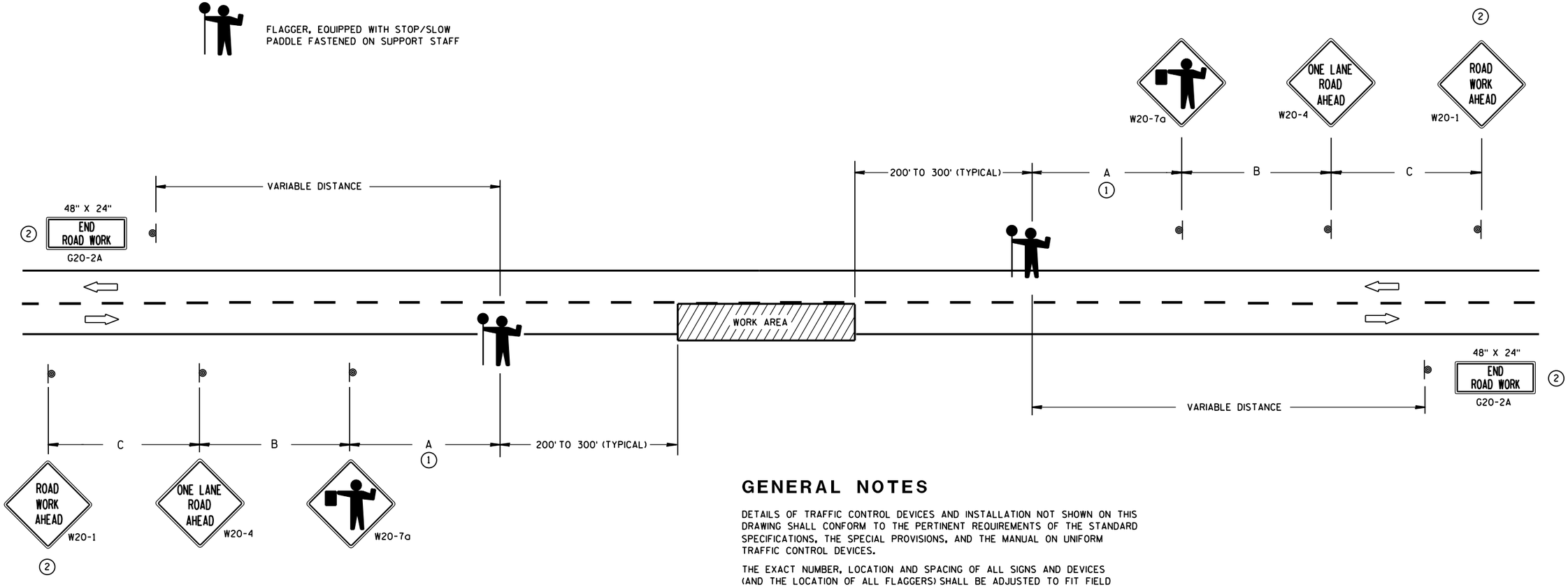
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'

W3-4

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



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

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

GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

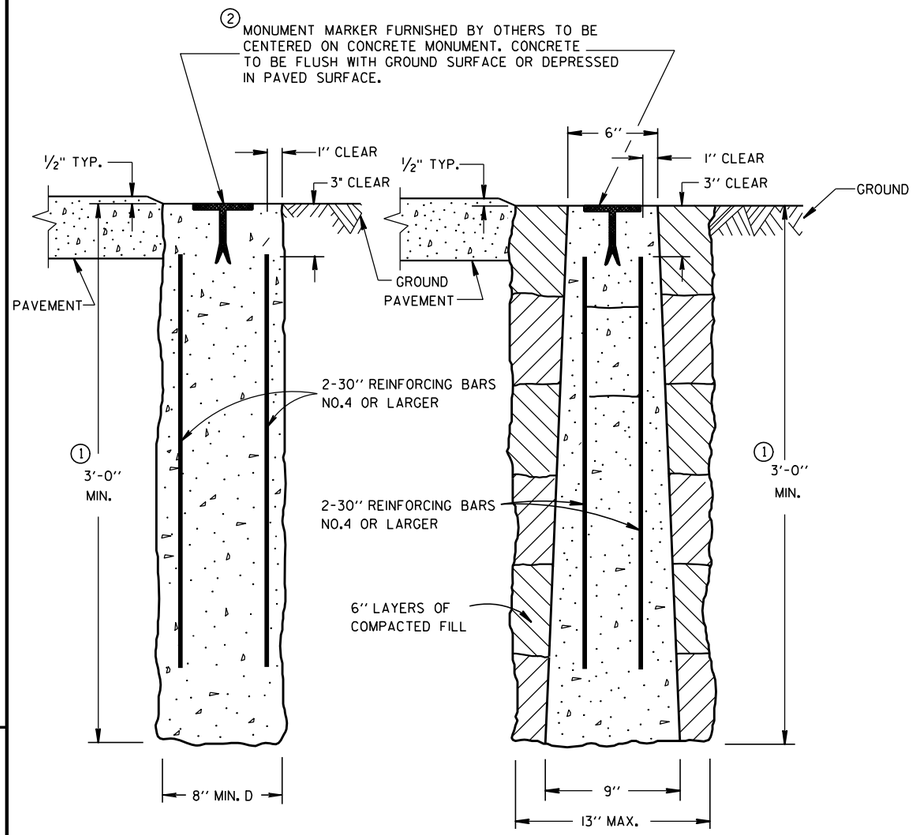
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 12-4

6

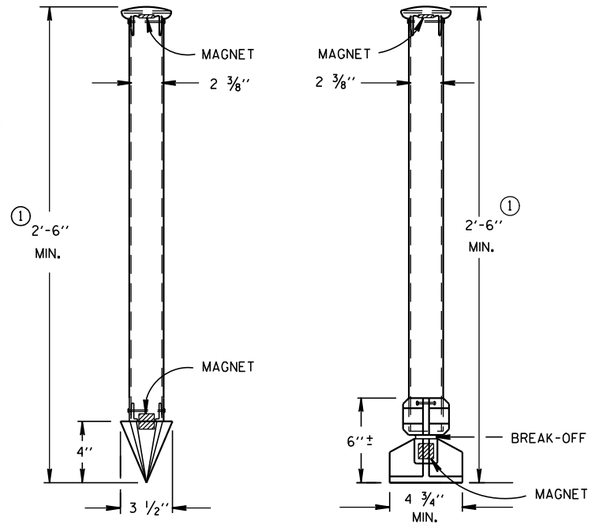
S.D.D. 15 C 12-4



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.

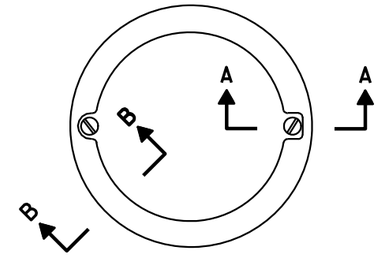
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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.

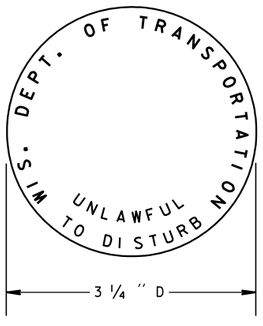
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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

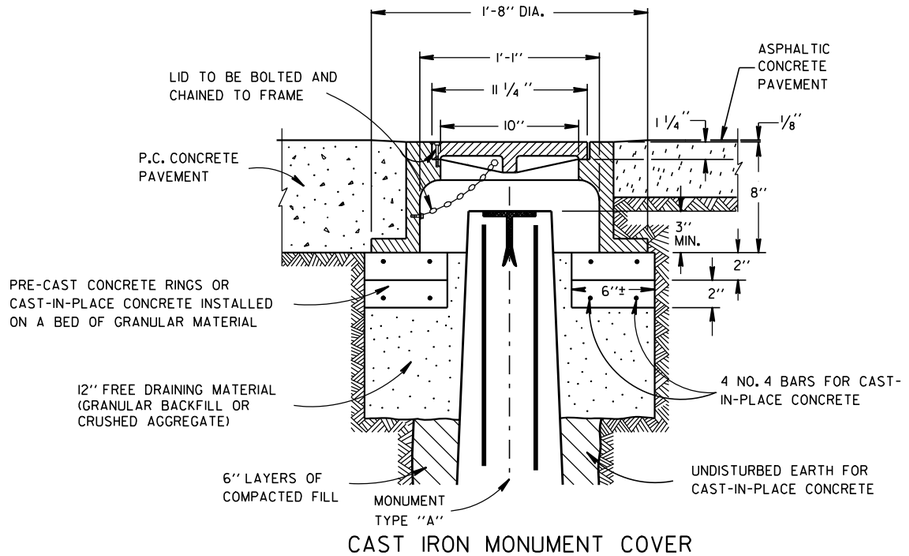
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

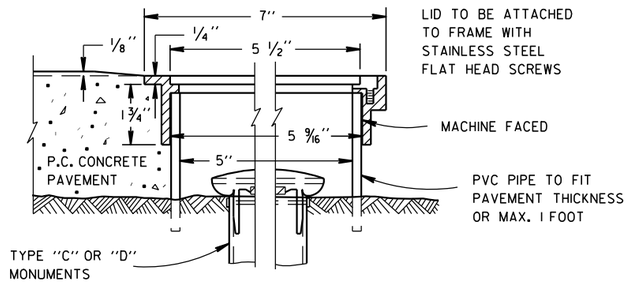


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

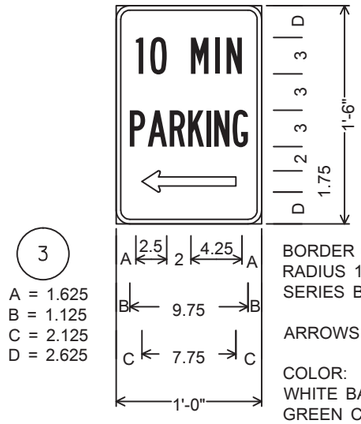
(FOR CONCRETE PAVEMENT ONLY)

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



3

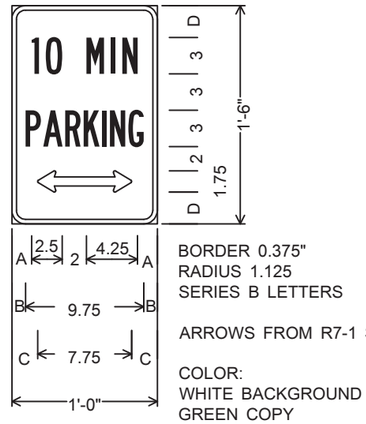
A = 1.625
B = 1.125
C = 2.125
D = 2.625

BORDER 0.375"
RADIUS 1.125
SERIES B LETTERS

ARROWS FROM R7-1 SIGN PLATE

COLOR:
WHITE BACKGROUND
GREEN COPY

TYPE II SIGN



4

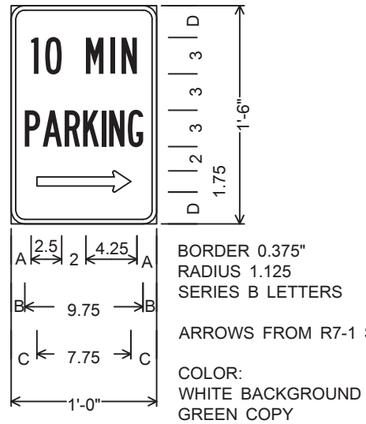
A = 1.625
B = 1.125
C = 2.125
D = 2.625

BORDER 0.375"
RADIUS 1.125
SERIES B LETTERS

ARROWS FROM R7-1 SIGN PLATE

COLOR:
WHITE BACKGROUND
GREEN COPY

TYPE II SIGN



5

A = 1.625
B = 1.125
C = 2.125
D = 2.625

BORDER 0.375"
RADIUS 1.125
SERIES B LETTERS

ARROWS FROM R7-1 SIGN PLATE

COLOR:
WHITE BACKGROUND
GREEN COPY

TYPE II SIGN

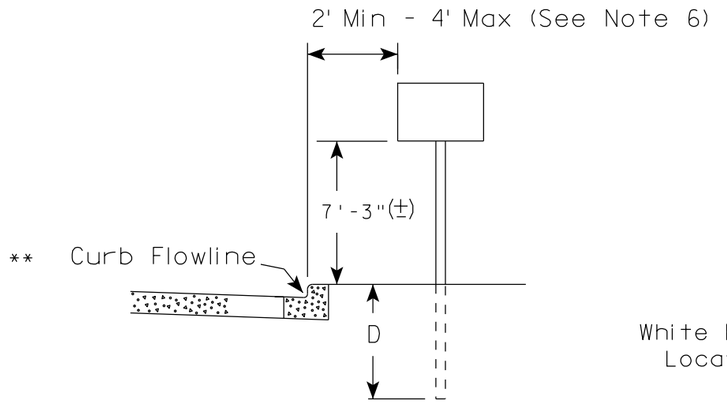
GENERAL NOTES:

1. DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE PLANS.
2. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET ARE "SIGNS, TYPE II".
3. UNLESS OTHERWISE NOTED, TYPE II SIGNS ON THIS SHEET SHALL HAVE "TYPE H REFLECTIVE SHEETING" AND "TYPE H MESSAGE MATERIAL". TYPE I SIGNS SHALL HAVE "TYPE SH REFLECTIVE SHEETING".
4. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE A GREEN BACKGROUND AND WHITE MESSAGE.
5. TYPE II SIGNS ALL UPPERCASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E". ALL LOWERCASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E".
6. TYPE I SIGNS ALL UPPERCASE MESSAGE (EXCEPT ON SHIELDS OR WHERE OTHERWISE NOTED) SHALL BE "SERIES E MODIFIED". ALL LOWER CASE MESSAGE WITH AN INITIAL UPPERCASE LETTER SHALL BE "SERIES E MODIFIED". ALL CAP WORDS ARE "SERIES E".
7. UNLESS OTHERWISE NOTED, ALL SIGNS SHOWN ON THIS SHEET SHALL HAVE "TYPE A" OR "TYPE C" ARROWS AS SHOWN. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS.
8. SEE THE STANDARD SIGN PLATES FOR FURTHER DETAILS ON ROUTE MARKER SHIELDS.
9. THE SIGN NUMBER IS DENOTED IN THE CIRCLE NEAR EACH DETAIL.
10. NUMBER FRACTIONS FOR INTERCHANGE SEQUENCE SIGNS SHALL BE "SERIES E" PER PLATES A11-7 AND A11-10.
11. DO NOT SCALE.

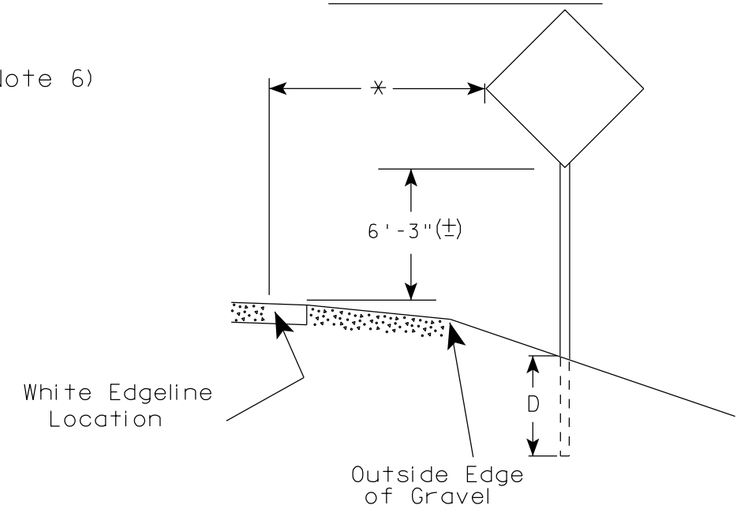
PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	SIGNING DETAIL - TYPE II	SHEET 81	E

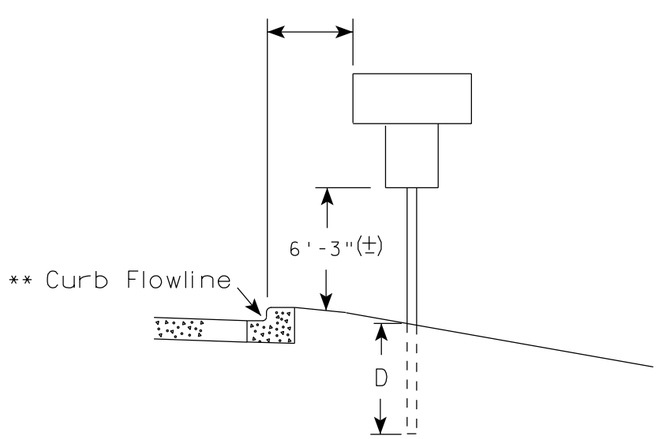
FILE NAME : W:\PDS\C3D\CAD\10603317\84\070101_MS.DWG
LAYOUT NAME - 070101_MS
PLOT DATE : 2/10/2015 7:14 AM PLOT BY : DODGE, BRIAN M PLOT NAME : PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET

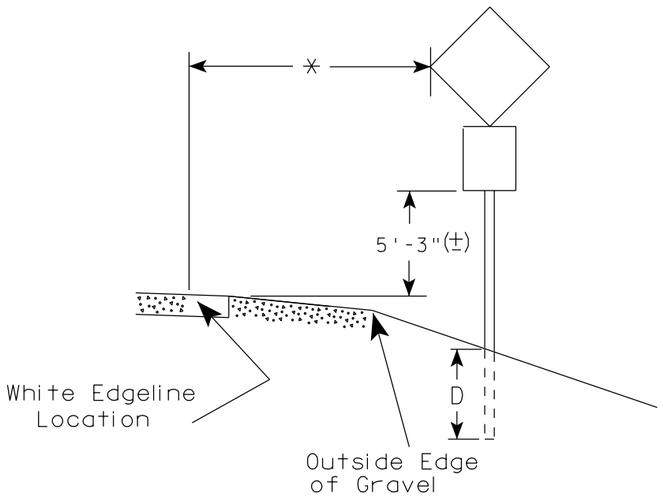
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

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

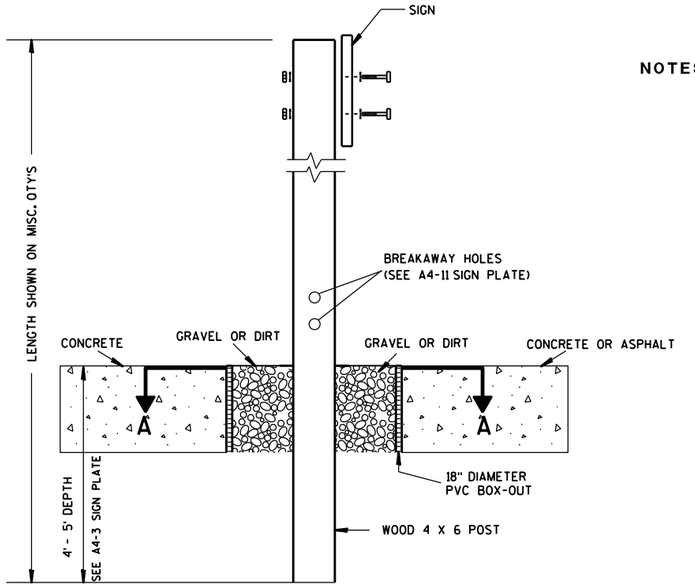
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

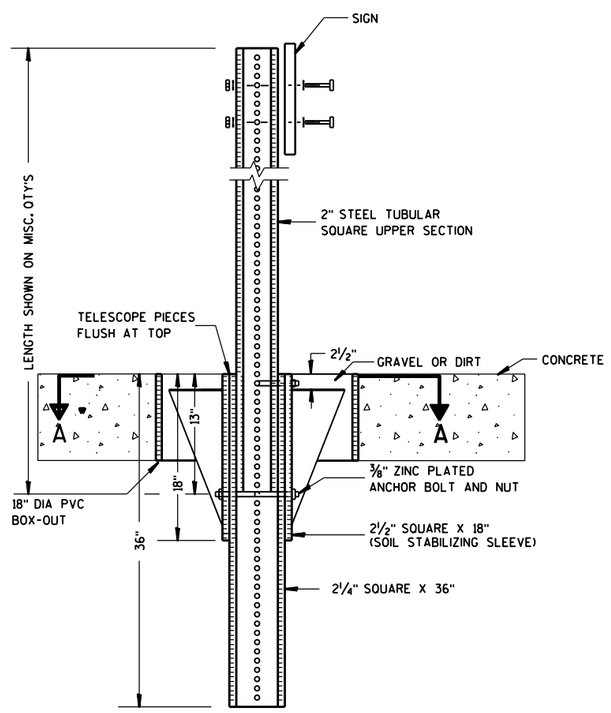
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

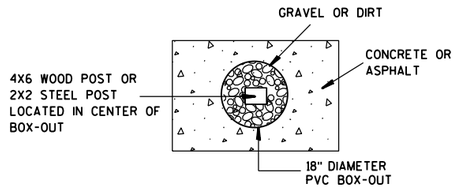
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

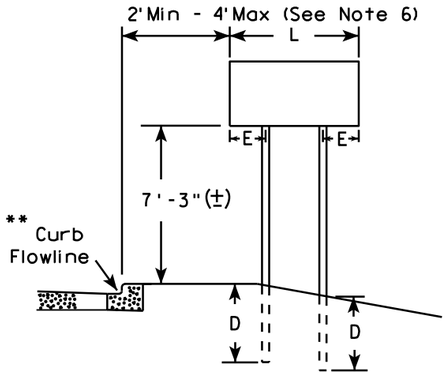
APPROVED Matthew R Rauch
for State Traffic Engineer

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

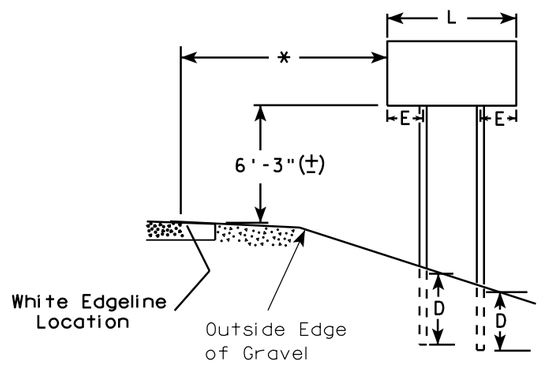
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

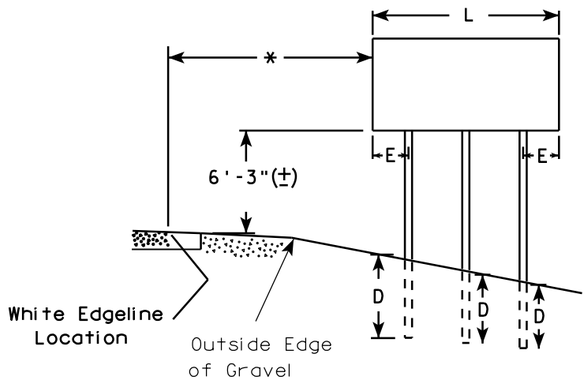
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

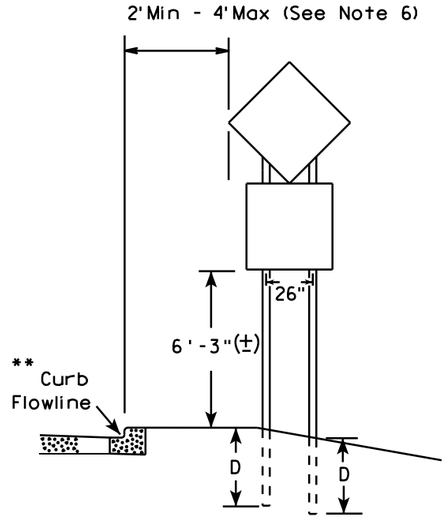
URBAN AREA



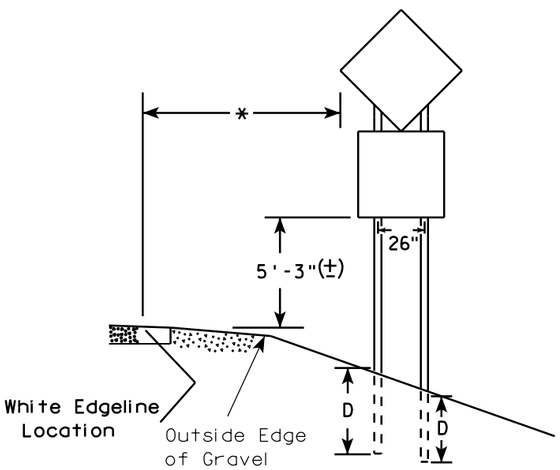
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

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

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

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

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

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

***

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

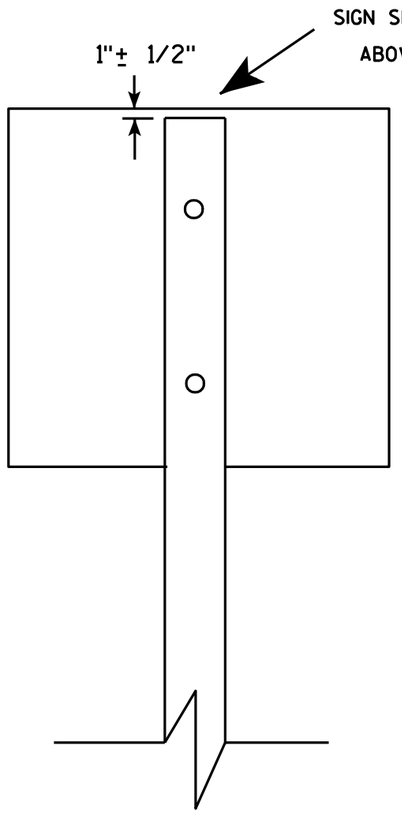
WISCONSIN DEPT OF TRANSPORTATION

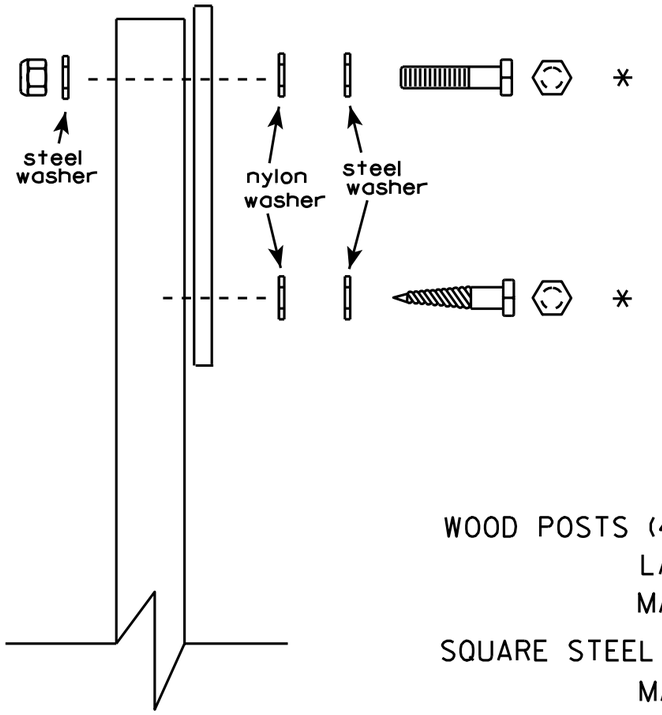
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-4 13

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 12-NOV-2014 14:01 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 107.021305:1.000000 WISDOT/CADDS SHEET 42





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

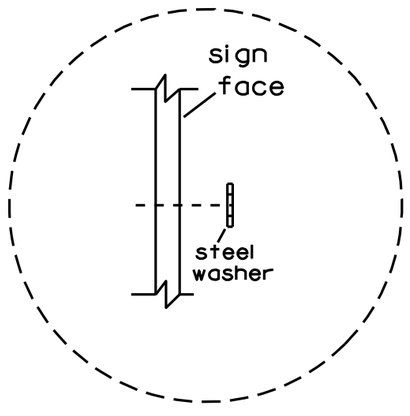
a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

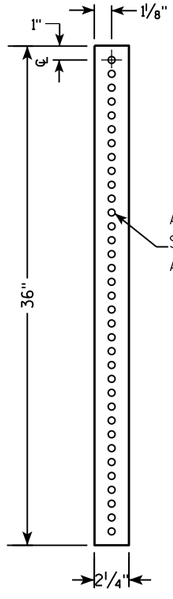
7

PROJECT NO:

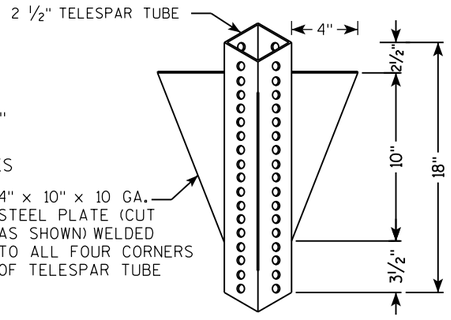
SHEET NO: 85 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

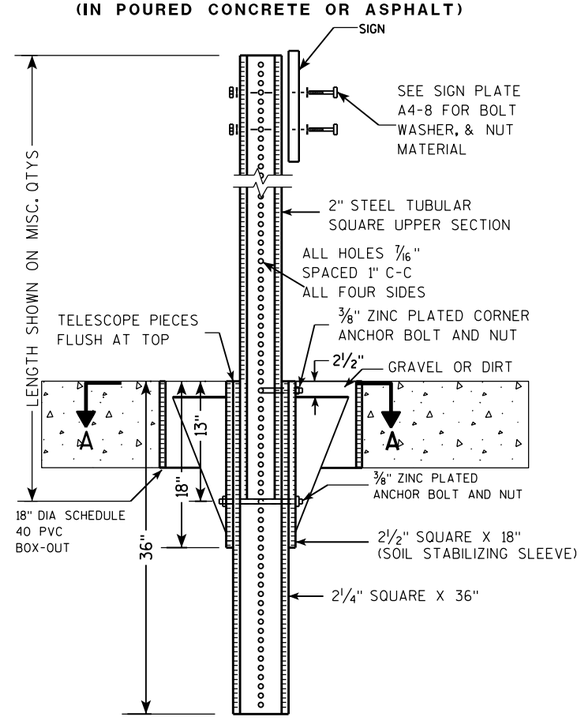
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



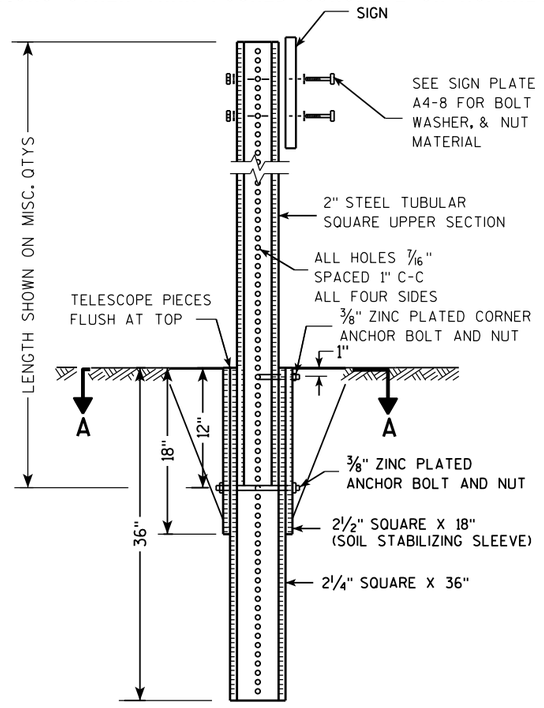
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

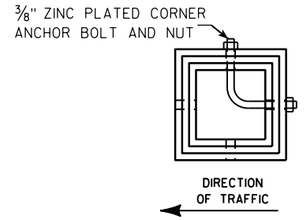


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

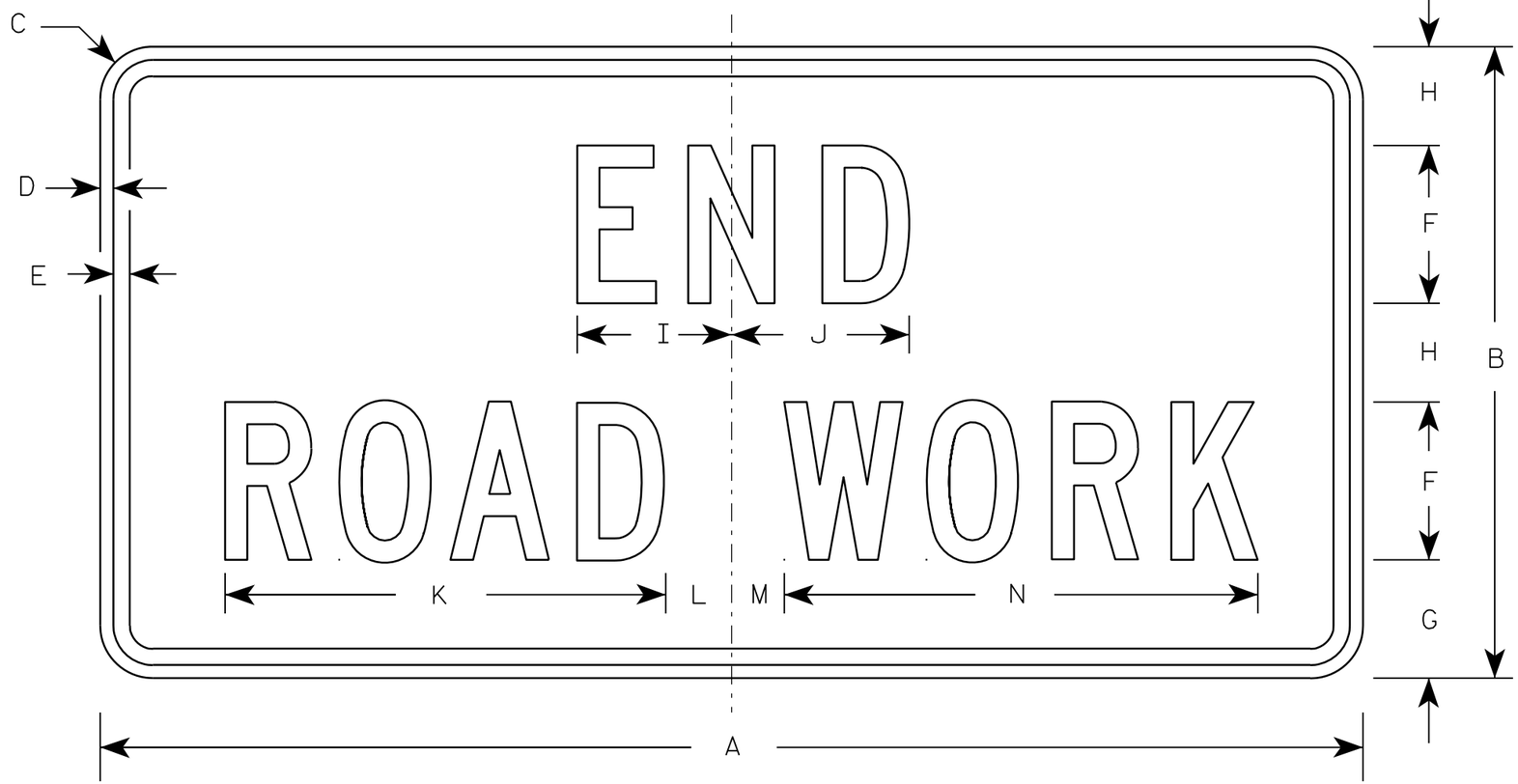
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 86 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



G20-2A

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

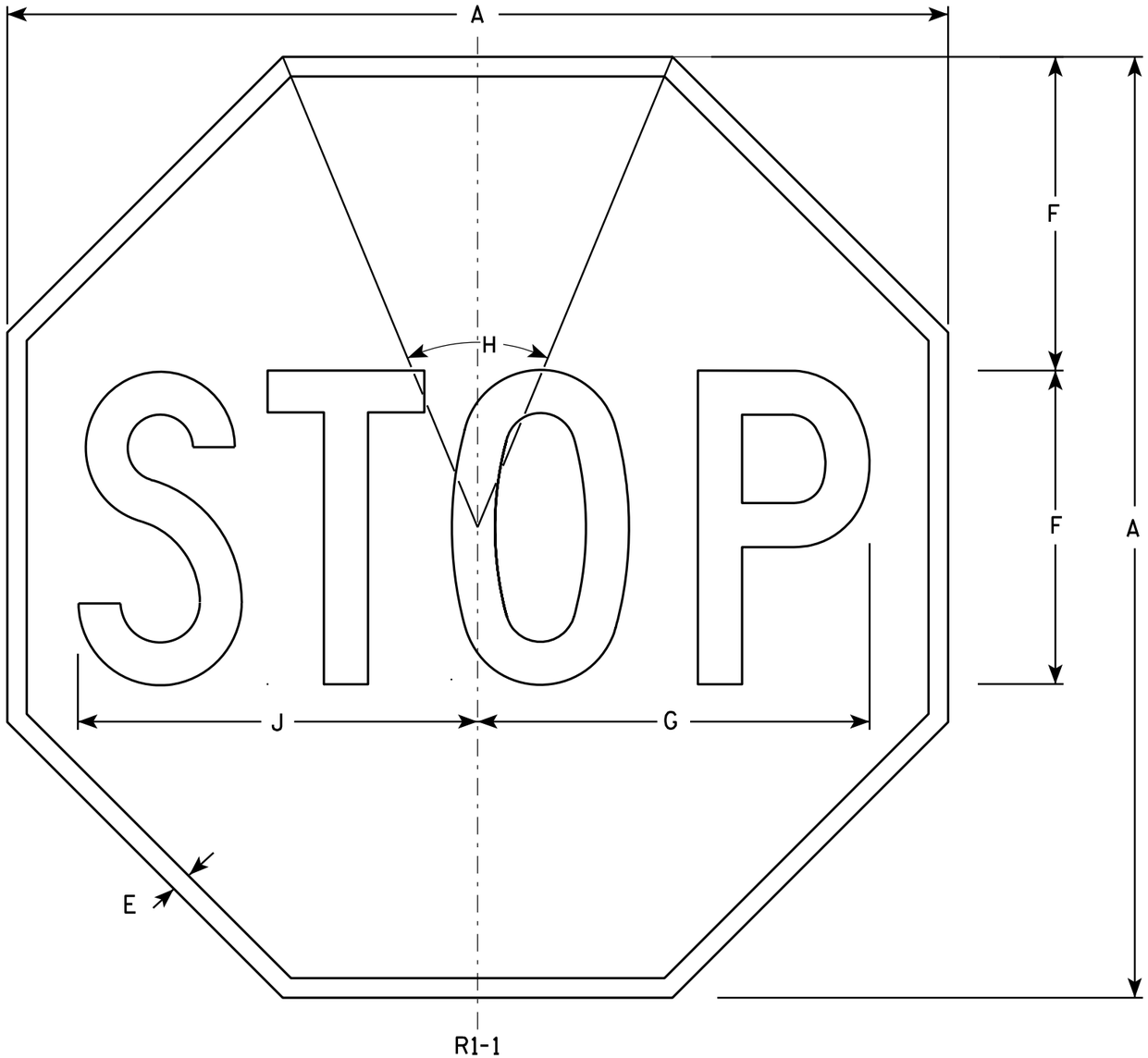
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

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



NOTES

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

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

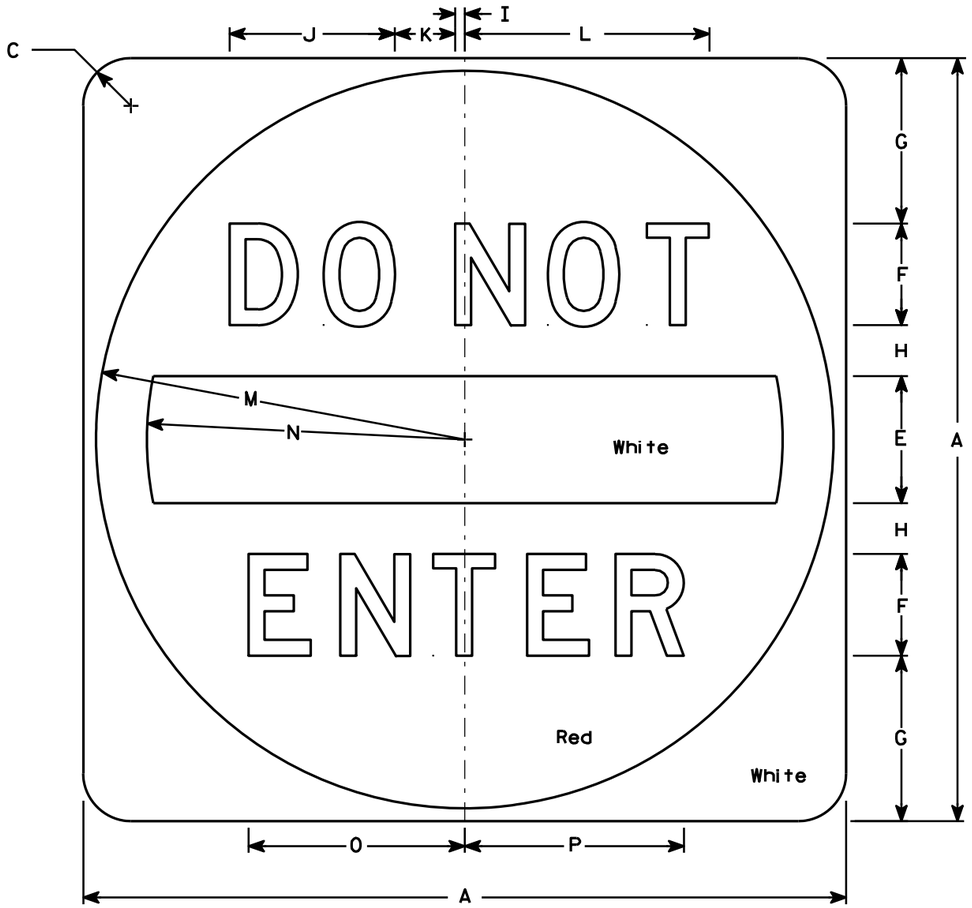
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

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



R5-1

NOTES

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

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

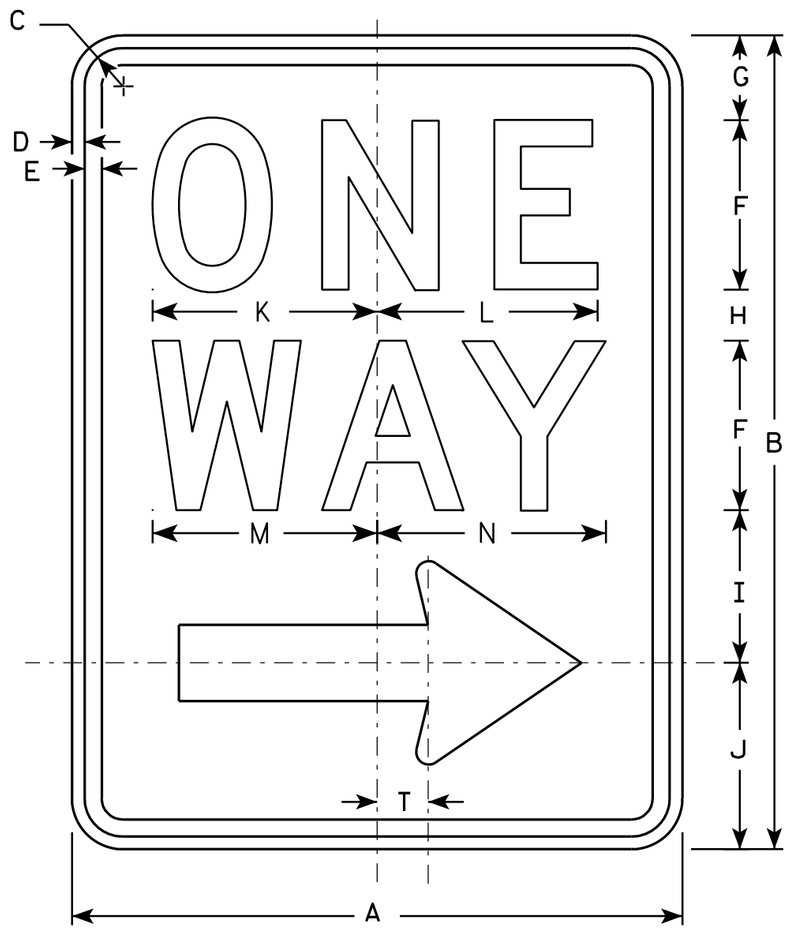
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

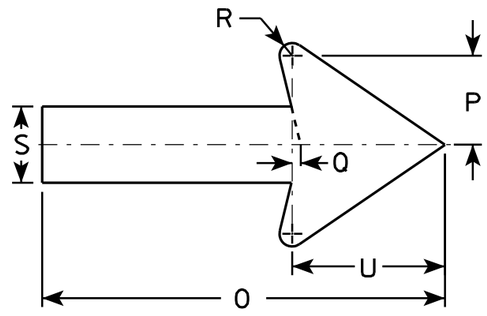
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 89 | E



R6-2R

NOTES

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



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

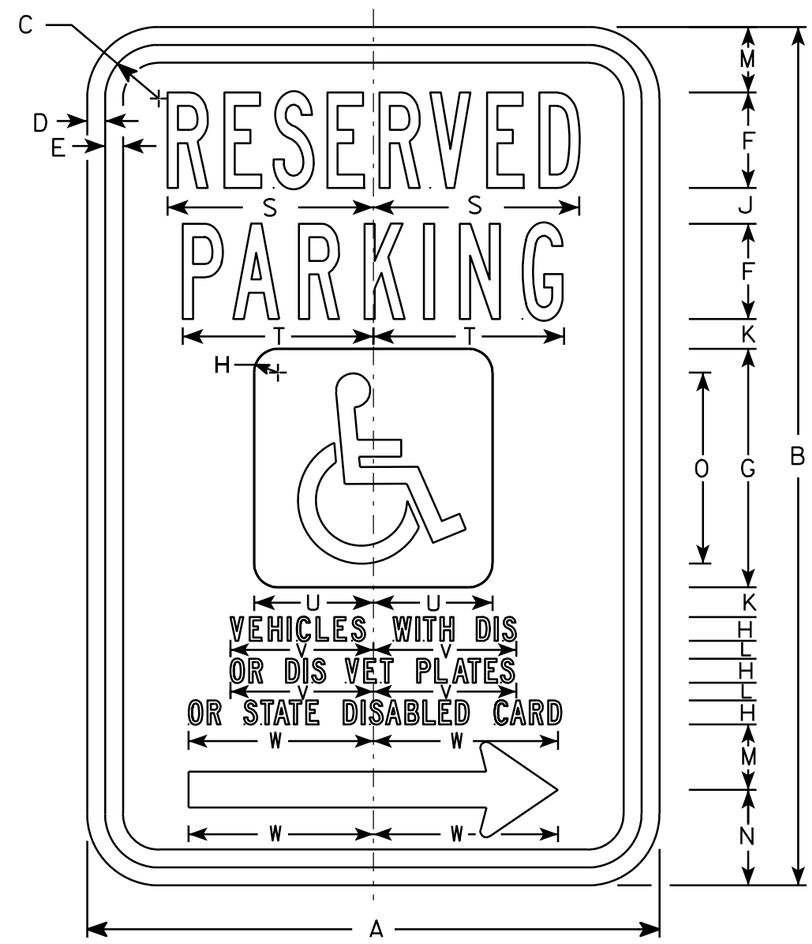
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

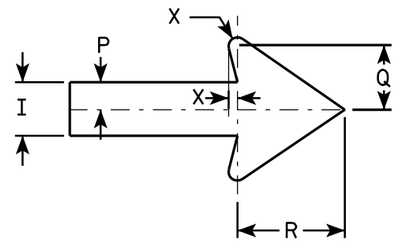
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 90	E



R7-8R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Sign is white Type H Reflective; paraplegic background is blue.
   Message - Legend and border are green; paraplegic symbol is white
3. Message Series - Lines 1 & 2 are Series B
   Lines 3, 4, 5 & 6 are Series C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R7-8R (RIGHT ARROW)
   R7-8L (LEFT ARROW)



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	12	18	1 1/8	3/8	3/8	2	5	1/2	3/4	3/4	5/8	3/8	1 3/8	2	4	3/8	7/8	1 1/2	4 3/8	4	2 1/2	3	3 7/8	3/16			1.5
2M	18	24	1 1/8	3/8	1/2	3	6	3/4	1 1/8	7/8	5/8	1/2	1 7/8	2 7/8	5	5/8	1 3/8	2 1/4	6 1/2	5 3/8	3	4 1/2	5 7/8	1/8			3.0
3	18	24	1 1/8	3/8	1/2	3	6	3/4	1 1/8	7/8	5/8	1/2	1 7/8	2 7/8	5	5/8	1 3/8	2 1/4	6 1/2	5 3/8	3	4 1/2	5 7/8	1/8			3.0
4																											
5																											

STANDARD SIGN
R7-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-8.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 91	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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	18	1 3/4	1/2	1/2	4	3 1/2	3	10 3/4	8 1/8																	3.75
2M	30	18	1 3/4	1/2	1/2	4	3 1/2	3	10 3/4	8 1/8																	3.75
3																											
4																											
5																											

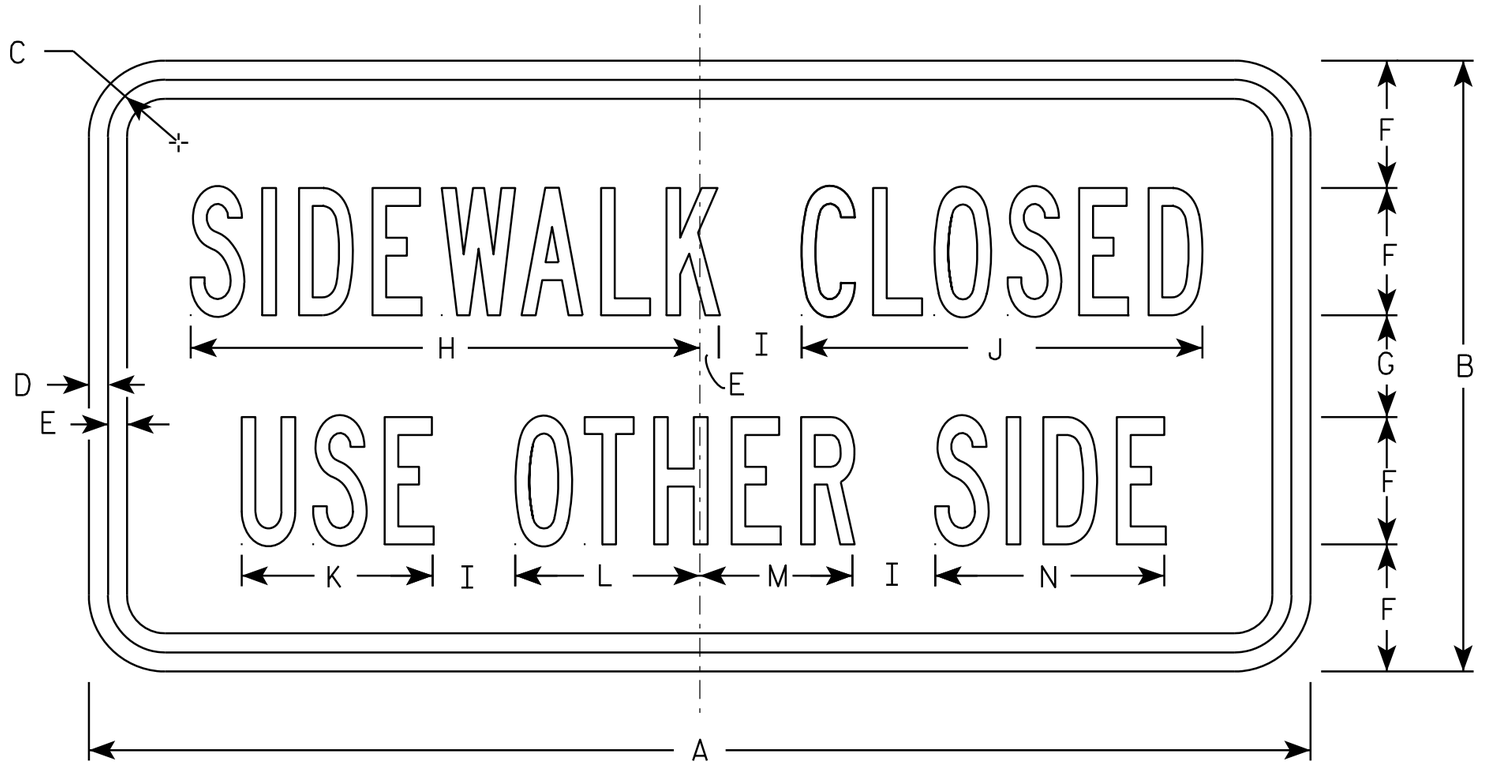
STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/2011 PLATE NO. R9-9.5

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



R9-10

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	12	1 1/8	3/8	3/8	2 1/2	2	10	1 5/8	7 7/8	3 3/4	3 5/8	3	4 1/2													2.0
2S	48	24	2 3/4	3/4	3/4	5	4	20	3 1/4	15 3/4	7 1/2	7 1/4	6	9													8.0
2M	48	24	2 3/4	3/4	3/4	5	4	20	3 1/4	15 3/4	7 1/2	7 1/4	6	9													8.0
3																											
4																											
5																											

STANDARD SIGN
R9-10

WISCONSIN DEPT OF TRANSPORTATION

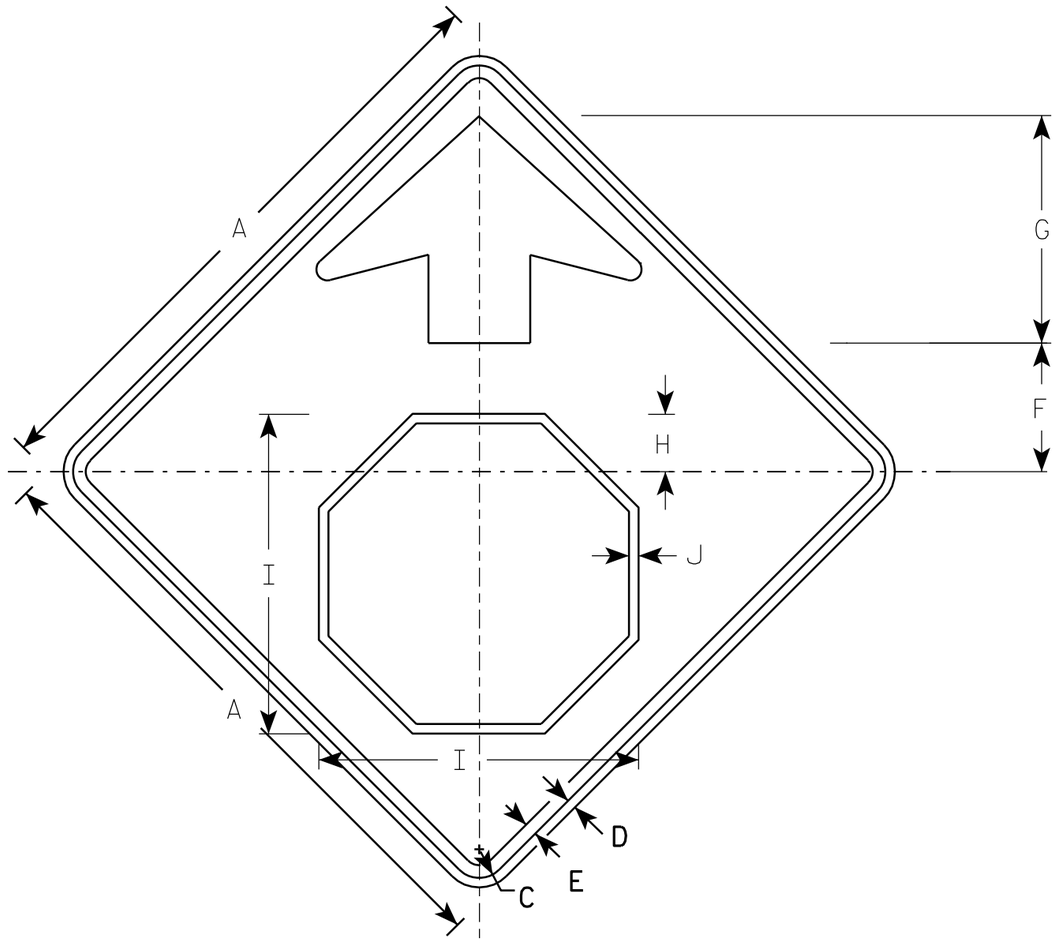
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/2012 PLATE NO. R9-10.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 93 | E

7

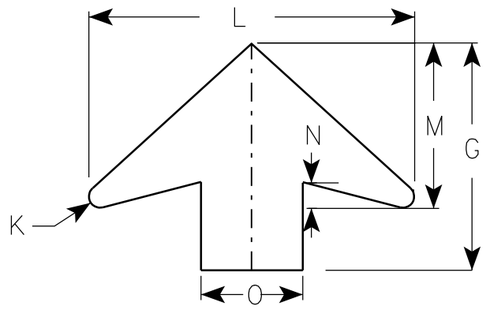
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R910.DGN PLOT DATE : 16-AUG-2012 09:37 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 2.977140:1.000000 WISDOT/CADDS SHEET 42



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - YELLOW
   Arrow & Border - BLACK
   Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN
W3-1

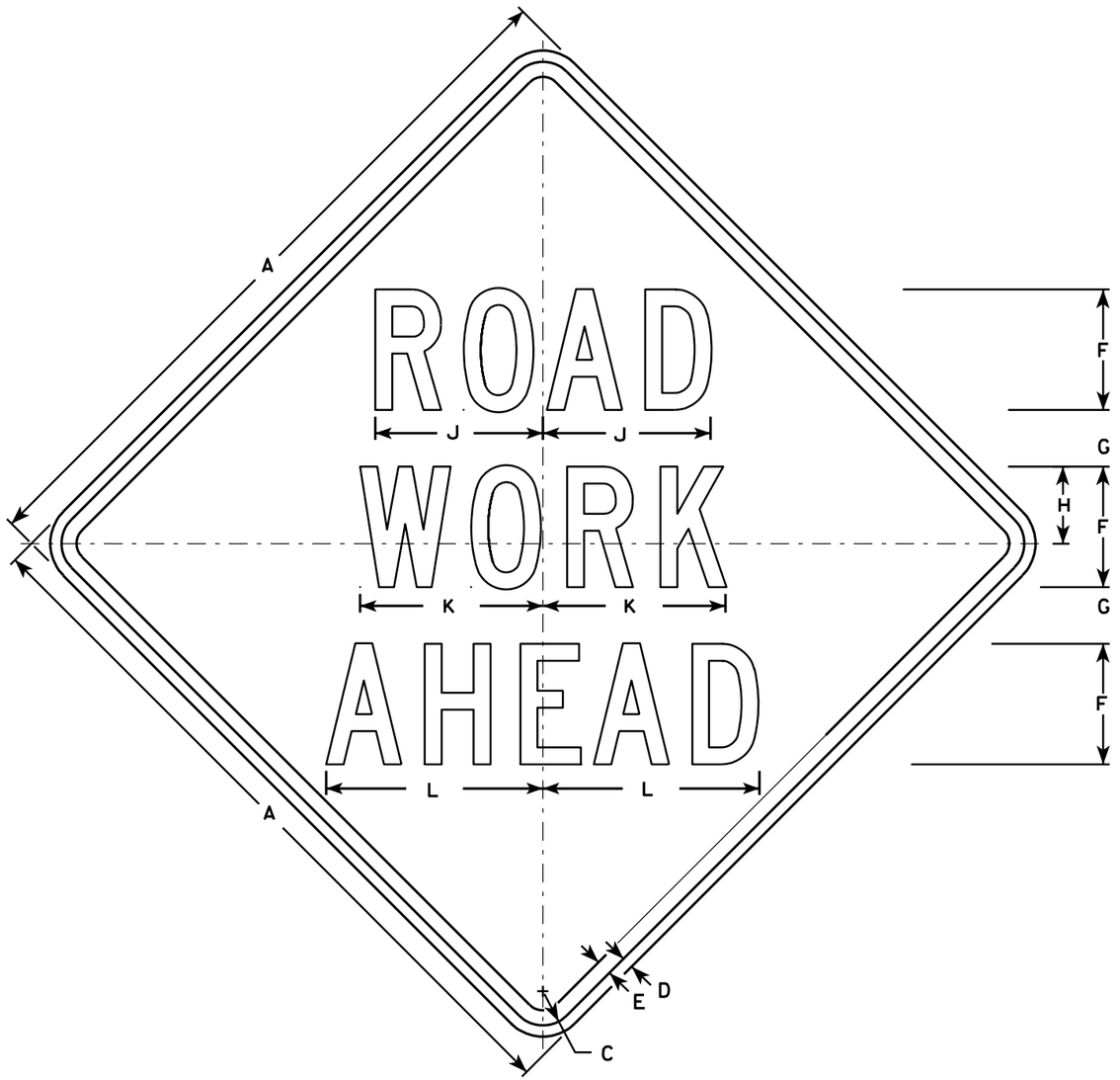
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

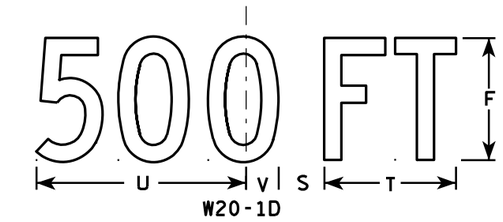
DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO:

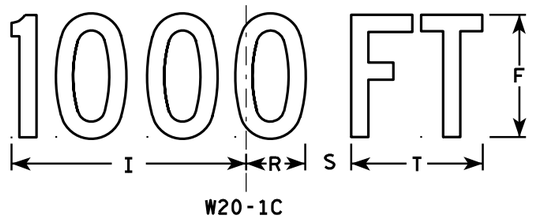
SHEET NO: 94 E



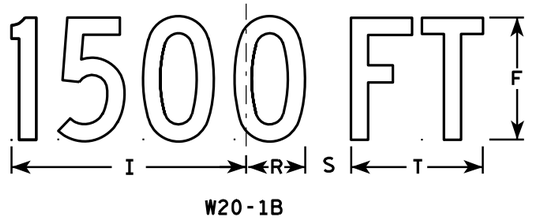
W20-1A



W20-1D

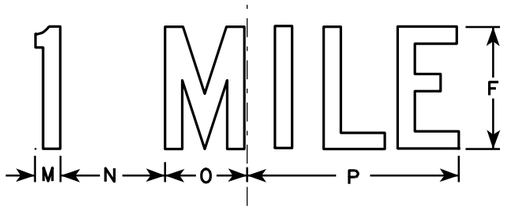


W20-1C



W20-1B

W20-1G



W20-1F

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.

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	1 7/8	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		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		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		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		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		3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-1.9

PROJECT NO:

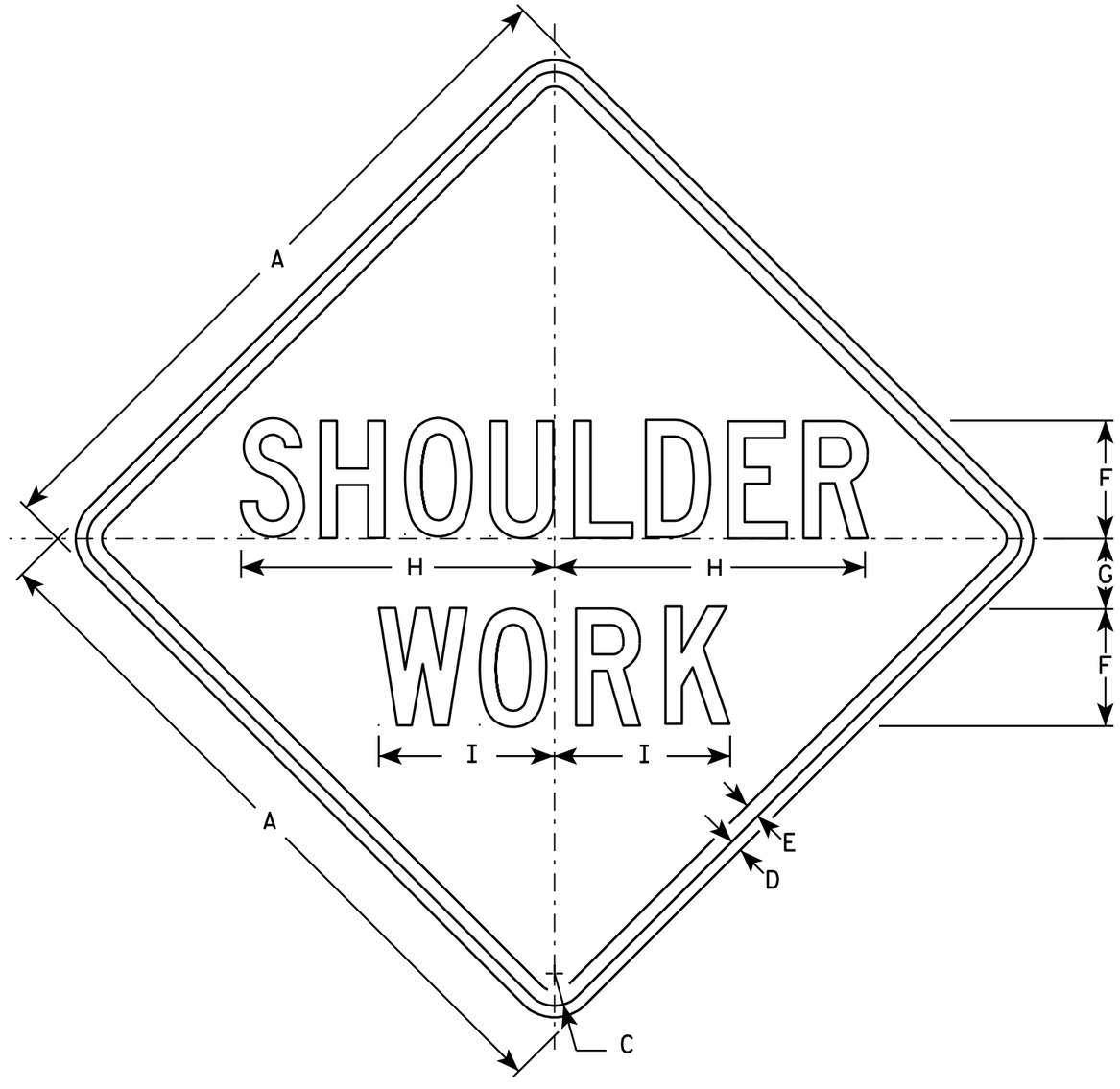
SHEET NO: 95 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W201.DGN PLOT DATE : 18-MAR-2011 09:56 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42

7

7



W21-5

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2 1/2	10 3/4	6																		4.0
2S	30		1 3/8	1/2	5/8	5	3	13 3/8	7 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	3	13 3/8	7 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3 1/2	16	9																		9.0
4	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0

STANDARD SIGN
W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5.5

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

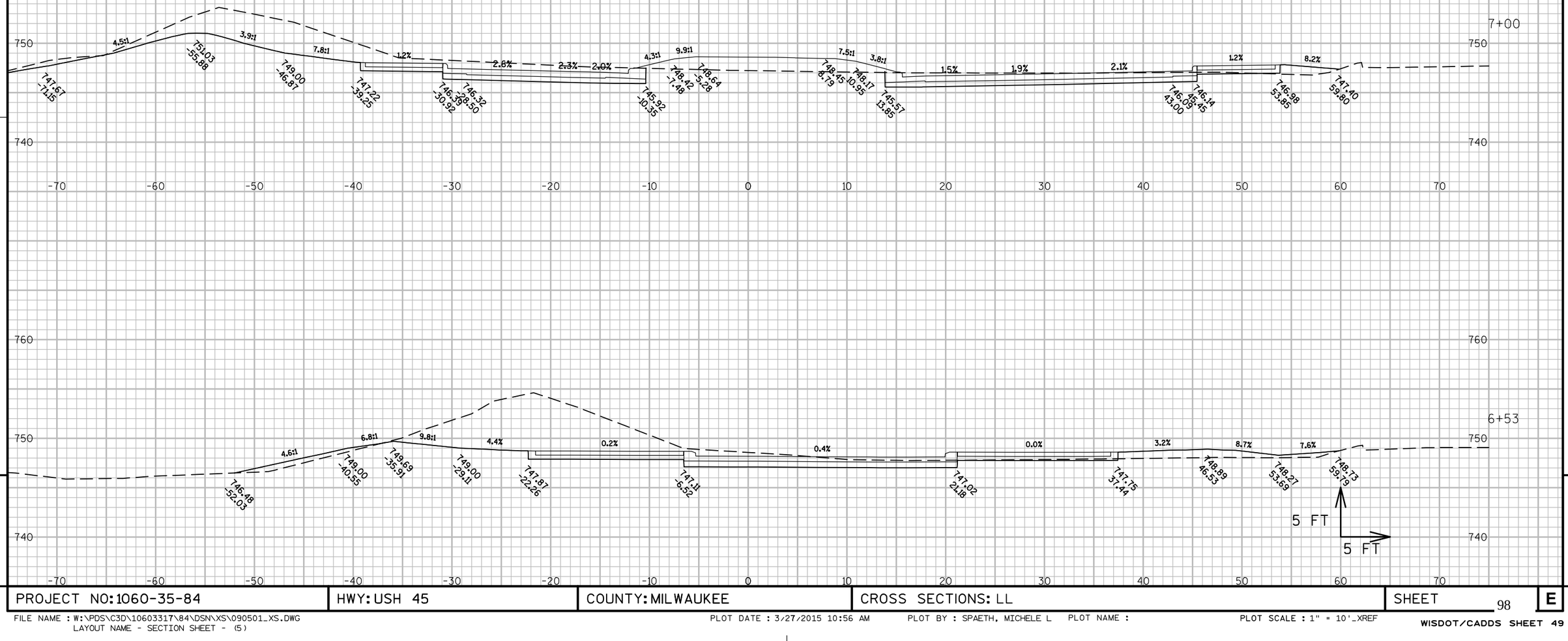
LOCUST PARKING LOT

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Cumulative Vol (CY) Expanded Fill 1.20	Mass Ordinate
06+53	653.00	0.00	140.31	18.78	0	0	0	0	0
07+00	700.00	47.00	145.11	6.19	248	22	248	26	222
07+50	750.00	50.00	78.57	3.82	207	9	456	37	418
08+00	800.00	50.00	124.60	0.00	188	4	644	41	602
08+50	850.00	50.00	37.44	0.00	150	0	794	41	752
09+00	900.00	50.00	32.99	0.00	65	0	859	41	818
09+50	950.00	50.00	106.03	1.02	129	1	988	43	945
09+70.84	970.84	20.84	58.15	0.59	63	1	1,051	43	1,008
					1,051	36			

XF PATH EXTENSION

STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut	Incremental Vol (CY) (Unadjusted) Fill	Cumulative Vol (CY) Cut 1.00	Cumulative Vol (CY) Expanded Fill 1.20	Mass Ordinate
104+43.49	10443.49	0.00	17.00	0.00	0	0	0	0	0
104+50	10450.00	6.51	17.65	0.00	4	0	4	0	4
105+00	10500.00	50.00	2.42	3.63	19	3	23	4	19
105+50	10550.00	50.00	38.79	0.88	38	4	61	9	52
106+00	10600.00	50.00	120.47	12.26	147	12	208	24	185
106+47.62	10647.62	47.62	49.72	32.93	150	40	358	71	287
				Totals:	358	60			

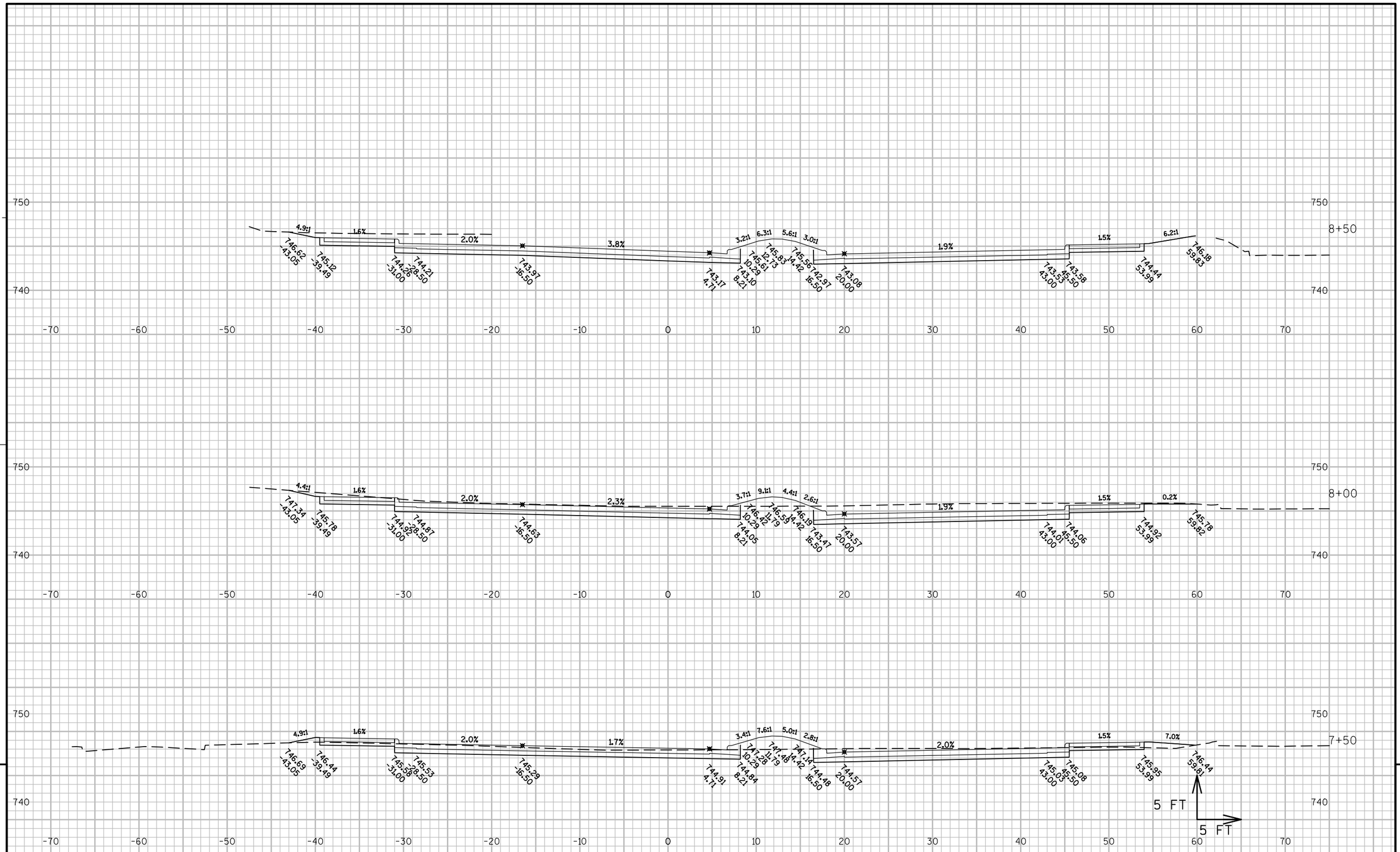
SLOPE INTERCEPT:
O/S: -87.17'
ELEV: 745.17'



PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CROSS SECTIONS: LL	SHEET 98	E

FILE NAME : W:\PDS\C3D\10603317\84\DSN\XS\090501_XS.DWG
LAYOUT NAME - SECTION SHEET - (5)

PLOT DATE : 3/27/2015 10:56 AM PLOT BY : SPAETH, MICHELE L PLOT NAME : PLOT SCALE : 1" = 10'_XREF

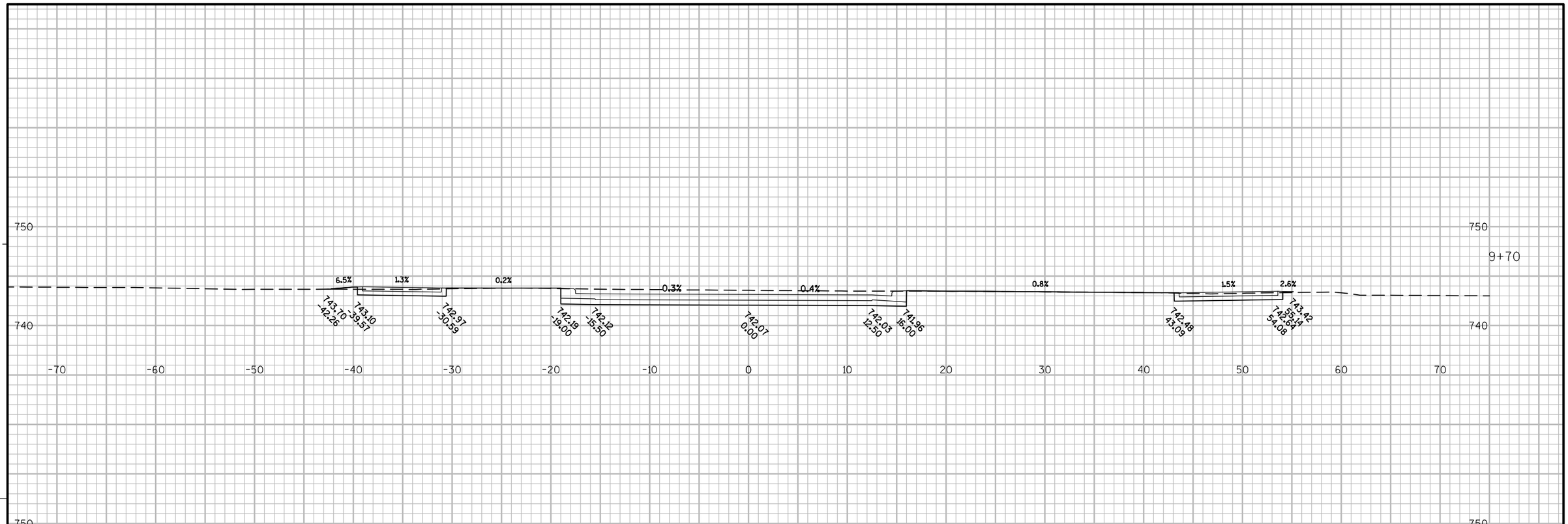


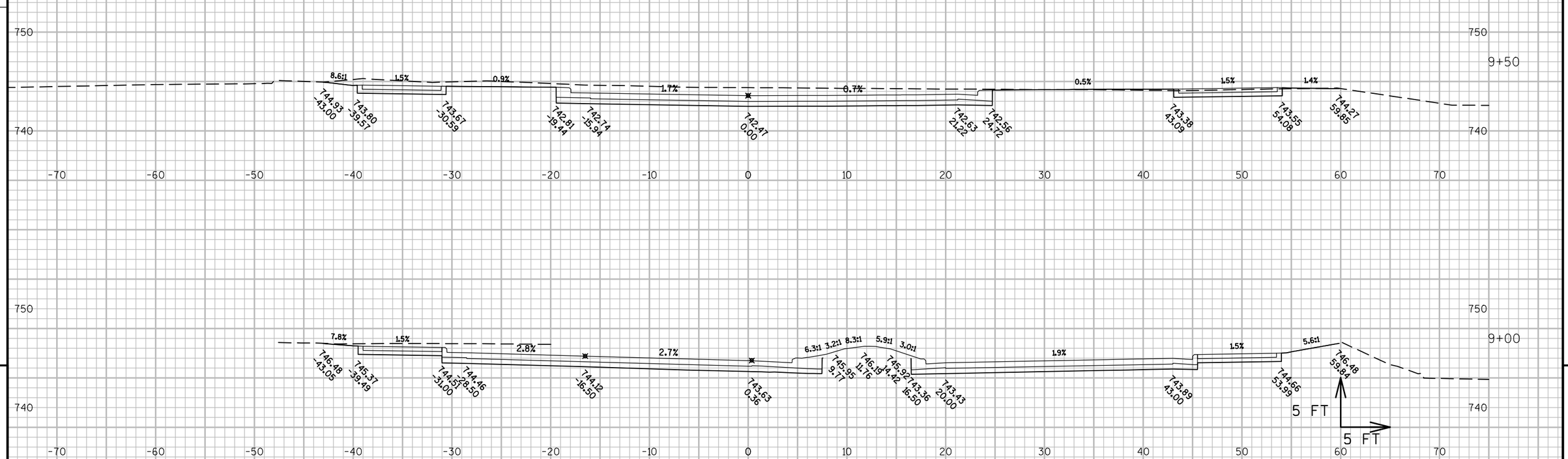
PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CROSS SECTIONS: LL	SHEET 99	E

FILE NAME : W:\PDS\C3D\10603317\84\DSN\XS\090501_XS.DWG
LAYOUT NAME - SECTION SHEET - (6)

PLOT DATE : 3/27/2015 10:56 AM PLOT BY : SPAETH, MICHELE L PLOT NAME : PLOT SCALE : 1" = 10'_XREF

WISDOT/CADDS SHEET 49



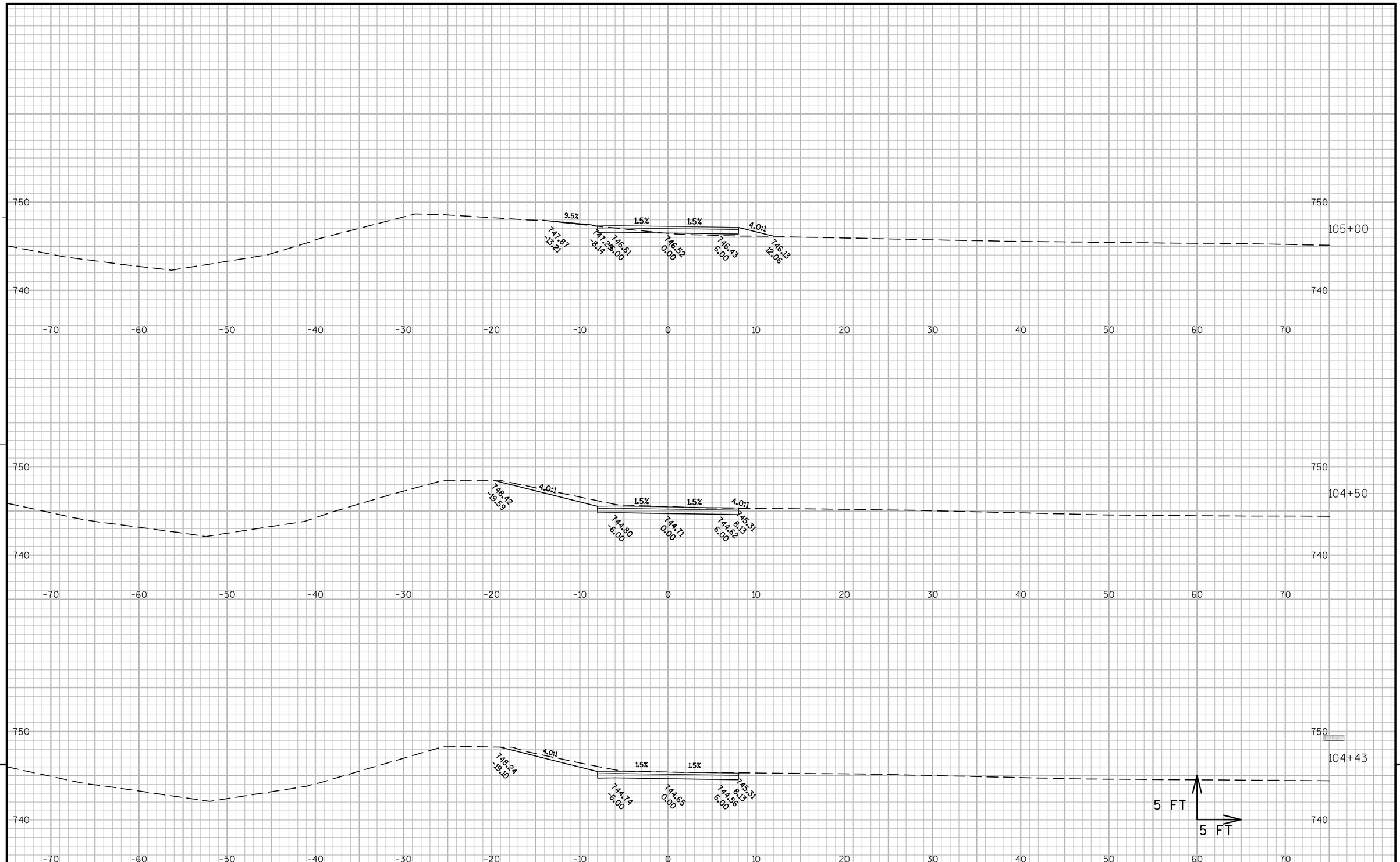


PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CROSS SECTIONS: LL	SHEET 100	E

FILE NAME : W:\PDS\C3D\10603317\84\DSN\XS\090501_XS.DWG
LAYOUT NAME - SECTION SHEET - (7)

PLOT DATE : 3/27/2015 10:56 AM PLOT BY : SPAETH, MICHELE L PLOT NAME : PLOT SCALE : 1" = 10'_XREF

WISDOT/CADDS SHEET 49



9

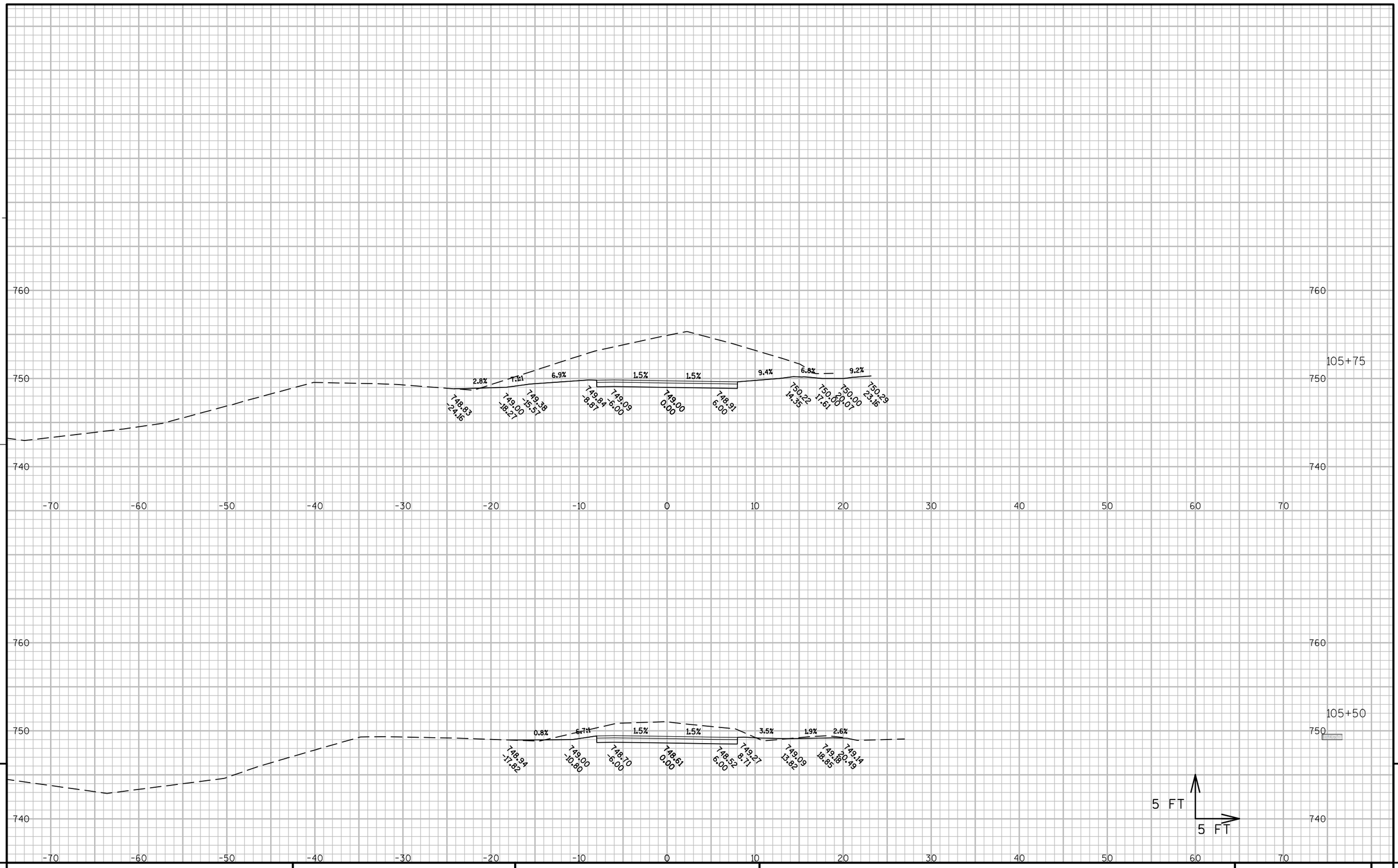
9

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CROSS SECTIONS: XF	SHEET 101	E

FILE NAME : W:\PDS\C3D\10603317\84\DSN\XS\090502_XS.DWG
LAYOUT NAME - SECTION SHEET - (3)

PLOT DATE : 3/27/2015 10:32 AM PLOT BY : SPAETH, MICHELE L PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



9

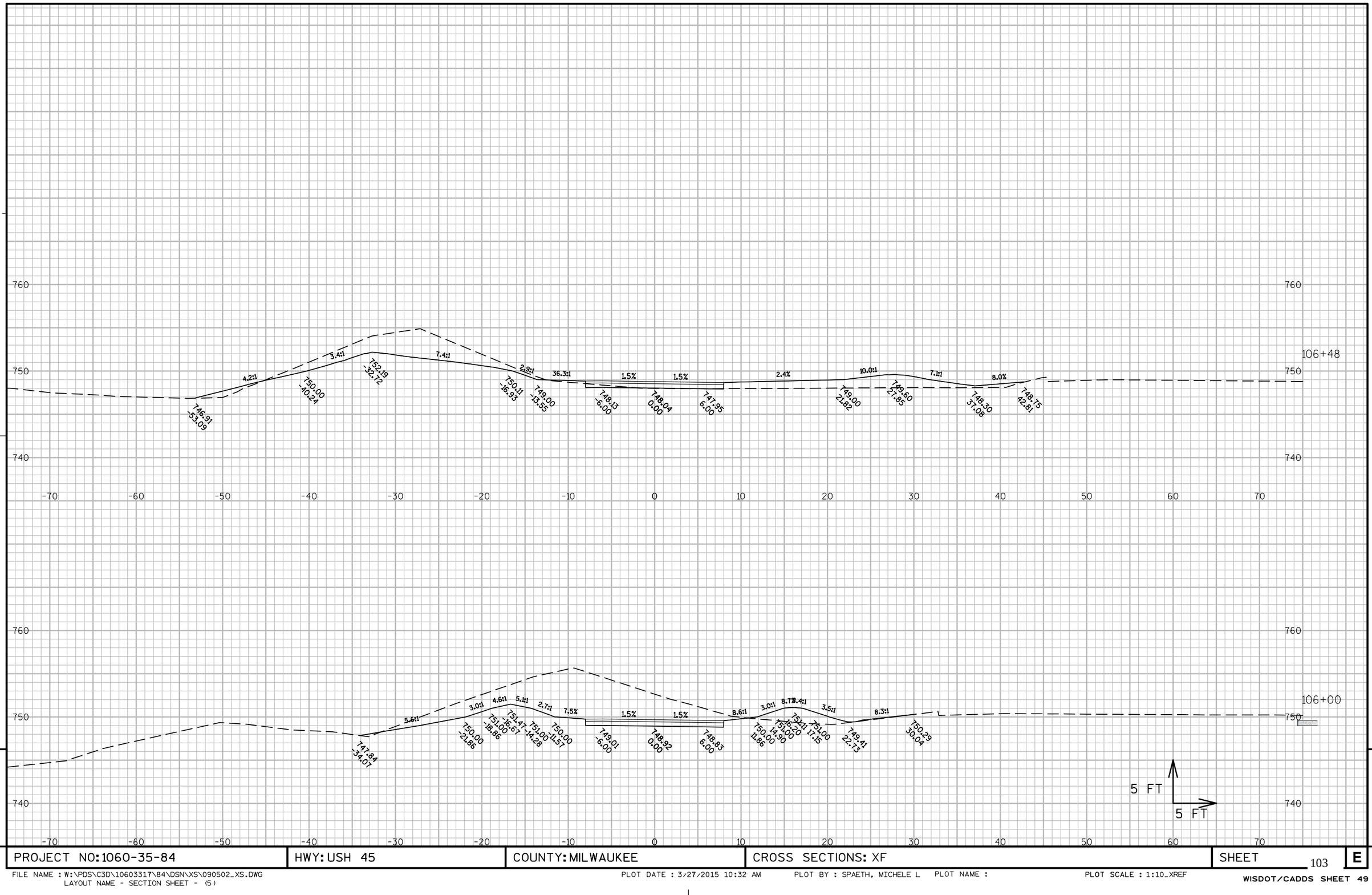
9

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CROSS SECTIONS: XF	SHEET 102	E

FILE NAME : W:\PDS\C3D\10603317\84\DSN\XS\090502_XS.DWG
LAYOUT NAME - SECTION SHEET - (4)

PLOT DATE : 3/27/2015 10:32 AM PLOT BY : SPAETH, MICHELE L PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 1060-35-84	HWY: USH 45	COUNTY: MILWAUKEE	CROSS SECTIONS: XF	SHEET 103	E

FILE NAME : W:\PDS\C3D\10603317\84\DSN\XS\090502_XS.DWG
LAYOUT NAME - SECTION SHEET - (5)

PLOT DATE : 3/27/2015 10:32 AM PLOT BY : SPAETH, MICHELE L PLOT NAME : PLOT SCALE : 1:10_XREF

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov