MAD JANUARY 2015

PROJECT ID: 1206-07-80
WITH: N/A

COUNTY: DANE

ORDER OF SHEETS

TOTAL SHEETS = 208

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

MT HOREB - MADISON

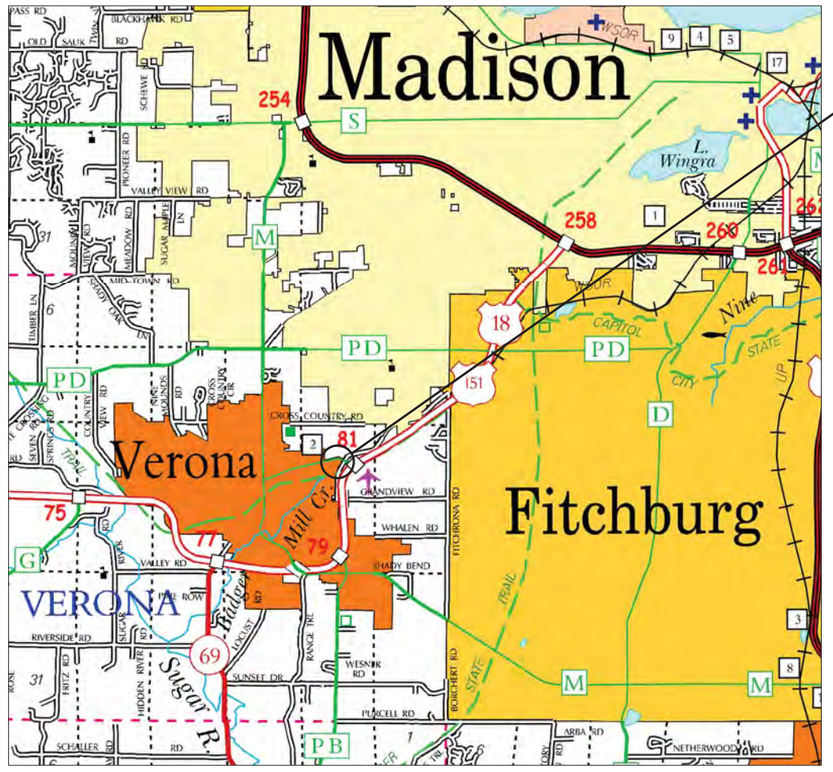
(MILITARY RIDGE PARK & RIDE EXPANSION)

USH 18

DANE COUNTY

STATE PROJECT NUMBER
1206-07-80

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1206-07-80	———	—



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DANE 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 VERTICAL NAVD 88 (2007).

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	CHARLENE BREGAUDIT
Project Manager	DAVID LAYTON
Regional Examiner	
Regional Supervisor	BRENDA SCHOENFELD

APPROVED FOR THE DEPARTMENT

DATE: 7-31-2014 Brenda Schoenfeld (Signature)

E

GENERAL NOTES

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
3. DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.
4. CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
5. NO EQUIPMENT OR MATERIALS SHALL BE STORED IN OR IMPACT ANY WATERWAYS.
6. EROSION CONTROL FEATURES WILL BE DETERMINED BY THE EROSION CONTROL IMPLEMENTATION PLAN (ECIP). ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.
7. THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDE AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.
8. THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTLITIES ARE MEMBERS OF DIGGERS HOTLINE.
9. ADJUST THE LOCATIONS OF CONTRACT ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH THE EXISTING UTLITY FACILITIES, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT SPECIAL PROVISIONS.
10. PAVEMENT REMOVAL WILL BE TO THE NEAREST JOINT OR A SAWED EDGE WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.
11. ASPHALTIC WASTE MATERIAL RESULTING FROM THE VARIOUS OPERATIONS UNDER THIS CONTRACT SHALL BE ENTIRELY REMOVED AND DISPOSED OF AT THE TIME OF OCCURRENCE AS DIRECTED BY THE ENGINEER.
12. IN THE PERFORMANCE OF THE WORK UNDER THE ITEM "MULCHING", ALL AREAS SEEDED AND FERTILIZED SHALL BE MULCHED AS DIRECTED BY THE ENGINEER.
13. CONSTRUCT INSIDE EDGE OF SIDEWALK 0.04' HIGHER THAN TOP OF CURB WHEN THEY ARE ADJACENT TO EACH OTHER.
14. INLET GRATE ELEVATIONS REFERRED TO ON INLET NOTES ARE GRATE FLOW LINE ELEVATIONS.
15. DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

PAVEMENT TABLE

ROADWAY				
	THICKNESS	HMA TYPE	ASPHALTIC MATERIAL	GRADATION
UPPER LAYER	2.5'	E-3	PG58-28	12.5 MM
LOWER LAYER	3'	E-3	PG58-28	12.5 MM

PARK & RIDE LOT				
	THICKNESS	HMA TYPE	ASPHALTIC MATERIAL	GRADATION
UPPER LAYER	1-3/4"	E-1	PG64-28	12.5 MM
LOWER LAYER	1-3/4"	E-1	PG64-28	12.5 MM

ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
AECP	APRON ENDWALL FOR CULVERT PIPE
ASPH	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
B.	BARN
B.P.	BREAK POINT
BAD	BASE AGGREGATE DENSE
BM	BENCHMARK
BOC	BACK OF CURB
C.E.	COMMERCIAL ENTRANCE
COR.	CORNER
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE
C.S.P.A.	CORRUGATED STEEL PIPE ARCH
D.H.V.	DESIGN HOURLY VOLUME
V.	DESIGN SPEED
DA	DEGREE OF CURVE
DIA.	DIAMETER
DIM.	DIMENTION
e.	EXTERNAL DISTANCE
E.	EAST
E.A.T.	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
EL. OR ELEV	ELEVATION
E.S.A.L.	EQUIVALENT SINGLE AXLE LOAD
E.O.P.	EDGE OF PAVEMENT
EXIST	EXISTING
F.E.	FIELD ENTRANCE
G	GARAGE
H.	HOUSE
H.P.	HIGH POINT
H.E.S.	HIGH EARLY STRENGTH
I.P.	IRON PIN
L.	LENGTH (OF CURVE)
·L.H.F.	·LEFT HAND FORWARD
L.C.	LONG CHORD
L.P.	LOW POINT
LT.	LEFT HAND FORWARD
LPOL	LIGHT POLE
MAX.	MAXIMUM
MIN.	MINIMUM
NOR.	NORMAL
N.	NORTH
T.	PERCENT TRUCKS
P.E.	PRIVATE ENTRANCE
P.L.	PROPERTY LINE
R.C.P.A.	REINFORCED CONCRETE PIPE ARCH
R.H.F.	RIGHT HAND FORWARD
RD.	ROAD
RT.	RIGHT
R/W	RIGHT OF WAY
S.	SHED
S.D.D.	STANDARD DETAIL DRAWING
SHR.	SHRINKAGE
S.E.	SUPERELEVATION
S.P.B.G.	STEEL PLATE BEAM GUARD
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
TEL.	TELEPHONE
TN.	TOWN
T.O.C.	TOP OF CURB
TRANS.	TRANSITION
VOL.	VOLUME
W.	WEST

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

UTILITY CONTACTS

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(608) 222-1202
erich@madsewer.org

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(608) 664-4404
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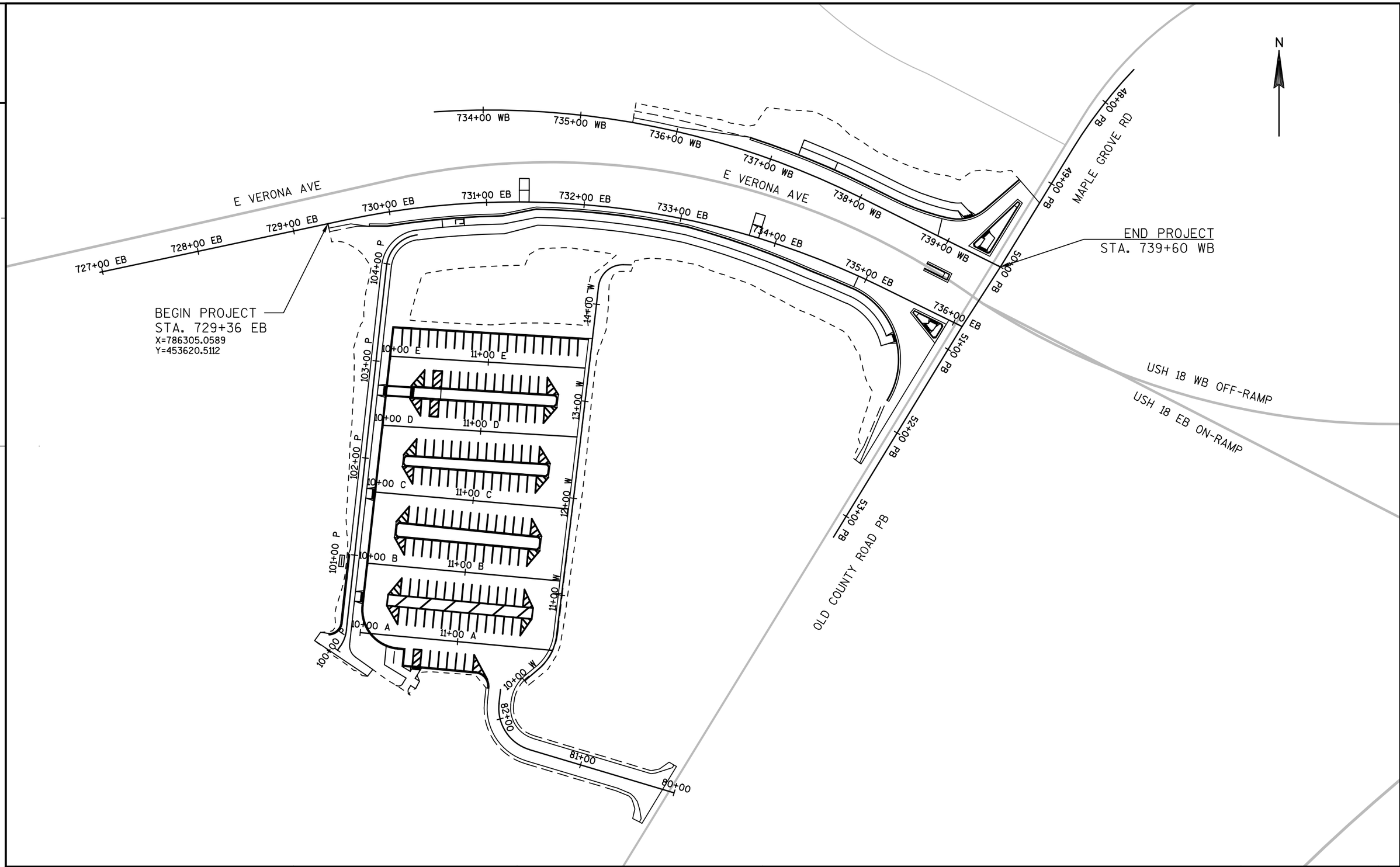
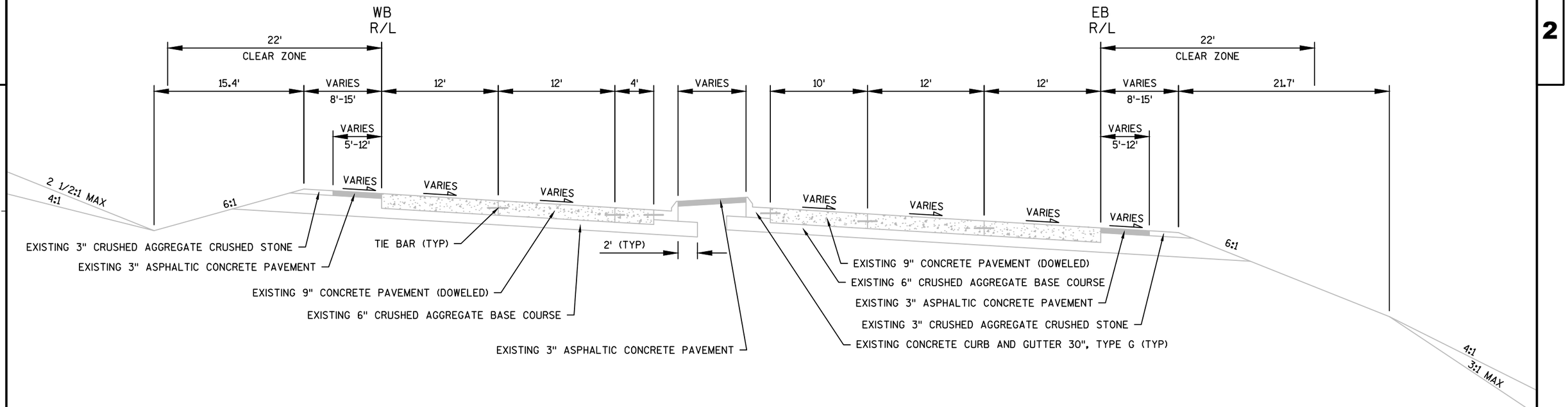
ORDER OF SECTION 2 SHEETS

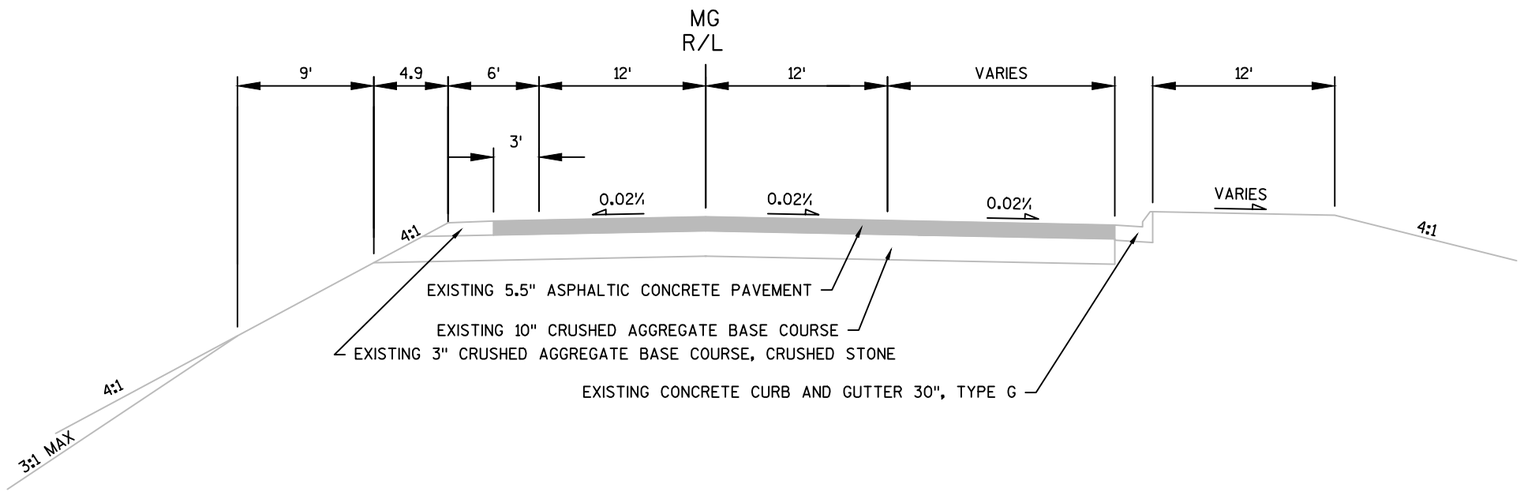


PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PROJECT OVERVIEW	SHEET 3	E



EXISTING TYPICAL SECTION

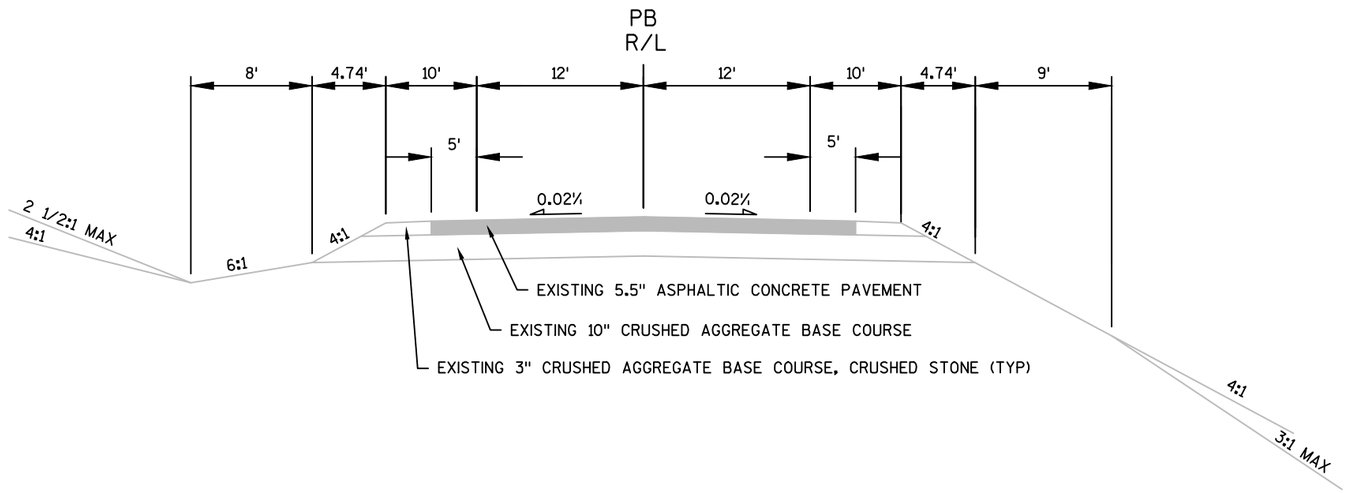
E VERONA AVE



EXISTING TYPICAL SECTION

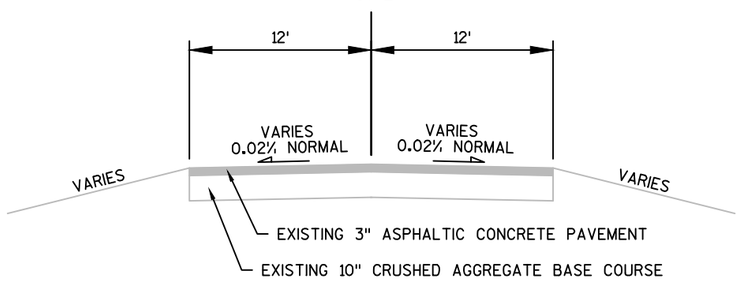
MAPLE GROVE DR

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TYPICAL SECTIONS	SHEET 4	E



EXISTING TYPICAL SECTION

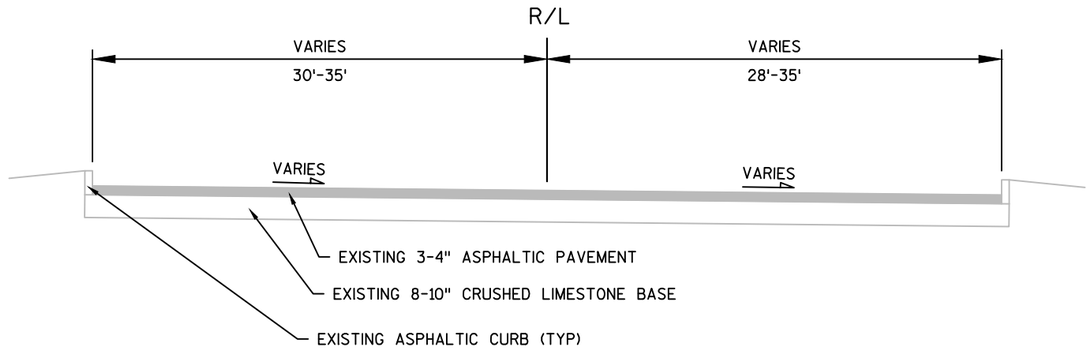
OLD CTH PB



EXISTING TYPICAL SECTION

PARK & RIDE DRIVEWAY

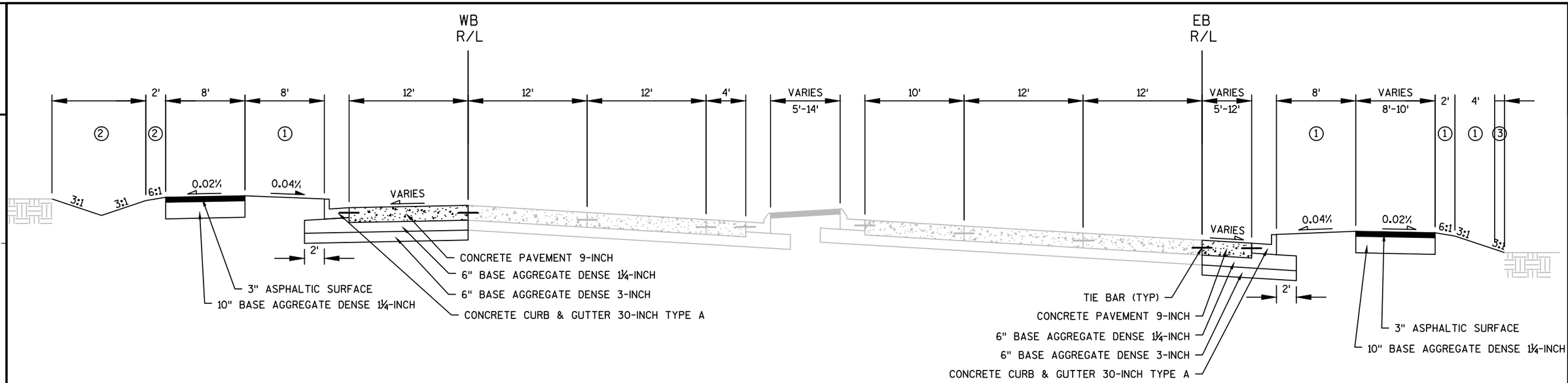
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TYPICAL SECTIONS	SHEET 5	E



EXISTING TYPICAL SECTION

PARKING BAY A
PARKING BAY B
PARKING BAY C
PARKING BAY D

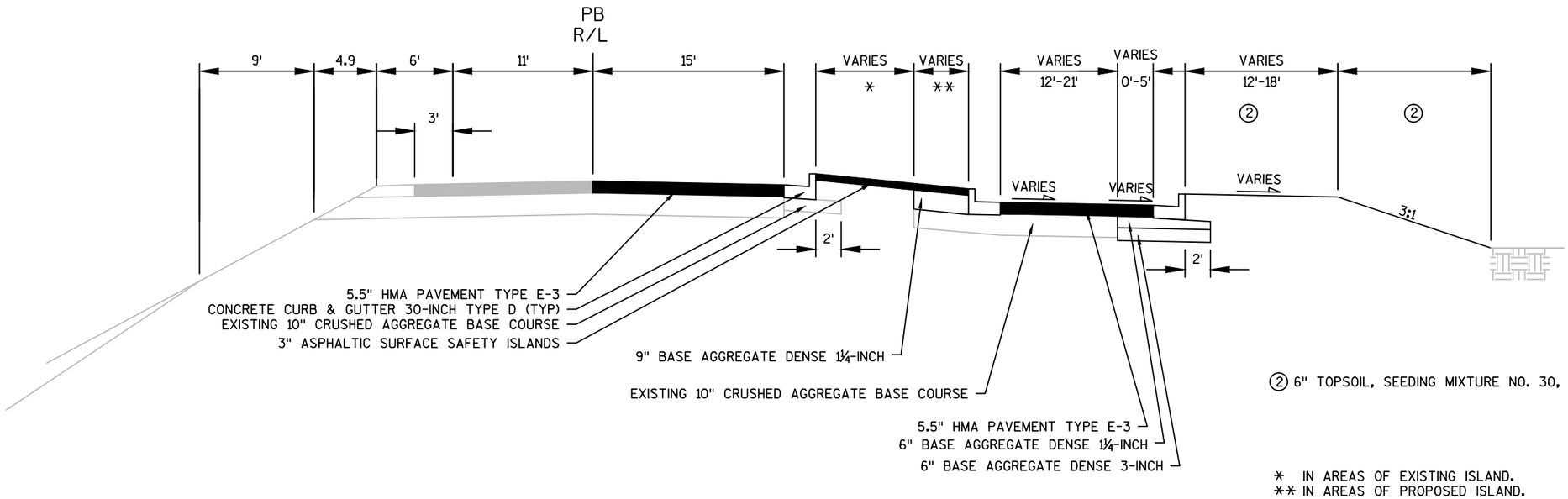
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TYPICAL SECTIONS	SHEET 6	E



FINISHED TYPICAL SECTION

E VERONA AVE
STA 729+36 - 734+92 EB
STA 735+54 - 738+88 WB

① 6" TOPSOIL, SOD EROSION CONTROL
② 6" TOPSOIL, SEEDING MIXTURE NO. 30, FERTILIZER TYPE B, MULCHING
③ 6" TOPSOIL, SEEDING MIXTURE NO. 75, FERTILIZER TYPE B, MULCHING

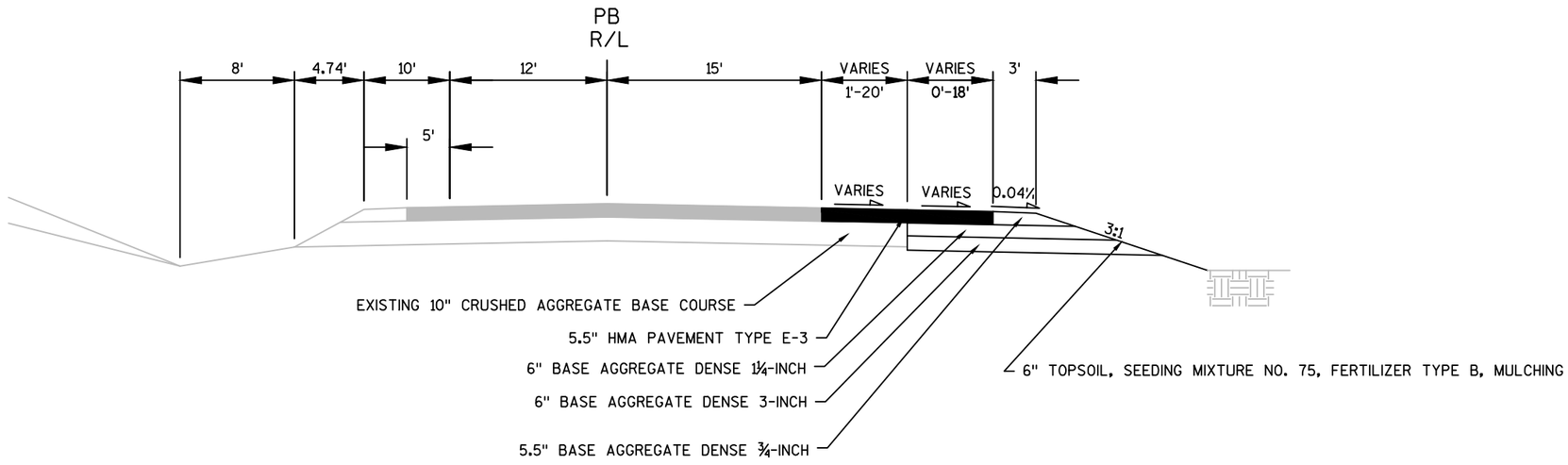


② 6" TOPSOIL, SEEDING MIXTURE NO. 30, FERTILIZER TYPE B, MULCHING

* IN AREAS OF EXISTING ISLAND.
** IN AREAS OF PROPOSED ISLAND.

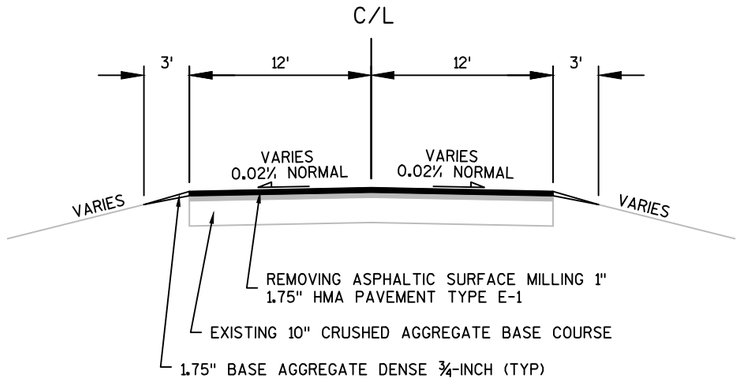
FINISHED TYPICAL SECTION

MAPLE GROVE DR
STA 49+23 - 50+00 PB



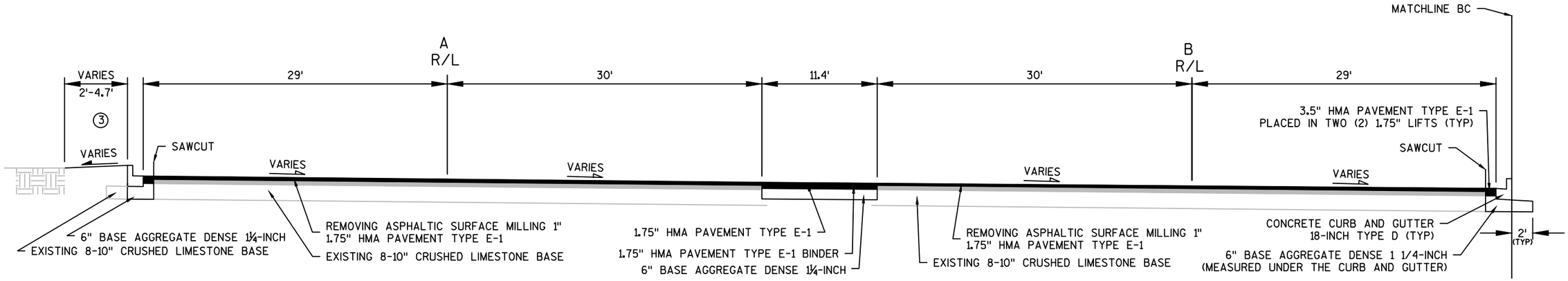
FINISHED TYPICAL SECTION

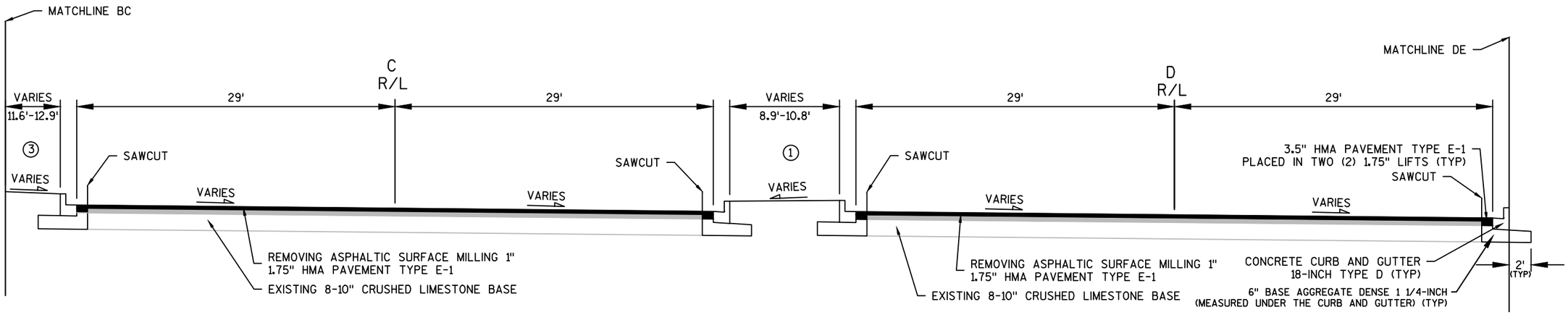
OLD CTH PB
STA 50+72 - 52+46 PB

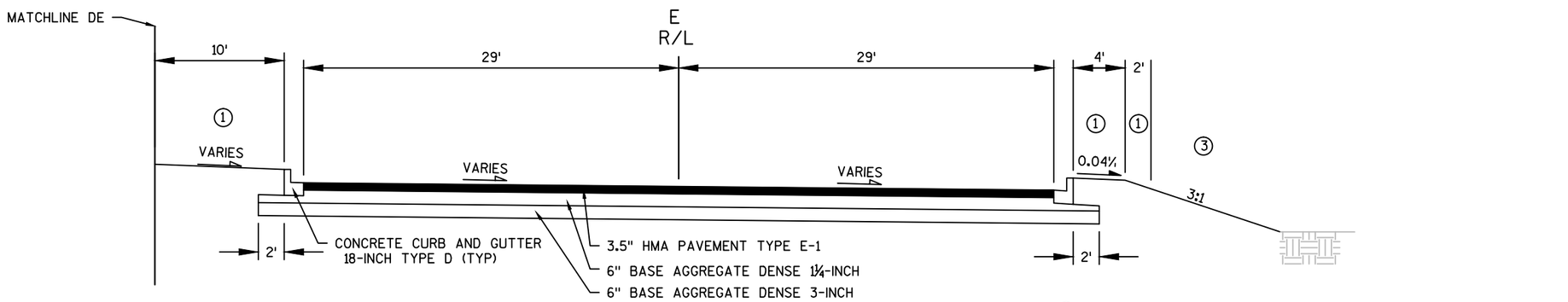


FINISHED TYPICAL SECTION

PARK & RIDE DRIVEWAY







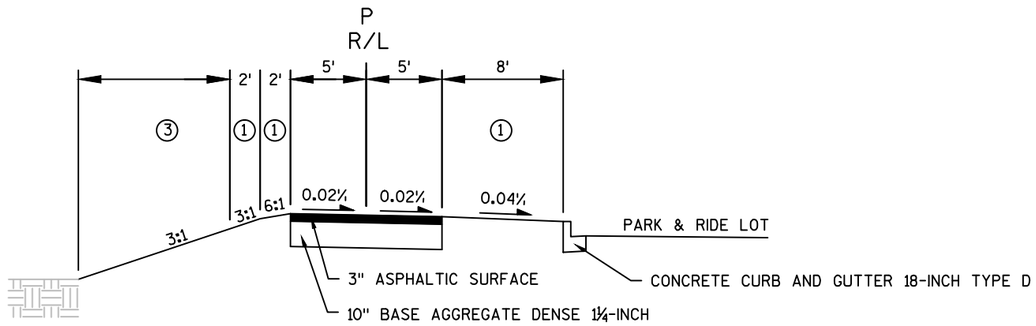
FINISHED TYPICAL SECTION

PARK AND RIDE

STA 10+47 - 11+21 A STA 10+25 - 11+74 B
STA 10+24 - 11+74 C STA 10+24 - 11+75 D
STA 10+00 - 11+99 E

① 6" TOPSOIL, SOD EROSION CONTROL
③ 6" TOPSOIL, SEEDING MIXTURE NO. 75, FERTILIZER TYPE B, MULCHING

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TYPICAL SECTIONS	SHEET 9	E

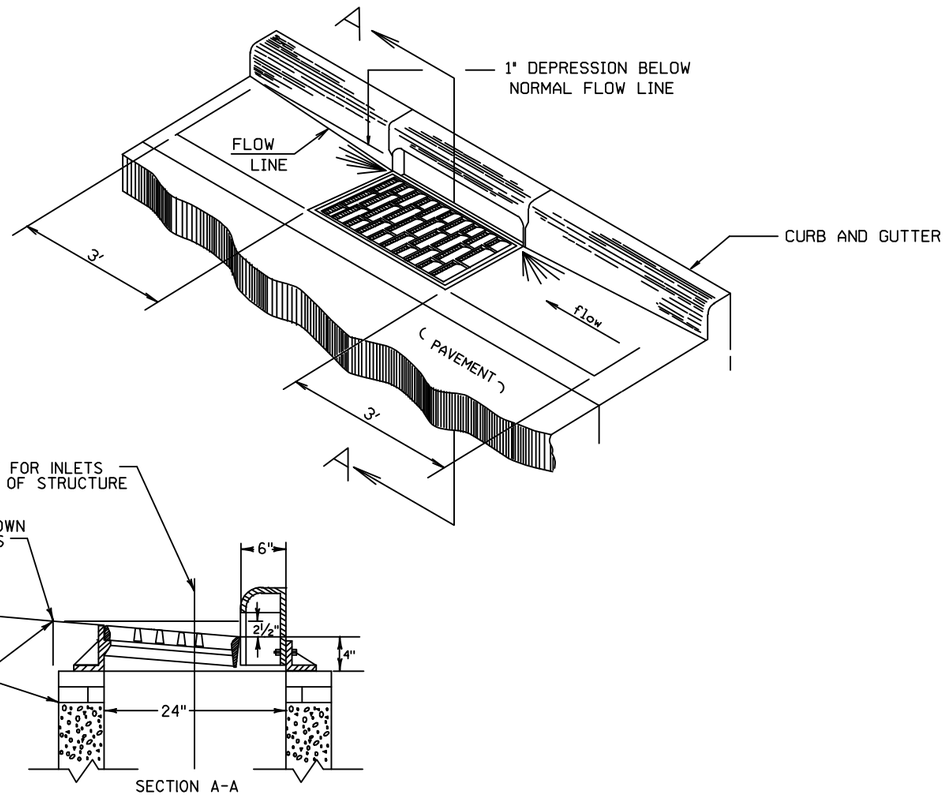


(1) 6" TOPSOIL, SOD EROSION CONTROL
(3) 6" TOPSOIL, SEEDING MIXTURE NO. 75, FERTILIZER TYPE B, MULCHING

FINISHED TYPICAL SECTION

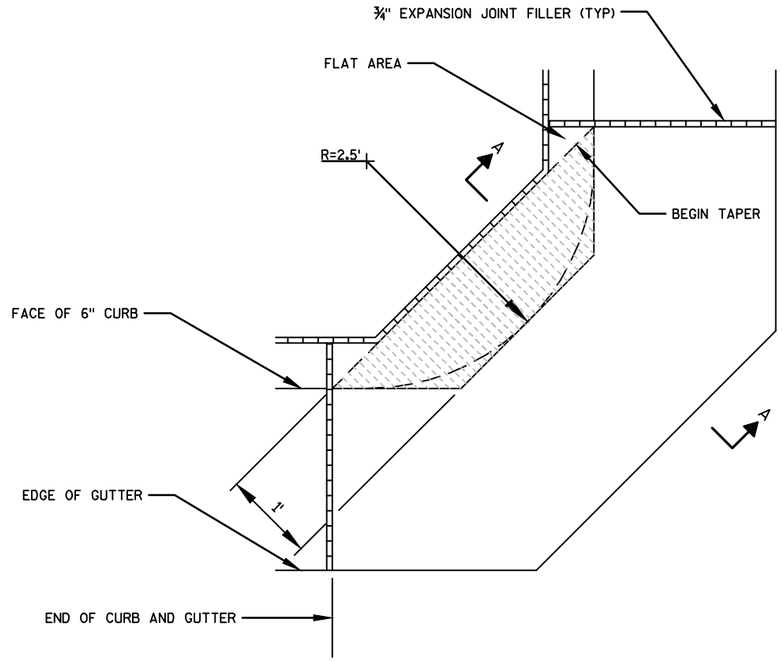
MULTI-USE PATH
STA 100+00 - 104+46 P

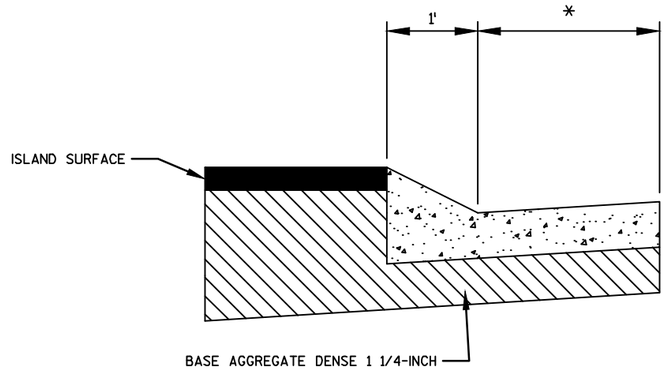
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TYPICAL SECTIONS	SHEET 10	E



DETAIL OF CURB AND GUTTER AT INLETS

(INLET 2X3-FT-H SHOWN)



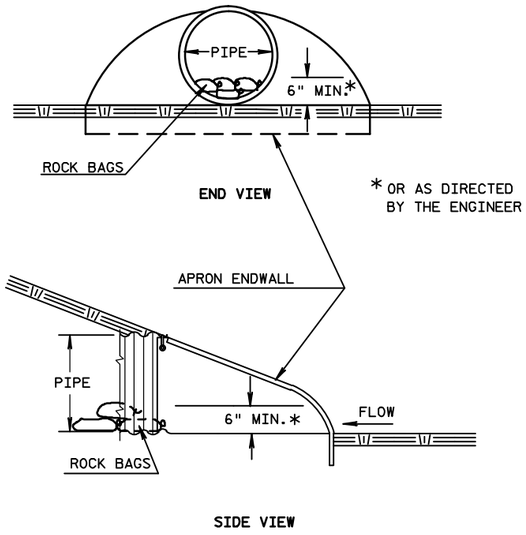


SECTION A-A

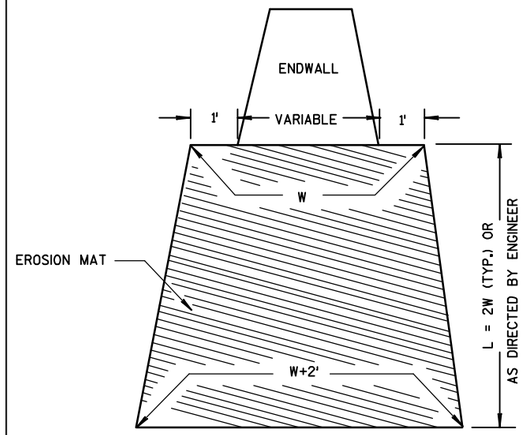
CONCRETE MEDIAN SLOPED NOSE SPECIAL

* WIDTH OF GUTTER TO MATCH ADJACENT GUTTER

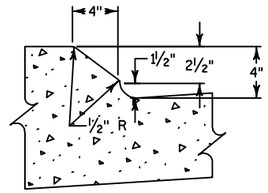
NOTE: PAID FOR AS "CONCRETE MEDIAN SLOPED NOSE"



CULVERT PIPE CHECK



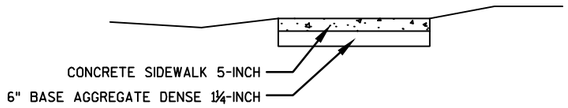
EROSION MAT TREATMENT AT CULVERTS



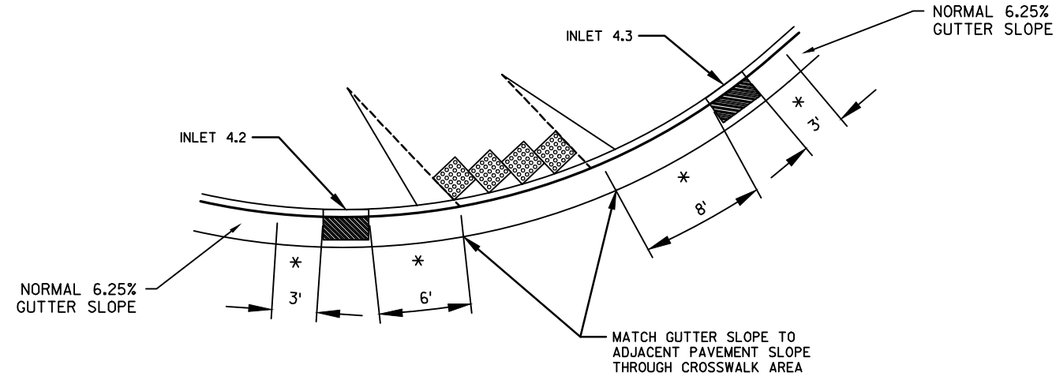
MOWER ACCESS CONCRETE CURB AND GUTTER

*MOWER ACCESS CURB SECTIONS TO BE 8' LONG PLUS TRANSITIONS, PAY AS ADJACENT CURB & GUTTER.

**PLACE AT LOCATIONS AS DIRECTED BY THE ENGINEER.

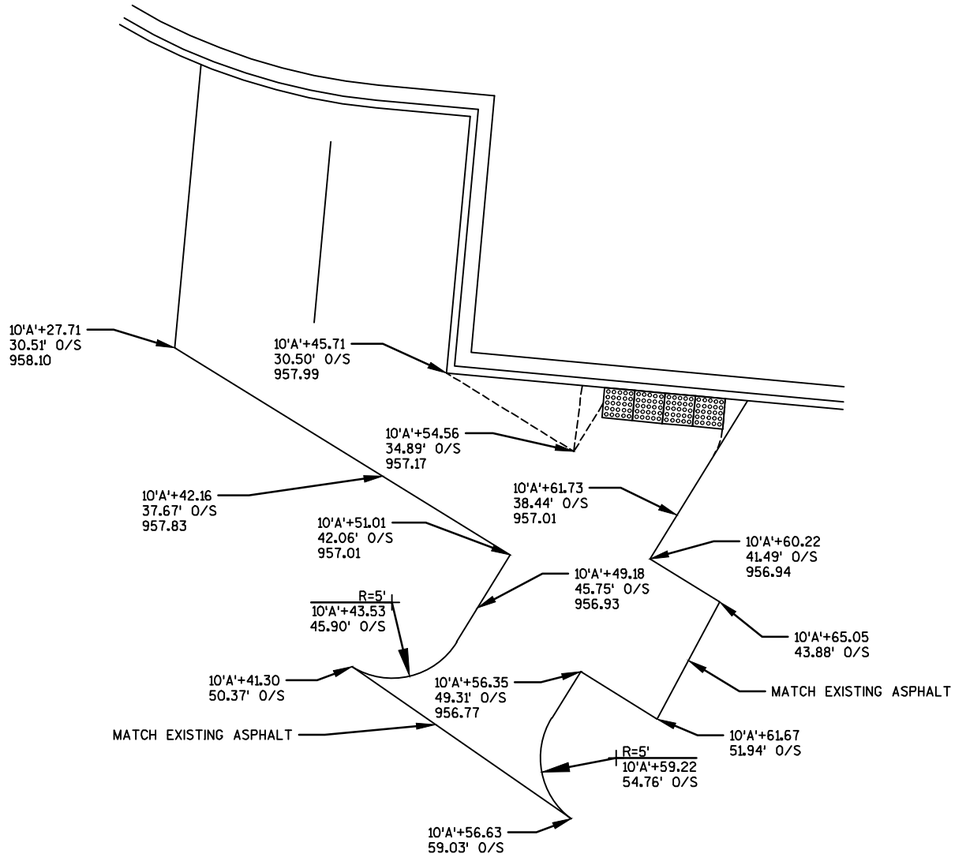


CONCRETE SIDEWALK TYPICAL SECTION

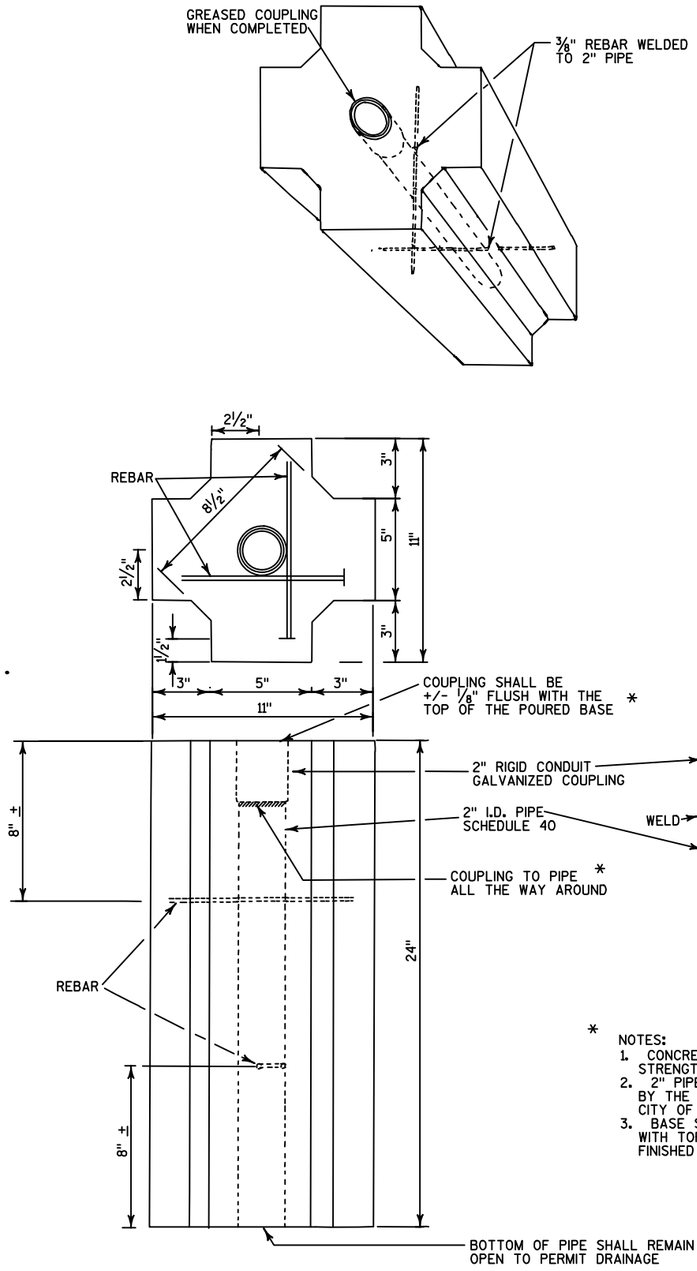


*TRANSITION GUTTER SLOPE TO 1" BELOW FLOWLINE OF NORMAL 6.25% CROSS-SLOPE (SEE CONSTRUCTION DETAIL "DETAIL OF CURB AND GUTTER AT INLETS")

DETAIL OF CURB AND GUTTER AT LOW POINT

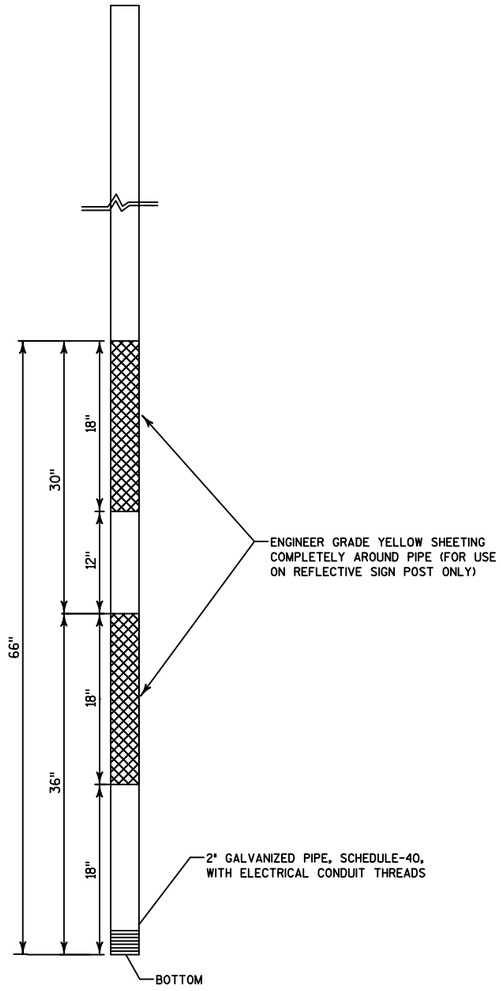


BIKE PAD DETAIL

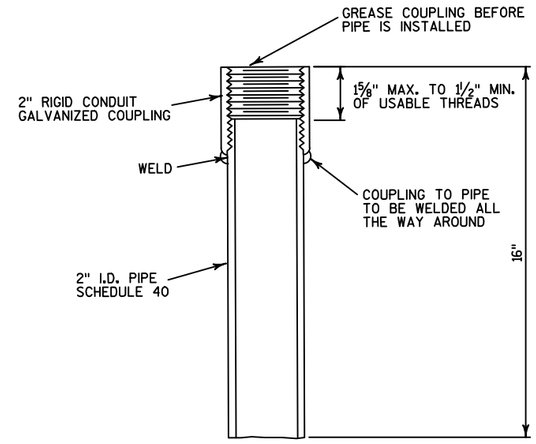


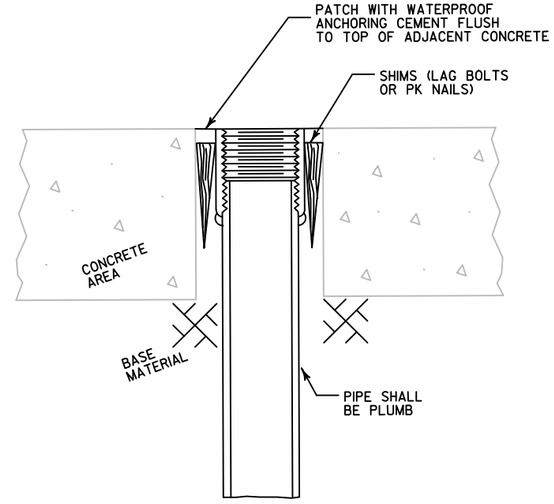
* NOTES:
1. CONCRETE 3200 PSI MINIMUM STRENGTH IN 28 DAYS
2. 2" PIPE AND COUPLING FURNISHED BY THE CITY - WHEN MADE FOR T.E. CITY OF MADISON
3. BASE SHALL BE INSTALLED PLUMB WITH TOP OF BASE FLUSH WITH FINISHED GRADE

PRECAST CONCRETE SIGN BASE



SIGN POST AND REFLECTIVE SIGN POST



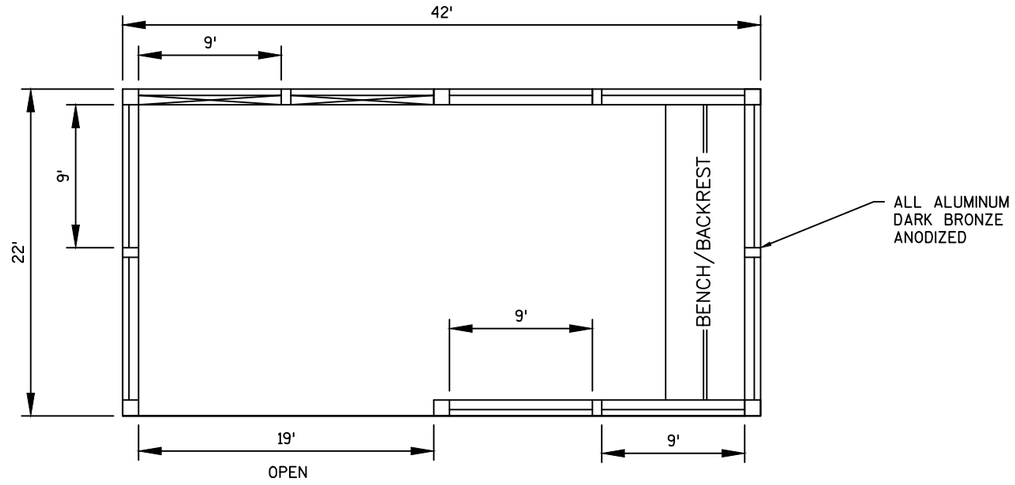


SIGN POST BASE FOR CONCRETE INSTALLATION

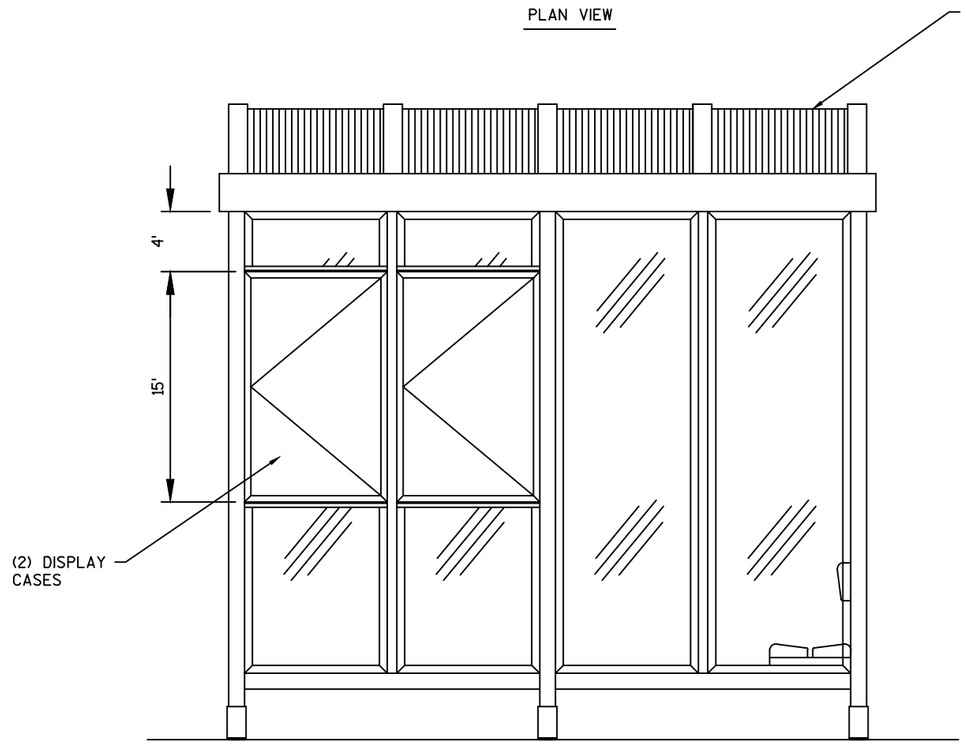
SIGN POST BASE FOR CONCRETE INSTALLATION INSTRUCTIONS:

DRILL OR COREDRILL 3" HOLE ALL THE WAY THROUGH THE CONCRETE TO THE BASE MATERIAL. WITH A TEMPORARY PIPE 4 TO 5 FEET LONG, HAND-TIGHTEN IT INTO THE INSERT (SEE INSERT DETAIL). DRIVE THE INSERT INTO THE BASE MATERIAL AT A LEVEL/PLUMB POSITION UNTIL THE INSERT IS FLUSH WITH THE TOP OF THE CONCRETE. SHIM INSERT TO A LEVEL/PLUMB POSITION WITH LAG BOLTS OR P.K. NAILS. ALL SHIMS MUST BE SET BELOW THE CONCRETE/INSERT. REMOVE TEMPORARY PIPE, REPLACE WITH PERMANENT PIPE, AND TIGHTEN INTO INSERT WITH LARGE PIPE WRENCH UNTIL INSERT TURNS. RESET SHIMS OR ADD SHIMS UNTIL PIPE NO LONGER TURNS. RETIGHTEN PIPE AND RECHECK LEVEL/PLUMB/TOP OF CONCRETE WITH INSERT. PATCH CONCRETE WITH A WATERPROOF ANCHORING CEMENT FOR CONCRETE. PATCH SHALL BE MIXED TO A LIQUID CONSISTENCY, NOT A PASTE. PATCH SHALL BE POURED UNTIL IT IS FLUSH WITH THE TOP OF THE INSERT. RECHECK LEVEL/PLUMB/TOP OF CONCRETE WITH INSERT IMMEDIATELY DUE TO FAST SETTING TIME OF CEMENT. ADDITIONAL CEMENT MAY BE REQUIRED AS IT SETTLES. COMPLETED INSTALLATION SHALL BE LEVEL/PLUMB, SOLID, AND ABLE TO SUPPORT REQUIRED SIGN POST AND SIGNS. PATCH SHALL BE FLUSH WITH ADJACENT CONCRETE WITHOUT EXPOSED SHIMS.

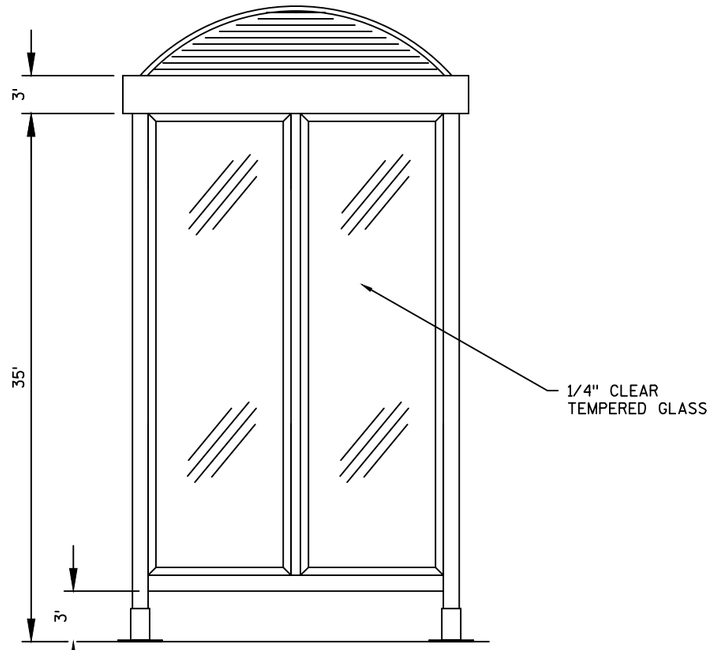
2



PLAN VIEW



ELEVATION VIEW

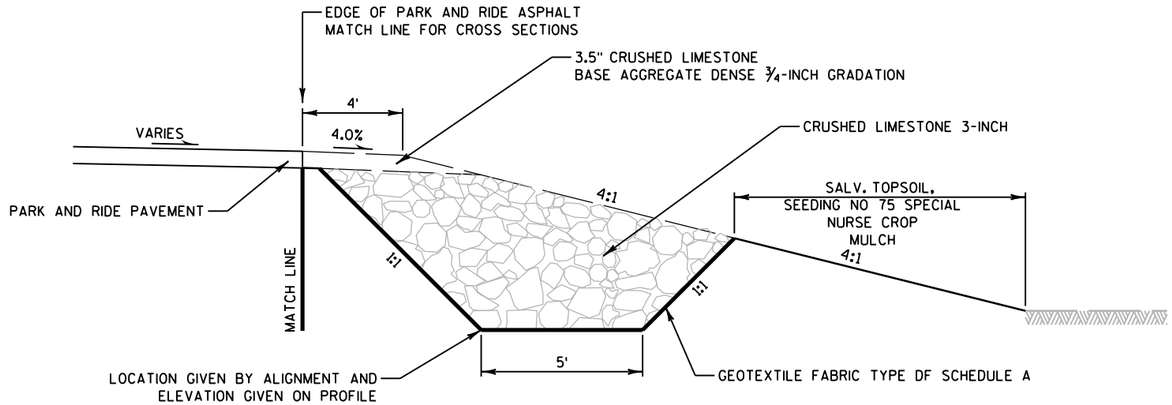


SIDE VIEW

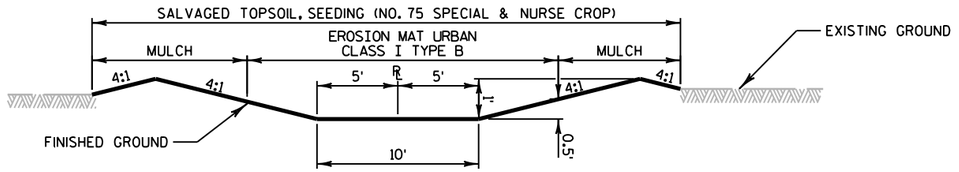
BUS SHELTER

MADISON METRO TRANSIT
TYPE "A" SHELTER SB4-2-M-MM

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CONSTRUCTION DETAILS	SHEET 14	E



STONE WEEPER TRENCH
TYPICAL SECTION
STA 10'W'+00 - STA 13'W'+75

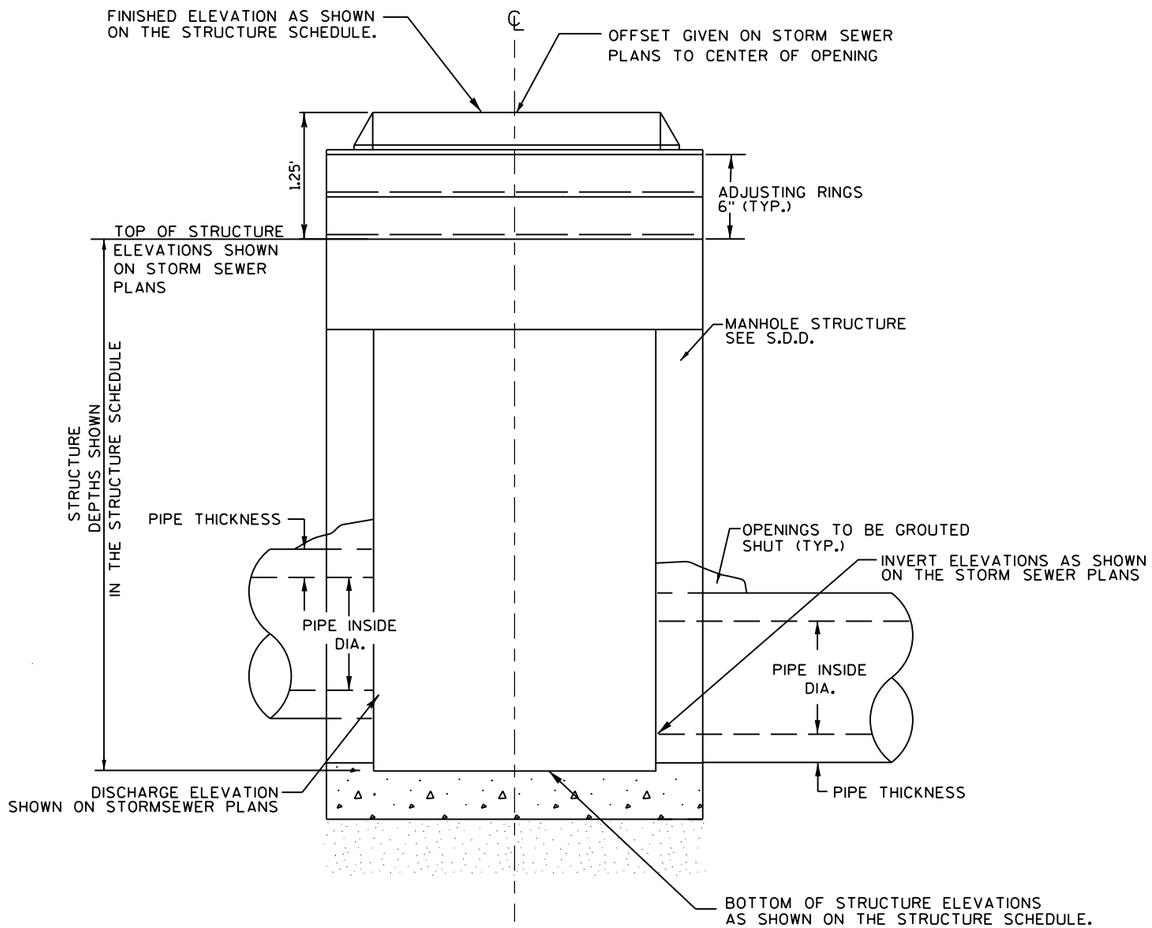


DRAINAGE SWALE
TYPICAL SECTION
STA 13'W'+75 - STA 14'W'+64

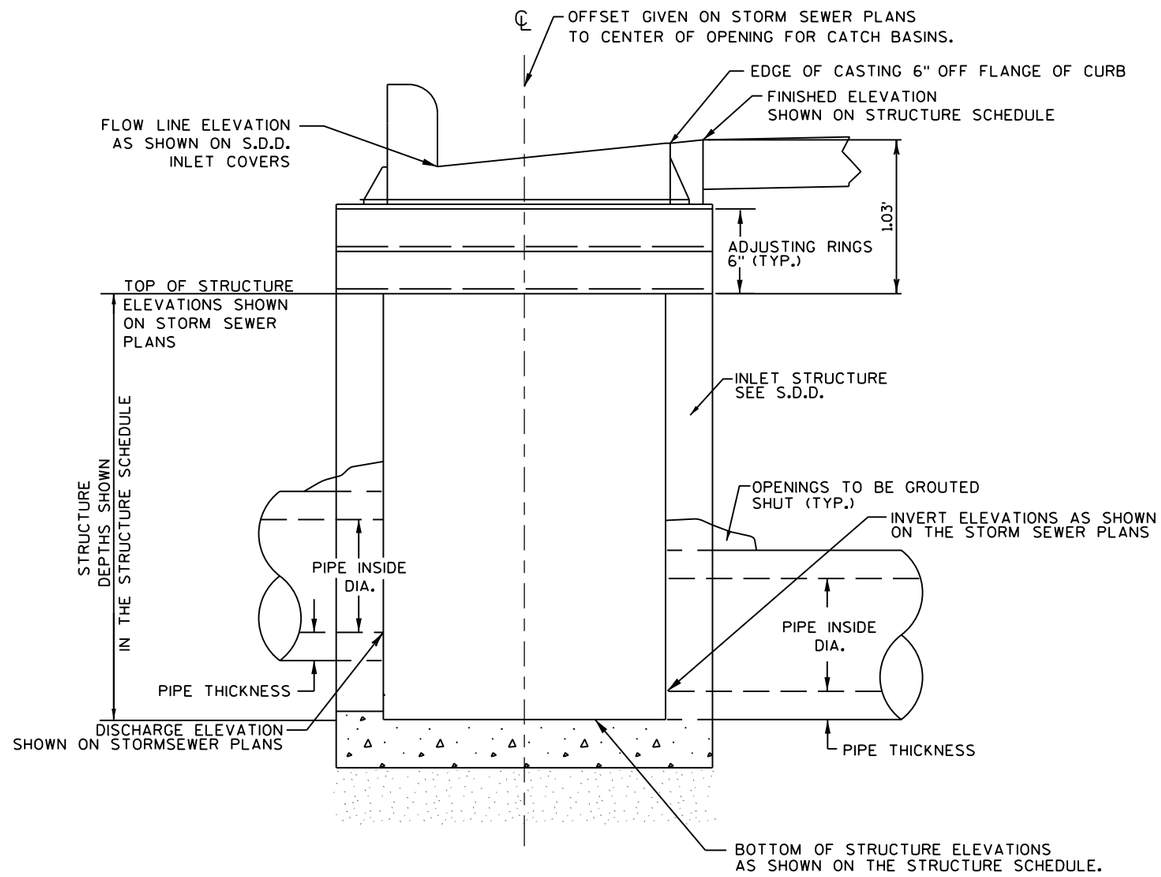
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	STONE WEEPER TRENCH & SWALE TYPICAL SECTION	SHEET 15	E

2

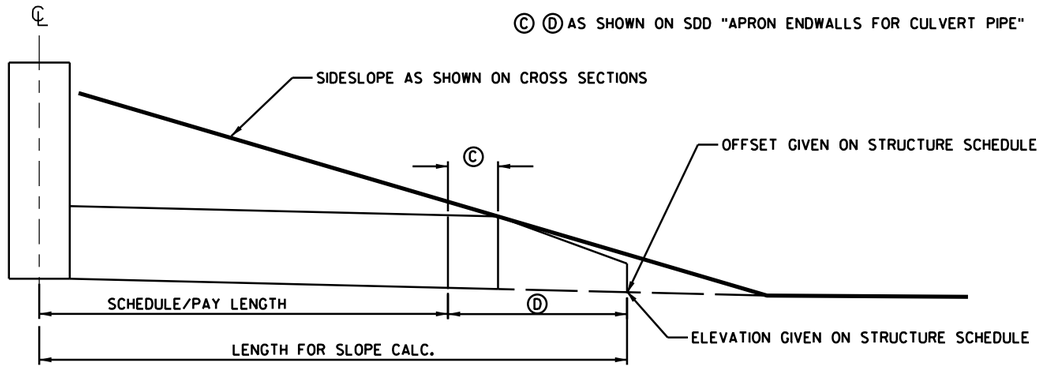
DETAIL OF MANHOLE WITH TYPE J CASTING



DETAIL OF INLET WITH TYPE H CASTING



DETAIL OF STORMSEWER ENDWALL



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CONSTRUCTION DETAIL FOR STORMSEWER	SHEET 16	E

NOTES: SEE CONSTRUCTION DETAIL FOR MORE INFORMATION

LABEL SHOWN ON PLAN INCLUDES
(#) STATION & OFFSET TO ℄ OF STRUCTURE
STRUCTURE TYPE, CASTING TYPE

2

WETLAND

4.0 STA. 738'WB'+79.1, 56.9'LT
APRON ENDWALLS FOR CULVERT PIPE 36-INCH

4.1 STA. 738'WB'+79.1, 23.4'LT
MANHOLE 5FT DIA, TYPE J

49+00PB

TRAFFIC SIGNAL
UG ELECTRIC

735+00WB 736+00WB 737+00WB 738+00WB 739+00WB

WB ℄

UG FIBER
TDS COMMUNICATIONS

MADISON METRO
SEWER DISTRICT
SANITARY SEWER

VERONA AVENUE

CUT EXISTING PIPE AT EDGE OF MANHOLE
30 L.F. - REMOVE STORM SEWER (36-INCH)

4.2 STA. 739'WB'+00.0, 23.5'LT
INLETS 2X3-FT, TYPE H-S

4.3 STA. 49'PB'+61.5, 45.0'RT
INLETS 2X3-FT, TYPE H-S

PI 50+00.00PB

PB ℄

2.1 STA. 733+75.0EB, 9.5'RT
INLETS 2X3-FT, TYPE H

1.1 STA. 731'EB'+14.0, 13.5'RT
INLETS 2X3-FT, TYPE H

1.0 STA. 731'EB'+40.0, 48.0'RT
APRON ENDWALLS FOR CULVERT PIPE 12-INCH

EB ℄

731+00EB 732+00EB 733+00EB 734+00EB 735+00EB 736+00EB

OLD COUNTY ROAD PB

54-INCH CPRC EXTENSION REQ'D

WETLAND

WETLAND

3.1 STA. 735'EB'+35.65, 25.2'RT
MANHOLE 5-FT DIA, TYPE H

2.0 STA. 733'EB'+75.0, 45.6'RT
APRON ENDWALLS FOR CULVERT PIPE 12-INCH

UG FIBER
TDS COMMUNICATIONS

WETLAND

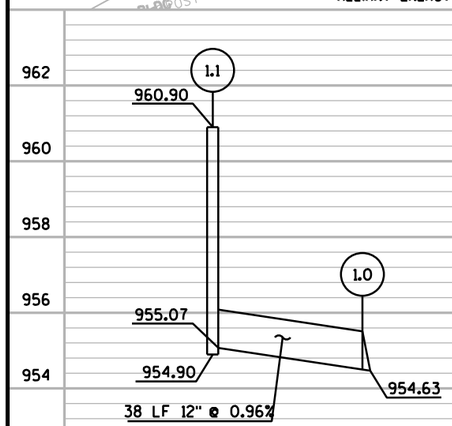
3.0 STA. 735'EB'+35.0, 71.1'RT
APRON ENDWALLS FOR CULVERT PIPE 36-INCH

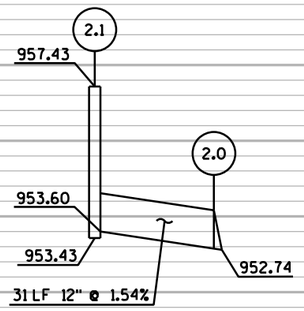
UG TELEPHONE
TDS COMMUNICATIONS

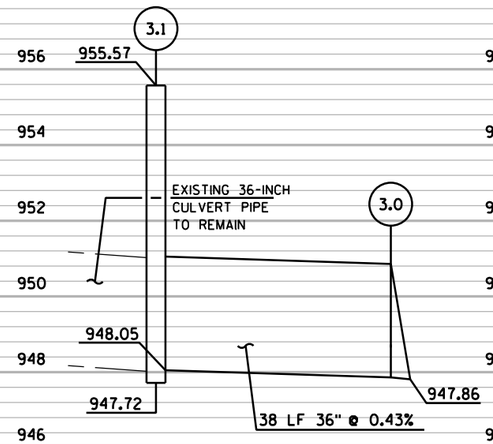
ALLIANT ENERGY

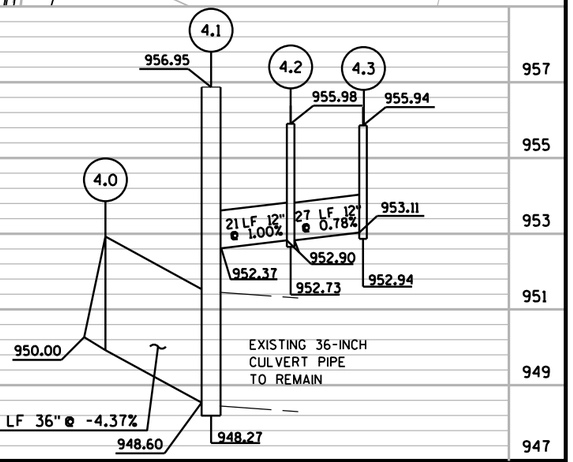
CUT EXISTING PIPE AT EDGE OF MANHOLE
30 L.F. - REMOVE STORM SEWER (36-INCH)

N









PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	STORM SEWER	SHEET 17	E

2

N

SAWING ASPHALT

SAWING CONCRETE

REMOVING ASPHALTIC SURFACE

REMOVING SMALL PIPE CULVERT

REMOVING CURB & GUTTER

734WB 735WB 736WB 737WB 738WB 739WB

E VERONA AVE

SAWING CONCRETE

SAWING CONCRETE

731EB 732EB 733EB 734EB 735EB 736EB

REMOVING ASPHALTIC SURFACE

REMOVING PAVEMENT

SAWING CONCRETE

MAPLE GROVE DR

52PB

729EB 730EB

SAWING ASPHALT

104P

103P

REMOVING BUILDING

REMOVING SMALL PIPE CULVERTS

REMOVING ASPHALTIC SURFACE

REMOVING CURB & GUTTER

SAWING ASPHALT

OLD COUNTY ROAD PB

SCALE, FEET 0 25 50

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	REMOVAL PLAN	SHEET 18	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\021201_PD.DWG PLOT DATE : 7/24/2014 4:14 PM PLOT BY : MECUM, BRANDYN W PLOT NAME : PLOT SCALE : 1:50_XREF

WISDOT/CADDS SHEET 42

2

2

SAWING ASPHALT

SAWING ASPHALT

SAWING ASPHALT

SAWING ASPHALT

SAWING ASPHALT

SAWING ASPHALT

103P

102P

101P

100P

10D

11D

10C

11C

10B

11B

10A

11A

PARK & RIDE PARKING LOT

REMOVING ASPHALTIC SURFACE MILLING

MOVING HISTORICAL MARKER

ICE AGE TRAIL

TO MILITARY RIDGE STATE TRAIL

OLD COUNTY ROAD PB

53PB

BORE

POST

WALLS

SIGN

N

SCALE, FEET 0 25 50

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	REMOVAL PLAN	SHEET 19	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\021201_PD.DWG PLOT DATE : 7/24/2014 4:14 PM PLOT BY : MECUM, BRANDYN W PLOT NAME : PLOT SCALE : 1:50_XREF

WISDOT/CADDS SHEET 42

LEGEND

- EROSION MAT URBAN CLASS I TYPE B
- SOD EROSION CONTROL
- MULCHING
- SILT FENCE
- SLOPE INTERCEPT
- ASPH — ASPHALTIC FLUME
- TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- SURFACE WATER FLOW
- FENCE SAFETY

N

734+00WB
735+00WB
736+00WB
737+00WB
738+00WB
739+00WB

E VERONA AVE

49+00 PB
MAPLE GROVE DR
50+00 PB

BUS SHELTER

729+00 EB
730+00 EB
731+00 EB
732+00 EB
733+00 EB
734+00 EB
735+00 EB
736+00 EB

104+00P
103+00P
14+00W
13+00W

ASPH

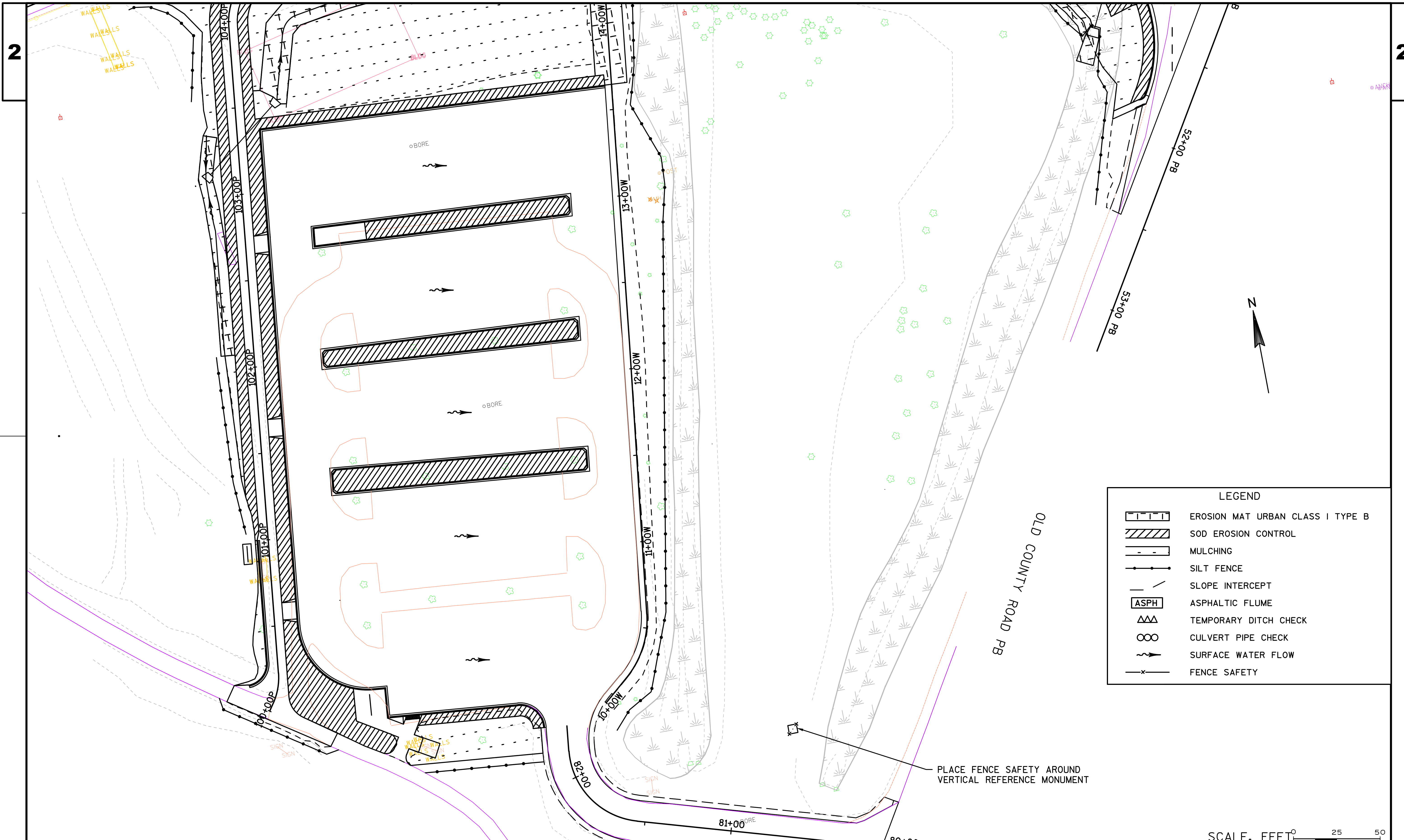
51+00 PB
52+00 PB
OLD COUNTY ROAD PB

BORE

SCALE, FEET 0 25 50

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	EROSION CONTROL	SHEET	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\022001_EC.DWG PLOT DATE : 10/29/2014 5:58 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:50_XREF


2
104+00P
103+00P
102+00P
101+00P
100+00P
14+00W
13+00W
12+00W
11+00W
10+00W
82+00
81+00
80+00
52+00 PB
53+00 PB
OLD COUNTY ROAD PB
BORE
N
PLACE FENCE SAFETY AROUND
VERTICAL REFERENCE MONUMENT
LEGEND
EROSION MAT URBAN CLASS I TYPE B
SOD EROSION CONTROL
MULCHING
SILT FENCE
SLOPE INTERCEPT
ASPH
ASPHALTIC FLUME
TEMPORARY DITCH CHECK
CULVERT PIPE CHECK
SURFACE WATER FLOW
FENCE SAFETY
SCALE, FEET
0
25
50

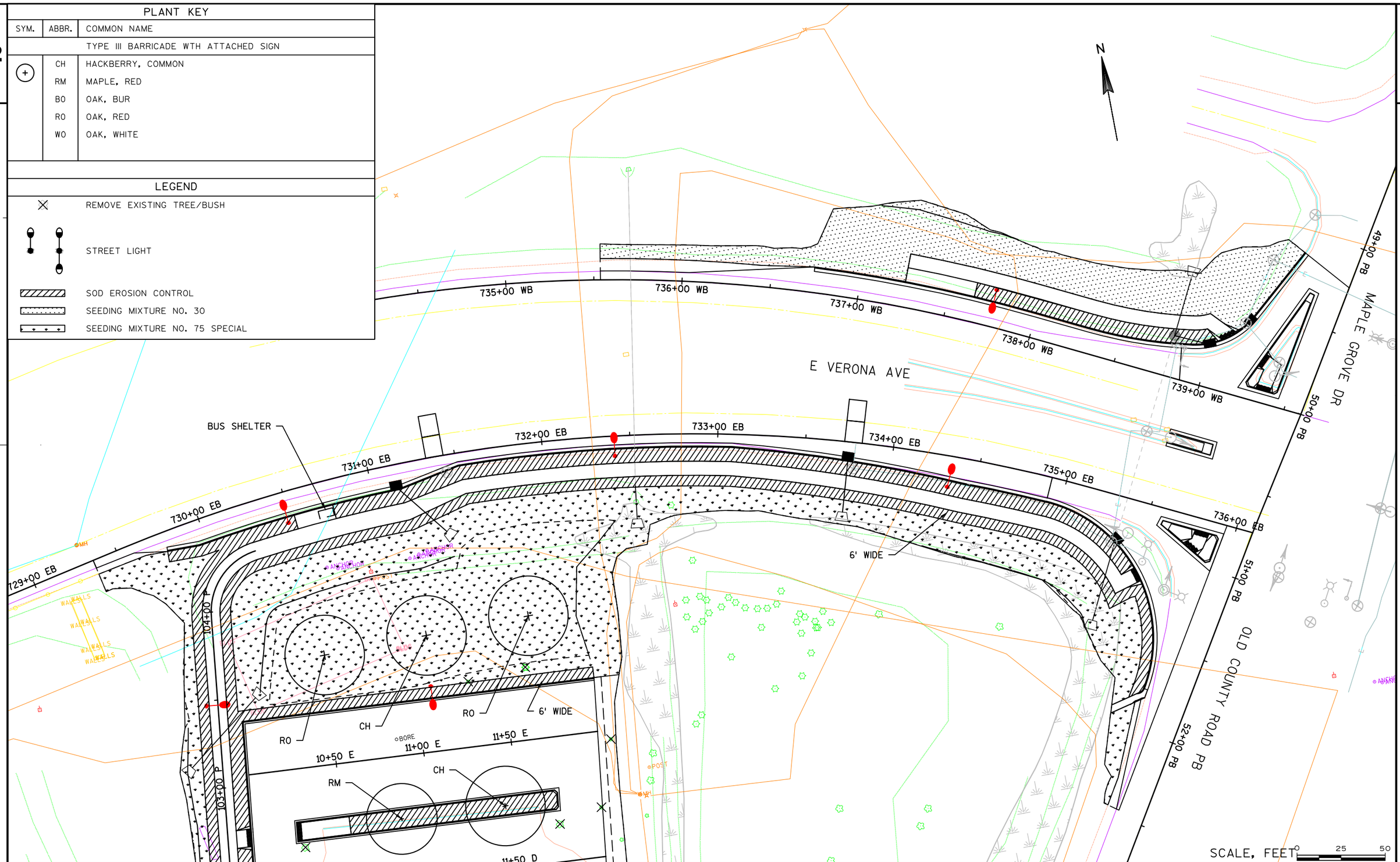
PROJECT NO:1206-07-80	HWY:USH 18	COUNTY:DANE	EROSION CONTROL	SHEET 21	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\022001_EC.DWG PLOT DATE : 10/29/2014 5:58 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:50_XREF

PLANT KEY		
SYM.	ABBR.	COMMON NAME
		TYPE III BARRICADE WTH ATTACHED SIGN
+	CH	HACKBERRY, COMMON
	RM	MAPLE, RED
	BO	OAK, BUR
	RO	OAK, RED
	WO	OAK, WHITE

LEGEND

- REMOVE EXISTING TREE/BUSH
- STREET LIGHT
- SOD EROSION CONTROL
- SEEDING MIXTURE NO. 30
- SEEDING MIXTURE NO. 75 SPECIAL



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLANTING DETAILS	SHEET 22	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\023101_PL.DWG PLOT DATE : 8/11/2014 9:57 AM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 50'_XREF

WISDOT/CADDS SHEET 42

2

PLANT KEY

SYM.	ABBR.	COMMON NAME
		TYPE III BARRICADE WTH ATTACHED SIGN
+	CH	HACKBERRY, COMMON
	RM	MAPLE, RED
	BO	OAK, BUR
	RO	OAK, RED
	WO	OAK, WHITE

LEGEND

- REMOVE EXISTING TREE/BUSH
- STREET LIGHT
- SOD EROSION CONTROL
- SEEDING MIXTURE NO. 30
- SEEDING MIXTURE NO. 75 SPECIAL

104+00 P
103+00 P
102+00 P
101+00 P
100+00 P
10+50 E
11+00 E
11+50 E
10+50 D
11+00 D
11+50 D
10+50 C
11+00 C
11+50 C
10+50 B
11+00 B
11+50 B
10+50 A
11+00 A
11+50 A
6' WIDE
RO
CH
RM
WO
BO
MOVING HISTORICAL MARKER
BICYCLE RACK
OBORE
POST
WALLS
SIGN
OLD COUNTY ROAD PB
N
SCALE, FEET 0 25 50

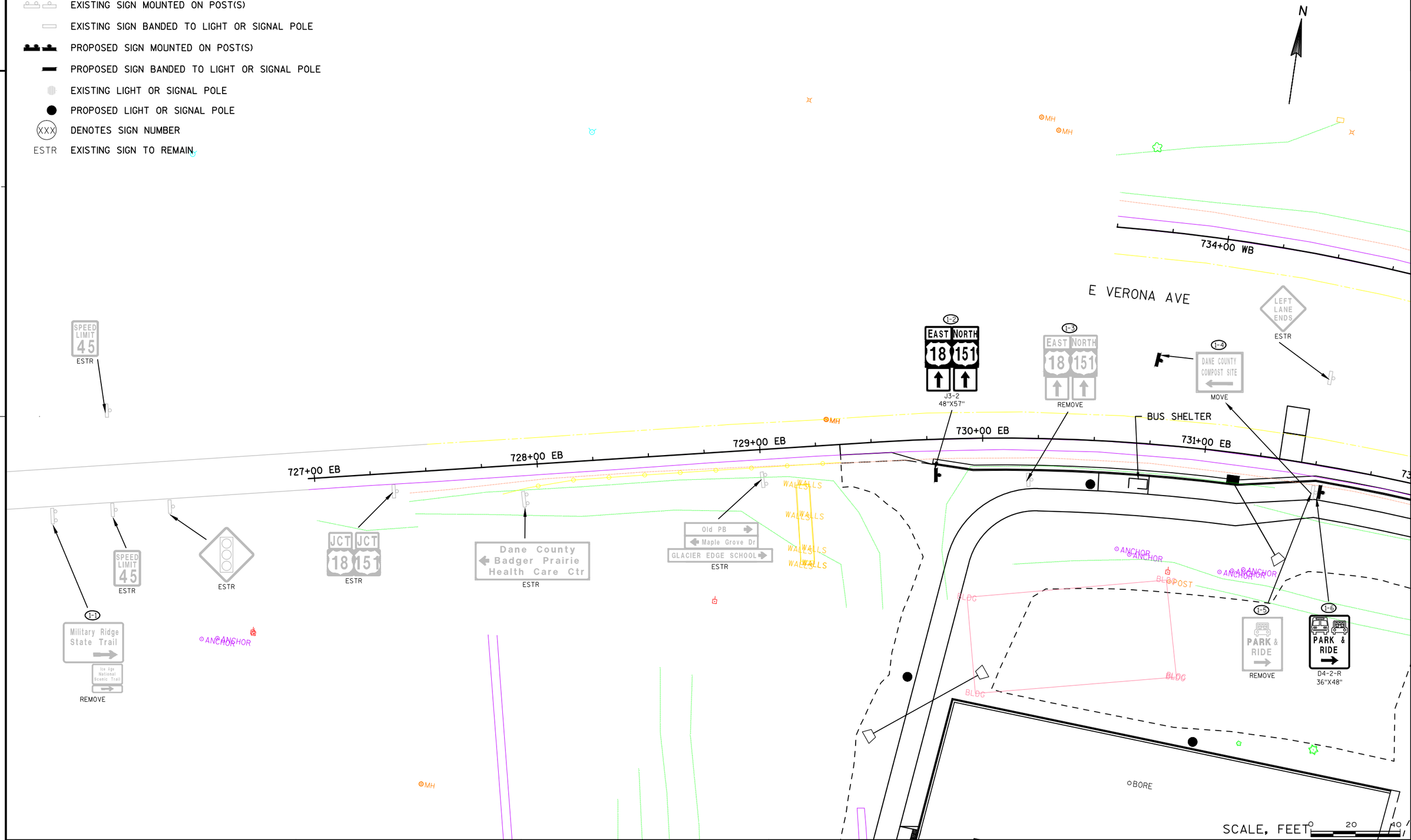
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLANTING DETAILS	SHEET	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\023101_PL.DWG PLOT DATE : 8/11/2014 9:57 AM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 50'_XREF

SYM.	COMMON NAME	SCIENTIFIC NAME	TYPE	AVE. MATURE HEIGHT	ROOT ZONE MODE	SIZE WHEN PLANTED	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													
CH	Hackberry, Common	Celtis occidentalis	1	65'	B&B	3-INCH CAL	32"	19"	56"	19"	BRACE	4	YES	68"
RM	Maple, Red	Acer rubrum	1	60'	B&B	3-INCH CAL	32"	19"	56"	19"	BRACE	4	YES	68"
BO	Oak, Bur	Quercus macrocarpa	1	70'	B&B	3-INCH CAL	32"	19"	56"	19"	BRACE	4	YES	68"
RO	Oak, Red	Quercus rubra	1	80'	B&B	3-INCH CAL	32"	19"	56"	19"	BRACE	4	YES	68"
WO	Oak, White	Quercus alba	1	80'	B&B	3-INCH CAL	32"	19"	56"	19"	BRACE	4	YES	68"

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN BANDED TO LIGHT OR SIGNAL POLE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN BANDED TO LIGHT OR SIGNAL POLE
- EXISTING LIGHT OR SIGNAL POLE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- ESTR EXISTING SIGN TO REMAIN



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET 25	E

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN BANDED TO LIGHT OR SIGNAL POLE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN BANDED TO LIGHT OR SIGNAL POLE
- EXISTING LIGHT OR SIGNAL POLE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- ESTR EXISTING SIGN TO REMAIN

2-1 Military Ridge State Trail / Ice Age Nat'l Scenic Trail, D7-95-R, 66"X60"
2-2 TO COUNTY PB, MOVE
2-3 DO NOT ENTER, REMOVE
2-4 STOP, REMOVE
2-5 STOP, R1-1, 36"X36"
2-6 E Verona Ave / Old PB, MOVE
2-7 W12-1D, 30"X30"
2-8 REMOVE
2-9 STOP, R1-1F, 36"X36"
2-10 STOP, R1-1F, 36"X36"
2-11 R4-7, 36"X48"
2-12 STOP, R1-1F, 30"X30"
2-13 W12-1D, 24"X24"
2-14 EAST NORTH 18 151, J3-2, 48"X57"
2-15 EAST NORTH BUSINESS 18 151 18, REMOVE
2-16 STOP, R1-1, 30"X30"
2-17 STOP, REMOVE
2-18 CTV MV, REMOVE
2-19 WRONG WAY, REMOVE
2-20 VERONA POPULATION 10125, TREE CITY USA Arbor Day Foundation 13 YEARS, CALENDAR PARKING 1 AM - 6 AM NOVEMBER 20 TO APRIL 1, MOVE

WARNING, KofC, Optimists, Rotary, Lions, American Legion, Kiwanis, ESTR
BEGIN LEFT TURN LANE, ESTR
DO NOT ENTER, ESTR
STOP, ESTR
SPEED LIMIT 45, ESTR
WRONG WAY, ESTR
DANE COUNTY COMPOST SITE, ESTR
SPEED LIMIT 45, ESTR
ESTR
STOP, ESTR
STOP, ESTR
ESTR
ESTR
ANCHOR

E VERONA AVE
MAPLE GROVE DR
OLD COUNTY ROAD PB
732+00 EB
733+00 EB
734+00 EB
735+00 EB
736+00 EB
736+00 WB
737+00 WB
738+00 WB
739+00 WB
49+00 PB
50+00 PB
51+00 PB
52+00 PB
N
SCALE, FEET 0 20 40

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET 26 E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\023201_PS.DWG
PLOT DATE : 9/15/2014 4:49 PM
PLOT BY : BREGAUDIT, CHARLENE PLOT NAME :
PLOT SCALE : 1" = 40'_XREF
WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN BANDED TO LIGHT OR SIGNAL POLE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN BANDED TO LIGHT OR SIGNAL POLE
- EXISTING LIGHT OR SIGNAL POLE
- PROPOSED LIGHT OR SIGNAL POLE
- (XXX) DENOTES SIGN NUMBER
- ESTR EXISTING SIGN TO REMAIN

N

2

USH 18/151 WB OFF RAMP

Redden Soccer Park
Badger Prairie County Park
ESTR

3-1
Ice Age National Scenic Trail
REMOVE

Dane County Badger Prairie Health Care Ctr
ESTR

Old PB
Maple Grove Dr
GLACIER EDGE SCHOOL
ESTR

WRONG WAY
ESTR

LEFT TURN LANE
ESTR

ESTR

USH 18/151 EB ON RAMP

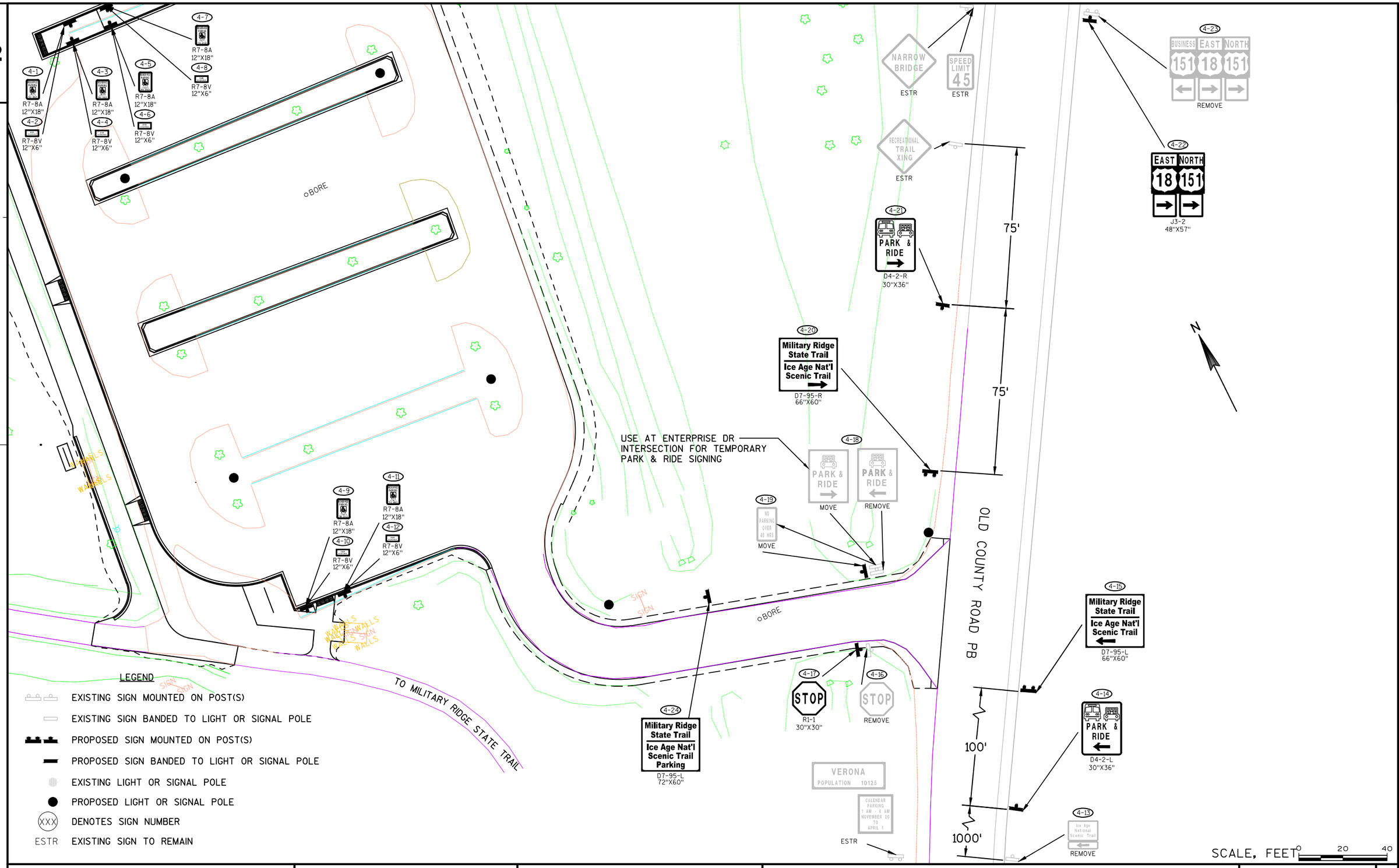
3-2
Military Ridge State Trail
Ice Age Nat'l Scenic Trail
D7-95-L
66"X60"

3-3
PARK & RIDE
REMOVE

3-4
PARK & RIDE
D4-2-L
36"X48"

SCALE, FEET 0 20 40

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET 27	E



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\023201_PS.DWG PLOT DATE : 9/15/2014 4:49 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 40'_XREF

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON STEEL BEAMS
- PROPOSED SIGN MOUNTED ON STEEL BEAMS
- (XXX) DENOTES SIGN NUMBER
- ESTR EXISTING SIGN TO REMAIN

5-1
Park & Ride
EXIT 79
D4-3
144"X90"

5-2
Military Ridge State Trail
Ice Age Nat'l Scenic Trail
EXIT 79
E3-1
180"X138"

5-3
PARK & RIDE
REMOVE

5-4
PARK & RIDE
REMOVE

5-5
PARK & RIDE
D4-2-L
30"X36"

5-6
Military Ridge State Trail
Ice Age Nat'l Scenic Trail
D7-95-L
66"X60"

5-7
PARK & RIDE AHEAD
D4-2-A
30"X36"

5-8
Military Ridge State Trail
Ice Age Nat'l Scenic Trail AHEAD
D7-93(MOD)
66"X60"

EXIT 79
TO
PB M
3/4 MILE
ESTR

Paoli
EXIT 79
ESTR

EAST NORTH
18 151
ESTR

SPEED LIMIT
65
ESTR

EXIT 79
TO
PB M
ESTR

GAS - EXIT 79
FOOD - EXIT 79
ESTR

GAS
LEFT ON WHALEN
FOOD
LEFT ON WHALEN
ESTR

Old PB
Paoli
ESTR

TO
COUNTY PB
COUNTY M
ESTR

WRONG WAY
ESTR

WRONG WAY
ESTR

ESTR

650' 1200' 800' 800' 800'

100' 75' 125' 150' 500'

N

SCALE, FEET 0 250 500

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET 29	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\023205_PS.DWG PLOT DATE : 9/15/2014 4:53 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 500'

WISDOT/CADDS SHEET 42

2

6-3

Park & Ride
EXIT 81

D4-3
144"X90"

Badger Prairie County Park
Redden Soccer Park
EXIT 81

Verona
NEXT 4 EXITS

ESTR

EXIT 81
BUSINESS
MV 18 151
Verona
1 MILE

6-2

Military Ridge State Trail
Ice Age Nat'l Scenic Trail
EXIT 81

E3-1
180"X138"

ESTR

1800'

800'

800'

800'

279'

800'

800'

800'

230'

FOOD-EXIT 81

ESTR

LODGING-EXIT 81

REMOVED BY OTHERS

GAS-EXIT 81
LODGING-EXIT 81

MODIFIED BY OTHERS

EXIT 81
BUSINESS
MV 18 151
Verona

ESTR

6-1

PARK & RIDE

REMOVE

AUTUMN JADE CT
TIMBER RUN CT
PARKER HILL DR
WILD-BERRY DR
SERENITY TRL
ROCKSTREAM DR
WILLOWBROOK CT
AMBLESIDE
FAIRHAVEN RD
AVALON LN
DEWDROP COUNTRY LN
DRUMLIN LN
DORAL CIR
DOLPHIN DR
BEIHOFF CIR
URICH TER
TONKINESE TRL
NESBITT RD
FITCHRONA RD
GOOSE LAKE
GOOSE LAKE RD
PHEASANT PL
DEMARCO
U.S. HWY 151 & 18

N

SCALE, FEET 0 250 500

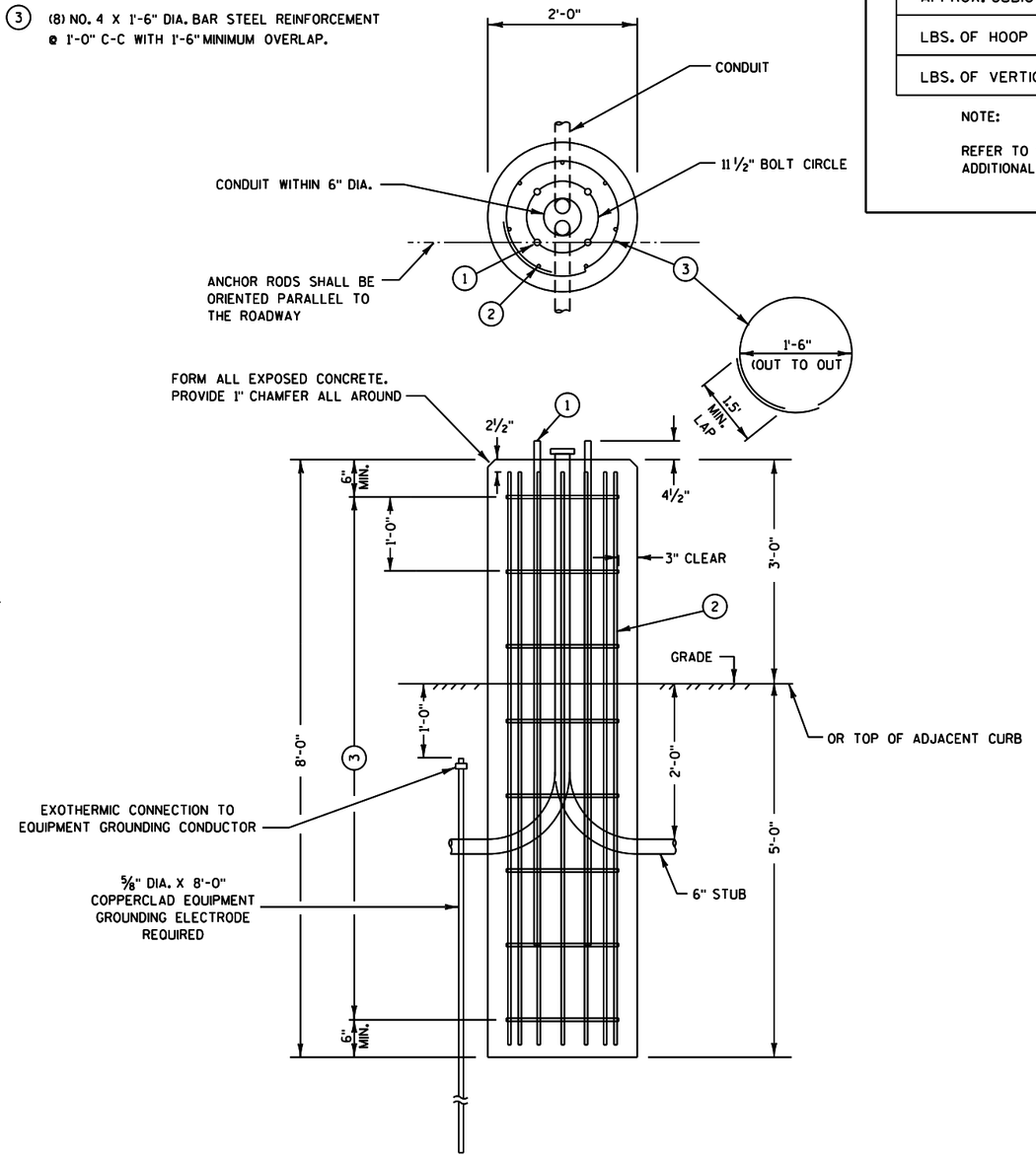
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET 30	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\023205_PS.DWG PLOT DATE : 9/15/2014 4:53 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 500'_XREF

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

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

(3) (8) NO. 4 X 1'-6" DIA. BAR STEEL REINFORCEMENT @ 1'-0" C-C WITH 1'-6" MINIMUM OVERLAP.



CONCRETE BASES TYPE 5 TALL - DETAIL

NO SCALE

ESTIMATED QUANITIES PER BASE (APPROX.)

QUANTITY REQUIREMENTS	TALL	WIDE
APPROX. CUBIC YARDS OF CONCRETE	0.93	0.91
LBS. OF HOOP BAR STEEL	36	22
LBS. OF VERTICAL BAR STEEL	36	18

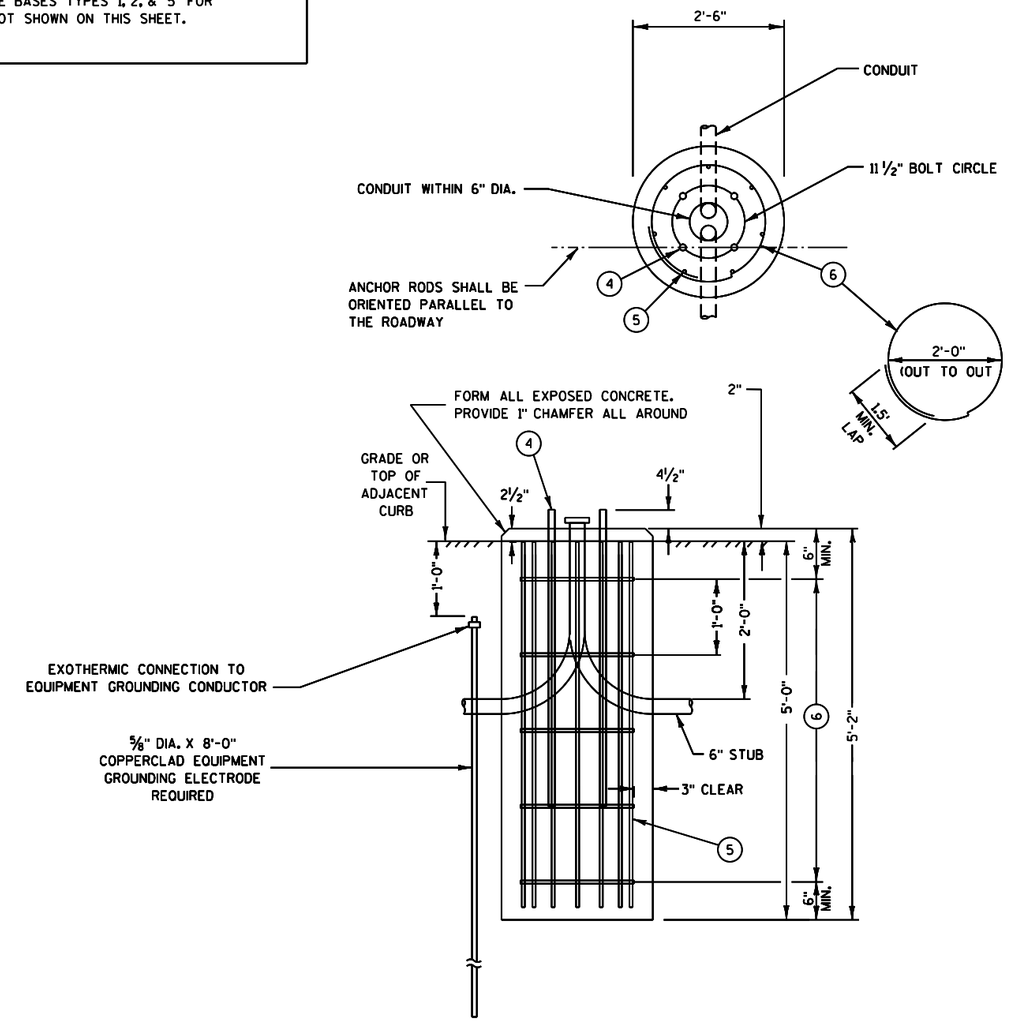
NOTE:

REFER TO S.D.D. "CONCRETE BASES TYPES 1, 2, & 5" FOR ADDITIONAL INFORMATION NOT SHOWN ON THIS SHEET.

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

(5) (7) NO. 4 X 4'-10" BAR STEEL REINFORCEMENT

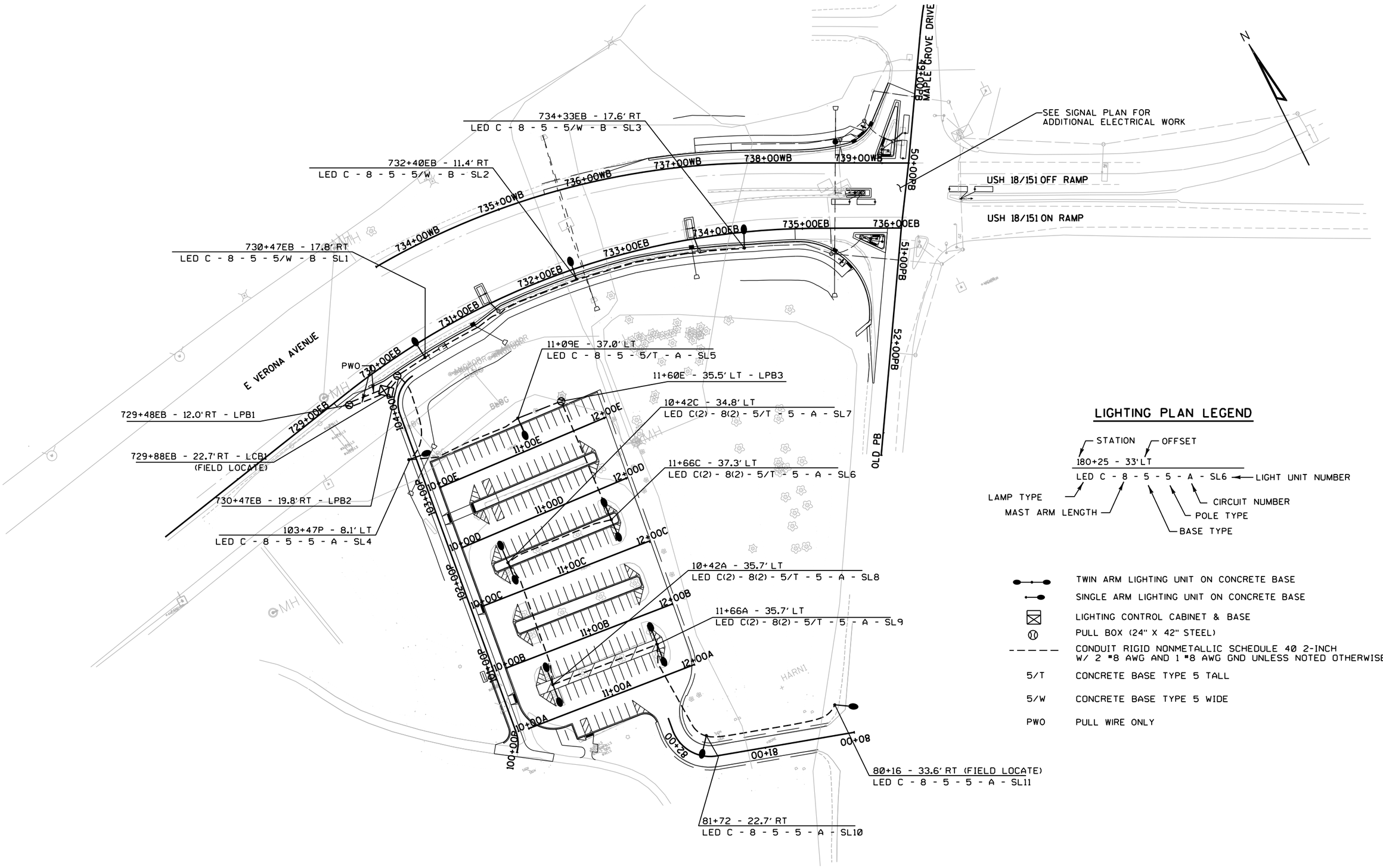
(6) (5) NO. 4 X 2'-0" DIA. BAR STEEL REINFORCEMENT @ 1'-0" C-C WITH 1'-6" MINIMUM OVERLAP.



CONCRETE BASES TYPE 5 WIDE - DETAIL

NO SCALE

2



LIGHTING PLAN LEGEND

	TWIN ARM LIGHTING UNIT ON CONCRETE BASE
	SINGLE ARM LIGHTING UNIT ON CONCRETE BASE
	LIGHTING CONTROL CABINET & BASE
	PULL BOX (24" X 42" STEEL)
	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH W/ 2 #8 AWG AND 1 #8 AWG GND UNLESS NOTED OTHERWISE
5/T	CONCRETE BASE TYPE 5 TALL
5/W	CONCRETE BASE TYPE 5 WIDE
PWO	PULL WIRE ONLY

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	LIGHTING PLAN	SHEET	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\023502_lp.dgn PLOT DATE : 10/30/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :
WISDOT/CADDS SHEET 42

2

TRAFFIC SIGNAL PLANS PREPARED BY

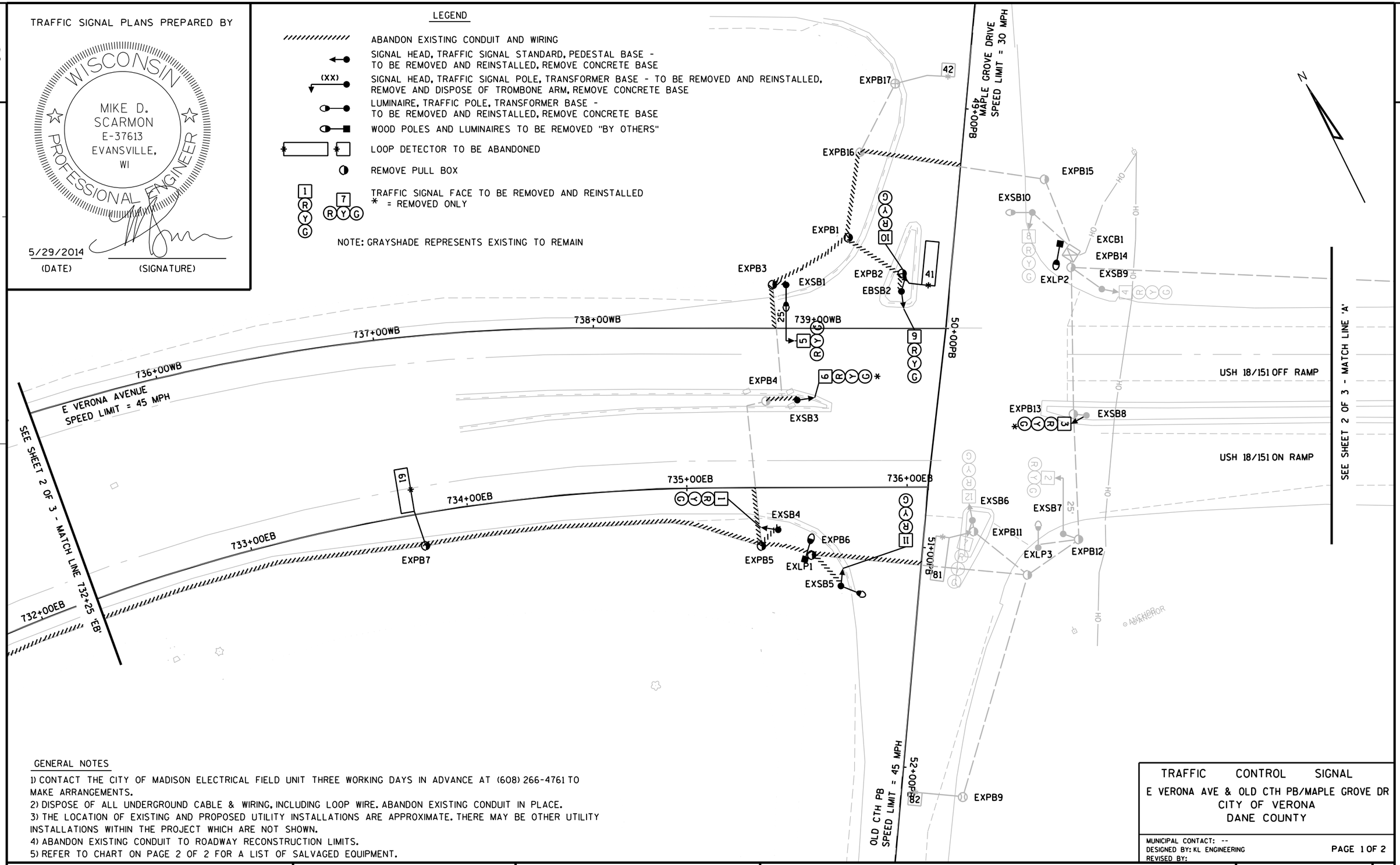
WISCONSIN
MIKE D. SCARMON
E-37613
EVANSVILLE, WI
PROFESSIONAL ENGINEER

5/29/2014
(DATE) (SIGNATURE)

LEGEND

- ABANDON EXISTING CONDUIT AND WIRING
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE - TO BE REMOVED AND REINSTALLED, REMOVE CONCRETE BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE - TO BE REMOVED AND REINSTALLED, REMOVE AND DISPOSE OF TROMBONE ARM, REMOVE CONCRETE BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE - TO BE REMOVED AND REINSTALLED, REMOVE CONCRETE BASE
- WOOD POLES AND LUMINAIRES TO BE REMOVED "BY OTHERS"
- LOOP DETECTOR TO BE ABANDONED
- REMOVE PULL BOX
- TRAFFIC SIGNAL FACE TO BE REMOVED AND REINSTALLED
  * = REMOVED ONLY

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN



GENERAL NOTES

1) CONTACT THE CITY OF MADISON ELECTRICAL FIELD UNIT THREE WORKING DAYS IN ADVANCE AT (608) 266-4761 TO MAKE ARRANGEMENTS.
2) DISPOSE OF ALL UNDERGROUND CABLE & WIRING, INCLUDING LOOP WIRE. ABANDON EXISTING CONDUIT IN PLACE.
3) THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4) ABANDON EXISTING CONDUIT TO ROADWAY RECONSTRUCTION LIMITS.
5) REFER TO CHART ON PAGE 2 OF 2 FOR A LIST OF SALVAGED EQUIPMENT.

TRAFFIC CONTROL SIGNAL
E VERONA AVE & OLD CTH PB/MAPLE GROVE DR
CITY OF VERONA
DANE COUNTY

MUNICIPAL CONTACT: --
DESIGNED BY: KL ENGINEERING
REVISED BY:

PAGE 1 OF 2

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 33	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\024004_srp.dgn PLOT DATE : 7/15/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

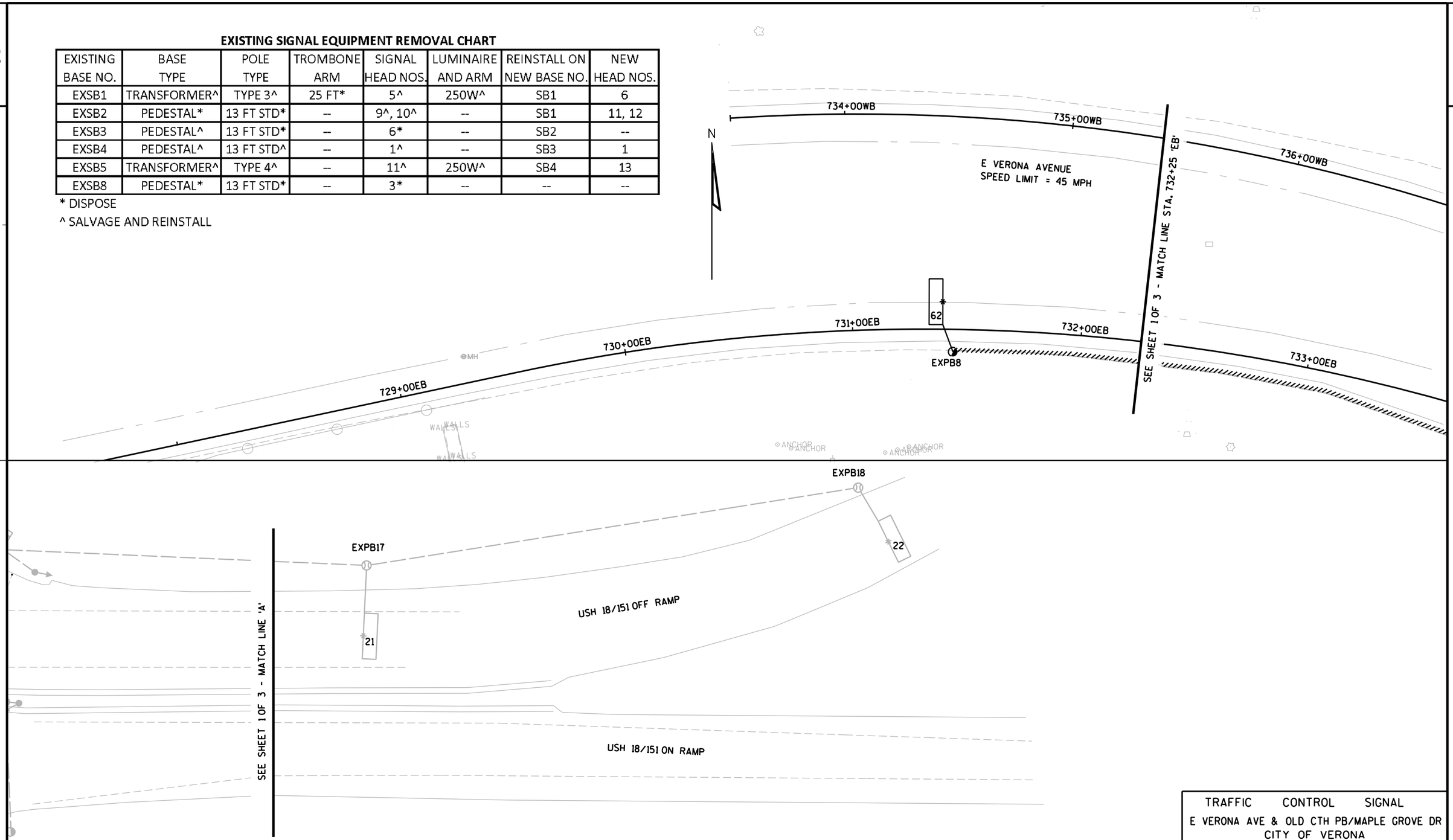
WISDOT/CADDS SHEET 42

EXISTING SIGNAL EQUIPMENT REMOVAL CHART

EXISTING BASE NO.	BASE TYPE	POLE TYPE	TROMBONE ARM	SIGNAL HEAD NOS.	LUMINAIRE AND ARM	REINSTALL ON NEW BASE NO.	NEW HEAD NOS.
EXSB1	TRANSFORMER^	TYPE 3^	25 FT*	5^	250W^	SB1	6
EXSB2	PEDESTAL*	13 FT STD*	--	9^, 10^	--	SB1	11, 12
EXSB3	PEDESTAL^	13 FT STD*	--	6*	--	SB2	--
EXSB4	PEDESTAL^	13 FT STD^	--	1^	--	SB3	1
EXSB5	TRANSFORMER^	TYPE 4^	--	11^	250W^	SB4	13
EXSB8	PEDESTAL*	13 FT STD*	--	3*	--	--	--

* DISPOSE

^ SALVAGE AND REINSTALL



TRAFFIC CONTROL SIGNAL

E VERONA AVE & OLD CTH PB/MAPLE GROVE DR
CITY OF VERONA
DANE COUNTY

MUNICIPAL CONTACT:
DESIGNED BY: KL ENGINEERING
REVISED BY:

PAGE 2 OF 2

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\024005_srp.dgn PLOT DATE : 7/15/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

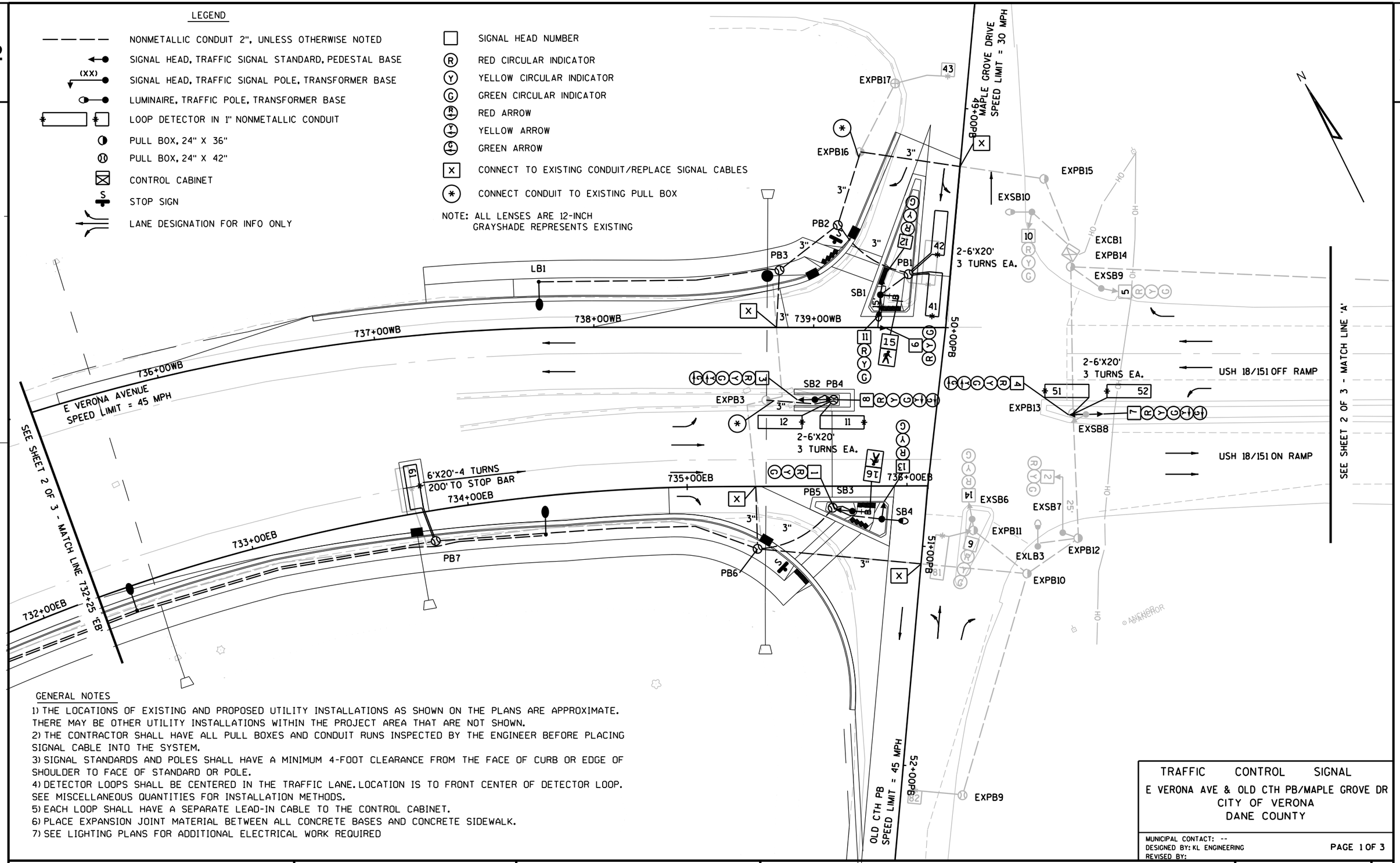
WISDOT/CADDS SHEET 42

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- CONTROL CABINET
- S STOP SIGN
- LANE DESIGNATION FOR INFO ONLY

- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- X CONNECT TO EXISTING CONDUIT/REPLACE SIGNAL CABLES
- (*) CONNECT CONDUIT TO EXISTING PULL BOX

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING



GENERAL NOTES

1) THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2) THE CONTRACTOR SHALL HAVE ALL PULL BOXES AND CONDUIT RUNS INSPECTED BY THE ENGINEER BEFORE PLACING SIGNAL CABLE INTO THE SYSTEM.
3) SIGNAL STANDARDS AND POLES SHALL HAVE A MINIMUM 4-FOOT CLEARANCE FROM THE FACE OF CURB OR EDGE OF SHOULDER TO FACE OF STANDARD OR POLE.
4) DETECTOR LOOPS SHALL BE CENTERED IN THE TRAFFIC LANE. LOCATION IS TO FRONT CENTER OF DETECTOR LOOP. SEE MISCELLANEOUS QUANTITIES FOR INSTALLATION METHODS.
5) EACH LOOP SHALL HAVE A SEPARATE LEAD-IN CABLE TO THE CONTROL CABINET.
6) PLACE EXPANSION JOINT MATERIAL BETWEEN ALL CONCRETE BASES AND CONCRETE SIDEWALK.
7) SEE LIGHTING PLANS FOR ADDITIONAL ELECTRICAL WORK REQUIRED

TRAFFIC CONTROL SIGNAL

E VERONA AVE & OLD CTH PB/MAPLE GROVE DR
CITY OF VERONA
DANE COUNTY

MUNICIPAL CONTACT: --
DESIGNED BY: KL ENGINEERING
REVISED BY:

PAGE 1 OF 3

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\024001_sp.dgn
PLOT DATE : 7/16/2014
PLOT BY : KL Engineering
PLOT NAME :
PLOT SCALE :
WISDOT/CADDS SHEET 42

2

N

734+00WB

735+00WB

736+00WB

E VERONA AVENUE
SPEED LIMIT = 45 MPH

SEE SHEET 1 OF 3 - MATCH LINE STA. 732+25 'EB'

62

6'X20'-5 TURNS
440' TO STOP BAR

731+00EB

732+00EB

730+00EB

733+00EB

729+00EB

PB8

MH

WALLS

ANCHOR

EXPB18

22

395' TO
STOP BAR

EXPB17

21

160' TO
STOP BAR

USH 18/151 OFF RAMP

SEE SHEET 1 OF 3 - MATCH LINE 'A'

USH 18/151 ON RAMP

TRAFFIC CONTROL SIGNAL

E VERONA AVE & OLD CTH PB/MAPLE GROVE DR
CITY OF VERONA
DANE COUNTY

MUNICIPAL CONTACT:
DESIGNED BY: KL ENGINEERING
REVISED BY:

PAGE 2 OF 3

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC SIGNAL PLAN	SHEET	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\024002_sp.dgn PLOT DATE : 7/15/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

2

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	01 R/W	01 CLEAR TO **	01 CLEAR TO	01 CLEAR TO	02 R/W	02 CLEAR TO **	02 CLEAR TO	02 CLEAR TO	03 NOT USED R/W	03 CLEAR TO **	03 CLEAR TO	03 CLEAR TO	04 R/W	04 CLEAR TO **	04 CLEAR TO	04 CLEAR TO	FLASH
01	3,4	G	Y	-		-	-	-						-	-	-		-
02	5,6,7,8	R	R	R		G	Y	R						R	R	R		R
03																		
04	12,13,14	R	R	R		R	R	R						G	Y	R		R
05	7,8	-	-	-		-	-	-						-	-	-		-
06	1,2,3,4	R	R	R		R	R	R						R	R	R		R
07																		
08	9,10,11	R	R	R		R	R	R						R	R	R		R
02P																		
04P	15,16	D	D	D		D	D	D						*	D	D		
06P																		
08P																		

RING 2

	HEAD NUMBERS	05 R/W	05 CLEAR TO **	05 CLEAR TO	05 CLEAR TO	06 R/W	06 CLEAR TO **	06 CLEAR TO	06 CLEAR TO	07 NOT USED R/W	07 CLEAR TO **	07 CLEAR TO	07 CLEAR TO	08 R/W	08 CLEAR TO **	08 CLEAR TO	08 CLEAR TO
01	3,4	-	-	-		-	-	-						-	-	-	
02	5,6,7,8	R	R	R		R	R	R						R	R	R	
03																	
04	12,13,14	R	R	R		R	R	R						R	R	R	
05	7,8	G	Y	-		-	-	-						-	-	-	
06	1,2,3,4	R	R	R		G	Y	R						R	R	R	
07																	
08	9,10,11	R	R	R		R	R	R						G	Y	R	
02P																	
04P	15,16	D	D	D		D	D	D						D	D	D	
06P																	
08P																	

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

* WHEN CALLED, TIMED STEADY WALK, THEN FLASHING DON'T WALK, THEN GOES TO STEADY DON'T WALK

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5,6	2,4,8
2	5,6	1,4,8
3		
4	8	1,2,5,6
5	1,2	4,6,8
6	1,2	4,5,8
7		
8	4	1,2,5,6

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
11	1	X			1	1				6'X20'	3
12	1	X			1	1				6'X20'	3
21	2	X			2	2				6'X18'	3
22	2	X			2	2				6'X18'	4
41	3	X			4	4				6'X20'	3
42	3	X			4	4				6'X20'	3
43	4	X			4	4				6'X6'	4
51	5	X			5	5				6'X20'	3
52	5	X			5	5				6'X20'	3
61	6	X			6	6				6'X20'	4
62	6	X			6	6				6'X20'	5
81	7	X			8	8				6'X20'	3
82	7	X			8	8				6'X6'	4

CONTROLLER LOGIC

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

OVERLAPS

O.L. "A" =
O.L. "B" =
O.L. "C" =
O.L. "D" =

"NONE"

N

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR	
CLOSED LOOP FIBER OPTIC	
RADIO	

TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

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

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

SEQUENCE OF OPERATIONS

E VERONA AVE & OLD CTH PB/MAPLE GROVE DR

CITY OF VERONA DANE COUNTY

SIGNAL NO. N/A

CONTROLLER TYPE: ECONOLITE ASC-8000

DATE PAGE NO. 3 OF 3

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	SEQUENCE OF OPERATIONS	SHEET 37	E

2

LEGEND

① PAVEMENT MARKING EPOXY 4-INCH (WHITE)
② PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
③ PAVEMENT MARKING EPOXY 8-INCH (WHITE)
④ PAVEMENT MARKING ARROWS EPOXY TYPE 2
⑥ PAVEMENT MARKING CURB EPOXY (YELLOW)
⑦ PAVEMENT MARKING STOP LINE EPOXY 18-INCH
⑧ PAVEMENT MARKING ISLAND NOSE EPOXY
⑩ PAVEMENT MARKING CROSSWALK EPOXY 6-INCH

N

734+00 WB
735+00 WB
736+00 WB
737+00 WB
738+00 WB
739+00 WB

E VERONA AVE

49+00 PB
MAPLE GROVE DR
50+00 PB

BEGIN 4" WHITE EDGELINE
AT STA 729+36 EB

BUS SHELTER

731+00 EB
732+00 EB
733+00 EB
734+00 EB
735+00 EB
736+00 EB

ANCHOR
POST
BLDG
BORE
POST
MH

51+00 PB
OLD COUNTY ROAD PB
52+00 PB

SCALE, FEET 0 20 40

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PAVEMENT MARKING DETAILS	SHEET 38 E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\024501_PM.DWG PLOT DATE : 8/11/2014 1:48 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:40_XREF

WISDOT/CADDS SHEET 42

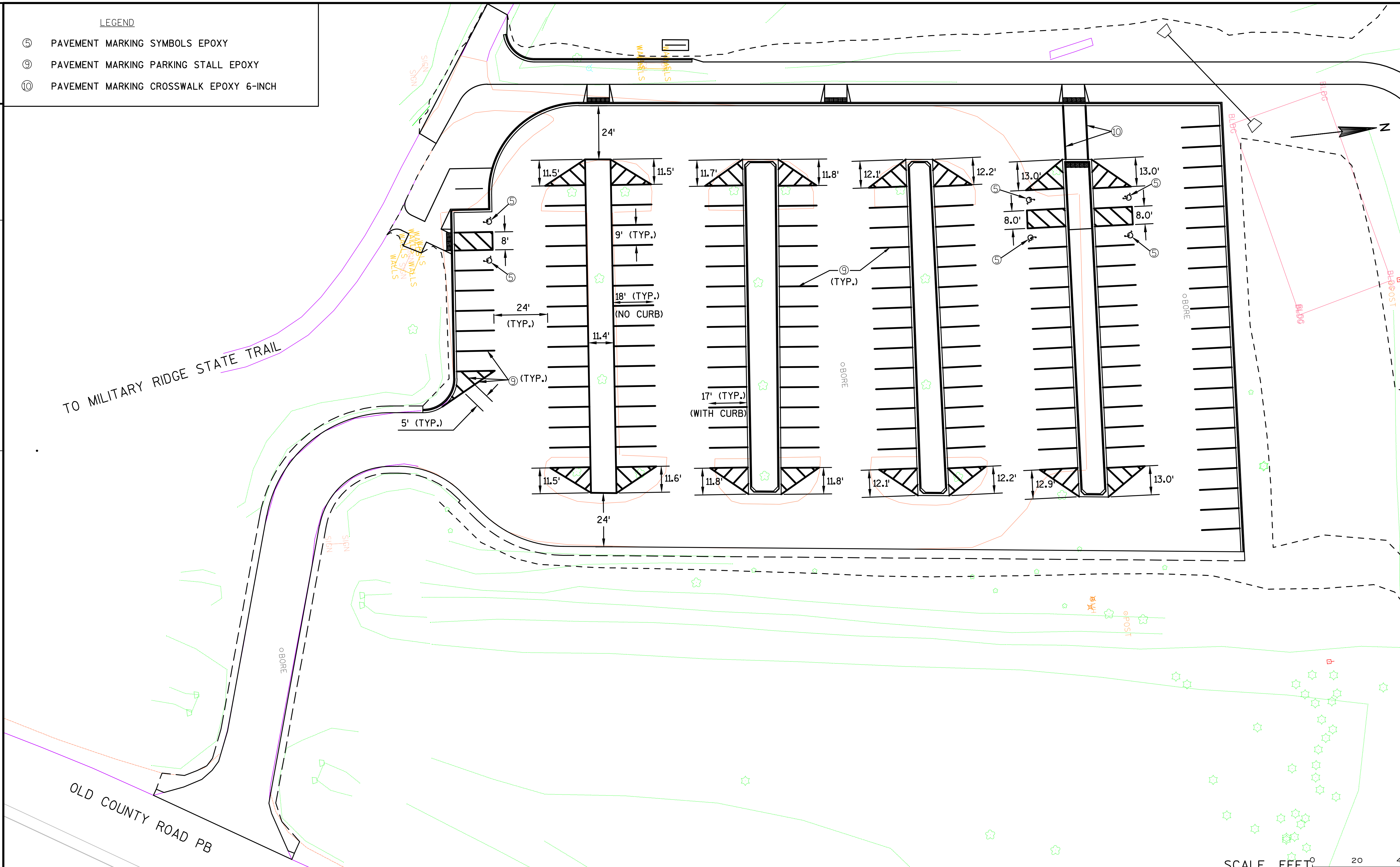
2

LEGEND

⑤ PAVEMENT MARKING SYMBOLS EPOXY

⑨ PAVEMENT MARKING PARKING STALL EPOXY

⑩ PAVEMENT MARKING CROSSWALK EPOXY 6-INCH



2

PROJECT NO:1206-07-80	HWY:USH 18	COUNTY:DANE	PAVEMENT MARKING DETAILS	SHEET 39	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\024501_PM.DWG PLOT DATE : 8/11/2014 1:48 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:40_XREF WISDOT/CADDS SHEET 42

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- WORK AREA
- DIRECTION OF TRAFFIC
- ① TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH (WHITE)

N

ROAD WORK AHEAD W20-1

SHOULDER WORK W21-5

200'

200'

48+00 PB

END ROAD WORK G20-2A 48" X 24"

LANE CLOSED R11-2(MOD) 48" X 30"

25'

MAPLE GROVE DR

49+00 PB

500'

END ROAD WORK G20-2A 48" X 24"

734+00 WB

25'

735+00 WB

736+00 WB

737+00 WB

50'

738+00 WB

739+00 WB

50+00 PB

E VERONA AVE

FOR TRAFFIC CONTROL BEYOND STA 729+36 EB
SEE S.D.D. "TRAFFIC CONTROL, SINGLE LANE CLOSURE,
NON-FREEWAY/EXPRESSWAY"

732+00 EB

733+00 EB

734+00 EB

735+00 EB

736+00 EB

50'

731+00 EB

730+00 EB

729+00 EB

25'

51+00 PB

OLD COUNTY ROAD PB

52+00 PB

BEGIN RIGHT TURN LANE R3-20R 24"X36"

500'

500'

END ROAD WORK G20-2A 48" X 24"

53+00 PB

ROAD WORK AHEAD W20-1

SCALE, FEET 0 30 60

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 1	SHEET 40	E

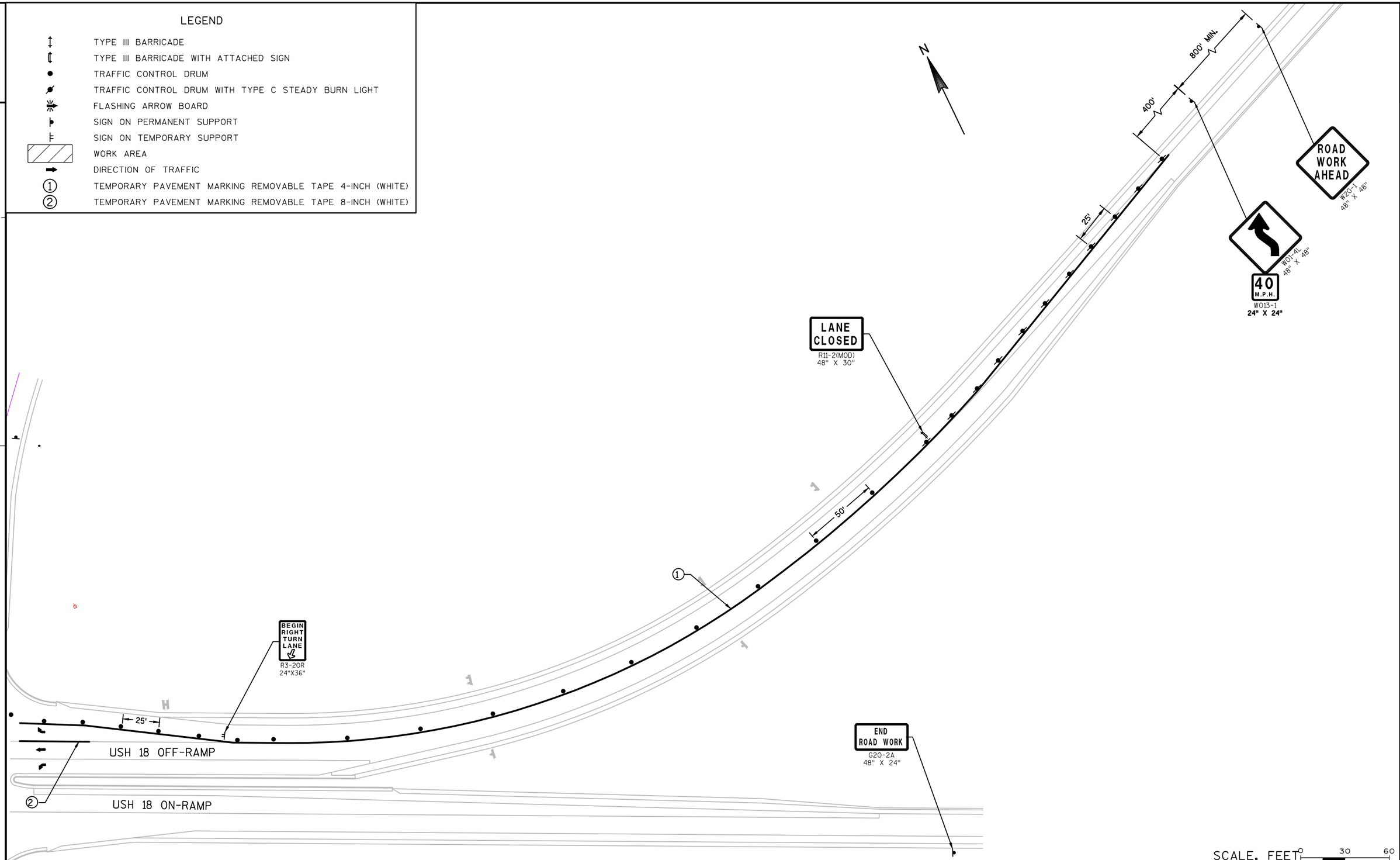
FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\026001_S1.DWG PLOT DATE : 9/11/2014 2:00 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 60'_XREF

WISDOT/CADDS SHEET 42

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- WORK AREA
- DIRECTION OF TRAFFIC
- ① TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
- ② TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH (WHITE)



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 1	SHEET 41	E

2

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- WORK AREA
- DIRECTION OF TRAFFIC
- COVERING SIGNS TYPE II
- ① TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
- ③ TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (YELLOW)
- ④ REMOVE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE

* PLACE AT CROSS COUNTRY RD INTERSECTION
** PLACE AT GRANDVIEW RD INTERSECTION
*** SEE S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

FOR TRAFFIC CONTROL BEYOND STA 729+36 EB SEE S.D.D. "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY"

N

ROAD CLOSED 500 FT W20-3

ROAD CLOSED AHEAD W20-3

500'

48+00 PB

*** ROAD CLOSED R11-2 48" X 30"

49+00 PB

MAPLE GROVE DR

END ROAD WORK G20-2A 48" X 24"

500'

734+00 WB 735+00 WB 736+00 WB 737+00 WB 25' 738+00 WB 739+00 WB

50+00 PB

LANE CLOSED R11-2(MOD) 48" X 30"

E VERONA AVE

R3-2 24"X24"

50' 732+00 EB 733+00 EB 734+00 EB 735+00 EB 736+00 EB 25' 50'

731+00 EB 730+00 EB 729+00 EB 728+00 EB

LEFT LANE TURN LANE ESTR

2-2 TO COUNTY PB

R3-1 24"X24"

LANE CLOSED R11-2(MOD) 48" X 30"

LANE CLOSED R11-2(MOD) 48" X 30"

1-4 DANE COUNTY COMPOST SITE

1-5 PARK & RIDE

USE AT ENTERPRISE DR INTERSECTION FOR TEMPORARY PARK & RIDE SIGNING

STA. 733+41 EB - 735+36 EB

REMOVE PRIOR TO INTERSECTION CLOSURE

LANE CLOSED R11-2(MOD) 48" X 30"

OLD COUNTY ROAD PB

51+00 PB

52+00 PB

ROAD CLOSED 500 FT W20-3

*** ROAD CLOSED R11-2 48" X 30"

500'

53+00 PB

**

ROAD CLOSED AHEAD W20-3

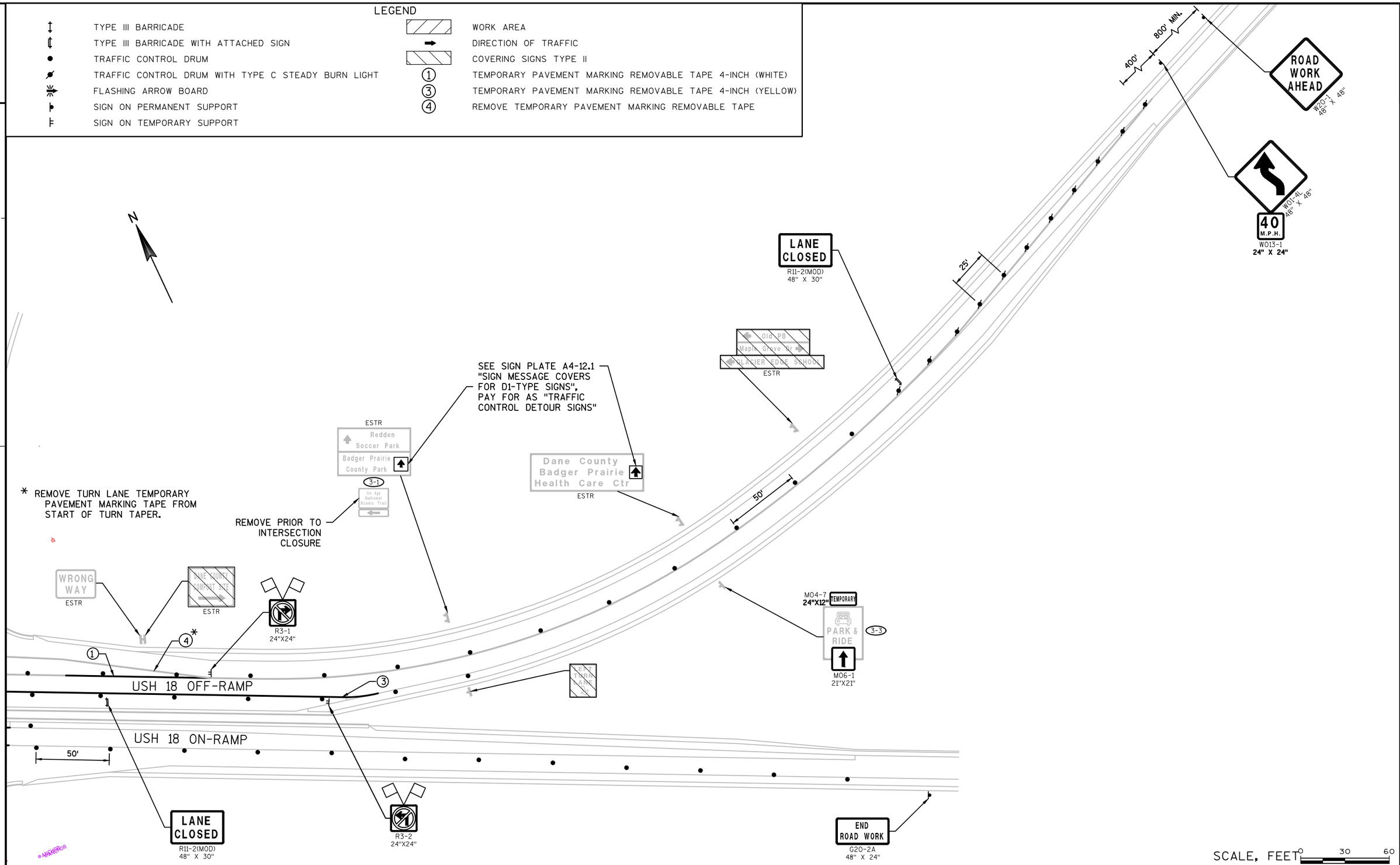
SCALE, FEET 0 30 60

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 2	SHEET 42	E

2

LEGEND

‡	TYPE III BARRICADE		WORK AREA
‡	TYPE III BARRICADE WITH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM		COVERING SIGNS TYPE II
●	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	①	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
⇶	FLASHING ARROW BOARD	③	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (YELLOW)
▶	SIGN ON PERMANENT SUPPORT	④	REMOVE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE
⊢	SIGN ON TEMPORARY SUPPORT		



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 2	SHEET 43	E

2

2

N

PAOLI ST

MAIN ST

FACTORY ST

ENTURE CT

FRANKLIN

JEFFERSON

OAK CT

LINCOLN

MELODY LA

PARK VIEW LA

MELODY LA

MELODY CIR LA

S. HILLCREST DR

E. HILLCREST DR

FOREST VIEW

HILLCREST CIR

HARVEST LA

GLENVIEW DR

GLACIER

QUESTA RIDGE

MIL

TRL

ELM ST

EAST VIEW CT

JAMES CIR

HARPER DR

MARSHALL CIR

SANDY CIR

VIEW RD

PARK- LAND DR

HARVEST

GREEN MEADOW DR

EAST STONE RIDGE

WOOD LAWN WY

FAIRVIEW

OLD PB

WHALEN RD

S. HWY 151 & 18

EXIT 79
TO
PB M
ESTR

GAS - EXIT 79
FOOD - EXIT 79
ESTR

LOCUST DR

CTH "M"

EXIT 79
TO
PB M
3/4 MILE
ESTR

Paoli
EXIT 79
ESTR

EAST NORTH
18 151
ESTR

SPEED LIMIT
65
ESTR

U.S. HWY 151 & 18

REMOVE PRIOR TO INTERSECTION CLOSURE
5-3
PARK & RIDE
REMOVE

REMOVE PRIOR TO INTERSECTION CLOSURE
5-4
PARK & RIDE
REMOVE

GAS
LEFT ON WHALEN
FOOD
LEFT ON WHALEN
ESTR

Old PB
Paoli
ESTR

TO
COUNTY PB
COUNTY M
ESTR

WRONG WAY
ESTR

WRONG WAY
ESTR

ESTR

SCALE, FEET 0 250 500

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 2	SHEET 44	E

2

2

PROJECT NO:1206-07-80	HWY:USH 18	COUNTY:DANE	TRAFFIC CONTROL - STAGE 2 & 3 TEMPORARY PARK & RIDE	SHEET 45	E

2

LEGEND

‡	TYPE III BARRICADE		WORK AREA
‡	TYPE III BARRICADE WITH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM		COVERING SIGNS TYPE II
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	①	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
	FLASHING ARROW BOARD	④	REMOVE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE
	SIGN ON PERMANENT SUPPORT		
	SIGN ON TEMPORARY SUPPORT		

* PLACE AT CROSS COUNTRY RD INTERSECTION
** PLACE AT GRANDVIEW RD INTERSECTION
*** SEE S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

FOR TRAFFIC CONTROL BEYOND STA 728+50 EB SEE S.D.D. "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY"

N

ROAD CLOSED AHEAD W20-3

ROAD CLOSED 500 FT W20-3

500'

48+00 PB

*** ROAD CLOSED R11-2 48" X 30"

MAPLE GROVE DR

49+00 PB

50+00 PB

LANE CLOSED R11-2(MOD) 48" X 30"

END ROAD WORK C20-2A 48" X 24"

500'

734+00 WB 735+00 WB 736+00 WB 737+00 WB 738+00 WB 739+00 WB

E VERONA AVE

R3-2 24"X24"

50'

729+00 EB 730+00 EB 731+00 EB 732+00 EB 733+00 EB 734+00 EB 735+00 EB 736+00 EB

LANE CLOSED R11-2(MOD) 48" X 30"

LANE CLOSED R11-2(MOD) 48" X 30"

BEGIN LEFT TURN LANE ESTR

R3-1 24"X24"

LANE CLOSED R11-2(MOD) 48" X 30"

51+00 PB

25'

OLD COUNTY ROAD PB

52+00 PB

LANE CLOSED R11-2(MOD) 48" X 30"

*** ROAD CLOSED R11-2 48" X 30"

53+00 PB

500'

** ROAD CLOSED 500 FT W20-3

ROAD CLOSED AHEAD W20-3

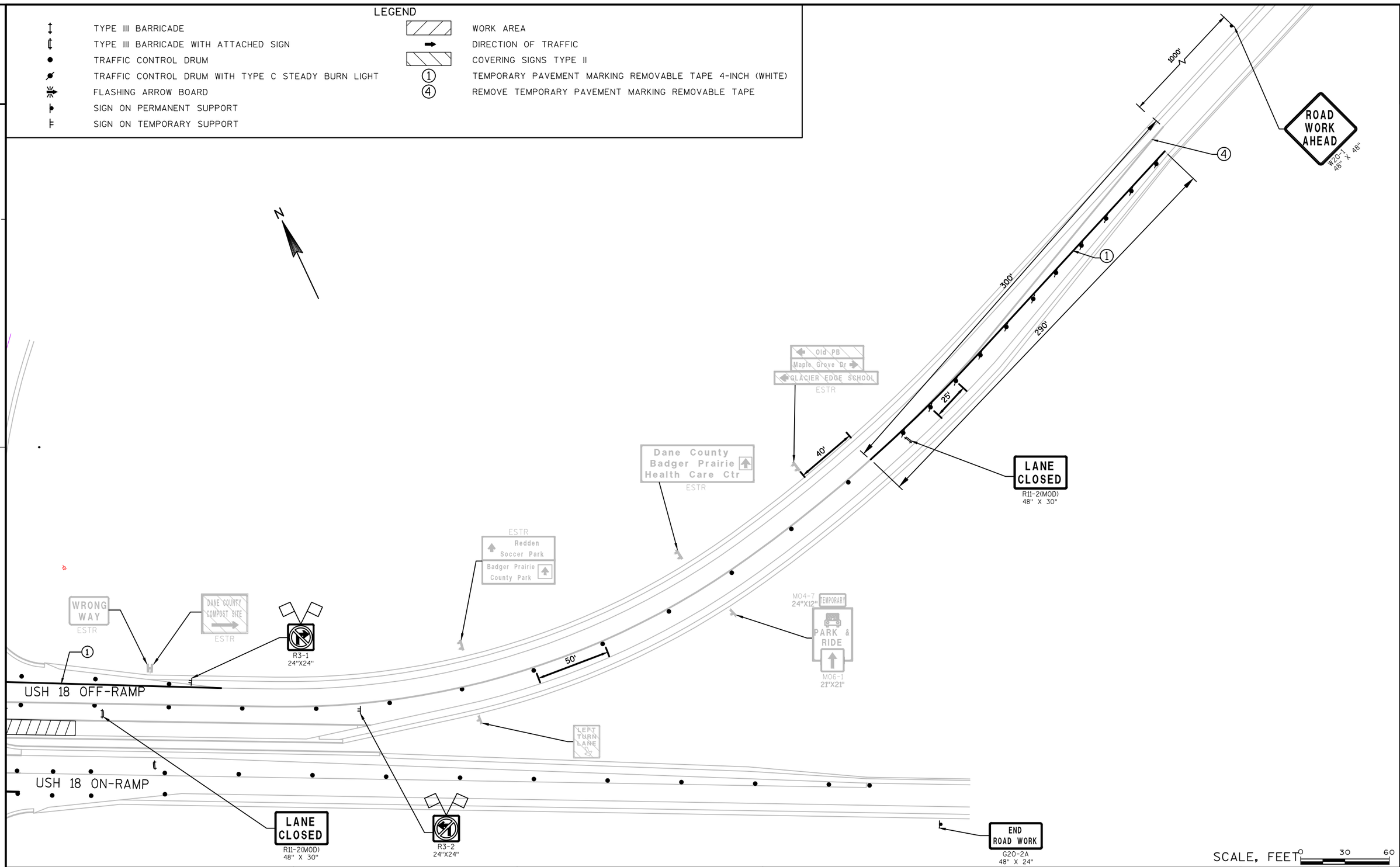
SCALE, FEET 0 30 60

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 3	SHEET 46 E

2

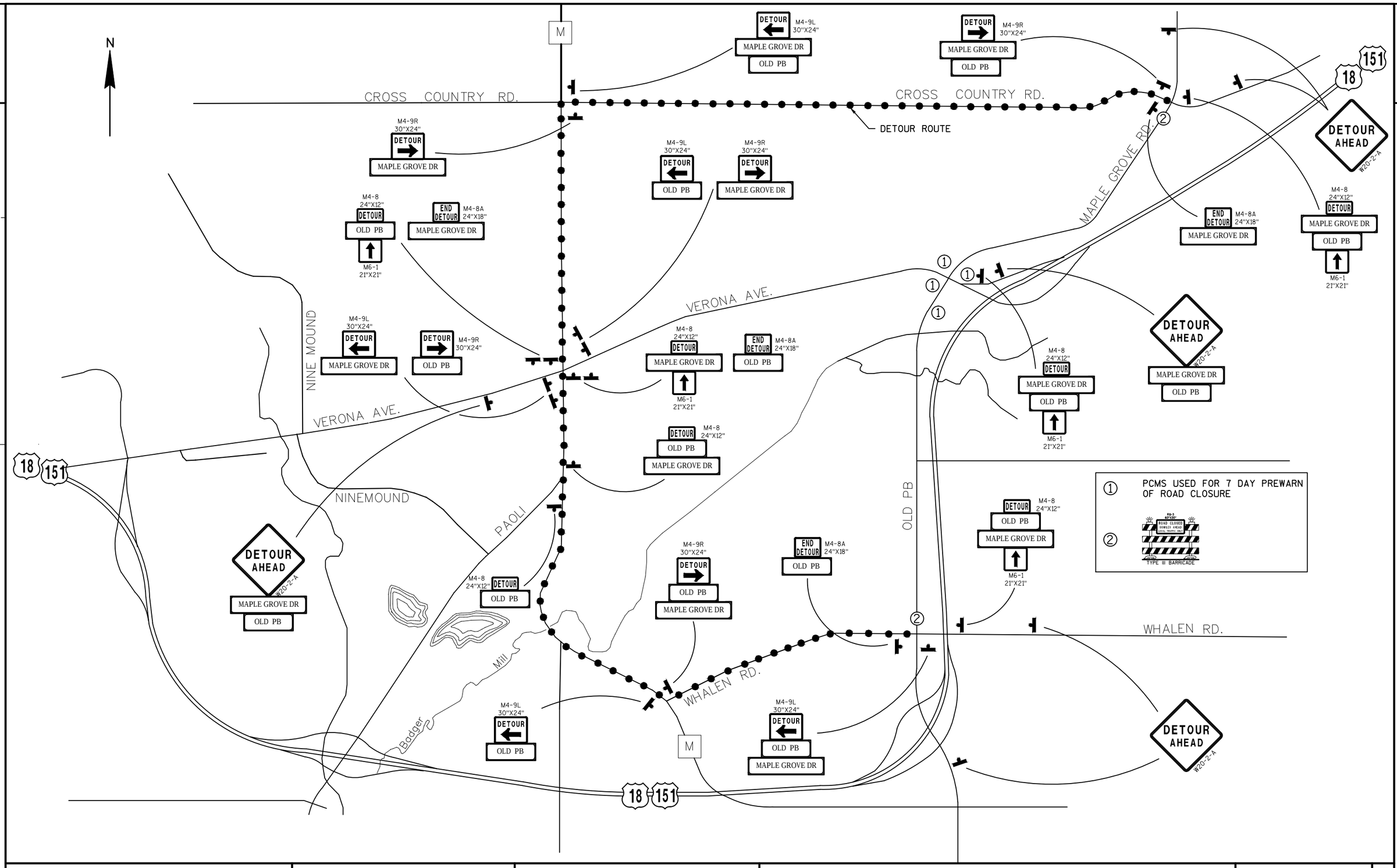
LEGEND

‡	TYPE III BARRICADE		WORK AREA
‡	TYPE III BARRICADE WITH ATTACHED SIGN	➡	DIRECTION OF TRAFFIC
●	TRAFFIC CONTROL DRUM		COVERING SIGNS TYPE II
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	①	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE)
	FLASHING ARROW BOARD	④	REMOVE TEMPORARY PAVEMENT MARKING REMOVABLE TAPE
	SIGN ON PERMANENT SUPPORT		
	SIGN ON TEMPORARY SUPPORT		



SCALE, FEET 0 30 60

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TRAFFIC CONTROL - STAGE 3	SHEET 47	E



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	DETOUR ROUTE	SHEET 48	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\027001_DT.DWG
LAYOUT NAME - ****
PLOT DATE : 9/10/2014 4:10 PM PLOT BY : RUSEK, NICOLE A PLOT NAME : PLOT SCALE : 0.002660

PI STA	X	Y
PI: 10+00.00 E	786369.48	453484.80
PI: 11+99.29 E	786568.41	453472.79
PI: 10+00.00 D	786361.66	453414.14
PI: 11+98.72 D	786560.03	453402.17
PI: 10+00.00 C	786354.10	453345.79
PI: 11+97.93 C	786551.28	453328.50
PI: 10+00.00 B	786346.04	453272.88
PI: 11+97.32 B	786542.53	453254.74
PI: 10+00.00 A	786338.19	453201.93
PI: 11+96.75 A	786534.11	453183.84
PI: 80+00.00	786659.46	453037.94
PI: 87+06.34	786534.12	453616.75
PI: 10+00.00 W	786506.55	453152.61
PI: 14+63.51 W	786615.67	453578.30

PI STA	X	Y
PI: 726+97.25 EB	786071.66	453570.81
PI: 736+09.50 EB	786954.24	453515.18
PI: 733+49.90 WB	786413.94	453735.02
PI: 739+76.45 WB	787008.13	453568.83
PI: 47+55.41 PB	787130.10	453778.33
PI: 53+25.09 PB	786822.54	453299.60
PI: 100+00.00 P	786314.89	453183.93
PI: 104+45.71 P	786396.38	453608.87

PI STA = 732+46.10 EB
Y = 453685.122
X = 786608.477
DELTA = 38°11'40"
D = 6°47'30"
T = 292.09'
L = 562.38'
R = 843.63'
PC STA = 729+54.01 EB
PT STA = 735+16.39 EB

PI STA = 735+79.85 WB
Y = 453750.056
X = 786643.401
DELTA = 30°10'11"
D = 6°42'57"
T = 229.95'
L = 449.23'
R = 853.14'
PC STA = 733+49.90 WB
PT STA = 737+99.13 WB

PI STA = 104+26.02 P
Y = 453605.323
X = 786368.221
DELTA = 76°30'01"
D = 159°09'18"
T = 28.38'
L = 48.07'
R = 36.00'
PC STA = 103+97.64 P
PT STA = 104+45.71 P

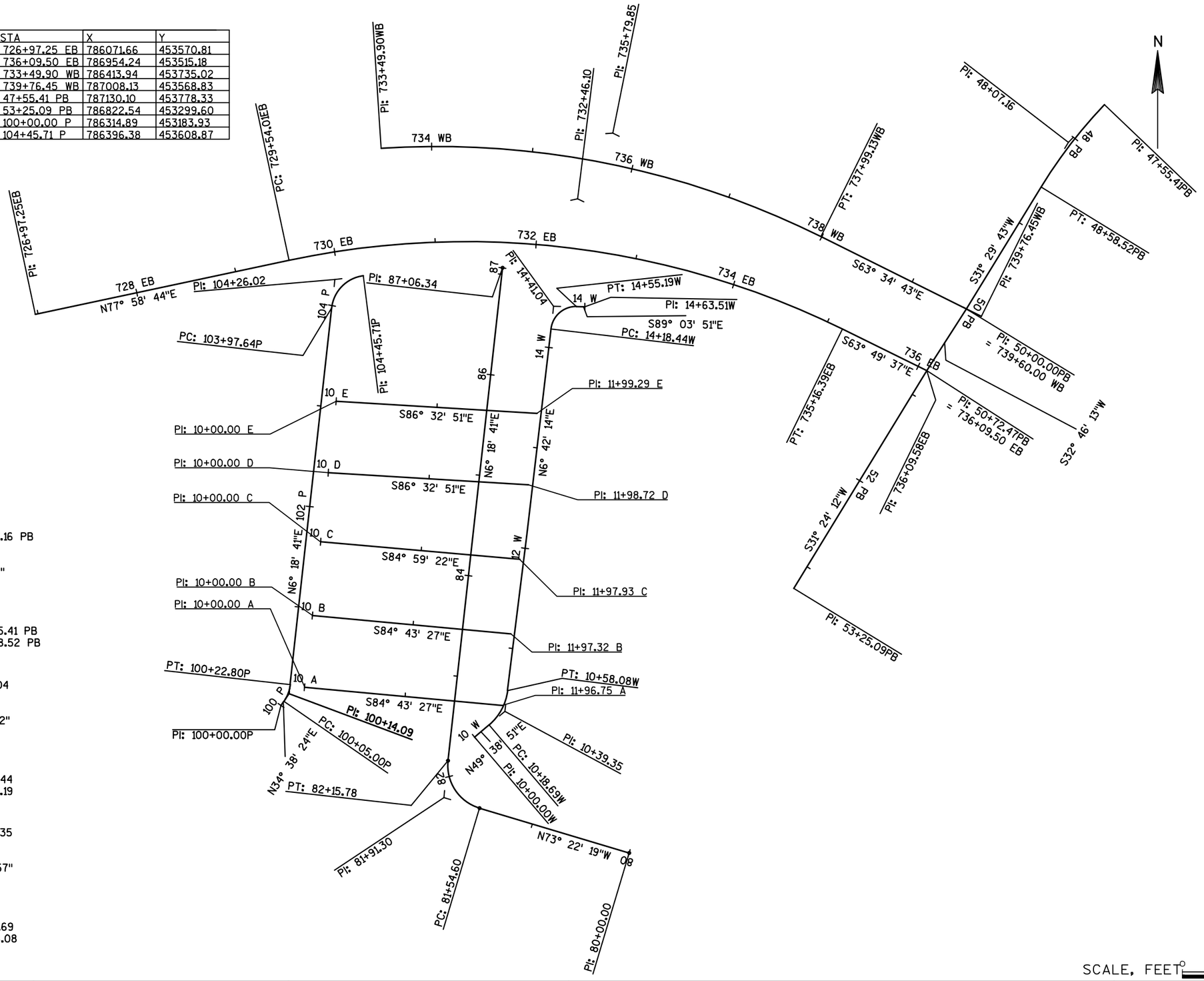
PI STA = 48+07.16 PB
Y = 453740.912
X = 787094.349
DELTA = 12°11'47"
D = 11°49'42"
T = 51.75'
L = 103.11'
R = 484.40'
PC STA = 47+55.41 PB
PT STA = 48+58.52 PB

PI STA = 100+14.09 P
Y = 453195.515
X = 786322.895
DELTA = 28°19'43"
D = 159°09'18"
T = 9.09'
L = 17.80'
R = 36.00'
PC STA = 100+05.00 P
PT STA = 100+22.80 P

PI STA = 14+41.04
Y = 453578.801
X = 786584.753
DELTA = 84°14'02"
D = 229°10'59"
T = 22.60'
L = 36.75'
R = 25.00'
PC STA = 14+18.44
PT STA = 14+55.19

PI STA = 81+91.30
Y = 453092.686
X = 786476.158
DELTA = 79°41'00"
D = 130°15'03"
T = 36.70'
L = 61.18'
R = 43.99'
PC STA = 81+54.60
PT STA = 82+15.78

PI STA = 10+39.35
Y = 453178.084
X = 786536.540
DELTA = 42°34'57"
D = 108°06'19"
T = 20.65'
L = 39.39'
R = 53.00'
PC STA = 10+18.69
PT STA = 10+58.08



SCALE, FEET 0 50 100

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	ALIGNMENT LAYOUT DETAILS	SHEET 49	E

DATE 14NOV14 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	1206-07-80 QUANTITY
0010	201.0120	CLEARING	ID	149.000	149.000
0020	201.0220	GRUBBING	ID	149.000	149.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	3.000	3.000
0040	204.0100	REMOVING PAVEMENT	SY	25.000	25.000
0050	204.0110	REMOVING ASPHALTIC SURFACE	SY	722.000	722.000
0060	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	5,203.000	5,203.000
0070	204.0150	REMOVING CURB & GUTTER	LF	243.000	243.000
0080	204.0195	REMOVING CONCRETE BASES	EACH	5.000	5.000
0090	204.0230	REMOVING BUILDING (STATION) 01. STA 730+00	LS	1.000	1.000
0100	205.0100	EXCAVATION COMMON	CY	2,017.000	2,017.000
0110	208.0100	BORROW	CY	2,304.000	2,304.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 01. 1206-07-80	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	76.000	76.000
0140	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	2,490.000	2,490.000
0150	305.0130	BASE AGGREGATE DENSE 3-INCH	TON	1,224.000	1,224.000
0160	312.0110	SELECT CRUSHED MATERIAL	TON	130.000	130.000
0170	415.0090	CONCRETE PAVEMENT 9-INCH	SY	919.000	919.000
0180	416.0610	DRILLED TIE BARS	EACH	382.000	382.000
0190	416.0620	DRILLED DOWEL BARS	EACH	64.000	64.000
0200	416.1710	CONCRETE PAVEMENT REPAIR	SY	54.000	54.000
0210	455.0105	ASPHALTIC MATERIAL PG58-28	TON	13.000	13.000
0220	455.0120	ASPHALTIC MATERIAL PG64-28	TON	52.000	52.000
0230	455.0605	TACK COAT	GAL	491.000	491.000
0240	460.1101	HMA PAVEMENT TYPE E-1	TON	947.000	947.000
0250	460.1103	HMA PAVEMENT TYPE E-3	TON	237.000	237.000
0260	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	946.000	946.000
0270	465.0105	ASPHALTIC SURFACE	TON	205.000	205.000
0280	465.0305	ASPHALTIC SURFACE SAFETY ISLANDS	TON	12.000	12.000
0290	465.0315	ASPHALTIC FLUMES	SY	10.000	10.000
0300	520.8000	CONCRETE COLLARS FOR PIPE	EACH	1.000	1.000
0310	522.0118	CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	50.000	50.000
0320	522.0154	CULVERT PIPE REINFORCED CONCRETE CLASS III 54-INCH	LF	10.000	10.000
0330	522.1012	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH	EACH	2.000	2.000
0340	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	2.000	2.000
0350	522.1036	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	EACH	2.000	2.000
0360	522.1054	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 54-INCH	EACH	1.000	1.000
0370	601.0407	CONCRETE CURB & GUTTER 18-INCH TYPE D	LF	1,672.000	1,672.000
0380	601.0409	CONCRETE CURB & GUTTER 30-INCH TYPE A	LF	722.000	722.000
0390	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	412.000	412.000
0400	601.0413	CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G	LF	42.000	42.000
0410	602.0410	CONCRETE SIDEWALK 5-INCH	SF	2,232.000	2,232.000
0420	602.0515	CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA	SF	192.000	192.000
0430	608.0312	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH	LF	117.000	117.000
0440	608.0336	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH	LF	64.000	64.000

3

DATE 14NOV14 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	1206-07-80 QUANTITY
0450	611.0530	MANHOLE COVERS TYPE J	EACH	1.000	1.000
0460	611.0624	INLET COVERS TYPE H	EACH	3.000	3.000
0470	611.0639	INLET COVERS TYPE H-S	EACH	2.000	2.000
0480	611.2005	MANHOLES 5-FT DIAMETER	EACH	2.000	2.000
0490	611.3230	INLETS 2X3-FT	EACH	4.000	4.000
0500	616.0700.S	FENCE SAFETY	LF	20.000	20.000
0510	619.1000	MOBILIZATION	EACH	1.000	1.000
0520	620.0300	CONCRETE MEDIAN SLOPED NOSE	SF	371.000	371.000
0530	621.0100	LANDMARK REFERENCE MONUMENTS	EACH	1.000	1.000
0540	624.0100	WATER	MGAL	32.000	32.000
0550	625.0100	TOPSOIL	SY	1,226.000	1,226.000
0560	625.0500	SALVAGED TOPSOIL	SY	8,171.000	8,171.000
0570	627.0200	MULCHING	SY	4,221.000	4,221.000
0580	628.1504	SILT FENCE	LF	1,887.000	1,887.000
0590	628.1520	SILT FENCE MAINTENANCE	LF	1,887.000	1,887.000
0600	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0610	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0620	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,038.000	1,038.000
0630	628.7005	INLET PROTECTION TYPE A	EACH	5.000	5.000
0640	628.7020	INLET PROTECTION TYPE D	EACH	8.000	8.000
0650	628.7504	TEMPORARY DITCH CHECKS	LF	30.000	30.000
0660	628.7555	CULVERT PIPE CHECKS	EACH	30.000	30.000
0670	629.0210	FERTILIZER TYPE B	CWT	0.720	0.720
0680	630.0130	SEEDING MIXTURE NO. 30	LB	20.600	20.600
0690	630.0400	SEEDING NURSE CROP	LB	31.300	31.300
0700	631.0300	SOD WATER	MGAL	15.200	15.200
0710	631.1100	SOD EROSION CONTROL	SY	2,714.000	2,714.000
0720	632.0101	TREES (SPECIES, ROOT, SIZE) 01. HACKBERRY, COMMON, B&B, 3-INCH	EACH	4.000	4.000
0730	632.0101	TREES (SPECIES, ROOT, SIZE) 02. MAPLE, RED, B&B, 3-INCH	EACH	1.000	1.000
0740	632.0101	TREES (SPECIES, ROOT, SIZE) 03. OAK, BUR, B&B, 3-INCH	EACH	2.000	2.000
0750	632.0101	TREES (SPECIES, ROOT, SIZE) 04. OAK, RED, B&B, 3-INCH	EACH	2.000	2.000
0760	632.0101	TREES (SPECIES, ROOT, SIZE) 05. OAK, WHITE, B&B, 3-INCH	EACH	1.000	1.000
0770	633.5200	MARKERS CULVERT END	EACH	8.000	8.000
0780	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	2.000	2.000
0790	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	5.000	5.000
0800	635.0200	SIGN SUPPORTS STRUCTURAL STEEL HS	LB	3,155.000	3,155.000
0810	636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	5.600	5.600
0820	636.0500	SIGN SUPPORTS STEEL REINFORCEMENT	LB	332.000	332.000
0830	637.1220	SIGNS TYPE I REFLECTIVE SH	SF	525.000	525.000
0840	637.2210	SIGNS TYPE II REFLECTIVE H	SF	355.390	355.390
0850	637.2215	SIGNS TYPE II REFLECTIVE H FOLDING	SF	20.100	20.100
0860	637.2230	SIGNS TYPE II REFLECTIVE F	SF	10.250	10.250
0870	638.2102	MOVING SIGNS TYPE II	EACH	12.000	12.000
0880	638.2602	REMOVING SIGNS TYPE II	EACH	36.000	36.000
0890	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	21.000	21.000
0900	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1206-07-80	EACH	1.000	1.000
0910	643.0300	TRAFFIC CONTROL DRUMS	DAY	7,644.000	7,644.000
0920	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,017.000	1,017.000
0930	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	266.000	266.000

3

DATE 14NOV14 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	1206-07-80 QUANTITY
0940	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	777.000	777.000
0950	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	74.000	74.000
0960	643.0900	TRAFFIC CONTROL SIGNS	DAY	930.000	930.000
0970	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	5.000	5.000
0980	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	104.000	104.000
0990	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	28.000	28.000
1000	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 1206-07-80	EACH	1.000	1.000
1010	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	722.000	722.000
1020	645.0111	GEOTEXTILE FABRIC TYPE DF SCHEDULE A	SY	510.000	510.000
1030	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	964.000	964.000
1040	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	236.000	236.000
1050	646.0600	REMOVING PAVEMENT MARKINGS	LF	505.000	505.000
1060	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	1.000	1.000
1070	647.0256	PAVEMENT MARKING SYMBOLS EPOXY	EACH	6.000	6.000
1080	647.0456	PAVEMENT MARKING CURB EPOXY	LF	10.000	10.000
1090	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	182.000	182.000
1100	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	1.000	1.000
1110	647.0656	PAVEMENT MARKING PARKING STALL EPOXY	LF	3,728.000	3,728.000
1120	647.0766	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	LF	307.000	307.000
1130	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	5,354.000	5,354.000
1140	649.0801	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH	LF	135.000	135.000
1150	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	10.000	10.000
1160	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	2,300.000	2,300.000
1170	650.5000	CONSTRUCTION STAKING BASE	LF	1,480.000	1,480.000
1180	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	2,227.000	2,227.000
1190	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	2.000	2.000
1200	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	891.000	891.000
1210	650.8500	CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) 01. 1206-07-80	LS	1.000	1.000
1220	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1206-07-80	LS	1.000	1.000
1230	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	2,235.000	2,235.000
1240	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	2,180.000	2,180.000
1250	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	361.000	361.000
1260	652.0800	CONDUIT LOOP DETECTOR	LF	560.000	560.000
1270	652.0900	LOOP DETECTOR SLOTS	LF	263.000	263.000
1280	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	11.000	11.000
1290	653.0905	REMOVING PULL BOXES	EACH	7.000	7.000
1300	654.0101	CONCRETE BASES TYPE 1	EACH	2.000	2.000
1310	654.0102	CONCRETE BASES TYPE 2	EACH	2.000	2.000
1320	654.0105	CONCRETE BASES TYPE 5	EACH	3.000	3.000
1330	654.0230	CONCRETE CONTROL CABINET BASES TYPE L30	EACH	1.000	1.000
1340	655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG	LF	141.000	141.000
1350	655.0240	CABLE TRAFFIC SIGNAL 7-14 AWG	LF	76.000	76.000
1360	655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG	LF	1,048.000	1,048.000
1370	655.0270	CABLE TRAFFIC SIGNAL 15-14 AWG	LF	212.000	212.000
1380	655.0305	CABLE TYPE UF 2-12 AWG GROUNDED	LF	512.000	512.000
1390	655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	LF	1,049.000	1,049.000
1400	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	2,394.000	2,394.000

3

DATE 14NOV14 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	1206-07-80 QUANTITY
1410	655.0620	ELECTRICAL WIRE LIGHTING 8 AWG	LF	5,043.000	5,043.000
1420	655.0700	LOOP DETECTOR LEAD IN CABLE	LF	2,560.000	2,560.000
1430	655.0800	LOOP DETECTOR WIRE	LF	1,908.000	1,908.000
1440	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 01. STA 729+93 EB	LS	1.000	1.000
1450	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	7.000	7.000
1460	657.0322	POLES TYPE 5-ALUMINUM	EACH	12.000	12.000
1470	657.0425	TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	EACH	2.000	2.000
1480	657.0585	TROMBONE ARMS 15-FT	EACH	1.000	1.000
1490	657.0615	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 8-FT	EACH	16.000	16.000
1500	658.0120	TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL	EACH	4.000	4.000
1510	658.0225	BACKPLATES SIGNAL FACE 5 SECTION 12-INCH	EACH	4.000	4.000
1520	658.0412	PEDESTRIAN SIGNAL FACE 12-INCH	EACH	2.000	2.000
1530	658.0500	PEDESTRIAN PUSH BUTTONS	EACH	2.000	2.000
1540	658.0600	LED MODULES 12-INCH RED BALL	EACH	4.000	4.000
1550	658.0605	LED MODULES 12-INCH YELLOW BALL	EACH	4.000	4.000
1560	658.0610	LED MODULES 12-INCH GREEN BALL	EACH	4.000	4.000
1570	658.0620	LED MODULES 12-INCH YELLOW ARROW	EACH	4.000	4.000
1580	658.0625	LED MODULES 12-INCH GREEN ARROW	EACH	4.000	4.000
1590	658.0635	LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	EACH	2.000	2.000
1600	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 01. E VERONA AVE & OLD PB/MAPLE GROVE DR	LS	1.000	1.000
1610	659.1125	LUMINAIRES UTILITY LED C	EACH	16.000	16.000
1620	659.2130	LIGHTING CONTROL CABINETS 120/240 30-INCH	EACH	1.000	1.000
1630	690.0150	SAWING ASPHALT	LF	1,271.000	1,271.000
1640	690.0250	SAWING CONCRETE	LF	199.000	199.000
1650	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	460.000	460.000
1660	999.1950.S	BICYCLE RACK ASPHALT OR CONCRETE-MOUNTED	EACH	1.000	1.000
1670	SPV.0035	SPECIAL 01. CRUSHED LIMESTONE 3-INCH	CY	270.000	270.000
1680	SPV.0060	SPECIAL 01. BUS SHELTER	EACH	1.000	1.000
1690	SPV.0060	SPECIAL 02. MOVING HISTORICAL MARKER	EACH	1.000	1.000
1700	SPV.0060	SPECIAL 03. REESTABLISH SECTION CORNERS	EACH	1.000	1.000
1710	SPV.0060	SPECIAL 04. CONCRETE BASES TYPE 5 TALL	EACH	5.000	5.000
1720	SPV.0060	SPECIAL 05. CONCRETE BASES TYPE 5 WIDE	EACH	4.000	4.000
1730	SPV.0060	SPECIAL 07. PRECAST CONCRETE SIGN BASE	EACH	26.000	26.000
1740	SPV.0060	SPECIAL 08. SIGN POST BASE FOR CONCRETE INSTALLATION	EACH	3.000	3.000
1750	SPV.0085	SPECIAL 01. SEEDING MIXTURE NO. 75 SPECIAL	LB	27.400	27.400
1760	SPV.0090	SPECIAL 01. SIGN POST	LF	69.000	69.000
1770	SPV.0090	SPECIAL 02. REFLECTIVE SIGN POST	LF	236.000	236.000
1780	SPV.0105	SPECIAL 01. REMOVE AND REINSTALL TRAFFIC SIGNALS	LS	1.000	1.000
1790	SPV.0180	SPECIAL 01. PREPARING TOPSOIL FOR LAWN TYPE TURF	SY	8,171.000	8,171.000

3

CLEARING AND GRUBBING

STATION	OFFSET	201.0120 CLEARING ID	201.0220 GRUBBING ID
100+48 P	7' LT	3	3
100+46 P	53' RT	6	6
100+48 P	178' RT	4	4
100+59 P	92' RT	9	9
100+60 P	137' RT	9	9
100+61 P	8' LT	3	3
100+70 P	53' RT	9	9
100+77 P	179' RT	9	9
101+19 P	52' RT	9	9
101+30 P	94' RT	10	10
101+32 P	140' RT	10	10
101+33 P	180' RT	4	4
101+33 P	180' RT	4	4
101+42 P	52' RT	9	9
101+93 P	52' RT	9	9
102+04 P	92' RT	9	9
102+05 P	139' RT	9	9
102+19 P	180' RT	9	9
102+63 P	44' RT	6	6
102+65 P	188' RT	9	9
	TOTAL	149	149

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH
732+52 EB	RT	1
735+35 EB	RT	1
738+79 WB	LT	1
	TOTAL	3

REMOVING PAVEMENT

STATION	TO	STATION	LOCATION	204.0100 REMOVING PAVEMENT SY
735+49 EB	-	735+76 EB	MEDIAN	25
			TOTAL	25

3

REMOVING ASPHALTIC SURFACE

STATION	TO	STATION	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	REMARKS
49+14 PB	-	738+86 EB	400	-	SB-WB RIGHT TURN
734+92 EB	-	52+47 PB	322	-	EB-SB RIGHT TURN
10+00 A	-	11+97 A	-	1108	-
10+00 B	-	11+97 B	-	1200	-
10+00 C	-	11+98 C	-	1232	-
10+00 D	-	11+99 D	-	1030	-
PARK & RIDE DRIVEWAY			-	633	-
		TOTAL	722	5203	

REMOVING CURB & GUTTER

STATION	TO	STATION	LOCATION	204.0150 REMOVING CURB & GUTTER LF	REMARKS
735+36 EB	-	735+75 EB	RT	56	SW CORNER OF INTERSECTION
738+84 WB	-	739+38 WB	LT	99	NW CORNER OF INTERSECTION
49+55 PB	-	49+91 PB	RT	88	NORTH PORKCHOP ISLAND
			TOTAL	243	

REMOVING BUILDING (01. STA 730+00 EB)

STATION	LOCATION	204.0230.01 REMOVING BUILDING LS
730+00 EB	LT	1
	TOTAL	1

3

EARTHWORK

		205.0100 EXCAVATION COMMON (1)	(2)	(3)	(4)		(5)	(6)		208.0100
	LOCATION	CUT CY	EBS EXCAVATION CY	UNUSABLE PAVEMENT MATERIAL CY	AVAILABLE MATERIAL CY	UNEXPANDED FILL CY	EXPANDED FILL FACTOR = 1.25 CY	MASS ORDINATE BALANCE CY	WASTE CY	BORROW CY
DIVISION 1	VERONA AVE EB	489	0	36	453	1477	1846	-1393	36	
	VERONA AVE WB	354	0	18	336	368	460	-124	18	
	BIKE PATH	238	0	10	228	735	919	-691	10	
	WEEPER TRENCH	220	0	0	220	20	25	195	0	
	PARKING BAY E	170	44	6	164	247	309	-145	50	
	MISC LOT AREAS	275	30	2	273	90	113	160	32	
	DIVISION 1 SUBTOTAL	1746	74	72	1674	2937	3672	-1998	146	1998
DIVISION 2	OLD PB	46	0	0	46	84	105	-59	0	
	MAPLE GROVE DR	77	0	0	77	259	324	-247	0	
	DIVISION 2 SUBTOTAL	123	0	0	123	343	429	-306	0	306
	SUB-TOTAL	1943	74	72	1797	3280	4101	-2304	146	2304
	TOTAL		2017							2304

(1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS.
(2) UNDISTRIBUTED. EBS EXCAVATION TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL.
(3) UNUSABLE ASPHALT MATERIAL IS INCLUDED IN EXCAVATION COMMON.
(4) AVAILABLE MATERIAL = CUT - UNUSABLE PAVEMENT MATERIAL
(5) EXPANDED FILL = UNEXPANDED FILL X 1.25
(6) MASS ORDINATE = AVAILABLE MATERIAL - EXPANDED FILL. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION

BASE AGGREGATE

STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0130 BASE AGGREGATE DENSE 3-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON	REMARKS
729+36 EB	-	729+77 EB	RT	6	-	-	-	UNPAVED SHOULDER
729+36 EB	-	734+92 EB	RT	-	269	263	-	INCLUDING BUS PAD
734+92 EB	-	735+79 EB	RT	-	97	76	-	EB-SB RIGHT TURN
730+25 EB	-	735+50 EB	RT	-	268	-	-	PATH SOUTH OF VERONA AVE
735+54 WB	-	736+74 WB	LT	32	-	-	-	UNPAVED SHOULDER
735+54 WB	-	738+88 WB	LT	-	180	168	-	INCLUDING BUS PAD
737+25 WB	-	739+05 WB	LT	-	88	-	-	PATH NORTH OF VERONA AVE
738+86 WB	-	49+14 PB	LT	-	60	26	-	SB-WB RIGHT TURN
51+83 PB	-	52+46 PB	RT	8	-	-	-	UNPAVED SHOULDER
10+04 A	-	10+36 A	LT & RT	-	11	-	-	SW CORNER OF LOT
10+29 A	-	10+67 A	RT	-	25	-	-	BIKE RACK PAD
10+46 A	-	11+35 A	RT	-	15	-	-	S LOT CURB & GUTTER
10+25 A	-	10+48 A	LT	-	16	-	-	SW A/B ISLAND FILL
11+58 A	-	11+78 A	LT	-	18	-	-	SE A/B MEDIAN FILL
10+24 B	-	11+77 B	RT	-	140	-	-	N A/B MEDIAN FILL
10+25 B	-	10+47 B	LT	-	14	-	-	SW B/C MEDIAN FILL
10+28 B	-	11+70 B	LT	-	38	-	-	S B/C MEDIAN CURB & GUTTER
11+58 B	-	11+79 B	LT	-	15	-	-	SE B/C MEDIAN FILL
10+24 C	-	10+46 C	RT	-	15	-	-	NW B/C MEDIAN FILL
10+27 C	-	11+69 C	RT	-	38	-	-	N B/C MEDIAN CURB & GUTTER
11+57 C	-	11+77 C	RT	-	17	-	-	NE B/C MEDIAN FILL
10+26 C	-	10+46 C	LT	-	12	-	-	SW C/D MEDIAN FILL
10+29 C	-	11+71 C	LT	-	23	-	-	S C/D MEDIAN CURB & GUTTER
11+57 C	-	11+79 C	LT	-	22	-	-	SE C/D MEDIAN FILL
10+00 D	-	10+41 D	LT & RT	-	60	60	-	NW CORNER LOT FILL
10+23 D	-	10+44 D	RT	-	17	-	-	NW C/D ISLAND FILL
10+26 D	-	11+69 D	RT	-	23	-	-	N C/D ISLAND CURB & GUTTER
11+56 D	-	11+77 D	RT	-	16	-	-	NE C/D ISLAND FILL
11+64 D	-	12+01 D	LT & RT	-	57	57	-	NE CORNER LOT FILL
10+25 D	-	10+57 D	LT	-	5	-	-	S HANDICAP AREA CURB & GUTTER
10+57 D	-	11+73 D	LT	-	19	-	-	S D/E ISLAND CURB & GUTTER
10+00 E	-	12+01 E	LT & RT	-	440	440	-	LOT ADDITION
10+23 E	-	10+53 E	RT	-	11	11	-	HANDICAP AREA
10+23 E	-	10+53 E	RT	-	4	4	-	N HANDICAP AREA CURB & GUTTER
10+53 E	-	11+70 E	RT	-	15	15	-	N D/E ISLAND CURB & GUTTER
10+01 E	-	12+01 E	LT	-	26	26	-	NORTH LOT CURB & GUTTER
100+00 P	-	104+46 P	LT & RT	-	320	-	-	PATH WEST OF LOT
100+08 P		101+00 P	LT	-	13	13	-	W SIDE OF BIKE PATH CURB AND GUTTER
100+18 P	-	103+36 P	RT	-	46	46	-	W SIDE OF LOT CURB & GUTTER
100+51 P	-	100+65 P	RT	-	3	-	-	CURB RAMP
101+23 P	-	101+39 P	RT	-	5	-	-	W SIDE OF B/C MEDIAN
101+58 P	-	101+71 P	RT	-	3	-	-	CURB RAMP
101+96 P	-	102+07 P	RT	-	4	-	-	W SIDE OF C/D MEDIAN
102+64 P	-	102+77 P	RT	-	3	-	-	CURB RAMP
102+67 P	-	102+78 P	RT	-	13	13	-	W SIDE OF D/E MEDIAN
80+27	-	82+49	RT	7	-	-	-	E DRIVEWAY SHOULDER
80+43	-	82+30	LT	7	-	-	-	W DRIVEWAY SHOULDER
11+42 W	-	11+57 W	LT	-	2	2	-	E SIDE OF B/C MEDIAN
12+18 W	-	12+32 W	LT	-	2	2	-	E SIDE OF C/D MEDIAN
12+90 W	-	13+03 W	LT	-	2	2	-	E SIDE OF D/E MEDIAN
10+00 W	-	13+65 W	LT	16	-	-	-	E SIDE OF LOT SHOULDER
UNDISTRIBUTED			PARK AND RIDE	-	-	-	130	EBS AREAS
			TOTAL	76	2490	1224	130	

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CONCRETE PAVEMENT

STATION	TO	STATION	LOCATION	415.0090 CONCRETE PAVEMENT 9-INCH SY	416.1710 CONCRETE PAVEMENT REPAIR SY
729+36 EB	-	734+92 EB	RT	521	-
731+34 EB	-	731+44 EB	LT	-	27
733+72 EB	-	733+82 EB	LT	-	27
735+54 WB	-	738+88 WB	LT	398	-
			TOTAL	919	54

DRILLED BARS

STATION	TO	STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH
729+36 EB	-	734+92 EB	RT	222	-
731+34 EB	-	731+44 EB	LOOPS	-	32
733+72 EB	-	733+82 EB	LOOPS	-	32
735+54 WB	-	738+88 WB	LT	134	-
735+49 EB	-	735+76 EB	MEDIAN	26	-
			TOTAL	382	64

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ASPHALT PAVEMENT

STATION	TO	STATION	LOCATION	455.0105 ASPHALTIC MATERIAL PG58-28* TON	455.0120 ASPHALTIC MATERIAL PG64-28* TON	455.0605 TACK COAT** GAL	460.1101 HMA PAVEMENT TYPE E-1*** TON	460.1103 HMA PAVEMENT TYPE E-3*** TON
734+92 EB	-	52+47 PB	EB-SB RIGHT TURN	7	-	25	-	129
49+14 PB	-	738+84 WB	SB-WB RIGHT TURN	6	-	21	-	108
10+00 A	-	11+97 A	-	-	7	67	120	-
10+00 B	-	11+97 B	-	-	10	95	190	-
10+00 C	-	11+98 C	-	-	8	82	148	-
10+00 D	-	11+99 D	-	-	9	81	163	-
10+00 E	-	11+99 E	NEW PARKING BAY	-	14	79	259	-
			PARK & RIDE DRIVEWAY	-	4	41	67	-
			TOTAL	13	52	491	947	237

*BASED ON 5.5% ASPHALT CONTENT
**BASED ON .025 GAL/SY APPLICATION RATE
***BASED ON 112 LB/SY/IN

ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	465.0105 ASPHALTIC SURFACE* TON	465.0305 ASPHALTIC SURFACE SAFETY ISLANDS* TON	465.0315 ASPHALTIC FLUMES SY
100+00 P	-	104+46 P	PATH	97	-	-
730+25 EB	-	735+50 EB	PATH	81	-	-
737+25 WB	-	739+04 WB	PATH	27	-	-
735+63 EB	-	735+91 EB	RT	-	3	-
735+49 EB	-	735+69 EB	VERONA MEDIAN	-	2	-
49+38 PB	-	49+95 PB	RT	-	7	-
51+77 PB	-	51+97 PB	RT	-	-	10
			TOTAL	205	12	10

*BASED ON 112 LB/SY/IN

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CULVERT PIPE

INLET STATION	INLET OFFSET	INLET ELEVATION	DISCHARGE STATION	DISCHARGE OFFSET	DISCHARGE ELEVATION	SLOPE FT/FT	520.8000 CONCRETE COLLARS FOR PIPE EACH	522.0118 REINFORCED CONCRETE CLASS III 18-INCH LF	522.0154 REINFORCED CONCRETE CLASS III 54-INCH LF	522.1018 APRON ENDWALLS FOR CPRC 18-INCH EACH	522.1054 APRON ENDWALLS FOR CPRC 54-INCH EACH	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH
-	-	-	732'EB'+52.38	41.90' RT	954.31	0.0146	1	-	10	-	1	1
103'P'+10.00	17.78' LT	955.00	103'P'+52.50	22.00' RT	954.70	0.0050	-	50	-	2	-	1
						TOTAL	1	50	10	2	1	2

SEE CONSTRUCTION DETAIL "DETAIL OF STORMSEWER ENDWALL" FOR MORE INFORMATION

CURB AND GUTTER

STATION	TO	STATION	LOCATION	601.0407 18-INCH TYPE D LF	601.0409 30-INCH TYPE A LF	601.0411 30-INCH TYPE D LF	601.0413 6-INCH SLOPED 30-INCH TYPE G LF	REMARKS
729+77 EB	-	734+92 EB	RT	-	509	-	-	-
734+92 EB	-	51+77 PB	RT	-	-	135	-	S RADIUS
735+49 EB	-	735+69 EB	LT	-	-	-	21	VERONA MEDIAN
735+62 EB	-	735+87 EB	RT	-	-	27	-	TURN LANE SIDE OF S PORKCHOP
735+63 EB	-	735+89 EB	RT	-	-	25	-	MAINLINE SIDE OF S PORKCHOP
736+74 WB	-	738+84 WB	LT	-	213	-	-	-
738+84 WB	-	49+14 PB	LT	-	-	93	-	N RADIUS
738+91 WB	-	739+12 WB	RT	-	-	-	21	VERONA MEDIAN
739+28 WB	-	739+41 WB	LT	-	-	13		N PORKCHOP
49+37 PB	-	49+93 PB	RT	-	-	56	-	TURN LANE SIDE OF N PORKCHOP
49+39 PB	-	49+92 PB	RT	-	-	52	-	MAINLINE SIDE OF N PORKCHOP
50+84 PB	-	50+95 PB	RT	-	-	11	-	S PORKCHOP
100+09 P	-	101+00 P	LT	98	-	-	-	WEST SIDE OF BIKE PATH
100+18 P	-	103+36 P	RT	357	-	-	-	WEST SIDE OF PARKING LOT
101+27 P	-	101+35 P	RT	8	-	-	-	WEST SIDE OF B/C MEDIAN
102+00 P	-	102+04 P	RT	4	-	-	-	WEST SIDE OF C/D MEDIAN
102+67 P	-	102+78 P	RT	11	-	-	-	WEST SIDE OF D/E MEDIAN
11+46 W	-	11+53 W	LT	7	-	-	-	EAST SIDE OF B/C MEDIAN
12+22 W	-	12+28 W	LT	6	-	-	-	EAST SIDE OF C/D MEDIAN
12+94 W	-	12+99 W	LT	5	-	-	-	EAST SIDE OF D/E MEDIAN
10+46 A	-	11+35 A	RT	114	-	-	-	SOUTH SIDE OF PARKING LOT
10+28 B	-	11+70 B	LT	142	-	-	-	B/C MEDIAN
10+27 C	-	11+69 C	RT	142	-	-	-	B/C MEDIAN
10+29 C	-	11+71 C	LT	142	-	-	-	C/D MEDIAN
10+26 D	-	11+69 D	RT	143	-	-	-	C/D MEDIAN
10+26 D	-	10+57 D	LT	30	-	-	-	DRIVEWAY CURB
10+57 D	-	11+73 D	LT	116				D/E MEDIAN
10+24 E	-	10+53 E	RT	30	-	-	-	DRIVEWAY CURB
10+53 E	-	11+70 E	RT	116	-	-	-	D/E MEDIAN
10+01 E	-	12+01 E	LT	201	-	-	-	NORTH SIDE OF PARKING LOT
			TOTAL	1672	722	412	42	

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SIDEWALK

STATION	TO	STATION	LOCATION	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0515 DETECTABLE WARNING FIELD NATURAL PATINA SF	REMARKS
730+53 EB	-	730+76 EB	RT	180	-	BUS PAD
735+44 EB	-	735+57 EB	RT	80	16	CURB RAMP
737+25 WB	-	737+64 WB	LT	322	-	BUS PAD
738+96 WB	-	739+13 WB	LT	94	16	CURB RAMP
49+74 PB	-	49+94 PB	RT	177	32	ISLAND
50+82 PB	-	50+95 PB	RT	114	32	ISLAND
100+51 P	-	100+65 P	RT	94	20	CURB RAMP
101+58 P	-	101+71 P	RT	93	20	CURB RAMP
102+64 P	-	102+77 P	RT	94	20	CURB RAMP
10+24 E	-	10+53 E	RT	297	20	HANDICAP AREA
10+29 A	-	10+67 A	RT	687	16	BIKE RACK PAD
			TOTAL	2232	192	

STORM SEWER

FROM STRUCTURE	TO STRUCTURE	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH LF	608.0336 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 36-INCH LF
1.1	1.0	955.07	954.63	0.0100	38	-
2.1	2.0	953.60	953.00	0.0162	31	-
3.1	3.0	948.05	947.86	0.0041	-	38
4.1	4.0	948.60	950.00	0.0410	-	26
4.2	4.1	952.90	952.69	0.0078	21	-
4.3	4.2	953.11	952.90	0.0063	27	-
				TOTAL	117	64

SEE CONSTRUCTION DETAIL "DETAIL OF STORMSEWER ENDWALL" FOR MORE DETAILS

3

STRUCTURE SCHEDULE

STRUCTURE NUMBER	STATION	OFFSET TO CENTER OF STRUCTURE	FINISHED ELEVATION	TOP OF STRUCTURE ELEVATION	BOTTOM OF STRUCTURE ELEVATION	DEPTH	APRON ENDWALL FOR CULVERT PIPE REINFORED CONCRETE 522.1012 12-INCH EACH	APRON ENDWALL FOR CULVERT PIPE REINFORED CONCRETE 522.1036 36-INCH EACH	611.0530 MANHOLE COVERS TYPE J EACH	611.0624 INLET COVERS TYPE H EACH	611.0639 INLET COVERS TYPE H-S EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	611.3230 INLETS 2X3-FT EACH	650.4000 CONSTRUCTION STAKING STORM SEWER EACH
1.0	731+40.00 EB	48.0' RT	954.63	954.63	954.63	-	1	-	-	-	-	-	-	1
1.1	731+14.00 EB	13.5' RT	961.93	960.90	954.90	6.00	-	-	-	1	-	-	1	1
2.0	733+75.00 EB	45.6' RT	952.74	952.74	952.74	-	1	-	-	-	-	-	-	1
2.1	733+75.00 EB	9.5' RT	958.46	957.43	953.43	4.00	-	-	-	1	-	-	1	1
3.0	735+35.65 EB	71.05' RT	948.96	947.86	947.86	-	-	1	-	-	-	-	-	1
3.1	735+35.65 EB	25.2' RT	956.60	955.57	947.72	7.85	-	-	-	1	-	1	-	1
4.0	738+79.10 WB	56.9' LT	958.08	950.00	950.00	-	-	1	-	-	-	-	-	1
4.1	738+79.10 WB	23.4' LT	958.20	956.95	948.27	8.68	-	-	1	-	-	1	-	1
4.2	739+00.00 WB	23.5' LT	957.01	955.98	952.73	3.25	-	-	-	-	1	-	1	1
4.3	49+61.50 PB	45.0' RT	956.97	955.94	952.94	3.00	-	-	-	-	1	-	1	1
						TOTAL	2	2	1	3	2	2	4	10

SEE CONSTRUCTION DETAIL FOR MORE INFORMATION

3

FENCE SAFETY

STATION	LOCATION	616.0700.S FENCE SAFETY LF	REMARKS
734+14 EB	500' RT	20	PLACE AROUND VERTICAL REFERENCE MONUMENT
	TOTAL	20	

CONCRETE MEDIAN SLOPED NOSE

STATION	TO	STATION	LOCATION	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	REMARKS
735+56 EB	-	735+64 EB	RT	50	TYPE 1
735+69 EB	-	735+76 EB	MEDIAN	68	TYPE 1
739+21 WB	-	739+28 WB	LT	26	SPECIAL
739+41 WB	-	739+45 WB	LT	19	SPECIAL
49+31 PB	-	49+39 PB	RT	49	TYPE 1
50+79 PB	-	50+84 PB	RT	21	SPECIAL
50+95 PB	-	51+01 PB	RT	26	SPECIAL
10+25 B	-	10+28 B	LT	11	SPECIAL
11+70 B	-	11+74 B	LT	11	SPECIAL
10+23 C	-	10+27 C	RT	11	SPECIAL
11+69 C	-	11+73 C	RT	11	SPECIAL
10+25 C	-	10+29 C	LT	11	SPECIAL
11+71 C	-	11+75 C	LT	11	SPECIAL
10+23 D	-	10+26 D	RT	11	SPECIAL
11+69 D	-	11+73 D	RT	12	SPECIAL
11+73 D	-	11+76 D	LT	11	SPECIAL
11+70 E	-	11+74 E	RT	12	SPECIAL
			TOTAL	371	

REFERENCE MONUMENTS

LOCATION	621.0100 LANDMARK REFERENCE MONUMENTS EACH	SPV.0060.03 REESTABLISH SECTION CORNERS EACH
CENTER OF SEC 14, T6N, R8E	1	1
TOTAL	1	1

WATER

LOCATION	624.0100 MGAL UNIT
PROJECT	32
TOTAL	32

LANDSCAPING ITEMS

STATION	TO	STATION	LOCATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0400 SEEDING NURSE CROP LB	631.0300 SOD WATER MGAL	631.1100 SOD EROSION CONTROL SY	SPV.0085.01 SEEDING MIXTURE NO. 75 SPECIAL LB	SPV.0180.01 PREPARING TOPSOIL FOR LAWN TYPE TURF SY
729+76 EB	-	52+47 P	RT	-	3901	2419	0.35	-	21.9	4.8	866	19.1	3901
735+54 WB	-	739+30 WB	LT	-	1115	817	0.10	17.9	-	0.7	122	-	1115
100+00 P	-	104+46 P	LT	-	473	-	0.04	-	-	2.6	473	-	473
100+00 P		104+46 P	RT	-	600	265	0.05	-	2.7	1.3	224	2.4	600
10+00 W	-	14+64 W	LT & RT	-	198	-	0.02	-	1.4	0.0	-	1.2	198
			LOT ISLANDS	-	491	-	0.04	-	-	2.7	491	-	491
10+54 A	-	11+35 A	RT	-	218	169	0.02	-	1.2	0.3	49	1.1	218
10+00 E	-	11+99 E	LT	-	135	-	0.01	-	-	0.8	135	-	135
			UNDISTRIBUTED	1226	1040	551	0.09	2.7	4.1	2.0	354	3.6	1040
			TOTAL 001	1226	8171	4221	0.72	20.6	31.3	15.2	2714	27.4	8171

3

EROSION CONTROL ITEMS

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7005 INLET PROTECTION TYPE A EACH	628.7020 INLET PROTECTION TYPE D EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
	731+14 EB		RT	-	-	-	1	1	-	-
731+57 EB	-	52+46 PB	RT	493	493	-	-	-	-	-
729+92 EB	-	731+60 EB	RT	-	-	303	-	-	10	-
733+71 EB	-	733+78 EB	RT	-	-	4	-	-	-	-
735+27 EB	-	735+49 EB	E VERONA MEDIAN	-	-	-	-	3	-	-
	733+75 EB		RT	-	-	-	1	1	-	-
734+24 EB	-	735+41 EB	RT	-	-	111	-	-	-	-
	735+36 EB		RT	-	-	-	1	1	-	-
735+54 WB	-	737+04 WB	LT	173	173	-	-	-	-	-
	735+69 WB		LT	-	-	-	-	-	-	10
736+73 WB	-	737+85 WB	LT	-	-	117	-	-	10	-
737+80 WB	-	739+24 WB	LT	193	193	-	-	-	-	-
	738+79 WB		LT	-	-	-	-	-	-	10
	739+00 WB		LT	-	-	-	1	1	-	-
49+11 PB	-	49+68 PB	RT	-	-	59	-	-	-	-
	49+62 PB		RT	-	-	-	1	1	-	-
101+04 P	-	102+07 P	LT	104	104	-	-	-	-	-
102+08 P	-	103+35 P	LT	-	-	111	-	-	-	-
	103+07 P		LT	-	-	-	-	-	-	10
103+55 P	-	104+04 P	LT	81	81	-	-	-	-	-
10+00 W	-	14+36 W	RT	449	449	-	-	-	-	-
13+65 W	-	14+34 W	LT & RT	-	-	198	-	-	-	-
82+12	-	82+30	RT	148	148	-	-	-	-	-
			UNDISTRIBUTED	246	246	135	-	-	10	-
			TOTAL	1887	1887	1038	5	8	30	30

EROSION CONTROL MOBILIZATION

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT	2	2
TOTAL	2	2

TREES

STATION	OFFSET	LOCATION	632.0101.01 HACKBERRY, COMMON, B&B, 3-INCH EACH	632.0101.02 MAPLE, RED, B&B, 3-INCH EACH	632.0101.03 OAK, BUR, B&B, 3-INCH EACH	632.0101.04 OAK, RED, B&B, 3-INCH EACH	632.0101.05 OAK, WHITE B&B, 3-INCH EACH
100+52 P	29'	LT	-	-	1	-	-
10+96 A	52'	RT	-	-	1	-	-
10+63 B	37'	LT	1	-	-	-	-
11+36 B	36'	LT	1	-	-	-	-
11+00 C	36'	LT	-	-	-	-	1
10+87 D	35'	LT	-	1	-	-	-
11+46 D	35'	LT	1	-	-	-	-
10+51 E	62'	LT	-	-	-	1	-
11+10 E	66'	LT	1	-	-	-	-
11+68 E	70'	LT	-	-	-	1	-
		TOTAL	4	1	2	2	1

MARKERS CULVERT END

STATION	OFFSET	633.5200 EACH UNIT
731'EB'+40.00	46.00' RT	1
732'EB'+52.38	41.90' RT	1
733'EB'+75.00	43.60' RT	1
735'EB'+35.65	65.80' RT	1
735'WB'+69.00	63.62' LT	1
738'WB'+79.10	51.63' LT	1
103'P'+10.00	17.78' LT	1
103'P'+52.50	22.00' RT	1
	TOTAL	8

SIGNS TYPE I

SIGN NO.	LOCATION	SIGN CODE	MESSAGE	SIZE W X H (FEET)	635.0200 SIGN SUPPORTS STRUCTURAL STEEL HS LB	636.0100 SIGN SUPPORTS CONCRETE MASONRY CY	636.0500 SIGN SUPPORTS STEEL REINFORCEMENT LB	637.1220 SIGNS TYPE I REFLECTIVE SH SF
5-1	USH 18 EB	D4-3	"PARK & RIDE EXIT 79"	12' X 7.5'	600	1.2	68	90.00
5-2	USH 18 EB	E3-1	"MLITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL" "EXIT 79"	15' X 11.5'	1045	1.6	98	172.50
6-2	USH 18 WB	E3-1	"MLITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL" "EXIT 81"	15' X 11.5'	965	1.6	98	172.50
6-3	USH 18 WB	D4-3	"PARK & RIDE EXIT 81"	12' X 7.5'	545	1.2	68	90.00
				TOTAL	3155	5.6	332	525.00

SIGNS TYPE II

SIGN NO	LOCATION	SIGN CODE	MESSAGE	SIZE W X H (INCHES)	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	634.0618 POSTS WOOD 4X6-INCH X 18-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	SPV.0060.07 PRECAST CONCRETE SIGN BASE EACH	SPV.0060.08 SIGN POST BASE FOR CONCRETE INSTALLATION EACH	SPV.0090.01 SIGN POST LF	SPV.0090.02 REFLECTIVE SIGN POST LF	REMARKS
1-1	VERONA AVE EB, RT	-	MILITARY RIDGE STATE TRAIL	-	-	-	-	-	-	-	3	2	-	-	-	-	-
1-2	VERONA AVE EB, RT	J3-2	"EAST" "18" "NORTH" "151" UP ARROWS	48" X 57"	-	-	19.00	-	-	-	-	-	1	-	-	12	-
1-3	VERONA AVE EB, RT	-	"EAST" "18" "NORTH" "151" UP ARROWS	-	-	-	-	-	-	-	1	1	-	-	-	-	-
1-4	VERONA AVE EB, LT	-	"DANE COUNTY COMPOST SITE" LT ARROW	-	-	-	-	-	-	1	-	-	1	-	-	9	-
1-5	VERONA AVE EB, RT	-	"PARK & RIDE" RT ARROW	-	-	-	-	-	-	1	1	1	-	-	-	-	-
1-6	VERONA AVE EB, RT	D4-2-R	"PARK & RIDE" RT ARROW	36" X 48"	-	-	12.00	-	-	-	-	-	1	-	-	11	-
2-1	VERONA AVE EB, RT	D7-95-R	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL"	66" X 60"	-	-	27.50	-	-	-	-	-	-	-	-	-	BAND TO LIGHT POLE
2-2	VERONA AVE EB, RT	-	"TO" "PB" RT ARROW	-	-	-	-	-	-	2	-	1	1	-	-	12	-
2-3	VERONA AVE EB, RT	-	"DO NOT ENTER"	-	-	-	-	-	-	-	1	1	-	-	-	-	-
2-4	VERONA AVE EB, RT	-	"STOP" (FOLDING SIGN)	-	-	-	-	-	-	-	1	-	-	-	-	-	-
2-5	VERONA AVE EB, RT	R1-1	"STOP"	36" X 36"	-	-	7.46	-	-	-	-	-	1	-	-	10	-
2-6	VERONA AVE EB, RT	-	"VERONA" "OLD PB"	-	-	-	-	-	-	2	-	-	-	-	-	-	BAND TO SIGNAL POLE
2-7	VERONA AVE EB, RT	W12-1D	DOUBLE DIAGONAL ARROW	30" X 30"	-	-	-	-	6.25	-	-	-	1	-	-	6	-
2-8	VERONA AVE, MED	-	KEEP RIGHT	-	-	-	-	-	-	-	1	-	-	-	-	-	-
2-9	VERONA AVE, MED	R1-1F	"STOP"	36" X 36"	-	-	-	7.46	-	-	-	-	-	-	-	-	BAND TO SIGNAL POLE
2-10	VERONA AVE EB, RT	R1-1F	"STOP"	36" X 36"	-	-	-	7.46	-	-	-	-	-	-	-	-	BAND TO SIGNAL POLE
2-11	VERONA AVE, MED	R4-7	KEEP RIGHT	36" X 48"	-	-	12.00	-	-	-	-	-	-	-	-	-	BAND TO SIGNAL POLE
2-12	MAPLE GROVE DR, RT	R1-1F	"STOP"	30" X 30"	-	-	-	5.18	-	-	-	-	-	-	-	-	BAND TO SIGNAL POLE
2-13	MAPLE GROVE DR, RT	W12-1D	DOUBLE DIAGONAL ARROW	24" X 24"	-	-	-	-	4.00	-	-	-	1	-	-	5	-
2-14	MAPLE GROVE DR, RT	J3-2	"EAST" "18" "NORTH" "151" LEFT ARROWS	48" X 57"	1	-	19.00	-	-	-	-	-	-	-	-	-	-
2-15	MAPLE GROVE DR, RT	-	"EAST" "18" "NORTH" "151" LT ARROWS & "BUSINESS" "18" RT ARROW	-	-	-	-	-	-	-	7	2	-	-	-	-	-
2-16	MAPLE GROVE DR, RT	R1-1	"STOP"	30" X 30"	-	-	5.18	-	-	-	-	-	1	-	-	10	-
2-17	MAPLE GROVE DR, RT	-	"STOP"	-	-	-	-	-	-	-	1	1	-	-	-	-	-
2-18	MAPLE GROVE DR, RT	-	"CTY MV"	-	-	-	-	-	-	-	1	1	-	-	-	-	-
2-19	VERONA AVE, MED	-	"WRONG WAY"	-	-	-	-	-	-	-	1	1	-	-	-	-	-
2-20	VERONAL AVE WB, RT	-	"VERONA POPULATION" "TREE CITY USA" "CALENDAR PARKING"	-	-	-	-	-	-	3	-	2	2	-	-	24	2 - 12' POSTS
3-1	USH 18 WB OFF RAMP, RT	-	"ICE AGE NATIONAL SCENIC TRAIL" LT ARROW	-	-	-	-	-	-	-	2	-	-	-	-	-	-
3-2	USH 18 WB OFF RAMP, LT	D7-95-L	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL"	66" X 60"	-	2	27.50	-	-	-	-	-	-	-	-	-	-
3-3	USH 18 WB OFF RAMP, LT	-	"PARK & RIDE" LT ARROW	-	-	-	-	-	-	-	1	1	-	-	-	-	-
3-4	USH 18 WB OFF RAMP, LT	D4-2-L	"PARK & RIDE" LT ARROW	36" X 48"	1	-	12.00	-	-	-	-	-	-	-	-	-	-

CONTINUED ON NEXT PAGE

SIGNS TYPE II (CONTINUED)

SIGN NO	LOCATION	SIGN CODE	MESSAGE	SIZE W X H (INCHES)	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	634.0618 POSTS WOOD 4X6-INCH X 18-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	SPV.0060.07 PRECAST CONCRETE SIGN BASE EACH	SPV.0060.08 SIGN POST BASE FOR CONCRETE INSTALLATION EACH	SPV.0090.01 SIGN POST LF	SPV.0090.02 REFLECTIVE SIGN POST LF	REMARKS
4-1	PARKING BAY E	R7-8A	"RESERVED PARKING THIS STALL"	12" X 18"	-	-	1.50	-	-	-	-	-	-	1	8	-	-
4-2	PARKING BAY E	R7-8V	"VAN ACCESSIBLE"	12" X 6"	-	-	0.50	-	-	-	-	-	-	-	-	-	MOUNT BELOW SIGN 4-1
4-3	PARKING BAY D	R7-8A	"RESERVED PARKING THIS STALL"	12" X 18"	-	-	1.50	-	-	-	-	-	-	1	8	-	-
4-4	PARKING BAY D	R7-8V	"VAN ACCESSIBLE"	12" X 6"	-	-	0.50	-	-	-	-	-	-	-	-	-	MOUNT BELOW SIGN 4-3
4-5	PARKING BAY D	R7-8A	"RESERVED PARKING THIS STALL"	12" X 18"	-	-	1.50	-	-	-	-	-	1	-	8	-	-
4-6	PARKING BAY D	R7-8V	"VAN ACCESSIBLE"	12" X 6"	-	-	0.50	-	-	-	-	-	-	-	-	-	MOUNT BELOW SIGN 4-5
4-7	PARKING BAY E	R7-8A	"RESERVED PARKING THIS STALL"	12" X 18"	-	-	1.50	-	-	-	-	-	1	-	8	-	-
4-8	PARKING BAY E	R7-8V	"VAN ACCESSIBLE"	12" X 6"	-	-	0.50	-	-	-	-	-	-	-	-	-	MOUNT BELOW SIGN 4-7
4-9	PARKING BAY A	R7-8A	"RESERVED PARKING THIS STALL"	12" X 18"	-	-	1.50	-	-	-	-	-	-	1	8	-	-
4-10	PARKING BAY A	R7-8V	"VAN ACCESSIBLE"	12" X 6"	-	-	0.50	-	-	-	-	-	-	-	-	-	MOUNT BELOW SIGN 4-9
4-11	PARKING BAY A	R7-8A	"RESERVED PARKING THIS STALL"	12" X 18"	-	-	1.50	-	-	-	-	-	1	-	8	-	-
4-12	PARKING BAY A	R7-8V	"VAN ACCESSIBLE"	12" X 6"	-	-	0.50	-	-	-	-	-	-	-	-	-	MOUNT BELOW SIGN 4-11
4-13	OLD PB NB, RT	-	"ICE AGE NATIONAL SCENIC TRAIL" LT ARROW	-	-	-	-	-	-	-	2	1	-	-	-	-	-
4-14	OLD PB NB, RT	D4-2-L	"PARK & RIDE" LT ARROW	30" X 36"	-	-	7.50	-	-	-	-	-	1	-	-	11	-
4-15	OLD PB NB, RT	D7-95-L	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL"	66" X 60"	-	-	27.50	-	-	-	-	-	2	-	-	26	2 - 13' POSTS
4-16	PARK & RIDE DRIVEWAY	-	"STOP"	-	-	-	-	-	-	-	1	1	-	-	-	-	-
4-17	PARK & RIDE DRIVEWAY	R1-1	"STOP"	30" X 30"	-	-	6.25	-	-	-	-	-	1	-	12	-	-
4-18	PARK & RIDE DRIVEWAY	-	"PARK & RIDE" RT & LT ARROW	-	-	-	-	-	-	1	2	1	-	-	-	-	USE FOR TEMP PARK & RIDE
4-19	PARK & RIDE DRIVEWAY	-	"NO PARKING OVER 48 HRS"	-	-	-	-	-	-	1	-	-	1	-	9	-	-
4-20	OLD PB SB, RT	D7-95-R	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL"	66" X 60"	-	-	27.50	-	-	-	-	-	2	-	-	26	2 - 13' POSTS
4-21	OLD PB SB, RT	D4-2-R	"PARK & RIDE" RT ARROW	30" X 36"	-	-	7.50	-	-	-	-	-	1	-	-	11	-
4-22	OLD PB NB, RT	J3-2	"EAST" "18" "NORTH" "151" RT ARROWS	48" X 57"	-	1	19.00	-	-	-	-	-	-	-	-	-	-
4-23	OLD PB NB, RT	-	"BUSINESS" "151" "EAST" "18" "NORTH" "151" RT & LT ARROWS	-	-	-	-	-	-	-	7	2	-	-	-	-	-
4-24	PARK & RIDE DRIVEWAY	SEE DETAIL	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL PARKING"	66"X60"	-	-	27.50	-	-	-	-	-	2	-	-	26	2 - 13' POSTS
5-3	USH 18 EB, RT	-	"PARK & RIDE" RT ARROW	-	-	-	-	-	-	1	1	1	-	-	-	-	-
5-4	USH 18 EB OFF RAMP, RT	-	"PARK & RIDE" LT ARROW	-	-	-	-	-	-	-	1	-	-	-	-	-	-
5-5	USH 18 EB OFF RAMP, RT	D4-2-L	"PARK & RIDE" LT ARROW	36" X 48"	-	-	12.00	-	-	-	-	-	-	-	-	-	REPLACE SIGN 5-4
5-6	USH 18 EB OFF RAMP, RT	D7-95-L	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL"	66" X 60"	-	2	27.50	-	-	-	-	-	-	-	-	-	-
5-7	OLD PB NB, RT	D4-2-A	"PARK & RIDE AHEAD"	36" X 48"	-	-	12.00	-	-	-	-	-	1	-	-	11	-
5-8	OLD PB NB, RT	D7-93(MOD)	"MILITARY RIDGE STATE TRAIL" "ICE AGE NAT'L SCENIC TRAIL AHEAD"	66" X 60"	-	-	27.50	-	-	-	-	-	2	-	-	26	2 - 13' POSTS
6-1	USH 18 WB, RT	-	"PARK & RIDE" RT ARROW	-	-	-	-	-	-	-	1	1	-	-	-	-	-
				TOTAL	2	5	355.39	20.10	10.25	12	36	21	26	3	69	236	

TRAFFIC CONTROL

STAGE	DURATION DAYS	643.0300 DRUMS EACH	643.0300 DRUMS DAY	643.0420 BARRICADES TYPE III EACH	643.0420 BARRICADES TYPE III DAY	643.0705 WARNING LIGHTS TYPE A EACH	643.0705 WARNING LIGHTS TYPE A DAY	643.0715 WARNING LIGHTS TYPE C EACH	643.0715 WARNING LIGHTS TYPE C DAY	643.0800 ARROW BOARDS EACH	643.0800 ARROW BOARDS DAY	643.0900 SIGNS EACH	643.0900 SIGNS DAY	643.0920 COVERING SIGNS TYPE II EACH	643.1000 SIGNS FIXED MESSAGE SF	643.1050 PORTABLE CHANGEABLE MESSAGE SIGNS EACH	643.1050 PORTABLE CHANGEABLE MESSAGE SIGNS DAY	643.3000 DETOUR SIGNS EACH	643.3000 DETOUR SIGNS DAY
STAGE 1	18	96	1728	3	54	-	-	21	378	2	36	21	378	-	-	4	28	-	-
STAGE 2	10	114	1140	27	270	14	140	21	210	2	20	30	300	5	104	-	-	38	380
STAGE 3	9	114	1026	27	243	14	126	21	189	2	18	28	252	-	-	-	-	38	342
PARKING LOT	75	50	3750	6	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		7644		1017		266		777		74		930	5	104		28		722

STONE WEEPER TRENCH

STATION TO	STATION	LOCATION	645.0111 GEOTEXTILE FABRIC TYPE DF SCHEDULE A SY	SPV.0035.01 CRUSHED LIMESTONE 3-INCH CY
10+00 W	13+75 W	WEEPER TRENCH	510	270
		TOTAL	510	270

PAVEMENT MARKINGS

STATION	TO	STATION	LOCATION	646.0106 EPOXY 4-INCH WHITE LF	646.0106 EPOXY 4-INCH YELLOW LF	646.0106 DOUBLE YELLOW LF	646.0126 EPOXY 8-INCH WHITE LF	647.0166 ARROWS EPOXY TYPE 2 EACH	647.0256 SYMBOLS EPOXY EACH	647.0456 CURB EPOXY YELLOW LF	647.0566 STOP LINE EPOXY 18-INCH LF	647.0606 ISLAND NOSE EPOXY YELLOW EACH	647.0656 PARKING STALL EPOXY WHITE LF	647.0766 CROSSWALK EPOXY 6-INCH LF	REMARKS
729+36 EB	-	733+08 EB	RT	372	-	-	-	-	-	-	-	-	-	-	-
734+43 EB	-	735+75 EB	RT	-	-	-	132	-	-	-	39	-	-	-	-
735+34 EB	-	735+79 EB	RT	-	-	-	36	-	-	-	25	-	-	56	TURN LANE
735+78 EB	-	735+97 EB	LT & RT	-	-	-	-	-	-	-	-	-	-	166	-
735+54 WB	-	738+82 WB	LT	330	-	-	-	-	-	-	-	-	-	-	-
738+91 WB	-	739+12 WB	RT	-	16	-	-	-	-	5	-	-	-	-	-
735+49 EB	-	735+69 EB	LT	-	16	-	-	-	-	5	-	1	-	-	-
49+09 PB	-	49+42 PB	RT	-	-	-	34	-	-	-	-	-	-	-	-
49+09 PB	-	49+42 PB	RT	-	-	-	34	1	-	-	-	-	-	-	TURN LANE
49+23 PB	-	49+96 PB	CL	-	-	146	-	-	-	-	-	-	-	-	-
49+84 PB			RT	-	-	-	-	-	-	-	15	-	-	-	-
49+67 PB	-	49+82 PB	RT	-	-	-	-	-	-	-	15	-	-	37	TURN LANE
50+85 PB	-	50+97 PB	LT	-	-	-	-	-	-	-	37	-	-	-	-
51+77 PB	-	52+60 PB	RT	84	-	-	-	-	-	-	-	-	-	-	-
USH 18 WB OFF RAMP			LT & RT	-	-	-	-	-	-	-	51	-	-	-	-
10+25 A	-	11+74 A	BAY A	-	-	-	-	-	2	-	-	-	737	-	HANDICAP PARKING SYMBOLS
10+23 B	-	11+74 B	BAY B	-	-	-	-	-	-	-	-	-	855	-	-
10+23 C	-	11+75 C	BAY C	-	-	-	-	-	-	-	-	-	679	-	-
10+23 D	-	11+76 D	BAY D	-	-	-	-	-	2	-	-	-	720	24	HANDICAP PARKING SYMBOLS
10+00 E	-	11+90 E	BAY E	-	-	-	-	-	2	-	-	-	737	24	HANDICAP PARKING SYMBOLS
			SUBTOTAL	786	32	146									
			TOTAL	964			236	1	6	10	182	1	3728	307	

REMOVING PAVEMENT MARKINGS

STATION	TO	STATION	LOCATION	646.0600 LF UNIT	REMARKS
732+14 EB	-	735+49 EB	RT	335	WHITE EDGE LINE
735+49 EB			LT & RT	170	STOP BAR
			TOTAL	505	

TEMPORARY PAVEMENT MARKING

	STATION	TO	STATION	LOCATION	649.0400 REMOVEABLE TAPE 4-INCH (WHITE) LF	649.0400 REMOVEABLE TAPE 4-INCH (YELLOW) LF	649.0801 REMOVABLE TAPE 8-INCH (WHITE) LF	REMARKS
STAGE 1	729+34 EB	-	735+36 EB	LT	609	-	-	STA 729+34 EB - STA 735+36 EB
	734+49 EB	-	735+36 EB	LT	-	-	88	STA 734+49 EB - STA 735+36 EB
	735+40 WB	-	738+67 WB	RT	323	-	-	STA 735+40 WB - STA 738+67 WB
	WB OFF-RAMP/E VERONA AVE				931	-	47	EAST OF VERONA AVE/OLD PB INT.
	E VERONA AVE				760	-	-	EB BEFORE WEST PROJECT LIMITS
STAGE 2	733+40 EB	-	734+50 EB	LT	111	-	-	STA 733+40 EB - STA 734+50 EB
	E VERONA AVE				141	376	-	THROUGH INTERSECTION EB
	E VERONA AVE				123	381	-	THROUGH INTERSECTION WB
	E VERONA AVE				97	-	-	NO RIGHT TURN FROM WB OFF RAMP
STAGE 3	E VERONA AVE				386	-	-	THROUGH INTERSECTION EB
	E VERONA AVE				287	-	-	THROUGH INTERSECTION WB
	E VERONA AVE				289	-	-	WB USH 18 OFF RAMP
	E VERONA AVE				540	-	-	EB BEFORE WEST PROJECT LIMITS
				SUB-TOTALS	4597	757	135	
				TOTAL	5354		135	

3

LIGHTING CONDUIT AND ELECTRICAL WIRE ITEMS

FROM	-	TO	*652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG LF
LCB1	-	PB1	40	--
LCB1	-	PB1	40	--
LCB1	-	PB2	20	--
LCB1	-	PB2	20	96
PB2	-	SL1	40	156
SL1	-	SL2	190	606
SL2	-	SL3	190	606
PB2	-	SL4	100	336
SL4	-	SL5	130	426
SL5	-	PB3	50	186
PB3	-	SL6	140	456
SL6	-	SL7	125	411
SL7	-	SL8	145	471
SL8	-	SL9	125	411
SL9	-	SL10	120	396
SL10	-	SL11	150	486
PROJECT TOTALS			**1,625**	**5,043**

*ADDITIONAL QUANTITY FOUND IN "TRAFFIC SIGNAL CONDUIT" TABLE

LIGHTING CONTROL AND CABINET ITEMS

CABINET #	STATION	R/L	654.0230 CONCRETE CONTROL CABINET BASES TYPE L30 EACH	659.2130 LIGHTING CONTROL CABINETS 120/240 30-INCH EACH	656.0200.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL LS	650.8500.01 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (1206-07-80) LS
LCB1	729+88EB	22.7' RT	1	1	1	1
PROJECT TOTALS			**1**	**1**	**1**	**1**

LIGHTING PULLBOX ITEMS

PULLBOX NUMBER	STATION	OFFSET	R/L	*653.0140 PULL BOXES STEEL 24X42-INCH EACH
LPB1	729+48EB	12.0'	RT	1
LPB2	730+47EB	19.8'	RT	1
LPB3	11+60E	35.5'	LT	1
PROJECT TOTALS				**3**

*ADDITIONAL QUANTITIES FOUND IN "TRAFFIC SIGNAL PULLBOXES" TABLE

LIGHTING UNIT ITEMS

LIGHT UNIT	STATION	OFFSET	R/L	654.0105 CONCRETE BASES TYPE 5 TALL EACH	SPV.0060.04 CONCRETE BASES TYPE 5 WIDE EACH	SPV.0060.05 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0255 POLES TYPE 5 ALUMINUM EACH	657.0322 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 8-FT EACH	657.0615 LUMINAIRES UTILITY LED C EACH	659.1125 ELECTRICAL WIRE LIGHTING 12 AWG LF	*655.0610
SL1	730+47EB	17.8'	RT	--	--	1	1	1	1	1	126
SL2	732+40EB	11.4'	RT	--	--	1	1	1	1	1	126
SL3	734+33EB	17.6'	RT	--	--	1	1	1	1	1	126
SL4	103+47P	8.1'	LT	1	--	--	1	1	1	1	126
SL5	11+09E	37.0'	LT	--	1	--	--	1	1	1	126
SL6	11+66C	37.3'	LT	--	1	--	--	1	2	2	252
SL7	10+42C	34.8'	LT	--	1	--	--	1	2	2	252
SL8	11+66A	35.7'	LT	--	1	--	--	1	2	2	252
SL9	10+42A	35.7'	LT	--	1	--	--	1	2	2	252
SL10	81+72	22.7'	RT	1	--	--	1	1	1	1	126
SL11	80+16	33.6'	RT	1	--	--	1	1	1	1	126
LB1**	734+60EB	95.7'	LT	--	--	1	1	1	1	1	126
PROJECT TOTALS				**3**	**5**	**4**	**7**	**12**	**16**	**16**	**2,016**

* ADDITIONAL QUANTITIES FOUND IN "TRAFFIC SIGNAL CABLE & WIRE - ABOVE GROUND" TABLE
** SHOWN IN TRAFFIC SIGNAL PLANS

3

TRAFFIC SIGNAL REMOVALS

LOCATION	STATION	LT/RT	204.0195 REMOVING CONCRETE BASES EACH	653.0905 REMOVING PULL BOXES EACH	SPV.0105.01 REMOVE AND REINSTALL TRAFFIC SIGNALS LS
E VERONA AVE & OLD PB/MAPLE GROVE DR			--	--	1
EXSB1	735+45.4EB	LT	1	--	--
EXSB2	735+97.7EB	LT	1	--	--
EXSB3	735+50.3EB	LT	1	--	--
EXSB4	735+41.4EB	RT	1	--	--
EXSB5	735+69.8EB	RT	1	--	--
EXPB1	735+73.8EB	LT	--	1	--
EXPB2	735+98.2EB	LT	--	1	--
EXPB3	735+39.3EB	LT	--	1	--
EXPB4	735+36.2EB	LT	--	1	--
EXPB5	735+33.9EB	RT	--	1	--
EXPB7	733+68.4EB	RT	--	1	--
EXPB8	731+40.1EB	RT	--	1	--
PROJECT TOTAL			**5**	**7**	**1**

TRAFFIC SIGNAL PULLBOXES

LOCATION / PULL BOX NUMBER	STATION	OFFSET	L/R	*653.0140 PULL BOXES STEEL 24X42-INCH EACH
E VERONA AVE & OLD PB/MAPLE GROVE DR				
PB1	736+01.1EB	96.3'	LT	1
PB2	735+68.9EB	118.7'	LT	1
PB3	735+42.3EB	98.3'	LT	1
PB4	735+66.7EB	39.3'	LT	1
PB5	735+66.1EB	9.7'	RT	1
PB6	735+35.0EB	28.3'	RT	1
PB7	733+84.7EB	13.9'	RT	1
PB8	731+44.3EB	11.6'	RT	1
PROJECT TOTAL				**8**

* ADDITIONAL QUANTITY FOUND IN "LIGHTING PULLBOX ITEMS" TABLE

TRAFFIC SIGNAL LOOP DETECTORS

LOCATION / LOOP NO.	*STATION	OFFSET	L/R	SIZE FT X FT	NO. OF TURNS	INSTALLATION METHOD	652.0800 CONDUIT LOOP DETECTOR LF	652.0900 LOOP DETECTOR SLOTS LF	655.0800 LOOP DETECTOR WIRE LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF
E VERONA AVE & OLD PB/MAPLE GROVE DR										
11	735+80.6EB	29.0'	LT	6 X 20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT	63	63	189	328
12	735+52.4EB	29.2'	LT	6 X 20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT	63	63	189	328
41	736+11.4EB	77.2'	LT	6 X 20	3	SDD: LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION2)	72	--	216	236
42	736+13.9EB	105.1'	LT	6 X 20	3	SDD: LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION2)	74	--	222	240
51	736+62.7EB	43.2'	LT	6 X 20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT	63	67	189	101
52	736+91.0EB	43.1'	LT	6 X 20	3	SDD: LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT	70	70	210	108
61	733+79.7EB	12.0'	LT	6 X 20	4	SDD: LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION2)	82	--	328	495
62	731+41.4EB	12.0'	LT	6 X 20	5	SDD: LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION2)	73	--	365	724
						PROJECT TOTAL	**560**	**263**	**1,908**	**2,560**

* LOCATION IS TO THE FRONT CENTER OF DETECTOR LOOP. FINAL LOCATION TO BE VERIFIED BY THE ENGINEER IN THE FIELD.

3

TRAFFIC SIGNAL CABLE AND WIRE - ABOVE GROUND

LOCATION	FROM SIGNAL BASE	TO SIGNAL HEAD	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	*655.0610 ELECTRICAL WIRE LIGHTING 12 AWG LF
E VERONA AVE & OLD PB/MAPLE GROVE DR					
	SB1	6	39	--	--
		11	17	--	--
		12	17	--	--
		15	17	--	--
		LUMINAIRE	--	--	126
	SB2	3	--	19	--
		8	--	19	--
	SB3	1	17	--	--
		16	17	--	--
	SB4	13	17	--	--
		LUMINAIRE	--	--	126
	EXSB8	4	--	19	--
		7	--	19	--
	LB1	LUMINAIRE	--	--	126
PROJECT TOTAL			**141**	**76**	**378**

* ADDITIONAL QUANTITY FOUND IN "LIGHTING UNIT ITEMS" TABLE

TRAFFIC SIGNAL CABLE AND WIRE - BELOW GROUND

LOCATION	FROM - TO	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF	655.0270 CABLE TRAFFIC SIGNAL 15-14 AWG LF	655.0305 CABLE TYPE UF 2-12 GROUNDED LF
E VERONA AVE & OLD PB/MAPLE GROVE DR				
	EXCB1 - SB1	--	212	212
	EXCB1 - SB2	295	--	--
	EXCB1 - SB3	329	--	--
	EXCB1 - SB4	344	--	--
	EXCB1 - EXSB8	80	--	--
	EXCB1 - LB1	--	--	300
PROJECT TOTAL		**1,048**	**212**	**512**

3

ELECTRICAL WIRE TRAFFIC SIGNALS

LOCATION	FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
E VERONA AVE & OLD PB/MAPLE GROVE DR			
	EXCB1	SB1	212
	SB1	SB2	193
	SB2	SB3	166
	SB3	SB4	32
	SB4	EXSB6	222
	PB1	SB1	16
	PB2	SB1	56
	PB3	SB1	91
	PB4	SB2	5
	PB5	SB3	8
	PB6	SB3	48
PROJECT TOTAL			**1,049**

TRAFFIC SIGNAL CONDUIT

LOCATION	FROM	-	TO	*652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF
E VERONA AVE & OLD PB/MAPLE GROVE DR					
	EXPB16	-	TIE IN	--	46
	EXPB16	-	PB2	--	38
	PB2	-	PB1	--	40
	PB1	-	SB1	16	--
	PB2	-	PB3	--	35
	PB3	-	LB1	111	--
	PB3	-	TIE IN	--	27
	EXPB3	-	PB4	--	31
	PB4	-	SB2	10	--
	PB6	-	N TIE IN	--	29
	PB6	-	E TIE IN	--	75
	PB6	-	PB5	--	40
	PB5	-	SB3	10	--
	PB5	-	SB4	24	--
	PB6	-	PB7	150	--
	PB7	-	PB8	234	--
PROJECT TOTAL				**555**	**361**

* ADDITIONAL QUANTITY FOUND IN "LIGHTING CONDUIT & ELECTRICAL WIRE ITEMS" TABLE

TRAFFIC SIGNAL BASES, POLES & ARMS

LOCATION / BASE NUMBER	STATION	OFFSET	L/R	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0585 TROMBONE ARMS 15-FT EACH
E VERONA AVE & OLD PB/MAPLE GROVE DR							
SB1	735+88.3EB	87.0'	LT	--	1	--	1
SB2	735+58.3EB	39.5'	LT	1	--	1	--
SB3	735+75.1EB	11.4'	RT	1	--	--	--
SB4	735+88.5EB	15.0'	RT	--	1	--	--
EXSB8	50+33.5PB	67.0'	LT	--	--	1	--
PROJECT TOTAL				**2**	**2**	**2**	**1**

TRAFFIC SIGNALS

LOCATION / BASE NUMBER	HEAD NO.	658.0120 TRAFFIC SIGNAL FACE 5-12 INCH VERTICAL EACH	658.0225 BACKPLATES SIGNAL FACE 5 SECTION 12-INCH EACH	658.0600 LED MODULES 12-INCH RED BALL EACH	658.0605 LED MODULES 12-INCH YELLOW BALL EACH	658.0610 LED MODULES 12-INCH GREEN BALL EACH	658.0620 LED MODULES 12-INCH YELLOW ARROW EACH	658.0625 LED MODULES 12-INCH GREEN ARROW EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	658.0412 PEDESTRIAN SIGNAL FACE EACH	658.0635 LED MODULE PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH	658.5069 SIGNAL MOUNTING HARDWARE LS
E VERONA AVE & OLD PB/MAPLE GROVE DR												1
SB1	15	--	--	--	--	--	--	--	1	1	1	--
SB2	3	1	1	1	1	1	1	1	--	--	--	--
	8	1	1	1	1	1	1	1	--	--	--	--
SB3	16	--	--	--	--	--	--	--	1	1	1	--
EXSB8	4	1	1	1	1	1	1	1	--	--	--	--
	7	1	1	1	1	1	1	1	--	--	--	--
PROJECT TOTAL		**4**	**4**	**4**	**4**	**4**	**4**	**4**	**2**	**2**	**2**	**1**

CONSTRUCTION STAKING

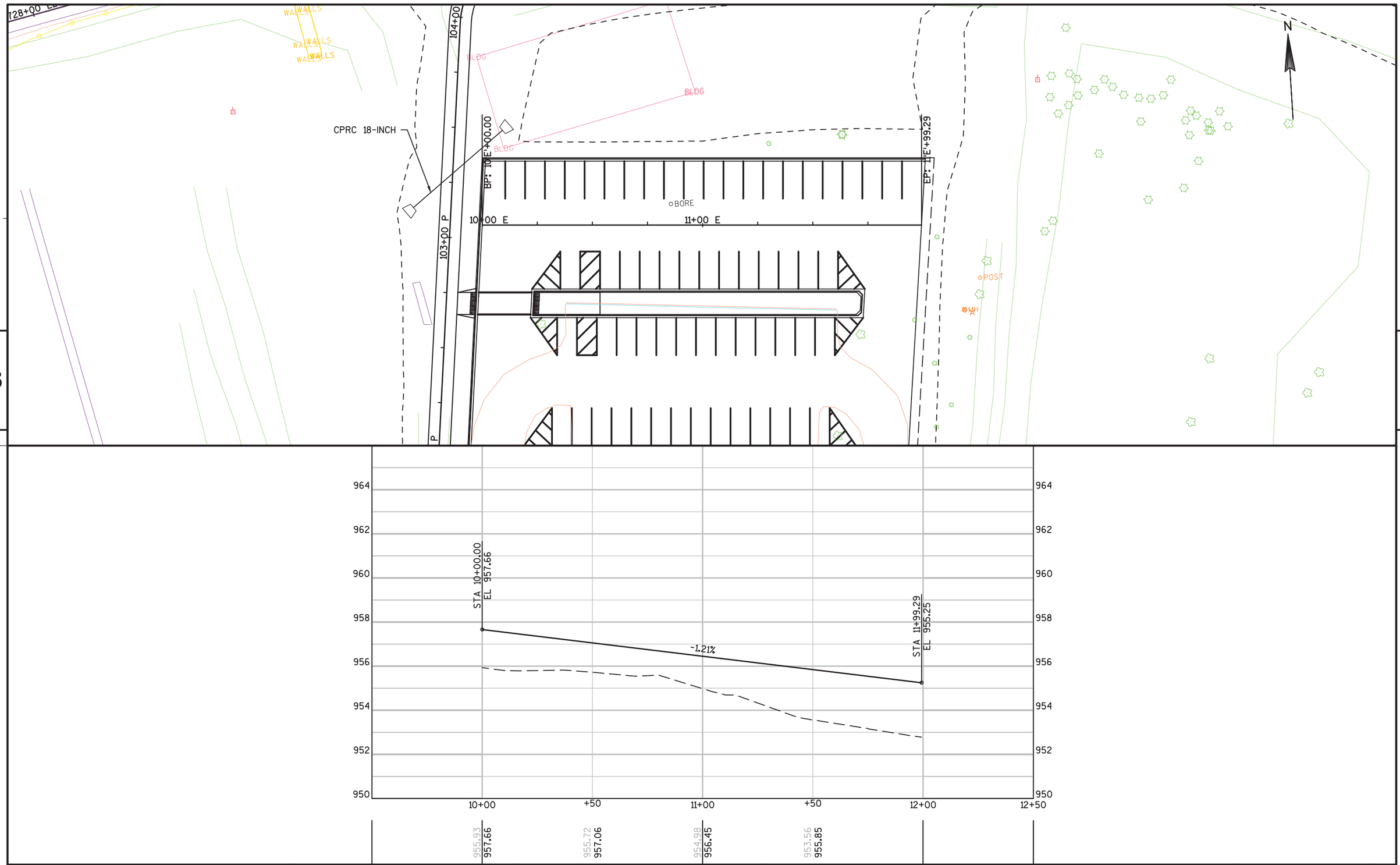
STATION	TO	STATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	REMARKS
729+36 EB	-	734+92 EB	556	-	-	556	556	-
730+25 EB	-	735+54 EB	511	511	-	-	-	BIKE PATH
734+92 EB	-	51+77 PB	102	102	135	-	102	EB-SB RIGHT TURN
735+54 WB	-	738+84 WB	335	-	-	335	335	-
737+25 WB	-	739+09 WB	174	174	-	-	-	BIKE PATH
738+84 WB	-	49+14 PB	48	48	93	-	48	SB-WB RIGHT TURN
49+34 PB	-	49+95 PB	-	-	144	-	61	N PORKCHOP
50+35 PB	-	50+41 PB	-	-	57	-	-	MEDIAN
50+81 PB	-	50+98 PB	-	-	85	-	17	S PORKCHOP
100+00 P	-	104+46 P	-	446	-	-	446	BIKE PATH
100+00 P	-	103+36 P	-	-	441	-	-	BIKE PATH/WEST SIDE OF LOT
10+00 W	-	13+75 W	375	-	-	-	375	WEEPER
10+39 A	-	11+35 A	-	-	121	-	96	-
10+00 B	-	11+97 B	-	-	158	-	-	-
10+00 C	-	11+97 C	-	-	321	-	-	-
10+00 D	-	11+97 D	-	-	313	-	-	-
10+00 E	-	11+97 E	199	199	359	-	199	-
		TOTAL	2300	1480	2227	891	2235	

SAWING

STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
729+36 EB			RT	5	-	OUTSIDE SHOULDER
731+34 EB	-	731+44 EB	LT	-	58	LOOP DETECTOR
733+72 EB	-	733+82 EB	LT	-	68	LOOP DETECTOR
735+49 EB	-	735+76 EB	LT	-	70	MEDIAN
735+54 WB			LT	5	-	OUTSIDE SHOULDER
49+13 PB	-	49+23 PB	RT	30	3	-
50+74 PB	-	52+46 PB	RT	174	-	-
10+36 A	-	11+36 A	RT	126	-	-
10+48 A	-	11+58 A	LT	109	-	-
10+61 A	-	10+65 A	RT	9	-	KIOSK
10+47 B	-	11+56 B	RT	108	-	-
10+47 B	-	11+58 B	LT	111	-	-
10+46 C	-	11+57 C	RT	111	-	-
10+46 C	-	11+58 C	LT	112	-	-
10+44 D	-	11+56 D	RT	112	-	-
10+41 D	-	11+65 D	LT	123	-	-
100+00 P			LT	10	-	TRAIL 25' LEFT
100+00 P			RT	9	-	TRAIL 41' RIGHT
100+33 P	-	101+39 P	RT	105	-	-
101+95 P	-	102+08 P	RT	12	-	-
			TOTAL	1271	199	

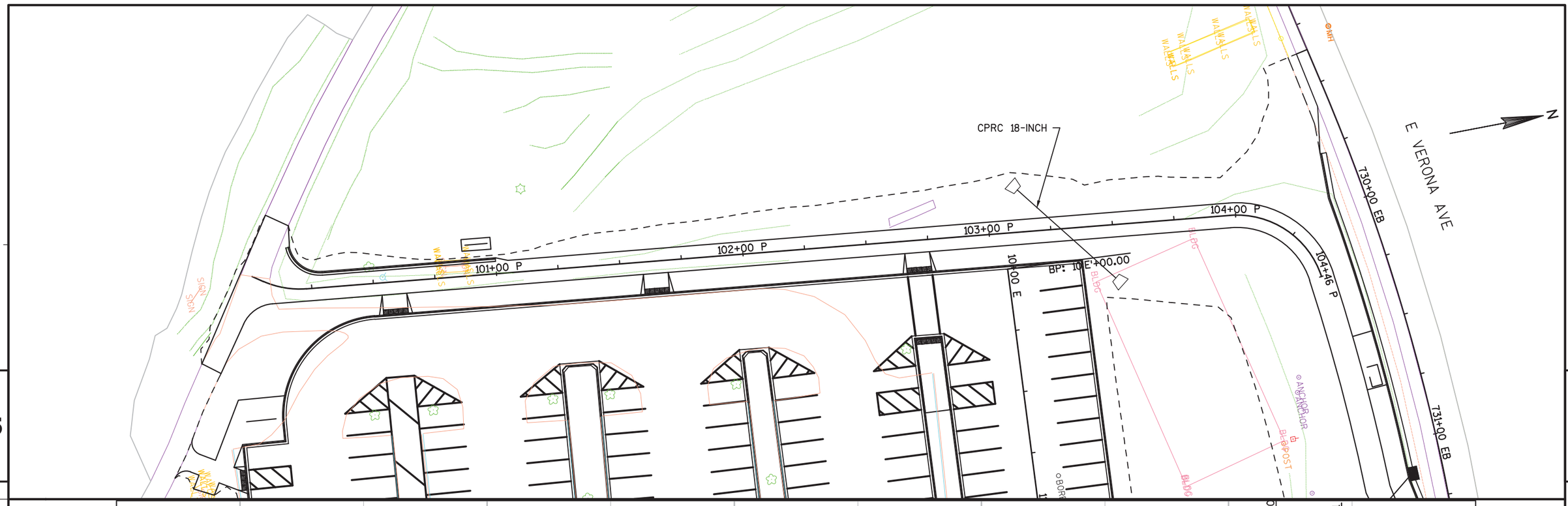
STREETSCAPE ITEMS

STATION	OFFSET	999.1950.S BICYCLE RACK ASPHALT OR CONCRETE MOUNTED EACH	SPV.0060.01 BUS SHELTER EACH	SPV.0060.02 MOVING HISTORICAL MARKER EACH
10+81 A	38' RT	1	-	-
730+60 EB	18' RT	-	1	-
100+77 P	7' LT	-	-	1
	TOTAL	1	1	1



5 5

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLAN AND PROFILE: PARKING BAY E	SHEET 70	E



PROJECT NO:1206-07-80	HWY:USH 18	COUNTY:DANE	PLAN AND PROFILE: MULTI-USE PATH	SHEET 71	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\050101_PP REV.DWG PLOT DATE : 8/11/2014 5:40 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 40'_XREF

BMP PI #1
STA: 10'W'+00.00
X: 786506.553
Y: 453152.606

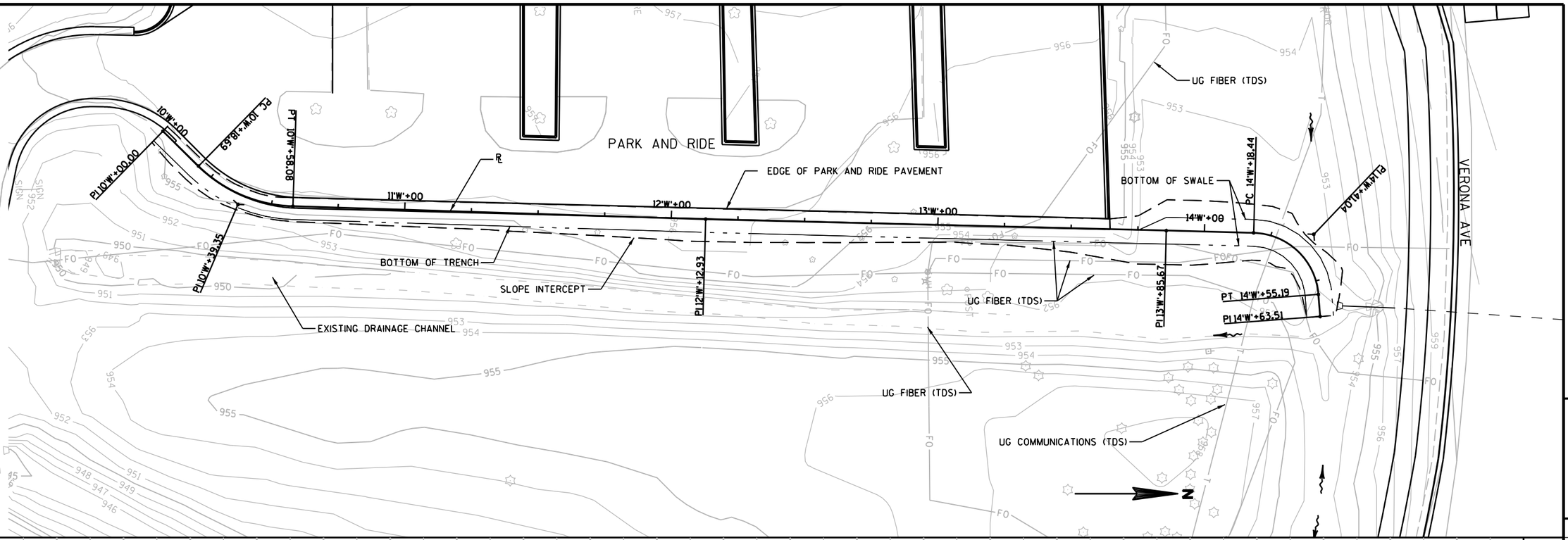
BMP PI # 2
PI STA: 10'W'+39.35
X: 786536.540
Y: 453178.084
DELTA: -42°34'58.18"
DEG: 108°06'18.88"
L: 39.39'
T: 20.65'
R: 53.00'
PC STA: 10'W'+18.69
PT STA: 10'W'+58.08

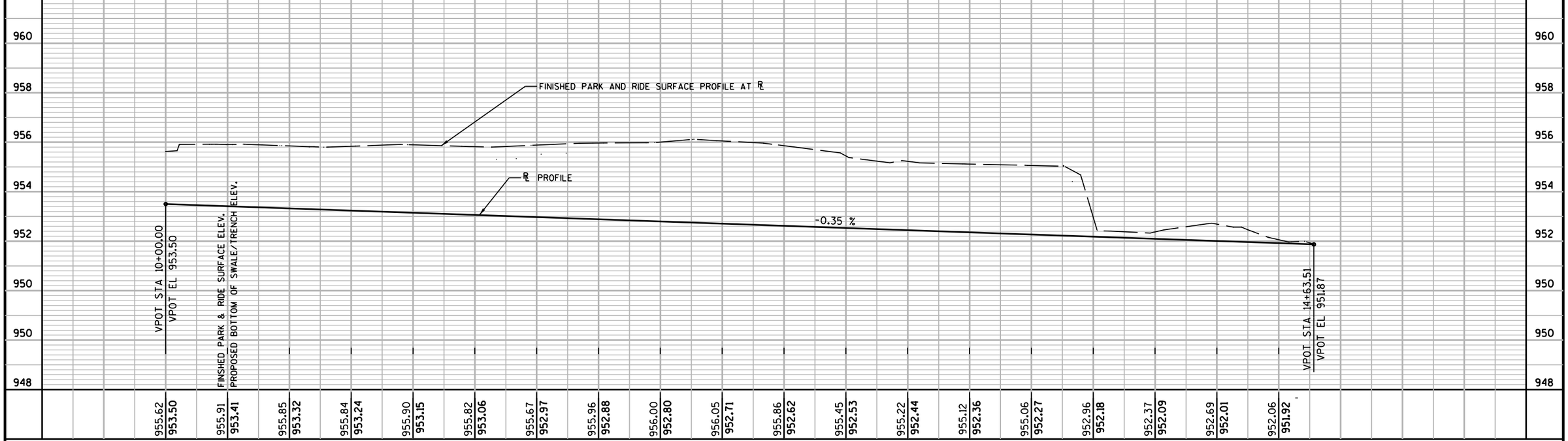
BMP PI #3
STA: 12'W'+12.93
X: 786558.126
Y: 453352.249

BMP PI #4
STA: 13'W'+85.67
X: 786578.291
Y: 453523.808

BMP PI # 5
PI STA: 14'W'+41.04
X: 786584.753
Y: 453578.801
DELTA: 84°13'58.06"
DEG: 229°10'59.22"
L: 36.75'
T: 22.60'
R: 25.00'
PC STA: 14'W'+18.44
PT STA: 14'W'+55.19

BMP PI #6
STA: 14'W'+63.51
X: 786615.668
Y: 453578.296





PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLAN & PROFILE: STONE WEEPER TRENCH/SWALE	SHEET E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\050105_pp.dgn PLOT DATE : 5/5/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 30

LEGEND

CP9	CONCRETE PAVEMENT 9-INCH
CPR	CONCRETE PAVEMENT REPAIR
30A	CONCRETE CURB AND GUTTER 30-INCH TYPE A
CS5	CONCRETE SIDEWALK 5-INCH OVER 6" BASE AGGREGATE DENSE 1-1/4-INCH

NAME	STATION	OFFSET	NOTES
P-26	729+58.87 EB	R5.02'	
P-27	729+77.62 EB	R8.77'	END OF CURB
P-28	729+95.88 EB	R12.00'	
P-29	731+15.88 EB	R12.00'	
P-30	731+50.88 EB	R5.00'	
P-31	736+03.72 WB	L5.00'	

N

E VERONA AVE

728+00 EB
729+00 EB
730+00 EB
731+00 EB
732+00 EB
733+00 EB
733+50 WB
734+00 WB
735+00 WB
736+00 WB
104+00 P
103+00 P
10+00 E
11+00 E
10+00 D
14+00 W
10+00 W

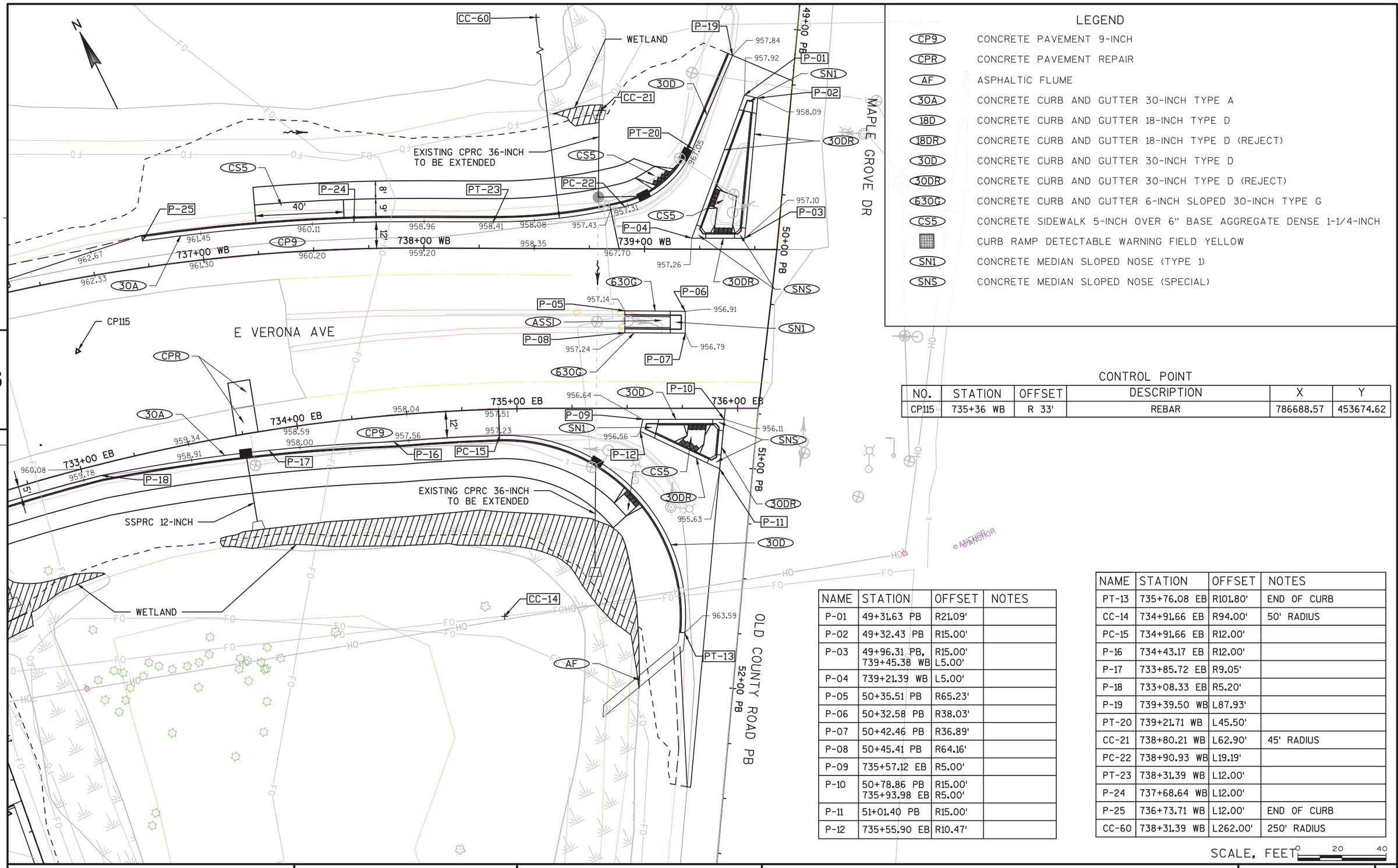
BUS SHELTER
CPR
30A
CP9
CS5
P-26
P-27
P-28
P-29
P-30
P-31
22'
12'
SSPRC 12-INCH
EXISTING CPRC 54-INCH TO BE EXTENDED
BUILDING TO BE REMOVED
WETLAND
CPRC 18-INCH
ABANDONED WATER MAIN
REESTABLISH SECTION CORNERS AND INSTALL LANDMARK REFERENCE MONUMENT
BORE

SCALE, FEET 0 20 40

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLAN DETAILS - E VERONA AVE	SHEET 73	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\050201_PN REV.DWG PLOT DATE : 9/22/2014 11:25 AM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1" = 40'_XREF

WISDOT/CADDS SHEET 42



LEGEND

CP9	CONCRETE PAVEMENT 9-INCH
CPR	CONCRETE PAVEMENT REPAIR
AF	ASPHALTIC FLUME
30A	CONCRETE CURB AND GUTTER 30-INCH TYPE A
18D	CONCRETE CURB AND GUTTER 18-INCH TYPE D
18DR	CONCRETE CURB AND GUTTER 18-INCH TYPE D (REJECT)
30D	CONCRETE CURB AND GUTTER 30-INCH TYPE D
30DR	CONCRETE CURB AND GUTTER 30-INCH TYPE D (REJECT)
630G	CONCRETE CURB AND GUTTER 6-INCH SLOPED 30-INCH TYPE G
CS5	CONCRETE SIDEWALK 5-INCH OVER 6" BASE AGGREGATE DENSE 1-1/4-INCH
	CURB RAMP DETECTABLE WARNING FIELD YELLOW
SN1	CONCRETE MEDIAN SLOPED NOSE (TYPE 1)
SNS	CONCRETE MEDIAN SLOPED NOSE (SPECIAL)

CONTROL POINT

NO.	STATION	OFFSET	DESCRIPTION	X	Y
CP115	735+36 WB	R 33'	REBAR	786688.57	453674.62

NAME	STATION	OFFSET	NOTES
P-01	49+31.63 PB	R21.09'	
P-02	49+32.43 PB	R15.00'	
P-03	49+96.31 PB, 739+45.38 WB	R15.00' L5.00'	
P-04	739+21.39 WB	L5.00'	
P-05	50+35.51 PB	R65.23'	
P-06	50+32.58 PB	R38.03'	
P-07	50+42.46 PB	R36.89'	
P-08	50+45.41 PB	R64.16'	
P-09	735+57.12 EB	R5.00'	
P-10	50+78.86 PB 735+93.98 EB	R15.00' R5.00'	
P-11	51+01.40 PB	R15.00'	
P-12	735+55.90 EB	R10.47'	

NAME	STATION	OFFSET	NOTES
PT-13	735+76.08 EB	R101.80'	END OF CURB
CC-14	734+91.66 EB	R94.00'	50' RADIUS
PC-15	734+91.66 EB	R12.00'	
P-16	734+43.17 EB	R12.00'	
P-17	733+85.72 EB	R9.05'	
P-18	733+08.33 EB	R5.20'	
P-19	739+39.50 WB	L87.93'	
PT-20	739+21.71 WB	L45.50'	
CC-21	738+80.21 WB	L62.90'	45' RADIUS
PC-22	738+90.93 WB	L19.19'	
PT-23	738+31.39 WB	L12.00'	
P-24	737+68.64 WB	L12.00'	
P-25	736+73.71 WB	L12.00'	END OF CURB
CC-60	738+31.39 WB	L262.00'	250' RADIUS

SCALE, FEET 0 20 40

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLAN DETAILS - E VERONA AVE	SHEET 74 E

LEGEND

18D	CONCRETE CURB AND GUTTER 18-INCH TYPE D
18DC	CONCRETE CURB AND GUTTER 18-INCH TYPE D (DRIVEWAY)
18DR	CONCRETE CURB AND GUTTER 18-INCH TYPE D (REJECT)
18DRC	CONCRETE CURB AND GUTTER 18-INCH TYPE D (REJECT) (DRIVEWAY)
CS5	CONCRETE SIDEWALK 5-INCH OVER 6" BASE AGGREGATE DENSE 1-1/4-INCH
	CURB RAMP DETECTABLE WARNING FIELD YELLOW
SNS	CONCRETE MEDIAN SLOPED NOSE (SPECIAL)

NAME	STATION	OFFSET	NOTES
P-32	11+73.57 E	R29.00'	
P-33	10+22.58 E	R29.00'	
P-34	10+25.48 D	L29.00'	
P-35	11+76.36 D	L29.00'	
P-36	11+73.00 D	R29.00'	
P-37	10+22.58 D	R29.00'	
P-38	10+24.65 C	L28.50'	
P-39	11+74.86 C	L30.56'	
P-40	11+72.98 C	R30.56'	
P-41	10+23.36 C	R28.50'	
P-42	10+24.53 B	L29.00'	
P-43	11+74.07 B	L29.00'	
P-44	103+45.35 P	R213.75'	END OF CURB
P-45	103+35.40 P	R14.50'	
PC-46	10+00.50 A	L27.71'	
CC-47	10+39.49 A	L27.00'	39' RADIUS
PT-48	10+39.49 A	R12.00'	
P-49	10+47.21 A	R12.00'	
P-50	10+47.21 A	R29.00'	
PC-51	11+21.36 A	R29.00'	
CC-52	11+21.36 A	R44.00'	15' RADIUS
PT-53	11+36.36 A	R44.52'	END OF CURB
P-54	101+05.00 P	L5.00'	
P-55	101+00.00 P	L5.00'	END OF CURB
PT-56	100+29.66 P	L5.00'	
CC-57	100+29.66 P	L19.00'	14' RADIUS
PC-58	100+10.00 P	L15.87'	END OF CURB
P-59	100+05.42 P	L24.67'	
CC-61	100+13.70 P	L20.81'	14' RADIUS

REFER TO "BIKE PAD DETAIL"

TO MILITARY RIDGE STATE TRAIL

OLD COUNTY ROAD PB

BM VERONA E GPS

CPRC 18-INCH

BENCH MARK

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM VERONA E GPS	10+31 W	R 98'	SURVEY DISK SET IN TOP OF CONCRETE MONUMENT	953.44

CONTROL POINTS

NO.	STATION	OFFSET	DESCRIPTION	X	Y
CP1	10+69 D	L 13'	PK NAIL	786431.49	453422.80
CP2	13+61 W	L 7'	ALUMINUM CAP	786568.18	453500.27

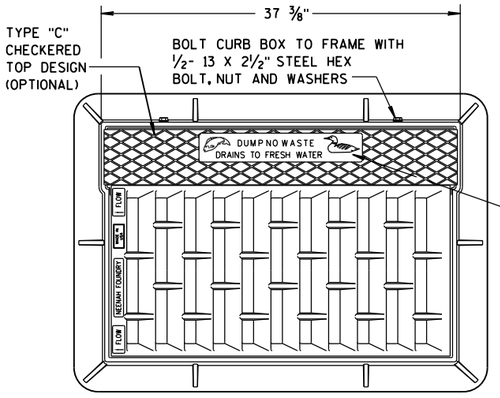
SCALE, FEET 0 20 40

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PLAN DETAILS - PARK & RIDE PARKING LOT	SHEET 75	E

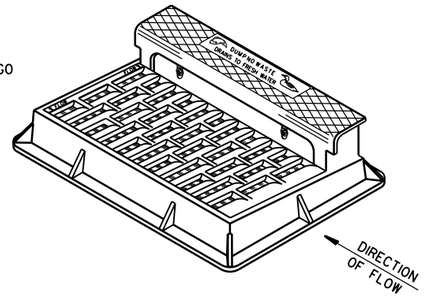
Standard Detail Drawing List

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
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
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
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09C14-01	CONCRETE CONTROL CABINET BASE, TYPE L
09D04-01	LIGHTING CONTROL CABINET
09E01-12A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-12B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-12D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-12G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-04	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09F10-03	LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY
09F12-03	LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT
09F15-03B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
11B02-02	CONCRETE MEDIAN NOSE
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-11A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
14A02-01	TREE PLANTING DETAIL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C07-12A	PAVEMENT MARKING SYMBOLS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C27-01	DOUBLE ARROW WARNING SIGN PLACEMENT
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-02	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

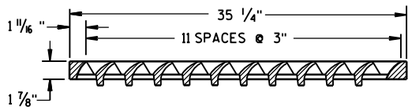
6

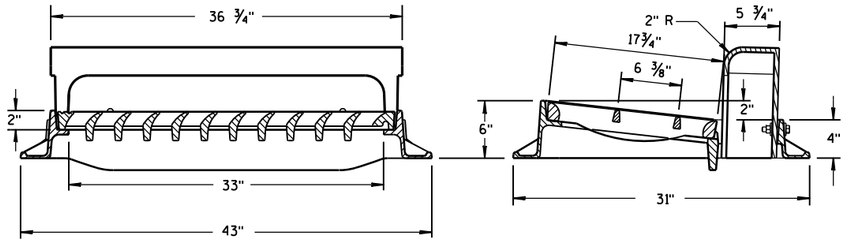


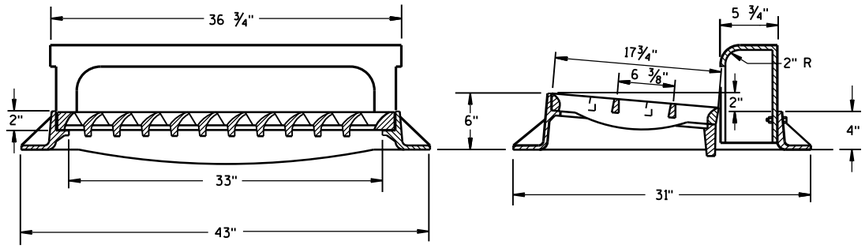
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

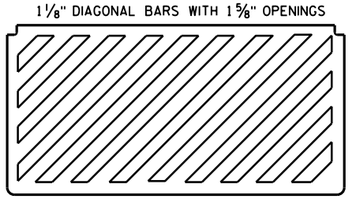






TYPE "H"

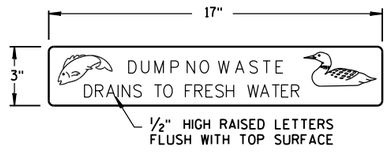
NOTE: EITHER CASTING IS ACCEPTABLE



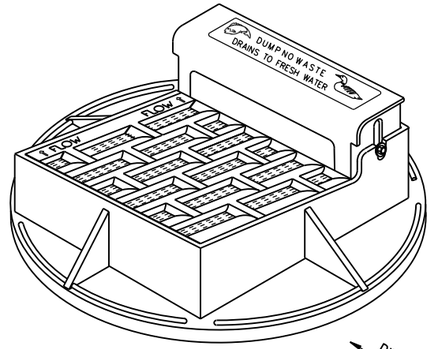
SPECIAL GRATE FOR TYPE "H" COVER

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

(NOTED AS TYPE H-S ON DRAINAGE TABLE)



LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

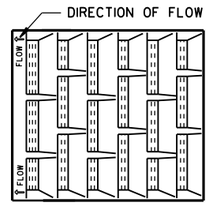
NOTE:
GRATE IS REVERSIBLE.

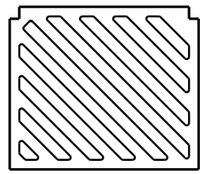
GENERAL NOTES

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.

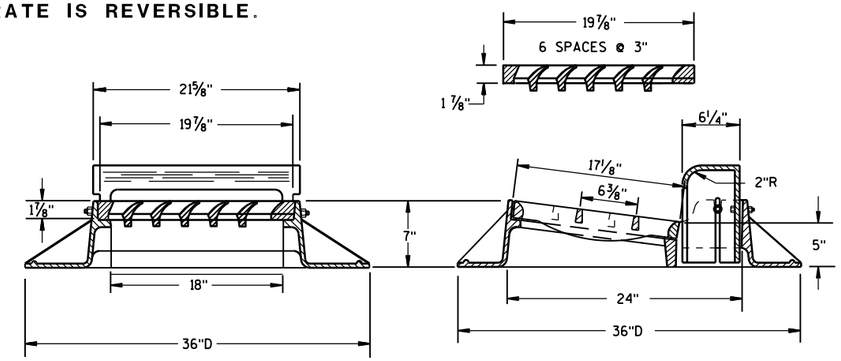




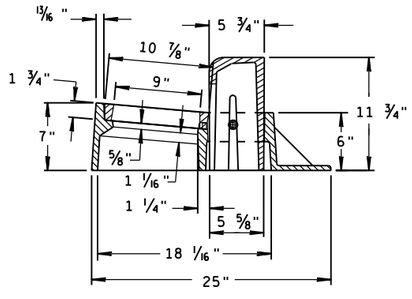
SPECIAL GRATE FOR TYPE "A" COVER

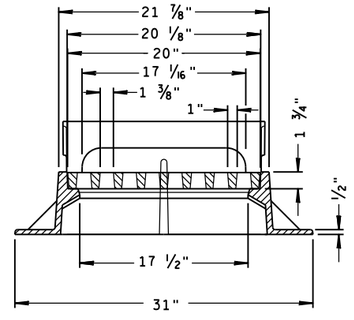
(MEASURES 19 3/4" X 17" X 1 7/8")

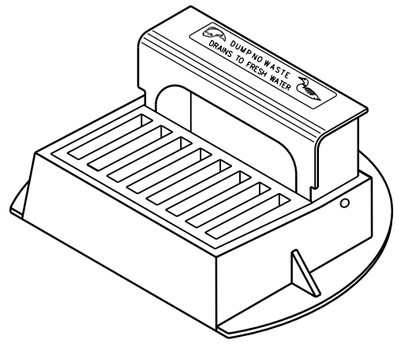
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"







TYPE "Z"

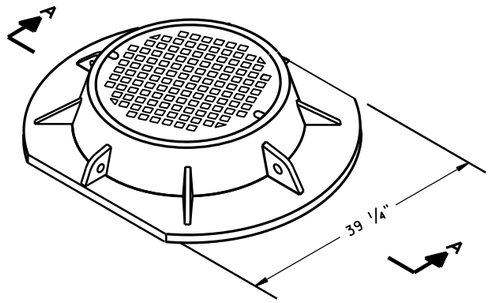
INLET COVERS
TYPE A, H, A-S, H-S & Z

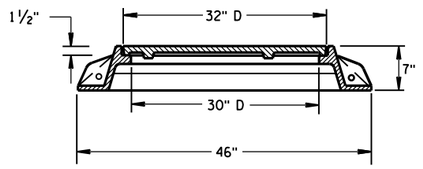
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

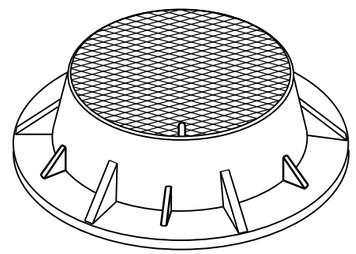
6

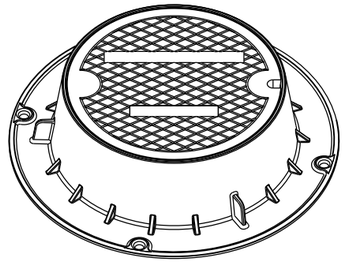
S.D.D. 8 A 5-19a

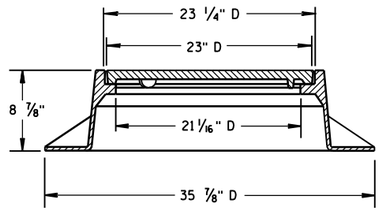


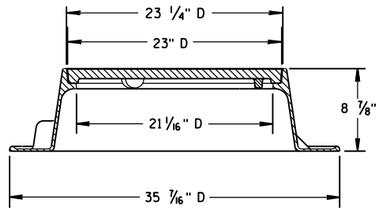


SECTION A-A
TYPE "K"









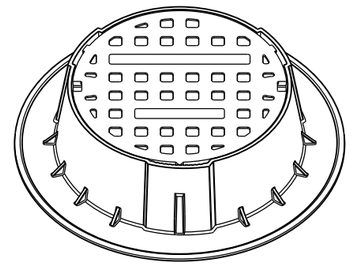
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

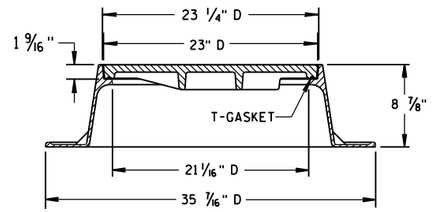
GENERAL NOTES

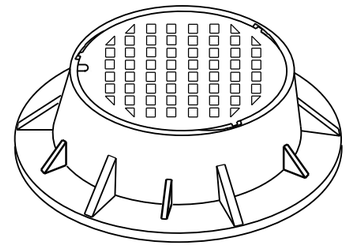
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

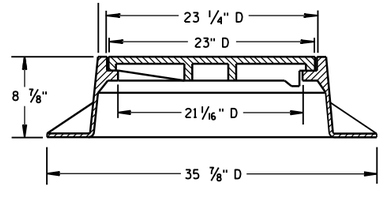
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

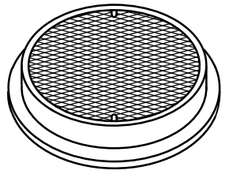


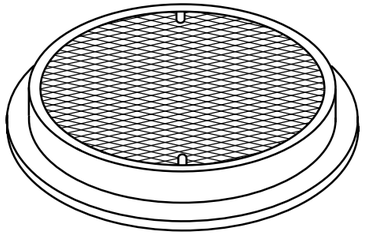


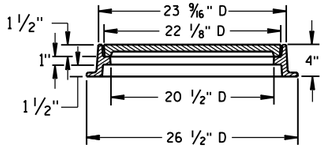




TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE







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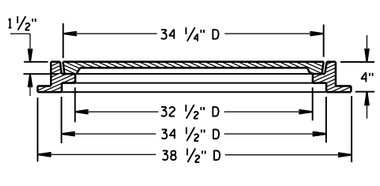
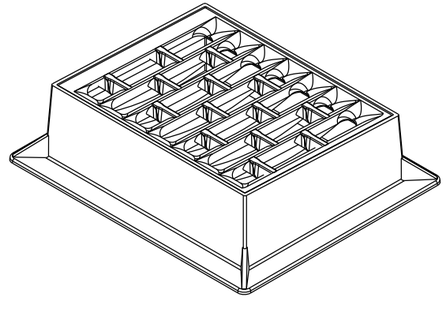
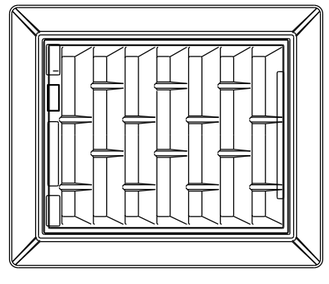
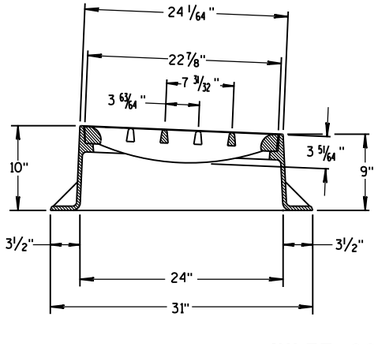
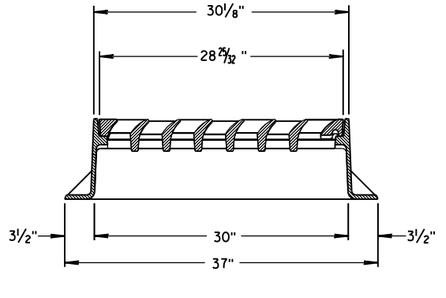


TYPE "M"









INLET COVER TYPE "BW"

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

STATE OF WISCONSIN
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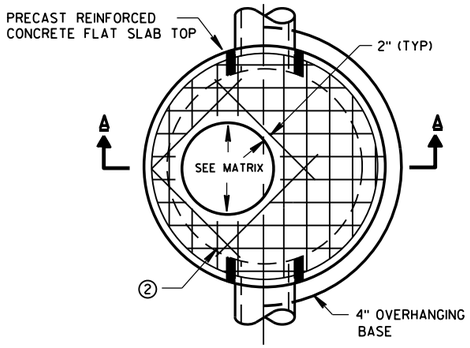
APPROVED
11/27/2013
DATE
FHWA

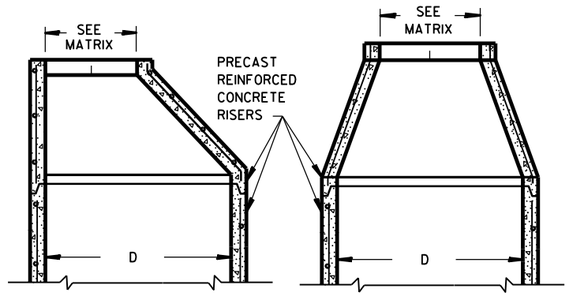
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

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

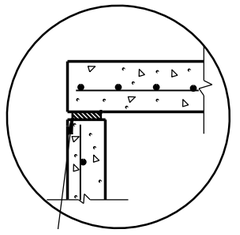


PLAN VIEW CIRCULAR OPENING

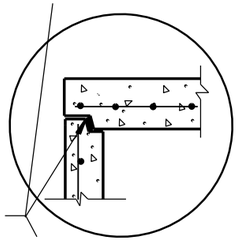


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

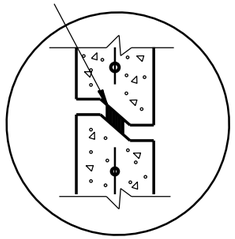


TOP WITH PLAIN END JOINT



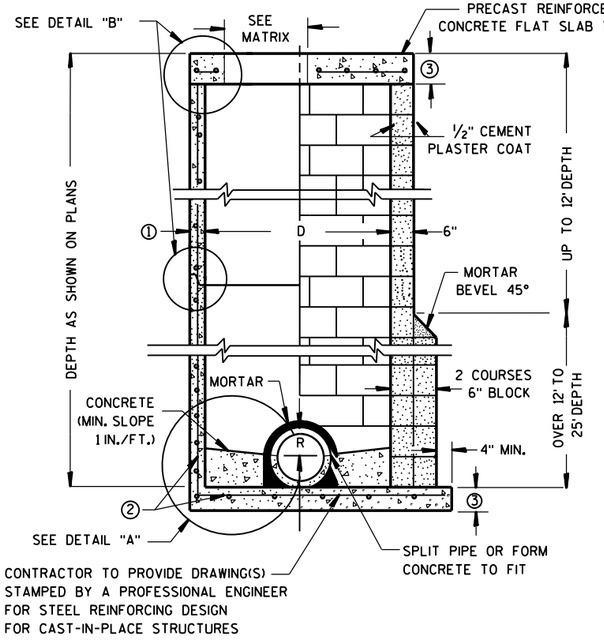
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



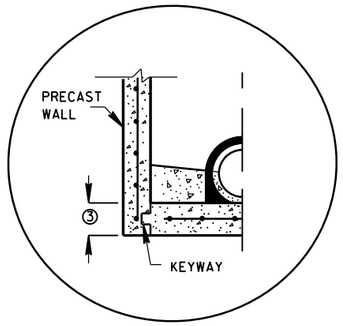
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

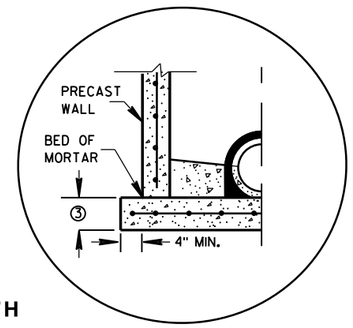


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

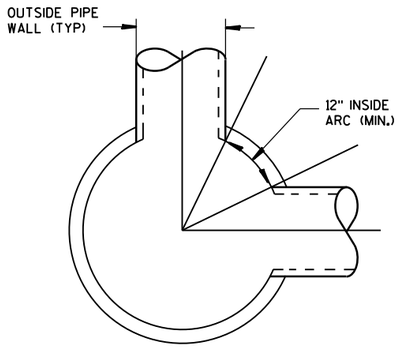


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

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

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

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

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

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

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

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

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

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

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

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

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

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

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

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

MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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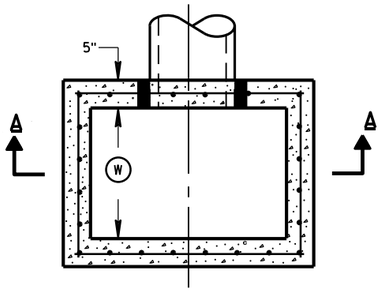
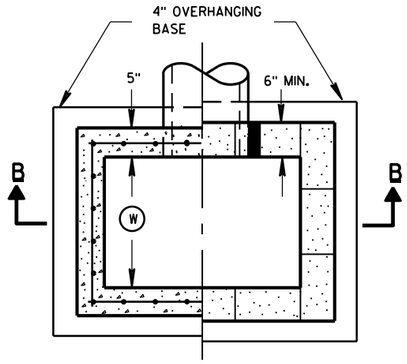
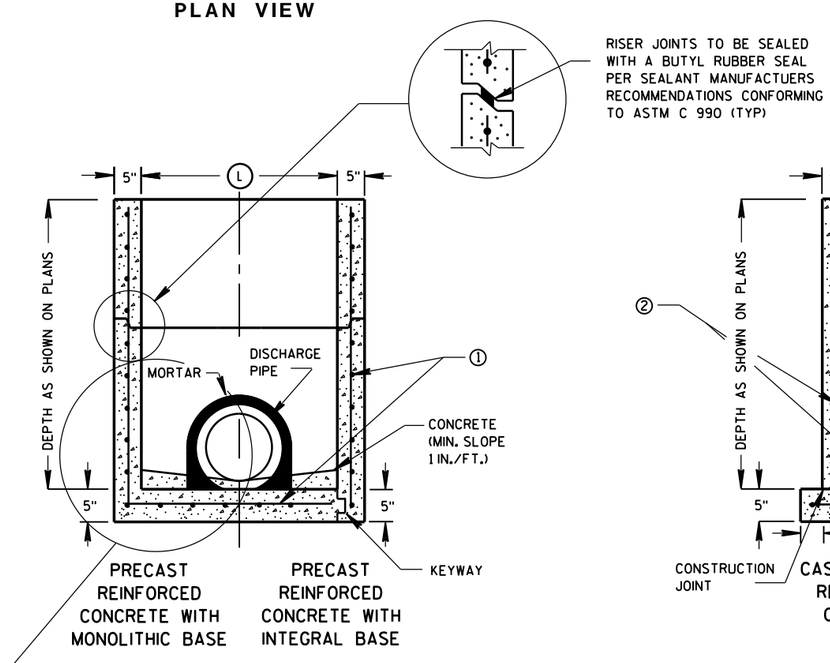


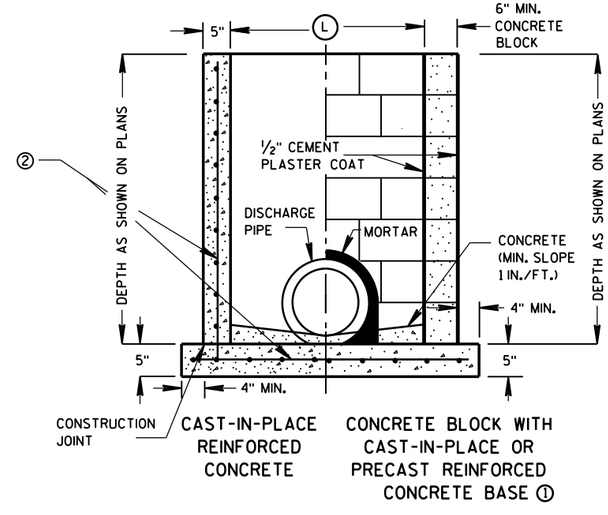
PLAN VIEW



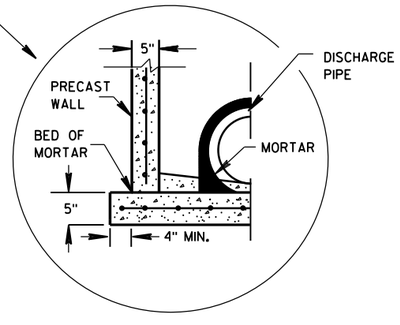
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

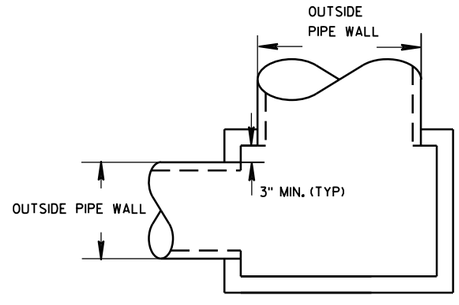
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



DETAIL "A"

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

STATE OF WISCONSIN
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6/5/2012
DATE
/S/ Jerry H. Zogg
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ENGINEER
FHWA

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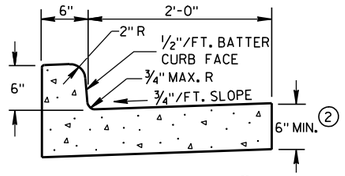
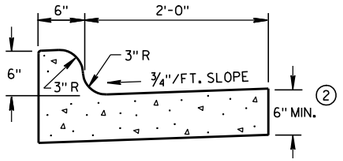
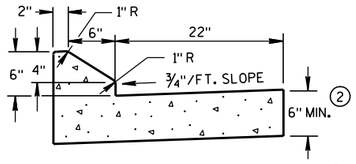
S.D.D. 8 C 7-1



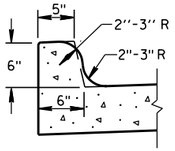
TYPES A & D (1)



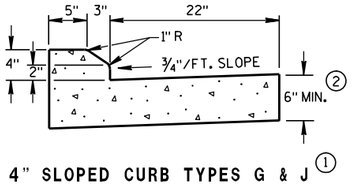
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

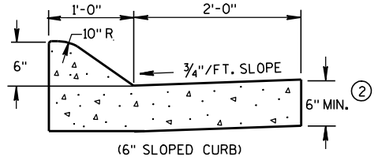


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

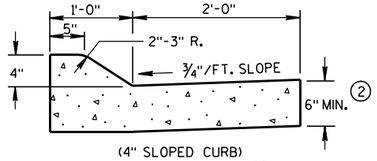


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

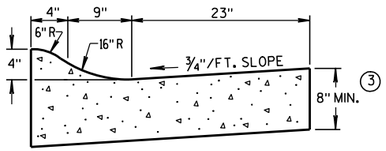


(6" SLOPED CURB)



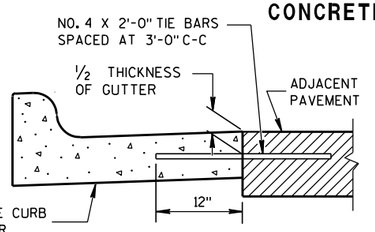
(4" SLOPED CURB)

TYPES A & D (1)

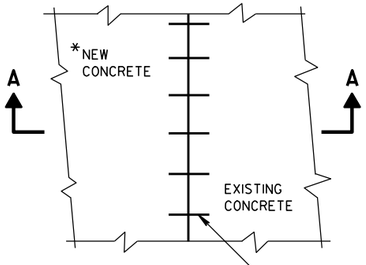


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

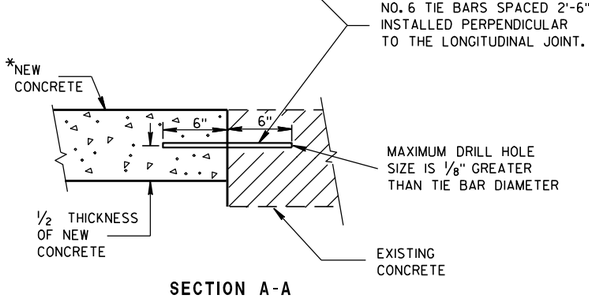


TYPICAL TIE BAR LOCATION (1)



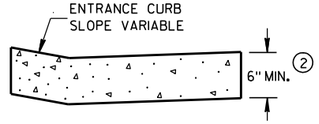
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

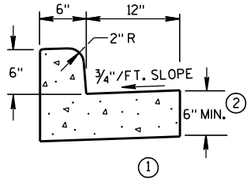


SECTION A-A

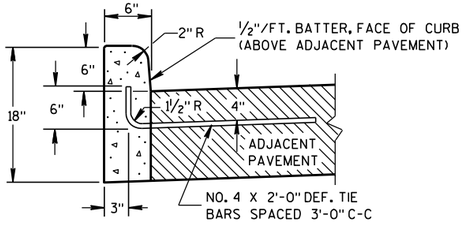
TIE BARS DRILLED INTO EXISTING PAVEMENT



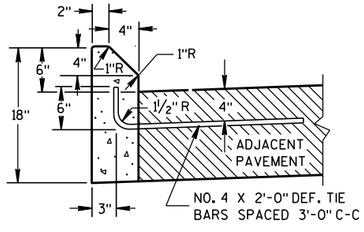
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES A & D



(1)
TYPES G & J

CONCRETE CURB

GENERAL NOTES

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

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

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

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

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

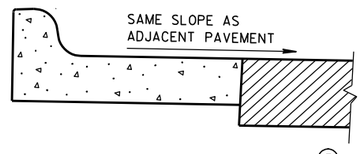
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

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

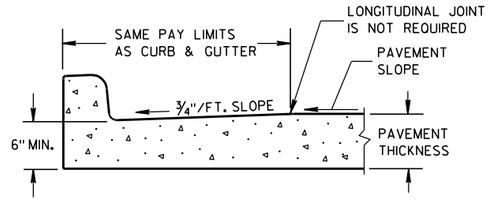
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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

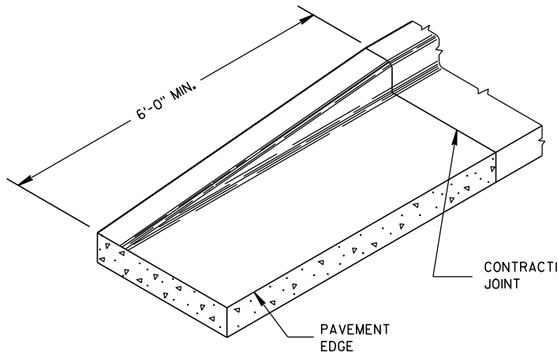
(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

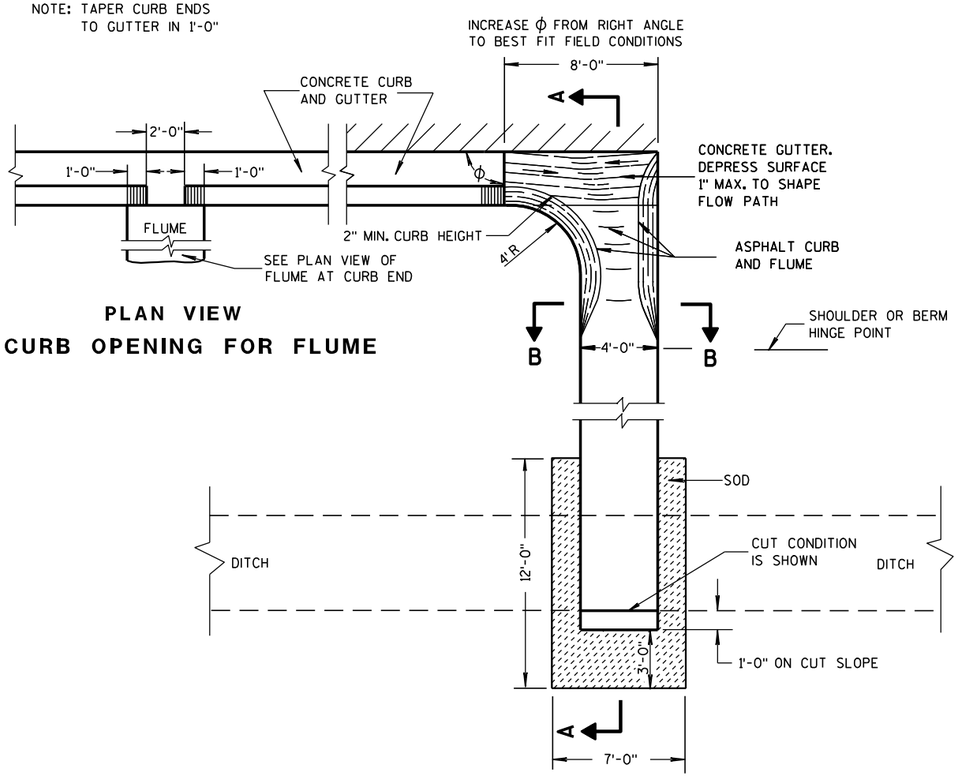
6

S.D.D. 8 D 1-17

6

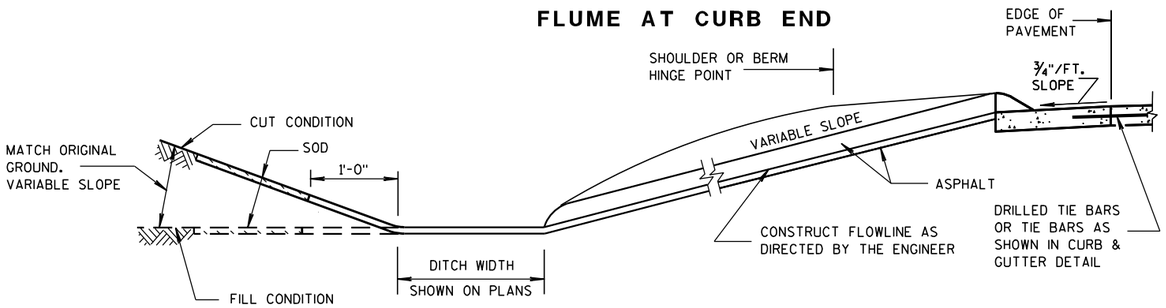
S.D.D. 8 D 1-17

ASPHALTIC FLUME

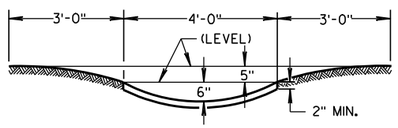


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

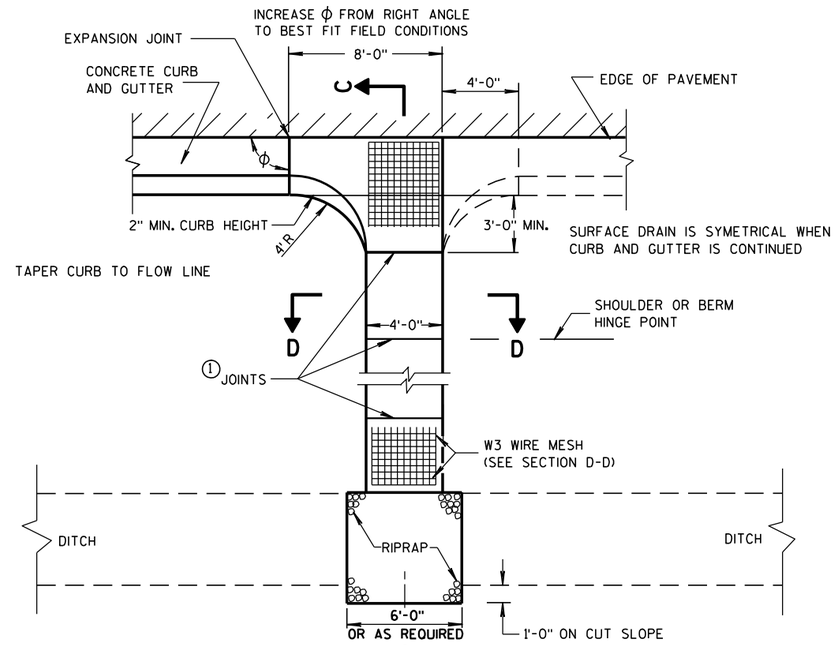
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

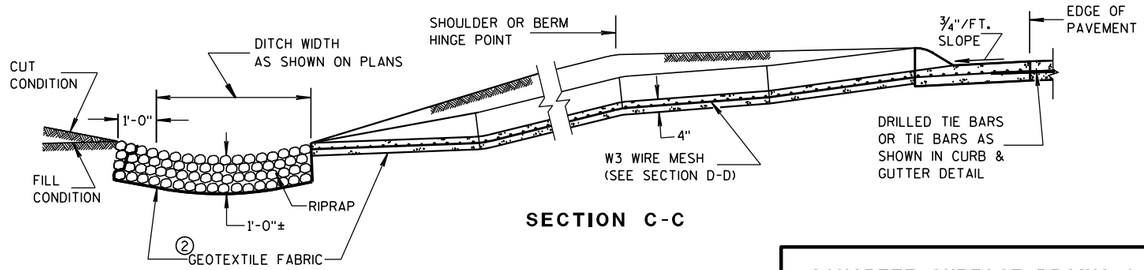
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

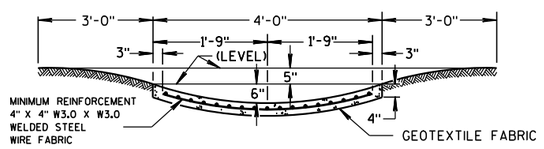
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

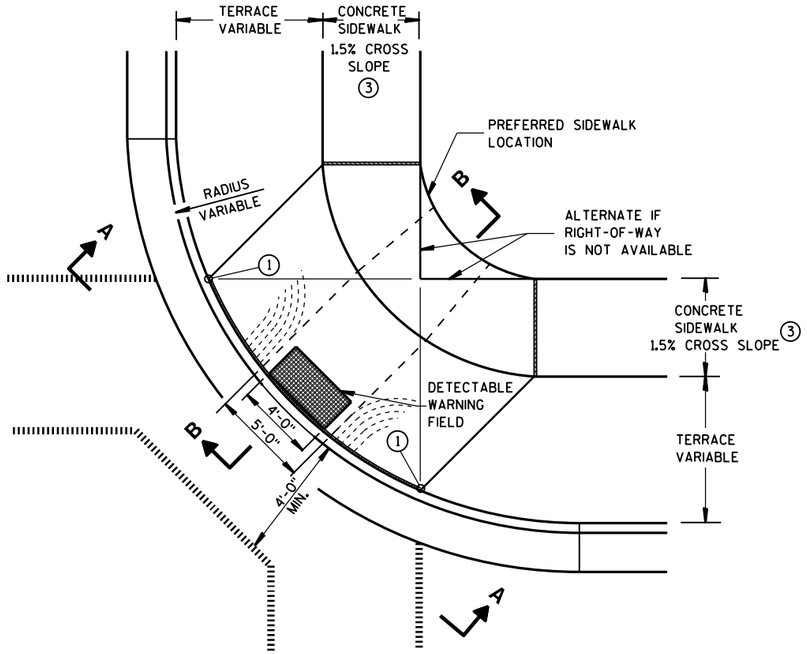
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA

6

S.D.D. 8 D 4-5

6

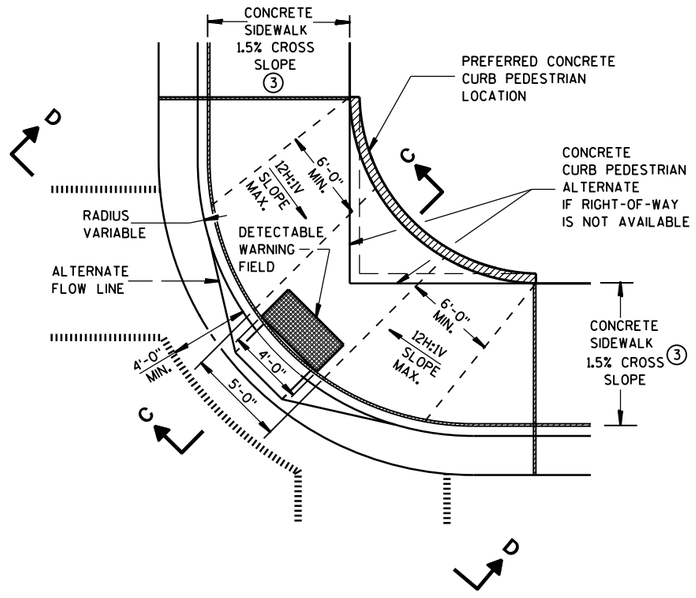
S.D.D. 8 D 4-5



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.

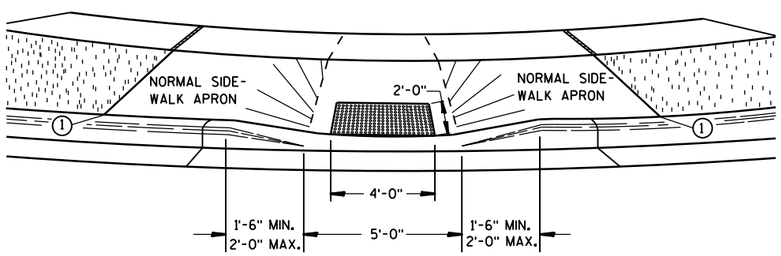
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

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.

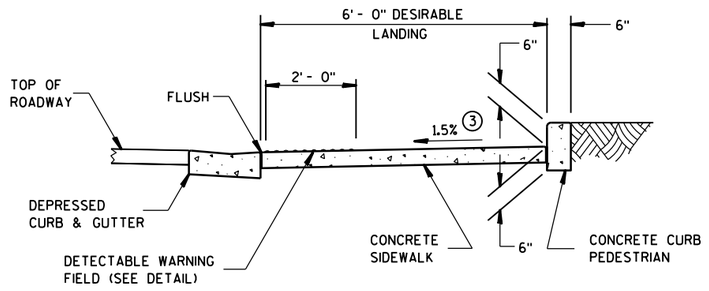
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

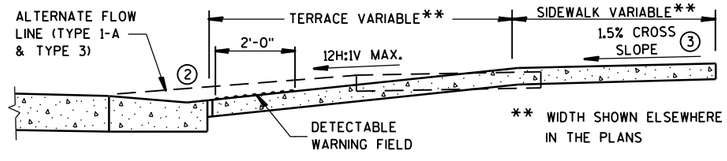
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



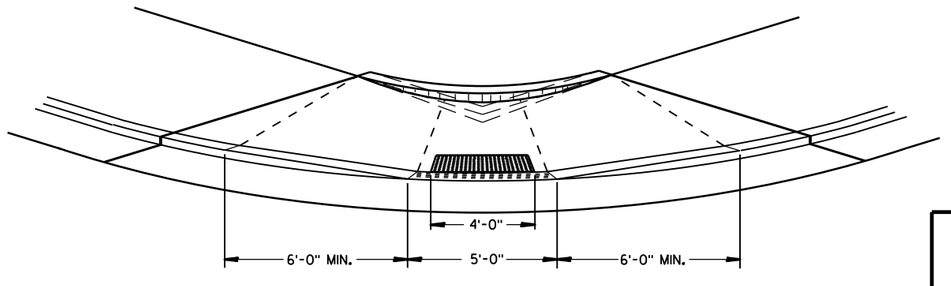
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

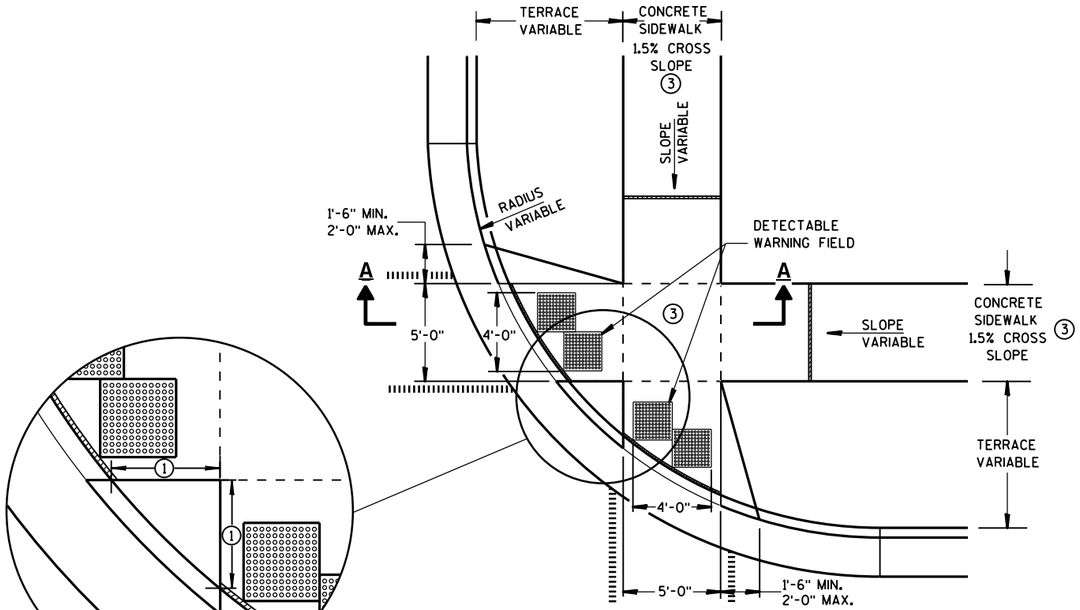
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

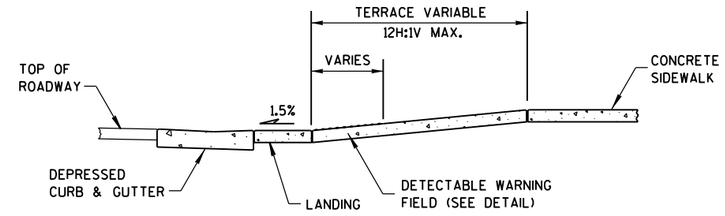
S.D.D. 8 D 5-15a

6

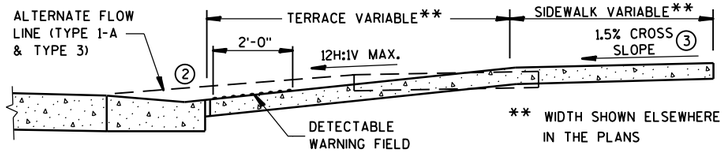
S.D.D. 8 D 5-15a



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.

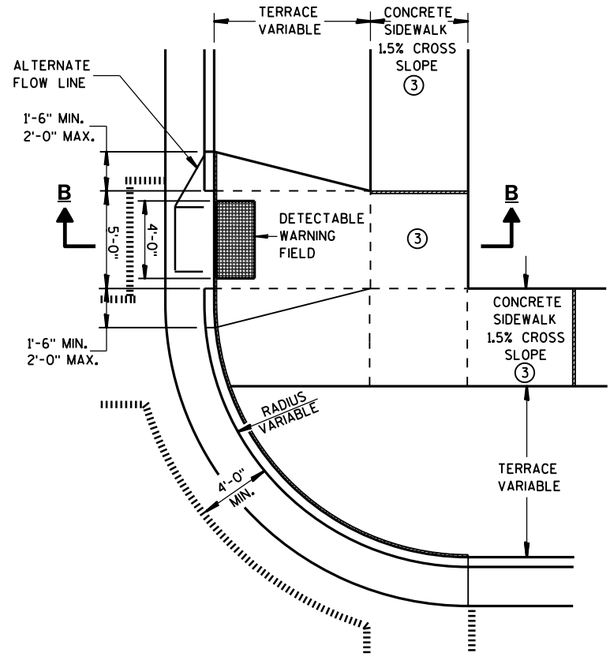
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

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



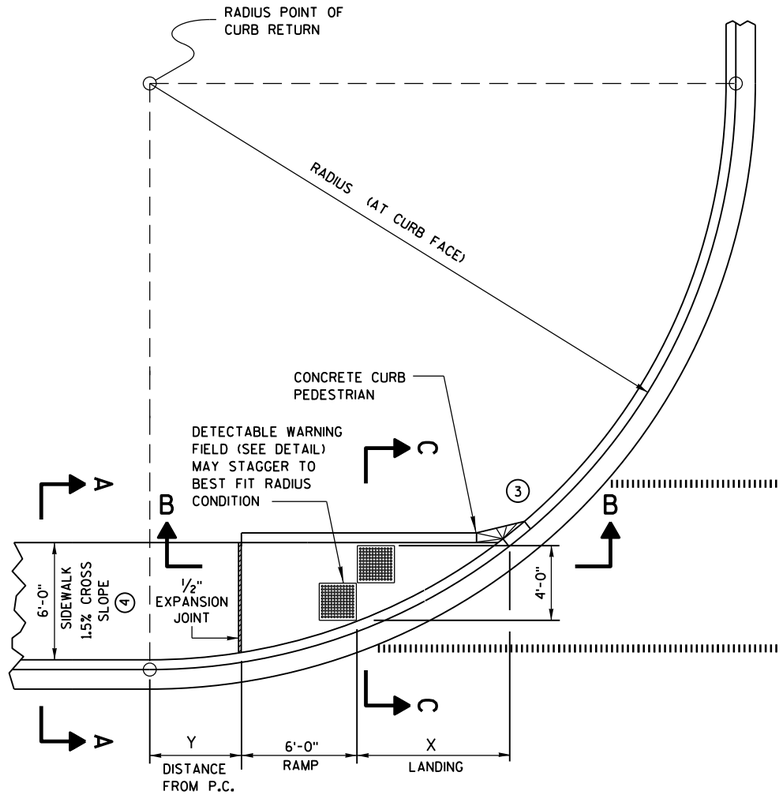
PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

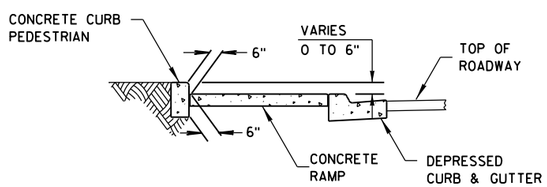
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

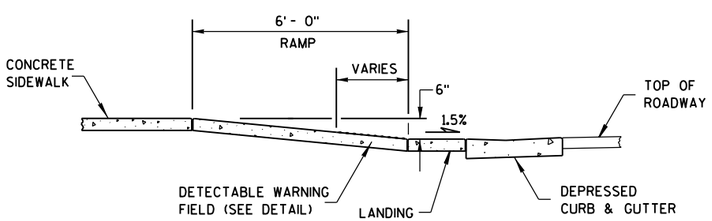
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



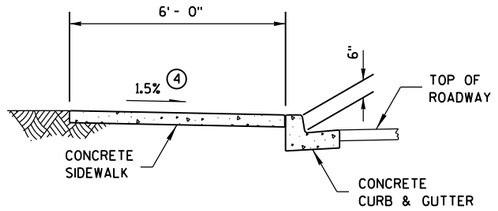
SECTION C-C FOR TYPE 4A



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

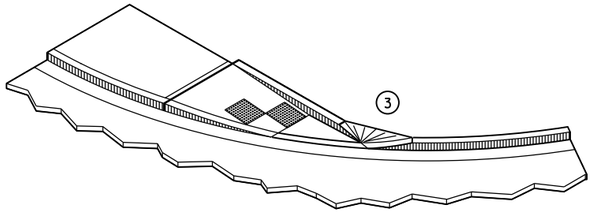
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

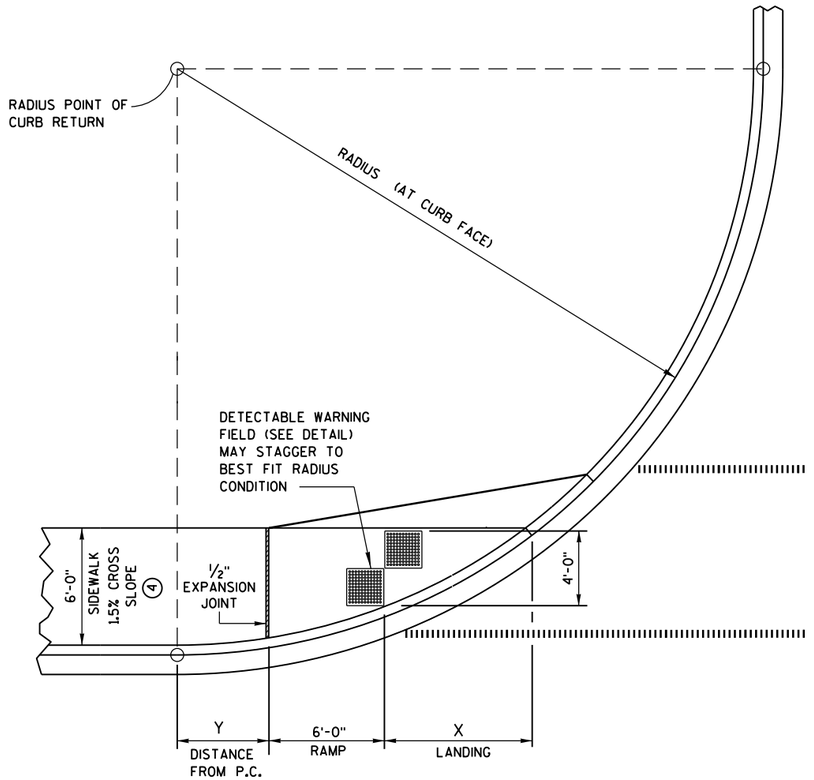
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

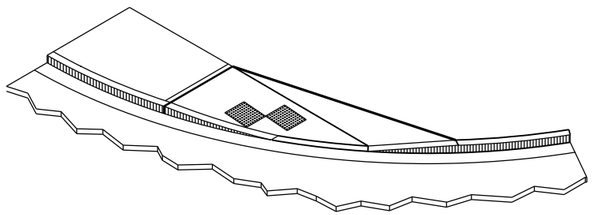
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

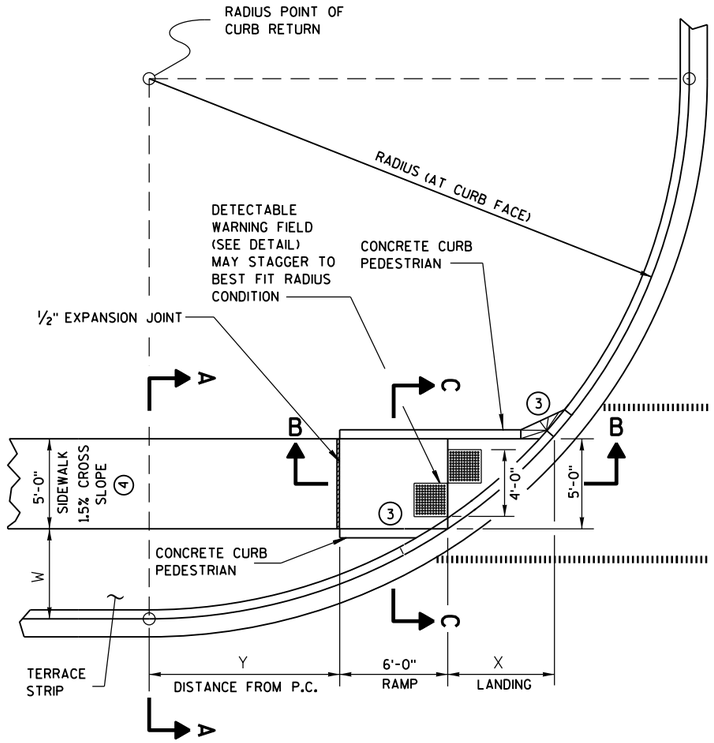
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

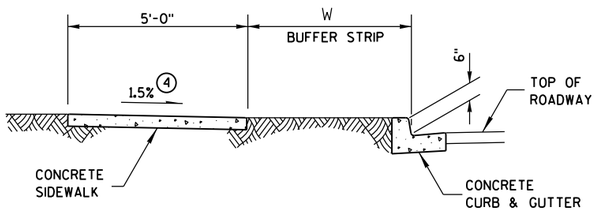
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

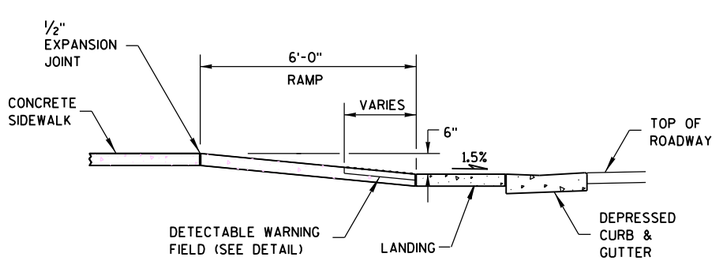
S.D.D. 8 D 5-15c



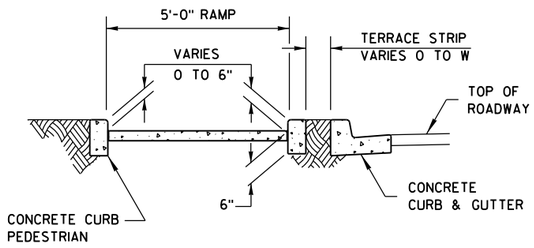
CURB RAMP TYPE 4B
PLAN VIEW



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

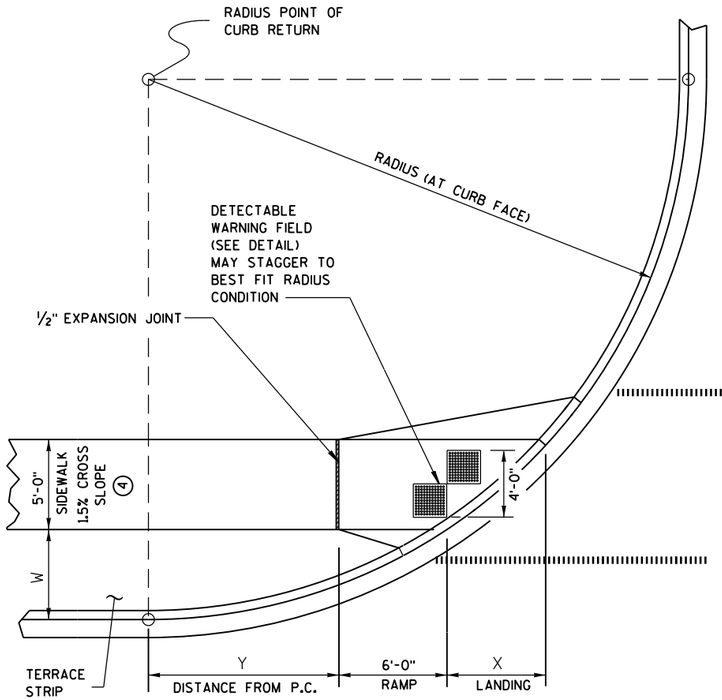
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

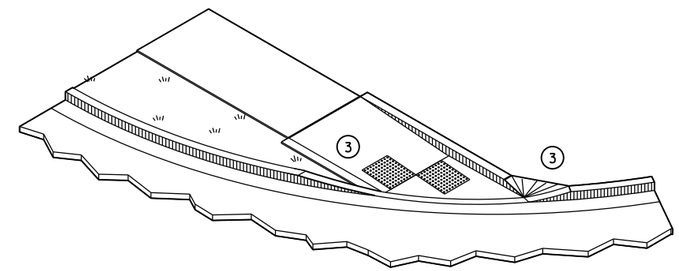
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

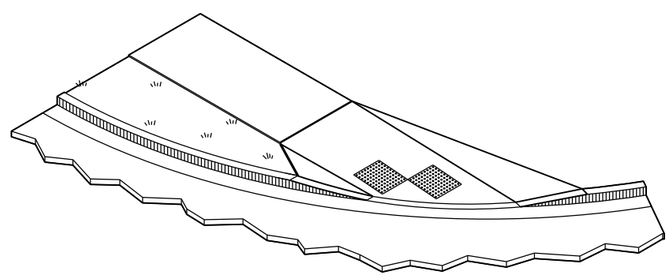
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



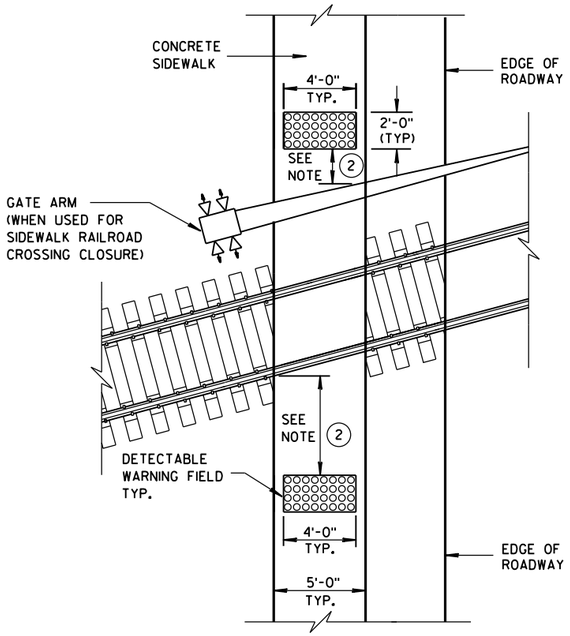
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS
TYPE 4B AND 4B1

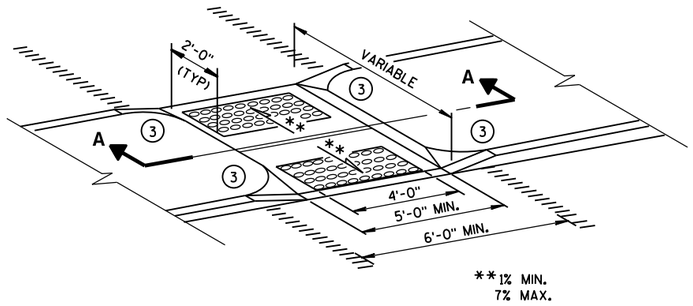
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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%.

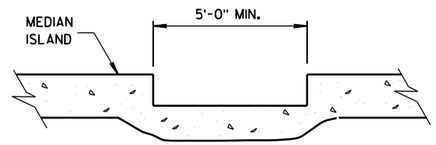
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

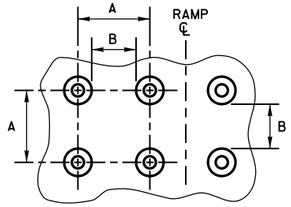
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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



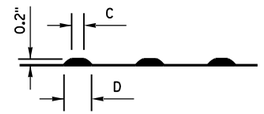
SECTION A-A



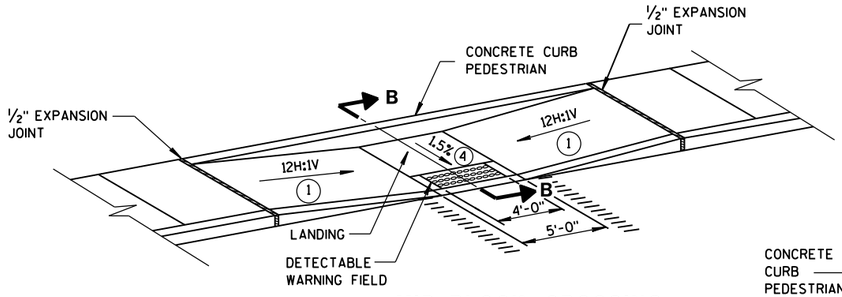
PLAN VIEW

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

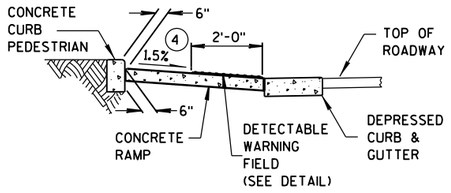
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

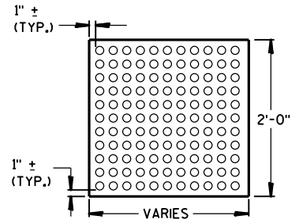


MID-BLOCK CROSSING
TYPE 7A



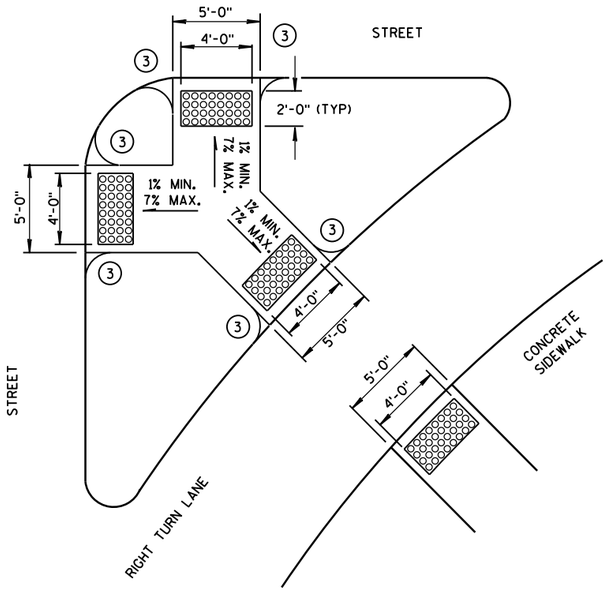
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

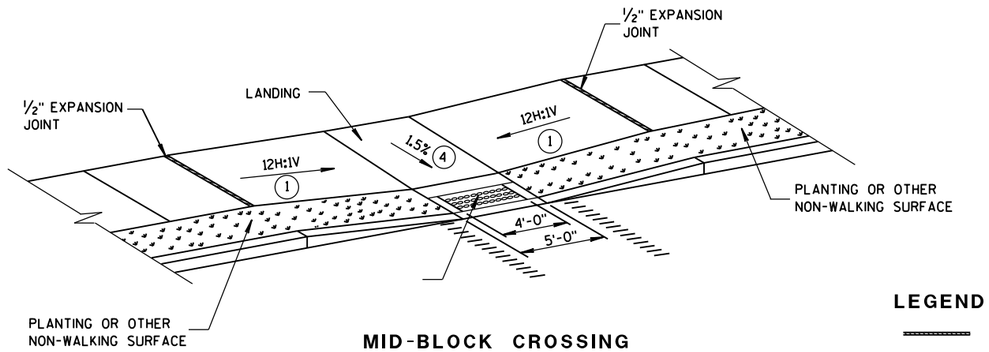


PLAN VIEW

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

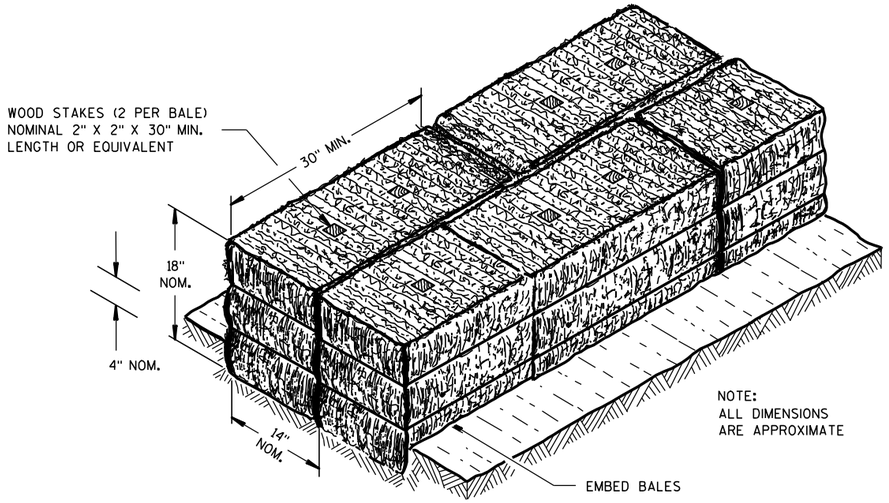
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

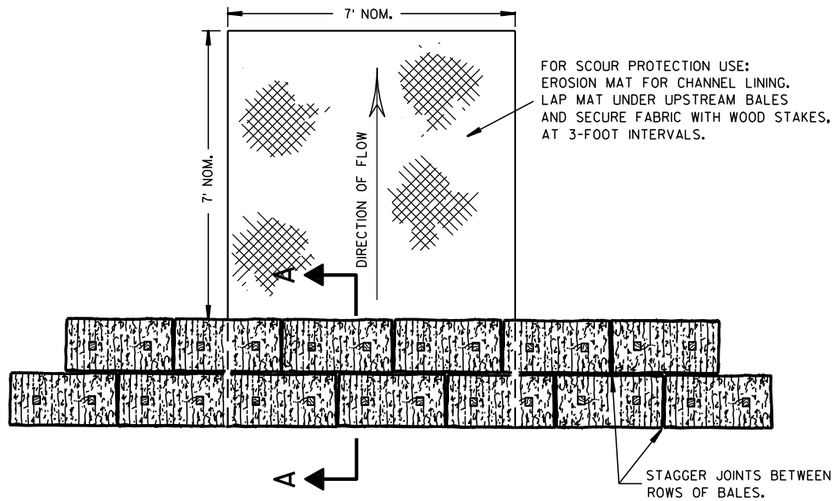
S.D.D. 8 D 5-15e

6

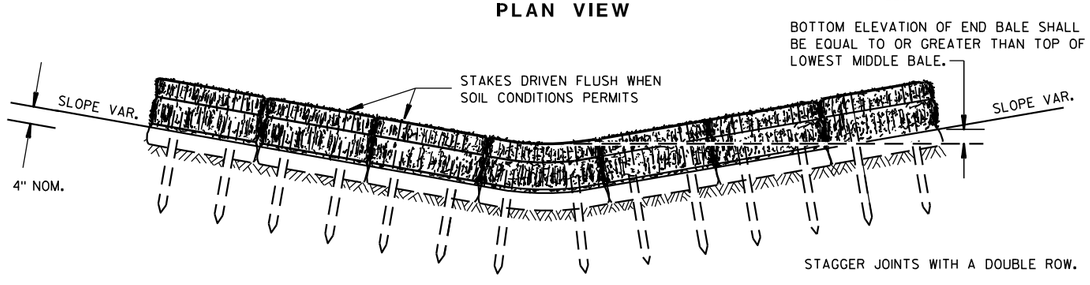
S.D.D. 8 D 5-15e



SECTION A-A



PLAN VIEW



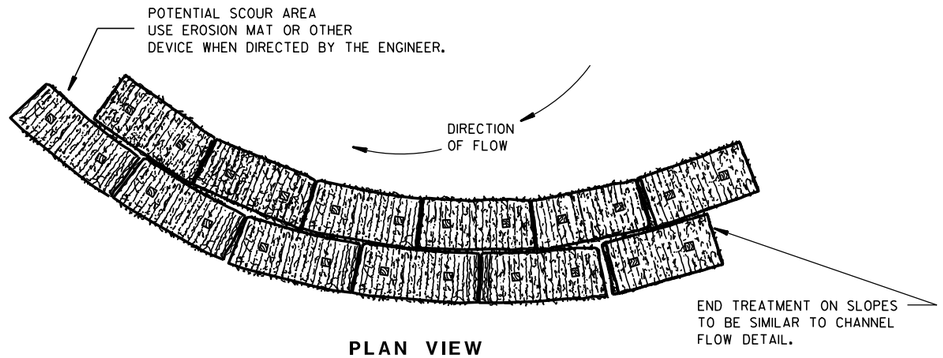
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

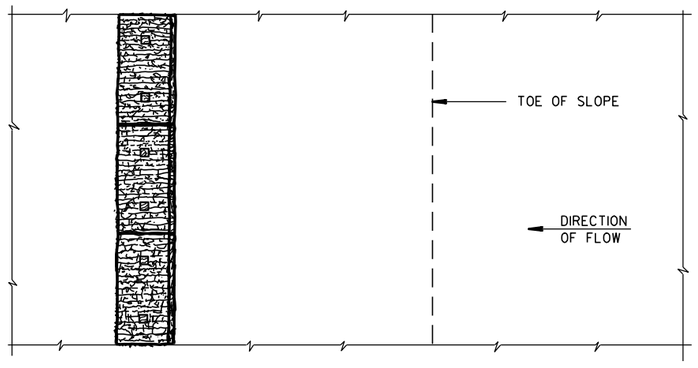
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

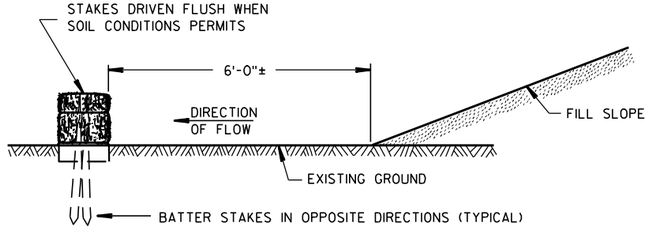


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

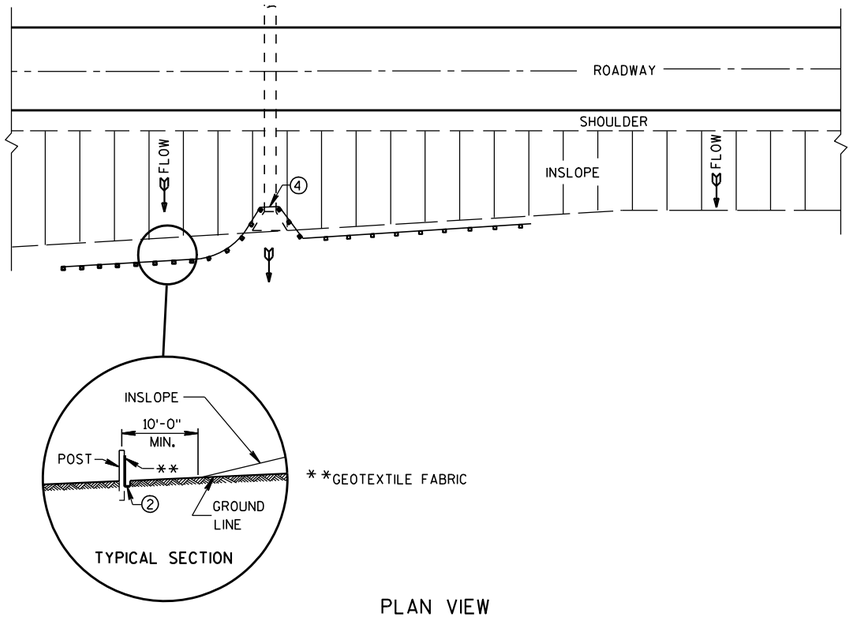
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

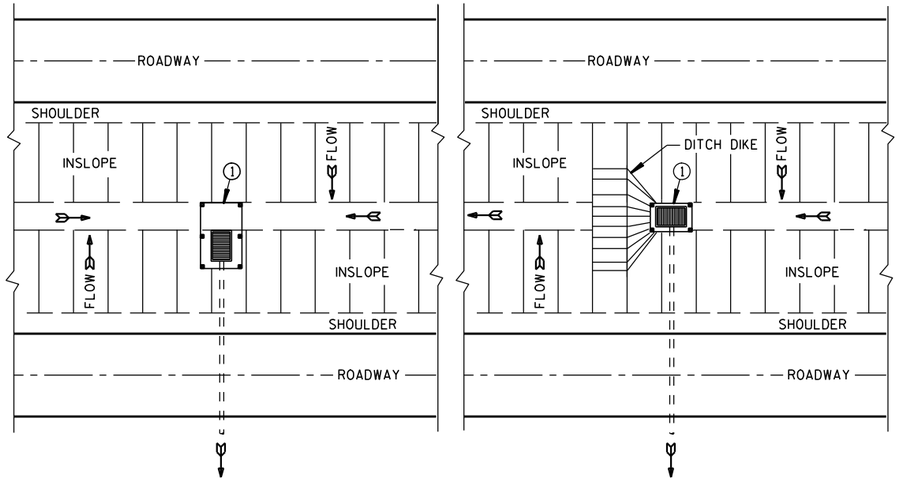
6/04/02 DATE — /S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

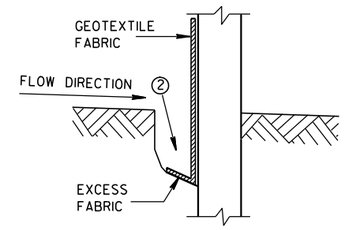
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

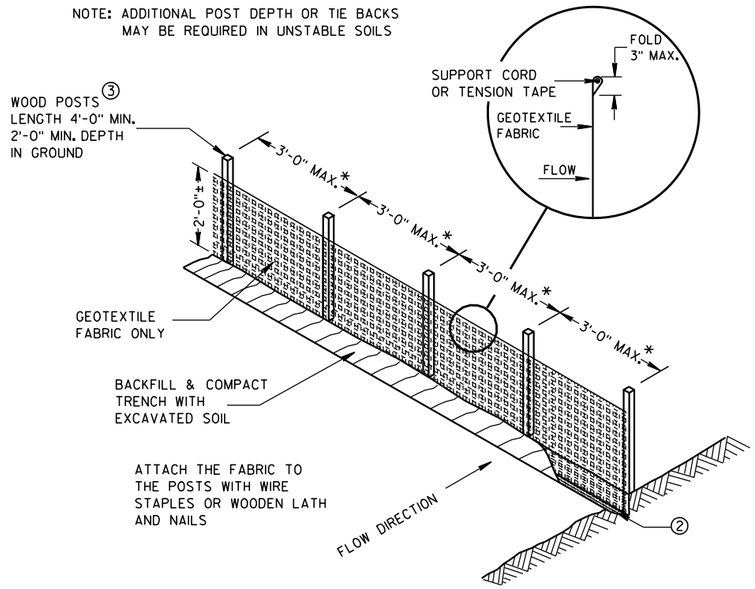
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

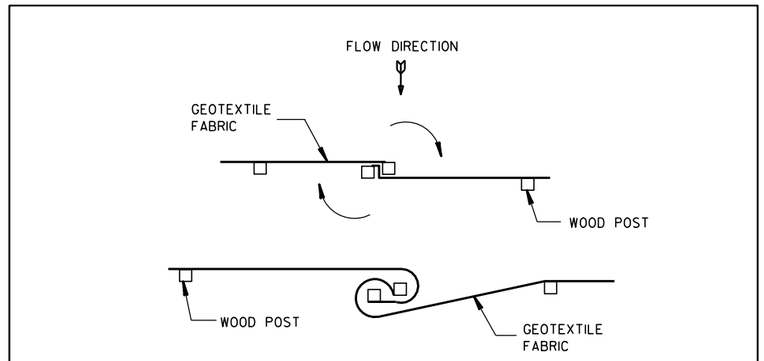
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



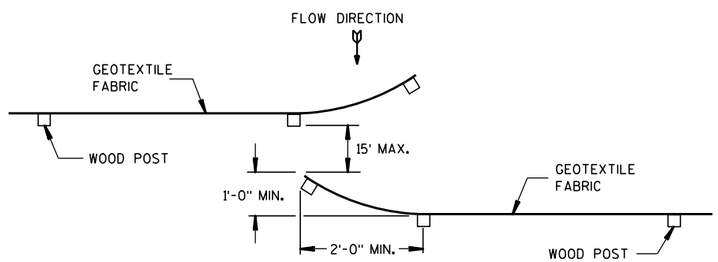
TRENCH DETAIL



SILT FENCE

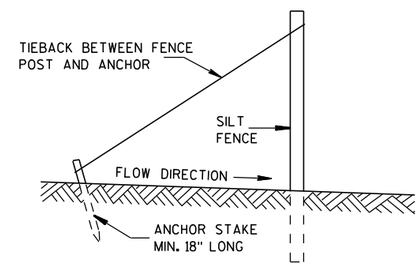


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

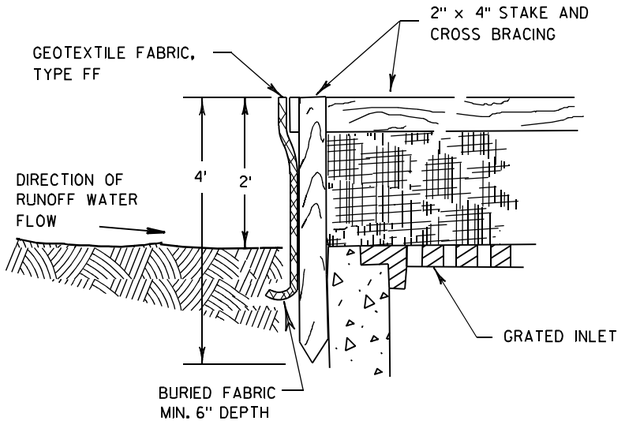
APPROVED
4-29-05
DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

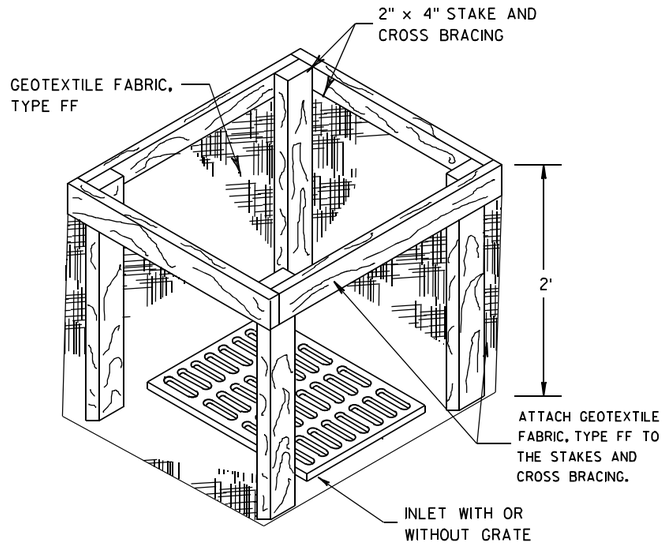
6

S.D.D. 8 E 9-6

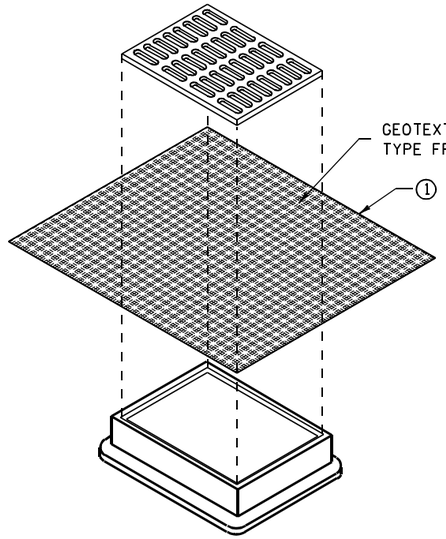
6

S.D.D. 8 E 9-6



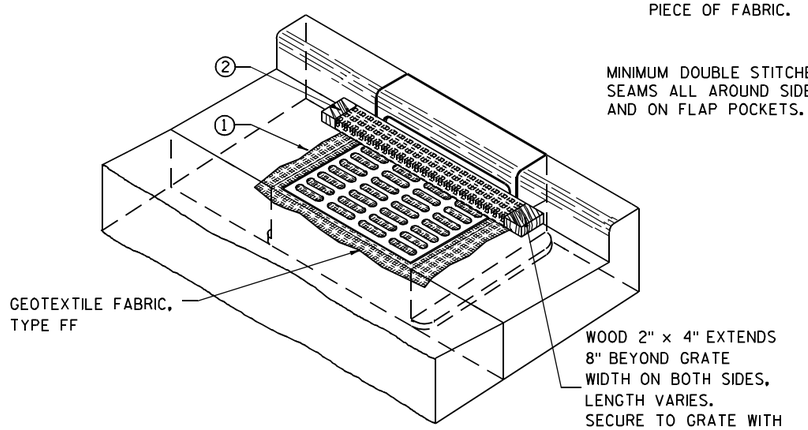


INLET PROTECTION, TYPE A

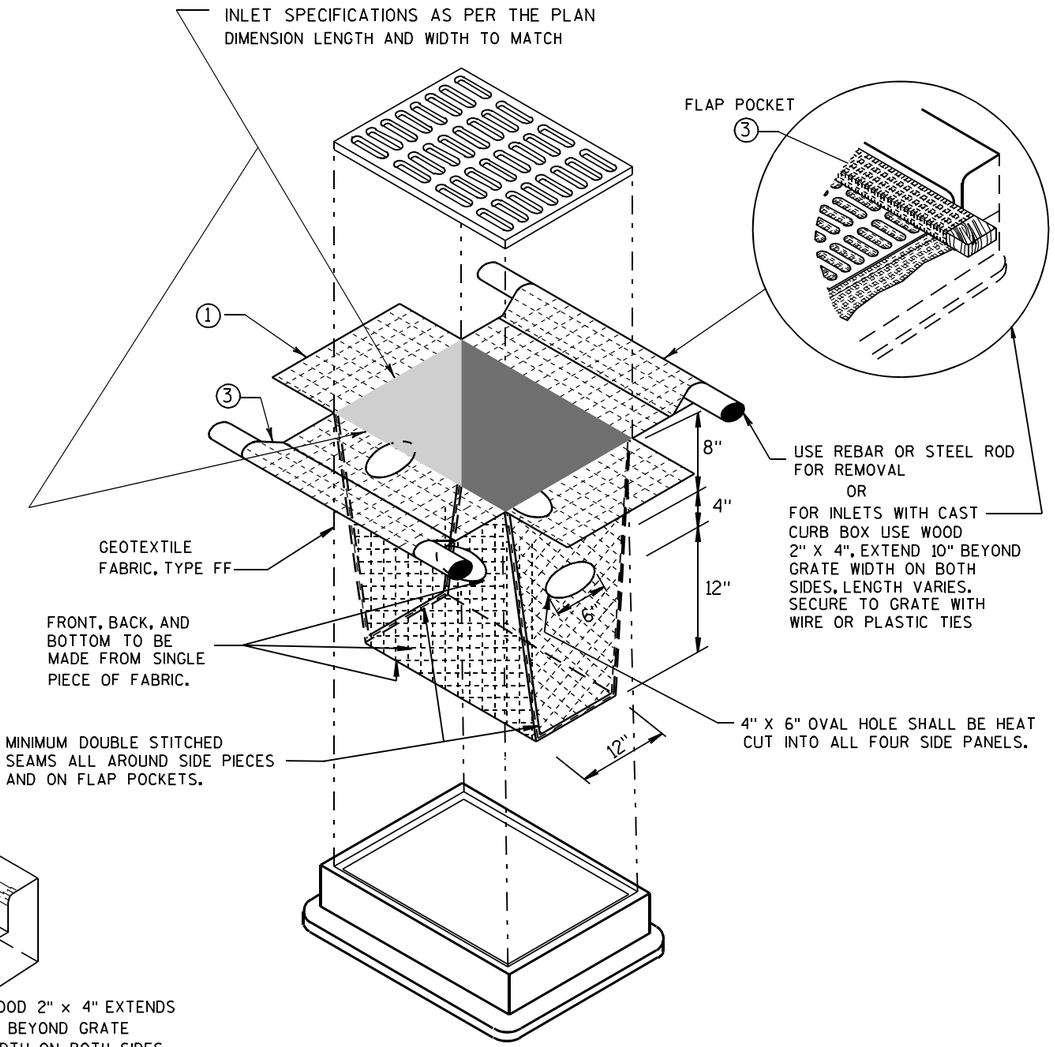


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 8 E 10-2

6

S.D.D. 8 E 10-2

METAL APRON ENDWALLS

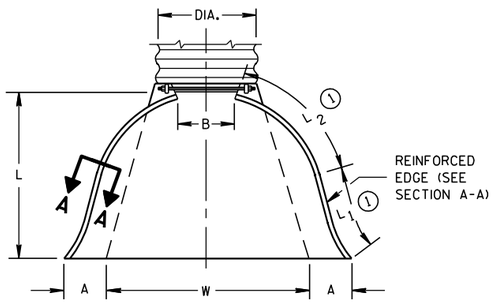
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

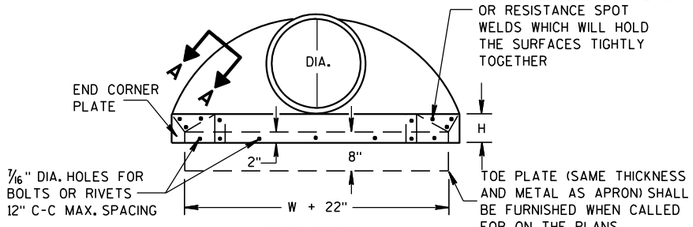
REINFORCED CONCRETE APRON ENDWALLS

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

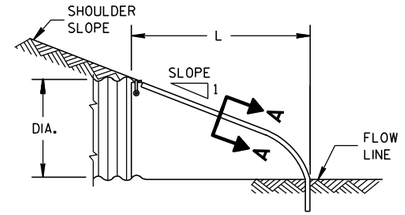
*MINIMUM
**MAXIMUM



PLAN VIEW

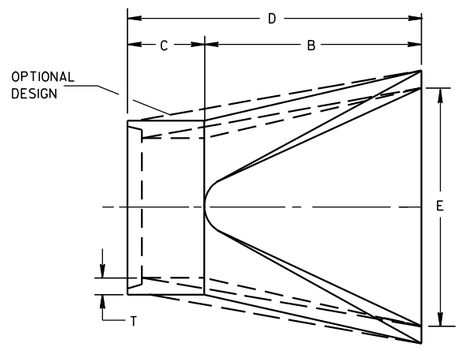


END VIEW

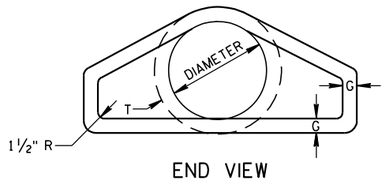


SIDE ELEVATION

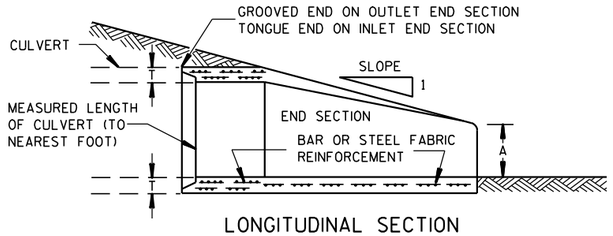
METAL ENDWALLS



PLAN

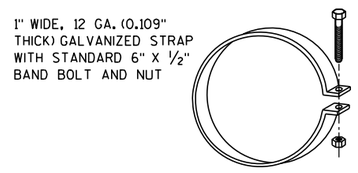


END VIEW



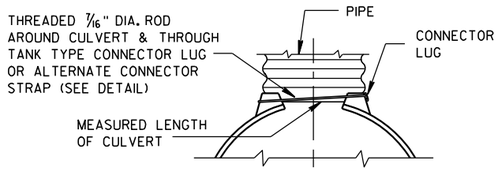
LONGITUDINAL SECTION

CONCRETE ENDWALLS

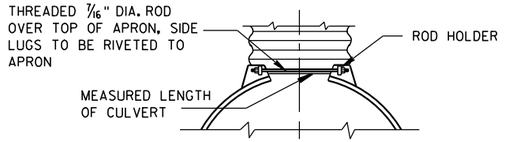


ALTERNATE FOR TYPE 1 CONNECTION

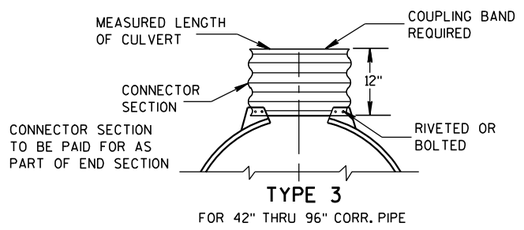
END SECTION CONNECTOR STRAP



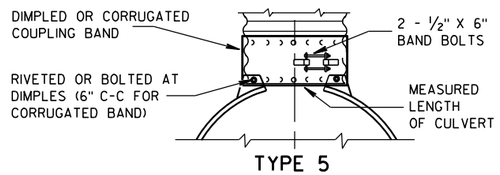
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

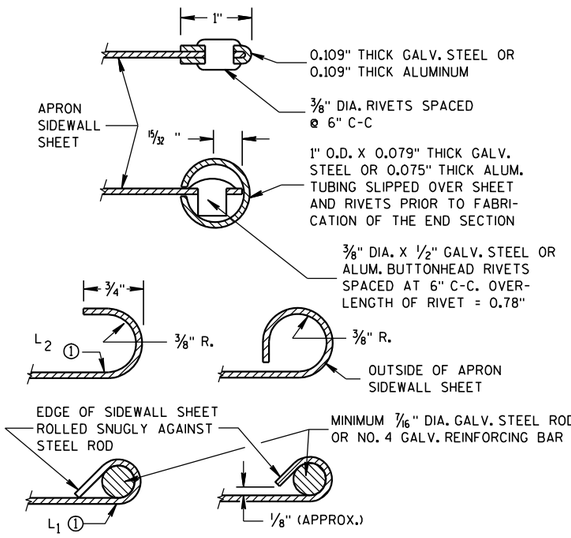
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

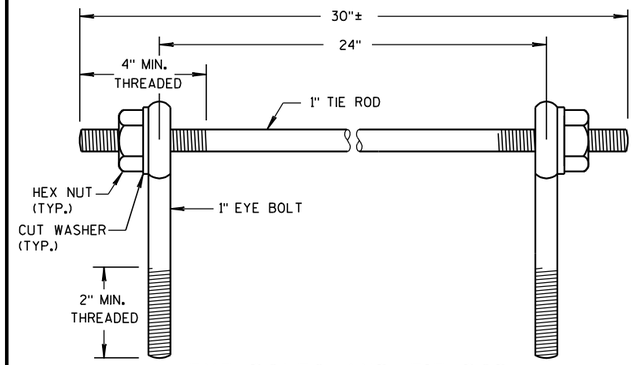
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

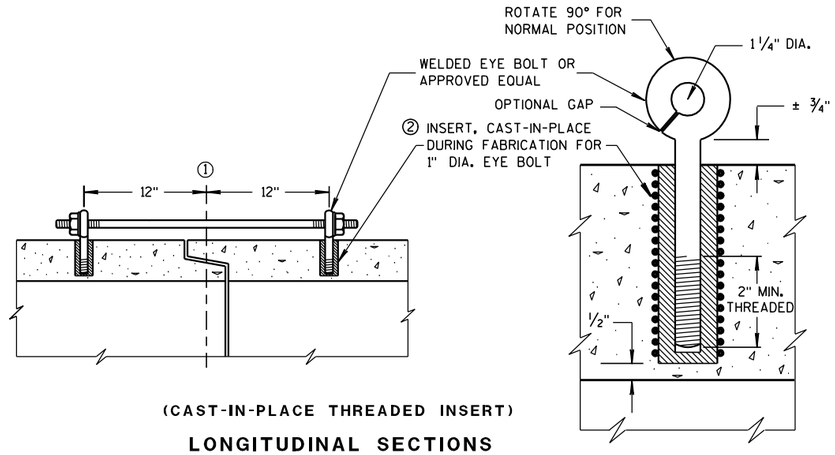
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

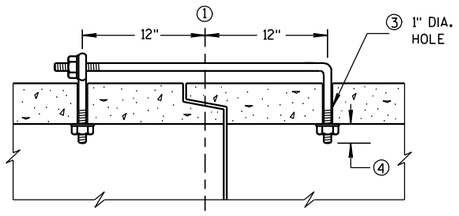
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

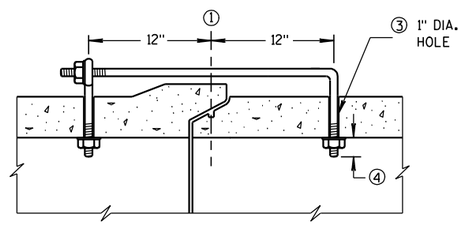
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

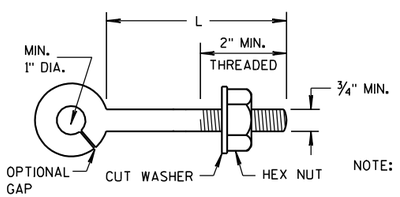


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

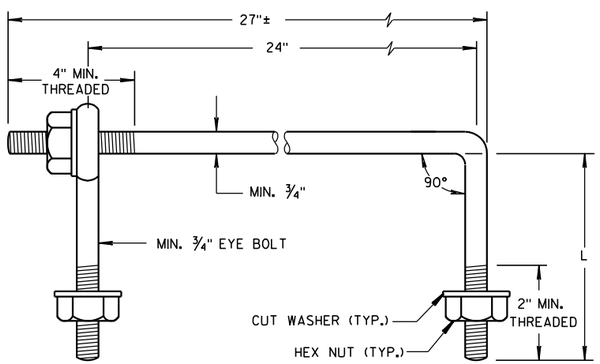
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

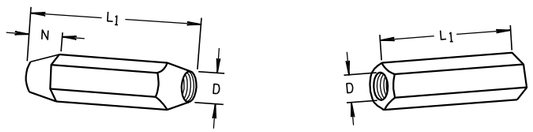
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

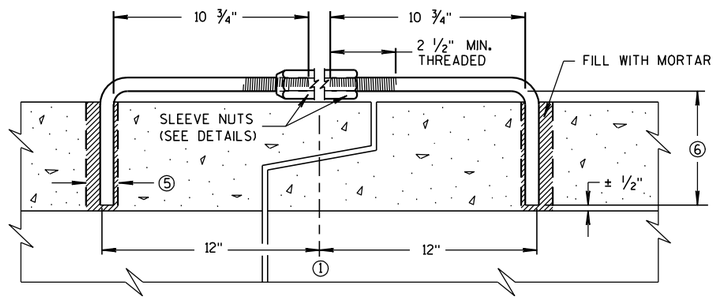
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

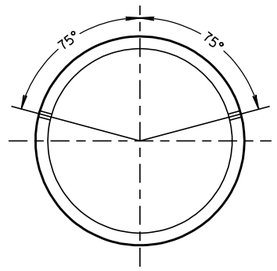
SLEEVE NUTS



LONGITUDINAL SECTION

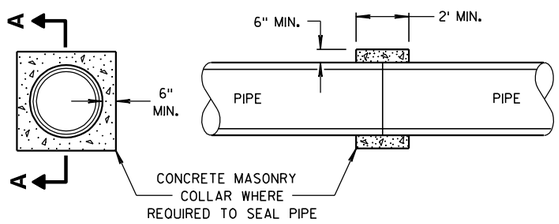
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
92
FHWA

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S.D.D. 8 F 4-7

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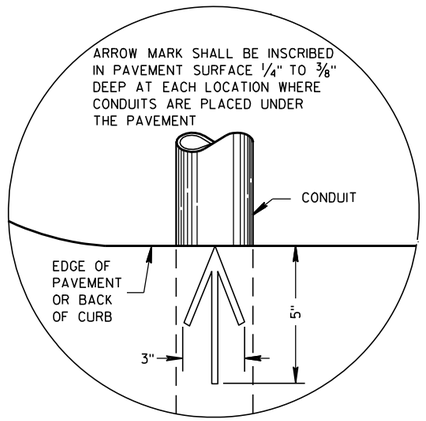
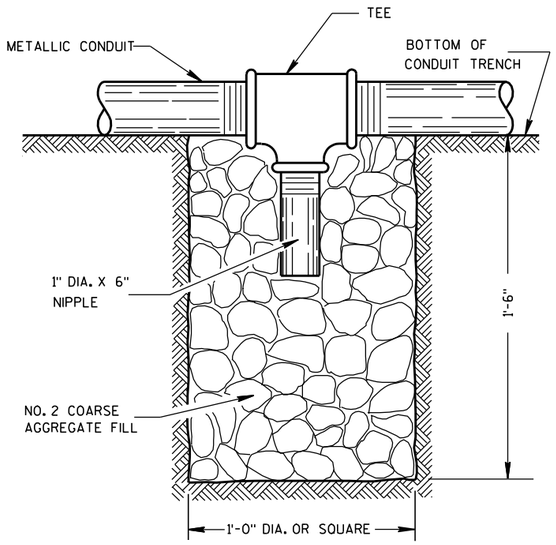


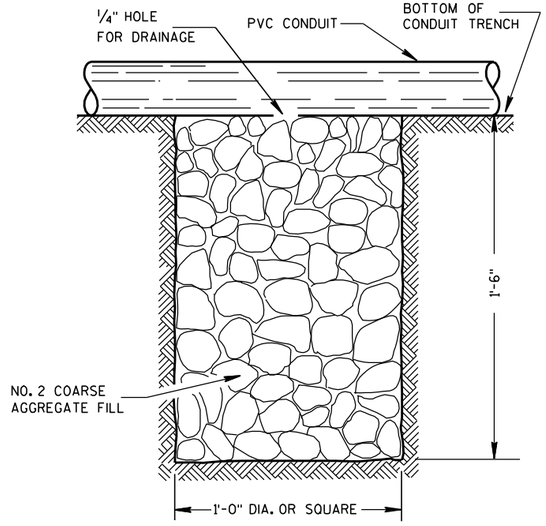
PLAN VIEW

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.

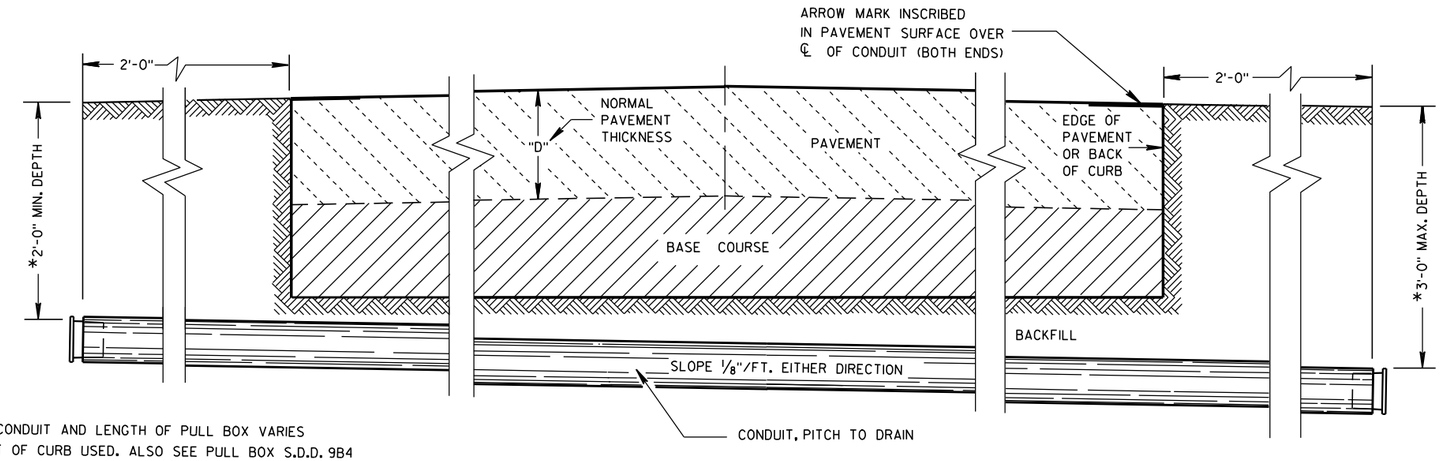
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

10/23/03 — DATE

/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI

FHWA — HWYS

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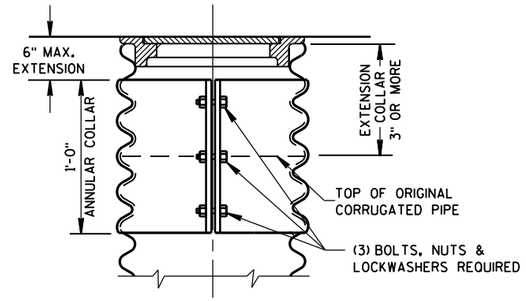
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

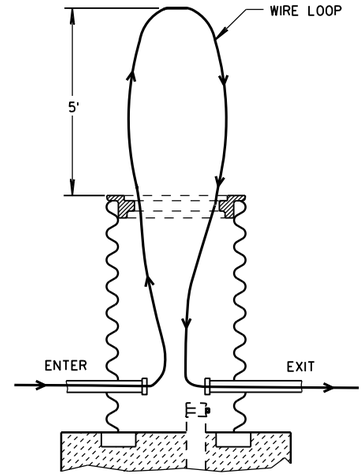
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

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

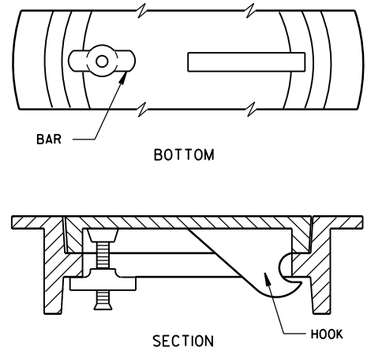
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

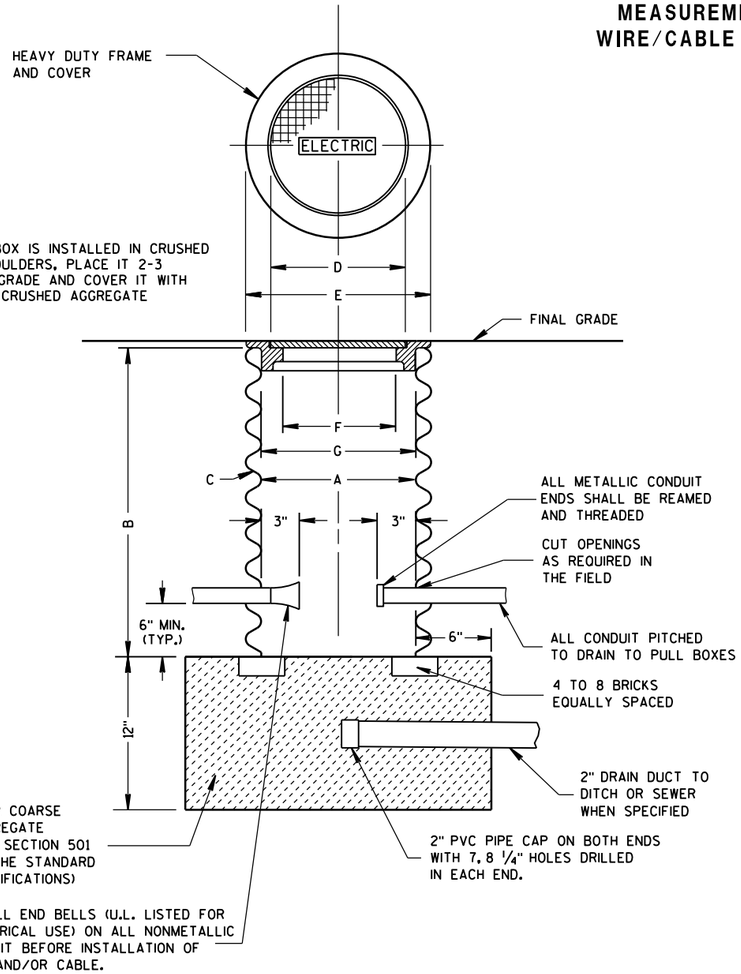


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



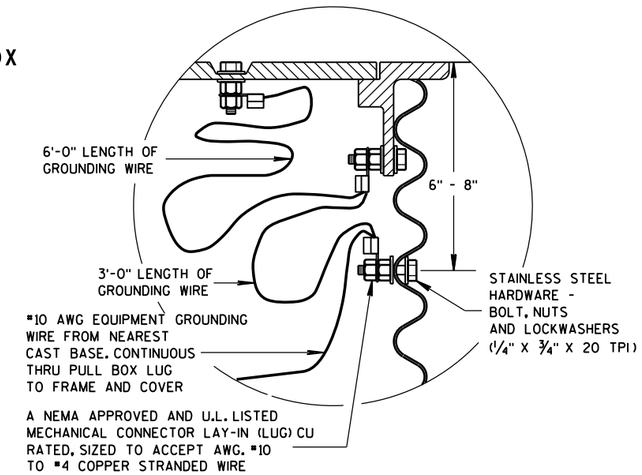
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

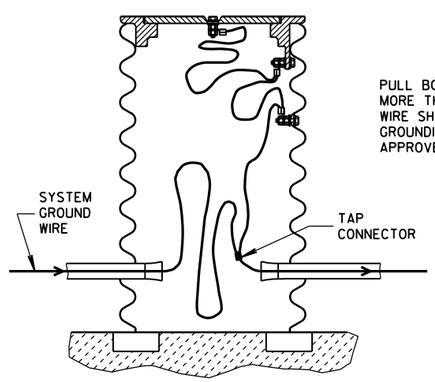


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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

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

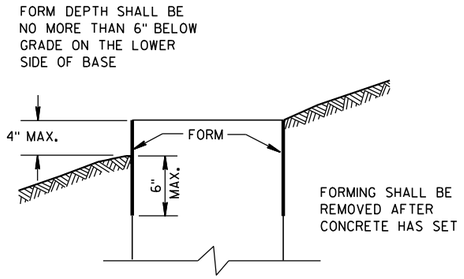
S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

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

PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
2-7-2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA	

6

S.D.D. 9 B 4-10



FORMING DETAIL

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

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

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

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

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

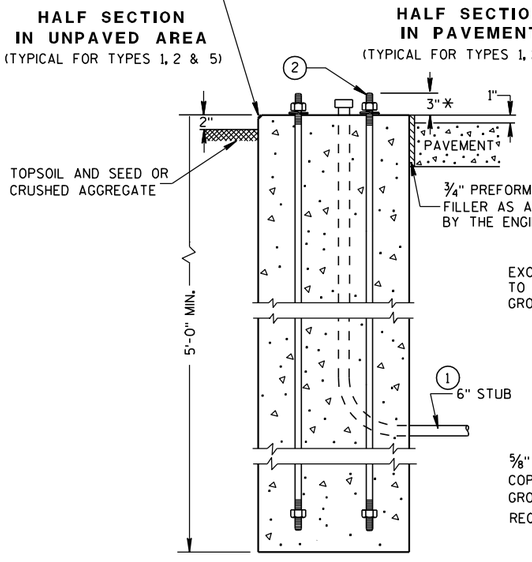
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

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

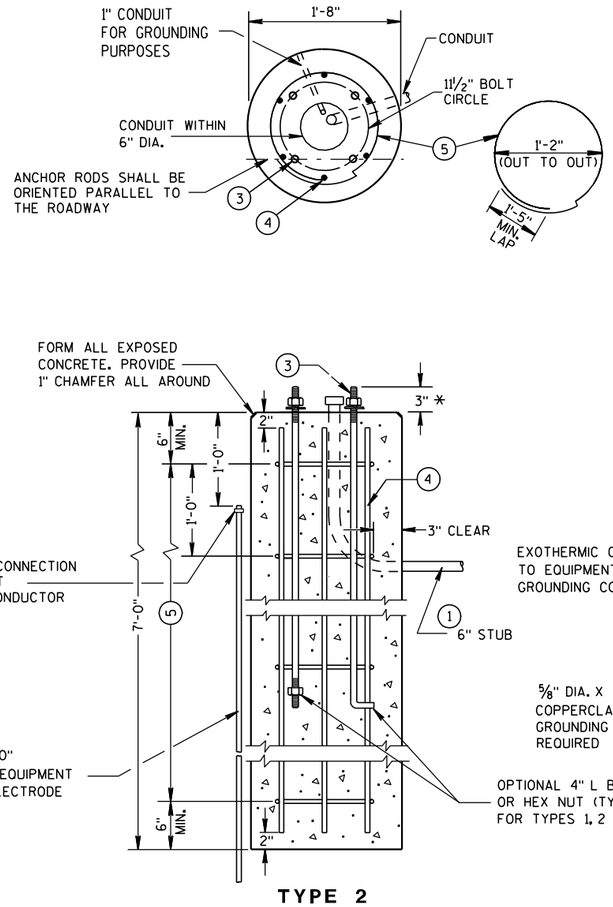
(6) (4) I" DIA. X 3'-6" ANCHOR RODS.

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

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



TYPE 1



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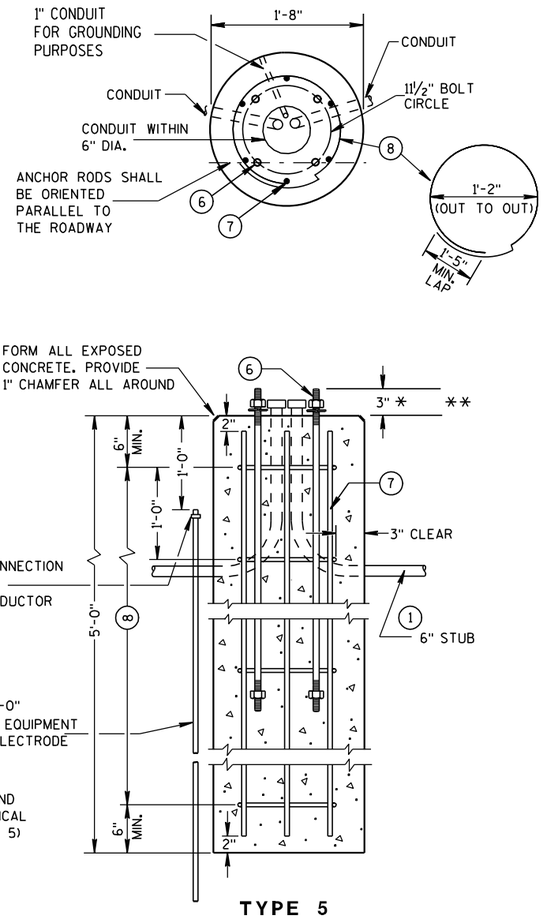

TYPE 5

CONCRETE BASES

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

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

CONCRETE BASES, TYPES 1, 2 & 5

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/3/10 — DATE
/S/ Joanna L. Rush — STATE ELECTRICAL ENGI 95 — HWYS
FHWA

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S.D.D. 9 C 2-6

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S.D.D. 9 C 2-6

GENERAL NOTES

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

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

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

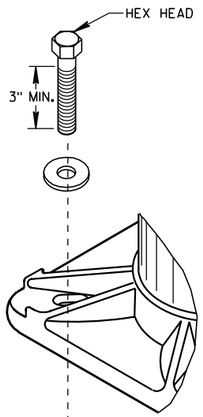
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

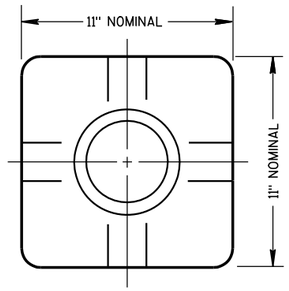
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

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

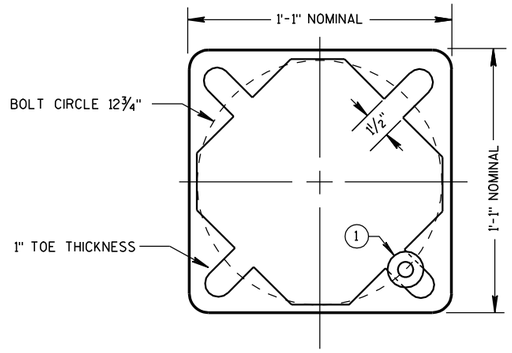
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1½", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

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

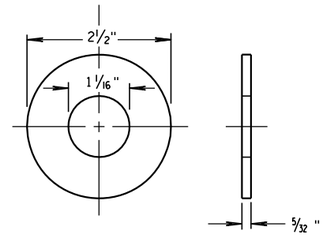




TOP VIEW
(PEDESTAL BASE)

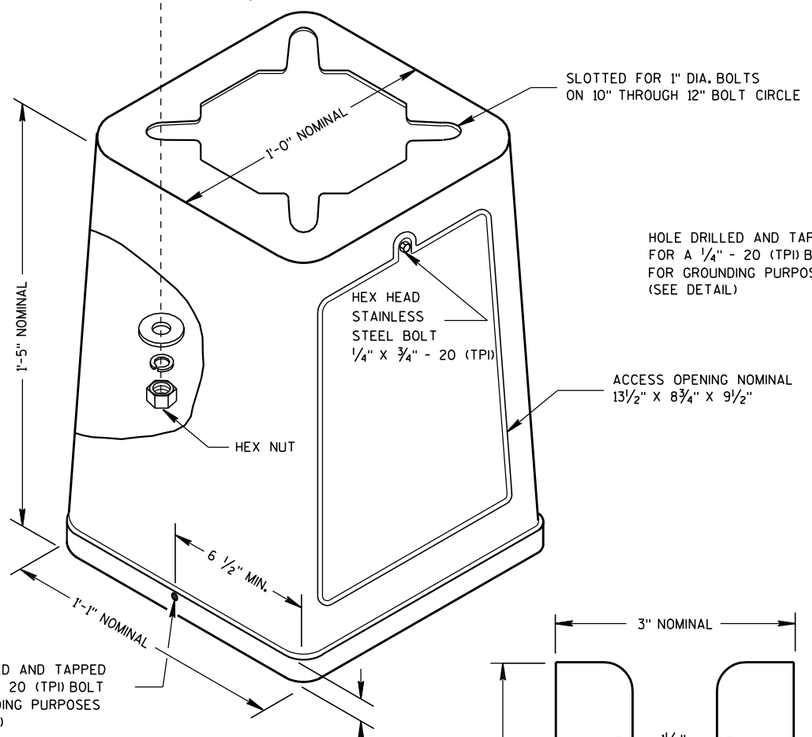


BOTTOM VIEW
(PEDESTAL BASE)

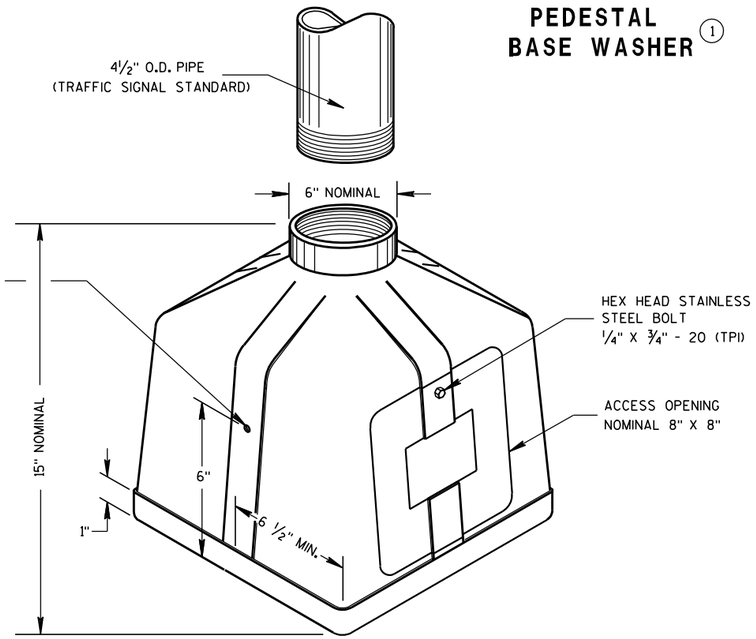


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

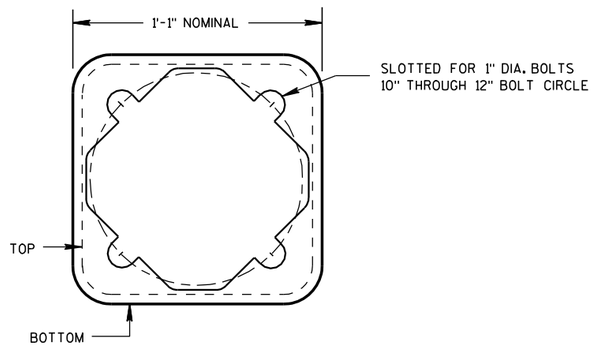


ISOMETRIC VIEW

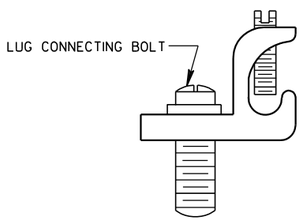


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

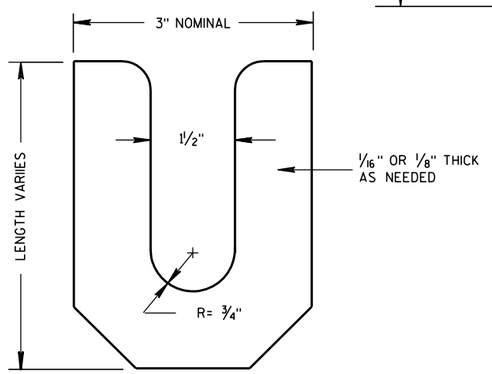


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

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



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/27/09 — DATE
/S/ Joanna L. Rich — STATE ELECTRICAL ENGI
96
HWYS
FHWA

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S.D.D. 9 C 3-3

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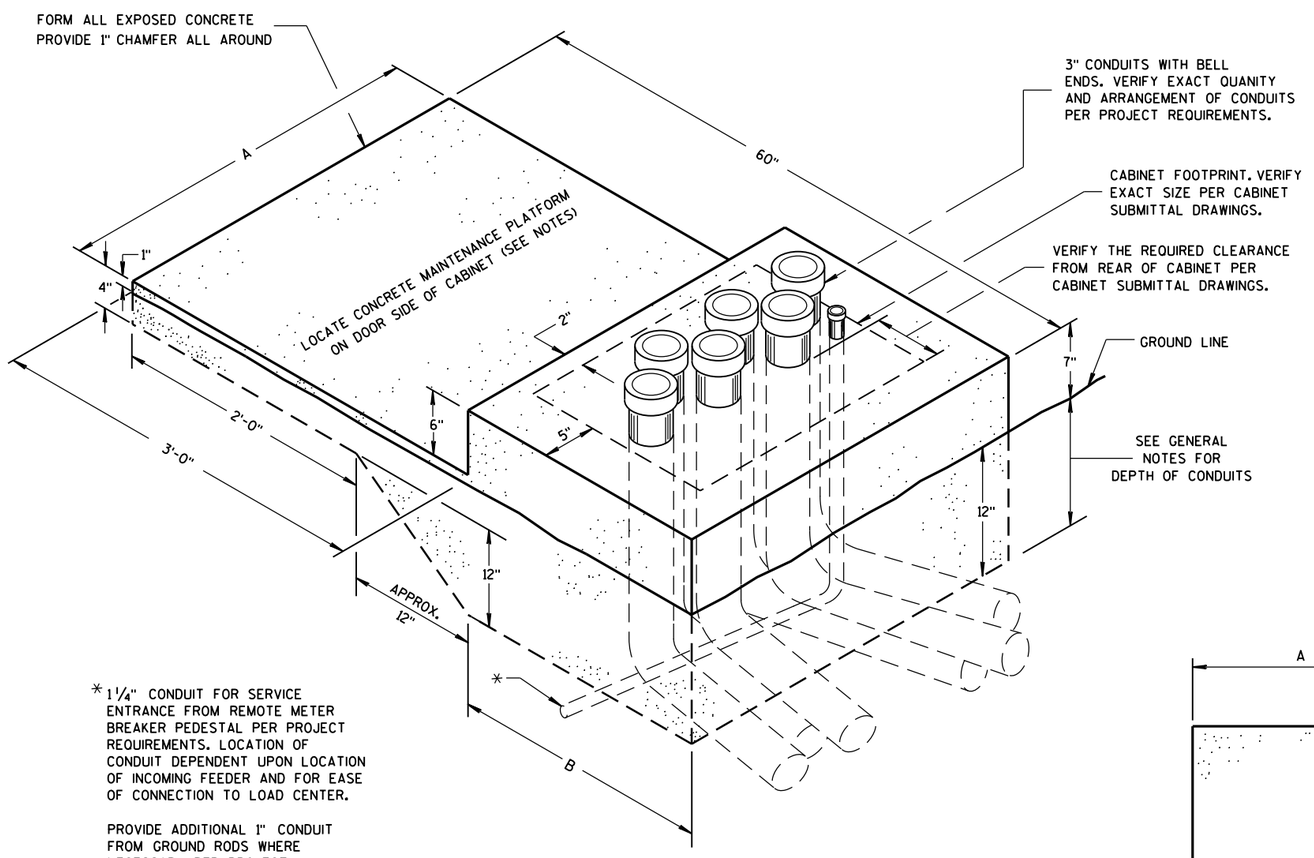
S.D.D. 9 C 3-3



* 1¼" CONDUIT FOR SERVICE ENTRANCE FROM REMOTE METER BREAKER PEDESTAL PER PROJECT REQUIREMENTS. LOCATION OF CONDUIT DEPENDENT UPON LOCATION OF INCOMING FEEDER AND FOR EASE OF CONNECTION TO LOAD CENTER.

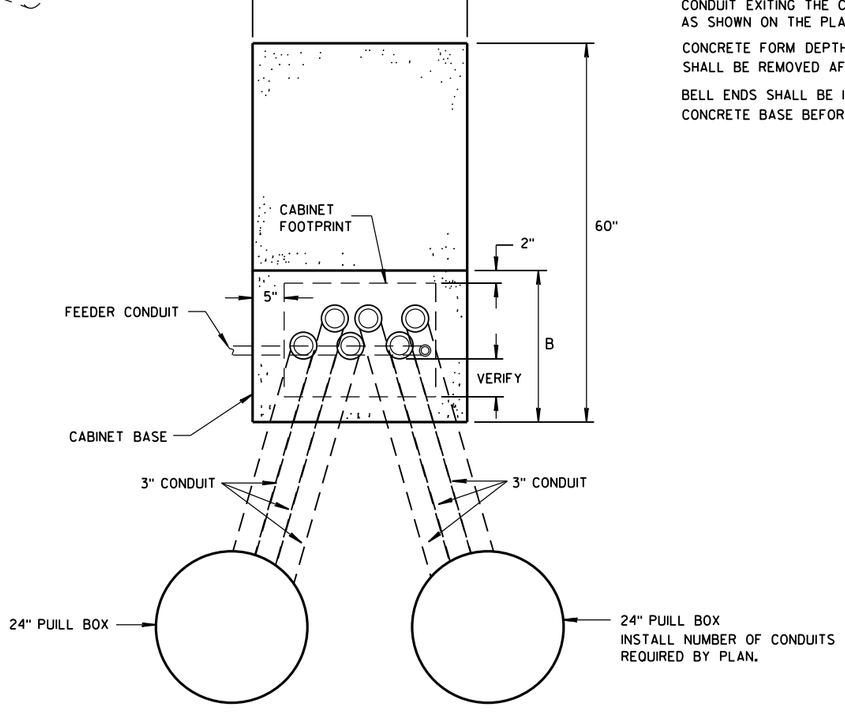
PROVIDE ADDITIONAL 1" CONDUIT FROM GROUND RODS WHERE NECESSARY PER PROJECT REQUIREMENTS.

ISOMETRIC VIEW

CONCRETE CONTROL CABINET BASE, TYPE L

(C.Y. CONCRETE = APPROX. 0.4)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSIONS	
		A	B
L24	24"	34"	24"
L30	30"	40"	24"



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE L

GENERAL NOTES

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

INSTALL FOUR STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET BASES. THE ANCHORS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

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

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

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

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

CONCRETE CONTROL CABINET BASE, TYPE L

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Thomas Gonring — STATE LIGHTING ENGINE 97 — WYS
FHWA

6

S.D.D. 9 C 14-1

GENERAL NOTES

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

ALL INTERNAL ELECTRICAL COMPONENTS WILL BE PRE-WIRED BY THE CABINET FABRICATOR.

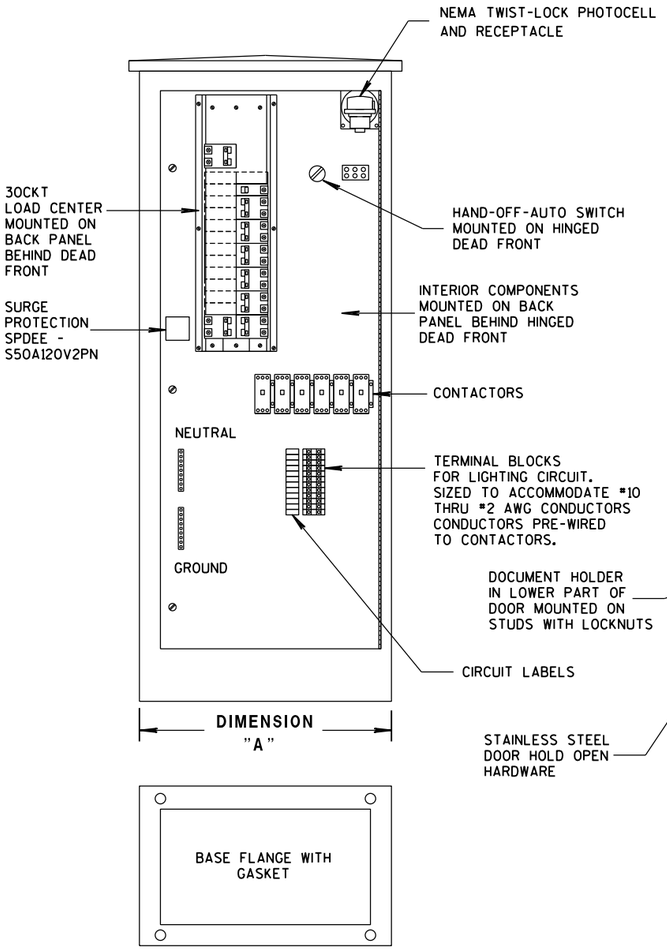
ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.

ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS.

THE CONTRACTOR SHALL TOUCH UP ANY DAMAGE TO THE ANODIZED FINISH CAUSED BY THE INSTALLATION PROCESS. COLOR MATCH PAINT SHALL BE USED.

A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.

FRONT INTERIOR ELEVATION



SIDE VIEW

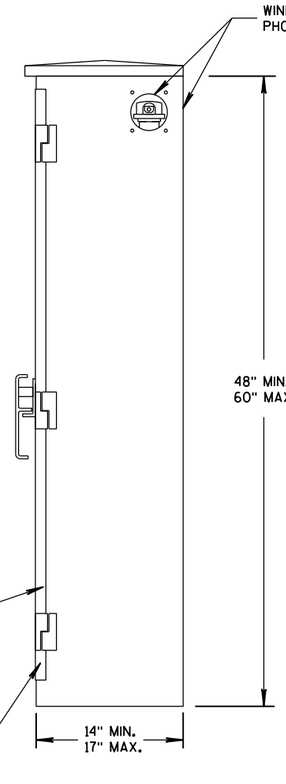
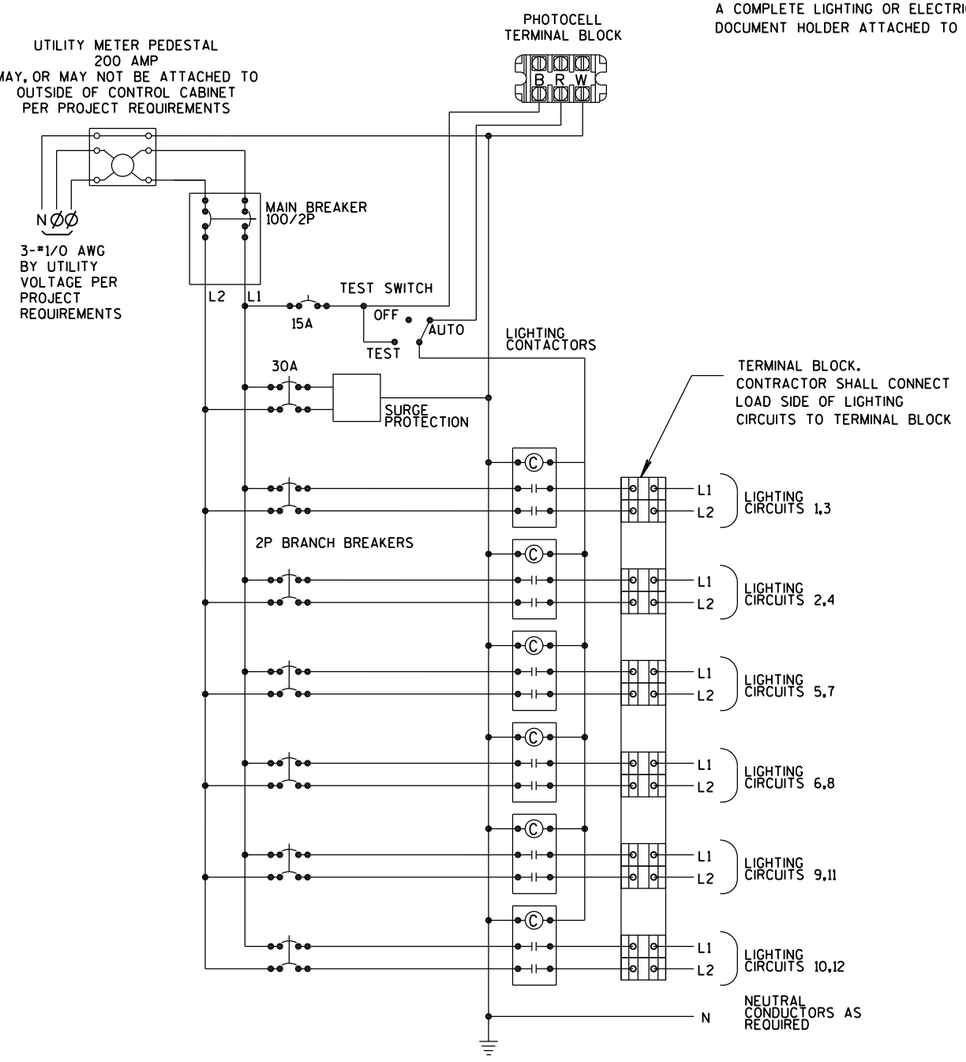


TABLE OF DIMENSIONS (INCHES)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"



CONTROL CABINET SCHEMATIC

LIGHTING CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Thomas Gonring — STATE LIGHTING ENGINEER
FHWA — NYS.

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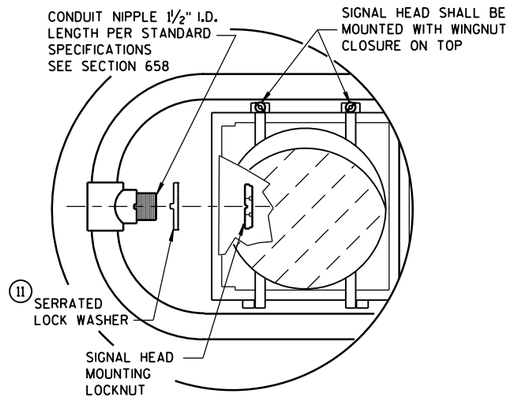
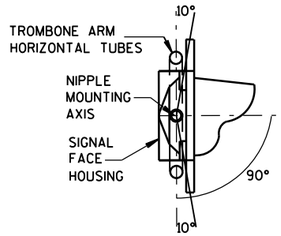


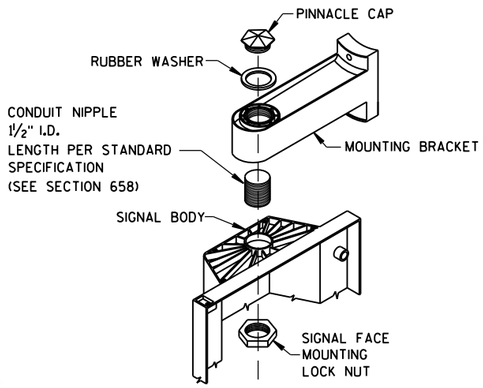
HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR



SECTION A-A

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



SIGNAL FACE MOUNTING DETAIL

(BANDED)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

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

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

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

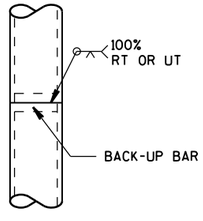
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

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

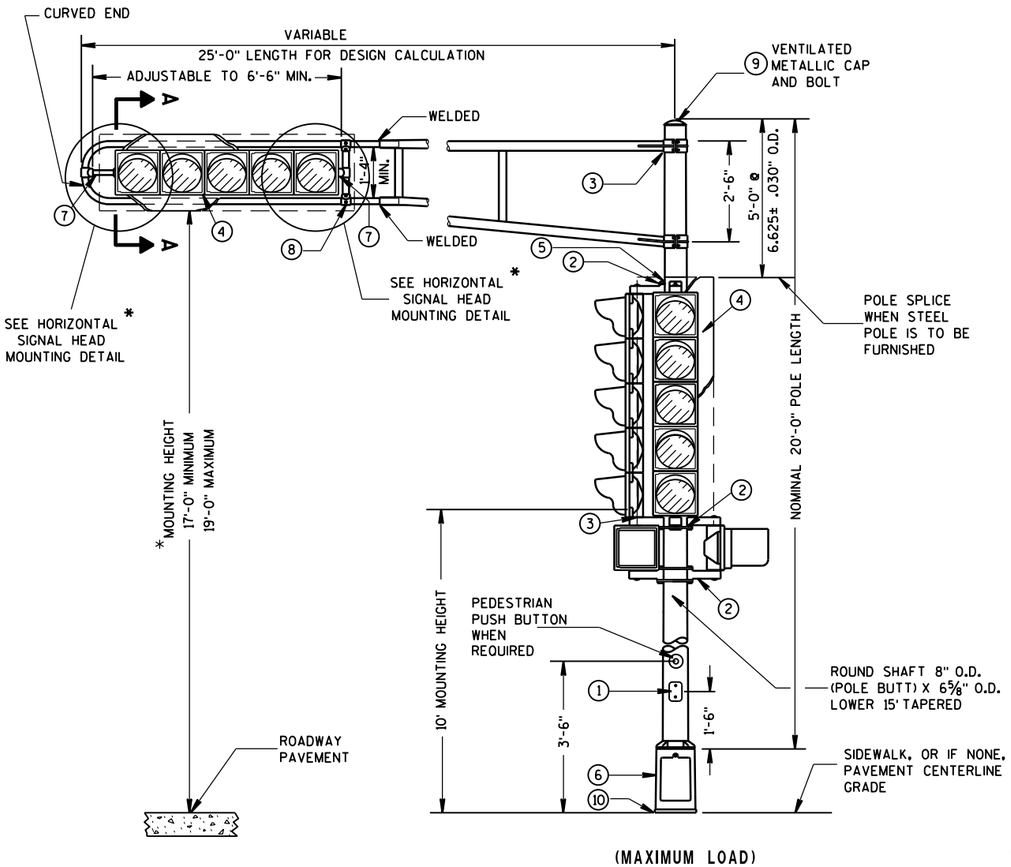
*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

FOR MANUFACTURERS USE ONLY

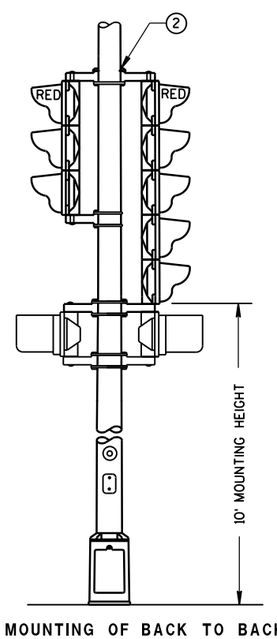
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



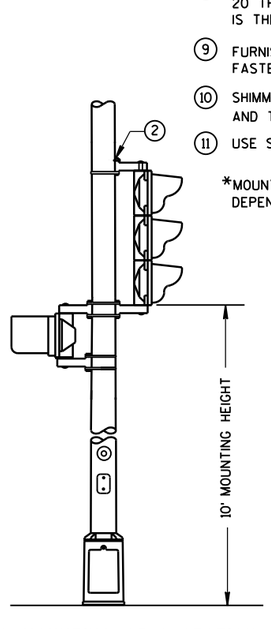
POLE SPLICE DETAIL



(MAXIMUM LOAD)



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



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 2 POLE MOUNTING CONFIGURATION

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

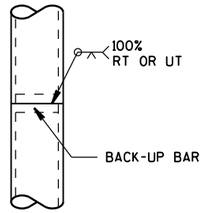
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

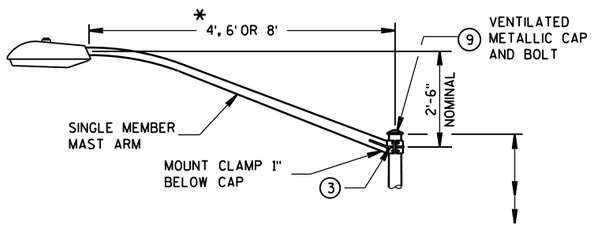
6

S.D.D. 9 E 1-12a

FOR MANUFACTURERS USE ONLY

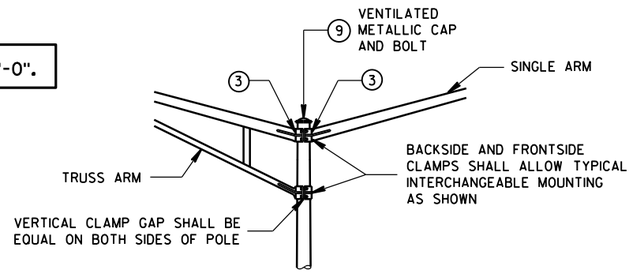
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.





POLE SPLICE DETAIL

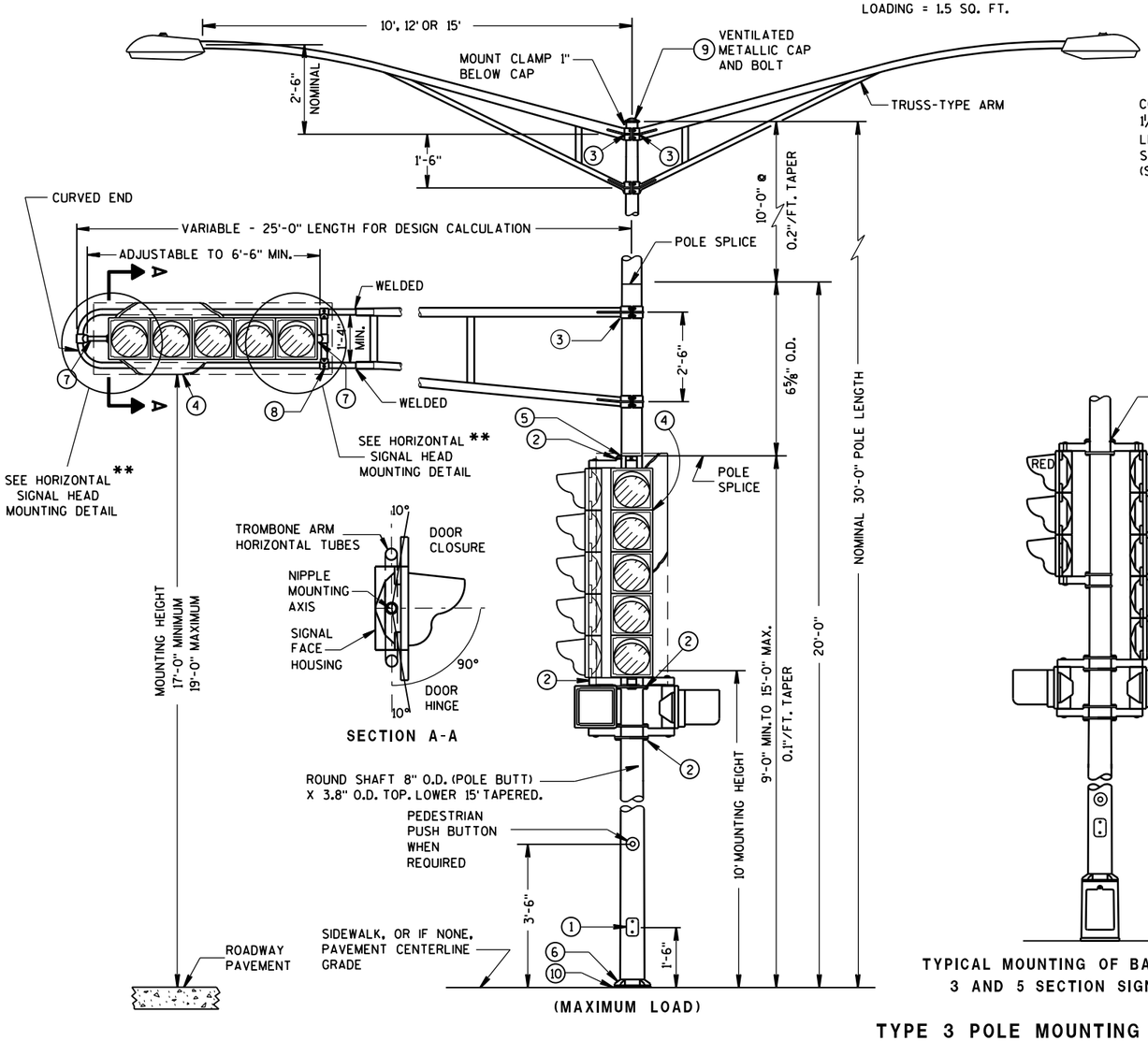
***RISE FOR 4' ARM SHALL BE 2'-0".**



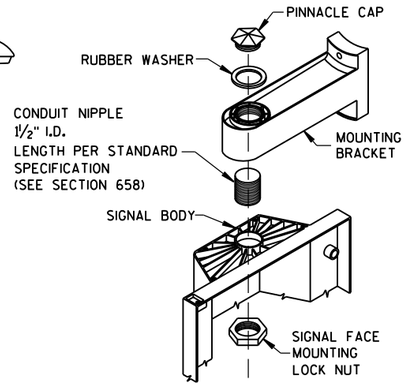
INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

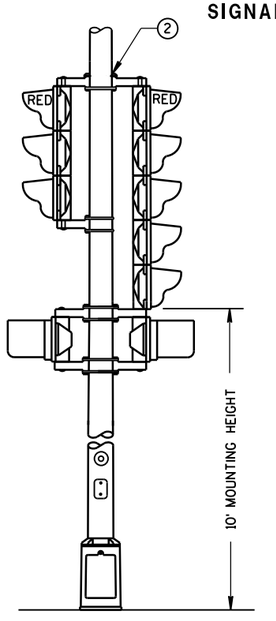
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.



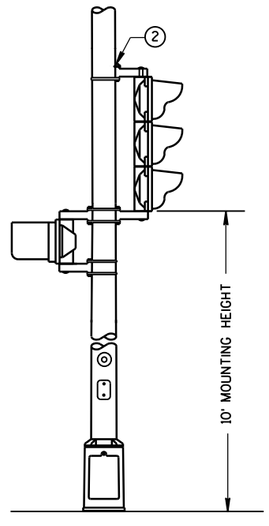
TYPE 3 POLE MOUNTING CONFIGURATION



SIGNAL FACE MOUNTING DETAIL
(BANDED)



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



TYPICAL MOUNTING OF 3 SECTION
SIGNAL FACE

GENERAL NOTES

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

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

POLES SHALL BE GALVANIZED STEEL.

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

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

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

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

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

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

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

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

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

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

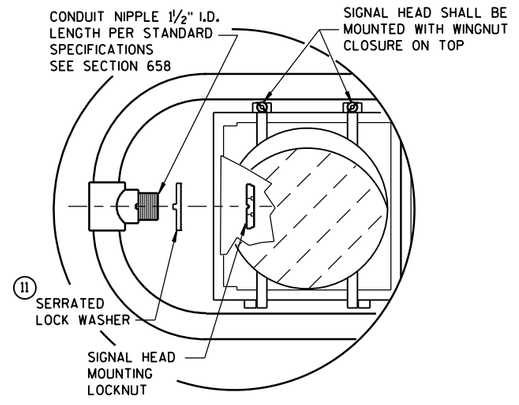
(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)

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

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

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

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



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL**

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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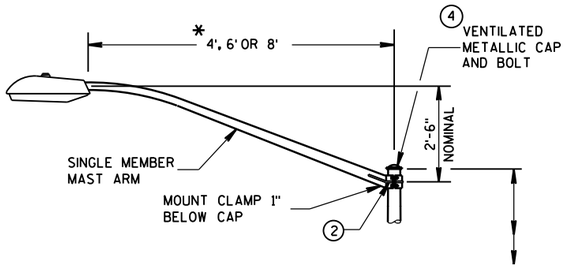
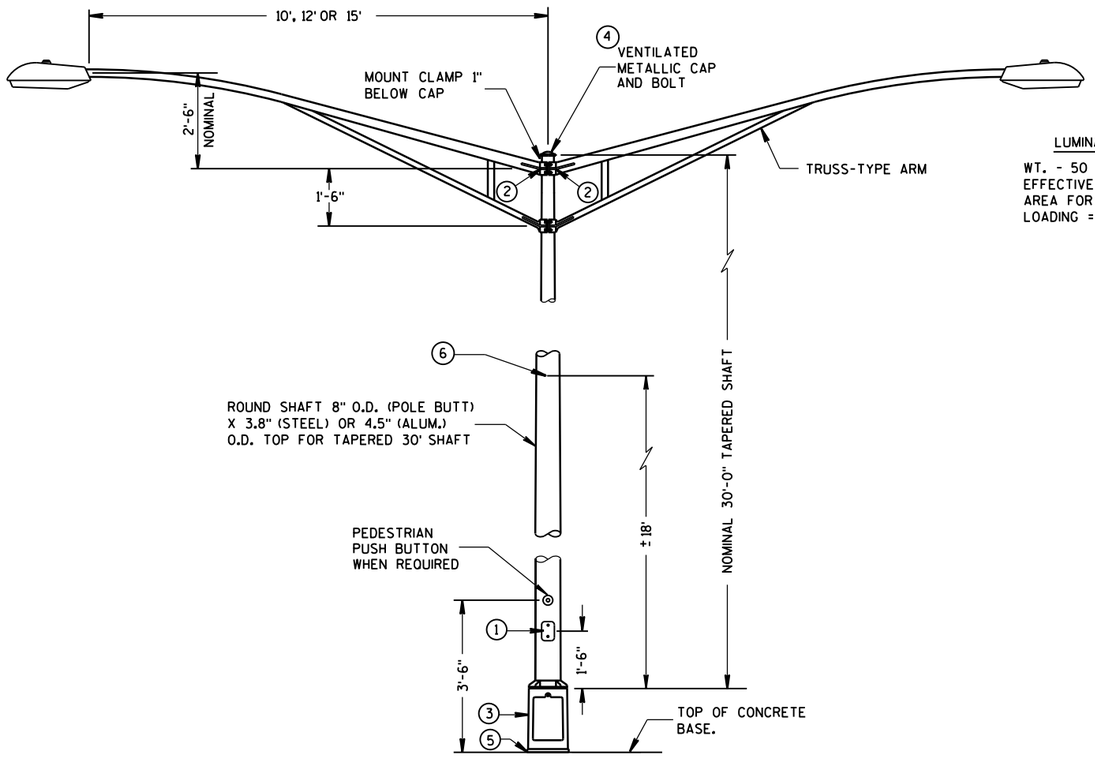
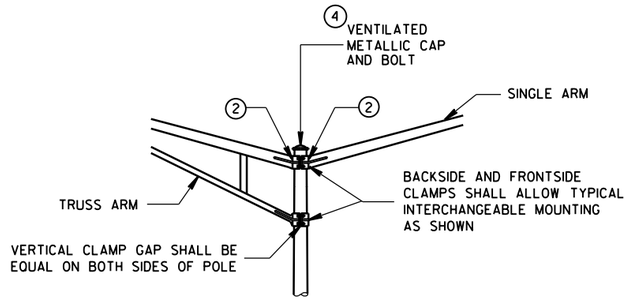
S.D.D. 9 E 1-12b

*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 1-12d

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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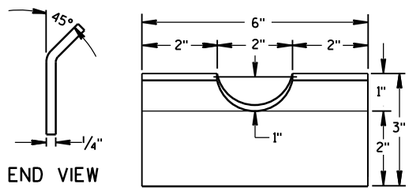
S.D.D. 9 E 1-12d

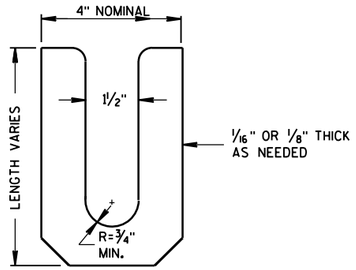


END VIEW

FRONT VIEW

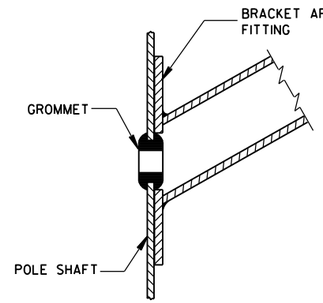
RECTANGULAR CLAMP SHIM

(4 TO A SET)

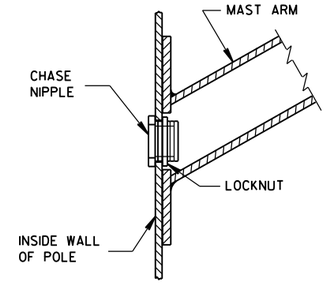


LEVELING SHIM (15)

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".

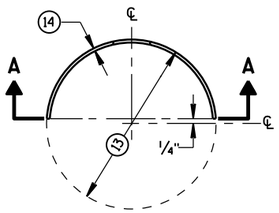
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.

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

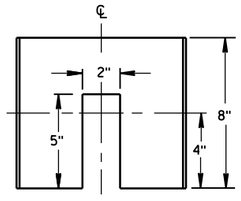
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.

(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.



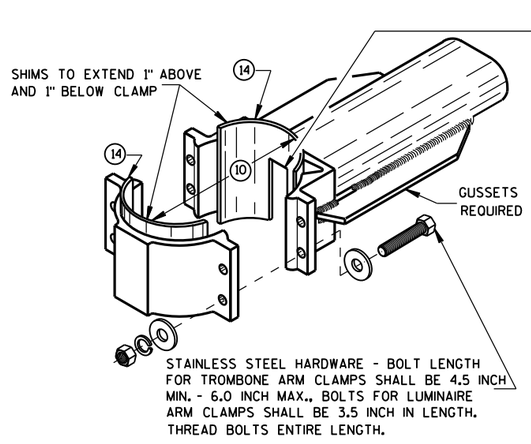
PLAN VIEW



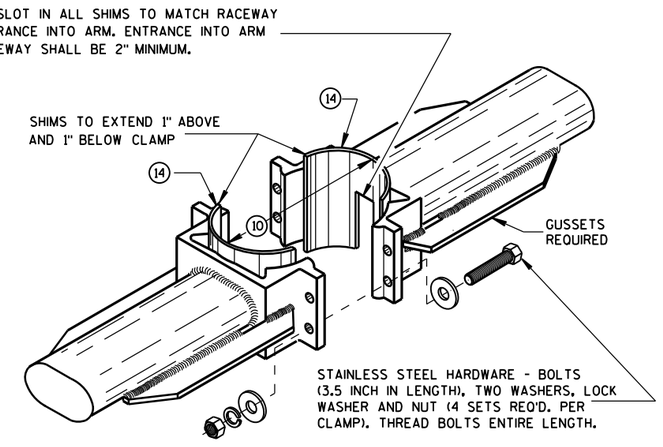
SECTION A-A

CIRCULAR CLAMP SHIM

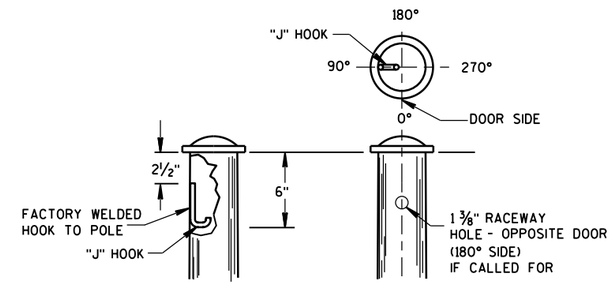
(2 TO A SET)



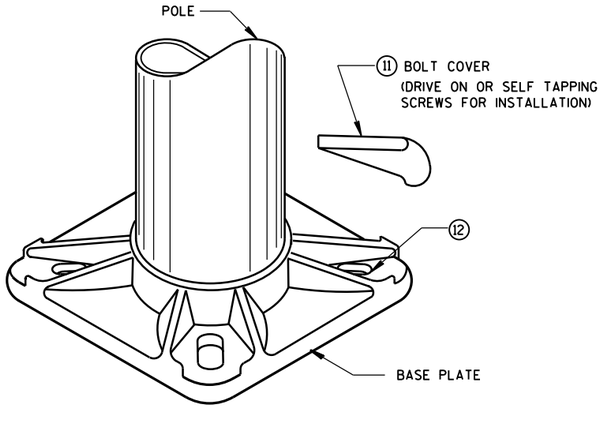
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



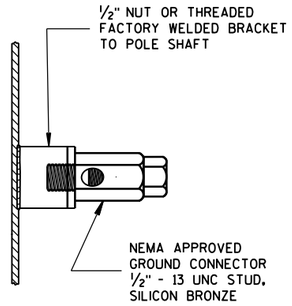
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

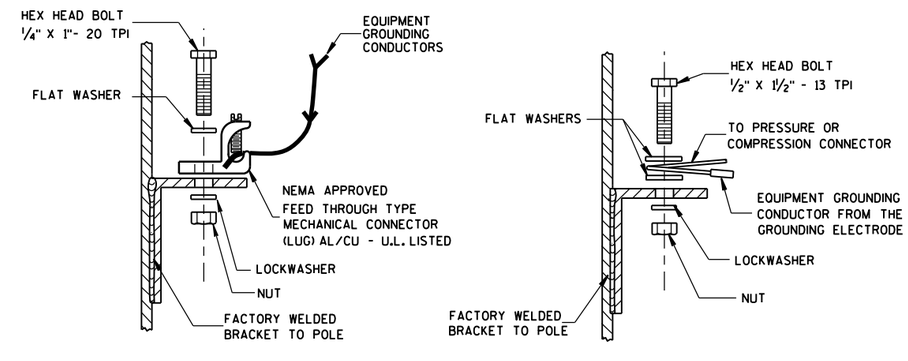


TYPICAL "J" HOOK LOCATION



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
2/7/2013 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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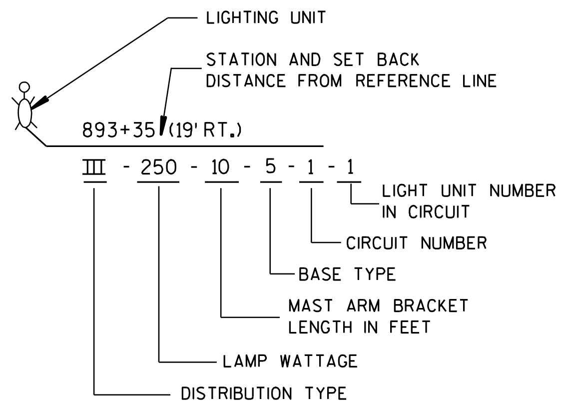
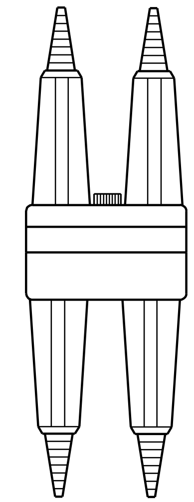
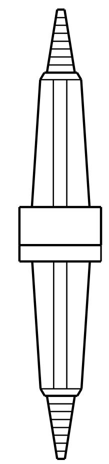
S.D.D. 9 E 1-12g



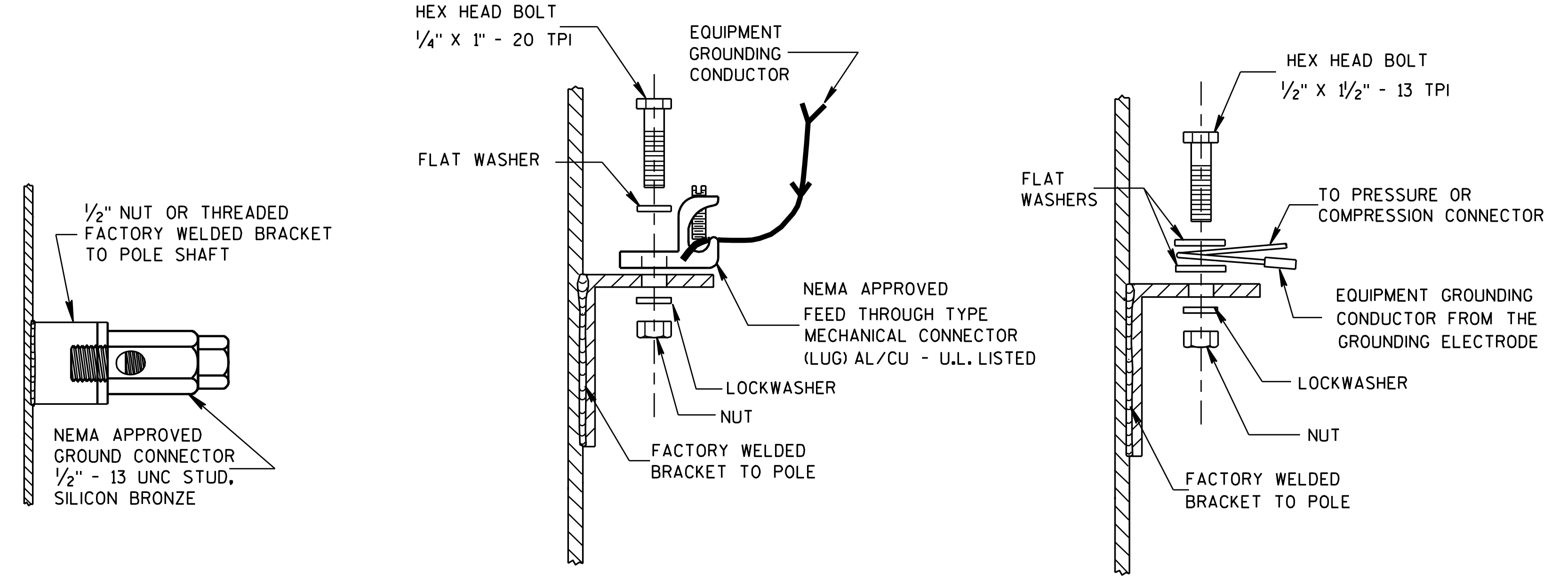
LIGHTING UNIT CODE
(TYPICAL)



DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT

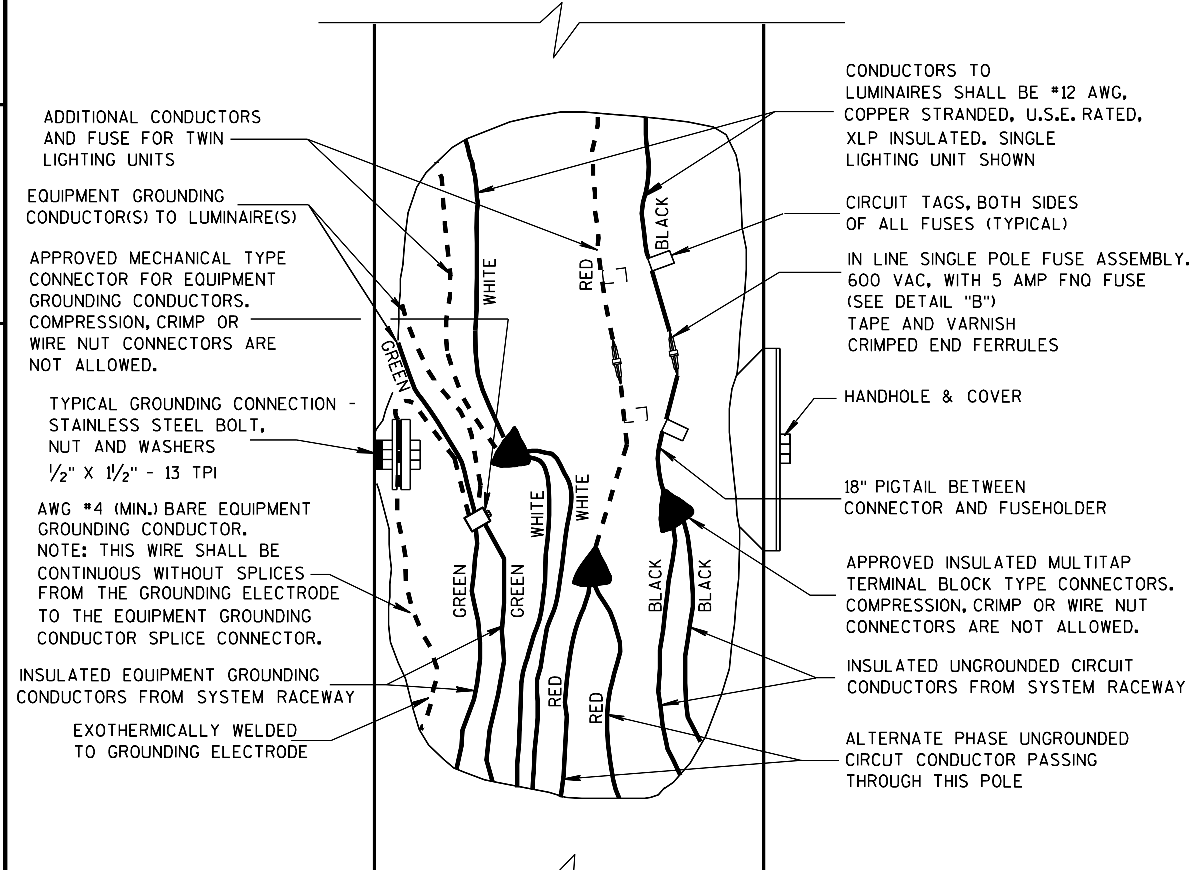


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL

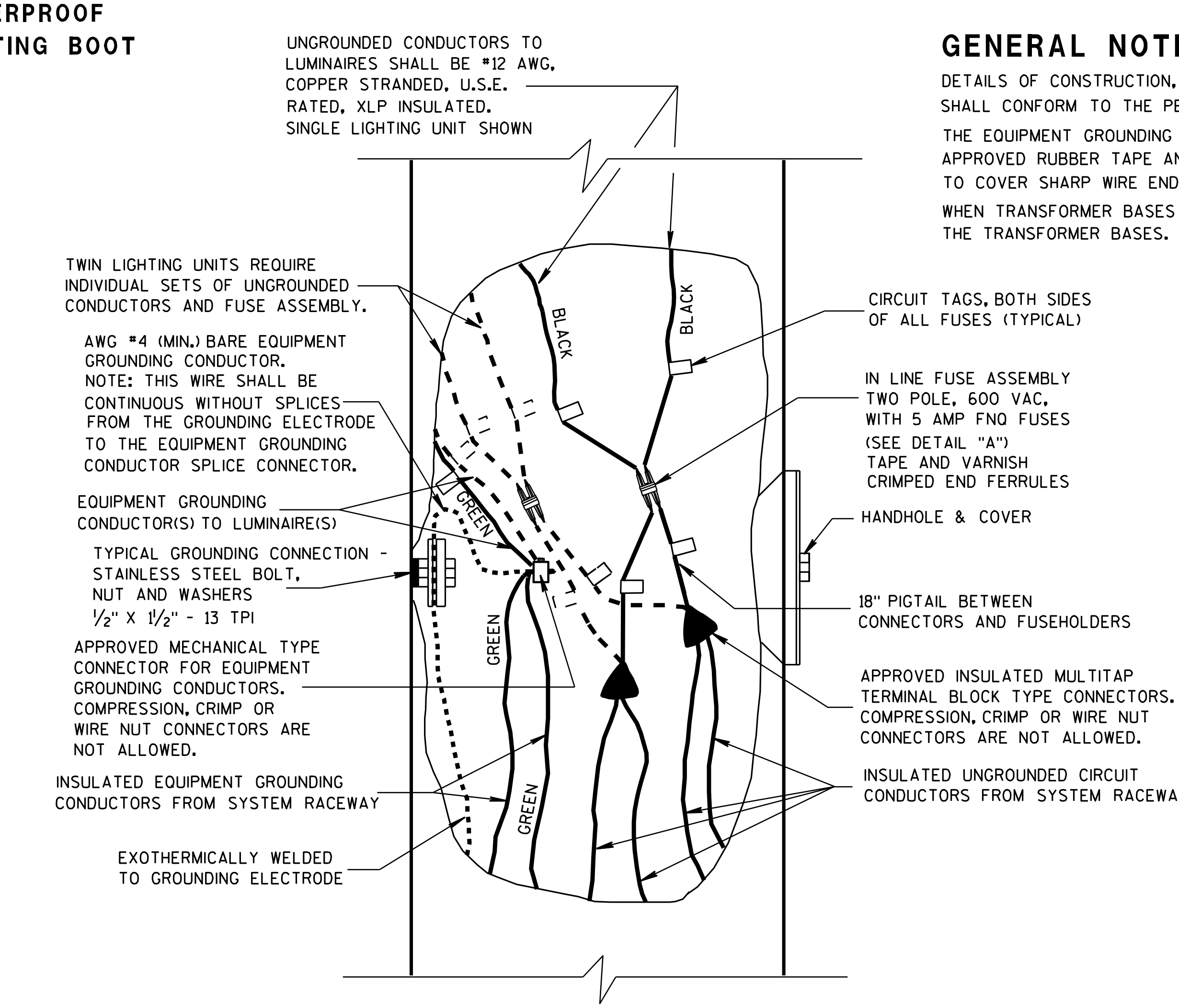
GENERAL NOTES
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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.



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

NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 /S/ Thomas J. Gearing
DATE STATE ELECTRICAL ENGINEER HWYS
FHWA

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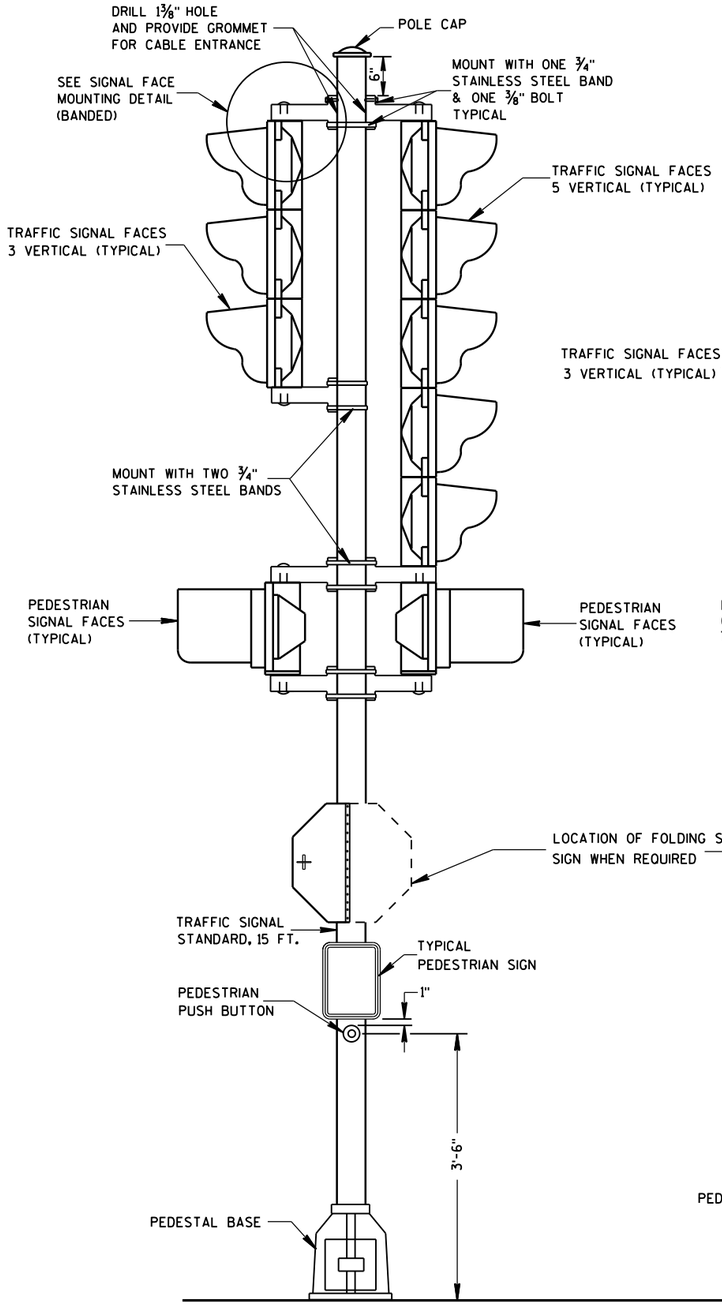
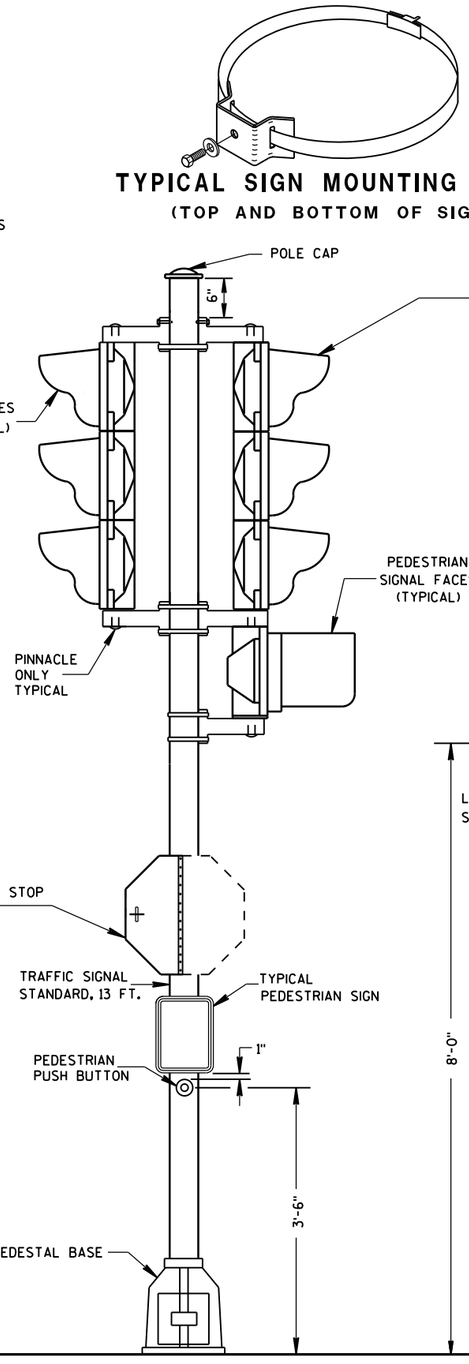
S.D.D. 9 E 3-4

S.D.D. 9 E 3-4

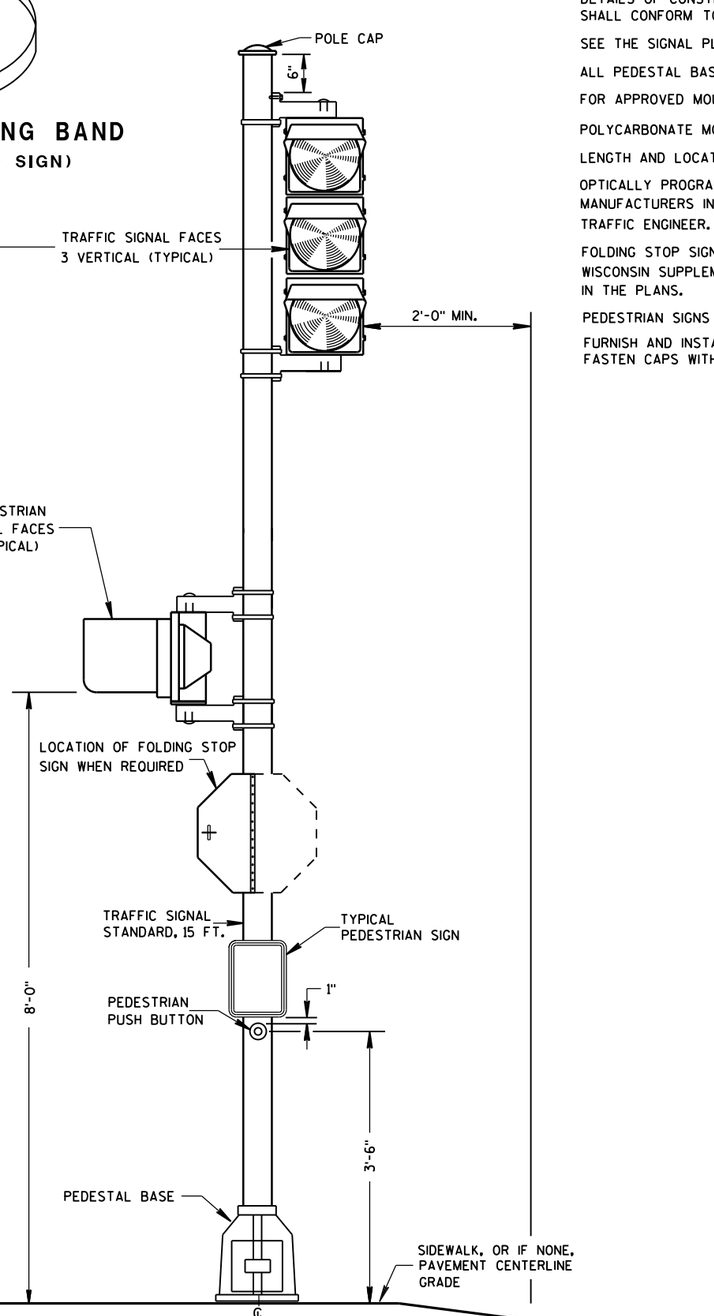


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



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

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

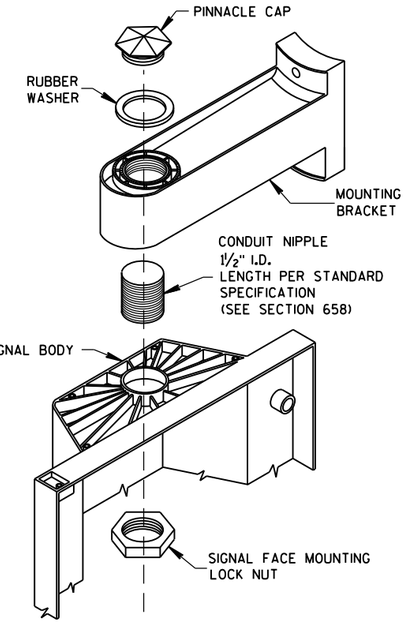
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

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

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

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

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



SIGNAL FACE MOUNTING DETAIL
(BANDED)

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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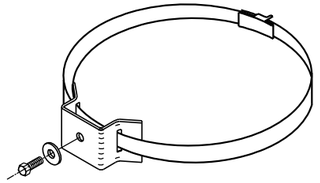
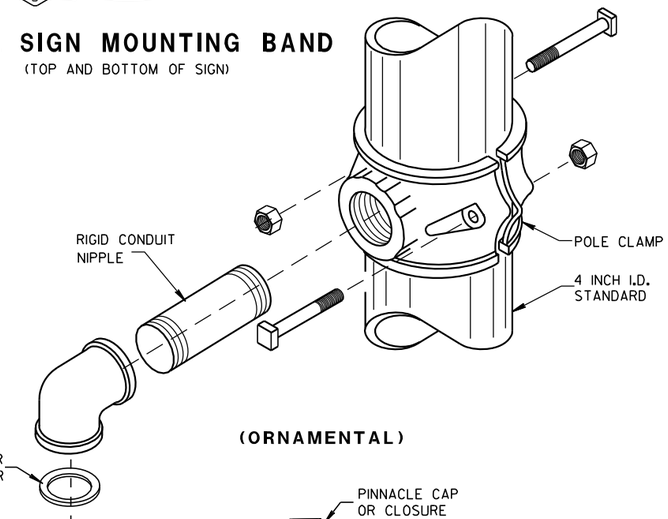


TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



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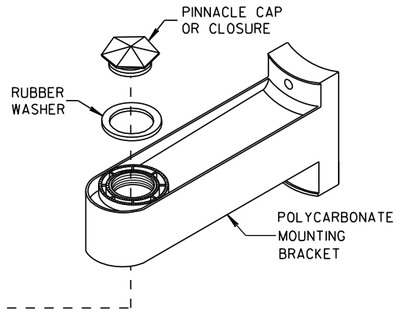

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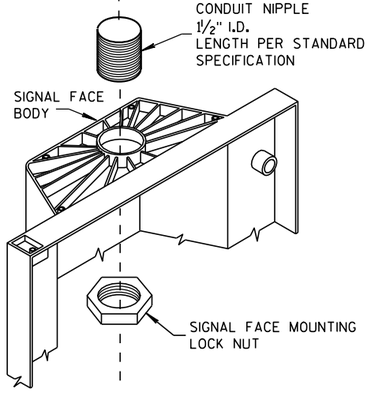
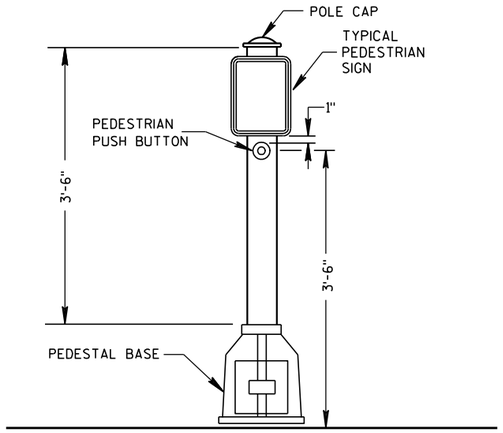


SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

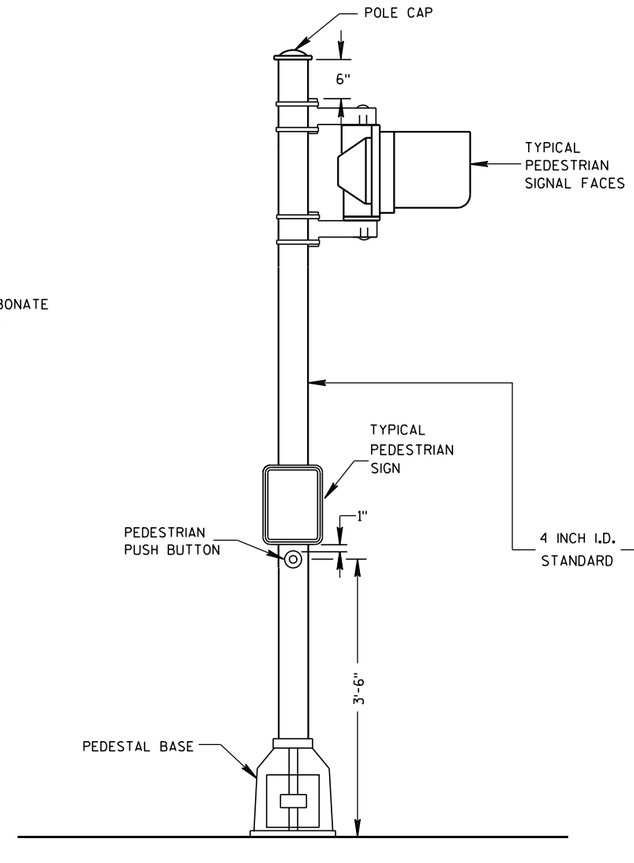
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

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

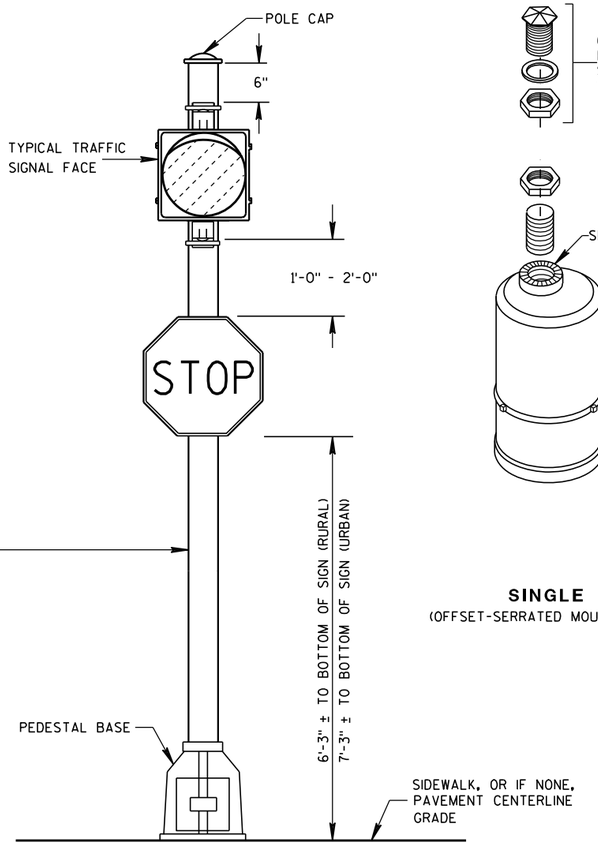
MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

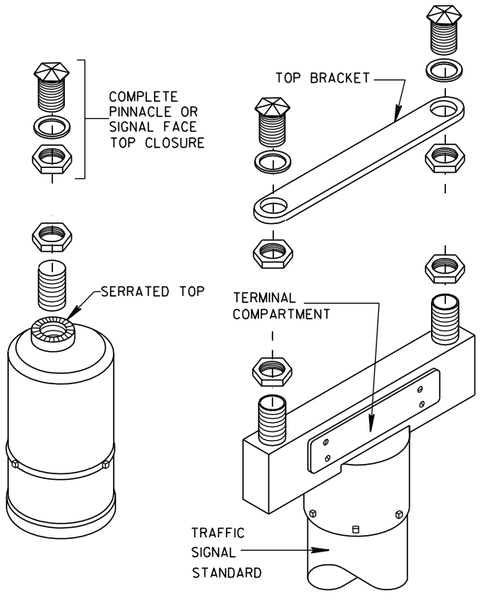
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



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



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



SINGLE
(OFFSET-SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/11/10 — DATE

/S/ John Corbin — STATE ELECTRICAL ENGI

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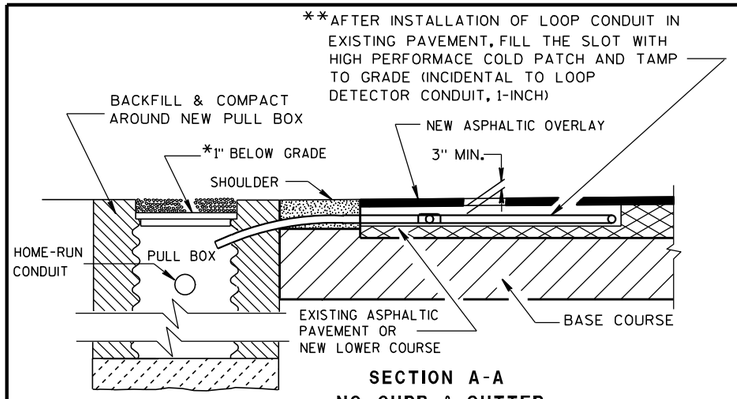
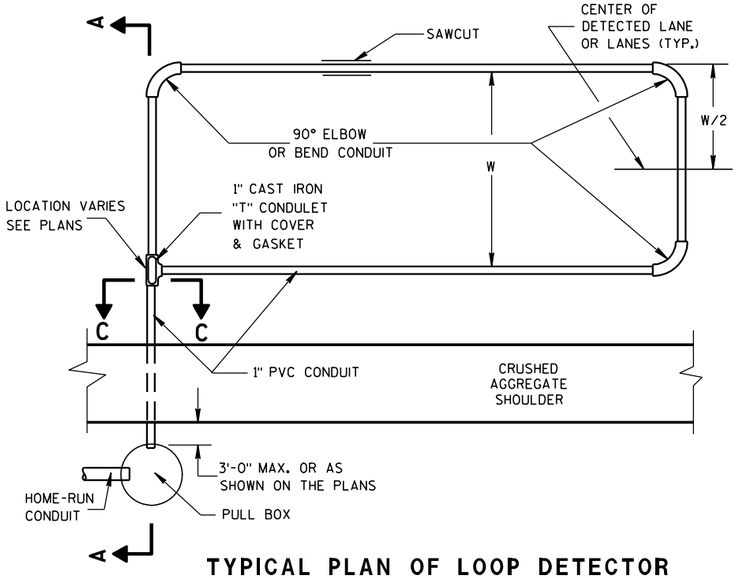


SECTION A-A

NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY ½ INCH. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

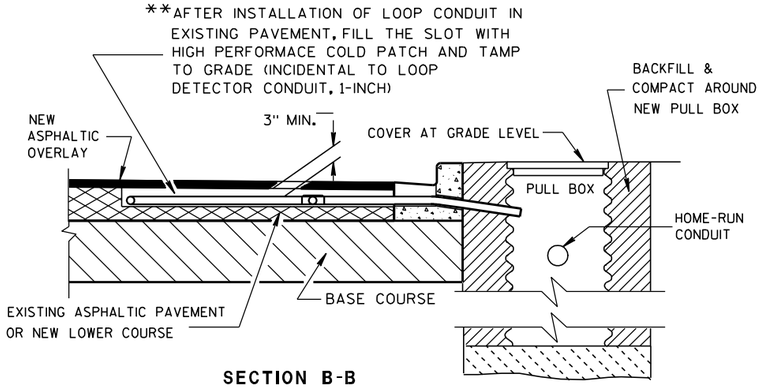
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

DRIVE A 1½" MAX. PK NAIL INTO THE NEW ASPHALTIC OVERLAY AND ON TOP OF THE CONDULET AFTER THE NEW ASPHALTIC OVERLAY IS INSTALLED, IF REQUIRED BY THE DISTRICT TRAFFIC SECTION.

** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/ PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

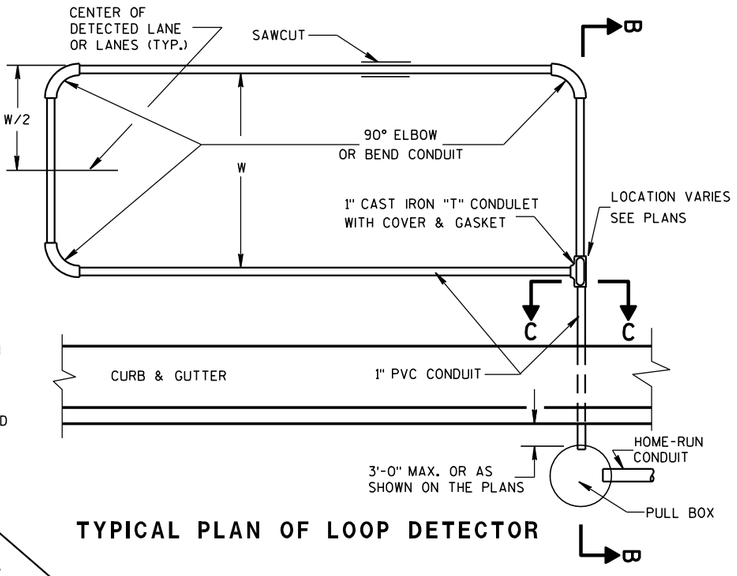
IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN APPROVAL BY THE PROJECT ENGINEER.



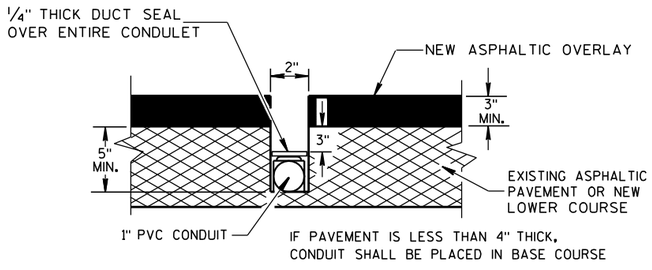
SECTION B-B

CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



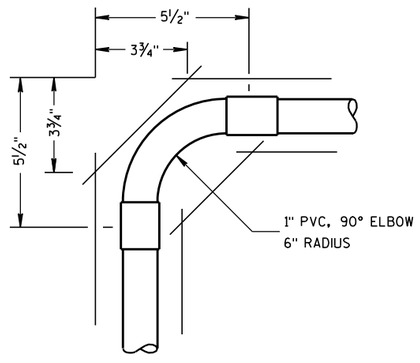
TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW

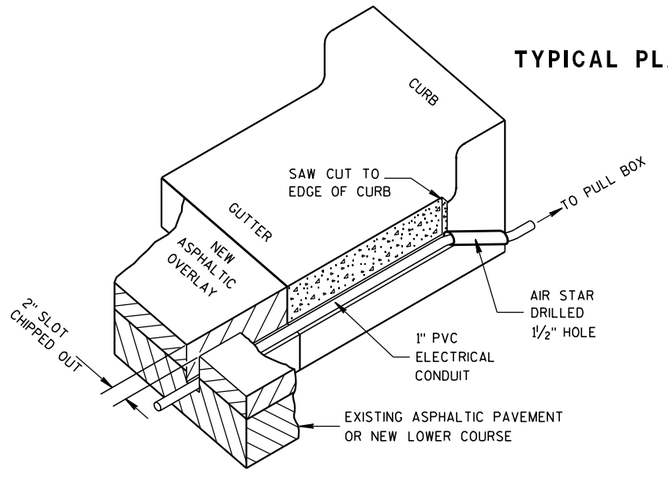
SECTION C-C

LOOP DETECTOR SLOT DETAIL



TOP VIEW

CORNER SAW SLOT DETAIL



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/7/06 DATE
/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGI 106 HWYS
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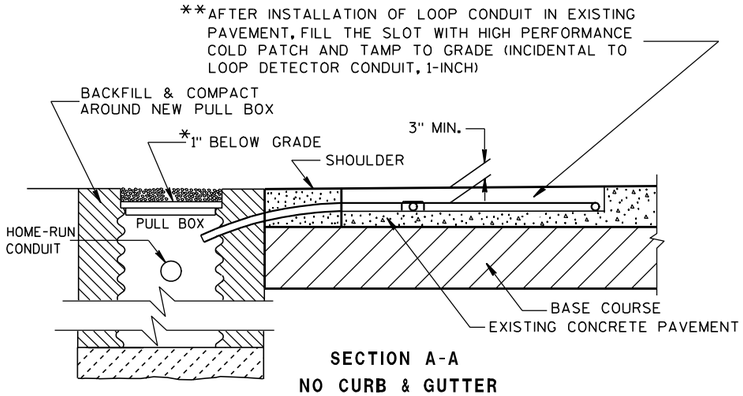
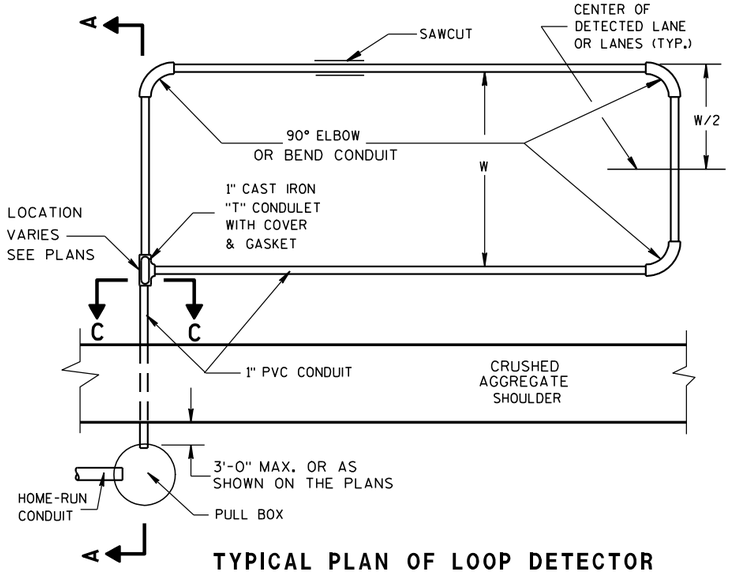


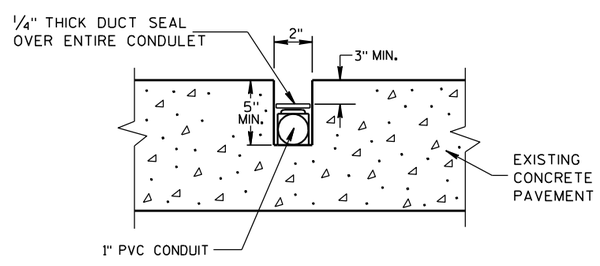
SECTION A-A
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW
SECTION C-C

LOOP DETECTOR SLOT DETAIL

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISITANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY 1/2 INCH.

ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

ANTI-SIEZE LUBRICATING MATERIAL SHALL BE USED ON ALL THREADS OF THREADED ASSEMBLIES BEFORE INSTALLATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

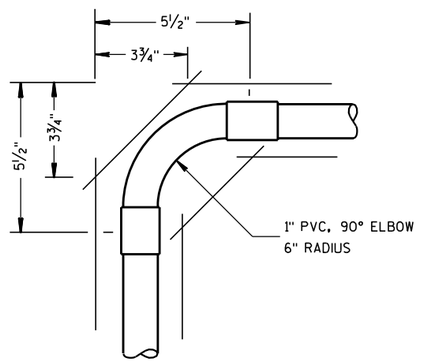
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

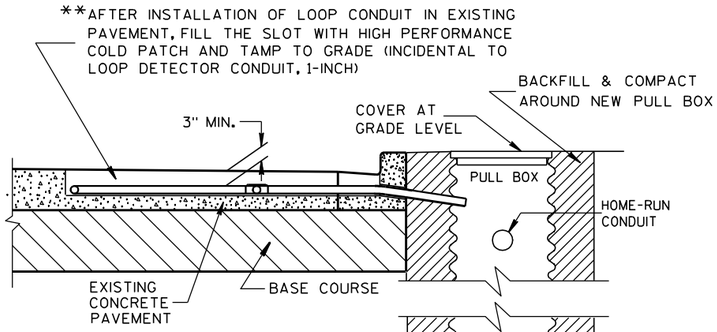
** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/ PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN APPROVAL BY THE PROJECT ENGINEER.



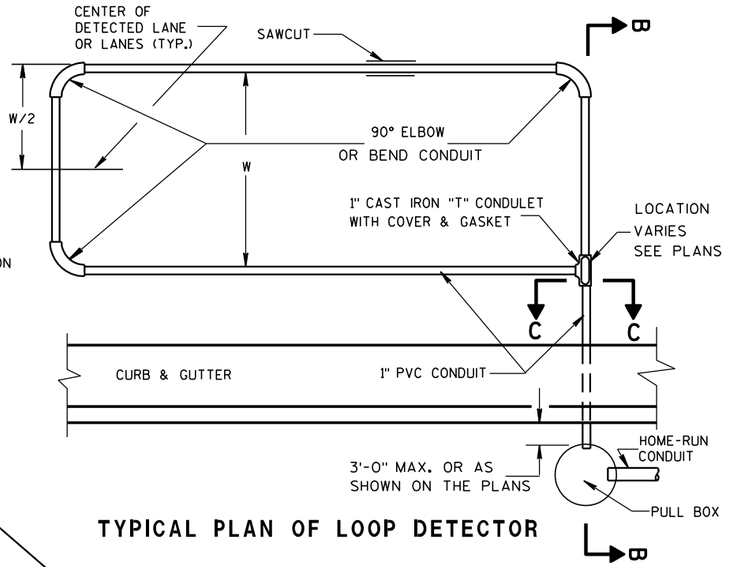
TOP VIEW

CORNER SAW SLOT DETAIL

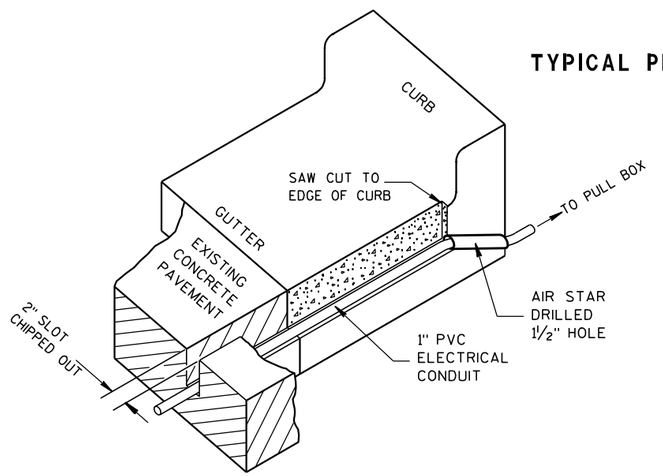


SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/7/06 DATE
/S/ Balu Ananthanarayanan STATE ELECTRICAL ENGI
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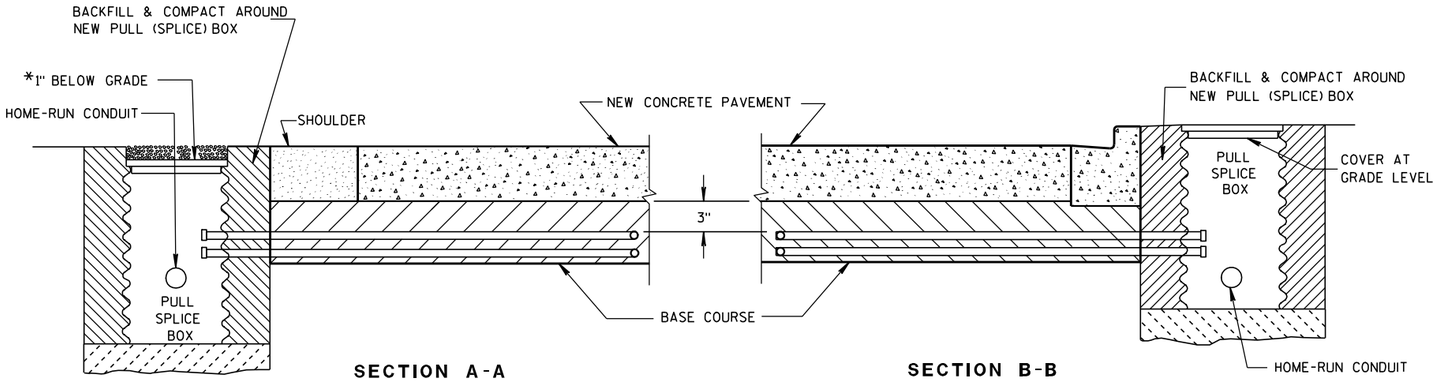


SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

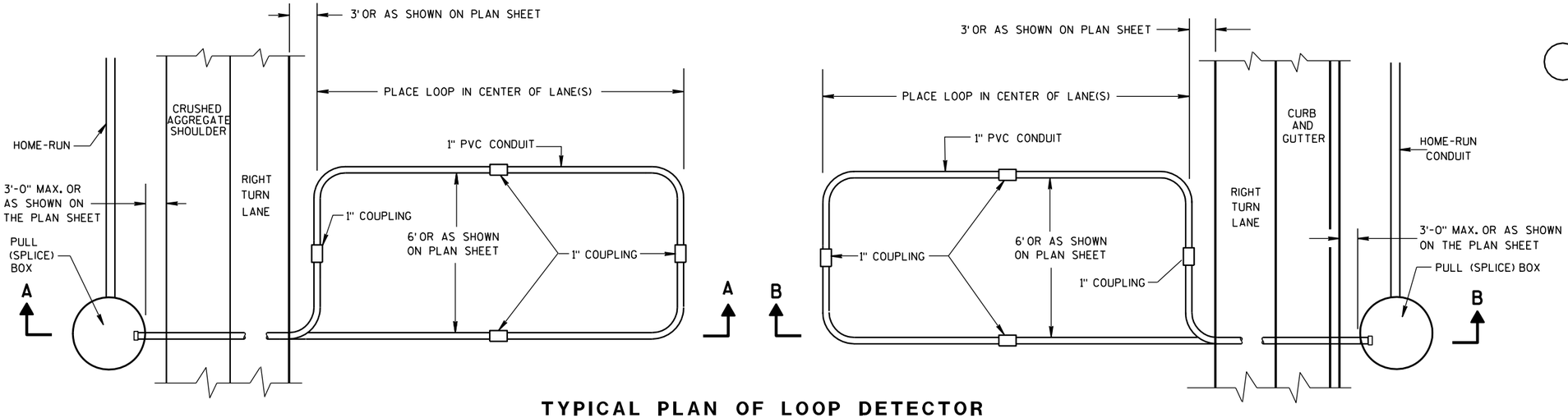
THE #12 AWG. LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

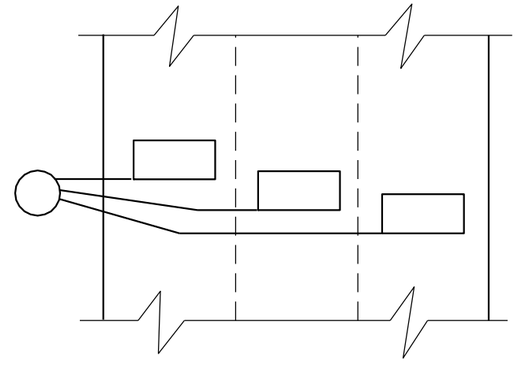
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 24" PULL (SPLICE) BOX



MULTI-LANE INSTALLATION

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/7/06 DATE
/S/ Balu Anantharaman
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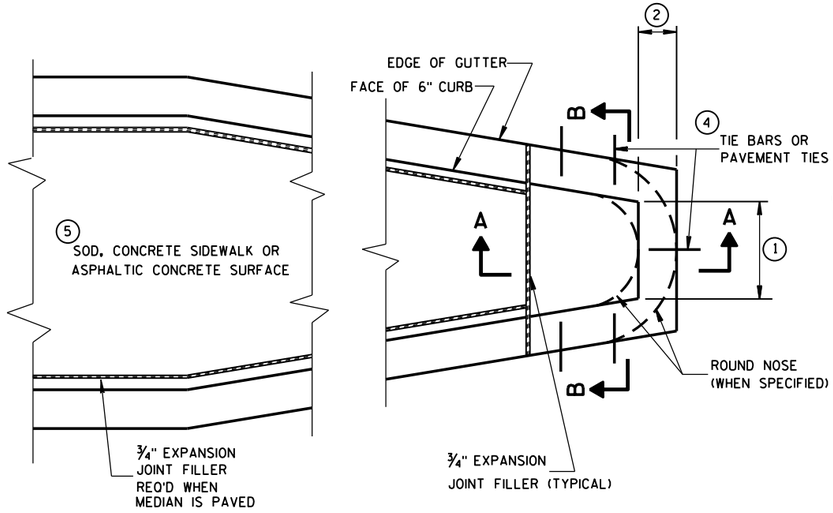
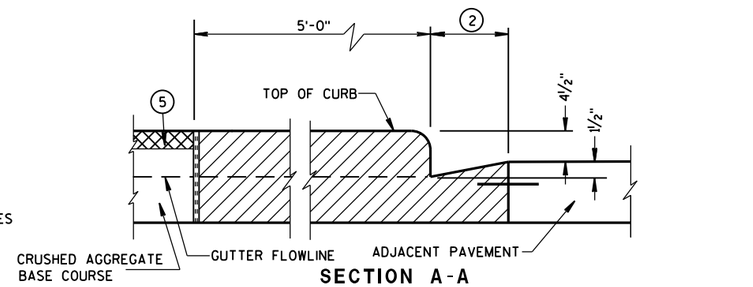




CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

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

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

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

(1) NEW OR EXISTING CONCRETE PAVEMENT.

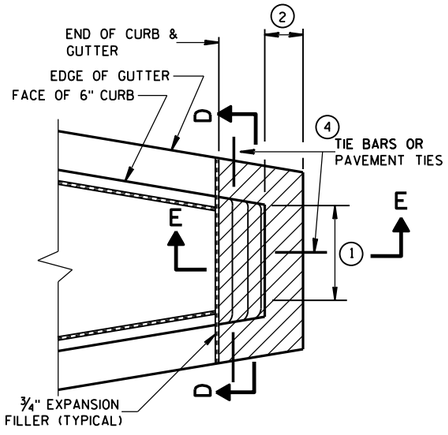
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

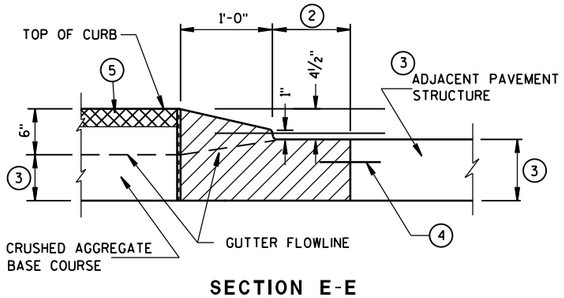
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

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

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

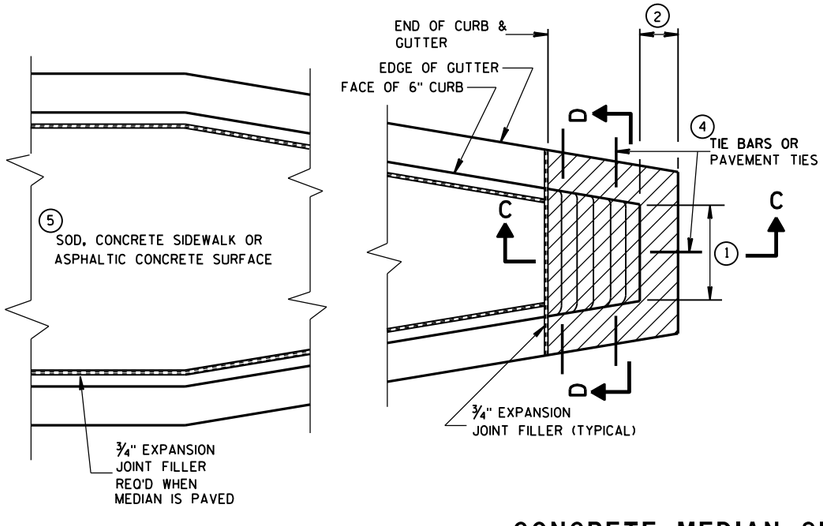
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

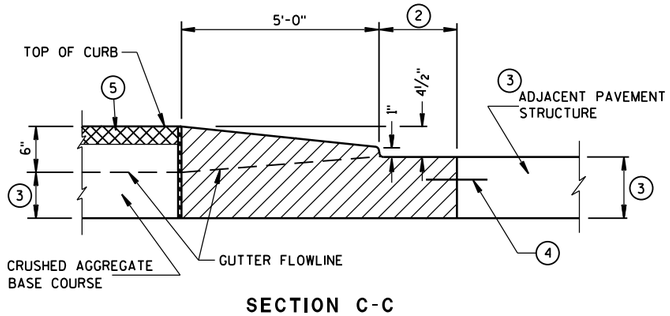




SECTION E-E

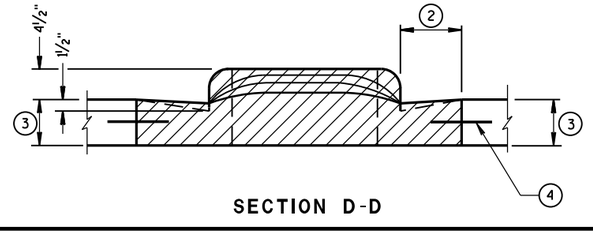
CONCRETE MEDIAN SLOPED NOSE TYPE 2





SECTION C-C

CONCRETE MEDIAN SLOPED NOSE TYPE 1



SECTION D-D

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/8/2006
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS D ENGINEER
FHWA

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S.D.D. 11 B 2-2

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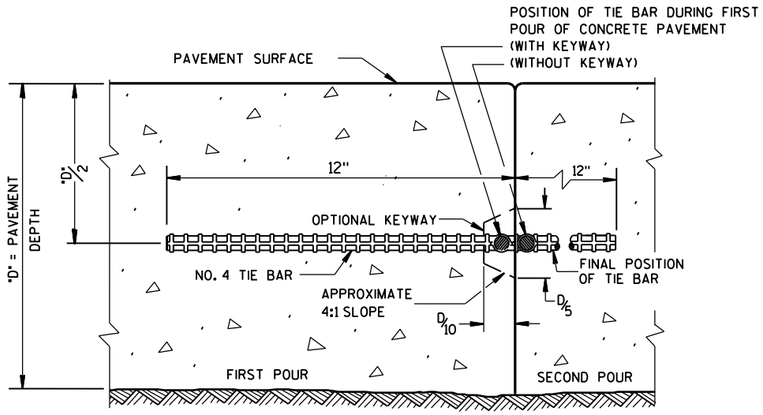
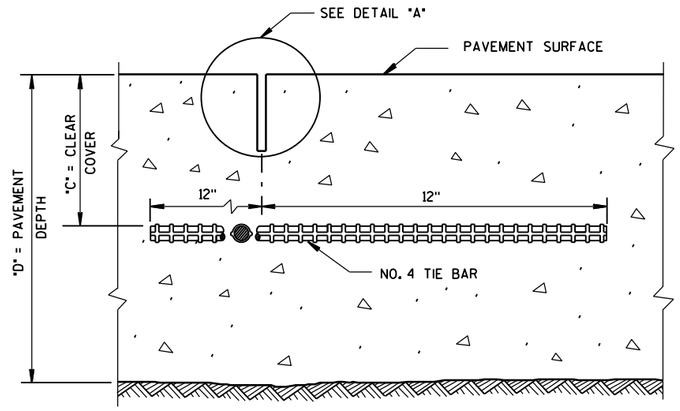
S.D.D. 11 B 2-2



CONSTRUCTION JOINT



SAWED JOINT

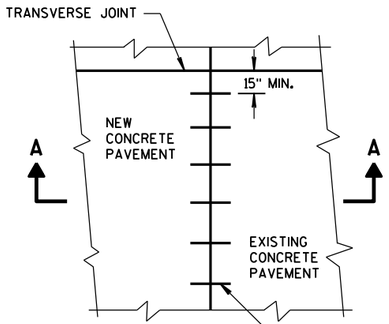
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

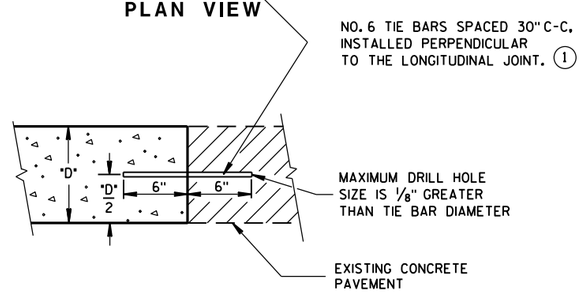
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

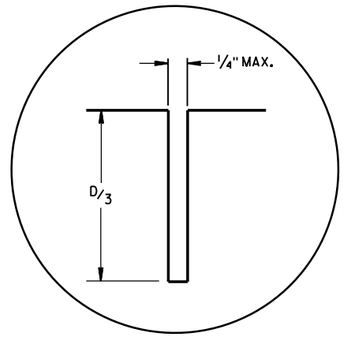


PLAN VIEW



SECTION A-A

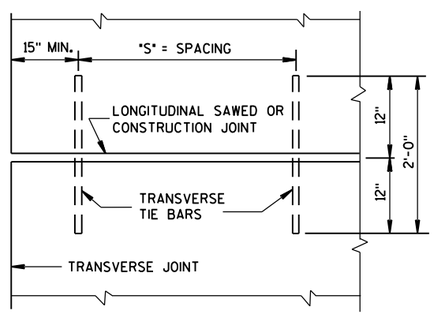
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"

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
5-3-2013 DATE
/S/ Deb Bischoff PAVEMENT POLICY & DE ...NEER
FHWA

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S.D.D. 13 C 1-16

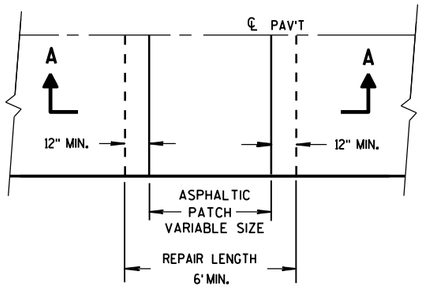
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

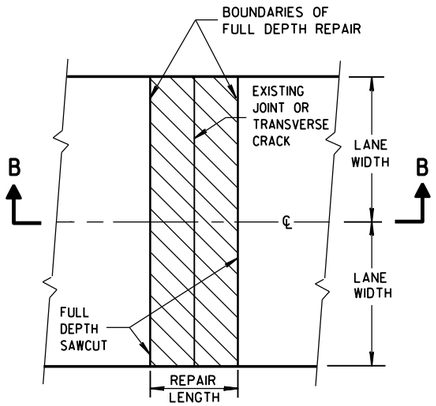
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

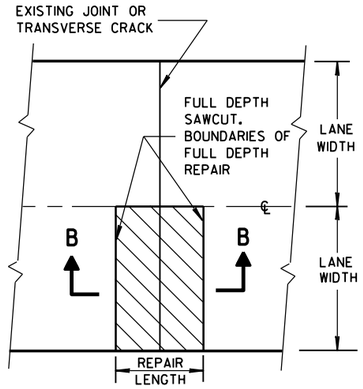
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



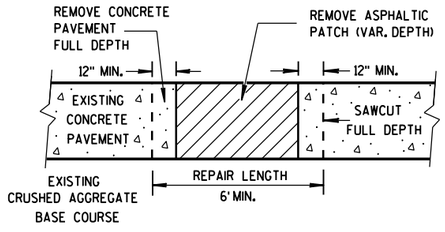
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

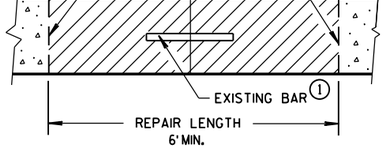
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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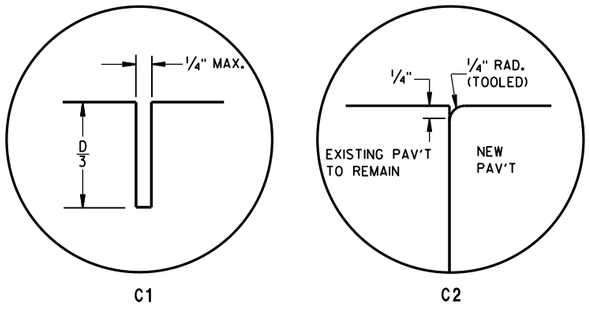
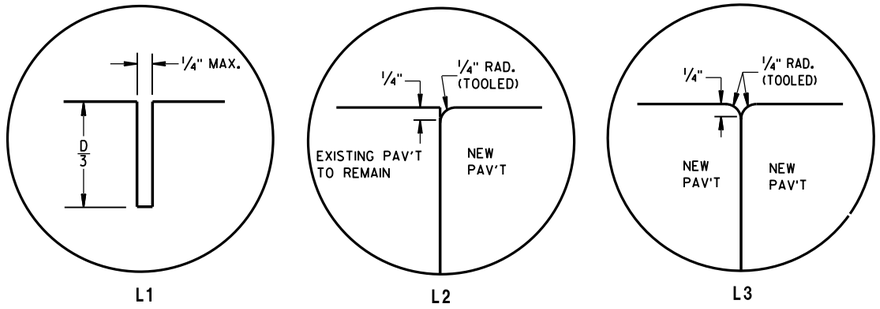


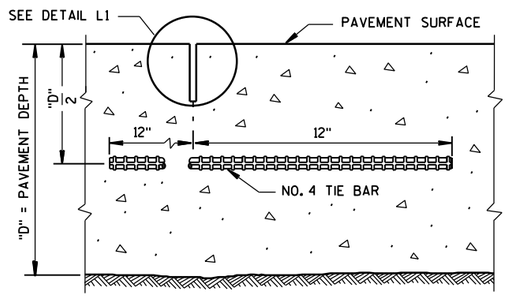
TRANSVERSE JOINTS

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"



LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

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

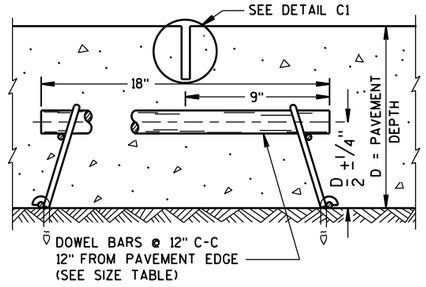
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

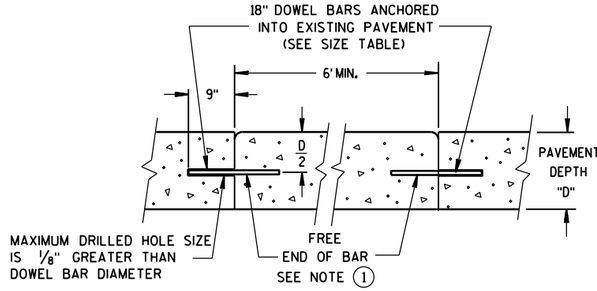
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

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

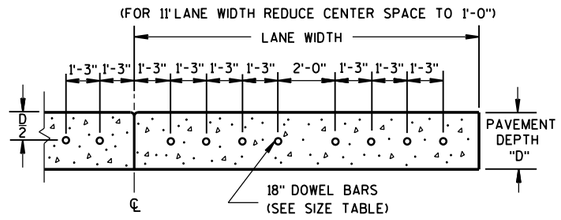


SECTION F-F

CONTRACTION JOINT



SECTION D-D

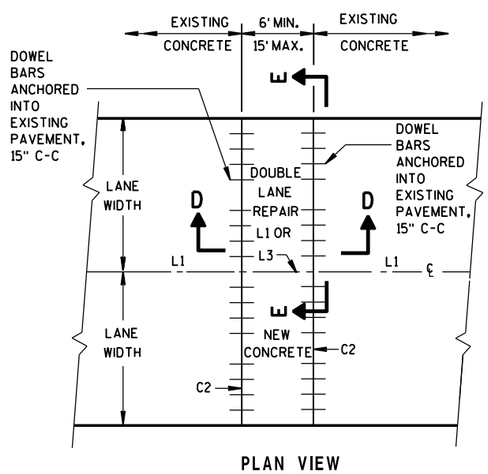


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

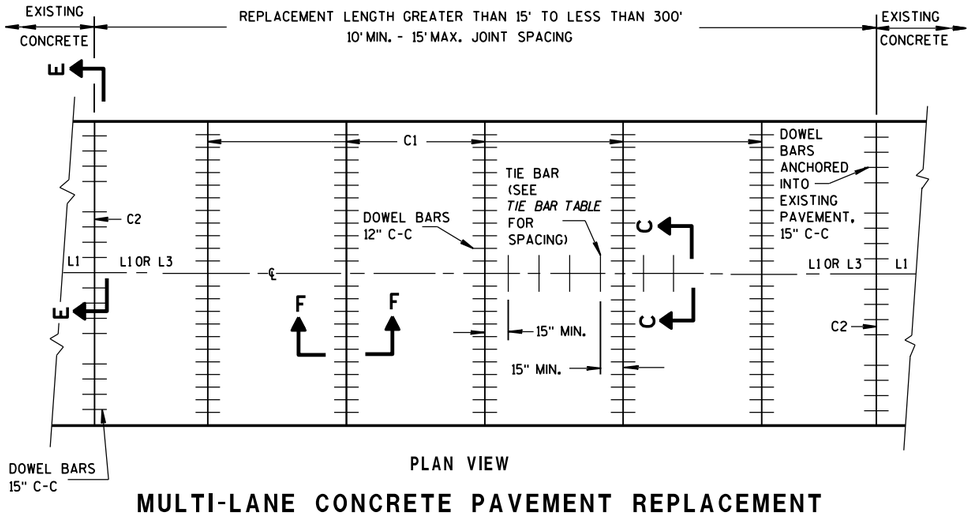
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6",6 1/2"	NONE	12'
7",7 1/2"	1"	14'
8",8 1/2"	1 1/4"	15'
9",9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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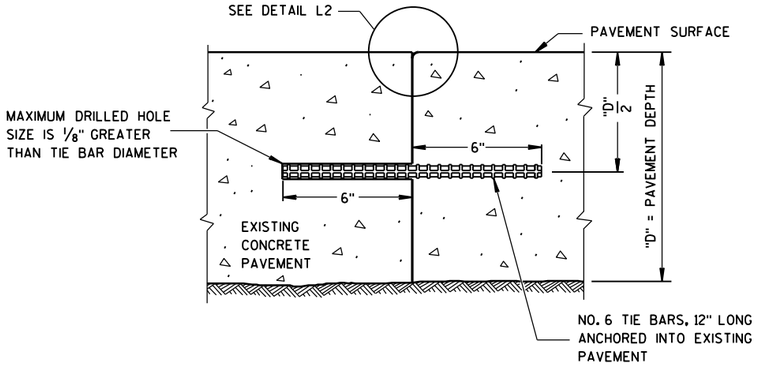
S.D.D. 13 C 9-11b



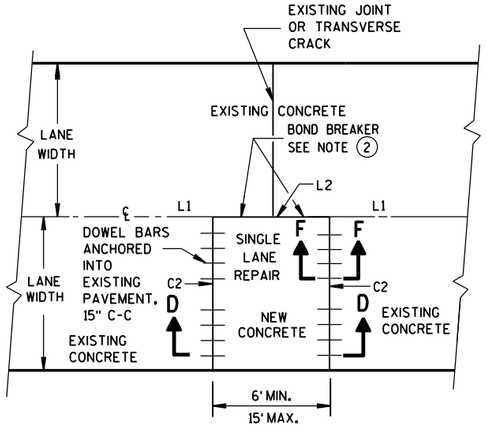
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

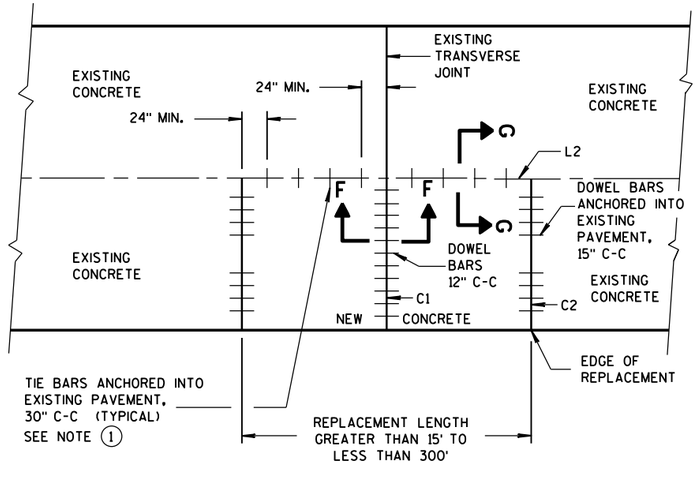
(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

(2) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12-2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE
FHWA

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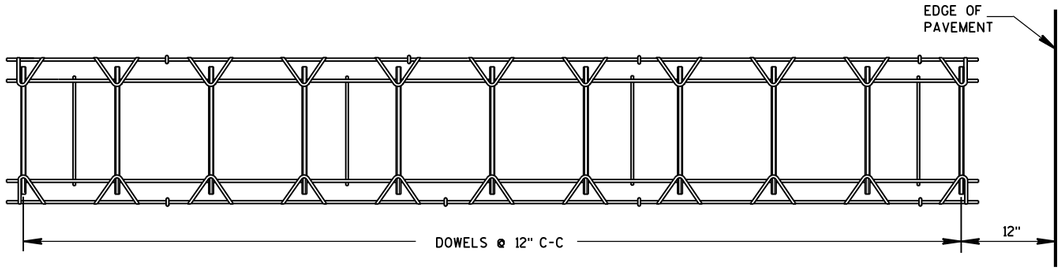
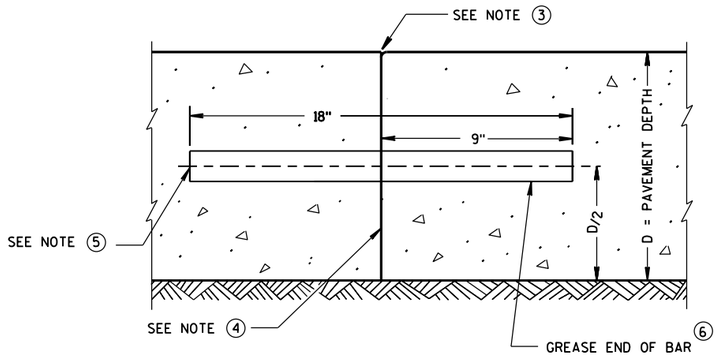
S.D.D. 13 C 9-11c



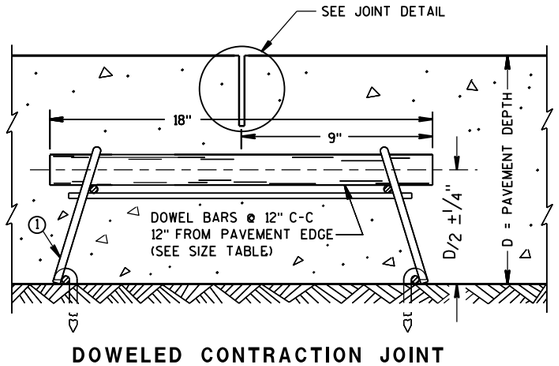
PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



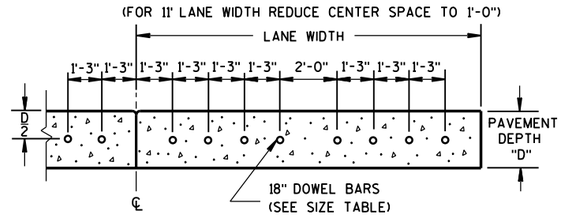
TRANSVERSE CONSTRUCTION JOINT



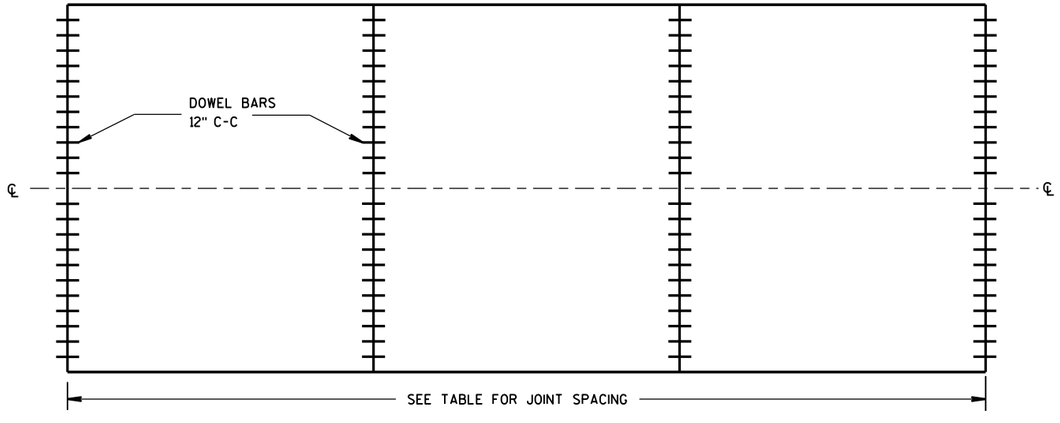
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

CONSTRUCTION JOINTS

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

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

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

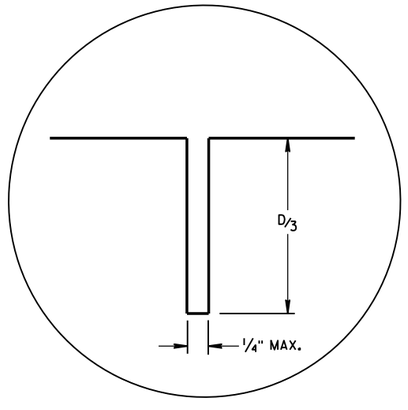
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

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

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

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

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

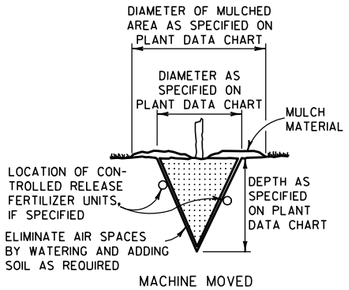
URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

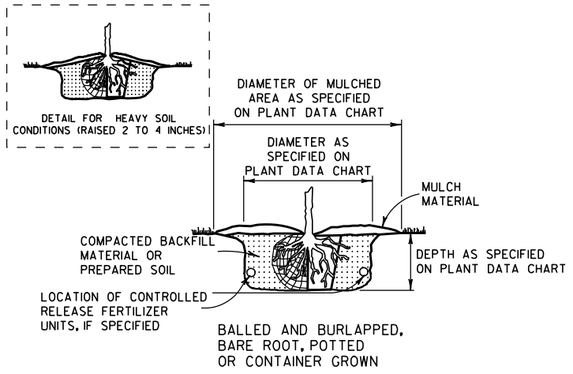
APPROVED
5/3/2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER
FHWA

6

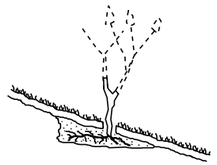
S.D.D. 13 C 13-8



MACHINE MOVED

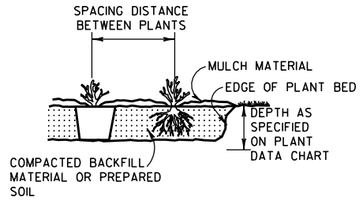


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



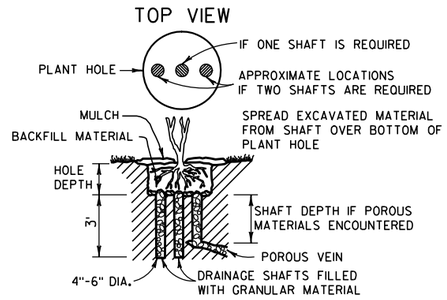
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

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



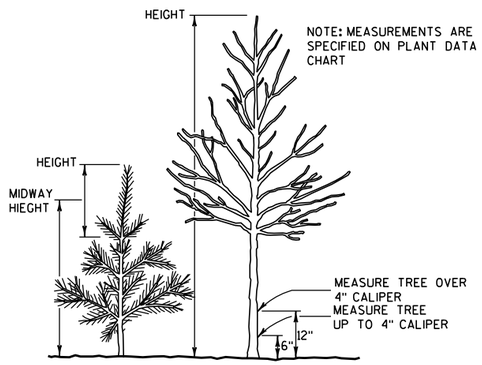
PREPARED BED (BARE ROOT AND POTTED)

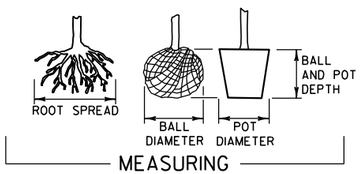
PLANTING



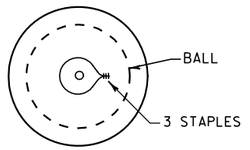
NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

DRAINING

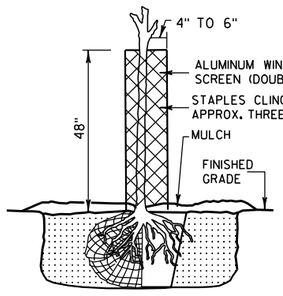




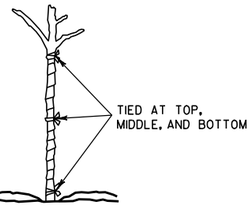
MEASURING



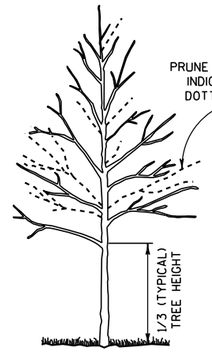
TOP VIEW



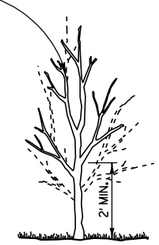
RODENT PROTECTION



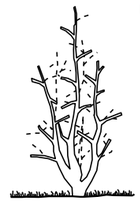
WRAPPING



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



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

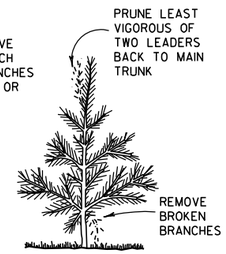


MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

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

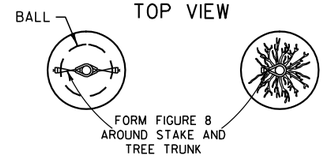
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

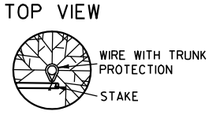
SUMAC

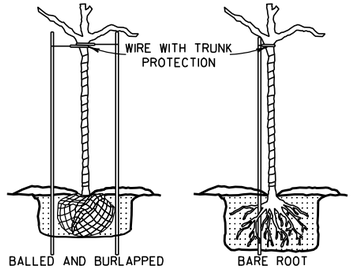


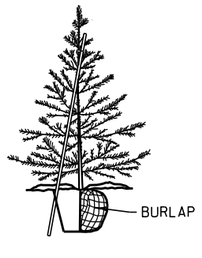
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

PRUNING



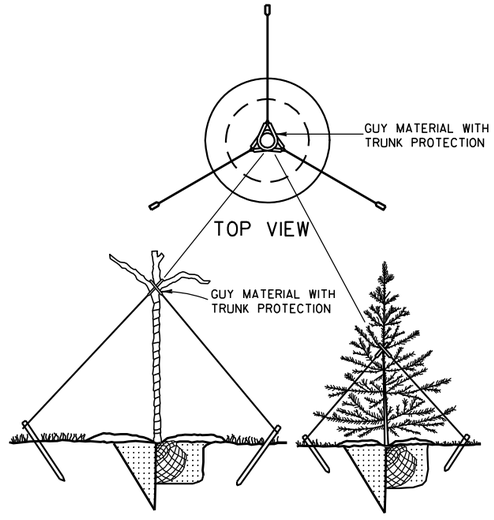






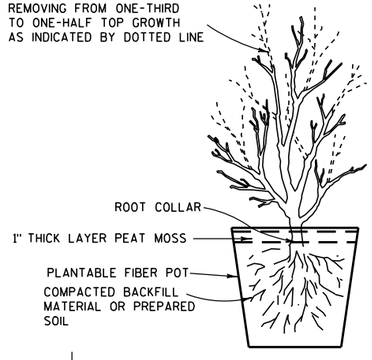
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE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

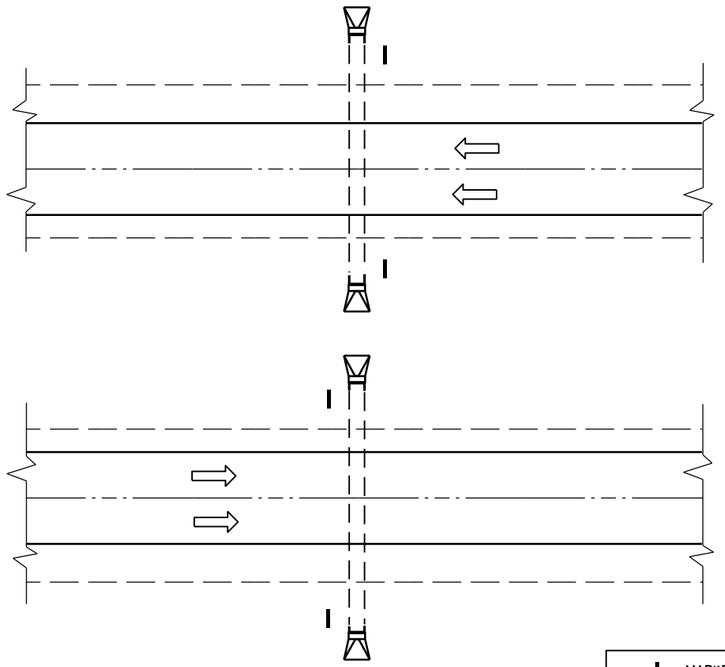
TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

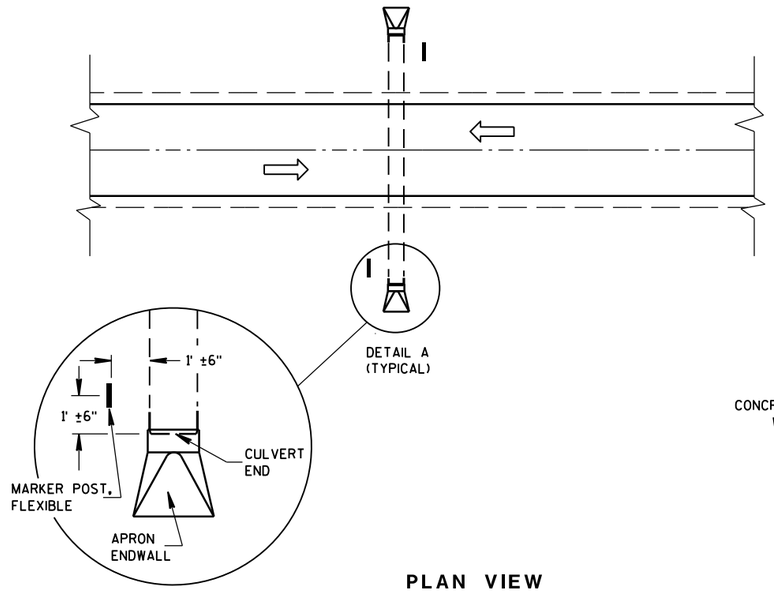
S.D.D. 14 A 2-1

S.D.D. 14 A 2-1



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

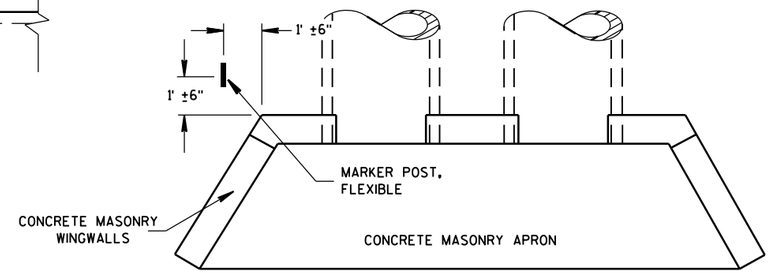
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

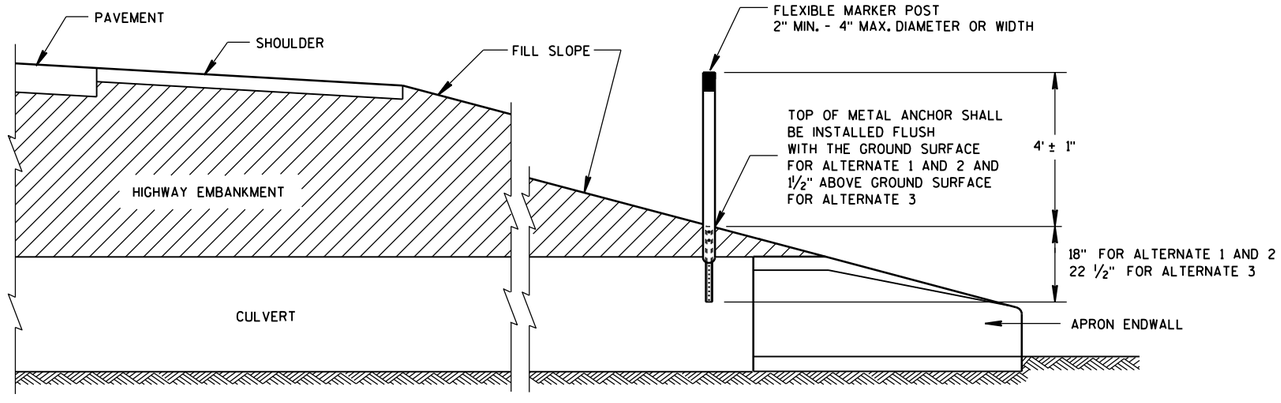
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

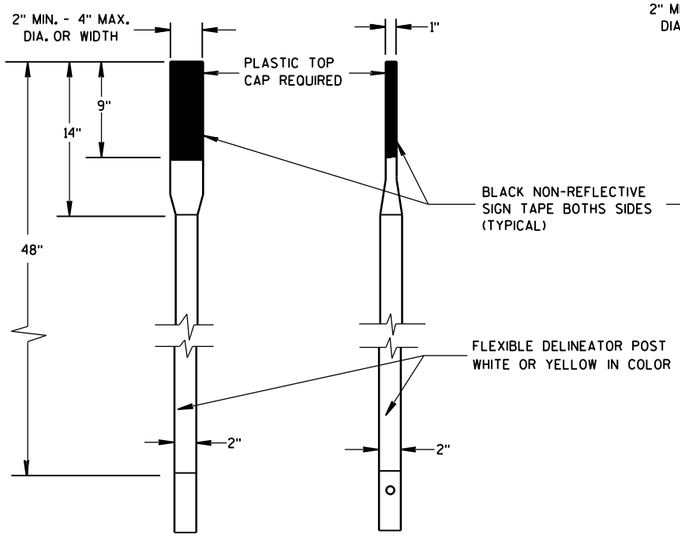
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

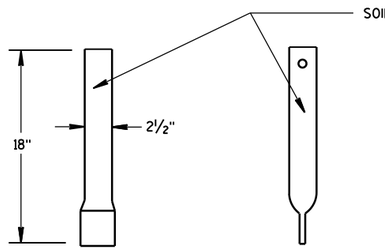
6

S.D.D. 15 A 3-2a

6

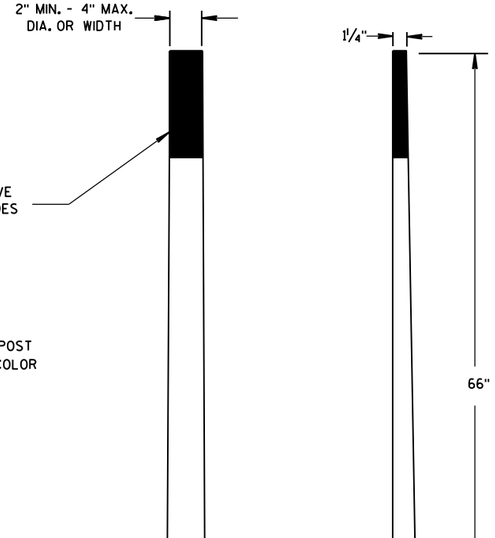
S.D.D. 15 A 3-2a





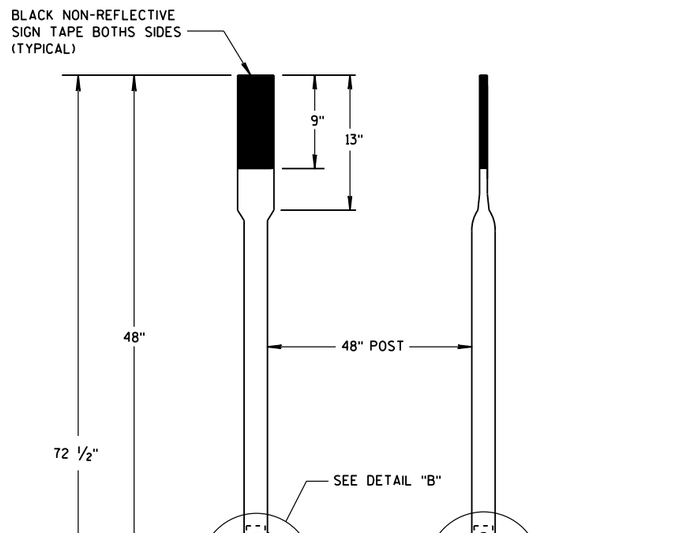
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

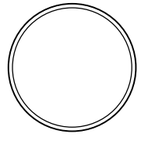
ALTERNATE 2



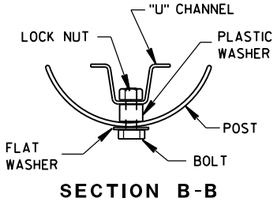
FRONT VIEW SIDE VIEW

ALTERNATE 3

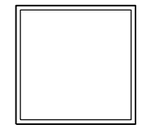
FLEXIBLE MARKER POSTS



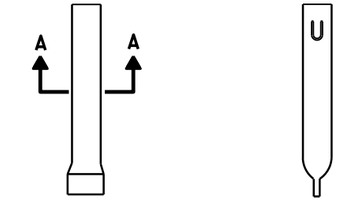
SECTION A-A



SECTION B-B

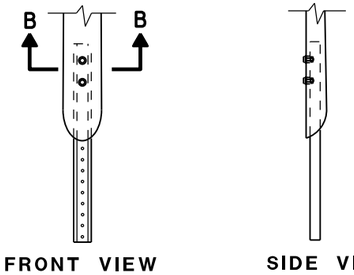


SECTION C-C



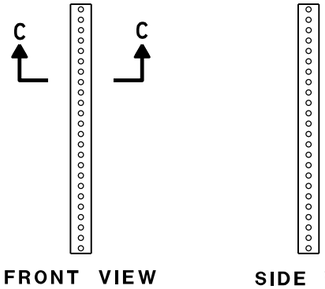
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

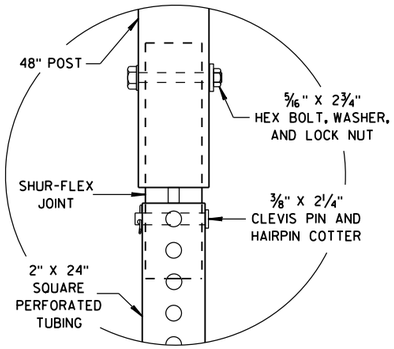
ALTERNATE 2



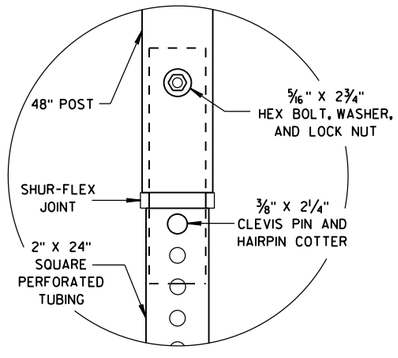
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

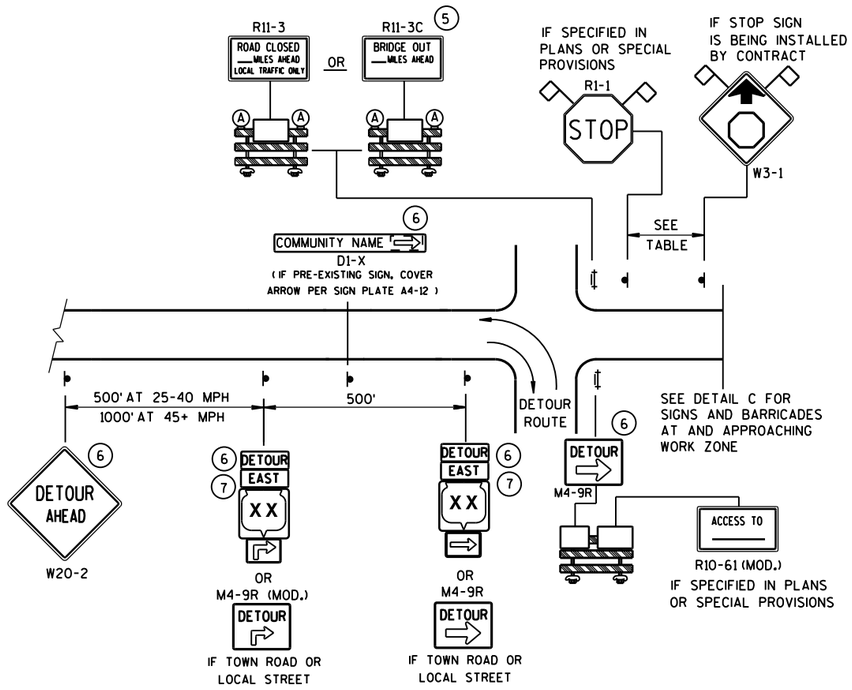
APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 3-2b

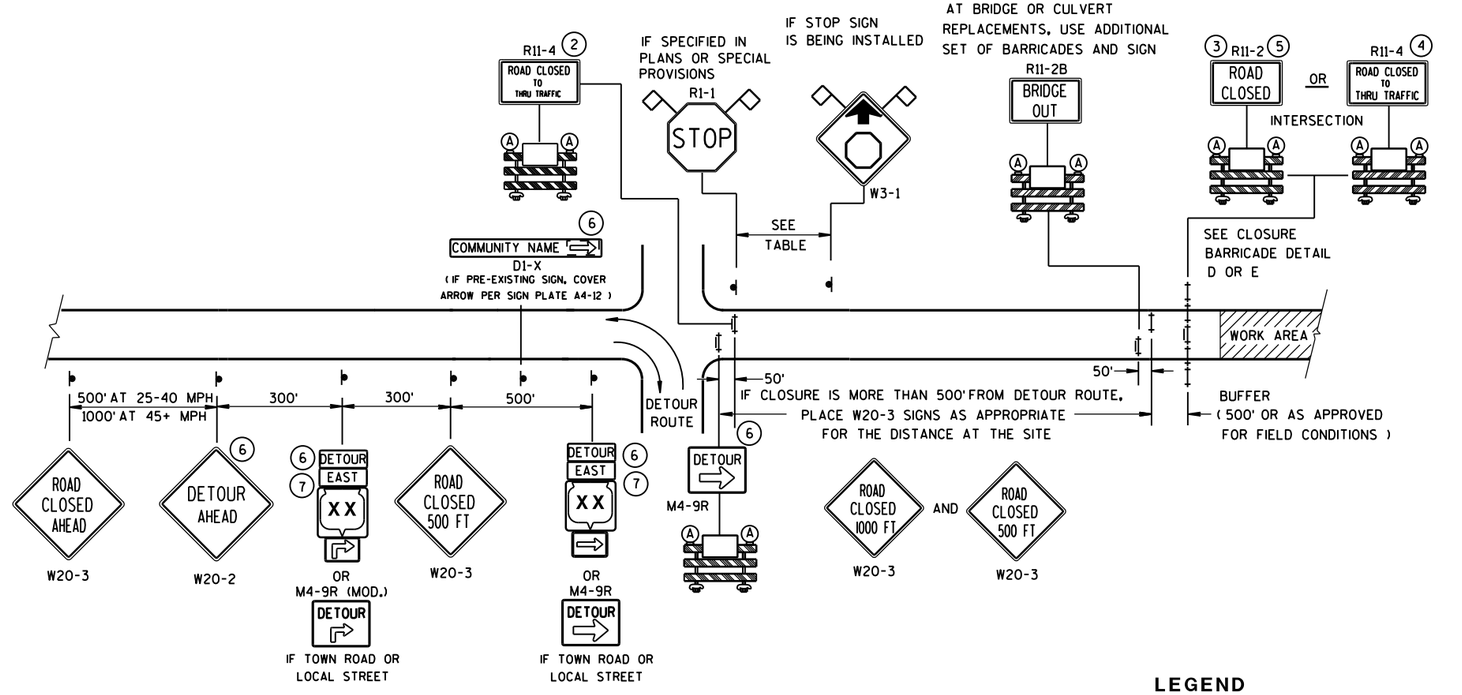
6

S.D.D. 15 A 3-2b



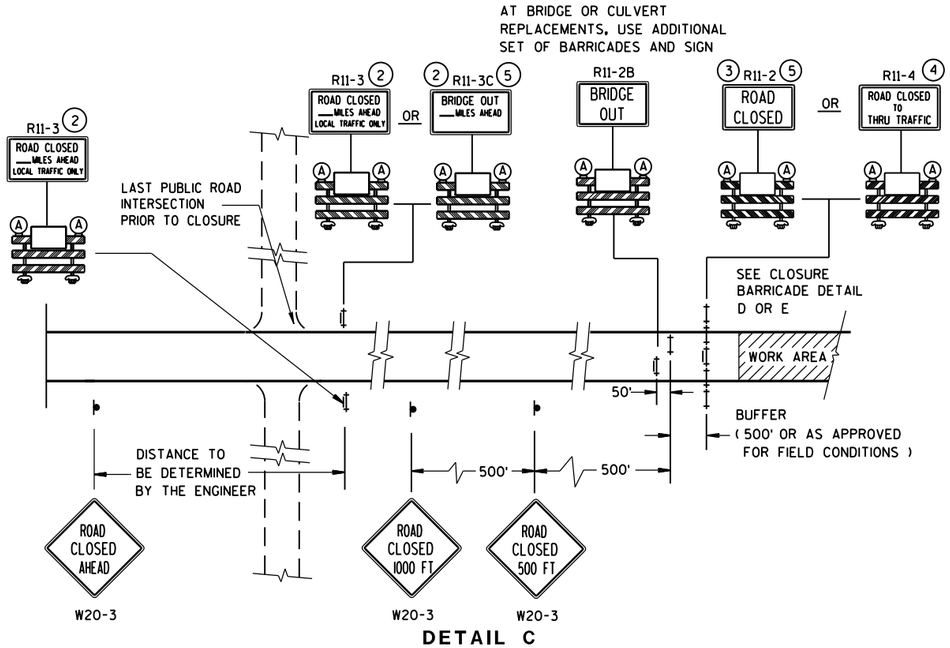
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

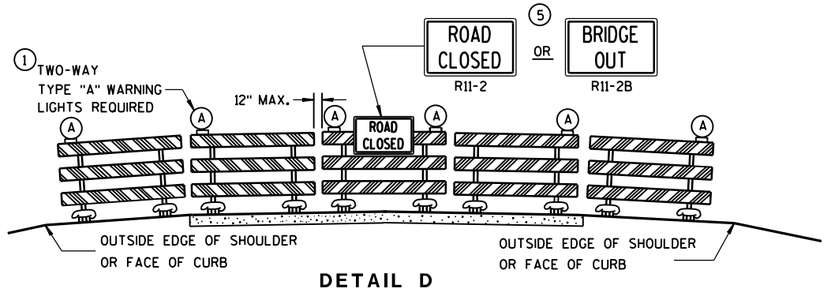
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

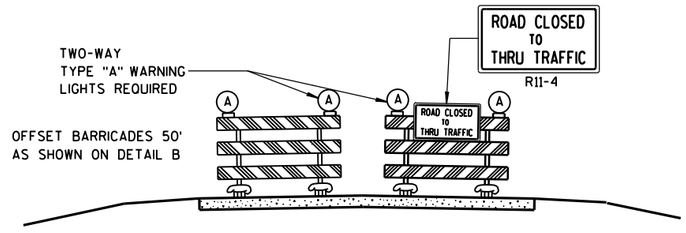
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

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

GENERAL NOTES

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

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

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

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

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

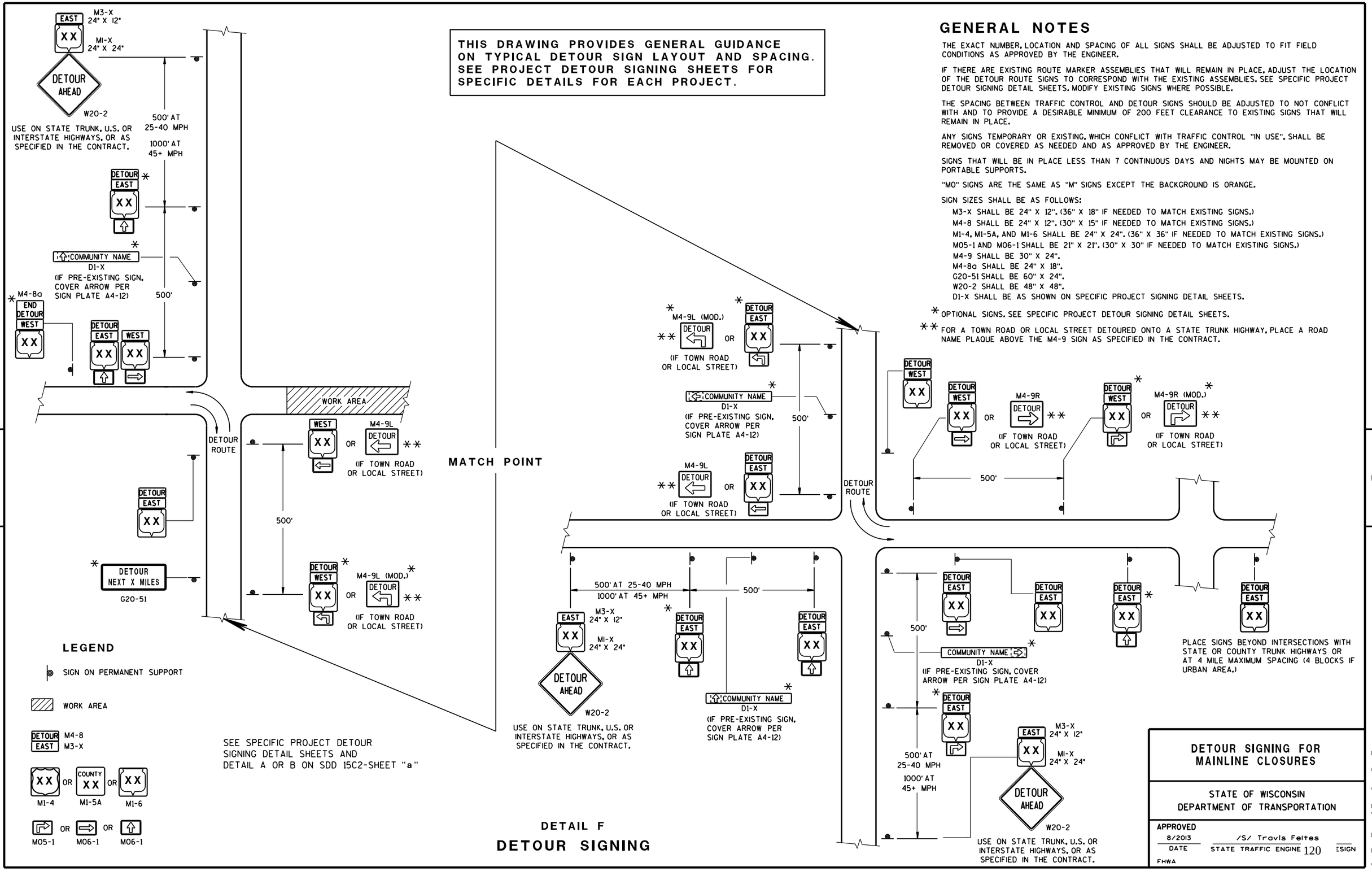
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

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

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

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



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8, M3-X
- XX OR COUNTY XX OR XX — M1-4, M1-5A, M1-6
- MO5-1 OR MO6-1 OR MO6-1

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

DETAIL F

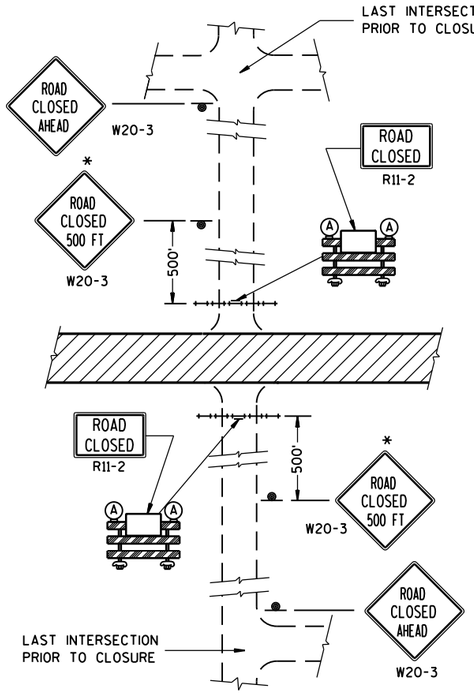
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

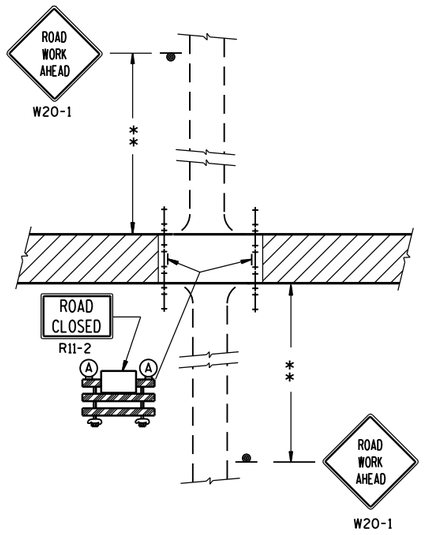
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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



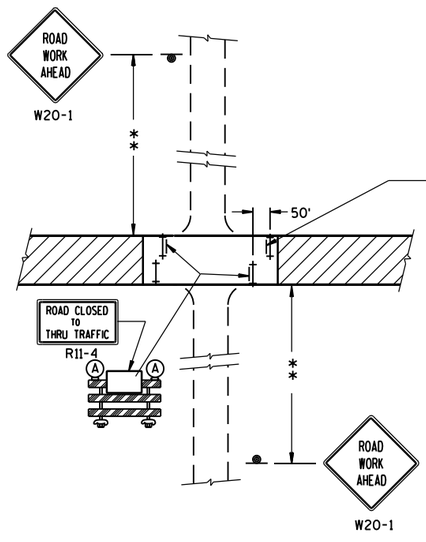
DETAIL 1

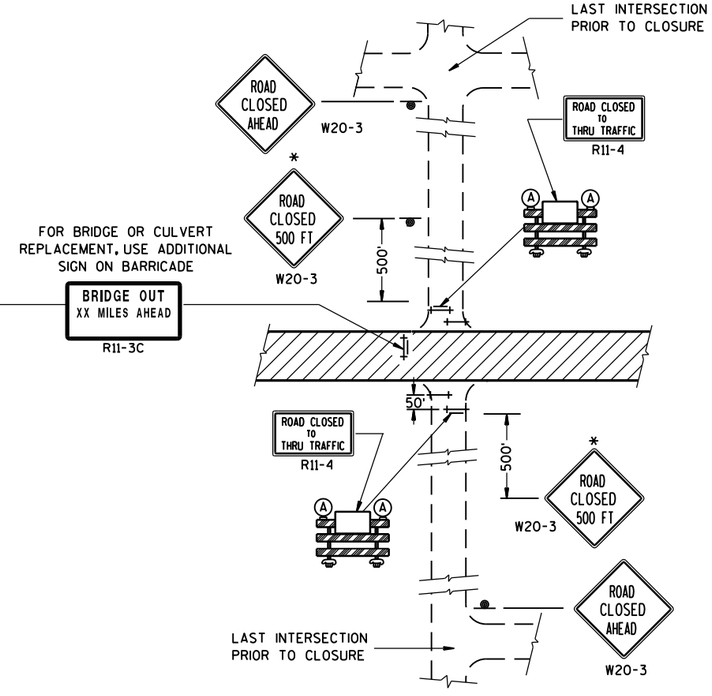
(NO ACCESS TO PROJECT)



DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).

DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 3-2

6

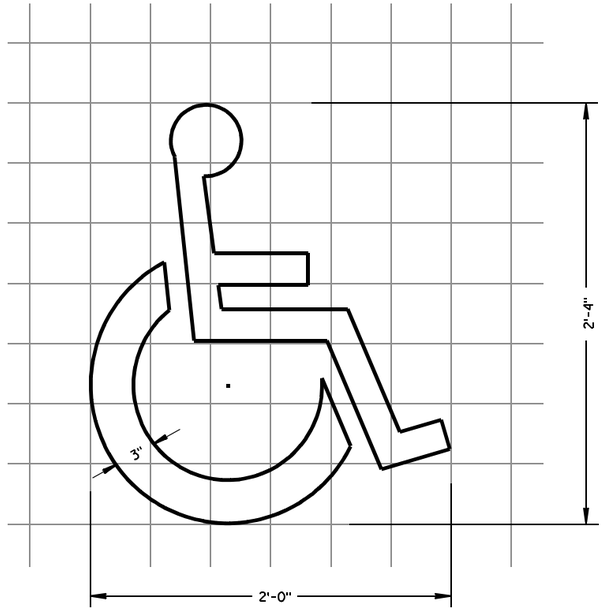
S.D.D. 15 C 3-2

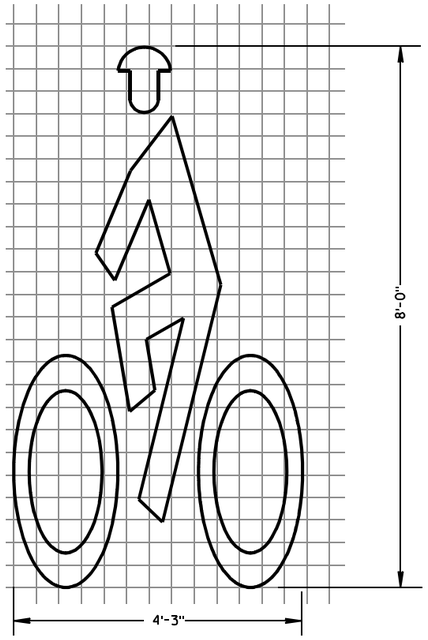
GENERAL NOTES

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.

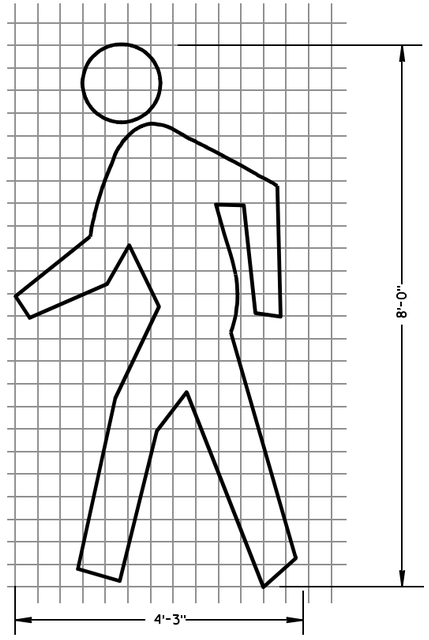
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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

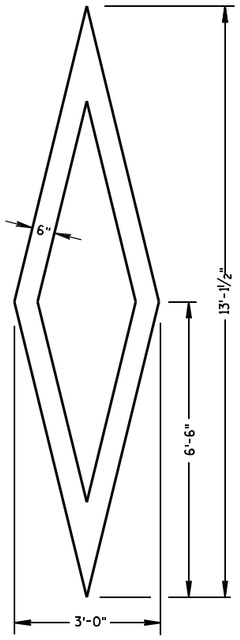




BIKE CROSSING SYMBOL



PEDESTRIAN SYMBOL



PREFERENTIAL LANE SYMBOL

6

6

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

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

PAVEMENT MARKING SYMBOLS

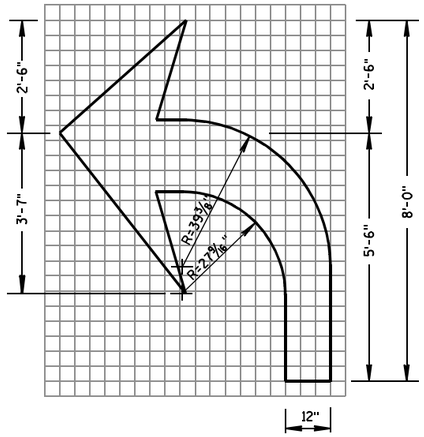
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

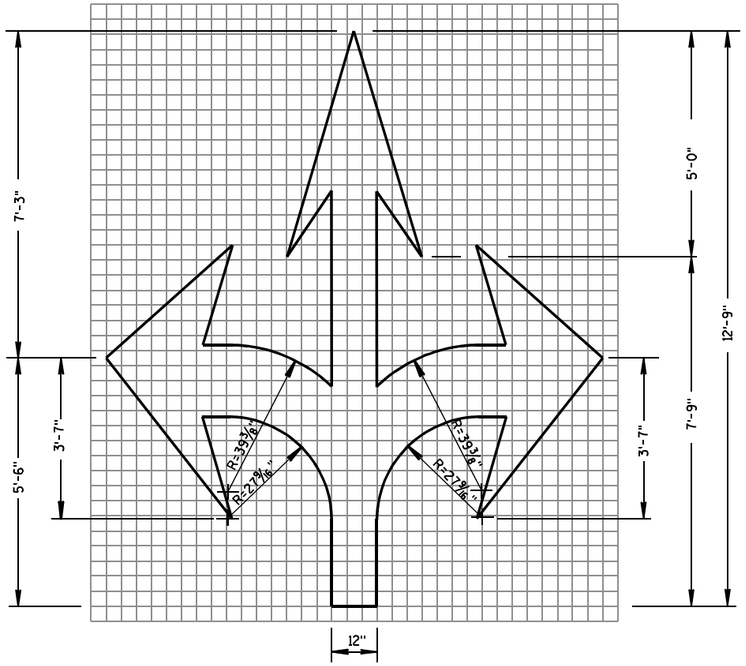
7/1/11 DATE

/S/ Thomas N Nathan
STATE TRAFFIC ENGINEER

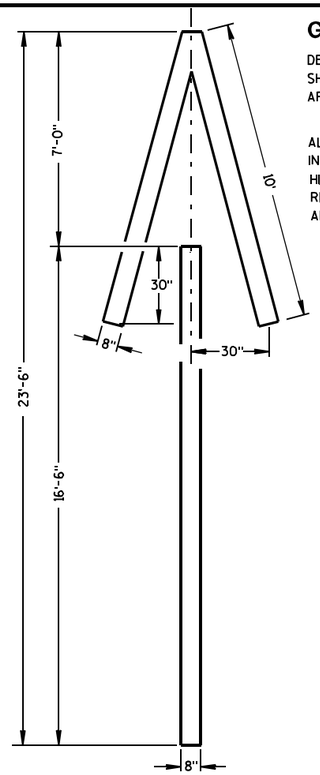
FHWA



TYPE 2



TYPE 6

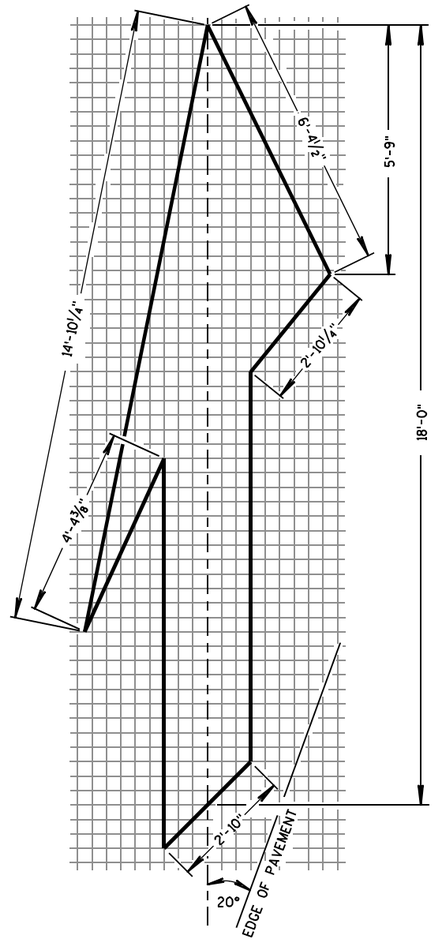


TYPE 4

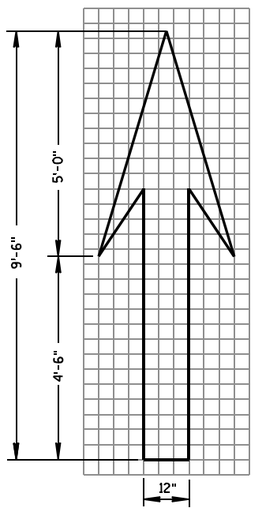
GENERAL NOTES

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.

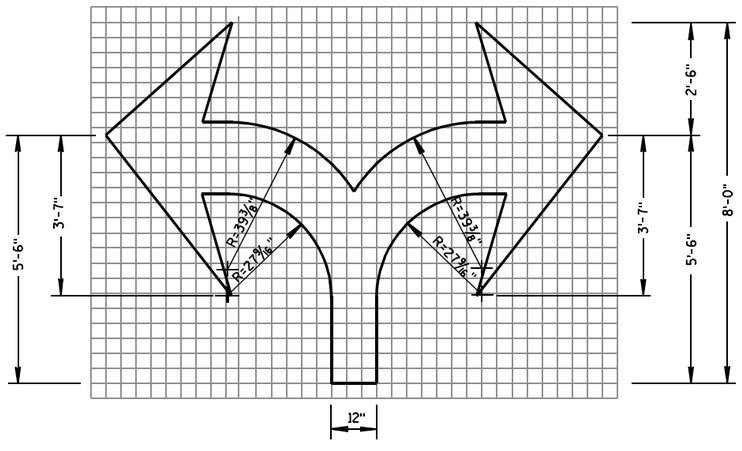
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



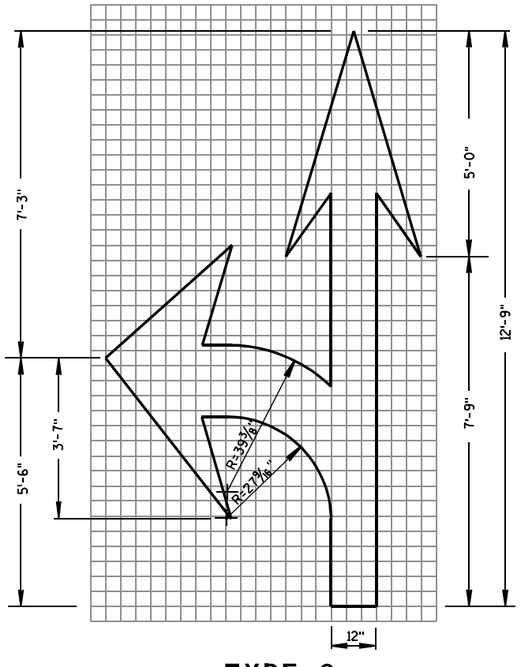
TYPE 5 LANE DROP ARROW



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

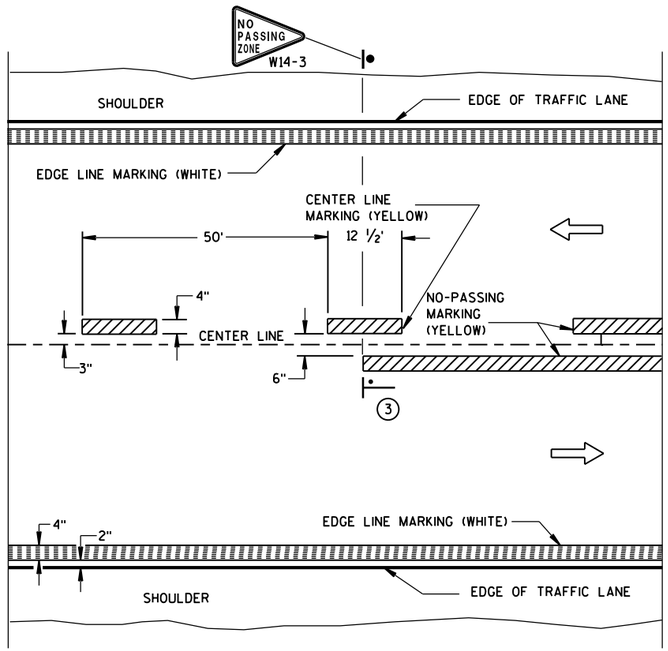
FHWA

6

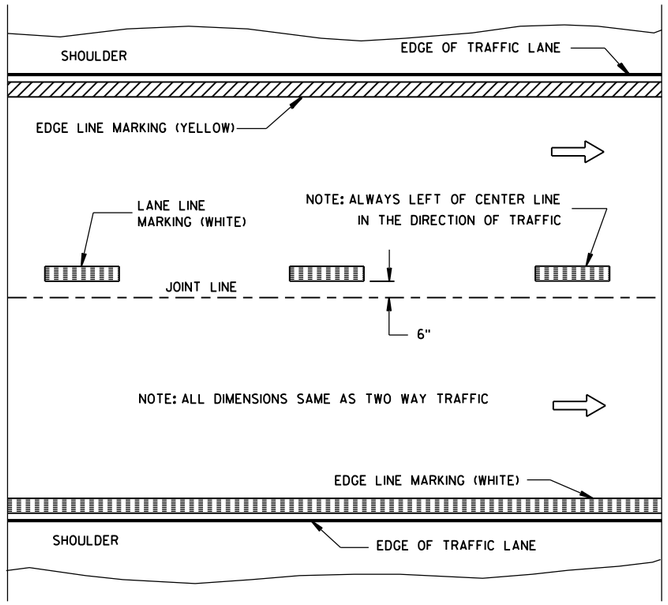
S.D.D. 15 C 7-12c

6

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

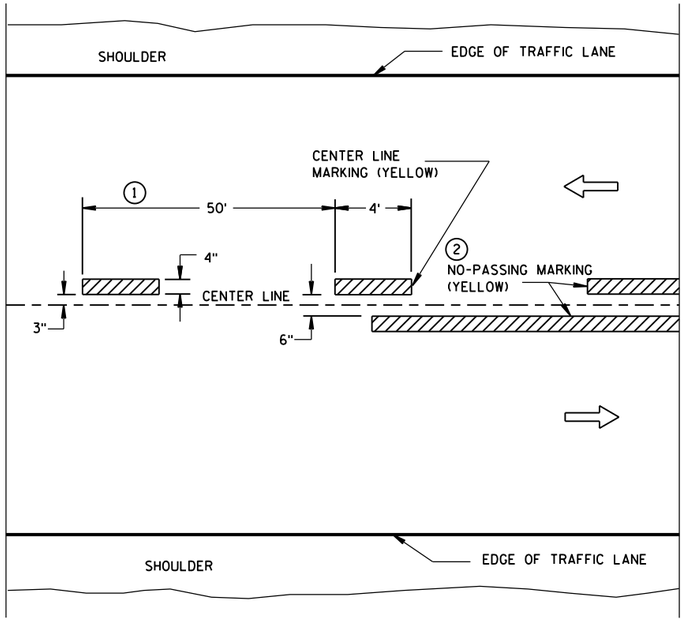


TWO WAY TRAFFIC

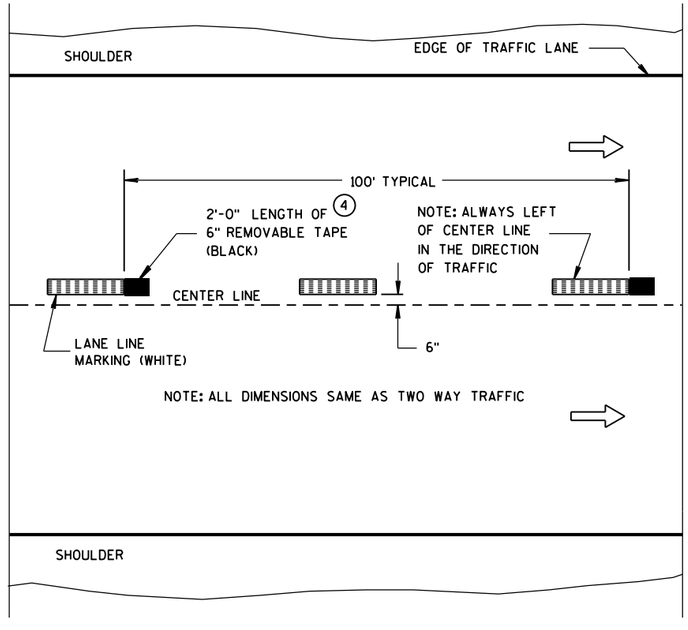


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

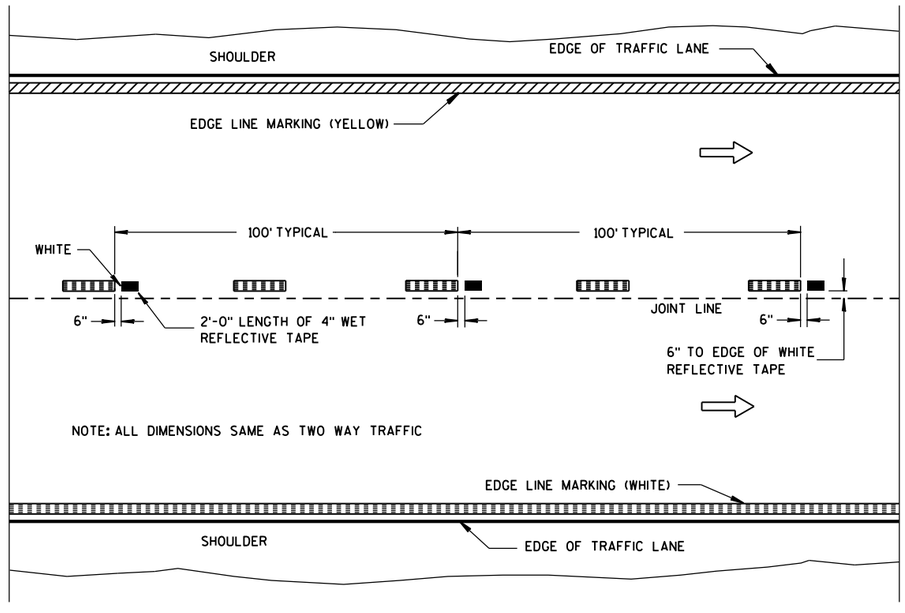
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

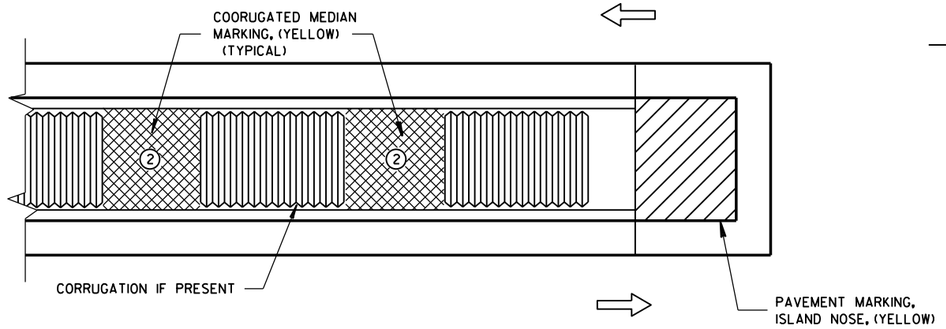
PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

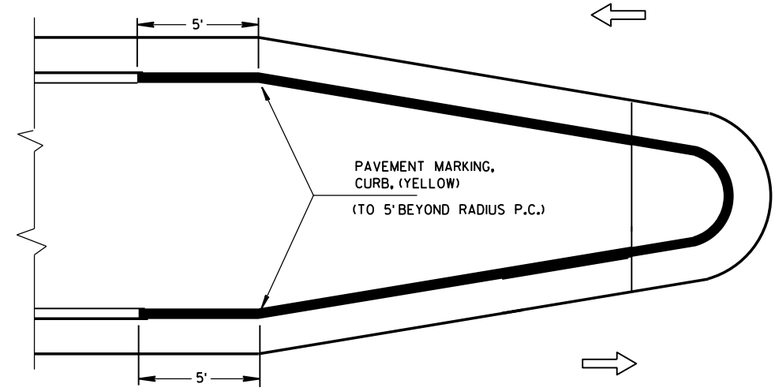
APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

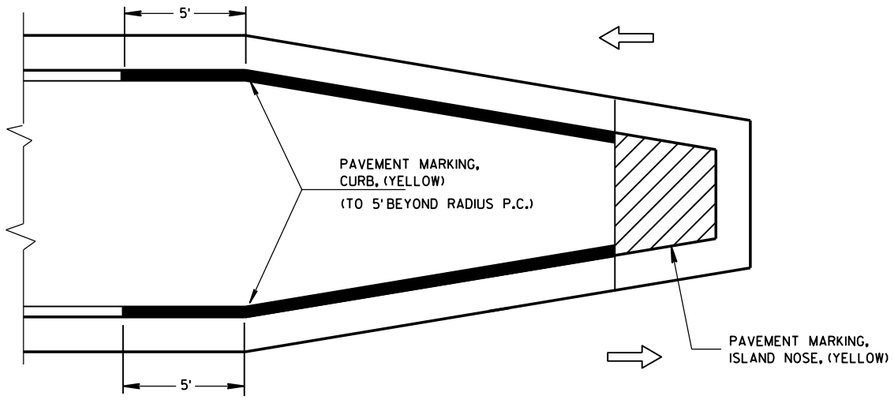
S.D.D. 15 C 8-16a



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

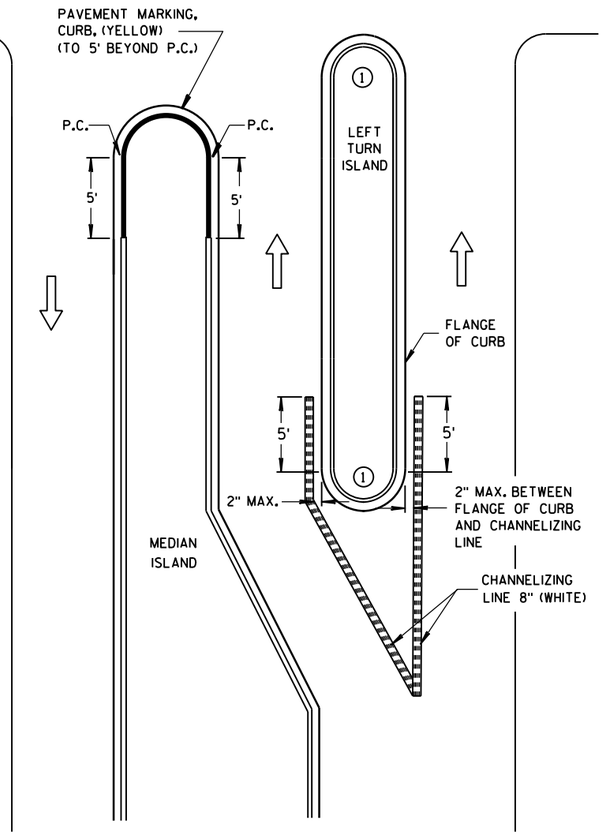


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

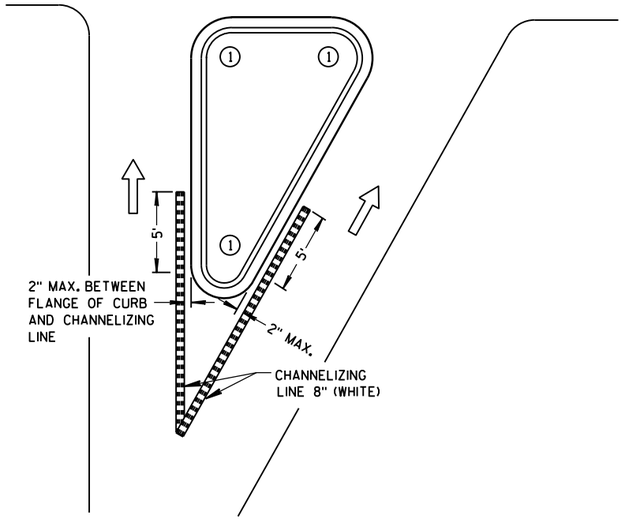


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

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

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



RIGHT TURN ISLAND

LEGEND

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

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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

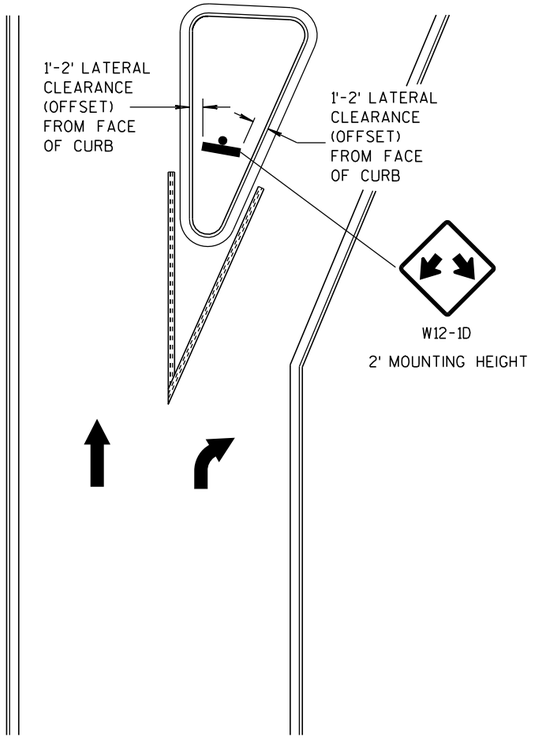
6

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

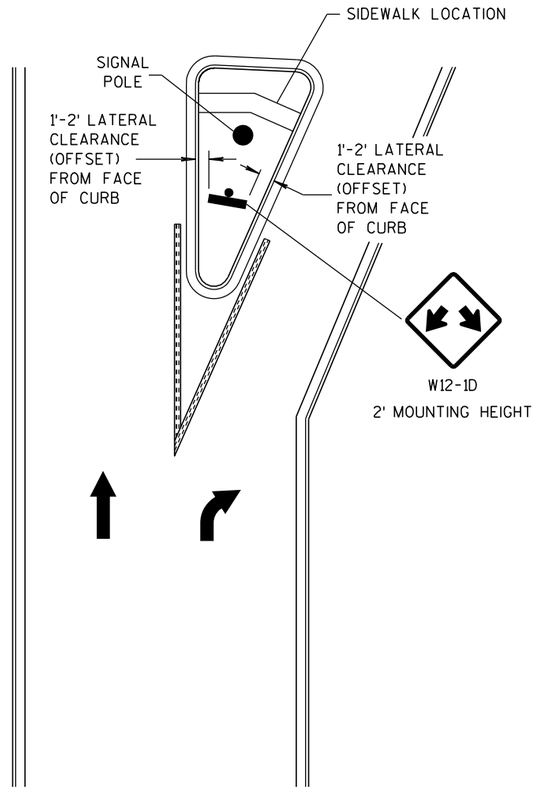
GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

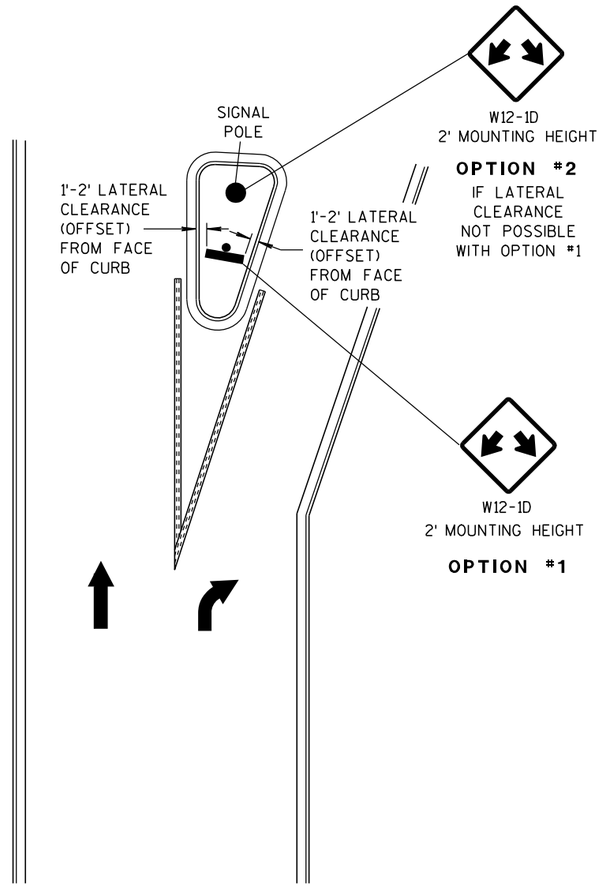
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.



LARGE RIGHT TURN ISLAND



LARGE RIGHT TURN ISLAND
WITH SIGNAL POLE



SMALL RIGHT TURN ISLAND

DOUBLE ARROW WARNING SIGN PLACEMENT

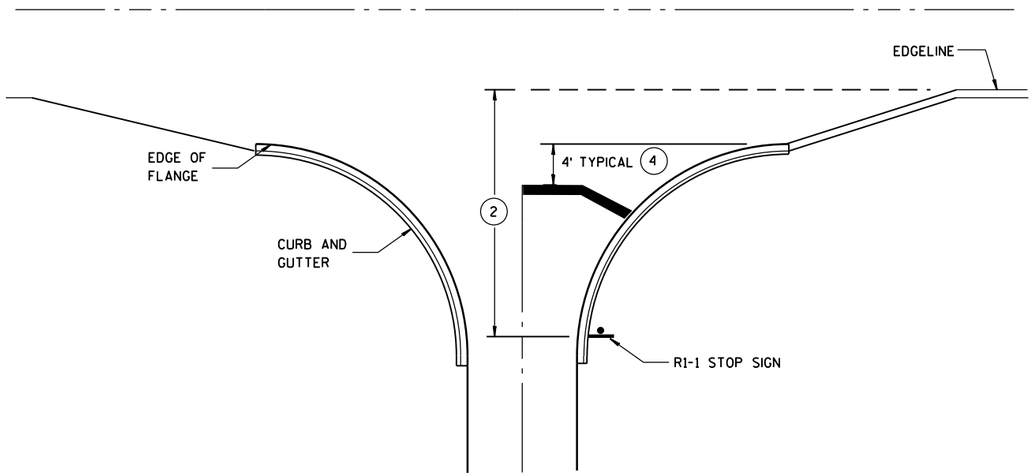
DOUBLE ARROW WARNING SIGN PLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
10-22-08 DATE	/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA	IGN

6

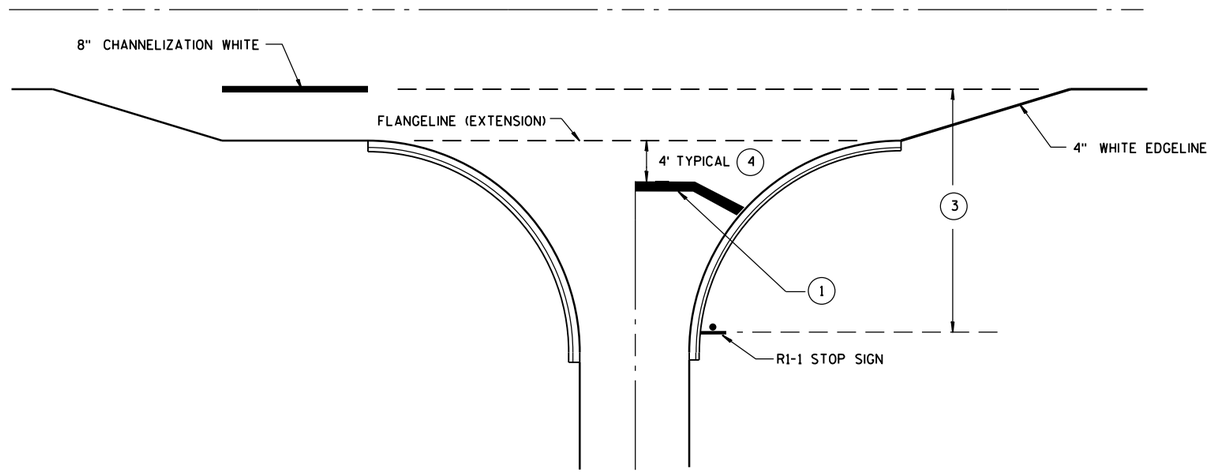
S.D.D. 15 C 27-1

6

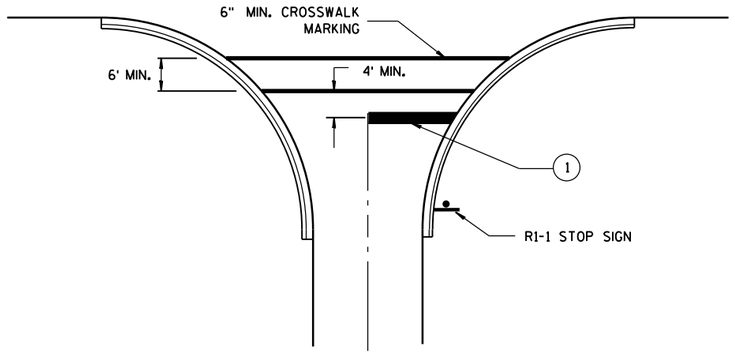
S.D.D. 15 C 27-1



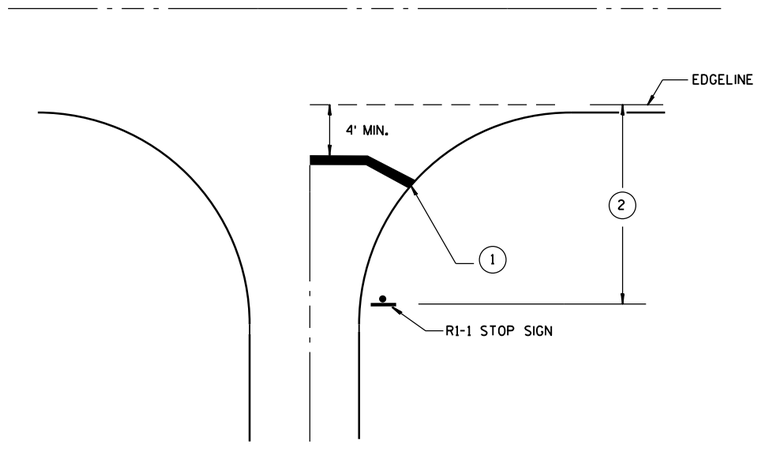
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

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

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

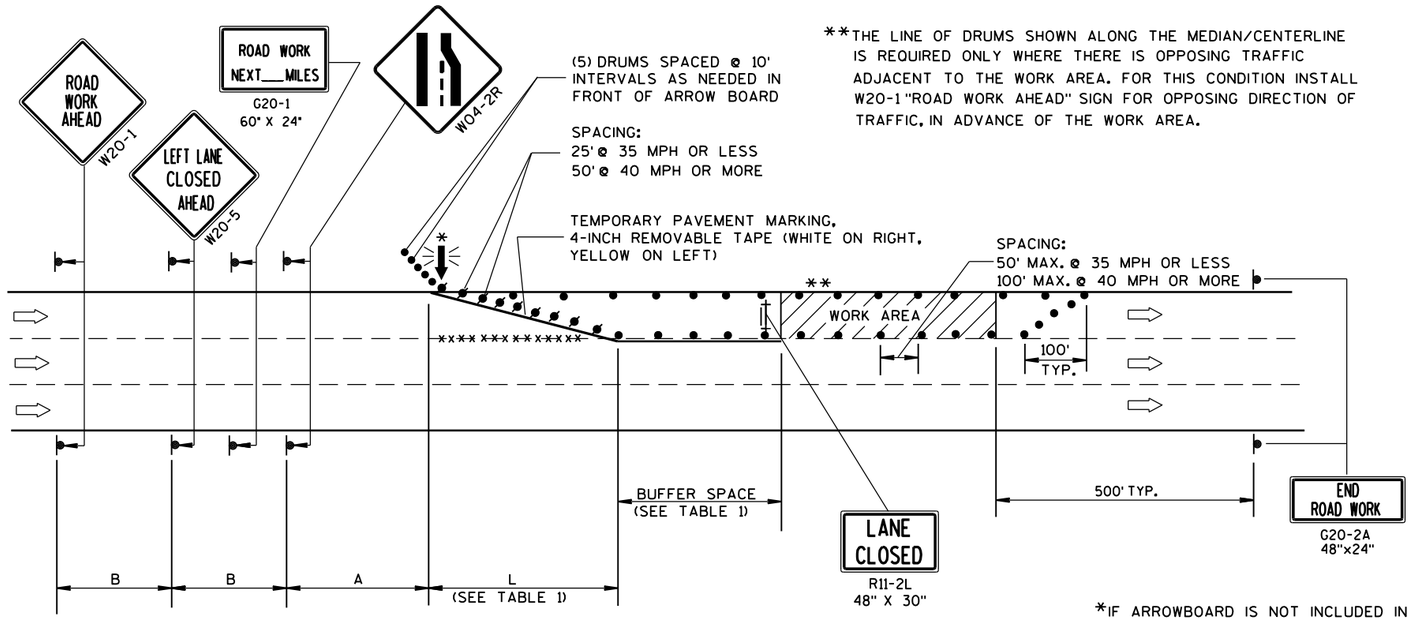
4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

6

S.D.D. 15 C 33-1



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

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

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

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

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

W01-6
48"x24"

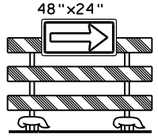


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

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

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 D 20-2

6

S.D.D. 15 D 20-2

LEGEND

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

GENERAL NOTES

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

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

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

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

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

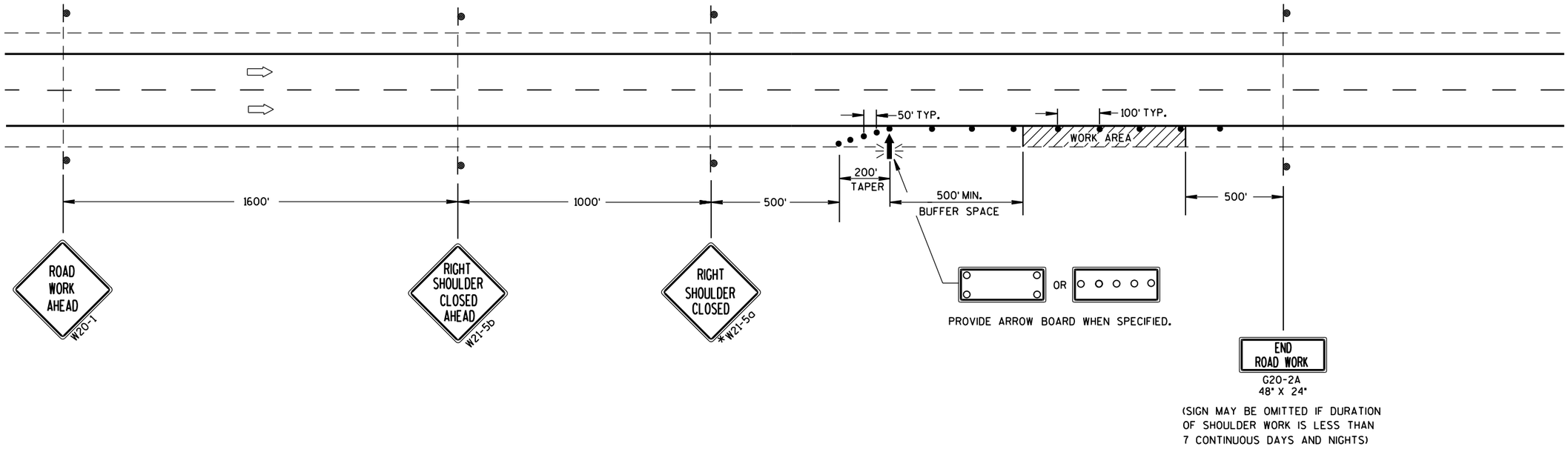
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

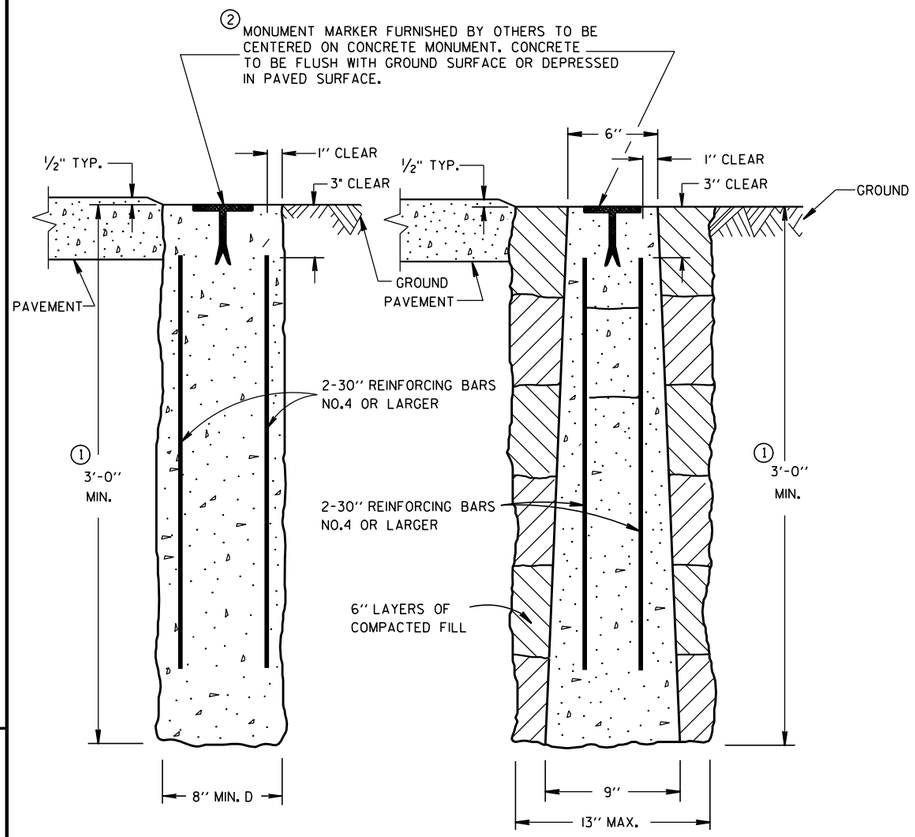
8/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

6

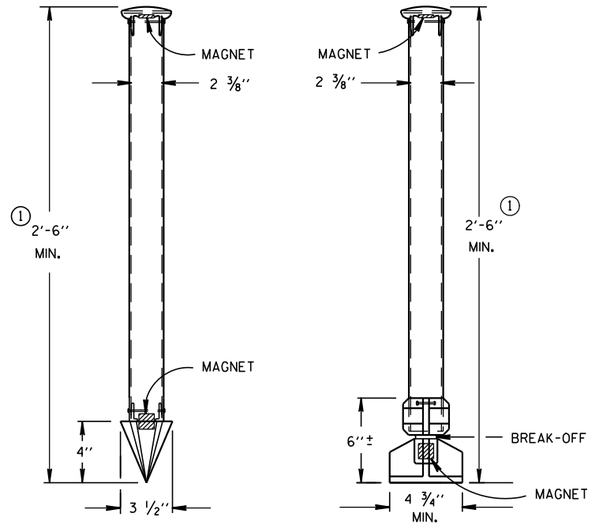
S.D.D. 15 D 27-2



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.

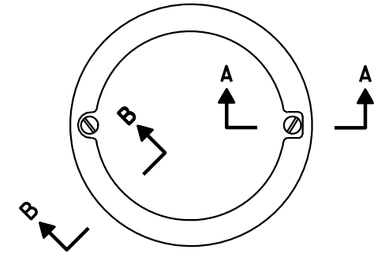
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

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.

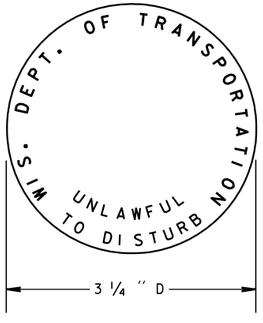
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

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

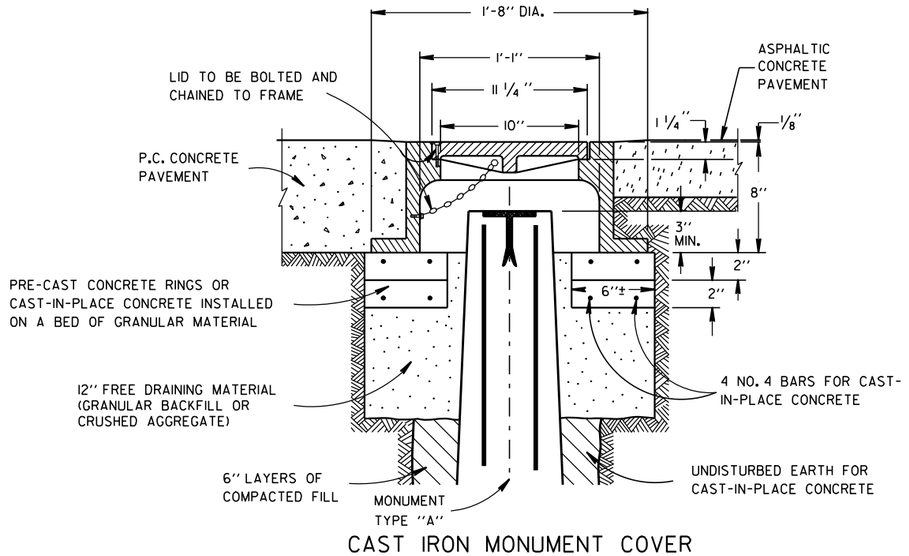
② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



TOP VIEW

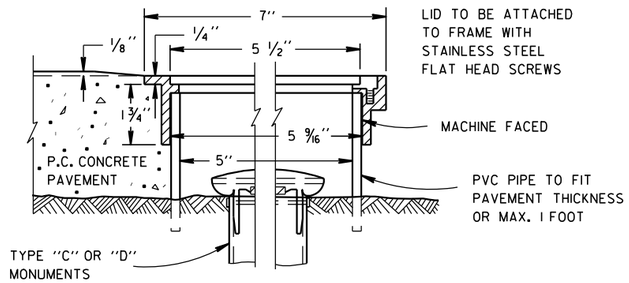


② WIS DOT MONUMENT MARKER LOGO FOR TYPES "A", "C" & "D"



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

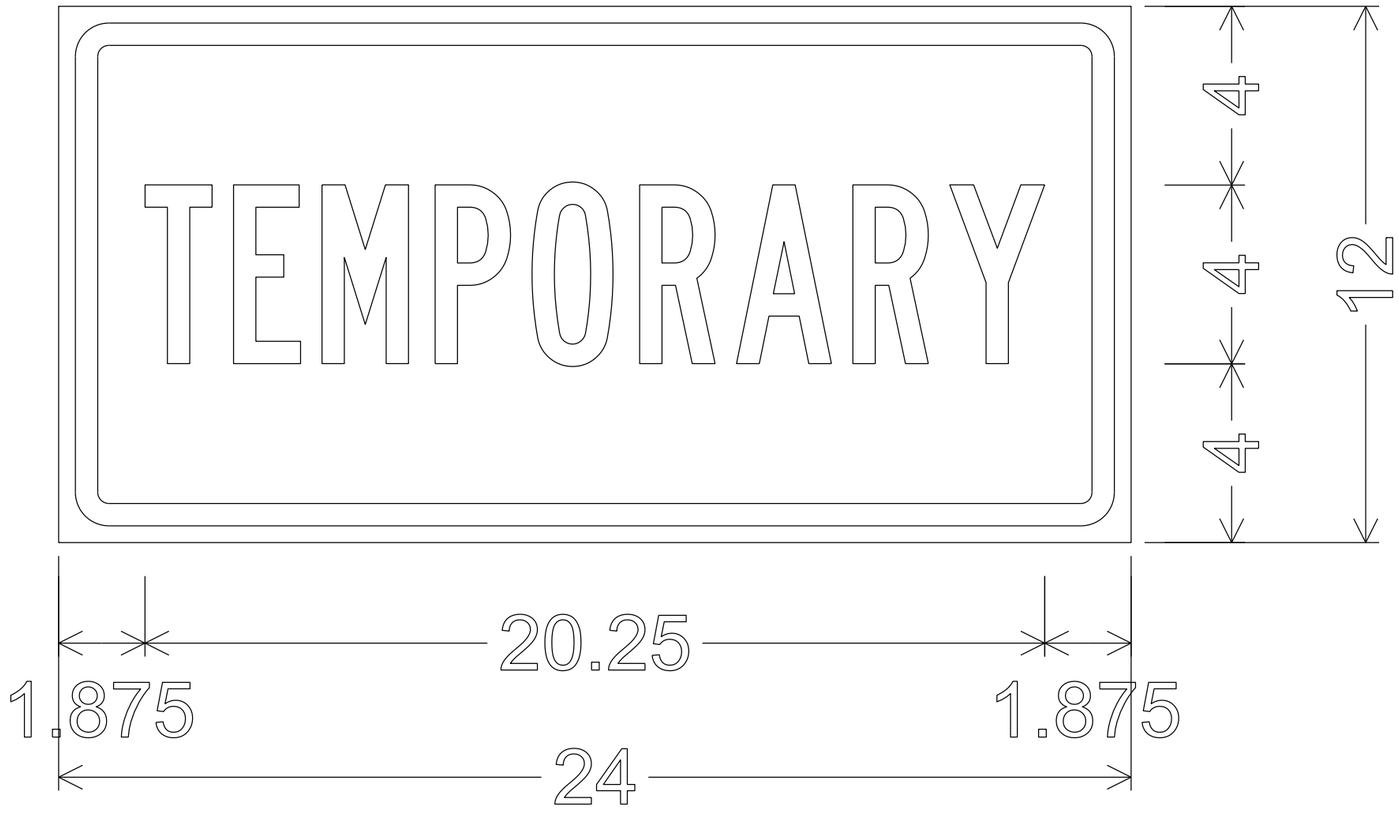
S.D.D. 16 A 1-6

6

S.D.D. 16 A 1-6

NOTES

1. All Signs are Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - B



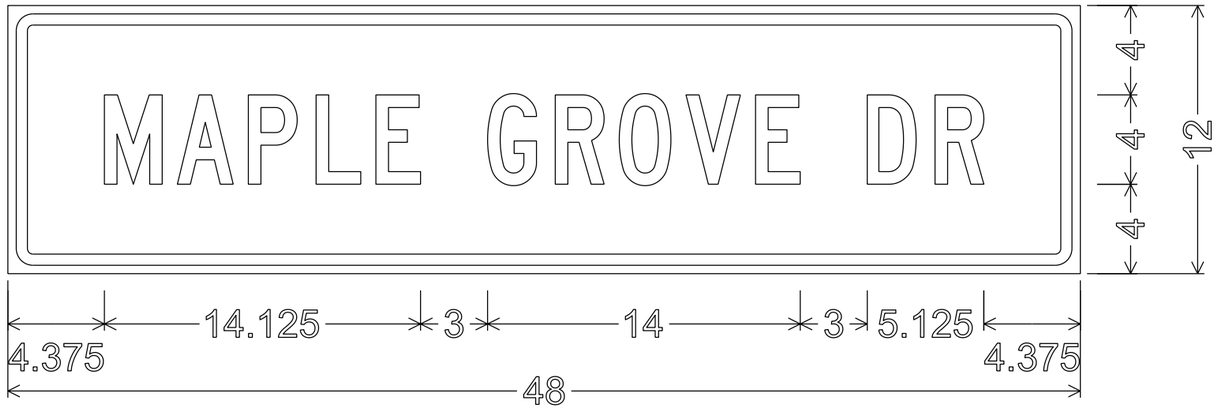
1.125" Radius, 0.500" Border, 0.375" Indent

7

7

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	TEMPORARY SIGNING	SHEET NO:	E

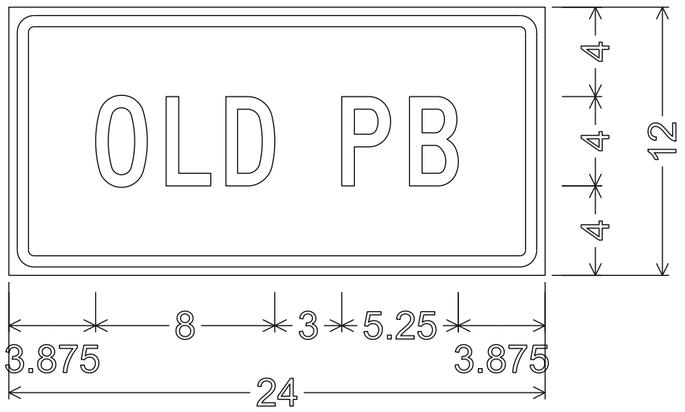
FILE NAME : C:\CAEfiles\Projects\tr_d1\Temporary.dgn PLOT DATE : 26-AUG-2014 08:40 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 20.342609:1.000000 WISDOT/CADDS SHEET 42



1.125" Radius, 0.500" Border, 0.375" Indent

NOTES

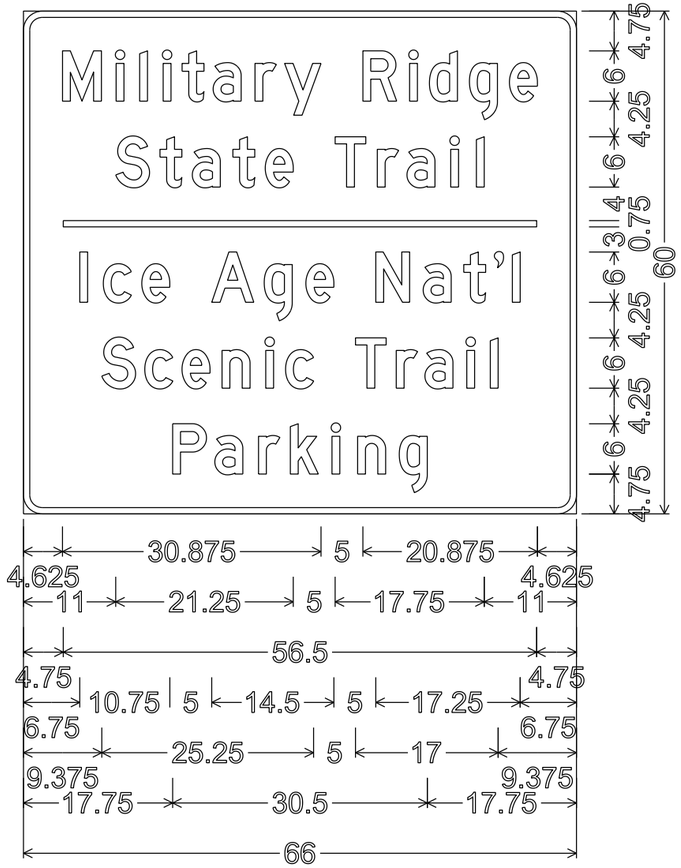
1. All Signs are Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C



1.125" Radius, 0.500" Border, 0.375" Indent

NOTES

1. All Signs are Type II - Type H Reflective
2. Color:
   Background - Brown
   Message - White
3. Message Series - D



2.250" Radius, 0.750" Border

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_d1\MilitaryRidge.dgn PLOT DATE : 16-SEP-2014 08:13 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 20.342609:1.000000
WISDOT/CADDS SHEET 42

NOTES

1. All Signs are Type I - Type SH Reflective
2. Color:
   Background - BROWN
   Message - White
3. Message Series - E Modified except all cap words are Series E

E3-1

E3-1

7

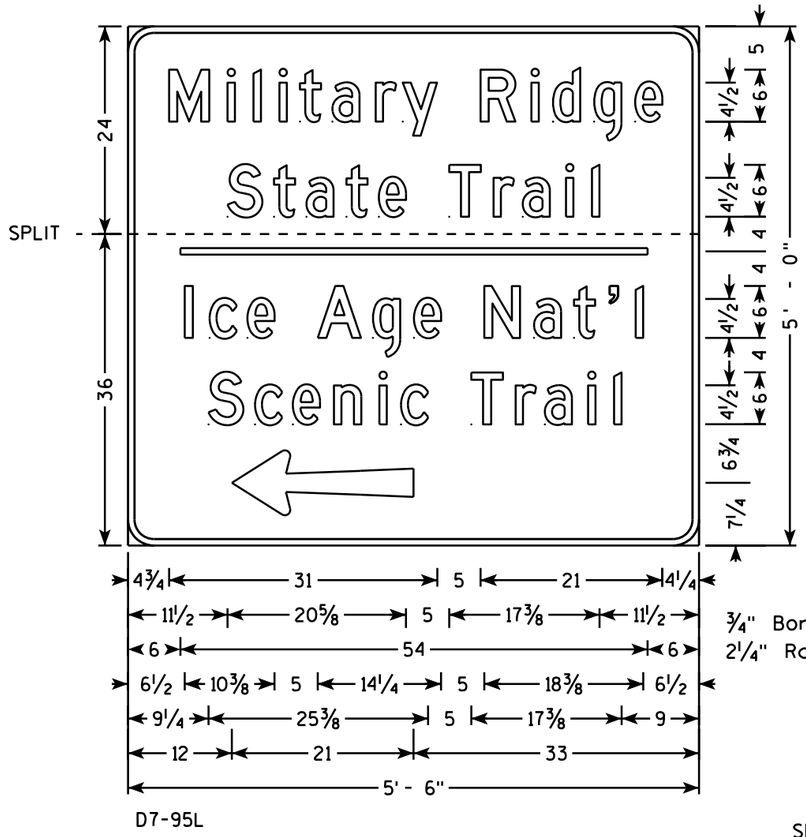
7

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET NO:	E

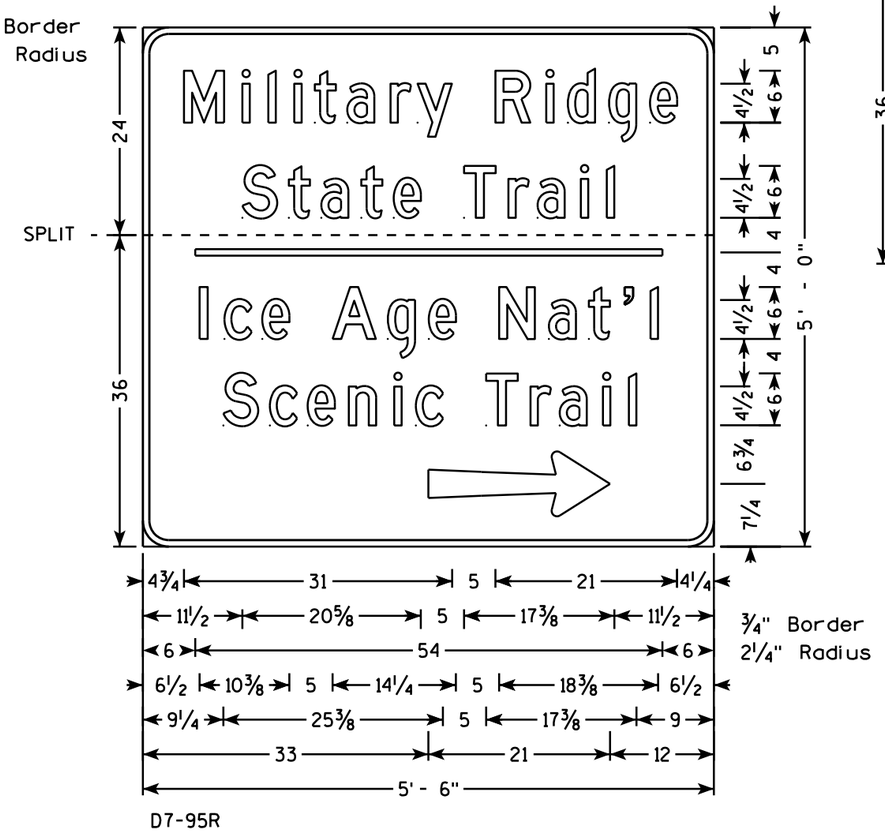
FILE NAME : C:\CAEFiles\Projects\tr_d1\1133A314.DGN PLOT DATE : 10-APR-2014 11:41 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 29.187629:1.000000 WISDOT/CADDS SHEET 42

NOTES

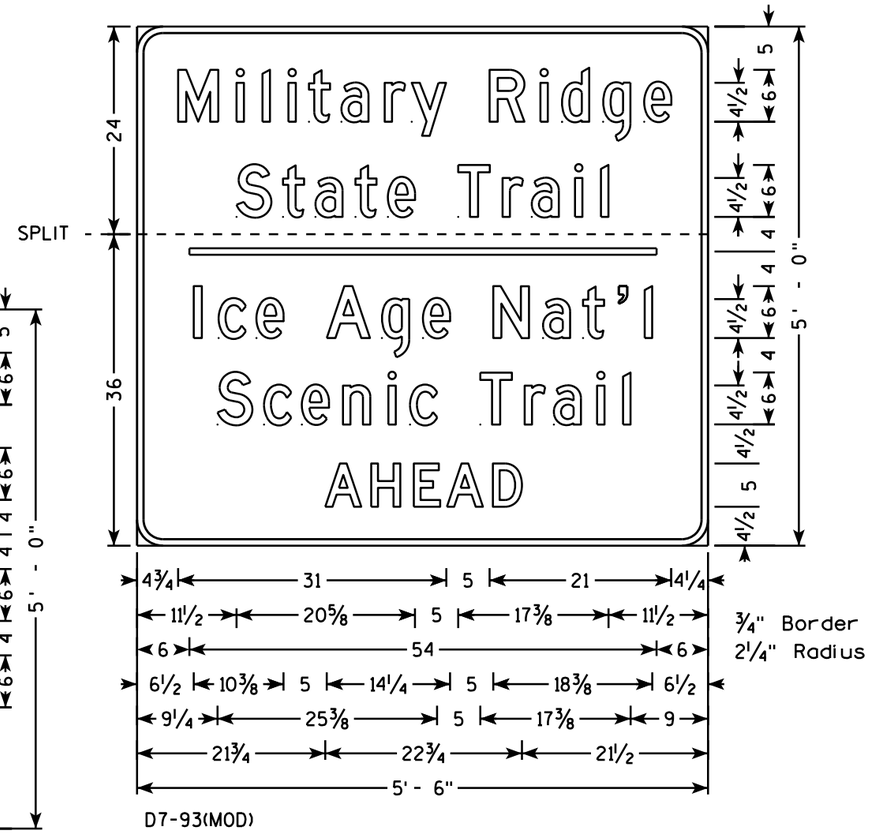
1. All Signs Type II - Type H Reflective
2. Color:
   Background - BROWN
   Message - White
3. Message Series - D



D7-95L



D7-95R



D7-93(MOD)

7

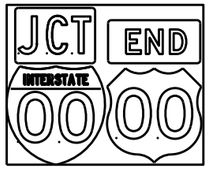
7

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	PERMANENT SIGNING	SHEET NO:	E

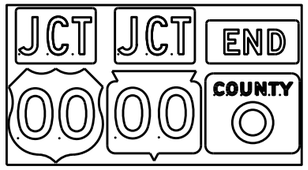
FILE NAME : C:\CAEFiles\Projects\tr_d1\1133A314.DGN PLOT DATE : 10-APR-2014 11:40 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 17.512577:1.000000
WISDOT/CADDS SHEET 42

TYPICAL ASSEMBLIES

J1-1

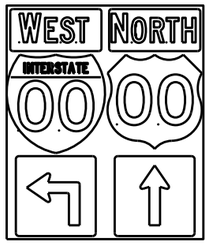


J1-2

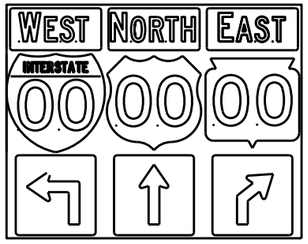


J1-3

J2-1



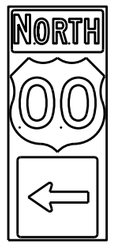
J2-2



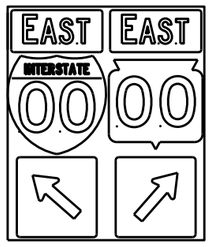
J2-3

JV

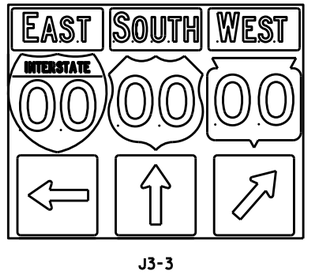
(Typical Vertical J-Assembly
See Note 10 and 11)



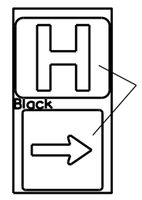
J3-1



J3-2

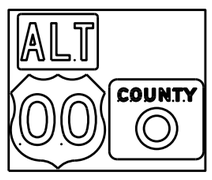


J3-3

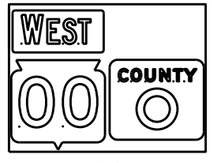


JH-1

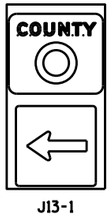
J4-1



J4-2



J4-2



J13-1

J12-1

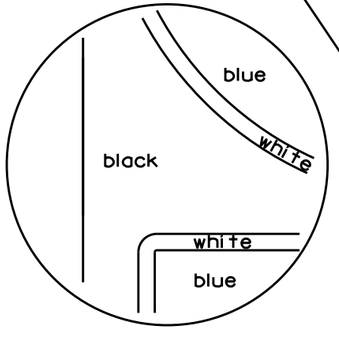
J32-1

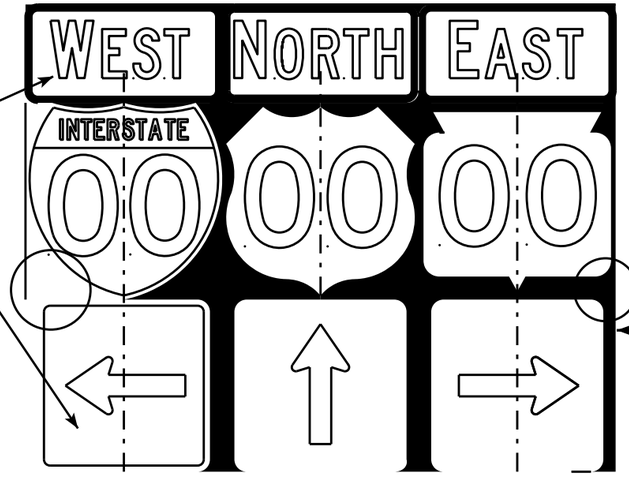
J33-1

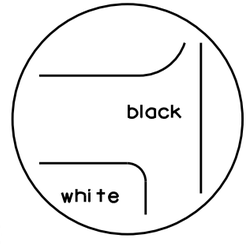
J23-1

J22-1

[blue background with interstate]







[black background]

NOTES

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

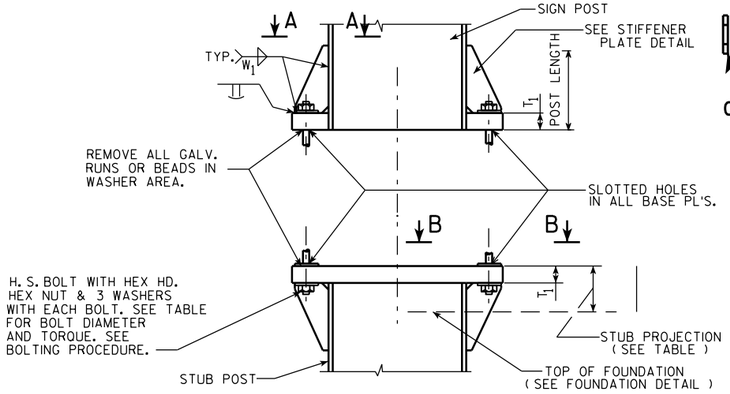
ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

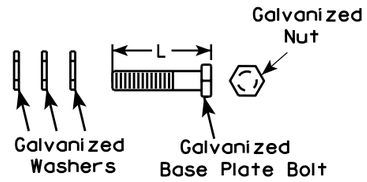
APPROVED Matthew R Rauch
for State Traffic Engineer

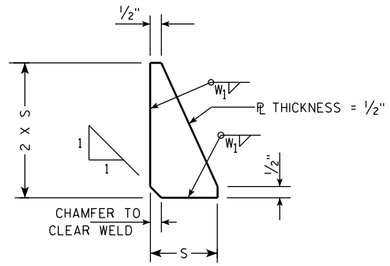
DATE 2/06/14 PL... A2-1S.8

PROJECT NO: | SHEET NO: E



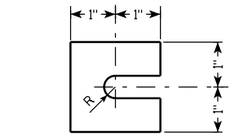
SIGN POST AND STUB POST ELEVATION





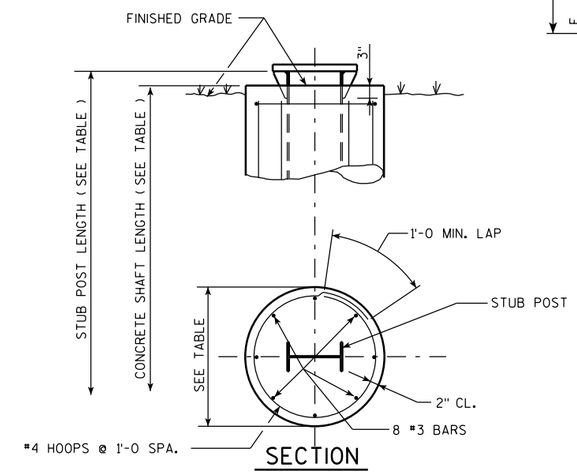
STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

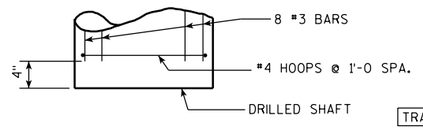


FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M.- B36.

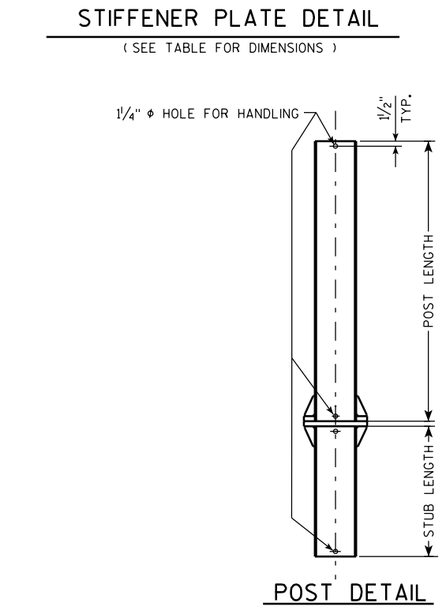
SHIM DETAIL



SECTION



FOUNDATION DETAIL



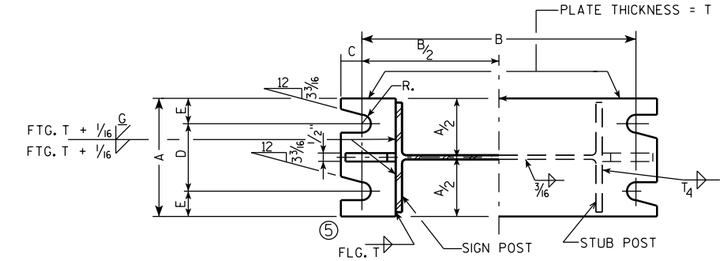
POST DETAIL

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

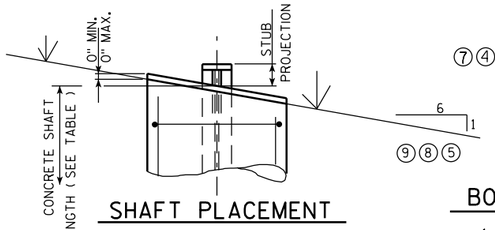
⑦

REINF.	TYPE	#3	#4
	A	8 @ 4'-5	5 @ 6'-3
	B	8 @ 6'-5	7 @ 6'-3
	C	8 @ 6'-11	7 @ 6'-3
	D	8 @ 7'-5	8 @ 6'-3
	E	8 @ 7'-11	9 @ 6'-3

⑦



SECTION A-A SECTION B-B



SHAFT PLACEMENT

DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

GROUP LOADS	PERCENT OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & ½ WIND[4]	140 [4]25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1½T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

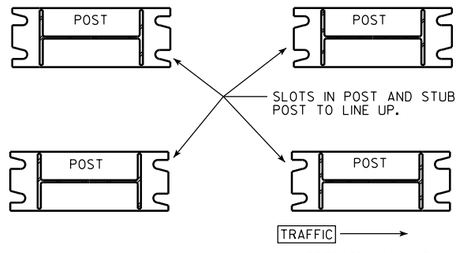
GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50.
⑨ THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
H.S. BOLTS, WASHERS & NUTS SHALL BE A325 GALVANIZED WHEN POSTS, POST STUBS AND ATTACHMENTS ARE A709 GRADE 50 AND GALVANIZED.

BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
5. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.



POST SLOT ORIENTATION ⑦

L	X	TYPE	DIMENSION / POST SIZE	BASE CONNECTION DATA TABLE: BOLT SIZE & TORQUE	A	B	C	D	E	T_1	T_4	W_1	R	S	FOUNDATION DATA: STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	② K
3 ¾	④	A	W10"X12.0 #/FT.	¾" Φ @ 75#-FT.	5¼"	1'-0⅜	⅞"	3½"	⅞"	1"	3/16"	5/16"	13/32"	2⅛"	3'-6	3"	2'-0 Φ	5'-0	76.0# ④
4 ¾	④	B	W12"X16.0 #/FT.	⅞" Φ @ 85#-FT.	5½"	1'-4¼	1"	3½"	1"	1¼"	¼"	5/16"	15/32"	3"	5'-6	3"	2'-0 Φ	7'-0	146.5# ④
5		C	W12"X19.0 #/FT.	⅞" Φ @ 85#-FT.	5½"	1'-4¼	1"	3½"	1"	1½"	5/16"	5/16"	15/32"	3"	6'-0	3"	2'-0 Φ	7'-6	182.1#
5		D	W12"X22.0 #/FT.	⅞" Φ @ 85#-FT.	5½"	1'-4¼	1"	3½"	1"	1½"	⅜"	5/16"	15/32"	3"	6'-6	3"	2'-0 Φ	8'-0	210.5#
5	③	E	W12"X26.0 #/FT.	1" Φ @ 90#-FT.	7"	1'-4¼	1¼"	4"	1½"	1½"	⅜"	5/16"	11/32"	3"	7'-0	3"	2'-0 Φ	8'-6	293.0# ③

① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K+ (POST LENGTH X POST WT.)
" K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO. A3-1.15

⑩	1-21-14	LUBRICATION OF BASE BOLTS
⑨	4-26-11	REMOVE NON-GALVANIZED
⑧	10-30-96	NOT GALVANIZED/GALVANIZED
⑦	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW
⑥	8-24-87	BASE CONN. WELD
⑤	10-13-81	BASE CONN. WELD & FUSE PL WASHERS
④	10-19-79	POST A & B, A572 GR. 50, & K
②	11-28-78	"K" ③ 4-23-79 TYPE "E"
①	5-4-78	T_1 , T_2 & W_1
NO.	DATE	REVISION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TYPE A, B, C, D, & E

CONST. SPEC. 2011	DRAWN BY JPH	PLANS CK'D.

FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS

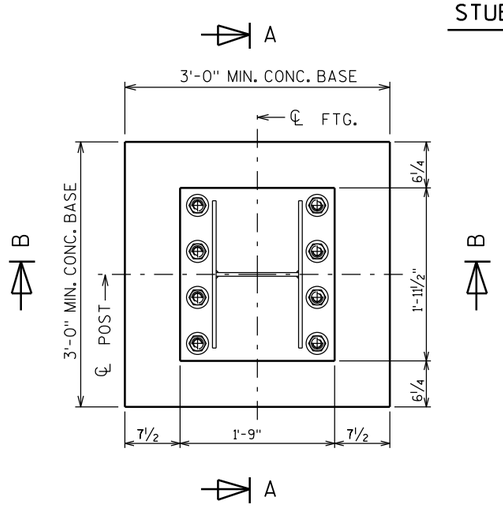
SHEET 137

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

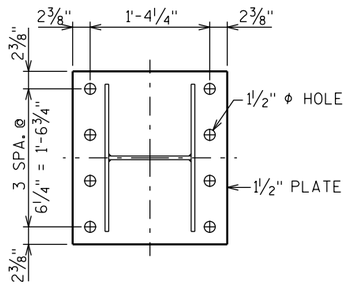
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A31.DGN PLOT DATE : 30-JUN-2014 10:43 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.351066:1.000000

WISDOT/CADDS SHEET 42

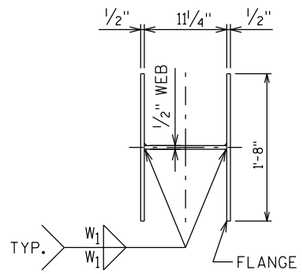
STUB AND MASONRY ANCHOR DETAILS



STUB SECTION



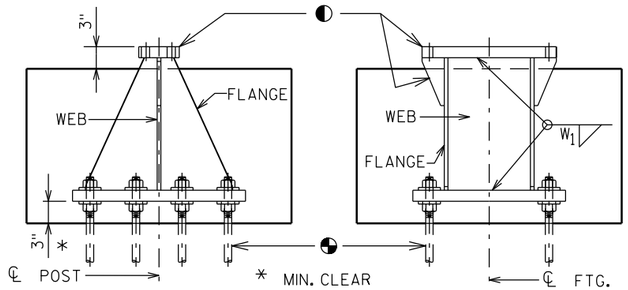
BASE PLATE



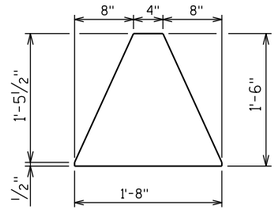
STUB

◐ SEE PLATE NO. A3-1 FOR DETAILS

◒ MASONRY ANCHORS TYPE S 1¼-INCHES (ADHESIVE). ALLOWABLE PULL OUT CAPACITY 14,995 KIPS. EMBED 1'-3" IN ROCK.



SECTION A SECTION B



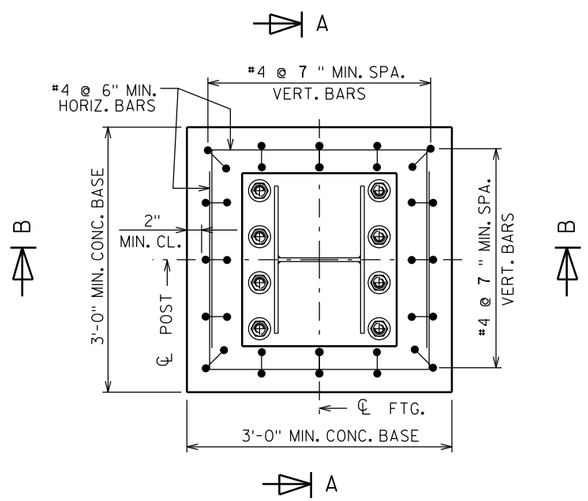
FLANGE

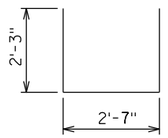
GENERAL NOTES

1. Quantities per Base:
   - REINFORCING BAR STEEL = 62 LBS
   - CONCRETE = 0.6 C.Y.
   - STEEL WEIGHT = 335 LBS
2. All materials, except anchor rod, nuts and washers, are to be A.S.T.M. A709 grade 50. All materials to be galvanized after fabrication.
3. If the contractor encounters rock before reaching the footing depth, per the A3-1 Sign Detail, determine the pull-out capacity of a test adhesive anchor installed in the rock. If the test result equals or exceeds the pull-out capacity of 14,995 KIPS, the contractor may install the breakaway stub for rock, according to this detail.

CONCRETE BASE AND REINFORCING STEEL DETAILS

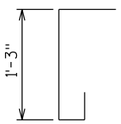
CONCRETE BASE SECTION





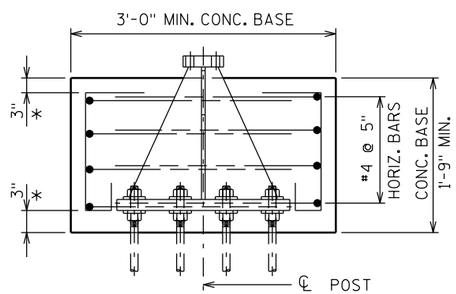
HORIZONTAL BAR

8 BARS @ 6'-11" LENGTH



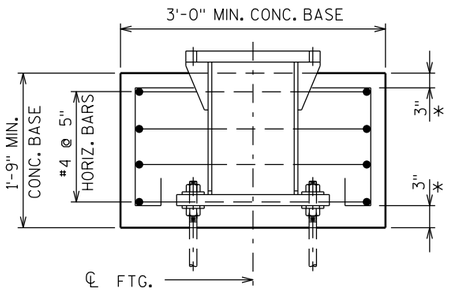
VERTICAL BARS

16 BARS @ 2'-4" LENGTH
MAY BE PLACED IN SKEW
FOR CLEARANCE NEED



SECTION A

* MIN. CLEAR



SECTION B

ALTERNATE BREAK-AWAY BASE ON ROCK
A3-1M

WISCONSIN DEPT OF TRANSPORTATION

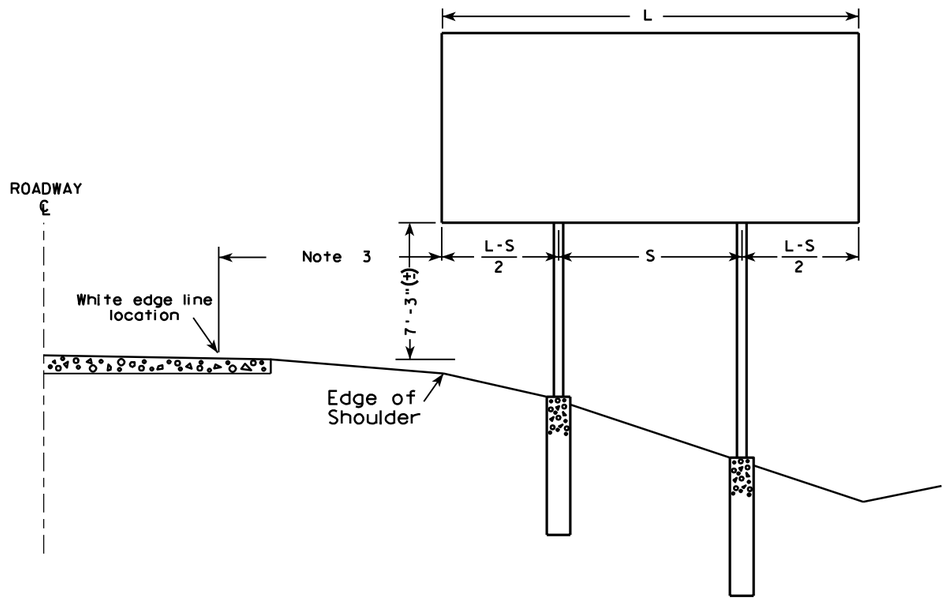
APPROVED Matthew R Rauch for State Traffic Engineer

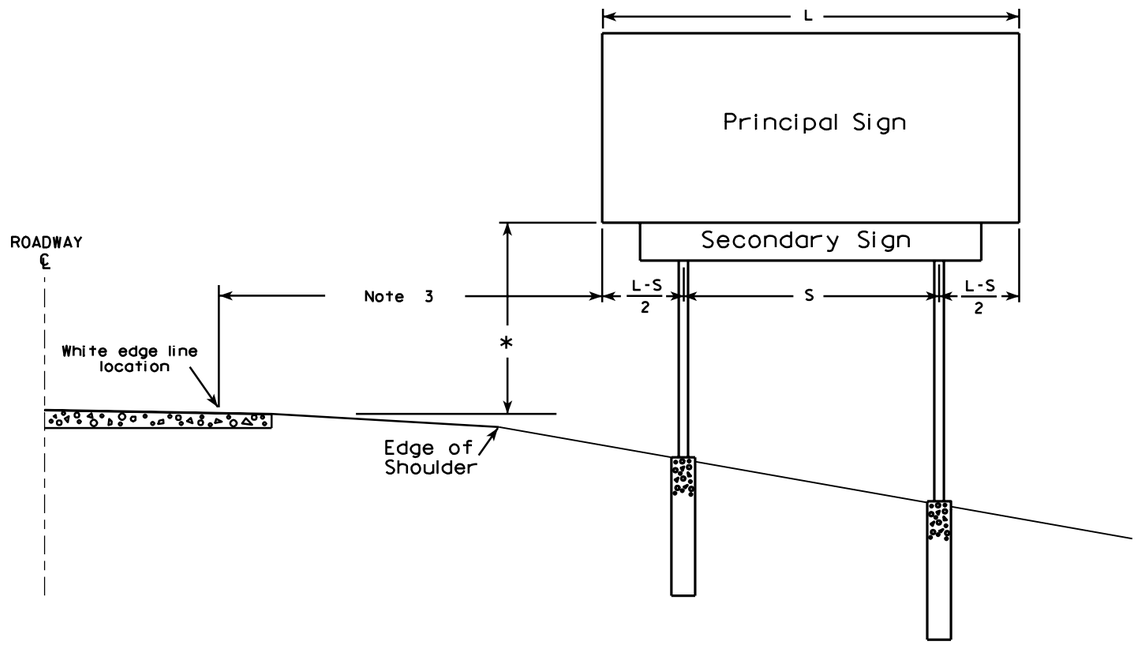
DATE 2/06/2014 PLAN A3-1M.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A31M.DGN PLOT DATE : 10-MAR-2014 15:16 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 1.556674:1.000000

WISDOT/CADDS SHEET 42





GENERAL NOTES

1. For a 2 post installation, S equals 3L/5, but shall not be less than 9 ft.
2. For a 3 post installation, S equals 5L/7, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3"(±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3"(±).

7

7

TYPICAL INSTALLATION
OF TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

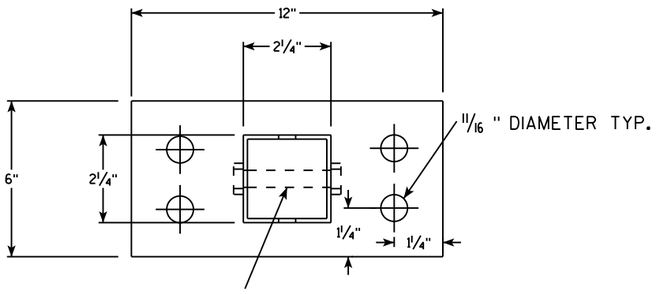
DATE 4/02/08 PLATE NO. A4-1.9

PROJECT NO:				SHEET NO: 139	E

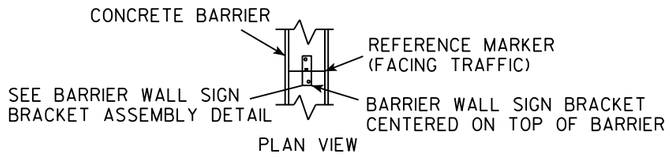
TYPICAL BARRIER WALL SIGN PLACEMENT DETAILS

TYPICAL REFERENCE MARKER MOUNTING DETAILS

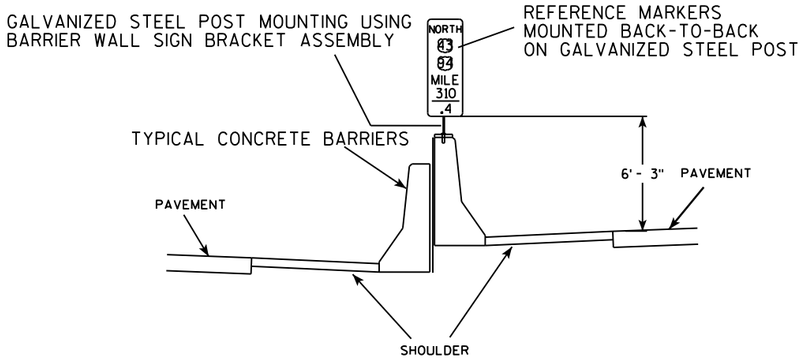
BARRIER WALL SIGN BRACKET ASSEMBLY
NOT TO SCALE



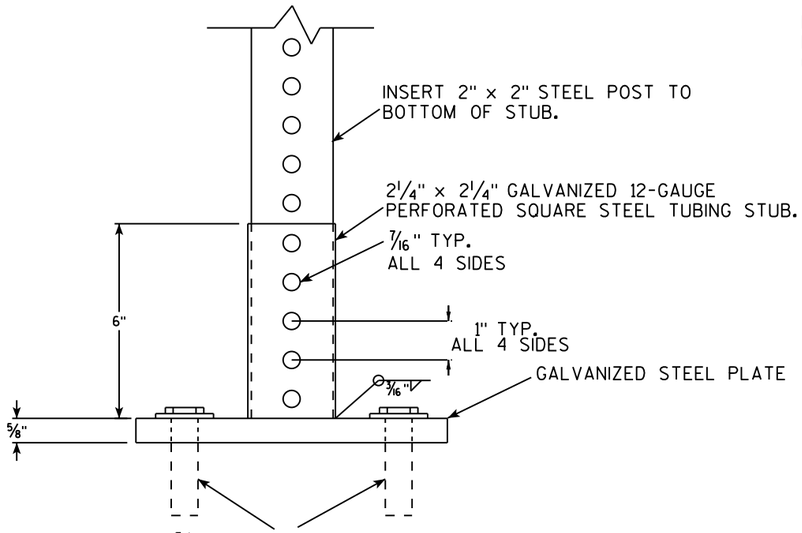
3½" X ⅜" GALVANIZED STEEL BOLT & HARDWARE
PLAN VIEW



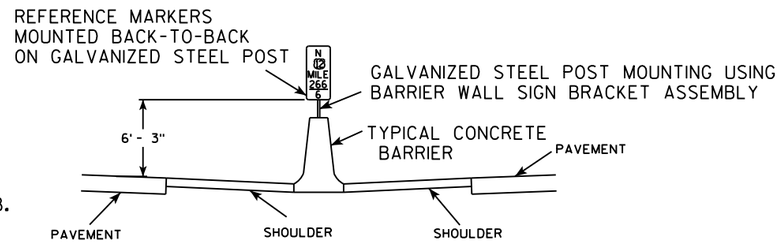
MEDIAN BARRIER MOUNTING DETAIL



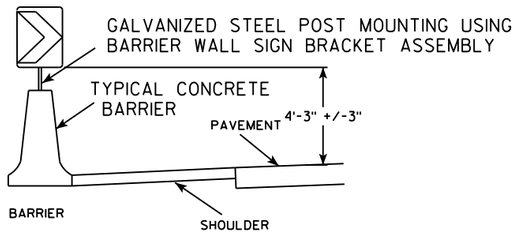
TYPICAL ENHANCED REFERENCE
MARKER PLACEMENT ON DOUBLE MEDIAN BARRIER



SIDE VIEW



TYPICAL ENHANCED REFERENCE
MARKER PLACEMENT ON SINGLE MEDIAN BARRIER



TYPICAL CHEVRON MARKER PLACEMENT

NOTES

1) ALL MATERIAL TO BE APPROVED BY ENGINEER BEFORE INSTALLATION
2) SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS.

SIGN MOUNTING ON BARRIER WALL

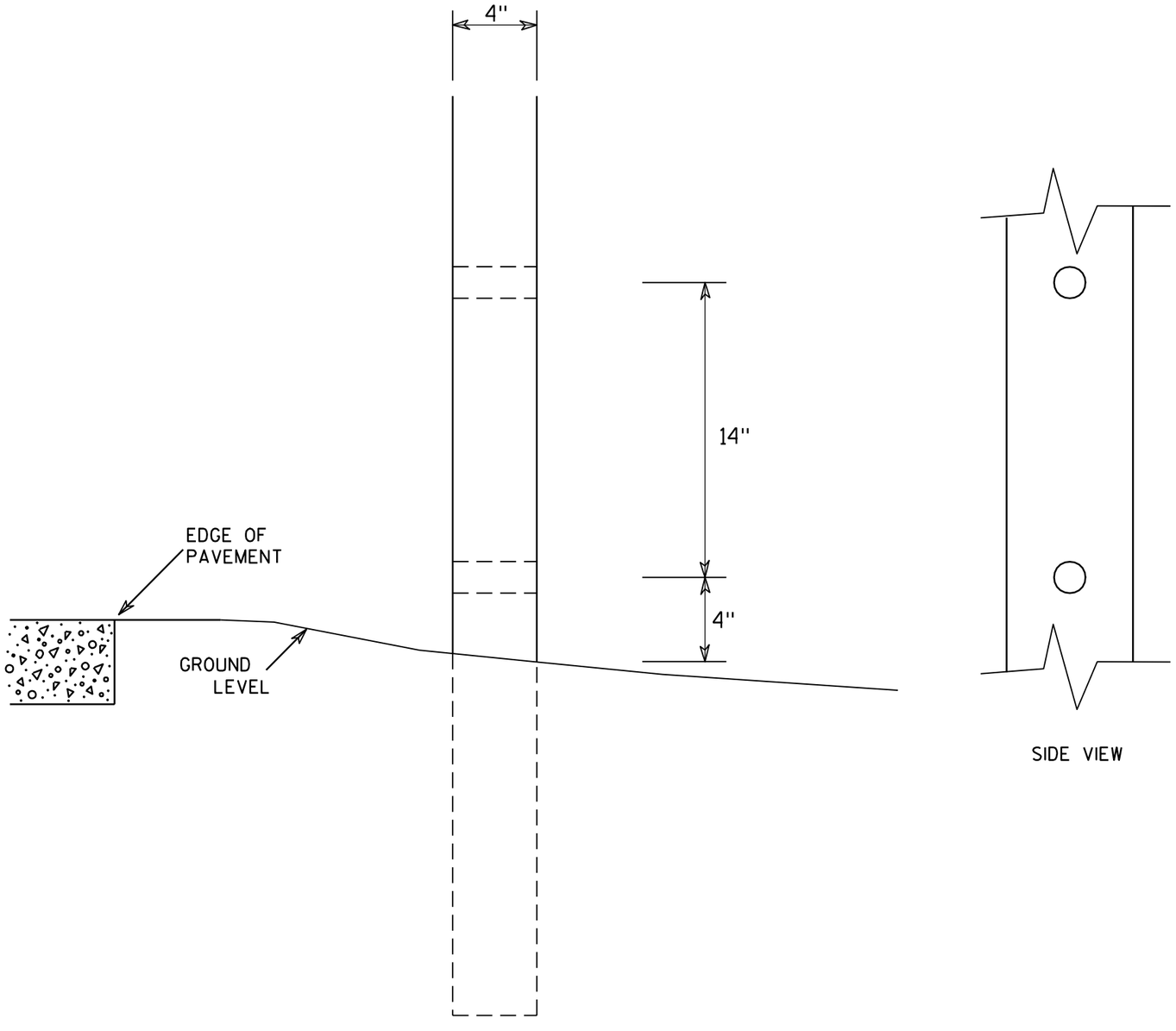
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE A4-10.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A410.DGN PLOT DATE : 30-SEP-2013 13:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 14.593816:1.000000
WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

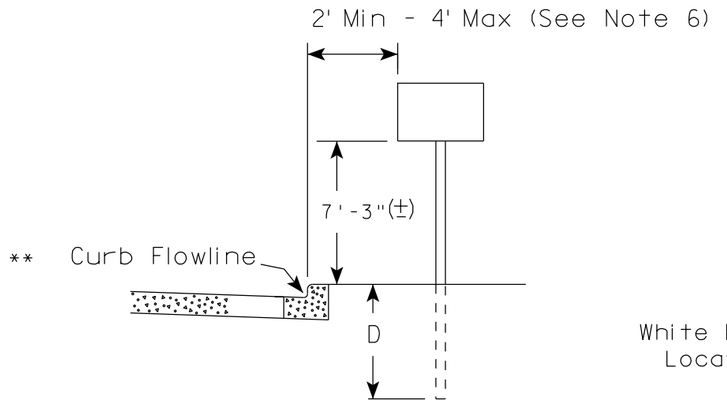
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

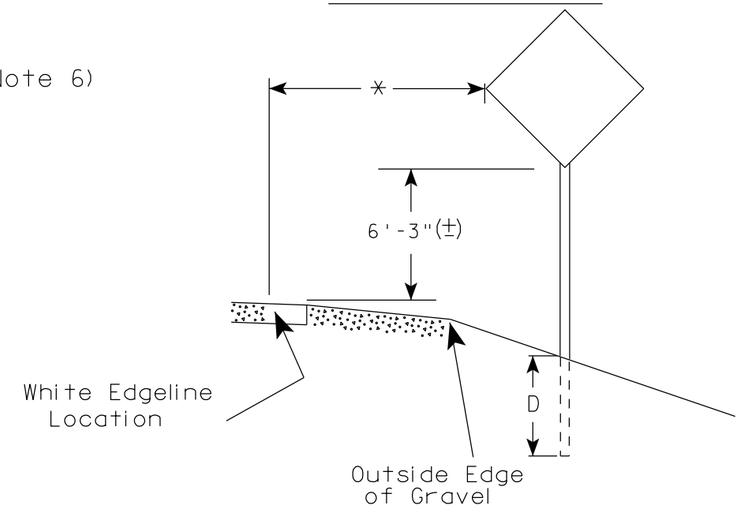
DATE 3/27/97 PLATE NO. A4-11.2

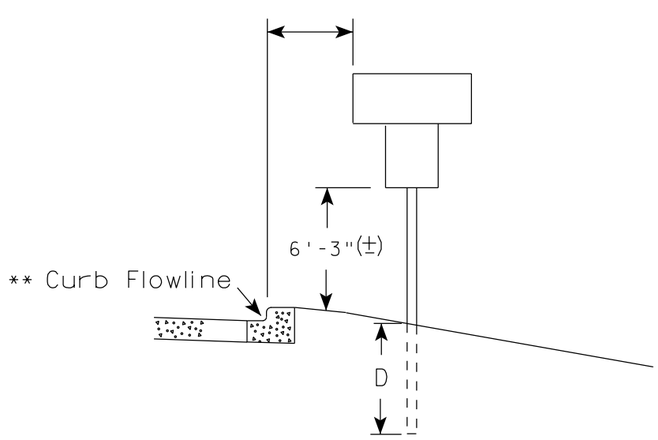
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E

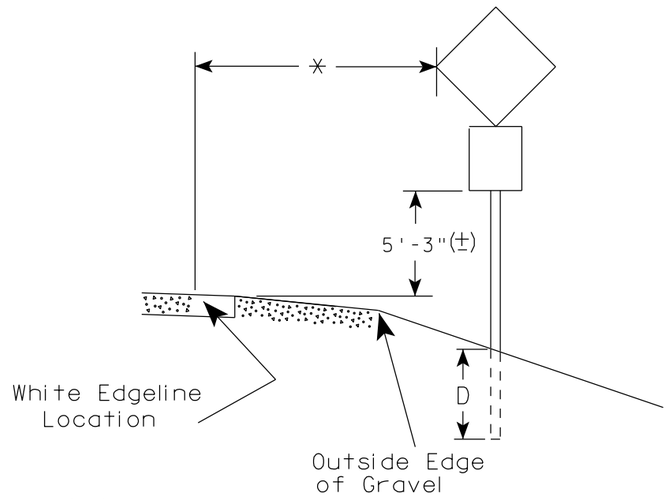
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

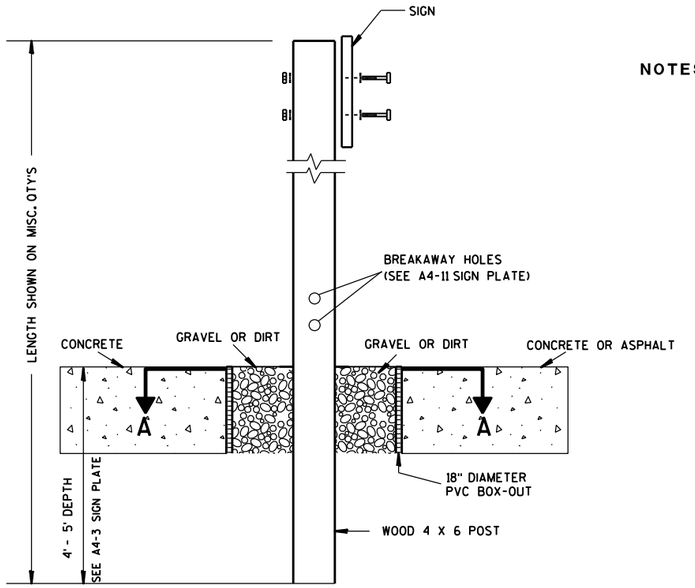
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 10/13/14 PLATE NO. A4-3.19

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

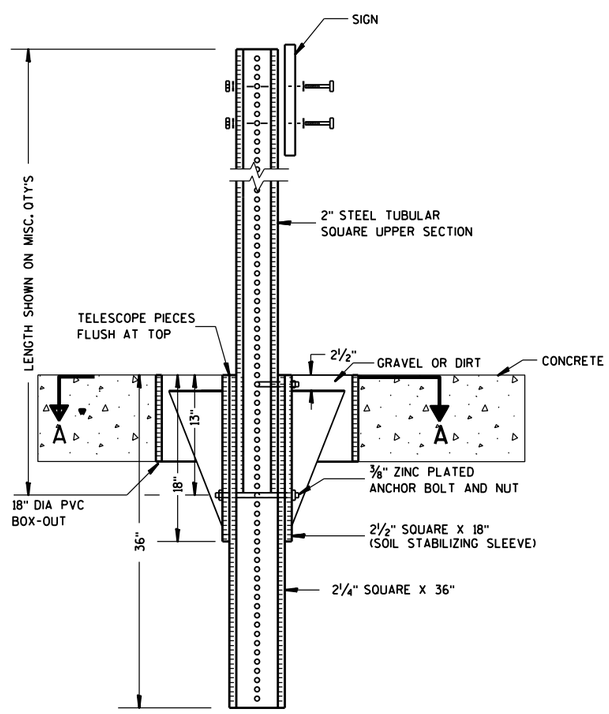
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43.DGN PLOT DATE : 13-OCT-2014 16:30 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 99.237937:1.000000 WISDOT/CADDS SHEET 42



ELEVATION VIEW

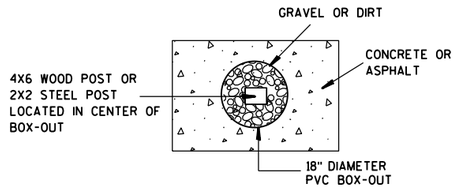
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

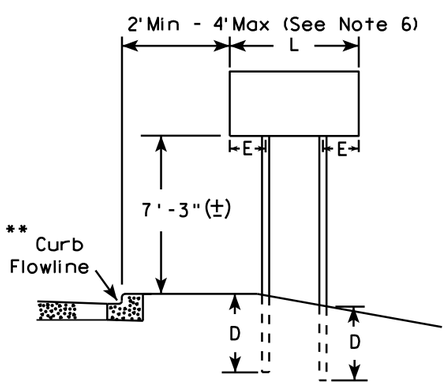
APPROVED Matthew R Rauch
for State Traffic Engineer

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

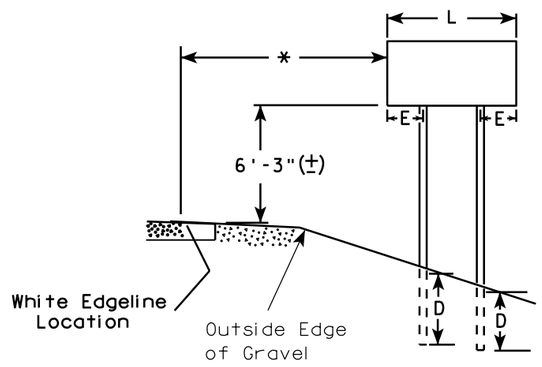
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

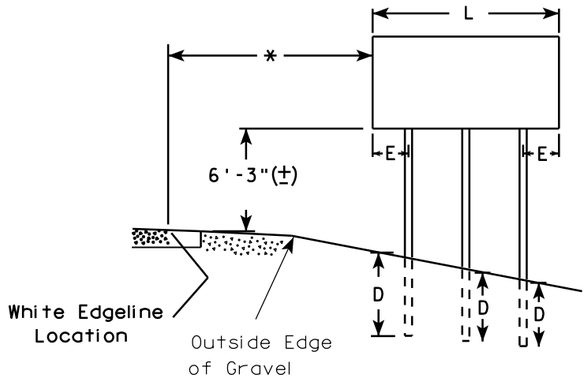
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

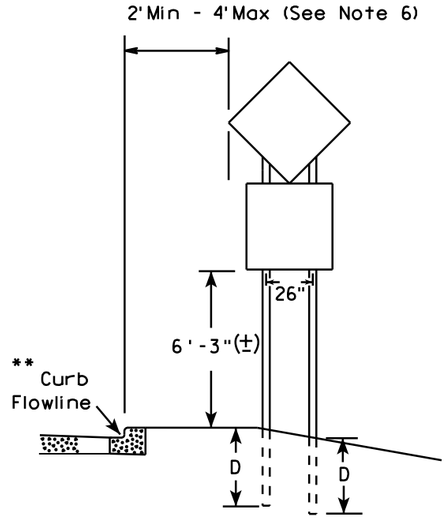
URBAN AREA



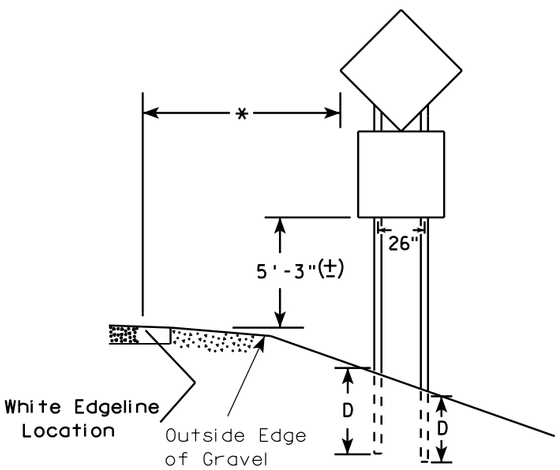
RURAL AREA (See Note 3)







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 stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), 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

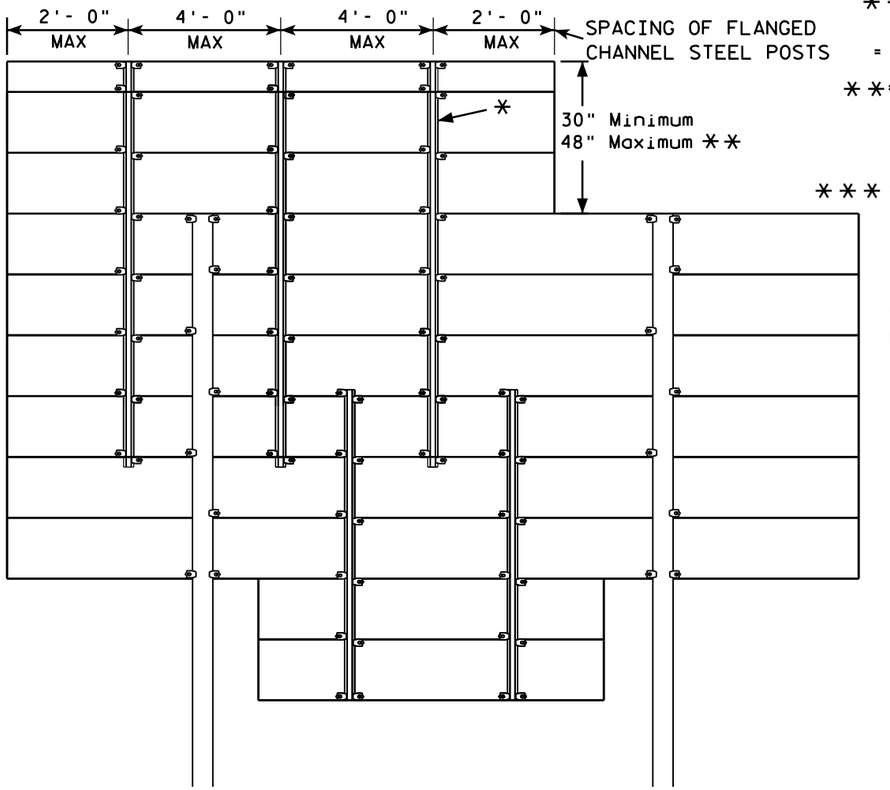
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE NO. A4-4 144 13

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

GROUND MOUNTED SIGN

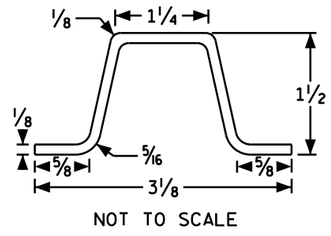


* =2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

** =FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

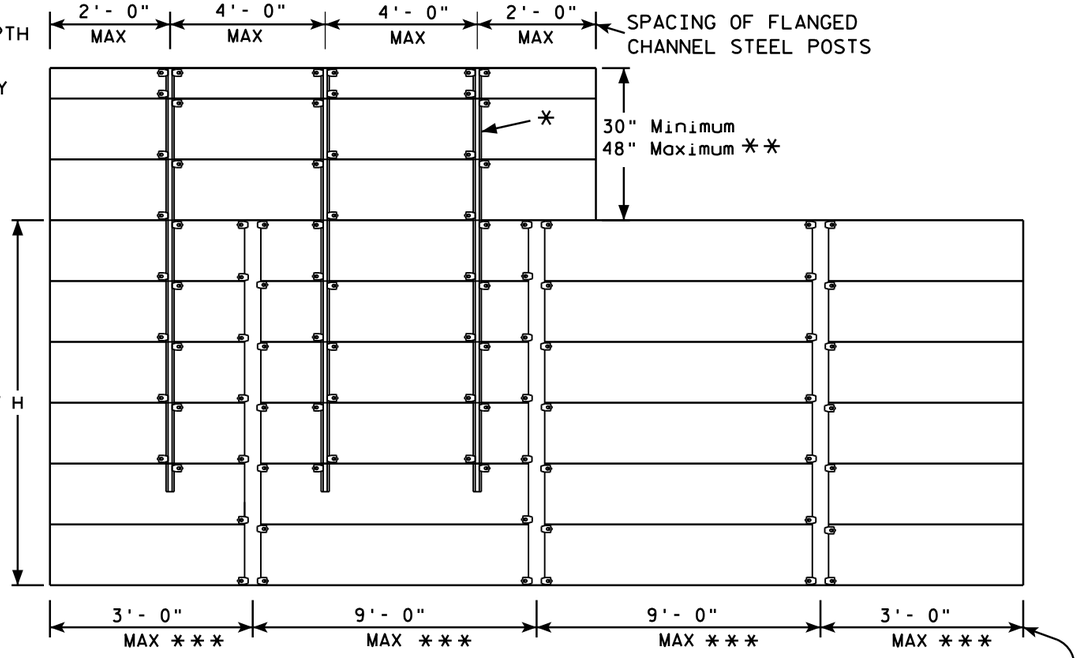
*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAIL



NOT TO SCALE

SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:

   PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
   PANEL LENGTH 9'- 0" - 12'- 0" = 3 CHANNELS
   PANEL LENGTH 13'- 0" OR MORE = 4 CHANNELS

   If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

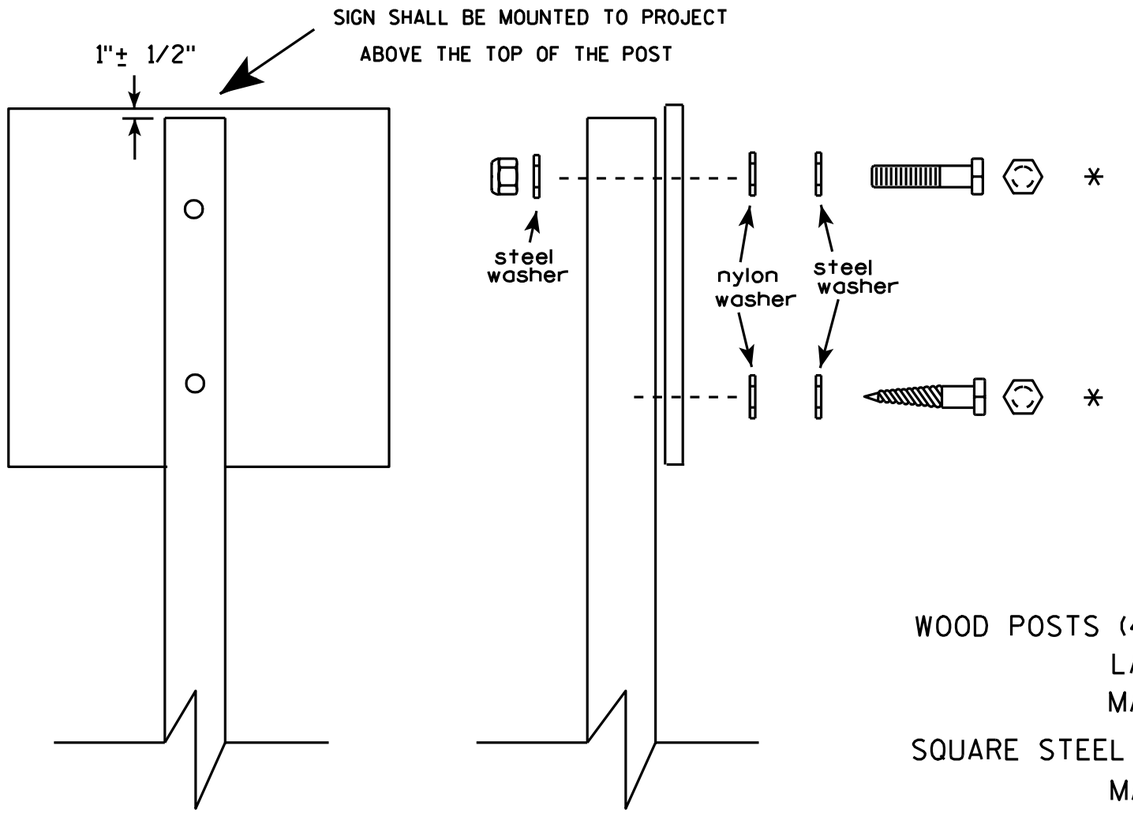
ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/05/13 PLAT 14-6.12

PROJECT NO: | SHEET NO: E



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

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

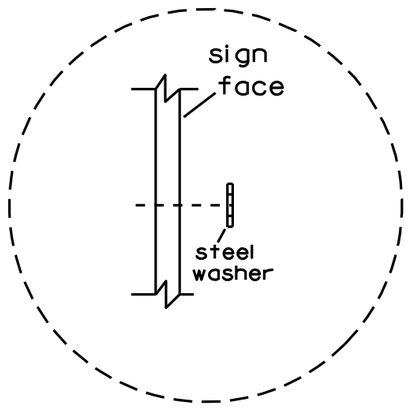
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

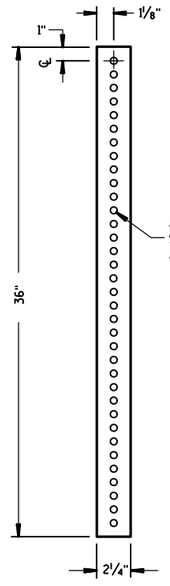
7

PROJECT NO:

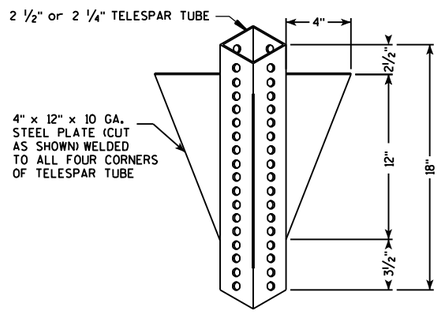
SHEET NO: 146 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

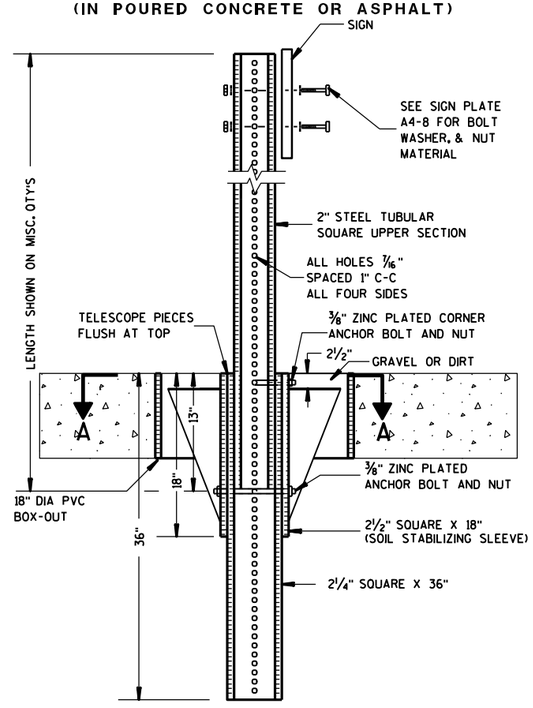
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



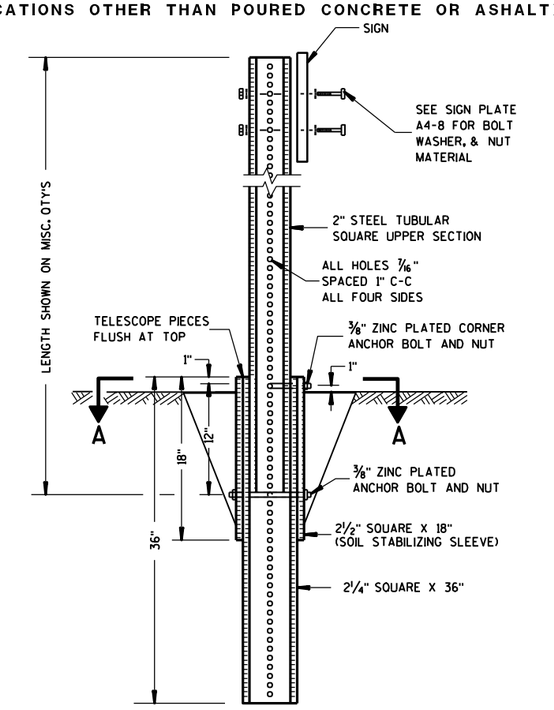
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

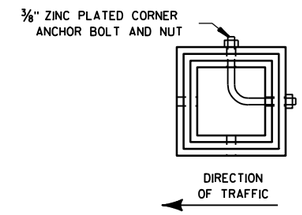


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

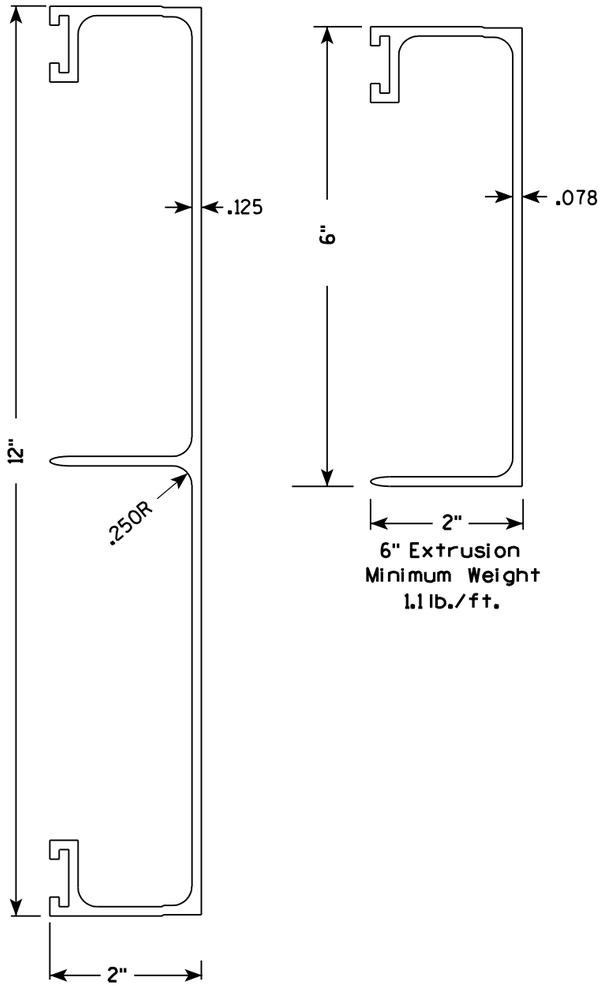
TUBULAR STEEL
SIGN POST
A4-9

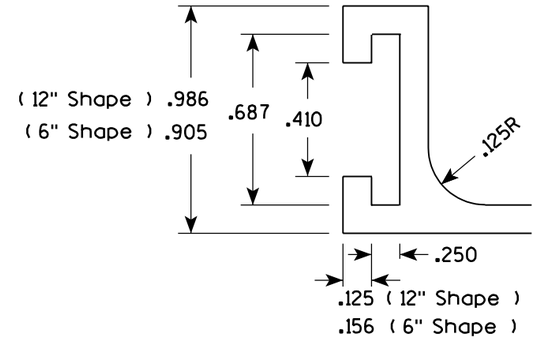
WISCONSIN DEPT OF TRANSPORTATION

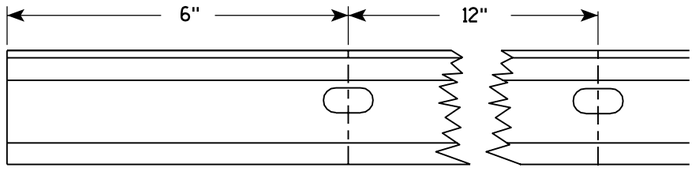
APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/30/12 PLATE NO. A4-9.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 147	E

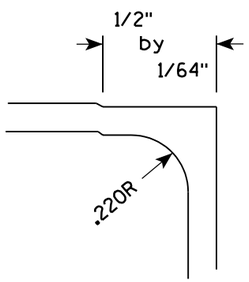
Extruded Shape







Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

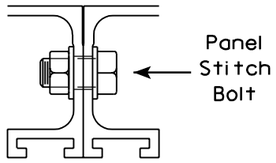


Hardware

STITCH BOLT, WASHER & NUT

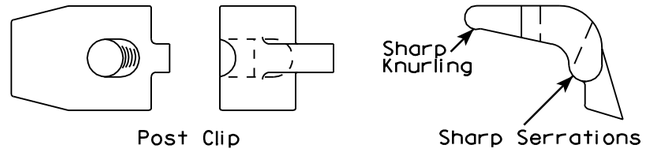
The hardware includes:

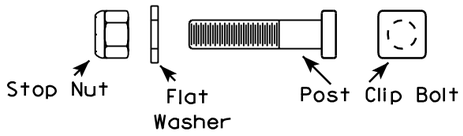
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.





NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

ALUMINUM EXTRUSIONS FOR TYPE I SIGNS

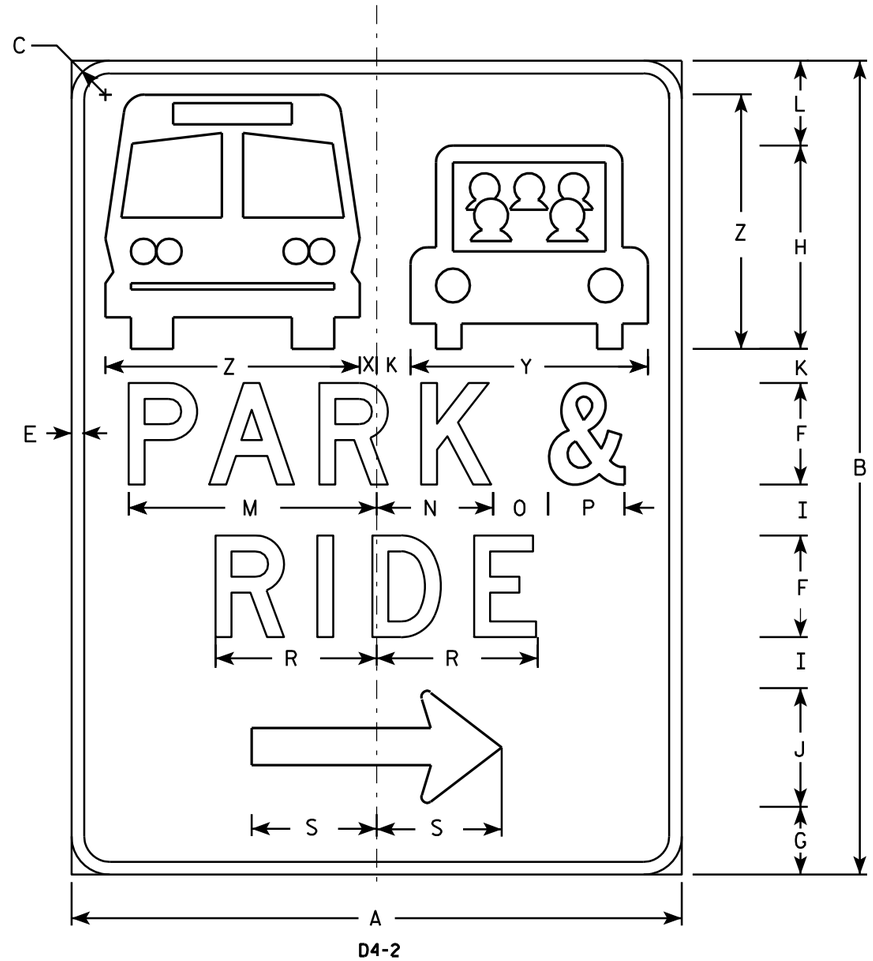
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

DATE 11/18/99 PLATE NO. A5-2.9

PROJECT NO:

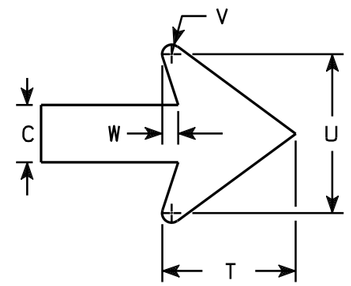
SHEET NO: 148 E



D4-2

NOTES

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



Arrow Detail

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

STANDARD SIGN
D4-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

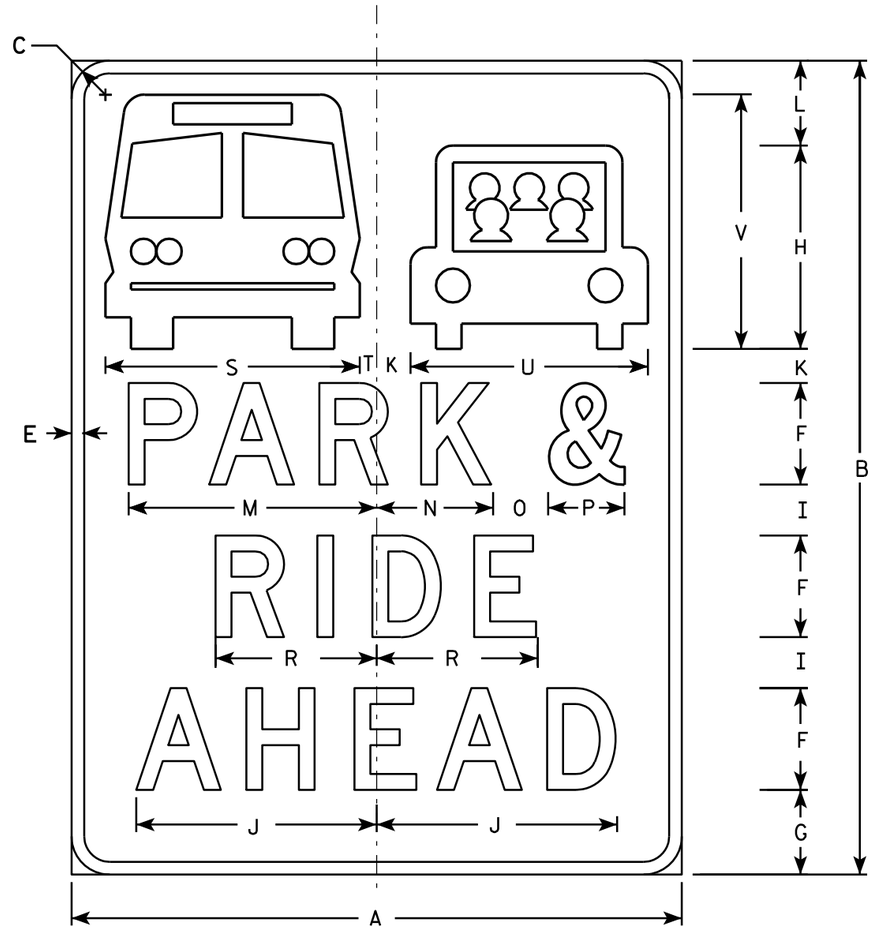
SHEET NO: 149 E

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

WISDOT/CADDS SHEET 42

7

7



D4-2A

NOTES

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

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

STANDARD SIGN
D4-2A

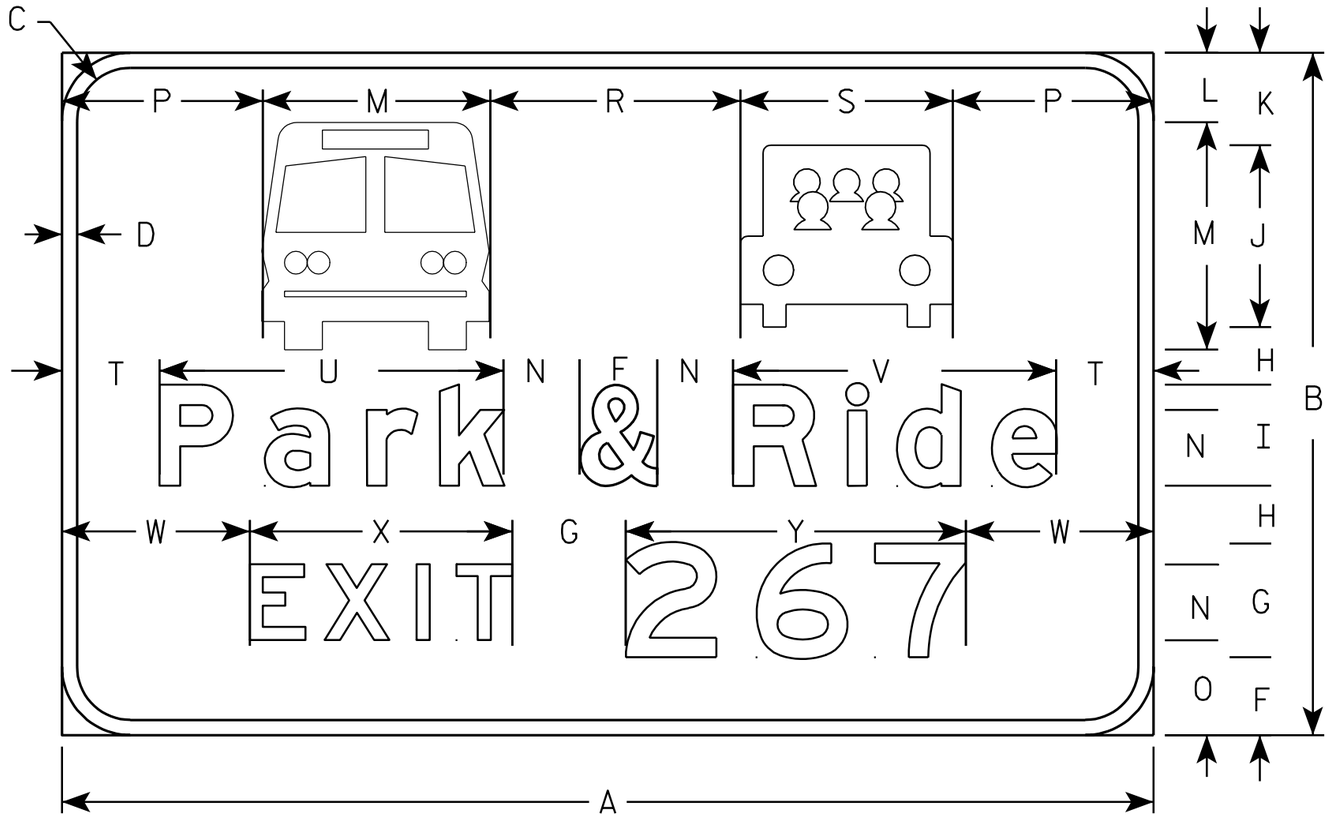
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 150 E



D4-3

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	
2	3600 mm X 2250 mm
3	
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	144	90	9	2		10 1/4	15	7 5/8	13 5/16	24	12 3/16	9 1/8	30	10	12 1/2	26 1/2		33	28	12 7/8	45 3/8	42 5/8	24 3/4	34 5/8	44 7/8		90.0	8.1
3																												
4																												
5																												

STANDARD SIGN
D4-3

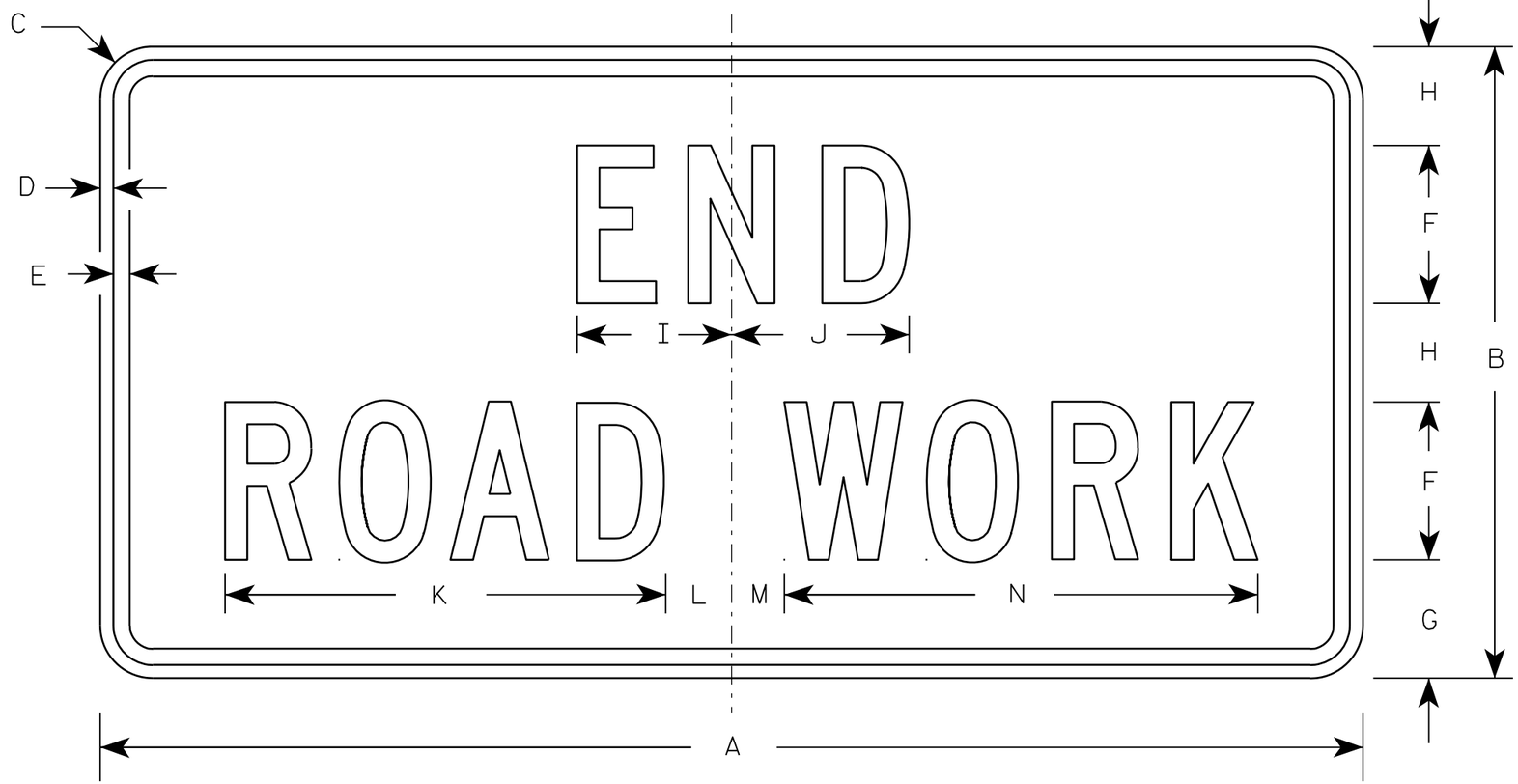
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/5/08 PLATE NO. D4-3.2

PROJECT NO:

SHEET NO: 151 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

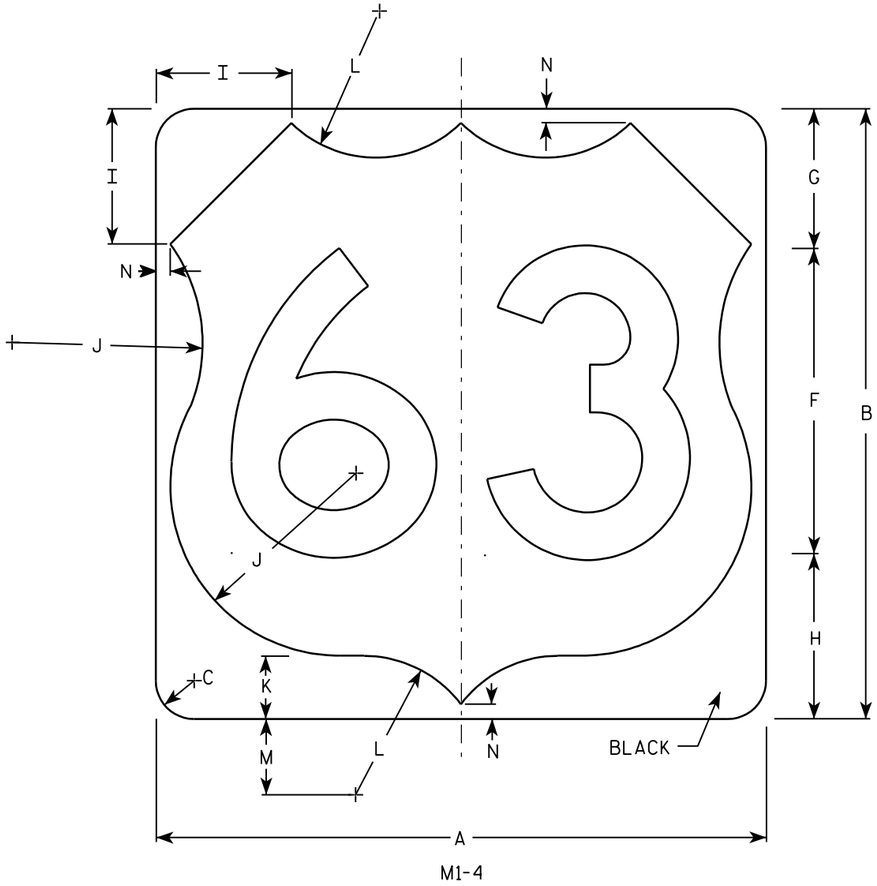
APPROVED Matthew R Rauch
for State Traffic Engineer

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

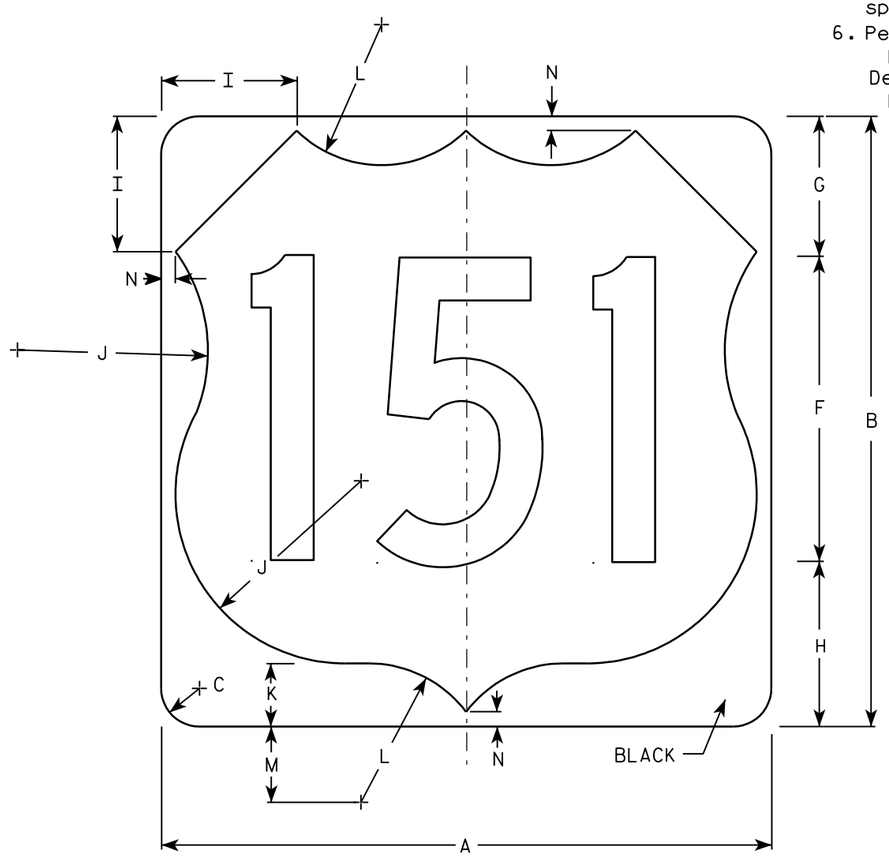
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 152	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

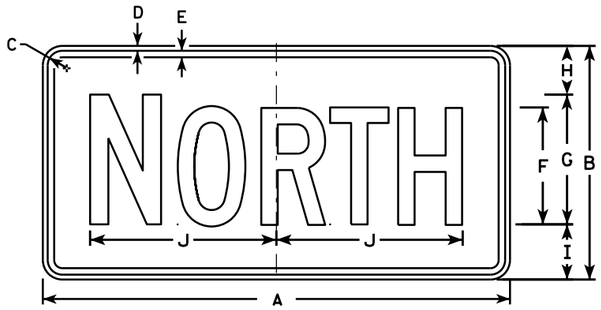
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

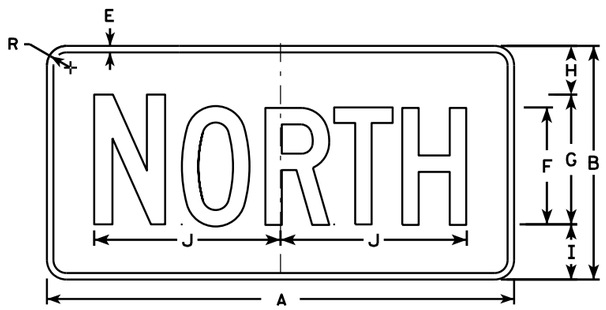
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/25/05 PLATE NO. M1-4.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 153 | E



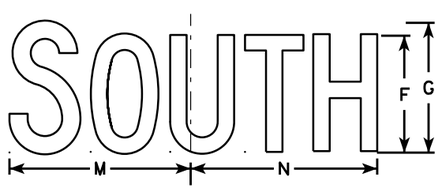
M3-1
MK3-1
MM3-1
MN3-1



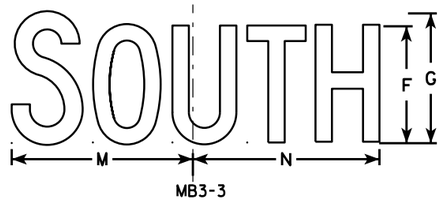
MB3-1

M3-2
MK3-2
MM3-2
MN3-2

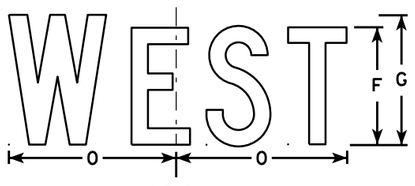
MB3-2



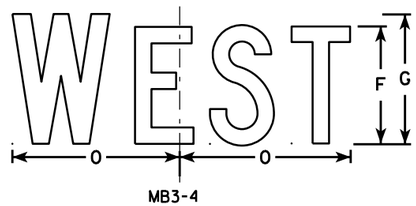
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



M3-4
MK3-4
MM3-4
MN3-4



MB3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

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

STANDARD SIGNS
M3-1 thur M3-4
SERIES

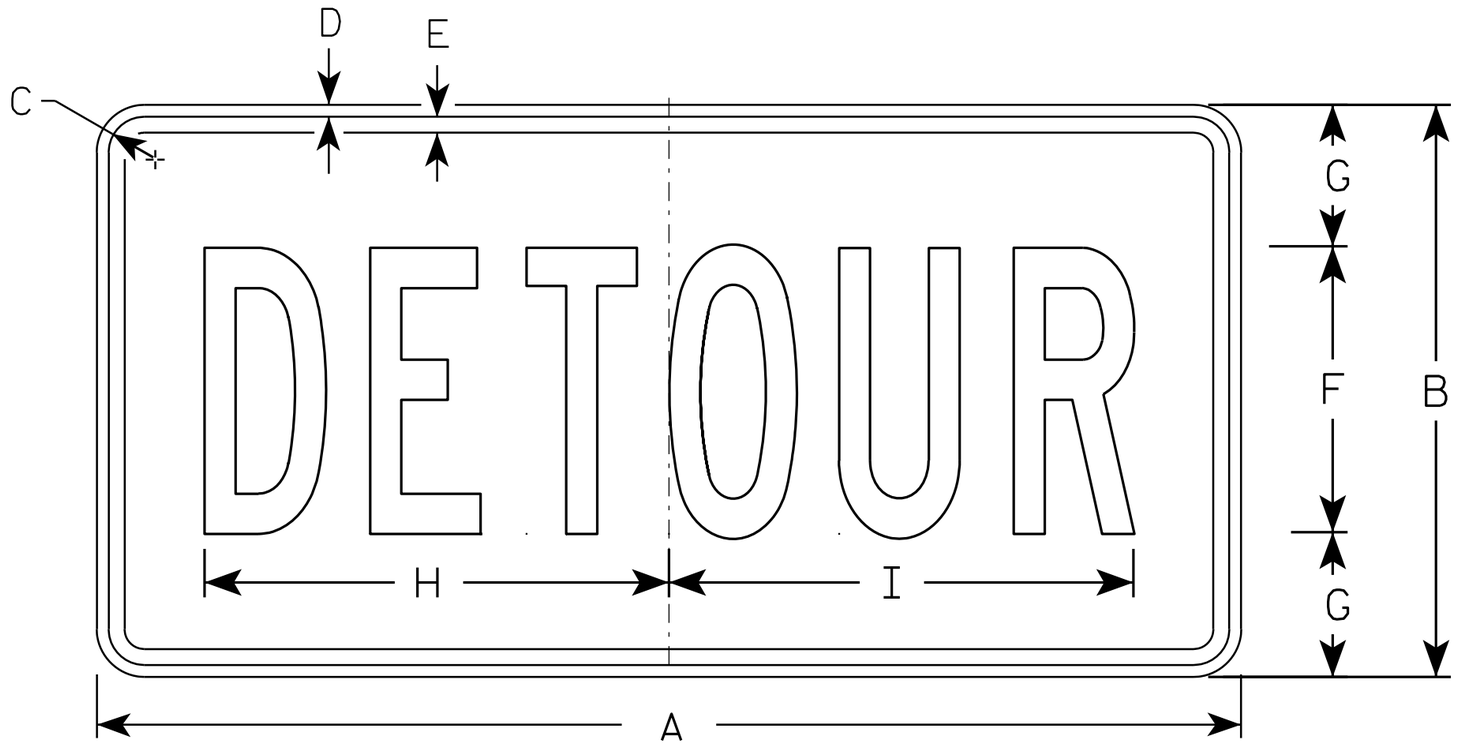
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

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

7



M4-8

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

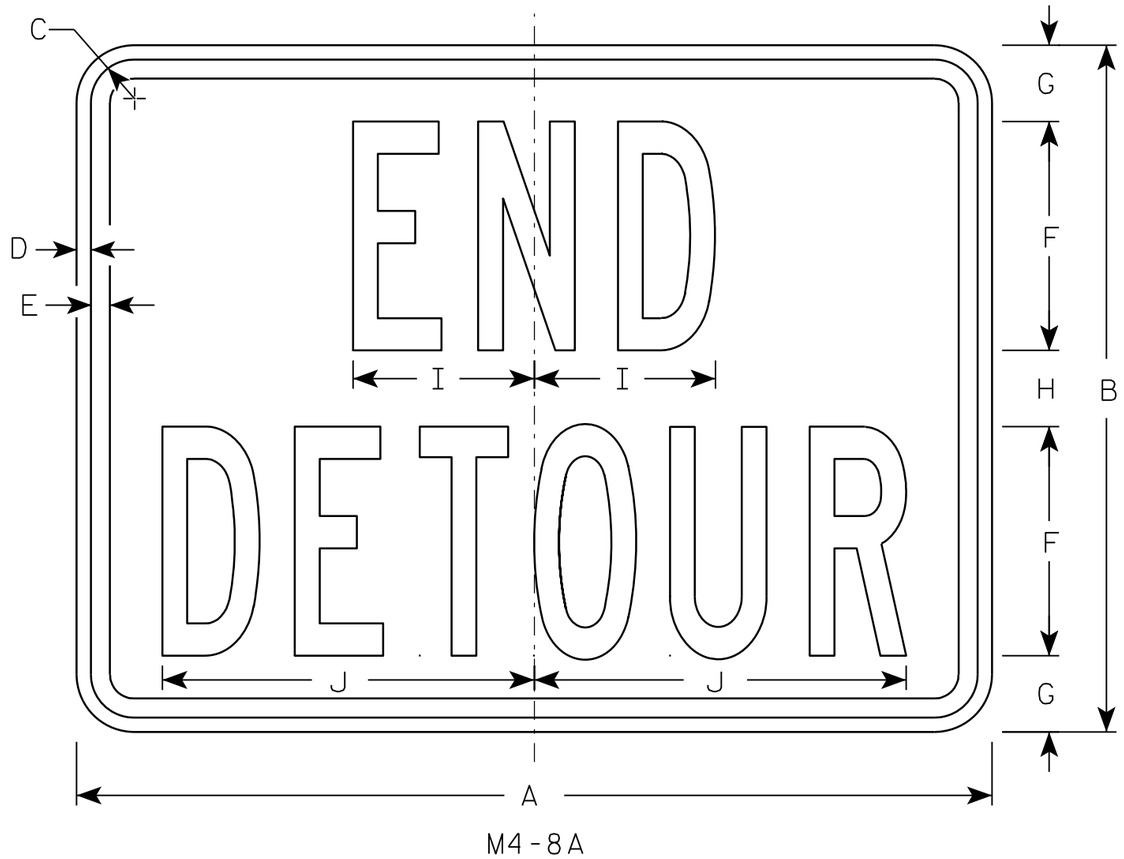
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 155	E



M4-8A

NOTES

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

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

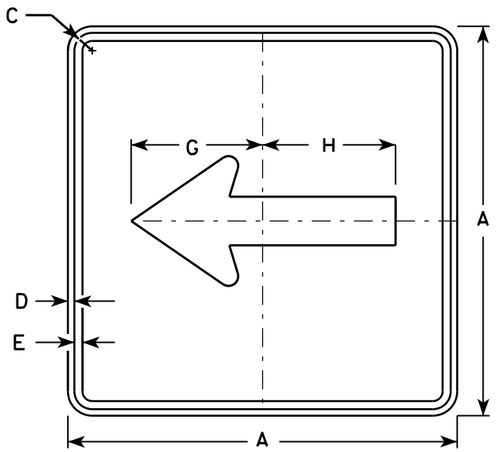
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

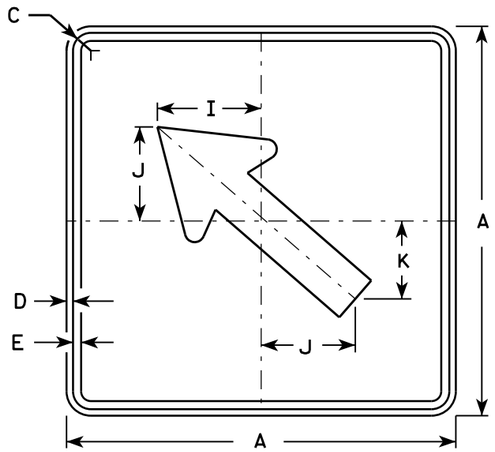
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 156	E



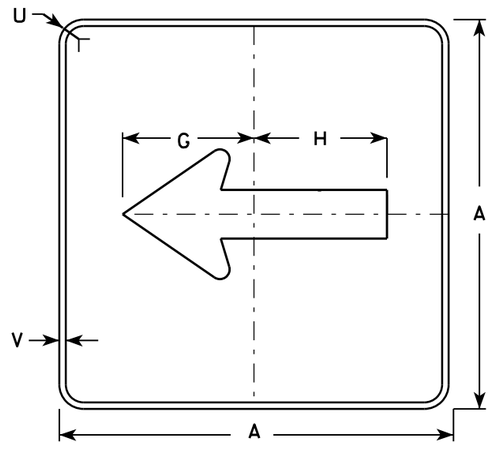
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



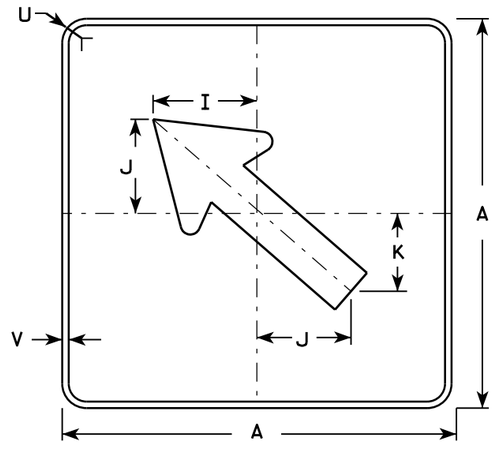
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

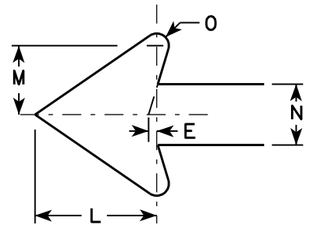
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MG6-1 and MG6-2 Background - Green
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1



MB6-2



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

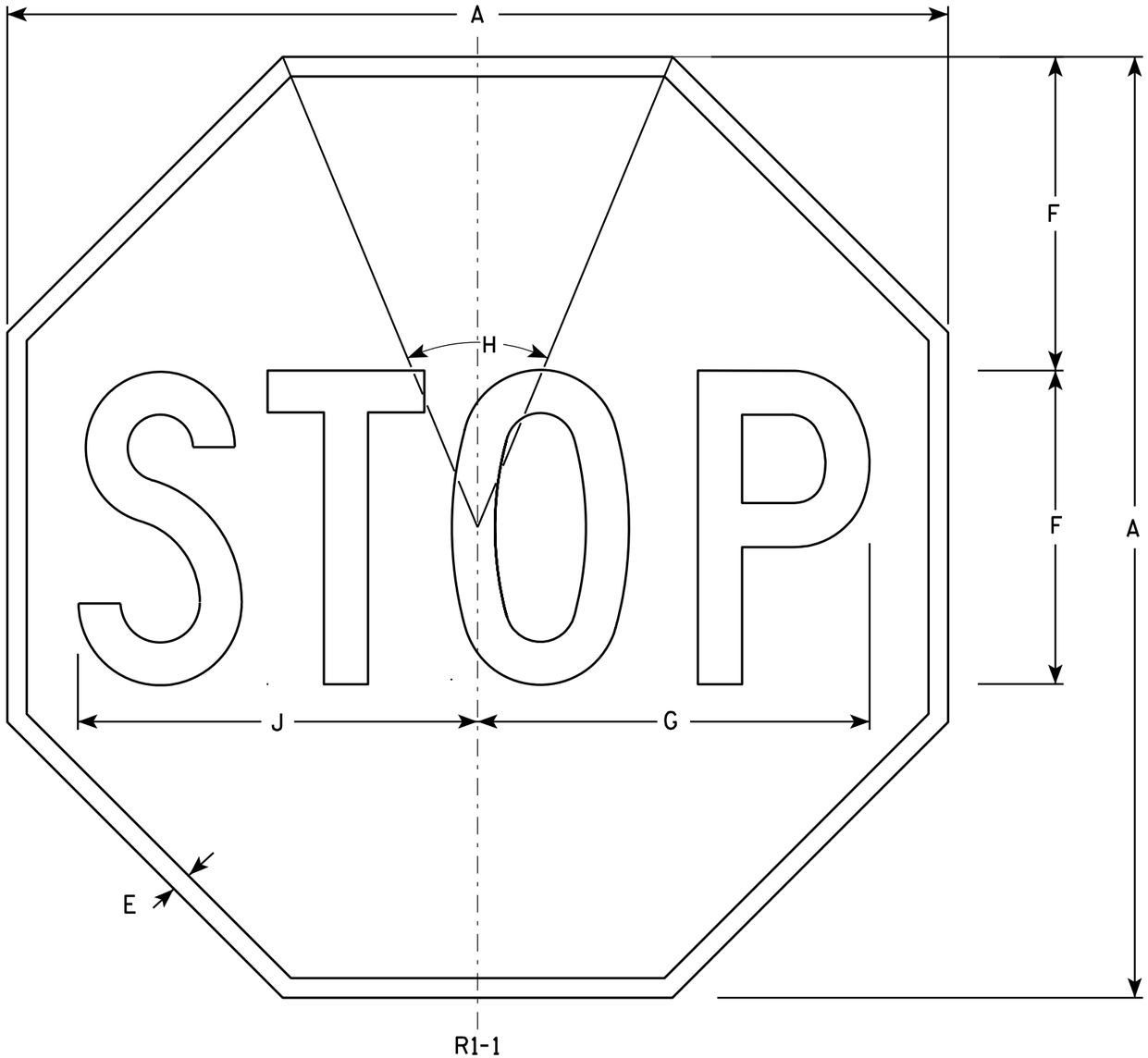
STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/03/14 PLATE 157 M6-1.14

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

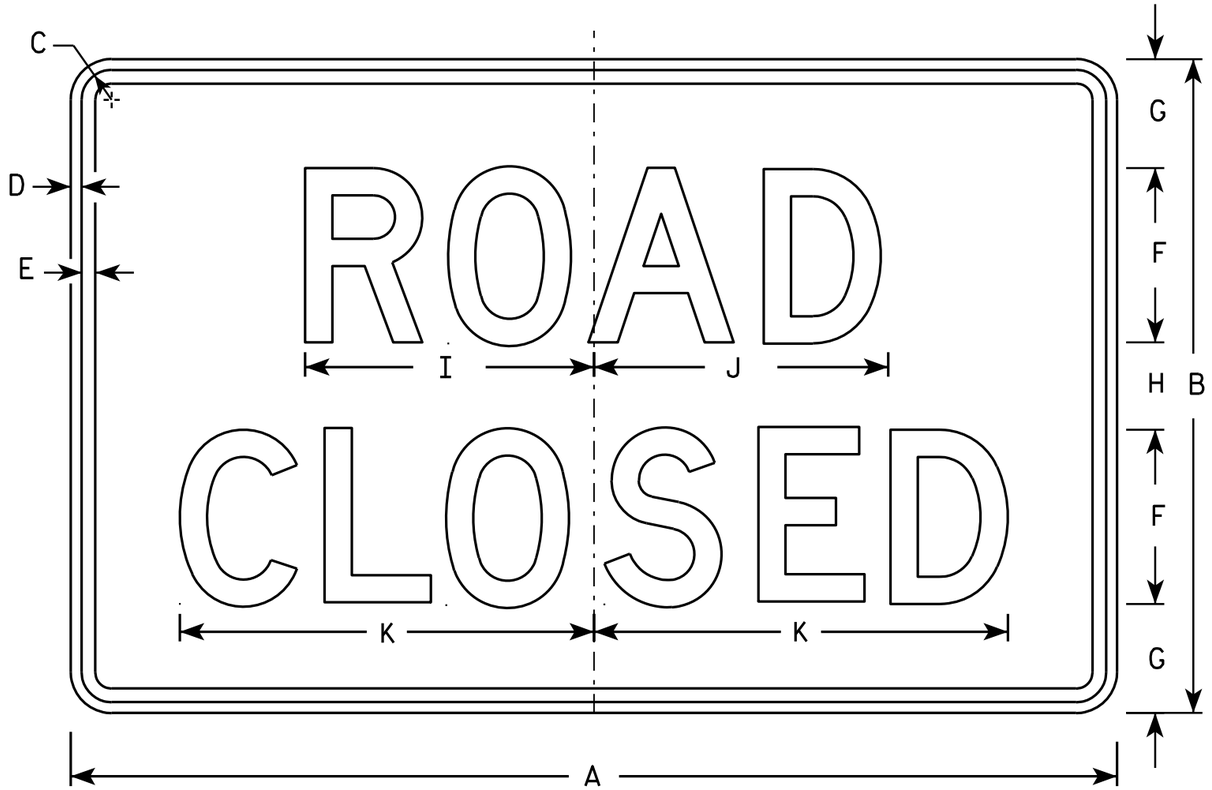
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

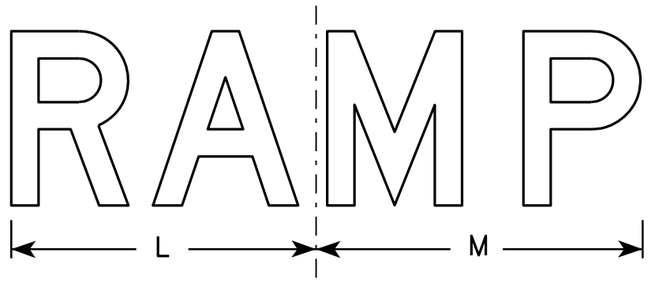
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 158	E



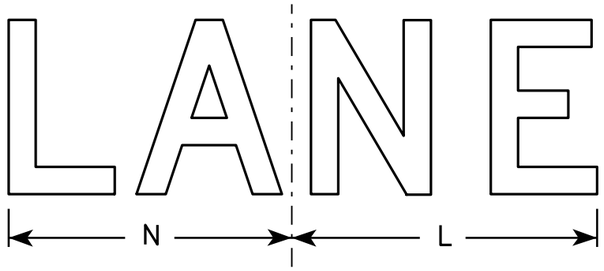
R11-2

NOTES

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



R11-2R



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

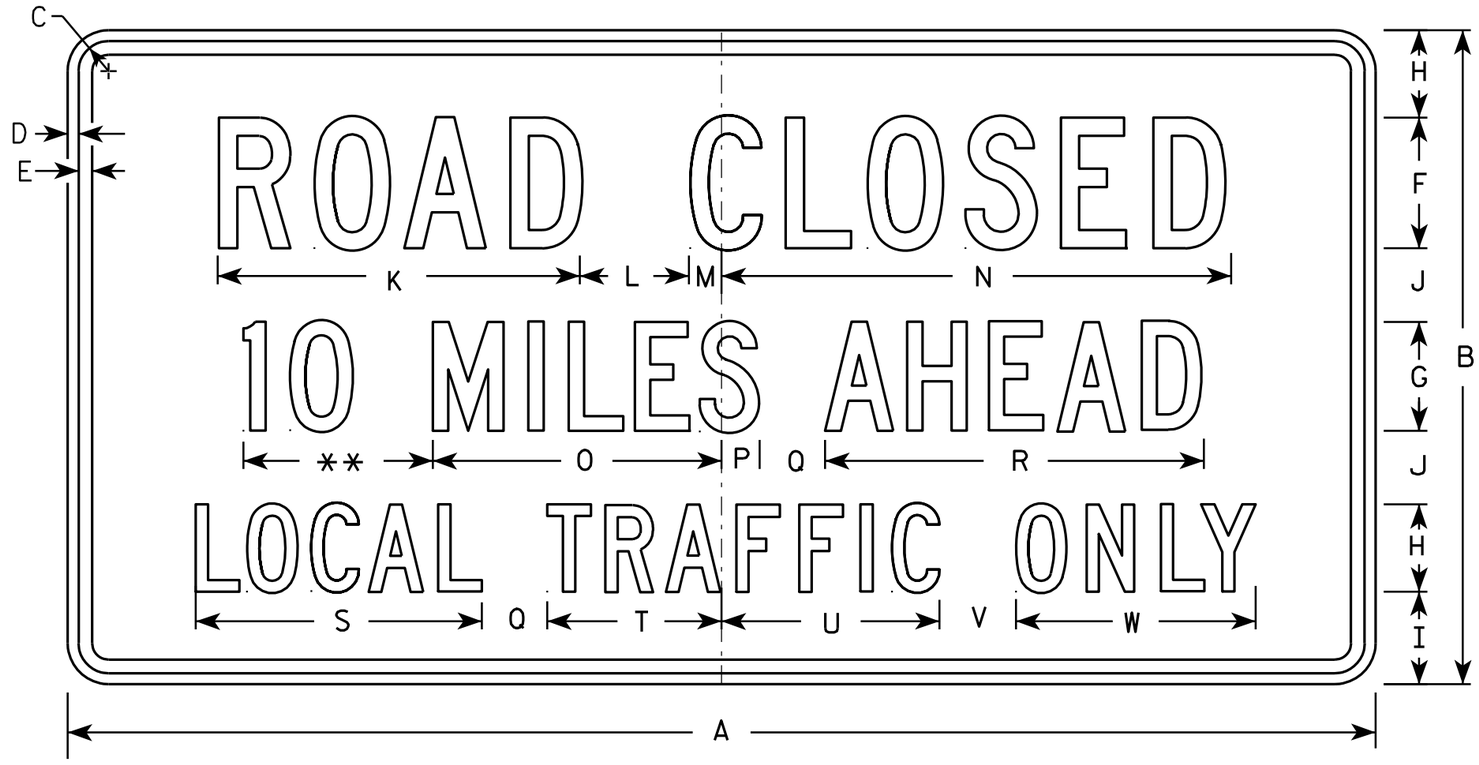
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 159 | E



R11-3

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - 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. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

** See Note 5

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	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	11 1/8	3	1 1/8	15 1/4	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4				4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
3																											
4																											
5																											

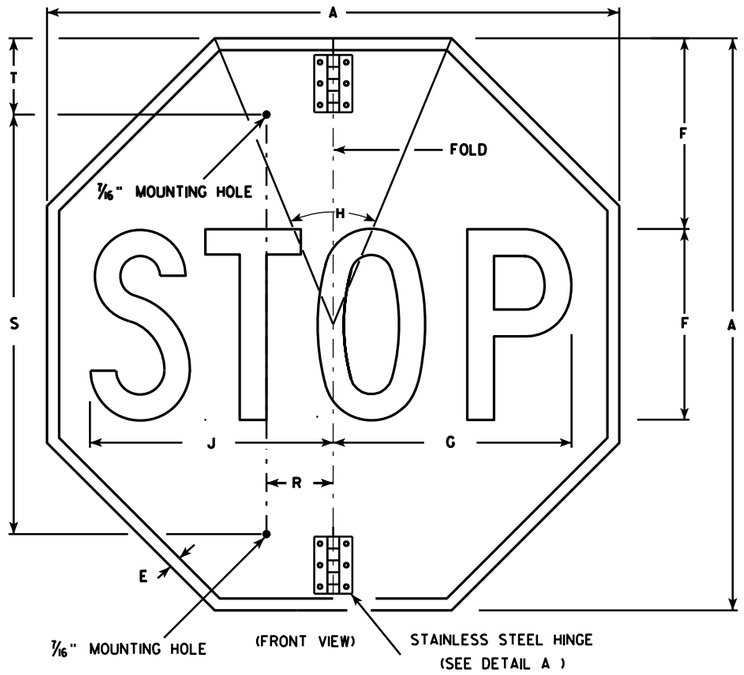
STANDARD SIGN
R11-3

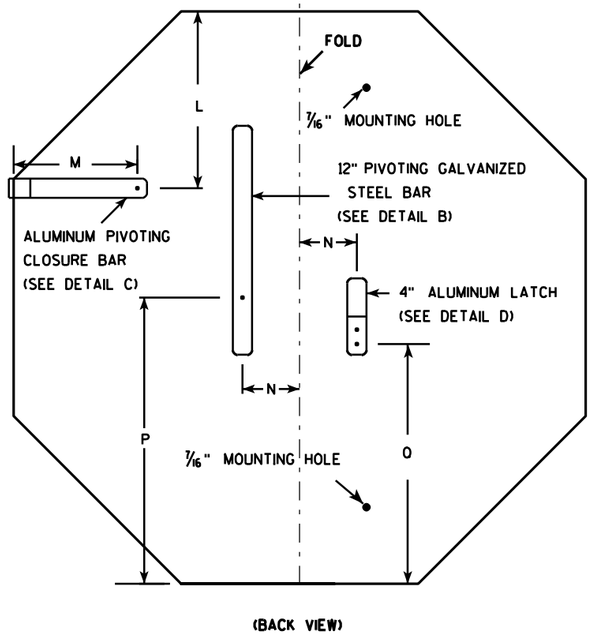
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-3.6

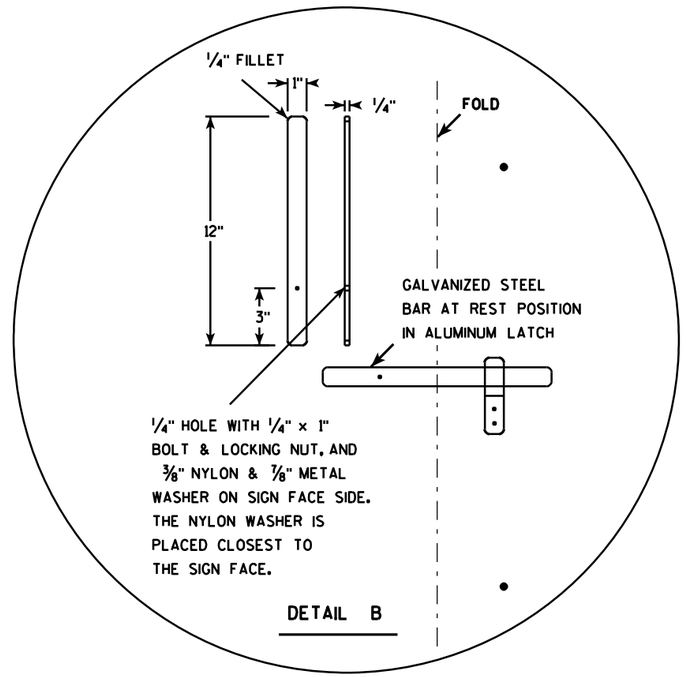
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 160	E



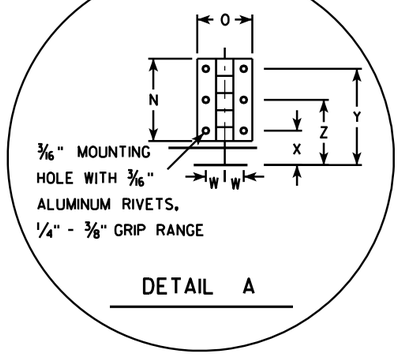


NOTES

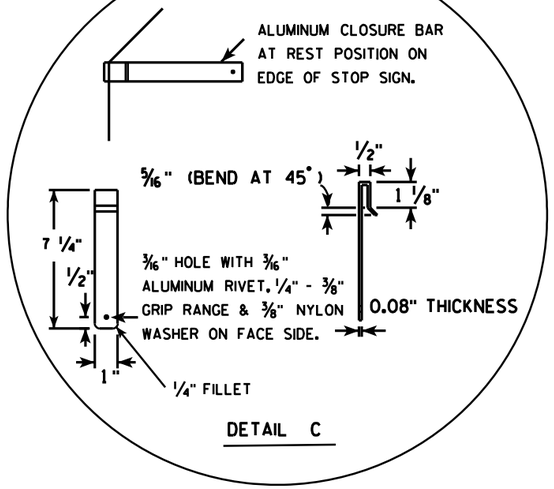
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



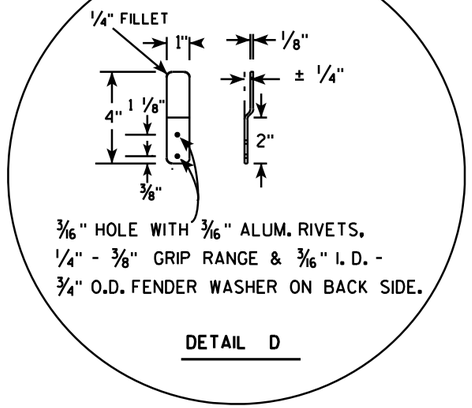
DETAIL B



DETAIL A



DETAIL C



DETAIL D

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

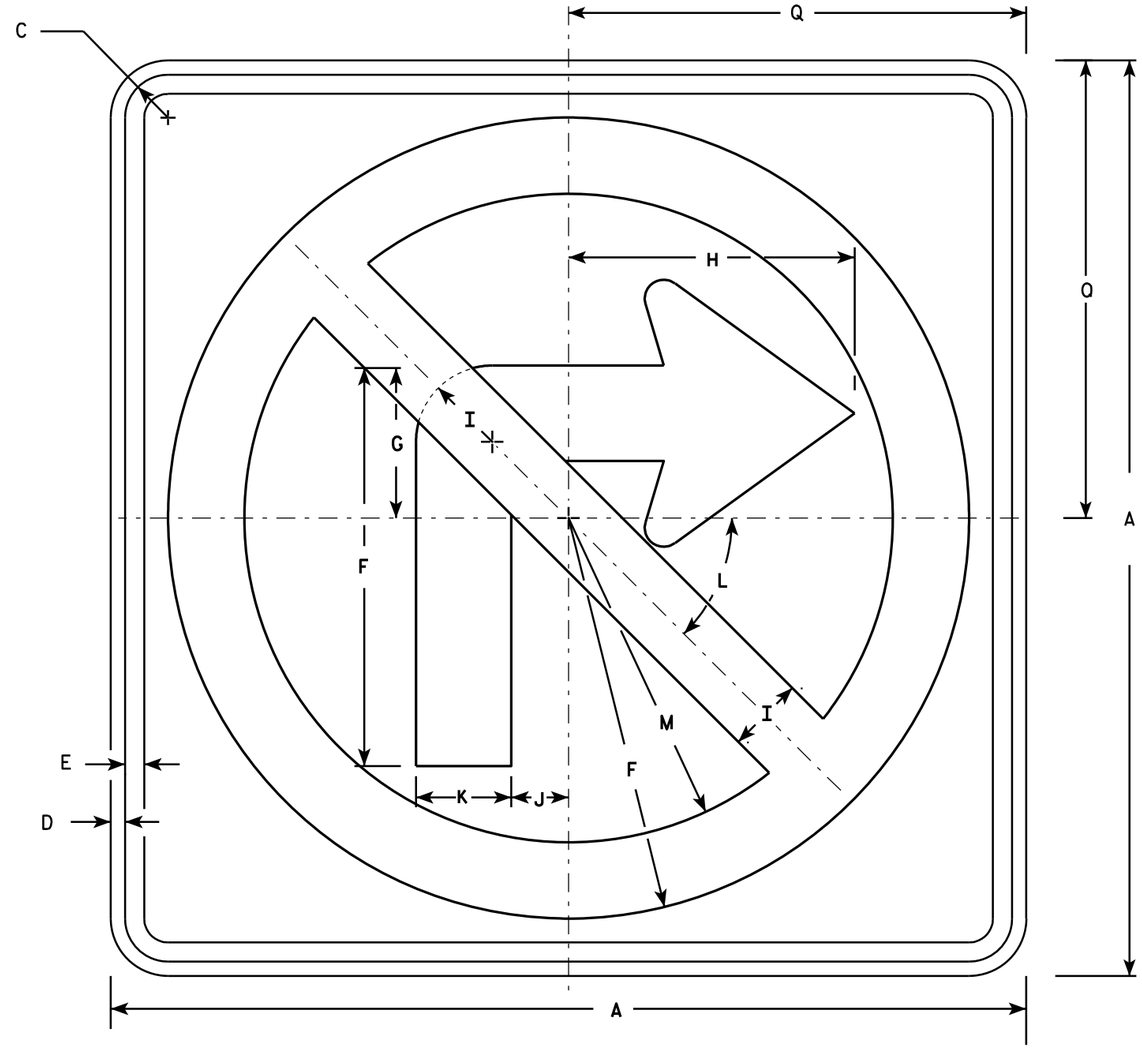
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 161 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R11F.DGN PLOT DATE : 02-DEC-2010 15:26 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 7.945391:1.000000

WISDOT/CADDS SHEET 42

7

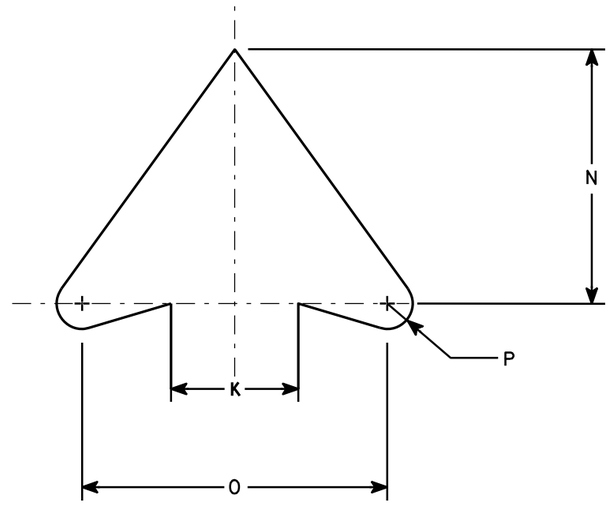
7



R3-1

NOTES

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



ARROW DETAIL

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

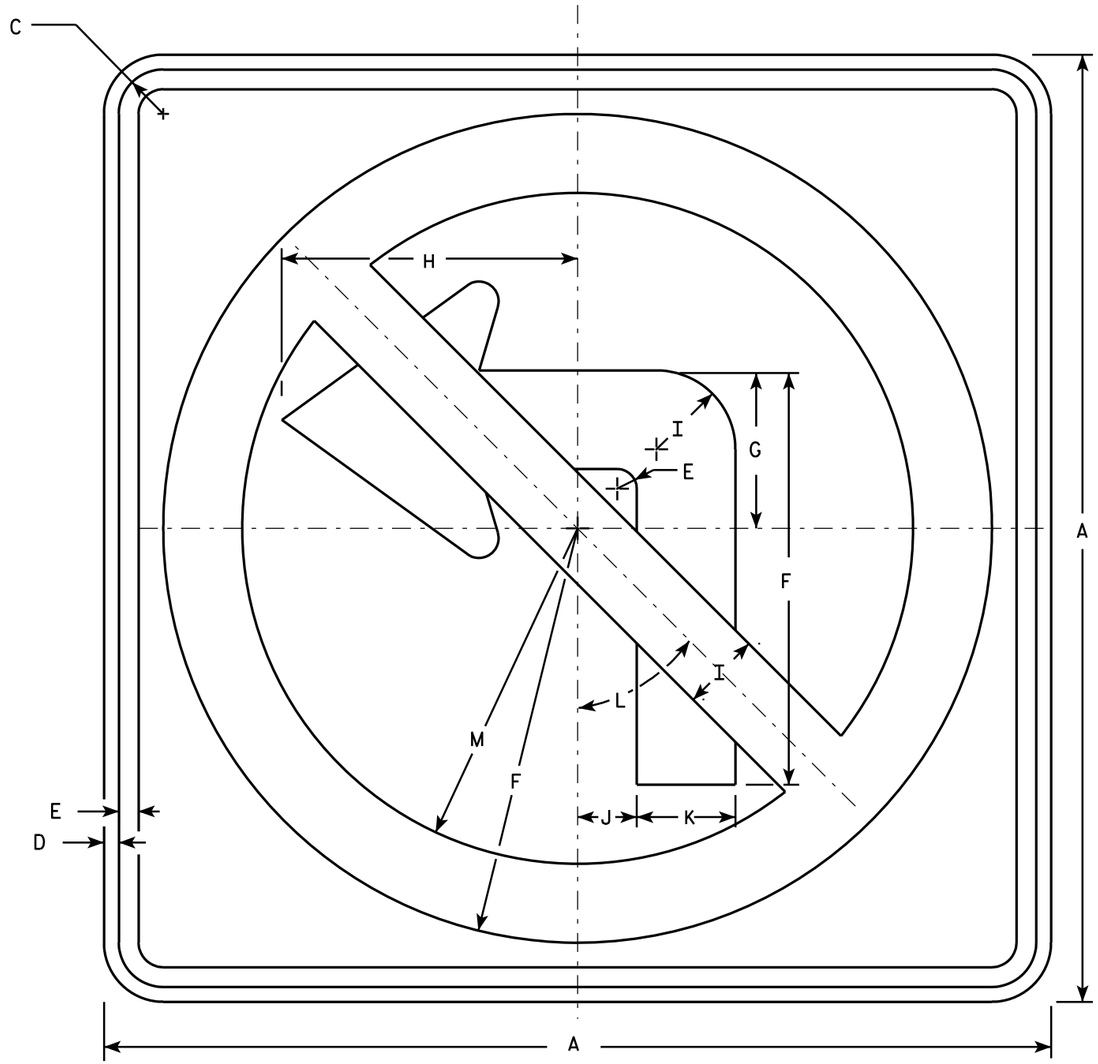
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

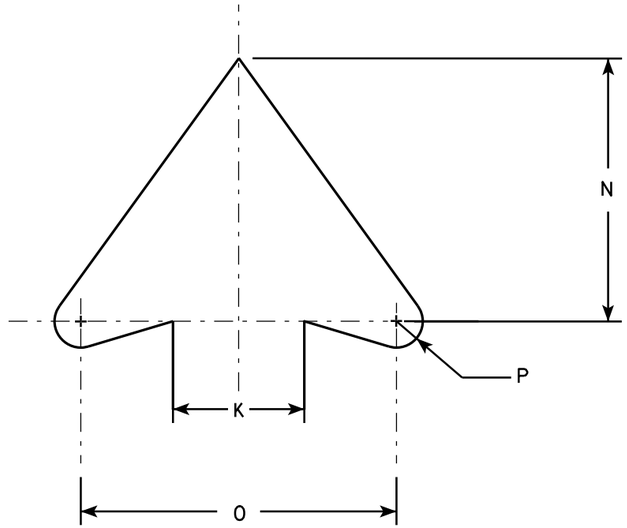
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 162	E



R3-2

NOTES

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



ARROW DETAIL

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

STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

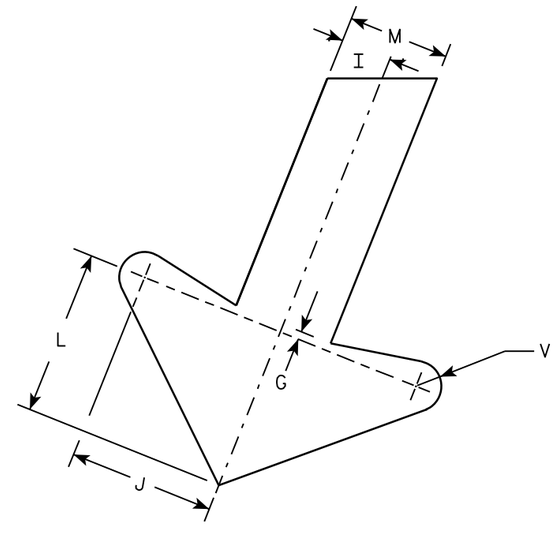
DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 163	E

R3-20R

NOTES

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



ARROW DETAIL

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

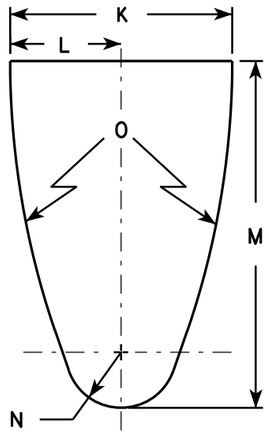
STANDARD SIGN
R3-20R

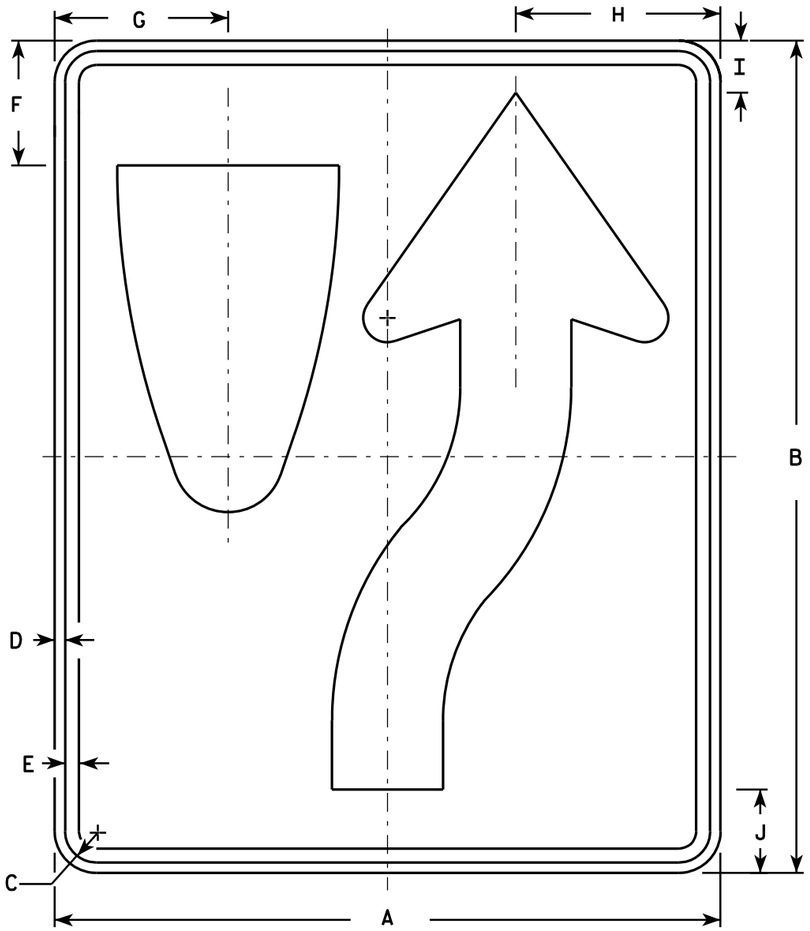
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 164 | E

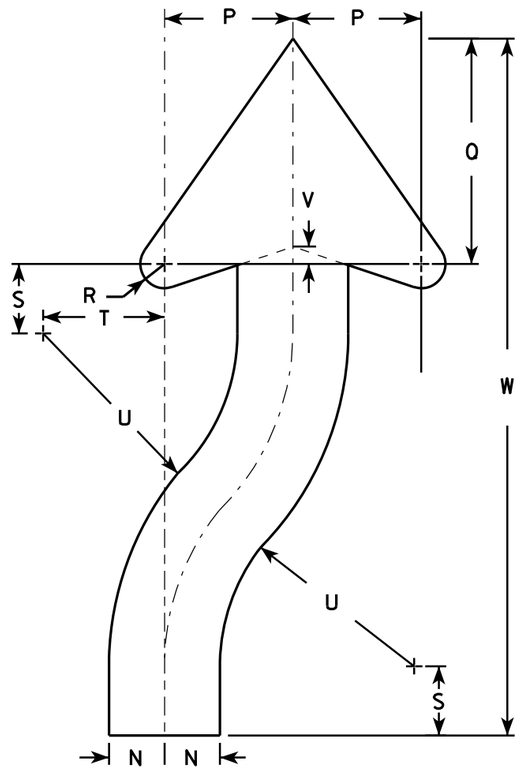




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

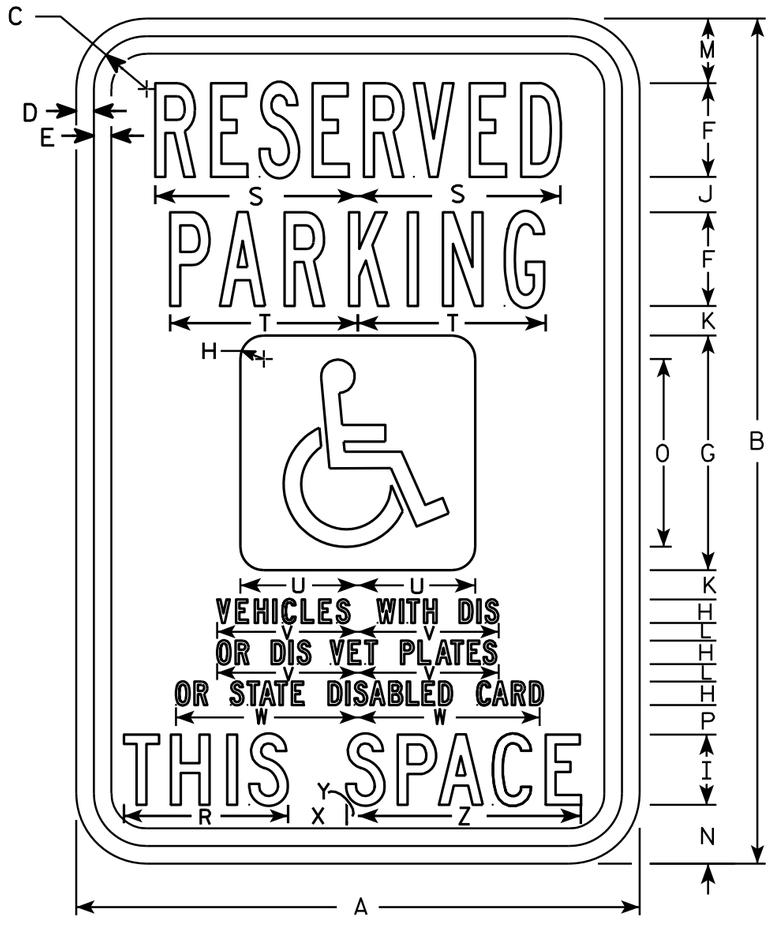
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 165	E



R7-8A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	18	1 1/8	3/8	3/8	2	5	1/2	1 1/2	3/4	5/8	3/8	1 3/8	1 1/4	4	5/8		3 1/2	4 3/8	4	2 1/2	3	3 7/8	1 1/4	1/4	4 3/4	1.5
2M	18	24	1 1/8	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
3	18	24	1 1/8	3/8	1/2	3	6	3/4	2	7/8	5/8	1/2	1 7/8	2	5	3/4		4 5/8	6 1/2	5 3/8	3	4 1/2	5 7/8	1 1/2	1/4	6 3/8	3.0
4																											
5																											

STANDARD SIGN
R7-8A

WISCONSIN DEPT OF TRANSPORTATION

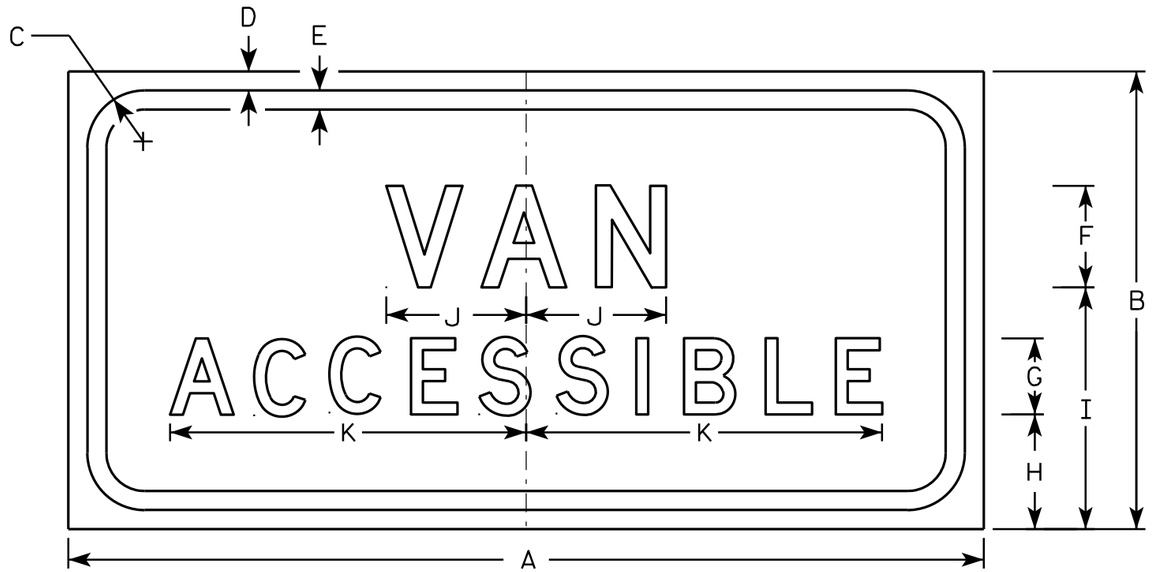
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/25/2011 PLATE NO. R7-8A.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 166 | 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 - White
   Message - Green - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



R7-8V

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	6	1 1/8	3/8	3/8	1 1/2	1	1 5/8	3 1/2	2	4 1/4																0.50
2M	18	9	1 1/8	3/8	3/8	2	1 1/2	2 1/4	4 3/4	2 3/4	7																0.75
3	18	9	1 1/8	3/8	3/8	2	1 1/2	2 1/4	4 3/4	2 3/4	7																0.75
4																											
5																											

STANDARD SIGN
R7-8V

WISCONSIN DEPT OF TRANSPORTATION

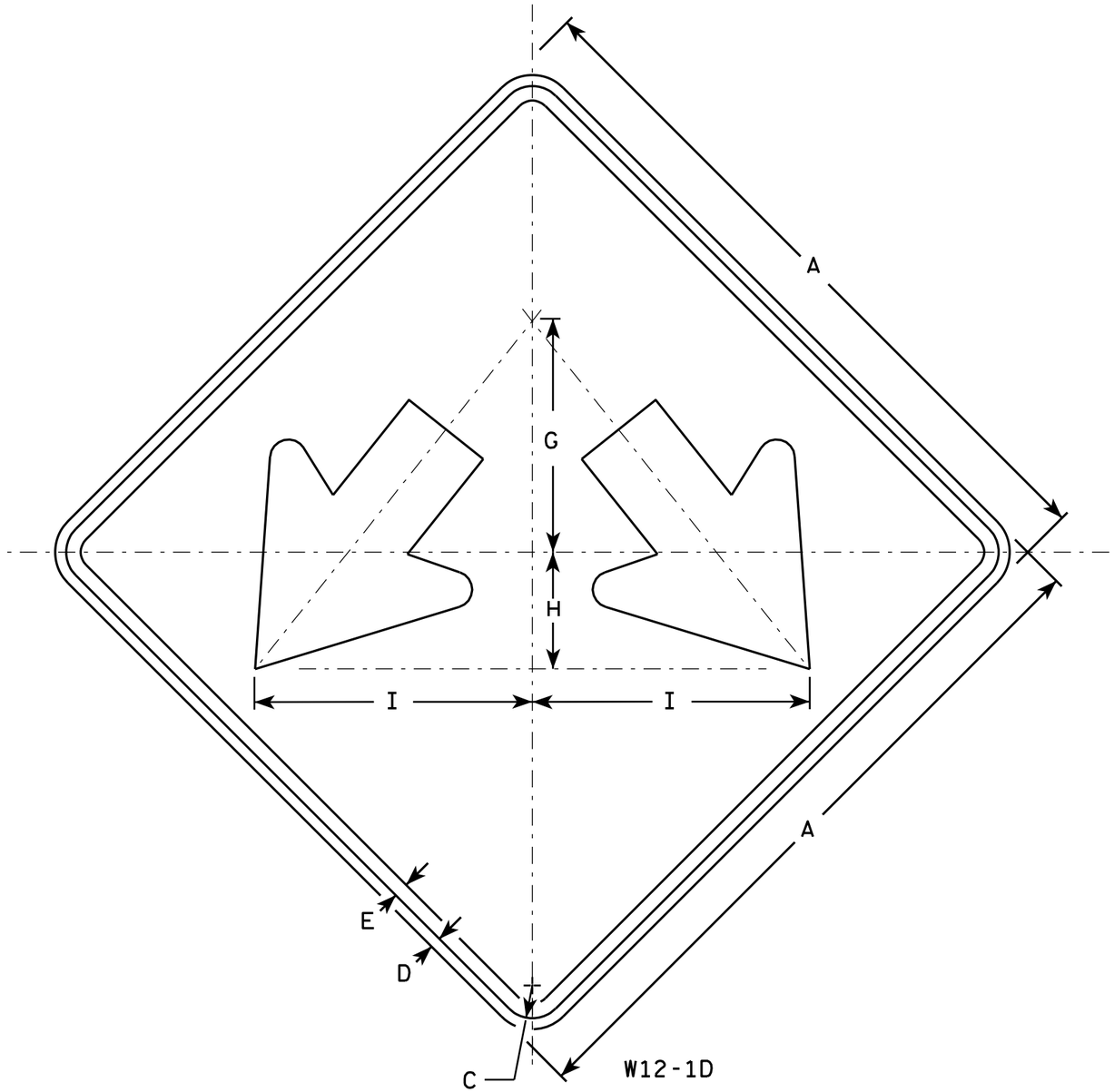
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-8V.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 167 | E

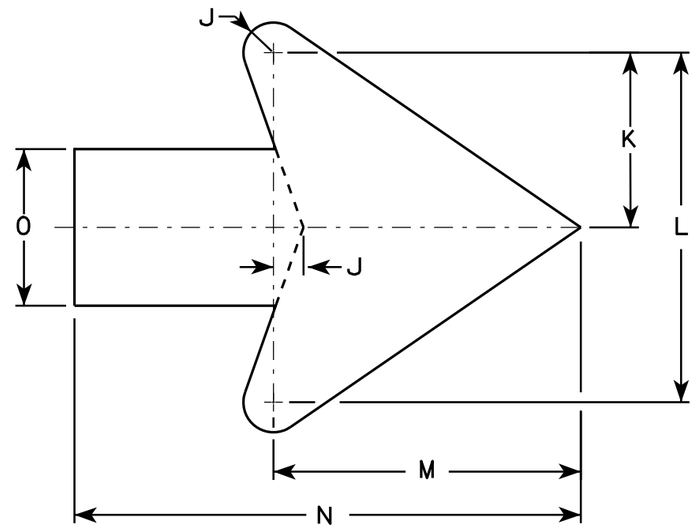
FILE NAME : C:\Users\PROJECTS\tr_stdplate\R78V.DGN PLOT DATE : 31-MAR-2011 11:13 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 2.979520:1.000000

WISDOT/CADDS SHEET 42



NOTES

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



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	48		2 1/4	3/4	1		16	8	19	1 1/4	7 1/4	14 1/2	12 3/4	21	6 1/4												16.0

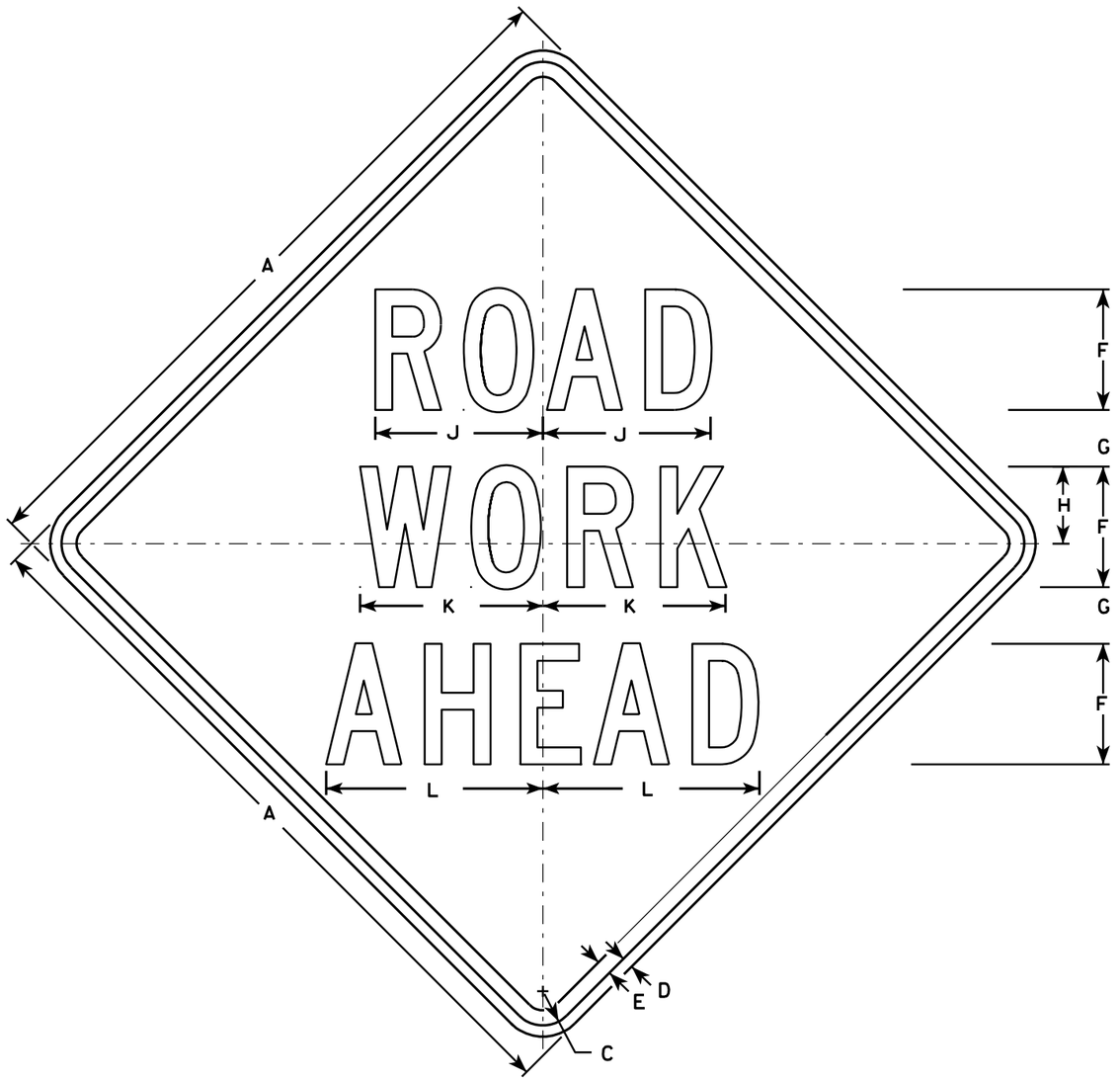
STANDARD SIGN
W12-1D

WISCONSIN DEPT OF TRANSPORTATION

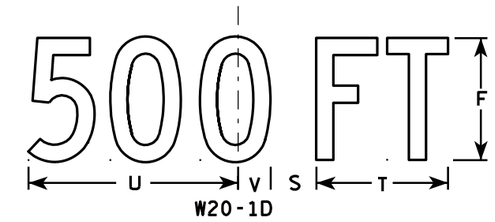
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1D.15

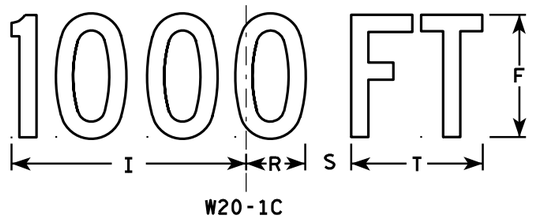
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 168	E



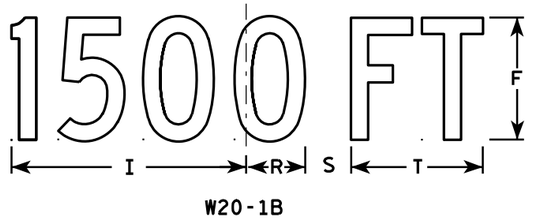
W20-1A



W20-1D

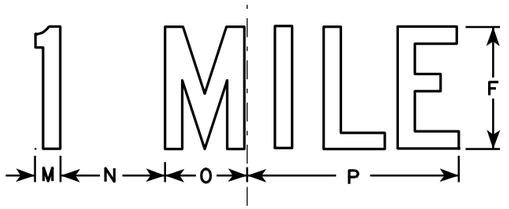


W20-1C



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:

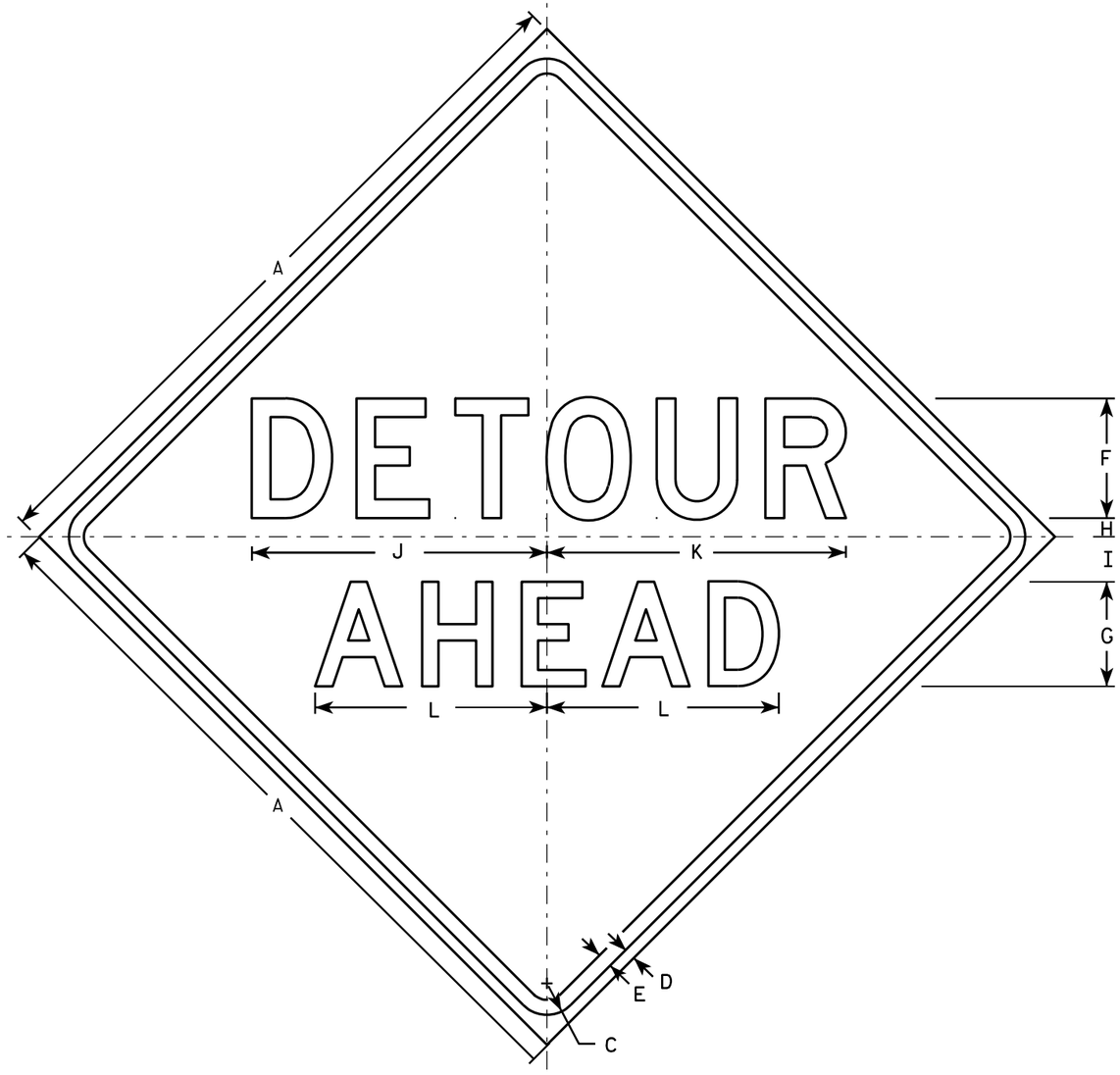
SHEET NO: 169 E

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

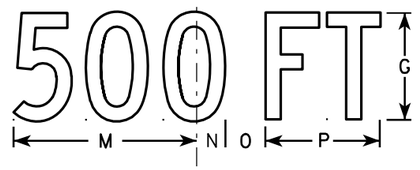
WISDOT/CADDS SHEET 42

7

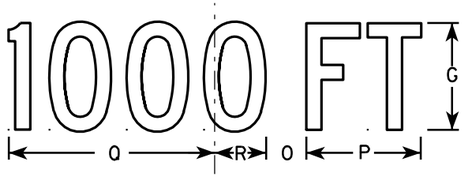
7



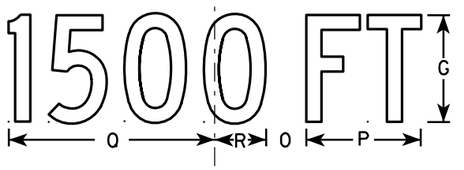
W20-2A



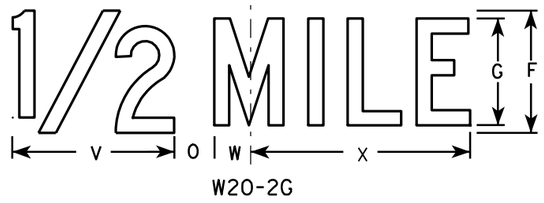
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
   Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

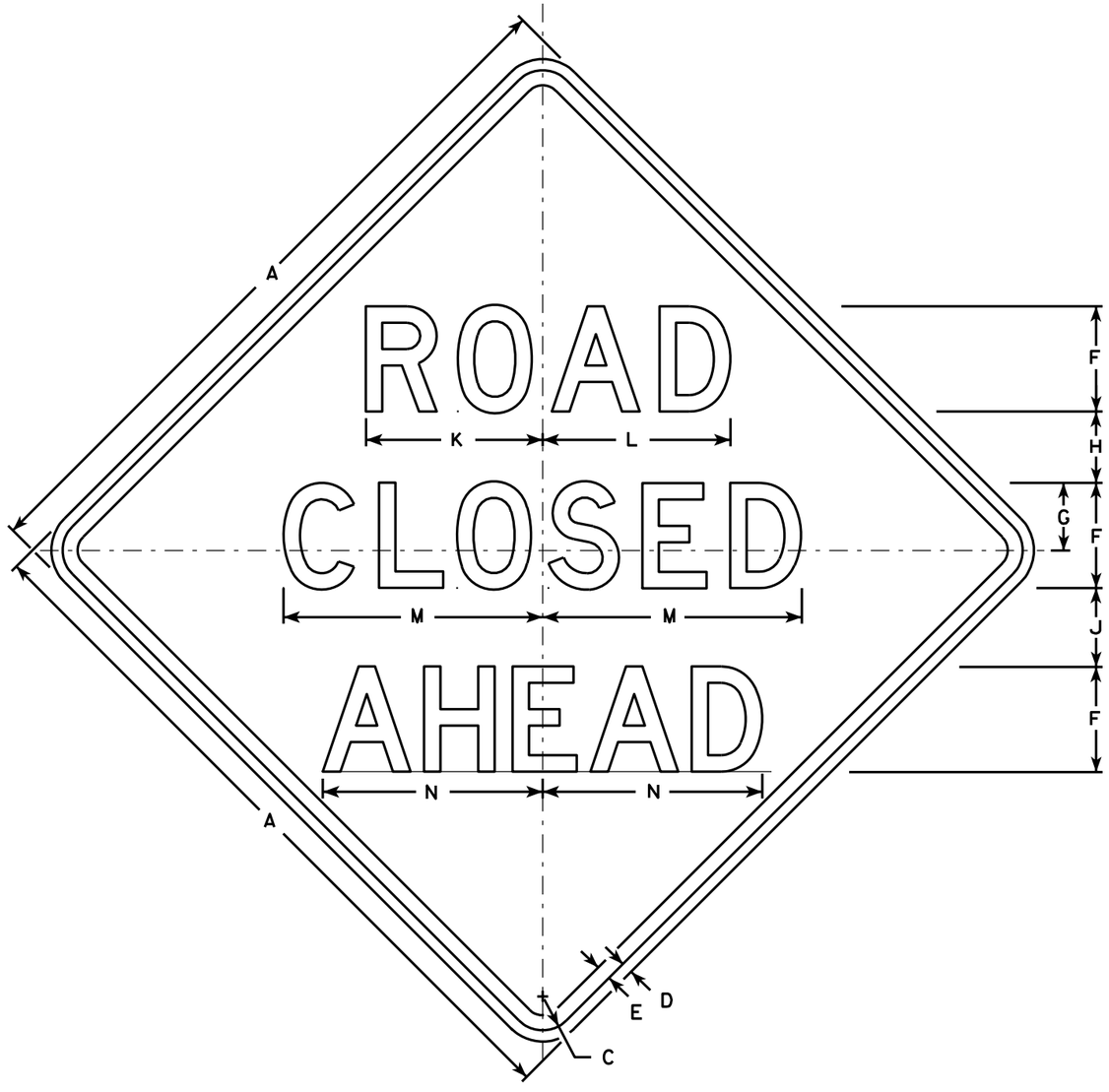
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

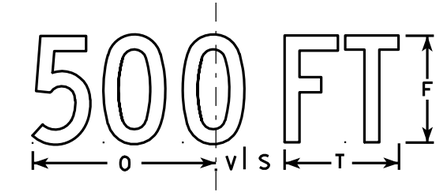
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 170 E

7

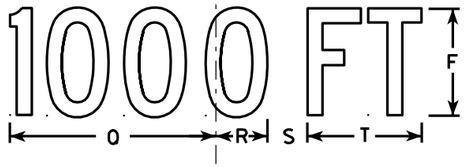
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



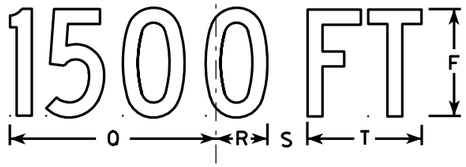
W20-3A



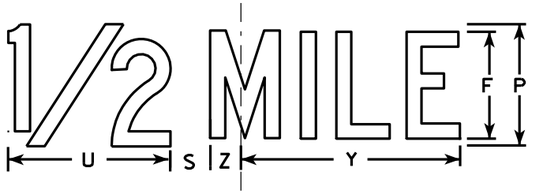
W20-3D



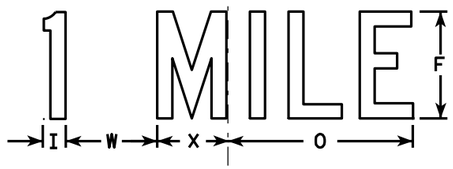
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

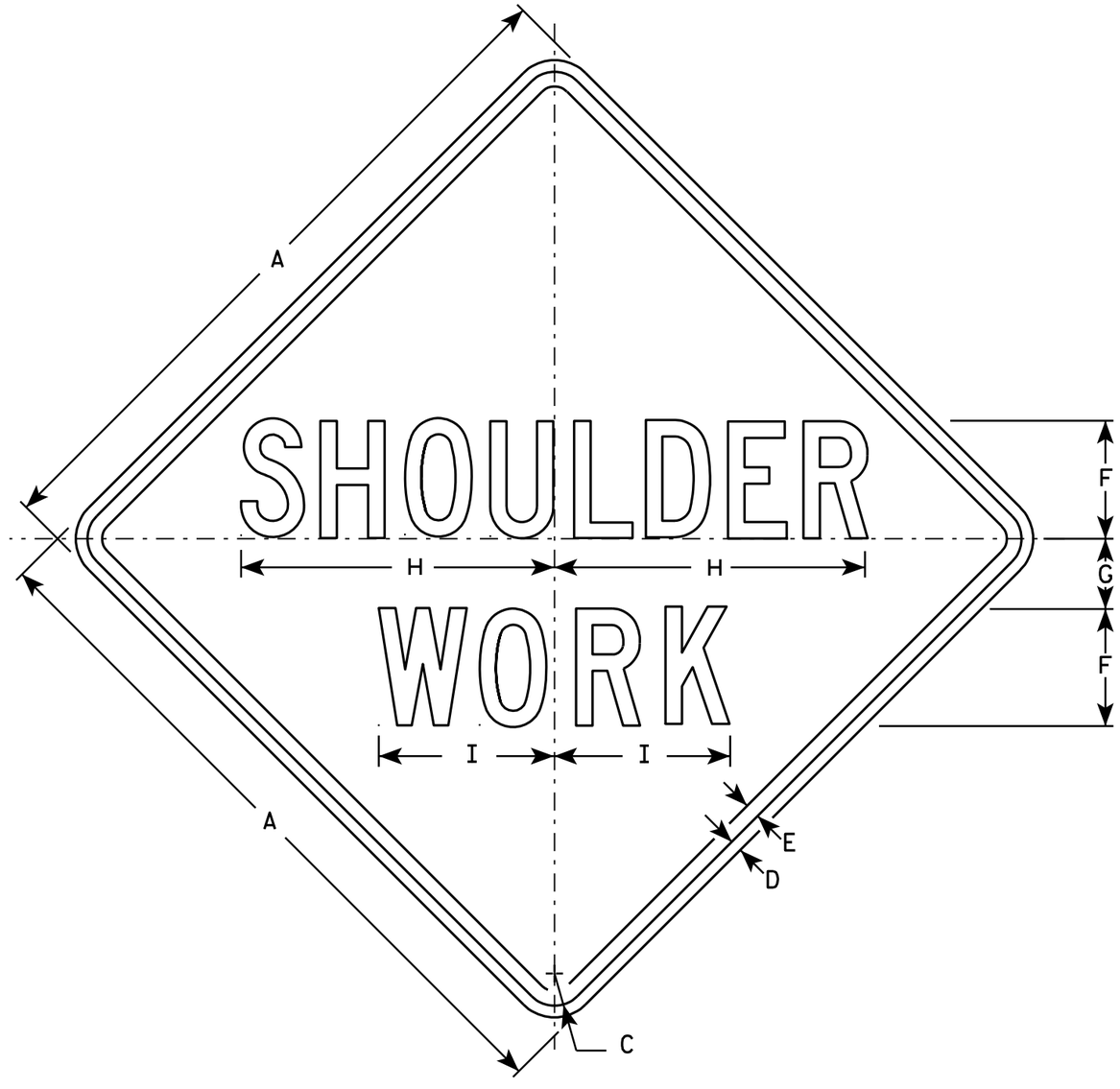
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 171 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



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

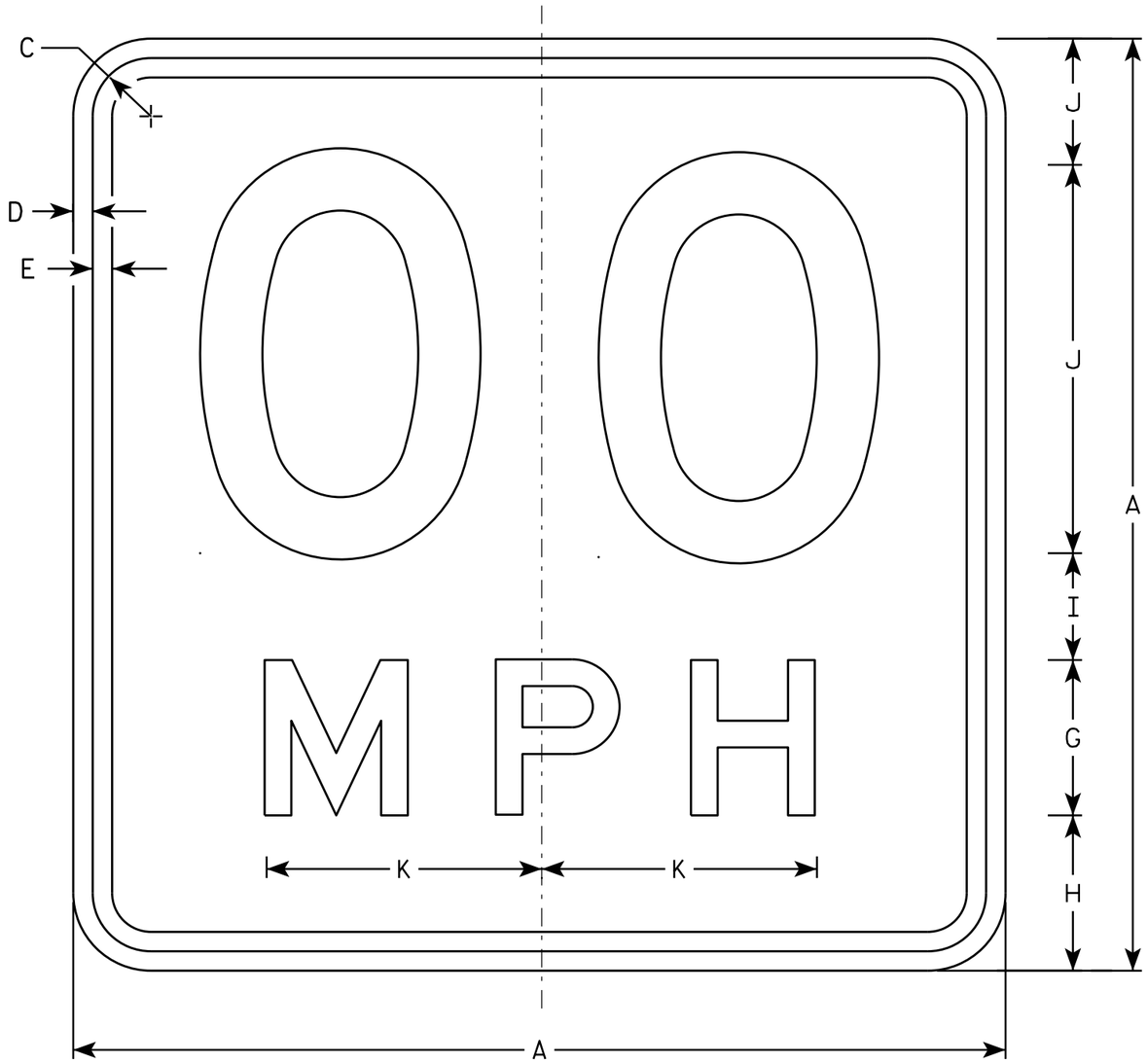
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 172 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W215.DGN PLOT DATE : 21-MAR-2011 08:01 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.207338:1.000000
WISDOT/CADDS SHEET 42



W013-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.00
2S	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
2M	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
3	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN
W013-1

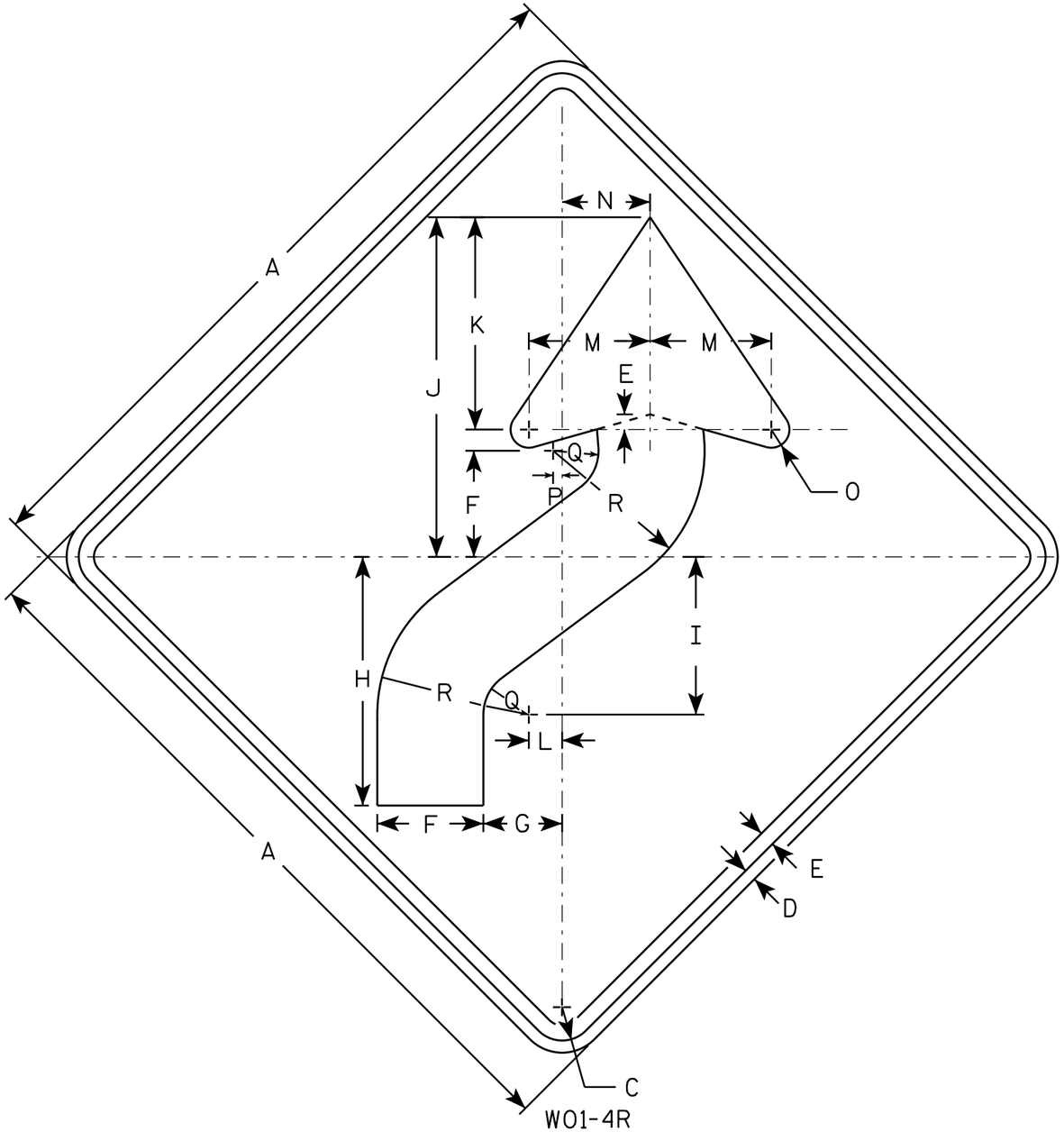
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/21/13 PLATE 173 W013-1.1

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W0131.DGN PLOT DATE : 02-DEC-2013 13:55 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 3.794391:1.000000
WISDOT/CADDS SHEET 42



W01-4R

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. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO W01-4.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.755110:1.000000 WISDOT/CADDS SHEET 42

EARTHWORK - E VERONA AVE EB - ALIGNMENT "EB"

STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
729+35.88	26.34	0.00	0.00	0.00	0.00	0.00	0.00
729+50.00	33.02	0.00	15.52	0.00	15.52	0.00	15.52
729+75.00	31.38	1.48	29.81	0.69	45.34	0.69	44.65
730+00.00	22.16	29.29	24.79	14.25	70.13	14.93	55.20
730+25.00	21.99	15.60	20.44	20.78	90.57	35.71	54.85
730+50.00	33.50	103.25	25.69	55.02	116.26	90.74	25.52
730+75.00	34.99	100.63	31.71	94.39	147.96	185.13	-37.16
731+00.00	30.05	112.17	30.11	98.52	178.07	283.64	-105.57
731+25.00	24.10	107.28	25.07	101.60	203.14	385.24	-182.10
731+50.00	16.33	71.04	18.72	82.56	221.86	467.80	-245.93
731+75.00	15.92	61.30	14.93	61.27	236.79	529.06	-292.27
732+00.00	15.85	62.73	14.71	57.42	251.50	586.49	-334.99
732+25.00	15.67	65.27	14.59	59.26	266.09	645.75	-379.65
732+50.00	15.97	95.11	14.65	74.25	280.74	720.00	-439.25
732+75.00	16.22	66.61	14.90	74.87	295.64	794.87	-499.22
733+00.00	16.06	60.39	14.94	58.80	310.59	853.66	-543.07
733+25.00	18.12	57.87	15.82	54.75	326.41	908.41	-582.00
733+50.00	21.59	63.29	18.38	56.09	344.80	964.50	-619.71
733+75.00	24.18	57.90	21.19	56.11	365.99	1,020.61	-654.62
734+00.00	26.35	63.08	23.39	56.01	389.38	1,076.62	-687.24
734+25.00	27.25	78.35	24.81	65.48	414.20	1,142.10	-727.90
734+50.00	27.67	82.88	25.43	74.64	439.62	1,216.74	-777.12
734+75.00	27.75	90.71	25.66	80.37	465.28	1,297.11	-831.83
735+00.00	6.18	85.73	15.71	81.69	480.99	1,378.79	-897.80
735+25.00	10.50	126.17	7.72	98.10	488.71	1,476.89	-988.18

Earthwork values in table have not been expanded
Fill expansion factor for common excavation = 1.25

EARTHWORK - E VERONA AVE WB - ALIGNMENT "WB'

STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
735+53.71	20.18	0.00	0.00	0.00	0.00	0.00	0.00
735+75.00	19.66	0.00	15.71	0.00	15.71	0.00	15.71
736+00.00	21.17	0.00	18.90	0.00	34.61	0.00	34.61
736+25.00	24.08	0.00	20.95	0.00	55.56	0.00	55.56
736+50.00	29.31	0.00	24.72	0.00	80.28	0.00	80.28
736+75.00	32.39	1.27	28.56	0.59	108.84	0.59	108.25
737+00.00	30.32	36.48	29.03	17.48	137.87	18.06	119.81
737+25.00	32.48	56.95	29.07	43.25	166.95	61.32	105.63
737+50.00	32.65	47.19	30.15	48.21	197.10	109.53	87.57
737+75.00	32.43	50.01	30.13	45.00	227.23	154.53	72.70
738+00.00	31.44	49.41	29.57	46.03	256.80	200.56	56.24
738+25.00	32.29	51.79	29.50	46.85	286.30	247.41	38.89
738+50.00	32.99	48.70	30.22	46.52	316.53	293.94	22.59
738+75.00	33.66	66.04	30.86	53.12	347.38	347.06	0.33
738+83.28	12.54	68.54	7.08	20.64	354.47	367.69	-13.22

Earthwork values in table have not been expanded
Fill expansion factor for common excavation = 1.25

EARTHWORK - MAPLE GROVE DR - ALIGNMENT "PB"

STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
49+09.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49+25.00	9.46	14.17	2.65	3.96	2.65	3.96	-1.32
49+50.00	21.85	60.14	14.50	34.40	17.14	38.37	-21.22
49+75.00	23.01	22.29	20.77	38.16	37.91	76.53	-38.62
49+93.41	0.00	0.00	7.84	7.60	45.75	84.13	-38.37

Earthwork values in table have not been expanded
Fill expansion factor for common excavation = 1.25

EARTHWORK - OLD PB - ALIGNMENT "PB"

STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
50+90.91	11.96	6.06	0.00	0.00	0.00	0.00	0.00
51+00.00	49.89	0	10.41	1.02	10.41	1.02	9.39
51+25.00	15.3	129.94	30.18	60.16	40.59	61.18	-20.59
51+50.00	6.68	129.89	10.18	120.29	50.77	181.47	-130.70
51+75.00	6.76	13.85	6.22	66.55	56.99	248.02	-191.03
52+00.00	8.44	4.64	7.04	8.56	64.03	256.58	-192.55
52+25.00	7.92	0.28	7.57	2.28	71.60	258.85	-187.25
52+45.58	7.28	0	5.79	0.11	77.39	258.96	-181.57

Earthwork values in table have not been expanded
Fill expantion factor for common excavation = 1.25

EARTHWORK - BIKE PATH - ALIGNMENT "P"

STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
100+00.00	73.97	0.00	0.00	0.00	0.00	0.00	0.00
100+25.00	71.39	5.20	67.30	2.41	67.30	2.41	64.89
100+50.00	40.78	3.14	51.93	3.86	119.23	6.27	112.96
100+75.00	22.75	5.55	29.41	4.02	148.64	10.29	138.35
101+00.00	15.20	5.44	17.57	5.09	166.21	15.38	150.83
101+25.00	3.92	14.07	8.85	9.03	175.06	24.41	150.65
101+50.00	3.59	28.53	3.48	19.72	178.54	44.13	134.40
101+75.00	3.89	30.44	3.46	27.30	182.00	71.44	110.56
102+00.00	3.83	33.22	3.57	29.47	185.57	100.91	84.67
102+25.00	3.73	34.61	3.50	31.40	189.07	132.31	56.76
102+50.00	4.58	26.26	3.85	28.18	192.92	160.49	32.43
102+75.00	4.90	30.40	4.39	26.23	197.31	186.72	10.59
103+00.00	4.01	54.46	4.13	39.29	201.44	226.01	-24.57
103+25.00	3.00	66.32	3.25	55.92	204.68	281.93	-77.25
103+50.00	6.43	95.18	4.37	74.77	209.05	356.69	-147.65
103+75.00	11.59	119.83	8.34	99.54	217.39	456.24	-238.85
104+00.00	8.43	134.88	9.27	117.92	226.66	574.16	-347.50
104+25.00	7.30	116.72	7.28	116.48	233.94	690.64	-456.70
104+45.70	4.15	0.00	4.39	44.74	238.33	735.38	-497.05

Earthwork values in talbe have not been expanded
Fill expansion factor for common excavation = 1.25

EARTHWORK - STONE WEEPER TRENCH/DRAINAGE SWALE - ALIGNMENT "W"

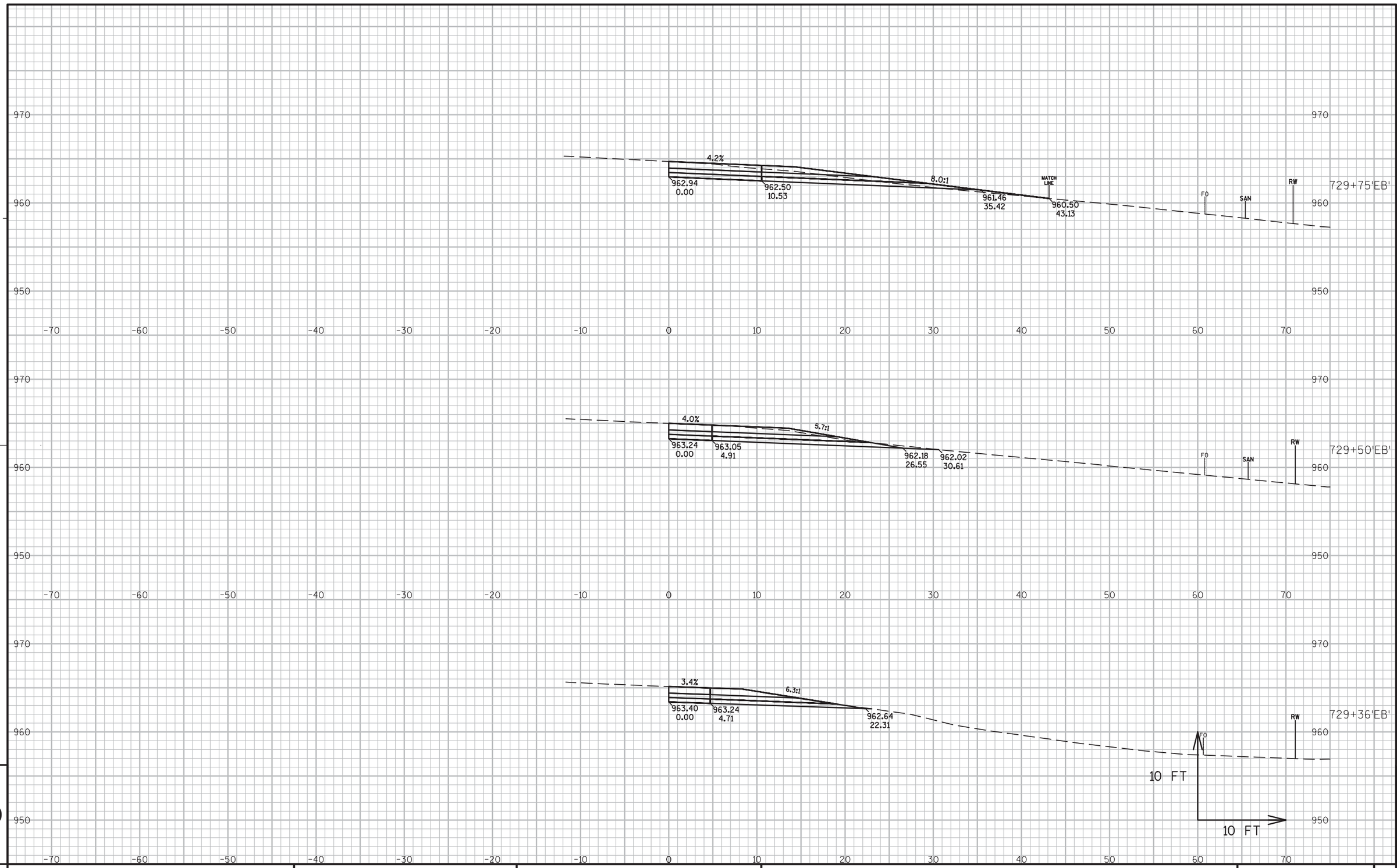
STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
10+00.00	10.70	0.00	0.00	0.00	0.00	0.00	0.00
10+25.00	15.60	0.00	12.18	0.00	12.18	0.00	12.18
10+40.00	11.80	0.00	7.61	0.00	19.79	0.00	19.79
10+50.00	8.92	0.00	3.84	0.00	23.62	0.00	23.62
10+75.00	11.90	0.00	9.64	0.00	33.26	0.00	33.26
11+00.00	13.00	0.00	11.53	0.00	44.79	0.00	44.79
11+25.00	14.20	0.00	12.59	0.00	57.38	0.00	57.38
11+50.00	16.60	0.00	14.26	0.00	71.64	0.00	71.64
11+75.00	22.70	0.00	18.19	0.00	89.84	0.00	89.84
12+00.00	28.80	0.00	23.84	0.00	113.68	0.00	113.68
12+25.00	28.10	0.00	26.34	0.00	140.02	0.00	140.02
12+50.00	24.10	0.00	24.17	0.00	164.19	0.00	164.19
12+75.00	18.00	0.00	19.49	0.00	183.68	0.00	183.68
13+00.00	10.60	1.50	13.24	0.69	196.92	0.69	196.23
13+25.00	4.00	4.20	6.76	2.64	203.68	3.33	200.35
13+50.00	1.30	6.90	2.45	5.14	206.13	8.47	197.66
13+75.00	1.50	4.30	1.30	5.19	207.43	13.66	193.77
14+00.00	3.04	4.40	2.10	4.03	209.53	17.69	191.85
14+25.00	8.53	0.90	5.36	2.45	214.89	20.14	194.75
14+40.00	4.78	0.00	3.70	0.25	218.59	20.39	198.20
14+50.00	5.30	0.00	1.87	0.00	220.45	20.39	200.06

Earthwork values in table have not been expanded
Fill expansion factor for common excavation = 1.25

EARTHWORK - PARKING BAY E - ALIGNMENT "E"

STATION	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) Cut	Incremental Vol (CY) Fill	Cumulative Vol (CY) Cut	Cumulative Vol (CY) Fill	Mass Ordinate (CY)
10+00.00	37.79	6.76	0.00	0.00	0.00	0.00	0.00
10+25.00	27.87	16.76	30.40	10.89	30.40	10.89	19.51
10+50.00	23.61	7.72	23.83	11.33	54.23	22.22	32.01
10+75.00	31.94	5.79	25.72	6.25	79.95	28.48	51.47
11+00.00	22.33	10.29	25.13	7.44	105.07	35.92	69.15
11+25.00	18.55	42.84	18.93	24.60	124.00	60.52	63.48
11+50.00	15.24	66.75	15.64	50.74	139.64	111.25	28.39
11+75.00	25.06	82.18	18.66	68.95	158.30	180.20	-21.90
11+99.29	0	66.07	11.27	66.69	169.57	246.89	-77.32

Earthwork values in table have not been expanded
Fill expansion factor for common excavation = 1.25



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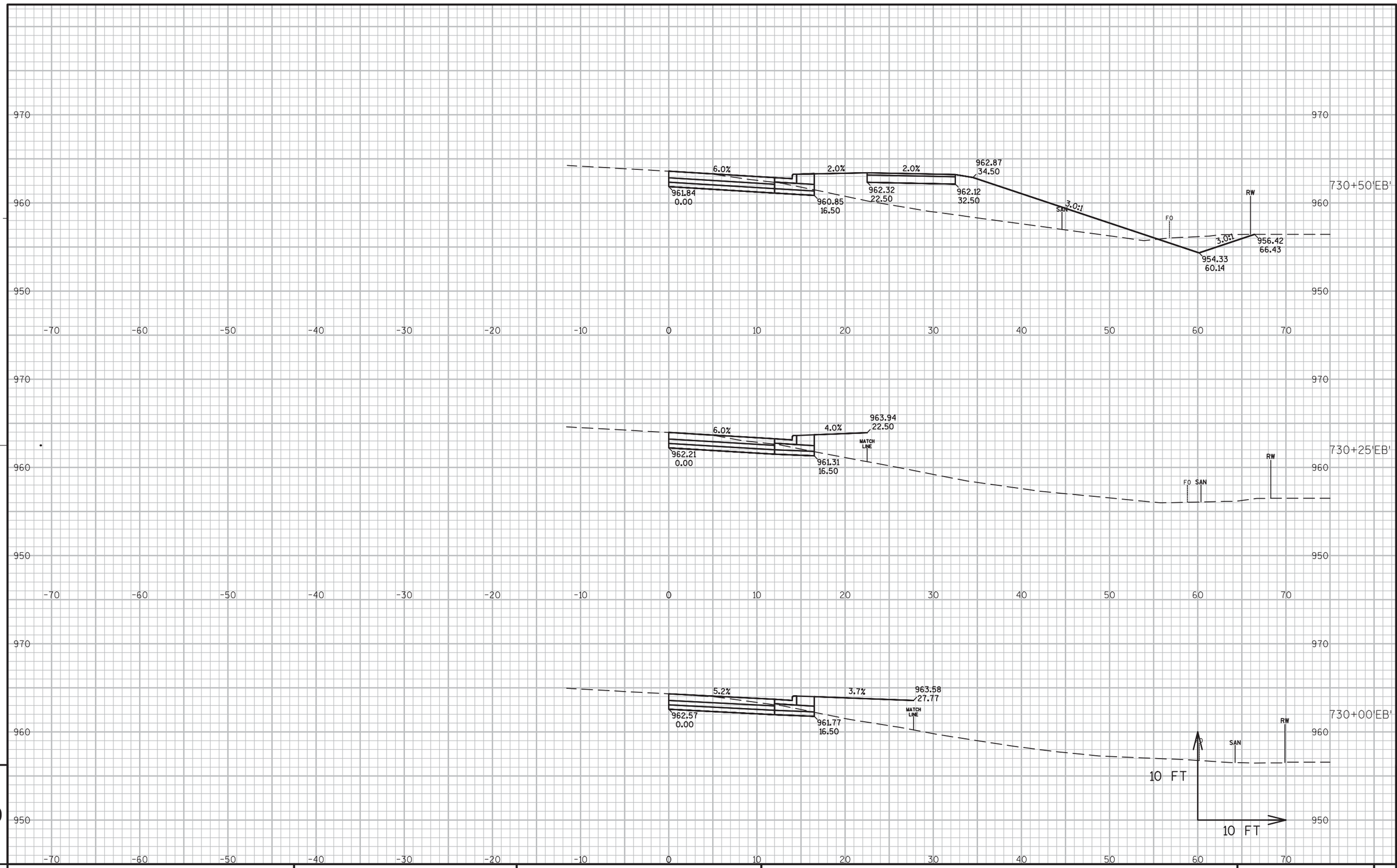
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - EB	SHEET 177	E



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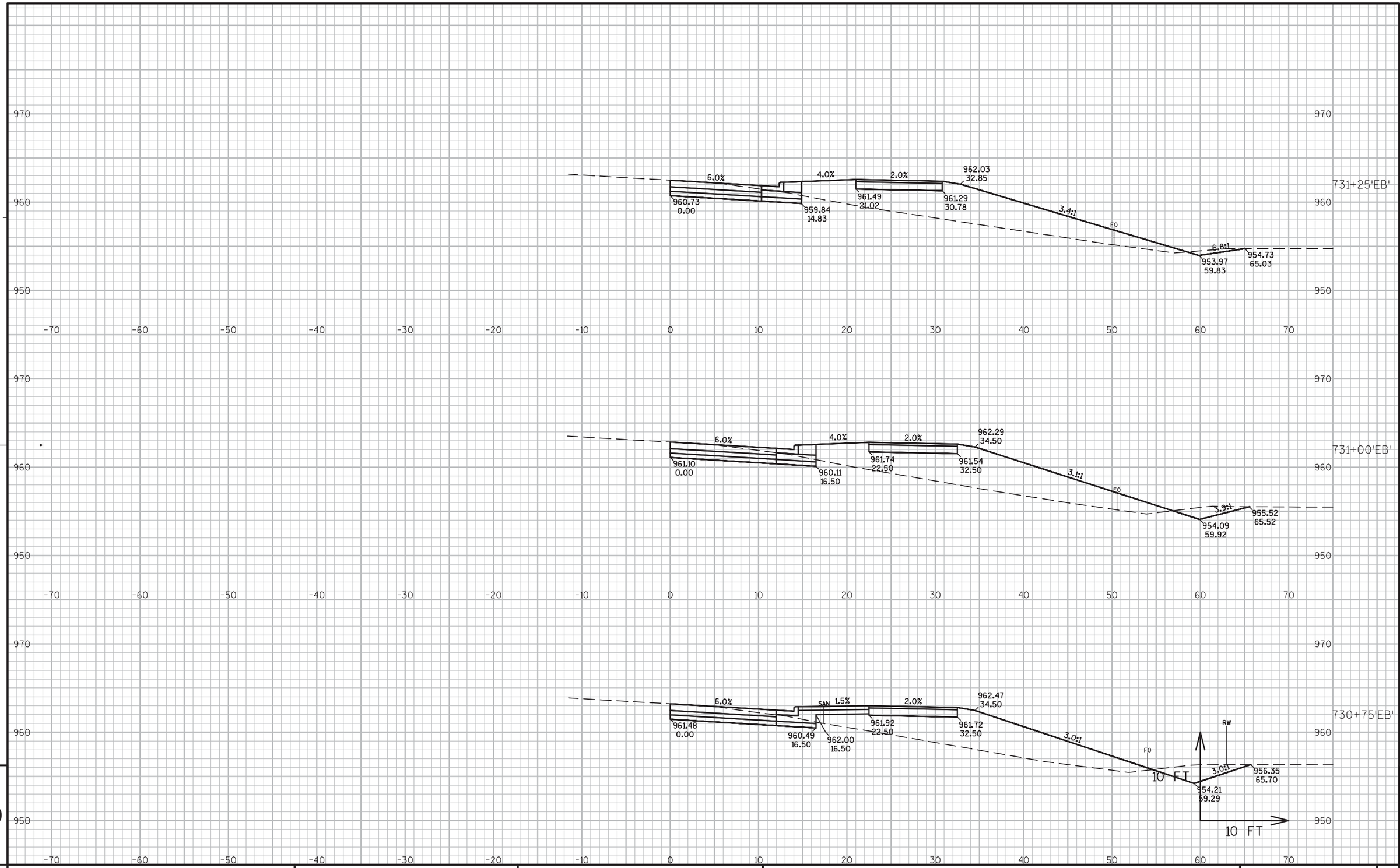
WISDOT/CADDS SHEET 49



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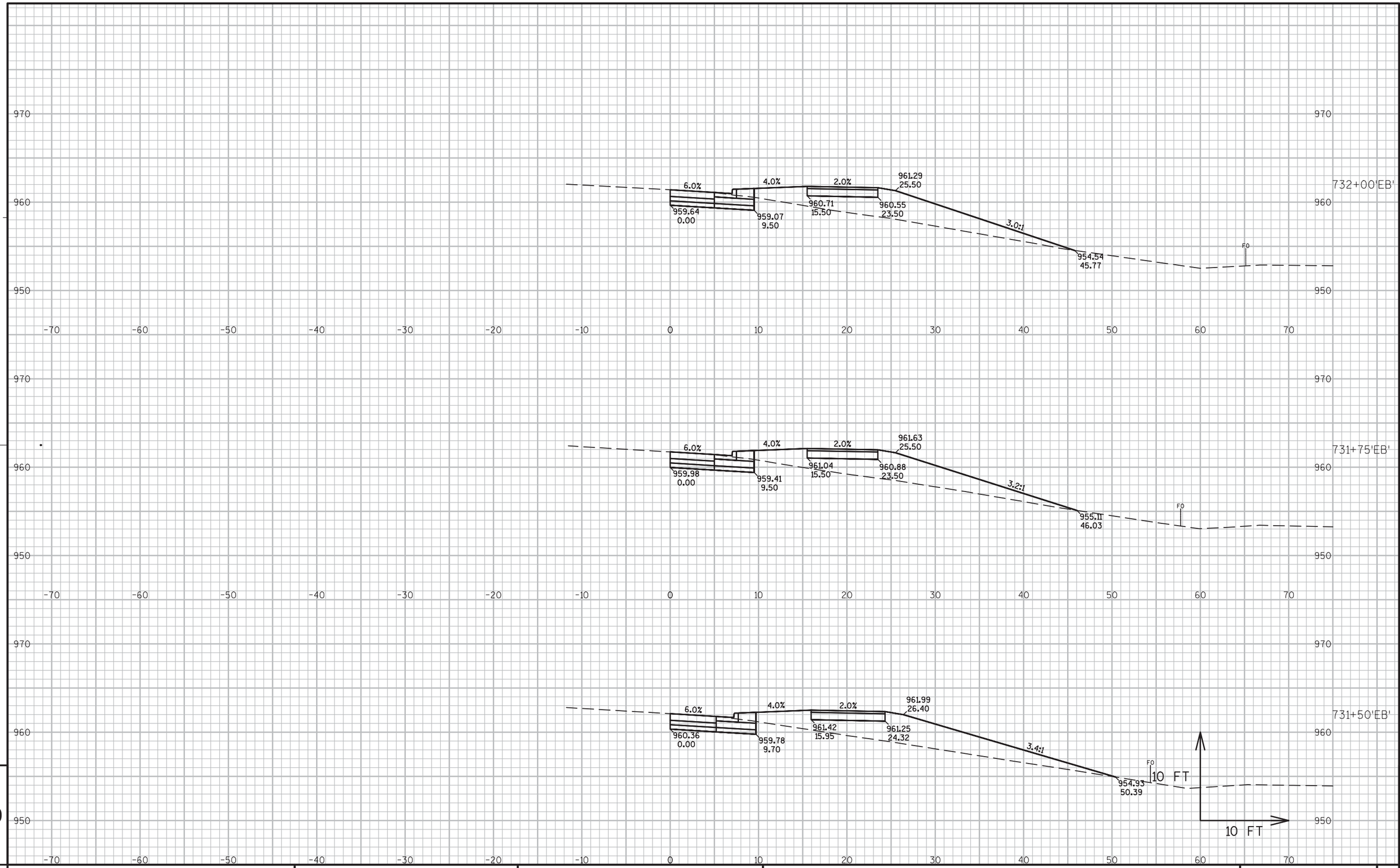

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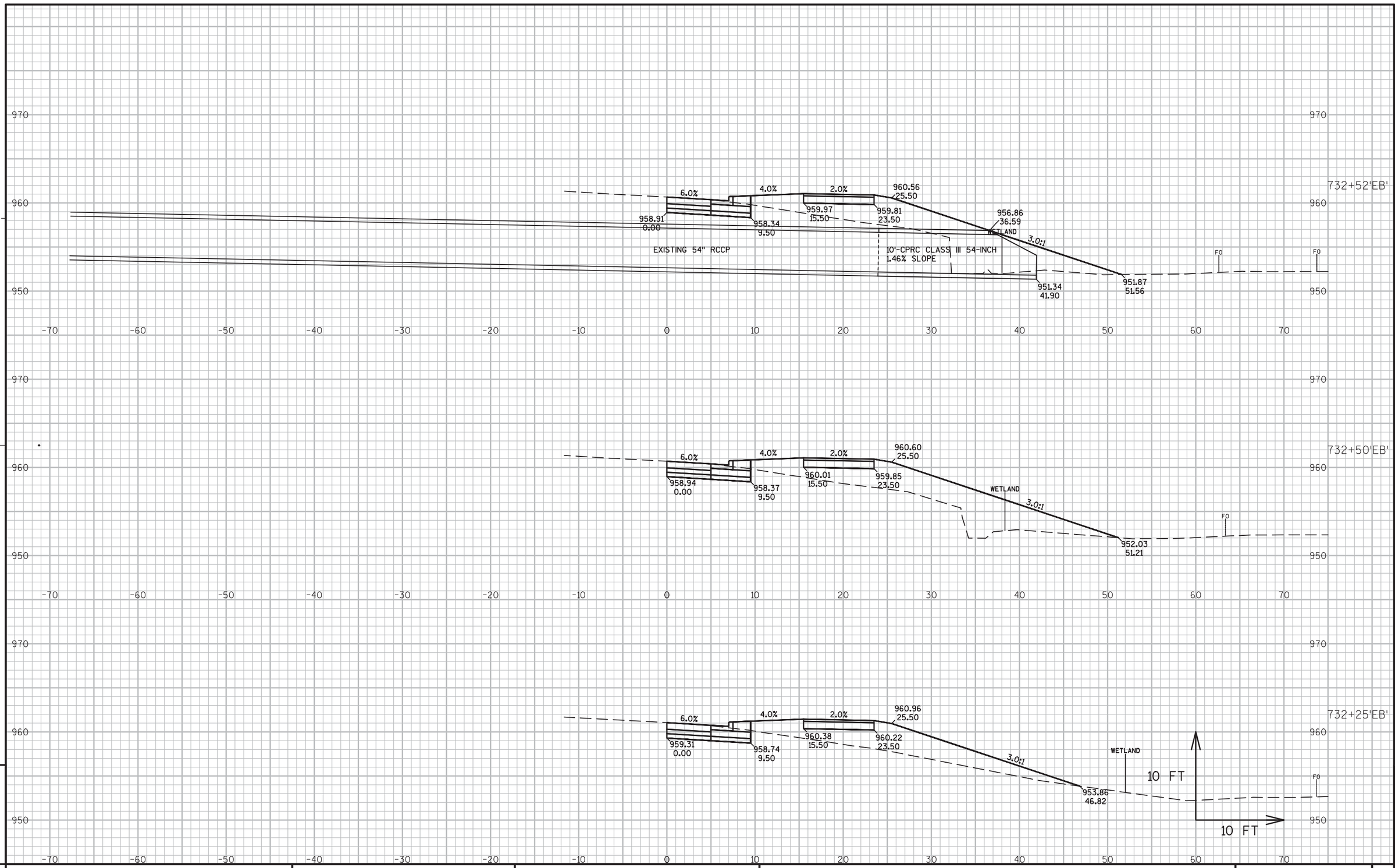

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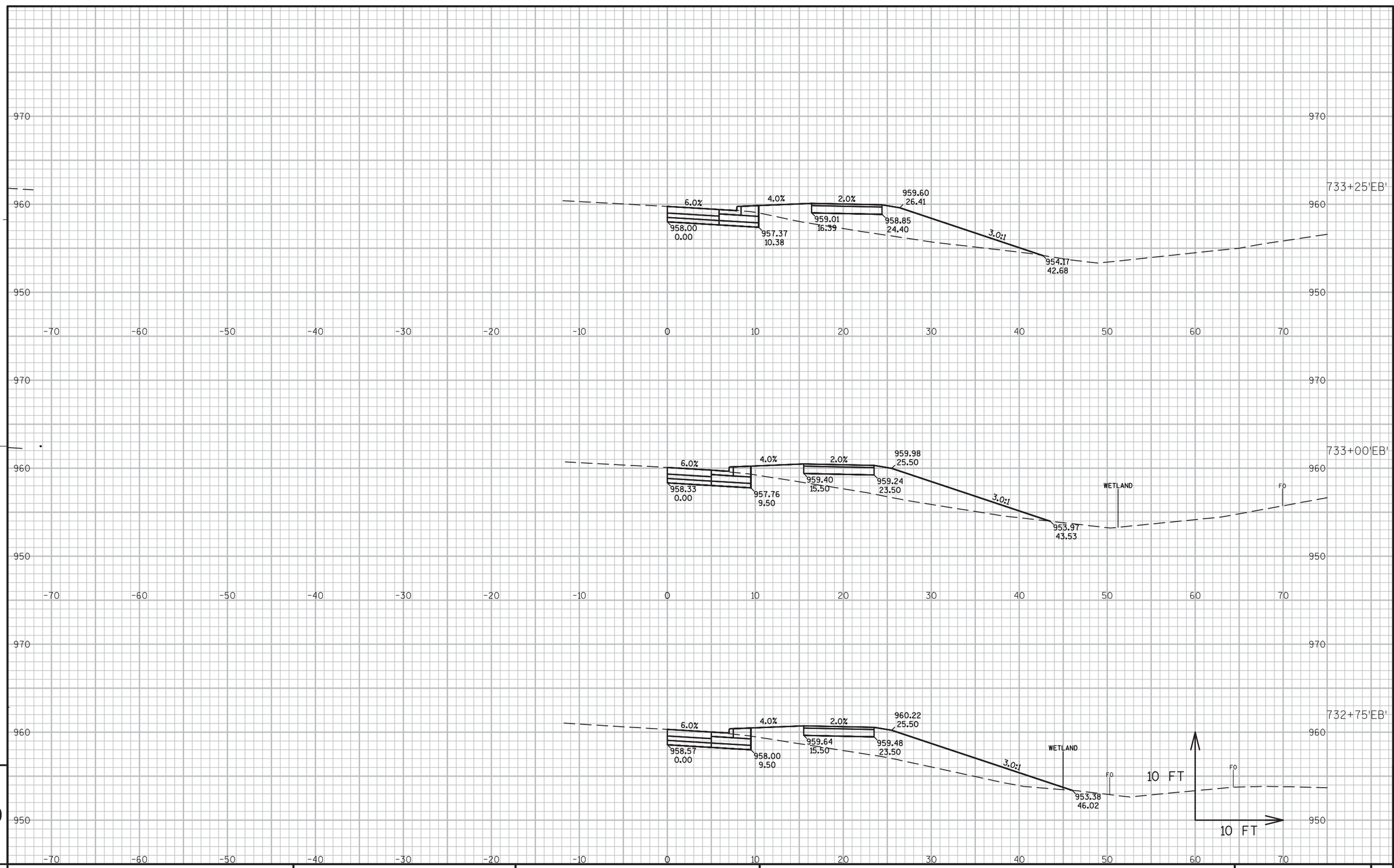

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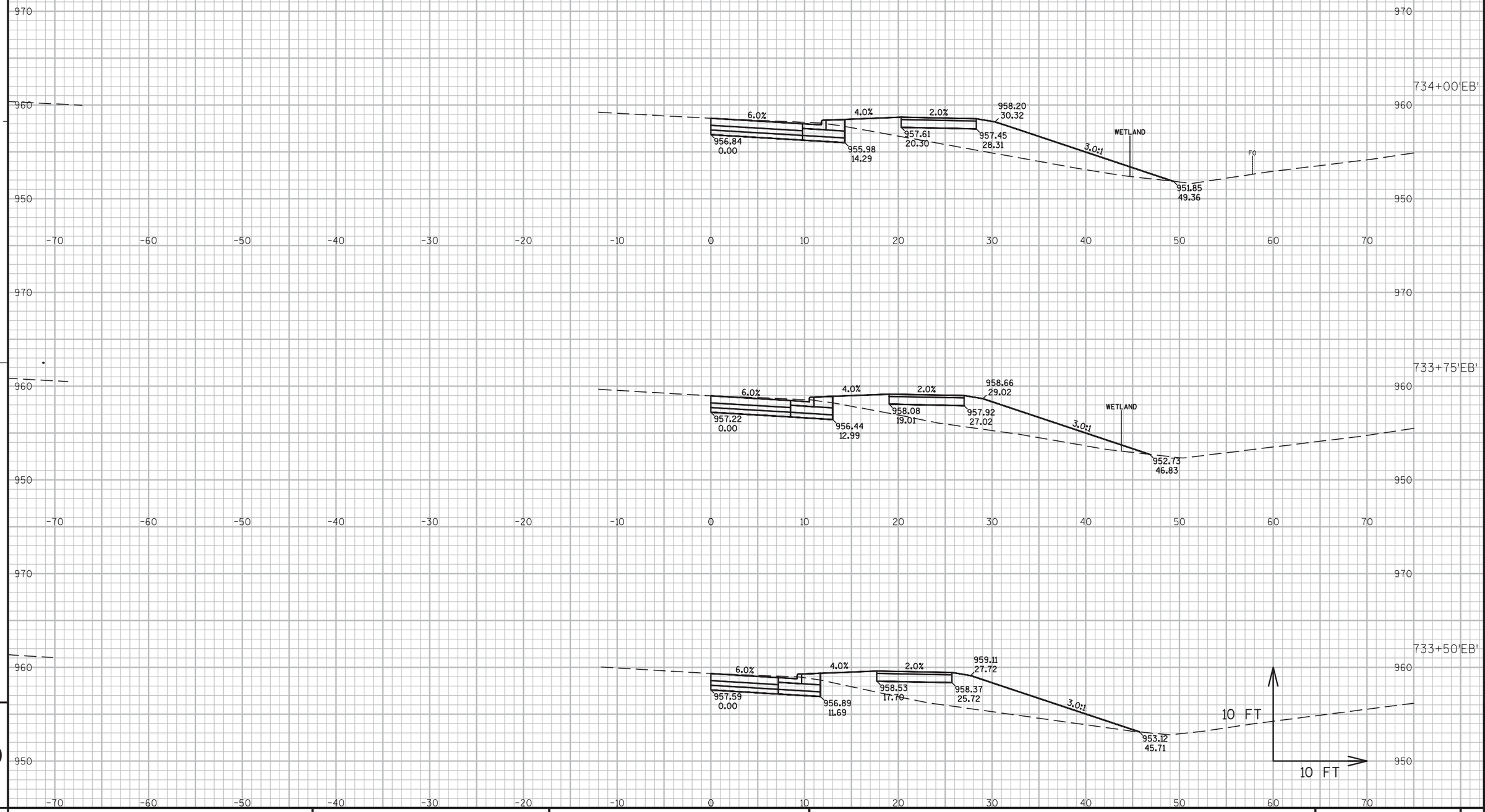

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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - EB	SHEET	E

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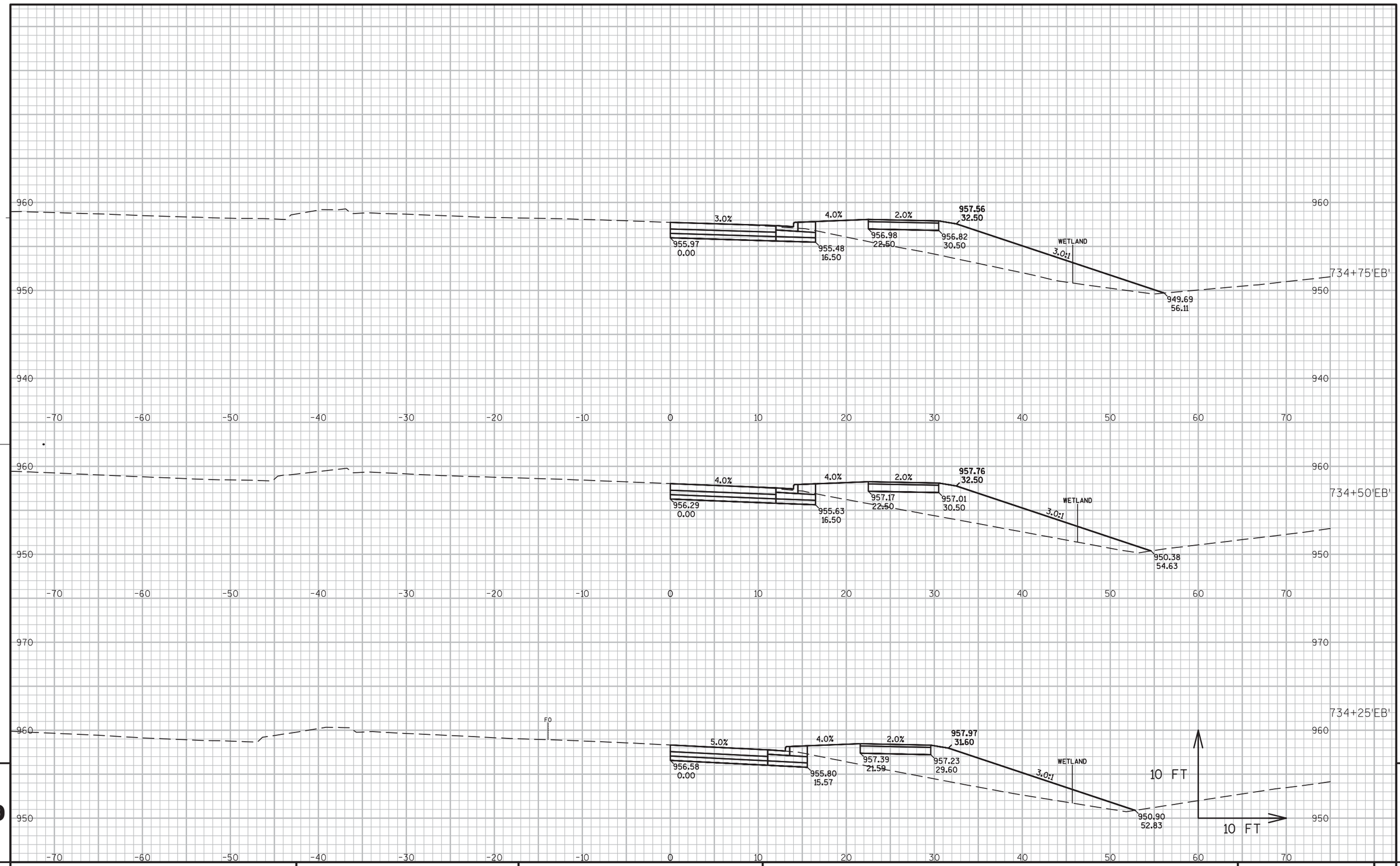

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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - EB	SHEET	E

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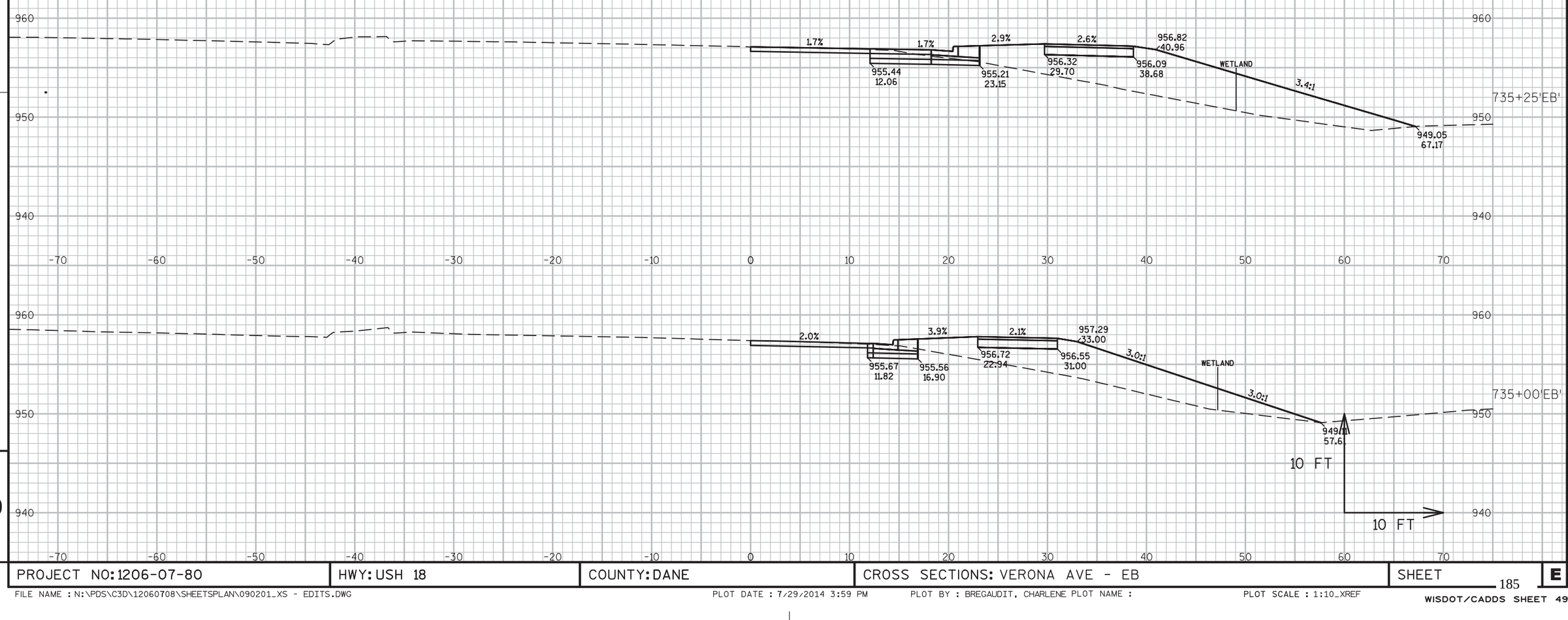

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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - EB	SHEET	E

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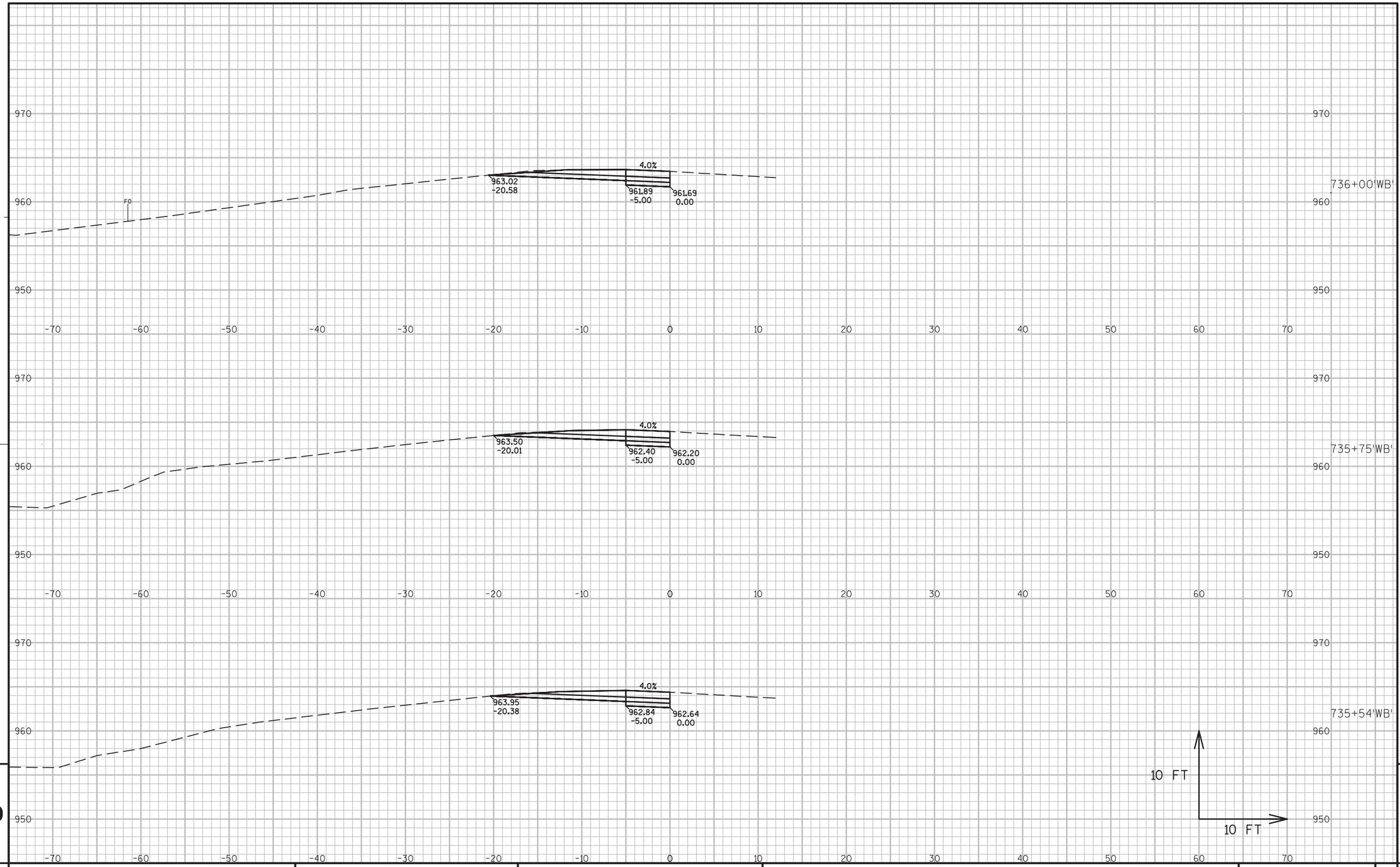

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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - WB	SHEET	E

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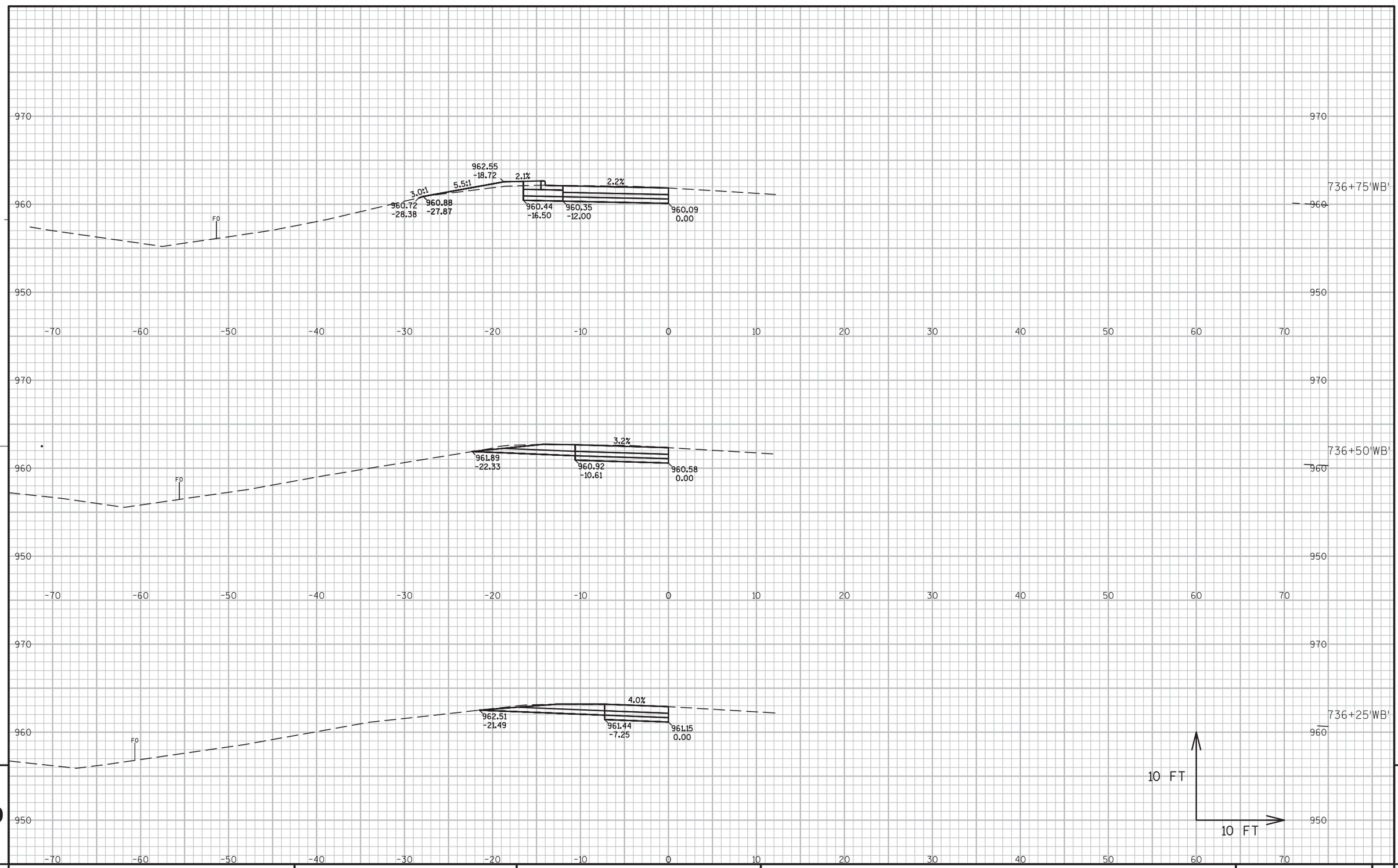

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - WB	SHEET	E

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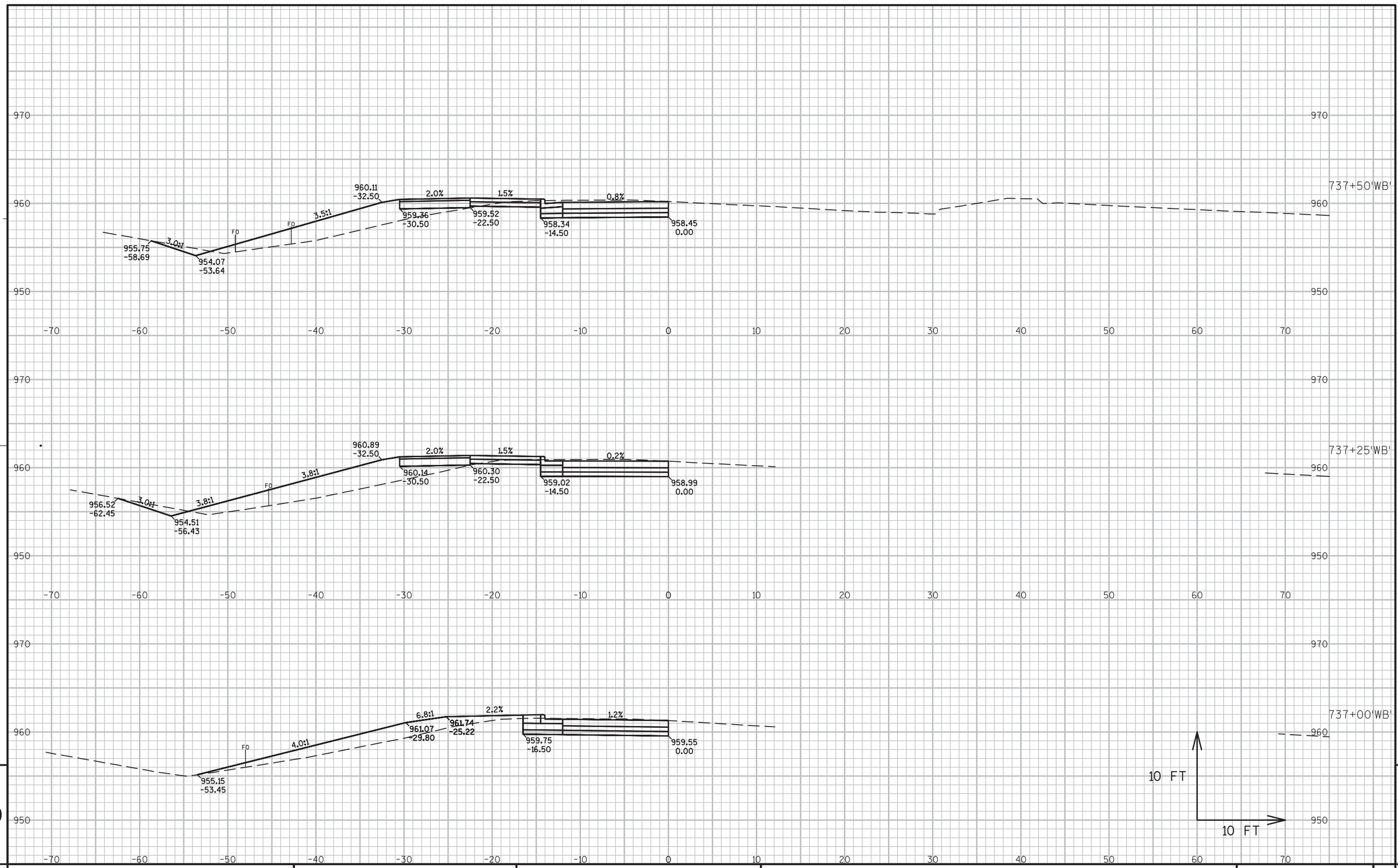

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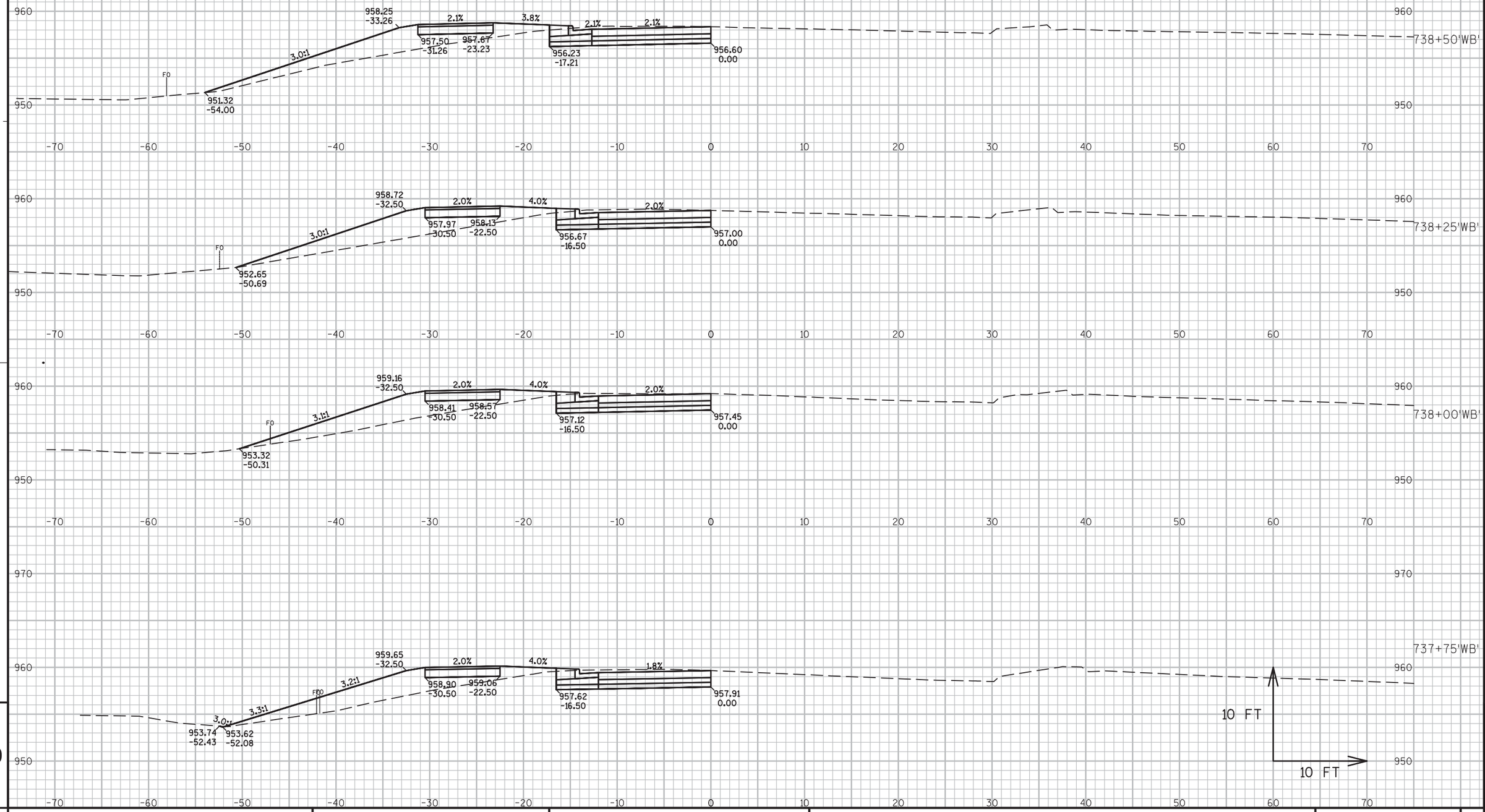

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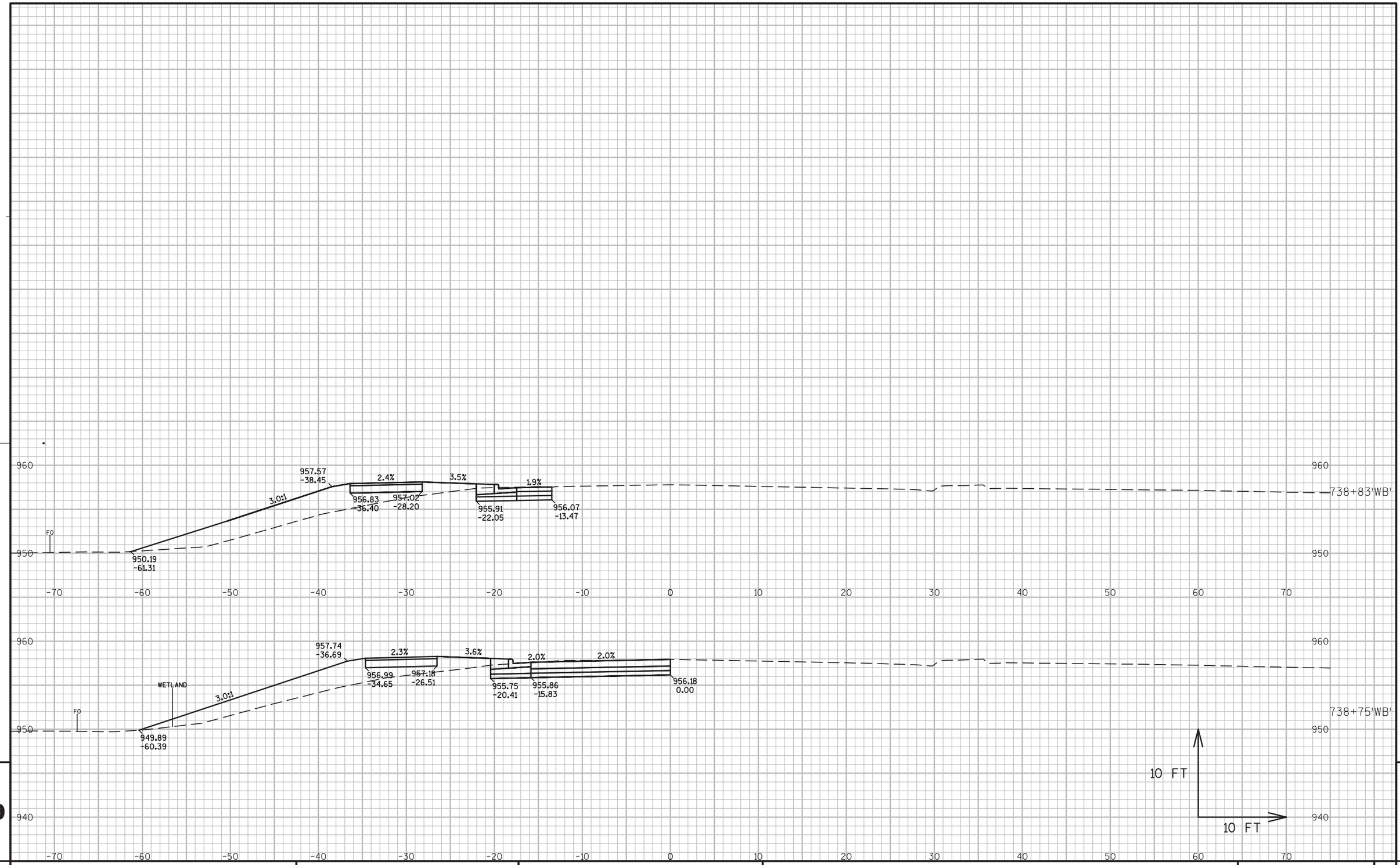
WISDOT/CADDS SHEET 49



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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: VERONA AVE - WB	SHEET	E

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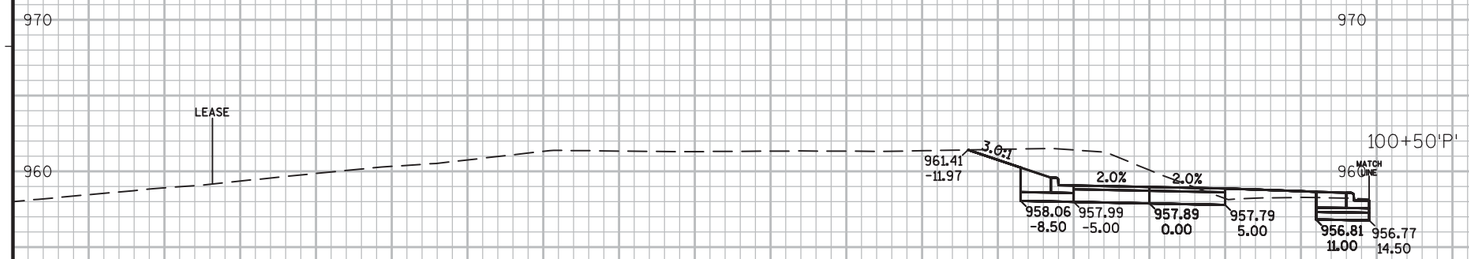

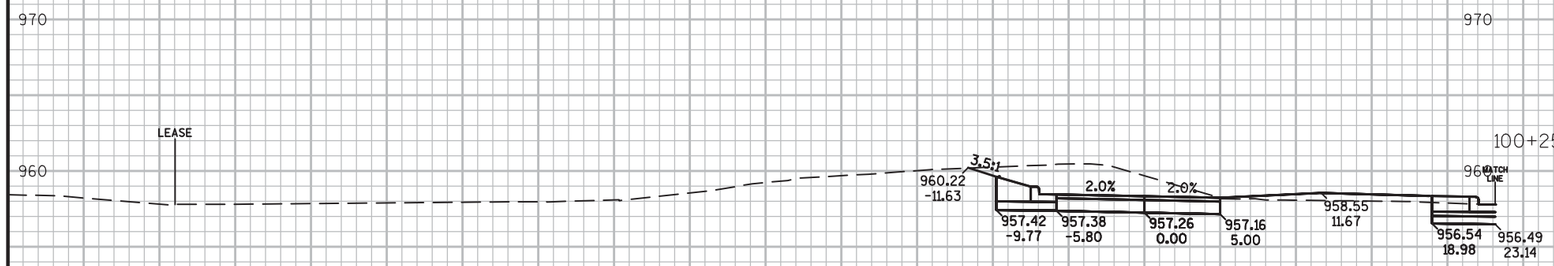

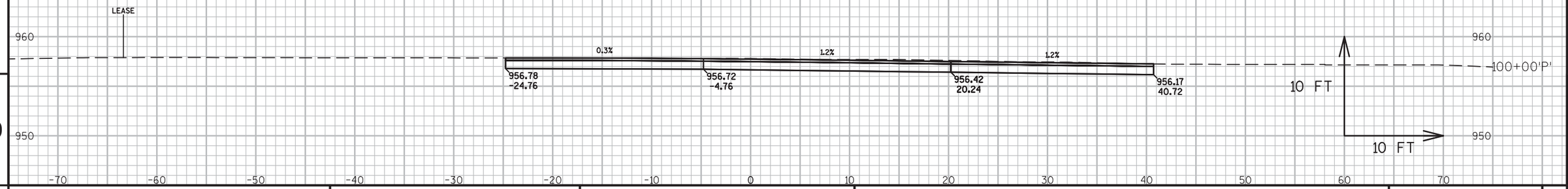

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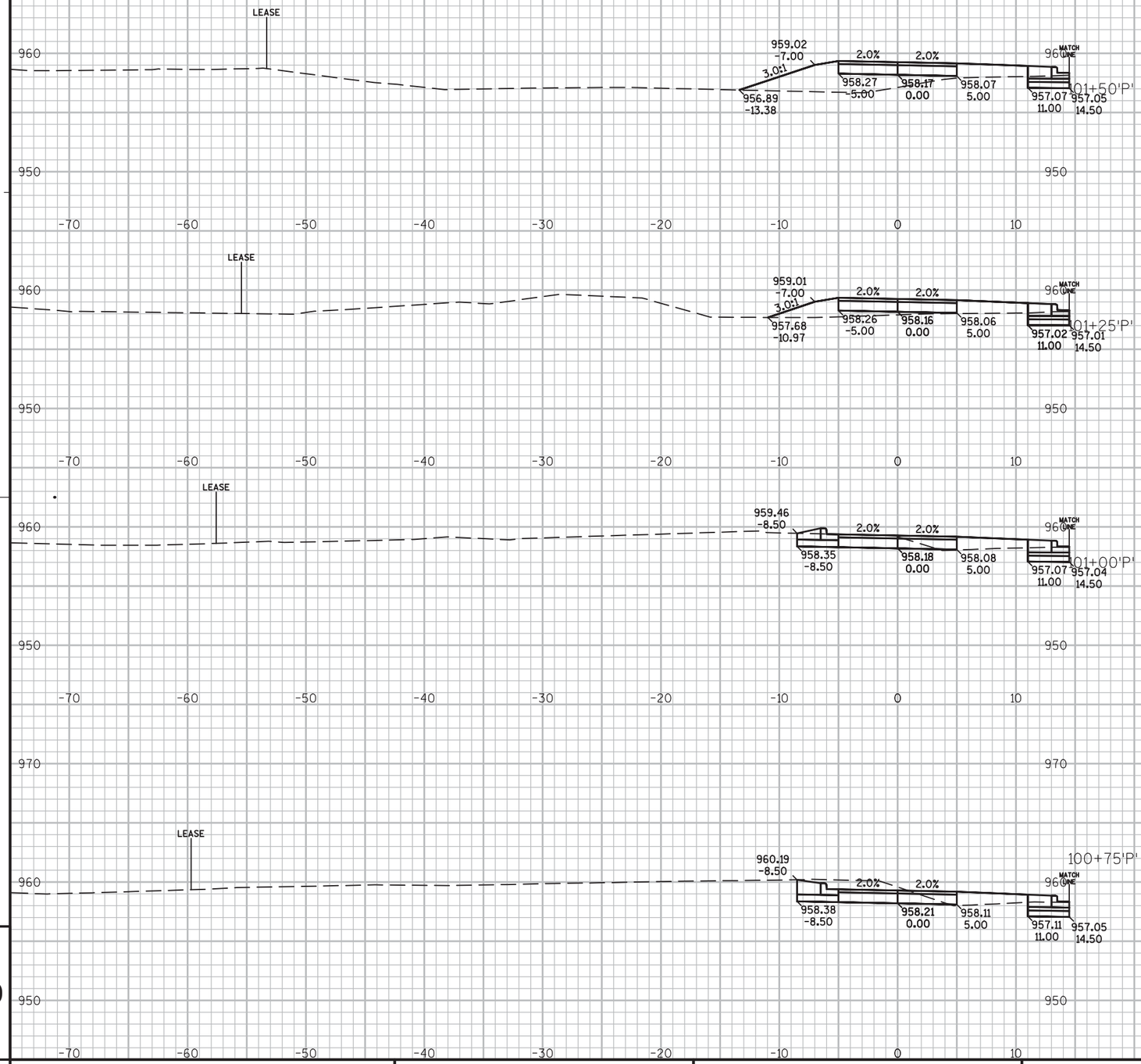
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: BIKE PATH	SHEET	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\090201_XS - EDITS.DWG PLOT DATE : 7/29/2014 4:26 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:10_XREF



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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: BIKE PATH	SHEET	E

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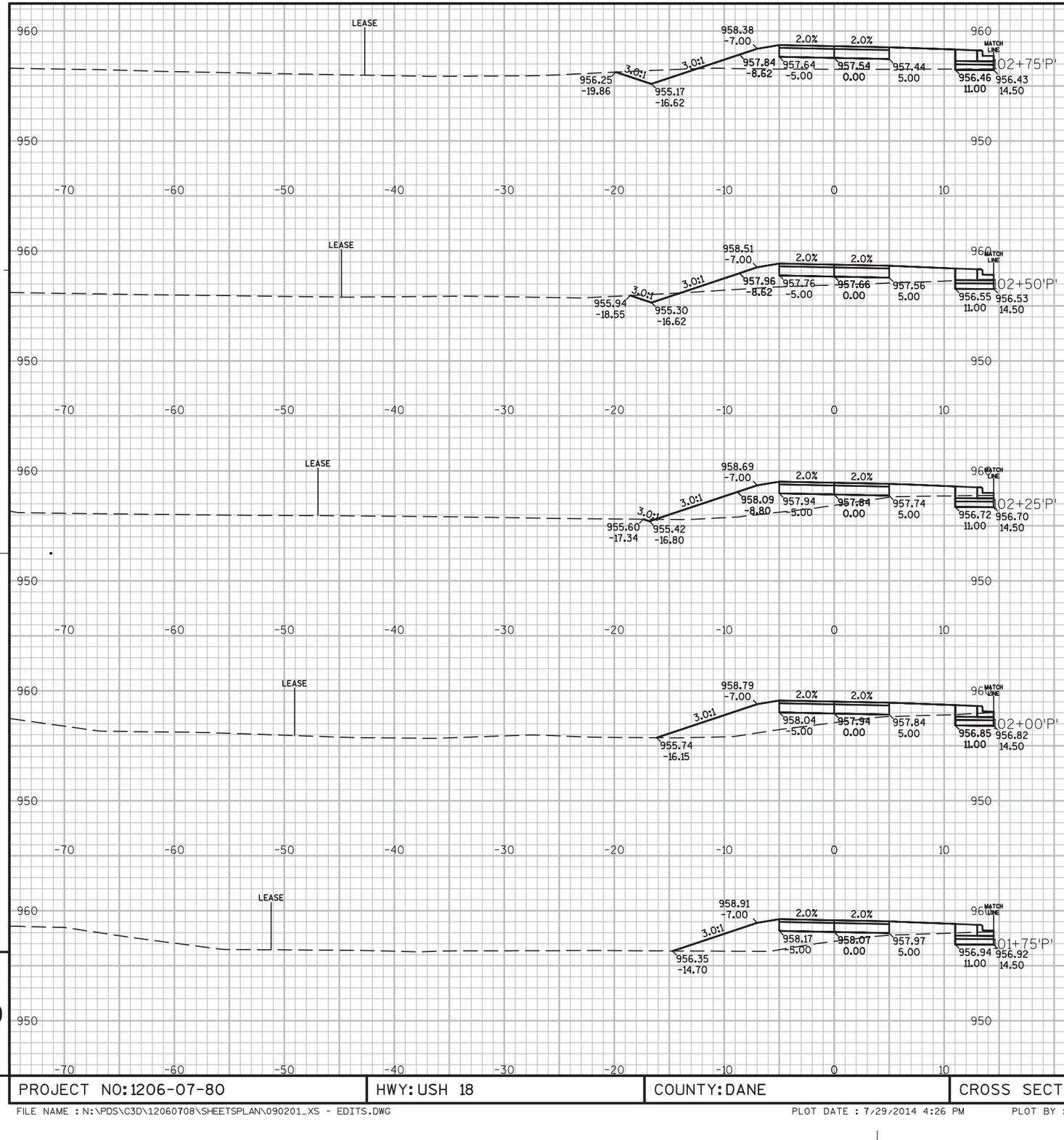

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: BIKE PATH	SHEET	E

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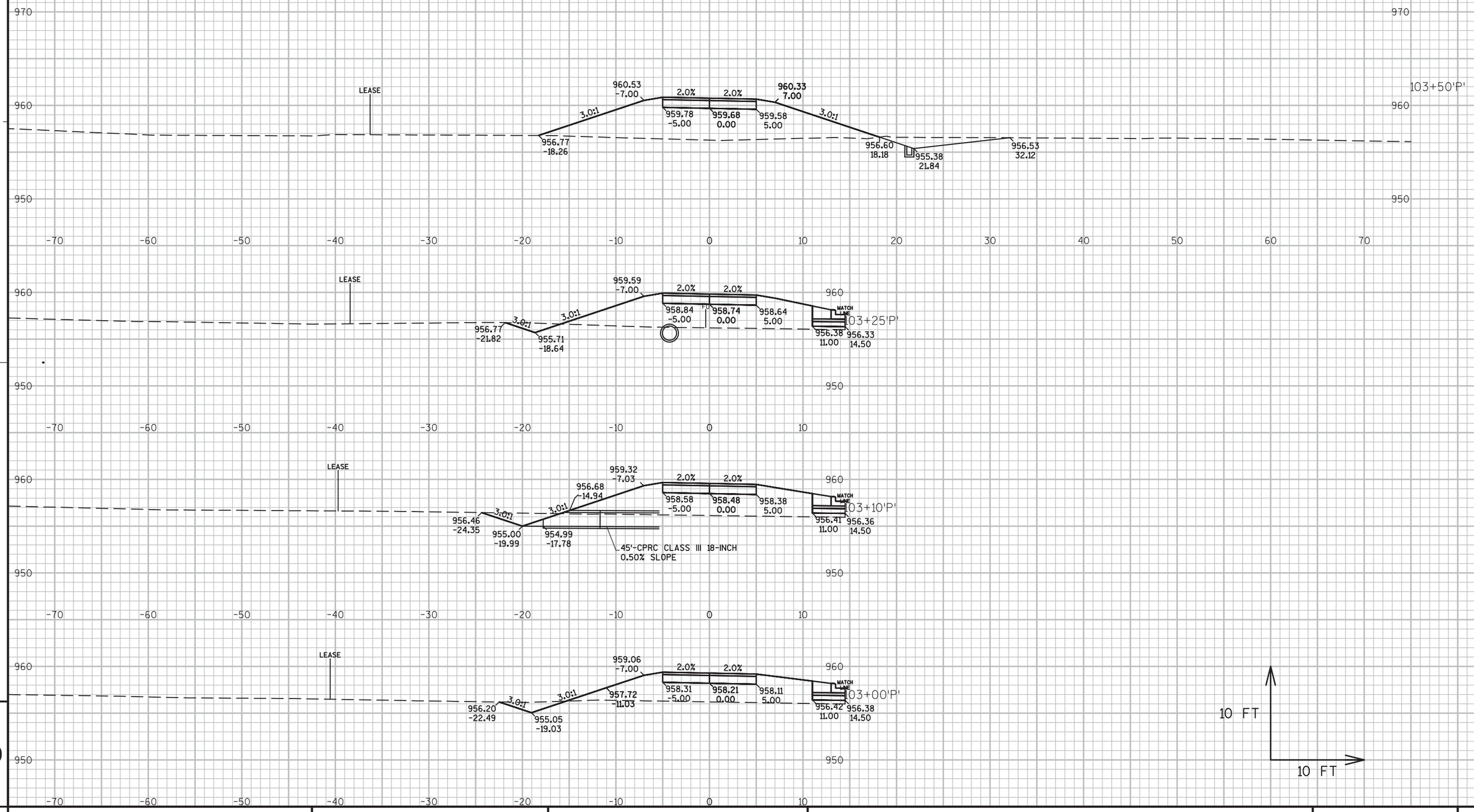
WISDOT/CADDS SHEET 49



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: BIKE PATH	SHEET	E

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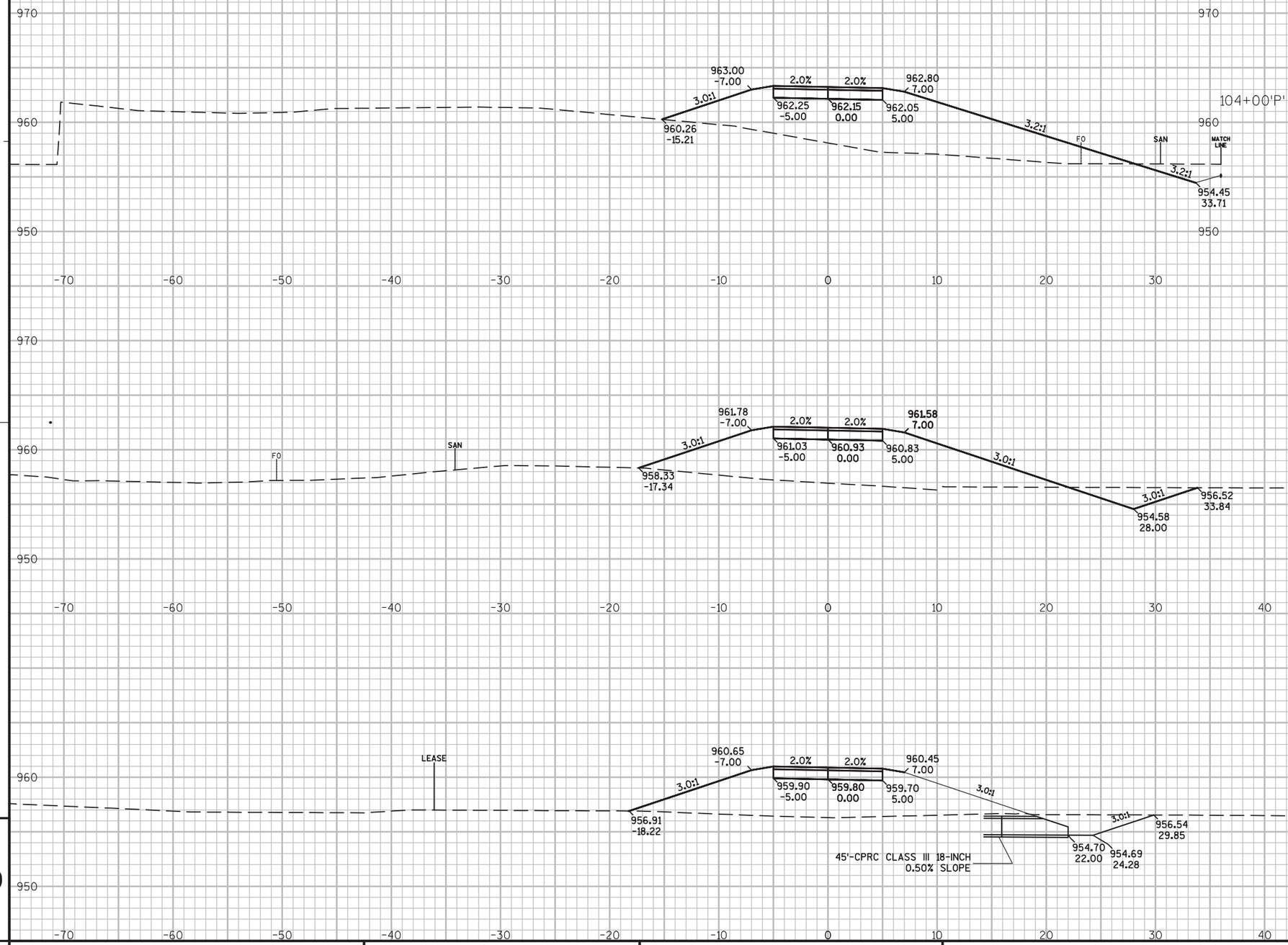

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: BIKE PATH	SHEET	E

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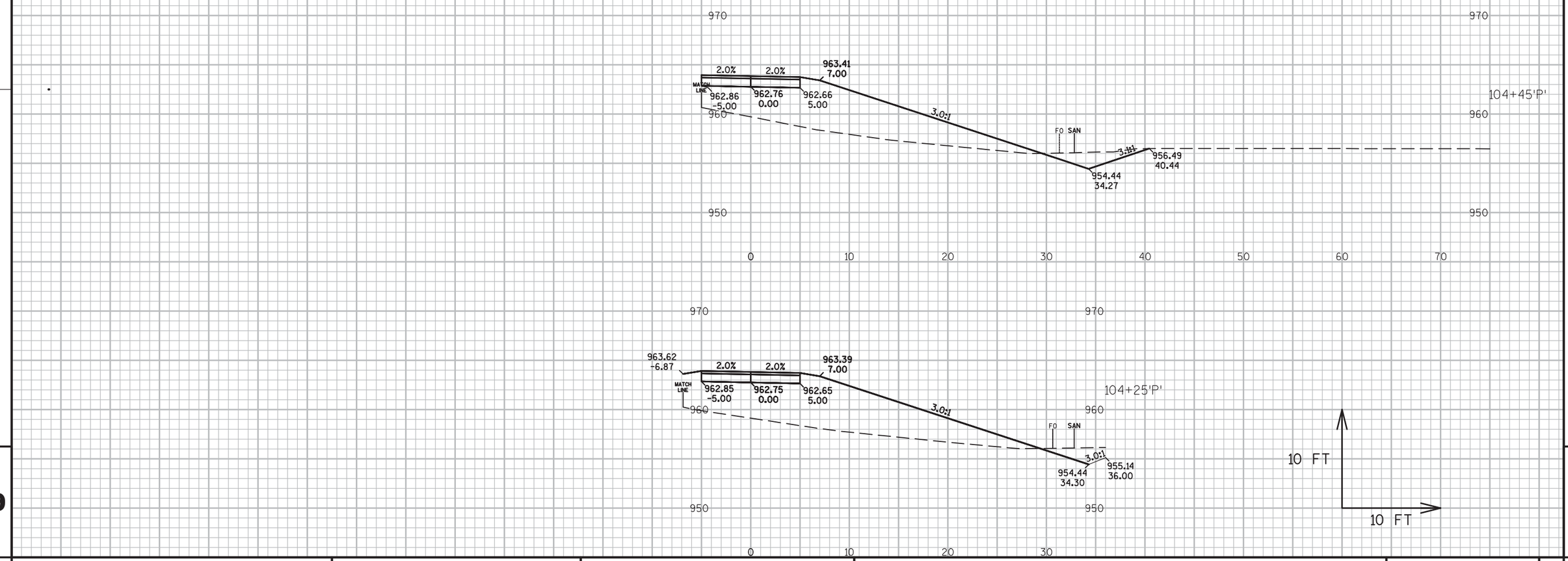

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PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: BIKE PATH	SHEET	E

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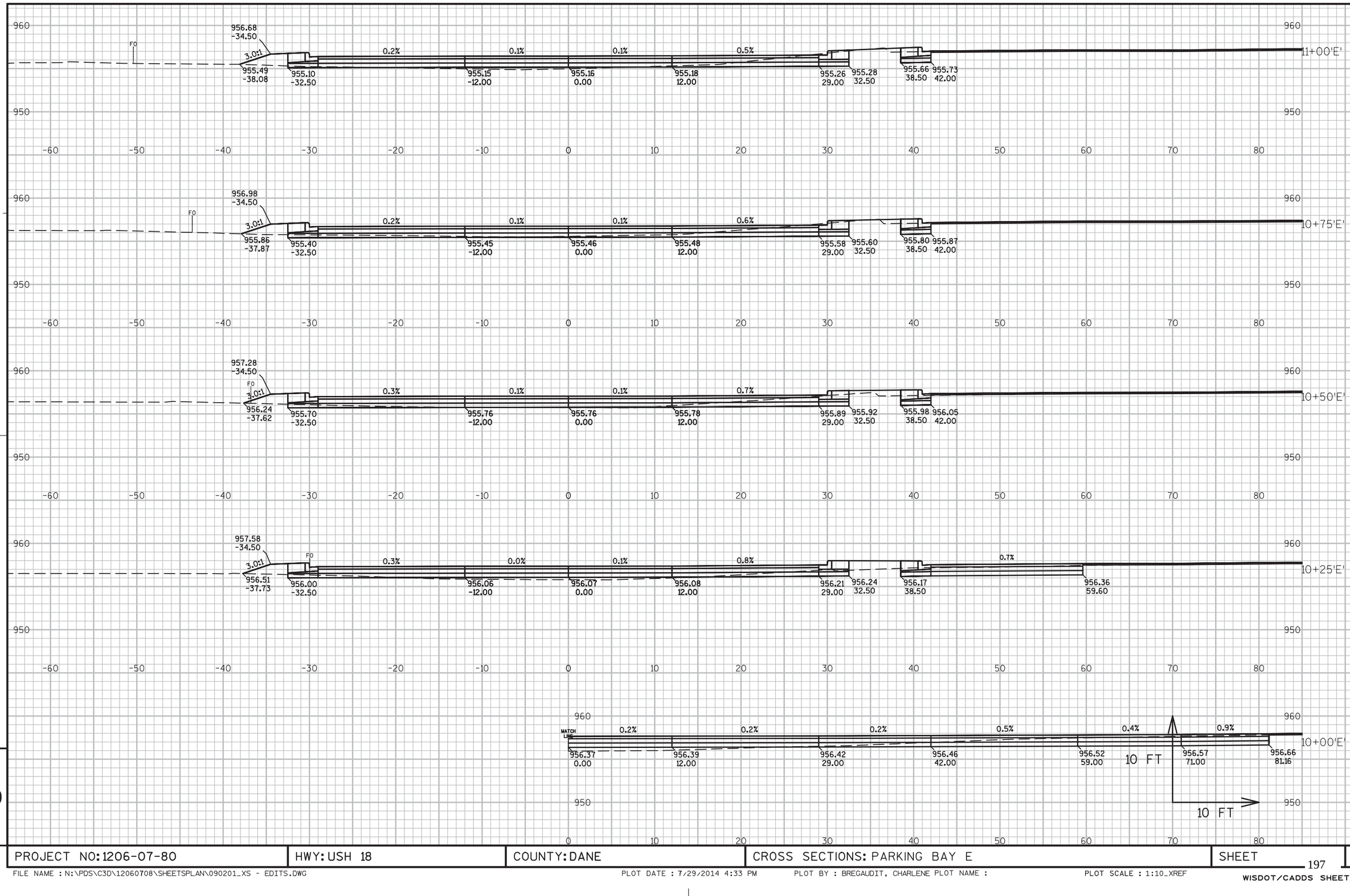

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: PARKING BAY E	SHEET 197 E

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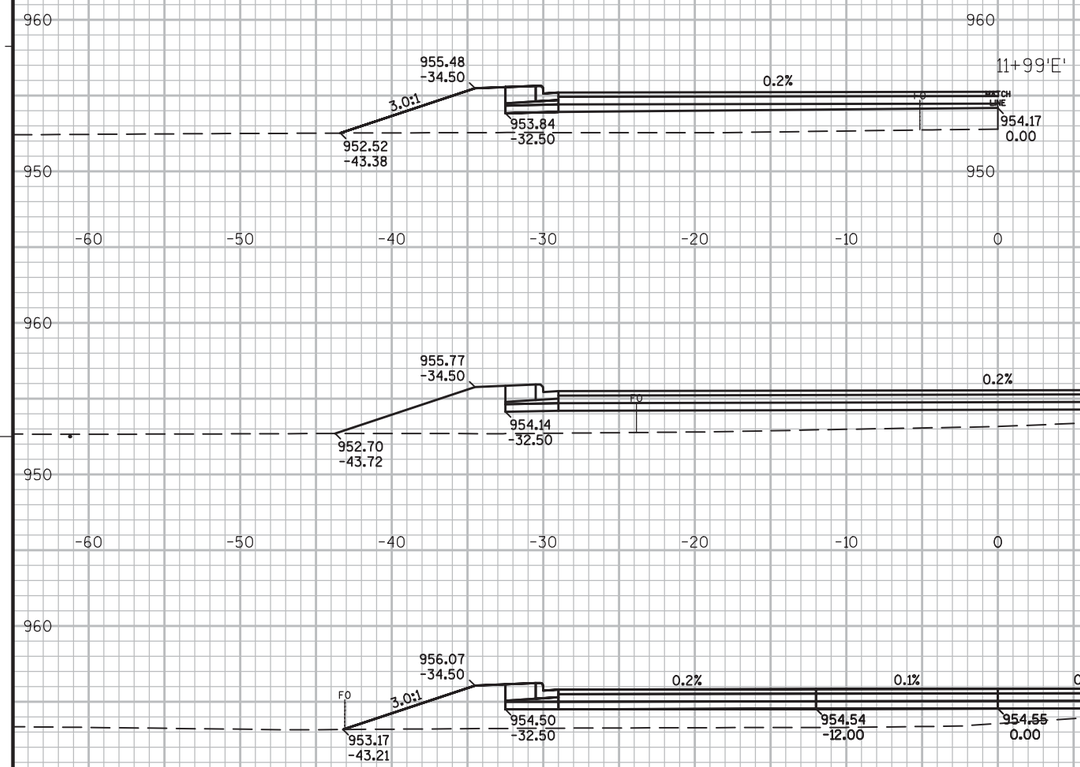
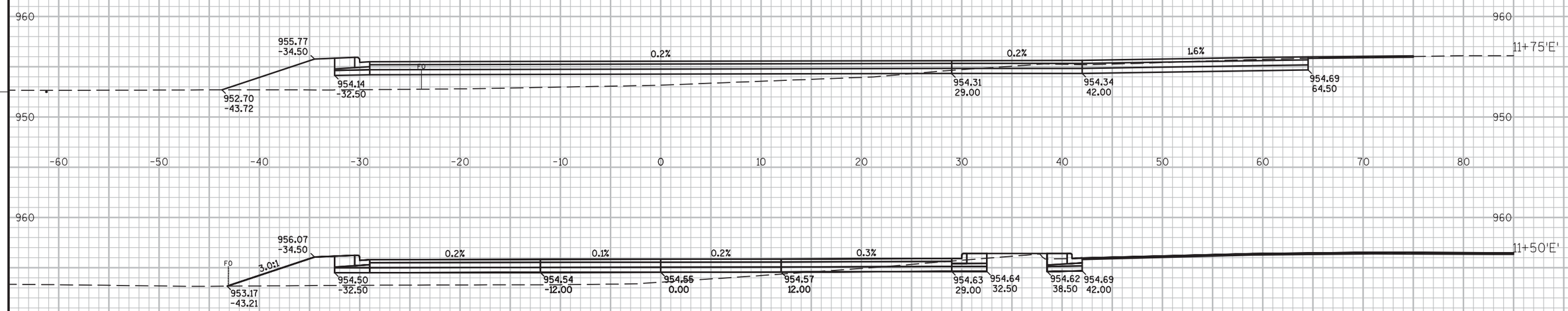
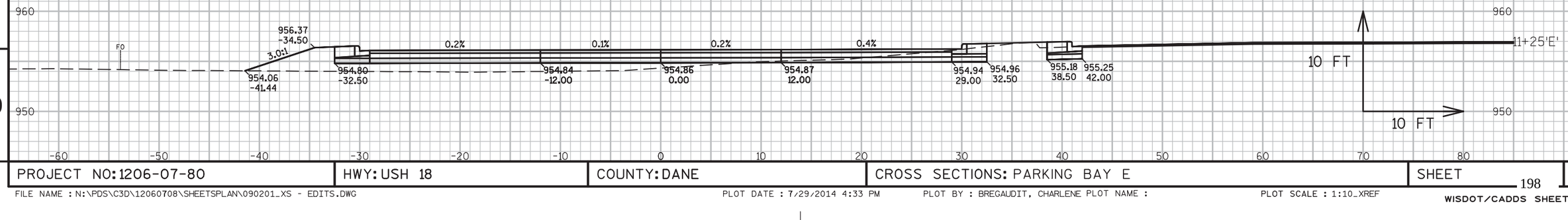
WISDOT/CADDS SHEET 49







9

9

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: PARKING BAY E	SHEET	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\090201_XS - EDITS.DWG PLOT DATE : 7/29/2014 4:33 PM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49

END
EXCAVATION

MATCH LINE
49+93'PB'

960
950
-60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

MATCH LINE
49+75'PB'

956.97
15.00
957.03
17.50
956.96
30.06
956.89
32.65
955.47
46.91
955.38
52.12
955.37
57.61
956.71
64.31
956.77
69.20
956.93
79.24

49+50'PB'

957.37
15.00
957.43
17.50
957.27
23.40
957.17
25.99
955.85
36.66
955.75
39.59
955.57
44.32
957.29
60.72
3.2:1
MATCH LINE
951.52
81.46

49+25'PB'

956.24
30.71
956.08
36.35
957.82
48.89
3.2:1
952.15
67.14
FD

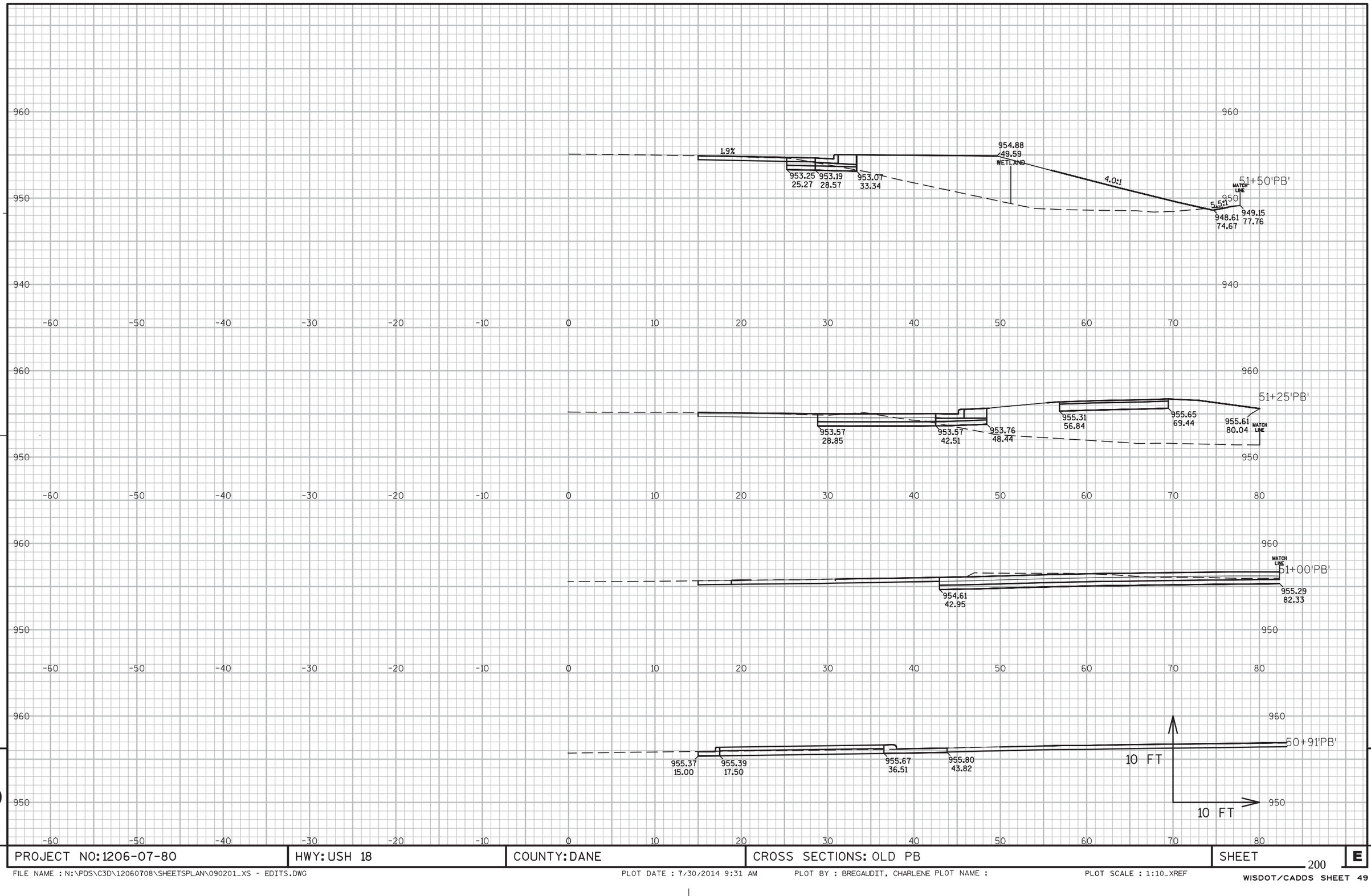
BEGIN
EXCAVATION

49+10'PB'

10 FT
10 FT

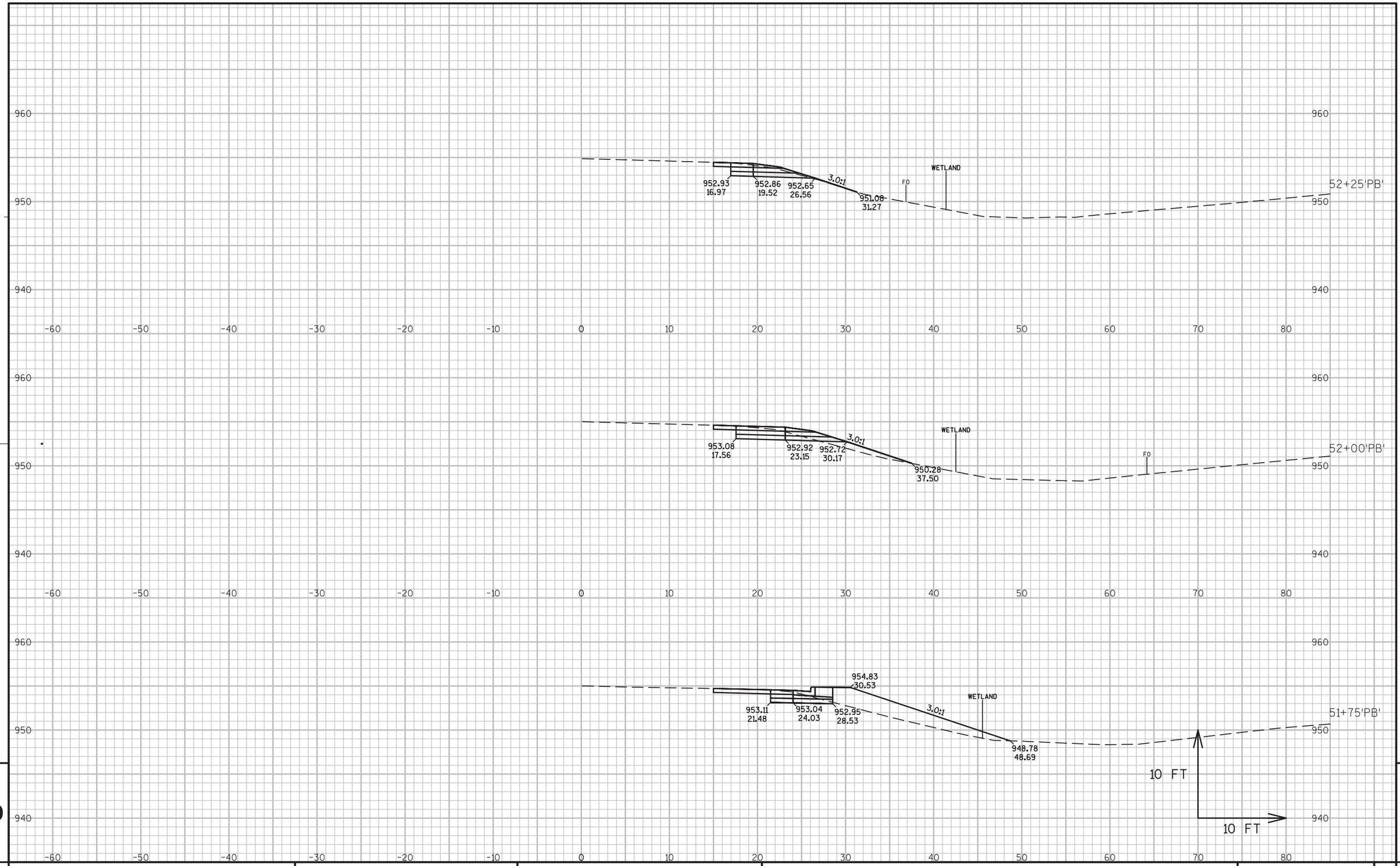
9

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: MAPLE GROVE DR	SHEET 199	E



PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: OLD PB	SHEET	E

FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\090201_XS - EDITS.DWG PLOT DATE : 7/30/2014 9:31 AM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:10_XREF



9

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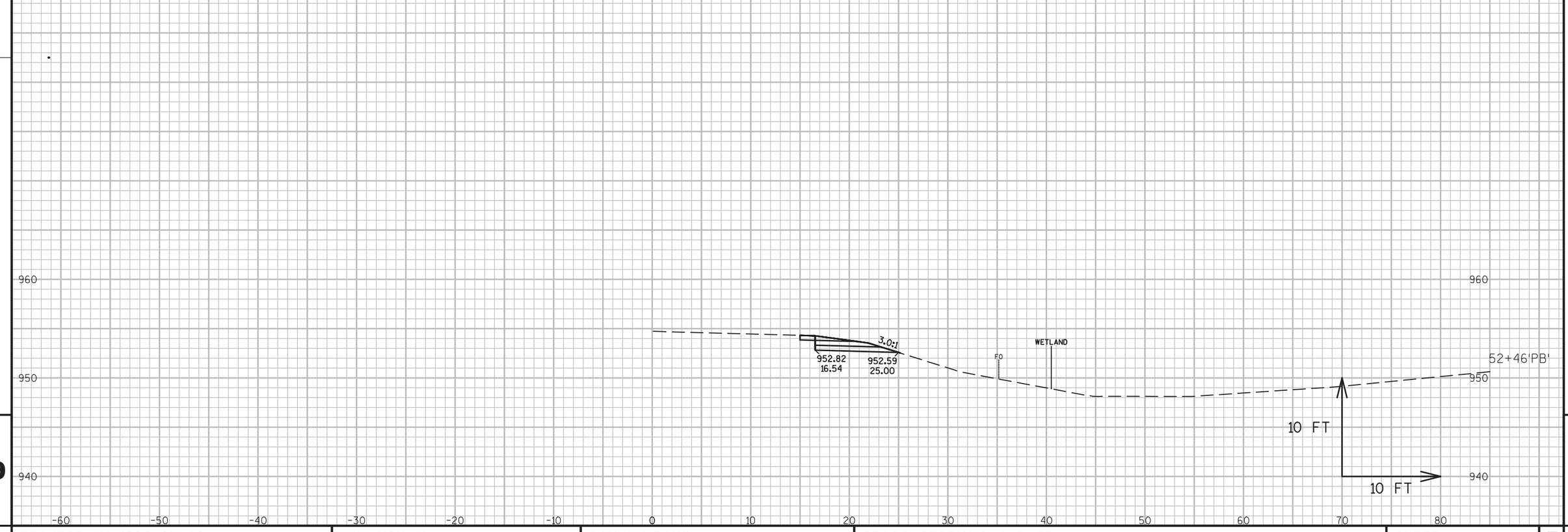
PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: OLD PB	SHEET 201	E

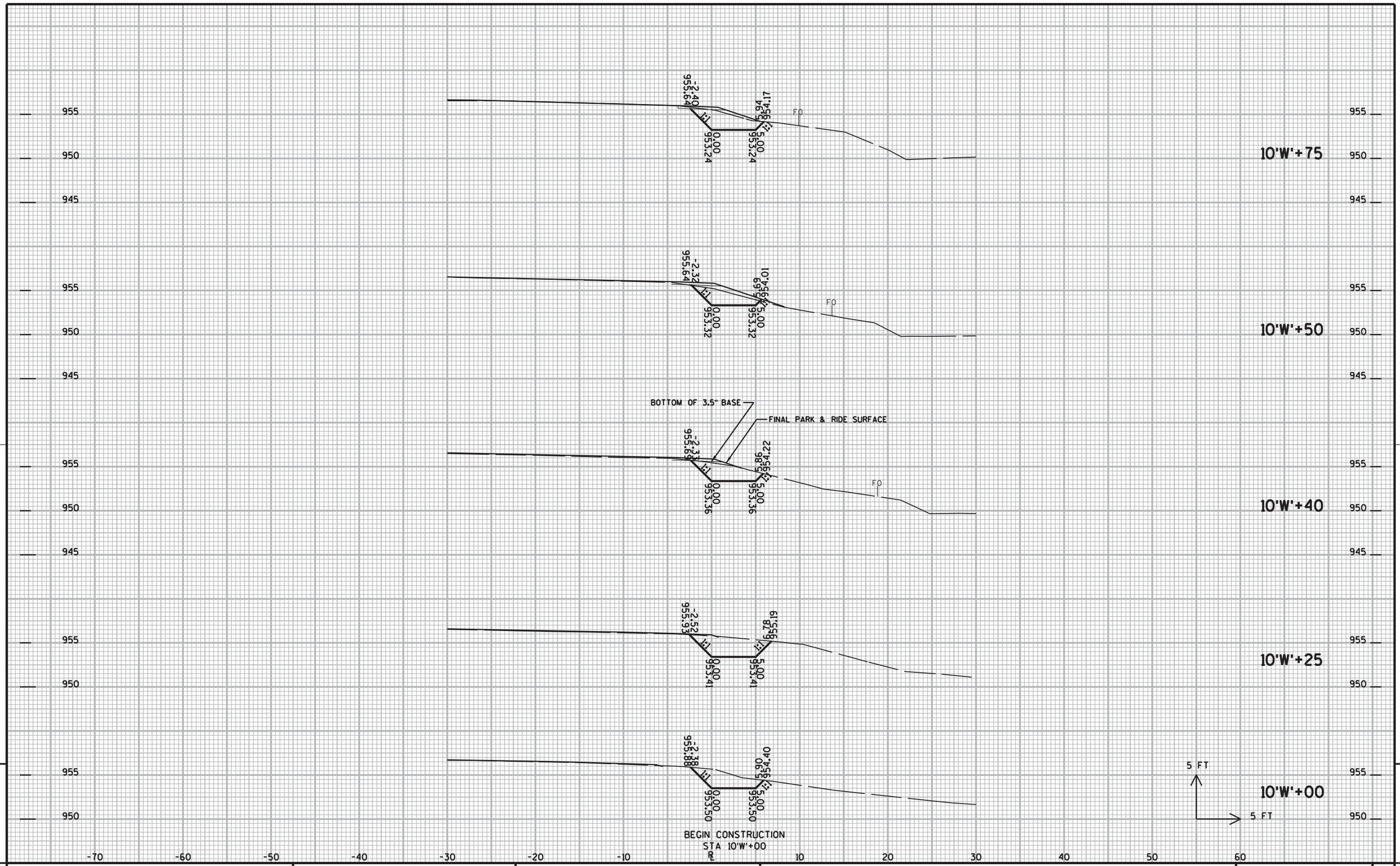


9

9

PROJECT NO: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: OLD PB	SHEET	E

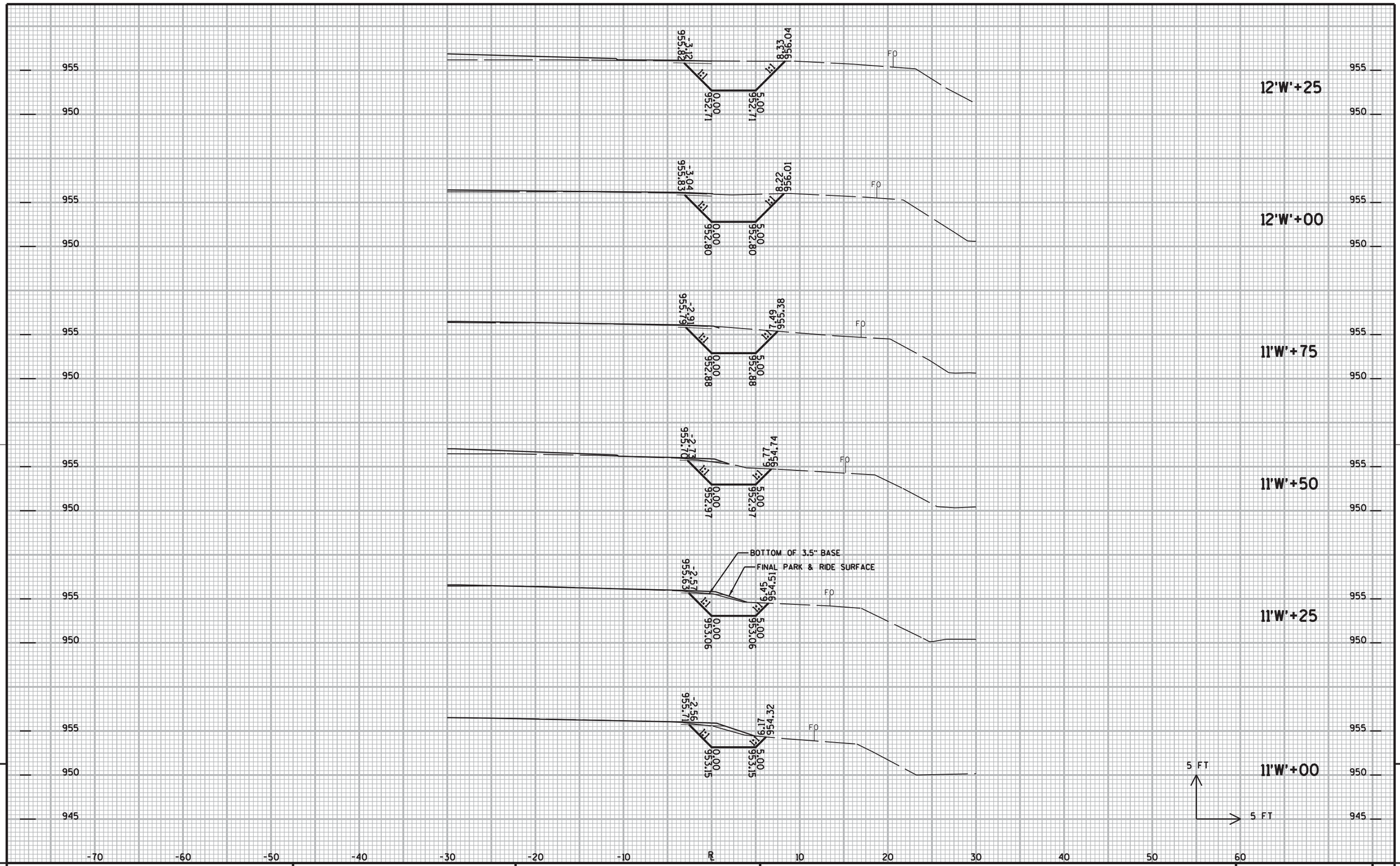
FILE NAME : N:\PDS\C3D\12060708\SHEETSPLAN\090201_XS - EDITS.DWG PLOT DATE : 7/30/2014 9:31 AM PLOT BY : BREGAUDIT, CHARLENE PLOT NAME : PLOT SCALE : 1:10_XREF
WISDOT/CADDS SHEET 49



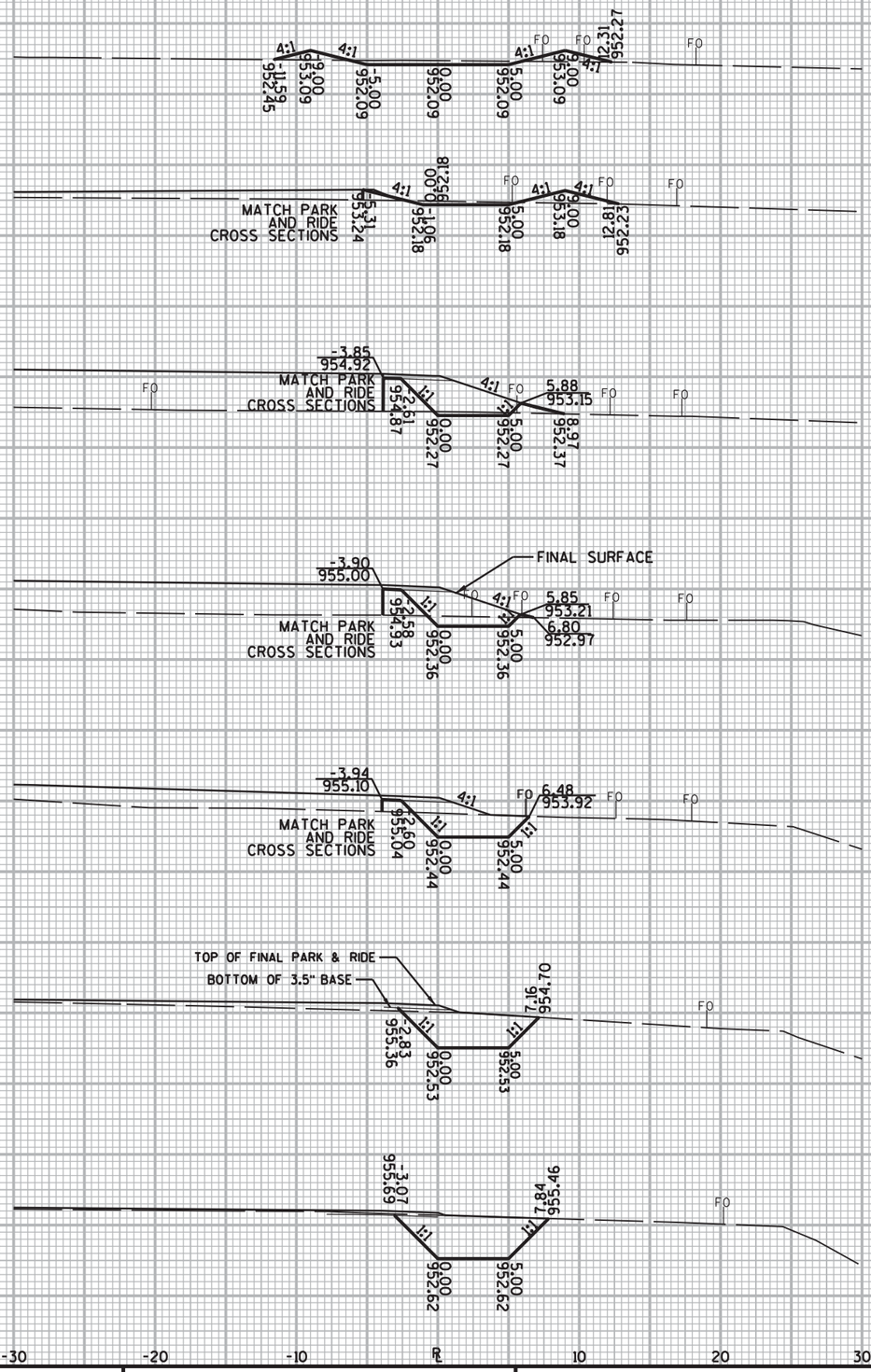
PROJECT NUMBER: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: STONE WEEPER & SWALE	SHEET NO: 203	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\090205_xs.DGN PLOT DATE : 4/30/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 21



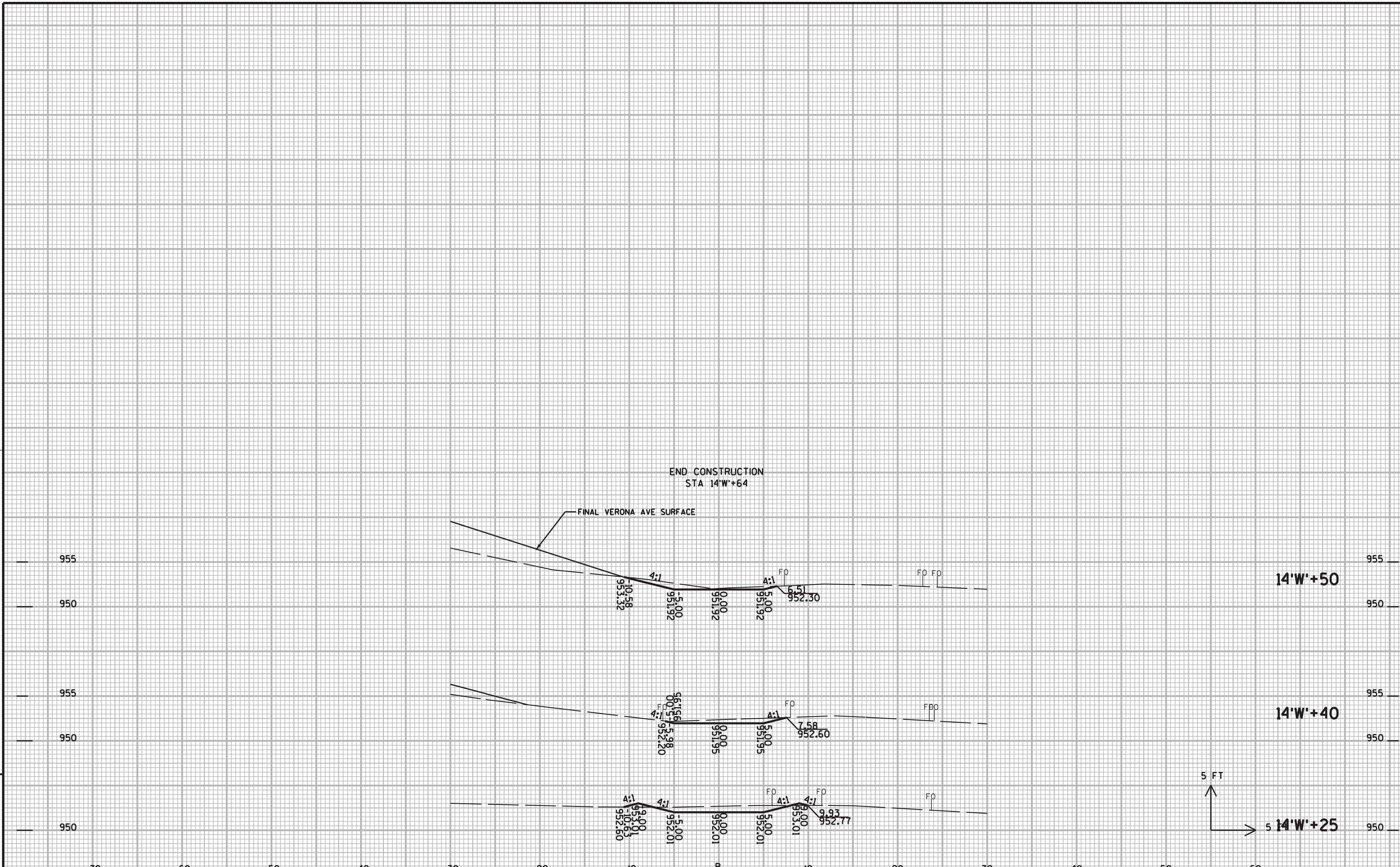
PROJECT NUMBER: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: STONE WEEPER & SWALE	SHEET NO: 204	E



PROJECT NUMBER: 1206-07-80	HWY: USH 18	COUNTY: DANE	CROSS SECTIONS: STONE WEEPER & SWALE	SHEET NO: 205	E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\090205_XS.DGN PLOT DATE : 5/5/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 21



PROJECT NUMBER: 1206-07-80 | HWY: USH 18 | COUNTY: DANE | CROSS SECTIONS: STONE WEEPER & SWALE | SHEET NO: 206 | E

FILE NAME : G:\WDOTCO\10033 (Design Work Orders)\WO 4 Military Ridge Park and Ride\DGN\Sheets\090205_xs.DGN PLOT DATE : 4/30/2014 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

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