RHI

PROJECT ID: 9231-07-72

WITH: NA

COUNTY: VILAS

JUNE 2022

ORDER OF SHEETS

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

TOTAL SHEETS = 50

13

N

DESIGN DESIGNATION

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

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- 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

WOODRUFF- LAC DU FLAMBEAU

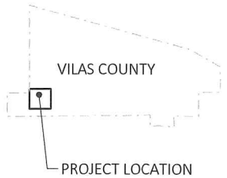
STORMWATER DRAINAGE IMPROVEMENTS

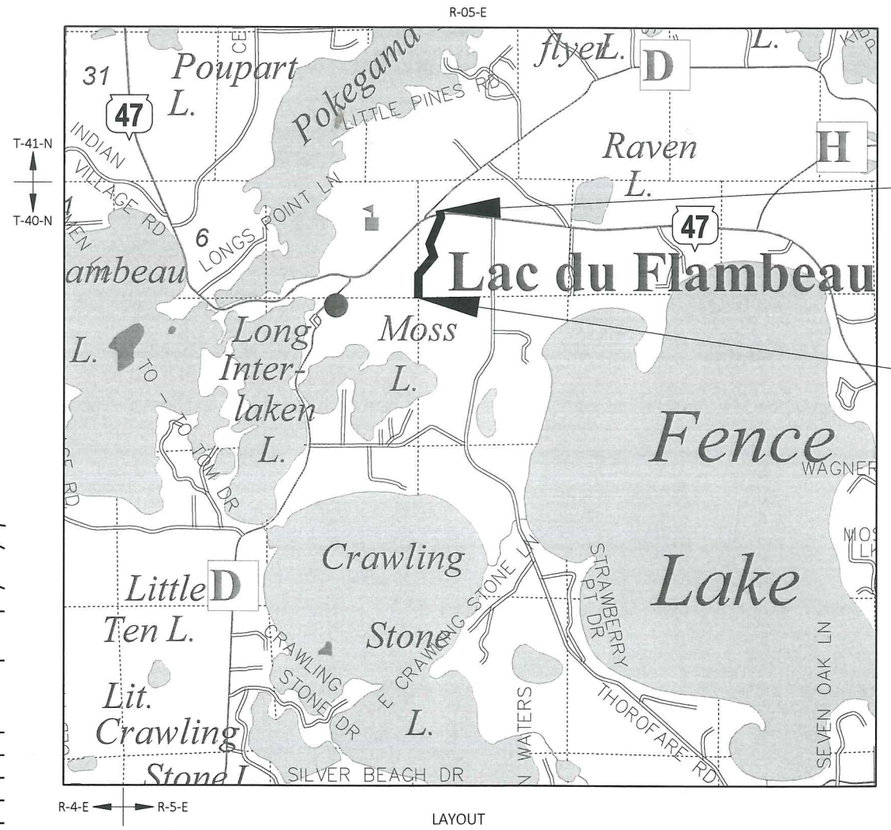
STH 47

VILAS COUNTY

STATE PROJECT NUMBER
9231-07-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9231-07-72	WISC 2022424	1





END PROJECT
STA 125+07
Y = 129,263.17
X = 341,901.28

BEGIN PROJECT
STA 100+00
Y = 127,003.93
X = 341,470.09

LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.069 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), VILAS COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2011). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ORIGINAL PLANS PREPARED BY
COOPER ENGINEERING

WISCONSIN
SCOT J. BALSAVICH
E-30051
RICE LAKE
WI
PROFESSIONAL ENGINEER

DATE: 1/26/22 (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	COOPER ENGINEERING
Designer	COOPER ENGINEERING
Project Manager	JIM VOLKMANN P.E.
Regional Examiner	ZACH GRULING
Regional Supervisor	DANIEL ERVA

APPROVED FOR THE DEPARTMENT

DATE: 01/27/2022 (Signature)

E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\010101-TI.DWG PLOT DATE : 1/26/2022 8:28 AM PLOT BY : JACOB FRIBERG PLOT NAME :

UTILITY CONTACTS

COMMUNICATIONS

FRONTIER COMMUNICATIONS OF WI LLC
JEFF TIMM
1851 N. 14th AVENUE
WAUSAU, WI 54401
PHONE: 715-894-0809
EMAIL: jtimm@mscon.com

COMMUNICATIONS

LAC DU FLAMBEAU TRIBE - TRIBAL FIBER OPTIC**
GEORGE W. THOMPSON
280 INDUSTRIAL PARK ROAD, P.O. BOX 67
LAC DU FLAMBEAU, WI 54538
PHONE: 715-588-9630
CELL: 715-604-2625
EMAIL: gthompson@ldftribe.com

SANITARY SEWER

LAC DU FLAMBEAU TRIBE - SEWER DEPT.
SCOTT VALLIERE
P.O. BOX 67
LAC DU FLAMBEAU, WI 54538
PHONE: 715-588-7887
CELL: 715-614-6394
EMAIL: svalliere@@ldftribe.com

WATER

LAC DU FLAMBEAU TRIBE - WATER DEPT.
SCOTT VALLIERE
P.O. BOX 67
LAC DU FLAMBEAU, WI 54538
PHONE: 715-588-7887
CELL: 715-614-6394
EMAIL: svalliere@@ldftribe.com

**PLEASE CONTACT DIRECTLY FOR UTILIY LOCATES

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

TRIBAL CONTACTS

LAC DU FLAMBEAU TRIBE - TRIBAL DNR
P.O. BOX 67
LAC DU FLAMBEAU, WI 54538
PHONE: 715-588-4213

LAC DU FLAMBEAU TRIBE - TRIBAL HISTORIC PRESERVATION OFFICE
P.O. BOX 67
LAC DU FLAMBEAU, WI 54538
PHONE: 715-588-2139

LAC DU FLAMBEAU TRIBE - TRIBAL PLANNING & DEVELOPMENT
P.O. BOX 67
LAC DU FLAMBEAU, WI 54538
PHONE: 715-588-4252

GENERAL NOTES:

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, AND MULCHED.

THE LOCATION 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.

MAXIMUM WIDTH OF CLEARING & GRUBBING SHALL BE 25 FEET EACH WAY FROM CENTERLINE OF PROPOSED PIPE.

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 2.9 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.4 ACRES

BENCH MARKS			
NO.	STATION	ELEV.	DESCRIPTION
1	121+93, 141' LT	1609.14	TOP NUT HYDRANT

N

PROPOSED OUTFALL
STA 101+50, 0' RT
Y = 127,153.91
X = 341,472.79
STRUCTURE #1
30" AEW INV. = 1597.87

BEGIN PROJECT
STA 100+00
Y = 127,003.93
X = 341,470.09

PROPOSED DISCHARGE DITCH

STA 104+53, 0' RT
Y = 127,456.73
X = 341,478.23
STRUCTURE #2
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1605.64
NE 30" INV. = 1598.17
S 30" INV. = 1598.17

EXISTING STORM SEWER

GAULKE RD

CLINIC RD

STH 47

APARTMENTS

STA 110+62, 0' RT
Y = 127,874.93
X = 341,850.65
STRUCTURE #4
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1610.86
N 30" INV. = 1598.78
S 30" INV. = 1598.78

STA 113+00, 0' RT
Y = 128,112.63
X = 341,858.54
STRUCTURE #5
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1610.70
N 30" INV. = 1599.02
S 30" INV. = 1599.02

STA 116+81, 0' RT
Y = 128,475.03
X = 341,822.06
STRUCTURE #7
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1613.79
N 30" INV. = 1599.40
SE 30" INV. = 1599.40
STORM MANHOLE ENHANCEMENT - SANITARY CROSSING

TRENCHLESS 30" PIPE INSTALLATION - STH 47 CROSSING

EXISTING 27" RCP
INV. = 1601.00

EXISTING 24" RCP
INV. = 1601.63

EXISTING STORMWATER DEPRESSION
(OVERFLOWS TO CTH D AT ELEV. = 1605.4±)

EXISTING 12" RCP
INV. = 1600.16

BM#1

EXISTING 15" RCP
INV. = 1605.09

END PROJECT
STA 125+07
Y = 129,263.17
X = 341,901.28

EXISTING 18" CMP
INV. = 1598.32

CTH D

STA 108+22, 0' RT
Y = 127,640.92
X = 341,798.63
STRUCTURE #3
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1607.54
N 30" INV. = 1598.54
SW 30" INV. = 1598.54

BALL FIELD

BALL FIELD

TENNIS COURT

BALL FIELD

EXISTING STORMWATER DEPRESSION

STA 116+11, 0' RT
Y = 128,423.80
X = 341,868.88
STRUCTURE #6
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1613.83
NW 30" INV. = 1599.33
S 30" INV. = 1599.33

STA 121+32, 0' RT
Y = 128,926.21
X = 341,801.93
STRUCTURE #8
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1608.41
NE 30" INV. = 1599.84
S 30" INV. = 1599.84
STORM MANHOLE ENHANCEMENT - SANITARY CROSSING

LAC DU FLAMBEAU SCHOOL

LAC DU FLAMBEAU SCHOOL MAINTENANCE DRIVEWAY

PROPOSED OUTLET
STA 125+07, 0' RT
STRUCTURE #10
MANHOLE 5-FT DIAMETER
BASIN GRATE SPECIAL EL. = 1603.50
N 6" ORIFICE = 1600.20
S 30" INV. = 1600.20
SUMP ELEV. = 1597.00

STH 47

EXISTING SANITARY SEWER

GAULKE RD

STA 124+00, 0' RT
Y = 129,160.54
X = 341,931.34
STRUCTURE #9
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1604.91
N 30" INV. = 1600.09
SW 30" INV. = 1600.09

EXISTING 18" CMP
INV. = 1602.48

LAC DU FLAMBEAU SCHOOL PARKING LOT DRIVEWAY

LAC DU FLAMBEAU SCHOOL PARKING LOT

GAULKE RD

YOUTH CENTER LANE

LAC DU FLAMBEAU YOUTH CENTER PARKING LOT

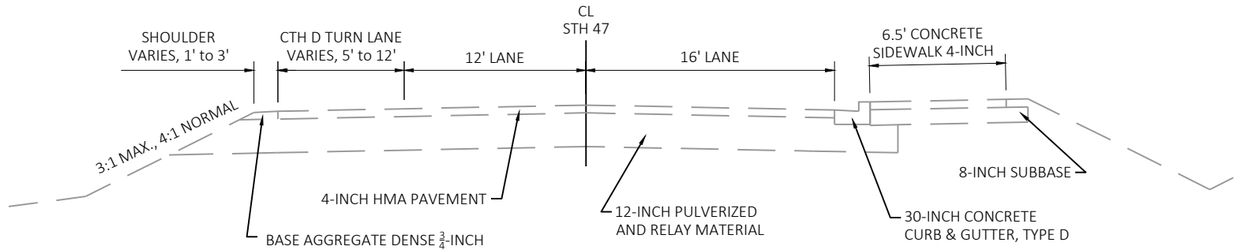
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - PO

PLOT DATE : 1/28/2022 10:35 AM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:200 FT

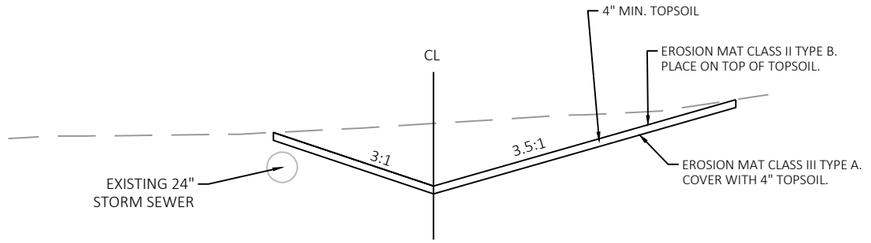
WISDOT/CADDS SHEET 42

2



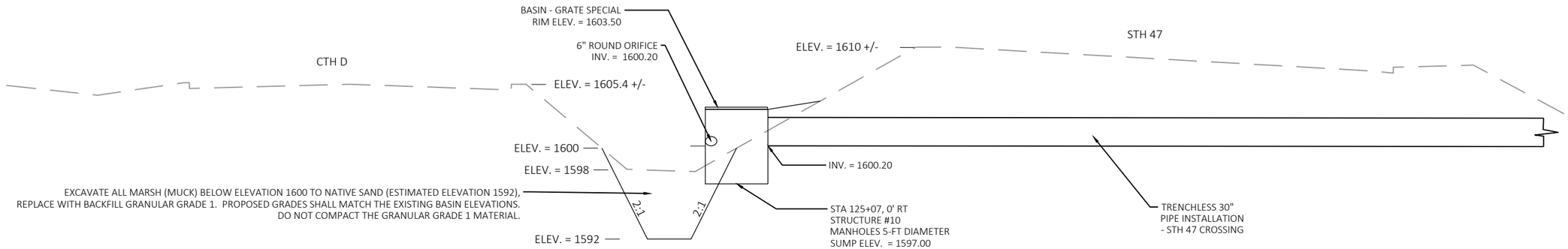
EXISTING STH 47 TYPICAL SECTION

LOOKING EAST



PROPOSED DITCH TYPICAL SECTION

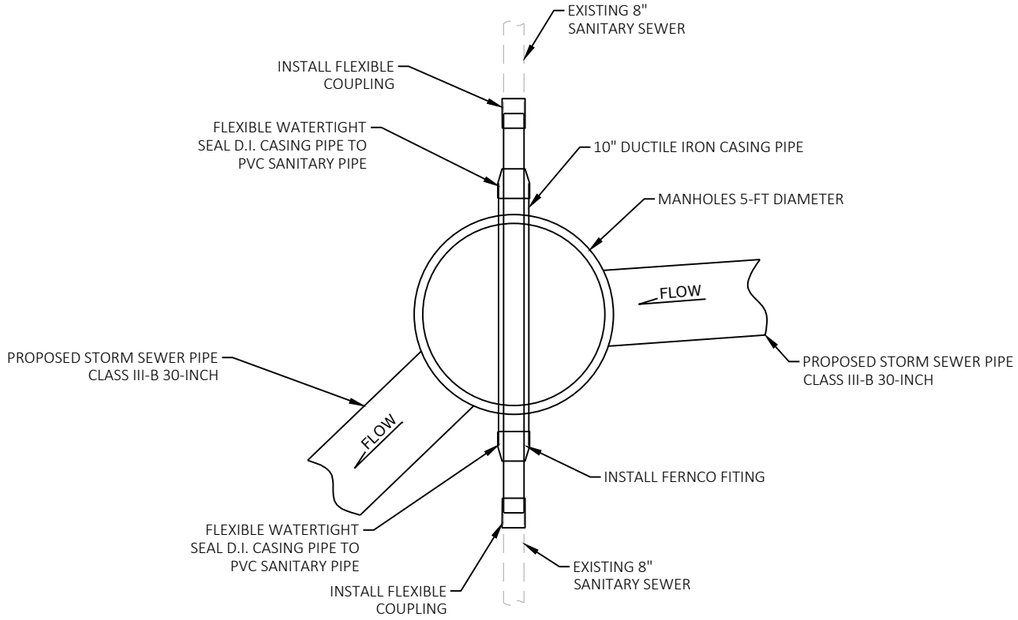
STA 100+00 - 101+50



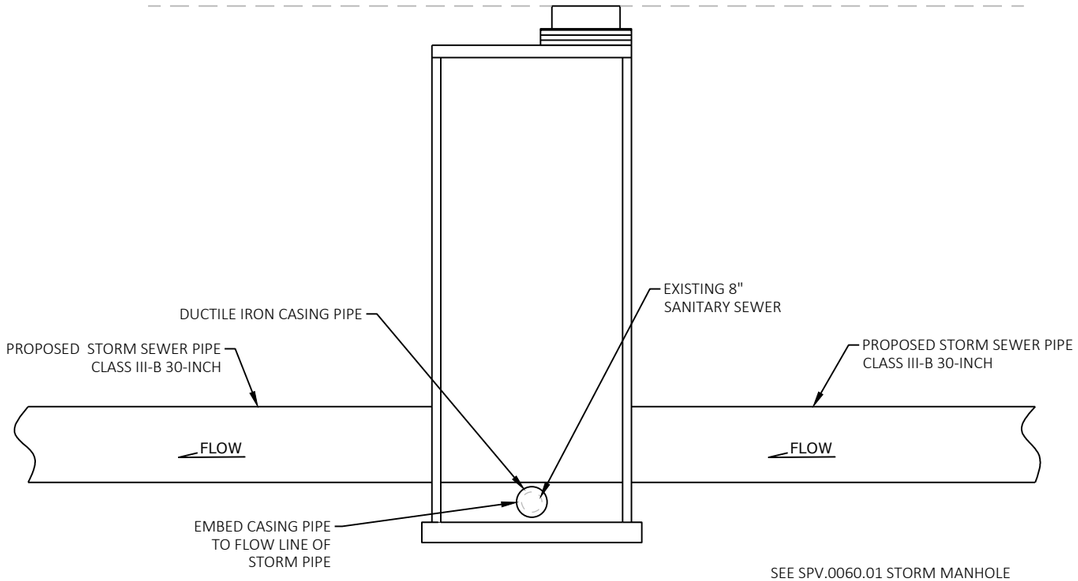
PROPOSED STH 47 STORM BASIN TYPICAL SECTION

LOOKING EAST

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	TYPICAL SECTION	SHEET 4	E

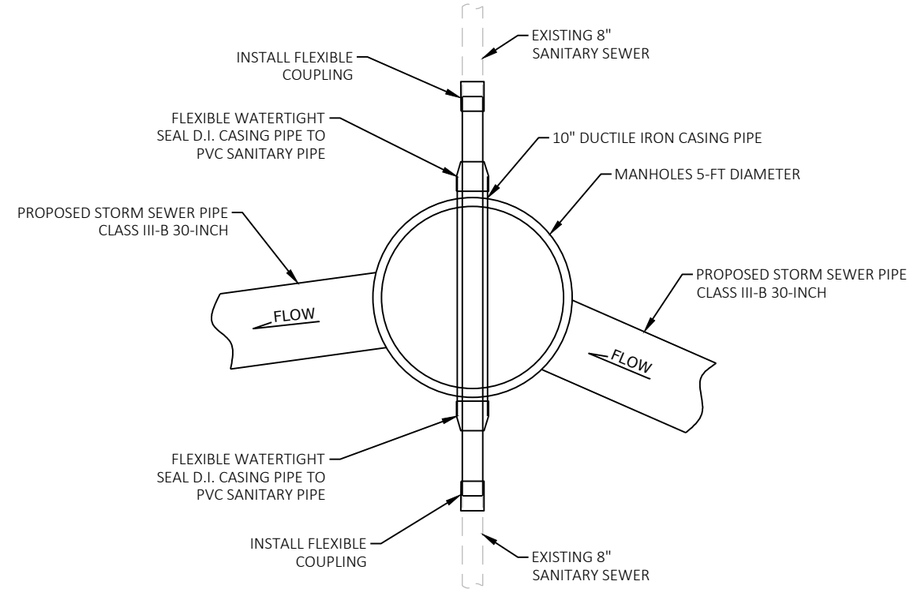


PLAN VIEW - STRUCTURE #7
STA 116+81

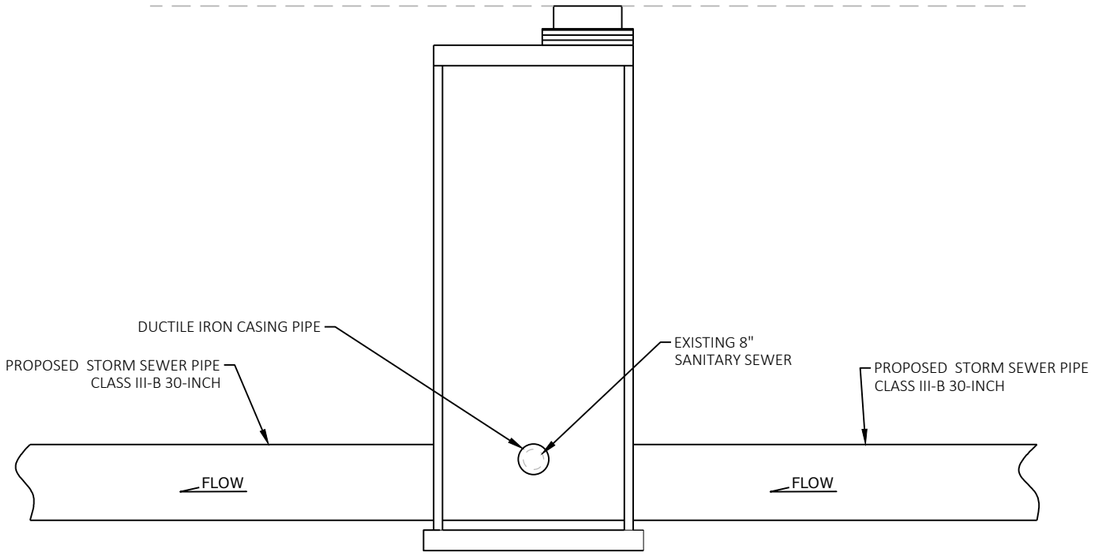


SECTION VIEW - STRUCTURE #7
STA 116+81

SEE SPV.0060.01 STORM MANHOLE ENHANCEMENTS - SANITARY CROSSING FOR MATERIALS AND INSTALLATION SPECIFICATIONS

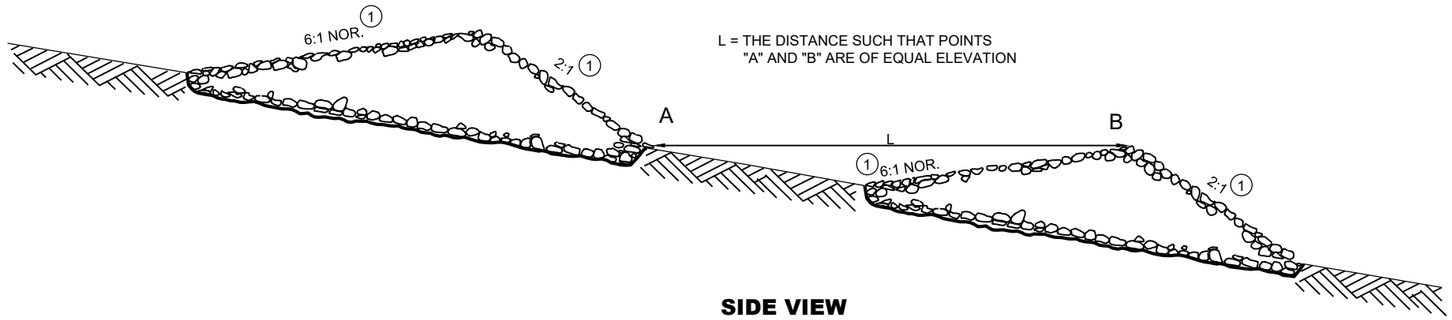


PLAN VIEW - STRUCUTRE #8
STA 121+32

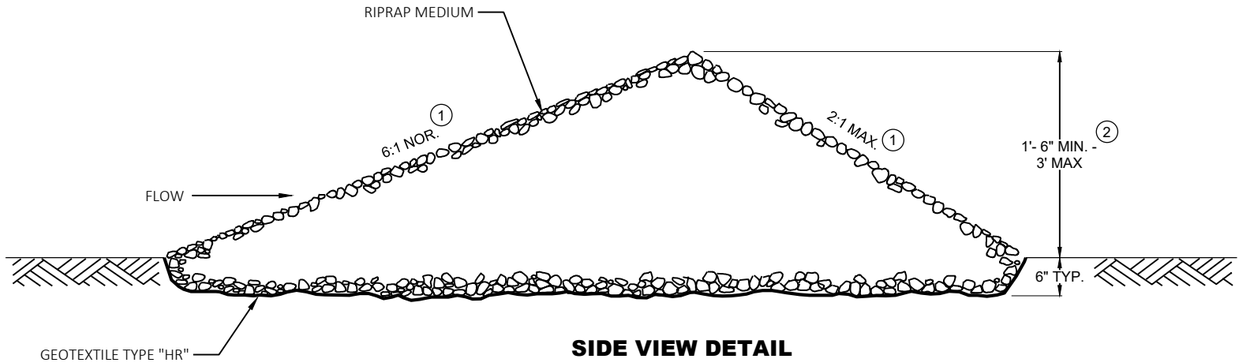


SECTION VIEW - STRUCTURE #8
STA 121+32

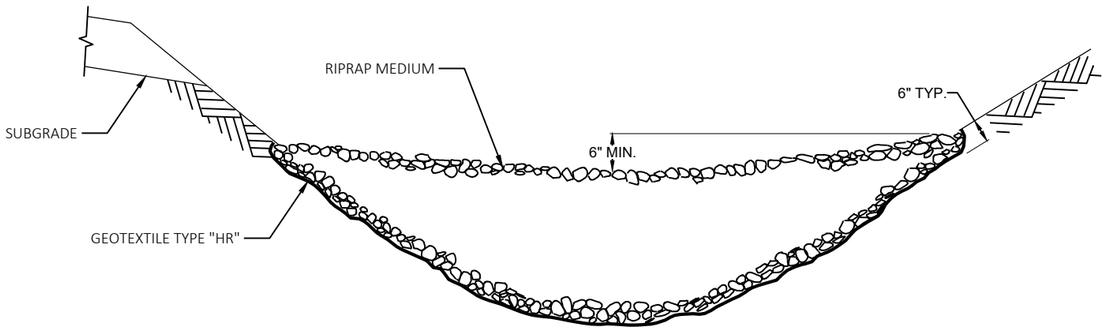
SEE SPV.0060.01 STORM MANHOLE ENHANCEMENTS - SANITARY CROSSING FOR MATERIALS AND INSTALLATION SPECIFICATIONS



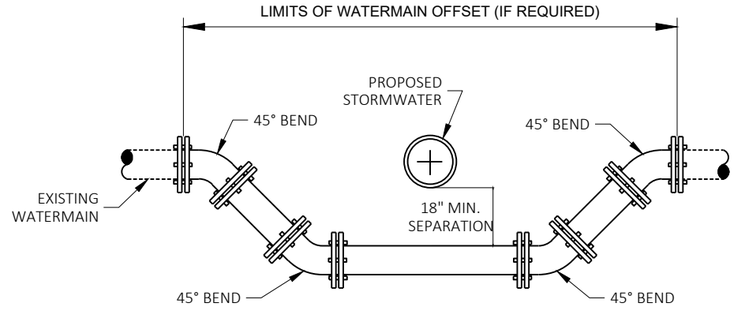
SIDE VIEW



SIDE VIEW DETAIL



SECTION VIEW



WATERMAIN OFFSET DETAIL

STONE DITCH CHECK

(1) WHEN PLACED WITHIN THE CLEAR ZONE, SLOPED AT 6:1 OR FLATTER.

(2) MEASURED AT THE CENTER OF THE DITCH CHECK.

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	CONSTRUCTION DETAIL	SHEET 6	E

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY. ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT. USE CURRENT OSHA STANDARDS.

40 LF SILT FENCE BELOW OUTLET LOCATION UNTIL EMAT COMPLETED AND PIPE PLACED IN SERVICE

5 C.Y. RIPRAP MEDIUM (STONE DITCH CHECK)

20 C.Y. RIPRAP MEDIUM ON GEOTEXTILE TYPE HR

EXISTING STORM SEWER

CLEARING & GRUBBING

40 LF SILT FENCE

360 S.Y. EROSION MAT CLASS III TYPE A W/CLASS II TYPE B AT SURFACE

30 LF TEMPORARY DITCH CHECKS

SLOPE INTERCEPT

30 LF TEMPORARY DITCH CHECKS

APPROXIMATE PIPE TRENCH DAYLIGHT*

PLACE TOPSOIL
STA 100+00 TO 108+00
MIN THICKNESS 4"

675 LF SILT FENCE

CLEARING & GRUBBING

GAULKE RD

CLEARING & GRUBBING

APPROXIMATE PIPE TRENCH DAYLIGHT*

PREPARING TOPSOIL
FOR LAWN TYPE TURF
STA 108+00 TO 117+00
MIN THICKNESS 4"

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY. ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT. USE CURRENT OSHA STANDARDS.

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	EROSION CONTROL	SHEET 7	E

PREPARING TOPSOIL
FOR LAWN TYPE TURF
STA 108+00 TO 117+00
MIN THICKNESS 4"

EXISTING
SANITARY SEWER

90 LF SILT FENCE

EXISTING
STORM SEWER

INLET PROTECTION, TYPE A

GAULKE RD

INLET PROTECTION, TYPE A

30 LF
TEMPORARY
DITCH CHECKS

111+00
112+00
113+00
114+00
115+00
116+00
117+00

100 LF TEMP DITCH CHECKS

CHAIN LINK FENCE

BALLFIELD

APPROXIMATE PIPE TRENCH DAYLIGHT*

BLEACHERS

DUGOUT

BLEACHERS

BALLFIELD

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH
WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY.
ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT.
USE CURRENT OSHA STANDARDS.

PLACE TOPSOIL
STA 117+00 TO 124+00
MIN THICKNESS 4"

EXISTING
SANITARY SEWER

117+00
118+00
119+00
120+00
121+00
122+00

APPROXIMATE PIPE TRENCH DAYLIGHT*

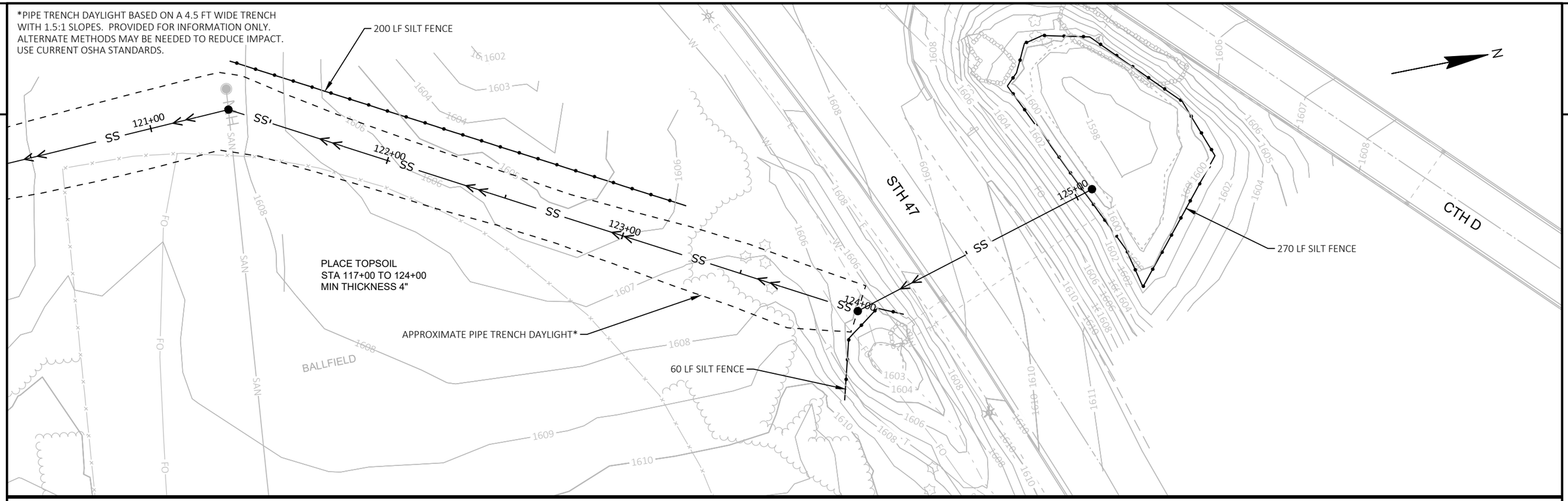
CHAIN LINK
FENCE

TENNIS COURT

BALLFIELD

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH
WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY.
ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT.
USE CURRENT OSHA STANDARDS.

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	EROSION CONTROL	SHEET 8	E



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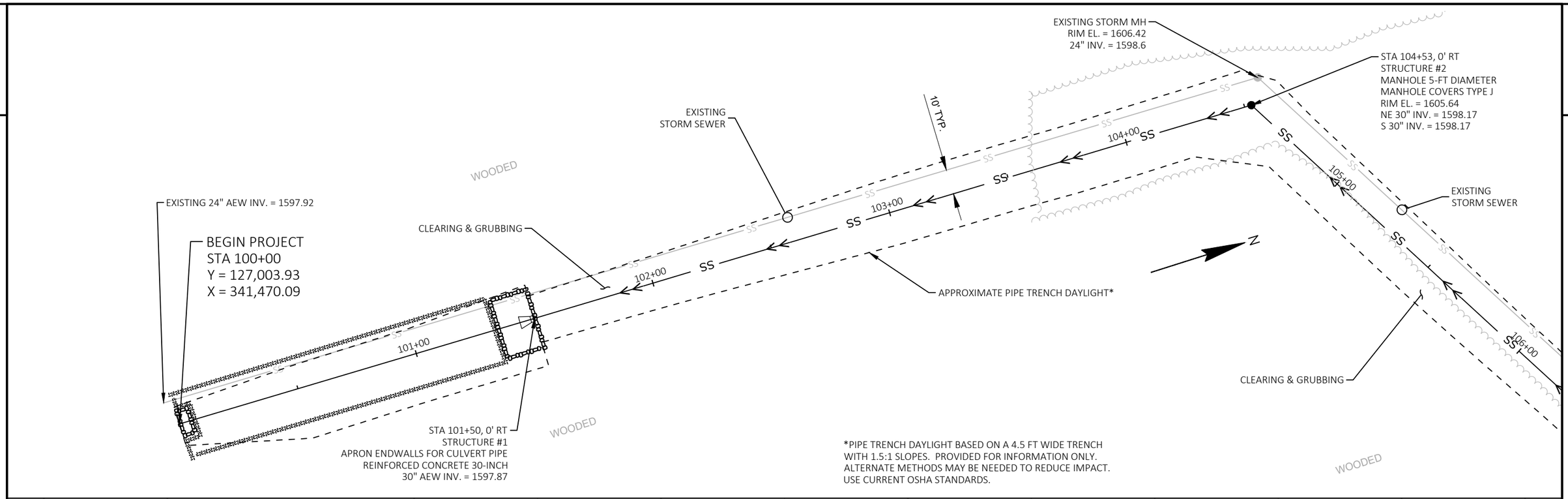
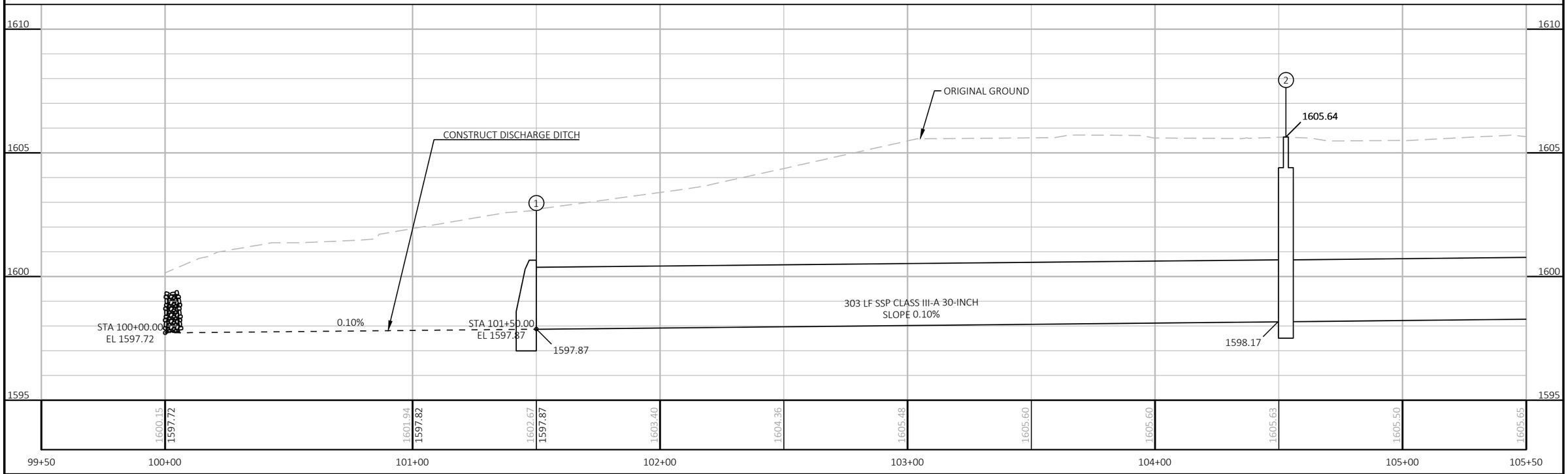
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	EROSION CONTROL	SHEET 9	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 022003-ec

PLOT DATE : 1/21/2022 1:33 PM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : ##########



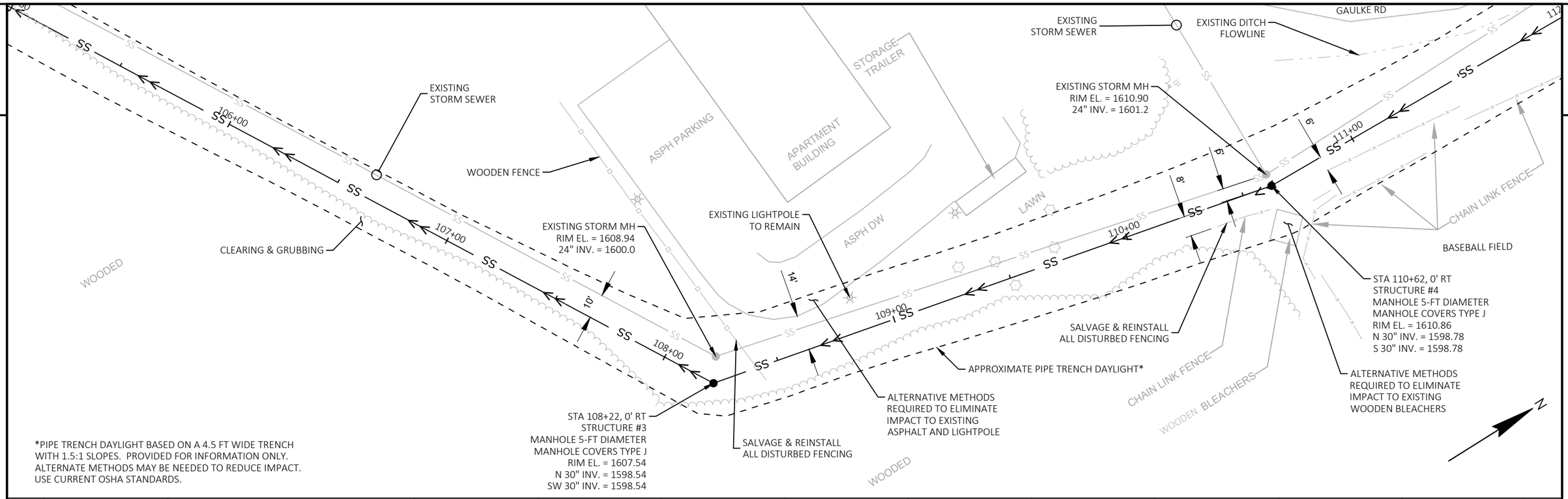


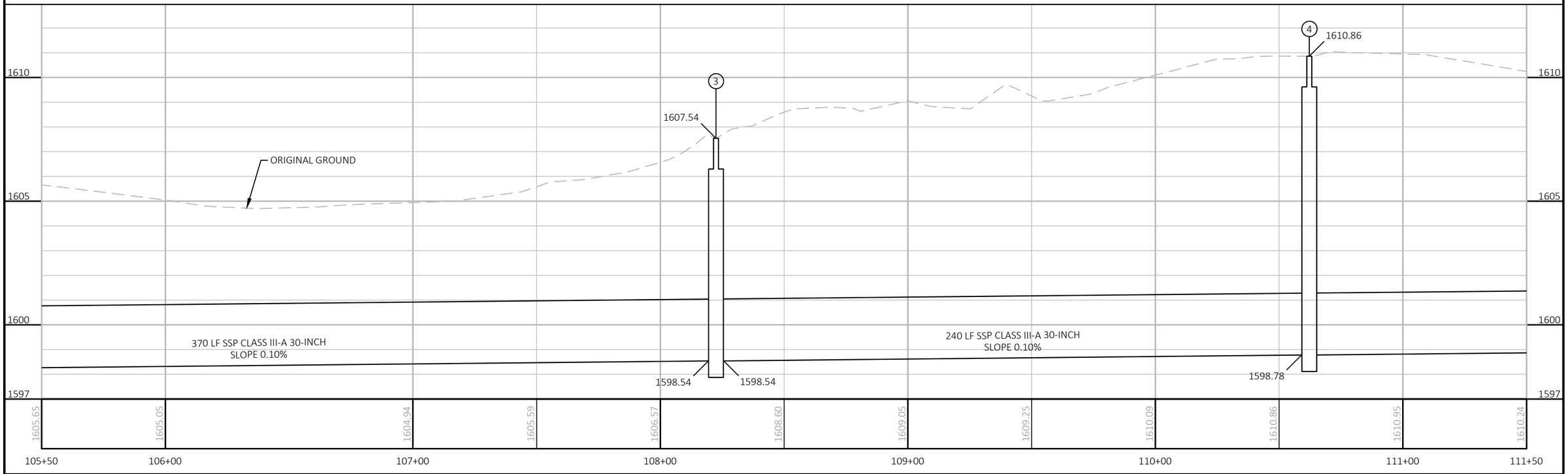
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	PLAN AND PROFILE: STORM SEWER	SHEET 10	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022501-ss

PLOT DATE : 1/17/2022 4:25 PM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44





PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	PLAN AND PROFILE: STORM SEWER	SHEET 11	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022502-ss
PLOT DATE : 1/17/2022 4:31 PM
PLOT BY : JACOB FRIBERG
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 44

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY. ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT. USE CURRENT OSHA STANDARDS.

STA 116+11, 0' RT
STRUCTURE #6
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1613.83
NW 30" INV. = 1599.33
S 30" INV. = 1599.33

STA 116+81, 0' RT
STRUCTURE #7
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1613.79
N 30" INV. = 1599.40
SE 30" INV. = 1599.40
STORM MANHOLE ENHANCEMENT - SANITARY CROSSING

SALVAGE & REINSTALL ALL DISTURBED FENCING

EXISTING STORM SEWER

EXISTING DITCH FLOWLINE

MOVE SIGN IF NECESSARY DURING CONSTRUCTION

GAULKE RD

ALTERNATIVE METHODS REQUIRED TO ELIMINATE IMPACT TO EXISTING BLEACHERS & DUGOUT

EXISTING STORM MH
RIM EL. = 1608.94
24" INV. = 1600.0

EXISTING SANITARY MH
RIM EL. = 1613.99
8" INV. = 1598.24

111+00 112+00 113+00 114+00 115+00 116+00 117+00

18'

45'

25'

6'

SAWCUT AND MATCH EXISTING

RESTORE GAULKE ROAD TO SAME GRADE
PLACE 4" ASPHALTIC SURFACE (2 LAYERS)
ON 10" BASE AGGREGATE DENSE 1 ¼ INCH

STA 113+00, 0' RT
STRUCTURE #5
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1610.70
N 30" INV. = 1599.02
S 30" INV. = 1599.02

APPROXIMATE PIPE TRENCH DAYLIGHT*

CHAIN LINK FENCE

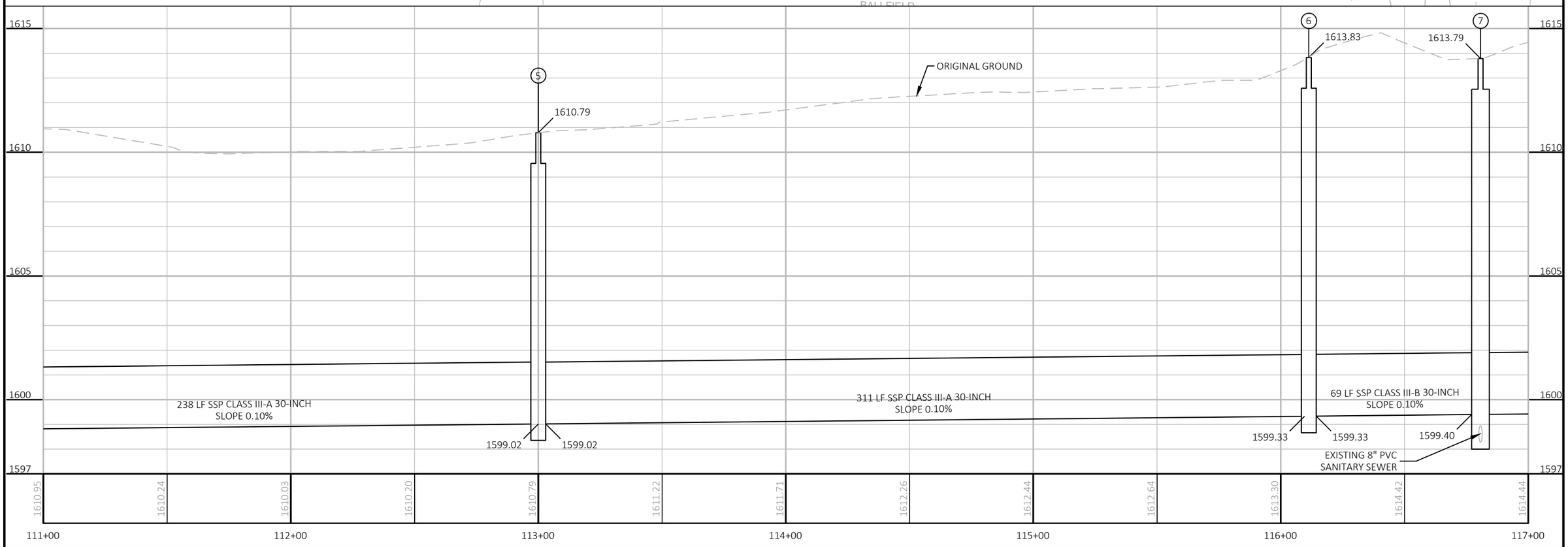
BALLFIELD

BLEACHERS

DUGOUT

BLEACHERS

N



PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	PLAN AND PROFILE: STORM SEWER	SHEET 12	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022503-ss

PLOT DATE : 1/17/2022 4:35 PM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY. ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT. USE CURRENT OSHA STANDARDS.

N

EXISTING SANITARY MH
RIM EL. = 1613.99
8" INV. = 1598.24

STA 116+81, 0' RT
STRUCTURE #7
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1613.79
N 30" INV. = 1599.40
SE 30" INV. = 1599.40
STORM MANHOLE
ENHANCEMENT -
SANITARY CROSSING

EXISTING SANITARY MH
RIM EL. = 1608.51
8" INV. = 1601.16

STA 121+32, 0' RT
STRUCTURE #8
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1608.41
NE 30" INV. = 1599.84
S 30" INV. = 1599.84
STORM MANHOLE
ENHANCEMENT -
SANITARY CROSSING

APPROXIMATE PIPE TRENCH DAYLIGHT*

EXISTING DITCH
FLOWLINE

117+00 SS 118+00 SS 119+00 SS 120+00 SS 121+00 SS 122+00 SS

23'

7'

8"

SALVAGE & REINSTALL
ALL DISTURBED FENCING

SALVAGE & REINSTALL
ALL DISTURBED FENCING

CLEARING & GRUBBING

SURVEYED
WATER
SERVICE

GAULKE RD

TENNIS COURT

BASEBALL FIELD

1613.79

1608.41

ORIGINAL GROUND

EXISTING 8" PVC
SANITARY SEWER

452 LF SSP CLASS III-B 30-INCH
SLOPE 0.10%

1599.40

1599.84

1615 1610 1605 1600 1597

1614.42 1614.44 1616.30 1615.80 1614.58 1610.90 1607.13 1607.99 1608.72 1607.41 1606.17 1605.60

116+50 117+00 118+00 119+00 120+00 121+00 122+00 122+50

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	PLAN AND PROFILE: STORM SEWER	SHEET 13	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022504-ss

PLOT DATE : 1/17/2022 4:36 PM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

*PIPE TRENCH DAYLIGHT BASED ON A 4.5 FT WIDE TRENCH WITH 1.5:1 SLOPES. PROVIDED FOR INFORMATION ONLY. ALTERNATE METHODS MAY BE NEEDED TO REDUCE IMPACT. USE CURRENT OSHA STANDARDS.

EXISTING SANITARY MH
RIM EL. = 1608.51
8" INV. = 1601.16

STA 121+32, 0' RT
STRUCTURE #8
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1608.41
NE 30" INV. = 1599.84
S 30" INV. = 1599.84
STORM MANHOLE ENHANCEMENT - SANITARY CROSSING

APPROXIMATE PIPE TRENCH DAYLIGHT*

CLEARING & GRUBBING

EXISTING DITCH FLOWLINE

STA 124+00, 0' RT
STRUCTURE #9
MANHOLE 5-FT DIAMETER
MANHOLE COVERS TYPE J
RIM EL. = 1604.91
N 30" INV. = 1600.09
SW 30" INV. = 1600.09

SALVAGE & REINSTALL ALL DISTURBED FENCING

SURVEYED WATER SERVICE

EXISTING HIGHWAY EASEMENT

EXISTING STORMWATER DEPRESSION

TRENCHLESS 30" PIPE INSTALLATION - STH 47 CROSSING

EXISTING INFLOW
24" RCP INV. = 1601.63

EXISTING INFLOW
12" RCP INV. = 1600.16

EXISTING INFLOW
27" RCP INV. = 1601.00

EXISTING STORMWATER DEPRESSION (OVERFLOWS TO CTH D AT ELEV. = 1605.4±)

EXISTING INFLOW
15" RCP INV. = 1605.09

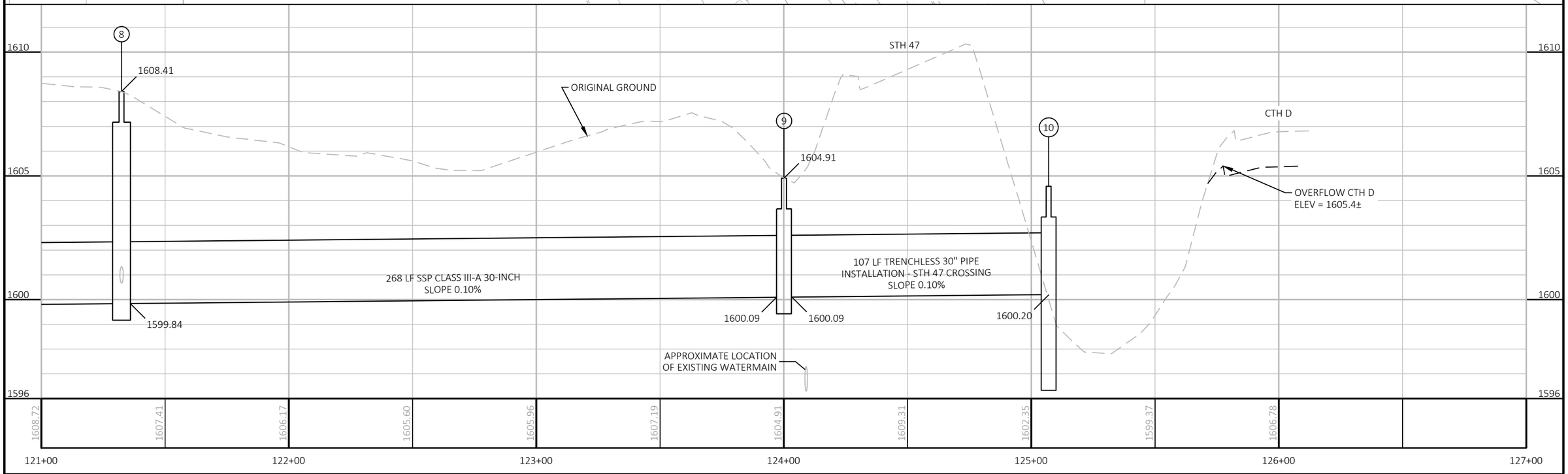
EXISTING OUTFLOW
18" CMP INV. = 1602.48

END PROJECT
STA 125+07
Y = 129,263.17
X = 341,901.28

EXISTING INFLOW
18" CMP INV. = 1598.32

PROPOSED OUTLET
STA 125+07, 0' RT
STRUCTURE #10
MANHOLE 5-FT DIAMETER
BASIN GRATE SPECIAL EL. = 1603.50
N 6" ORIFICE = 1600.20
S 30" INV. = 1600.20
SUMP ELEV. = 1597.00

EXISTING R/W
CONCRETE SIDEWALK
STH 47
CTH D
BALLFIELD
121+00
122+00
123+00
124+00
125+00
126+00
SS
SAN
FO
W
E



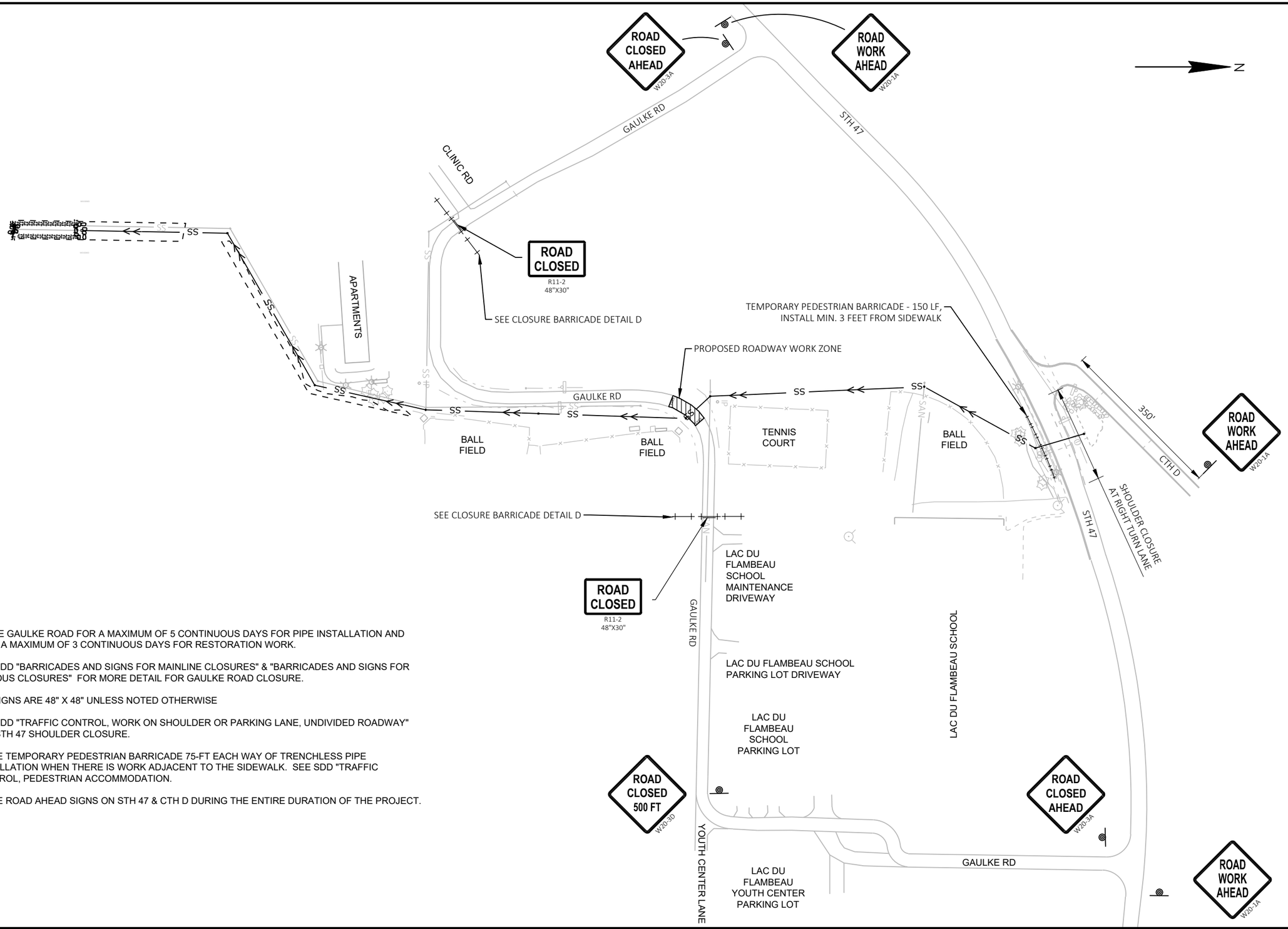
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	PLAN AND PROFILE: STORM SEWER	SHEET 14	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\022501-SS.DWG
LAYOUT NAME - 022505-ss

PLOT DATE : 1/21/2022 1:29 PM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 44

2



NOTES:

1. CLOSE GAULKE ROAD FOR A MAXIMUM OF 5 CONTINUOUS DAYS FOR PIPE INSTALLATION AND THEN A MAXIMUM OF 3 CONTINUOUS DAYS FOR RESTORATION WORK.
2. SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" & "BARRICADES AND SIGNS FOR VARIOUS CLOSURES" FOR MORE DETAIL FOR GAULKE ROAD CLOSURE.
3. ALL SIGNS ARE 48" X 48" UNLESS NOTED OTHERWISE
4. SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" FOR STH 47 SHOULDER CLOSURE.
5. PLACE TEMPORARY PEDESTRIAN BARRICADE 75-FT EACH WAY OF TRENCHLESS PIPE INSTALLATION WHEN THERE IS WORK ADJACENT TO THE SIDEWALK. SEE SDD "TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION.
6. PLACE ROAD AHEAD SIGNS ON STH 47 & CTH D DURING THE ENTIRE DURATION OF THE PROJECT.

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	TRAFFIC CONTROL OVERVIEW	SHEET 15	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\020201-PO.DWG
LAYOUT NAME - TC
PLOT DATE : 1/28/2022 10:59 AM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42

9231-07-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	19.000	19.000
0004	201.0205	Grubbing	STA	19.000	19.000
0006	205.0100	Excavation Common	CY	430.000	430.000
0008	205.0400	Excavation Marsh	CY	450.000	450.000
0010	209.1100	Backfill Granular Grade 1	CY	450.000	450.000
0012	213.0100	Finishing Roadway (project) 01. 9231-07-72	EACH	1.000	1.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	160.000	160.000
0016	455.0605	Tack Coat	GAL	15.000	15.000
0018	465.0105	Asphaltic Surface	TON	55.000	55.000
0020	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	1.000	1.000
0022	606.0200	Riprap Medium	CY	25.000	25.000
0024	608.3030	Storm Sewer Pipe Class III-A 30-Inch	LF	1,730.000	1,730.000
0026	608.3630	Storm Sewer Pipe Class III-B 30-Inch	LF	521.000	521.000
0028	611.0530	Manhole Covers Type J	EACH	8.000	8.000
0030	611.2005	Manholes 5-FT Diameter	EACH	9.000	9.000
0032	618.0100	Maintenance And Repair of Haul Roads (project) 01. 9231-07-72	EACH	1.000	1.000
0034	619.1000	Mobilization	EACH	1.000	1.000
0036	624.0100	Water	MGAL	2.000	2.000
0038	625.0100	Topsoil	SY	11,700.000	11,700.000
0040	627.0200	Mulching	SY	11,700.000	11,700.000
0042	628.1504	Silt Fence	LF	1,600.000	1,600.000
0044	628.1520	Silt Fence Maintenance	LF	1,600.000	1,600.000
0046	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0048	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0050	628.2023	Erosion Mat Class II Type B	SY	550.000	550.000
0052	628.2031	Erosion Mat Class III Type A	SY	450.000	450.000
0054	628.7005	Inlet Protection Type A	EACH	3.000	3.000
0056	628.7504	Temporary Ditch Checks	LF	240.000	240.000
0058	629.0210	Fertilizer Type B	CWT	5.000	5.000
0060	630.0120	Seeding Mixture No. 20	LB	190.000	190.000
0062	630.0140	Seeding Mixture No. 40	LB	100.000	100.000
0064	630.0500	Seed Water	MGAL	330.000	330.000
0066	638.2102	Moving Signs Type II	EACH	3.000	3.000
0068	638.4000	Moving Small Sign Supports	EACH	3.000	3.000
0070	642.5001	Field Office Type B	EACH	1.000	1.000
0072	643.0300	Traffic Control Drums	DAY	1,000.000	1,000.000
0074	643.0420	Traffic Control Barricades Type III	DAY	300.000	300.000
0076	643.0705	Traffic Control Warning Lights Type A	DAY	400.000	400.000
0078	643.0900	Traffic Control Signs	DAY	550.000	550.000
0080	643.5000	Traffic Control	EACH	1.000	1.000
0082	644.1810	Temporary Pedestrian Barricade	LF	150.000	150.000
0084	645.0120	Geotextile Type HR	SY	45.000	45.000
0086	650.4000	Construction Staking Storm Sewer	EACH	10.000	10.000
0088	650.9910	Construction Staking Supplemental Control (project) 01. 9231-07-72	LS	1.000	1.000
0090	650.9920	Construction Staking Slope Stakes	LF	150.000	150.000
0092	690.0150	Sawing Asphalt	LF	50.000	50.000
0094	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	300.000	300.000
0096	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	600.000
0098	SPV.0030	Special 01. Fertilizer for Lawn Type Turf	CWT	4.000	4.000

9231-07-72

Line	Item	Item Description	Unit	Total	Qty
0100	SPV.0060	Special 01. Storm Manhole Enhancements - Sanitary Crossing	EACH	2.000	2.000
0102	SPV.0060	Special 02. Basin-Grate Special	EACH	1.000	1.000
0104	SPV.0060	Special 03. Watermain Offset Work	EACH	1.000	1.000
0106	SPV.0060	Special 04. Relocate Fiber Optic Communication Line	EACH	2.000	2.000
0108	SPV.0060	Special 05. Salvage and Reinstall Fencing Project 9231-07-72	EACH	1.000	1.000
0110	SPV.0060	Special 06. Trenchless 30" Pipe Installation - STH 47 Crossing	EACH	1.000	1.000
0112	SPV.0180	Special 01. Preparing Topsoil for Lawn Type Turf	SY	5,200.000	5,200.000

CATEGORY	STATION	TO	STATION	LOCATION	CLEARING 201.0105 STA	GRUBBING 201.0205 STA
0010	100+00	-	103+65	LT/RT	4	4
0010	104+40	-	110+40	RT	7	7
0010	116+90	-	119+00	LT	3	3
0010	119+00	-	123+75	LT/RT	5	5
				TOTAL 0010	19	19

CATEGORY	STATION	TO	STATION	SIDE	EXCAVATION COMMON 205.0100 CY	EXCAVATION MARSH 205.0400 CY	BACKFILL GRANULAR GRADE 1 209.1100 CY	CONSTRUCTION STAKING SLOPE STAKES 620.9920 LF	REMARKS
0010	100+00	-	101+50	LT/RT	360	-	-	150	DITCH CONSTRUCTION
0010	115+85	-	116+40	LT/RT	70	-	-	-	GAULKE ROAD
0010	125+07			LT/RT	-	450	450	-	STH 47 STORM BASIN
				TOTAL 0010	430	450	450	150	

CATEGORY	STATION	TO	STATION	SIDE	ASPHALT THICKNESS (IN)	LAYERS	BASE AGGREGATE DENSE 1 1/4-INCH 305.0120 TON	TACK COAT 455.0605 GAL	ASPHALTIC SURFACE 465.0105 TON	WATER 624.0100 MGAL	SAWING ASPHALT 690.0150 LF	REMARKS
0010	115+85	-	116+40	LT/RT	4.0	2	160	15	55	2	50	GAULKE ROAD
						TOTAL 0010	160	15	55	2	50	

CATEGORY	STRUCTURE #	STATION	OFFSET*	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH 522.1030 EACH	MANHOLE COVERS TYPE J 611.0530 EACH	MANHOLES 5-FT DIAMETER 611.2005 EACH	CONSTRUCTION STAKING STORM SEWER 650.4000 EACH	STORM MANHOLE ENHANCEMENTS - SANITARY CROSSING SPV.0060.01 EACH	BASIN-GRATE SPECIAL SPV.0060.02 EACH	WATERMAIN OFFSET WORK SPV.0060.03 EACH	RELOCATE FIBER OPTIC COMMUNICATION LINE SPV.0060.04 EACH	RIM ELEVATION	INVERT** ELEVATION	SUMP ELEVATION	DEPTH*** FT
0010	1	101+50	0' RT	1	-	-	1	-	-	-	-	-	1597.87	-	-
0010	2	104+53	0' RT	-	1	1	1	-	-	-	-	1605.64	1598.17	-	6.56
0010	3	108+22	0' RT	-	1	1	1	-	-	-	-	1607.54	1598.54	-	8.09
0010	4	110+62	0' RT	-	1	1	1	-	-	-	-	1610.86	1598.78	-	11.17
0010	5	113+00	0' RT	-	1	1	1	-	-	-	-	1610.70	1599.02	-	10.77
0010	6	116+11	0' RT	-	1	1	1	-	-	-	-	1613.83	1599.33	-	13.59
0010	7	116+81	0' RT	-	1	1	1	1	-	-	-	1613.79	1599.40	1598.20	14.35
0010	8	121+32	0' RT	-	1	1	1	1	-	-	-	1608.41	1599.85	-	7.65
0010	9	124+00	0' RT	-	1	1	1	-	-	-	-	1604.91	1600.12	-	3.88
0010	10	125+07	0' RT	-	-	1	1	-	1	-	-	1603.50	1600.20	1597.00	5.26
0010	-	UNDISTRIBUTED		-	-	-	-	-	-	1	2				
			TOTAL 0010	1	8	9	10	2	1	1	2				

REMARKS
* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
**INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE.
*** DEPTH = RIM ELEV - TOP OF BASE ELEV - CASTING HEIGHT - 6-INCH ADJUSTMENT RING HEIGHT

CATEGORY	STRUCTURE # FROM	-	TO	STORM SEWER PIPE CLASS III-A 30-INCH 608.3030 LF	STORM SEWER PIPE CLASS III-B 30-INCH 608.3630 LF	TRENCHLESS 30" PIPE INSTALLATION - STH 47 CROSSING SPV.0060.06 EACH	OUTFALL ELEVATION	INLET ELEVATION	SLOPE FT/FT	REMARKS
0010	1	-	2	303	-	-	1597.87	1598.17	0.0010	
0010	2	-	3	370	-	-	1598.17	1598.54	0.0010	
0010	3	-	4	240	-	-	1598.54	1598.78	0.0010	
0010	4	-	5	238	-	-	1598.78	1599.02	0.0010	
0010	5	-	6	311	-	-	1599.02	1599.33	0.0010	
0010	6	-	7	-	69	-	1599.33	1599.40	0.0010	
0010	7	-	8	-	452	-	1599.40	1599.84	0.0010	
0010	8	-	9	268	-	-	1599.84	1600.09	0.0009	
0010	9	-	10	-	-	1	1600.09	1600.20	0.0010	107 LF*
		TOTAL 0010		1,730	521	1				

CATEGORY	STATION	RIPRAP MEDIUM 606.0200 CY	GEOTEXTILE TYPE HR 645.0120 SY
0010	100+00	5	5
0010	101+50	20	40
	TOTAL 0010	25	45

CATEGORY	STATION TO STATION	TOPSOIL 625.0100 SY	MULCHING 627.0200 SY	EROSION MAT CLASS II TYPE B 628.2023 SY	EROSION MAT CLASS III TYPE A 628.2031 SY	INLET PROTECTION TYPE A 628.7005 EACH	TEMPORARY DITCH CHECKS 628.7504 LF	FERTILIZER TYPE B 629.0210 CWT	SEEDING MIXTURE NO. 20 630.0120 LB	SEEDING MIXTURE NO. 40 630.0140 LB	SEED WATER 630.0500 MGAL	FERTILIZER FOR LAWN TYPE TURF SPV.0030.01 CWT	PREPARING TOPSOIL FOR LAWN TYPE TURF SPV.0180.01 SY
0010	100+00 - 101+50	490	490	360	360	-	60	0.4	14	-	14	-	-
0010	101+50 - 108+00	1,860	1,860	-	-	-	-	1.2	51	-	53	-	-
0010	108+00 - 117+00	4,150	4,150	-	-	2	130	-	-	75	117	2.7	4,150
0010	117+00 - 124+00	2,770	2,770	-	-	-	-	1.8	75	-	78	-	-
0010	STH 47 BASIN	80	80	80	-	-	-	0.1	3	-	3	-	-
0010	UNDISTRIBUTED	2,350	2,350	110	90	1	50	1.5	47	25	65	1.3	1,050
	TOTAL 0010	11,700	11,700	550	450	3	240	5.0	190	100	330	4.0	5,200

CATEGORY	STATION TO STATION	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF
0010	100+00 -	40	40
0010	101+55 -	40	40
0010	103+75 - 110+50	675	675
0010	121+25 - 123+25	200	200
0010	124+00 -	60	60
0010	125+00 -	270	270
0010	UNDISTRIBUTED	315	315
	TOTAL 0010	1600	1600

CATEGORY	LOCATION	MOBILIZATIONS EROSION CONTROL 628.1905 EA	MOBILIZATIONS EMERGENCY EROSION CONTROL 628.1910 EA
0010	PROJECT	2	1
	TOTAL 0010	2	1

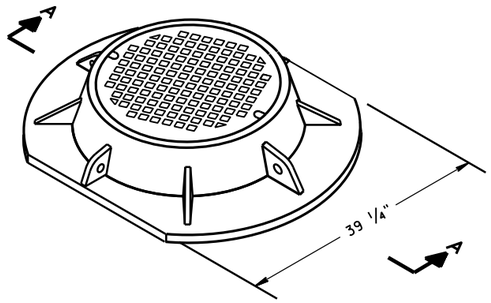
CATEGORY	STATION	MOVING SIGNS TYPE II 638.2102 EA	MOVING SMALL SIGN SUPPORTS 638.4000 EA	REMARKS
0010	113+50	1	1	NON-STATE OWNED SIGN
0010	UNDISTRIBUTED	2	2	INCLUDE NON-STATE OWNED SIGNS
	TOTAL 0010	3	3	

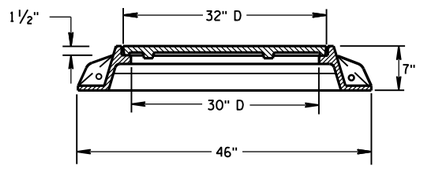
CATEGORY	CALENDAR DAYS	TRAFFIC CONTROL DRUMS 643.0300 #	DAYS	TRAFFIC CONTROL BARRICADES TYPE III 643.0420 #	DAYS	TRAFFIC CONTROL WARNING LIGHTS TYPE A 643.0705 #	DAYS	TRAFFIC CONTROL SIGNS 643.0900 #	DAYS	TEMPORARY PEDESTRIAN BARRICADE 644.1810 LF	REMARKS
0010	50		-	3	150	4	200	1	50	-	ROAD CLOSED DETAIL D WEST GAULKE RD
0010	50		-	3	150	4	200	1	50	-	ROAD CLOSED DETAIL D EAST GAULKE RD
0010	50		-		-		-	3	150	-	ROAD CLOSED ADVANCED WARNING SIGNS
0010	50		-		-		-	3	150	-	ROAD WORK ADVANCED WARNING SIGNS
0010	50		-		-		-		-	150	STH 47 SIDEWALK
0011	50	12	600		-		-	3	150	-	STH 47 SHOULDER CLOSURE
0010	50	8	400		-		-		-	-	UNDISTRIBUTED
	TOTAL 0010		1,000		300		400		550	150	

CATEGORY	STATION TO STATION	SALVAGE AND REINSTALL FENCING PROJECT 9231-07-72 SPV.0060.05 EACH	REMARKS
0010	108+10 - 108+45	-	35 LF WOODEN FENCE
0010	110+35 - 112+00	-	195 LF CHAIN LINK FENCE
0010	114+90 - 116+00	-	BLEACHERS & DUGOUT
0010	117+20 - 117+85	-	65 LF CHAIN LINK FENCE
0010	120+60 - 122+25	-	165 LF CHAIN LINK FENCE
0010	UNDISTRIBUTED	1	
	TOTAL 0010	1	

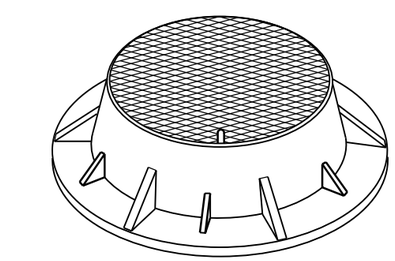
Standard Detail Drawing List

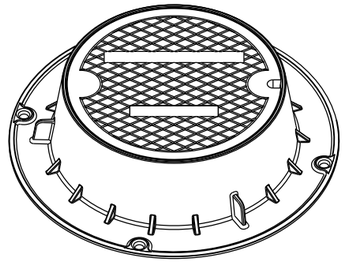
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-03	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-06C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

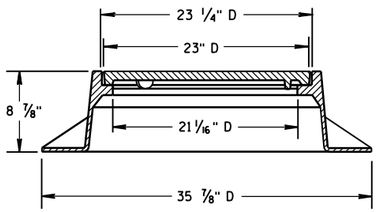


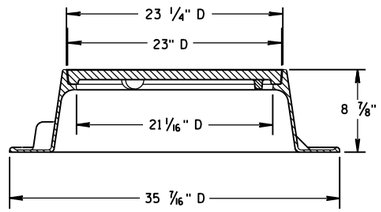


SECTION A-A
TYPE "K"









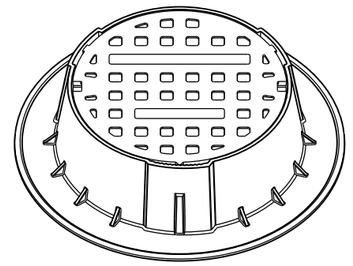
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

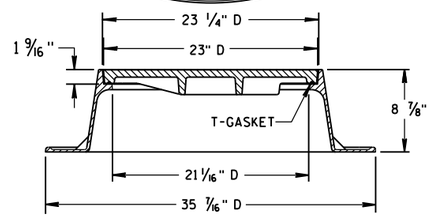
GENERAL NOTES

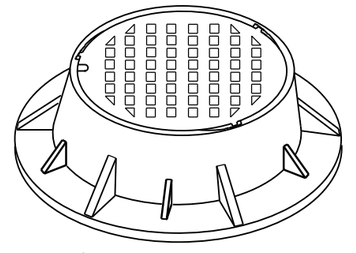
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

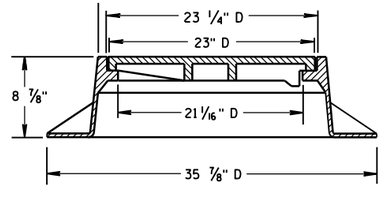
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

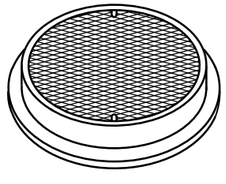


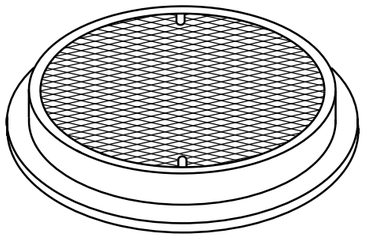


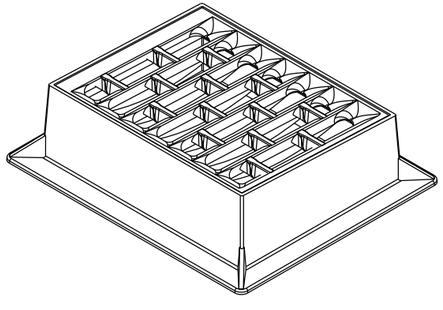


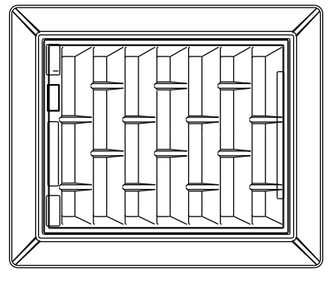


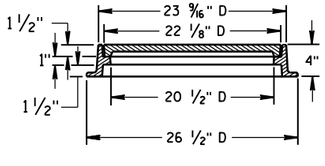
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



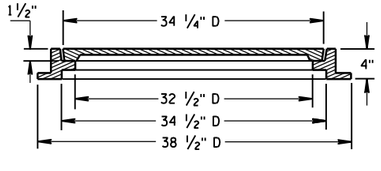








TYPE "L"



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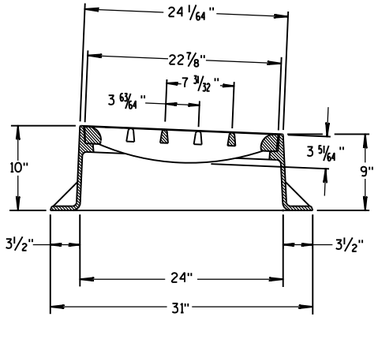
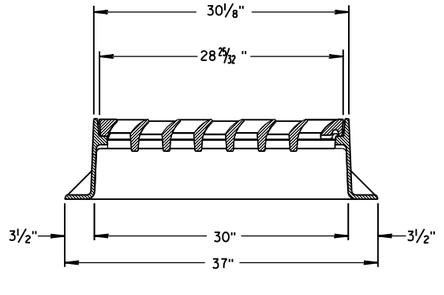




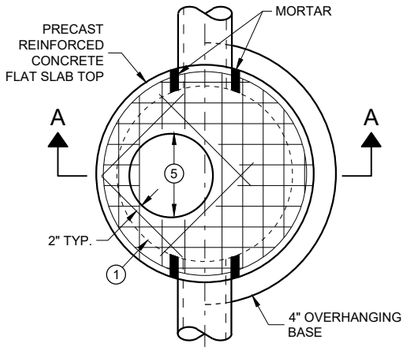
INLET COVER TYPE "BW"

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

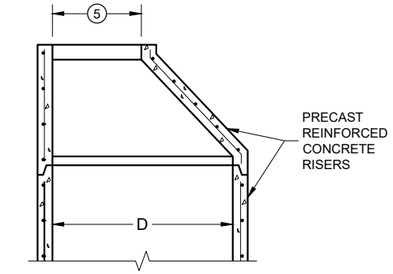
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

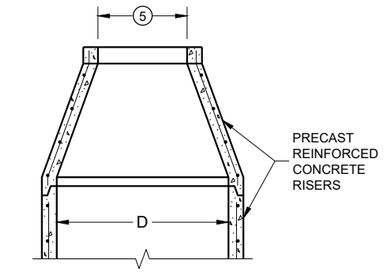
6
S.D.D. 8 A 5-19d



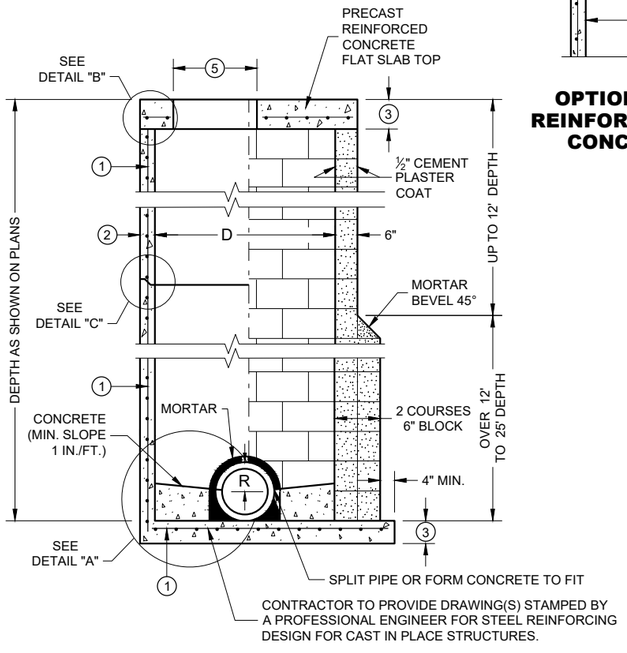
PLAN VIEW
CIRCULAR OPENING



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP



OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



SECTION A - A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE (1)

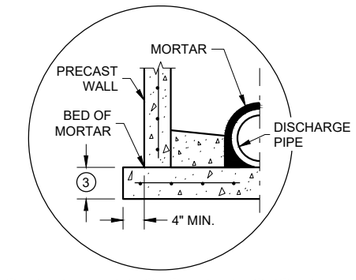
MANHOLE COVER OPENING MATRIX

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

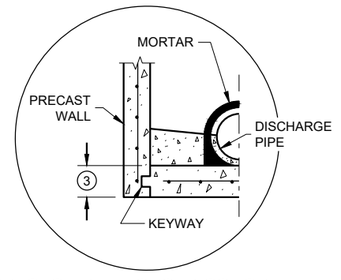
PIPE MATRIX

MANHOLE SIZE (DIA.)	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES		MINIMUM WALL THICKNESS (IN)	MINIMUM PRECAST FLAT SLAB TOP AND BASE THICKNESS
	180° SEPARATION (IN)	90° SEPARATION (IN)		
3-FT	15	12	4	6
4-FT	24	18	4	6
5-FT	36	24	5	8
6-FT	42	36	6	8
7-FT	48	36/42*	7	8
8-FT	60	42	8	8
9-FT	66	54	9	10
10-FT	72	60	10	10

*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES. SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.

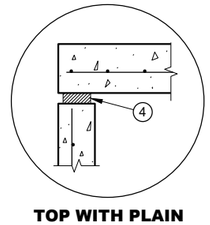


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

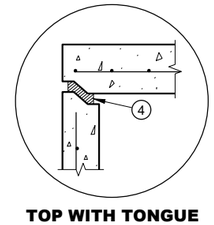


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

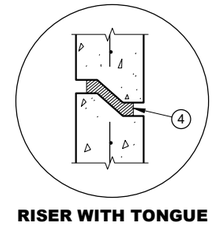
DETAIL "A"



TOP WITH PLAIN END JOINT

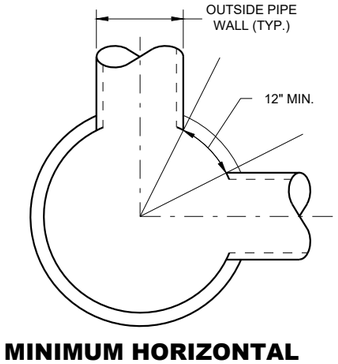


TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B" **DETAIL "C"**



MINIMUM HORIZONTAL PIPE SEPARATION

GENERAL NOTES

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

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

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

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

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

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

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. 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 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

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

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

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

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

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

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

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

(1) FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

(2) SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES

(3) SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.

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

(5) SEE MANHOLE COVER OPENING MATRIX.

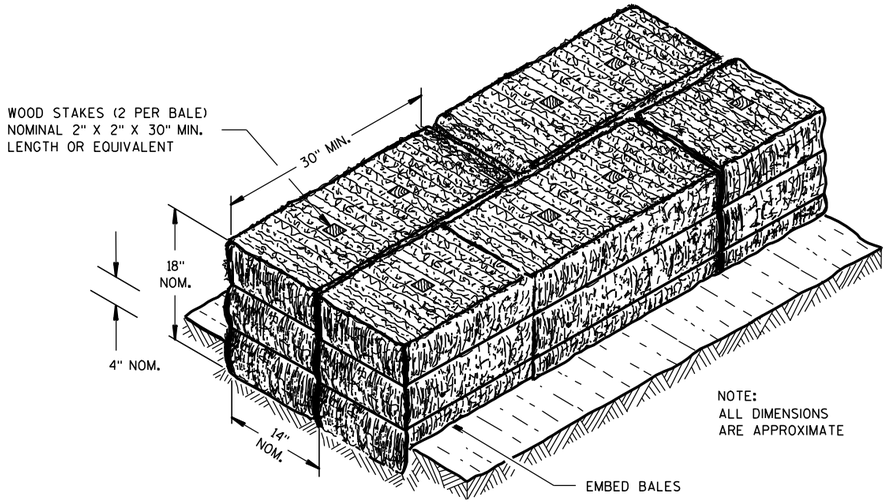
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT AND 10-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

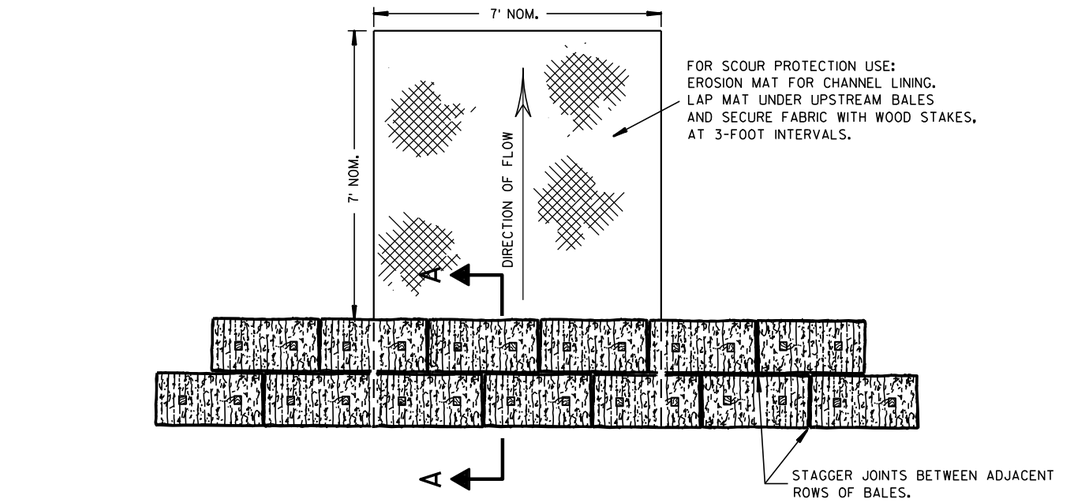
APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

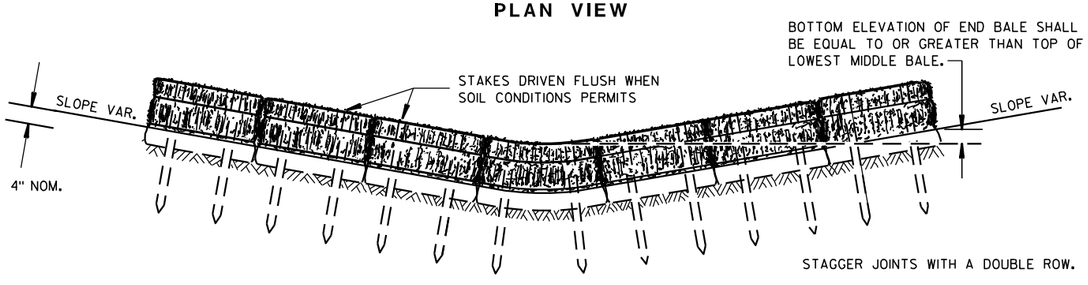
6
SDD 08B09 - 03



SECTION A-A



PLAN VIEW



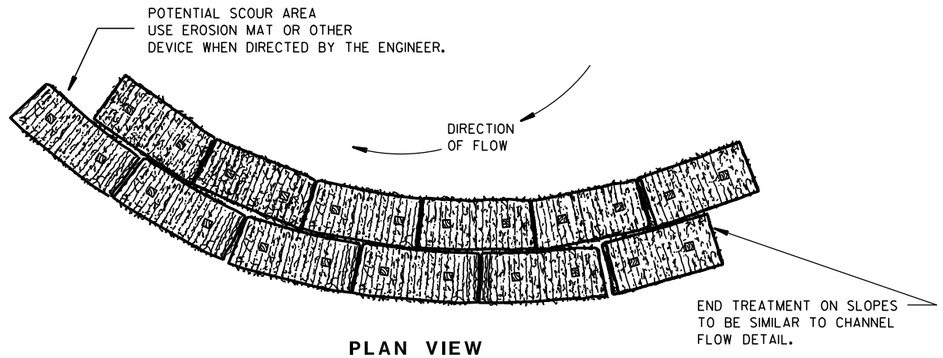
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

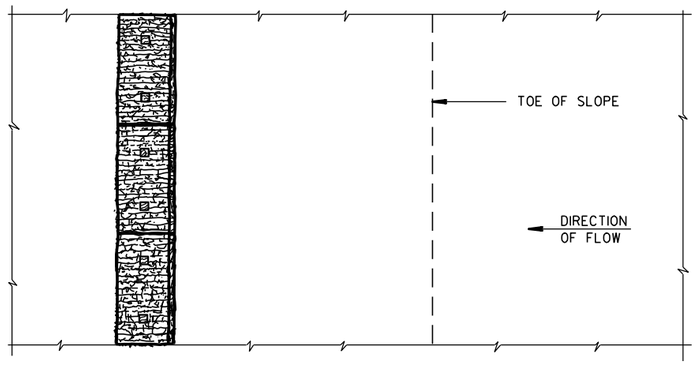
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

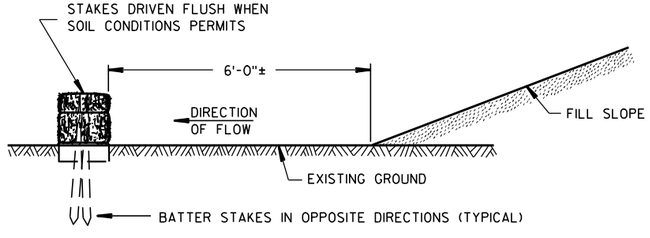


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

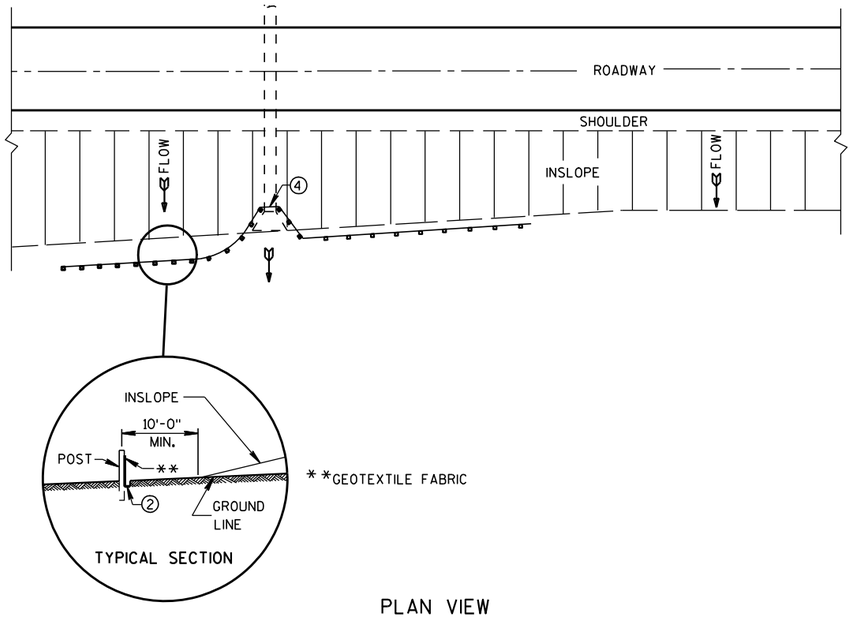
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

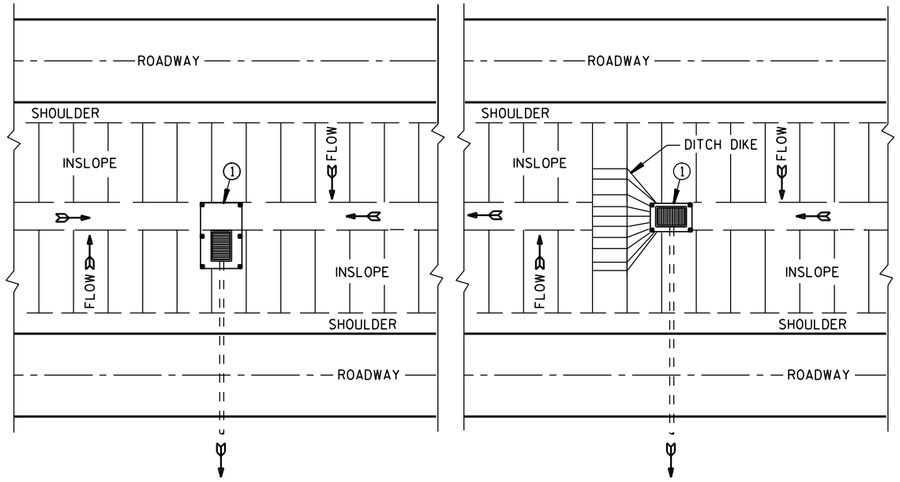
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



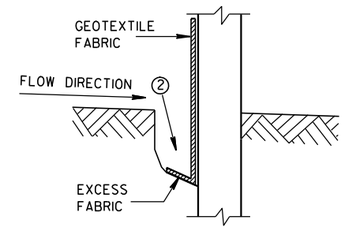
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

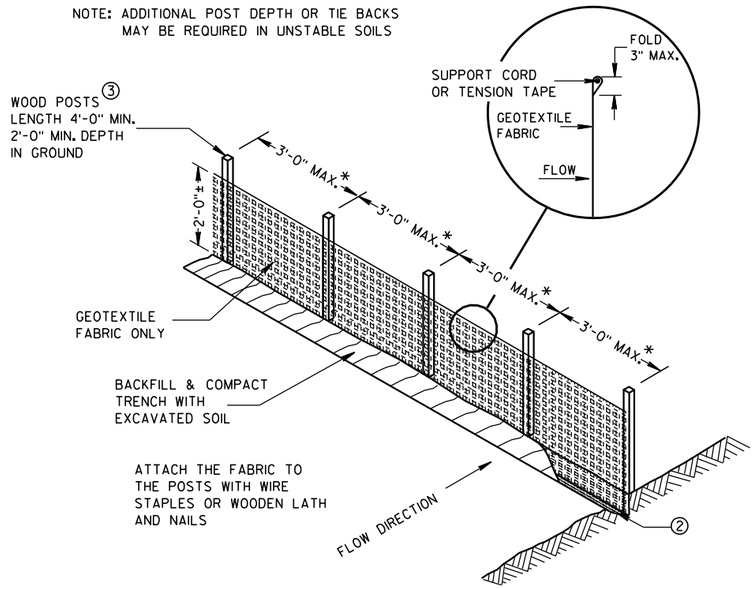
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

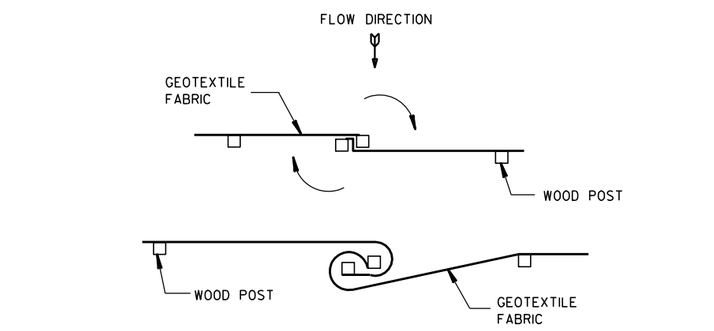


TRENCH DETAIL

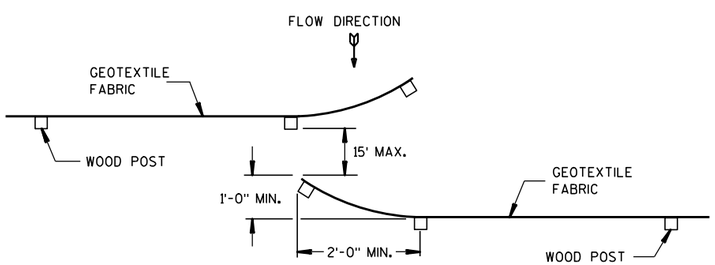


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

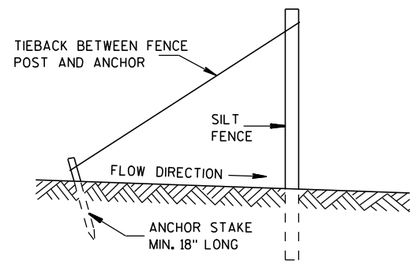


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

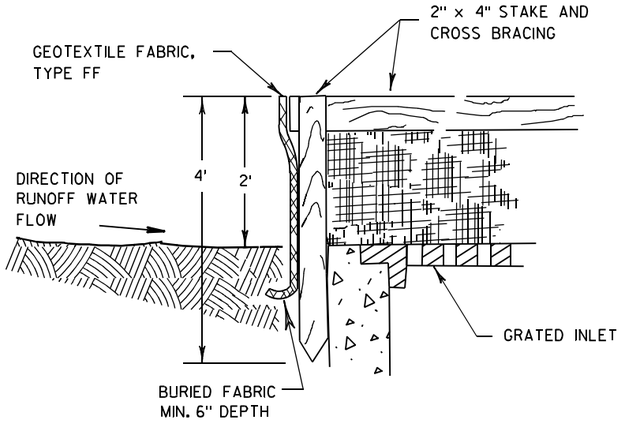
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

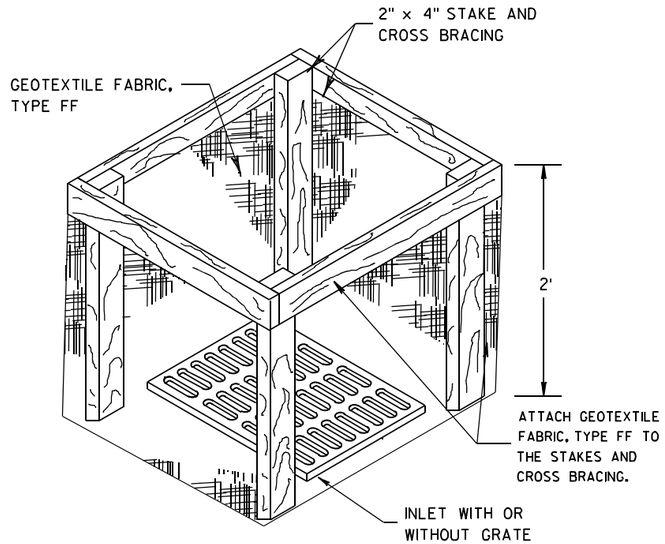
6

S.D.D. 8 E 9-6

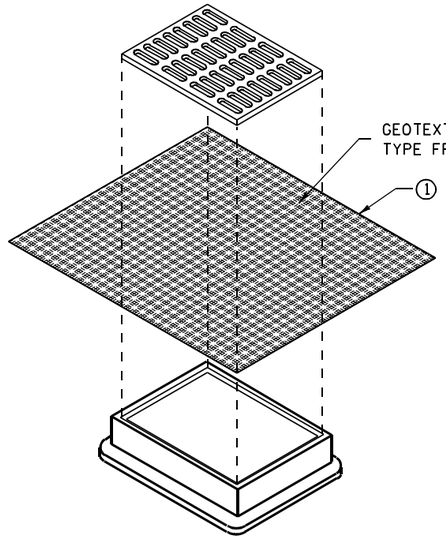
6

S.D.D. 8 E 9-6



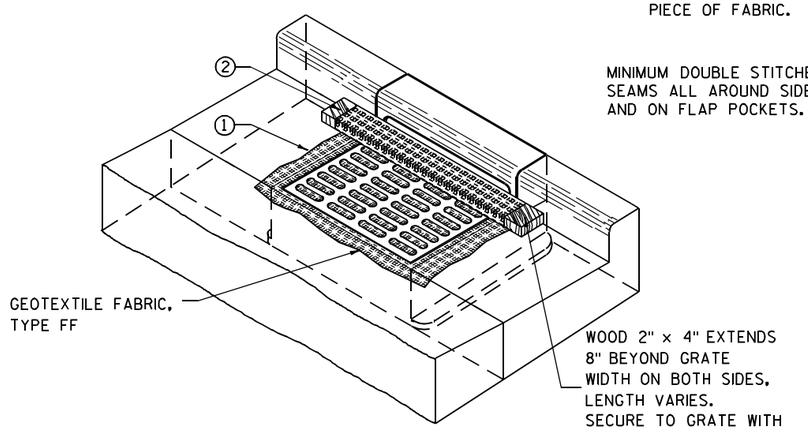


INLET PROTECTION, TYPE A

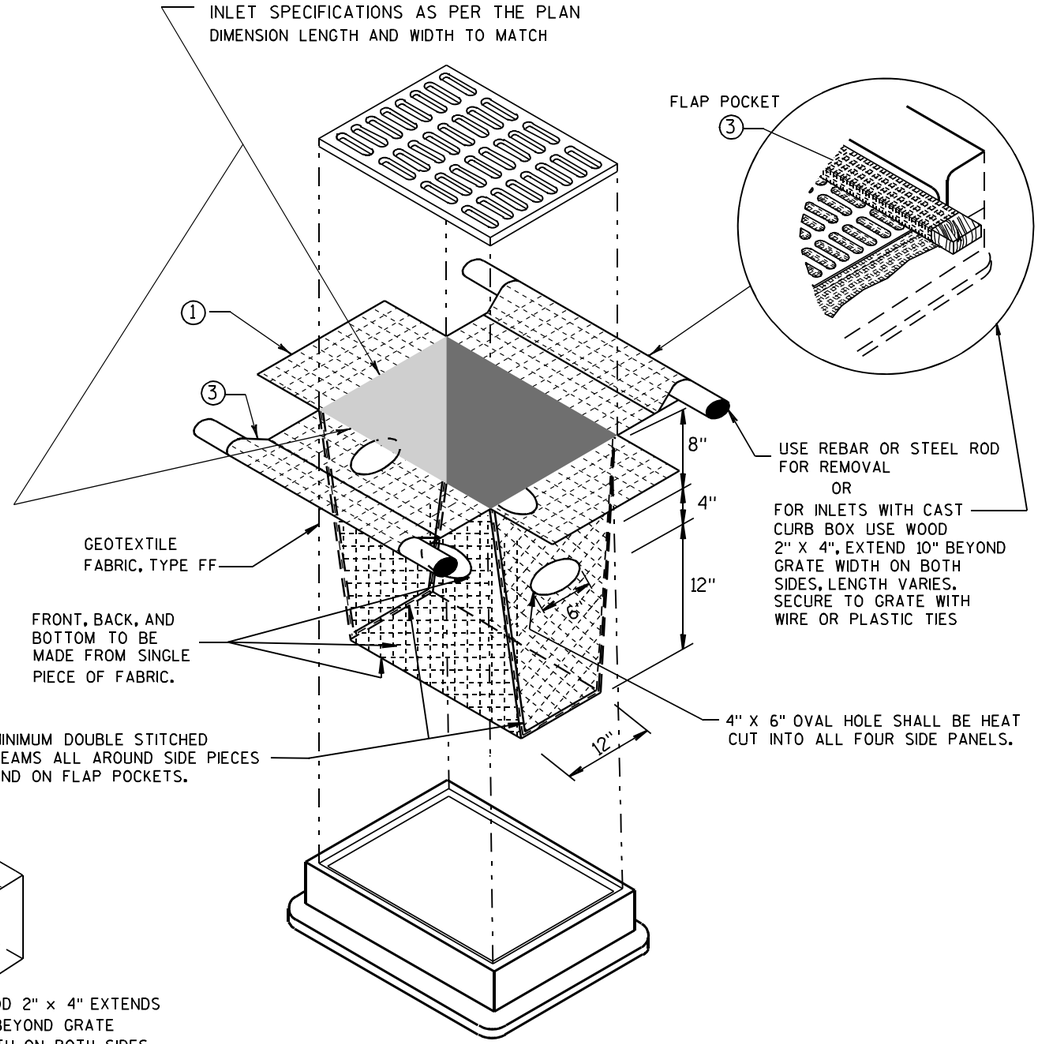


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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S.D.D. 8 E 10-2

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S.D.D. 8 E 10-2

METAL APRON ENDWALLS

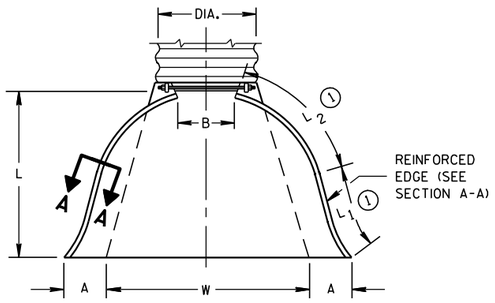
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

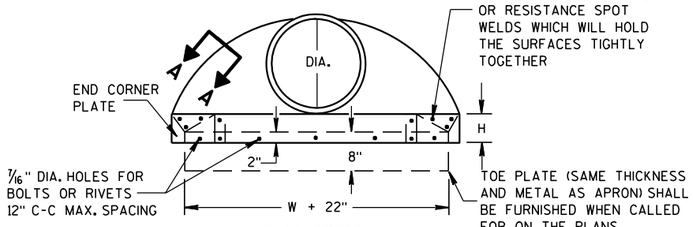
REINFORCED CONCRETE APRON ENDWALLS

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

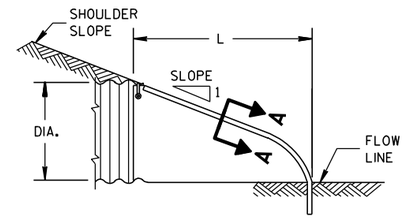
*MINIMUM
**MAXIMUM



PLAN VIEW

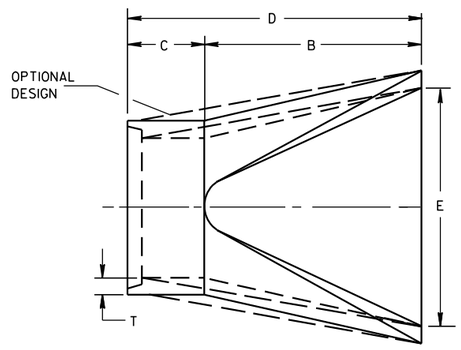


END VIEW

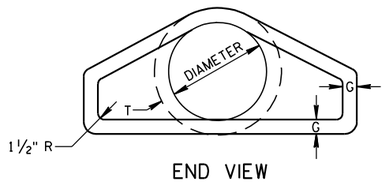


SIDE ELEVATION

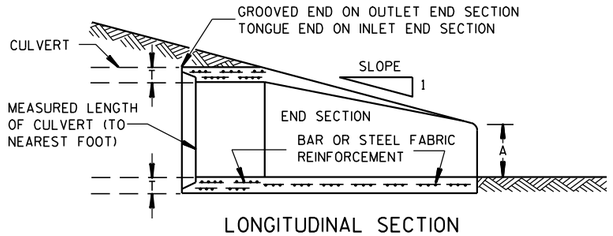
METAL ENDWALLS



PLAN

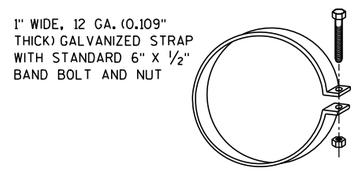


END VIEW



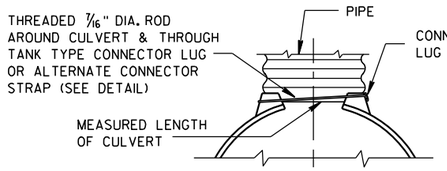
LONGITUDINAL SECTION

CONCRETE ENDWALLS

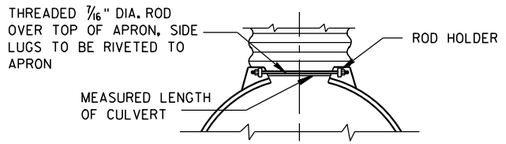


ALTERNATE FOR TYPE 1 CONNECTION

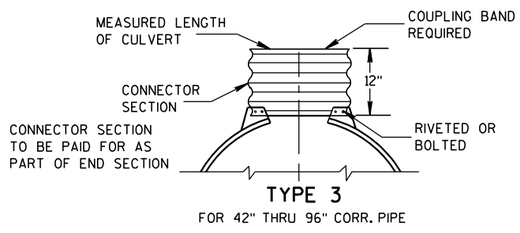
END SECTION CONNECTOR STRAP



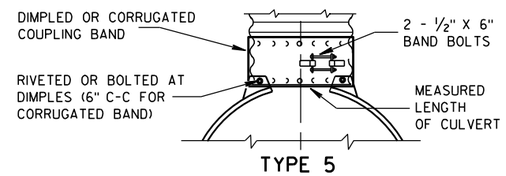
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

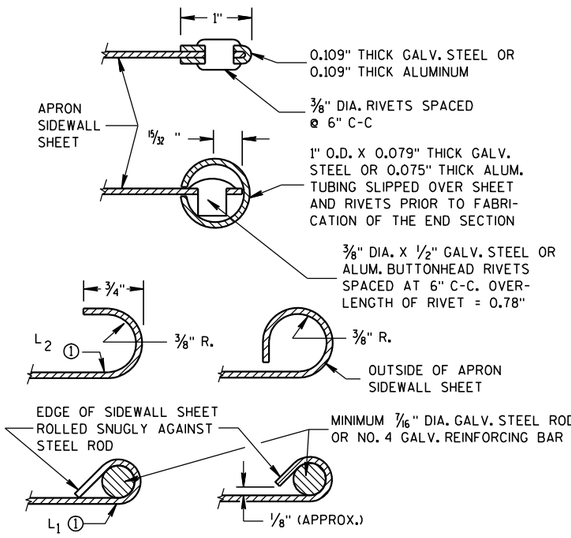
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

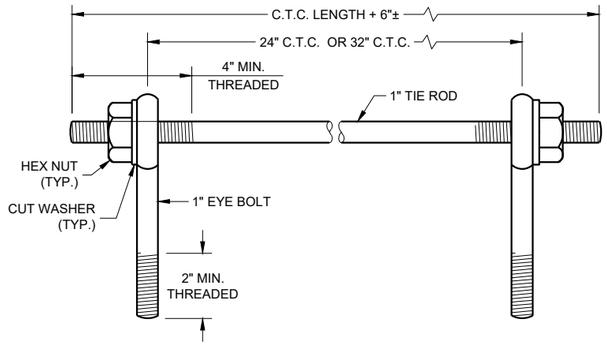
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

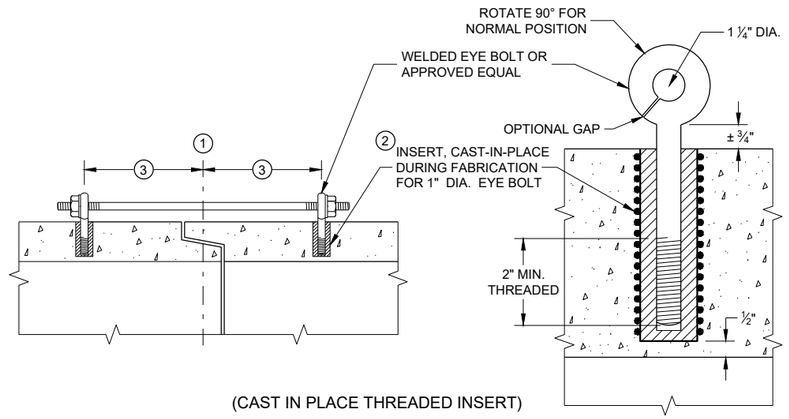
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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) CENTER LINE 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.

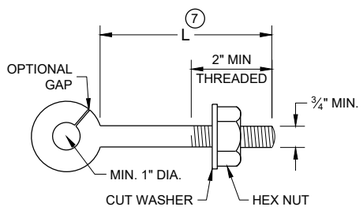
(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

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

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

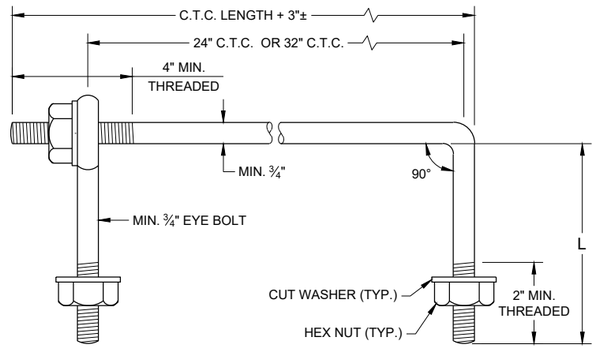
(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

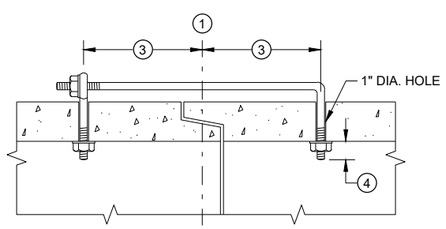


EYE BOLT (7)

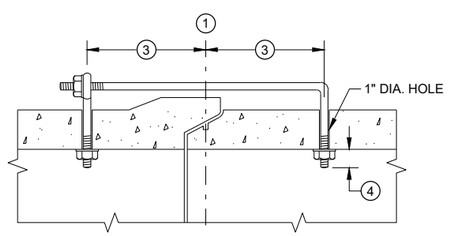
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

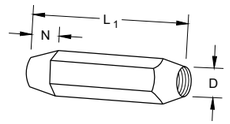
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



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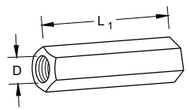
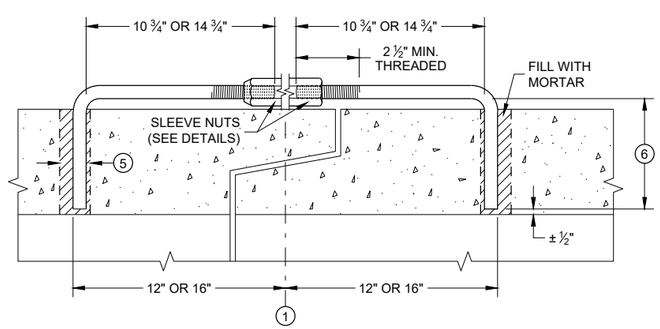


PLAIN

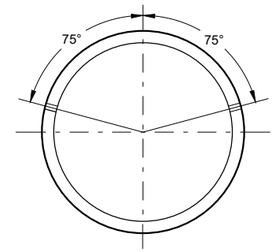
RIGHT AND LEFT THREADS

SLEEVE NUTS



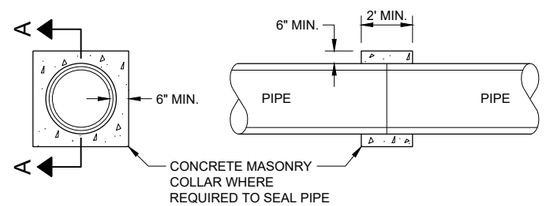
LONGITUDINAL SECTION

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

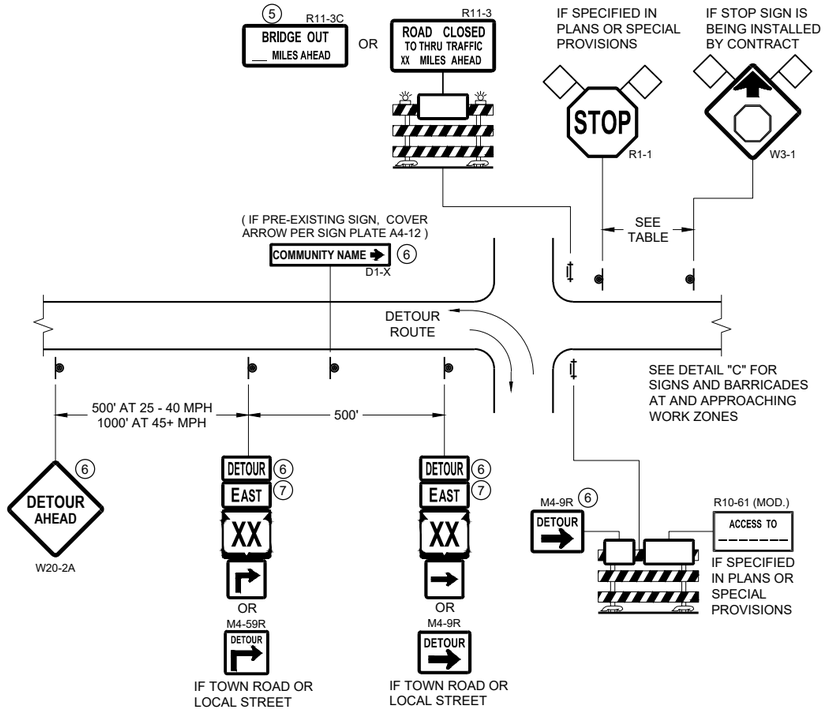
JOINT TIES FO CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

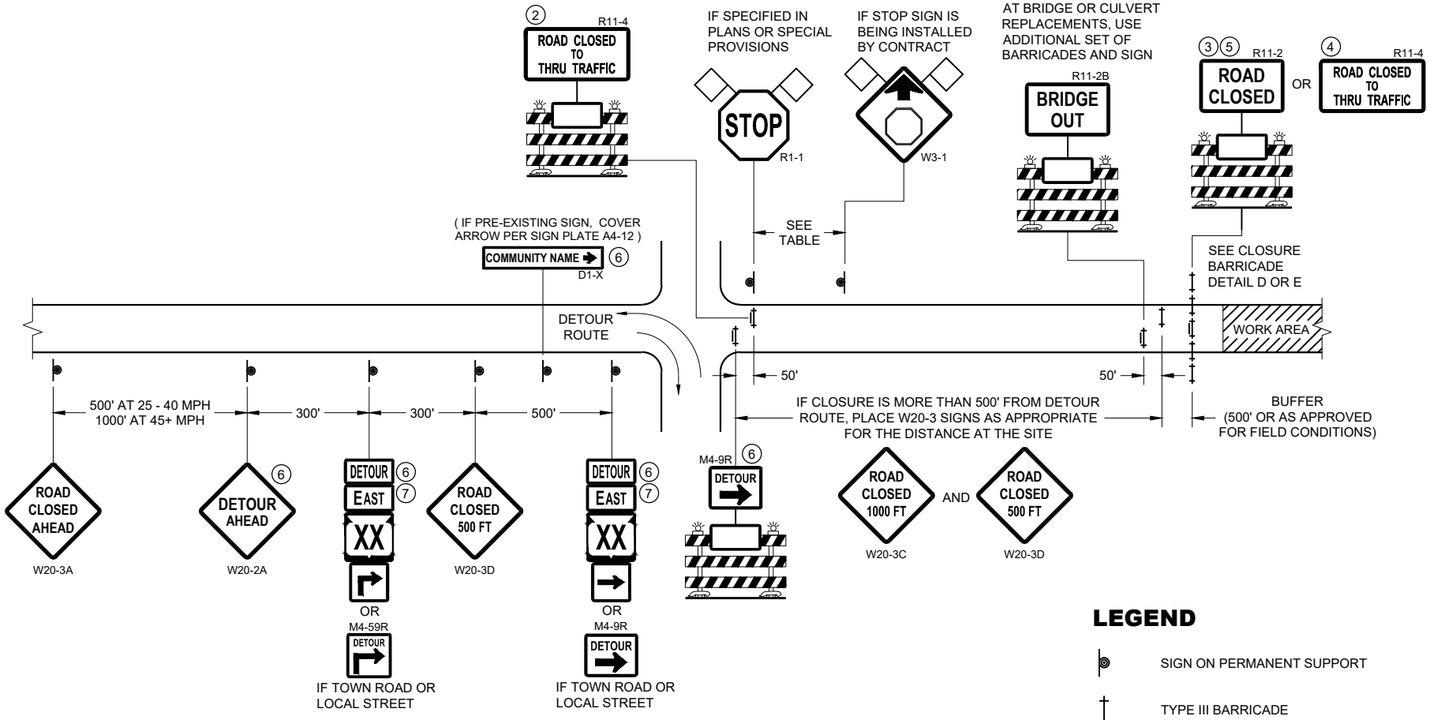
FHWA

6
SDD 08F04 - 08



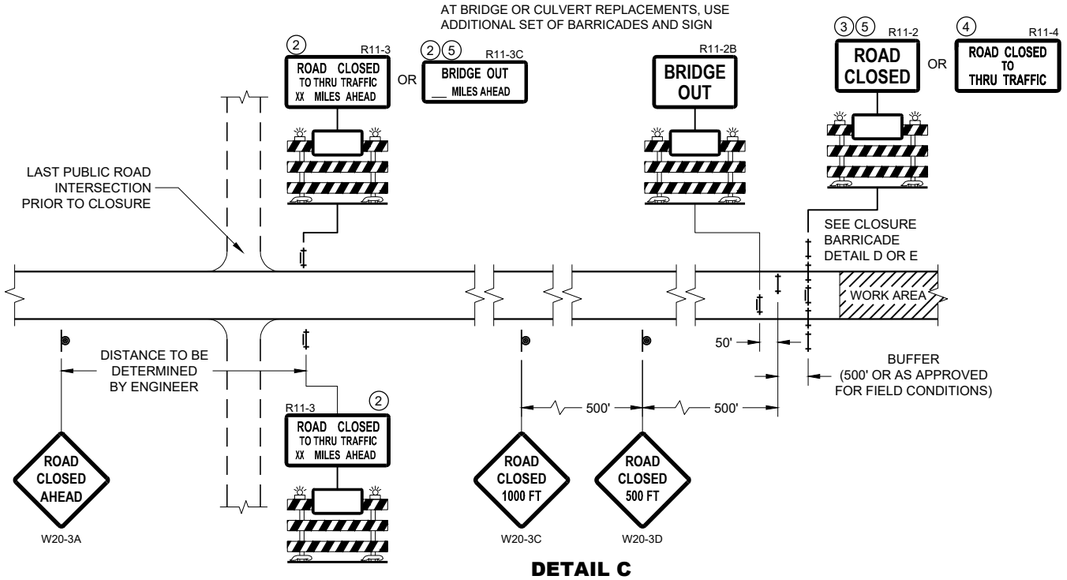
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO 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
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

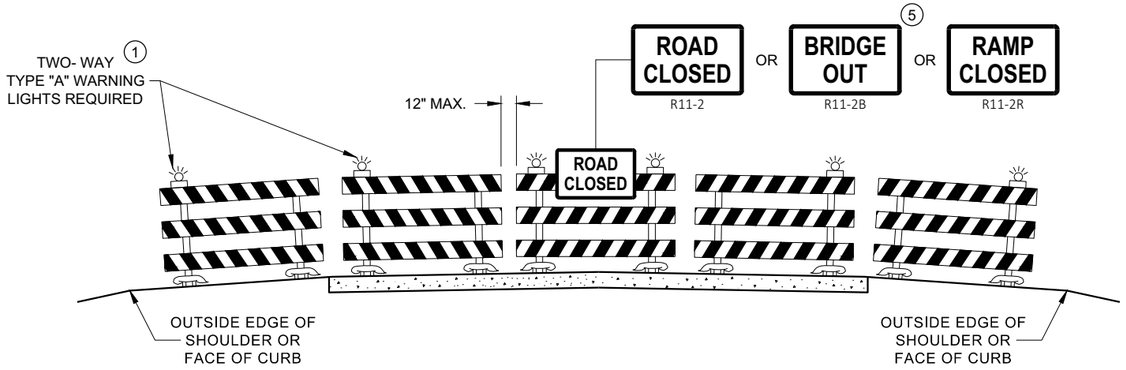
APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

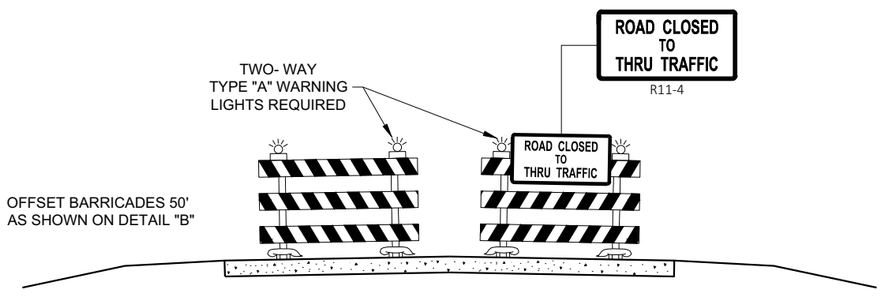
6

SDD 15C02 - 08a

SDD 15C02 - 08a



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 THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE
/S/ Andrew Heidtke
WORK ZONE ENGINEE

FHWA

6

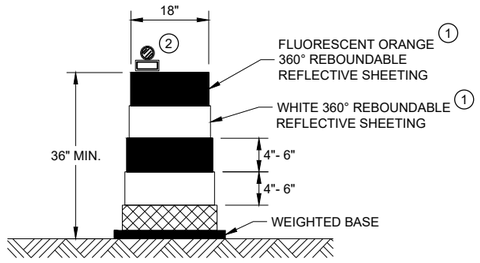
SDD 15C02 - 08b

6

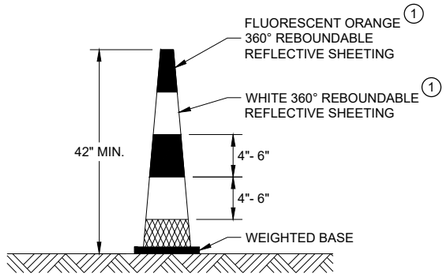
SDD 15C02 - 08b

GENERAL NOTES

1. REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
2. LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

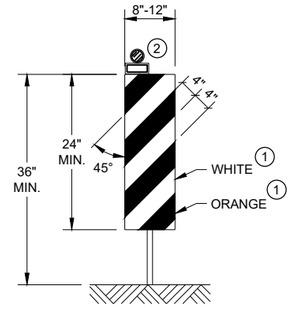


DRUM



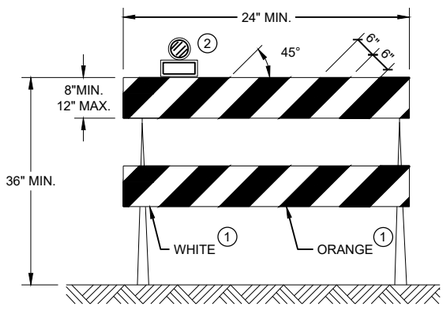
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



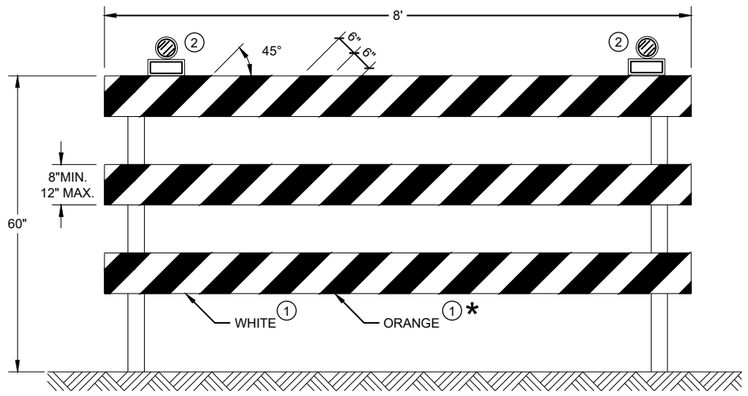
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

6

SDD15C11 - 09b

6

SDD15C11 - 09b

LEGEND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM

DIRECTION OF TRAFFIC

WORK ZONE

GENERAL NOTES

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 THE REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

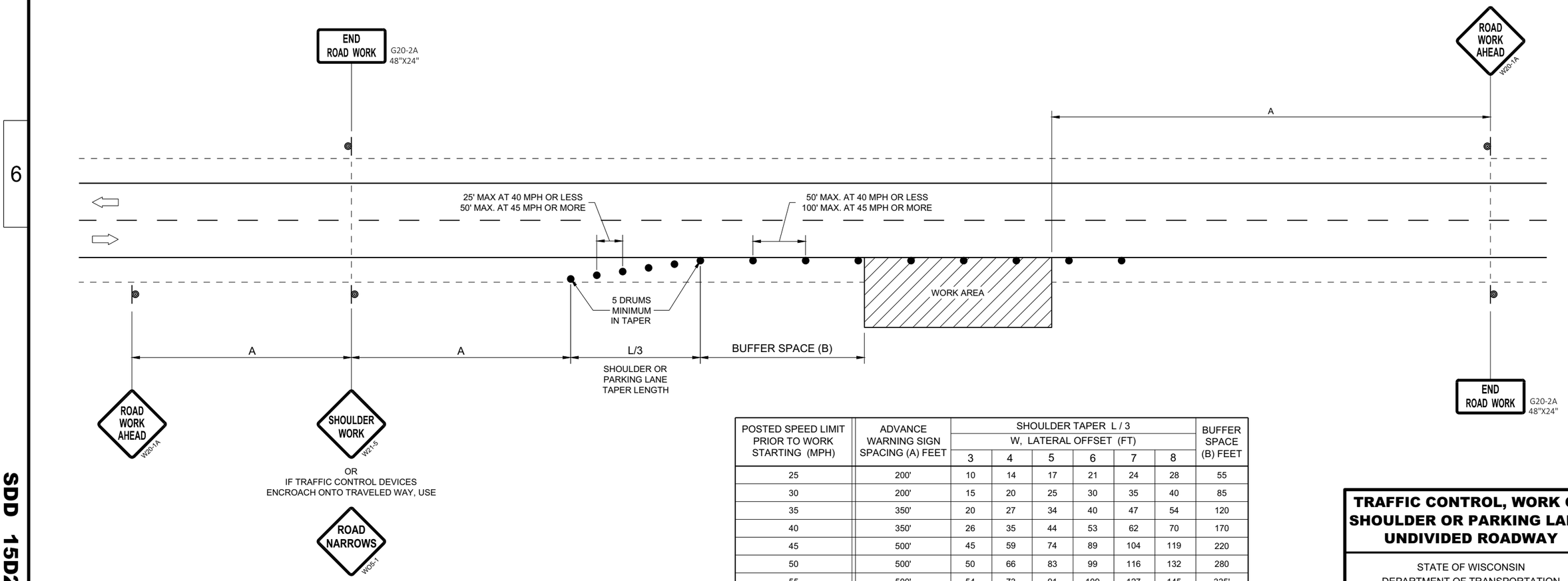
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

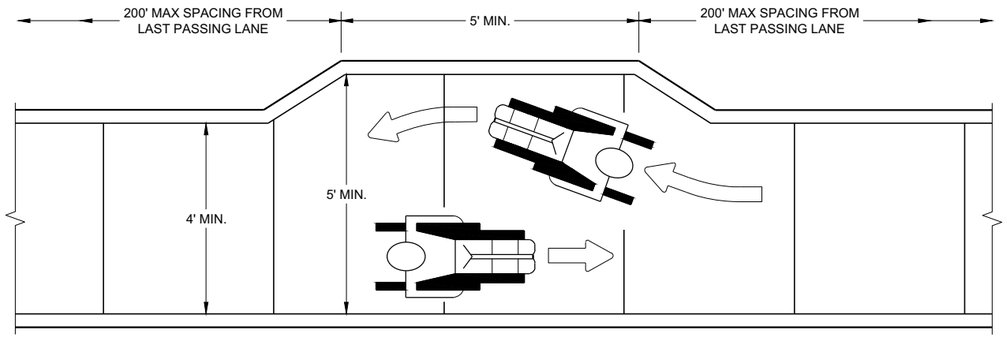
APPROVED
May 2020
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T SAFETY ENGINEER

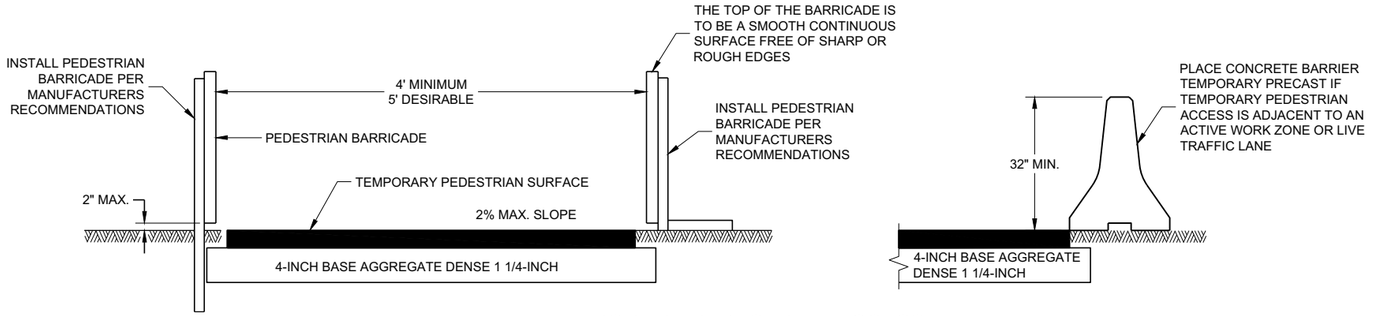
FHWA

SDD 15D28 - 04

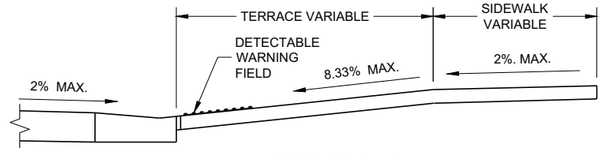
SDD 15D28 - 04



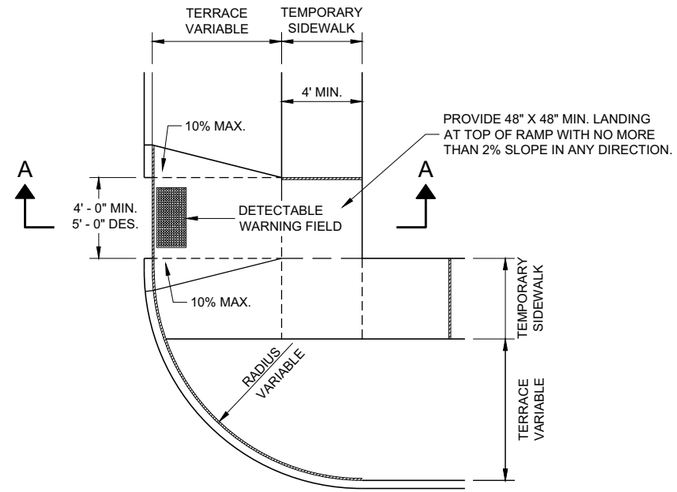
NARROW SIDEWALK PASSING DETAIL



TEMPORARY PEDESTRIAN ACCESS



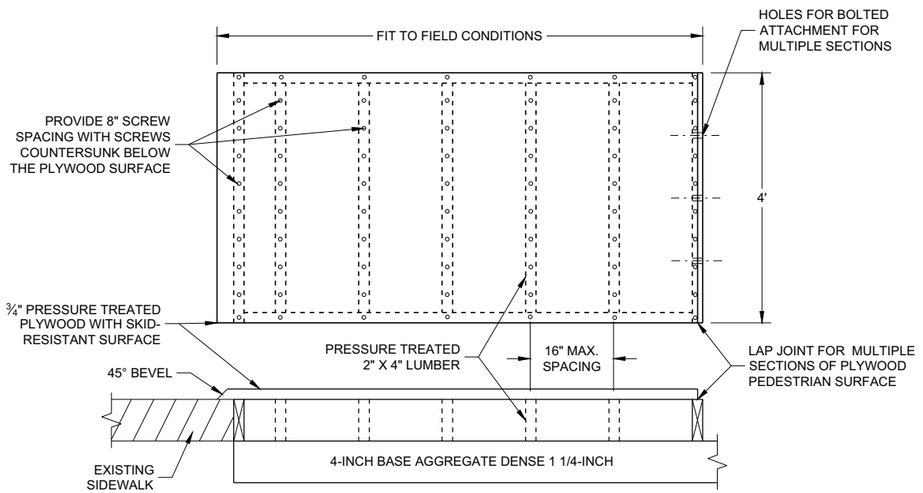
SECTION A - A



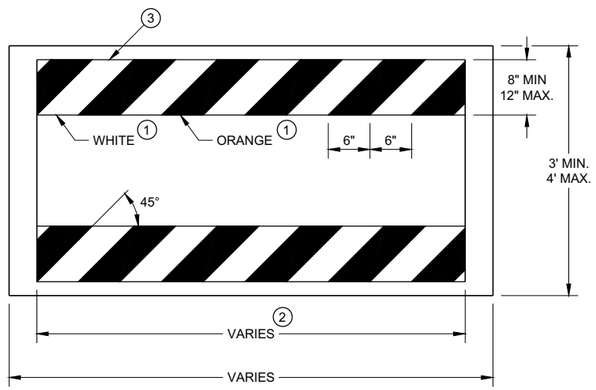
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



TEMPORARY PEDESTRIAN BARRICADE *

GENERAL NOTES

BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

(1) REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

(2) SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.

(3) PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.

* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEE

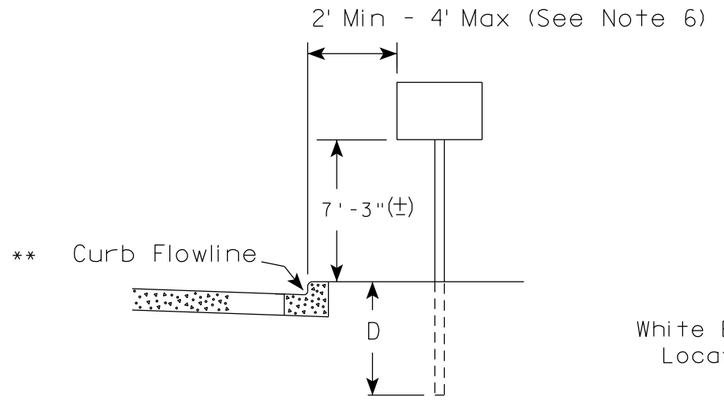
FHWA

SDD 15D30 - 06c

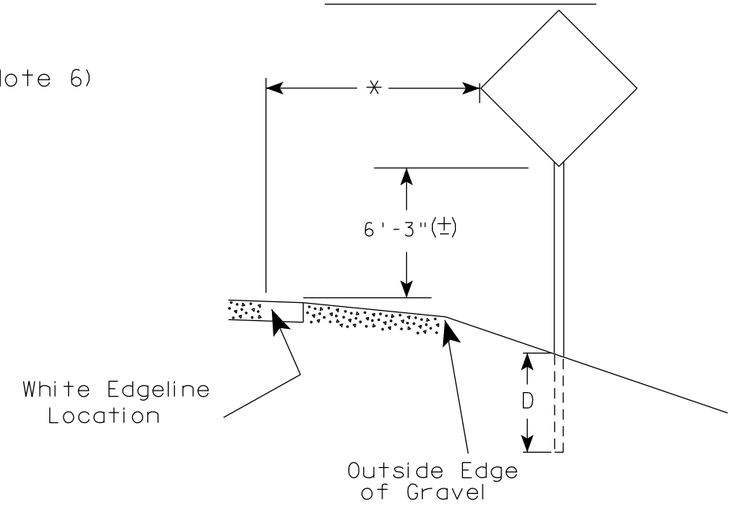
6

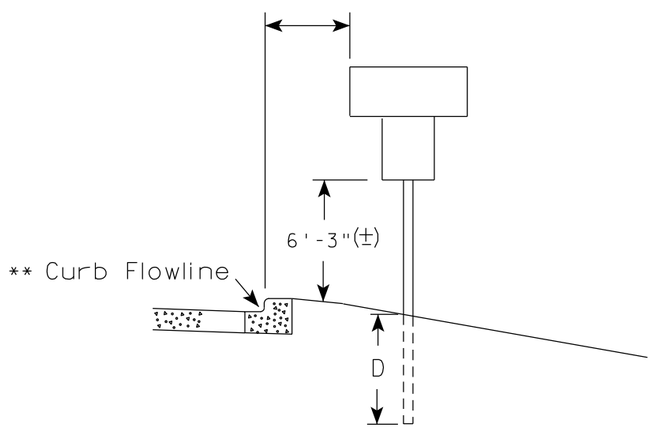
SDD 15D30 - 06c

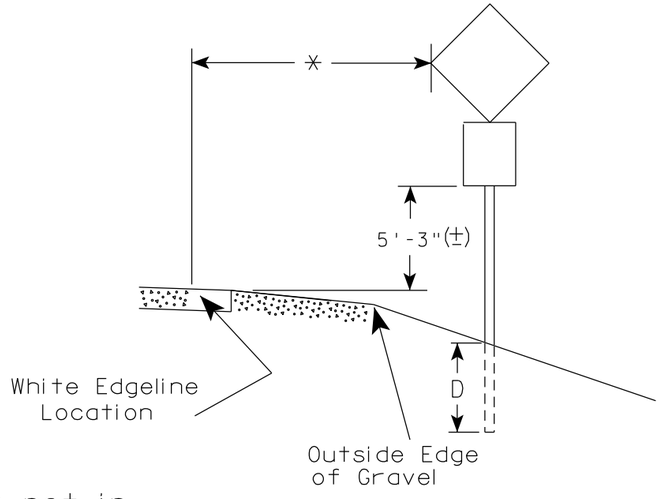
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
   The Double Arrow sign (W12-1D) 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" (±).
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 signs mounted on traffic signal poles is 5'- 3" (±).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (±) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.

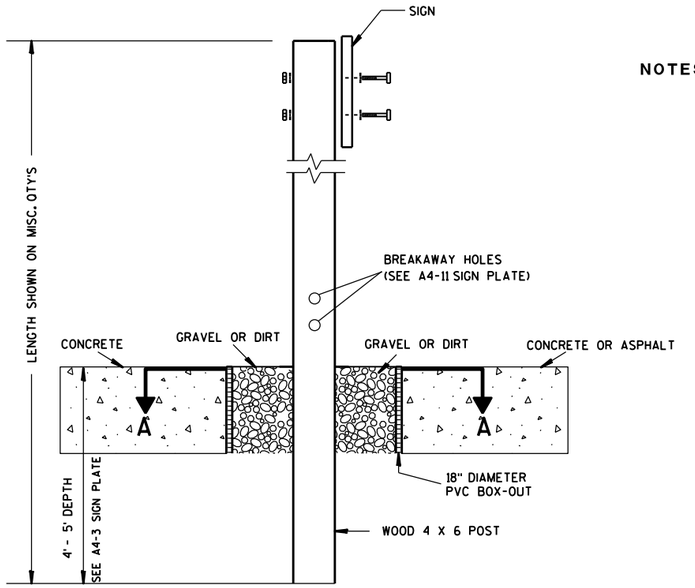
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

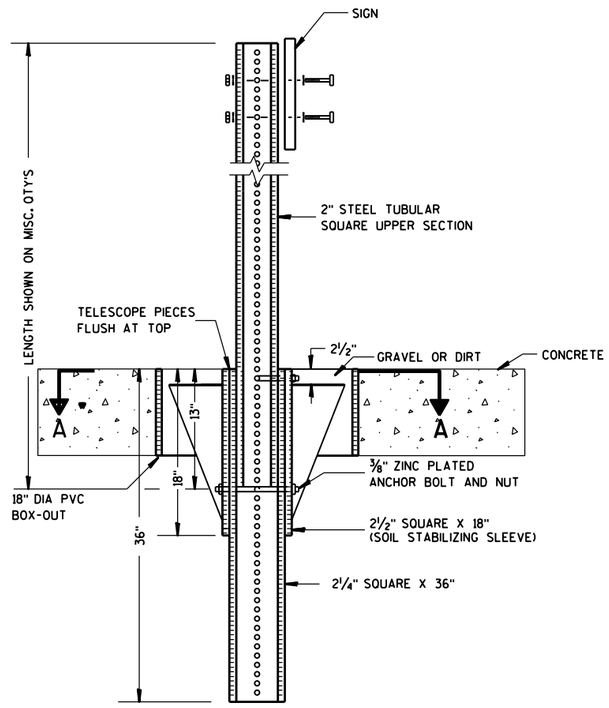
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 34	E



ELEVATION VIEW

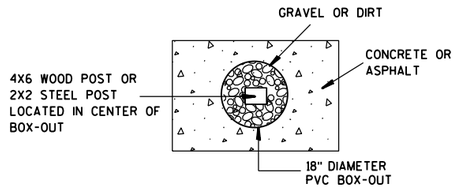
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

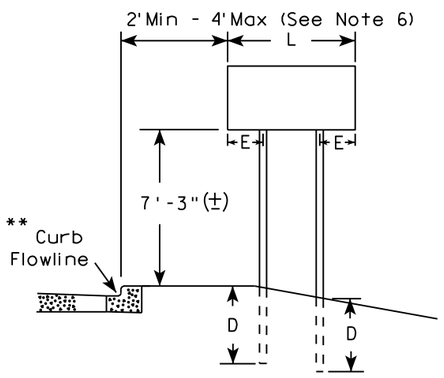
APPROVED Matthew R Rauch
for State Traffic Engineer

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

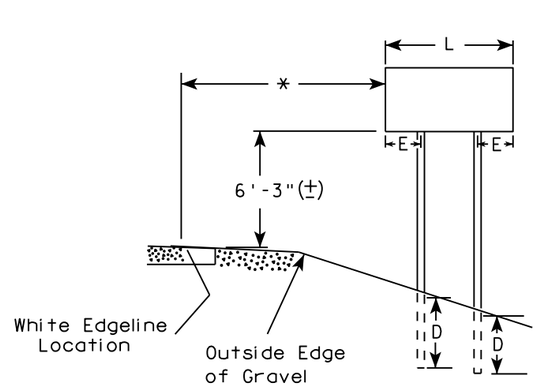
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

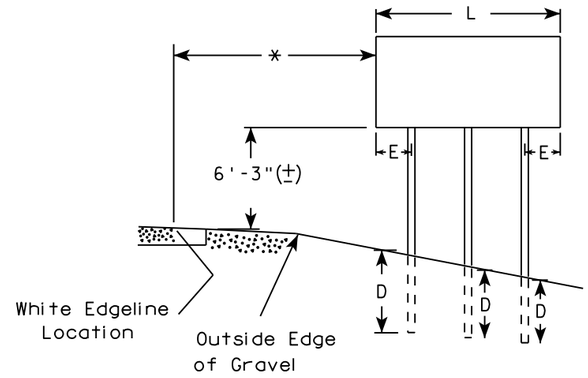
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

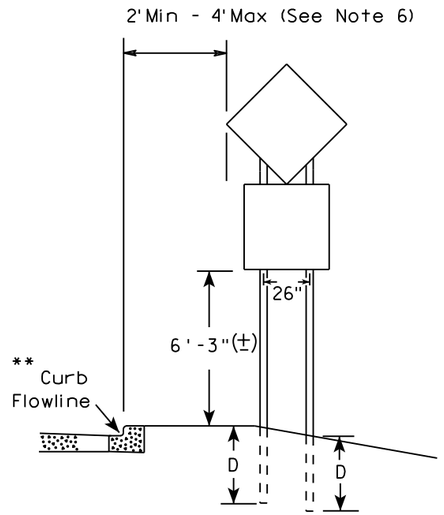
URBAN AREA



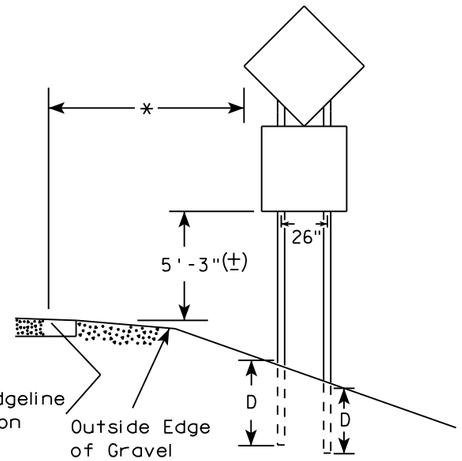
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)		
	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

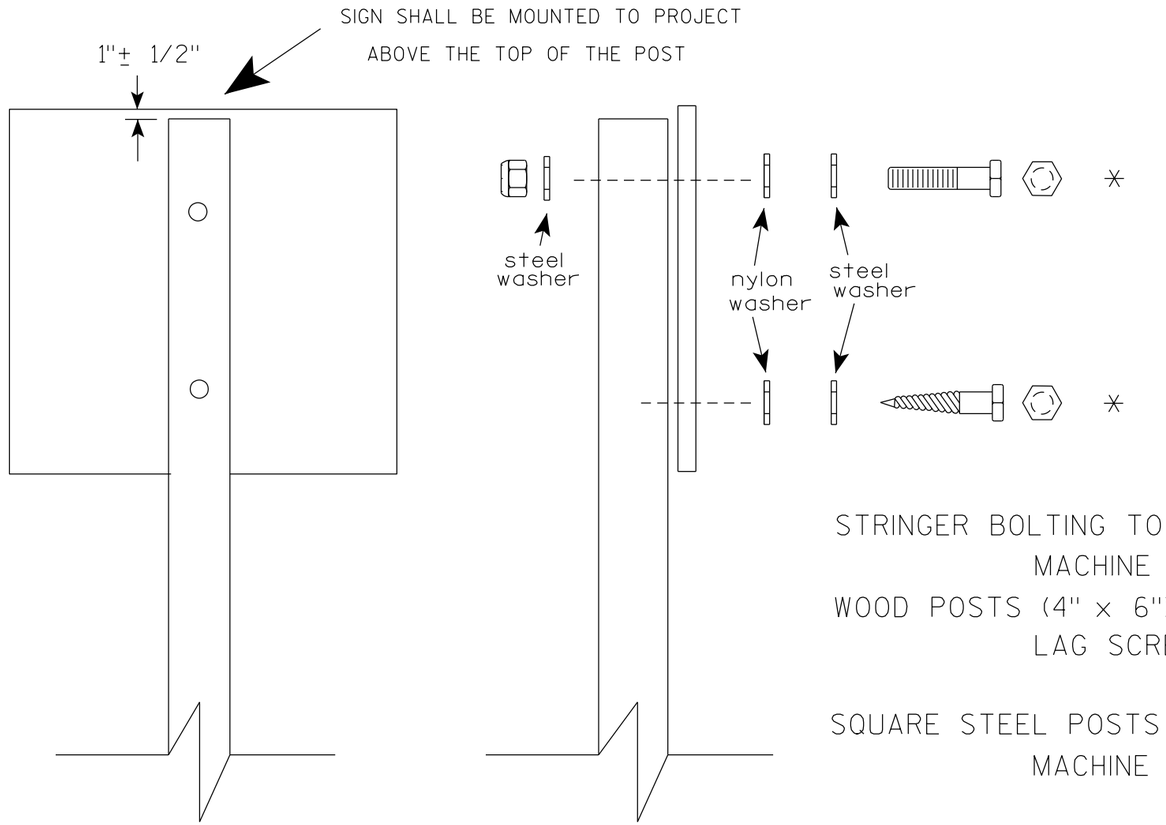
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 36	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

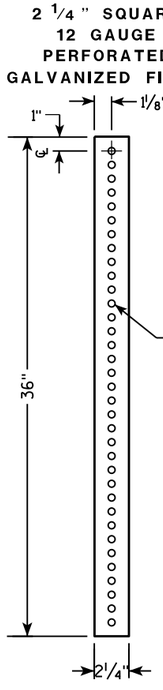
DATE 4/1/2020 PLATE NO. A4-8.9

PROJECT NO:

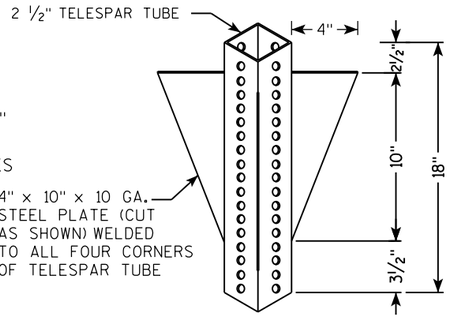
SHEET NO: 37 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

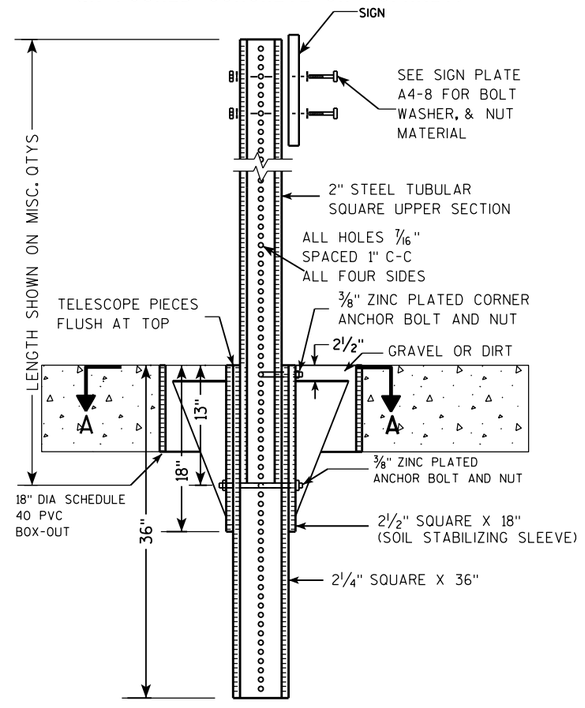
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



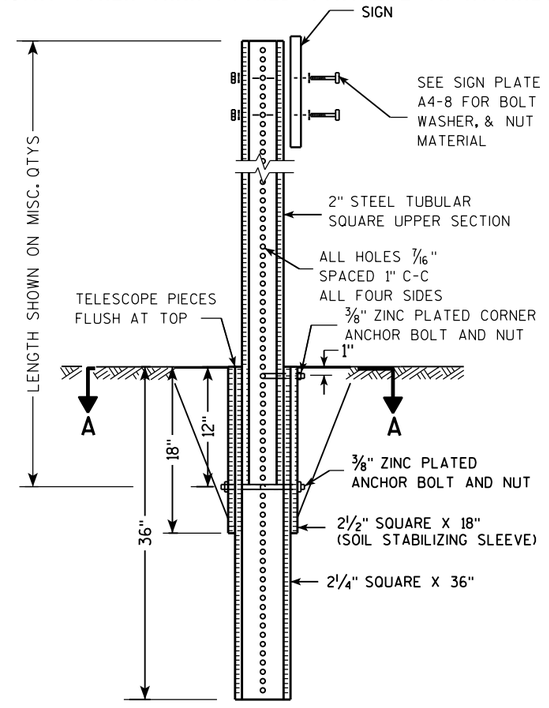
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

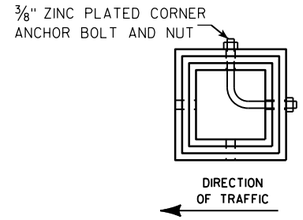


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

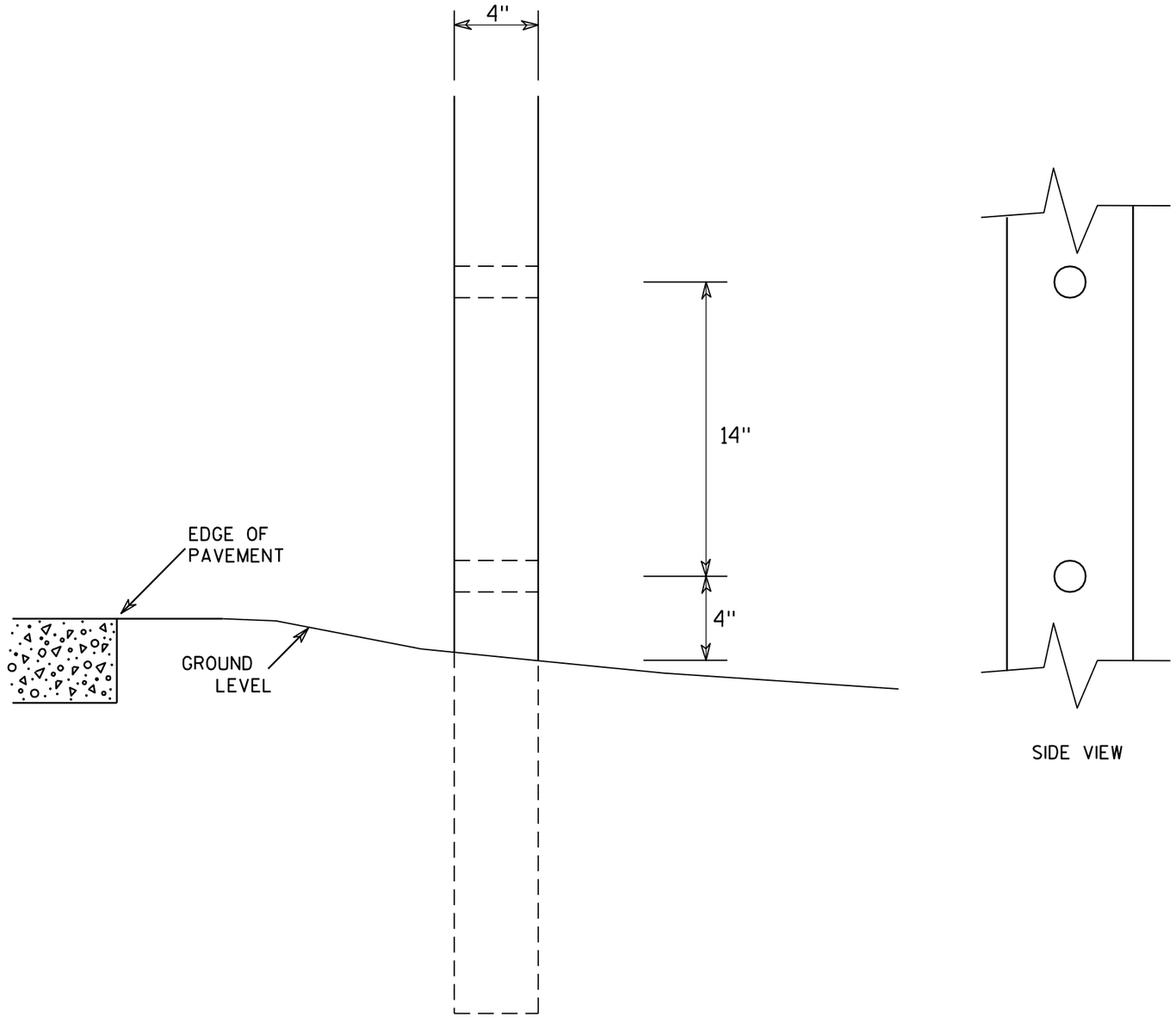
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000
WISDOT/CADDS SHEET 42



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

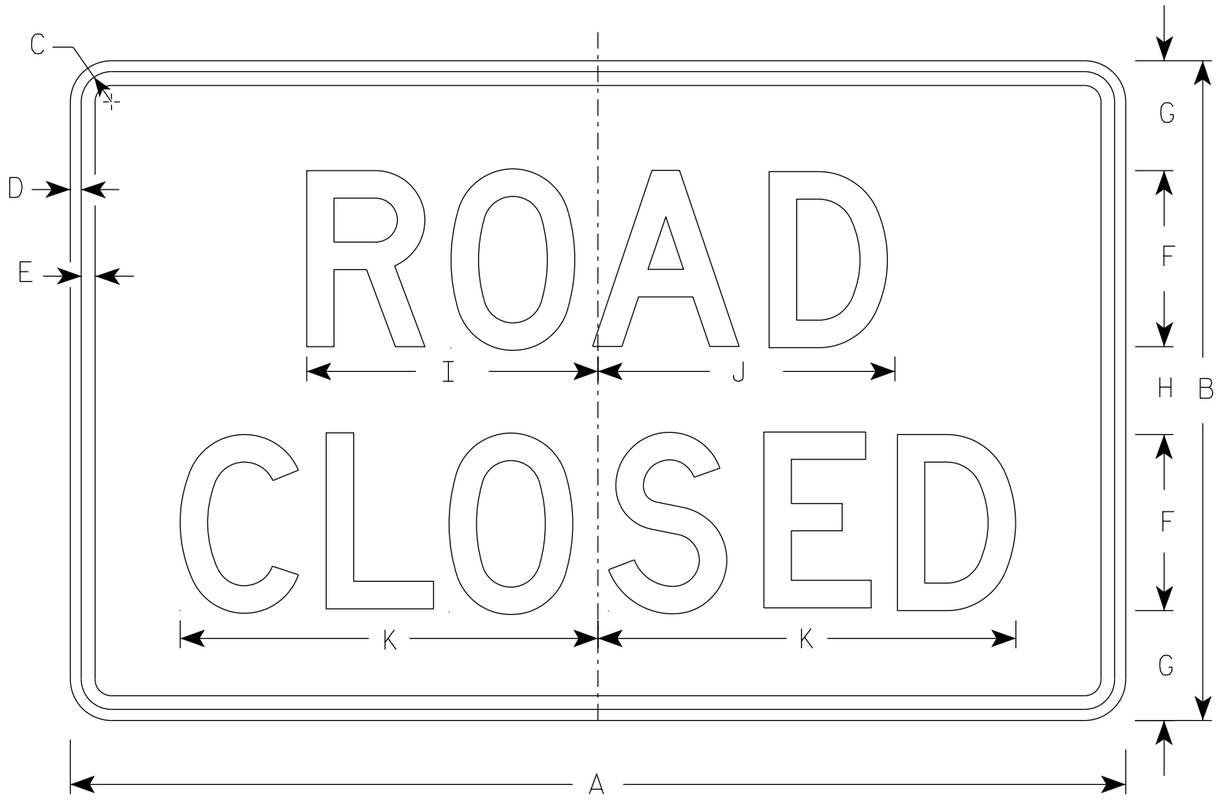
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

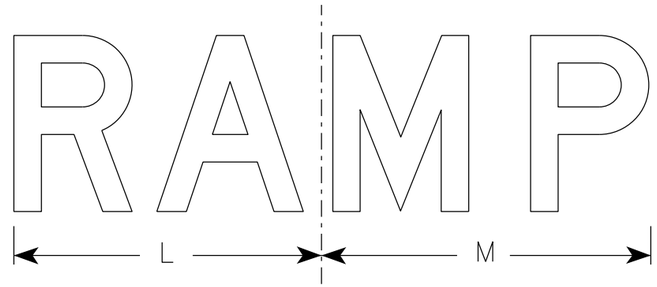
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 39	E



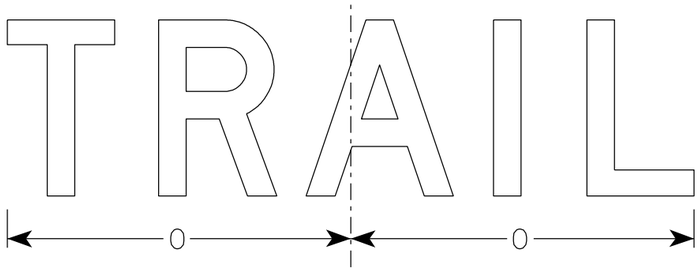
R11-2

NOTES

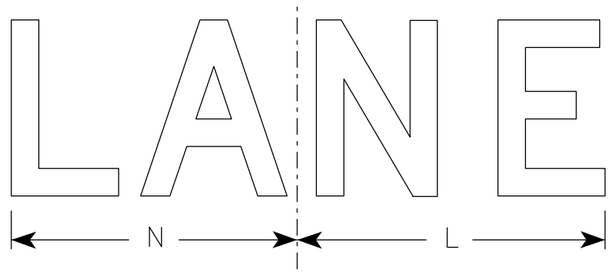
1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



R11-2R



R11-2T



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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												10.0

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

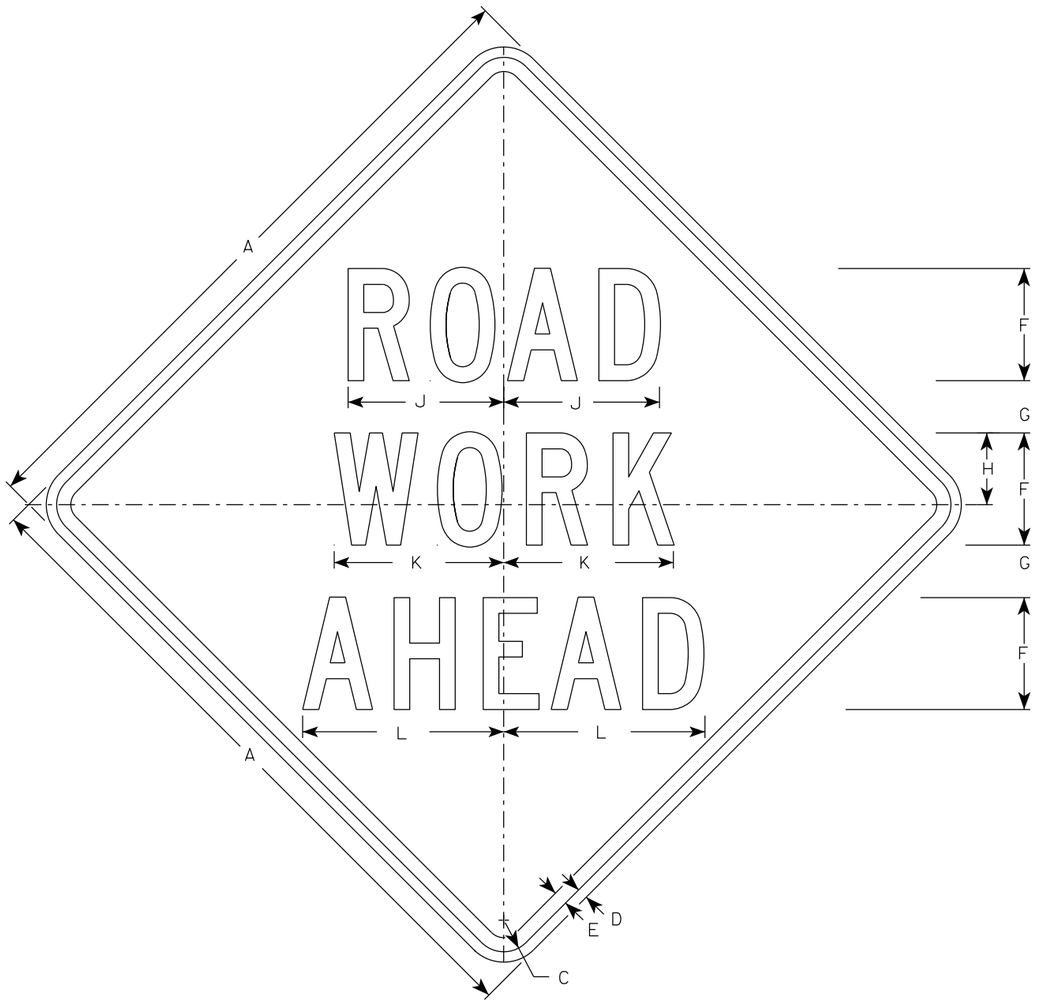
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

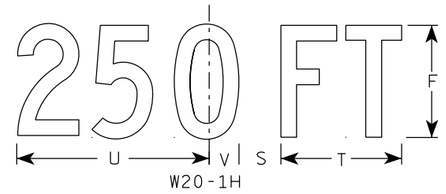
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 40	E

NOTES

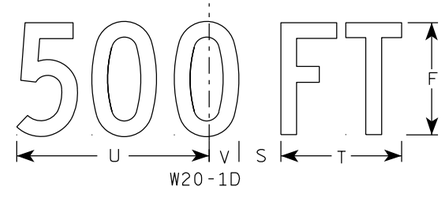
1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



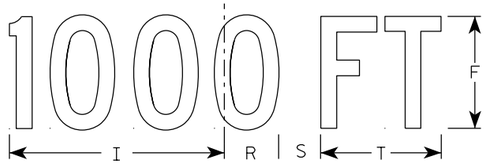
W20-1A



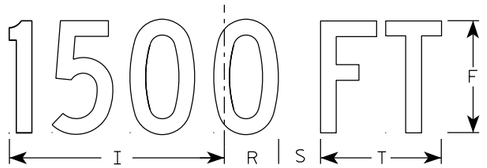
W20-1H



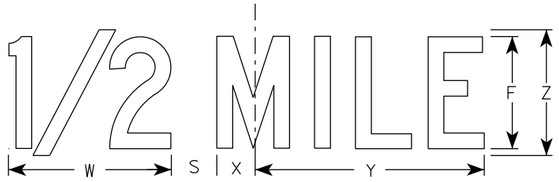
W20-1D



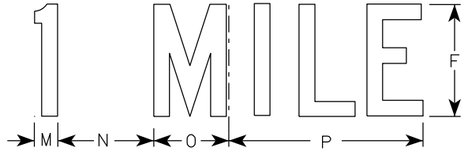
W20-1C



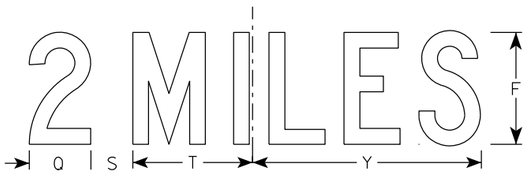
W20-1B



W20-1G



W20-1F



W20-1E

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	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	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

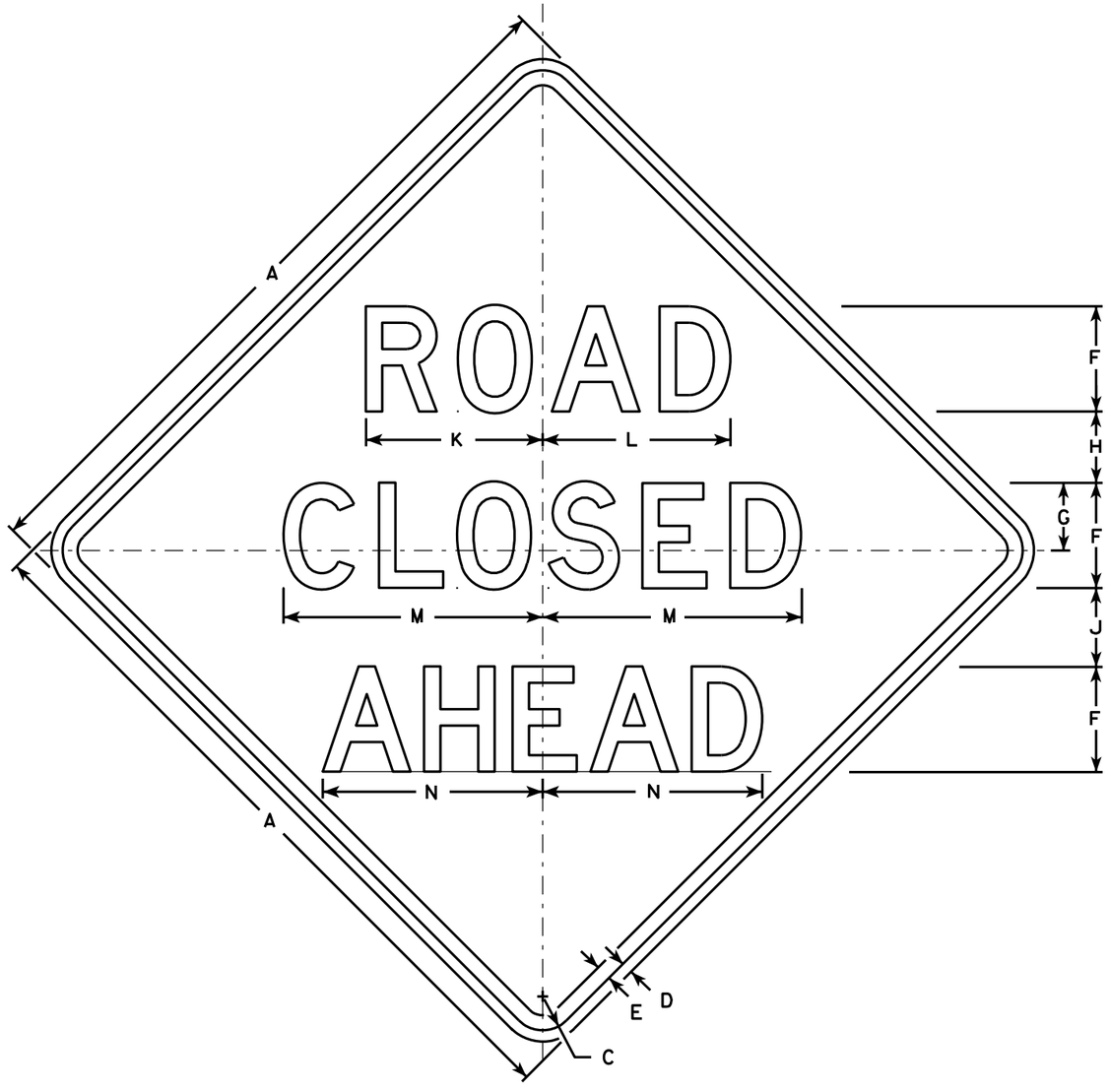
DATE 3/25/2020 PLATE NO. W20-1.11

PROJECT NO:

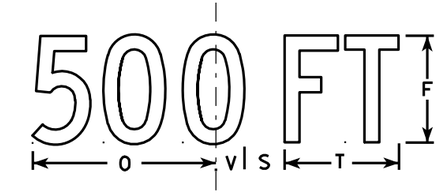
SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 25-MARCH-2020 PLOT BY : dotc4c

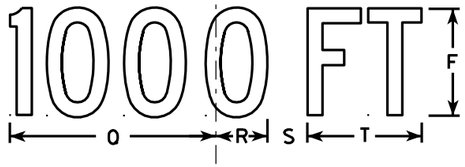
7



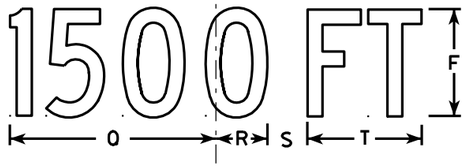
W20-3A



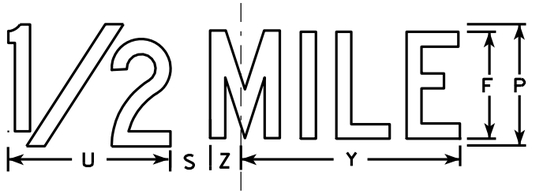
W20-3D



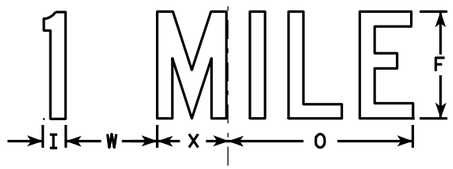
W20-3C



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

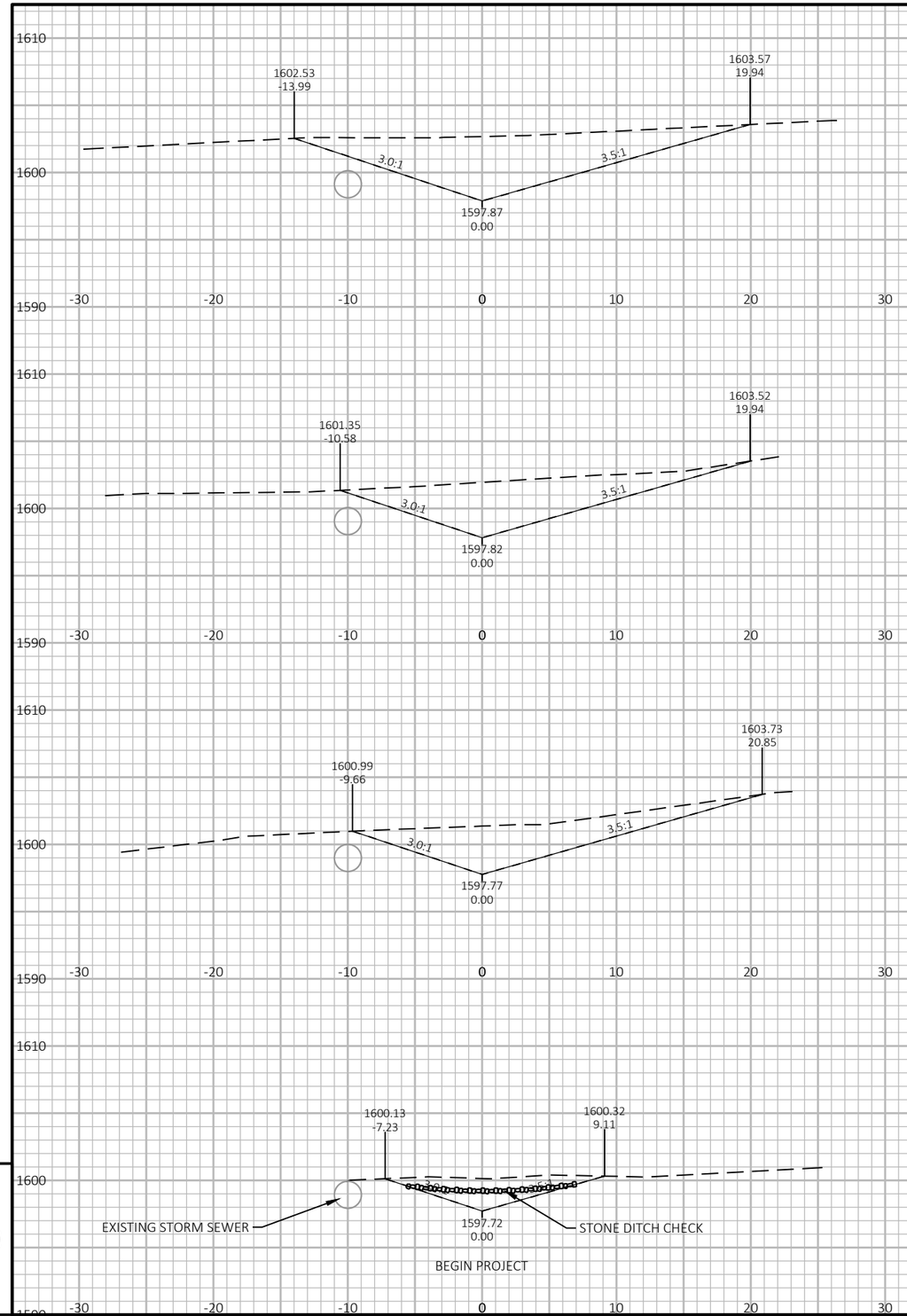
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

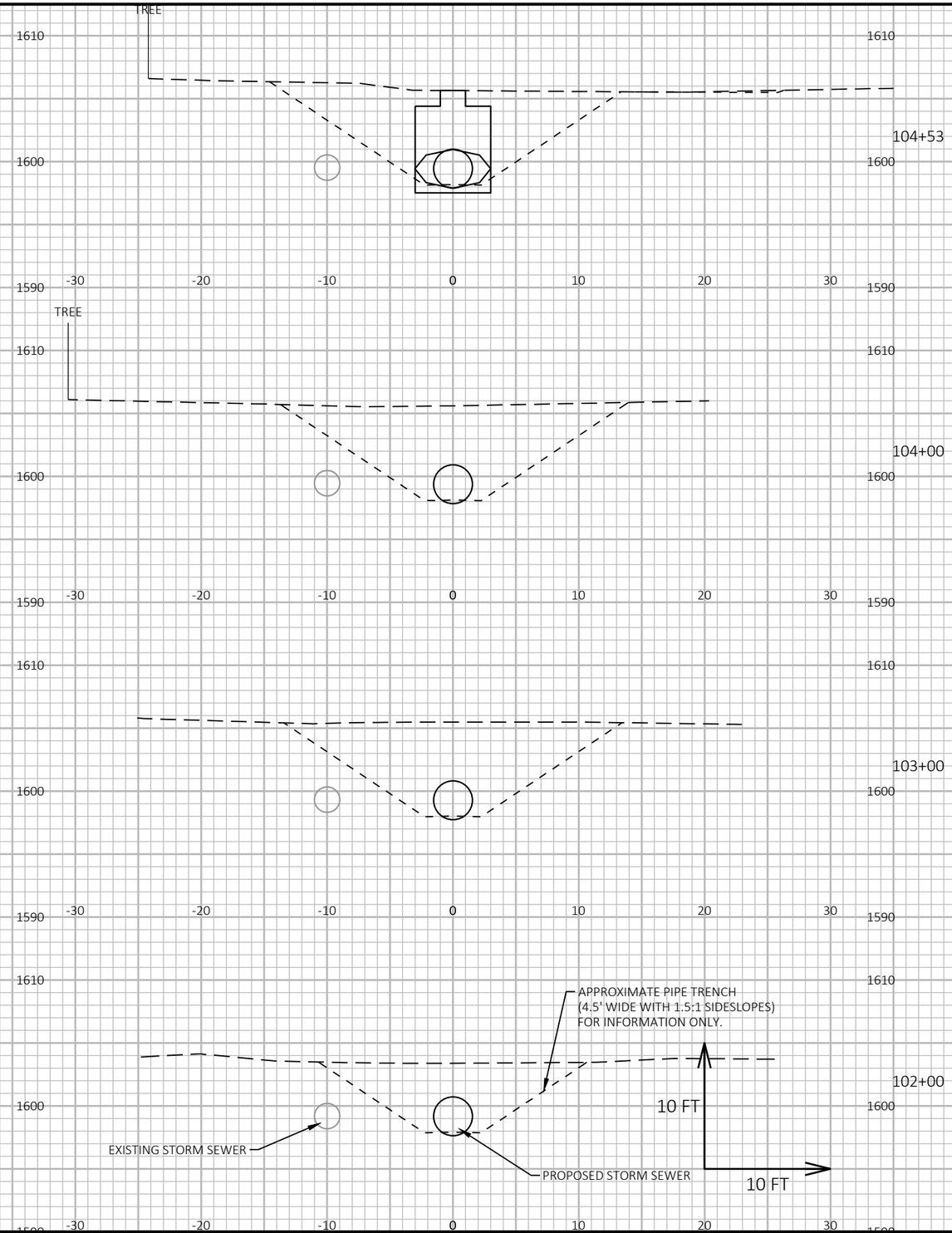
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 42 | E

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



101+50



104+53

101+00

104+00

100+50

103+00

100+00

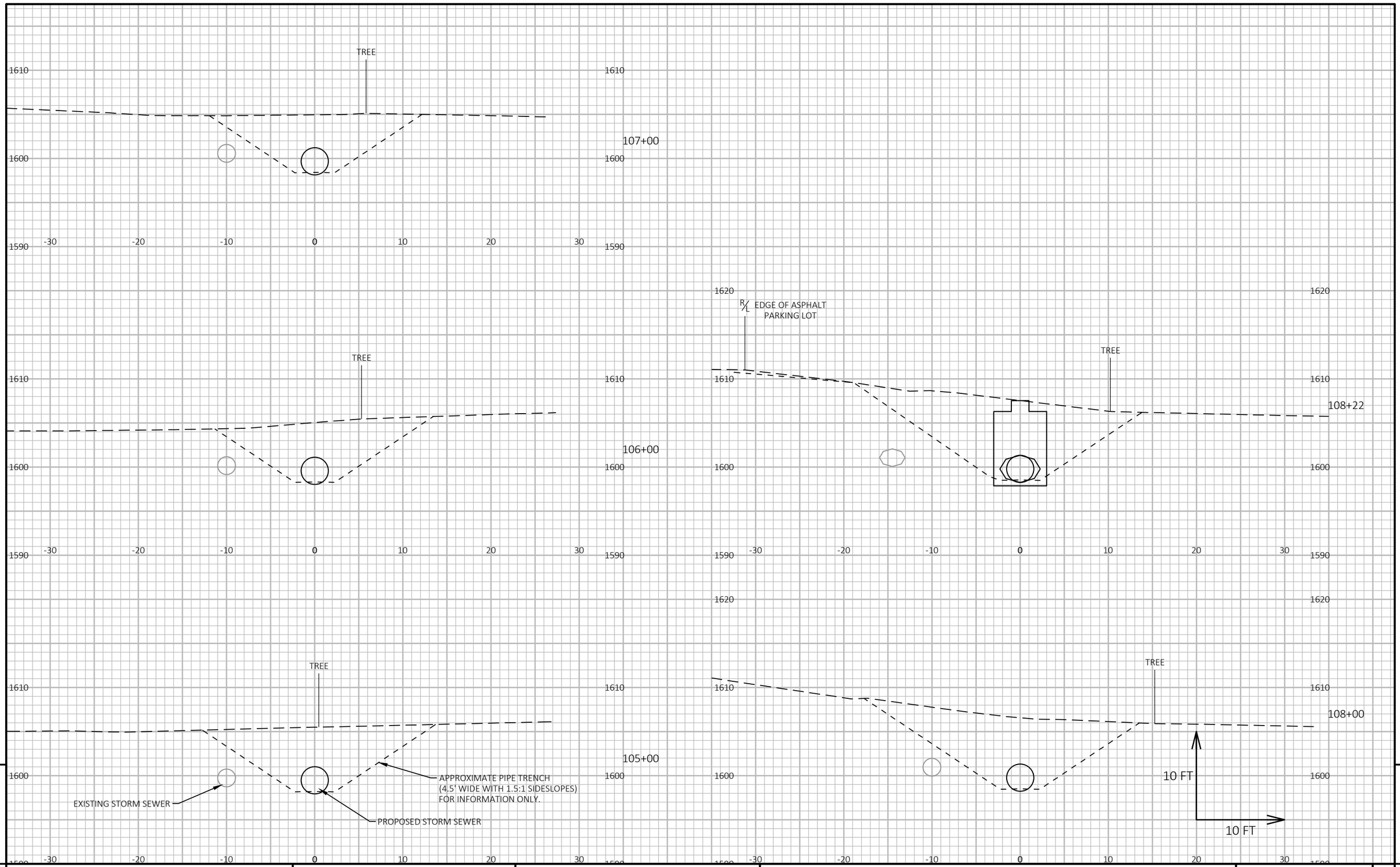
102+00

9

9

PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	CROSS SECTIONS: STORMWATER DRAINAGE IMPROVEMENTS	SHEET 43	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 18
PLOT DATE : 11/2/2021 12:35 PM
PLOT BY : JACOB FRIBERG
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



9

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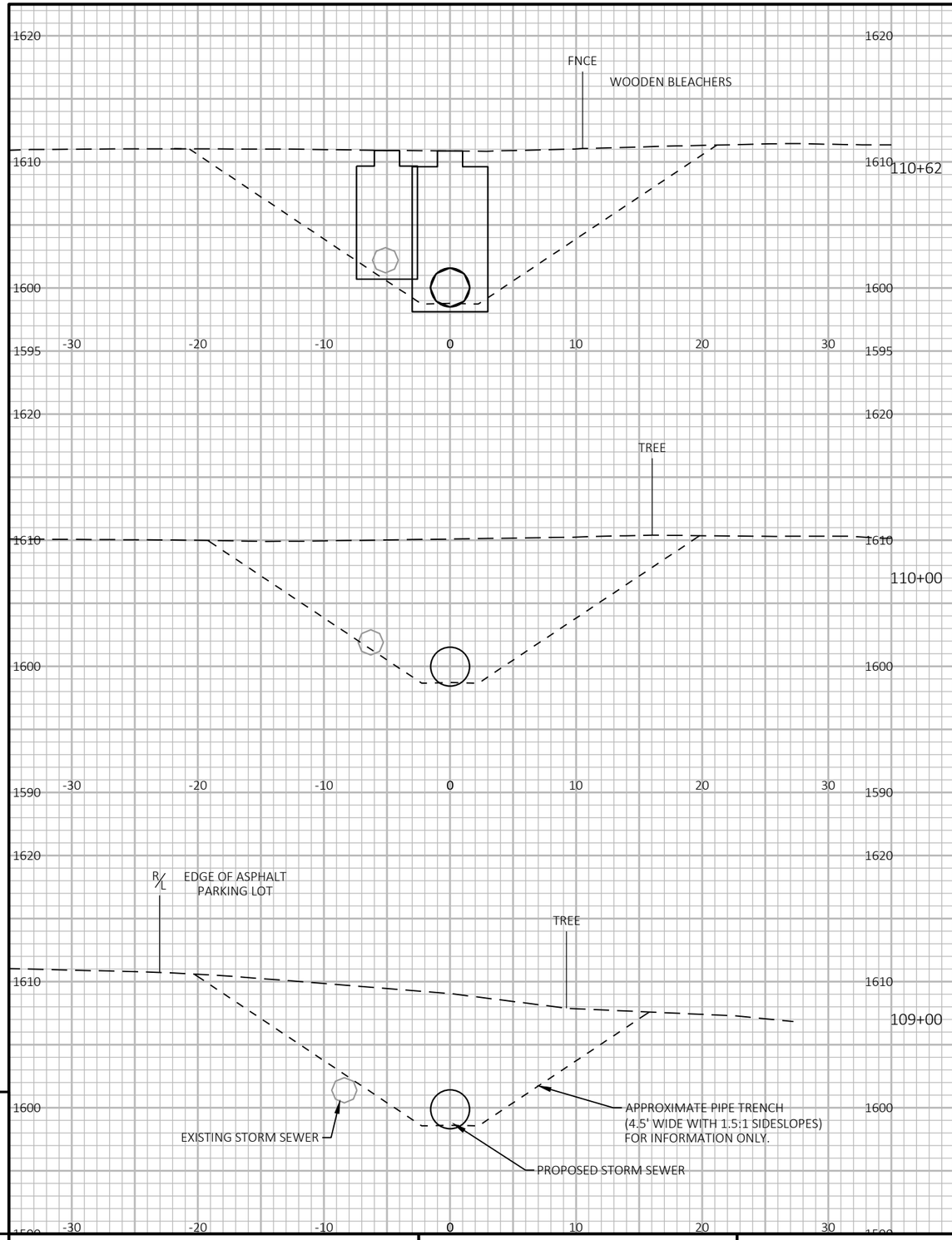
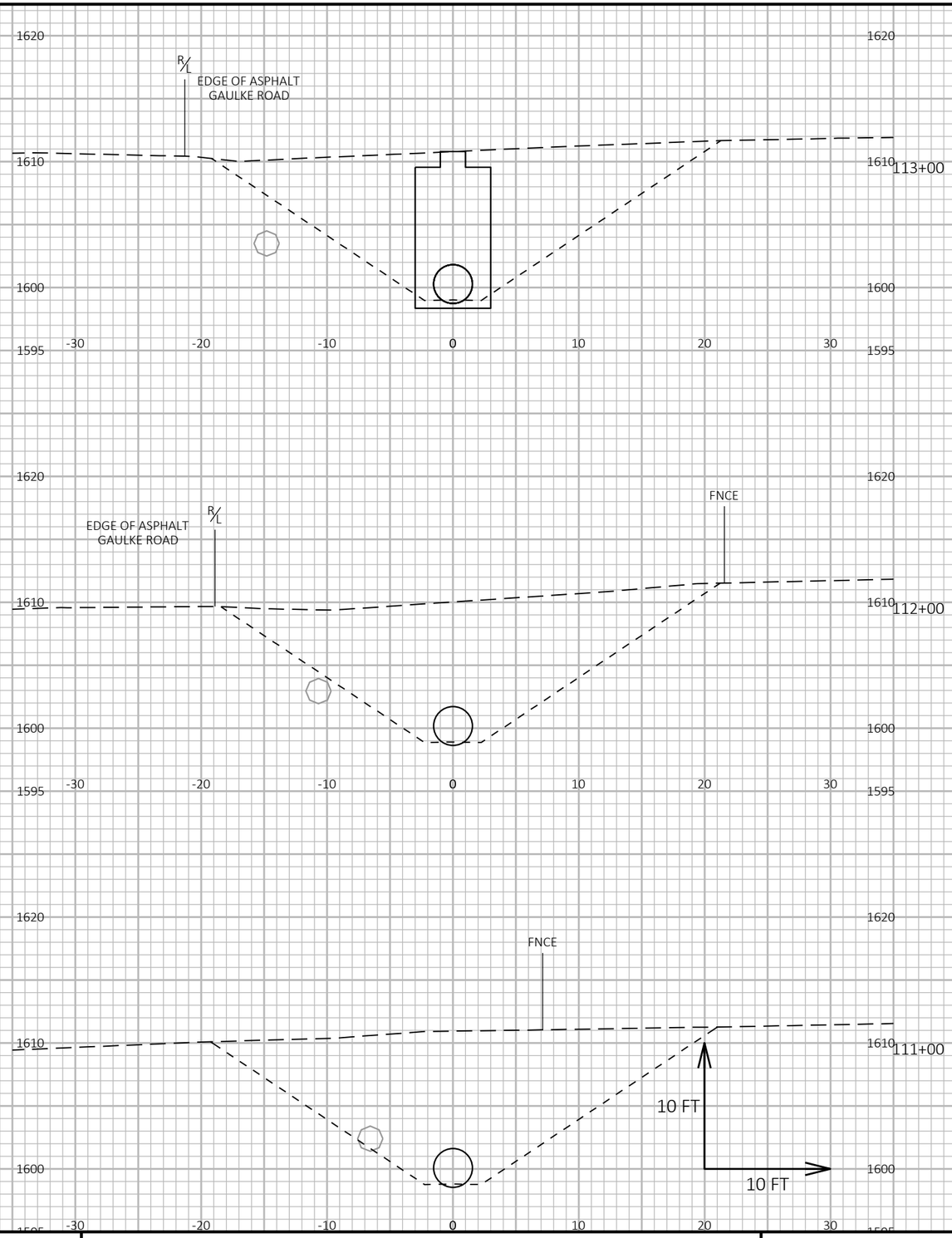
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	CROSS SECTIONS: STORMWATER DRAINAGE IMPROVEMENTS	SHEET 44	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 19

PLOT DATE : 10/6/2021 10:17 AM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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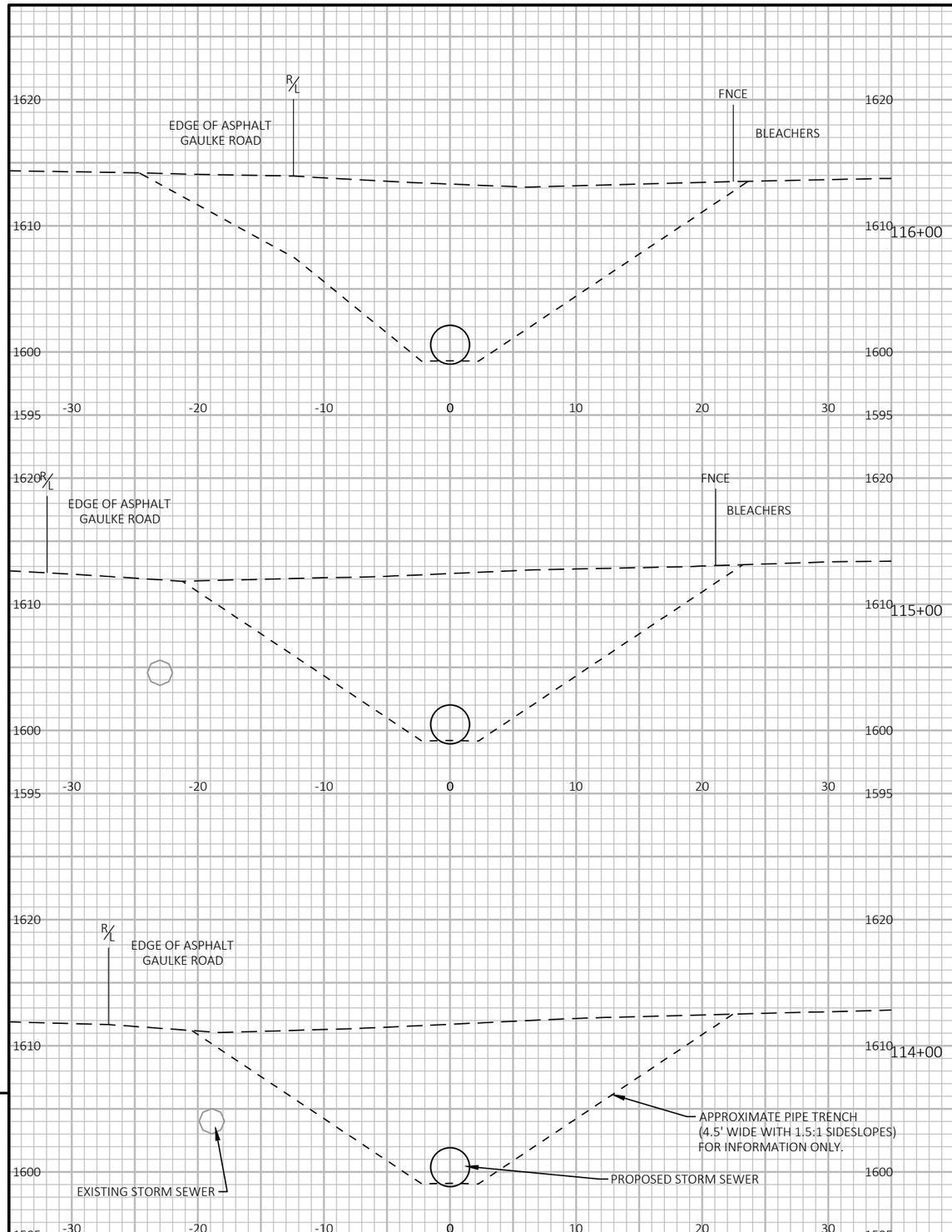
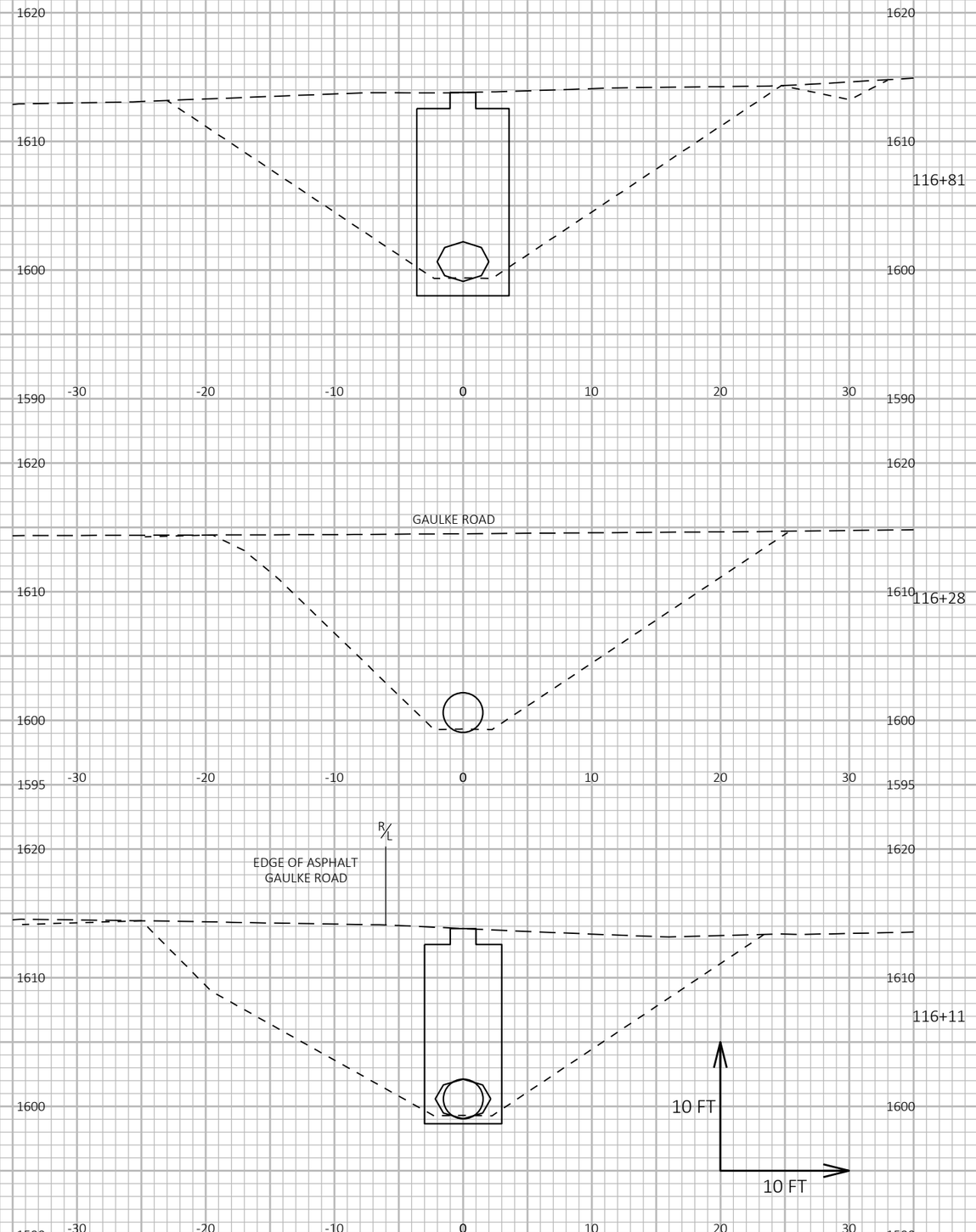
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	CROSS SECTIONS: STORMWATER DRAINAGE IMPROVEMENTS	SHEET 45	E

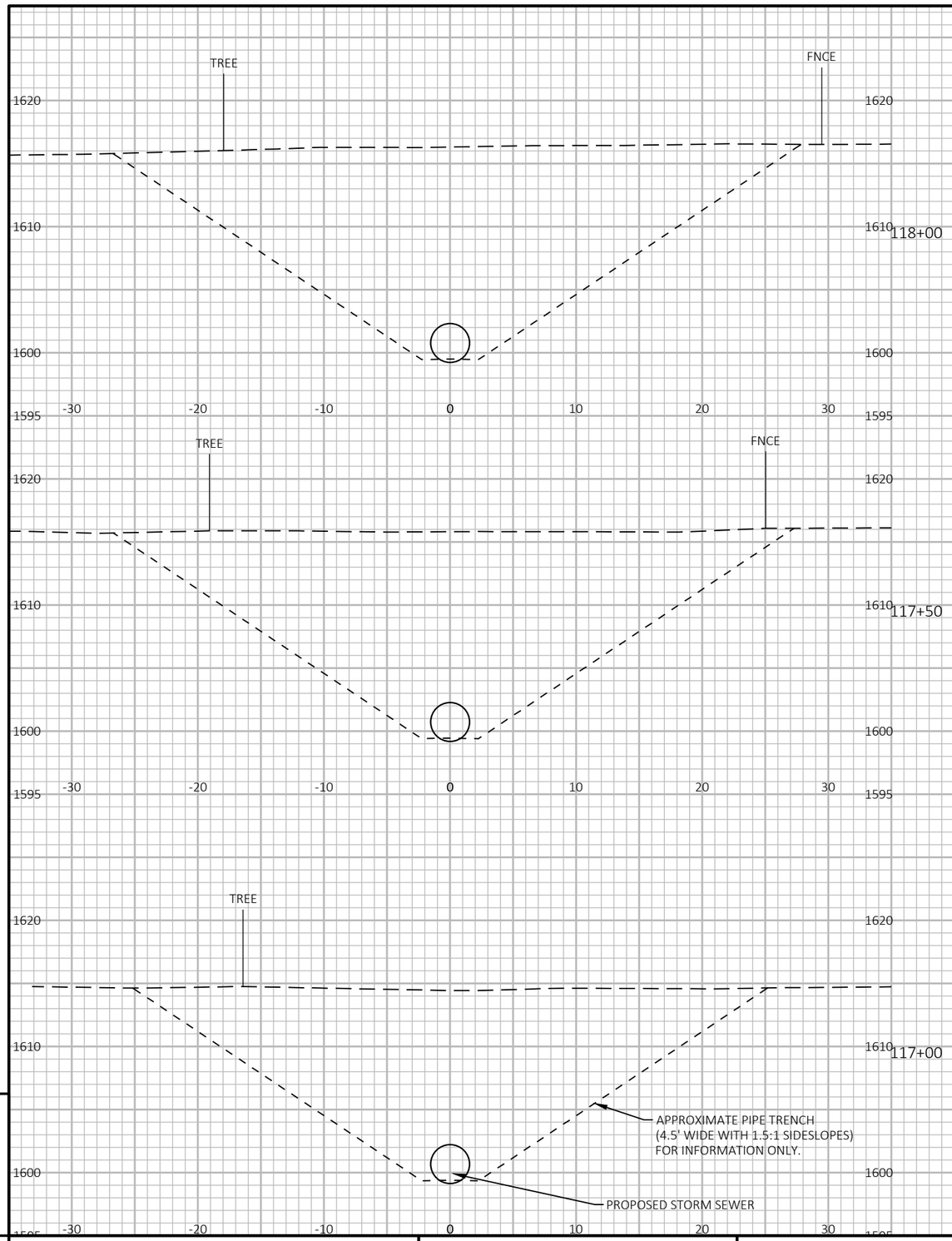
FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 20

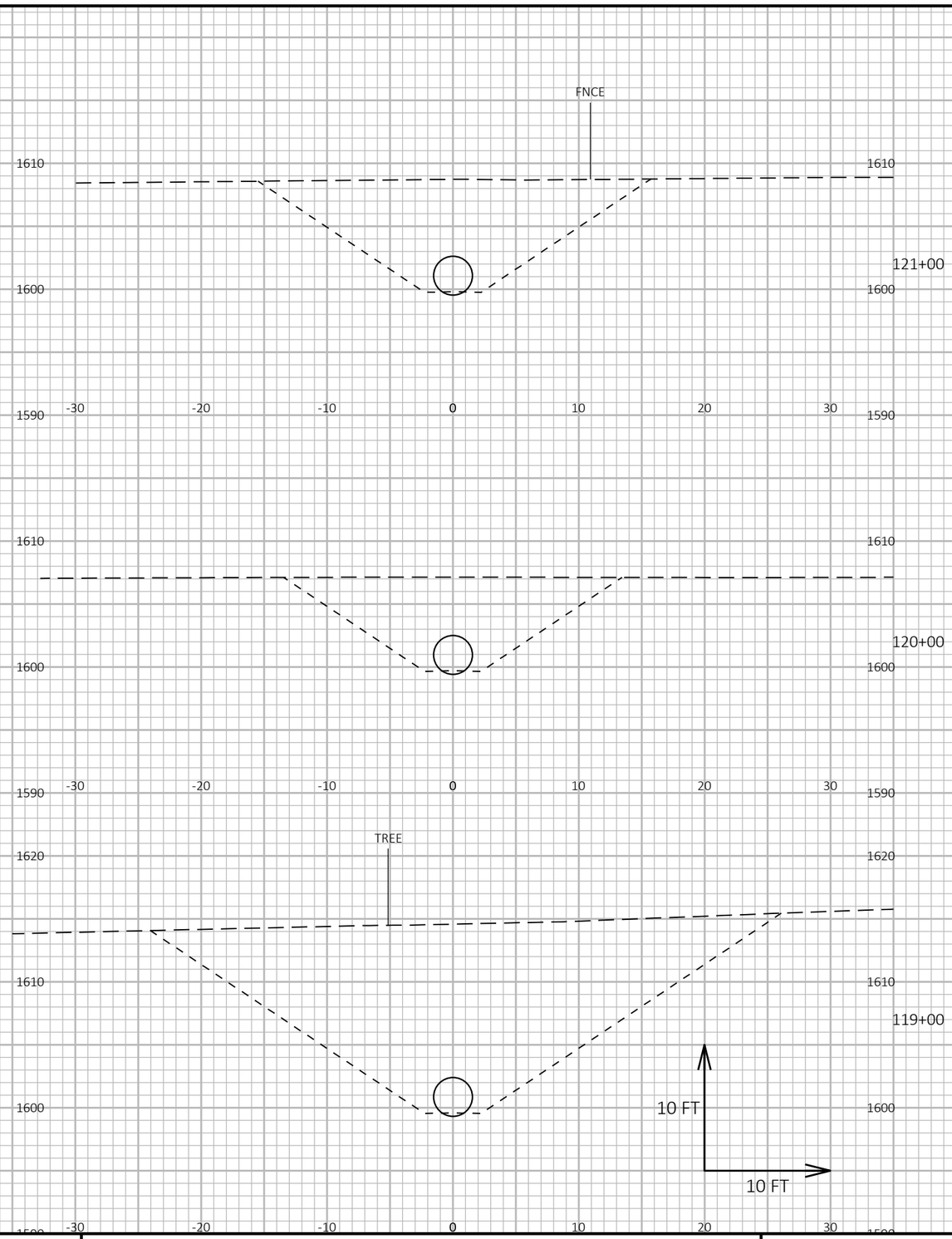
PLOT DATE : 10/6/2021 10:18 AM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49


R/L
EDGE OF ASPHALT
GAULKE ROAD
FNCE
BLEACHERS
116+00
115+00
114+00
1620
1610
1600
1595
-30
-20
-10
0
10
20
30


GAULKE ROAD
116+81
116+28
116+11
R/L
EDGE OF ASPHALT
GAULKE ROAD
10 FT
10 FT
1620
1610
1600
1595
1590
-30
-20
-10
0
10
20
30





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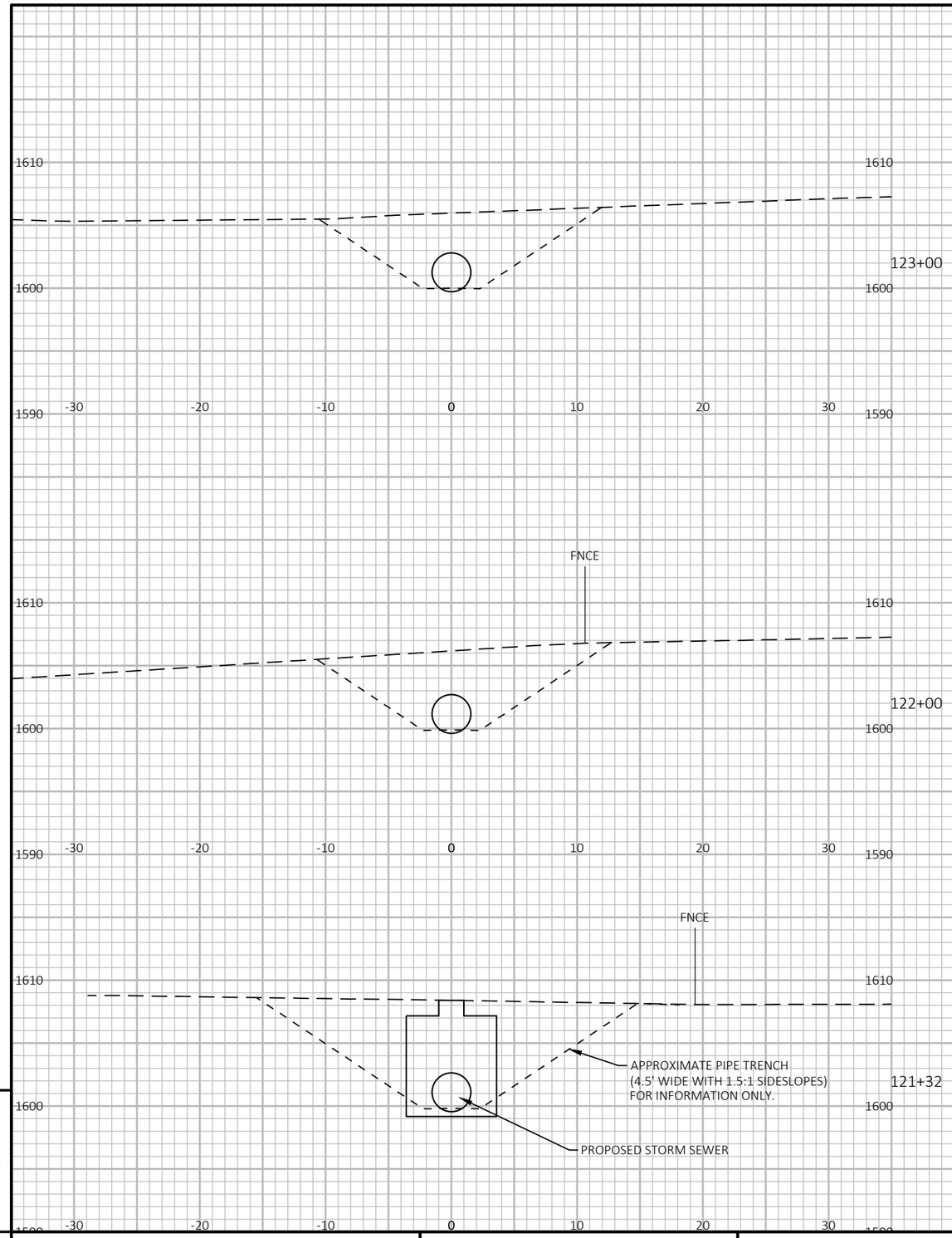
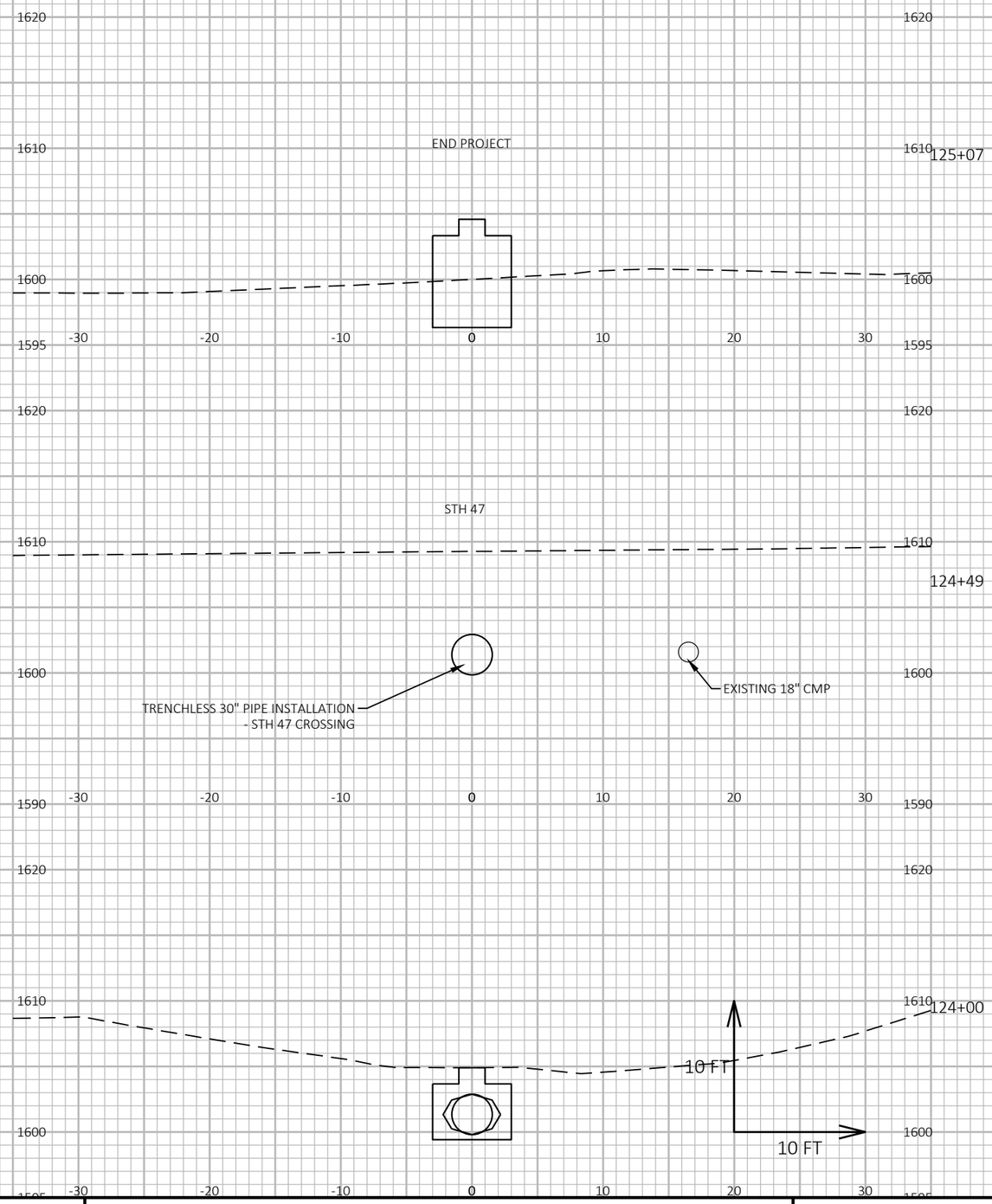
PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	CROSS SECTIONS: STORMWATER DRAINAGE IMPROVEMENTS	SHEET 47	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 22

PLOT DATE : 10/6/2021 10:19 AM PLOT BY : JACOB FRIBERG PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49





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PROJECT NO: 9231-07-72	HWY: STH 47	COUNTY: VILAS	CROSS SECTIONS: STORMWATER DRAINAGE IMPROVEMENTS	SHEET 48	E

FILE NAME : G:\2018-PROJ\18115028\C3D\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 23

PLOT DATE : 10/6/2021 10:19 AM PLOT BY : JACOB FRIBERG PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Notes

Wisconsin Department of Transportation

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