SUP FEB 13

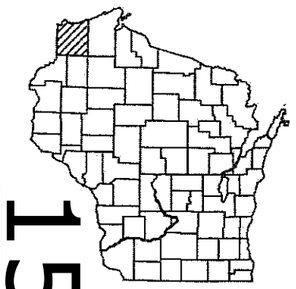
PROJECT ID: 8760-00-60 & 8760-00-61

WITH: N/A

COUNTY: DOUGLAS

ORDER OF SHEETS

TOTAL SHEETS = 58



N

15

DESIGN DESIGNATION

A.A.D.T.	2013	=	2500
A.A.D.T.	2033	=	3300
D.H.V.	2033	=	535
D.D.		=	58/42
T.		=	5.3%
DESIGN SPEED		=	25 MPH STA. 30+00 - STA. 30+40 55 MPH STA. 30+40 - STA. 32+00
ESALS		=	292,000

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

UTILITIES

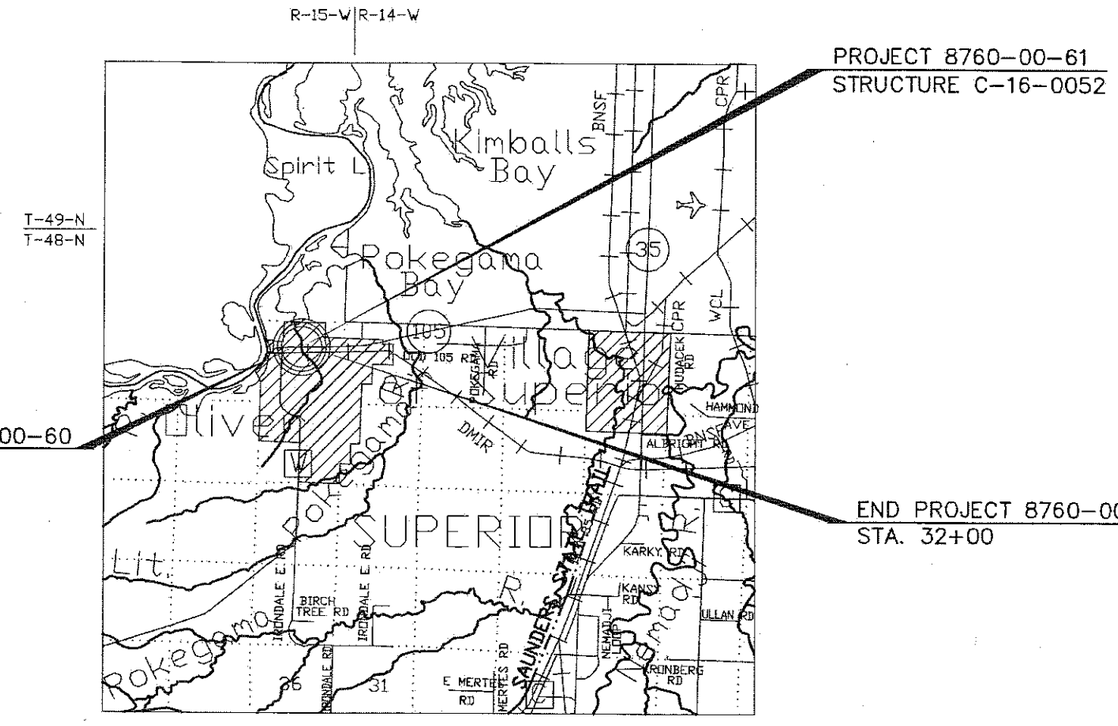
- ELECTRIC
- FIBER OPTIC
- GAS
- SANITARY SEWER
- STORM SEWER
- TELEPHONE
- WATER
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8760-00-60	———	—
8760-00-61	WISC 2013054	1

V OLIVER, UNION STREET
CULVERT W OF IRONDALE AVE C-16-0052
STH 105
DOUGLAS COUNTY

STATE PROJECT NUMBER	STATE PROJECT NUMBER
8760-00-60	8760-00-61



TOTAL NET LENGTH OF CENTERLINE
PROJECT 8760-00-60 = 0.038 MI.
PROJECT 8760-00-61 = 0.000 MI.
TOTAL = 0.038 MI.

LAYOUT SCALE 0 1 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), DOUGLAS COUNTY.

ORIGINAL PLANS PREPARED BY

JEWELL associates engineers, inc.
Engineers - Planners - Surveyors

WISCONSIN PATRICK A. ECKELBERG E-38776 WISCONSIN RAPIDS, WIS. PROFESSIONAL ENGINEER

09/28/2012

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	WISDOT/JEWELL ASSOCIATES ENGINEERS, INC.
Designer	JEWELL ASSOCIATES ENGINEERS, INC.
Project Manager	BRENDAN DIRKES, P.E.
Regional Examiner	DANIEL DUBRAY
Regional Supervisor	ANDREW STENSLAND, P.E.
C.O. Examiner	JE

APPROVED FOR THE DEPARTMENT
DATE: 10/1/12 Andy Stensland (Signature)

E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\DETAILS\COVER.DWG

PLOT DATE : 2-10-12

PLOT BY : ECKELBERG, PATRICK

WISDOT/CADDS SHEET 14

2

UTILITIES

ELECTRIC

SUPERIOR WATER, LIGHT, AND POWER
2915 HILL AVE.
SUPERIOR, WI 54880–5513
ATTN: KEVIN HABERMAN
PH: (715) 395–6315
E–MAIL: N/A

ELECTRIC

AMERICAN TRANSMISSION COMPANY
P.O. BOX 6113
DE PERE, WI 54115–6113
ATTN: MIKE OLSEN
PH: (920) 660–2390
E–MAIL: molsen@atcllc.com

SANITARY SEWER

VILLAGE OF OLIVER
2125 E. STATE STREET
SUPERIOR, WI 54880–8145
ATTN: GARY ABRAHAM
PH: (715) 394–3171
MOBILE: (218) 391–2570
E–MAIL: villageofoliver@centurytel.net

CATV

CHARTER COMMUNICATIONS
640 GARFIELD AVE.
DULUTH, MN 55802–2632
ATTN: JOHN QUADE
PH: (218) 348–8401
E–MAIL: jquade@chartercom.com

TELEPHONE

CENTURYLINK
2426 75TH AVENUE
PO BOX 518
OSCEOLA, WI 54020–0518
ATTN: MIKE VANDEN BOS
PH: (715) 294–2463
E–MAIL: mike.vandenbos@centurylink.com

DIGGERS HOTLINE

Call 811 Three Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impared TTY: (800) 542-2289
www.DiggersHotline.com

* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

CONTACTS

DESIGN CONSULTANT:

JEWELL ASSOCIATES ENGINEERS, INC.
310 E. JACKSON ST.
WISCONSIN RAPIDS, WI 54494
ATTN: GREG JEWELL, P.E., R.L.S.
PH: (715) 424–2424
FAX: (715) 424–2421
E–MAIL: greg.jewell@jewellassoc.com

WDNR LIASON:

STATE OF WISCONSIN
DEPT. OF NATURAL RESOURCES
NORTHERN REGION OFFICE
810 MAPLE STREET
SPOONER, WI 54801
ATTN: AMY CRONK
PH: (715) 635–4229
FAX: (715) 635–4105
E–MAIL: Amy.Cronk@wisconsin.gov

RAILROAD REPRESENTATIVE:

CANADIAN NATIONAL RAILWAY CO
(WISCONSIN CENTRAL LTD)
1625 DEPOT STREET
STEVENS POINT, WI 54481
ATTN: JACKIE MACEWICZ
PH: (715) 345–2503
FAX: (715) 345–2507
E–MAIL: Jackie.Macewicz@cn.ca

LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment
AC	Acre
AGG	Aggregate
AH	Ahead
<	Angle
ASPH	Asphaltic
AVG	Average
ADT	Average Daily Traffic
BK	Back
BF	Back Face
BM	Bench Mark
BR	Bridge
CABC	Crushed Aggregate Base Course
CL or C/L	Center Line
CC	Center to Center
CTH	County Trunk Highway
CR	Creek
CR	Crushed
CY or CU YD	Cubic Yard
CP	Culvert Pipe
C & G	Curb and Gutter
D	Degree of Curve
DHV	Design Hour Volume
DIA	Diameter
E	East
X	East Grid Coordinate
EB	Eastbound
ELEC	Electric (al)
EL or ELEV	Elevation
ESALS	Equivalent Single Axle Loads
EBS	Excavation Below Subgrade
FF	Face to Face
FE	Field Entrance
F	Fill
FG	Finished Grade
FL or F/L	Flow Line
FTG	Footing
GN	Grid North
HT	Height
CWT	Hundredweight
HYD	Hydrant
INL	Inlet
ID	Inside Diameter
INV	Invert
IP	Iron Pipe or Pin
IRS	Iron Rod Set
JT	Joint
JCT	Junction
LHF	Left–Hand Forward
L	Length of Curve
LIN FT or LF	Linear Foot
LC	Long Chord of Curve
MH	Manhole
MB	Mailbox
ML or M/L	Match Line
N	North
NC	Normal Crown
Y	North Grid Coordinate
NB	Northbound
OD	Outside Diameter
PLE	Permanent Limited Easement
PT	Point
PC	Point of Curvature
PI	Point of Intersection
PRC	Point of Reverse Curvature
PT	Point of Tangency
POC	Point On Curve
POT	Point on Tangent
PVC	Polyvinyl Chloride
PCC	Portland Cement Concrete
LB	Pound
PSI	Pounds Per Square Inch
PE	Private Entrance
R	Radius
RR	Railroad
R	Range
RL or R/L	Reference Line
RP	Reference Point
RCCP	Reinforced Concrete Culvert Pipe
REQD	Required
RES	Residence or Residential
RW	Retaining Wall
RT	Right
RHF	Right–Hand Forward
R/W	Right–of–Way
R	River
RD	Road
RDWY	Roadway
SALV	Salvaged
SAN S	Sanitary Sewer
SEC	Section
SHLDR	Shoulder
SHR	Shrinkage
SW	Sidewalk
S	South
SB	Southbound
SQ	Square
SF or SQ FT	Square Feet
SY or SQ YD	Square Yard
STD	Standard
SDD	Standard Detail Drawings
STH	State Trunk Highways
STA	Station
SS	Storm Sewer
SG	Subgrade
SE	Superelevation
SL or S/L	Survey Line
SV	Septic Vent
T	Tangent
TEL	Telephone
TEMP	Temporary
TI	Temporary Interest
TLE	Temporary Limited Easement
t	Ton
TC	Top Of Curb
T or TN	Town
TRANS	Transition
TL or T/L	Transit Line
T	Trucks (percent of)
TYP	Typical
UNCL	Unclassified
UG	Underground Cable
USH	United States Highway
VAR	Variable
V	Velocity or Design Speed
VERT	Vertical
VC	Vertical Curve
VOL	Volume
WM	Water Main
WV	Water Valve
W	West
WB	Westbound
YD	Yard

2

GENERAL NOTES

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

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

DISTURBED AREAS SHOWN WITHIN THE RIGHT–OF–WAY, AND OUTSIDE OF THE FINISHED SHOULDER POINTS SHALL BE FERTILIZED AND SEEDED MIXTURE NO. 20.

WHEN THE QUANTITY OF THE ITEM OF BASE OR SURFACE LAYER IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

INLET AND OUTLET ELEVATIONS FOR CULVERT PIPES AS SHOWN ON THE PLAN MAY BE ADJUSTED TO FIT EXISTING FIELD CONDITIONS WITH APPROVAL BY THE ENGINEER.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) DOUGLAS COUNTY.

THE 6–INCH ASPHALTIC SURFACE SHALL BE PLACED WITH A 2 1/2–INCH BOTTOM LAYER. A 1 3/4–INCH MIDDLE LAYER, AND A 1 3/4–INCH UPPER LAYER.

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS APPROVED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

JOINT TIES FOR CONCRETE PIPE SHALL BE INCIDENTAL TO THE CONCRETE PIPE BID ITEM. ALL JOINTS OF THE CULVERT PIPE SHALL BE JOINED WITH TWO JOINT TIES. REFER TO THE STRUCTURE PLANS FOR THE NUMBER OF TIES REQUIRED.

EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. EROSION CONTROL ITEMS ON THE PLAN ARE AT SUGGESTED LOCATIONS. THE EXACT LOCATIONS AND DIMENSIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. ALL EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER IN THE FIELD DEEMS THE DEVICES NO LONGER NECESSARY.

SILT FENCE SHALL BE PLACED AS SHOWN ON THE EROSION CONTROL PLAN AND MISCELLANEOUS QUANTITY SHEET OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION OF THE CULVERTS.

FILL EXPANSION OF EARTHWORK IS VARIABLE AND IS ESTIMATED AT 25%.

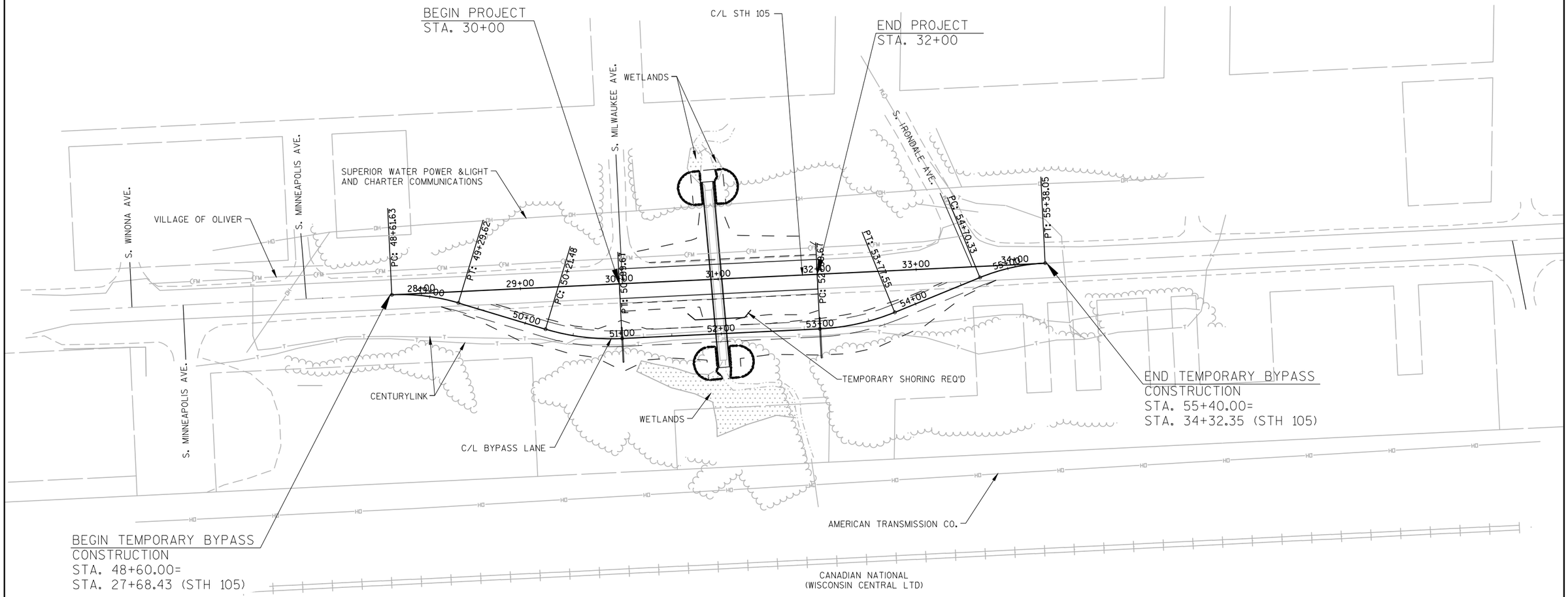
WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOT OPERATE EQUIPMENT BEYOND THE SLOPE INTERCEPTS IN AREAS OF DELINEATED WETLANDS AS SHOWN ON PLAN.

NON–ORGANIC MATERIAL EXCAVATED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES CULVERTS C–16–0052" SHALL BE USED AS BACKFILL MATERIAL UNDER THAT ITEM, HOWEVER EXCAVATED SOILS MAY BE ABOVE THEIR OPTIMUM MOISTURE CONTENT AND COULD REQUIRE DRYING PRIOR TO PLACEMENT IN ORDER TO OBTAIN THE REQUIRED COMPACTION LEVEL.

	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= 4.64 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.79 ACRES

2



PROJECT NO: 8760-00-60, 8760-00-61	HWY: STH 105	COUNTY: DOUGLAS	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\DETAILS\PROJECT OVERVIEW2_RECOVER_RECOVER.DWG
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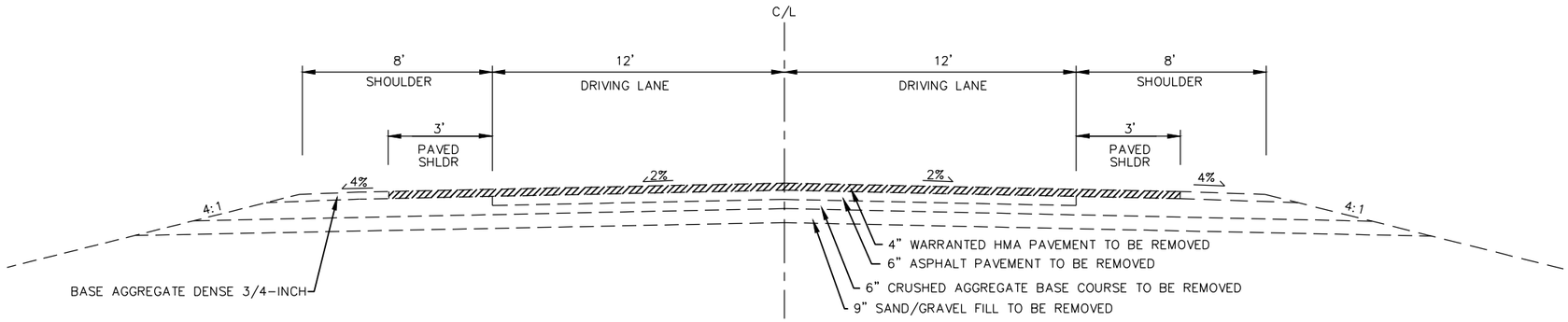
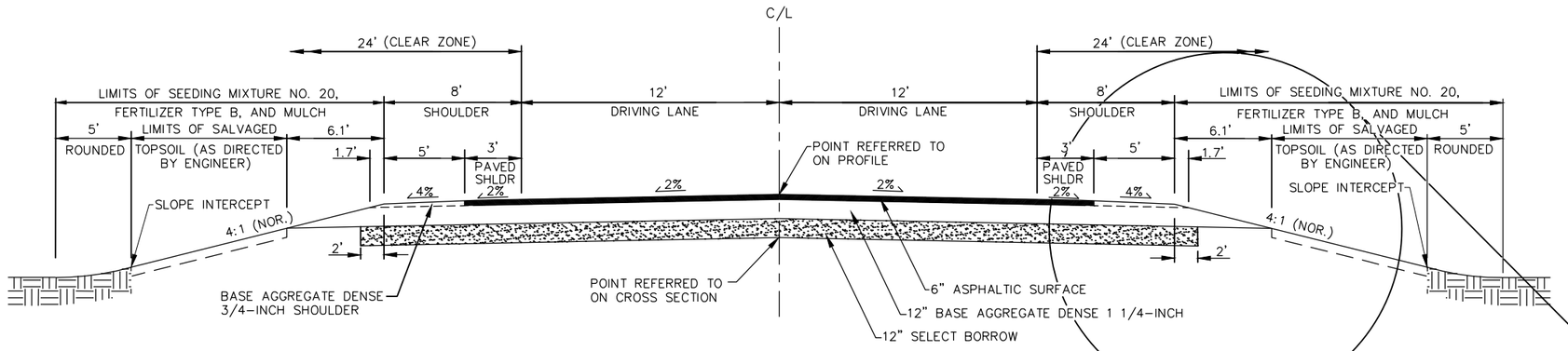
PLOT DATE : 10/18/2012
PLOT TIME : 9:03:15 AM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 0.500000



TYPICAL EXISTING SECTION

STH 105
STA. 30+00 – STA. 32+00



TYPICAL FINISHED SECTION

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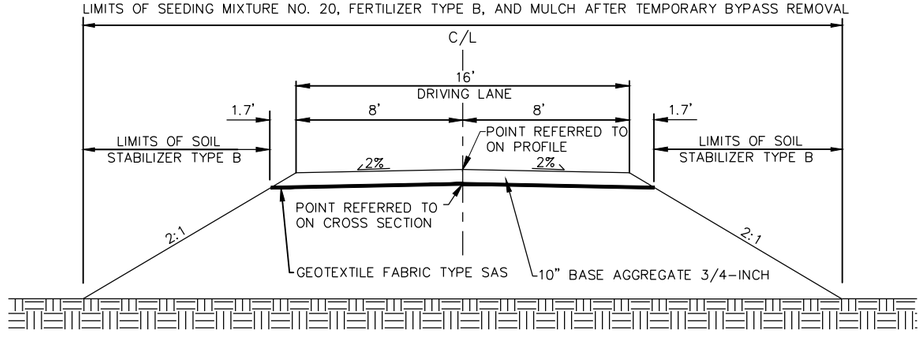
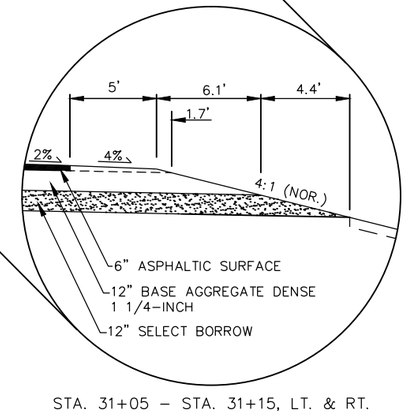


TYPICAL FINISHED SECTION FOR TEMPORARY BYPASS

STA. 48+60 – STA. 55+40



STA. 31+05 – STA. 31+15, LT. & RT.

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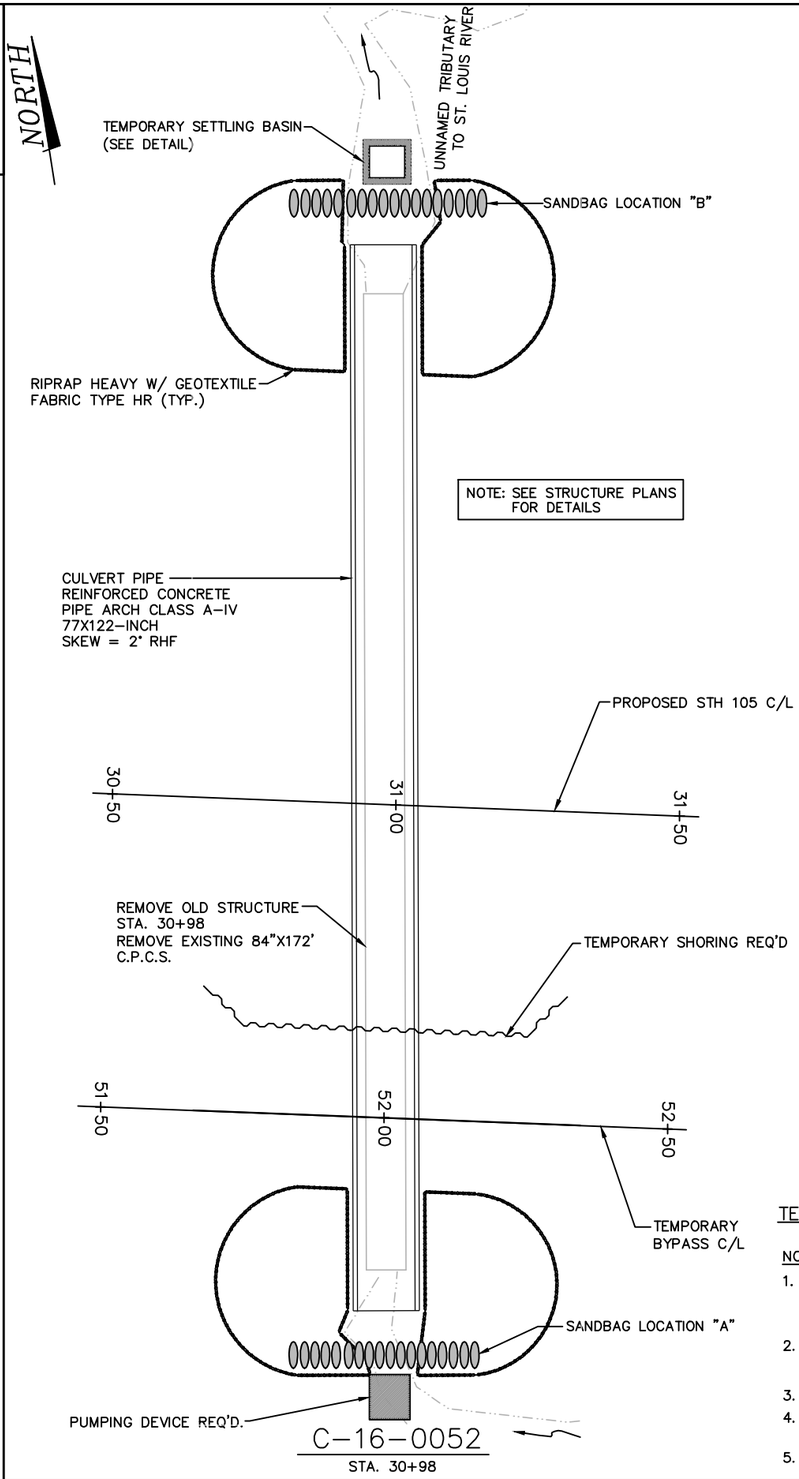
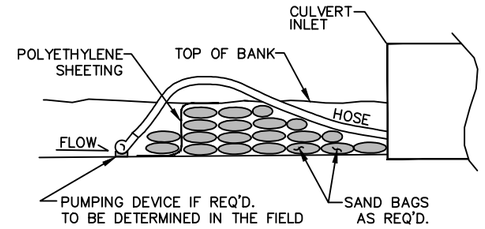
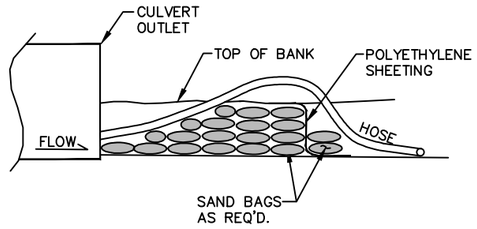


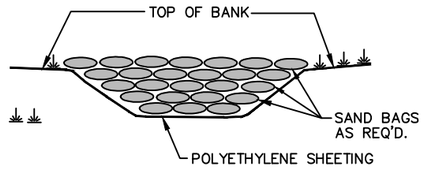
C-16-0052
STA. 30+98



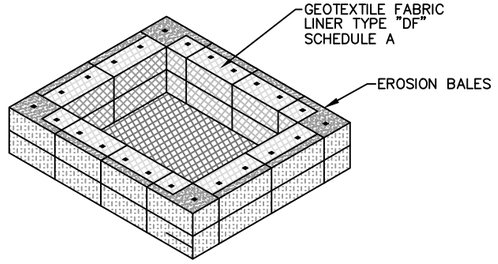
SAND BAG LOCATION "A" DETAIL
(TO STOP FLOW INTO WORK AREA)



SAND BAG LOCATION "B" DETAIL
(TO STOP BACKWASH INTO WORK AREA)



TYPICAL SAND BAG INSTALLATION
IN EXISTING CHANNEL



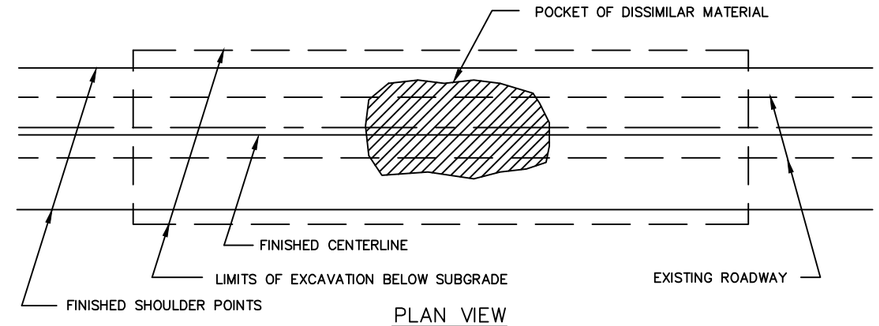
TEMPORARY SETTLING BASIN
SIZE TO BE DETERMINED BY WATER QUANTITY AND QUALITY

TEMPORARY SETTLING BASIN

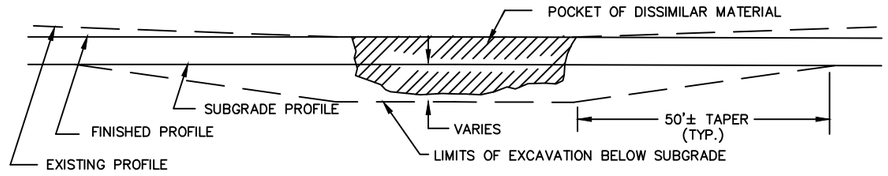
SIZE TO BE DETERMINED BY WATER QUANTITY AND QUALITY

NOTES:

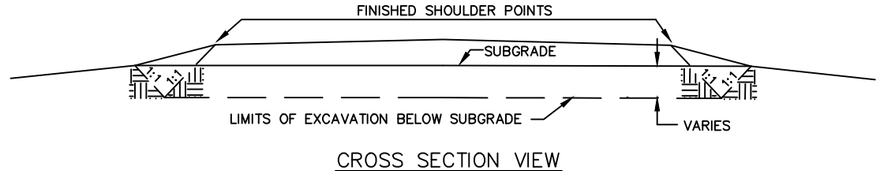
1. THE TEMPORARY SETTLING BASIN SHALL BE COMPLETED PRIOR TO BEGINNING OF PUMPING OPERATIONS. CONTRACTOR SHALL PUMP WATER FOR STRUCTURE EXCAVATION TO BASIN PRIOR TO DISCHARGE INTO THE STREAM.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC TYPE DF AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF OF THE PROJECT SITE.
3. PAID FOR AS EROSION BALES AND GEOTEXTILE FABRIC TYPE DF.
4. PUMPING DEVICE OR ENGINEER APPROVED EQUAL WILL BE PAID FOR UNDER THE BID ITEM "CULVERT PIPE REINFORCED CONCRETE PIPE ARCH CLASS A-IV 77X122-INCH"
5. SANDBAGS ARE CONSIDERED INCIDENTAL TO THE BID ITEM "POLYETHYLENE SHEETING".



PLAN VIEW



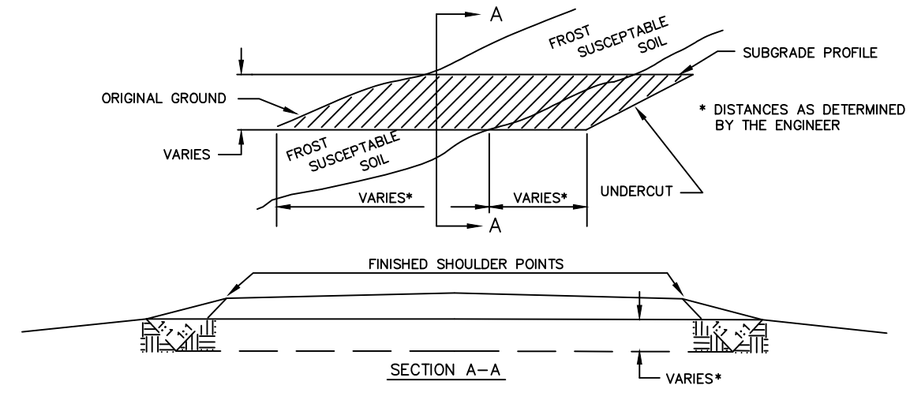
PROFILE VIEW



CROSS SECTION VIEW

1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.

EXCAVATION BELOW SUBGRADE (E.B.S.)



SECTION A-A

DETAIL FOR EXCAVATION
AT MOUNTH OF CUTS

PROJECT NO: 8760-00-60, 8760-00-61	HWY: STH 105	COUNTY: DOUGLAS	CONSTRUCTION DETAILS	SHEET 5	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\DETAILS\CULVERT PIPE DETAILS.DWG
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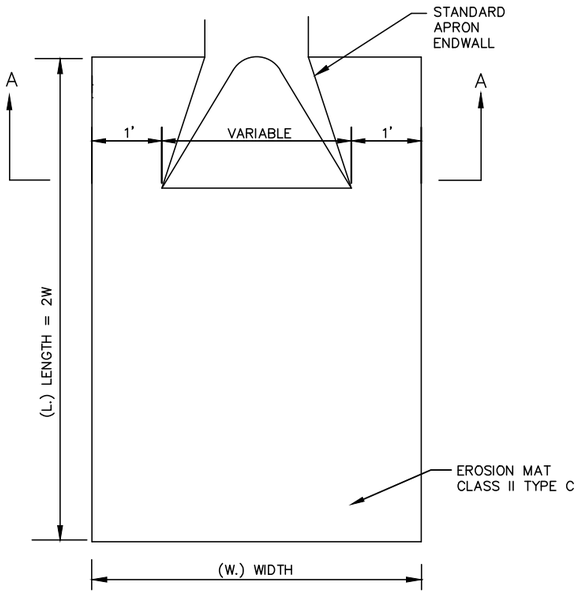
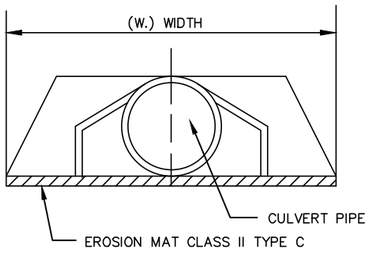
PLOT TIME : 1:56:20 PM
PLOT BY : ECKERT, PATRICK
PLOT NAME :
PLOT SCALE : 1 IN:20 FT_XREF



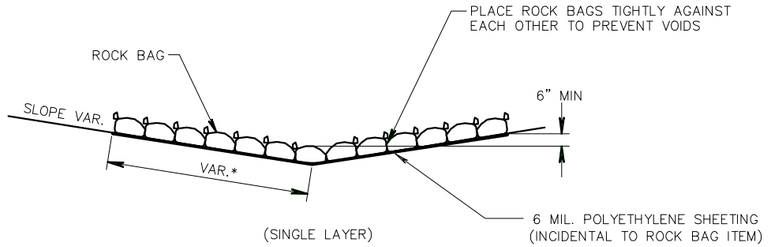
PLAN VIEW

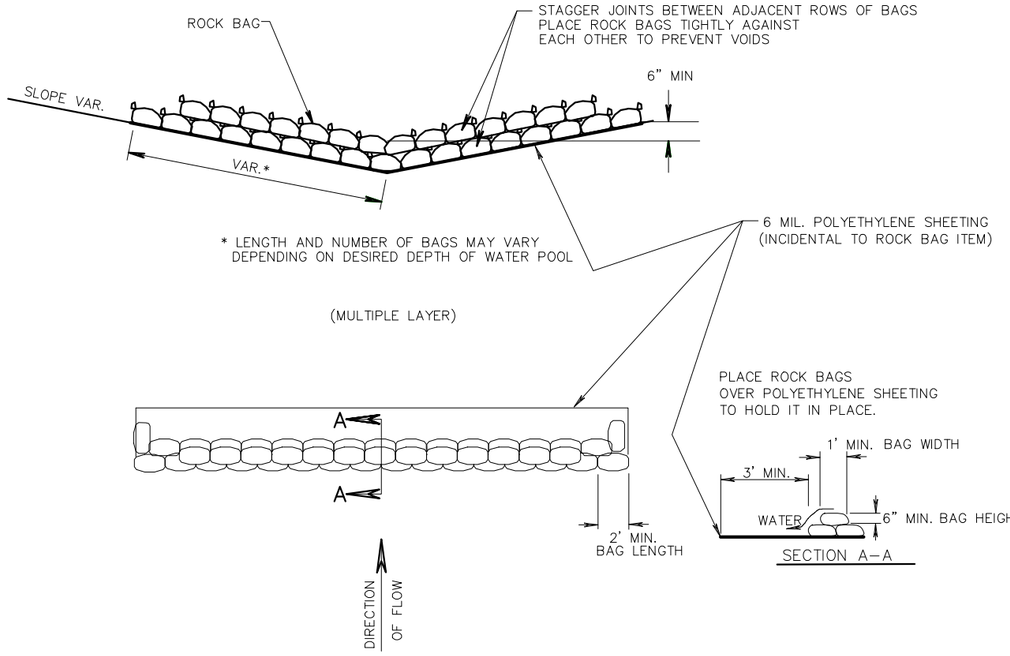


SECTION A–A

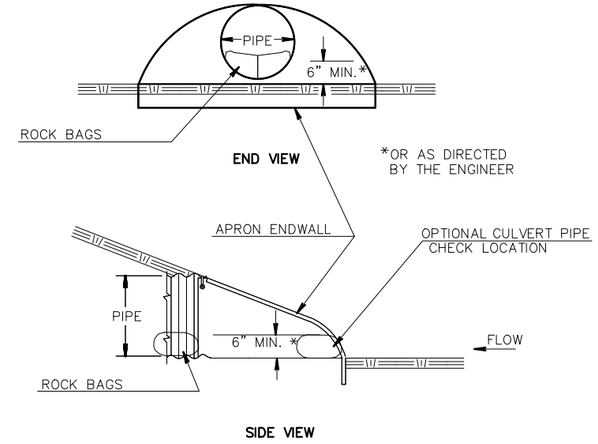
EROSION MAT CLASS II
TYPE C DISCHARGE APRON

LOCATION	L X W
STA. 51+00, LT.	4' X 8'
STA. 53+00, LT.	4' X 8'

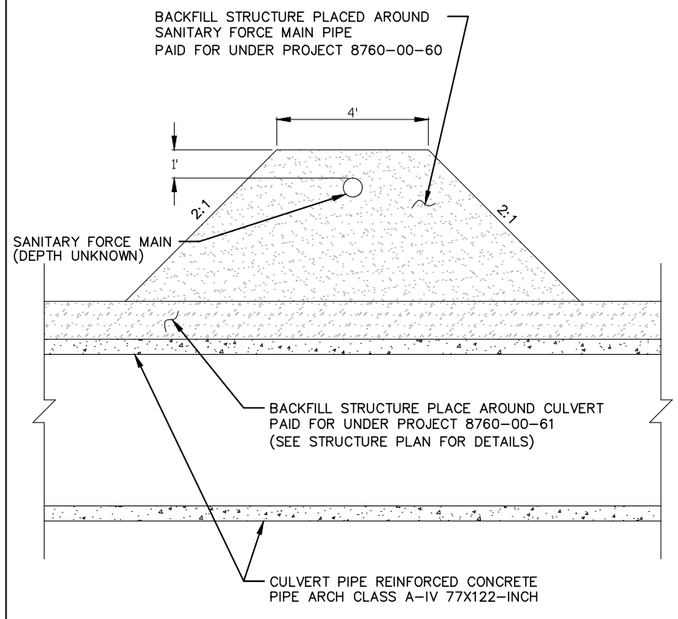




ROCK BAGS DITCH CHECK



CULVERT PIPE CHECKS
(INSTALL ON INLET END ONLY)



SANITARY FORCE MAIN BACKFILL DETAIL

2

LEGEND

- EROSION MAT CLASS II TYPE C
- RIPRAP HEAVY OVER GEOTEXTILE FABRIC TYPE HR
- SILT FENCE
- FLOW ARROW
- CULVERT PIPE CHECK
- ROCK BAGS

NOTE: PLACE SOIL STABILIZER TYPE B ON TEMPORARY BYPASS SLOPES (STAGE 1 CONSTRUCTION) AND ON STH 105, RT. TEMPORARY CONSTRUCTION SLOPES (STAGE 2 CONSTRUCTION).

NORTH

BEGIN PROJECT
STA. 30+00

END PROJECT
STA. 32+00

BEGIN TEMPORARY BYPASS
STA. 48+60

END TEMPORARY BYPASS
STA. 55+40

WETLANDS

SLOPE INTERCEPTS

C/L TEMPORARY BYPASS

C/L STH 105

S. MILWAUKEE AVE.

S. IRONDALE AVE.

TRIBUTARY TO THE ST. LOUIS RIVER

PC: 48+61.63

PT: 49+29.62

PC: 50+21.48

PC: 50+99.67

PC: 52+99.67

PT: 53+17.55

PC: 54+10.33

PT: 55+38.05

R/W

P.L.

OH

FM

T

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	EROSION CONTROL	SHEET 7	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\EROSION CONTROL\EC.DWG
LAYOUT : EROSION CONTROL

PLOT DATE : 10/17/2012
PLOT TIME : 9:17:50 AM

PLOT BY : ECKELBERG, PATRICK

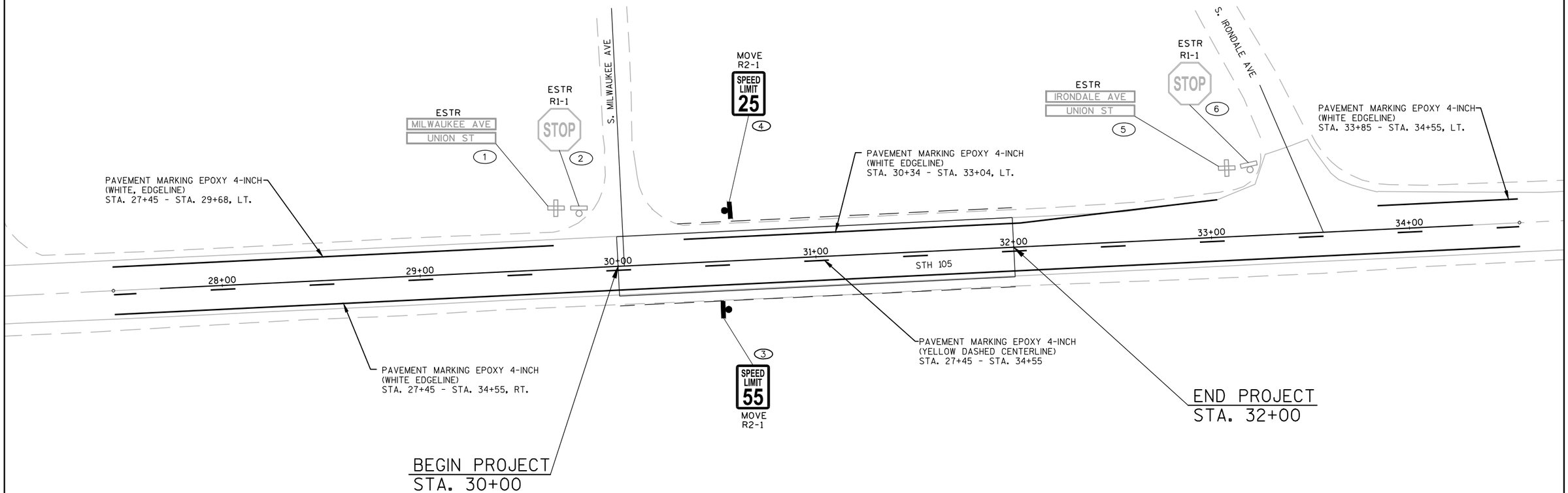
PLOT SCALE : 1" = 1'

2

LEGEND

- — EXISTING SIGN MOUNTED ON POST(S)
- — PROPOSED SIGN MOUNTED ON POST TO BE MOVED
- (XXX) — DENOTES SIGN NUMBER
- ESTR — EXISTING SIGN TO REMAIN

NORTH



PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	PERMANENT SIGNING AND PAVEMENT MARKING PLAN	SHEET 8	E

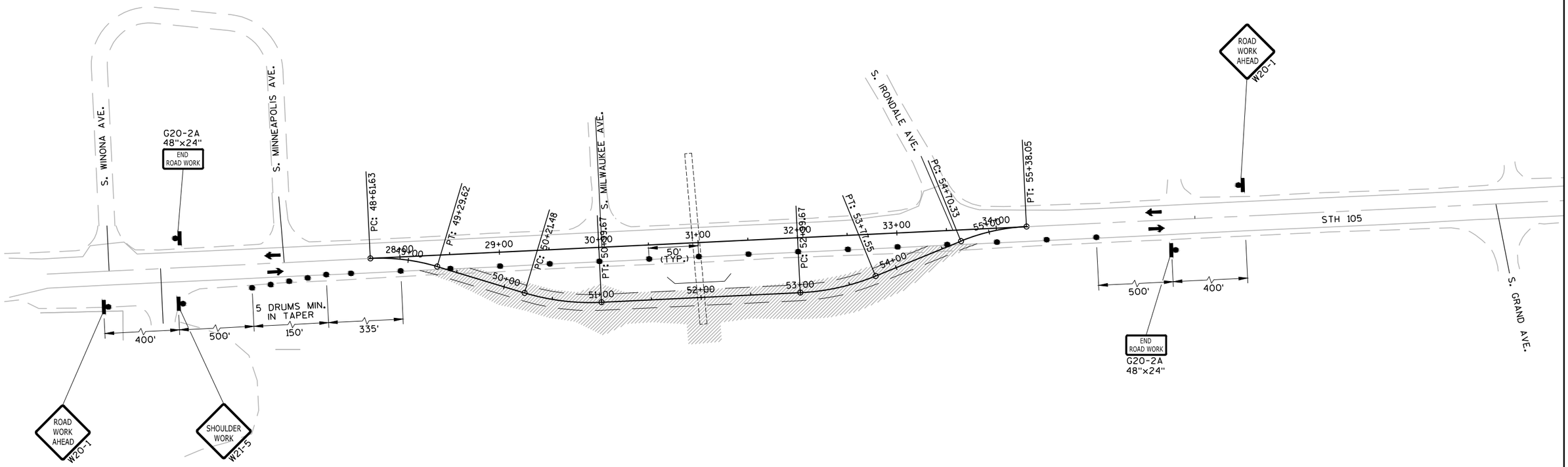
FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\PERMANENT SIGNING\SIGNING AND MARKING.DWG
LAYOUT : LAYOUT

PLOT DATE : 9/28/2012
PLOT TIME : 11:12:47 AM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1" = 1'

2



GENERAL NOTES:

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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

EQUIPMENT, VEHICLES, OR MATERIAL SHOULD NOT BE STORED IN BUFFER SPACE.

STAGE 1

STAGE 1 TRAFFIC:
2-WAY TRAFFIC WILL UTILIZE EXISTING STH 105.

STAGE 1 CONSTRUCTION:
CONSTRUCT TEMPORARY BYPASS.

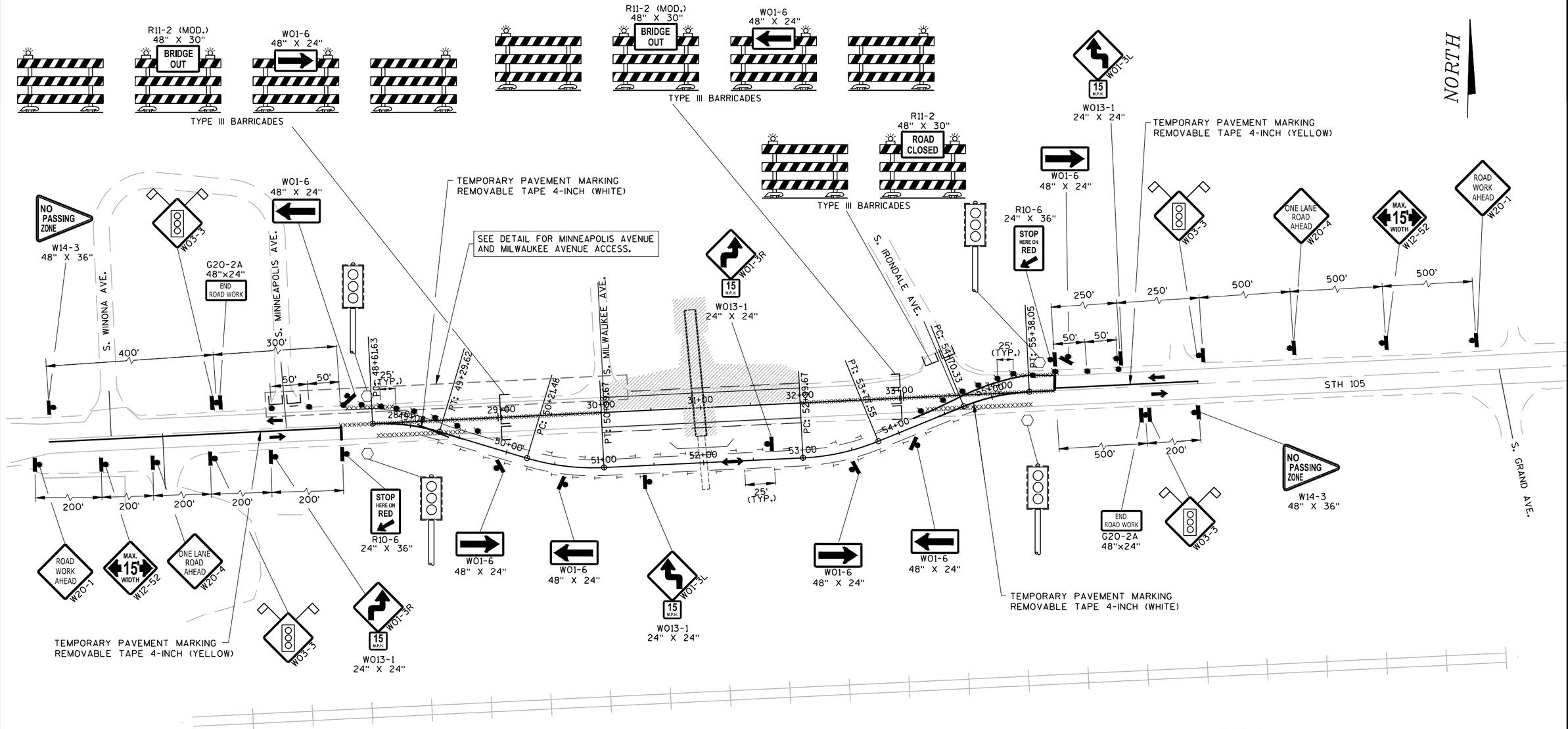
LEGEND

- WORK ZONE
- POST MOUNTED SIGN
- TRAFFIC CONTROL DRUM WITHOUT/WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- TYPE III BARRICADE (8'EQUIVALENT) WITHOUT/WITH SIGN
- TEMPORARY DELINEATOR, CRYSTAL (WHITE) (DOUBLE DELINEATOR, TWO-WAY)
- DIRECTION OF TRAFFIC FLOW
- REMOVING PAVEMENT MARKING
- FLAGS, 16"X16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- 4" X 6" WOOD POST

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	TRAFFIC CONTROL: STAGE 1	SHEET 9	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\TRAFFIC CONTROL\TRAFFIC CONTROL_NO REFERENCE.DWG
LAYOUT : 1
PLOT DATE : 10/18/2012
PLOT TIME : 9:21:24 AM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 1" = 1'

2



W057-52
36" X 24"

INSTALL AT INTERSECTION OF
STH 105 AND STH 35

STAGE 2

STAGE 2 TRAFFIC:
ONE LANE, 2-WAY TRAFFIC WILL UTILIZE NEWLY CONSTRUCTED TEMPORARY BYPASS AND TEMPORARY TRAFFIC SIGNALS.

S. MINNEAPOLIS AVE., S. MILWAUKEE AVE., AND S. IRONDALE AVE. WILL BE CLOSED DURING STAGE 2.

STAGE 2 CONSTRUCTION:
INSTALL REINFORCED CONCRETE CULVERT PIPE AND CONSTRUCT STH 105 WESTBOUND LANE.

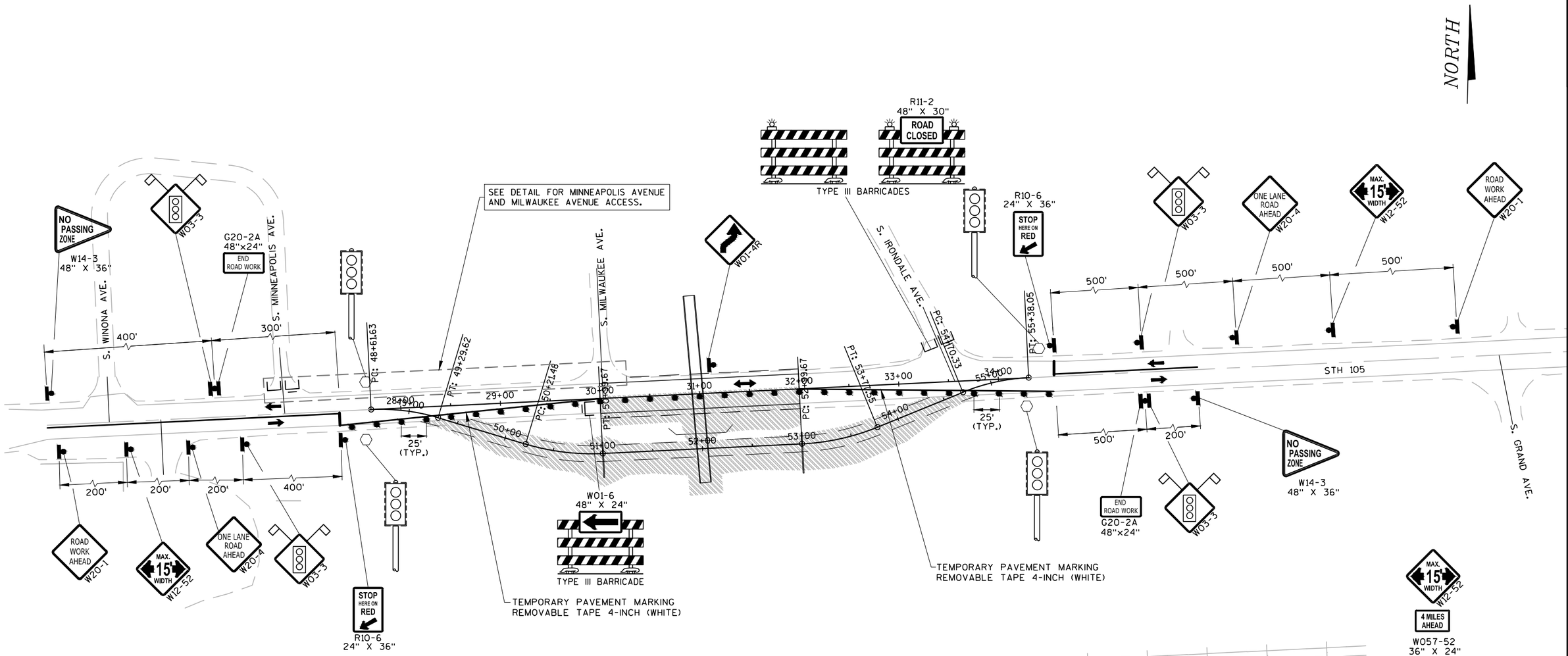
LEGEND

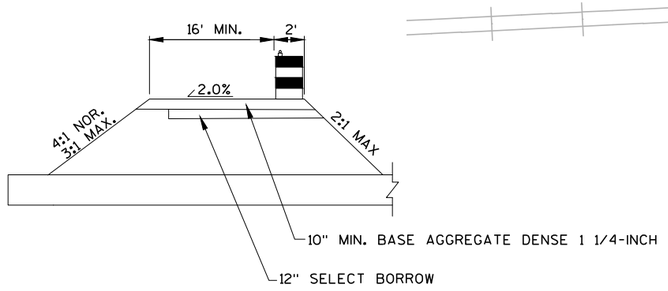
- WORK ZONE
- POST MOUNTED SIGN
- TRAFFIC CONTROL DRUM WITHOUT/WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- TYPE III BARRICADE (8'EQUIVALENT) WITHOUT/WITH SIGN
- TEMPORARY DELINEATOR, CRYSTAL (WHITE) (DOUBLE DELINEATOR, TWO-WAY)
- DIRECTION OF TRAFFIC FLOW
- REMOVING PAVEMENT MARKING
- FLAGS, 16"X16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- 4" X 6" WOOD POST

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	TRAFFIC CONTROL: STAGE 2	SHEET 10	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\TRAFFIC CONTROL\TRAFFIC CONTROL_NO REFERENCE.DWG
LAYOUT : 2
PLOT DATE : 10/18/2012
PLOT TIME : 9:44:07 AM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 1" = 1'

2





STAGE 2 TYPICAL SECTION

STH 105 W.B. LANE
STA. 30+00 - STA. 32+00

STAGE 3

STAGE 3 TRAFFIC:
ONE LANE, 2-WAY TRAFFIC WILL UTILIZE NEWLY CONSTRUCTED STH 105 WESTBOUND LANE AND TEMPORARY TRAFFIC SIGNALS.

S. MINNEAPOLIS AVE., S. MILWAUKEE AVE., AND S. IRONDALE AVE. WILL BE CLOSED DURING STAGE 3.

STAGE 3 CONSTRUCTION:
INSTALL REINFORCED CONCRETE CULVERT PIPE AND CONSTRUCT STH 105 EASTBOUND LANE.

REMOVE TEMPORARY BYPASS.

PLACE ASPHALTIC SURFACE AND SHOULDERING.

NOTE: CONTRACTOR TO PROVIDE TRANSITION FROM THE EXISTING TOP OF PAVEMENT TO THE TOP OF 10" BASE AGGREGATE DENSE 1 1/4-INCH IN 25 FEET. REMOVAL OF TRANSITIONS SHALL BE PAID UNDER BID ITEM "PREPARE FOUNDATION FOR ASPHALTIC PAVING 01. 8760-00-60."

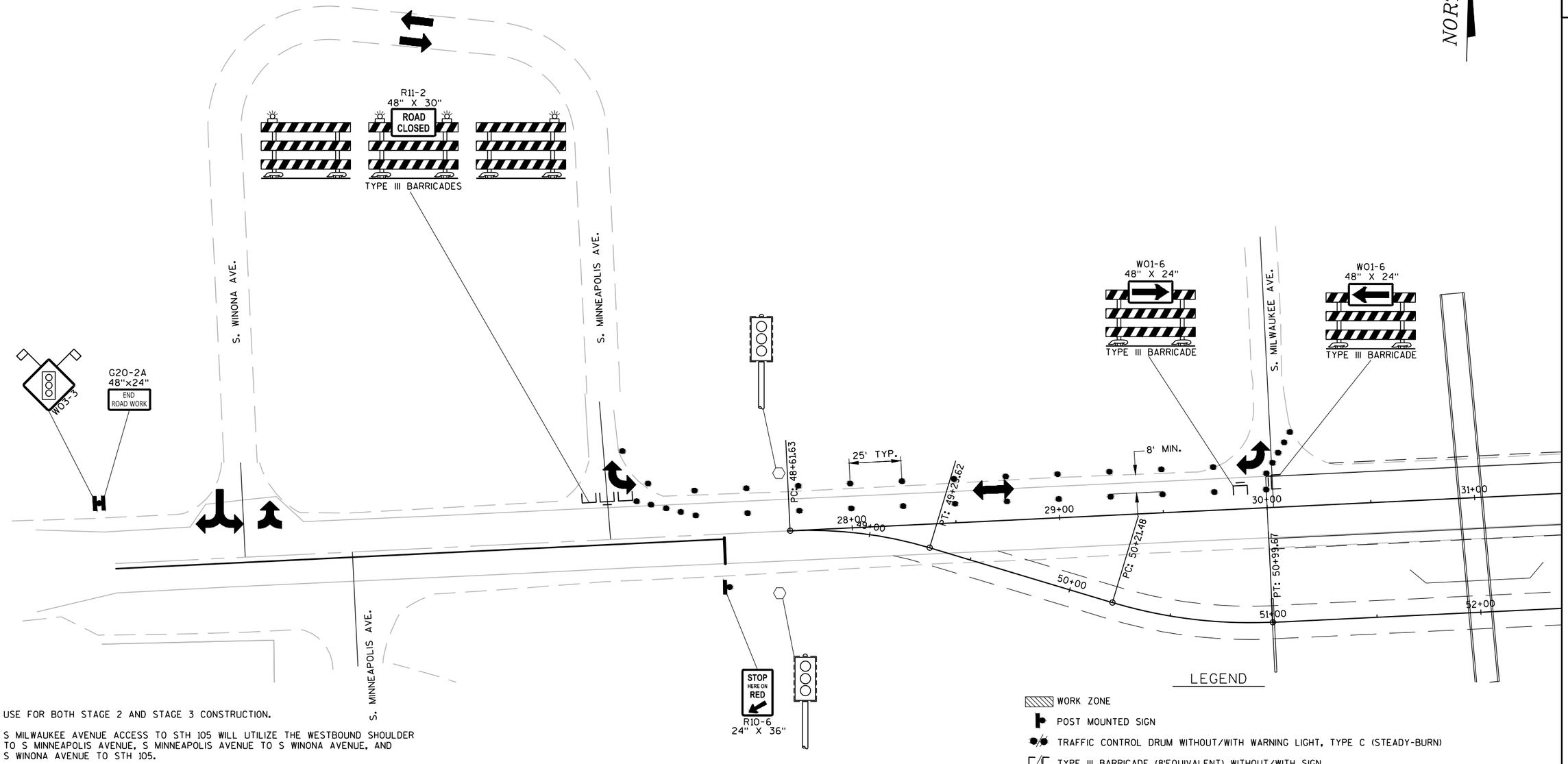
LEGEND

- WORK ZONE
- POST MOUNTED SIGN
- TRAFFIC CONTROL DRUM WITHOUT/WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- TYPE III BARRICADE (8'EQUIVALENT) WITHOUT/WITH SIGN
- TEMPORARY DELINEATOR, CRYSTAL (WHITE) (DOUBLE DELINEATOR, TWO-WAY)
- DIRECTION OF TRAFFIC FLOW
- REMOVING PAVEMENT MARKING
- FLAGS, 16"X16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- 4" X 6" WOOD POST

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	TRAFFIC CONTROL: STAGE 3	SHEET 11	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\TRAFFIC CONTROL\TRAFFIC CONTROL_NO REFERENCE.DWG
LAYOUT : 3
PLOT DATE : 10/23/2012
PLOT TIME : 8:41:52 AM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 1" = 1'

2



NOTES: USE FOR BOTH STAGE 2 AND STAGE 3 CONSTRUCTION.

S MILWAUKEE AVENUE ACCESS TO STH 105 WILL UTILIZE THE WESTBOUND SHOULDER TO S MINNEAPOLIS AVENUE, S MINNEAPOLIS AVENUE TO S WINONA AVENUE, AND S WINONA AVENUE TO STH 105.

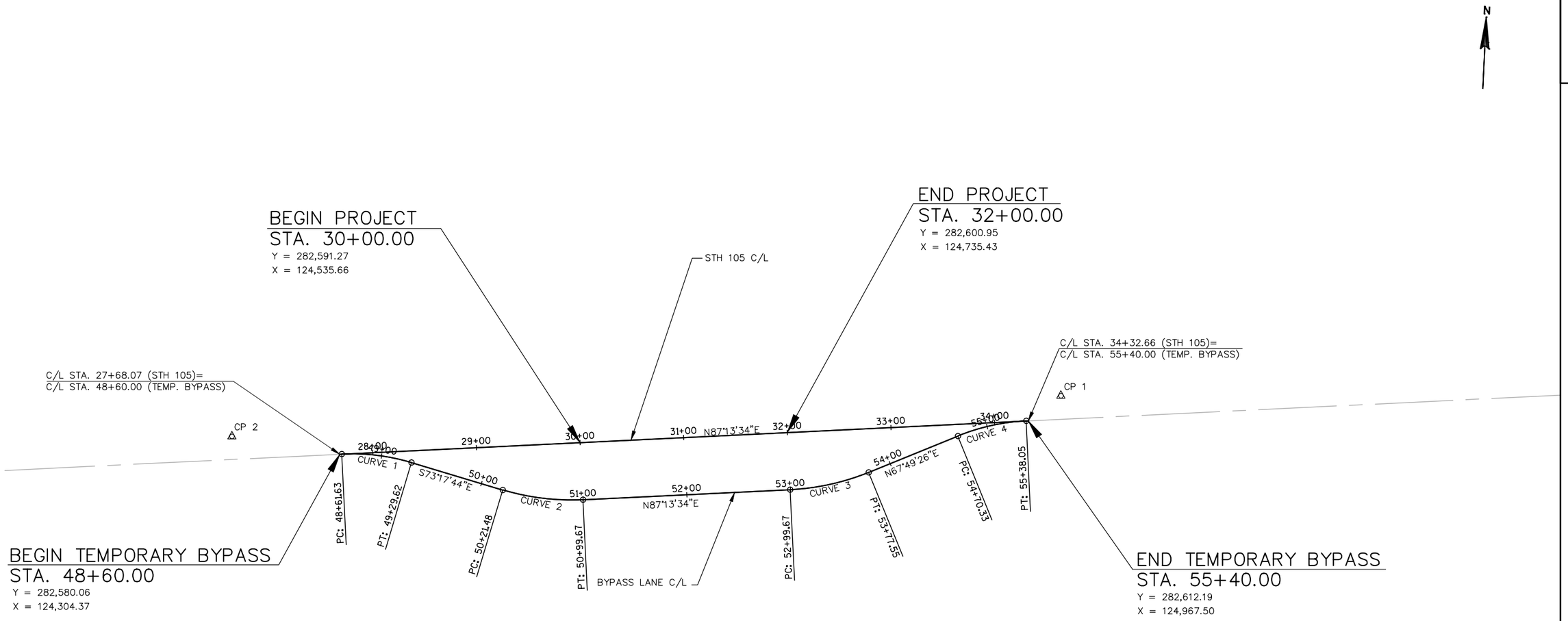
LEGEND

- WORK ZONE
- POST MOUNTED SIGN
- TRAFFIC CONTROL DRUM WITHOUT/WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- TYPE III BARRICADE (8'EQUIVALENT) WITHOUT/WITH SIGN
- TEMPORARY DELINEATOR, CRYSTAL (WHITE) (DOUBLE DELINEATOR, TWO-WAY)
- DIRECTION OF TRAFFIC FLOW
- REMOVING PAVEMENT MARKING
- FLAGS, 16"X16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- 4" X 6" WOOD POST

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	TRAFFIC CONTROL: MINNEAPOLIS AVE & MILWAUKEE AVE DETAILS	SHEET 12	E

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\PLAN PRODUCTION DRAWINGS\ROADWAY\TRAFFIC CONTROL\TRAFFIC CONTROL_NO REFERENCE.DWG
LAYOUT : 4
PLOT DATE : 10/18/2012
PLOT TIME : 9:52:49 AM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 1" = 1'

2



BYPASS LANE C/L
CURVE 1

P.I. STA. = 48+95.96
Y = 282,581.80
X = 124,340.29
Δ = 19°28'42"
D = 28°38'52"
T = 34.33'
L = 67.99'
R = 200'
P.C. STA. = 48+61.63
Y = 282,580.14
X = 124,305.99
P.T. STA. = 49+29.63
Y = 282,571.93
X = 124,373.17
S.E. = N/A

BYPASS LANE C/L
CURVE 2

P.I. STA. = 50+60.95
Y = 282,534.19
X = 124,498.95
Δ = 19°28'42"
D = 24°54'40"
T = 39.48'
L = 78.19'
R = 230'
P.C. STA. = 50+21.48
Y = 282,545.53
X = 124,461.14
P.T. STA. = 50+99.67
Y = 282,536.10
X = 124,538.38
S.E. = N/A

BYPASS LANE C/L
CURVE 3

P.I. STA. = 53+38.99
Y = 282,547.68
X = 124,777.42
Δ = 19°24'08"
D = 24°54'40"
T = 39.32'
L = 77.89'
R = 230'
P.C. STA. = 52+99.67
Y = 282,545.78
X = 124,738.15
P.T. STA. = 53+77.55
Y = 282,562.52
X = 124,813.83
S.E. = N/A

BYPASS LANE C/L
CURVE 4

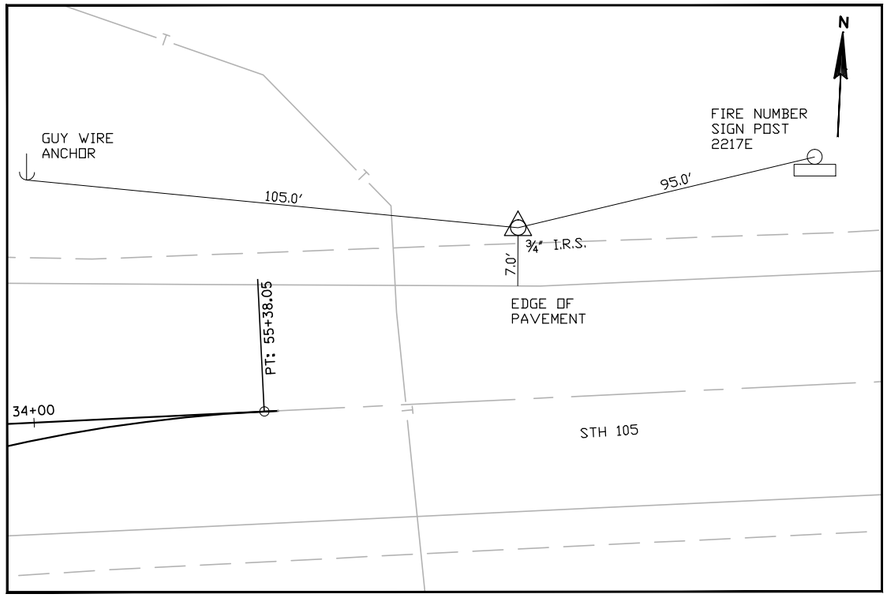
P.I. STA. = 55+04.52
Y = 282,610.44
X = 124,931.40
Δ = 19°24'08"
D = 28°38'52"
T = 34.19'
L = 67.73'
R = 200'
P.C. STA. = 54+70.33
Y = 282,597.54
X = 124,899.74
P.T. STA. = 55+38.05
Y = 282,612.10
X = 124,965.55
S.E. = N/A

STH 105

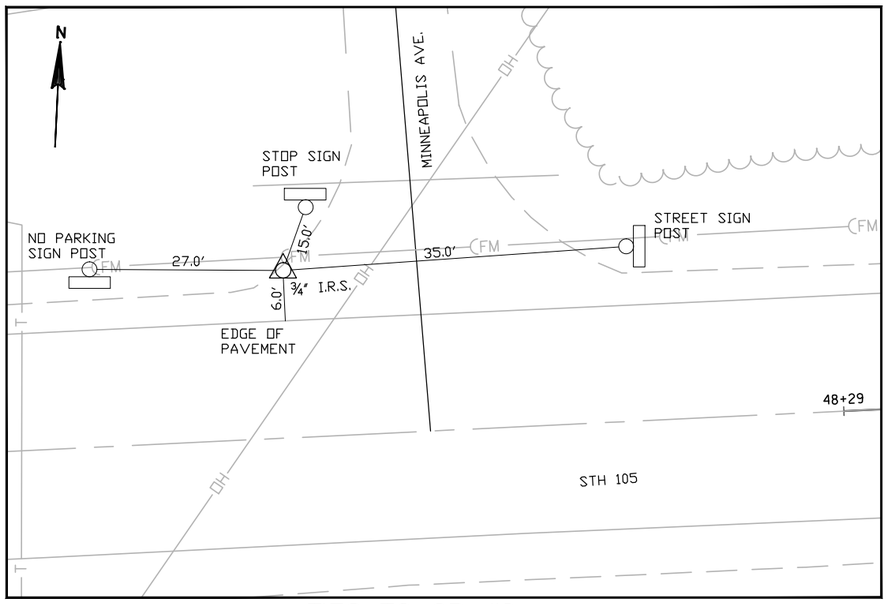
STATION	Y	X	REMARKS
30+00	282,591.27	124,535.67	BEGIN CONSTRUCTION
30+50	282,593.69	124,585.60	
30+98	282,596.01	124,633.61	C/L STRUCTURE C-16-0052
31+00	282,596.11	124,635.54	
31+50	282,598.53	124,685.46	
32+00	282,600.95	124,735.43	END CONTRUCTION

BYPASS LANE

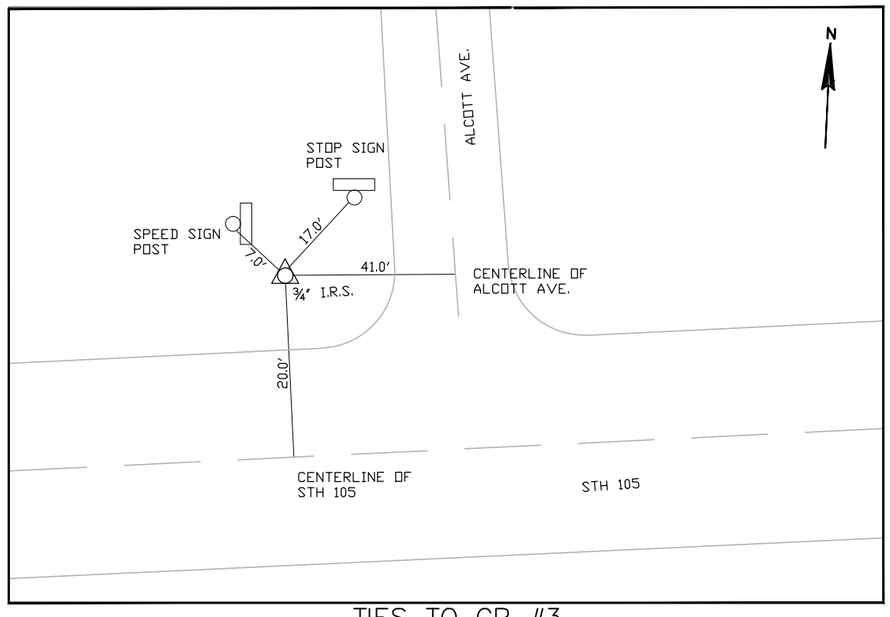
STATION	Y	X	REMARKS
48+60	282,580.06	124,304.37	BEGIN CONSTRUCTION
48+61.63	282,580.14	124,306.00	PC STATION
49+00	282,578.32	124,344.26	
49+29.63	282,571.93	124,373.17	PT STATION
49+50	282,566.08	124,392.68	
50+00	282,551.71	124,440.57	
50+21.48	282,545.53	124,461.14	PC STATION
50+50	282,539.05	124,488.90	
50+99.67	282,536.10	124,538.38	PT STATION
51+00	282,536.11	124,538.71	
51+50	282,538.53	124,588.65	
52+00	282,540.95	124,638.60	
52+50	282,543.37	124,688.54	
52+99.67	282,545.78	124,738.15	PC STATION
53+00	282,545.79	124,738.48	
53+50	282,553.67	124,787.75	
53+77.55	282,562.52	124,813.83	PT STATION
54+00	282,570.99	124,834.62	
54+50	282,589.86	124,880.92	
54+70.33	282,597.54	124,899.74	PC STATION
55+00	282,606.66	124,927.95	
55+38.05	282,612.10	124,965.55	PT STATION
55+40	282,612.19	124,967.50	END CONSTRUCTION



TIES TO CP #1
STA. 34+65.04, 22.6' LT.
Y= 282,636.33
X= 124,999.07



TIES TO CP #2
STA. 26+65.13, 22.1' LT.
Y= 282,597.16
X= 124,200.12



TIES TO CP #3
Y= 282,568.47
X= 123,649.98

PROJECT NO: 8760-00-60, 8760-00-61	HWY: STH 105	COUNTY: DOUGLAS	ALIGNMENT DETAILS	SHEET 14	E

DATE 05DEC12 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8760-00-60 QUANTITY	8760-00-61 QUANTITY
0010	201.0105	CLEARING	STA	3.000	3.000	
0020	201.0205	GRUBBING	STA	3.000	3.000	
0030	203.0200	REMOVING OLD STRUCTURE (STATION) 01. 30+98	LS	1.000		1.000
0040	205.0100	EXCAVATION COMMON	CY	2,300.000	2,300.000	
0050	206.2000	EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-16-0052	LS	1.000		1.000
0060	206.6000.S	TEMPORARY SHORING	SF	1,680.000	1,680.000	
0070	208.0100	BORROW	CY	1,630.000	1,630.000	
0080	208.1100	SELECT BORROW	CY	420.000	420.000	
0090	210.0100	BACKFILL STRUCTURE	CY	2,850.000	800.000	2,050.000
0100	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 8760-00-60	LS	1.000	1.000	
0110	213.0100	FINISHING ROADWAY (PROJECT) 01. 8760-00-60	EACH	1.000	1.000	
0120	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	710.000	710.000	
0130	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	770.000	770.000	
0140	311.0115	BREAKER RUN	CY	150.000		150.000
0150	455.0605	TACK COAT	GAL	40.000	40.000	
0160	465.0105	ASPHALTIC SURFACE	TON	240.000	240.000	
0170	520.4012	CULVERT PIPE TEMPORARY 12-INCH	LF	78.000	78.000	
0180	606.0300	RIPRAP HEAVY	CY	225.000		225.000
0190	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 8760-00-60	EACH	1.000	1.000	
0200	619.1000	MOBILIZATION	EACH	1.000	1.000	
0210	624.0100	WATER	MGAL	22.000	22.000	
0220	625.0500	SALVAGED TOPSOIL	SY	1,050.000	1,050.000	
0230	627.0200	MULCHING	SY	5,500.000	5,500.000	
0240	628.1104	EROSION BALES	EACH	35.000	35.000	
0250	628.1504	SILT FENCE	LF	1,075.000	1,075.000	
0260	628.1520	SILT FENCE MAINTENANCE	LF	2,150.000	2,150.000	
0270	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000	
0280	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000	
0290	628.2027	EROSION MAT CLASS II TYPE C	SY	410.000	410.000	
0300	628.5505	POLYETHYLENE SHEETING	SY	20.000	20.000	
0310	628.6510	SOIL STABILIZER TYPE B	ACRE	0.400	0.400	
0320	628.7555	CULVERT PIPE CHECKS	EACH	8.000	8.000	
0330	628.7570	ROCK BAGS	EACH	25.000	25.000	
0340	629.0210	FERTILIZER TYPE B	CWT	4.000	4.000	
0350	630.0120	SEEDING MIXTURE NO. 20	LB	115.000	115.000	
0360	630.0300	SEEDING BORROW PIT	LB	15.000	15.000	
0370	633.1100	DELINEATORS TEMPORARY	EACH	104.000	104.000	
0380	633.5200	MARKERS CULVERT END	EACH	2.000	2.000	
0390	638.2102	MOVING SIGNS TYPE II	EACH	2.000	2.000	
0400	638.4000	MOVING SMALL SIGN SUPPORTS	EACH	2.000	2.000	
0410	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000	
0420	643.0100	TRAFFIC CONTROL (PROJECT) 01. 8760-00-60	EACH	1.000	1.000	
0430	643.0300	TRAFFIC CONTROL DRUMS	DAY	3,168.000	3,168.000	
0440	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	590.000	590.000	
0450	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	617.000	617.000	
0460	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	966.000	966.000	
0470	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,649.000	1,649.000	
0480	645.0105	GEOTEXTILE FABRIC TYPE C	SY	380.000		380.000
0490	645.0111	GEOTEXTILE FABRIC TYPE DF SCHEDULE A	SY	40.000	40.000	
0500	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	450.000		450.000

3

DATE 05DEC12 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8760-00-60 QUANTITY	8760-00-61 QUANTITY
0510	645.0140	GEOTEXTILE FABRIC TYPE SAS	SY	1,050.000	1,050.000	
0520	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,450.000	1,450.000	
0530	646.0600	REMOVING PAVEMENT MARKINGS	LF	530.000	530.000	
0540	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	2,350.000	2,350.000	
0550	649.1200	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 18-INCH	LF	30.000	30.000	
0560	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	770.000	770.000	
0570	650.5000	CONSTRUCTION STAKING BASE	LF	770.000	770.000	
0580	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1.000		1.000
0590	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8760-00-60	LS	1.000	1.000	
0600	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	770.000	770.000	
0610	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. C-16-0052	LS	1.000	1.000	
0620	690.0150	SAWING ASPHALT	LF	60.000	60.000	
0630	SPV.0090	SPECIAL 01. CULVERT PIPE REINFORCED CONCRETE PIPE ARCH CLASS A-IV 122X77-INCH	LF	188.000		188.000
0640	SPV.0105	SPECIAL 01. SHAPING TEMPORARY BYPASS	LS	1.000	1.000	

CLEARING AND GRUBBING

STATION - STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
29+70 - 31+50	STH 105,LT & RT	2	2
32+00 - 33+00	STH 105, RT	1	1
	TOTALS =	3	3

TEMPORARY SHORING

STATION - STATION	LOCATION	206.6000.S.01 SF
30+70 - 31+30	STH 105, RT	1680
	TOTAL =	1680

SELECT BORROW

STATION - STATION	LOCATION	208.1100 CY
30+00 - 32+00	STH 105	407
- - -	UNDISTRIBUTED	13
	TOTAL =	420

BACKFILL STRUCTURE

STATION - STATION	LOCATION	210.0100 CY
30+50 - 31+50	STH 105	781
- - -	UNDISTRIBUTED	19
	TOTAL =	800

PREPARE FOUNDATION FOR ASPHALTIC PAVING 01. 8760-00-60

STATION - STATION	LOCATION	211.0100 LS
30+00 - 32+00	STH 105	1

BASE AGGREGATE DENSE

STATION - STATON	LOCATION	305.0110 3/4-INCH (TON)	305.0120 1 1/4-INCH (TON)
30+00 - 32+00	STH 105	--	744
30+00 - 32+00	STH 105, LT	44	--
30+00 - 32+00	STH 105, RT	44	--
48+88 - 55+12	TEMP BYPASS	600	--
- - -	UNDISTRIBUTED	22	26
	TOTALS =	710	770

ASPHALTIC SURFACE & TACK COAT

STATION - STATION	LOCATION	455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
30+00 - 32+00	STH 105	34	230
- - -	UNDISTRIBUTED	6	10
	TOTALS =	40	240

WATER

STATION - STATION	LOCATION	624.0100 MGAL
30+00 - 32+00	STH 105	12
48+88 - 55+12	TEMP BYPAS	9
- - -	UNDISTRIBUTED	1
	TOTAL =	22

CULVERT PIPE TEMPORARY 12-INCH

STATION	LOCATION	520.4012 LF
51+00	TEMP BYPASS	36
53+00	TEMP BYPASS	42
	TOTAL =	78

FINISHING ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	628.6510 SOIL STABILIZER TYPE B (ACRE)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0300 SEEDING BORROW PIT (LB)
30+00 - 32+00	STH 105	945	1354	0.10	0.9	37	--
48+88 - 55+12	TEMP BYPASS	--	2064	0.25	1.3	56	--
- - -	BORROW PIT	--	994	--	0.6	--	14
- - -	UNDISTRIBUTED	105	1088	0.05	1.2	22	1
	TOTALS =	1050	5500	0.4	4	115	15

TEMPORARY SETTLING BASIN

STATION	LOCATION	628.1104 EROSION BALES (EACH)	645.0111 GEOTEXTILE FABRIC TYPE DF SCHEDULE A (SY)
30+85	STH 105, LT	28	35
--	UNDISTRIBUTED	7	5
	TOTALS =	35	40

EARTHWORK SUMMARY

STAGE	From/To Station	Location	Common Excavation (1) (item # 205.0100) Cut (2)	EBS Excavation (3)	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6) (item #205.0500)	Rock Excavation (7) (item #205.0200)	Reduced Marsh in Fill (8) Factor 0.60	Reduced EBS in Fill (9) Factor 0.80	Expanded Marsh Backfill (10) Factor 1.50	Expanded EBS Backfill (11) Factor 1.30	Expanded Rock (12) Factor 1.10	Unexpanded Fill	Expanded Fill (13) Factor 1.25/1.42	Mass Ordinate +/- (14)	Waste	Borrow (item #208.0100)	Comment:
1	49+40 - 54+60	TEMP BYPASS CONST.	95	0	0	95	0	0	0	0	0	0	0	1380	1725	-1630	0	1630	
STAGE 1 SUBTOTAL			95	0	0	95	0	0	0	0	0	0	0	1380	1725	-1630	0	1630	
2	30+00 - 32+00	STH 105, LT.	365	0	85	280	0	0	0	0	0	0	0	55	78	287	287	0	
STAGE 2 SUBTOTAL			365	0	85	280	0	0	0	0	0	0	0	55	78	287	287	0	
3	30+00 - 32+00	STH 105, RT.	455	0	85	370	0	0	0	0	0	0	0	10	14	441	441	0	
	49+40 - 54+60	TEMP BYPASS REMOVAL	1385	0	0	1385	0	0	0	0	0	0	0	90	113	1273	1273	0	
STAGE 3 SUBTOTAL			1840	0	85	1755	0	0	0	0	0	0	0	100	127	1713	1713	0	
Grand Total			2300	0	170	2130	0	0	0	0	0	0	0	1535	1930	370	2000	1630	
		Total Common Exc	2300																

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation to be backfilled with Select Borrow. EBS is not used to balance Earthwork.
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
7) Rock Excavation item number 205.0200
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.11
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.11
12) Expanded Rock - Factor = 1.1.
13) Expanded Fill Factor = STH 105: 1.42, TEMP BYPASS: 1.25
Depending on selections:

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

14) The Mass Ordinate + or - Qty calculated for the Stage. Plus quantity indicates an excess of material within the Stage. Minus indicates a shortage of material within the Stage.

MOBILIZATIONS EROSION CONTROL & MOBILIZATIONS EMERGENCY EROSION CONTROL

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL (EACH)	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH)
STH 105	4	2
TOTALS =	4	2

SILT FENCE & SILT FENCE MAINTENANCE

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
30+00 - 32+00	STH 105, LT	250	500
49+15 - 54+80	TEMP BYPASS, RT	620	1240
- - -	UNDISTRIBUTED	205	410
	TOTALS =	1075	2150

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
51+00	TEMP BYPASS, LT	3
53+00	TEMP BYPASS, LT	3
–	UNDISTRIBUTED	2
	TOTAL =	8

ROCK BAGS

STATION	LOCATION	628.7570 EACH
50+90	TEMP BYPASS, LT	5
51+10	TEMP BYPASS, LT	5
52+90	TEMP BYPASS, LT	5
53+10	TEMP BYPASS, LT	5
–	UNDISTRIBUTED	5
	TOTAL =	25

POLYETHYLENE SHEETING

STATION	LOCATION	628.5505 SY
31+00	STH 105, RT	12
–	UNDISTRIBUTED	8
	TOTAL =	20

NOTE: SAND BAGS ARE CONSIDERED INCIDENTAL TO THE BID ITEM "POLYETHYLENE SHEETING"

EROSION MAT CLASS II TYPE C

STATION - STATION	LOCATION	628.2027 SY
30+45 - 31+90	STH 105, LT	181
30+80 - 32+00	STH 105, RT	138
51+00	TEMP BYPASS, RT	4
53+00	TEMP BYPASS, RT	4
- - -	UNDISTRIBUTED	83
	TOTAL =	410

MARKERS CULVERT END

STATION	LOCATION	633.5200 EACH
31+00	STH 105, LT & RT	2
	TOTAL =	2

GEOTEXTILE FABRIC TYPE SAS

STATION - STATION	LOCATION	645.0140 SY
48+88 - 55+12	TEMP BYPASS	1019
- - -	UNDISTRIBUTED	31
	TOTAL =	1050

TRAFFIC CONTROL

STATION - STATION	LOCATION	643.0100 TRAFFIC CONTROL 01. 8670-00-60 (EACH)	643.0300 TRAFFIC CONTROL DRUMS (DAYS)			643.0420 TRAFFIC CONTROL BARRICADES TYPE III (DAYS)			643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A (DAYS)			643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C (DAYS)			634.0900 TRAFFIC CONTROL SIGNS (DAYS)			633.1100 DELINEATORS TEMPORARY (EACH)			COMMENT
			STAGE 1	STAGE 2	STAGE 3	STAGE 1	STAGE 2	STAGE 3	STAGE 1	STAGE 2	STAGE 3	STAGE 1	STAGE 2	STAGE 3	STAGE 1	STAGE 2	STAGE 3	STAGE 1	STAGE 2	STAGE 3	
–	STH 105	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
14+15	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	7	–	–	–	–	–	(1) W20-1, AHEAD
17+45	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W20-1, AHEAD
18+15	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	7	–	–	–	–	–	(1) G20-2A
18+15	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	7	–	–	–	–	–	(1) W21-5
19+45	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W12-52, 15'
20+45	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W14-3
21+45	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W20-4, AHEAD
23+15 - 35+00	STH 105, RT	–	189	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
23+45	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) WO3-3
24+45	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	50	–	–	–	(1 EA) WO3-3, G20-2A
25+45	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	–	–	–	–	(1 EA) WO1-3R; WO13-1, 15 MPH
26+45 - 28+70	STH 105	–	–	260	–	–	–	–	–	–	–	–	208	–	–	–	–	–	–	–	
27+45	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	–	–	–	–	(1) WO1-6
27+45	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) R10-6
27+45 - 34+55	STH 105, RT	–	–	–	725	–	–	–	–	–	–	–	–	550	–	–	–	–	–	–	
29+00	STH 105	–	–	–	–	104	–	–	130	–	–	–	–	–	–	52	–	–	–	–	(1 EA) R11-2 (MOD.), WO1-6
29+90	STH 105, RT	–	–	–	–	–	25	–	–	–	–	–	–	–	–	–	25	–	–	–	(1) W01-6
31+10	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25	–	–	–	(1) WO1-4R
33+00	STH 105	–	–	–	–	104	–	–	130	–	–	–	–	–	–	26	–	–	–	–	(1 EA) R11-2 (MOD.), WO1-6
33+30 - 35+55	STH 105	–	–	260	–	–	–	–	–	–	–	–	208	–	–	–	–	–	–	–	
33+40	STH 105, LT	–	–	–	–	52	50	–	78	75	–	–	–	–	26	25	–	–	–	–	(1) R11-2
34+55	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	–	(1) R10-6
34+90	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	26	–	–	–	–	–	
37+05	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	52	–	–	–	–	–	(1 EA) WO1-3L; WO13-1, 15 MPH
39+00	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	7	–	–	–	–	–	(1) G20-2A
39+55	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) WO3-3
39+55	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	50	–	–	–	(1 EA) WO3-3, G20-2A
41+55	STH 105, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W14-3
43+00	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	7	–	–	–	–	–	(1) W20-1, AHEAD
44+55	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W20-4, AHEAD
49+55	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W12-52, 15'
54+55	STH 105, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	25	–	–	–	(1) W20-1, AHEAD
49+15 - 54+80	TEMP BYPASS, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	66	–	
49+65 - 54+35	TEMP BYPASS, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	38	–	
50+30	TEMP BYPASS, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	–	–	–	–	(1) WO1-6
50+85	TEMP BYPASS, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	–	–	–	–	(1) WO1-6
51+20	TEMP BYPASS, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	–	–	–	–	(1 EA) WO1-3L; WO13-1, 15 MPH
52+80	TEMP BYPASS, LT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	–	–	–	–	(1 EA) WO1-3R; WO13-1, 15 MPH
53+15	TEMP BYPASS, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	–	–	–	–	(1) WO1-6
53+65	TEMP BYPASS, RT	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	–	–	–	–	(1) WO1-6
–	STH 105/STH 35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	50	–	–	–	(1 EA) W12-52, 15'; WO57-52, 4 MILES
26+85	STH 105, LT	–	–	–	–	–	78	75	–	104	100	–	–	–	–	26	25	–	–	–	(1) R11-2
26+95 - 30+15	STH 105, LT	–	–	884	850	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
29+90	STH 105, LT	–	–	–	–	–	26	25	–	–	–	–	–	–	–	26	25	–	–	–	(1) WO1-6
30+05	STH 105, LT	–	–	–	–	–	26	25	–	–	–	–	–	–	–	26	25	–	–	–	(1) WO1-6
	SUBTOTALS =	1	189	1404	1575	0	390	200	0	442	175	0	416	550	35	1014	600	0	104	0	
	TOTALS =	1		3168			590			617			966			1649			104		

3

PERMANENT SIGNING

SIGN NUMBER	STATION	LOCATION	SIGN CODE	SIGN MESSAGE	638.2102 MOVING SIGNS TYPE II (EACH)	638.4000 MOVING SMALL SIGN SUPPORTS (EACH)	COMMENT
1	29+80	STH 105, LT	--	MILWAUKEE AVE	--	--	ESTR
1	29+80	STH 105, LT	--	UNION ST	--	--	ESTR
2	29+84	STH 105, LT	R1-1	STOP	--	--	ESTR
3	29+38	STH 105, RT	R2-1	SPEED LIMIT 55	1	1	
4	29+44	STH 105, LT	R2-1	SPEED LIMIT 25	1	1	
5	33+20	STH 105, LT	--	IRONDALE AVE	--	--	ESTR
5	33+20	STH 105, LT	--	UNION ST	--	--	ESTR
6	33+23	STH 105, LT	R1-1	STOP	--	--	ESTR
				TOTALS =	2	2	

PAVEMENT MARKING EPOXY 4-INCH

STATION - STATION	LOCATION	646.0106 SOLID WHITE (LF)	646.0106 DASHED YELLOW (LF)
27+45 - 34+55	STH 105, C/L	--	175
27+45 - 34+55	STH 105, RT	710	--
27+45 - 29+68	STH 105, LT	225	--
30+34 - 33+04	STH 105, LT	270	--
33+85 - 34+55	STH 105, LT	70	--
	SUBTOTALS =	1275	175
	TOTAL =	1450	

TEMPORARY PAVEMENT MARKING

STATION - STATION	LOCATION	646.0600 REMOVING PAVEMENT MARKINGS (LF)	649.0400 REMOVABLE TAPE 4-INCH WHITE (LF)	649.0400 REMOVABLE TAPE 4-INCH YELLOW (LF)	649.1200 STOP LINE REMOVABLE TAPE 18-INCH (LF)
20+45 - 27+45	STH 105, C/L	--	--	700	--
27+45	STH 105, RT	--	--	--	15
27+45 - 28+40	STH 105	--	220	--	--
27+45 - 28+45	STH 105, LT & RT	200	--	--	--
27+45 - 30+00	STH 105, C/L	65	--	--	--
32+00 - 34+55	CTH 105, C/L	65	--	--	--
33+55 - 34+55	STH 105, LT & RT	200	--	--	--
33+60 - 34+55	STH 105	--	220	--	--
34+55	STH 105, LT	--	--	--	15
34+55 - 41+55	STH 105, C/L	--	--	700	--
27+45 - 30+00	STH 105, RT	--	255	--	--
32+00 - 34+55	STH 105, RT	--	255	--	--
	SUBTOTALS =	530	950	1400	30
	TOTALS =	530	2350		30

CONSTRUCTION STAKING

STATION - STATION	LOCATION	650.4500 SUBGRADE (LF)	650.5000 BASE (LF)	650.9910 SUPPLEMENTAL CONTROL (LS)	650.9920 SLOPE STAKES (LF)
-- - --	PROJECT 8760-00-60	--	--	1	--
30+00 - 32+00	STH 105	200	200	--	200
49+15 - 54+85	TEMP BYPASS	570	570	--	570
	TOTALS =	770	770	1	770

TEMPORARY TRAFFIC SIGNALS FOR BRIDGES 01. C-16-0052

LOCATION	661.0100 LS
STH 105	1

SIGNAL SEQUENCE STRUCTURE C-15-0052				
INVERAL	EB	WB	SECONDS	PERCENT
1	G	R	22.4	17
2	Y	R	3.6	3
3	R	R	39	30
4	R	G	22.4	17
5	R	Y	3.6	3
6	R	R	39	30

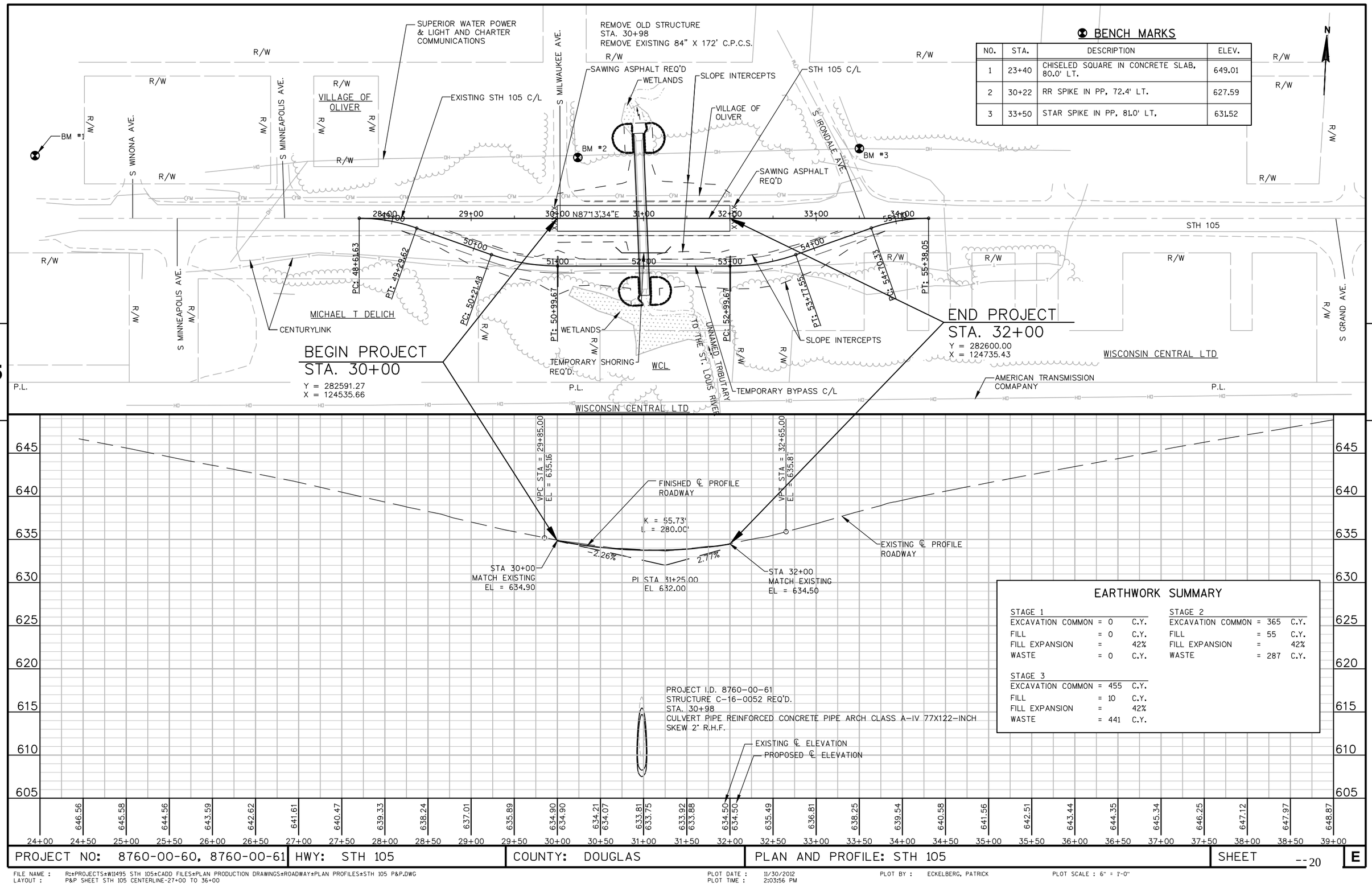
CYCLE LENGTH = 130 SECONDS

SAWING ASPHALT

STATION	LOCATION	690.0150 LF
30+00	STH 105	30
32+00	STH 105	30
	TOTAL =	60

SHAPING TEMPORARY BYPASS

STATION - STATION	LOCATION	SPV.0105.01 LS
30+00 - 32+00	STH 105	
48+88 - 55+12	TEMP BYPASS	1
	TOTAL =	1



PROJECT NO: 8760-00-60, 8760-00-61	HWY: STH 105	COUNTY: DOUGLAS	PLAN AND PROFILE: STH 105	SHEET --20	E

FILE NAME : R:±PROJECTS±W11495 STH 105±CADD FILES±PLAN PRODUCTION DRAWINGS±ROADWAY±PLAN PROFILES±STH 105 P&P.DWG
LAYOUT : P&P SHEET STH 105 CENTERLINE-27+00 TO 36+00

PLOT DATE : 11/30/2012
PLOT TIME : 2:03:56 PM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 6" = 1'-0"

CURVE 1
P.I. STA. = 48+95.96
Y = 282581.80
X = 124340.29
Δ = 19°28'42"
D = 28°38'52"
T = 34.33'
L = 67.99'
R = 200'
P.C. STA. = 48+61.63
P.T. STA. = 49+29.63
S.E. = N/A

CURVE 2
P.I. STA. = 50+60.95
Y = 282534.19
X = 124498.95
Δ = 19°28'42"
D = 24°54'40"
T = 39.48'
L = 78.19'
R = 230'
P.C. STA. = 50+21.48
P.T. STA. = 50+99.67
S.E. = N/A

CURVE 3
P.I. STA. = 53+38.99
Y = 282547.68
X = 124777.42
Δ = 19°24'08"
D = 24°54'40"
T = 39.32'
L = 7 .89'
R = 230'
P.C. STA. = 52+99.68
P.T. STA. = 53+77.55
S.E. = N/A

CURVE 4
P.I. STA. = 55+04.52
Y = 282610.44
X = 124931.40
Δ = 19°24'08"
D = 28°38'52"
T = 34.19'
L = 67.73'
R = 200'
P.C. STA. = 54+70.33
P.T. STA. = 55+38.05
S.E. = N/A

BM #1

BM #2

BM #3

S WINONA AVE.

S MINNEAPOLIS AVE.

S MILWAUKEE AVE.

S IRONDALE AVE.

VILLAGE OF OLIVER

SUPERIOR WATER POWER & LIGHT AND CHARTER COMMUNICATIONS

EXISTING STH 105 C/L

WETLANDS

SLOPE INTERCEPTS

VILLAGE OF OLIVER

N87°13'34"E

S73°17'44"E

N67°49'26"E

STH 105

MICHAEL T DELICH

CENTURYLINK

BYPASS LANE C/L

WETLANDS

TEMPORARY SHORTING REQ'D.

WCL

UNNAMED TRIBUTARY TO ST. LOUIS RIVER

SLOPE INTERCEPTS

WISCONSIN CENTRAL LTD

WISCONSIN CENTRAL LTD

AMERICAN TRANSMISSION COMAPANY

P.L.

R/W

M/W

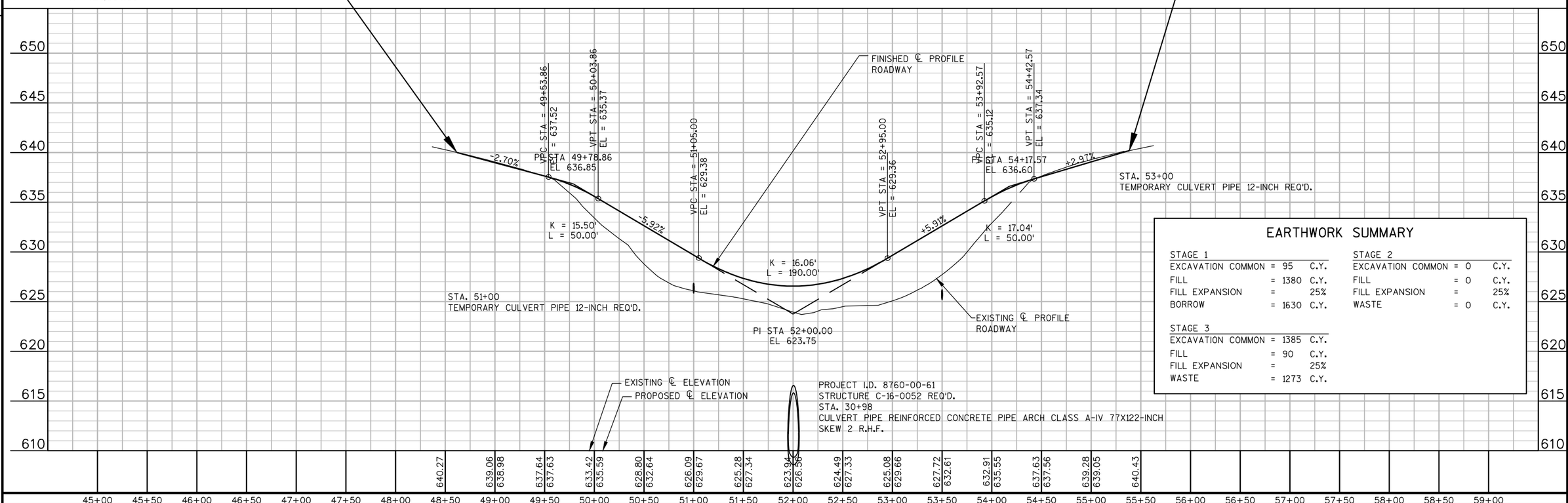
PC: 48+61.63
PT: 49+29.62
PC: 50+21.48
PT: 50+99.67
PC: 52+99.68
PT: 53+77.55
PC: 54+70.33
PT: 55+38.05

BEGIN TEMPORARY BYPASS
STA. 48+60.00
Y= 282,580.08
X= 124,304.00

END TEMPORARY BYPASS
STA. 55+40.00
Y= 282,612.21
X= 124,967.81

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	23+40	CHISELED SQUARE ON CONCRETE SLAB, 80.0' LT.	649.01
2	30+22	RR SPIKE IN PP, 72.4' LT.	627.59
3	33+50	STAR SPIKE IN PP, 81.0' LT.	631.52



EARTHWORK SUMMARY

STAGE 1			STAGE 2		
EXCAVATION COMMON	= 95	C.Y.	EXCAVATION COMMON	= 0	C.Y.
FILL	= 1380	C.Y.	FILL	= 0	C.Y.
FILL EXPANSION	=	25%	FILL EXPANSION	=	25%
BORROW	= 1630	C.Y.	WASTE	= 0	C.Y.

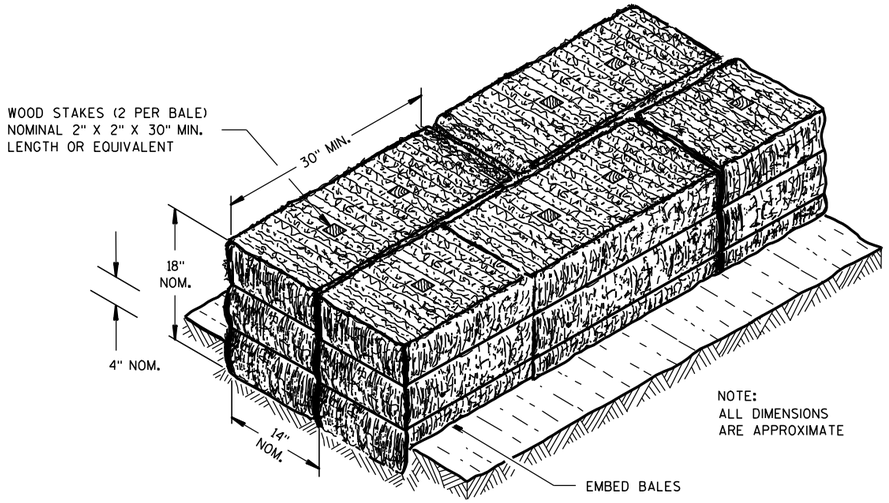
STAGE 3		
EXCAVATION COMMON	= 1385	C.Y.
FILL	= 90	C.Y.
FILL EXPANSION	=	25%
WASTE	= 1273	C.Y.

PROJECT NO: 8760-00-60, 8760-00-61	HWY: STH 105	COUNTY: DOUGLAS	PLAN & PROFILE: TEMPORARY BYPASS	SHEET --21	E

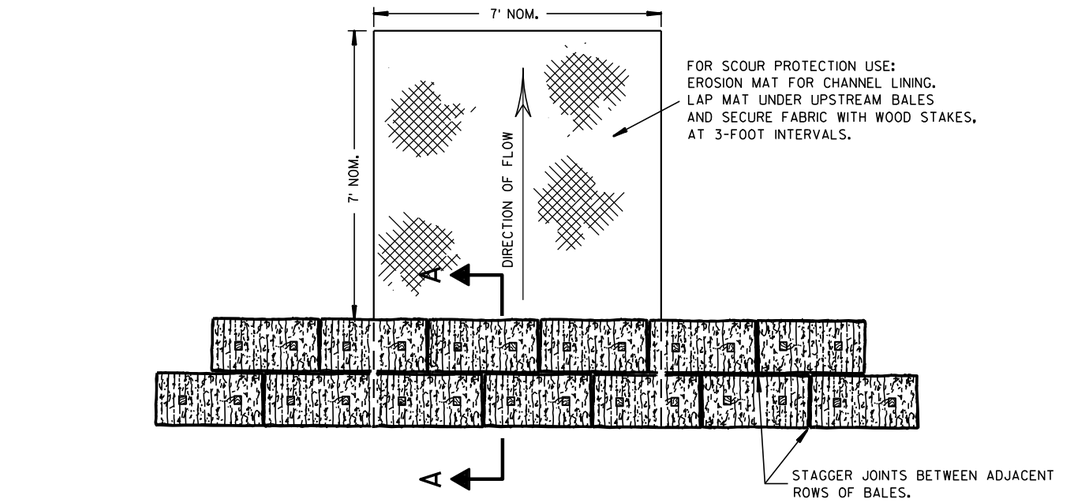
FILE NAME : R:±PROJECTS±W11495 STH 105±CADD FILES±PLAN PRODUCTION DRAWINGS±ROADWAY±PLAN PROFILES±NEW BYPASS PLAN P&P.DWG
LAYOUT : P&P SHEET NEW BYPASS LANE-48+36.63 TO 55+63.05
PLOT DATE : 11/30/2012
PLOT TIME : 2:08:27 PM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 6" = 1'-0"

Standard Detail Drawing List

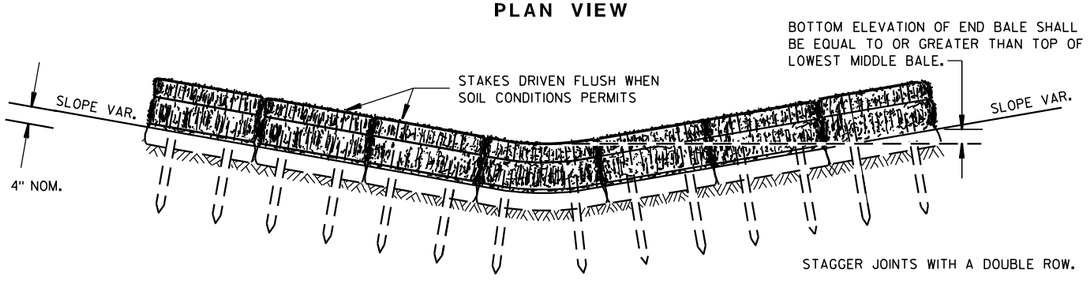
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
15A02-07	DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR
15A03-01	MARKER POSTS, FLEXIBLE, FOR CULVERT END
15C08-14A	PAVEMENT MARKING (MAINLINE)
15C08-14B	PAVEMENT MARKING (INTERSECTIONS)
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-01A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D31-01	TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY
15D33-02	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



SECTION A-A



PLAN VIEW



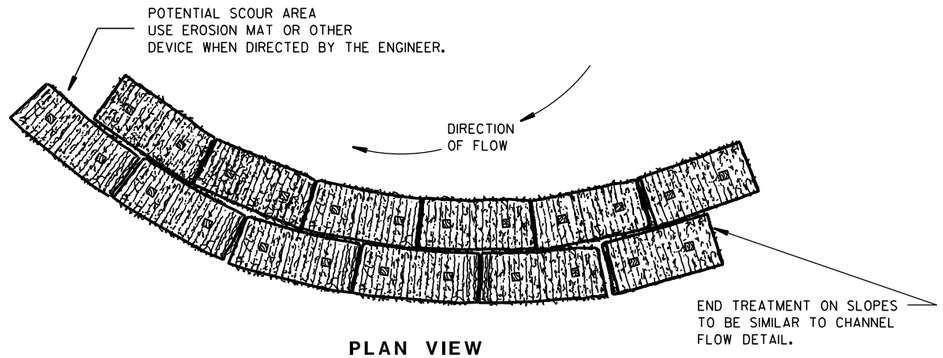
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

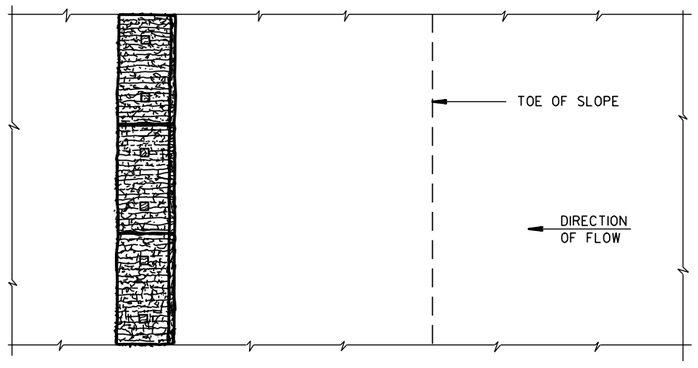
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

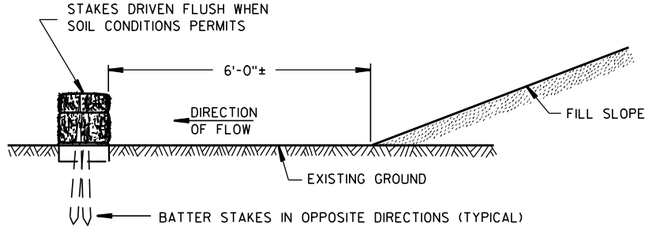


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

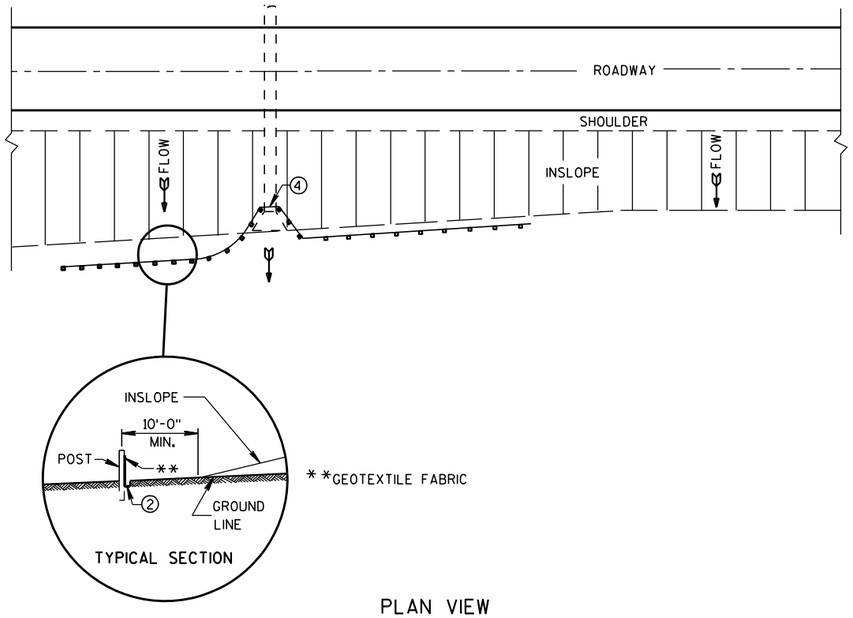
APPROVED

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

FHWA

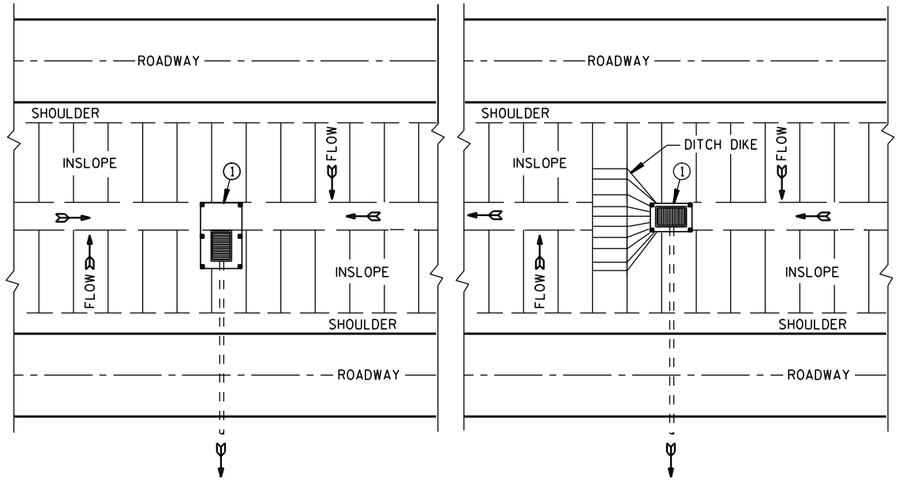
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



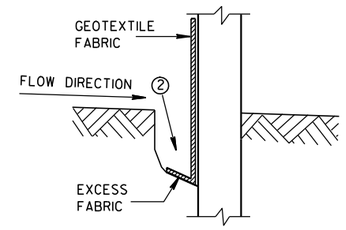
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

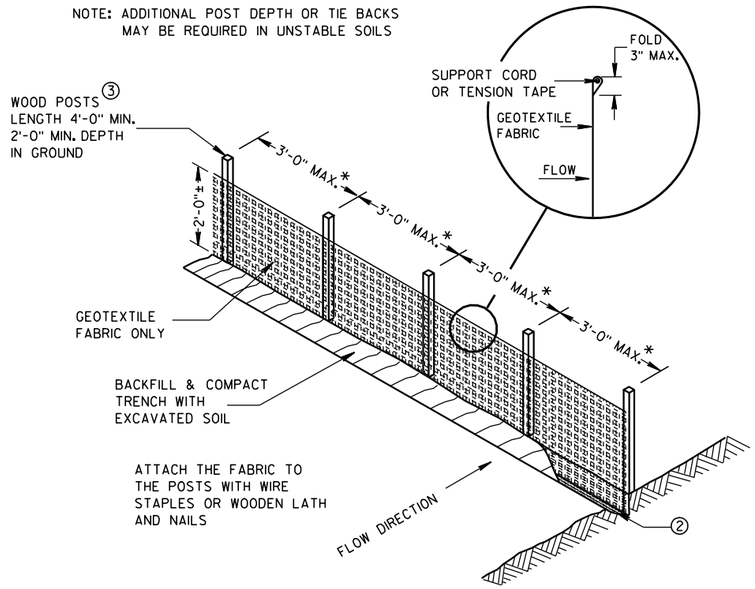
GENERAL NOTES

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.

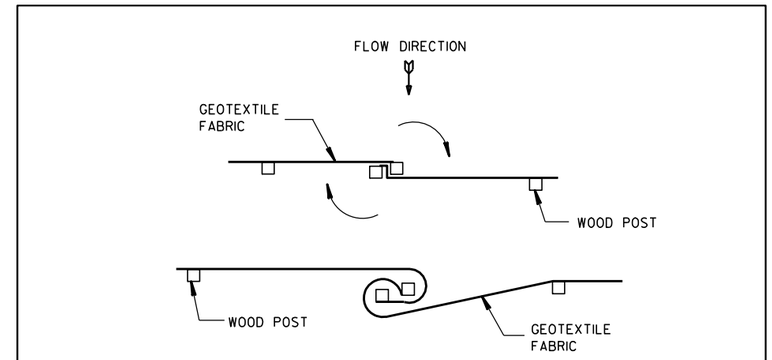


TRENCH DETAIL

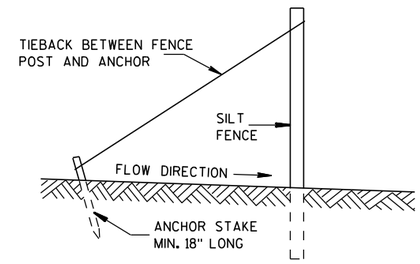


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 E 9-6

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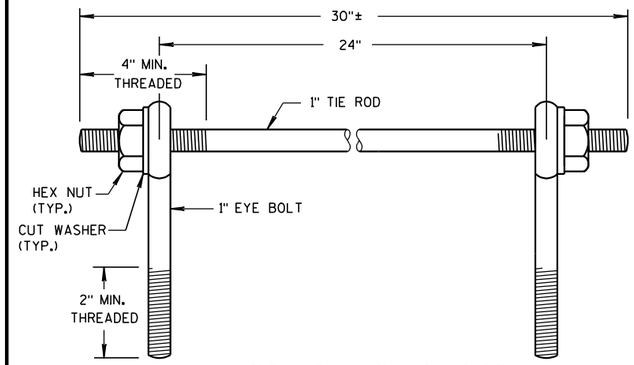
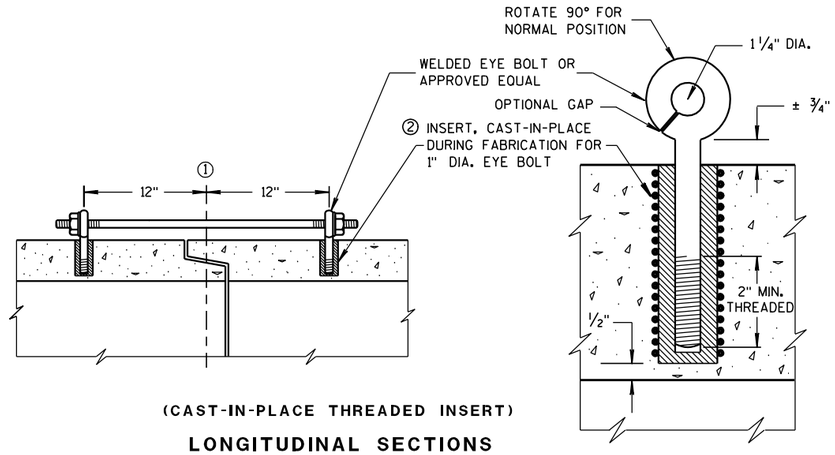
S.D.D. 8 E 9-6



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

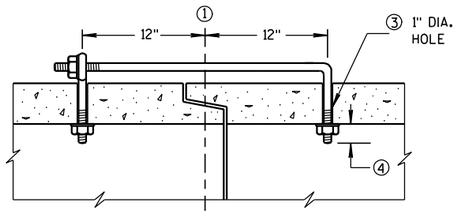
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

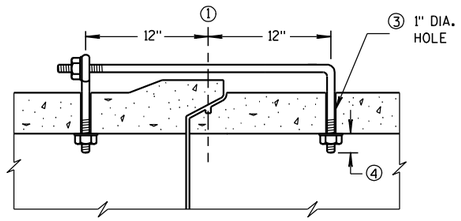
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

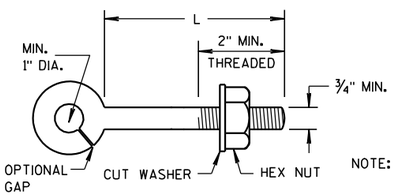


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

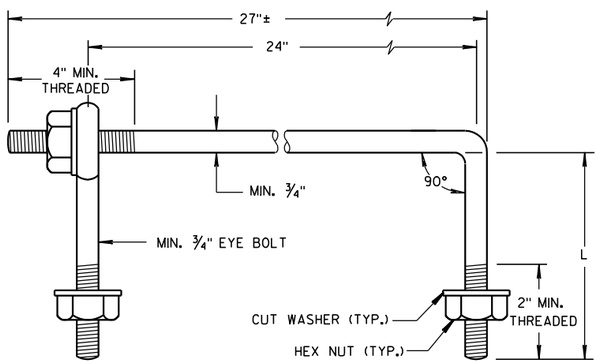
EYE BOLT DIMENSION TABLE

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



EYE BOLT

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



EYE BOLT AND TIE ROD

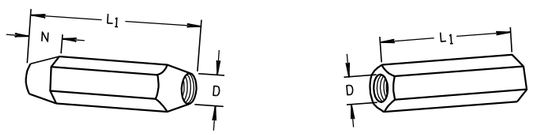
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

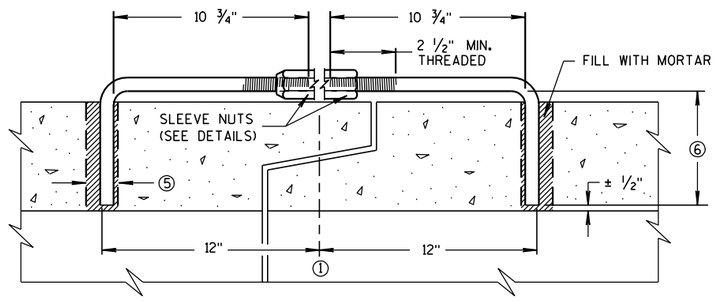
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

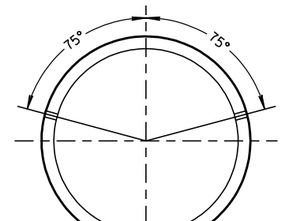
SLEEVE NUTS



LONGITUDINAL SECTION

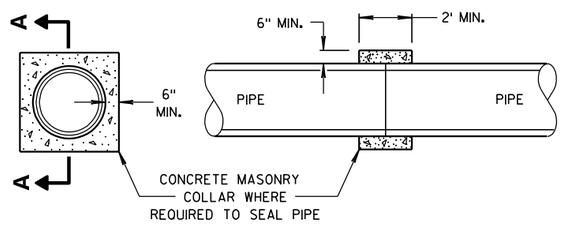
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 8 F 4-7

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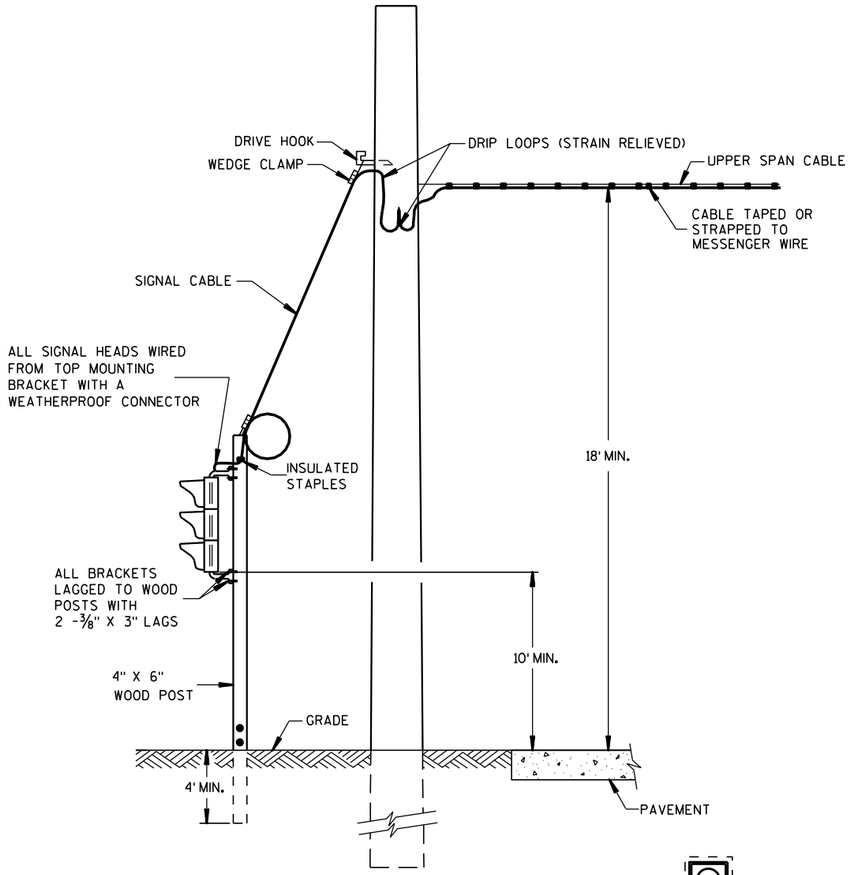
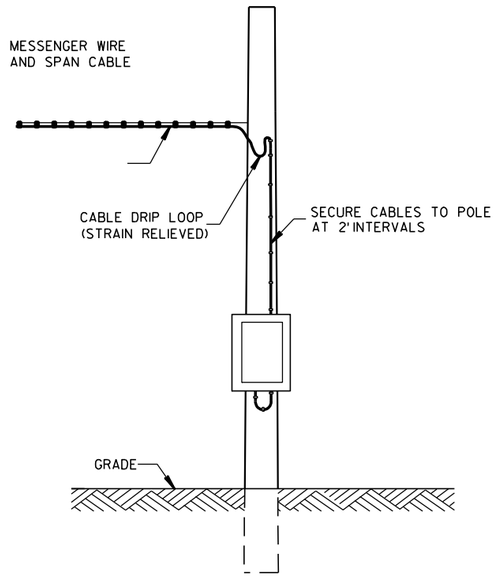
S.D.D. 8 F 4-7



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY PLOLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

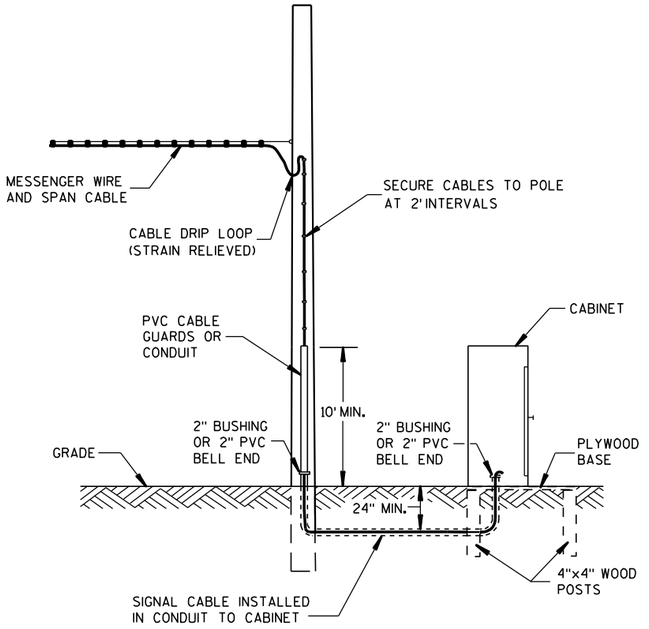
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

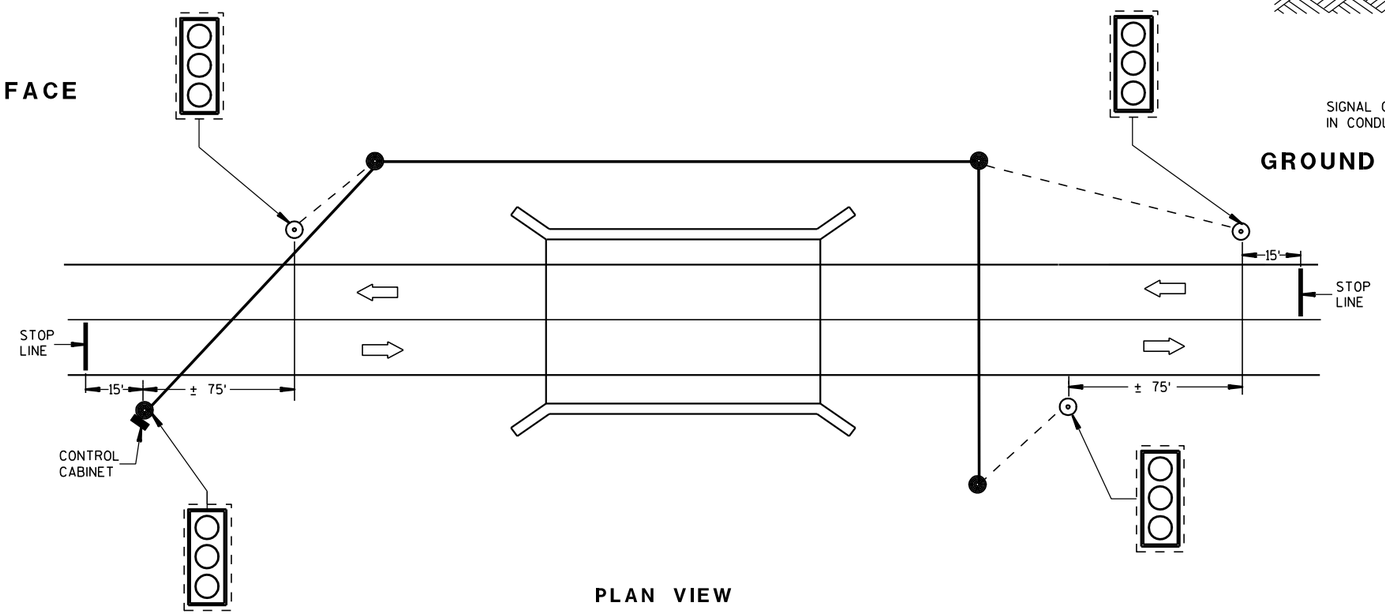
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT

**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.



PLAN VIEW

TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE (3-12")
- DIRECTION OF TRAFFIC

MINIMUM POLE LENGHTS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

/S/ Thomas J. Gosling STATE ELECTRICAL ENGI

HWYS

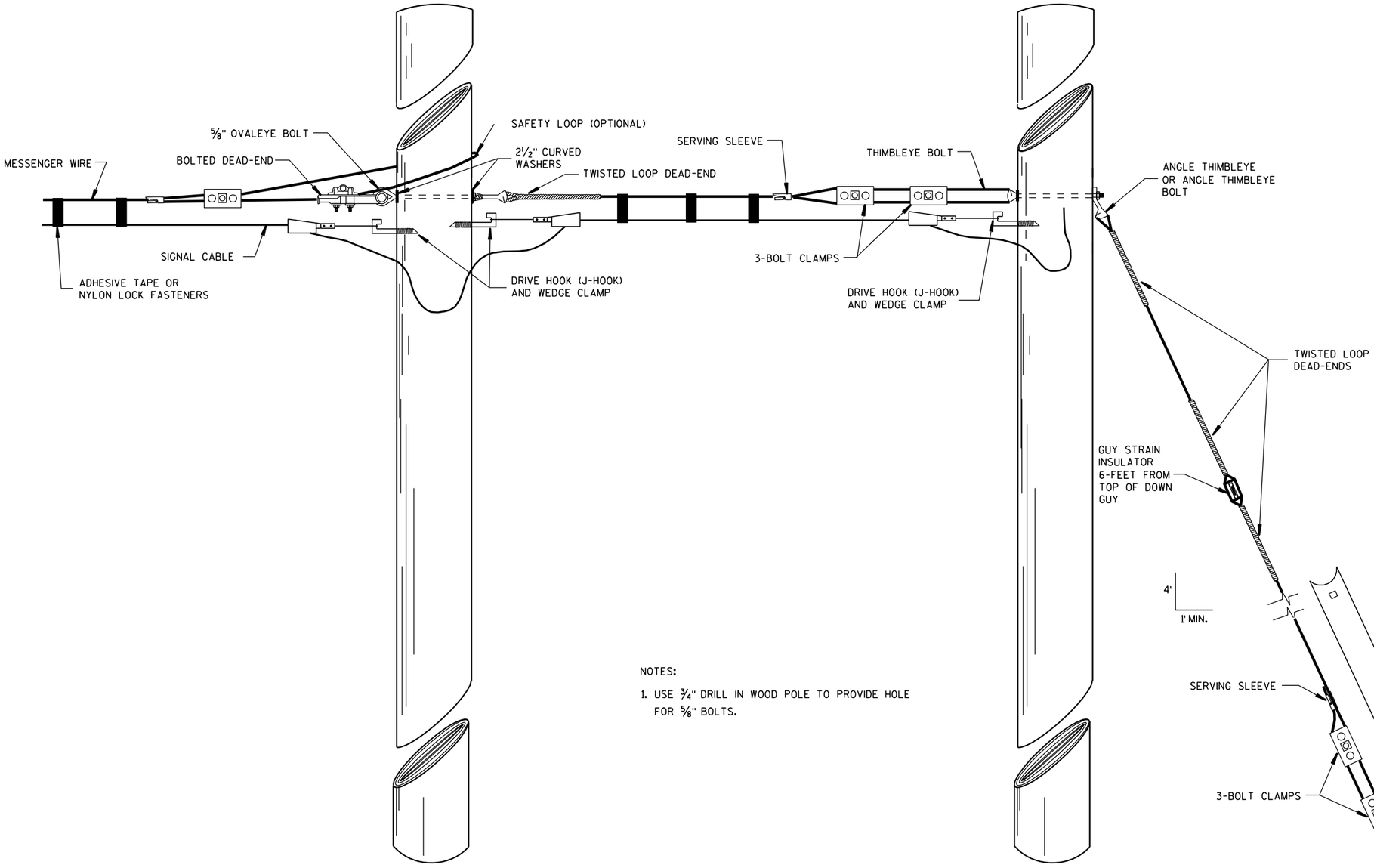
FHWA

6

S.D.D. 9 G 2-3a

6

S.D.D. 9 G 2-3a



SPAN WIRE POLE

GUY POLE

NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 DATE

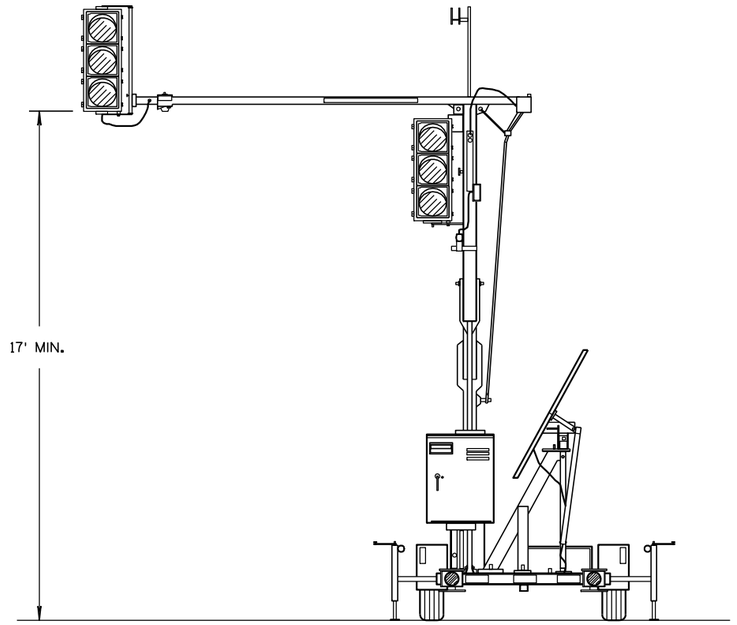
/S/ Thomas J. G... STATE ELECTRICAL ENGI

HWYS

FHWA

6

S.D.D. 9 G 2-3b

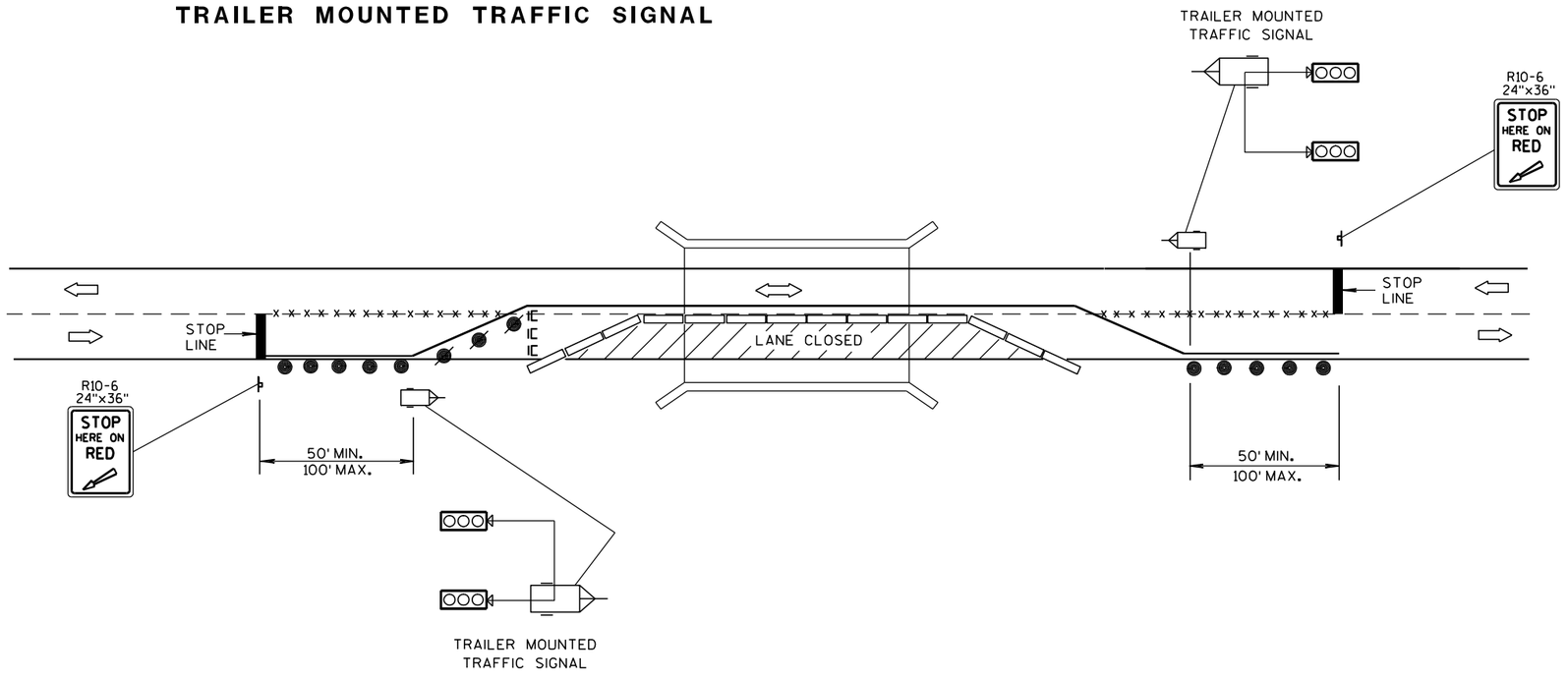


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011 — DATE

/S/ Thomas J. Gosling — STATE ELECTRICAL ENGI

FHWA

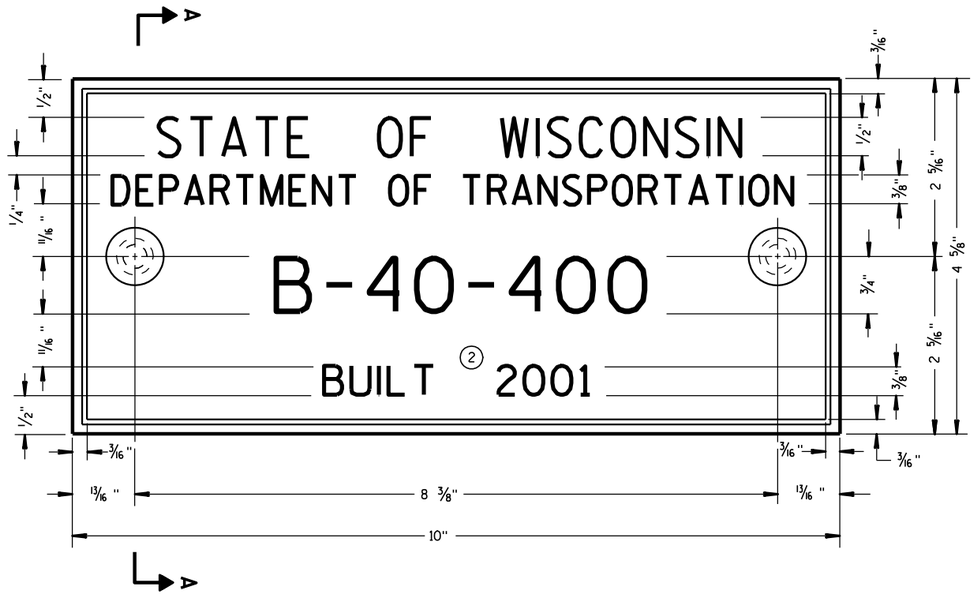
HWYS

6

S.D.D. 9 G 2-3c

6

S.D.D. 9 G 2-3c



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

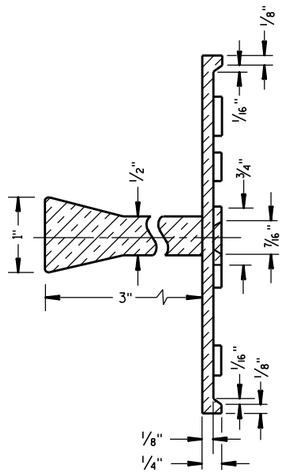
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

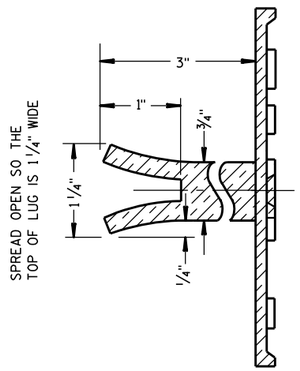
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

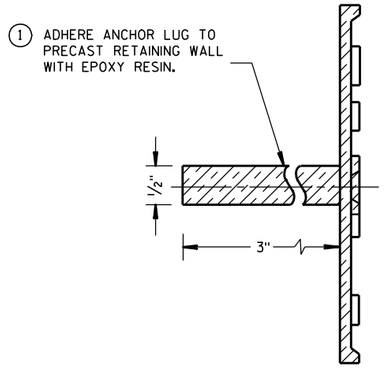
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck-- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

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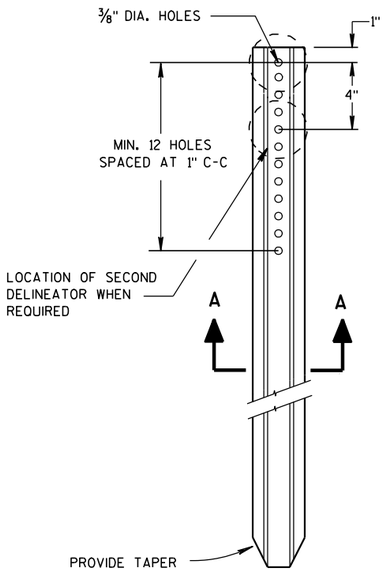
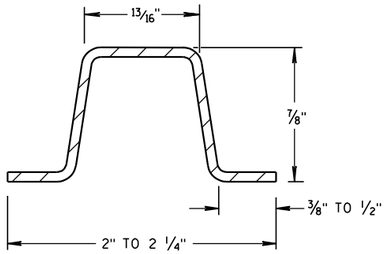
S.D.D. 12 A 3-10

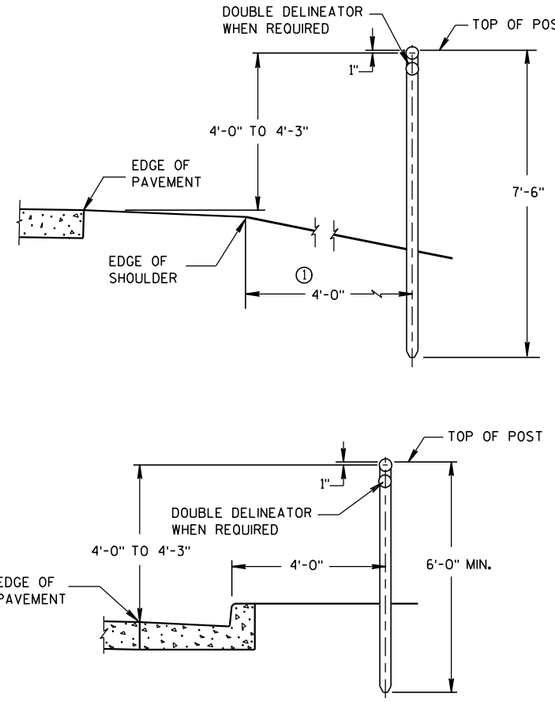


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

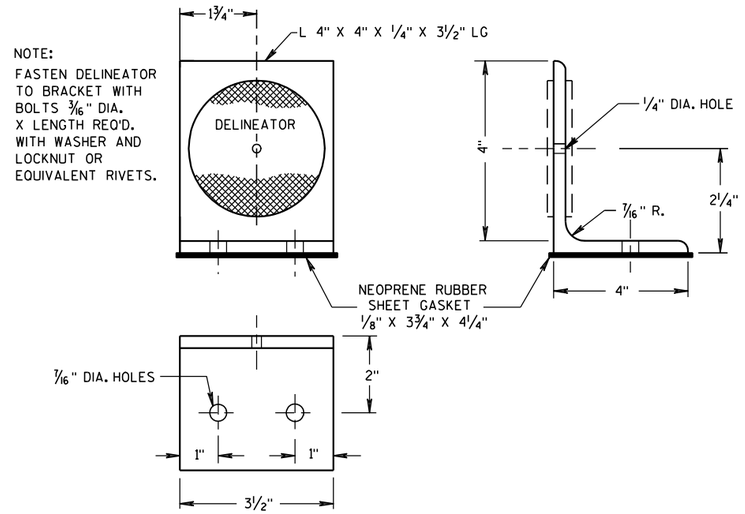


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

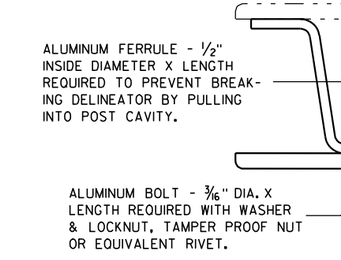
GENERAL NOTES

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

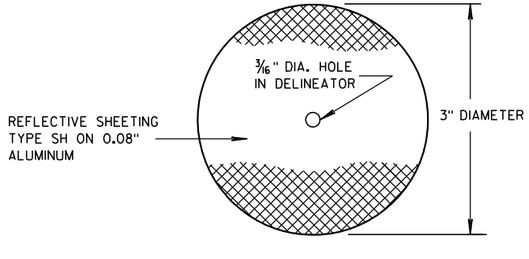
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



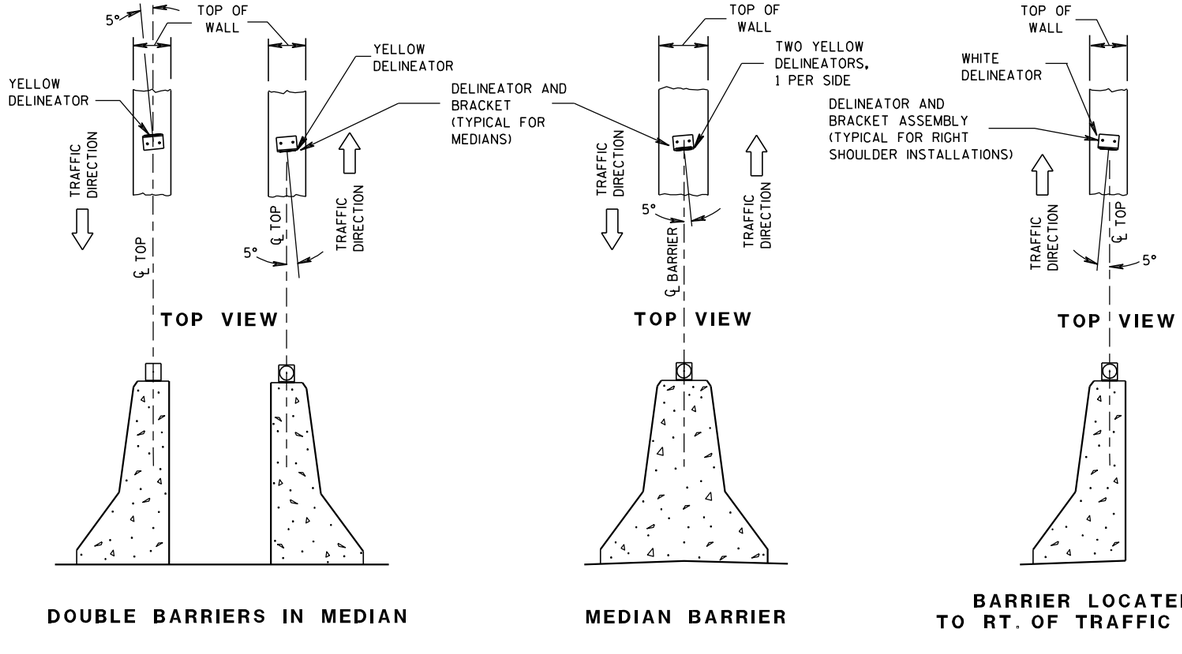
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR



DELINEATOR

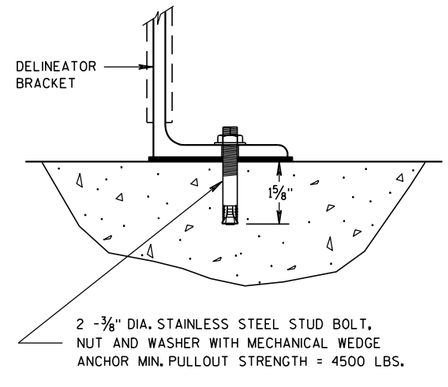


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATORS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

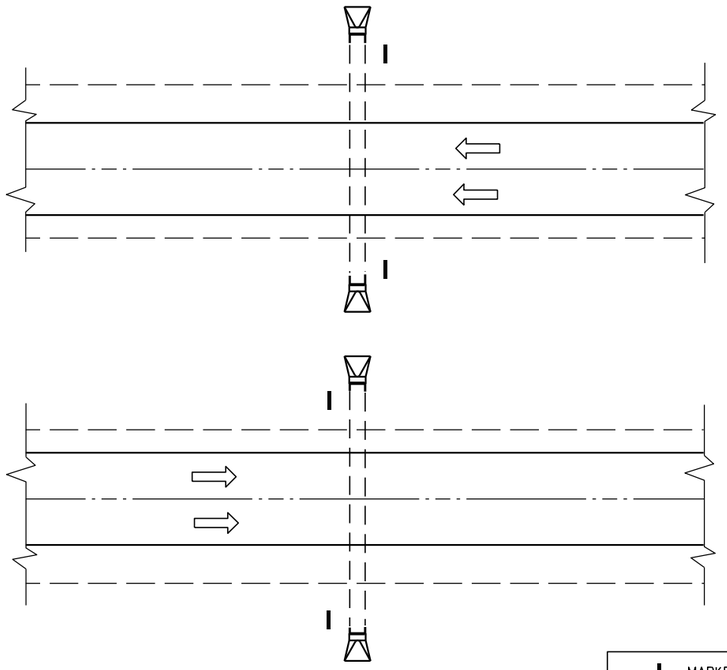
APPROVED
1/25/2011
DATE
/S/ Thomas N. Nothdurft
STATE TRAFFIC ENGINEER

FHWA

6
S.D.D. 15 A 2-7

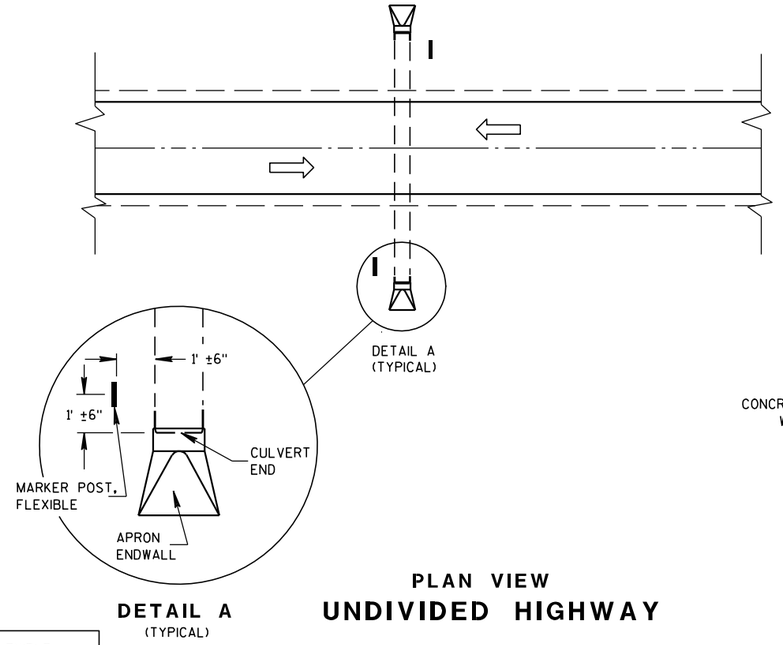
GENERAL NOTES

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



PLAN VIEW

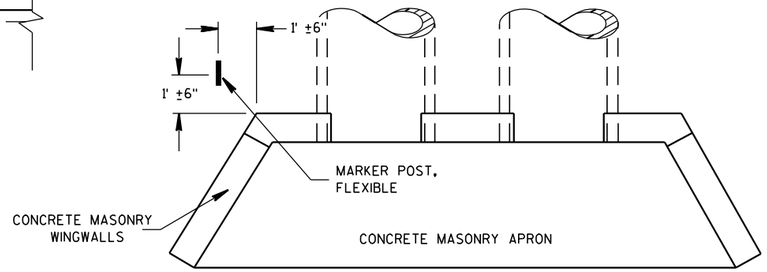
DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

UNDIVIDED HIGHWAY

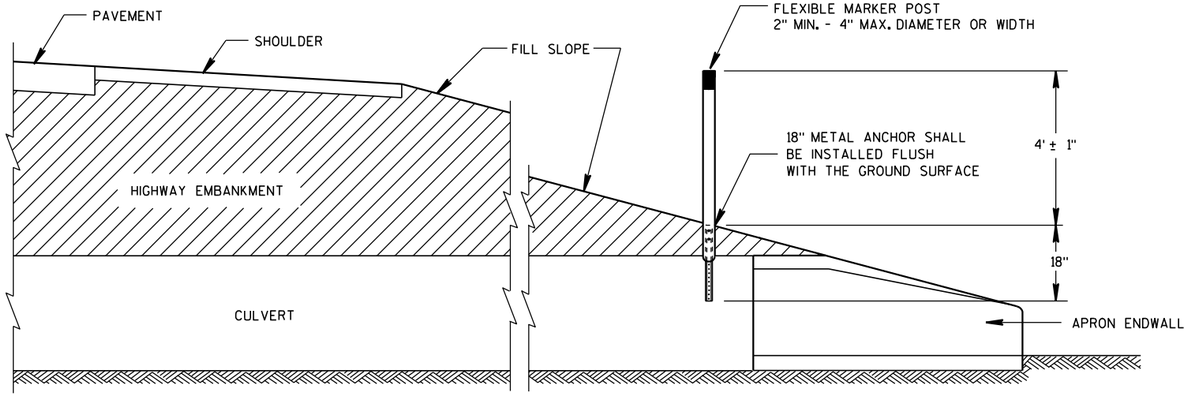


PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

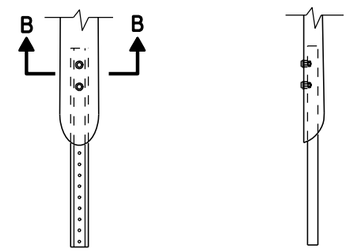
	MARKER POST, FLEXIBLE
	DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION

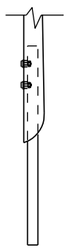


CROSS SECTION

FLEXIBLE MARKER POST

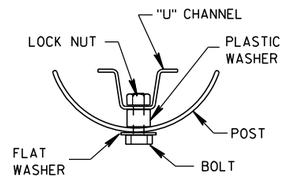


FRONT VIEW

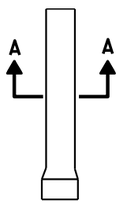


SIDE VIEW

CURVED MARKER



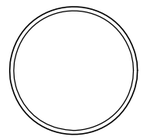
SECTION B-B



FRONT VIEW

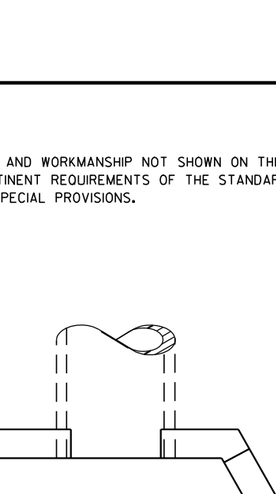
SIDE VIEW

ROUND MARKER



SECTION A-A

FLEXIBLE MARKER POST ANCHORS



ALTERNATE 1 ALTERNATE 2

FLEXIBLE MARKER POST

MARKER POST, FLEXIBLE, FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/98
DATE

/S/ Rory L. Rhinesmith
CHEIF ROADWAY DEVELOP ENGINEER

FHWA

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S.D.D. 15 A 3-1

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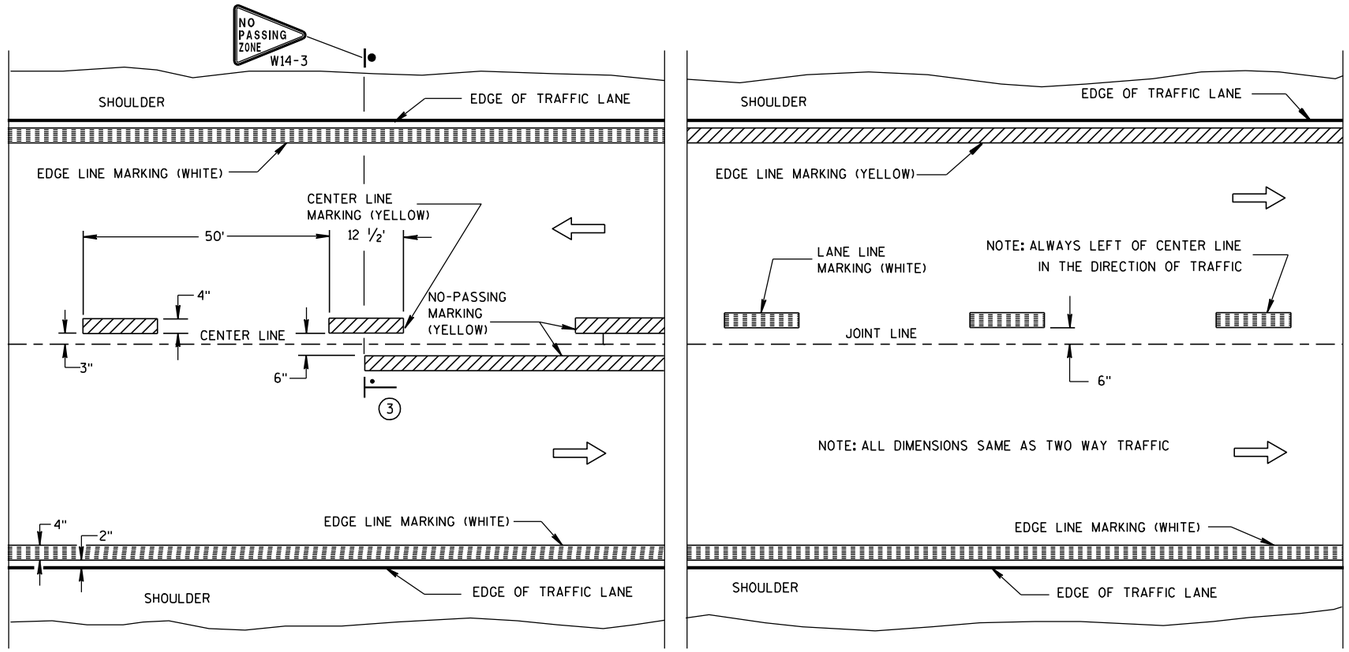
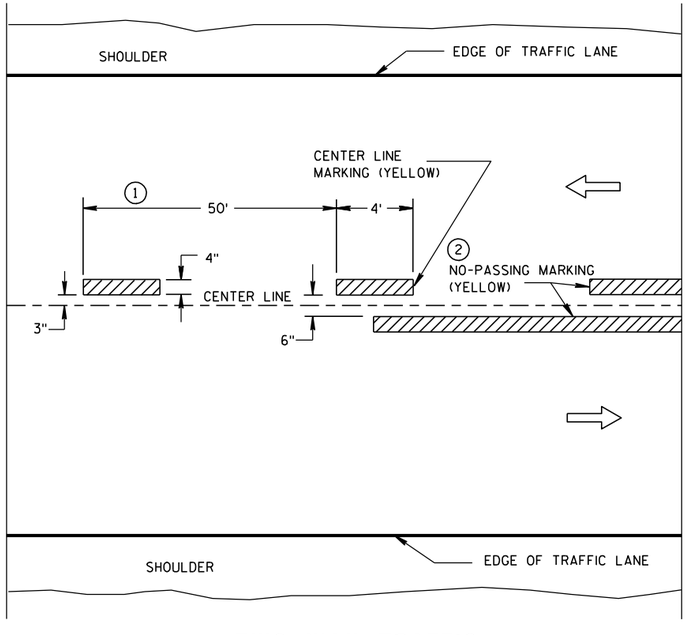
S.D.D. 15 A 3-1



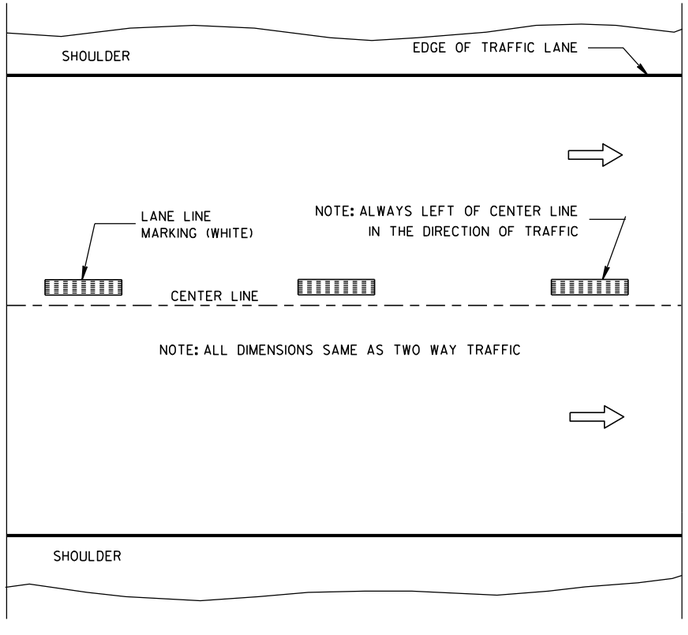
TWO WAY TRAFFIC

ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

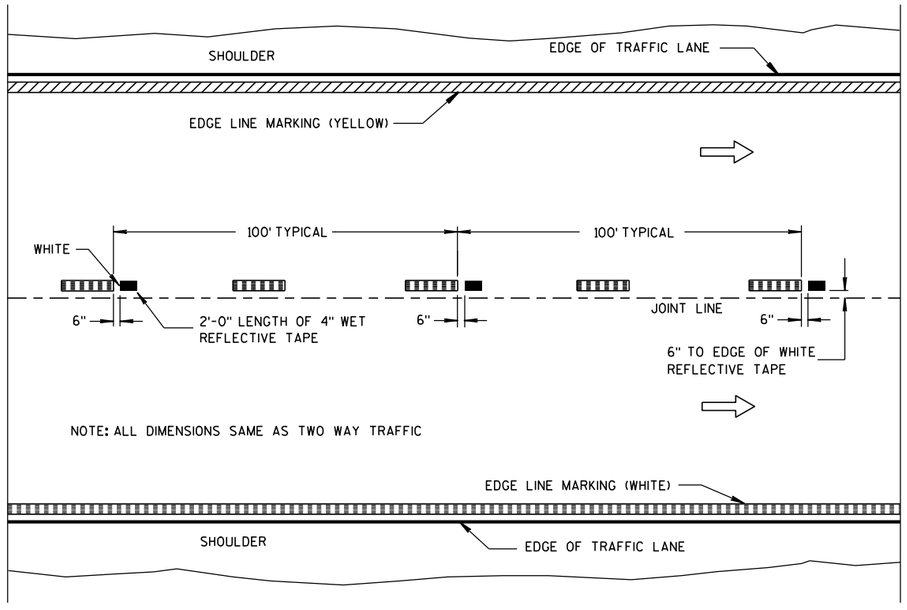
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-23-11 (DATE)
/S/ Thomas N. Notbohm (STATE TRAFFIC ENGINEER)

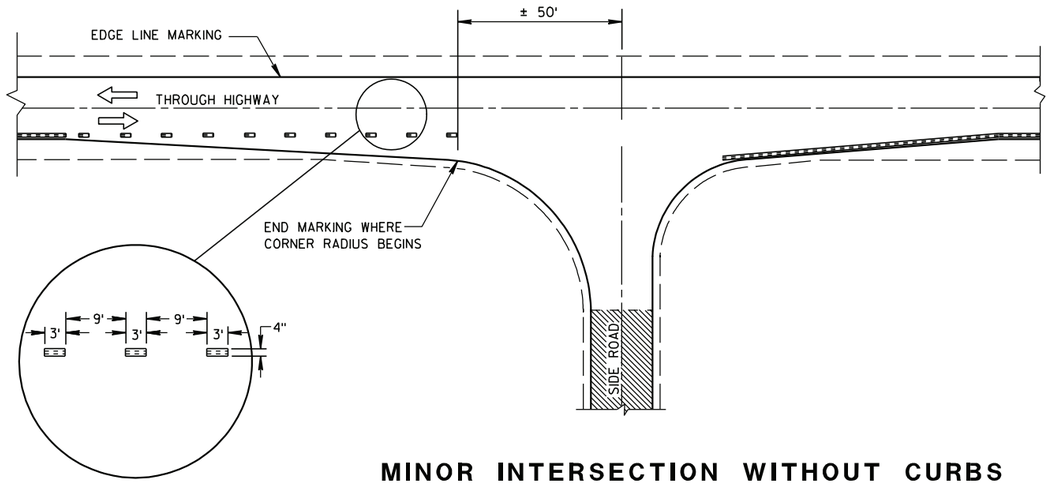
FHWA

6

S.D.D. 15 C 8-14a

6

S.D.D. 15 C 8-14a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

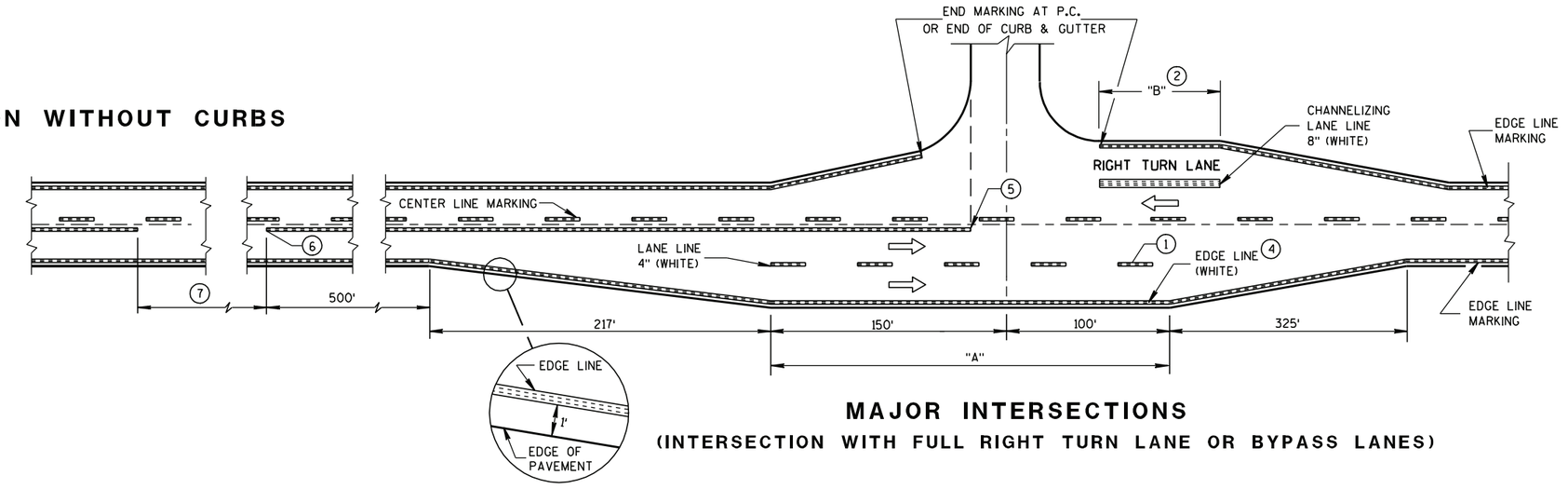
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

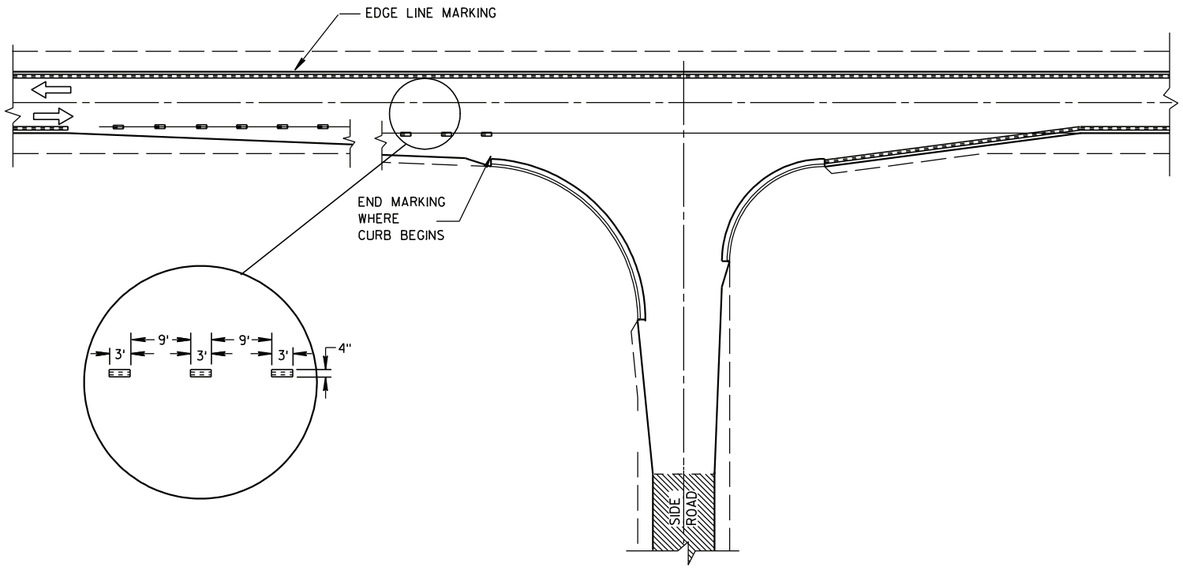
ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

(7)

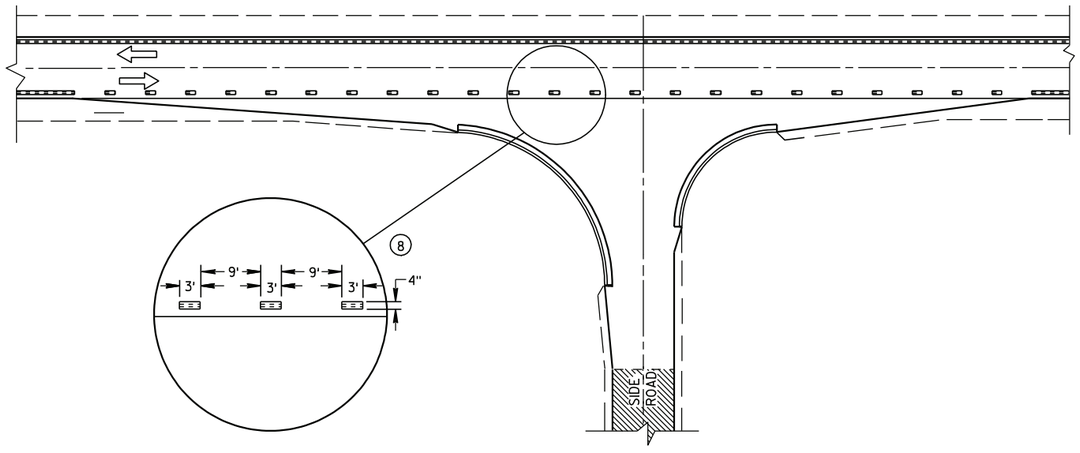
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING (INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 8-14b

6

S.D.D. 15 C 8-14b

TWO-LANE ROADWAY

SYMBOLS

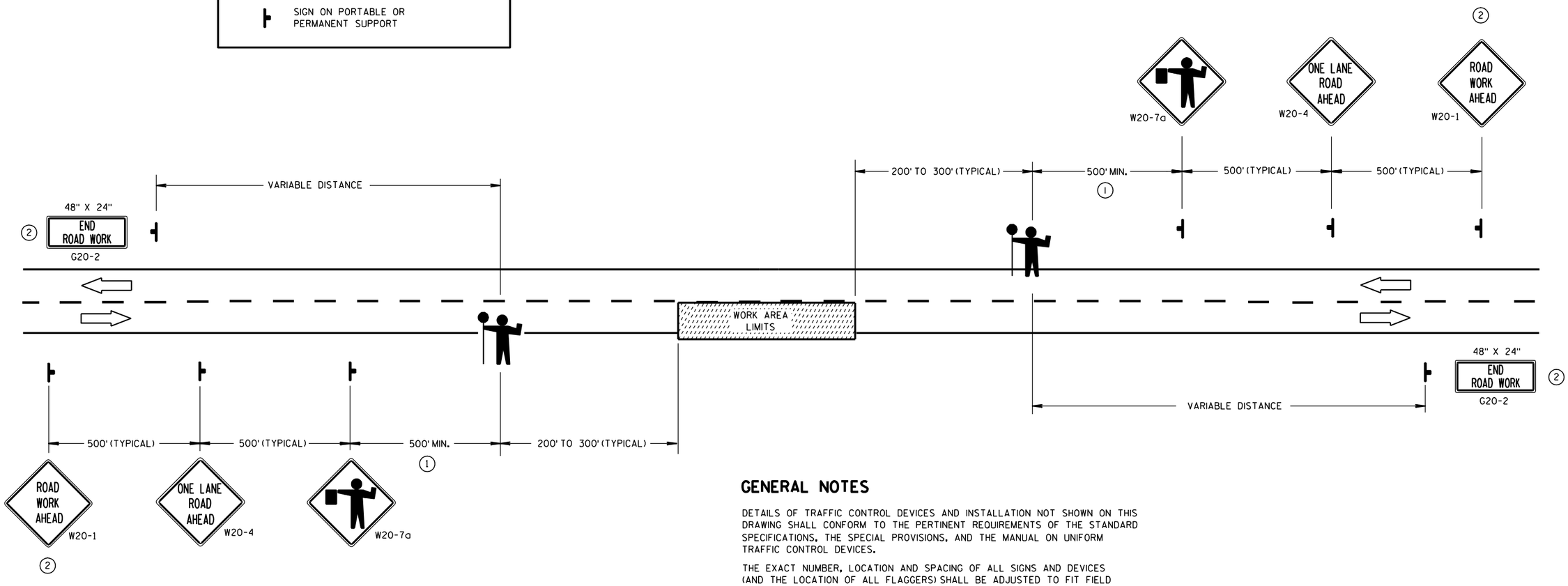
WORK AREA

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

SIGN ON PORTABLE OR PERMANENT SUPPORT

W3-4

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



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

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

GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, THE "FLAGGER AHEAD", THE "ROAD WORK AHEAD" AND THE ONE LANE ROAD AHEAD" SIGNS SHALL BE COVERED OR REMOVED AND THE HIGHWAY RESTORED TO NORMAL OPERATION.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

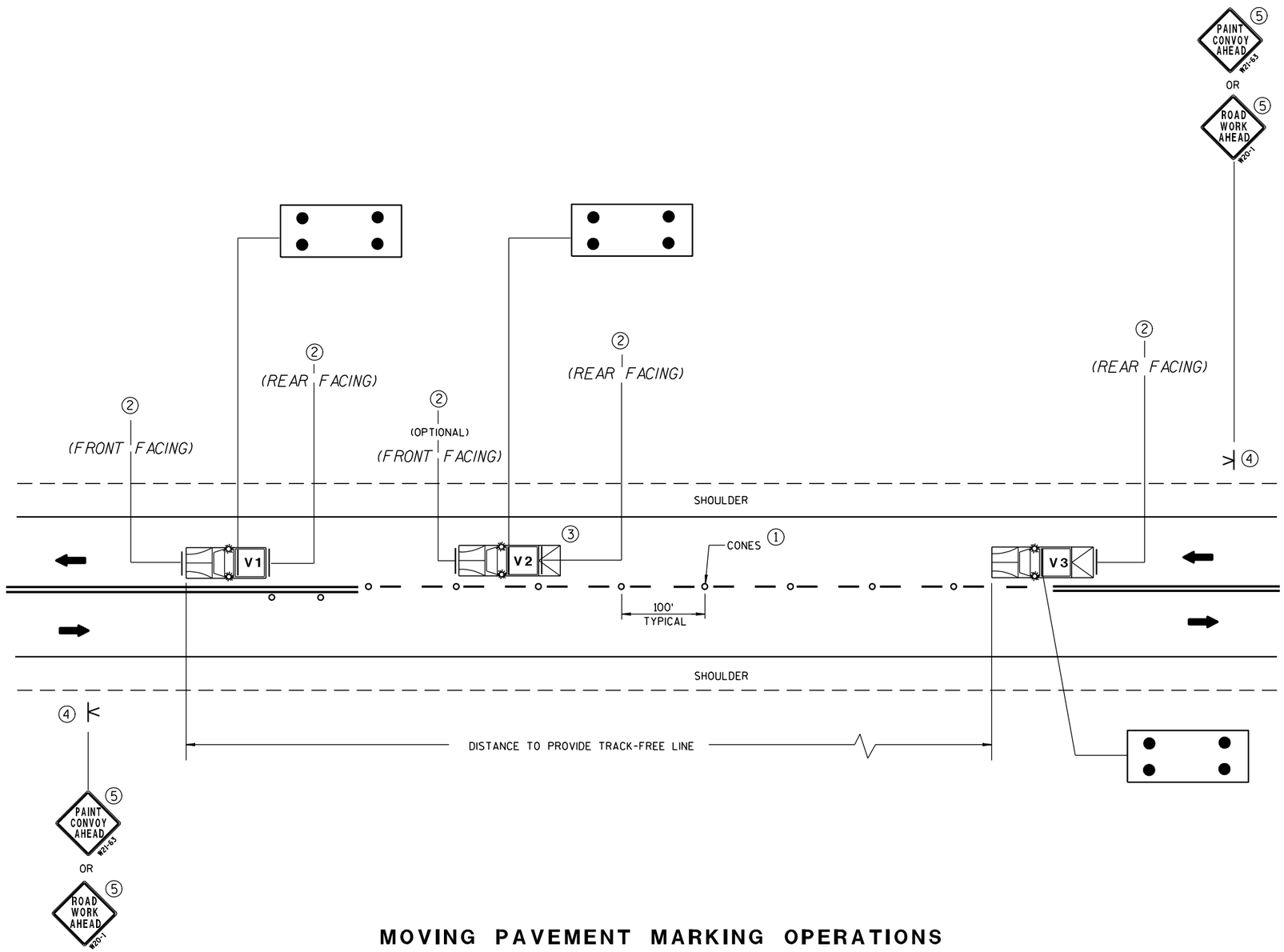
9/5/06 — DATE

/S/ Thomas N. Nathaam — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 C 12-3



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

(1) CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

(2) USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

(3) OPTIONAL TRUCK-MOUNTED ATTENUATOR.

(4) SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

(5) IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE (OPTIONAL)
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
- SIGN ON PORTABLE SUPPORT
- DIRECTION OF TRAVEL
- CONES
- FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
12/6/2011 DATE	/S/ Thomas N. Nothem STATE TRAFFIC ENGINE SIGN
FHWA	

6

S.D.D. 15 C 19-1a

GENERAL NOTES

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

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

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

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

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

W20-1 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.

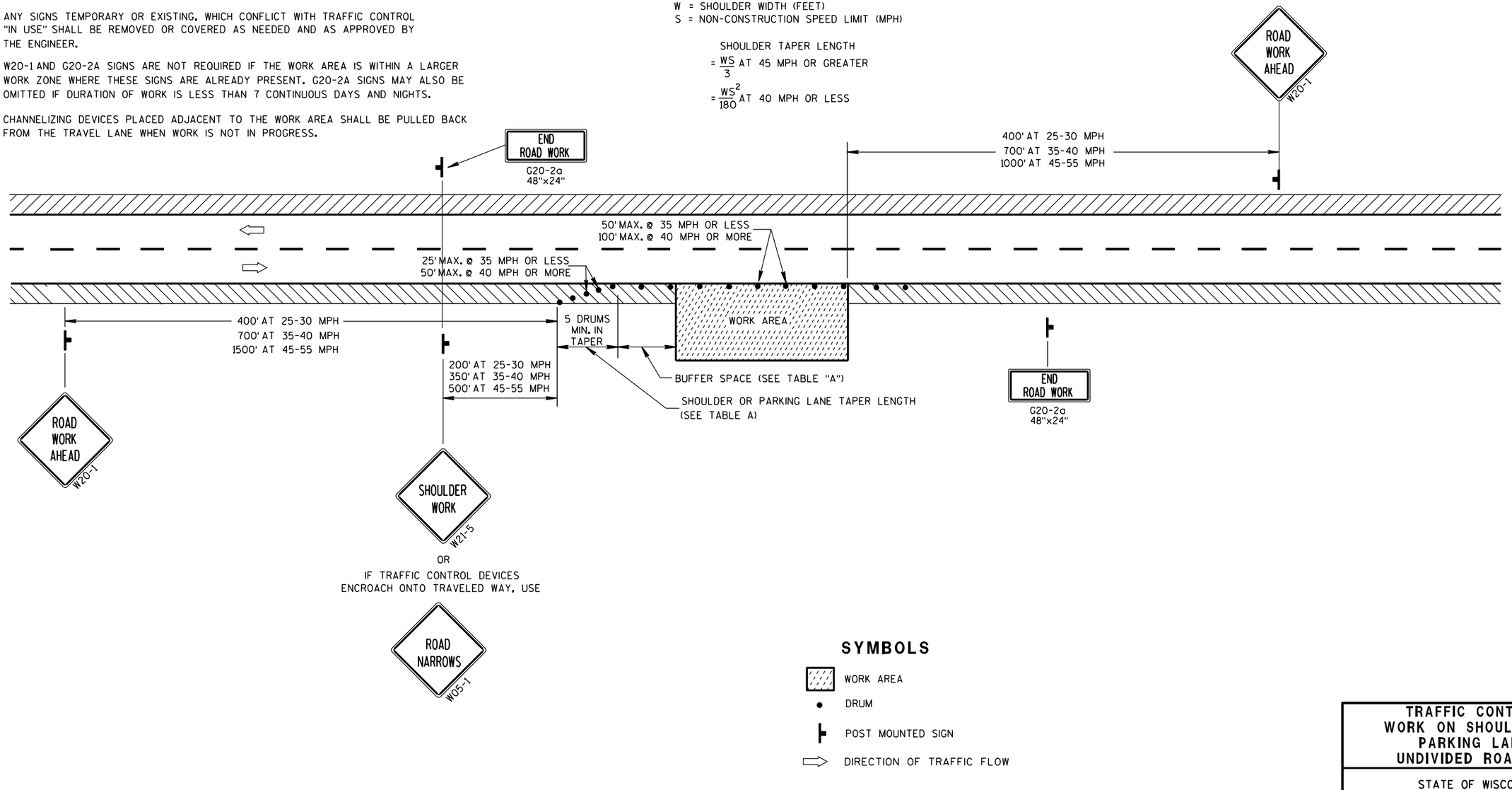
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

S \ W	SHOULDER TAPER LENGTH (FEET) 4	6	8	10	BUFFER SPACE (FEET)
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
$= \frac{WS}{3}$ AT 45 MPH OR GREATER
$= \frac{WS^2}{180}$ AT 40 MPH OR LESS



SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK[illegible] ENGINEER
FHWA

6

S.D.D. 15 D 28-1

S	BUFFER SPACE (DESIRABLE)
25	55'
30	85'
35	120'
40	170'
45	220'
50	280'
55	335'

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

END ROAD WORK
G20-2A
48"x24"

BEGIN TEMPORARY PAVEMENT MARKING, 4-INCH SOLID YELLOW CENTERLINE ✳✳

NO PASSING ZONE
W14-3
48"x36"

1000'
500'
200'
500'
50'
50'
25' TYP.

W01-6
48"x24"
✳✳✳

R11-2
48"x30"
ROAD CLOSED
TYPE III BARRICADE

FOR BRIDGE OR CULVERT REPLACEMENTS SUBSTITUTE
BRIDGE OUT
R11-2 (MOD)
48"x30"

ROAD CLOSURE OR BRIDGE/CULVERT REPLACEMENT

BUFFER SPACE (SEE TABLE)

WORK AREA

BEGIN TEMPORARY PAVEMENT MARKING, 4-INCH WHITE EDGELINE

TEMPORARY STEEL PLATE BEAM GUARD AND END TREATMENT WHEN INCLUDED IN THE CONTRACT. FOR LAYOUT, SEE DETAILS ELSEWHERE IN THE PLAN.

W5-52L
12"x36"

W5-52R
12"x36"

ROAD WORK AHEAD
W20-1

ROAD WORK 1000 FT
W20-1

W01-4R
W01-3R
W01-4L
W01-3L
W013-1
XX M.P.H.
24"x24"
OR

END TEMPORARY PAVEMENT MARKING, 4-INCH WHITE EDGELINE

TEMPORARY PAVEMENT MARKING, 4-INCH WHITE EDGELINES. (USE REMOVABLE TAPE WHERE TEMPORARY MARKING CROSSES PERMANENT PAVEMENT)

TEMPORARY PAVEMENT MARKING, 4-INCH DOUBLE YELLOW CENTERLINE AND 2-WAY YELLOW RAISED PAVEMENT MARKERS AT 25' SPACING. (USE REMOVABLE TAPE WHERE TEMPORARY MARKING CROSSES PERMANENT PAVEMENT)

ROAD WORK 1000 FT
W20-1

ROAD WORK AHEAD
W20-1

END TEMPORARY PAVEMENT MARKING, 4-INCH SOLID YELLOW CENTERLINE ✳✳

GENERAL NOTES :

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

EQUIPMENT, VEHICLES, OR MATERIAL SHOULD NOT BE STORED IN BUFFER SPACE.

✳ INDICATE THE ADVISORY SPEED PLATE LEGEND IN THE MISCELLANEOUS QUANTITIES. IF ADVISORY SPEED IS GREATER THAN 30 MPH, USE THE W01-4 SIGN. IF ADVISORY SPEED IS 30 MPH OR LESS, USE THE W01-3 SIGN.

✳✳ WHEN THE DISTANCE TO/FROM THE NEXT CLOSEST NO-PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.

✳✳✳ OMIT THESE W01-6 SIGNS IF THE ADVISORY SPEED OF THE CURVE IS GREATER THAN 30 MPH.

LEGEND

- POST MOUNTED SIGN
- DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- DRUM
- TYPE III BARRICADE (8' EQUIVALENT) WITHOUT / WITH SIGN
- (A) WARNING LIGHT, TYPE A (LOW-INTENSITY FLASHING)
- TEMPORARY DELINEATOR, CRYSTAL (WHITE) (SINGLE DELINEATOR)
- TEMPORARY RAISED PAVEMENT MARKERS (TWO-WAY YELLOW)
- XXX REMOVE PAVEMENT MARKING
- DIRECTION OF TRAFFIC FLOW
- TEMPORARY STEEL PLATE BEAM GUARD AND END TREATMENT

TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2000
DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

6

S.D.D. 15 D 31-1

LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- FLAGS, 16"x16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC FLOW
- 4" X 6" WOOD POST

W057-52
36"x24"

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

GENERAL NOTES :

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

NON-OPERATIONAL EQUIPMENT OR MATERIAL SHALL BE LOCATED BEHIND THE PRECAST CONCRETE BARRIER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

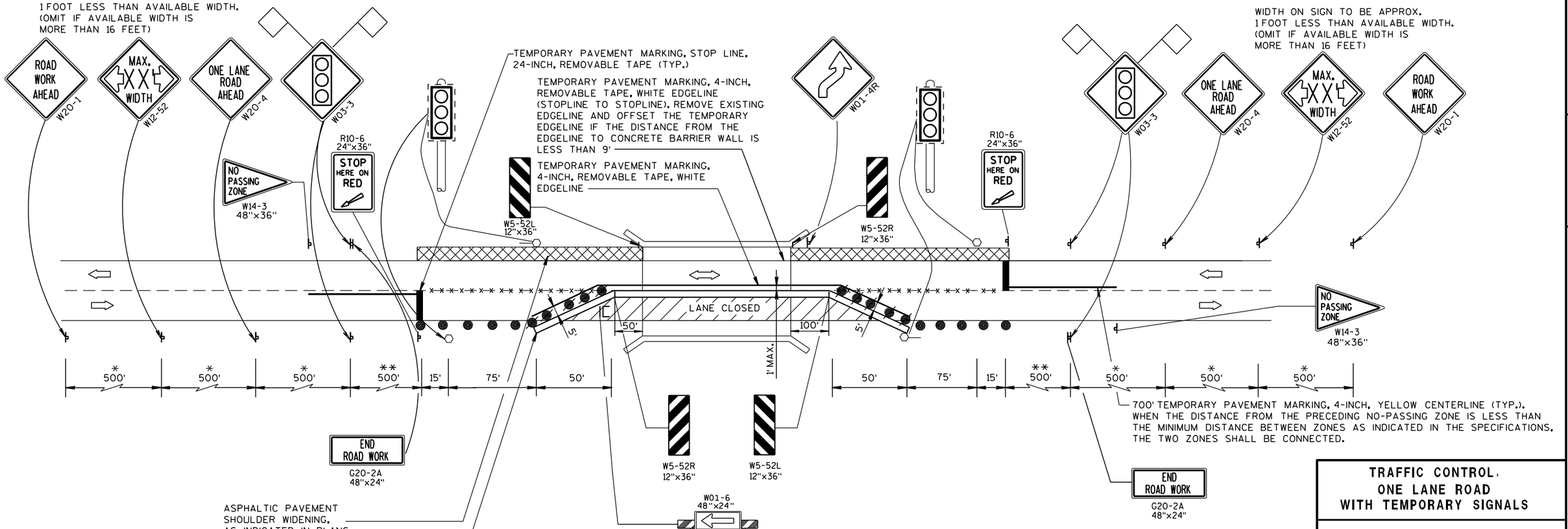
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500' SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350' TYPICAL SPACING. FOR 25-30 MPH, USE 200' TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

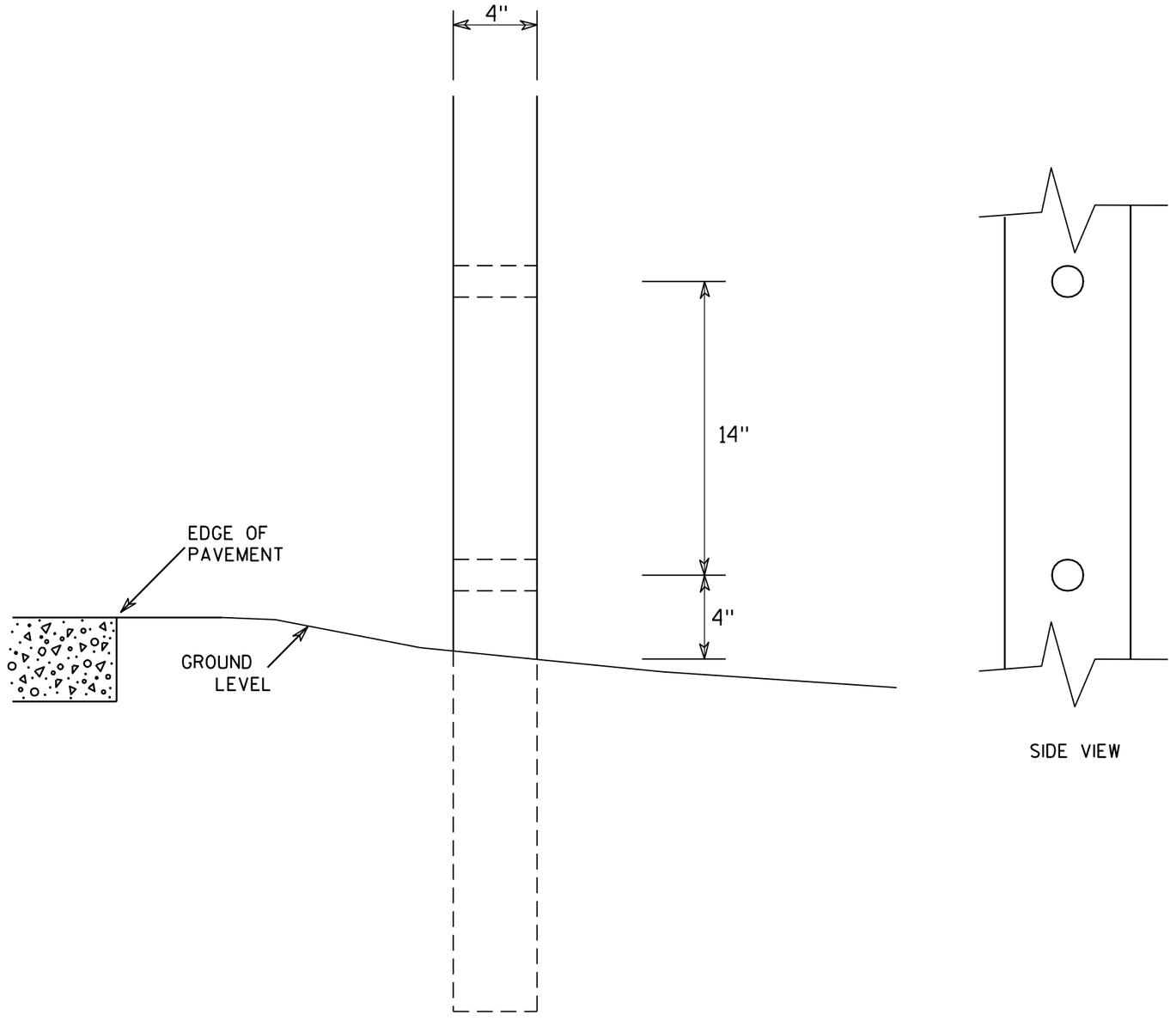
9-8-03 DATE

/S/ Thomas N. Nothohm for
CHIEF SIGNS AND MARI[illegible] IEER

FHWA

6

S.D.D. 15 D 33-2
S.D.D. 15 D 33-2



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

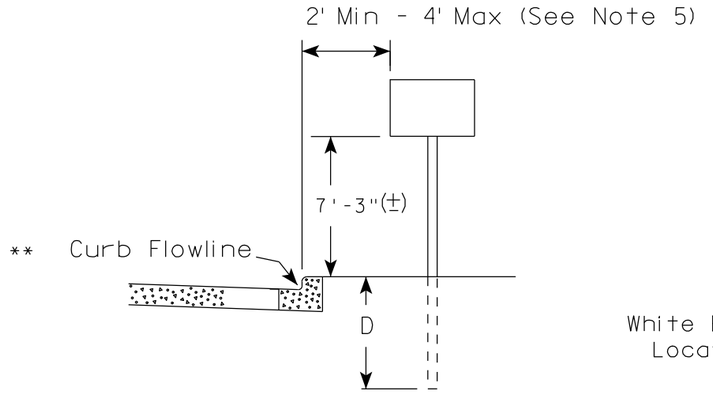
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

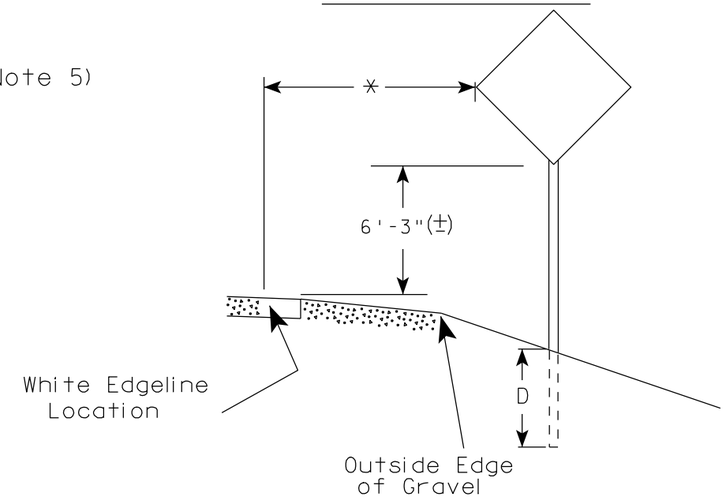
DATE 3/27/97 PLATE NO. A4-11.2

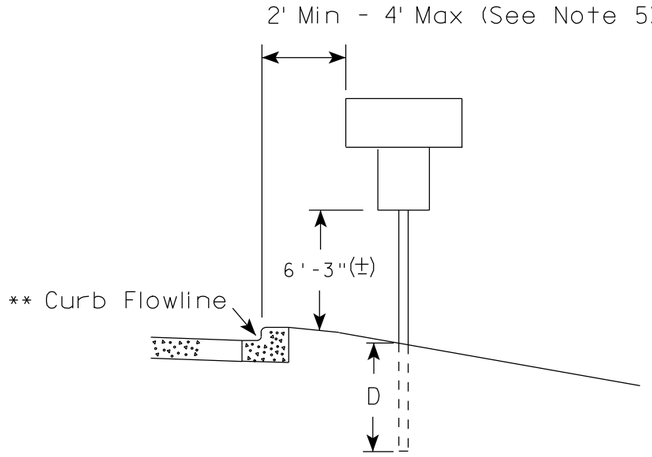
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 39	E

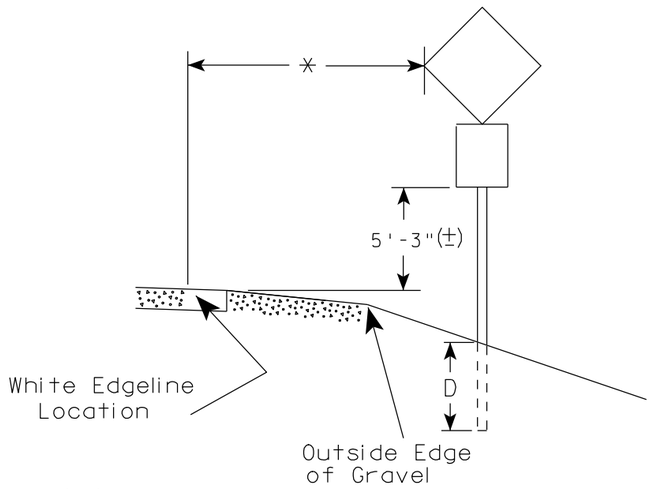
URBAN AREA



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.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

7

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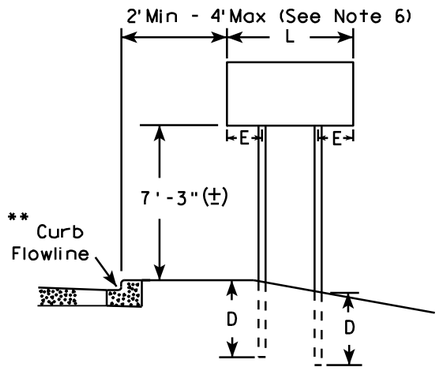
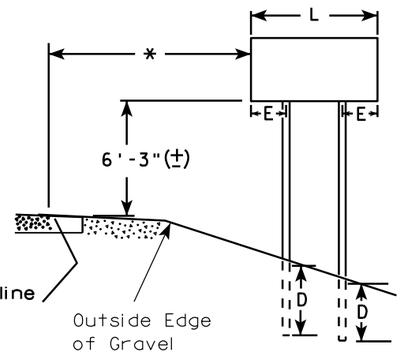
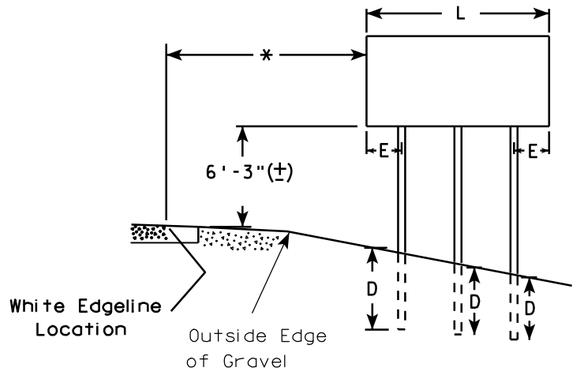
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 40 | E

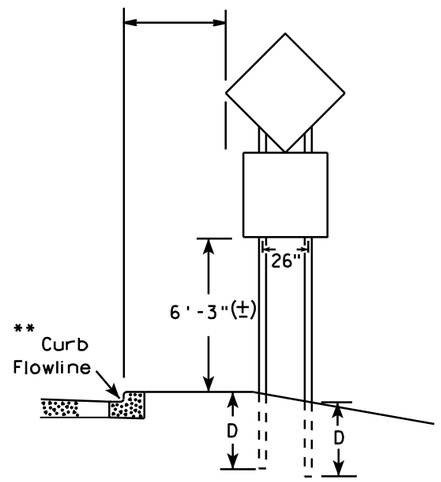
URBAN AREA



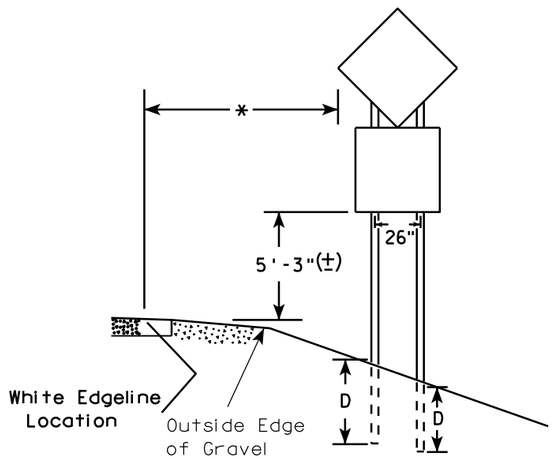
RURAL AREA (See Note 3)







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 120"	L/5

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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

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

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

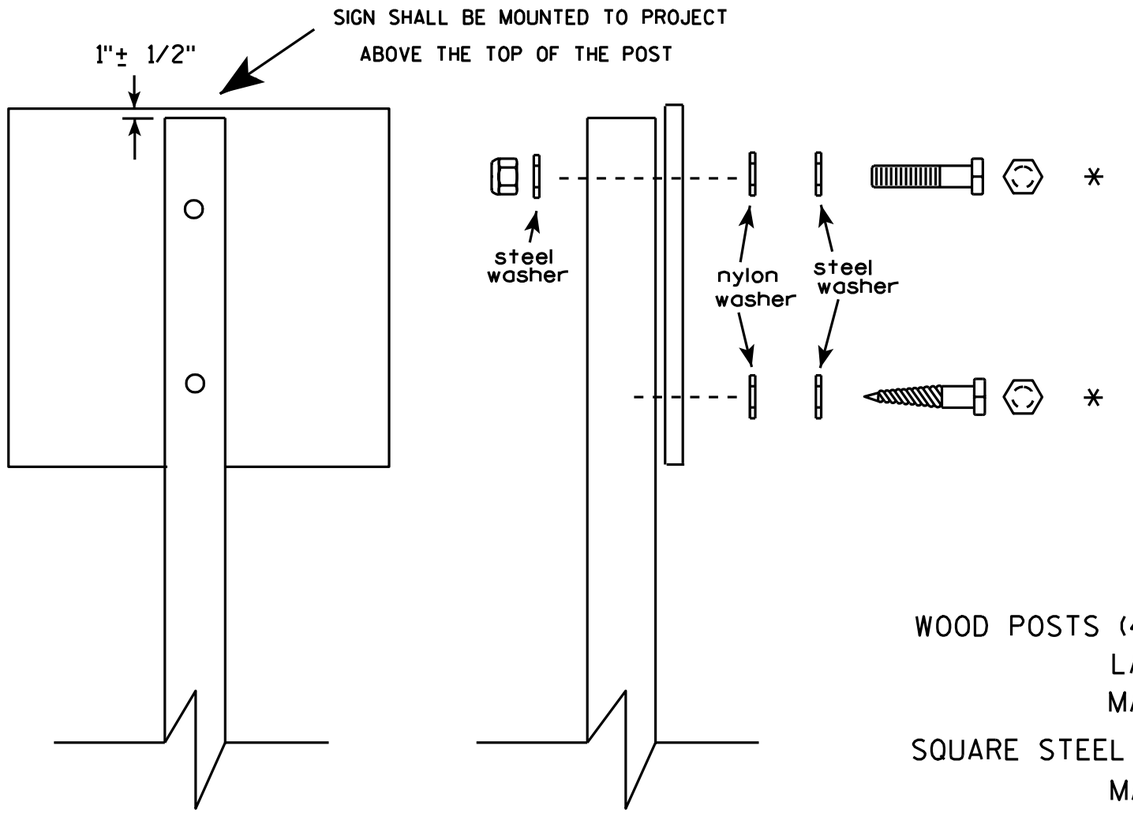
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 41	E



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

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

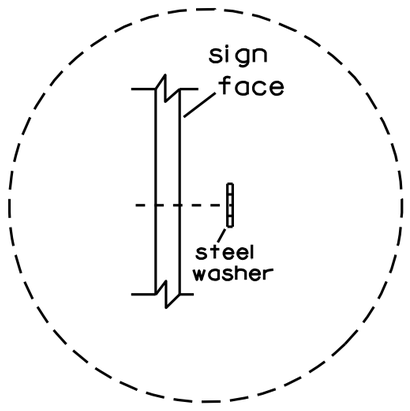
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

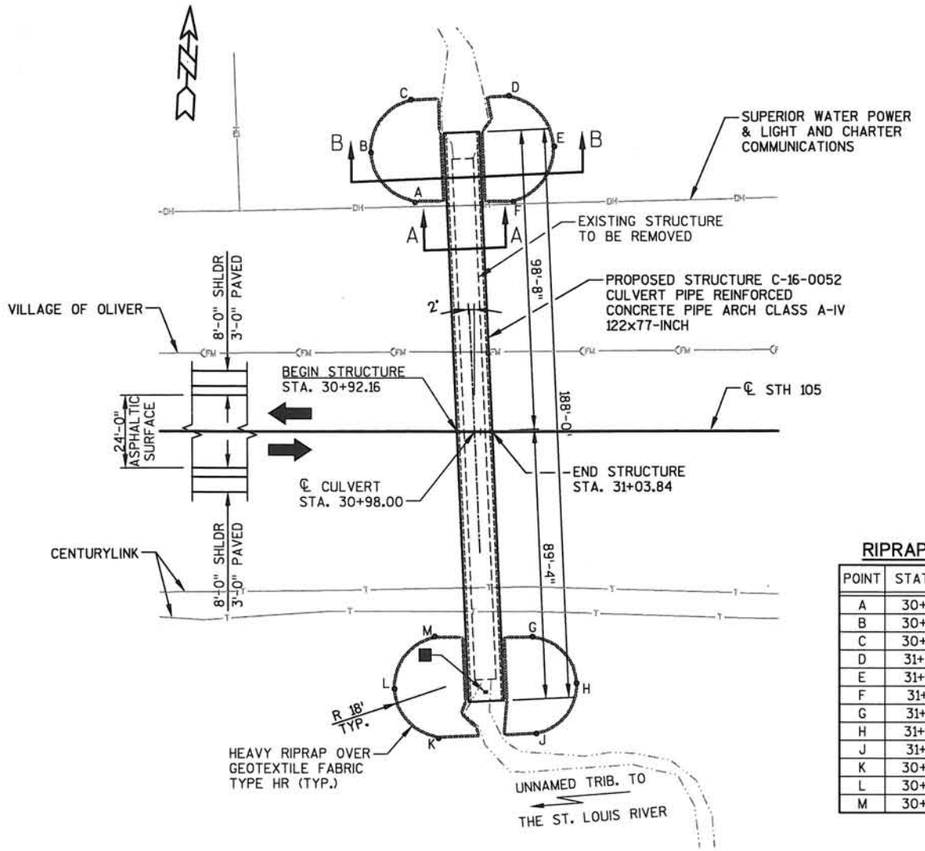
7

PROJECT NO:

SHEET NO: 42 E

STATE PROJECT NUMBER

8760-00-61

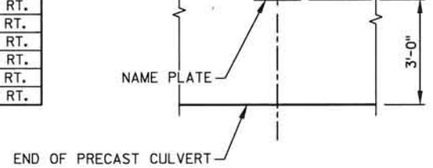


PLAN C-16-0052

(PRECAST CONCRETE PIPE ARCH)

RIPRAP LAYOUT

POINT	STATION	OFFSET
A	30+79	76.0' LT.
B	30+64	92.1 LT.
C	30+78	109.3' LT.
D	31+09	110.6' LT.
E	31+24	93.9 LT.
F	31+11	76.0' LT.
G	31+17	68.0' RT.
H	31+32	83.4 RT.
J	31+18	99.9' RT.
K	30+86	101.2' RT.
L	30+72	85.2 RT.
M	30+85	68.0' RT.



NAME PLATE LOCATION

OUTSIDE FACE OF CULVERT AT TOP OF PIPE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED AS SHOWN ON SHEET 3.

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE. ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TO THE ELEVATION 2' ABOVE THE TOP OF THE PIPE WITHIN THE LENGTH OF THE CULVERT AS SHOWN ON SHEET 2.

NON-ORGANIC MATERIAL EXCAVATED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES CULVERTS C-16-0052" MAY BE USED AS BACKFILL MATERIAL UNDER THAT ITEM, HOWEVER EXCAVATED SOILS MAY BE ABOVE THEIR OPTIMUM MOISTURE CONTENT AND COULD REQUIRE DRYING PRIOR TO PLACEMENT IN ORDER TO OBTAIN THE REQUIRED COMPACTION LEVEL. THE FOLLOWING ESTIMATED VOLUMES RELATED TO THE EXCAVATION FOR STRUCTURES BID ITEM ARE INCLUDED FOR INFORMATION ONLY:

EXCAVATION	= 6650 CY
FILL	= 4330 CY
FILL EXPANSION	= 25%
WASTE	= 1240 CY

THE EXISTING STRUCTURE IS A SINGLE CORRUGATED STEEL PIPE CULVERT WITH A 7-FOOT DIAMETER AND A LENGTH OF 170 FEET WHICH SHALL BE REMOVED IN STAGES TO ALLOW THE HIGHWAY TO REMAIN OPEN TO TRAFFIC.

ALL PRECAST ELEMENTS SHALL BE INCLUDED UNDER THE BID ITEM "REINFORCED CONCRETE PIPE ARCH". ALSO INCLUDED IN THIS PRICE IS ALL HARDWARE AND INCIDENTALS NECESSARY TO INSTALL THE PRECAST ELEMENTS INCLUDING JOINT TIES AND JOINT WRAP.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING — HL-93

EARTH LOAD:

DESIGNED FOR 16' OF FILL

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY — f'c = 5,000 P.S.I.

BAR STEEL REINFORCMENT GRADE 60 — fy = 60,000 P.S.I.

HYDRAULIC DATA

100 YEAR FREQUENCY

DRAINAGE AREA	1.11 SQ. MI.
Q_{100} TOTAL	480 C.F.S.
THROUGH STRUCTURE	480 C.F.S.
OVERTOPPING ROADWAY	N/A
VELOCITY - THROUGH STRUCTURE	12.5 F.P.S.
WATERWAY AREA	38.6 SQ. FT.
HIGH WATER $_{100}$ ELEVATION	617.73

EROSION CONTROL

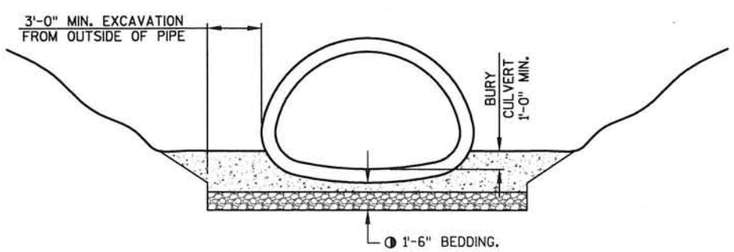
Q_2	110 C.F.S.
HIGH WATER$_2$ ELEVATION	615.25

LIST OF DRAWINGS

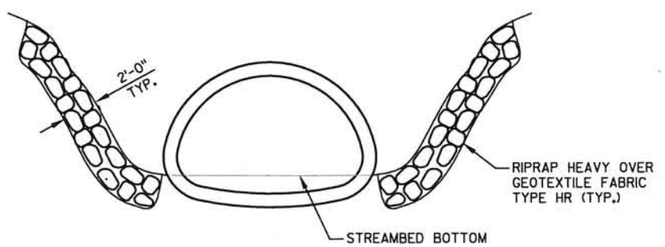
LEGEND

■ NAME PLATE LOCATION (SEE DETAIL THIS SHEET)

◑ UNDERCUT 1'-6" (TO BE PAID FOR UNDER "EXCAVATION FOR STRUCTURES"), PLACE GEOTEXTILE FABRIC TYPE C THEN BACKFILL WITH 12" OF BREAKER RUN AND 6" OF BACKFILL STRUCTURE. EXTEND 3'-0" BEYOND THE FOOTPRINT OF THE CULVERT. IN LIEU OF THE BREAKER RUN, THE CONTRACTOR MAY ELECT TO SUBSTITUTE NO. 1 OR NO. 2 COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL TO BE USED AS A CONSTRUCTION PLATFORM FOR THE CULVERT AS APPROVED BY THE FIELD ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.



SECTION A-A



SECTION B-B

⊗ BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1	23+40	CHISELED SQUARE IN CONCRETE SLAB, 80.0' LT.	649.01
2	30+22	RR SPIKE IN PP, 72.4' LT.	627.59
3	33+50	STAR SPIKE IN PP, 81.0' LT.	631.52

WISCONSIN PROFESSIONAL ENGINEER
PATRICK T. BOLAND E-36303 SPRING GREEN WI
12-18-12

DESIGN CONSULTANT
GREG JEWELL, PE
(608) 588-7484

BRIDGE OFFICE CONTACT
WILLIAM DREHER, PE
(608) 266-8489

NO.	DATE	REVISION	BY

JEWELL associates engineers, inc.
Engineers - Planners - Surveyors
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
PHONE: (608) 588-7484
FAX: (608) 588-9322

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR — CHIEF STRUCTURES DESIGN ENGINEER — DATE 11/07/12

STRUCTURE C-16-0052

STH 105 OVER UNNAMED TRIBUTARY TO THE ST. LOUIS RIVER

COUNTY	DOUGLAS	~~TOWN/CITY/~~VILLAGE	OLIVER

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	PTB	DESIGN CK'D.	AK	DRAWN BY	PTB	PLANS CK'D.	AK

GENERAL PLAN

SHEET 1 OF 4

8

8

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\STRUCTURE\C-00-0000_01_FSH.DWG
LAYOUT : LAYOUT1

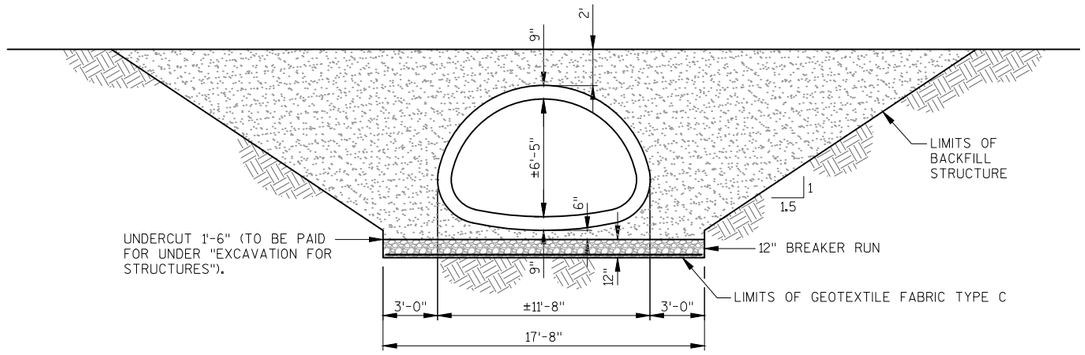
PLOT DATE : 12/18/2012
PLOT TIME : 8:42:59 AM

PLOT BY : BOLAND, PATRICK

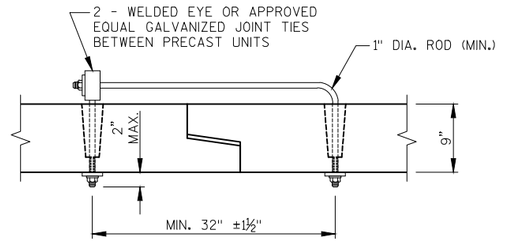
PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER

8760-00-61

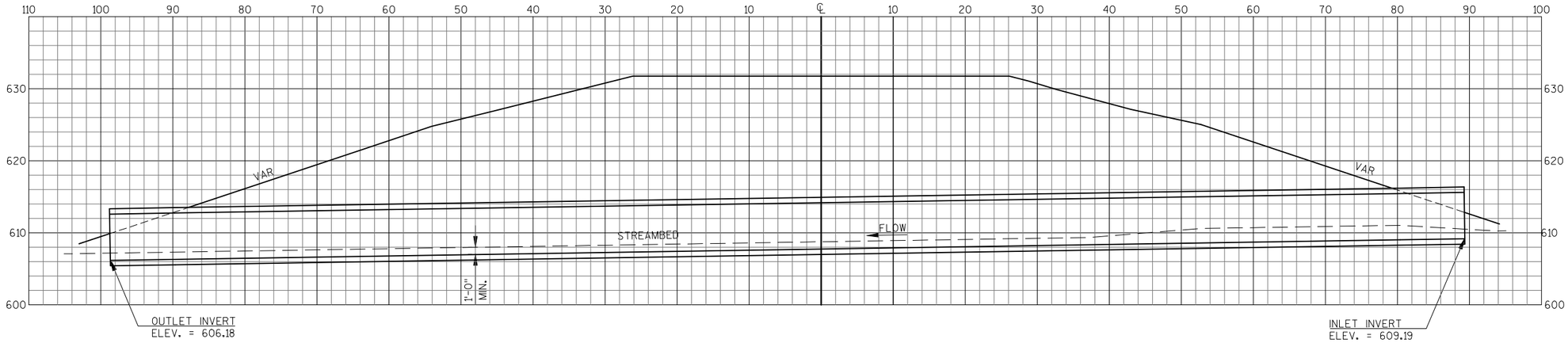


BACKFILL STRUCTURE DETAIL
&
GEOTEXTILE TYPE C PLACEMENT DETAIL



JOINT TIES

COST INCIDENTAL TO CONCRETE PIPE BID ITEM
(2) REQ'D PER JOINT



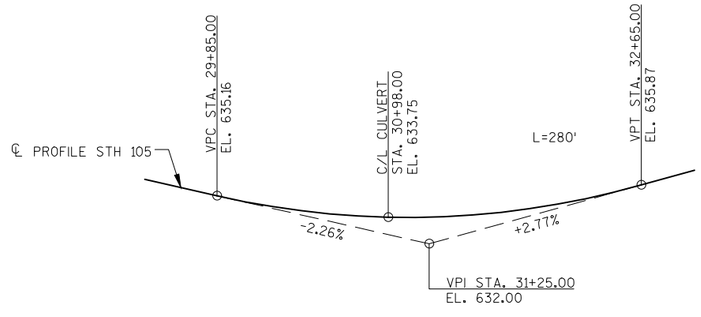
SECTION THROUGH CULVERT ALONG SKEW – STA. 30+98.00

(1) REINFORCED CONCRETE PIPE ARCH, CLASS A-IV, 122x77-INCH

TOTAL ESTIMATED QUANTITIES

	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL
	203.0200	REMOVING OLD STRUCTURE STA. 30+98	LS	1
	206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-16-0052	LS	1
	210.0100	BACKFILL STRUCTURE	CY	2050
	311.0115	BREAKER RUN	CY	150
	606.0300	RIPRAP HEAVY	CY	225
	645.0105	GEOTEXTILE FABRIC TYPE C	SY	380
	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	450
	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1
◑	SPV.0090.01	CULVERT PIPE REINFORCED CONCRETE PIPE ARCH CLASS A-IV 122x77-INCH	LF	188
		NON BID ITEMS		
◑		JOINT TIES	EACH	46

◑ JOINT TIES FOR CONCRETE PIPE SHALL BE INCIDENTAL TO THE CONCRETE PIPE BID ITEM. EACH JOINT OF CULVERT PIPE SHALL BE JOINED WITH TWO JOINT TIES. ESTIMATED QUANTITY IS BASED ON 8' PIPE SECTIONS, DIFFERENT LAYING LENGTHS WILL EFFECT THE NUMBER OF TIES REQ'D.



PROFILE GRADE LINE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-16-0052

DRAWN BY PTB | PLANS CK'D. AK

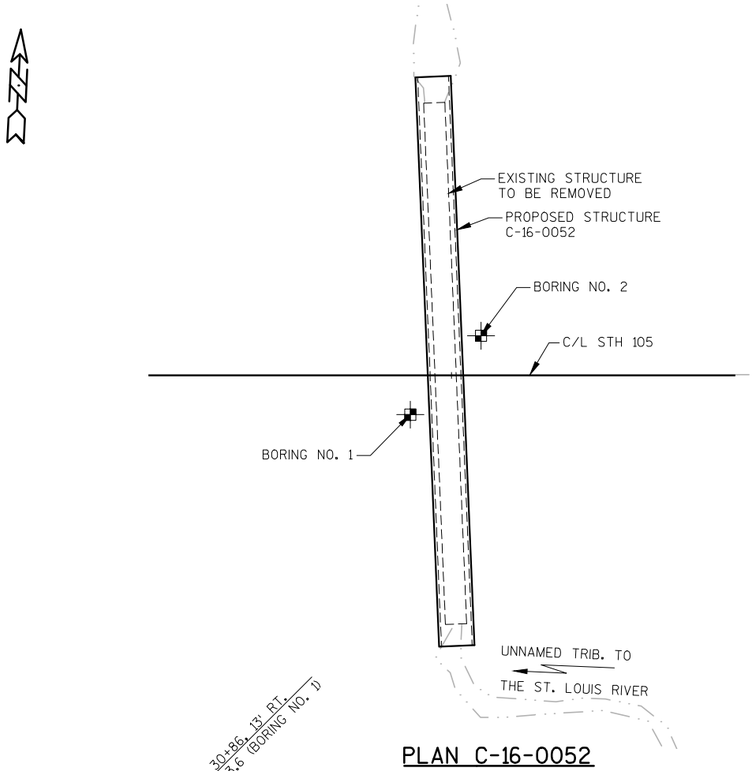
CROSS SECTION & QUANTITIES

SHEET 2 OF 4

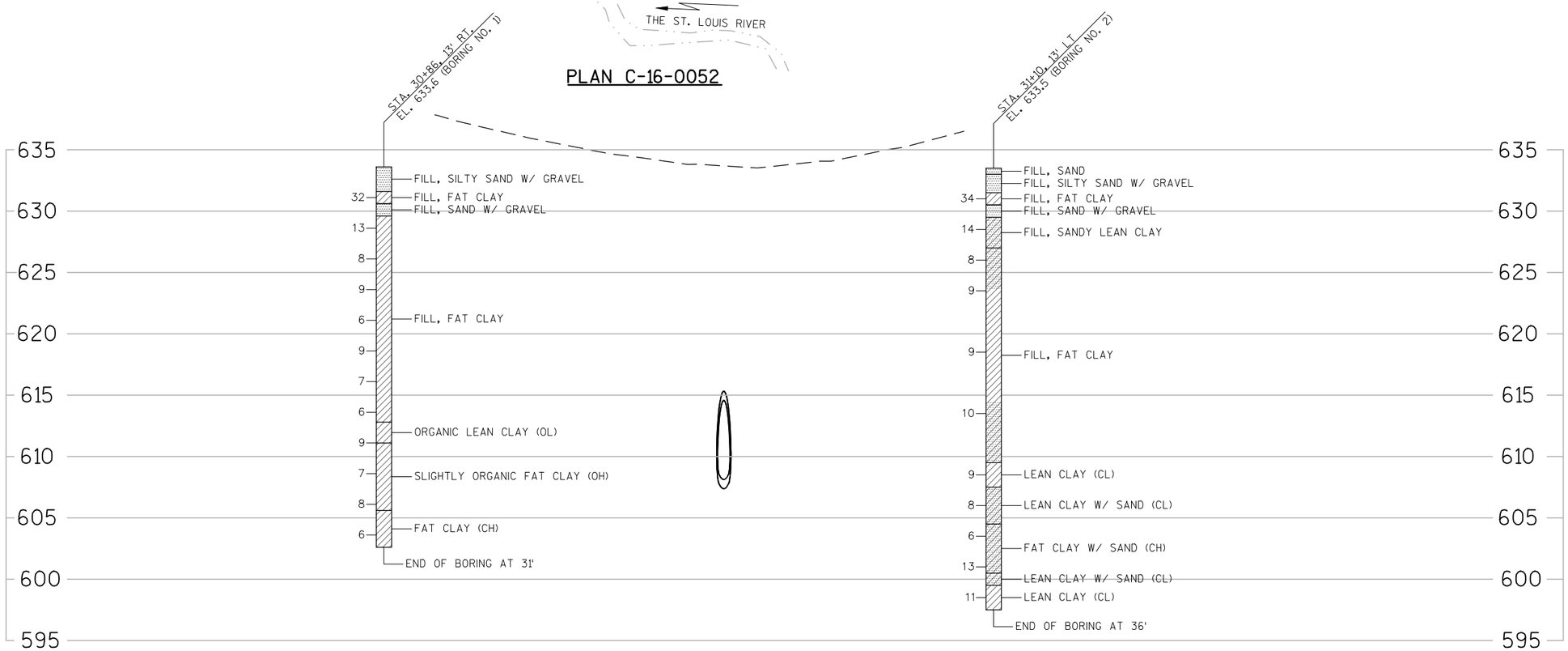
44

8

8



PLAN C-16-0052



SOIL BORINGS

BY:
AMERICAN ENGINEERING TESTING, INC.
4431 W MICHIGAN ST
PO BOX 16008
DULUTH, MN 55816
(218)628-1518

ON:
FEBRUARY 15, 2012

STATE PROJECT NUMBER

8760-00-61

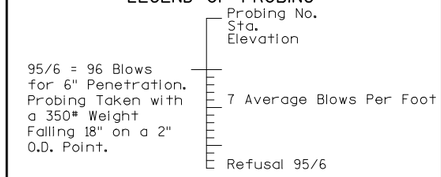
ABBREVIATIONS

F-Fine M-Medium C-Course
Ws-Weathered So-Sound

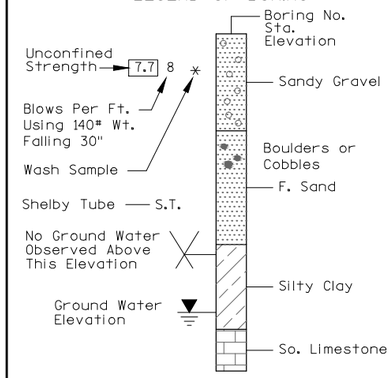
MATERIAL SYMBOLS

Asphalt, Silt, Sandstone
Sand, Peat, Limestone
Gravel, Clay, Igneous Rock

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

No.	Date	Revision	By

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-16-0052

Drawn By PTB | Plans Checked AK

SUBSURFACE EXPLORATION

SHEET 3 OF 4

8

8

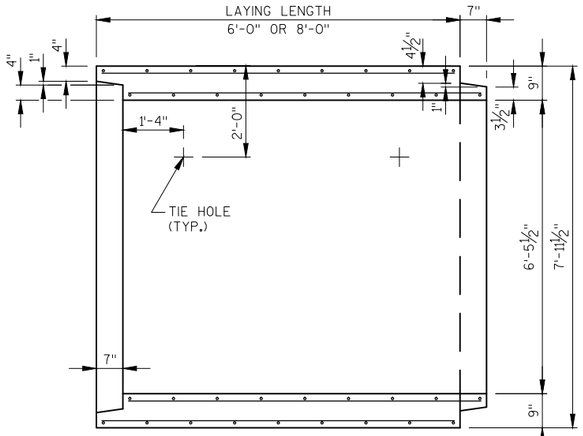
FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\STRUCTURE\C-00-0000_04_BOR.DWG
LAYOUT : LAYOUT1

PLOT DATE : 9/28/2012
PLOT TIME : 1:21:07 PM

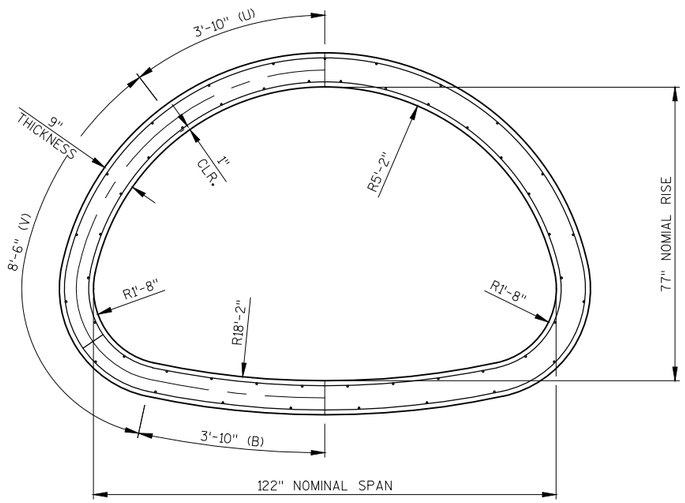
PLOT BY : BOLAND, PATRICK

PLOT SCALE : 1" = 1'

STATE PROJECT NUMBER
8760-00-61



ELEVATION VIEW



SECTION THROUGH PIPE

PRECAST PIPE ARCH SECTION DETAILS

CIRCUMFERENTIAL REINFORCEMENT REQUIREMENTS

CONTINUOUS BASIC REINFORCEMENT		ADDITIONAL REINFORCEMENT		
INNER CAGE	OUTER CAGE	INNER CAGE TOP (U)	INNER CAGE BOTTOM (B)	OUTER CAGE (V)
0.90	0.89	0.22	1.25	0.89

NOTE: VALUE GIVEN IS THE CIRCUMFERENTIAL STEEL AREA IN SQUARE INCHES PER LINEAL FOOT OF PIPE BARREL IN EACH CONTINUOUS BASIC CAGE AND SUPPLEMENTAL REINFORCEMENT DESIGNATED "U", "B" AND "V".

CIRCUMFERENTIAL REINFORCEMENT NOTES:

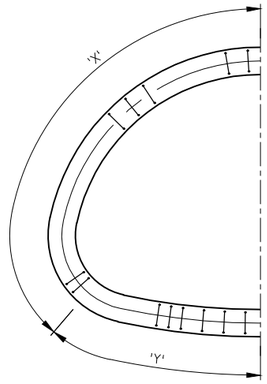
STEEL FABRIC SHALL CONFORM TO REQUIREMENTS OF ASTM A 185, fy=65 KSI.

IF REINFORCEMENT BARS ARE TO BE USED, INCREASE TABLE VALUES FOR REINFORCEMENT AREAS BY 8%. REINFORCEMENT BARS SHALL CONFORM TO REQUIREMENTS OF ASTM A 615, GRADE 60, fy=60 KSI.

MINIMUM COVER OF REINFORCEMENT SHALL BE ¾", MAXIMUM SHALL BE 1" +10% OF WALL THICKNESS.

LONGITUDINAL REINFORCING PARALLEL TO THE AXIS OF THE PIPE SHALL BE A MINIMUM OF 0.06 SQUARE INCHES PER CIRCUMFERENTIAL FOOT. THIS LONGITUDINAL REINFORCING SHALL BE UNIFORMLY SPACED AROUND THE REQUIRED AREAS OF THE CIRCUMFERENCE OF THE PIPE.

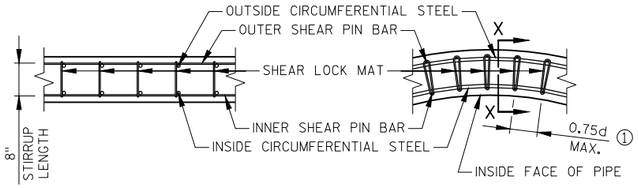
THE SPACING CENTER TO CENTER OF ADJACENT RINGS OF CIRCUMFERENTIAL REINFORCEMENT IN A CAGE SHALL NOT EXCEED 6 INCHES. THE CONTINUITY OF THE CIRCUMFERENTIAL REINFORCING STEEL SHALL NOT BE DESTROYED DURING THE MANUFACTURE OF THE PIPE.



STIRRUP REQUIREMENTS

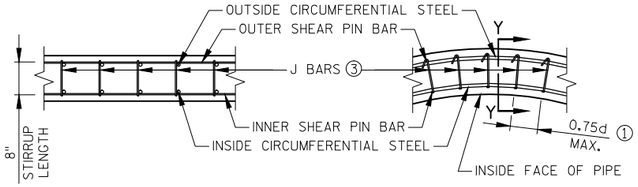
TOP (X)			SIDES (Y)		
SPA.	DIST.	As1	SPA.	DIST.	As1
7	8'-8"	0.26	4	6'-0"	0.67

NOTE: As1 IS THE MINIMUM RADIAL REINFORCEMENT IN SQUARE INCHES PER SQUARE FOOT OF WALL MEASURED AT CENTERLINE OF WALL. SPACING GIVEN IS MAXIMUM STIRRUP SPACING IN INCHES MEASURED AT THE CENTERLINE OF WALL.



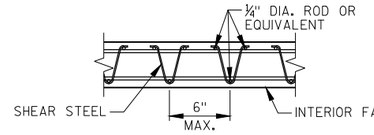
SECTION X-X SECTION THROUGH PIPE

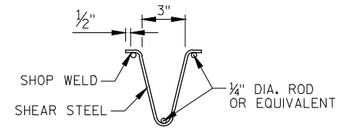
SHEAR LOCK ALTERNATE ②



SECTION Y-Y SECTION THROUGH PIPE

J-BAR ALTERNATE ②





V BAR DETAIL

V-BAR ALTERNATE

THE SHEAR REINFORCEMENT STEEL USED SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M32. THE REINFORCEMENT BARS SHALL BE GRADE 60.

THE ANCHORAGE OF THE SHEAR REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

CLEARANCES TO REINFORCEMENT, SHEAR REINFORCEMENT AREAS AND SPACING SHALL BE AS SHOWN.

ALL SHEAR REINFORCEMENT SHALL BE PINNED. THE SHEAR PIN BARS SHALL BE UNIFORMLY SIZED WITH THE MINIMUM CROSS SECTION AREA OF EACH BAR BEING 0.7 OF THE SHEAR REINFORCEMENT AREA.

OTHER FORMS OF SHEAR REINFORCEMENT WILL BE CONSIDERED FOR APPROVAL UPON WRITTEN REQUEST.

① "d" = DISTANCE FROM CENTROID OF REINFORCING TO OUTSIDE OF CONCRETE (d=WALL THICKNESS MINUS 1¼").

② STIRRUPS MAY BE SPLICED A MINIMUM OF ONE OVERLAP AT OR NEAR C/L OF PIPE.

③ THE J-BAR ALTERNATE CAN BE FABRICATED FROM WELDED WIRE FABRIC OR AS APPROVED BY THE ENGINEER. BEND THE WIRE TO FORM A 140° OR GREATER HOOK.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-16-0052

DRAWN BY KLA | PLANS CK'D. AEGJ

PRECAST CONCRETE PIPE DETAILS

SHEET 4 OF 4

FILE NAME : R:\PROJECTS\W11495 STH 105\CADD FILES\STRUCTURE\C-00-0000_03_DETAILS.DWG
LAYOUT : LAYOUT1
PLOT DATE : 9/28/2012
PLOT TIME : 1:21:10 PM
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'

STAGE 1 EARTHWORK - TEMPORARY BYPASS

	AREA (SF)					INCREMENTAL VOL (CY)								CUMMULATIVE VOLUME (CY)							
STATION	CUT	SALVAGED/ UNUSABLE PAV'T MATERIAL	FILL	MARSH EX	EBS	CUT NOTE 1	SALVAGED/ UNUSABLE PAV'T MATERIAL NOTE 2	FILL NOTE 3	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (25%)	SELECT CRUSHED MATERIAL (1.5)	EBS	CUT 1.00 NOTE 1	FILL	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (25%) NOTE 5	SELECT CRUSHED MATERIAL (1.5)	EBS	MASS ORDINATE NOTE 6
48+60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49+50	14.4	0	0.3	0	0	13.3	0	0.2	0	0	0.25	0	0	13.3	0.2	0	0	0.25	0	0	13
50+00	1.4	0	39.3	0	0	14.6	0	36.6	0	0	45.8	0	0	27.9	36.8	0	0	46.0	0	0	-18
50+50	0	0	81.3	0	0	1.3	0	111.6	0	0	139.5	0	0	29.2	148.4	0	0	185.5	0	0	-156
51+00	12.8	0	101.7	0	0	11.9	0	169.4	0	0	211.8	0	0	41.1	317.8	0	0	397.3	0	0	-356
51+50	3.5	0	45.6	0	0	15.1	0	136.4	0	0	170.5	0	0	56.2	454.2	0	0	567.8	0	0	-512
52+00	1	0	76.5	0	0	4.2	0	113.1	0	0	141.4	0	0	60.4	567.3	0	0	709.1	0	0	-649
52+50	0.5	0	66.8	0	0	1.4	0	132.7	0	0	165.9	0	0	61.8	700	0	0	875.0	0	0	-813
53+00	0	0	127.8	0	0	0.5	0	180.2	0	0	225.3	0	0	62.3	880.2	0	0	1100.3	0	0	-1038
53+50	0	0	142.9	0	0	0	0	250.7	0	0	313.4	0	0	62.3	1130.9	0	0	1413.6	0	0	-1351
54+00	0.7	0	61.6	0	0	0.6	0	189.3	0	0	236.6	0	0	62.9	1320.2	0	0	1650.3	0	0	-1587
54+50	15.7	0	0.6	0	0	15.2	0	57.6	0	0	72.0	0	0	78.1	1377.8	0	0	1722.3	0	0	-1644
55+00	0	0	0	0	0	14.6	0	0.6	0	0	0.75	0	0	92.7	1378.4	0	0	1723.0	0	0	-1630
55+40	0	0	0	0	0	0	0	0	0	0	0	0	0	92.7	1378.4	0	0	1723.0	0	0	-1630
					COLUMN TOTALS =	92.7	0	1378.4	0	0	1723.0	0	0								

STAGE 2 EARTHWORK - STH 105

	AREA (SF)					INCREMENTAL VOL (CY)								CUMMULATIVE VOLUME (CY)							
STATION	CUT	SALVAGED/ UNUSABLE PAV'T MATERIAL	FILL	MARSH EX	EBS	CUT NOTE 1	SALVAGED/ UNUSABLE PAV'T MATERIAL NOTE 2	FILL NOTE 3	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (42%)	SELECT CRUSHED MATERIAL (1.5)	EBS	CUT 1.00 NOTE 1	FILL	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (42%) NOTE 5	SELECT CRUSHED MATERIAL (1.5)	EBS	MASS ORDINATE NOTE 6
30+00	51.0	11.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30+50	52.6	11.5	0	0	0	95.9	21	0	0	0	0	0	0	95.9	0	0	0	0	0	0	96
31+00	46.0	11.5	18.5	0	0	91.2	21	17.1	0	0	24.3	0	0	187.1	17.1	0	0	24.3	0	0	163
31+50	46.0	11.5	8.0	0	0	85.1	21	24.5	0	0	34.8	0	0	272.2	41.6	0	0	59.1	0	0	213
32+00	47.6	11.5	6.4	0	0	86.6	22	13.3	0	0	18.9	0	0	358.8	54.9	0	0	78.0	0	0	281
					COLUMN TOTALS =	358.8	85	54.9	0	0	78.0	0	0								

STAGE 3 EARTHWORK - STH 105

	AREA (SF)					INCREMENTAL VOL (CY)								CUMMULATIVE VOLUME (CY)							
STATION	CUT	SALVAGED/ UNUSABLE PAV'T MATERIAL	FILL	MARSH EX	EBS	CUT NOTE 1	SALVAGED/ UNUSABLE PAV'T MATERIAL NOTE 2	FILL NOTE 3	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (42%)	SELECT CRUSHED MATERIAL (1.5)	EBS	CUT 1.00 NOTE 1	FILL	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (42%) NOTE 5	SELECT CRUSHED MATERIAL (1.5)	EBS	MASS ORDINATE NOTE 6
30+00	64.1	11.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30+50	64.6	11.5	0	0	0	119.1	21	0	0	0	0	0	0	119.1	0	0	0	0	0	0	119
31+00	59.6	11.5	1.8	0	0	115.0	21	1.7	0	0	2.4	0	0	234.1	1.7	0	0	2.4	0	0	232
31+50	57.3	11.5	2.0	0	0	108.3	21	3.5	0	0	5.0	0	0	342.4	5.2	0	0	7.4	0	0	335
32+00	57.3	11.5	4.5	0	0	106.3	22	6.1	0	0	8.7	0	0	448.7	11.3	0	0	16.0	0	0	433
					COLUMN TOTALS =	448.7	85	11.3	0	0	16.0	0	0								

STAGE 3 EARTHWORK - TEMPORARY BYPASS

	AREA (SF)					INCREMENTAL VOL (CY)								CUMMULATIVE VOLUME (CY)							
STATION	CUT	SALVAGED/ UNUSABLE PAV'T MATERIAL	FILL	MARSH EX	EBS	CUT NOTE 1	SALVAGED/ UNUSABLE PAV'T MATERIAL NOTE 2	FILL NOTE 3	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (25%)	SELECT CRUSHED MATERIAL (1.5)	EBS	CUT 1.00 NOTE 1	FILL	MARSH EX	REDUCED MARSH IN FILL (0.6) NOTE 4	FILL (25%) NOTE 5	SELECT CRUSHED MATERIAL (1.5)	EBS	MASS ORDINATE NOTE 6
48+60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49+50	0	0	14.4	0	0	0.3	0	13.3	0	0	16.625	0	0	0.3	13.3	0	0	16.625	0	0	-16
50+00	39.3	0	1.4	0	0	36.7	0	14.6	0	0	18.3	0	0	37	27.9	0	0	34.9	0	0	2
50+50	81.3	0	0	0	0	111.7	0	1.3	0	0	1.6	0	0	148.7	29.2	0	0	36.5	0	0	112
51+00	101.7	0	12.8	0	0	169.4	0	11.9	0	0	14.9	0	0	318.1	41.1	0	0	51.4	0	0	267
51+50	45.6	0	3.5	0	0	136.4	0	15.1	0	0	18.9	0	0	454.5	56.2	0	0	70.3	0	0	384
52+00	77.1	0	1	0	0	113.1	0	4.2	0	0	5.3	0	0	567.6	60.4	0	0	75.5	0	0	492
52+50	66.8	0	0.5	0	0	132.7	0	1.4	0	0	1.8	0	0	700.3	61.8	0	0	77.3	0	0	623
53+00	127.8	0	0	0	0	180.2	0	0.5	0	0	0.6	0	0	880.5	62.3	0	0	77.9	0	0	803
53+50	142.9	0	0	0	0	250.6	0	0	0	0	0.0	0	0	1131.1	62.3	0	0	77.9	0	0	1053
54+00	61.6	0	0.7	0	0	189.4	0	0.6	0	0	0.8	0	0	1320.5	62.9	0	0	78.6	0	0	1242
54+50	0.6	0	15.7	0	0	57.6	0	15.2	0	0	19.0	0	0	1378.1	78.1	0	0	97.6	0	0	1280
55+00	0	0	0	0	0	0.6	0	14.5	0	0	18.125	0	0	1378.7	92.6	0	0	115.8	0	0	1263
55+40	0	0	0	0	0	0	0	0	0	0	0	0	0	1378.7	92.6	0	0	115.8	0	0	1263
					COLUMN TOTALS =	1378.7	0	92.6	0	0	115.8	0	0								

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - REDUCED MARSH IN FILL	REDUCED MARSH THAT CAN BE USED IN FILL
5 - FILL [25% (TEMP BYPASS) OR 42% (STH 105)]	FILL EXPANDED: (FILL -REDUCED MARSH IN FILL)*1.XX
6 - MASS ORDINATE	(CUT - UNUSABLE PAVMENT - FILL (25% OR 42%))

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

640
630
620
610

C/L STH 105

SAN FM

MATCH EDGE OF ROAD AT MILWAUKEE AVE.

OH

22.00
632.90

2.0%

22.00
631.90

0.00
632.34

2.0%

2.0%

10.0:1

22.00
632.90

22.00
631.90

21.81
632.65

R/W
190'

T

T

30+00

BEGIN CONSTRUCTION
STA. 30+00
MATCH EXISTING

R/W
181'

OH

SAN FM

C/L STH 105

T

T

R/W
70'

29+50

9

9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: STH 105	SHEET 48	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 10/16/2012
PLOT TIME : 1:24:50 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –

STAGE 2 CONSTRCTUION –

STAGE 3 CONSTRUCTION –

STA. 30+98
(1) CULVERT PIPE REINFORCED CONCRETE PIPE ARCH CLASS A–IV 77X122–INCH X 188 FT. REQ'D
SKEW = 2° R.H.F.

C/L STH 105

SAN FM

R/W 181'

R/W 130'

TEMPORARY SHORING REQ'D

APPROXIMATE LOCATION OF SANITARY FORCE MAIN

APPROXIMATE LIMITS OF BACKFILL STRUCTURE PLACED AROUND FORCEMAIN (PAID FOR UNDER PROJECT 8760-00-60)

TEMPORARY SLOPE

BACKFILL STRUCTURE

LIMITS OF BACKFILL STRUCTURE PLACED AROUND CULVERT PIPE ARCH (PAID FOR UNDER PROJECT 8760-00-61)

OH

MATCH LINE

MATCH LINE

IDENTICAL POINTS

IDENTICAL POINTS

30+98

RIPRAP HEAVY OVER GEOTEXTILE FABRIC TYPE HR

MATCH LINE

MATCH LINE

C/L STH 105

SAN FM

R/W 181'

R/W 130'

OH

30+50

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: STH 105	SHEET 49	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 12/18/2012
PLOT TIME : 9:50:11 AM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

640 630 620 610

R/W 181'

C/L STH 105

SAN FM

OH

4.0:1 3.0:1 2.0% 2.0% 2.0% 4.0:1 3.0:1

-22.00 631.94
22.00 630.94
0.00 631.38
22.00 631.94
22.00 630.94
36.01 629.38
40.99 627.72
36.01 629.38
38.01 628.71

31+50

R/W 130'

T T

640 630 620 610

R/W 181'

C/L STH 105

SAN FM

OH

4.0:1 3.0:1 2.0% 2.0% 2.0% 4.0:1 3.0:1

-22.00 631.81
22.00 630.81
0.00 631.25
22.00 631.81
22.00 630.81
36.01 629.25
53.45 623.44
36.01 629.25
41.21 627.52

31+00

R/W 130'

T T

640 630 620 610

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

9 9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: STH 105	SHEET 50	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

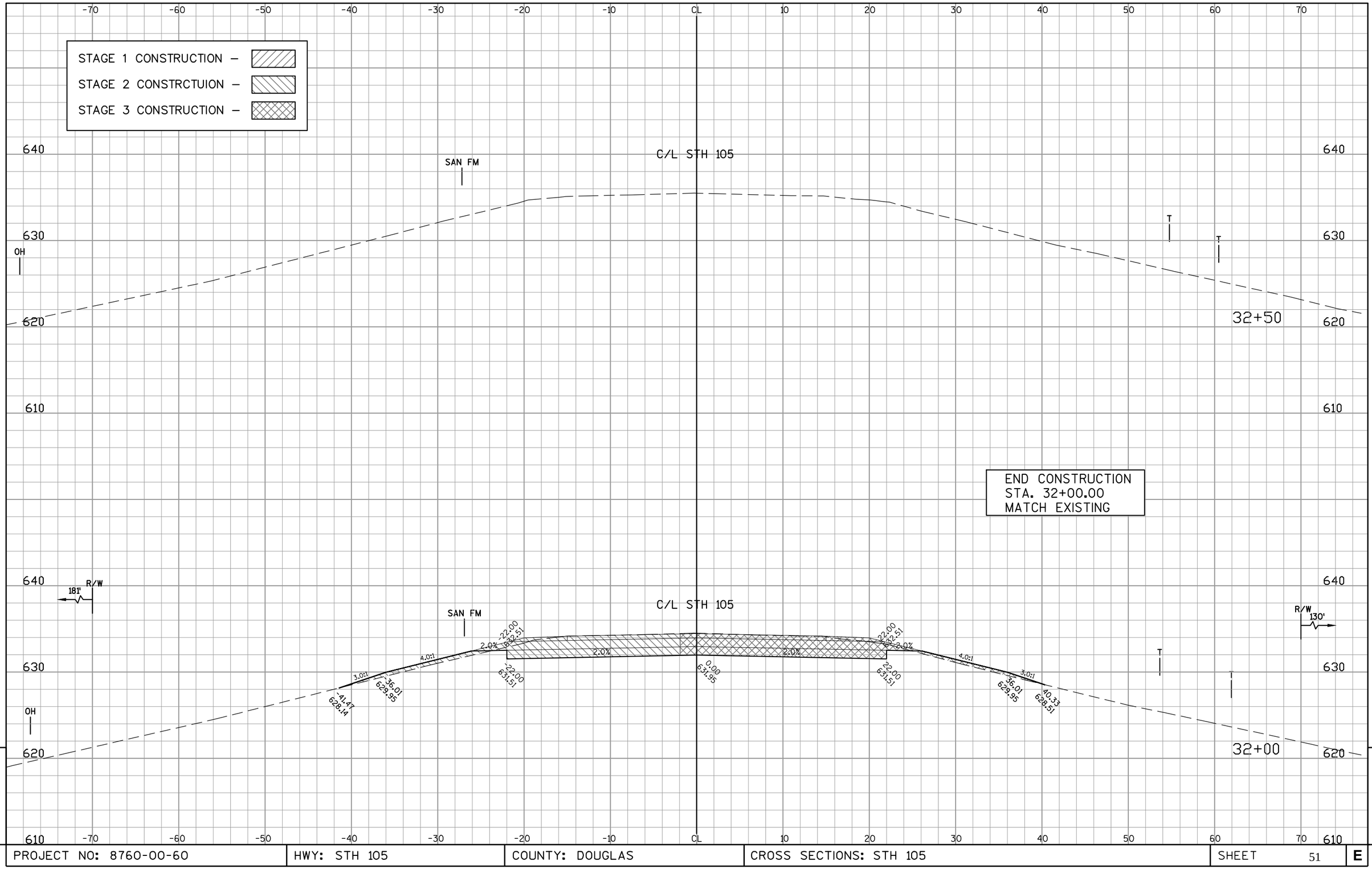
PLOT DATE : 10/15/2012
PLOT TIME : 3:01:13 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

END CONSTRUCTION
STA. 32+00.00
MATCH EXISTING



9

9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: STH 105	SHEET 51	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 10/15/2012
PLOT TIME : 3:01:37 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

650
640
630
620

C/L STH 105
C/L TEMPORARY BYPASS
SAN FM
9.70
637.78
2.0%
2.0%
10.41
636.25
2.0%
9.70
636.60
0.00
636.80
9.70
636.60
T
T
49+50

BEGIN CONSTRUCTION
STA. 49+15
MATCH EXISTING

650
640
630
620

OH
SAN FM
C/L STH 105
T
T
49+00

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

9 9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 52	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL
PLOT DATE : 10/15/2012
PLOT TIME : 3:02:04 PM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

C/L STH 105
SAN FM
640
630
620
C/L TEMPORARY BYPASS
2.0%
2.0%
-9.70
631.61
0.00
631.61
-9.70
631.61
2.0:1
-10.80
631.06
20.52
626.20
50+50

C/L STH 105
SAN FM
640
630
620
C/L TEMPORARY BYPASS
-9.70
635.34
-9.70
634.57
2.0%
2.0%
0.00
634.76
-9.70
634.57
2.0:1
18.64
630.10
50+00

9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 53	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL
PLOT DATE : 10/15/2012
PLOT TIME : 3:02:22 PM
PLOT BY : ECKELBERG, PATRICK
PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

640
630
620
610

SAN FM

C/L STH 105

C/L TEMPORARY BYPASS

T

-9.70
627.67

2.0%

2.0%

-9.70
626.32

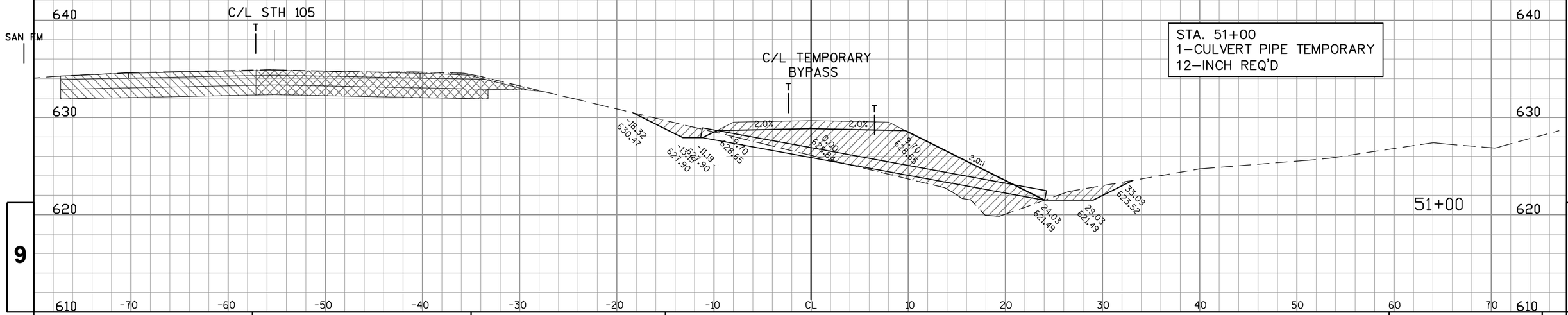
0.00
626.51

-9.70
626.32

2.0:1

22.24
620.05

51+50



STA. 51+00
1–CULVERT PIPE TEMPORARY
12–INCH REQ'D

9 9

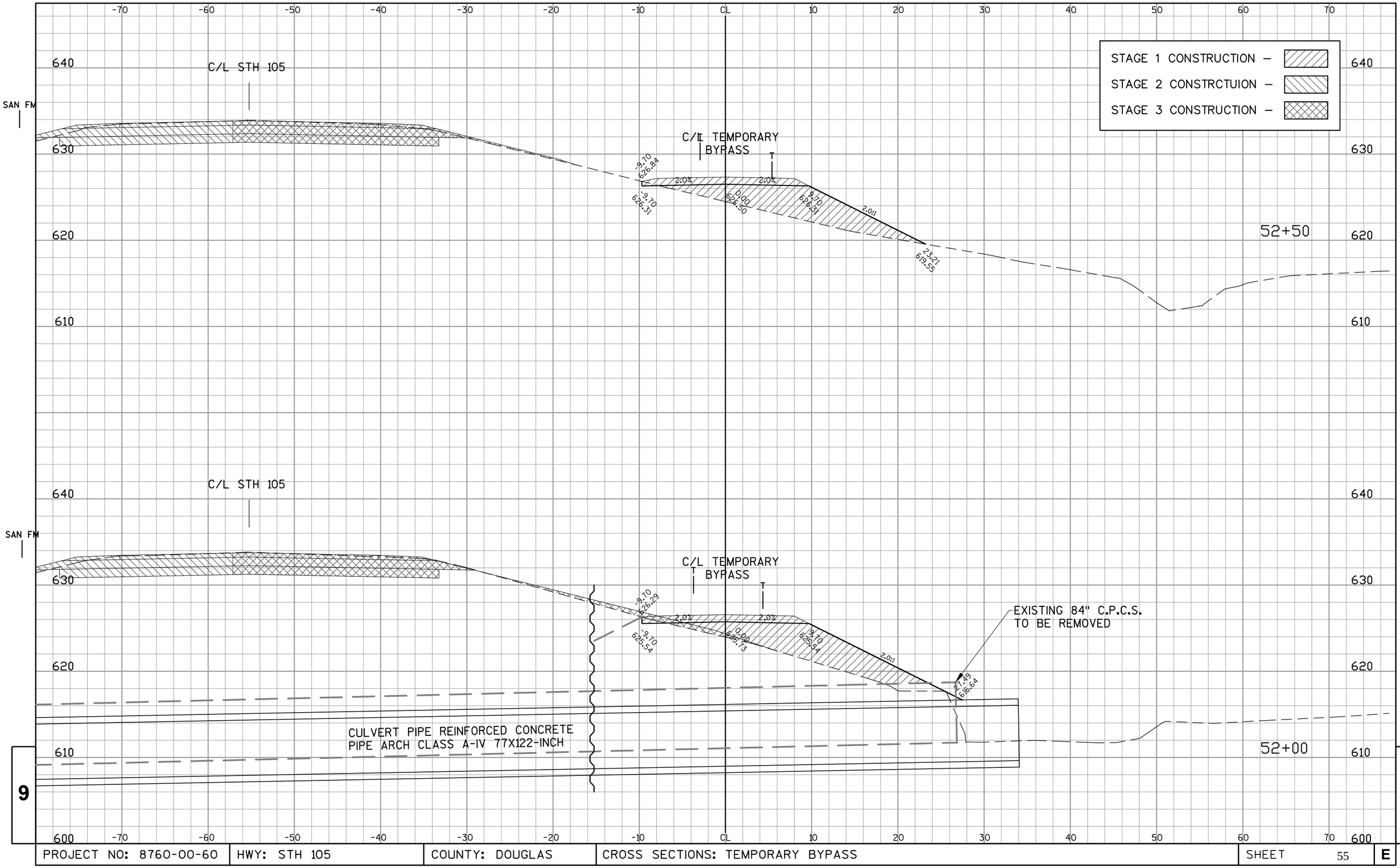
PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 54	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 10/16/2012
PLOT TIME : 1:28:57 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10



PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 55	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 11/30/2012
PLOT TIME : 2:16:12 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –
STAGE 2 CONSTRCTUION –
STAGE 3 CONSTRUCTION –

C/L STH 105

C/L TEMPORARY BYPASS

SAN FM

640
630
620
610

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

2.0%
2.0%
T
9.70
631.59
0.00
631.78
9.70
631.59
2.0:1
-12.16
630.35
30.54
621.17

53+50

STA. 53+00
1–CULVERT PIPE TEMPORARY
12–INCH REQ'D

T
2.0%
2.0%
T
9.70
626.63
0.00
626.83
9.70
626.63
-11.36
621.70
2.0:1
29.26
618.85

53+00

9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 56	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 10/15/2012
PLOT TIME : 3:35:55 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

STAGE 1 CONSTRUCTION –

STAGE 2 CONSTRCTUION –

STAGE 3 CONSTRUCTION –

END CONSTRUCTION
STA. 54+85.00
MATCH EXISTING

C/L STH 105

C/L TEMPORARY BYPASS

SAN FM

-9.70
637.82

2.0%

2.0%

10.70
636.54

3.0:1

-9.70
636.54

0.00
636.73

11.05
635.87

54+50

-9.70
635.08

2.0%

2.0%

-9.70
634.52

0.00
634.72

-9.10
634.52

2.0:1

24.09
627.32

54+00

-70 -60 -50 -40 -30 -20 -10 CL 10 20 30 40 50 60 70

640 630 620 610

9

PROJECT NO: 8760-00-60	HWY: STH 105	COUNTY: DOUGLAS	CROSS SECTIONS: TEMPORARY BYPASS	SHEET 57	E

FILE NAME : R:\PROJECTS\W11495 STH 105\DESIGN FILES\STH 105 BASE 2-7-12.DWG
LAYOUT : MODEL

PLOT DATE : 10/15/2012
PLOT TIME : 3:03:48 PM

PLOT BY : ECKELBERG, PATRICK

PLOT SCALE : 1:10

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