

SWL AUGUST 2014
PROJECT ID: 3677-00-73

ORDER OF SHEETS	
Section No. 1	Title
Section No. 2	Typical Sections and Details (Incl. Erosion Control)
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 8	Computer Earthwork Data
Section No. 9	Cross Sections
TOTAL SHEETS = 40	

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

REINER ROAD - CTH N

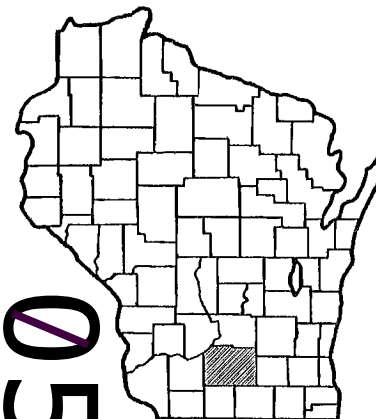
(VILAS HOPE ROAD INTERSECTION)

CTH BB
DANE COUNTY

STATE PROJECT NUMBER

3677-00-73

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3677-00-73	WISC 2014295	1

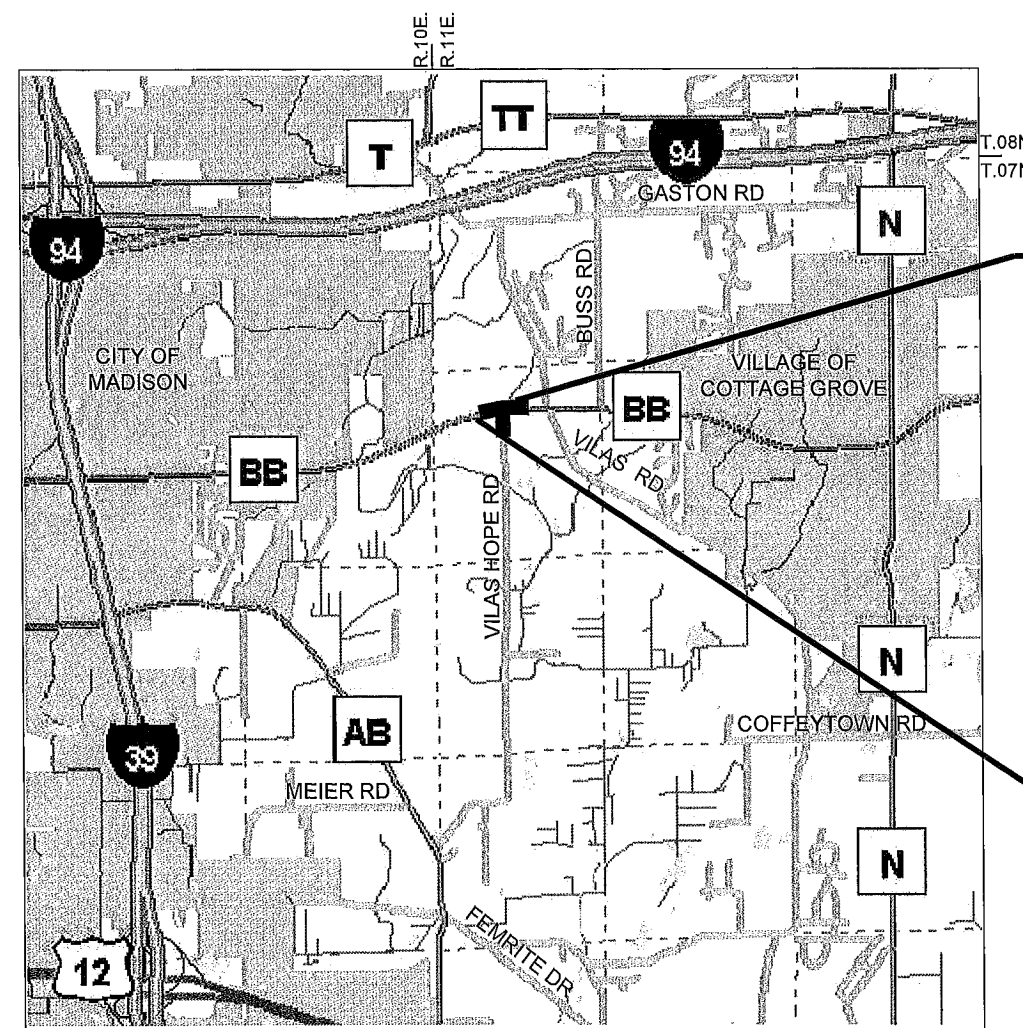


DESIGN DESIGNATION

A.A.D.T. (2013)	=	10,600
A.A.D.T. (2033)	=	14,650
D.H.V.	=	1773
D.D.	=	60/40
T.	=	3.4%
DESIGN SPEED	=	55 MPH
ESALS	=	1,635,200 (PCC) 1,182,600 (ACC)

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE	
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	
EXISTING RIGHT OF WAY		GRADE ELEVATION	
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	
EXISTING CULVERT		FIBER OPTIC	
PROPOSED CULVERT		GAS	
COMBUSTIBLE FLUIDS		SANITARY SEWER	
MARSH AREA		STORM SEWER	
WOODED OR SHRUB AREA		TELEPHONE	
UTILITY PEDESTAL		WATER	
		LIGHT POLE	
		POWER POLE	
		TELEPHONE POLE	



END PROJECT 3677-00-73

STA. 103+67
Y = 488,338
X = 860,198

BEGIN PROJECT 3677-00-73

STA. 95+67
Y = 488,231
X = 859,403

LAYOUT
0 1 MI
SCALE

TOTAL LENGTH OF CENTERLINE = 0.152 (RURAL)

Coordinates on this plan are referenced to the Wisconsin County
Coordinate System (WCCS), 'DANE' County.

ACCEPTED FOR

TOWN of COTTAGE GROVE

4/14/14
Date TOWN CHAIR

ACCEPTED FOR

COUNTY of DANE

4/14/14
Date Commissioner

ORIGINAL PLANS PREPARED BY
DANE COUNTY HIGHWAY



4/14/2014
Date Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor DANE COUNTY
Designer DANE COUNTY
Management Consultant KJOHNSON ENGINEERS INC
C.O. Examiner

APPROVED FOR THE DEPARTMENT
DATE: 4/23/14
(Manager/Consultant Signature)

E

2

GENERAL NOTES

TYPICAL SECTIONS SHOW THE GENERAL FEATURES THROUGHOUT THE PROJECT. PAVEMENT SLOPES, TERRACE SLOPES, ETC. MAY VARY WITHIN THE LIMITS OF THE SECTION.

EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE EXACT LOCATIONS AND DIMENSTIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

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

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.

DISTURBED AREAS ARE TO BE FERTILIZED AND SEEDED AS DIRECTED BY THE ENGINEER. TEMP. SEEDING REQUIRED.

WHEN THE QUANTITY OF AN ITEMS LOWER OR UPPER LAYERS IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

MISCELLANEOUS REMOVAL ITEMS REQUIRING RESTORATION OF CONCRETE OR ASPHALTIC CONCRETE SUCH AS DRIVEWAYS, SIDEWALKS OR SIDE STREETS, SHALL BE REMOVED TO AN EXISTING JOINT OR SAWED AS DETERMINED BY THE ENGINEER.

ALL RADII ARE MEASURED TO FLAG OF CURB UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS.

5¾-INCH HMA PAVEMENT, TYPE E-3 SHALL CONSIST OF A 3-INCH LOWER LAYER USING A 19MM AGGREGATE GRADATION AND A 2¾-INCH UPPER LAYER USING A 19MM AGGREGATE GRADATION.

EXISTING LANDMARK REFERENCE MONUMENTS WILL BE EITHER ADJUSTED OR REPLACED BY DANE COUNTY. DANE COUNTY SHALL BE CONTACTED A MINIMUM OF ONE WEEK PRIOR TO ANY PAVING OPERATIONS TO ALLOW SUFFICIENT TIME TO ADJUST REFERENCE MONUMENTS. THE CONTACT PERSON AT DANE COUNTY IS GREGGAR PETERSEN (608) 266-9081.

THE EXISTING DRIVEWAYS SHALL BE RESTORED IN KIND AS DIRECTED BY THE ENGINEER IN THE FIELD.

CURVE DATA IS BASED ON THE ARC DEFINITION.

EXPANSION JOINTS ARE TO BE CONSTRUCTED AT ALL RADIUS POINTS IN CURB AND GUTTER AND AS DIRECTED BY THE ENGINEER.

CURB HEIGHT AT THE END OF CURB AND GUTTER SHALL TAPER FROM 6 INCHES TO 0 INCHES IN 6'-0" OR AS DIRECTED BY THE ENGINEER.

RUNOFF COEFFICIENTS WILL REMAIN UNCHANGED. THE IMPERVIOUS SURFACE AREA WILL BE INCREASED BY 0.177 ACRES.

CONTROL POINT DATA AND LAYOUT INFORMATION WILL BE PROVIDED TO THE PROJECT ENGINEER AND CONTRACTOR. CONTACT THE DANE COUNTY HIGHWAY DEPARTMENT AT (608) 266-4037.

SECTION 2 ORDER OF SHEETS

GENERAL NOTES

TYPICAL SECTIONS

INTERSECTION DETAILS

PAVEMENT MARKING

TRAFFIC CONTROL STAGES

UTILITIES

GAS & ELECTRIC

MADISON GAS & ELECTRIC COMPANY

MARTY JACOBI

PO BOX 1231

MADISON WI 53701-1231

(608) 252-4785

mjacobi@mge.com

TELEPHONE

AT&T WISCONSIN

CAROL ANASON

316 W WASHINGTON AVE #301

MADISON WI 53703

(608) 252-2261

ca2624@att.com

TELEVISION & FIBER OPTIC

CHARTER COMMUNICATIONS

MATT BROWN

2701 DANIELS ST

MADISON WI 53718

(608) 209-9887

matt.brown@chartercom.com

COMMUNICATIONS & FIBER OPTIC

WISCONSIN INDEPENDENT NETWORK

JIM BIRKENHEIER

800 WISCONSIN ST

BUILDING D02, SUITE 219

EAU CLAIRE WI 54703-3612

(715) 838-4007

jbirkenheier@wins.net

DNR LIASON

WI DEPT OF NATURAL RESOURCES

ERIC HEGGELUND

3911 FISH HATCHERY RD

FITCHBURG WI 53711

(608) 275-3301

eric.heggelund@wisconsin.gov

DESIGN CONTACT

DANE COUNTY HIGHWAY DEPARTMENT

MATT RICE, HIGHWAY ENGINEER

2302 FISH HATCHERY RD

MADISON WI 53713

(608) 266-4037

rice@co.dane.wi.us

ABBREVIATIONS

AADT ANNUAL AVERAGE DAILY TRAFFIC

ASPH ASPHALT OR ASPHALTIC

BIT BITUMINOUS

BM BENCH MARK

CL CENTER LINE

CONC CONCRETE

CPCA CULVERT PIPE CORRUGATED ALUMINUM

CPCS CULVERT PIPE CORRUGATED STEEL

CPRC CULVERT PIPE REINFORCED CONCRETE

CPRCHE CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL

CTH COUNTY TRUNK HIGHWAY

CWT HUNDREDWEIGHT

CY CUBIC YARD

DHV DESIGN HOUR TRAFFIC VOLUME

EBS EXCAVATION BELOW SUBGRADE

EL ELEVATION

EXC EXCAVATION

EXIST EXISTING

FE FIELD ENTRANCE

FT FOOT

IE INVERT ELEVATION

IP IRON PIPE

LB POUND

LF LINEAR FOOT

LS LUMP SUM

LT LEFT

PC POINT OF CURVATURE

PE PRIVATE ENTRANCE

PI POINT OF INTERSECTION

PT POINT OF TANGENCY

R RADIUS

RT RIGHT-OF-WAY

R/W SUPERELEVATION

SE SQUARE FOOT

SF STATION

STA SQUARE YARD

SY TYPICAL

TYP VARIES OR VARIABLE

VAR VERTICAL POINT OF CURVATURE

VPC VERTICAL POINT OF INTERSECTION

VPI VERTICAL POINT OF TANGENCY

VPT EAST GRID COORDINATE

X NORTH GRID COORDINATE

Y

DIGGERS HOTLINE

Dial 811 or (800) 242-8511

www.DiggersHotline.com

*INDICATES UTILITY OR MUNICIPALITY IS NOT A MEMBER OF DIGGERS HOTLINE

PROJECT NO: 3677-00-73

HWY: CTH BB

COUNTY: DANE

GENERAL NOTES

SHEET NO:

E

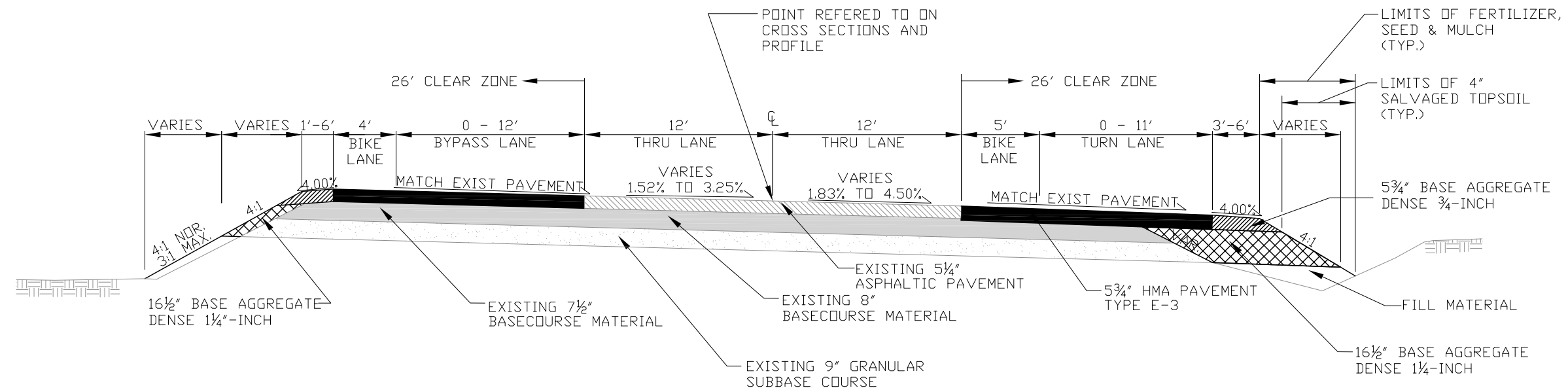
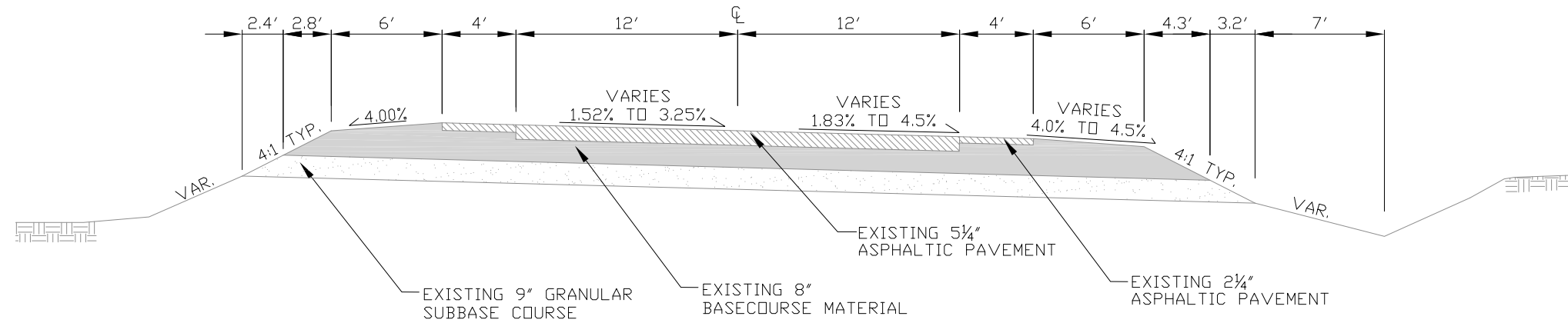
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PLOT DATE: 6/2/14

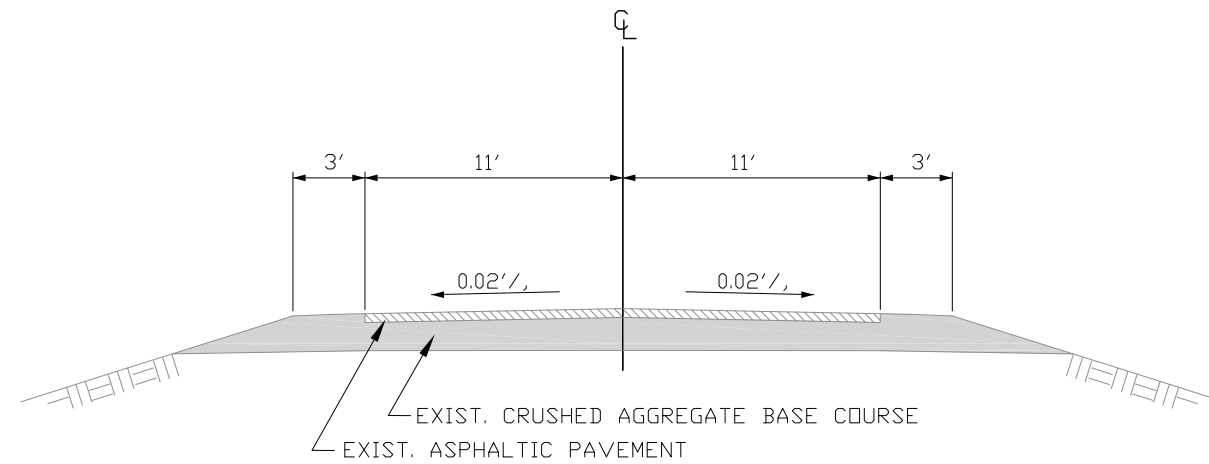
PLOT BY: DANE COUNTY HIGHWAY DEPT.

PLOT SCALE: NONE

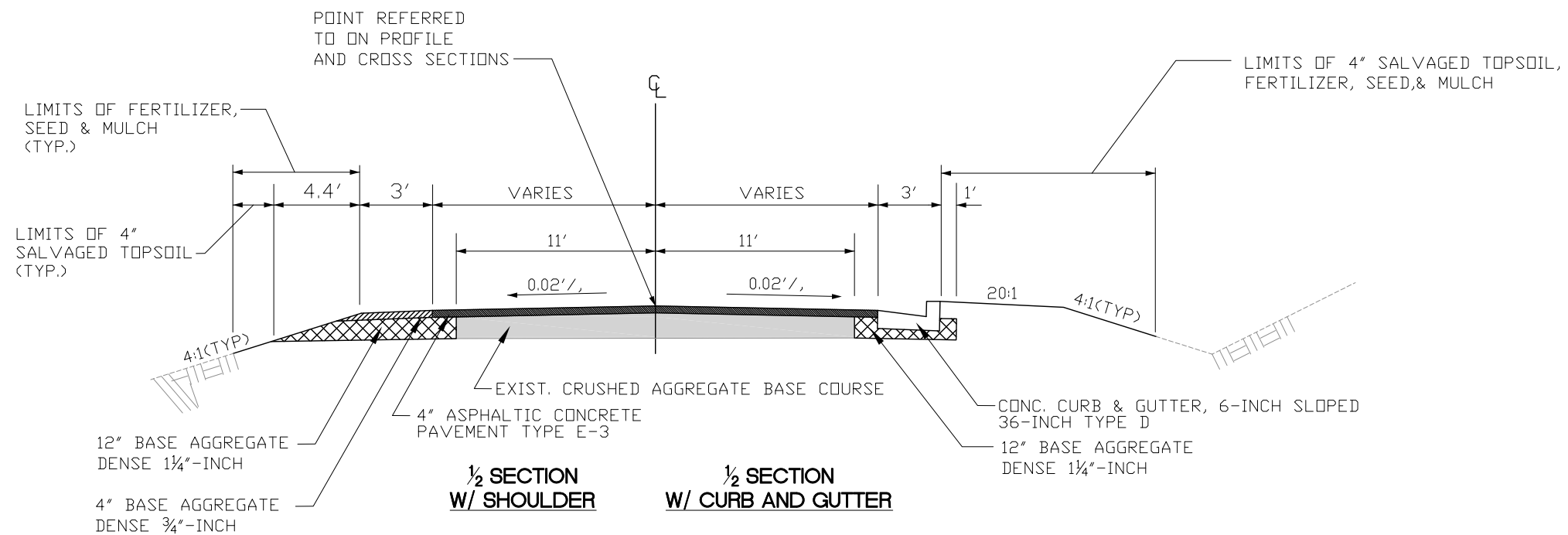
WISDOT/CADD\$ SHEET 42



NOT TO SCALE



EXISTING TYPICAL SECTION
VILAS HOPE ROAD



PROPOSED TYPICAL SECTION
VILAS HOPE ROAD
STA. 8+67 - STA. 9+72

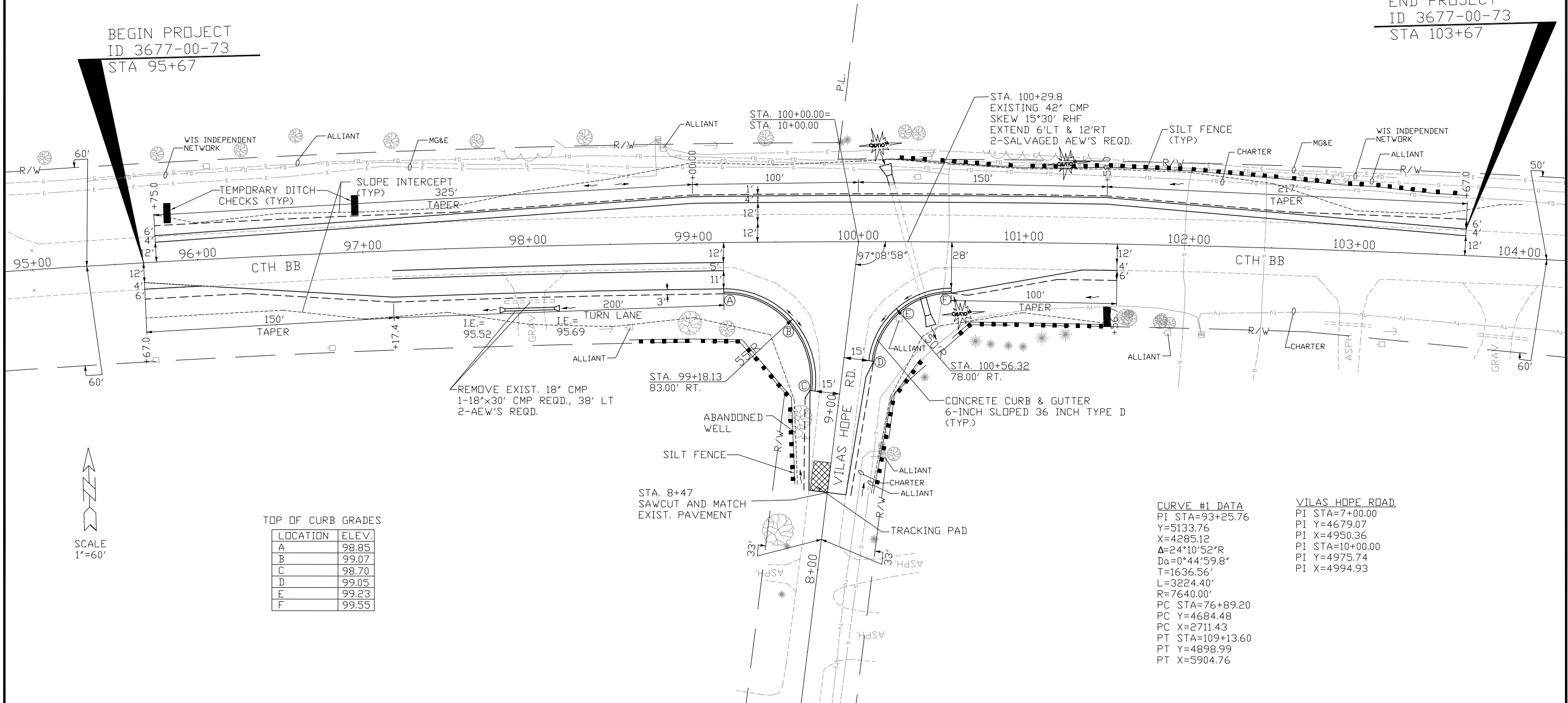
NOT TO SCALE

CONTROL POINTS

NO.	STA.	OFFSET	Y COORDINATE	X COORDINATE	DESC.	ELEV.
1	94+72.30	39.24'L	5009.5820	4465.6070	PK NAIL	97.29
2	100+04.46	24.38'L	4990.2451	5004.2163	#5 REBAR	100.00

END PROJECT
ID 3677-00-73
STA 103+67

BEGIN PROJECT
ID 3677-00-73
STA 95+67



TOP OF CURB GRADES

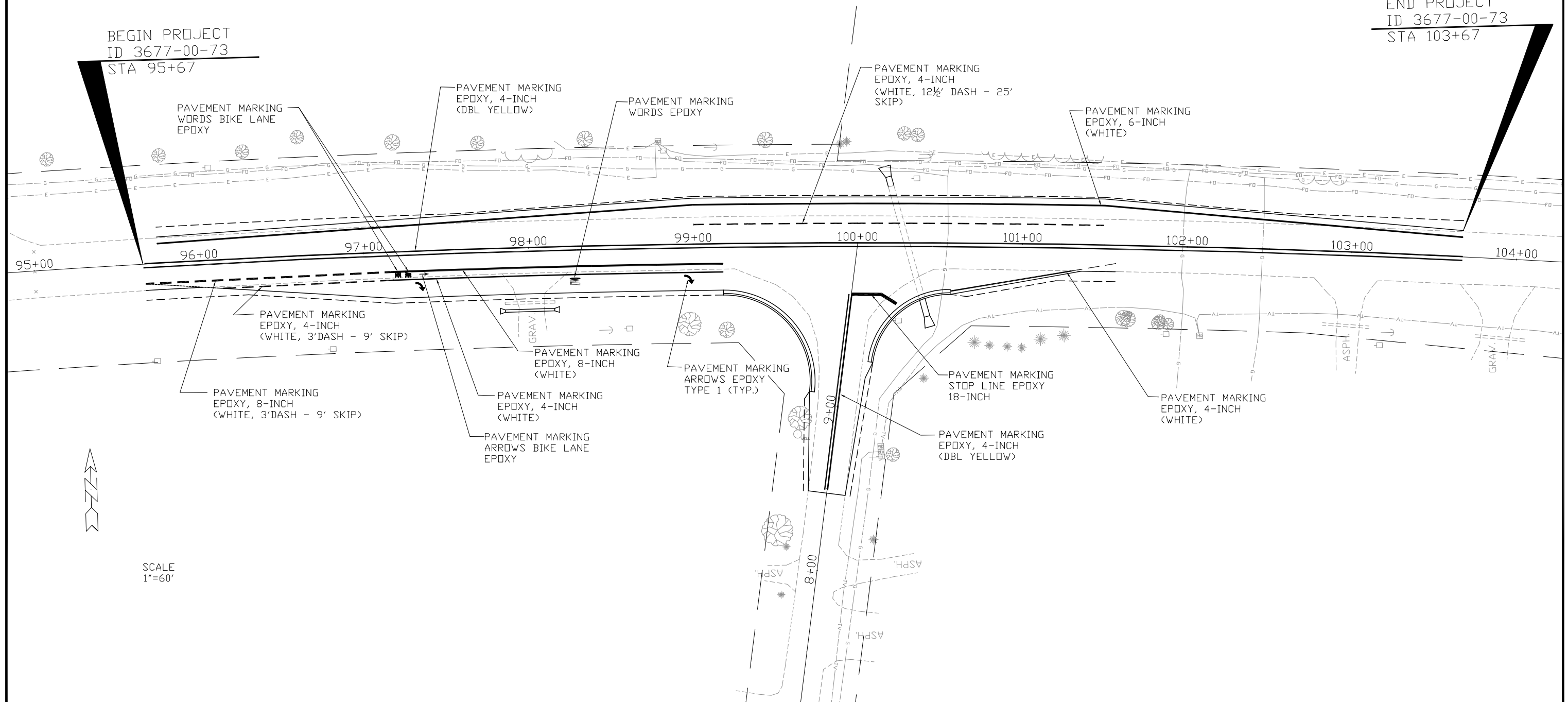
LOCATION	ELEV.
A	98.85
B	99.07
C	98.70
D	99.05
E	99.23
F	99.55

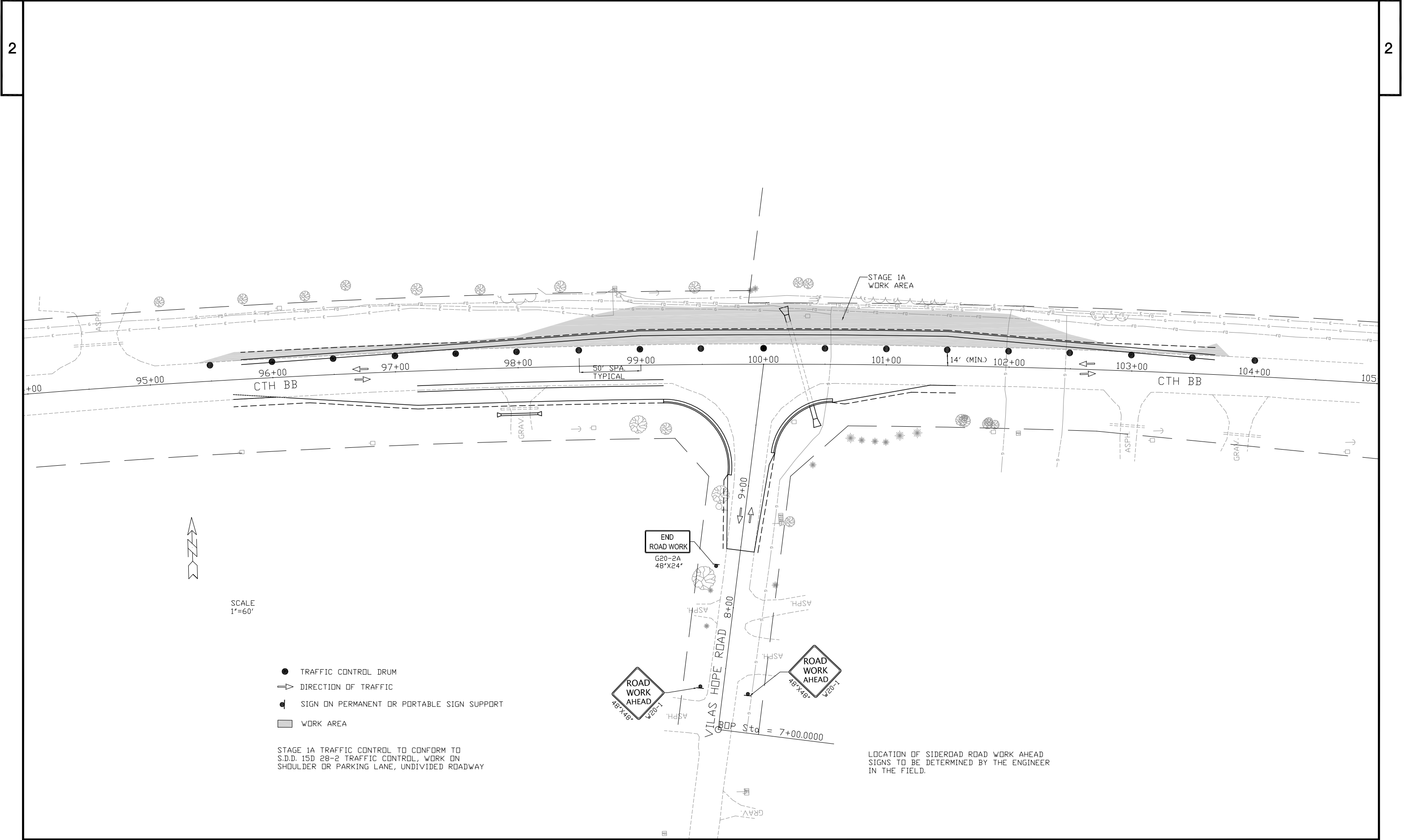
CURVE #1 DATA
PI STA=93+25.76
Y=5133.76
X=4285.12
Δ=24°10'52"R
D_a=0°44'59.8"
T=1636.56'
L=3224.40'
R=7640.00'
PC STA=76+89.20
PC Y=4684.48
PC X=2711.43
PT STA=109+13.60
PT Y=4898.99
PT X=5904.76

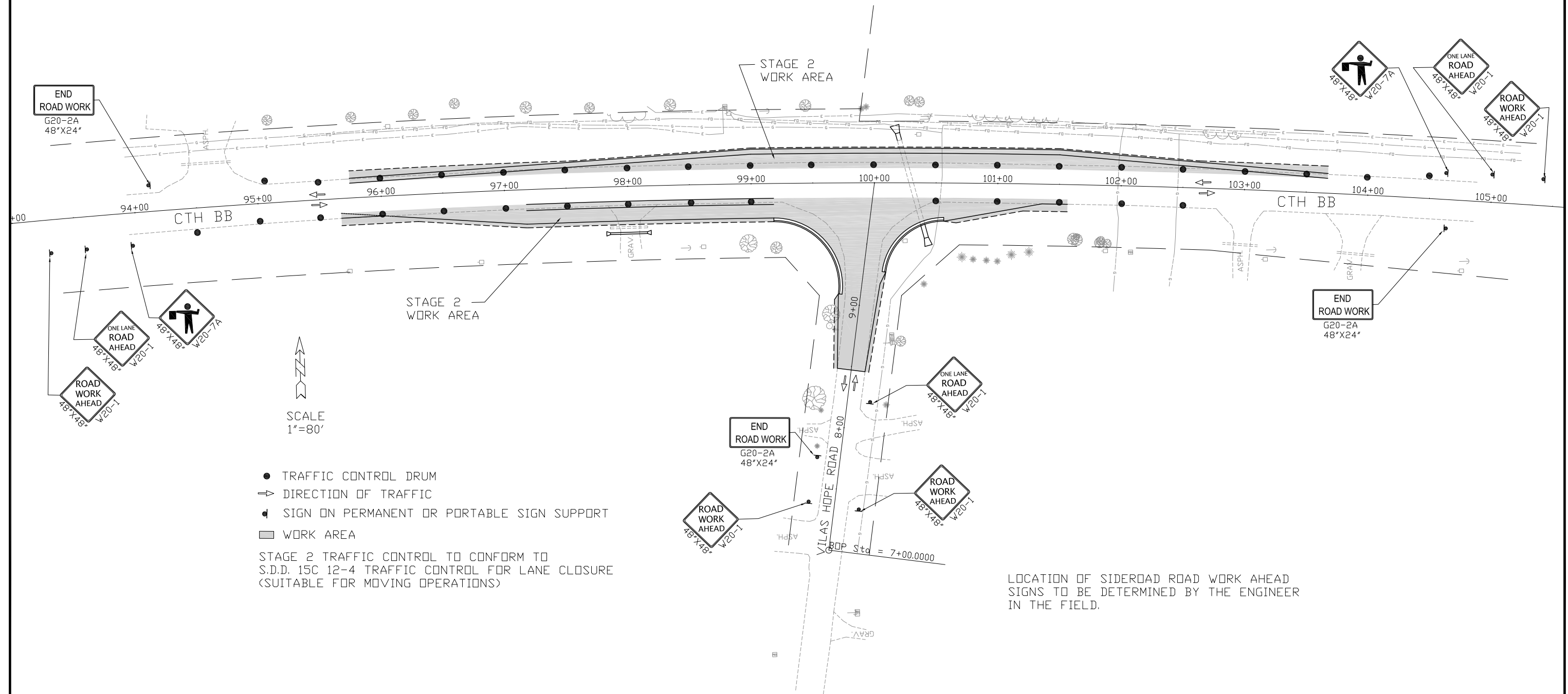
VILAS HOPE ROAD
PI STA=7+00.00
PI Y=4679.07
PI X=4950.36
PI STA=10+00.00
PI Y=4975.74
PI X=4994.93

BEGIN PROJECT
ID 3677-00-73
STA 95+67

END PROJECT
ID 3677-00-73
STA 103+67







DATE 19MAY14		E S T I M A T E O F Q U A N T I T I E S			
LINE		3677-00-73			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0120	CLEARING	ID	36.000	36.000
0020	201.0220	GRUBBING	ID	36.000	36.000
0030	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000	1.000
0040	204.0110	REMOVING ASPHALTIC SURFACE	SY	1,262.000	1,262.000
0050	205.0100	EXCAVATION COMMON **P**	CY	550.000	550.000
0060	208.0100	BORROW **P*	CY	135.000	135.000
0070	213.0100	FINISHING ROADWAY (PROJECT) 01. 3677-00-73	EACH	1.000	1.000
0080	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	270.000	270.000
0090	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,720.000	1,720.000
0100	455.0105	ASPHALTIC MATERIAL PG58-28	TON	46.000	46.000
0110	455.0605	TACK COAT	GAL	58.000	58.000
0120	460.1103	HMA PAVEMENT TYPE E-3	TON	760.000	760.000
0130	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	500.000	500.000
0140	465.0315	ASPHALTIC FLUMES	SY	11.000	11.000
0150	521.0118	CULVERT PIPE CORRUGATED STEEL 18-INCH	LF	30.000	30.000
0160	521.0142	CULVERT PIPE CORRUGATED STEEL 42-INCH	LF	18.000	18.000
0170	521.1018	APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH	EACH	2.000	2.000
0180	524.0642	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 42-INCH	EACH	2.000	2.000
0190	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	160.000	160.000
0200	619.1000	MOBILIZATION	EACH	1.000	1.000
0210	624.0100	WATER	MGAL	25.000	25.000
0220	625.0500	SALVAGED TOPSOIL **P**	SY	1,850.000	1,850.000
0230	627.0200	MULCHING **P**	SY	1,850.000	1,850.000
0240	628.1504	SILT FENCE	LF	700.000	700.000
0250	628.1520	SILT FENCE MAINTENANCE	LF	700.000	700.000
0260	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	1.000	1.000
0270	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0280	628.7504	TEMPORARY DITCH CHECKS	LF	30.000	30.000
0290	628.7560	TRACKING PADS	EACH	1.000	1.000
0300	629.0210	FERTILIZER TYPE B **P**	CWT	1.000	1.000
0310	630.0140	SEEDING MIXTURE NO. 40 **P**	LB	35.000	35.000
0320	630.0200	SEEDING TEMPORARY	LB	5.000	5.000
0330	638.2102	MOVING SIGNS TYPE II	EACH	6.000	6.000
0340	643.0100	TRAFFIC CONTROL (PROJECT) 01. 3677-00-73	EACH	1.000	1.000
0350	643.0300	TRAFFIC CONTROL DRUMS	DAY	1,031.000	1,031.000
0360	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	1,031.000	1,031.000
0370	643.0900	TRAFFIC CONTROL SIGNS	DAY	220.000	220.000
0380	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	2,260.000	2,260.000
0390	646.0116	PAVEMENT MARKING EPOXY 6-INCH	LF	800.000	800.000
0400	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	240.000	240.000
0410	647.0156	PAVEMENT MARKING ARROWS EPOXY TYPE 1	EACH	2.000	2.000
0420	647.0206	PAVEMENT MARKING ARROWS BIKE LANE EPOXY	EACH	1.000	1.000
0430	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	1.000	1.000
0440	647.0406	PAVEMENT MARKING WORDS BIKE LANE EPOXY	EACH	2.000	2.000
0450	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	30.000	30.000
0460	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	800.000	800.000
0470	650.5000	CONSTRUCTION STAKING BASE	LF	920.000	920.000
0480	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	160.000	160.000
0490	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	2.000	2.000

DATE 19MAY14		E S T I M A T E O F Q U A N T I T I E S			
LINE		3677-00-73			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0500	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 3677-00-73	LS	1.000	1.000
0510	690.0150	SAWING ASPHALT	LF	1,422.000	1,422.000
0520	SPV.0060	SPECIAL 01. UTILITY LINE OPENING (ULO)	EACH	5.000	5.000

3

CLEARING		
STA. _____	LOCATION _____	201.0120 QTY ID _____
8+90	21.7' LT	36
TOTAL		36

EARTH WORK SUMMARY				
		205.0100	208.0100	
		EXCAVATION	EXPANDED	
		COMMON	FILL	BORROW
		QTY	QTY	QTY
STA. _____	LOCATION _____	TON	CY	CY
95+67-103+67	CTH BB	385	478	93
8+47-9+88	VILAS HOPE RD	165	207	42
TOTAL		550	685	135
(*) FOR INFORMATIONAL PURPOSES ONLY EXPANDED FILL FACTOR = 1.25				

CULVERT PIPE SUMMARY						
		521.0118	521.0142	521.1018	524.0642	
		CULVERT	CULVERT	APRON	APRON	MIN.
		PIPE	PIPE	ENDWALLS	ENDWALLS	STEEL
		CORRUGATED	CORRUGATED	FOR CULVERT	FOR CULVERT	THICKNESS
		STEEL	STEEL	PIPE STEEL	PIPE SALVAGED	
		18-INCH	42-INCH	18-INCH	42-INCH	
		QTY	QTY	QTY	QTY	
STA. _____	LOCATION _____	LF	LF	EACH	EACH	INCH
98+00	RT	30	--	2	--	0.064
100+29.8	LT & RT	--	18	--	2	0.109
TOTAL		30	18	2	2	

FINISHING ITEMS SUMMARY					
		625.0500	627.0200	629.0210	630.0140
		SALVAGED	MULCHING	FERTILIZER	SEEDING
		TOPSOIL		TYPE B	MIXTURE
		QTY	QTY	QTY	QTY
STA. _____	LOCATION _____	SY	SY	CWT	LB
95+67-103+67	LT & RT	1480	1480	1	35
8+47-9+88	LT & RT	370	370	--	--
TOTAL		1850	1850	1	35

PROJECT NO: 3637-00-73

HWY: CTH BB

COUNTY: DANE

MISCELLANEOUS QUANTITIES

SHEET NO:

E

3

REMOVING SMALL PIPE CULVERTS		
STA. _____	LOCATION _____	203.0100 QTY EACH _____
98+00	32.5' RT	1
TOTAL		1

ASPHALTIC ITEMS SUMMARY				
		455.0105	455.0605	460.1103
		ASPHALTIC	TACK	PAVEMENT
		MATERIAL	COAT	TYPE E-3
		PG 58-28	QTY	QTY
STA. _____	LOCATION _____	TON	GAL	TON
95+67-103+67	LT & RT	35	44	580
8+87-9+88	VILAS HOPE RD	11	14	180
PROJECT		--	--	--
TOTAL		46	58	760

CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D		
STA. _____	LOCATION _____	601.0557 QTY LF _____
99+18	RADIUS	90
100+56	RADIUS	70
TOTAL		160

MOBILIZATIONS EROSION CONTROL		
LOCATION _____	DESCRIPTION _____	628.1905 QTY EACH _____
95+67-103+67	PROJECT	1
TOTAL		1

REMOVING ASPHALTIC SURFACE		
STA. _____	LOCATION _____	204.0110 QTY SY _____
95+75-103+67	LT	435
95+67-99+20	RT	187
100+45-101+56.7	RT	59
8+47-9+88	VILAS HOPE RD	581
TOTAL		1262

ASPHALTIC FLUMES		
		465.0315 QTY SY _____
STA. _____	LOCATION _____	
9+10	LT./END OF CURB	5
9+30	RT./END OF CURB	6
TOTAL		11

WATER		
STA. _____	LOCATION _____	624.0100 QTY MGAL _____
95+67-103+67	LT & RT	12
8+47-9+88	VILAS HOPE RD	3
PROJECT	UNDISTRIBUTED	10
TOTAL		25

MOBILIZATIONS EMERGENCY EROSION CONTROL		
LOCATION _____	DESCRIPTION _____	628.1910 QTY EACH _____
95+67-103+67	PROJECT	1
TOTAL		1

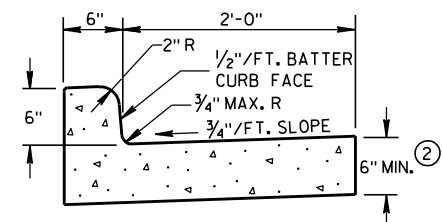
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3

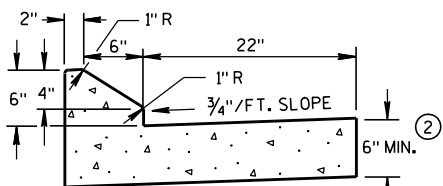
EROSION CONTROL ITEMS SUMMARY							MOVING SIGNS TYPE II				TRAFFIC CONTROL ITEMS SUMMARY							
							638.2102											
							QTY											
							EACH											
											643.0100		643.0300		643.0705		643.0900	
											TRAFFIC		TRAFFIC		TRAFFIC		TRAFFIC	
											CONTROL		CONTROL		CONTROL		CONTROL	
											PROJECT		DRUMS		LIGHTS		SIGNALS	
											QTY		QTY		QTY		QTY	
											EACH		DAYS		DAYS		DAYS	
											95+67-103+67		PROJECT		STAGE 1A		STAGE 1B	
											PROJECT		STAGE 1B		STAGE 2		STAGE 2	
											PROJECT		STAGE 2		STAGE 2		STAGE 2	
											TOTAL		1		1031		1031	
											TOTAL		1		1031		1031	
											TOTAL		1		1031		1031	
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Standard Detail Drawing List

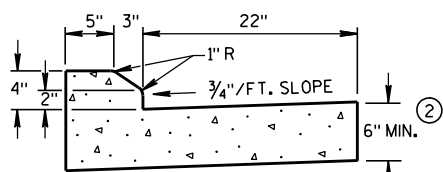
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C29-03B	BICYCLE LANE MARKING
15C29-03E	PAVEMENT MARKING FOR BIKE LANES
15D28-02	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



TYPES A & D ①

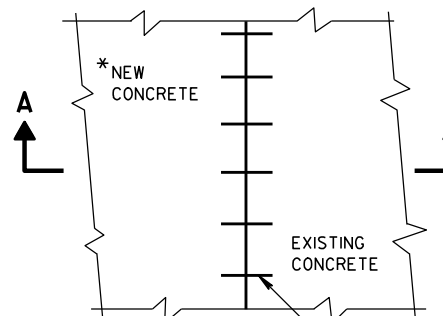


6" SLOPED CURB TYPES G & J ①



4" SLOPED CURB TYPES G & J ①

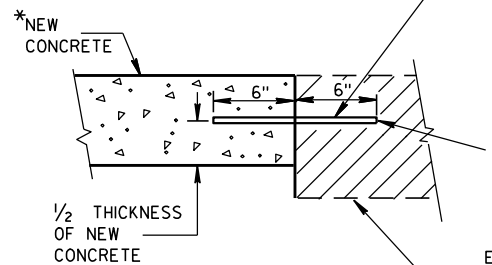
CONCRETE CURB & GUTTER 30"



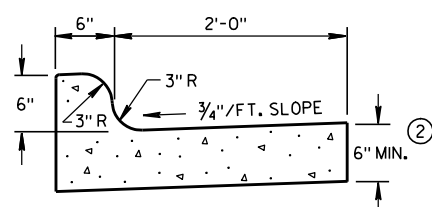
PLAN VIEW

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

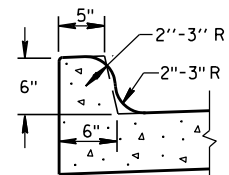
NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.



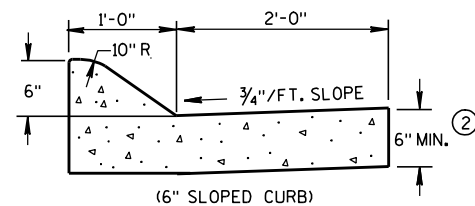
SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT



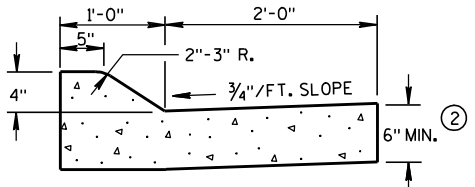
TYPES K & L ①



OPTIONAL CURB SHAPE
FOR TYPES K & L ①

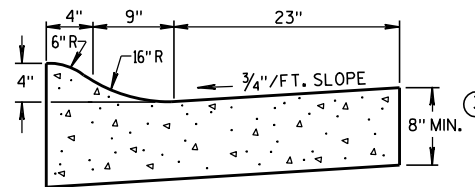


(6" SLOPED CURB)

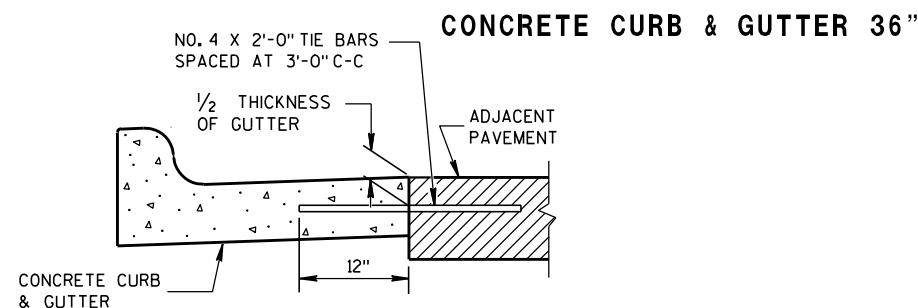


(4" SLOPED CURB)

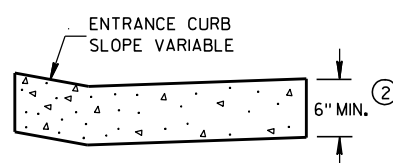
TYPES A & D ①



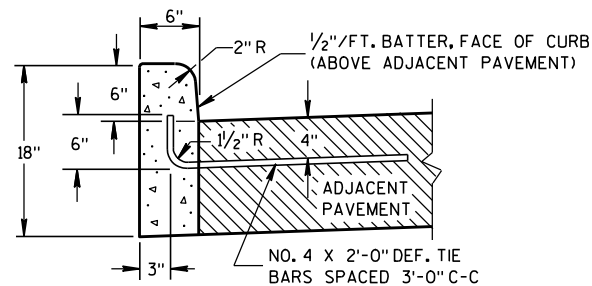
4" SLOPED CURB TYPES R & T ① ④



TYPICAL TIE BAR LOCATION ①

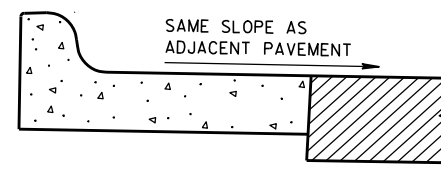


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

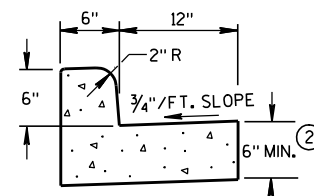


TYPES A & D
①

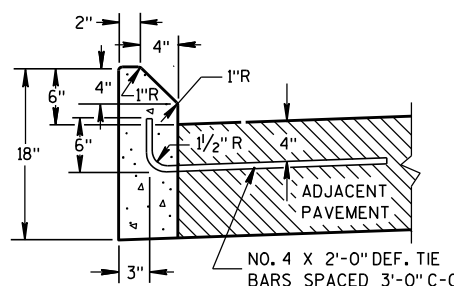
CONCRETE CURB



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



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J
①

GENERAL NOTES

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

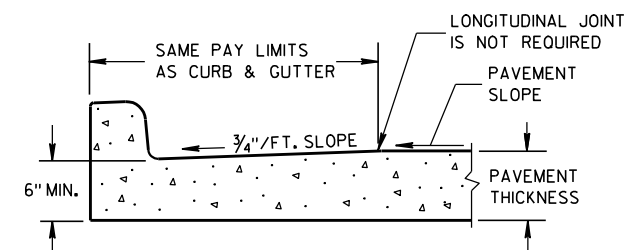
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

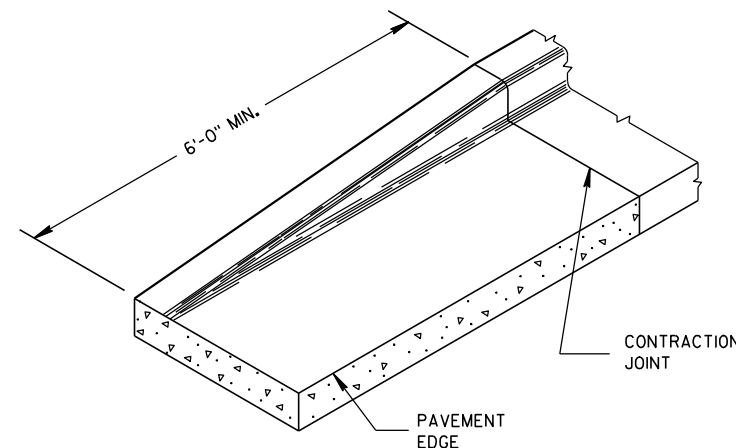
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08

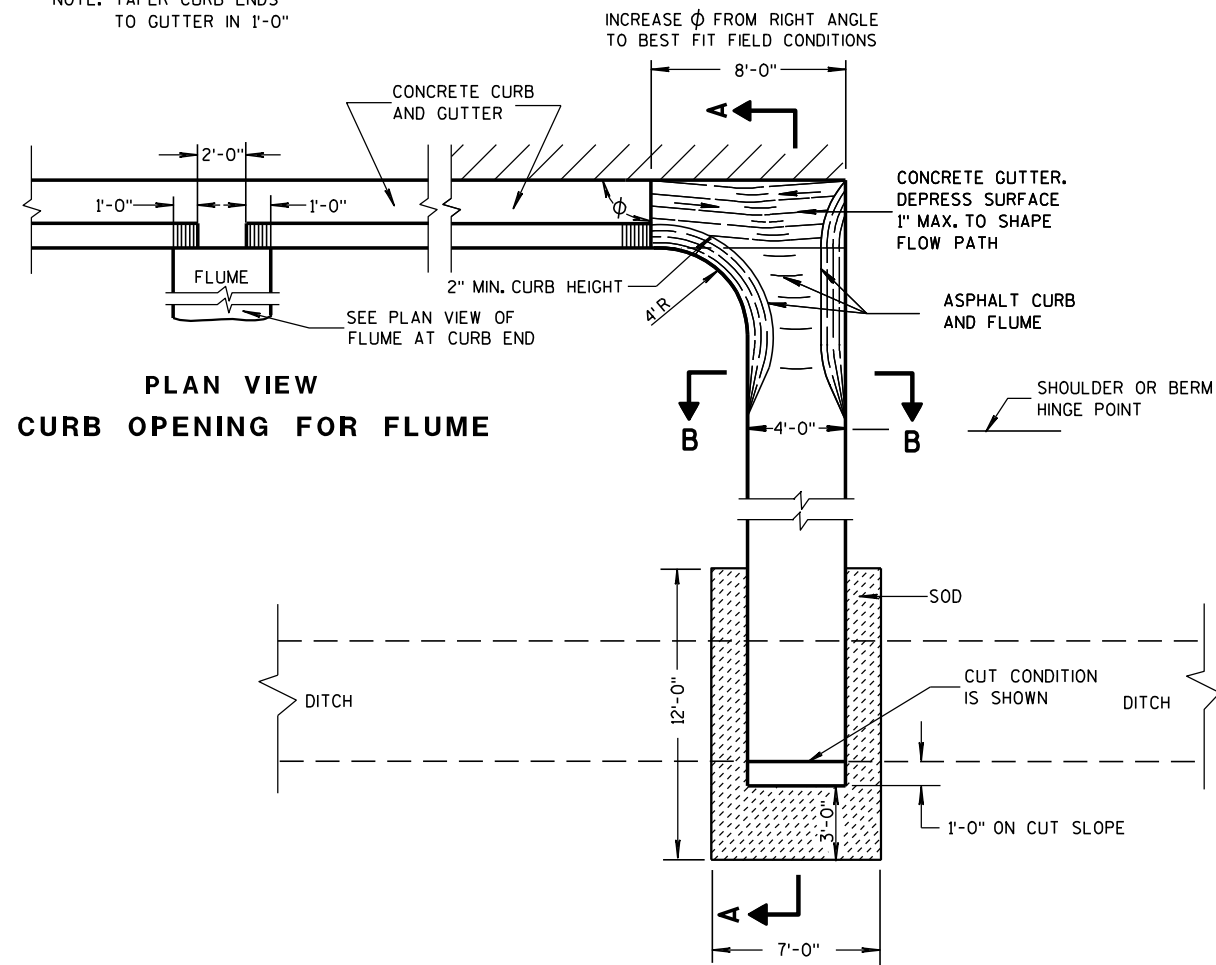
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

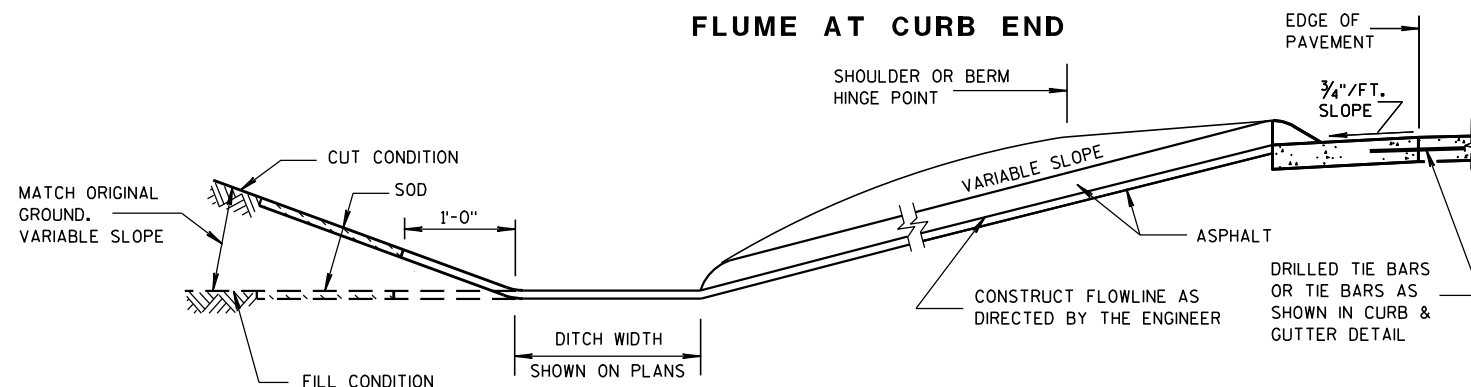
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

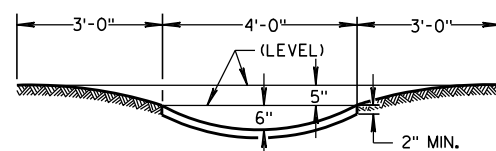


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

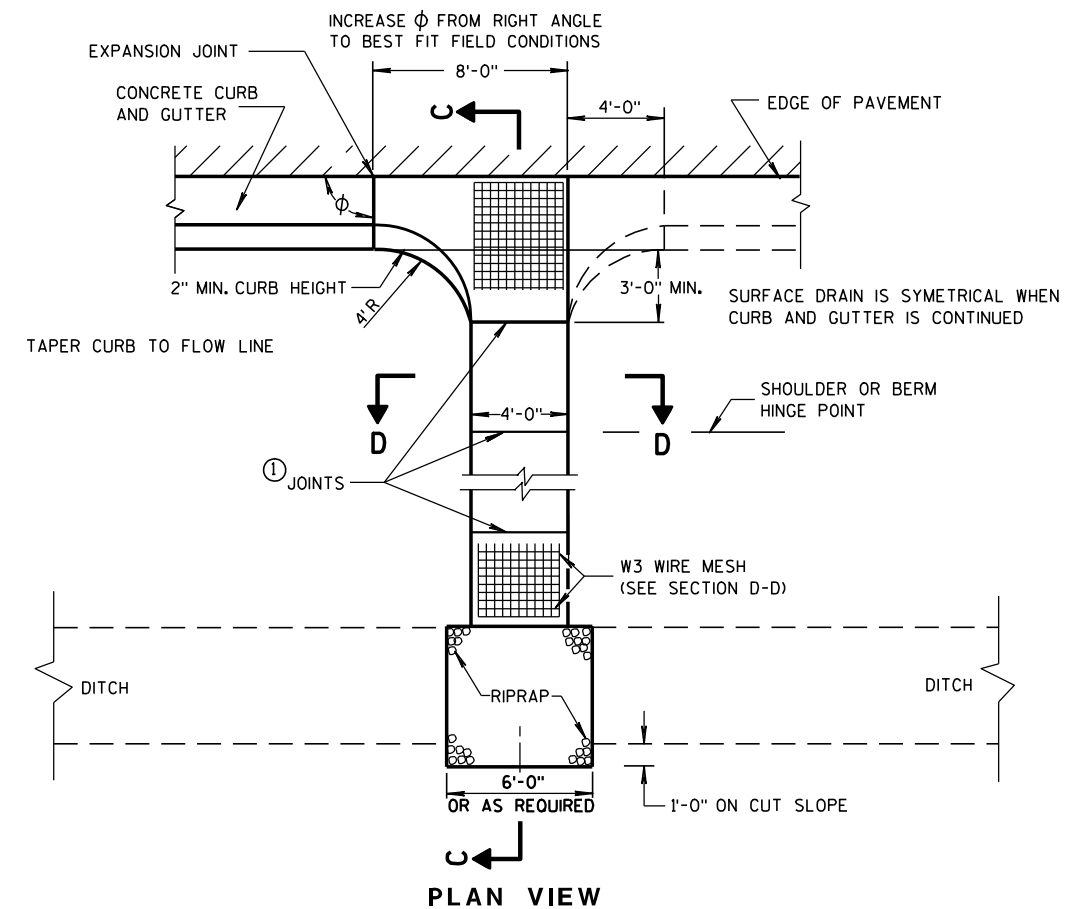
GENERAL NOTES

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

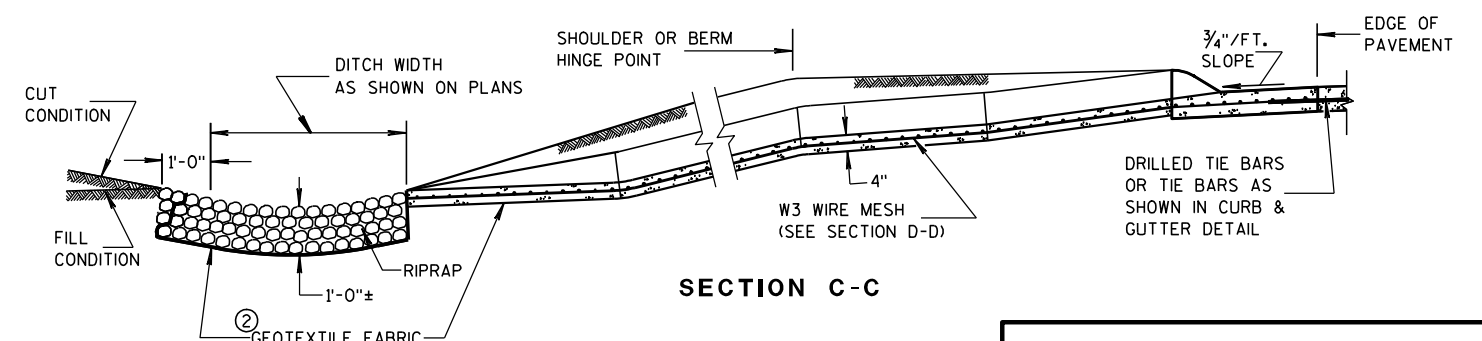
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

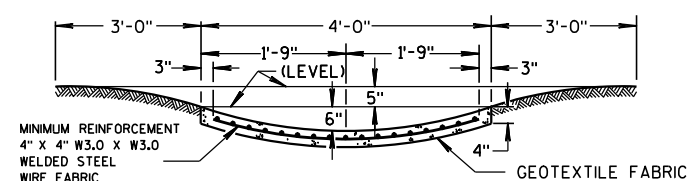
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

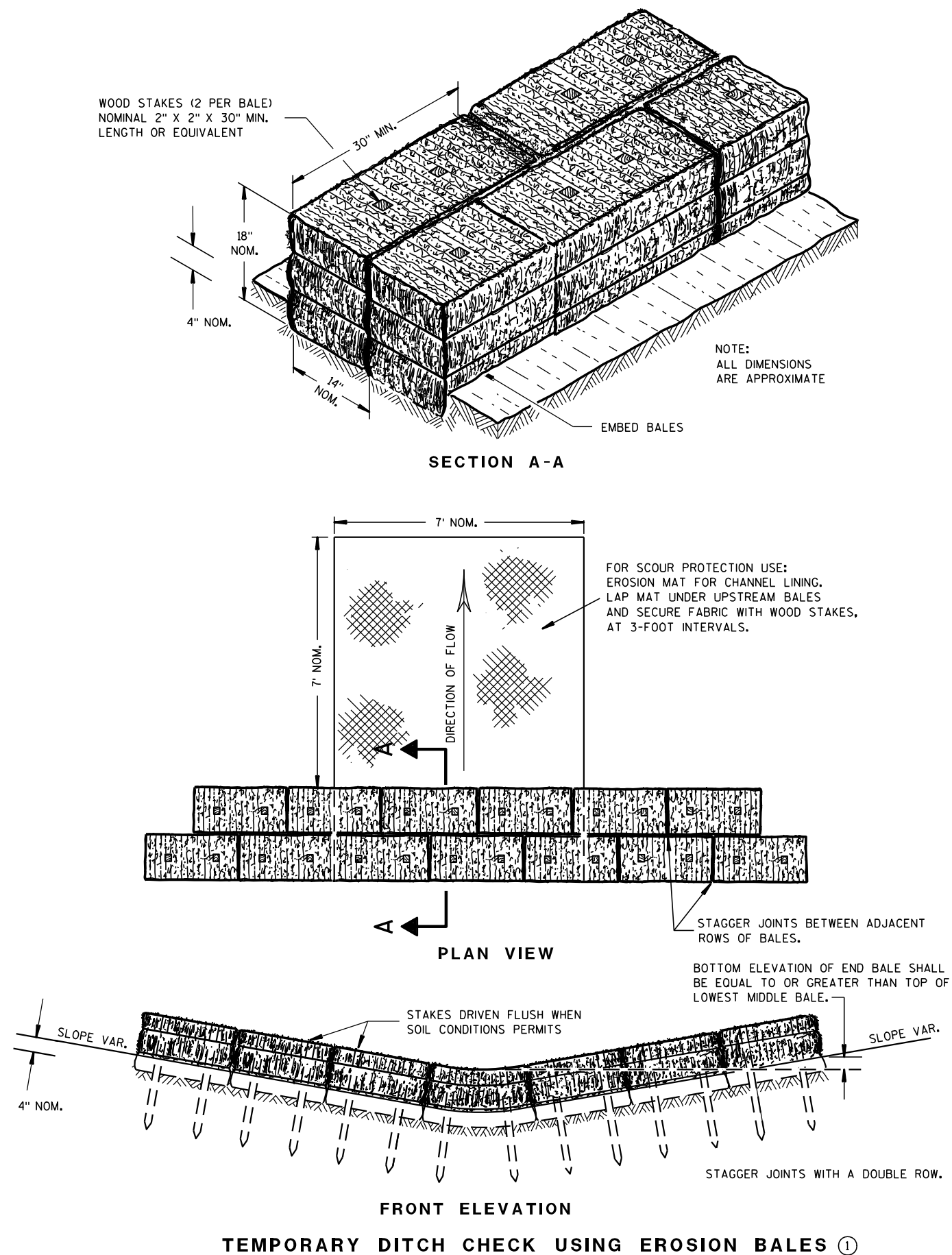
APPROVED

9-4-08

DATE

FHWA

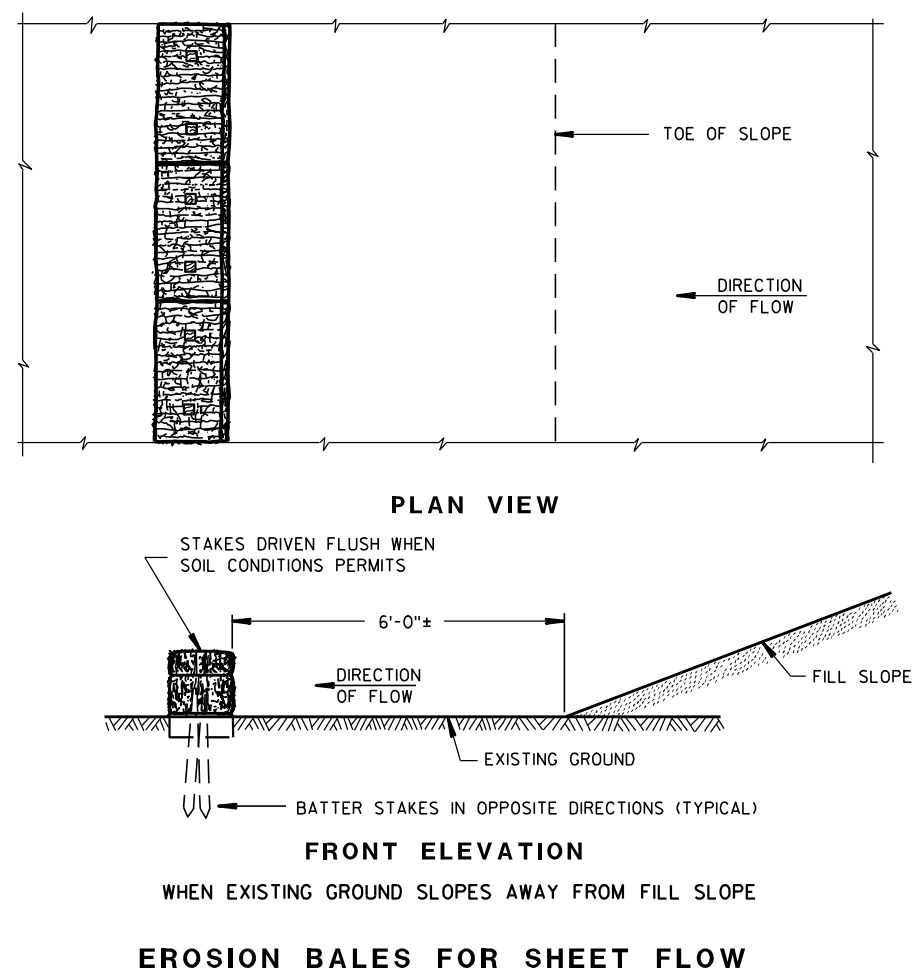
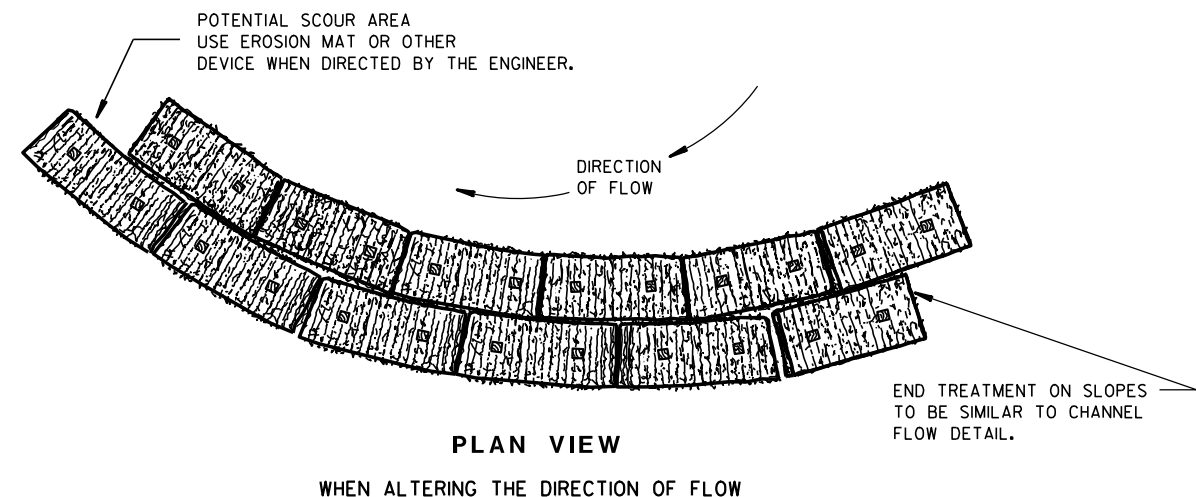
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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.

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

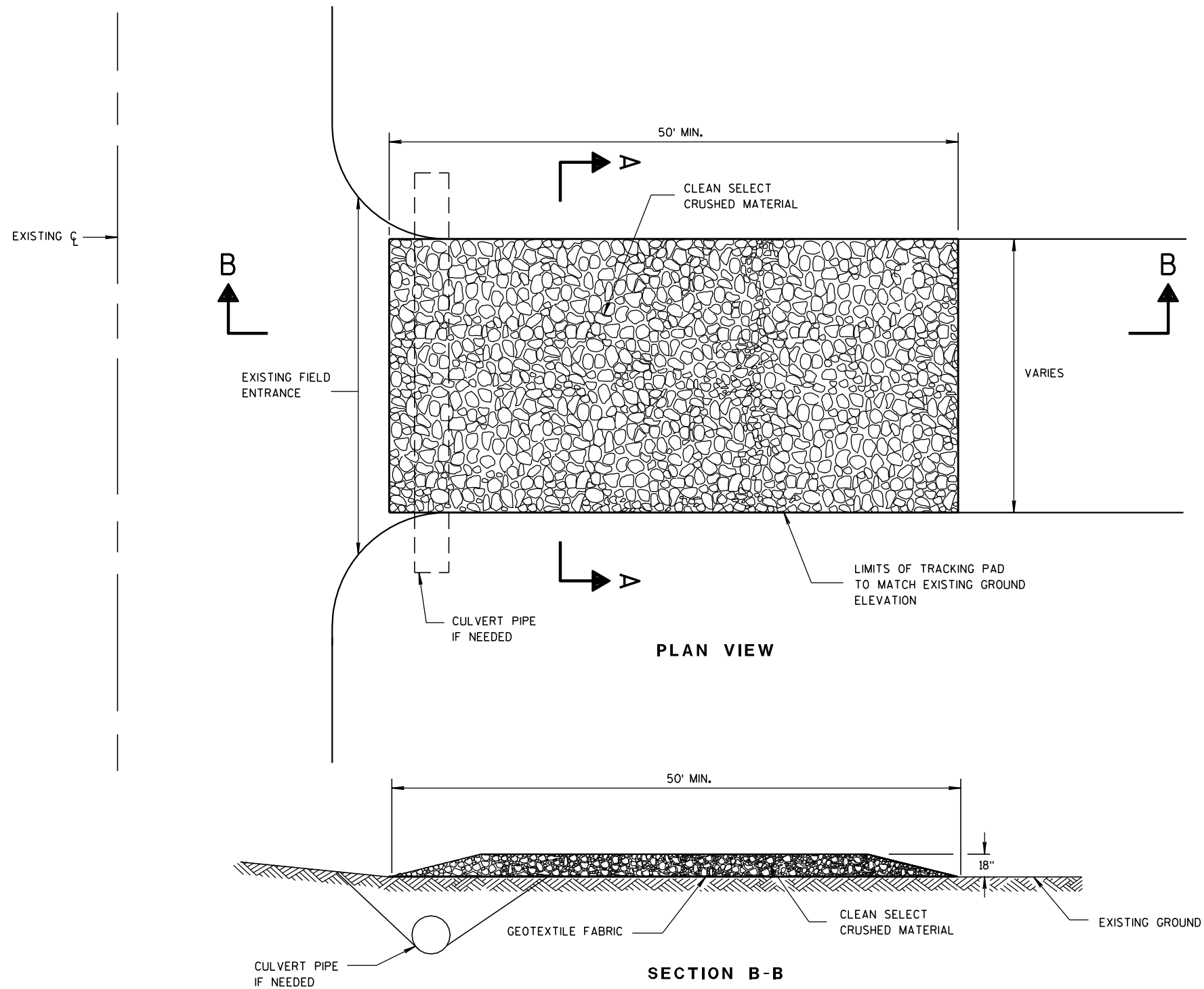
FHWA



- 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 1 1/8" X 1 1/8" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



TRACKING PAD

GENERAL NOTES

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

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

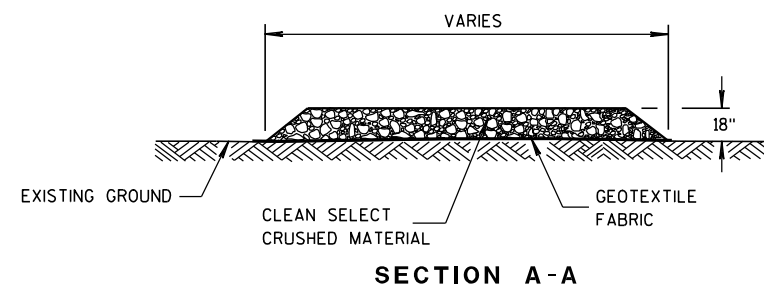
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

DATE

FHWA

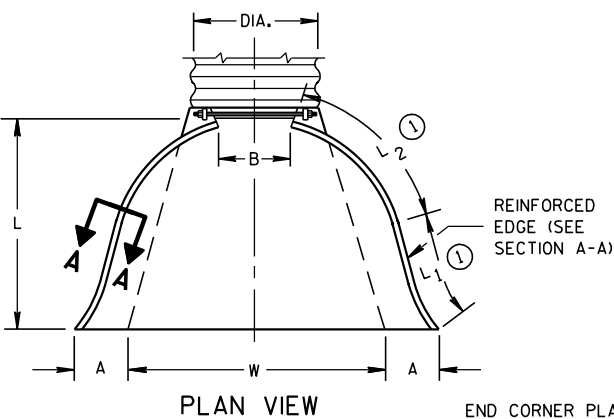
/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

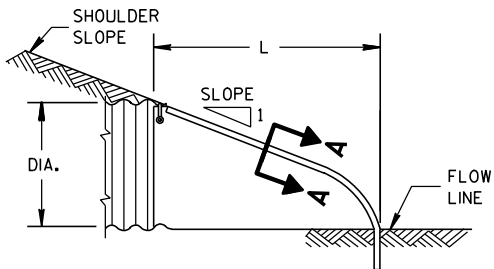
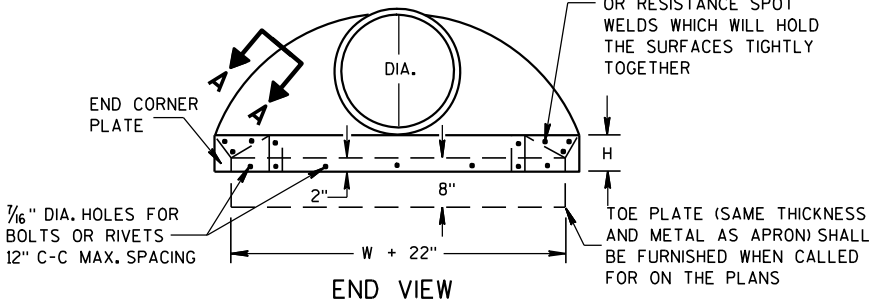
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

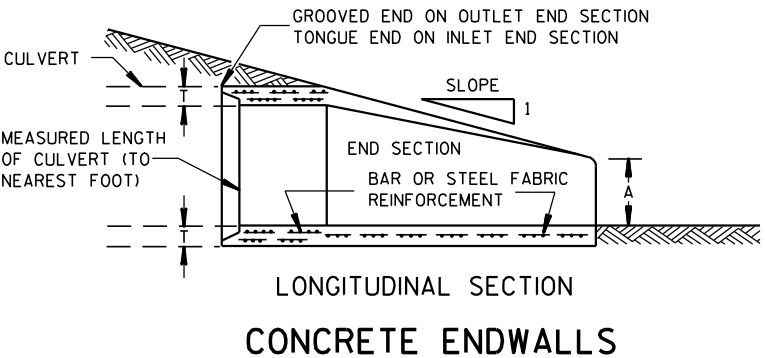
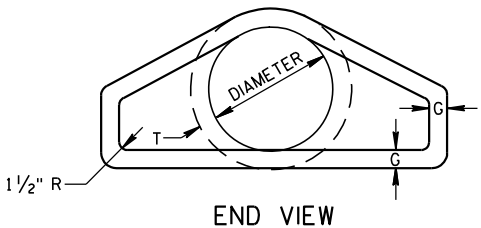
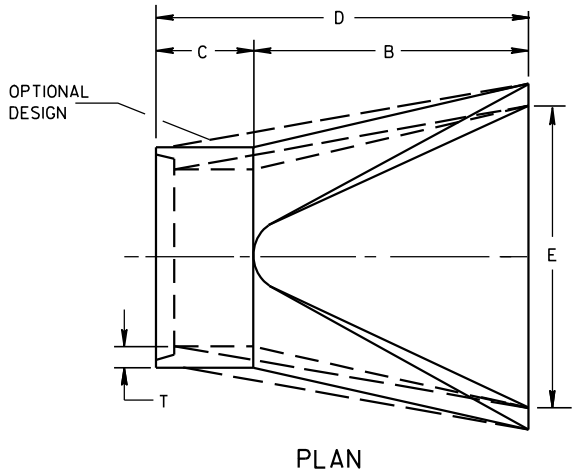
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

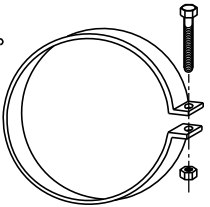
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43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

* MINIMUM
** MAXIMUM

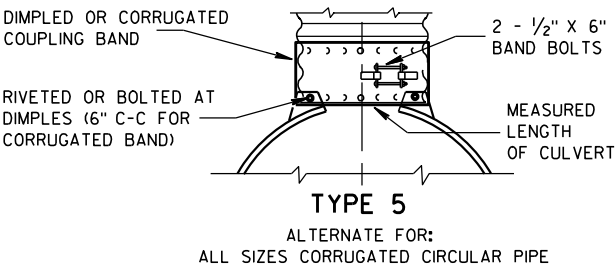
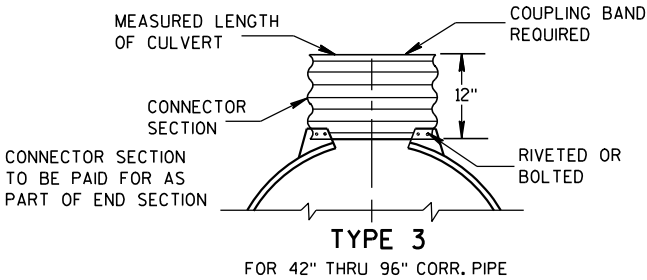
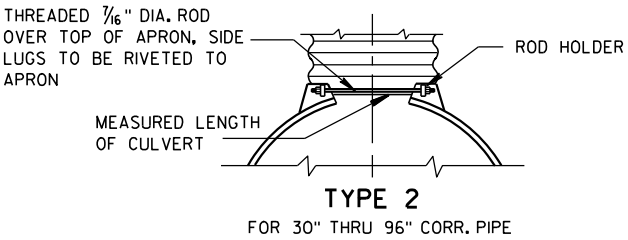
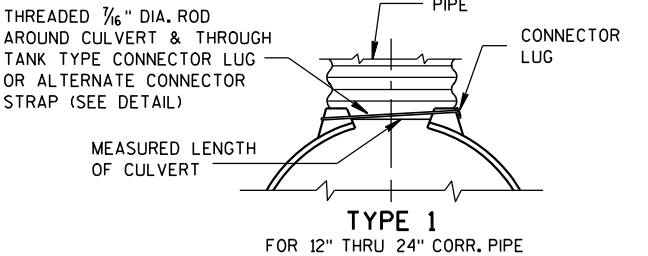


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



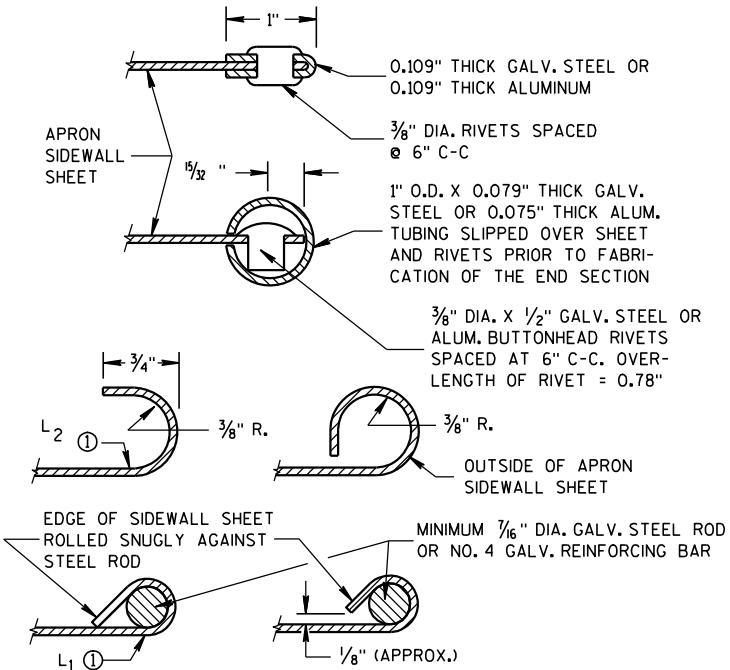
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

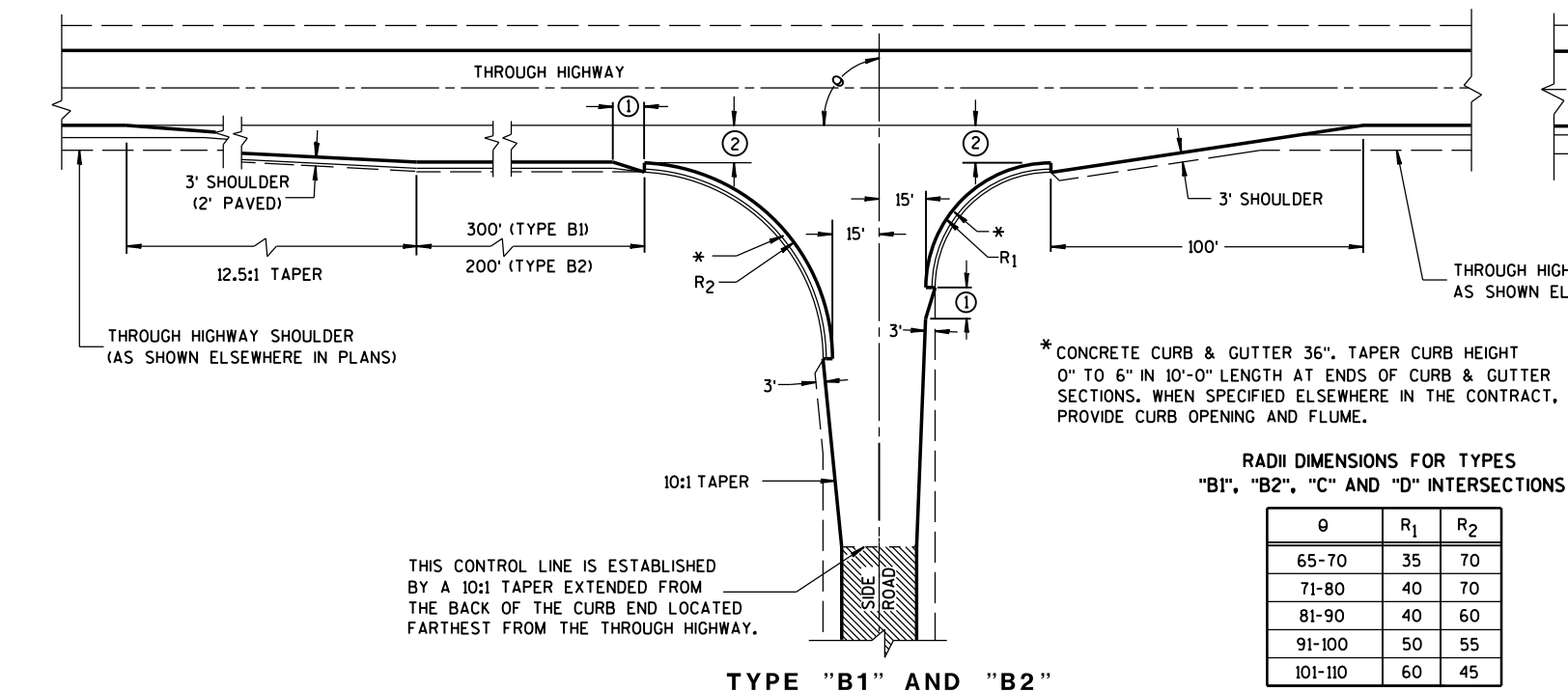
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

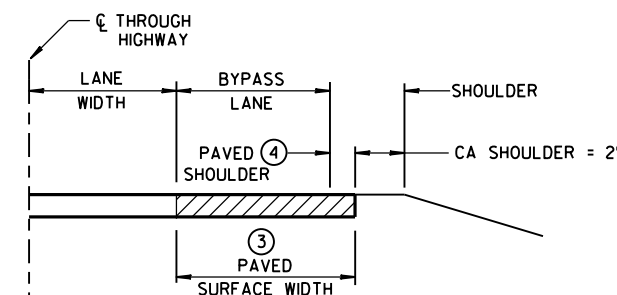
WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

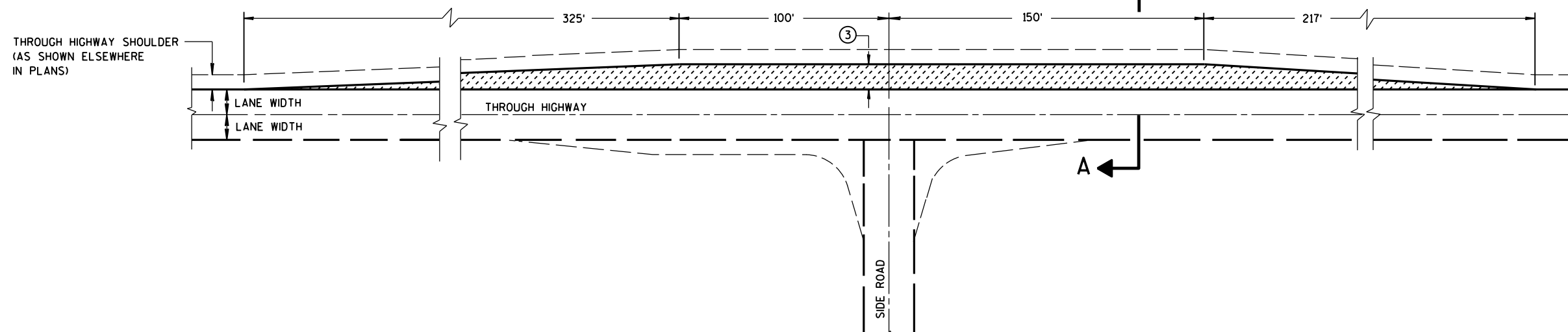
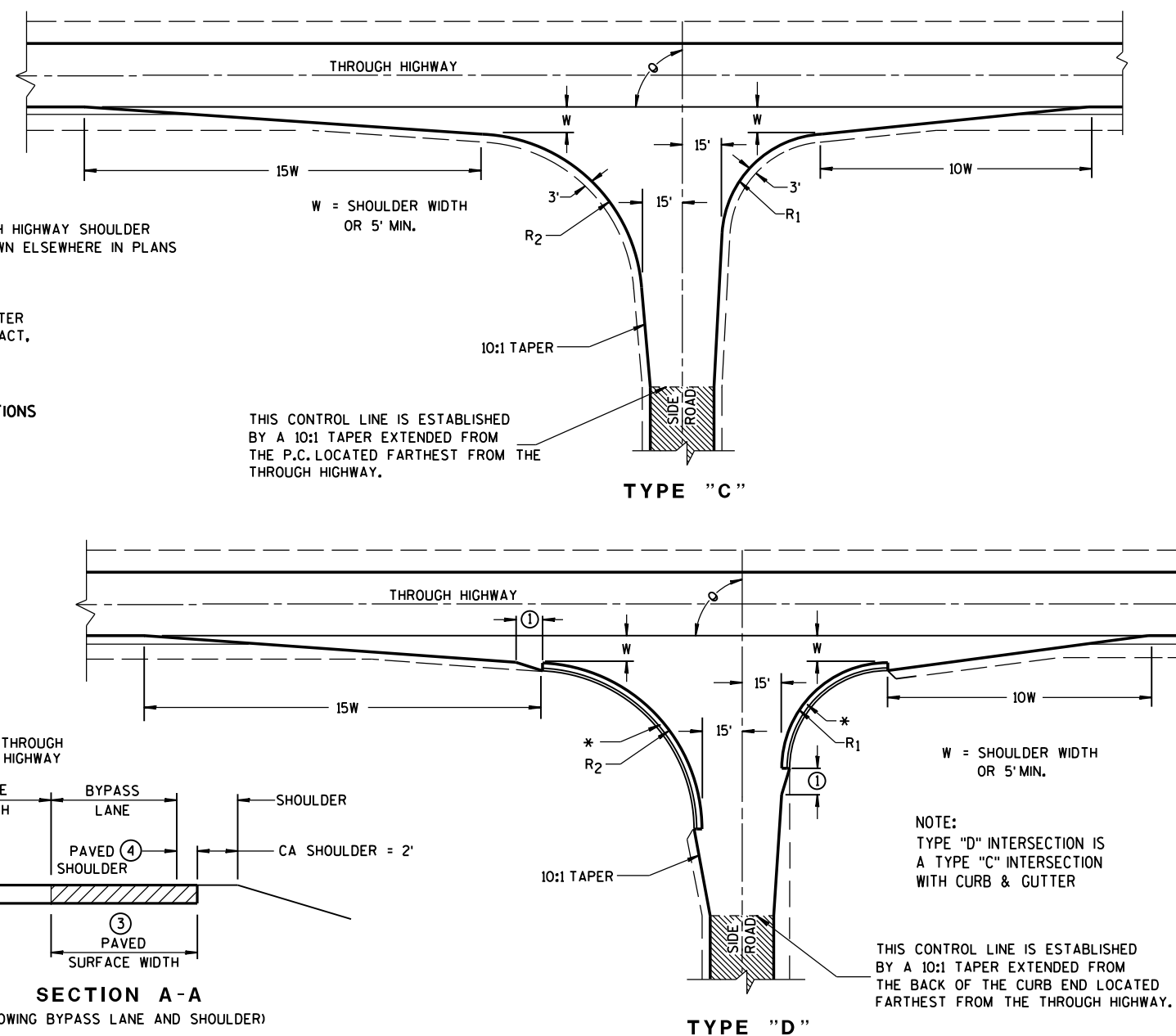
EXISTING PAVED SURFACE

BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
- **10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TEE INTERSECTION BYPASS LANE DETAIL

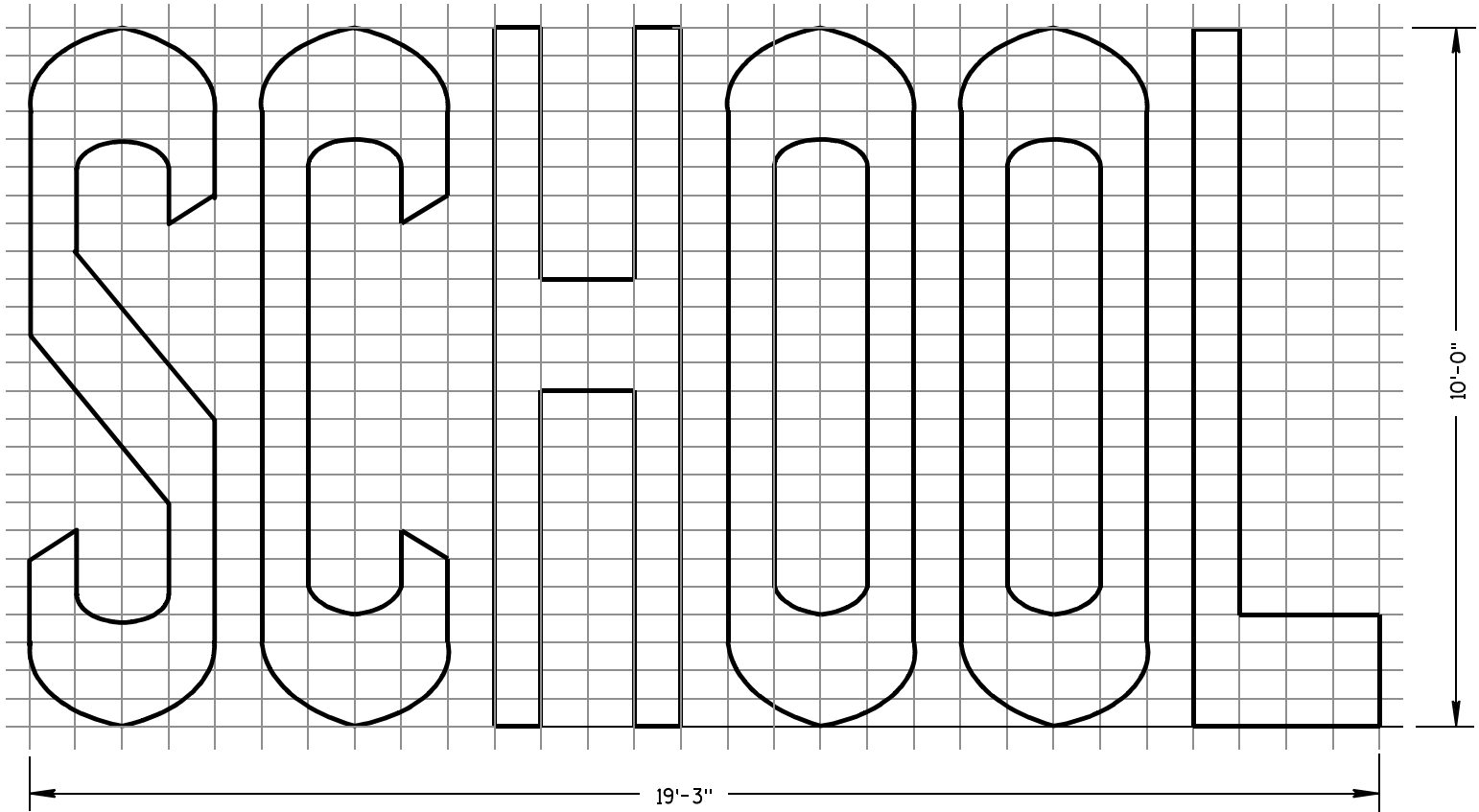
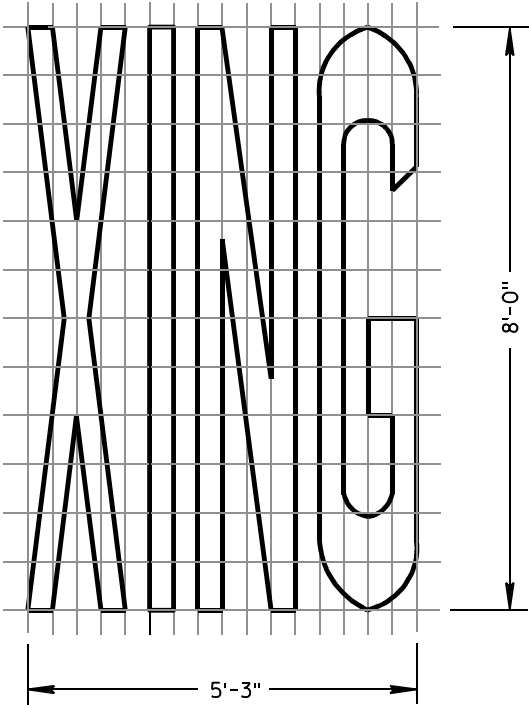
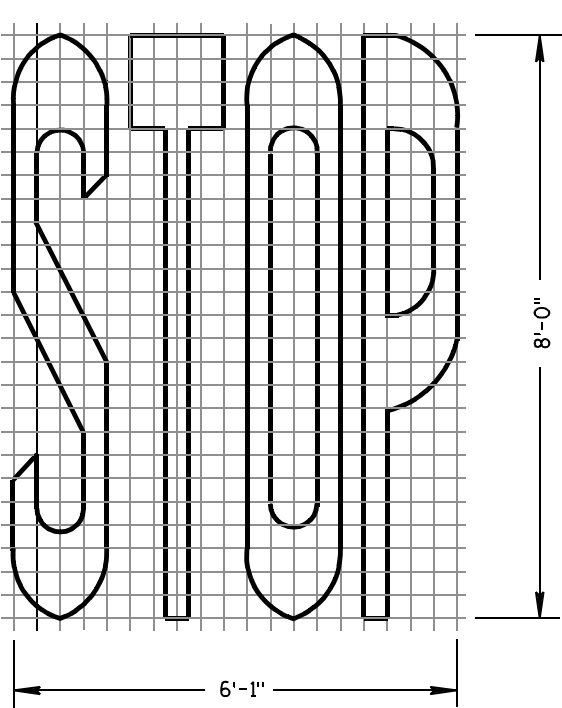
AT-GRADE SIDE ROAD
INTERSECTION, TYPES "B1", "B2",
"C" AND "D" AND TEE
INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

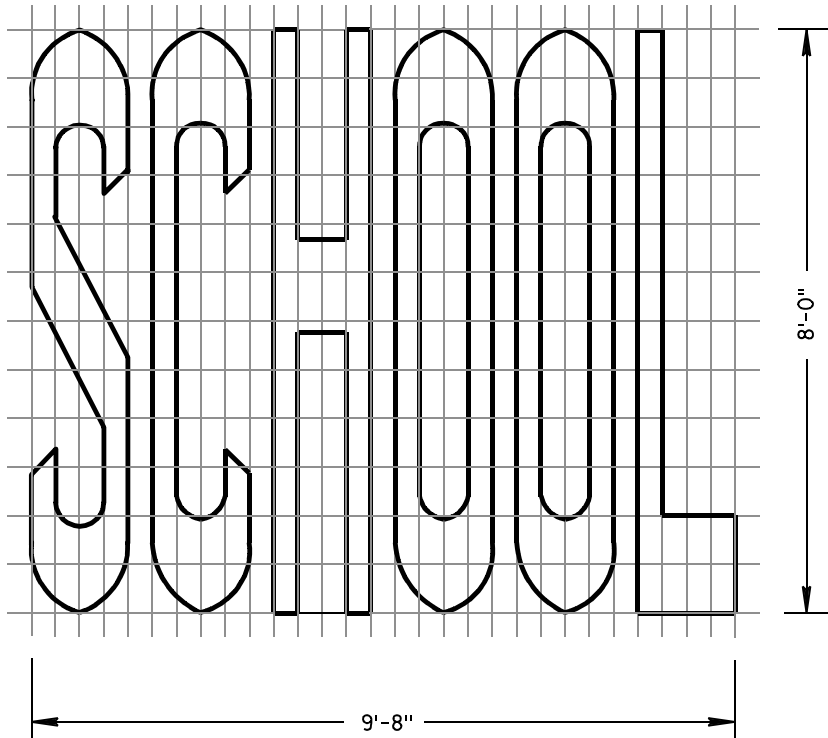
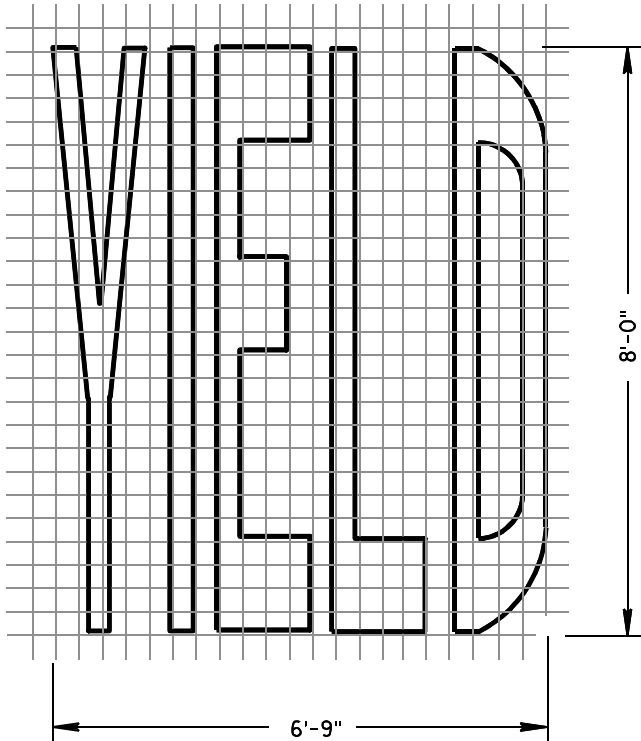
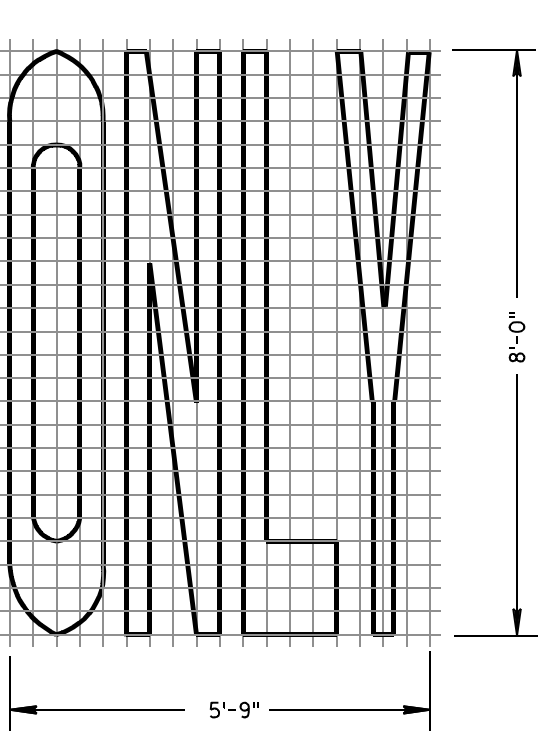
GENERAL NOTES

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

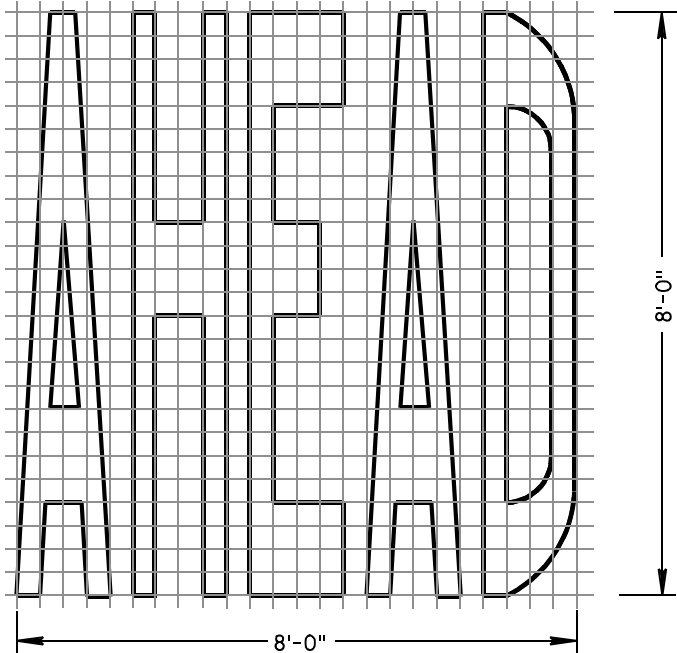
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

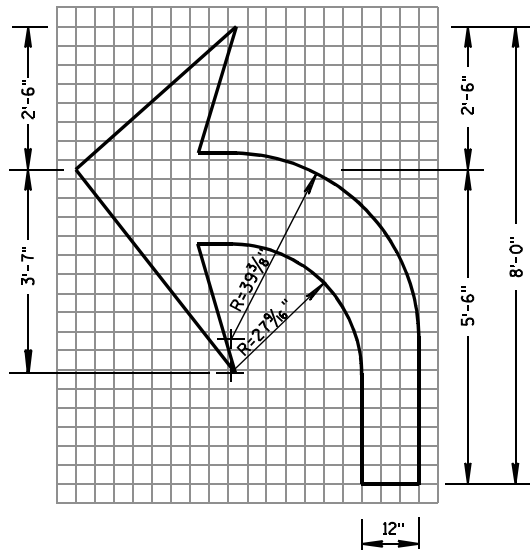
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

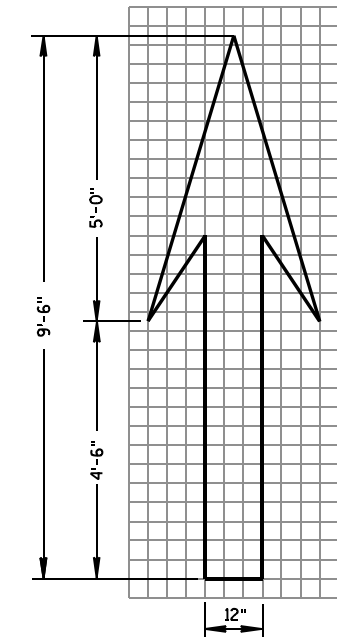
7-1-11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

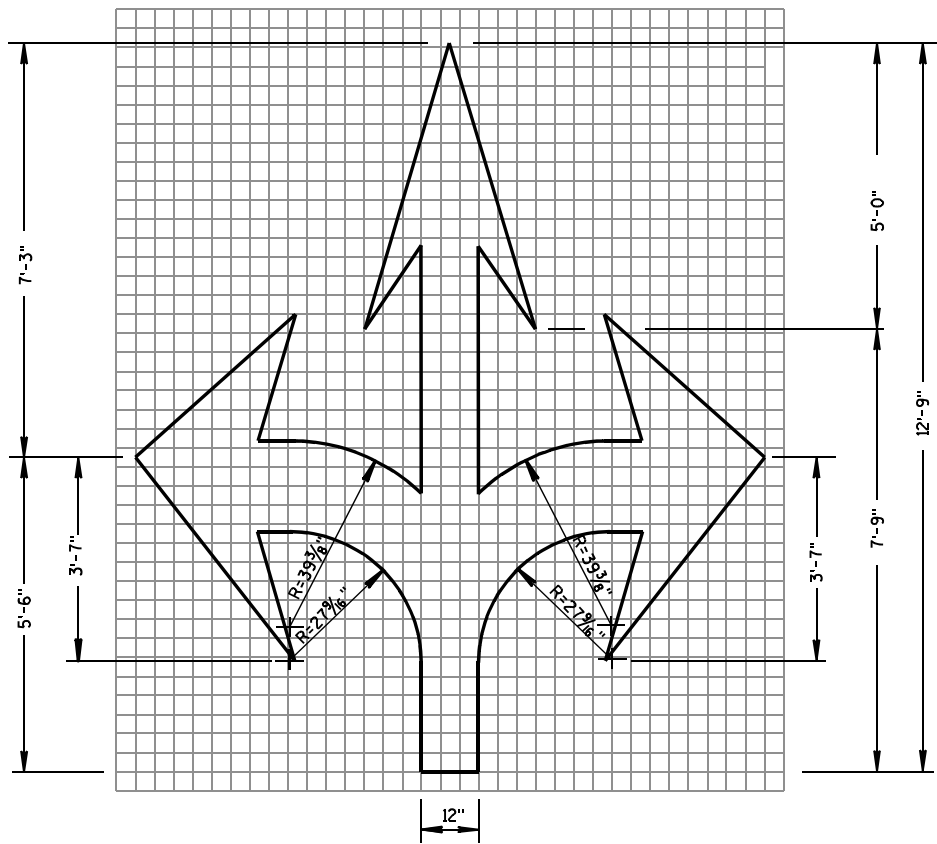
FHWA



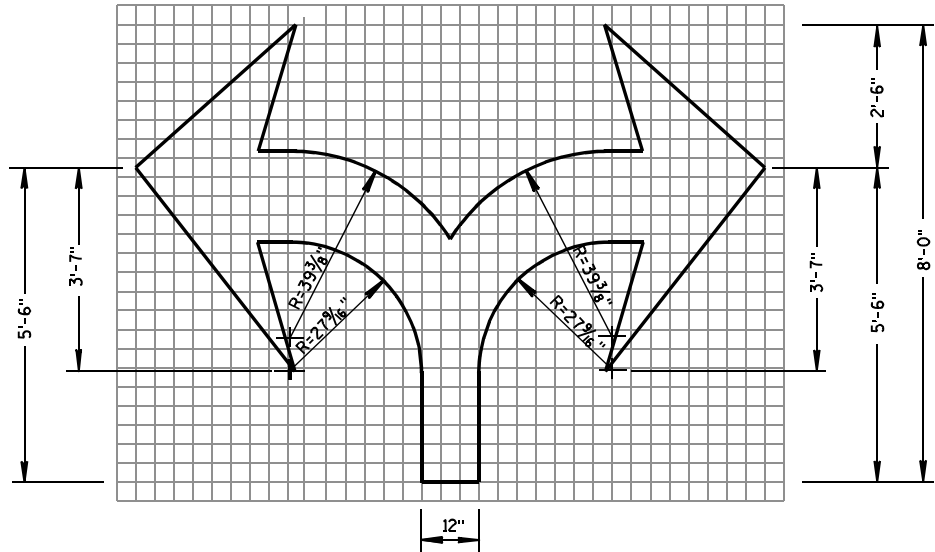
TYPE 2



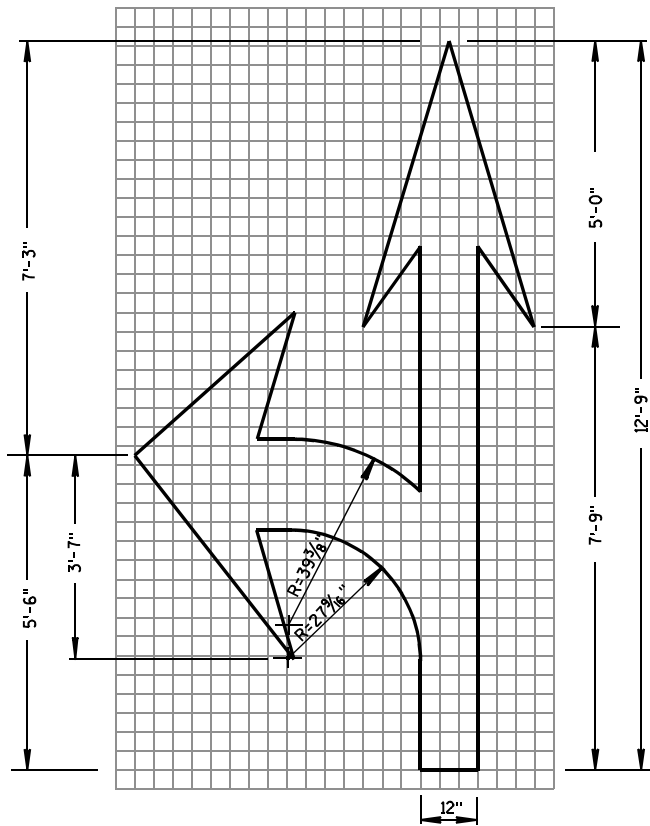
TYPE 1



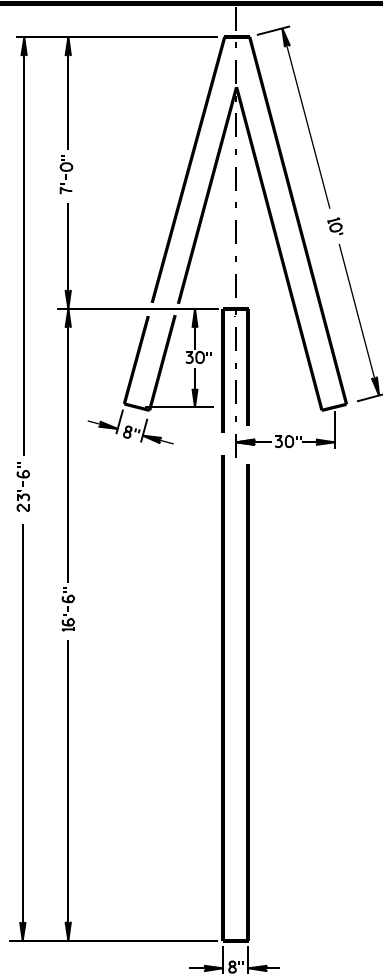
TYPE 6



TYPE 7



TYPE 3

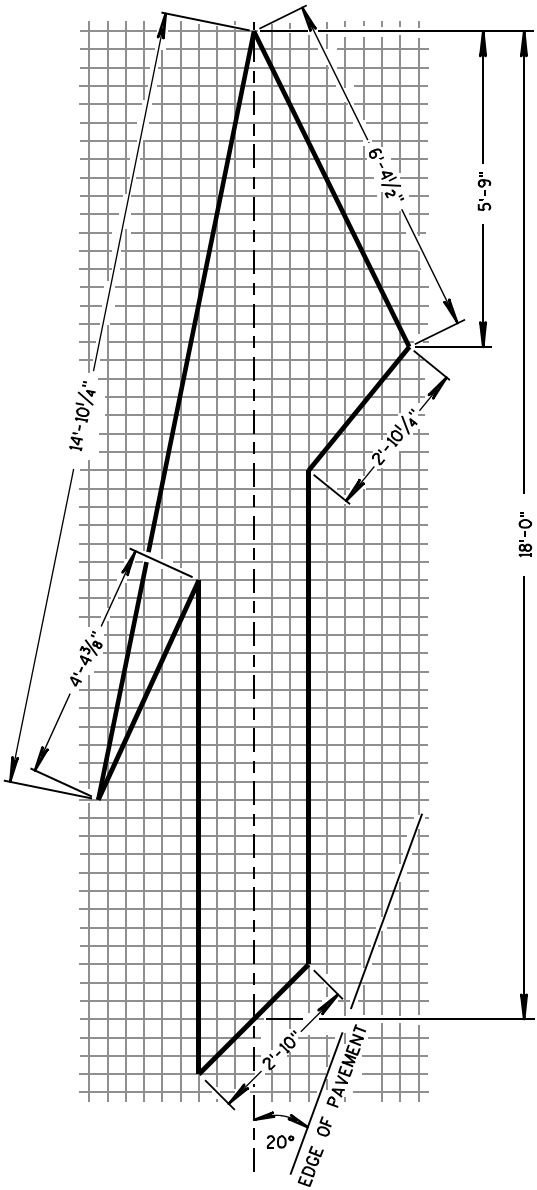


TYPE 4

GENERAL NOTES

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

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



TYPE 5 LANE DROP ARROW

PAVEMENT MARKING ARROWS

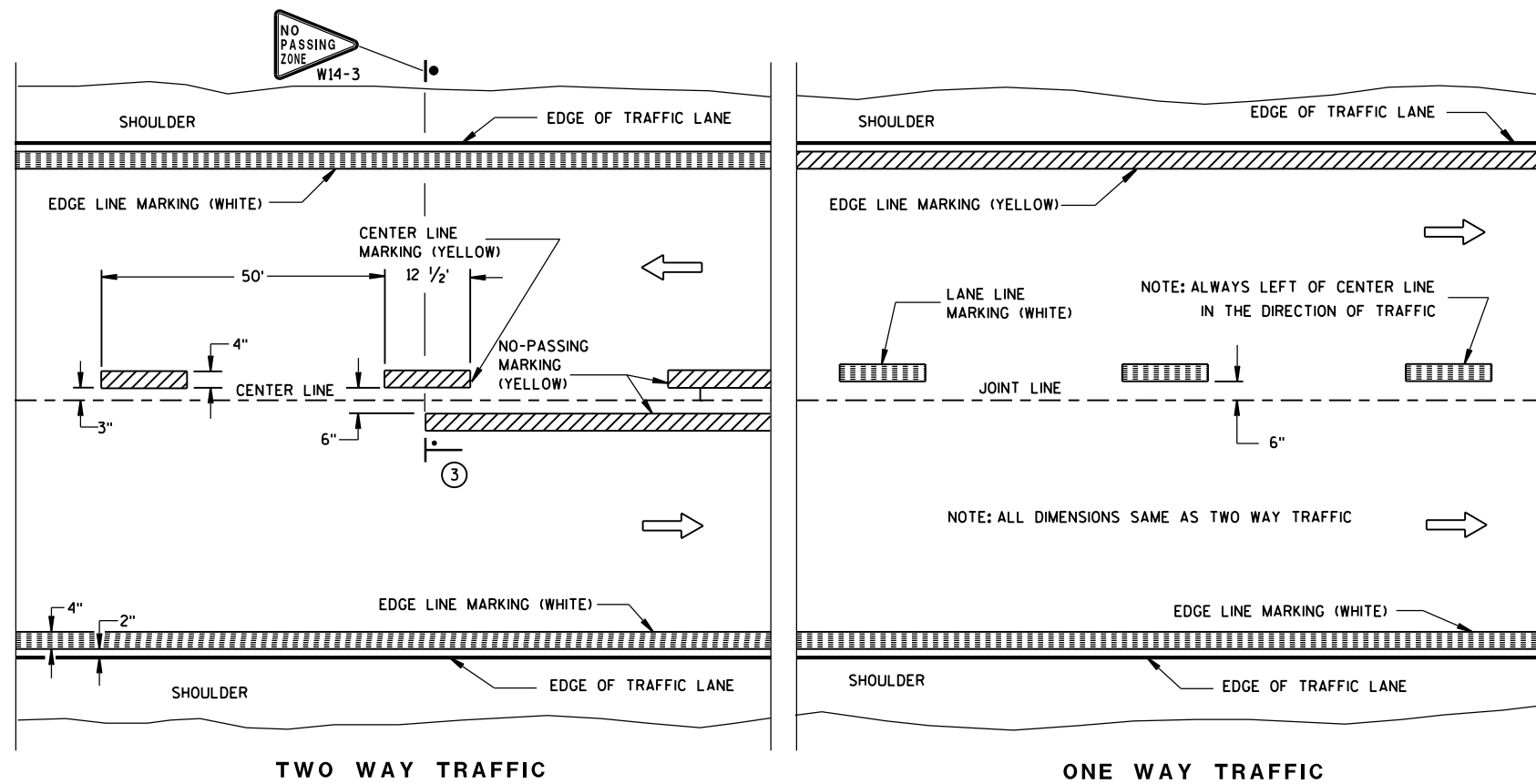
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

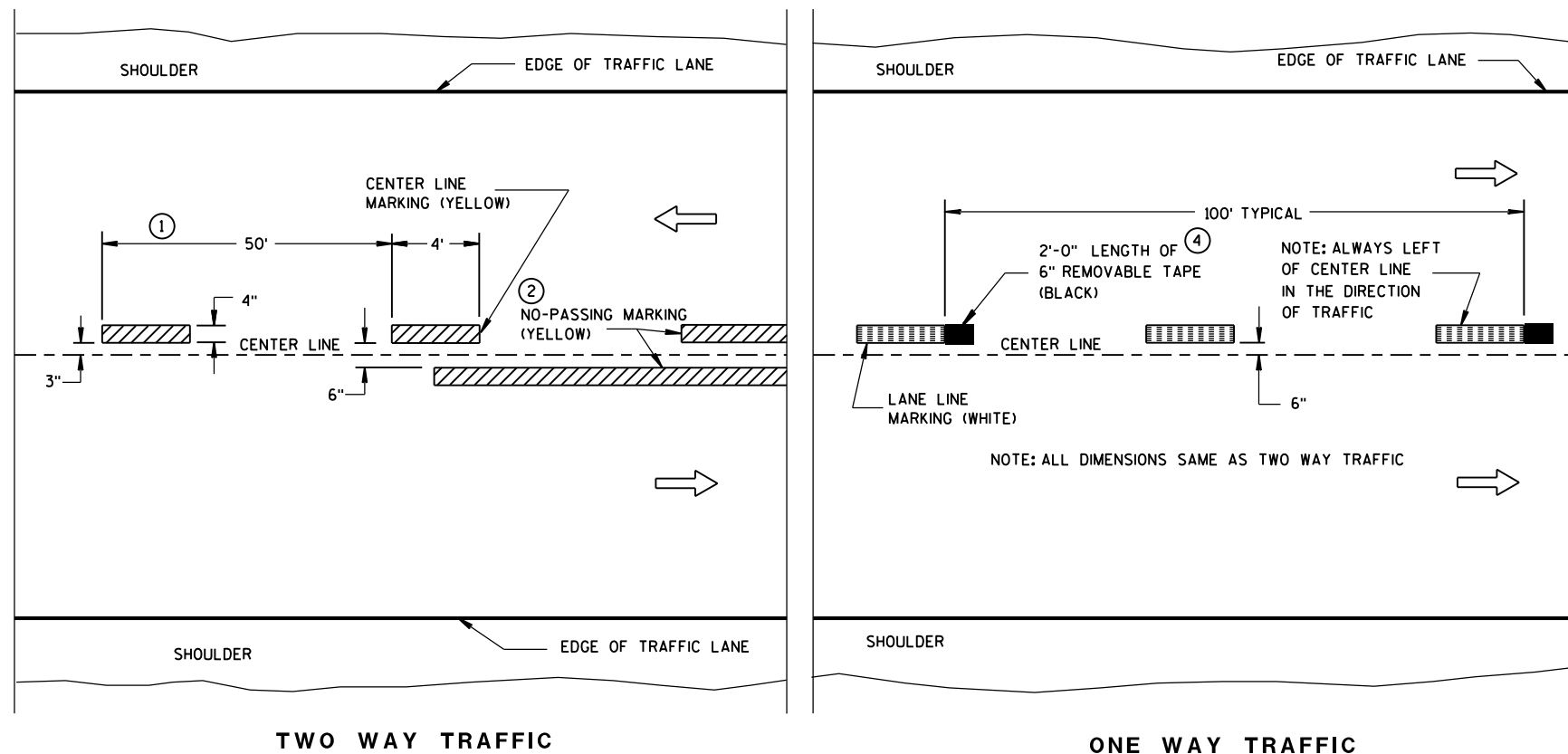
7/1/11
DATE

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

FHWA



PERMANENT PAVEMENT MARKING




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

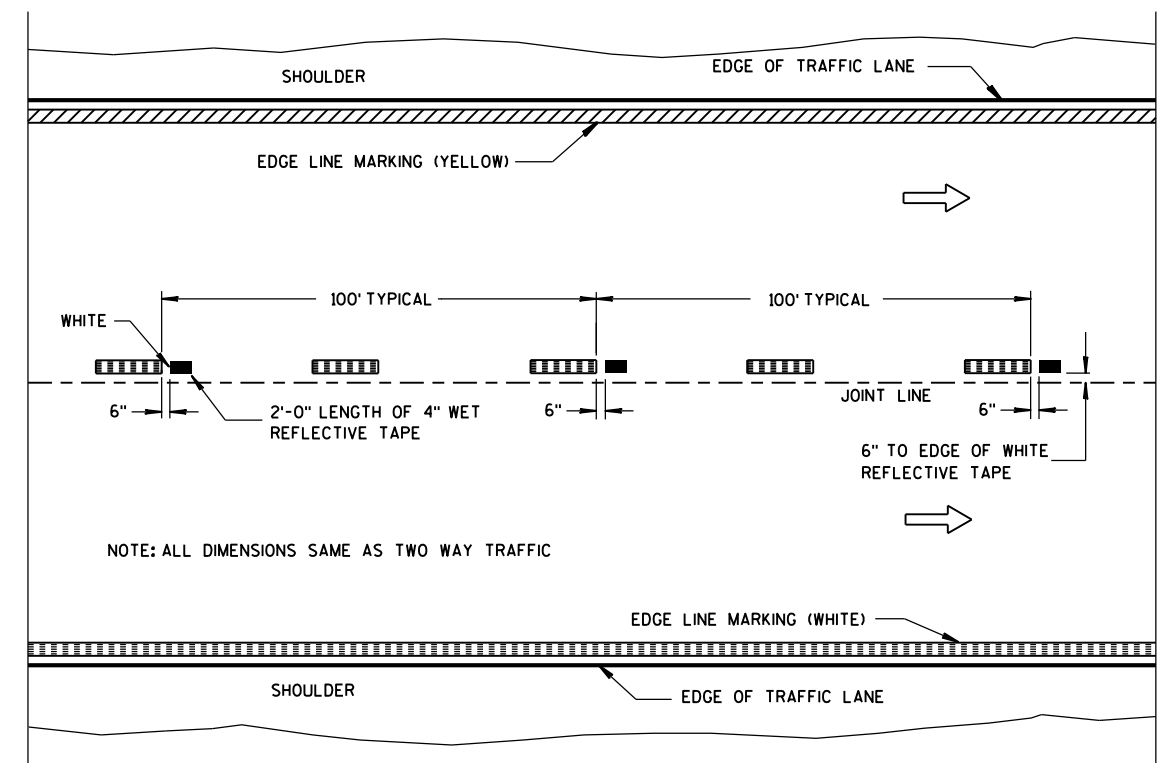
GENERAL NOTES

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

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


NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



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

LEGEND

 "T" MARKING

● POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

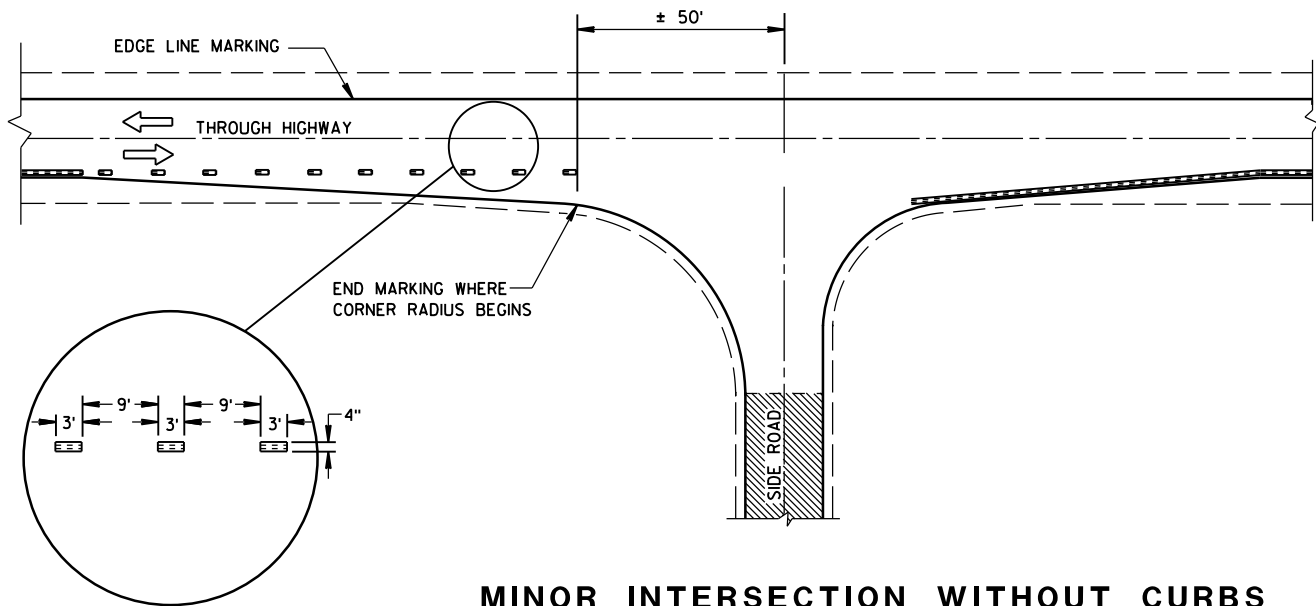
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

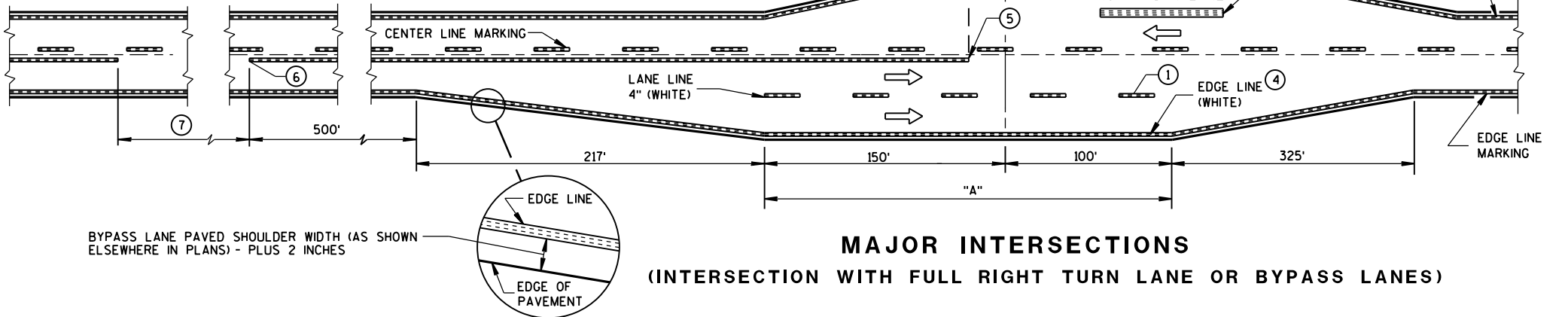
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

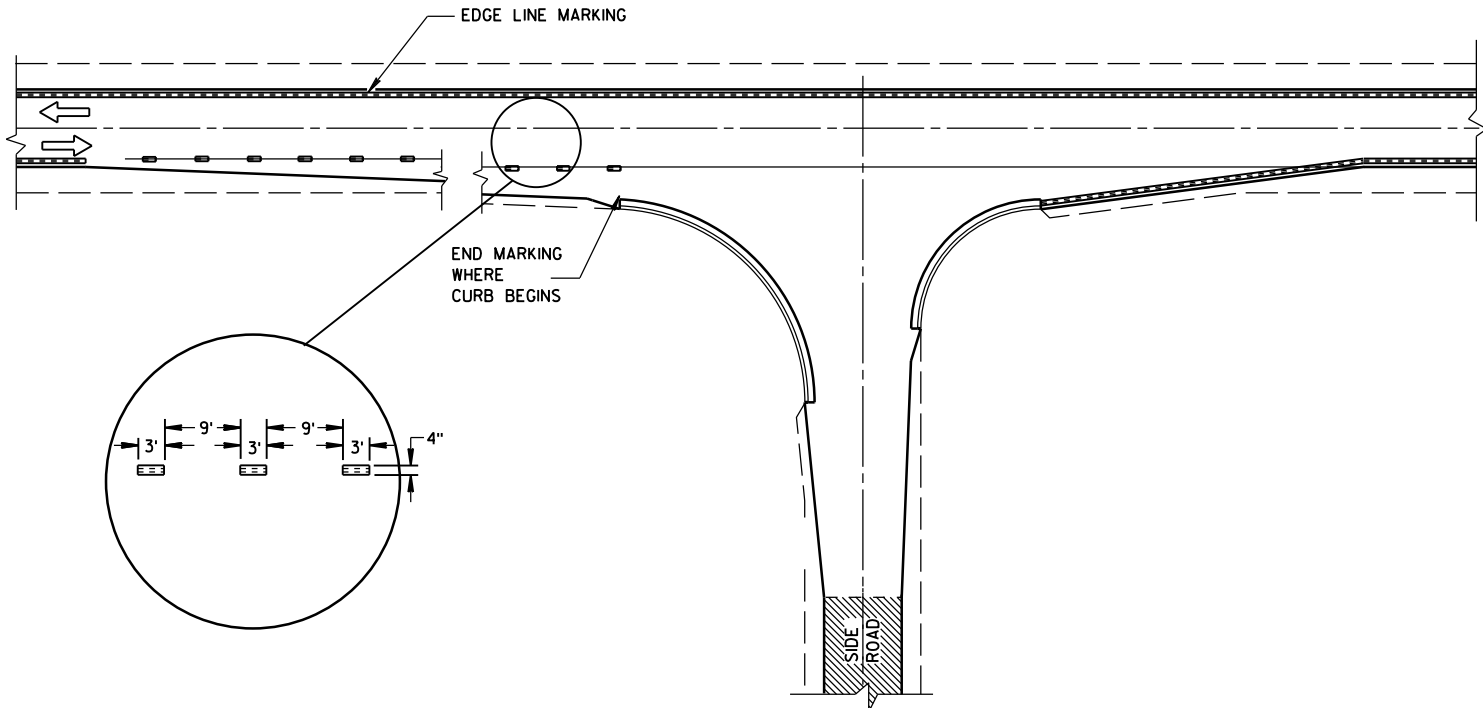


MINOR INTERSECTION WITHOUT CURBS

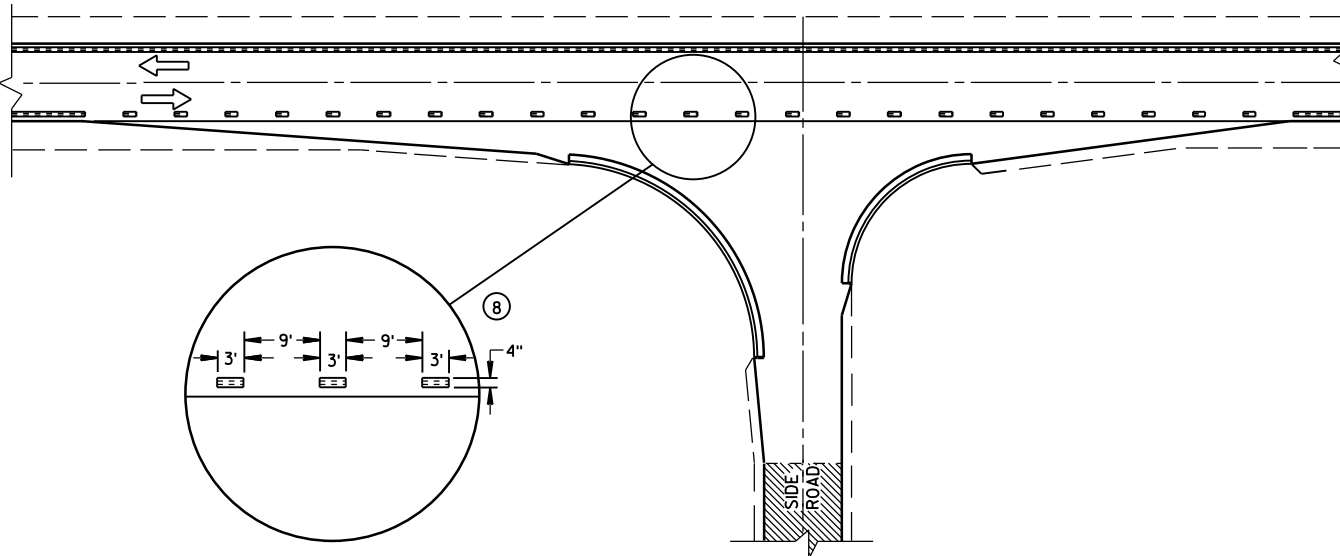
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)







MINOR INTERSECTION WITH CURBS
(FOR SPECIAL CONDITIONS AS SPECIFIED)

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

LEGEND

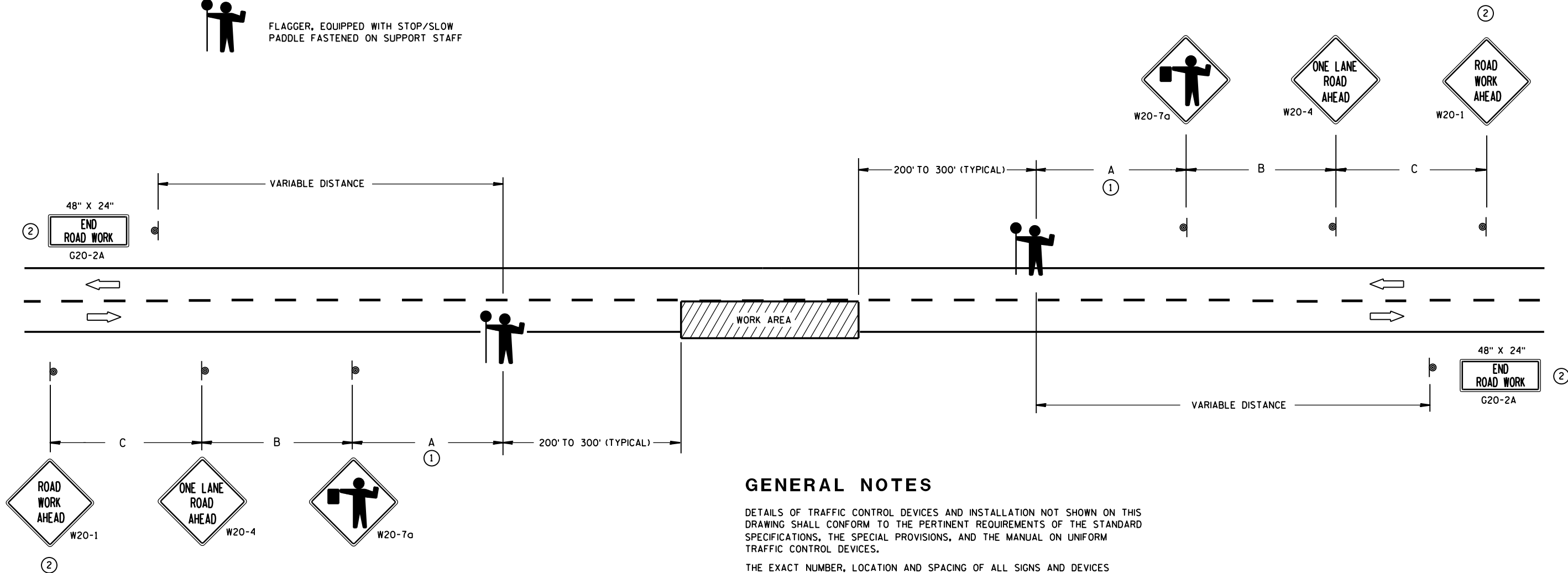
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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.



GENERAL NOTES

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

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

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

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

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

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

- 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.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

- ① 3' LINE, 9' GAP - 4-INCH WIDE, WHITE.

② 4-INCH, WHITE.

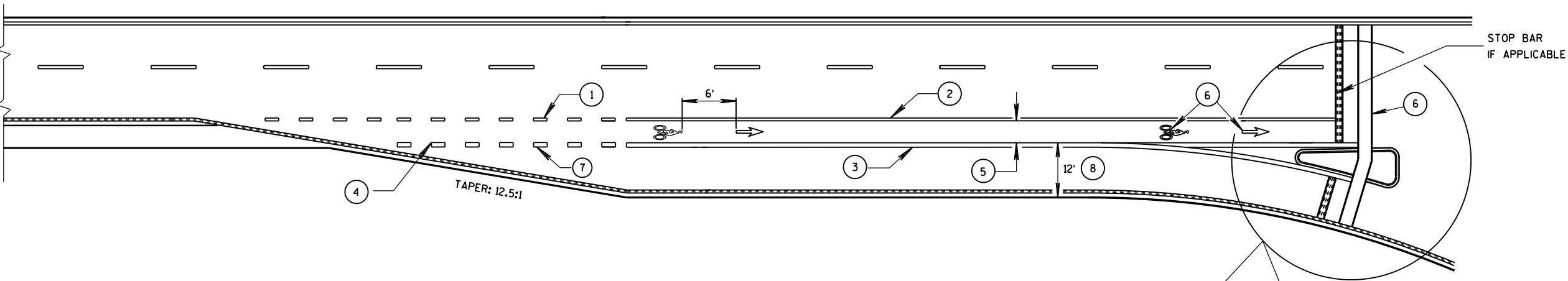
③ 8-INCH, WHITE.

④ IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.
- ⑤ 5' TYPICAL.

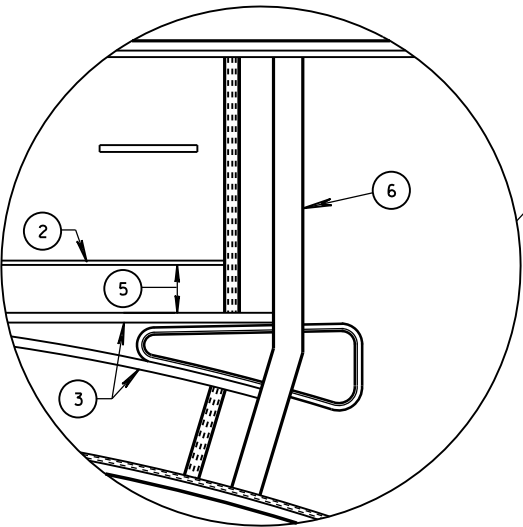
⑥ REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

⑦ 3' LINE, 9' GAP - 8-INCH WIDE, WHITE.

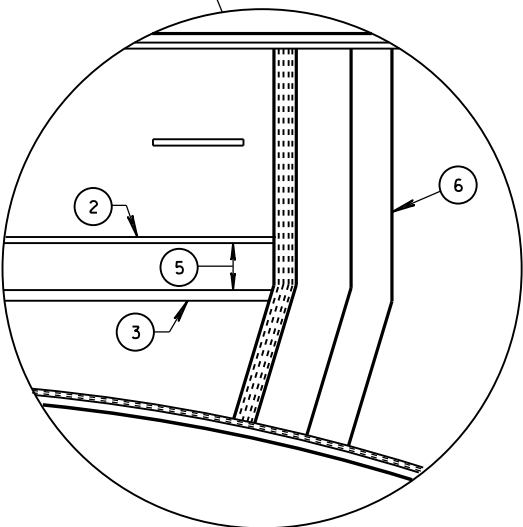
⑧ REFER TO CONTRACT PLANS.



BIKE LANE - 4-LANE DIVIDED WITH RIGHT TURN LANE



4 LANE DIVIDED WITH ISLAND



4 LANE DIVIDED WITHOUT ISLAND

BICYCLE LANE MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

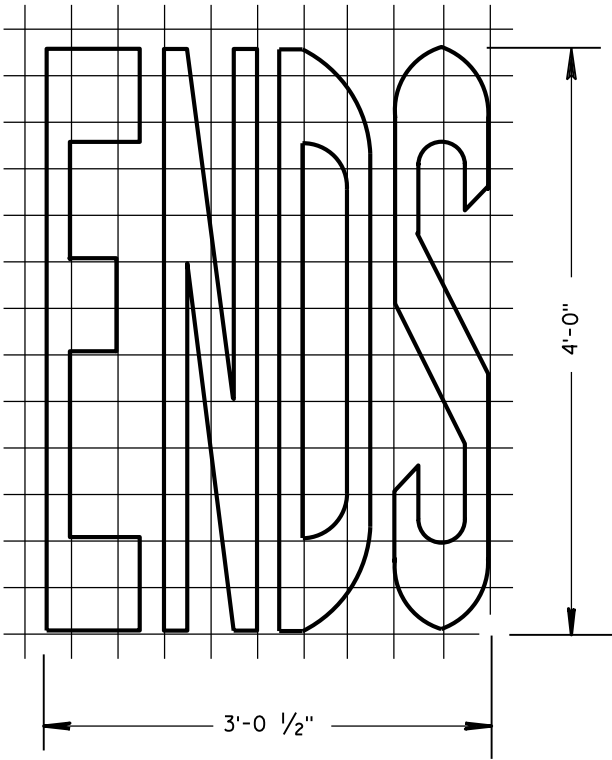
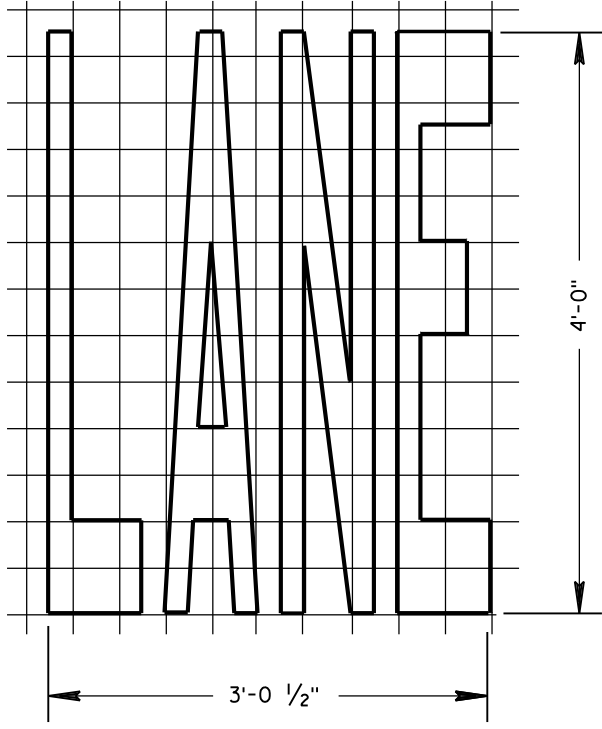
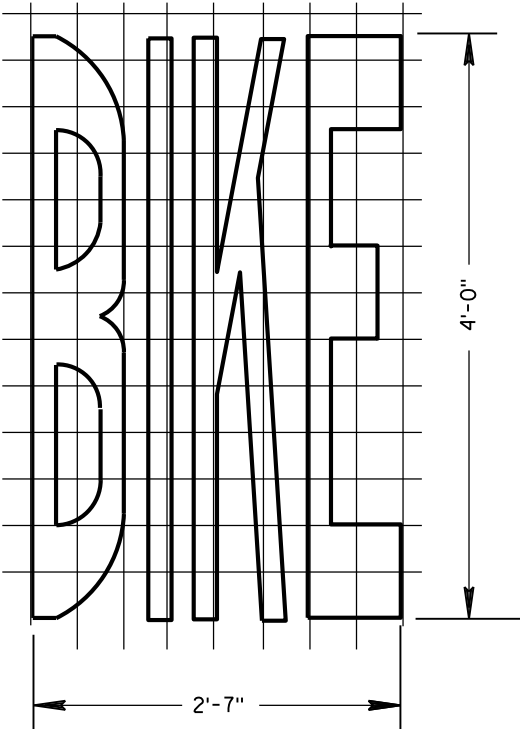
APPROVED
4/30/2013
DATE
FHWA

/S/ Travis Feltz
STATE TRAFFIC ENGINEER

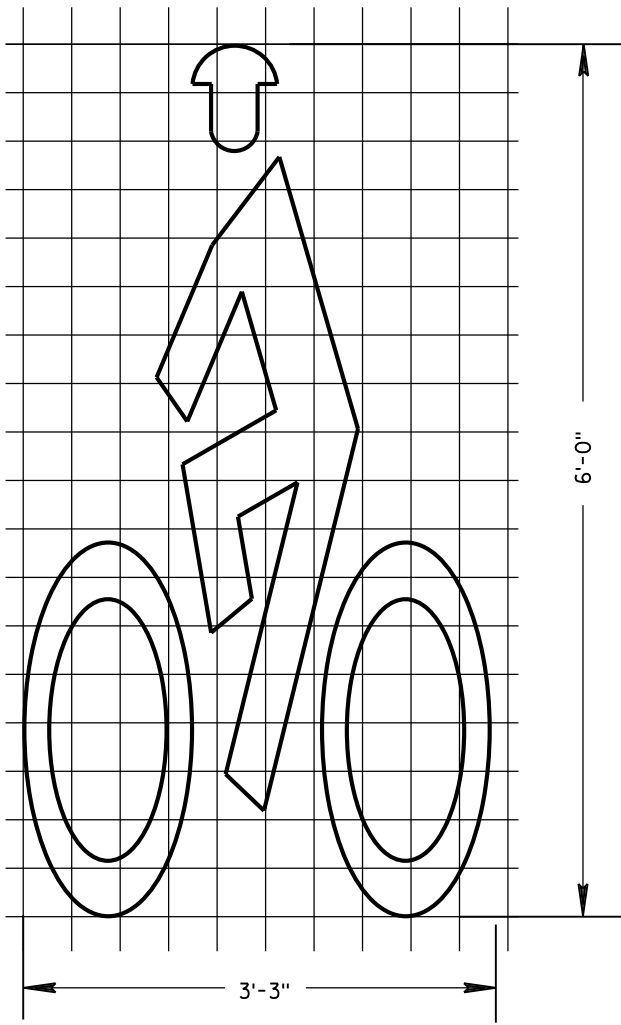
GENERAL NOTES

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

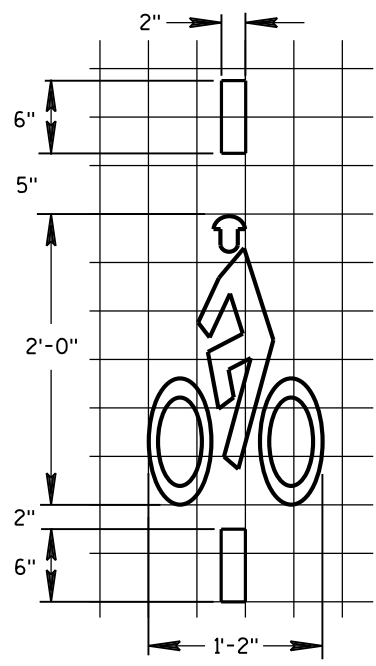
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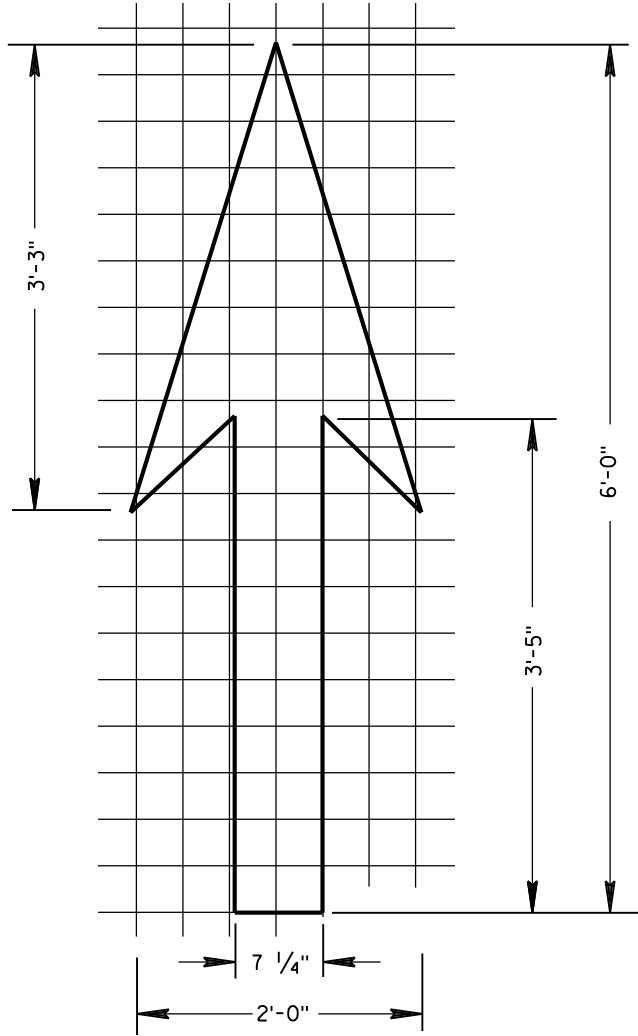
BIKE LANE WORDS



BIKE LANE SYMBOL



BICYCLE DETECTOR PAVEMENT MARKING



BIKE LANE ARROW

PAVEMENT MARKING FOR BIKE LANES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-30-2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER
FHWA	

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.

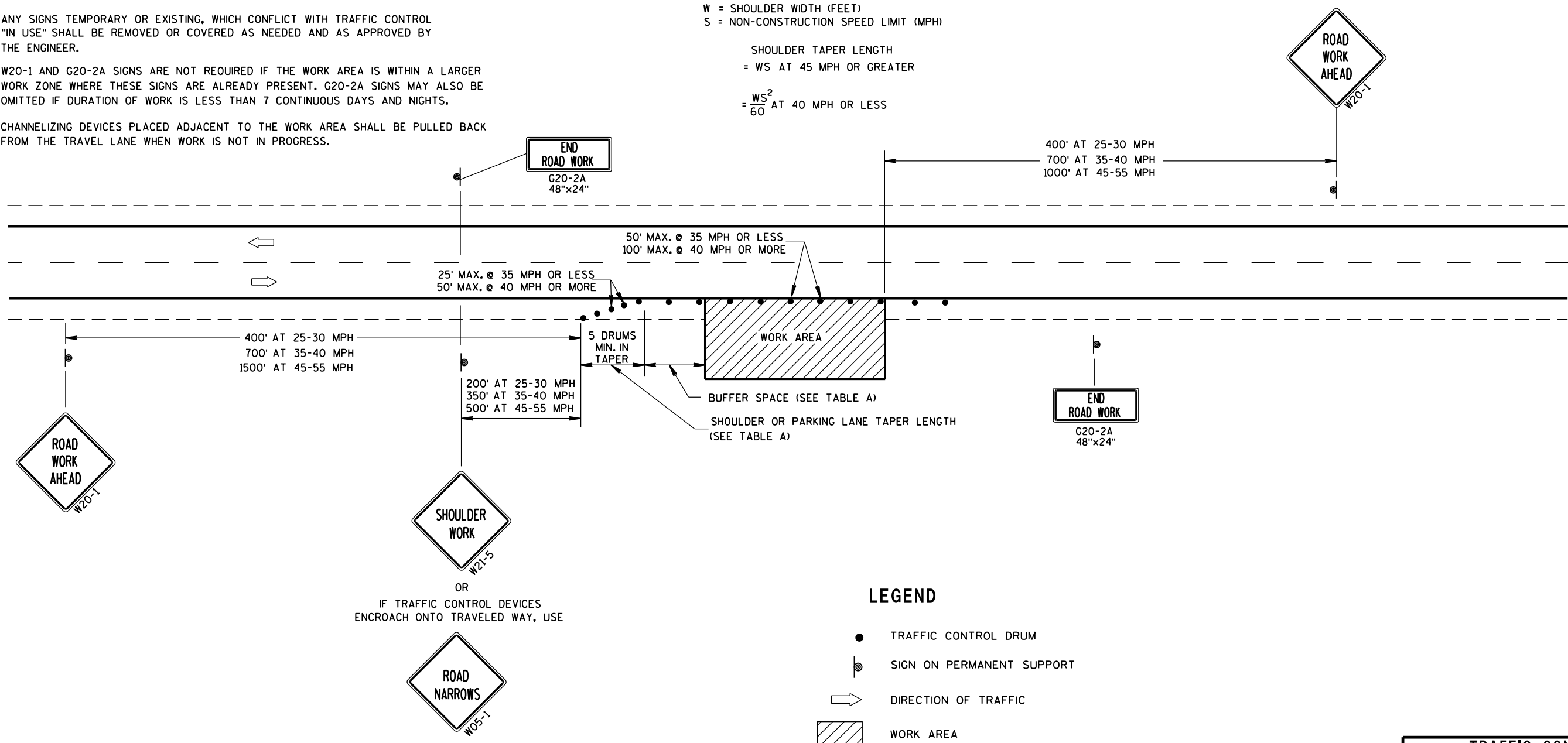
TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
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
= WS AT 45 MPH OR GREATER

= $\frac{WS^2}{60}$ AT 40 MPH OR LESS



LEGEND

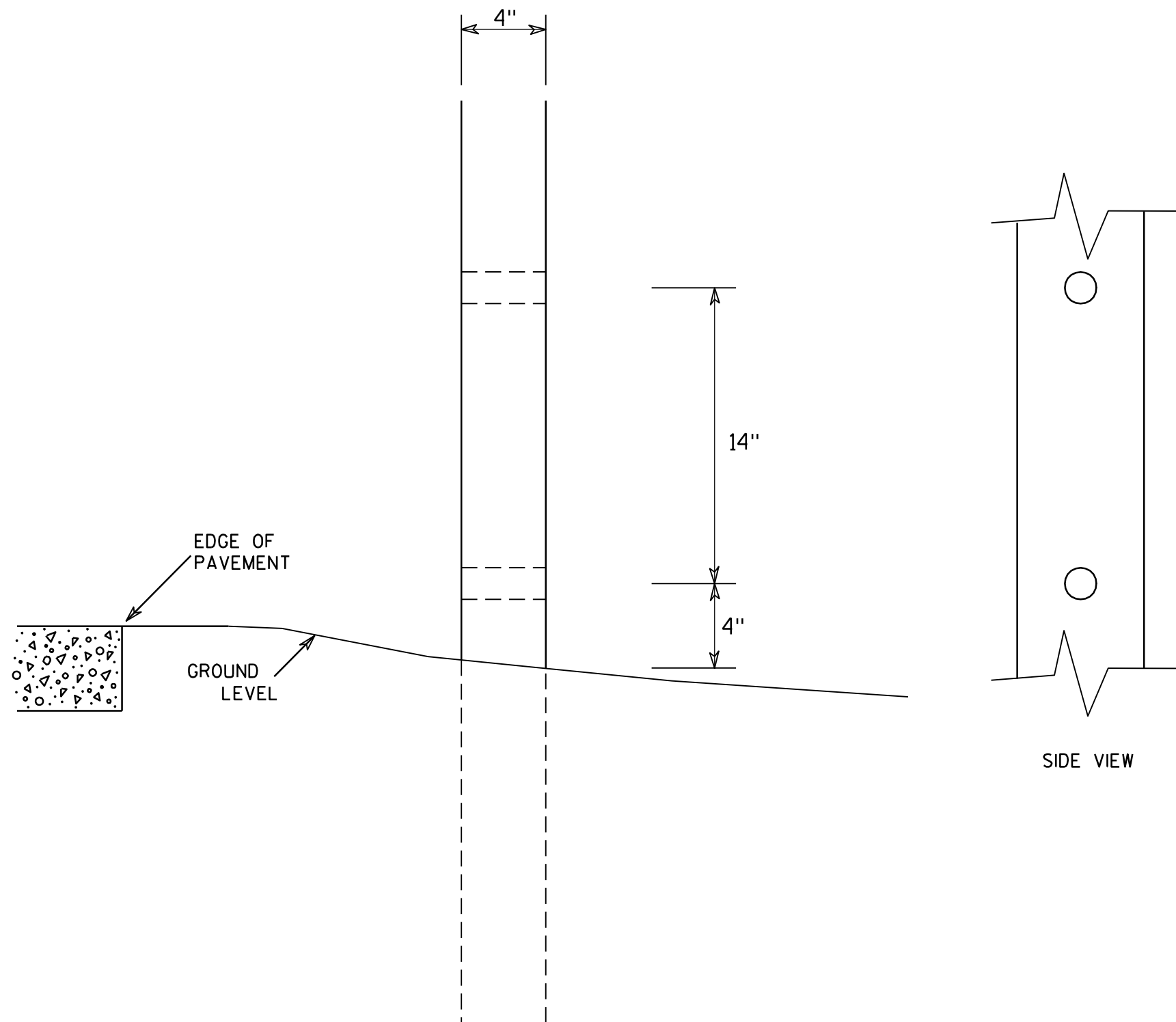
- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

7

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

**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:

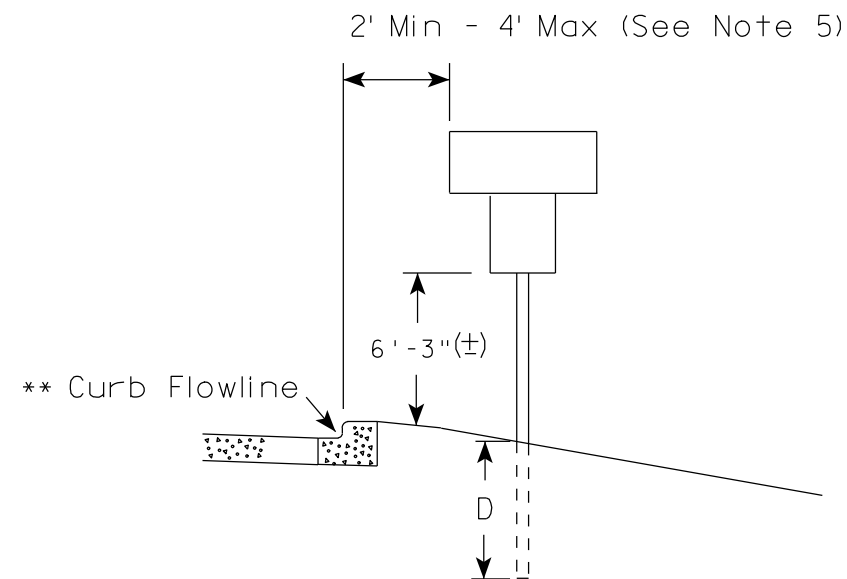
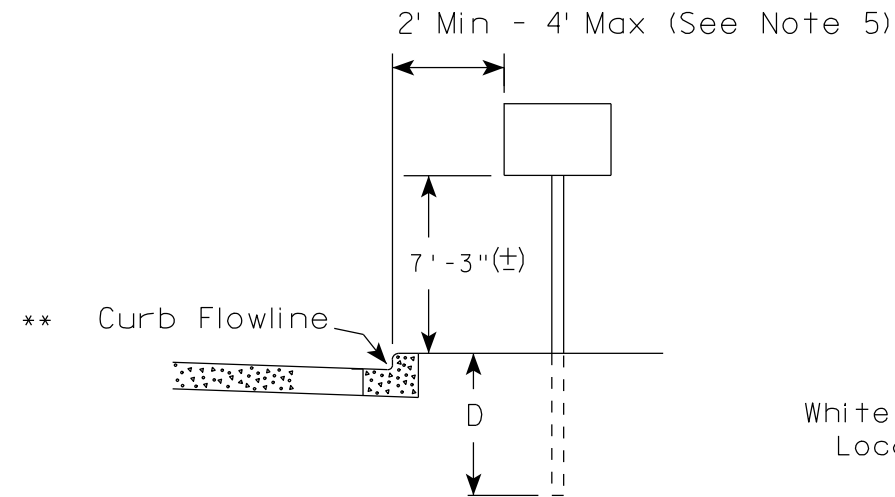
HWY:

COUNTY:

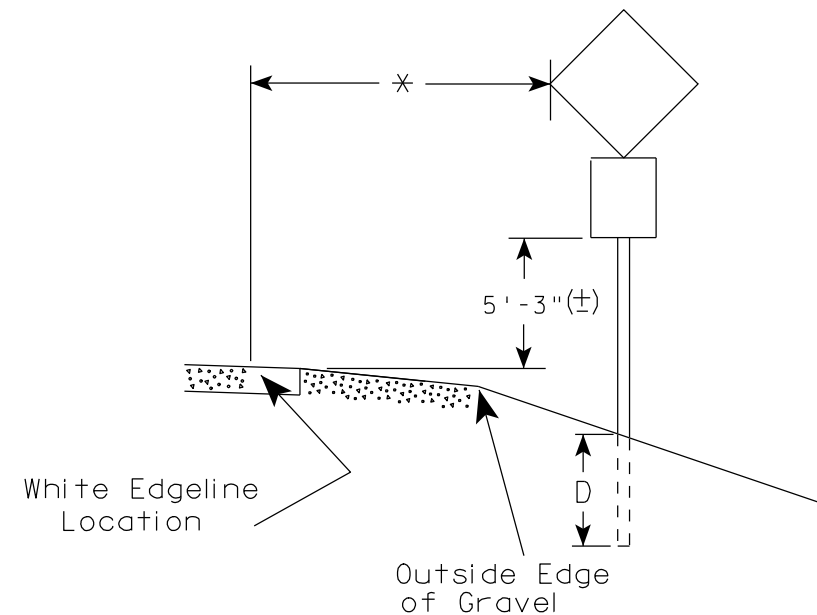
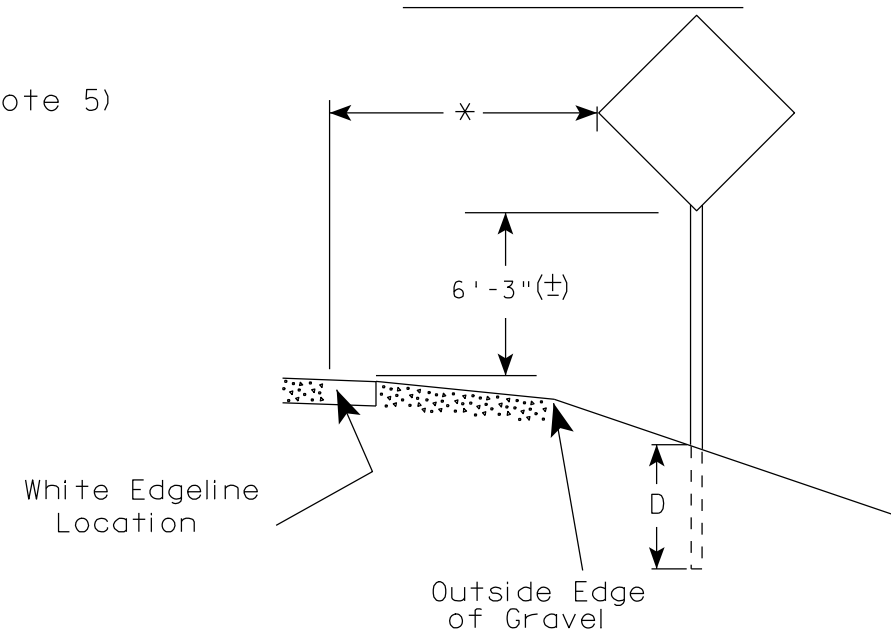
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



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'

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

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

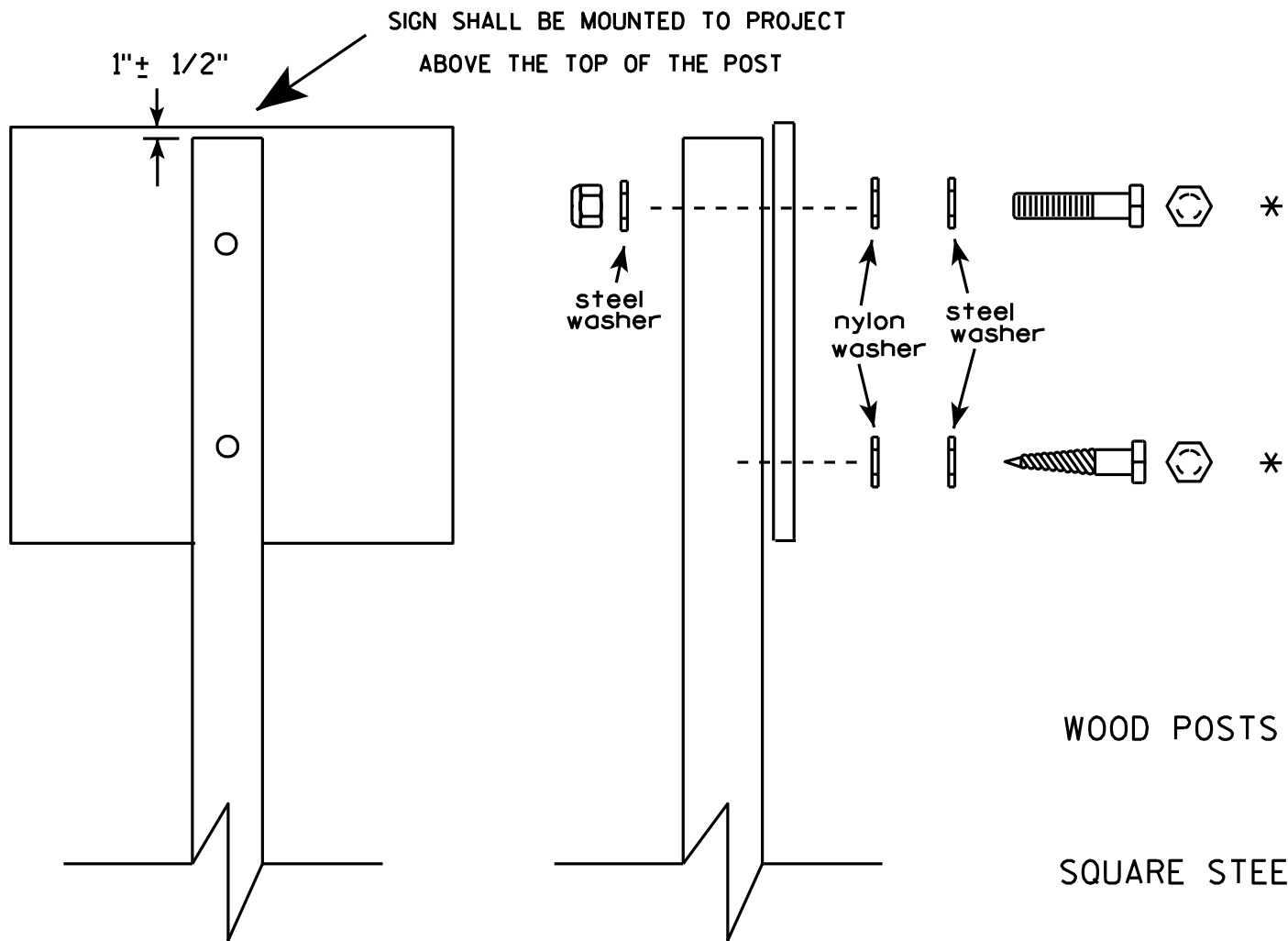
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

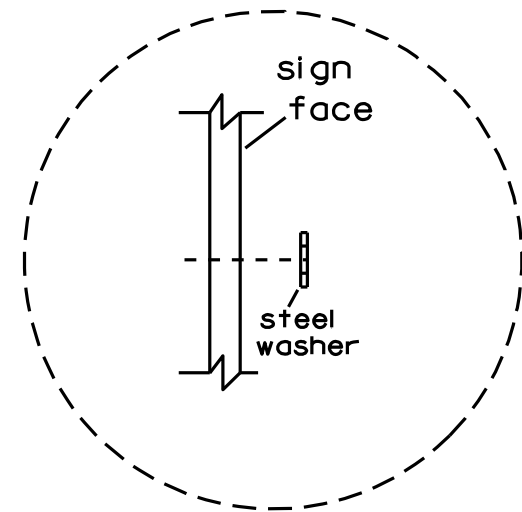


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

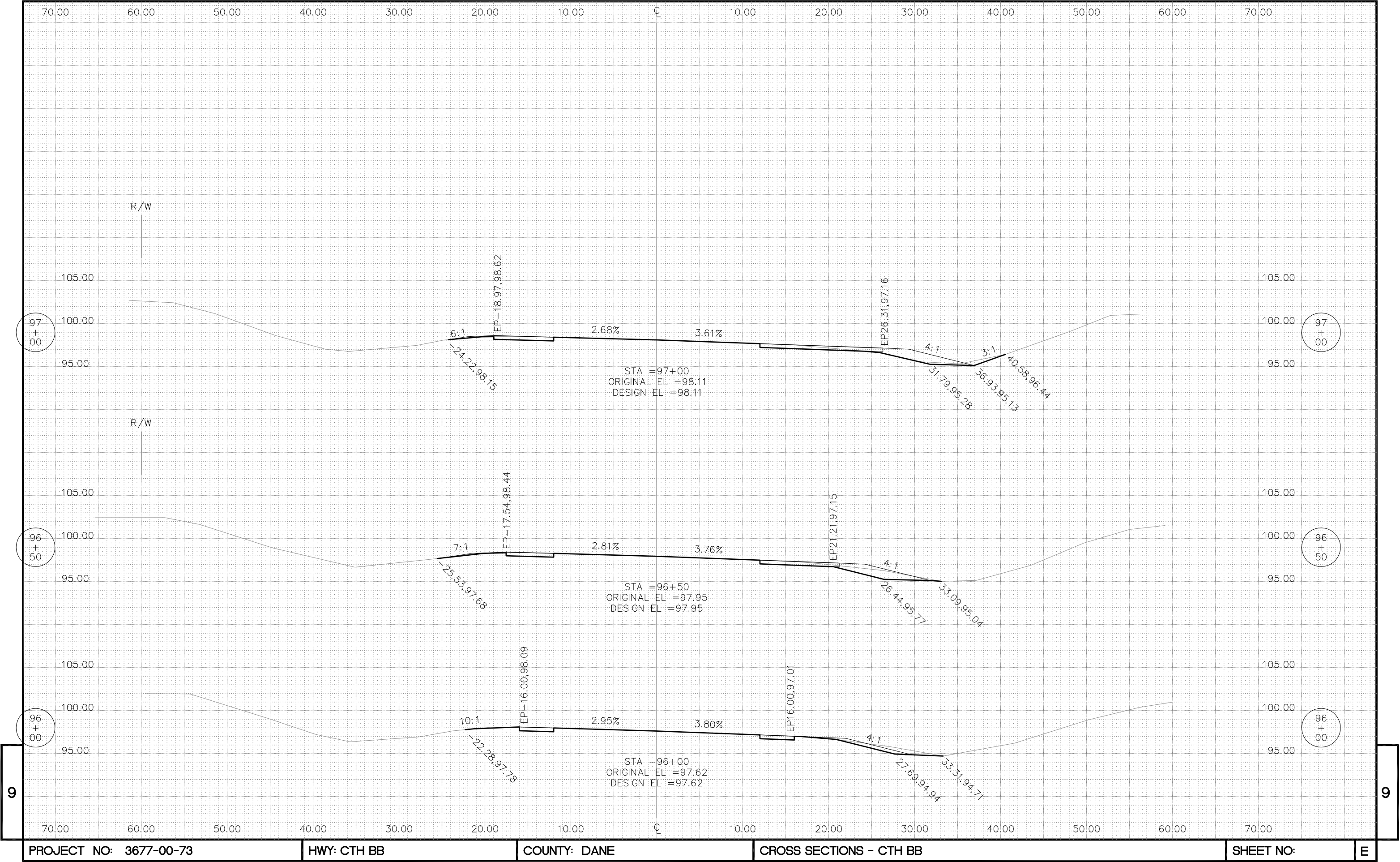
- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

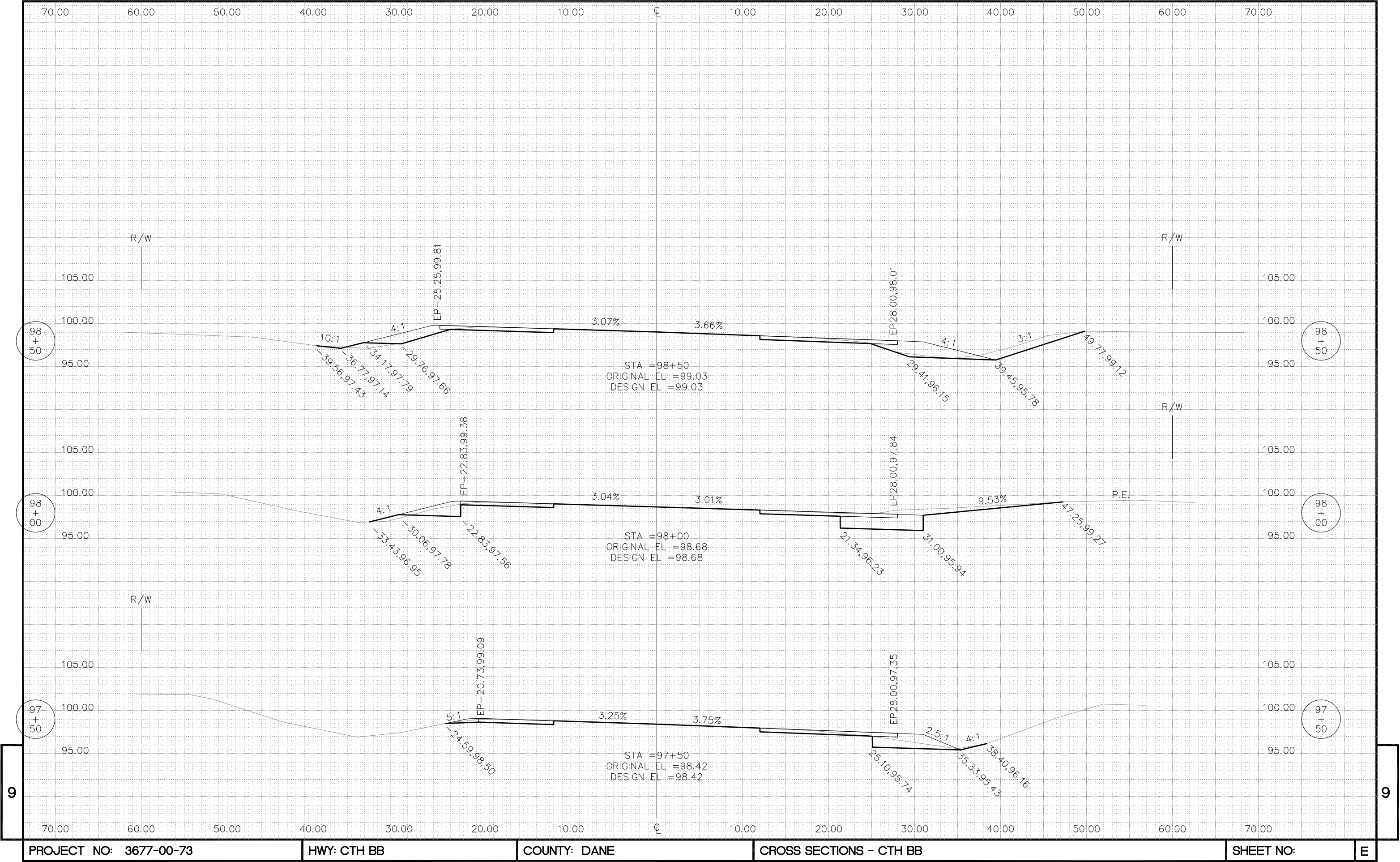


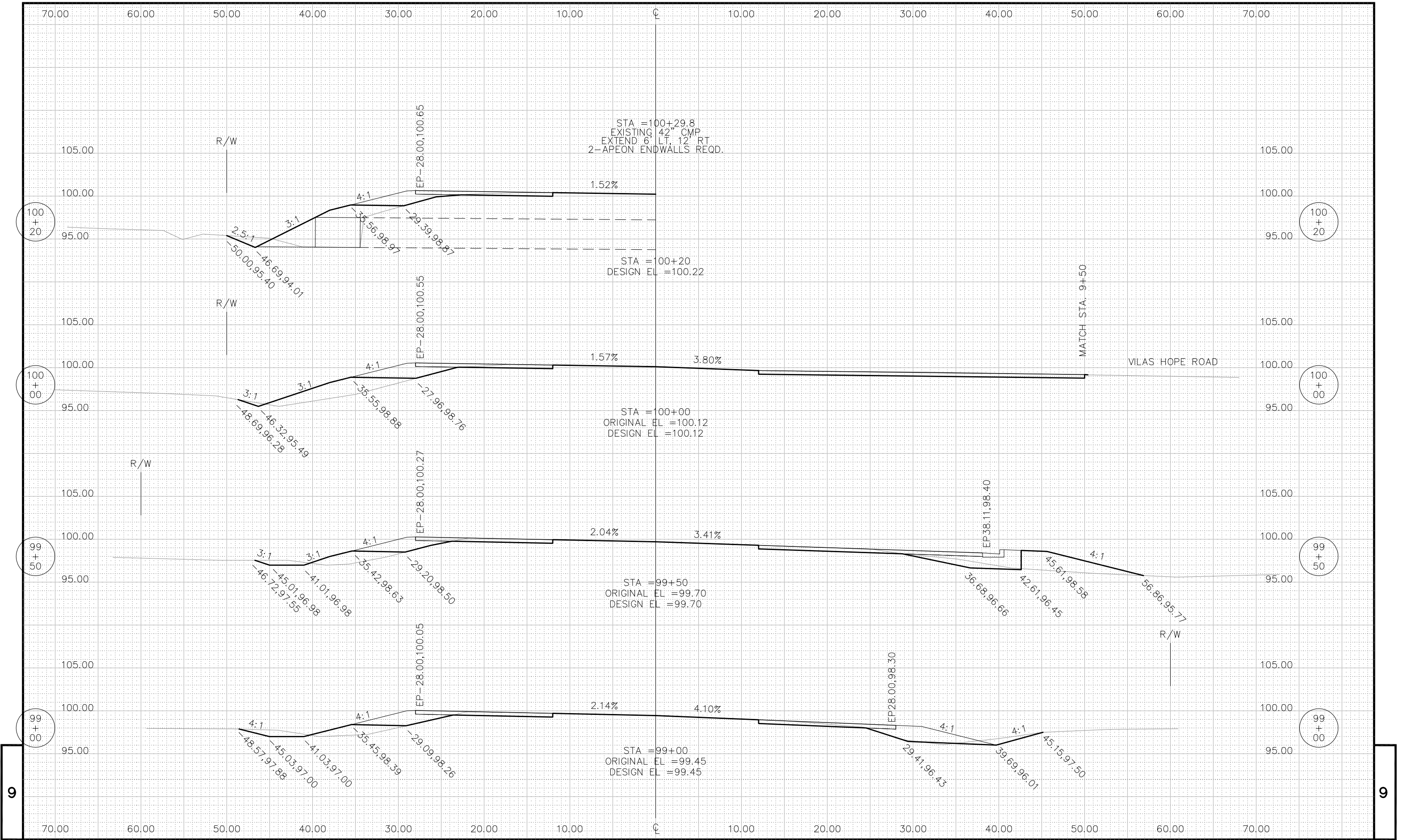
Washer Placement when Sign Has Other Than Type H or Type F Face

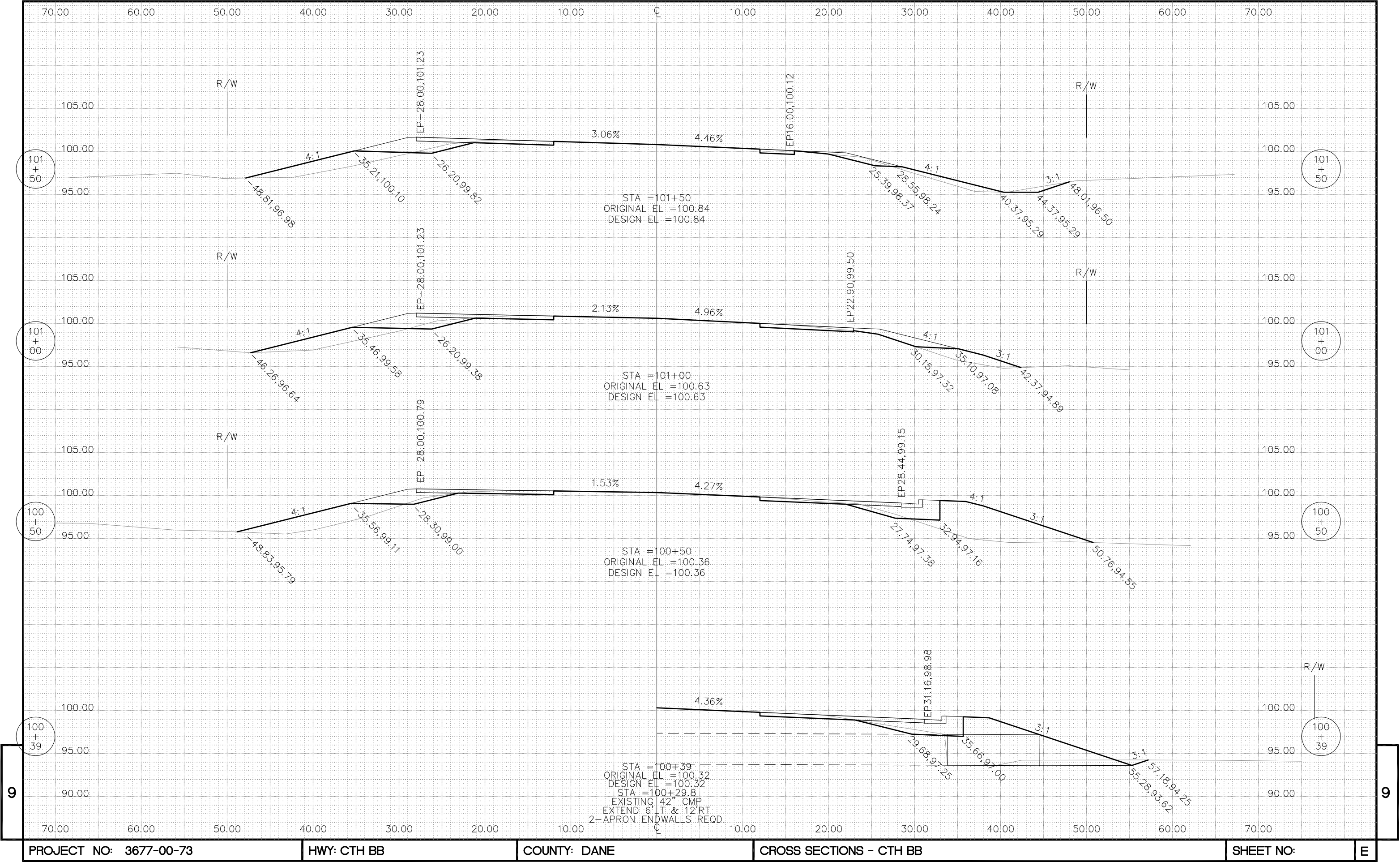
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7









PROJECT NO: 3677-00-73

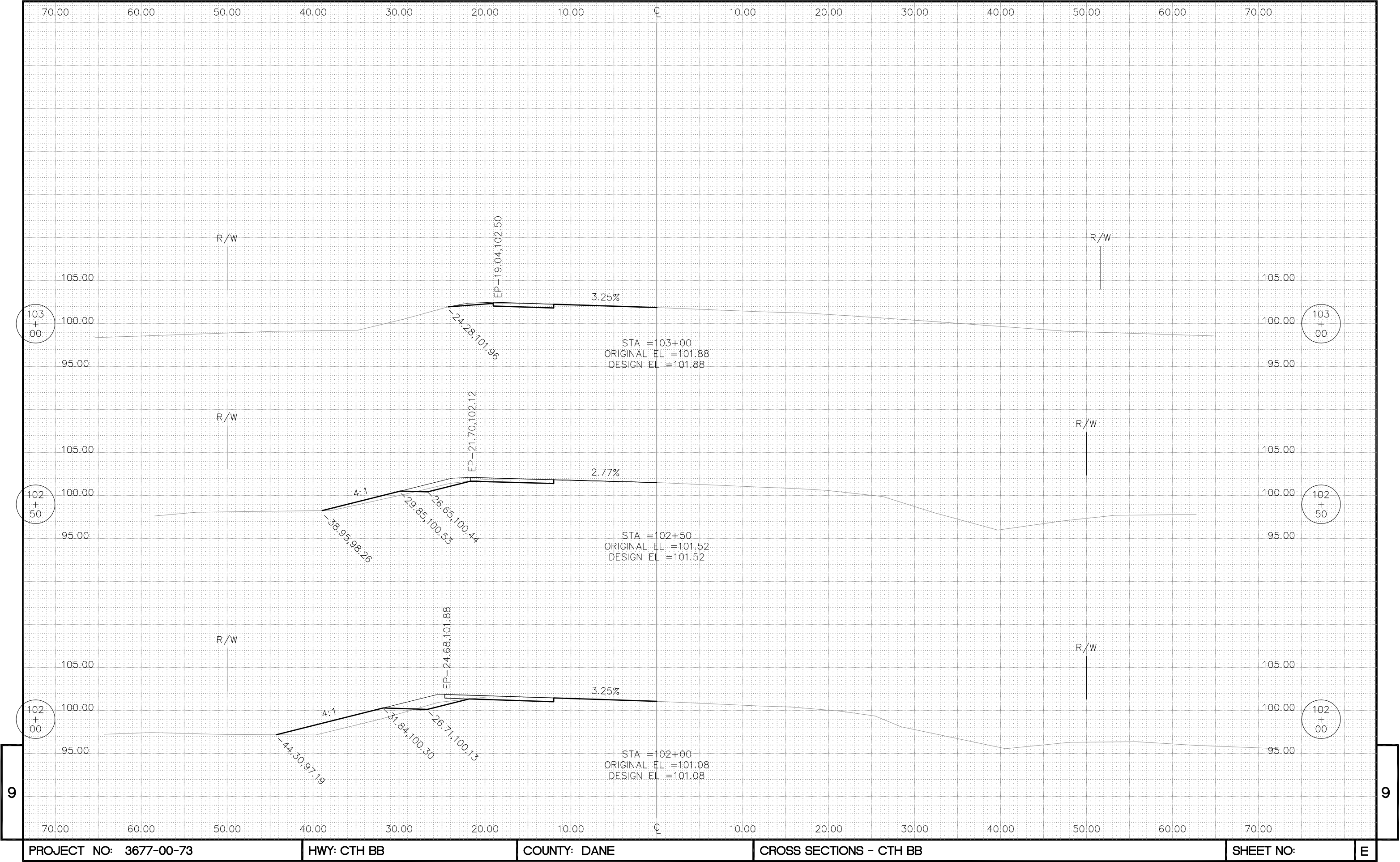
HWY: CTH BB

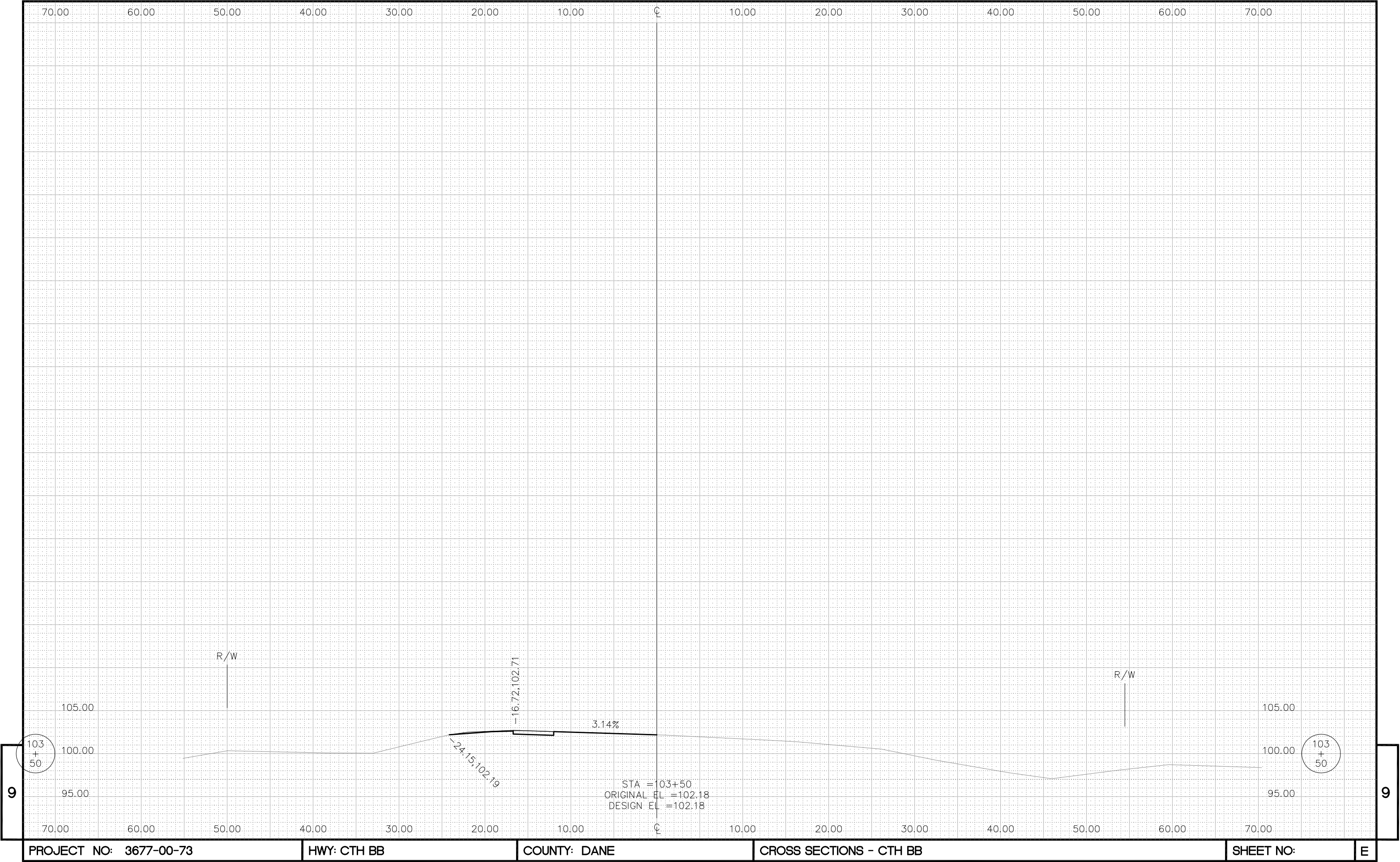
COUNTY: DANE

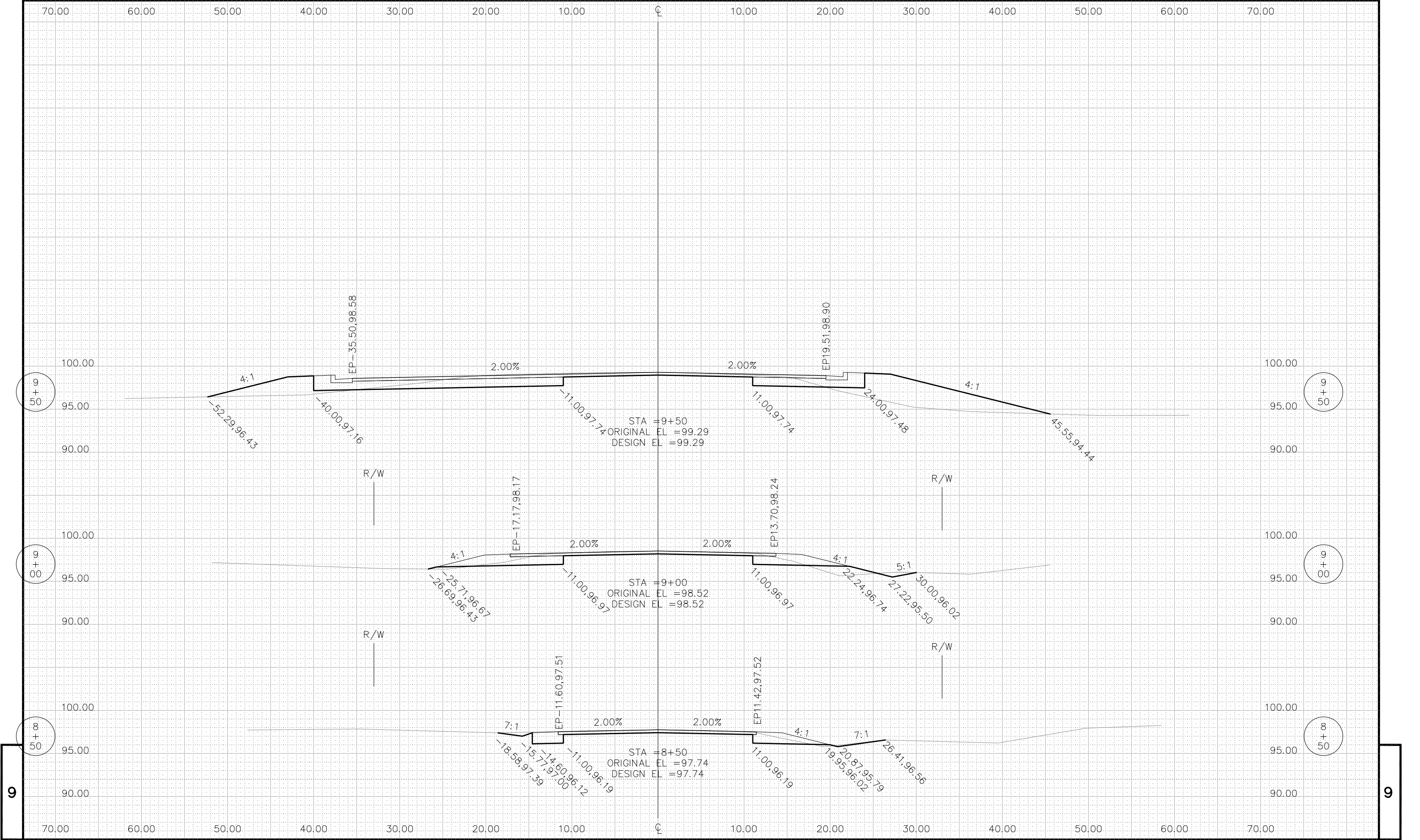
CROSS SECTIONS - CTH BB

SHEET NO:

E







PROJECT NO: 3677-00-73

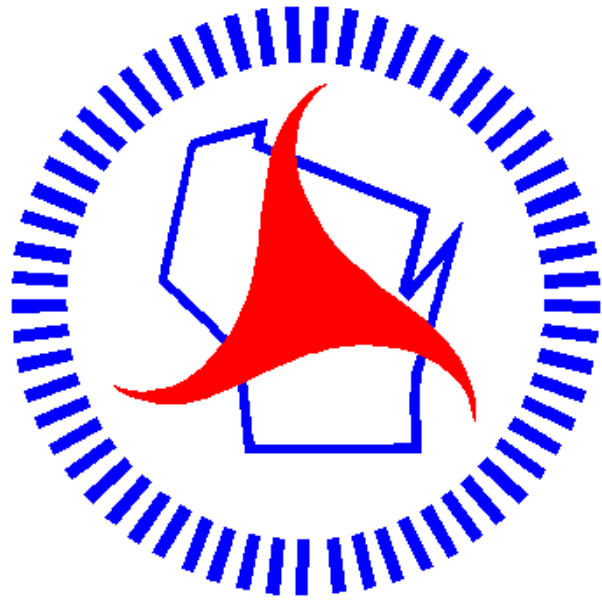
HWY: CTH BB

COUNTY: DANE

CROSS SECTIONS - VILAS HOPE ROAD

SHEET NO:

E



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