

WIS

PROJECT ID:
WTH: N/A

6320-00-62 & 6320-00-74

COUNTY:

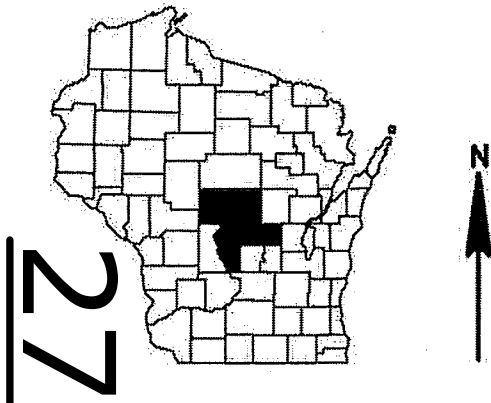
WOOD & ADAMS

FEB 11, 2020

ORDER OF SHEETS

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

TOTAL SHEETS = 82



DESIGN DESIGNATION	6320-00-62	6320-00-74
A.A.D.T.	2019 = 2100	= 2100
A.A.D.T.	2039 = 2300	= 2300
D.H.V.	= 24.4	= 24.4
D.D.	= 60/40	= 60/40
T.	= 29.0%	= 29.0%
DESIGN SPEED	= 65 MPH	= 65 MPH
ESALS	= 1,700,000	= 1,700,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
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 (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
	STORM SEWER
	TELEPHONE
	WATER
MARSH AREA	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE
WOODED OR SHRUB AREA	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

PLAINFIELD - WISCONSIN RAPIDS

VARIOUS CULVERT REPLACEMENTS CTH F TO CTH U

STH 73 STH 73
WOOD COUNTY ADAMS COUNTY

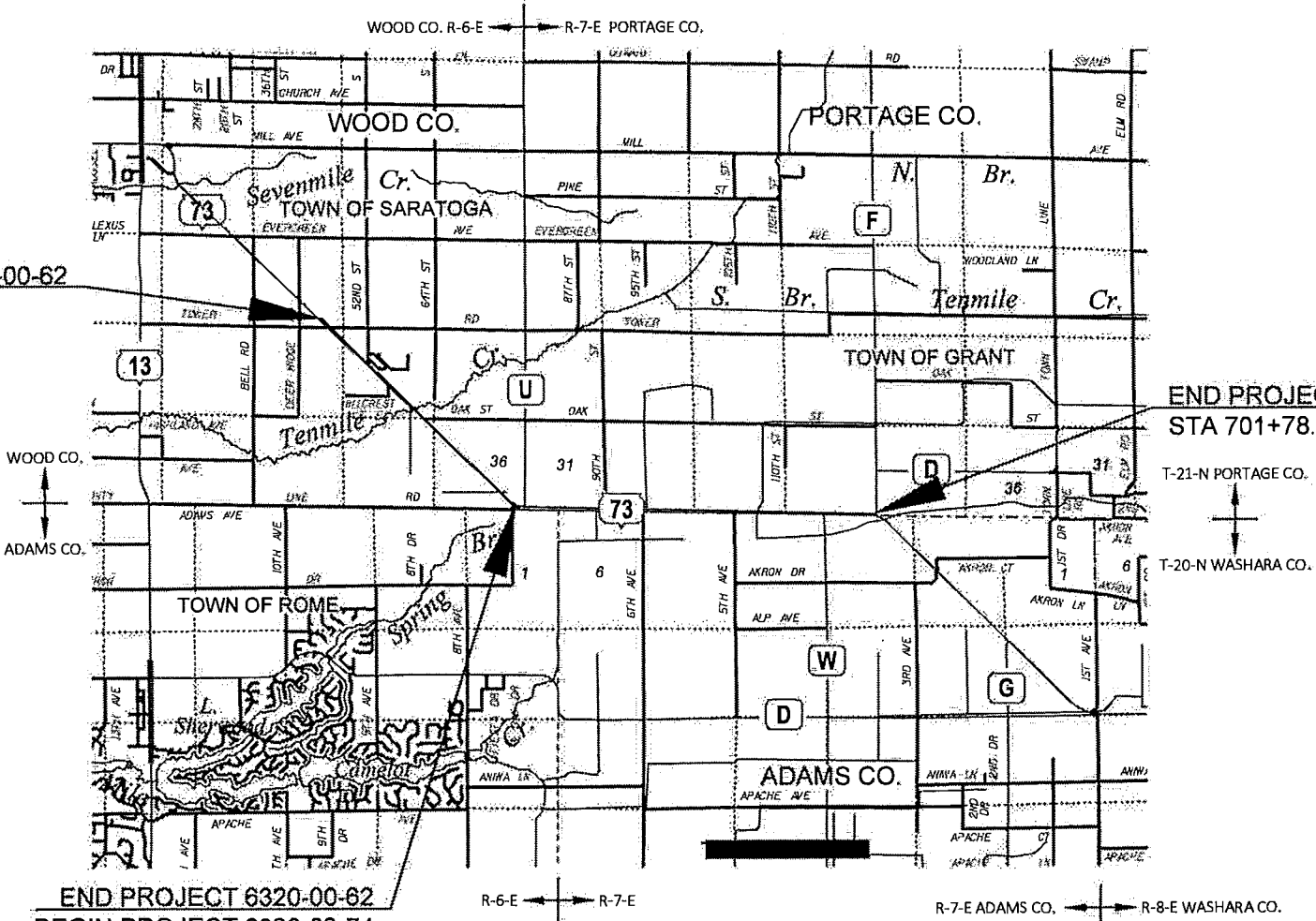
STATE PROJECT NUMBER
6320-00-62

STATE PROJECT NUMBER
6320-00-74

BEGIN PROJECT 6320-00-62
STA 335+00.00
X: 114134.897
Y: 113808.691

END PROJECT 6320-00-74
STA 701+78.52

END PROJECT 6320-00-62
BEGIN PROJECT 6320-00-74
STA 499+21.15
X: 125993.826
Y: 102519.777

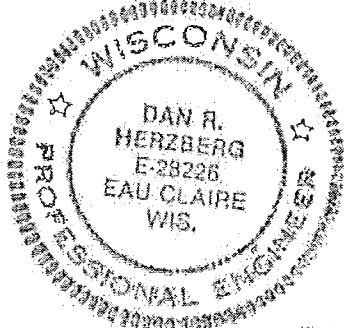


LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 3.110 6320-00-62
TOTAL NET LENGTH OF CENTERLINE = 3.837 6320-00-74

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), PORTAGE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012), GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6320-00-62		
6320-00-74	WISC 2019308	1

ORIGINAL PLANS PREPARED BY
Gräef
1150 Springhurst Drive,
Suite 201
Green Bay, WI 54304-5950
920 / 592 9440
920 / 592 9445 fax
www.graef-usa.com



1-23-2019 (Date)
[Signature] (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	GRAEF
Surveyor	GRAEF
Designer	DANIEL HOLLOWAY
Project Manager	REGIONAL EXAMINER
Regional Examiner	REGIONAL SUPERVISOR
Regional Supervisor	

APPROVED FOR THE DEPARTMENT
DATE: 1/23/19 [Signature] (Signature)
E

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHING THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED, FERTILIZED, SEEDED AND COVERED WITH EROSION MAT.

THE LOCATION OF KNOWN EXISTING UTILITIES IN THE VICINITY OF THE PROJECT ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITIES IN THE AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND ALL UTILITIES IN THE VICINITY OF THE PROJECT TO LOCATE THEIR FACILITIES AT LEAST THREE WORKING DAYS PRIOR TO BEGINNING WORK.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER. DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

THE BASE MAPPING DEPICTED IN THESE PLANS MAY NOT BE CURRENT.

PLEASE NOTE THAT THE TOPOGRAPHIC SURVEY FOR THIS PROJECT WAS SHOT USING WICONSIN COORDINATE REFERENCE SYSTEM (WISCRS) PORTAGE COUNTY ZONE.

WORK MUST OCCUR AFTER AUGUST 1 TO AVOID POTENTIAL IMPACTS TO KARNER BLUE BUTTERFLY LARVA.



RUNOFF COEFFICIENTS FOR SPECIFIC LAND USE

	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	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE-TURF			.25			.27			.28			.30
			.32			.34			.36			.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 = 46.5 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.8 ACRES
PROJECT 6320-00-74

DEPT. OF NATURAL RESOURCES

WISCONSIN DEPT. OF NATURAL RESOURCES
CASEY L. JONES
473 GRIFFITH AVENUE
WISCONSIN RAPIDS, WI 54494
(715) 421-7867 OFFICE
(715) 213-6571 CELL
Casey.Jones@Wisconsin.gov

UTILITY CONTACTS 6320-00-62

ADAMS-COLUMBIA ELECTRIC COOPERATIVE - ELECTRICITY
DUANE MOORE
ADAMS-COLUMBIA ELECTRIC COOPERATIVE - ELECTRICITY
PO BOX 70
FRIENDSHIP, WI. 53934-0070
(800) 831-8629 EXT: 424
dmoore@acecwi.com

ALLIANT ENERGY
MICHAEL PEETERS
ALLIANT ENERGY - ELECTRICITY
2710 JEFFERSON STREET
WISCONSIN RAPIDS, WI 54495
(715) 424-7039 - OFFICE
(715) 459-1581 - CELL
MichaelPeeters@alliantenergy.com

CHARTER COMMUNICATIONS
JESSE GRUNY
CHARTER COMMUNICATIONS
503 EAST IZES STREET, SUITE 316
MARSHFIELD, WI 54449
(715) 651-5605
jesse.gruny@charter.com

SOLARIS
DENNIS PIERCE
SOLARUS - COMMUNICATION LINE
440 E. GRAND AVENUE
WISCONSIN RAPIDS, WI. 54494-8045
(715) 421-8172 OFFICE
(715) 572-0152 MOBILE
pierce@solarus.net

WE ENERGIES
TAYLOR WIETING
WE ENERGIES - GAS LINE
1921 8TH STREET S.
WISCONSIN RAPIDS, WI. 54494
(715) 421-7277 OFFICE
(715) 213-5189 MOBILE
taylor.wieting@wecenergygroup.com

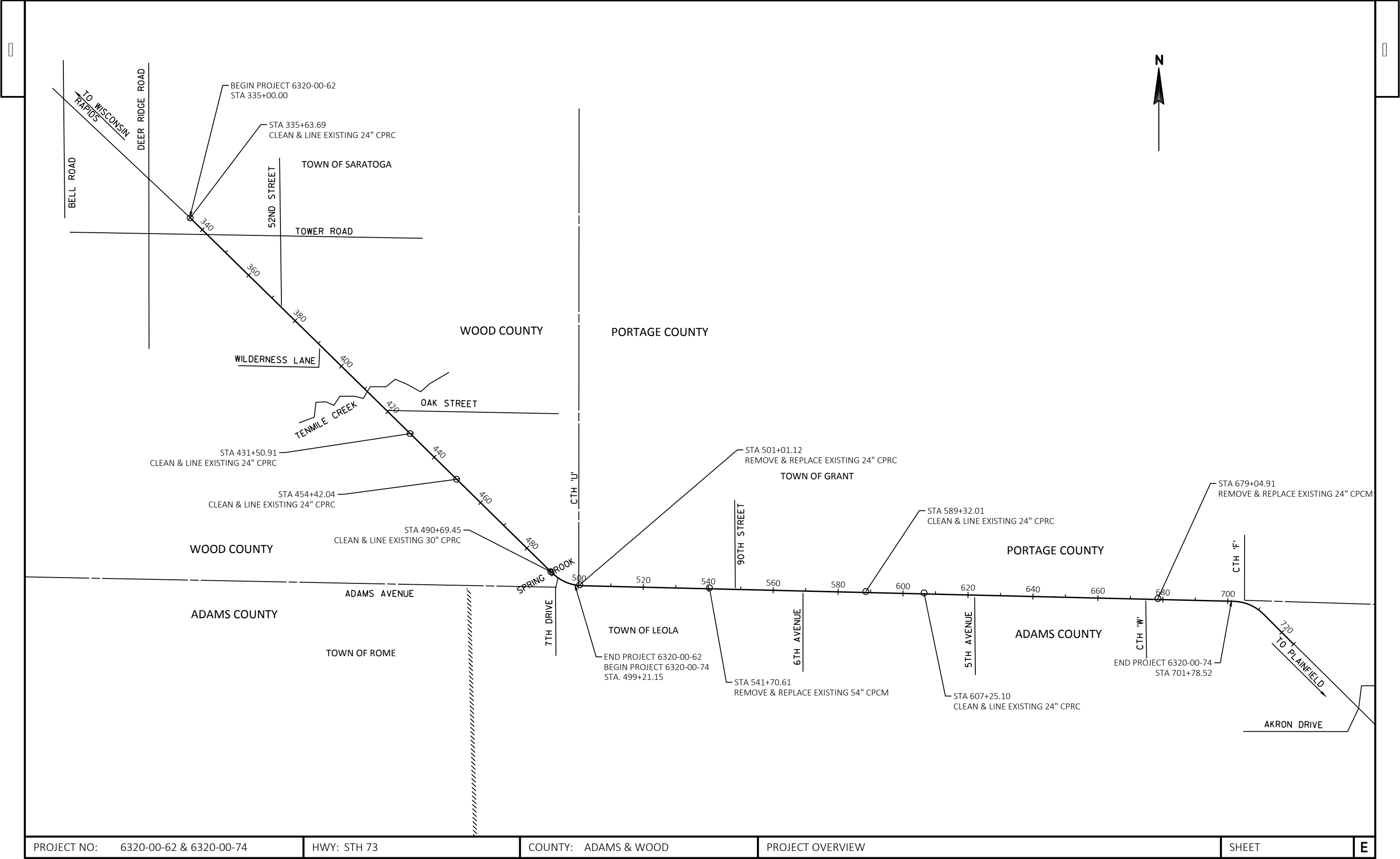
UTILITY CONTACTS 6320-00-74

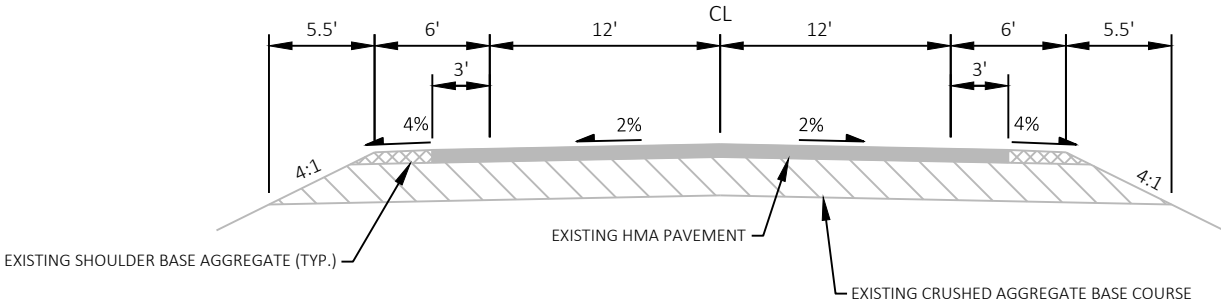
ADAMS-COLUMBIA ELECTRIC COOPERATIVE - ELECTRICITY
JOSH BERGER
ADAMS-COLUMBIA ELECTRIC COOPERATIVE - ELECTRICITY
PO BOX 70
FRIENDSHIP, WI. 53934-0070
(800) 831-8629 EXT: 244
jberger@acecwi.com

ATC
CHRIS DAILEY
ATC MANAGEMENT, INC. - ELECTRICITY - TRANSMISSION
P.O. BOX 47
WAUKESHA, WI. 53187
(262) 506-6884
cdailey@atcllc.com

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DENNIS PIERCE
SOLARUS - COMMUNICATION LINE
440 E. GRAND AVENUE
WISCONSIN RAPIDS, WI. 54494-8045
(715) 421-8172 OFFICE
(715) 572-0152 MOBILE
pierce@solarus.net

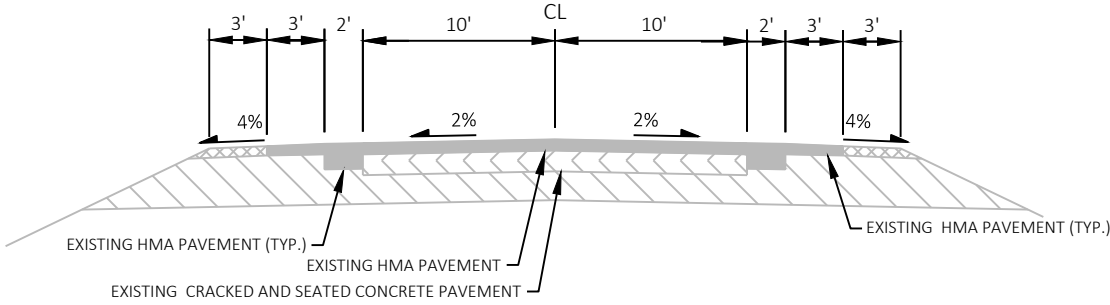
UNION TELEPHONE
RON BOWDEN
UNION TELEPHONE - COMMUNICATION LINE
P.O. BOX 96
PLAINFIELD, WI. 54966-0096
(715) 335-6301 OFFICE
(715) 572-9648 MOBILE
rbowden@uniontel.net





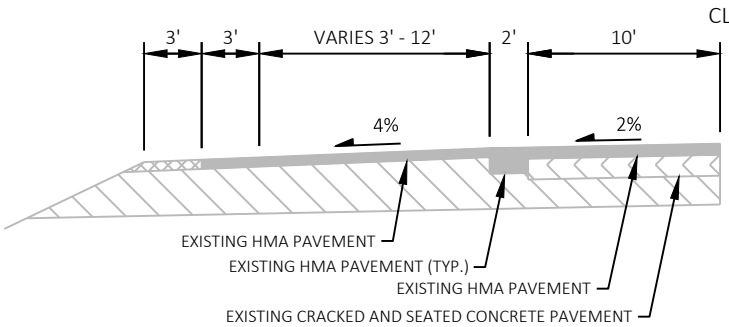
EXISTING TYPICAL SECTION

STA 335+00.00 - STA 499+21.15



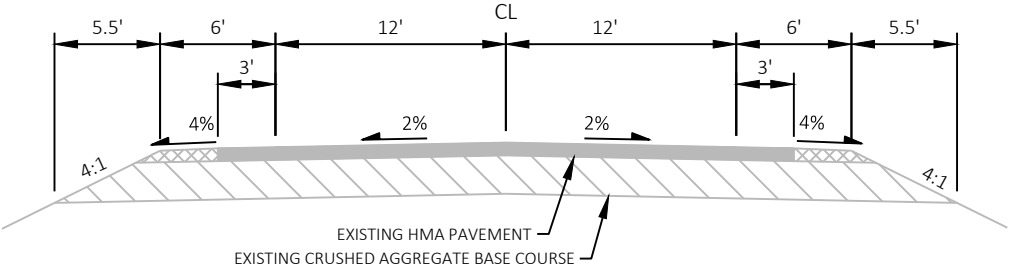
EXISTING TYPICAL SECTIONS

STA. 499+21 - STA. 700+00



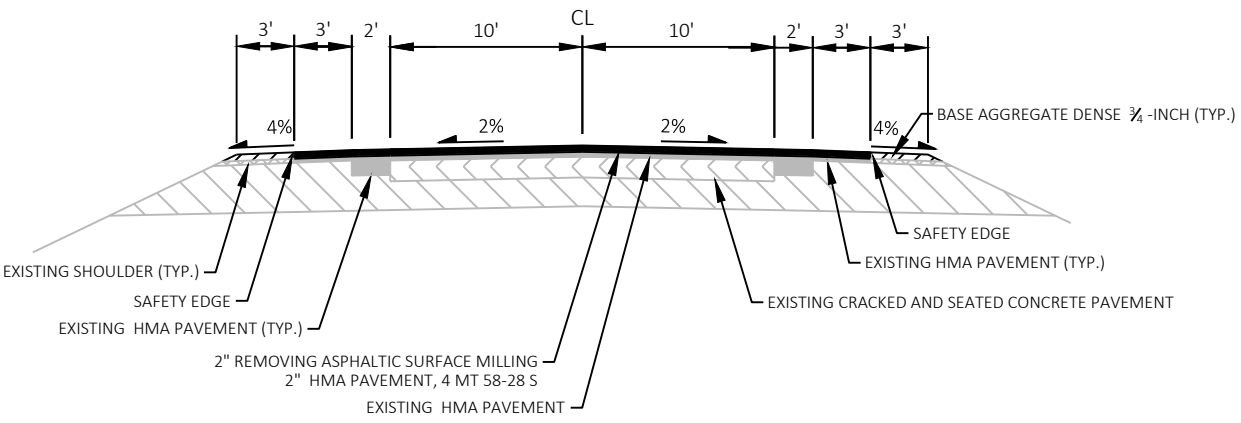
EXISTING TYPICAL HALF SECTIONS

STA. 670+82 - STA. 677+19



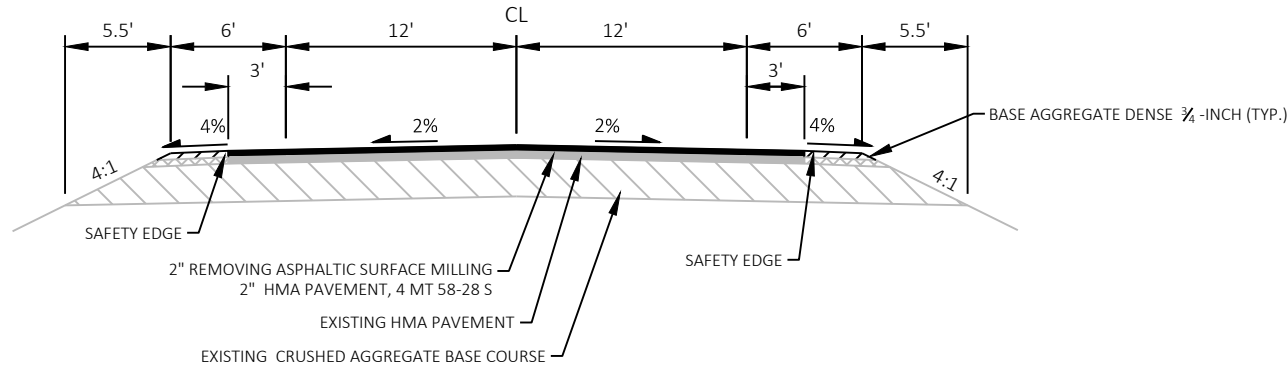
EXISTING TYPICAL SECTIONS

STA. 700+00 - STA. 701+78



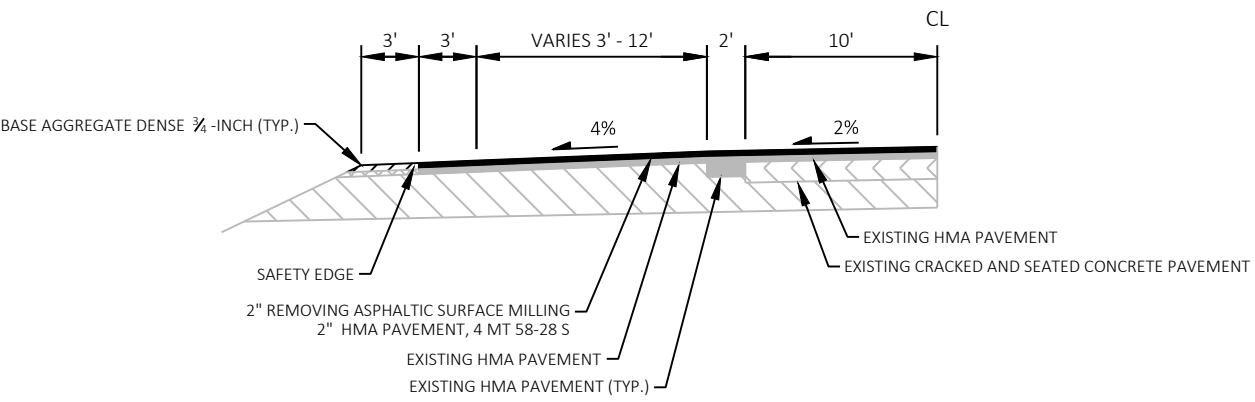
TYPICAL FINISHED SECTIONS

STA. 499+21 - STA. 700+00



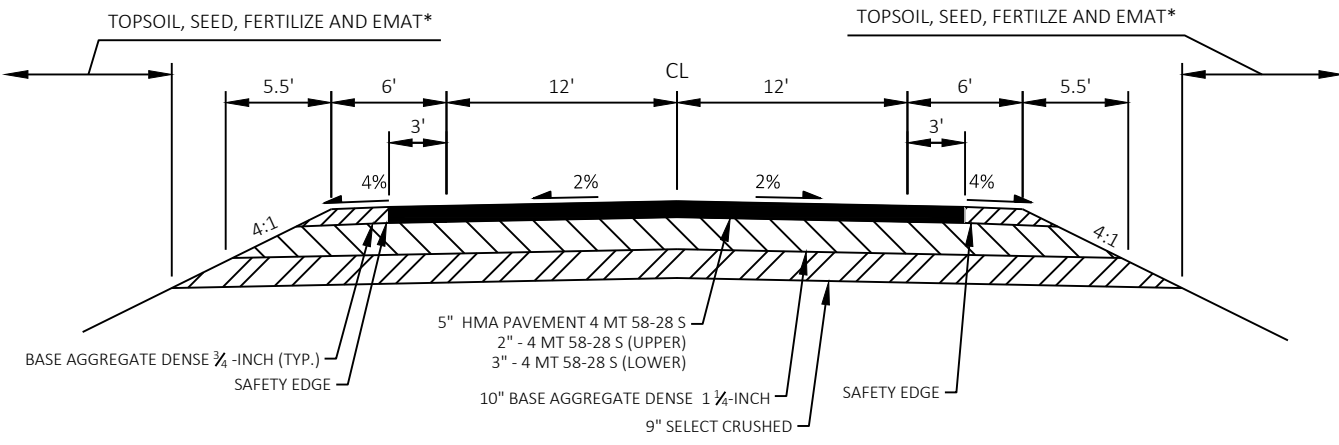
TYPICAL FINISHED SECTIONS

STA. 700+00 - STA. 701+78



TYPICAL FINISHED HALF SECTIONS

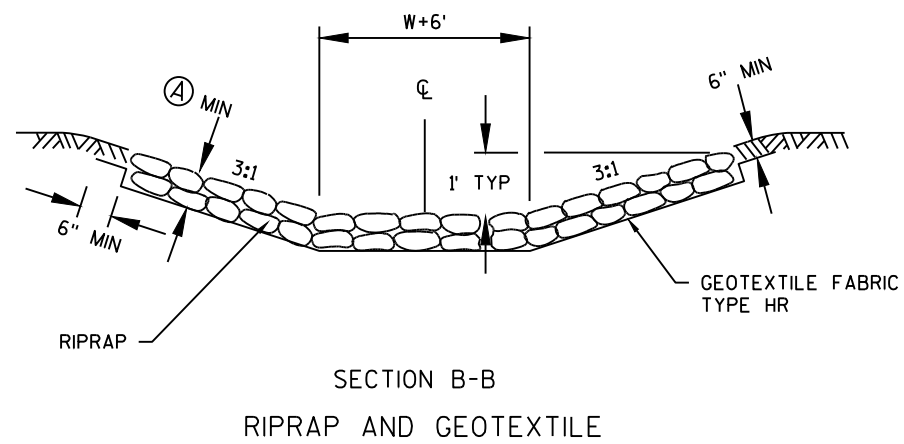
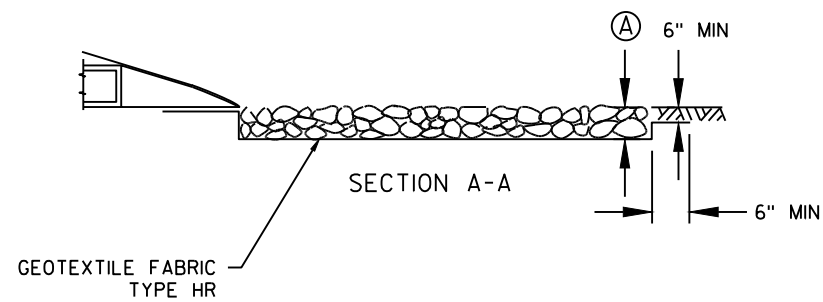
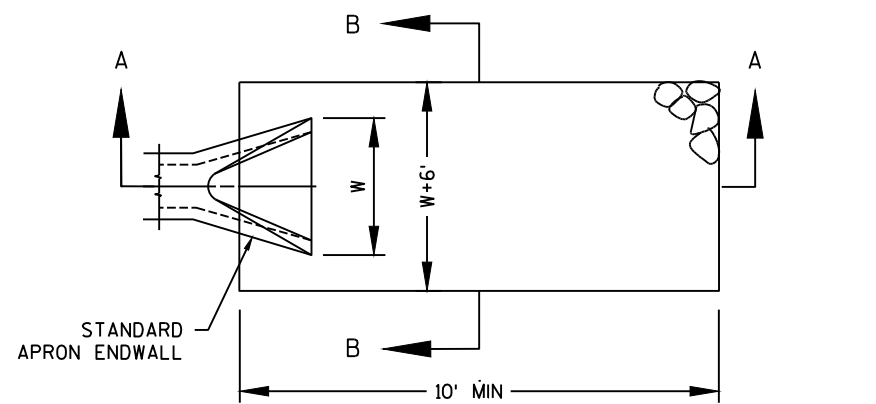
STA. 670+82 - STA. 677+19



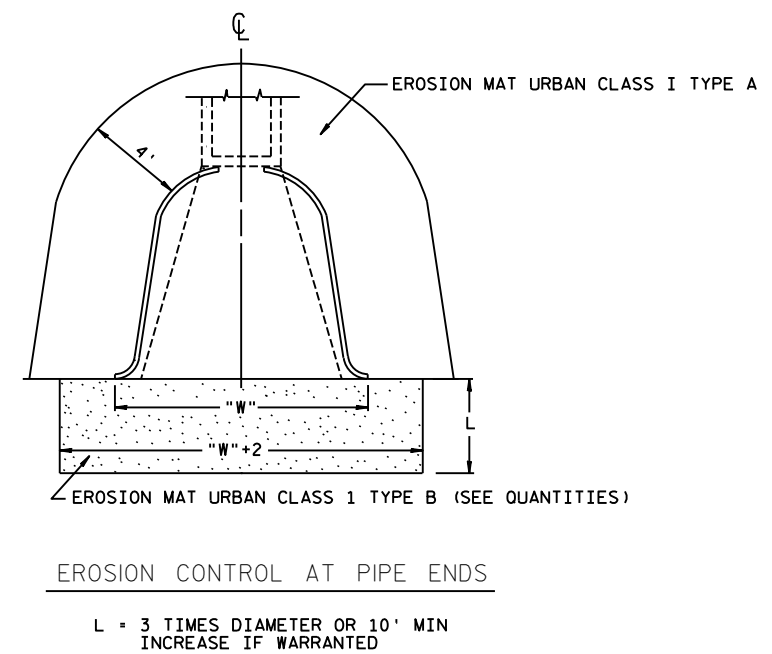
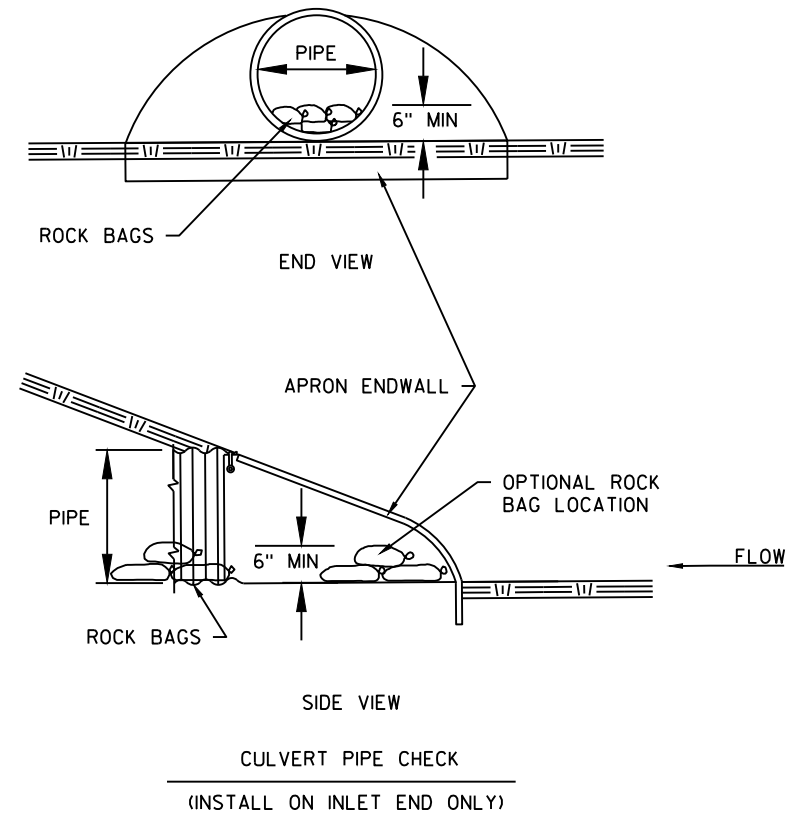
TYPICAL FINISHED SECTIONS CULVERT REPLACEMENT

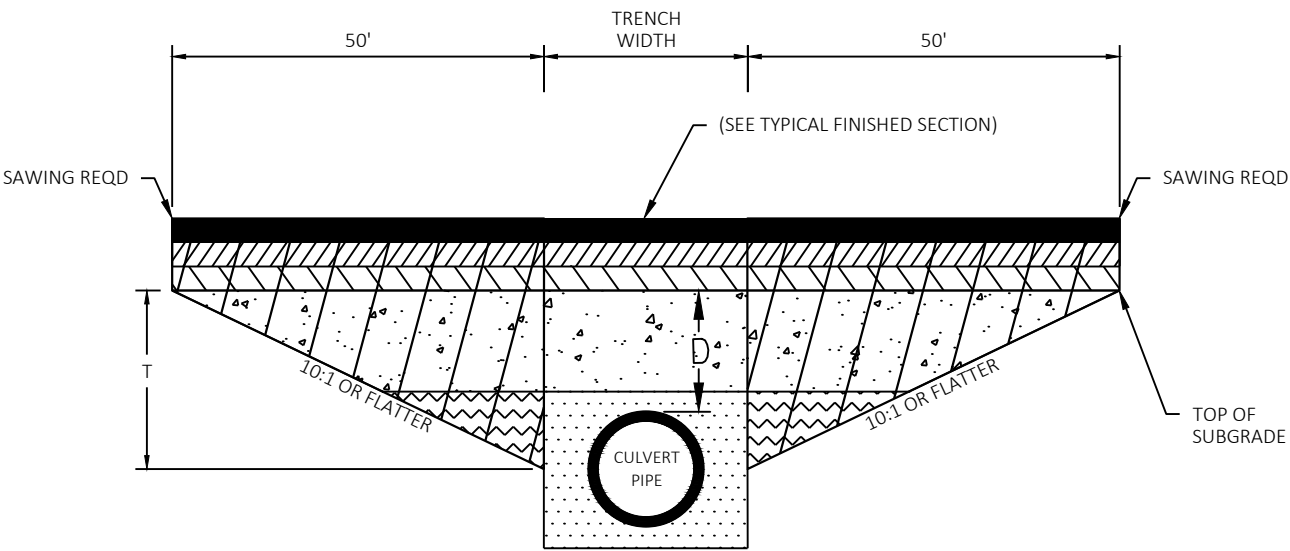
STA. 500+49 - STA. 501+53
STA. 541+16 - STA. 542+25
STA. 678+53 - STA. 679+57

* SEE CULVERT REPLACEMENT CONSTRUCTION DETAILS FOR LIMITS



NOTE : (A) = 1' FOR RIPRAP; 1.5' FOR MEDIUM RIPRAP; 2' FOR HEAVY RIPRAP





TRANSITION CUT DEPTH (T) = THE LESSER OF
DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER
OF PIPE.

DEPTH D < 6 FT

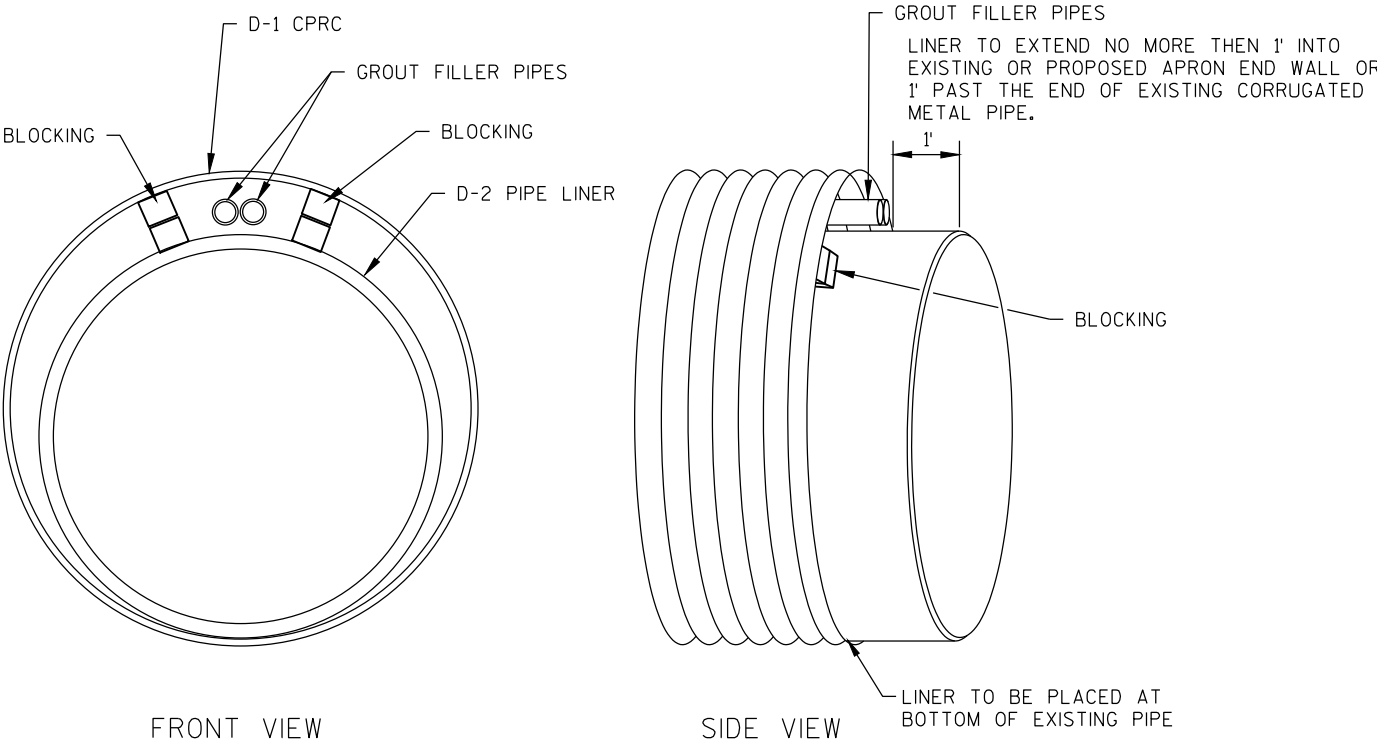
- HMA PAVEMENT
- TRENCH BACKFILL
- TRENCH OR FOUNDATION BACKFILL
- FOUNDATION BACKFILL
- TRANSITION CUT
- BASE AGGREGATE DENSE 1-1/4 INCH
- SELECT CRUSHED

NOTES

TRANSITION CUT IS PAID AS EXCAVATION COMMON.
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.
TRENCH BACKFILL AND FOUNDATION BACKFILL USED IN TRANSITION CUT AREA IS INCIDENTAL TO PIPE INSTALLATION (PER STD SPEC 520).
PERFORM CULVERT PIPE REPLACEMENT PRIOR TO CIR AND PAVING
PLACE ASPHALTIC SURFACE TO MATCH ADJACENT ASPHALT THICKNESS AFTER PIPE INSTALLATION

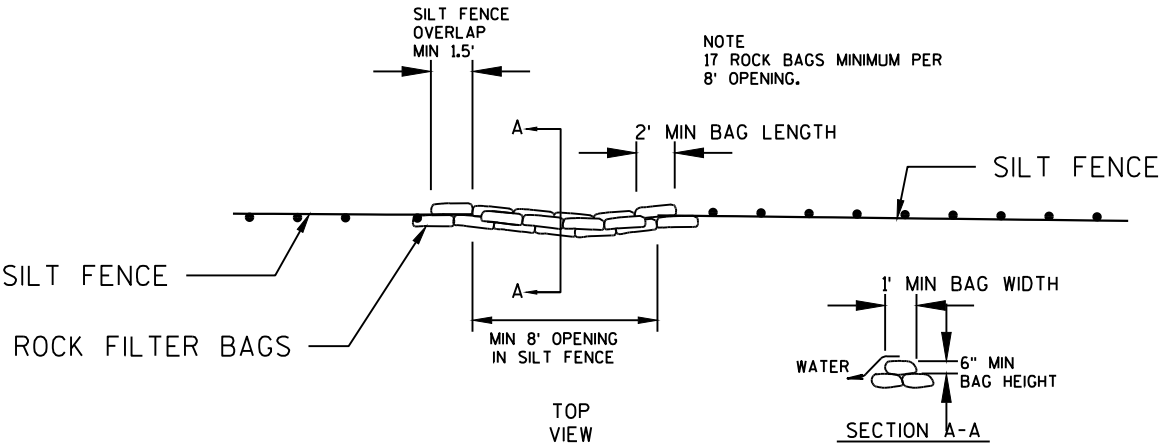
ERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 73	STA 501+01	D=0.4 FT	24-INCH	
STH 73	STA 541+71	D=1.8 FT	54-INCH	
STH 73	STA 679+05	D=0.0 FT	24-INCH	

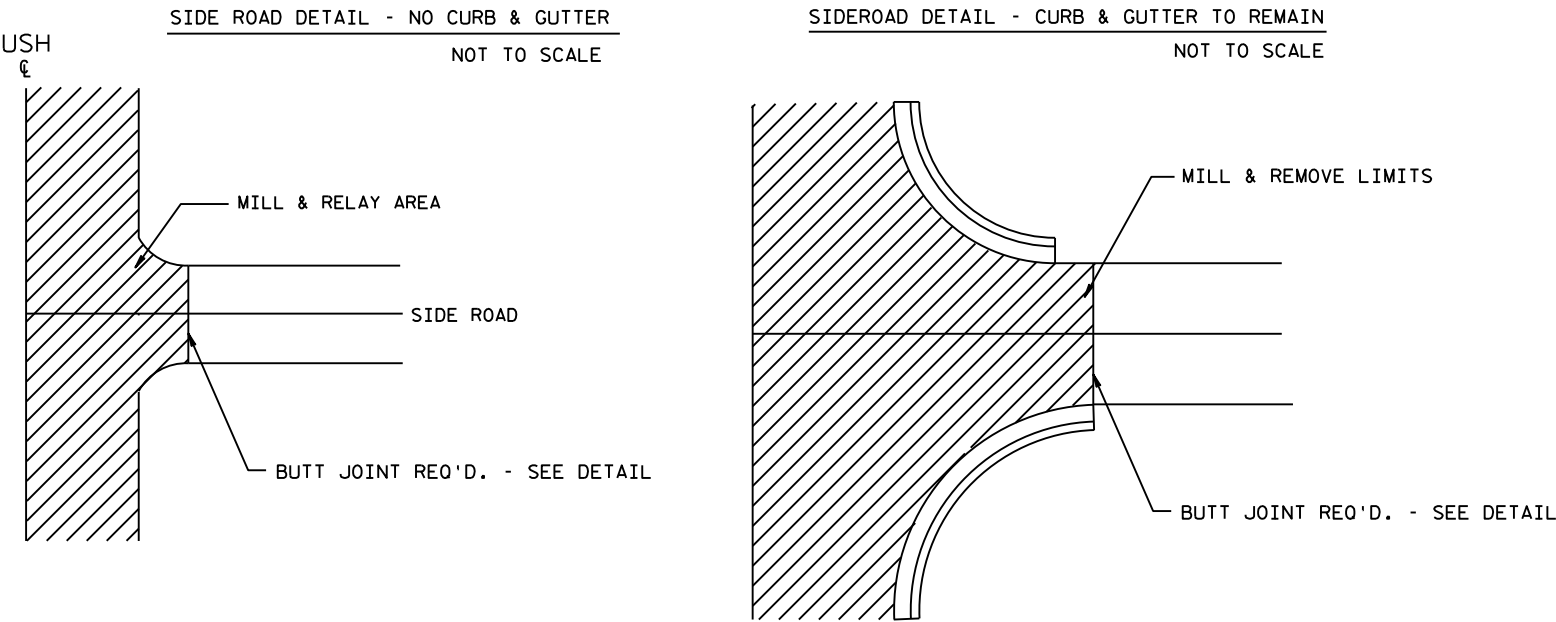


PIPE LINER DETAIL

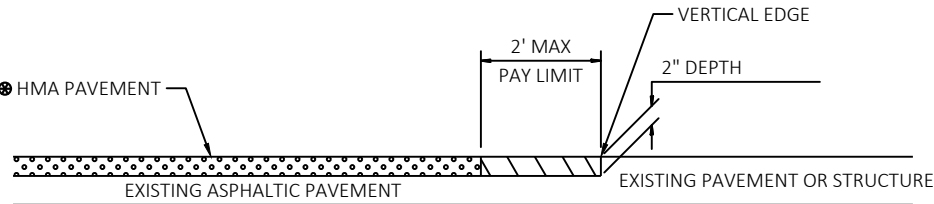
STA.	D-1	D-2
335+64	24" ID	??" ID MIN
431+51	24" ID	??" ID MIN
454+42	24" ID	??" ID MIN
490+69	30" ID	??" ID MIN
589+32	24" ID	??" ID MIN
607+25	24" ID	??" ID MIN



ROCK BAGS USED FOR SILT FENCE RELIEF

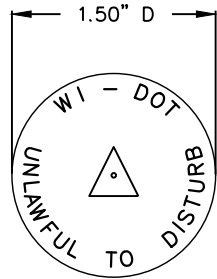


SIDE ROAD CONSTRUCTION LIMITS DETAIL

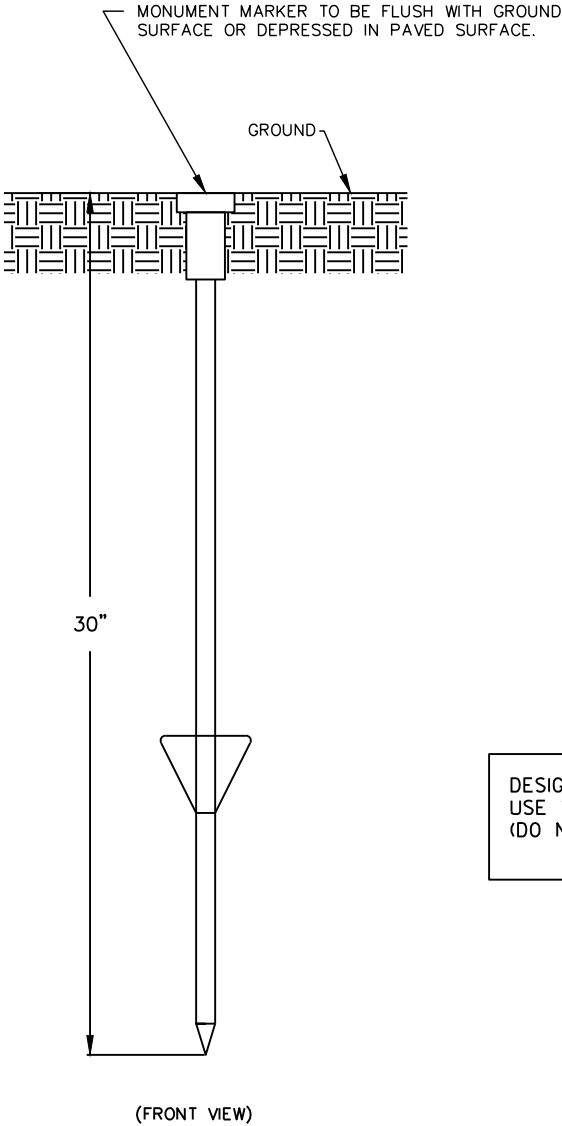


- SEE TYPICAL SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS
- REMOVING ASPHALTIC SURFACE, MILLING
- REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)

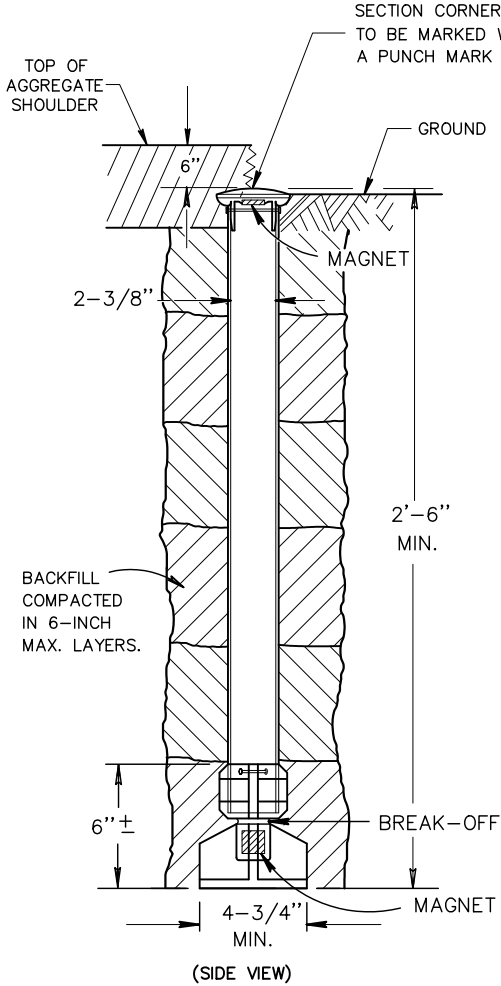


WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)
CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS
WITH THE ABOVE STAMPING

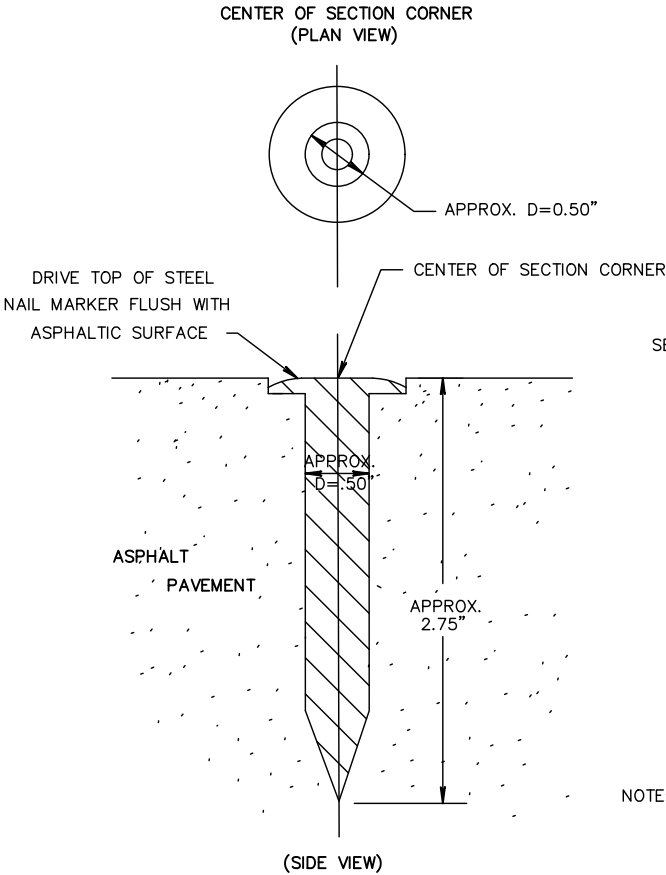


BERNSTEN DRIVABLE MONUMENT SSDR130

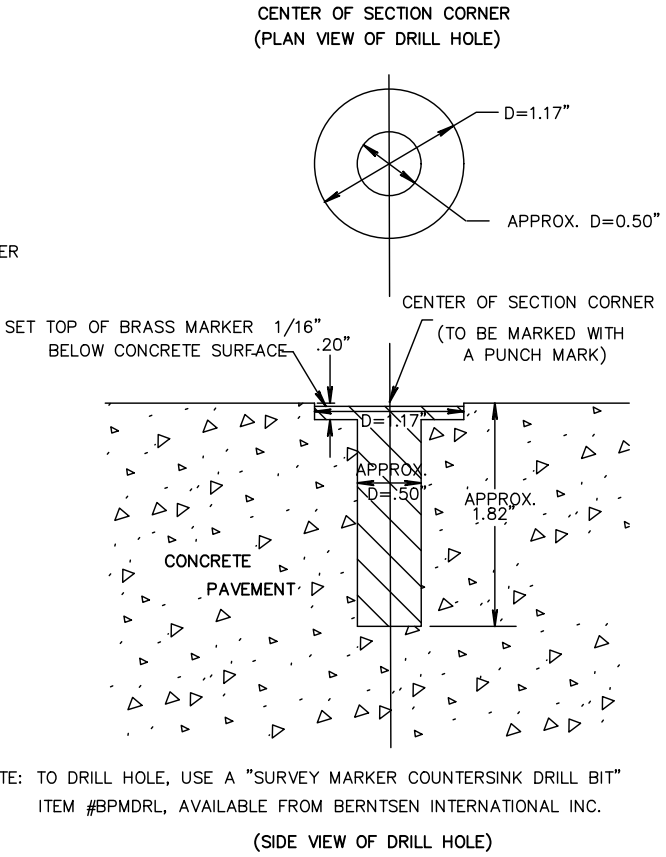
LANDMARK REFERENCE MONUMENT (TIES ONLY)



OUTSIDE OF PAVEMENT
BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



IN ASPHALTIC PAVEMENT
BERNTSEN SNM1 STEEL NAIL MARKER



IN CONCRETE PAVEMENT
BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG

SECTION CORNER MONUMENTS

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.

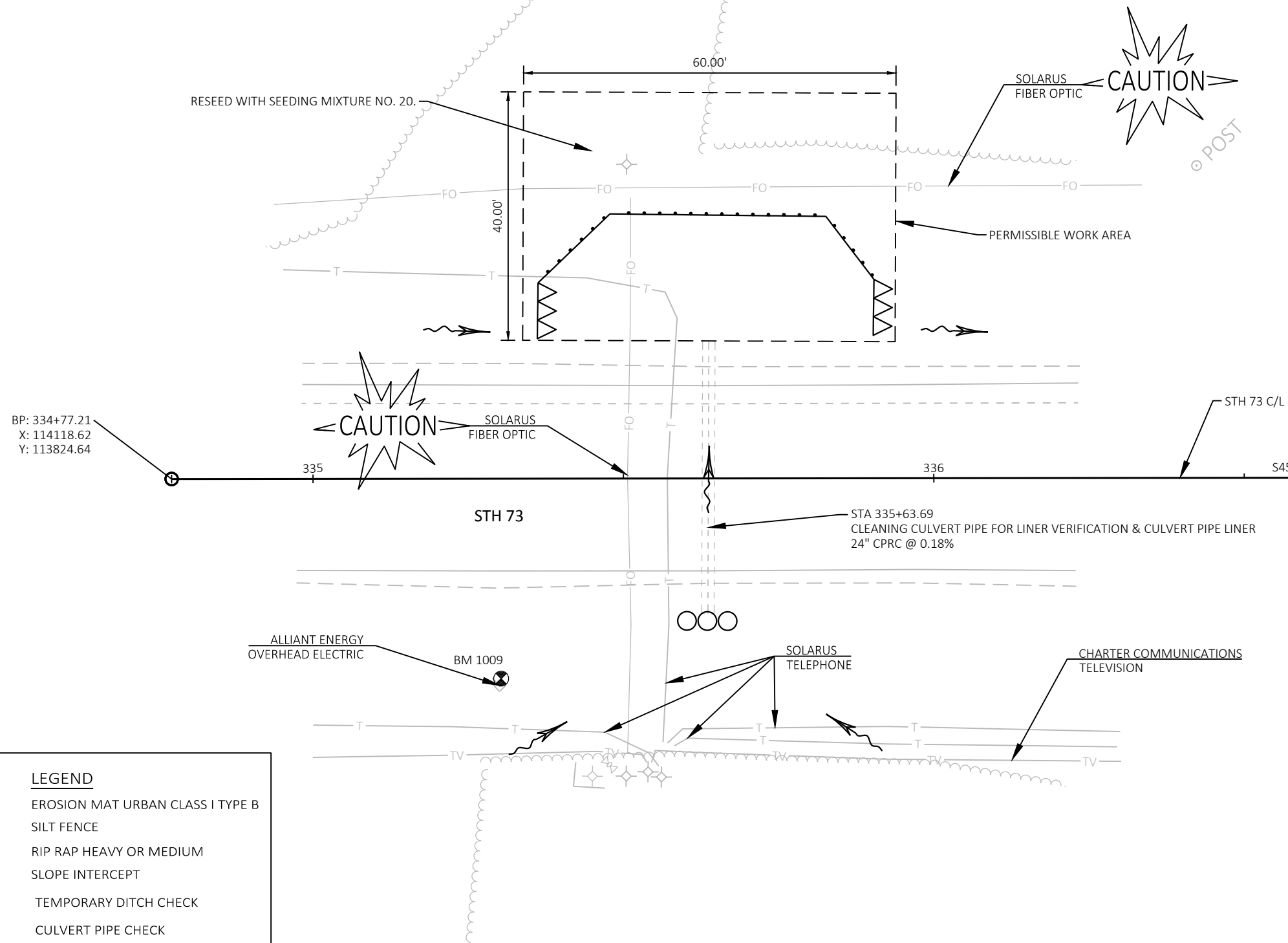
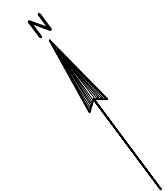
LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

DESIGN NOTE:
USE WITH NCR 621.01 REGION SPECIAL PROVISION
(DO NOT INCLUDE THIS NOTE IN FINAL PLANS)

SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
1009	335+30, 33' RT	1031.83	PK NAIL NORTH FACE OF PP #21-6-22 37-4



NOTE:
SENSITIVE AREAS STA. 335+00 - STA. 500+00 RT AND STA. 335+00 - STA. 550+00 LT.
SEE SPECIAL PROVISIONS.

PERMISSIBLE WORK AREA EXTENDS UP TO 40 FEET FROM CULVERT END TOWARD
THE RIGHT-OF-WAY LINE. WORK AREA MAY BE UP TO 60 FEET ALONG ROADWAY,
BUT DOESN'T NEED TO BE CENTERED ON PIPE.

RESTORE DISTURBED AREAS WITHIN THE PERMISSIBLE WORK AREA WITH SEED,
FERTILIZER TYPE B AND EROSION MAT URBAN CLASS I TYPE B.

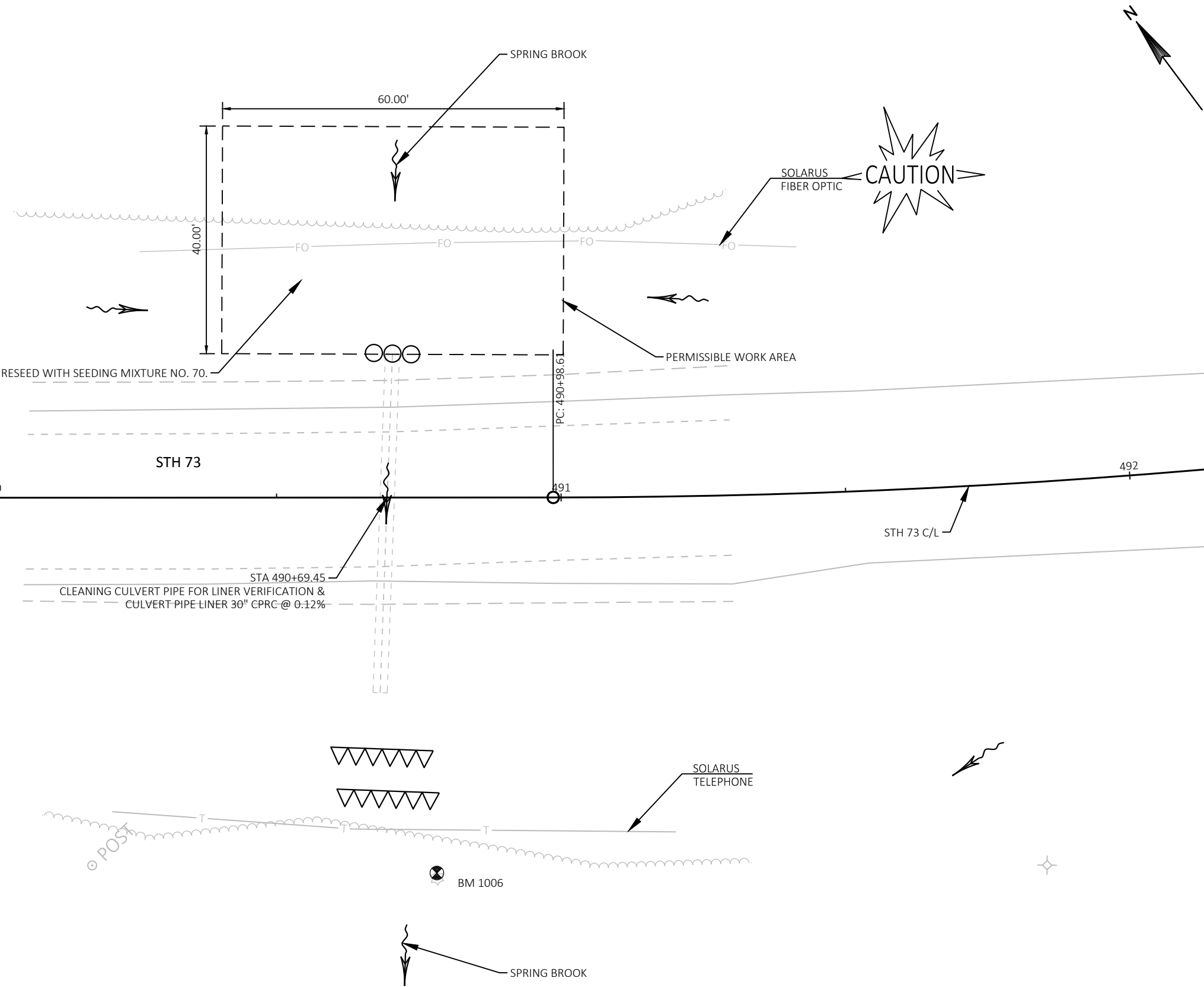
LEGEND	
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	RIP RAP HEAVY OR MEDIUM
	SLOPE INTERCEPT
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
	SURFACE WATER FLOW

BENCHMARKS			
NO.	STATION	ELEV.	DESCRIPTION
1006	490+78, 66' RT	1029.56	PK NAIL IN CONIFER TREE

NOTE:
SENSITIVE AREAS STA. 335+00 - STA. 500+00 RT AND STA. 335+00 - STA. 550+00 LT.
SEE SPECIAL PROVISIONS.

PERMISSIBLE WORK AREA EXTENDS UP TO 40 FEET FROM CULVERT END TOWARD
THE RIGHT-OF-WAY LINE. WORK AREA MAY BE UP TO 60 FEET ALONG ROADWAY,
BUT DOESN'T NEED TO BE CENTERED ON PIPE.

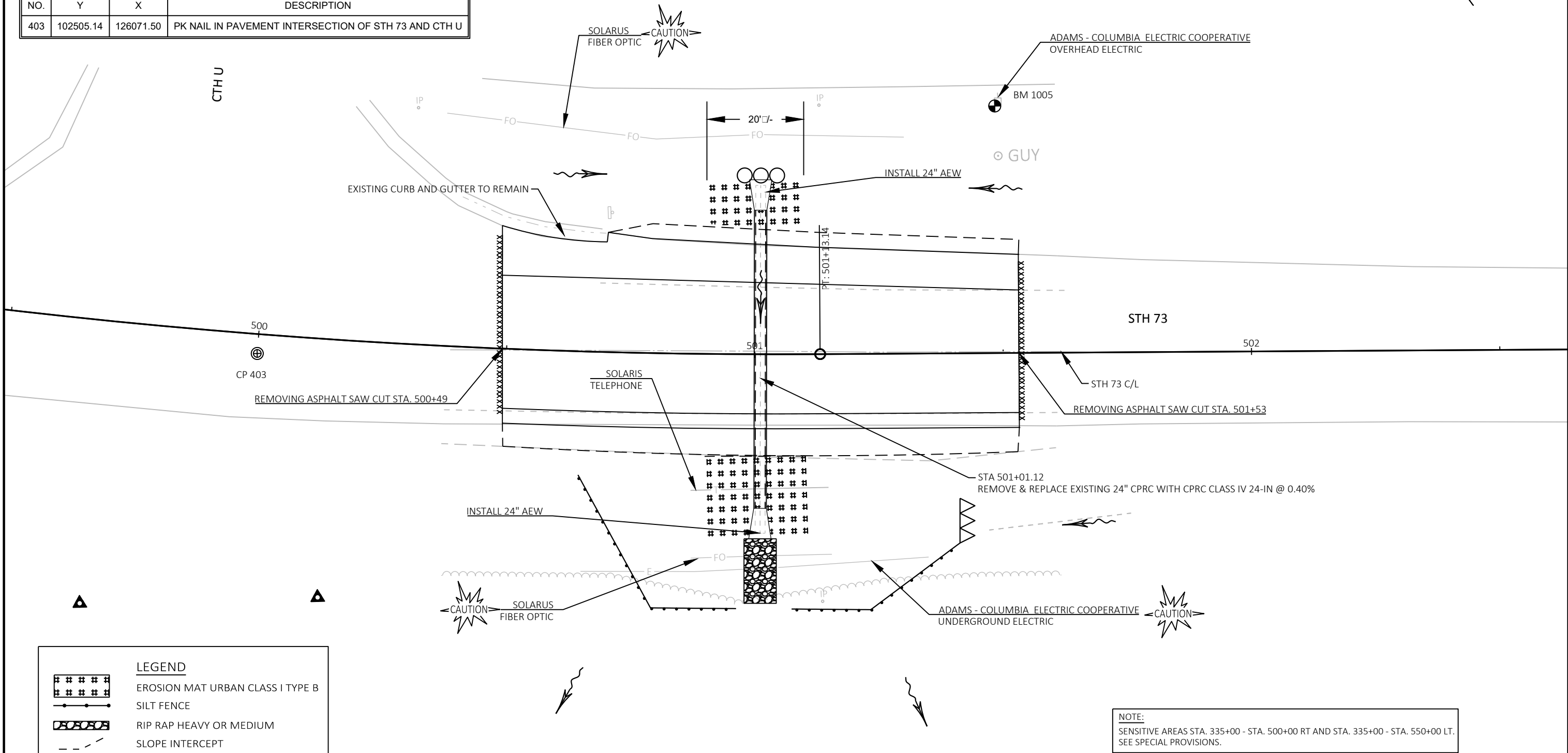
RESTORE DISTURBED AREAS WITHIN THE PERMISSIBLE WORK AREA WITH SEED,
FERTILIZER TYPE B AND EROSION MAT URBAN CLASS I TYPE B.



LEGEND	
	EROSION MAT URBAN CLASS I TYPE B
	SILT FENCE
	RIP RAP HEAVY OR MEDIUM
	SLOPE INTERCEPT
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK
	SURFACE WATER FLOW

BENCHMARKS				
NO.	STATION	OFFSET	ELEVATION	DESCRIPTION
1005	501+48.61	-49.76	1034.16	PK NAIL IN SOUTH FACE OF PP 819261 GR6 92

CONTROL POINTS			
NO.	Y	X	DESCRIPTION
403	102505.14	126071.50	PK NAIL IN PAVEMENT INTERSECTION OF STH 73 AND CTH U



PROJECT NO: 6320-00-74

HWY: STH 73

COUNTY: ADAMS & WOOD

CONSTRUCTION DETAILS: CULVERT REPLACEMENT, CULVERT NUMBER 71-073-0110

SHEET

E

FILE NAME : X:\GB\2018\20182005\CAD\TRANSPORTATION\DWG\SHEETPLAN\COMBINED PLANS\021009_CD.DWG
LAYOUT NAME - 021009

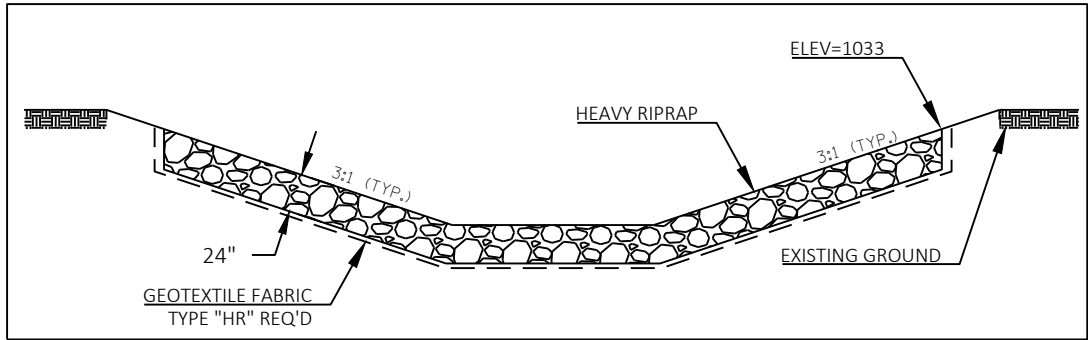
PLOT DATE : 2/1/2019 8:04 AM

PLOT BY : SCHULTZ, ANDREW K.

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD5 SHEET 42



STA. 541+71 NORTH SIDE DITCH HEAVY RIPRAP

PARCEL NO. 018210731-16
ELLIS INDUSTRIES LLC.

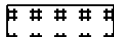
NOTE:
SENSITIVE AREAS STA. 335+00 - STA. 500+00 RT AND STA. 335+00 - STA. 550+00 LT.
SEE SPECIAL PROVISIONS.



Y = 102456.22
X = 128058.97
CALCULATED USING WITNESS TIES,
EXISTING IRON PIPE BURIED
UNDER THE ROADWAY

BENCHMARKS				
NO.	STATION	OFFSET	ELEVATION	DESCRIPTION
1000	539+10.79	-36.23	1034.64	HEIGHT MOD MONUMENT 36.5' NORTH OF STH 73 CL

CONTROL POINTS			
NO.	Y	X	DESCRIPTION
1000	102447.95	129982.24	HEIGHT MOD MONUMENT 36.5' NORTH OF STH 73 CL



LEGEND

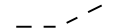
EROSION MAT URBAN CLASS I TYPE B



SILT FENCE



RIP RAP HEAVY OR MEDIUM



SLOPE INTERCEPT



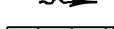
TEMPORARY DITCH CHECK



CULVERT PIPE CHECK



SURFACE WATER FLOW

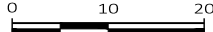


TEMPORARY CONSTRUCTION EASEMENT

N

PARCEL NO. 014001530000
IRON HORSE ACRES LLC.

SCALE, FEET



UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED	ACRES
1	WOOD COUNTY TELEPHONE COMPANY DBA SOLARIS	TCE	0.017

TOWN OF LEOLA ADAMS COUNTY

GOV'T LOT 3
SEC. 6, T20N-R7E
NE-NW

TOWN OF GRANT PORTAGE COUNTY

50'±

SEC 31, T21N-R6E
SE-SE

541+45.70, -65.00' LT

541+49.18, -53.75' LT

N01° 24' 18"E 15.00'

FO

541+45.69, -50.00' LT

N01° 24' 18"E 52.94'

1 SOLARIS

541+88.26, -54.52' LT

541+95.70, -65.00' LT

S01° 24' 18"W 15.00'

FO

541+95.69, -50.00' LT

SECTION CORNER TIES

INSTALL 54" AEW

STA 541+70.61
REMOVE & REPLACE EXISTING 54" CPCM WITH
CPRC CLASS IV 54-IN @ 1.8%

542+20.51, 0.00'

REMOVING ASPHALT SAW CUT STA. 542+25

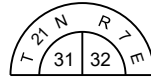
STH 73 C/L

1,146.72'

N88° 35' 30"W 416.43'



Y = 102401.35
X = 130290.93
CALCULATED USING WITNESS TIES,
EXISTING IRON PIPE BURIED
UNDER ROADWAY



Y = 102391.11
X = 130707.24
MAGNAIL FOUND

SOLARIS
FIBER OPTIC

ADAMS - COLUMBIA ELECTRIC COOPERATIVE
UNDERGROUND ELECTRIC

SECTION CORNER TIES

PARCEL NO. 14001520000
THOMAS L. & SHERRY L. CICHOSZ

GOV'T LOT 2
SEC. 6, T20N-R7E
NW-NE

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY
COORDINATE SYSTEM (WCCS), PORTAGE COUNTY, NAD83 (1991), IN U.S.
SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID
BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS
GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012).
GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

PROJECT NO: 6320-00-74

HWY: STH 73

COUNTY: ADAMS & WOOD

CONSTRUCTION DETAILS: CULVERT REPLACEMENT, CULVERT NUMBER 71-073-0080

SHEET

E

BENCHMARKS				
NO.	STATION	OFFSET	ELEVATION	DESCRIPTION
1003	604+41.78	-47.57	1042.88	PK NAIL IN PP

TO BM# 1003

606

607

608

STH 73

STA 607+25.10
CLEANING CULVERT PIPE FOR LINER VERIFICATION &
CULVERT PIPE LINER 24" CPRC @ 0.79%

STH 73 C/L

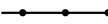
WETLAND BOUNDARY

LIMITS OF WETLAND IMPACT

LEGEND



EROSION MAT URBAN CLASS I TYPE B



SILT FENCE



RIP RAP HEAVY OR MEDIUM



SLOPE INTERCEPT



TEMPORARY DITCH CHECK



CULVERT PIPE CHECK



SURFACE WATER FLOW

PROJECT NO: 6320-00-74

HWY: STH 73

COUNTY: ADAMS & WOOD

CONSTRUCTION DETAILS: CULVERT LINING, CULVERT NUMBER 71-073-0040

SHEET

E

FILE NAME : X:\GB\2018\20182005\CAD\TRANSPORTATION\DWG\SHEETSP\AN\COMBINED PLANS\021009_CD.DWG
LAYOUT NAME - 021012

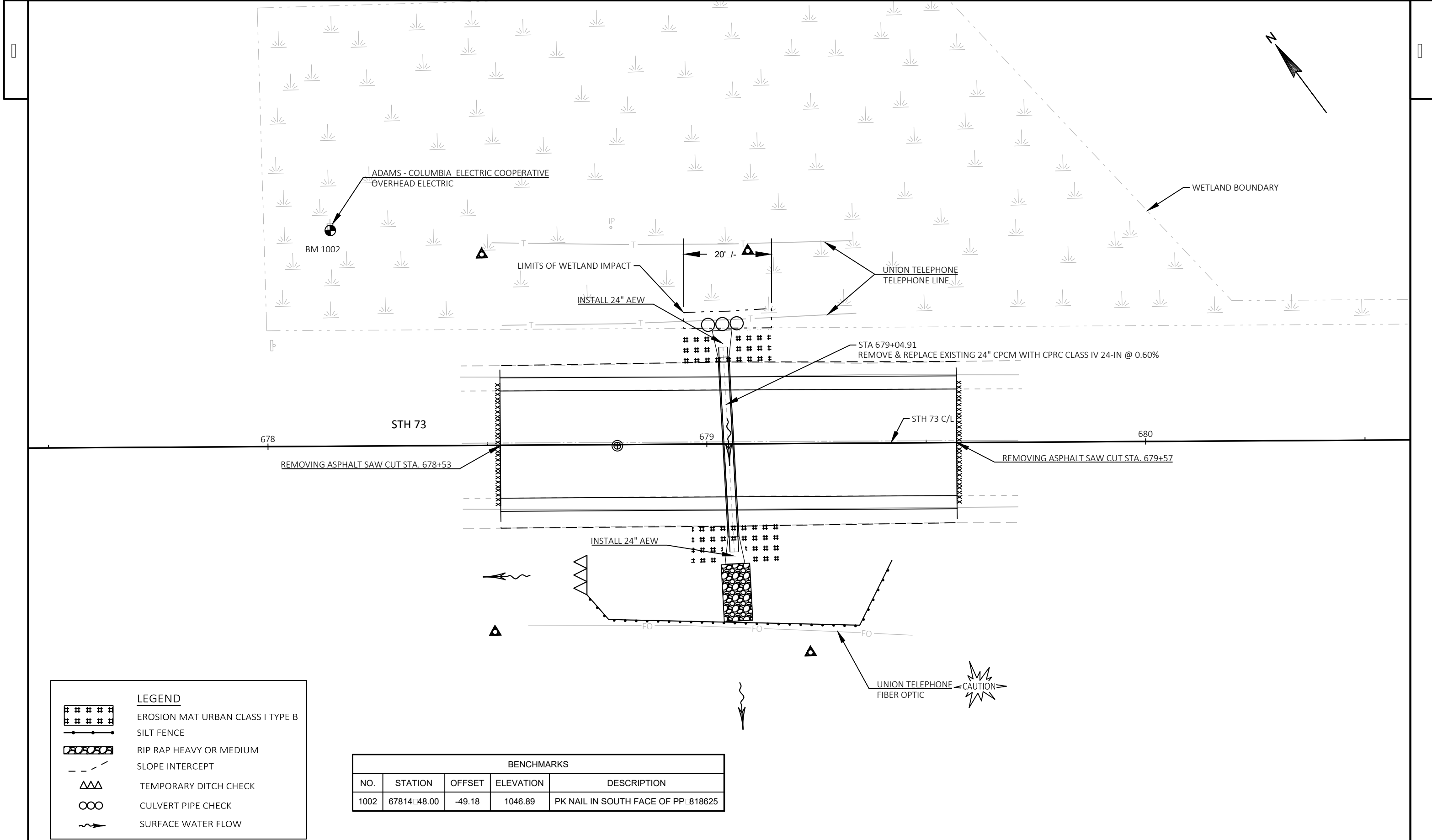
PLOT DATE : 2/1/2019 8:04 AM

PLOT BY : SCHULTZ, ANDREW K.

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD5 SHEET 42



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AAA

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LEGEND

EROSION MAT URBAN CLASS I TYPE B

SILT FENCE

RIP RAP HEAVY OR MEDIUM

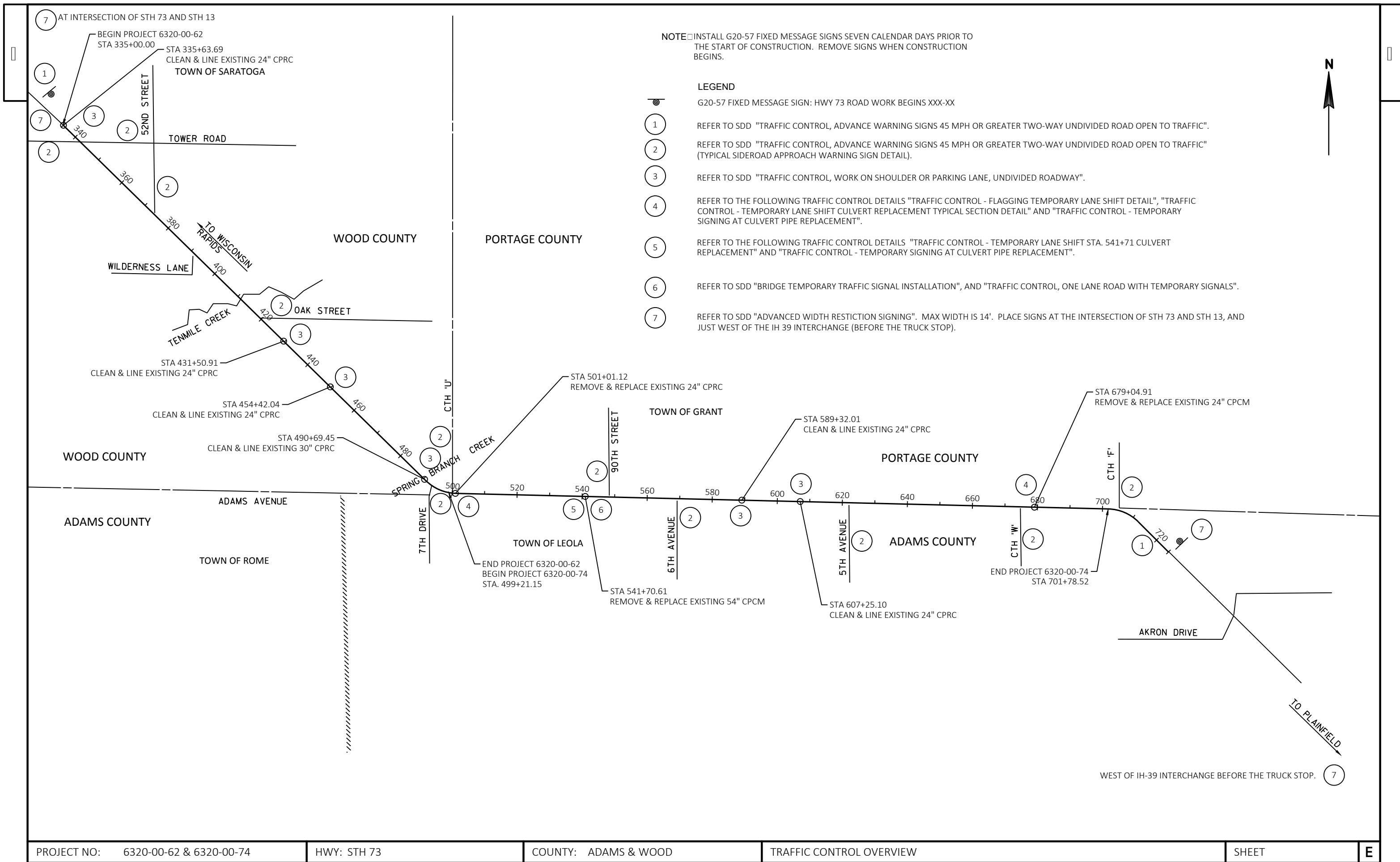
SLOPE INTERCEPT

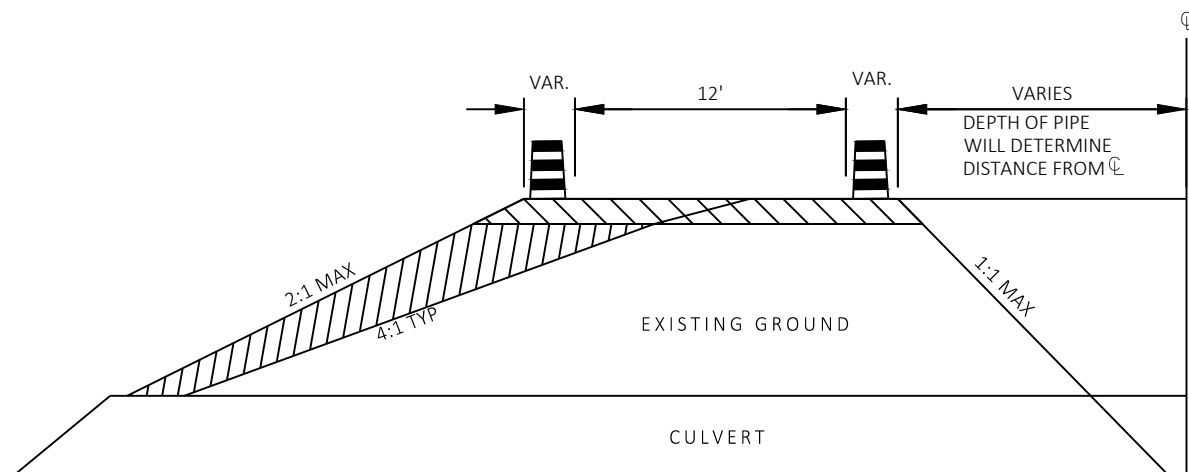
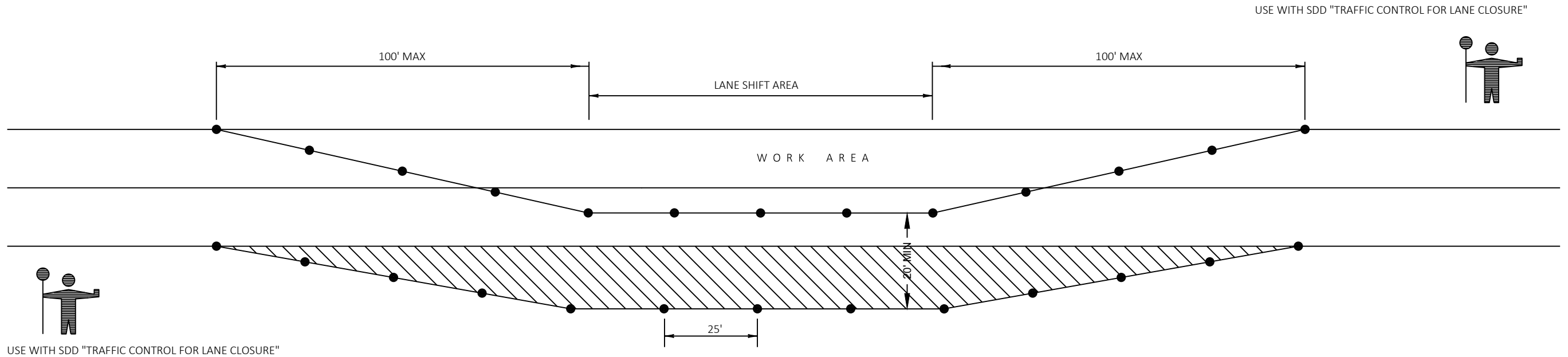
TEMPORARY DITCH CHECK

CULVERT PIPE CHECK

SURFACE WATER FLOW

| BENCHMARKS |             |        |           |                                    |
|------------|-------------|--------|-----------|------------------------------------|
| NO.        | STATION     | OFFSET | ELEVATION | DESCRIPTION                        |
| 1002       | 67814+48.00 | -49.18 | 1046.89   | PK NAIL IN SOUTH FACE OF PP 818625 |





LANE SHIFT DETAIL

NOTES

1. THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION
2. ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION
3. CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS
4. USE WITH SDD "TRAFFIC CONTROL FOR LANE CLOSURE"
5. SEE "CULVERT PIPE REPLACEMENT HALF AT A TIME WITH FLAGGING OPERATIONS" FOR SHY DISTANCES AT REQUIRED STATIONS.

| KEY |                                                                       |
|-----|-----------------------------------------------------------------------|
| ●   | DRUM WITHOUT WARNING LIGHT                                            |
|     | 6" BASE AGGREGATE DENSE 1 1/4 INCH<br>- INCIDENTAL TO LANE SHIFT ITEM |
|     | FILL<br>- INCIDENTAL TO LANE SHIFT ITEM                               |

PROJECT NO: 6320-00-62 & 6320-00-74

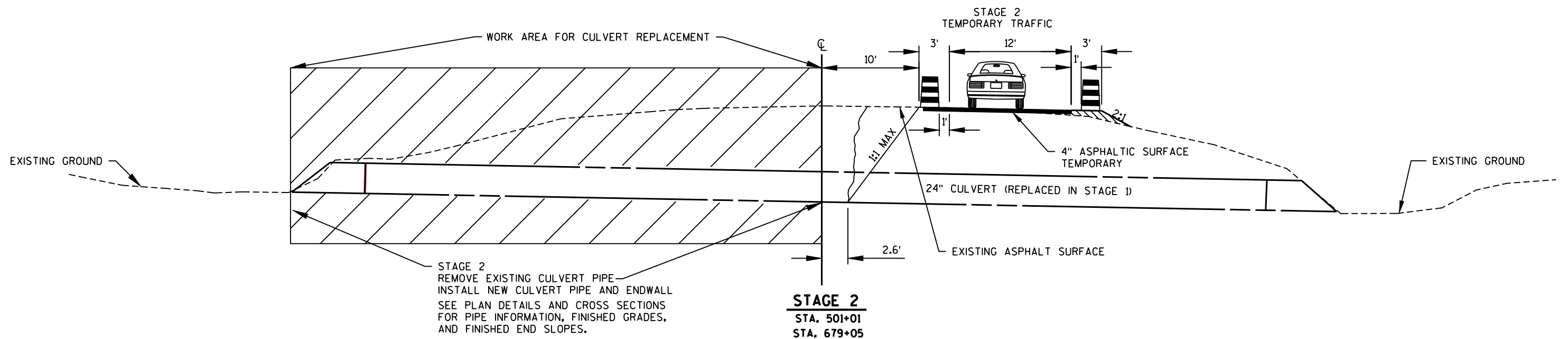
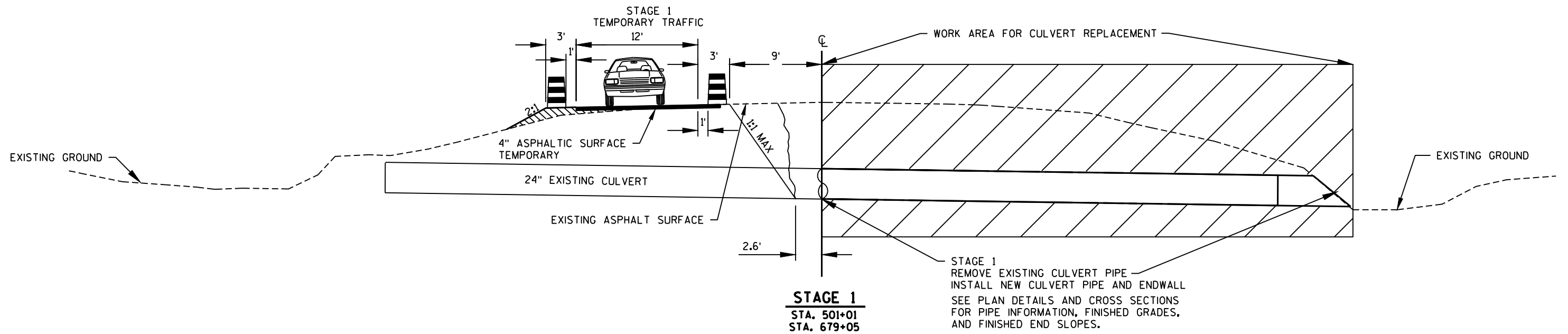
HWY: STH 73

COUNTY: ADAMS & WOOD

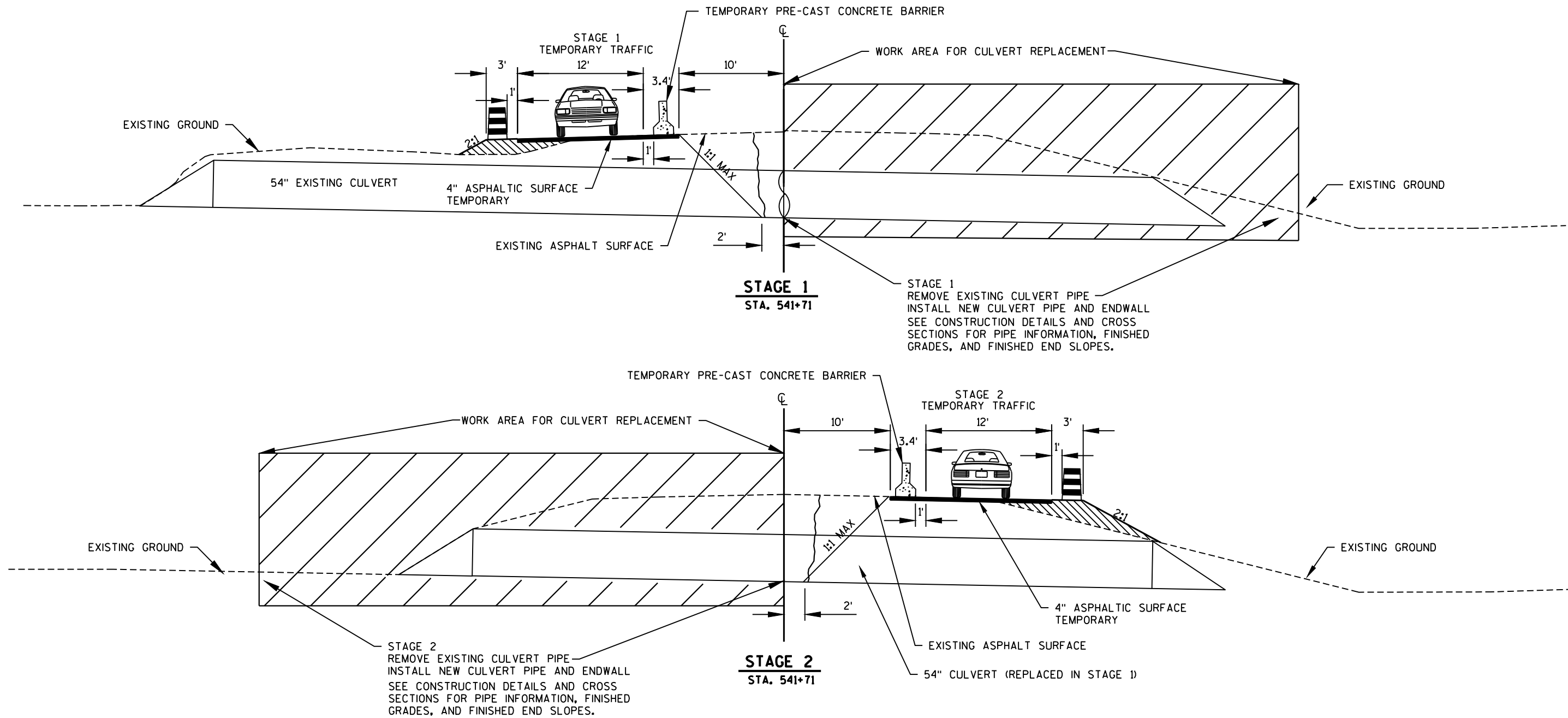
TRAFFIC CONTROL-FLAGGING TEMPORARY LANE SHIFT DETAIL

SHEET

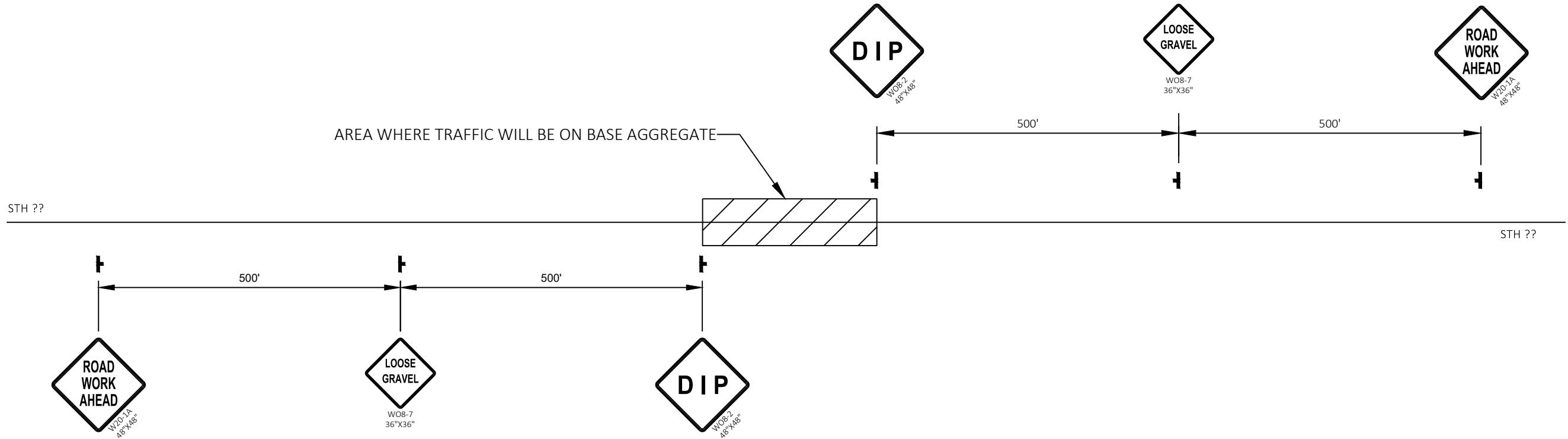
E



**CULVERT PIPE REPLACEMENT HALF AT A TIME  
 WITH FLAGGING OPERATIONS**



**CULVERT PIPE REPLACEMENT HALF AT A TIME  
FLAGGING OPERATIONS**



LOOSE GRAVEL SIGNING

STA. 501+01  
STA. 541+71  
STA. 679+05

Estimate Of Quantities

|      |            | 6320-00-62                                                       |      | 6320-00-74 |            |
|------|------------|------------------------------------------------------------------|------|------------|------------|
| Line | Item       | Item Description                                                 | Unit | Total      | Qty        |
| 0002 | 203.0100   | Removing Small Pipe Culverts                                     | EACH | 3.000      | 3.000      |
| 0004 | 204.0115   | Removing Asphaltic Surface Butt Joints                           | SY   | 47.000     | 47.000     |
| 0006 | 204.0120   | Removing Asphaltic Surface Milling                               | SY   | 69,515.000 | 69,515.000 |
| 0008 | 204.9060.S | Removing (item description) 01. Culvert Endwallls                | EACH | 4.000      | 4.000      |
| 0010 | 205.0100   | Excavation Common                                                | CY   | 1,754.000  | 1,754.000  |
| 0012 | 211.0100   | Prepare Foundation for Asphaltic Paving (project) 01. 6320-00-74 | LS   | 1.000      | 1.000      |
| 0014 | 213.0100   | Finishing Roadway (project) 01. 6320-00-62                       | EACH | 1.000      | 1.000      |
| 0016 | 213.0100   | Finishing Roadway (project) 02. 6320-00-74                       | EACH | 1.000      | 1.000      |
| 0018 | 305.0110   | Base Aggregate Dense 3/4-Inch                                    | TON  | 1,959.000  | 1,954.000  |
| 0020 | 305.0120   | Base Aggregate Dense 1 1/4-Inch                                  | TON  | 658.000    | 658.000    |
| 0022 | 312.0110   | Select Crushed Material                                          | TON  | 564.000    | 564.000    |
| 0024 | 450.4000   | HMA Cold Weather Paving                                          | TON  | 900.000    | 900.000    |
| 0026 | 455.0605   | Tack Coat                                                        | GAL  | 4,866.000  | 4,866.000  |
| 0028 | 460.2000   | Incentive Density HMA Pavement                                   | DOL  | 5,450.000  | 5,450.000  |
| 0030 | 460.6224   | HMA Pavement 4 MT 58-28 S                                        | TON  | 8,652.000  | 8,652.000  |
| 0032 | 465.0475   | Asphalt Centerline Rumble Strips 2-Lane Rural                    | LF   | 18,390.000 | 18,390.000 |
| 0034 | 520.9700.S | Culvert Pipe Liners (size) 01. 24-Inch                           | LF   | 200.000    | 120.000    |
| 0036 | 520.9700.S | Culvert Pipe Liners (size) 02. 30-Inch                           | LF   | 56.000     | 56.000     |
| 0038 | 520.9750.S | Cleaning Culvert Pipes for Liner Verification                    | EACH | 6.000      | 4.000      |
| 0040 | 522.0424   | Culvert Pipe Reinforced Concrete Class IV 24-Inch                | LF   | 101.000    | 101.000    |
| 0042 | 522.0454   | Culvert Pipe Reinforced Concrete Class IV 54-Inch                | LF   | 73.000     | 73.000     |
| 0044 | 522.1024   | Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch      | EACH | 8.000      | 4.000      |
| 0046 | 522.1054   | Apron Endwalls for Culvert Pipe Reinforced Concrete 54-Inch      | EACH | 2.000      | 2.000      |
| 0048 | 603.8000   | Concrete Barrier Temporary Precast Delivered                     | LF   | 150.000    | 150.000    |
| 0050 | 603.8125   | Concrete Barrier Temporary Precast Installed                     | LF   | 300.000    | 300.000    |
| 0052 | 606.0200   | Riprap Medium                                                    | CY   | 11.400     | 11.400     |
| 0054 | 606.0300   | Riprap Heavy                                                     | CY   | 29.000     | 29.000     |
| 0056 | 618.0100   | Maintenance And Repair of Haul Roads (project) 01. 6320-00-74    | EACH | 1.000      | 1.000      |
| 0058 | 619.1000   | Mobilization                                                     | EACH | 1.000      | 0.150      |
| 0060 | 621.0100   | Landmark Reference Monuments                                     | EACH | 3.000      | 3.000      |
| 0062 | 624.0100   | Water                                                            | MGAL | 26.100     | 26.100     |
| 0064 | 625.0100   | Topsoil                                                          | SY   | 2,700.000  | 1,495.000  |
| 0066 | 628.1504   | Silt Fence                                                       | LF   | 865.000    | 334.000    |
| 0068 | 628.1520   | Silt Fence Maintenance                                           | LF   | 865.000    | 334.000    |
| 0070 | 628.1905   | Mobilizations Erosion Control                                    | EACH | 18.000     | 8.000      |
| 0072 | 628.1910   | Mobilizations Emergency Erosion Control                          | EACH | 18.000     | 8.000      |
| 0074 | 628.2008   | Erosion Mat Urban Class I Type B                                 | SY   | 2,006.000  | 1,493.000  |

Estimate Of Quantities

|      |          | 6320-00-62                                                          |      | 6320-00-74 |           |            |
|------|----------|---------------------------------------------------------------------|------|------------|-----------|------------|
| Line | Item     | Item Description                                                    | Unit | Total      | Qty       | Qty        |
| 0076 | 628.7504 | Temporary Ditch Checks                                              | LF   | 178.000    | 88.000    | 90.000     |
| 0078 | 628.7555 | Culvert Pipe Checks                                                 | EACH | 43.000     | 15.000    | 28.000     |
| 0080 | 629.0210 | Fertilizer Type B                                                   | CWT  | 1.700      | 0.940     | 0.760      |
| 0082 | 630.0120 | Seeding Mixture No. 20                                              | LB   | 9.000      | 9.000     |            |
| 0084 | 630.0170 | Seeding Mixture No. 70                                              | LB   | 5.500      | 1.200     | 4.300      |
| 0086 | 630.0171 | Seeding Mixture No. 70A                                             | LB   | 3.000      | 3.000     |            |
| 0088 | 630.0500 | Seed Water                                                          | MGAL | 15.200     | 8.400     | 6.800      |
| 0116 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch                           | LF   | 40,053.000 |           | 40,053.000 |
| 100  | 643.0300 | Traffic Control Drums                                               | DAY  | 201.000    | 32.000    | 169.000    |
| 102  | 643.0420 | Traffic Control Barricades Type III                                 | DAY  | 3.000      |           | 3.000      |
| 104  | 643.0715 | Traffic Control Warning Lights Type C                               | DAY  | 30.000     |           | 30.000     |
| 106  | 643.0900 | Traffic Control Signs                                               | DAY  | 1,239.000  | 481.000   | 758.000    |
| 108  | 643.1000 | Traffic Control Signs Fixed Message                                 | SF   | 64.000     | 32.000    | 32.000     |
| 110  | 643.5000 | Traffic Control                                                     | EACH | 1.000      | 0.150     | 0.850      |
| 112  | 645.0120 | Geotextile Type HR                                                  | SY   | 66.300     |           | 66.300     |
| 114  | 646.1020 | Marking Line Epoxy 4-Inch                                           | LF   | 7,536.000  |           | 7,536.000  |
| 118  | 648.0100 | Locating No-Passing Zones                                           | MI   | 3.840      |           | 3.840      |
| 120  | 649.0105 | Temporary Marking Line Paint 4-Inch                                 | LF   | 8,077.000  |           | 8,077.000  |
| 122  | 649.0850 | Temporary Marking Stop Line Removable Tape 18-Inch                  | LF   | 24.000     |           | 24.000     |
| 124  | 650.6000 | Construction Staking Pipe Culverts                                  | EACH | 3.000      |           | 3.000      |
| 126  | 650.8000 | Construction Staking Resurfacing Reference                          | LF   | 19,941.000 |           | 19,941.000 |
| 128  | 650.9910 | Construction Staking Supplemental Control (project) 01. 6320-00-74  | LS   | 1.000      |           | 1.000      |
| 130  | 650.9920 | Construction Staking Slope Stakes                                   | LF   | 317.000    |           | 317.000    |
| 132  | 661.0100 | Temporary Traffic Signals for Bridges (structure) 01. C-71-073-0080 | LS   | 1.000      |           | 1.000      |
| 134  | 690.0150 | Sawing Asphalt                                                      | LF   | 193.000    |           | 193.000    |
| 136  | 740.0440 | Incentive IRI Ride                                                  | DOL  | 15,348.000 |           | 15,348.000 |
| 138  | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR                         | HRS  | 1,200.000  | 1,200.000 |            |
| 140  | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                           | HRS  | 600.000    | 600.000   |            |
| 142  | SPV.0060 | Special 01. Lane Shift                                              | EACH | 6.000      |           | 6.000      |
| 144  | SPV.0060 | Special 02. Reestablish Section Corner Monuments                    | EACH | 7.000      |           | 7.000      |
| 146  | SPV.0105 | Special 01. Temporary Bypass Pumping STA 541+70.61                  | LS   | 1.000      |           | 1.000      |
| 90   | 633.5200 | Markers Culvert End                                                 | EACH | 18.000     | 8.000     | 10.000     |
| 92   | 634.0616 | Posts Wood 4x6-Inch X 16-FT                                         | EACH | 2.000      | 1.000     | 1.000      |
| 94   | 638.2102 | Moving Signs Type II                                                | EACH | 4.000      | 2.000     | 2.000      |
| 96   | 638.3000 | Removing Small Sign Supports                                        | EACH | 4.000      | 2.000     | 2.000      |
| 98   | 642.5201 | Field Office Type C                                                 | EACH | 1.000      | 0.150     | 0.850      |

3

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

REMOVING SMALL PIPE CULVERTS

| 203.0100      |           |          |      |                         |
|---------------|-----------|----------|------|-------------------------|
| PROJECT       | STATION   | LOCATION | (EA) | NOTES                   |
| 6320-00-74    | 501+01.12 | RT & LT  | 1    | 24" CPRC - 60 FT LENGTH |
|               | 541+70.61 | RT & LT  | 1    | 54" CPRC - 90 FT LENGTH |
|               | 679+04.91 | RT & LT  | 1    | 24" CPRC - 40 FT LENGTH |
| PROJECT TOTAL |           |          | 3    |                         |

REMOVING ASPHALTIC SURFACE BUTT JOINTS

| 204.0115   |               |             |      |
|------------|---------------|-------------|------|
| PROJECT    | STATION       | LOCATION    | (SY) |
| 6320-00-74 | 499+21        | STH 73      | 7.0  |
|            | 499+90        | CTH 'U'     | 11.5 |
|            | 547+44        | 90TH STREET | 5.5  |
|            | 569+11        | 6TH AVENUE  | 5.0  |
|            | 622+05        | 5TH AVENUE  | 5.0  |
|            | 674+26        | CTH 'W'     | 6.5  |
|            | 701+79        | STH 73      | 6.5  |
|            | PROJECT TOTAL |             | 47.0 |

REMOVING ASPHALTIC SURFACE MILLING

|               |                   |                                     | 204.0120 |
|---------------|-------------------|-------------------------------------|----------|
| PROJECT       | STATION - STATION | LOCATION                            | (SY)     |
| 6320-00-74    | 499+21 - 500+49   | BEGINNING OF PROJECT TO STA. 500+49 | 570      |
|               | 500+49 - 501+53   | CULVERT REPLACEMENT AREA            | 418      |
|               | 501+53 - 541+16   | STA. 501+53 TO STA. 541+16          | 13,255   |
|               | 541+16 - 542+25   | CULVERT REPLACEMENT AREA            | 364      |
|               | 542+25 - 569+11   | STA. 542+25 TO 6TH AVENUE           | 8,949    |
|               | 569+11 - 622+05   | 6TH AVENUE TO 5TH AVENUE            | 17,644   |
|               | 622+05 - 674+26   | 5TH AVENUE TO CTH 'W'               | 17,861   |
|               | 674+26 - 678+53   | CTH 'W' TO STA. 678+53              | 1,765    |
|               | 678+53 - 679+57   | CULVERT REPLACEMENT AREA            | 347      |
|               | 679+57 - 701+79   | STA. 679+57 TO END OF PROJECT       | 7,405    |
|               |                   | CTH 'U'                             | 194      |
|               |                   | 90TH STREET                         | 184      |
|               |                   | 6TH AVENUE                          | 73       |
|               |                   | 5TH AVENUE                          | 166      |
|               |                   | CTH 'W'                             | 320      |
| PROJECT TOTAL |                   |                                     | 69,515   |

REMOVING CULVERT ENDWALLS

| 204.9060.S    |         |          |      |          |
|---------------|---------|----------|------|----------|
| PROJECT       | STATION | LOCATION | (EA) | NOTES    |
| 6320-00-62    | 431+51  | RT & LT  | 2    | 24" CPRC |
|               | 454+42  | RT & LT  | 2    | 24" CPRC |
| PROJECT TOTAL |         |          | 4    |          |

EARTHWORK

| STATION TO STATION                 | LOCATION    | COMMON EXCAVATION            | SALVAGED/UNUSABLE MATERIAL (2) | AVAILABLE MATERIAL (3) | UNEXPANDED FILL | EXPANDED FILL (4) | MASS ORDINATE +/- (5) (6) | WASTE | BORROW | COMMENT: |
|------------------------------------|-------------|------------------------------|--------------------------------|------------------------|-----------------|-------------------|---------------------------|-------|--------|----------|
|                                    |             | Cut (1)<br>(item # 205.0100) |                                |                        |                 | FACTOR<br>1.25    |                           |       |        |          |
| 500+49 - 501+53                    | 71-073-0110 | 480                          | 0                              | 480                    | 0               | 0                 | 480                       | 240   | 0      |          |
| CULVERT 71-073-0110 SUBTOTAL       |             | 480                          | 0                              | 480                    | 0               | 0                 | 480                       | 240   | 0      |          |
| 541+16 - 542+25                    | 71-073-0080 | 965                          | 0                              | 965                    | 0               | 0                 | 965                       | 965   | 0      |          |
| CULVERT 71-073-0080 SUBTOTAL       |             | 965                          | 0                              | 965                    | 0               | 0                 | 965                       | 965   | 0      |          |
| 678+53 - 679+57                    | 71-073-0020 | 309                          | 0                              | 309                    | 0               | 0                 | 309                       | 309   | 0      |          |
| CULVERT 71-073-0020 SUBTOTAL       |             | 309                          | 0                              | 309                    | 0               | 0                 | 309                       | 309   | 0      |          |
| Grand Total for Project 6320-00-74 |             | 1754                         | 0                              | 1754                   | 0               | 0                 | 1754                      | 1514  | 0      |          |
| Total Common Exc                   |             | 1754                         |                                |                        |                 |                   |                           |       |        |          |

- 1) Salvaged/Unsuable Pavement Material is included in Cut.
- 2) Salvaged/Unusable Pavement Material
- 3) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 4) Expanded Fill. Factor = 1.25
- 5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
- 6) Excavation for Structures is not included on this table.

3

NOTE: ALL ITEMS ON THIS  
SHEET ARE CATEGORY 0010  
UNLESS OTHERWISE NOTED.

PREPARE FOUNDATION FOR ASPHALTIC PAVING

| 211.0100      |          |      |                                             |
|---------------|----------|------|---------------------------------------------|
| PROJECT       | LOCATION | (LS) | REMARKS                                     |
| 6320-00-74    | STH 73   | 1    | APPLIES TO ALL MILLED AND OVERLAID SURFACES |
| PROJECT TOTAL |          | 1    |                                             |

BASE AGGREGATE DENSE

|            |                    |                                     |  | 305.0110       | 305.0120         | 312.0110       | 624.0100 |
|------------|--------------------|-------------------------------------|--|----------------|------------------|----------------|----------|
|            |                    |                                     |  | BASE AGGREGATE | BASE AGGREGATE   | SELECT CRUSHED | WATER    |
|            |                    |                                     |  | DENSE 3/4-INCH | DENSE 1 1/4-INCH | MATERIAL       |          |
| PROJECT    | STATION - STATION  | LOCATION                            |  | (TON)          | (TON)            | (TON)          | (MGAL)   |
| 6320-00-62 |                    | UNDISTRIBUTED                       |  | 5              | ---              | ---            | ---      |
| 6320-00-74 | 499+21 - 500+49    | BEGINNING OF PROJECT TO STA. 500+49 |  | 12             | ---              | ---            | 0.1      |
|            | 500+49 - 501+53    | CULVERT REPLACEMENT AREA            |  | 24             | 242              | 209            | 2.7      |
|            | 501+53 - 541+16    | STA. 501+53 TO 541+46               |  | 374            | ---              | ---            | 3.7      |
|            | 541+16 - 542+25    | CULVERT REPLACEMENT AREA            |  | 25             | 213              | 182            | 2.4      |
|            | 542+25 - 569+11    | STA. 542+25 TO 6TH AVENUE           |  | 253            | ---              | ---            | 2.5      |
|            | 569+11 - 622+05    | 6TH AVENUE TO 5TH AVENUE            |  | 500            | ---              | ---            | 5.0      |
|            | 622+05 - 674+26    | 5TH AVENUE TO CTH 'W'               |  | 490            | ---              | ---            | 4.9      |
|            | 674+26 - 678+53    | CTH 'W' TO STA. 678+53              |  | 42             | ---              | ---            | 0.4      |
|            | 678+53 - 679+57    | CULVERT REPLACEMENT AREA            |  | 24             | 203              | 173            | 2.3      |
|            | 679+57 - 701+79    | STA. 679+57 TO END OF PROJECT       |  | 210            | ---              | ---            | 2.1      |
|            | PROJECT -62 TOTALS |                                     |  | 5              | ---              | ---            | ---      |
|            | PROJECT -74 TOTALS |                                     |  | 1,954          | 658              | 564            | 26.1     |
|            | CONTRACT TOTALS    |                                     |  | 1,959          | 658              | 564            | 26.1     |

ASPHALT SUMMARY

|                |                   |                                     |  | 455.0605  | 460.6224 | 450.4000 |
|----------------|-------------------|-------------------------------------|--|-----------|----------|----------|
|                |                   |                                     |  | TACK COAT | HMA      | HMA      |
|                |                   |                                     |  |           | PAVEMENT | COLD     |
|                |                   |                                     |  |           | 4 MT     | WEATHER  |
|                |                   |                                     |  |           | 58-28 S  | PAVING   |
| PROJECT        | STATION - STATION | LOCATION                            |  | (GAL)     | (TON)    | (TON)    |
| 6320-00-74     | 499+21 - 500+49   | BEGINNING OF PROJECT TO STA. 500+49 |  | 40        | 68       | ---      |
|                | 500+49 - 501+53   | CULVERT REPLACEMENT AREA            |  | 29        | 165      | ---      |
|                | 501+53 - 541+16   | STA. 501+53 TO 541+46               |  | 928       | 1,591    | ---      |
|                | 541+16 - 542+25   | CULVERT REPLACEMENT AREA            |  | 26        | 144      | ---      |
|                | 542+25 - 569+11   | STA. 542+25 TO 6TH AVENUE           |  | 626       | 1,074    | ---      |
|                | 569+11 - 622+05   | 6TH AVENUE TO 5TH AVENUE            |  | 1,235     | 2,117    | ---      |
|                | 622+05 - 674+26   | 5TH AVENUE TO CTH 'W'               |  | 1,250     | 2,143    | ---      |
|                | 674+26 - 678+53   | CTH 'W' TO STA. 678+53              |  | 124       | 212      | ---      |
|                | 678+53 - 679+57   | CULVERT REPLACEMENT AREA            |  | 24        | 137      | ---      |
|                | 679+57 - 701+79   | STA. 679+57 TO END OF PROJECT       |  | 518       | 889      | ---      |
|                |                   | CTH 'U'                             |  | 14        | 23       | ---      |
|                |                   | 90TH STREET                         |  | 13        | 22       | ---      |
|                |                   | 6TH AVENUE                          |  | 5         | 9        | ---      |
|                |                   | 5TH AVENUE                          |  | 12        | 20       | ---      |
|                |                   | CTH 'W'                             |  | 22        | 38       | ---      |
| UNDISTRIBUTED  |                   |                                     |  | ---       | ---      | 900      |
| PROJECT TOTALS |                   |                                     |  | 4,866     | 8,652    | 900      |

NOTE: ALL ITEMS ON THIS  
SHEET ARE CATEGORY 0010  
UNLESS OTHERWISE NOTED.

ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

| PROJECT       | STATION - STATION | LOCATION           | 465.0475<br>(LF) |
|---------------|-------------------|--------------------|------------------|
| 6320-00-74    | 501+89 -701+79    | CTH 'U' TO CTH 'F' | 18,390           |
| PROJECT TOTAL |                   |                    | 18,390           |

CULVERT SUMMARY

|                    |                  | 520.9700.S.01                     | 520.9700.S.02                     | 520.9750.S                                             | 522.0424                                                   | 522.0454                                                   | 522.1024                                                             | 522.1054                                                             | 633.5200                   |
|--------------------|------------------|-----------------------------------|-----------------------------------|--------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------|
|                    |                  | CULVERT PIPE<br>LINERS<br>24-INCH | CULVERT PIPE<br>LINERS<br>30-INCH | CLEANING CULVERT<br>PIPES FOR<br>LINER<br>VERIFICATION | CULVERT PIPE<br>REINFORCED CONCRETE<br>CLASS IV<br>24-INCH | CULVERT PIPE<br>REINFORCED CONCRETE<br>CLASS IV<br>54-INCH | APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED CONCRETE<br>24-INCH | APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED CONCRETE<br>54-INCH | MARKERS<br>CULVERT<br>ENDS |
| PROJECT            | CULVERT LOCATION | (LF)                              | (LF)                              | (EA)                                                   | (LF)                                                       | (LF)                                                       | (EA)                                                                 | (EA)                                                                 | (EA)                       |
| 6320-00-62         | 71-073-0150      | 40                                | ---                               | 1                                                      | ---                                                        | ---                                                        | ---                                                                  | ---                                                                  | 2                          |
|                    | 71-073-0140      | 39                                | ---                               | 1                                                      | ---                                                        | ---                                                        | 2                                                                    | ---                                                                  | 2                          |
|                    | 71-073-0130      | 41                                | ---                               | 1                                                      | ---                                                        | ---                                                        | 2                                                                    | ---                                                                  | 2                          |
|                    | 71-073-0120      | ---                               | 56                                | 1                                                      | ---                                                        | ---                                                        | ---                                                                  | ---                                                                  | 2                          |
| 6320-00-74         | 71-073-0110      | ---                               | ---                               | ---                                                    | 60                                                         | ---                                                        | 2                                                                    | ---                                                                  | 2                          |
|                    | 71-073-0080      | ---                               | ---                               | ---                                                    | ---                                                        | 73                                                         | ---                                                                  | 2                                                                    | 2                          |
|                    | 71-073-0050      | 41                                | ---                               | 1                                                      | ---                                                        | ---                                                        | ---                                                                  | ---                                                                  | 2                          |
|                    | 71-073-0040      | 39                                | ---                               | 1                                                      | ---                                                        | ---                                                        | ---                                                                  | ---                                                                  | 2                          |
|                    | 71-073-0020      | ---                               | ---                               | ---                                                    | 41                                                         | ---                                                        | 2                                                                    | ---                                                                  | 2                          |
| PROJECT -62 TOTALS |                  | 120                               | 56                                | 4                                                      | ---                                                        | ---                                                        | 4                                                                    | ---                                                                  | 8                          |
| PROJECT -74 TOTALS |                  | 80                                | ---                               | 2                                                      | 101                                                        | 73                                                         | 4                                                                    | 2                                                                    | 10                         |
| CONTRACT TOTALS    |                  | 200                               | 56                                | 6                                                      | 101                                                        | 73                                                         | 8                                                                    | 2                                                                    | 18                         |

CONCRETE BARRIER TEMPORARY PRECAST

|               |             | 603.8000  | 603.8125  |
|---------------|-------------|-----------|-----------|
|               |             | DELIVERED | INSTALLED |
| PROJECT       | LOCATION    | (LF)      | (LF)      |
| 6320-00-74    | 71-073-0080 | 150       | 300       |
| PROJECT TOTAL |             | 150       | 300       |

RIPRAP SUMMARY

|               |         |              | 606.0200         | 606.0300        | 645.0120              |
|---------------|---------|--------------|------------------|-----------------|-----------------------|
|               |         |              | RIPRAP<br>MEDIUM | RIPRAP<br>HEAVY | GEOTEXTILE<br>TYPE HR |
| PROJECT       | STATION | LOCATION     | (CY)             | (CY)            | (SY)                  |
| 6320-00-74    | 501+11  | RIGHT        | 4.7              | ---             | 9.4                   |
|               | 541+71  | RIGHT & LEFT | ---              | 23.0            | 34.4                  |
|               | 679+15  | RIGHT        | 4.7              | ---             | 9.4                   |
| UNDISTRIBUTED |         |              | 2.0              | 6.0             | 13.0                  |
| PROJECT TOTAL |         |              | 11.4             | 29.0            | 66.3                  |

PROJECT NO: 6320-00-62 & 6320-00-74

HWY: STH 73

COUNTY: ADAMS & WOOD

MISCELLANEOUS QUANTITIES

SHEET

E

NOTE: ALL ITEMS ON THIS SHEET ARE CATEGORY 0010 UNLESS OTHERWISE NOTED.

| MONUMENTS  |               |                                               |                                                              |
|------------|---------------|-----------------------------------------------|--------------------------------------------------------------|
|            |               | 621.0100<br>LANDMARK<br>REFERENCE<br>MONUMENT | SPV.0060.02<br>REESTABLISH<br>SECTION<br>CORNER<br>MONUMENTS |
| PROJECT    | STATION       | (EA)                                          | (EA)                                                         |
| 6320-00-74 | 500+00        | ---                                           | 1                                                            |
|            | 519+60        | ---                                           | 1                                                            |
|            | 541+89        | 1                                             | ---                                                          |
|            | 542+20        | 1                                             | ---                                                          |
|            | 546+37        | ---                                           | 1                                                            |
|            | 599+36        | ---                                           | 1                                                            |
|            | 625+86        | ---                                           | 1                                                            |
|            | 652+35        | ---                                           | 1                                                            |
|            | 678+80        | 1                                             | ---                                                          |
|            | 701+29        | ---                                           | 1                                                            |
|            | PROJECT TOTAL | 3                                             | 7                                                            |

| LANDSCAPE SUMMARY  |                  |                     |                                  |                                         |                                         |                                          |                           |
|--------------------|------------------|---------------------|----------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|---------------------------|
|                    |                  | 625.0100<br>TOPSOIL | 629.0210<br>FERTILIZER<br>TYPE B | 630.0120<br>SEEDING<br>MIXTURE<br>NO.20 | 630.0170<br>SEEDING<br>MIXTURE<br>NO.70 | 630.0171<br>SEEDING<br>MIXTURE<br>NO.70A | 630.0500<br>SEED<br>WATER |
| PROJECT            | CULVERT LOCATION | (SY)                | (CWT)                            | LB                                      | (LB)                                    | (LB)                                     | (MGAL)                    |
| 6320-00-62         | 71-073-0150      | 267                 | 0.17                             | 7.2                                     | ---                                     | ---                                      | 1.5                       |
|                    | 71-073-0140      | 330                 | 0.21                             | ---                                     | ---                                     | 1.2                                      | 1.9                       |
|                    | 71-073-0130      | 330                 | 0.21                             | ---                                     | ---                                     | 1.2                                      | 1.9                       |
|                    | 71-073-0120      | 267                 | 0.17                             | ---                                     | 1.0                                     | ---                                      | 1.5                       |
|                    | UNDISTRIBUTED    | 301                 | 0.19                             | 1.8                                     | 0.2                                     | 0.6                                      | 1.7                       |
| 6320-00-74         | 71-073-0110      | 75                  | 0.05                             | ---                                     | 0.3                                     | ---                                      | 0.4                       |
|                    | 71-073-0080      | 315                 | 0.20                             | ---                                     | 1.1                                     | ---                                      | 1.8                       |
|                    | 71-073-0050      | 270                 | 0.17                             | ---                                     | 1.0                                     | ---                                      | 1.5                       |
|                    | 71-073-0040      | 270                 | 0.17                             | ---                                     | 1.0                                     | ---                                      | 1.5                       |
|                    | 71-073-0020      | 35                  | 0.02                             | ---                                     | 0.1                                     | ---                                      | 0.2                       |
|                    | UNDISTRIBUTED    | 240                 | 0.15                             | ---                                     | 0.9                                     | ---                                      | 1.4                       |
| PROJECT -62 TOTALS |                  | 1,495               | 0.94                             | 9.0                                     | 1.2                                     | 3.0                                      | 8.4                       |
| PROJECT -74 TOTALS |                  | 1,205               | 0.76                             | ---                                     | 4.3                                     | ---                                      | 6.8                       |
| CONTRACT TOTALS    |                  | 2,700               | 1.70                             | 9.0                                     | 5.5                                     | 3.0                                      | 15.1                      |

| EROSION CONTROL ITEMS |                  |                           |                                       |                                             |                                                          |                                                    |                                          |                                       |
|-----------------------|------------------|---------------------------|---------------------------------------|---------------------------------------------|----------------------------------------------------------|----------------------------------------------------|------------------------------------------|---------------------------------------|
|                       |                  | 628.1504<br>SILT<br>FENCE | 628.1520<br>SILT FENCE<br>MAINTENANCE | 628.1905<br>MOBILIZATION<br>EROSION CONTROL | 628.1910<br>MOBILIZATION<br>EMERGENCY<br>EROSION CONTROL | 628.2008<br>EROSION MAT<br>URBAN CLASS I<br>TYPE B | 628.7504<br>TEMPORARY<br>DITCH<br>CHECKS | 628.7555<br>CULVERT<br>PIPE<br>CHECKS |
| PROJECT               | CULVERT LOCATION | (LF)                      | (LF)                                  | (EACH)                                      | (EACH)                                                   | (SY)                                               | (LF)                                     | (EA)                                  |
| 6320-00-62            | 71-073-0150      | 65                        | 65                                    | 2                                           | 2                                                        | 267                                                | 35                                       | 3                                     |
|                       | 71-073-0140      | 102                       | 102                                   | 2                                           | 2                                                        | 330                                                | ---                                      | 3                                     |
|                       | 71-073-0130      | 100                       | 100                                   | 2                                           | 2                                                        | 330                                                | ---                                      | 3                                     |
|                       | 71-073-0120      | ---                       | ---                                   | 2                                           | 2                                                        | 267                                                | 35                                       | 3                                     |
|                       | UNDISTRIBUTED    | 67                        | 67                                    | ---                                         | ---                                                      | 299                                                | 18                                       | 3                                     |
| 6320-00-74            | 71-073-0110      | 105                       | 105                                   | 2                                           | 2                                                        | 75                                                 | 18                                       | 3                                     |
|                       | 71-073-0080      | 70                        | 70                                    | 2                                           | 2                                                        | 300                                                | 18                                       | 10                                    |
|                       | 71-073-0050      | 85                        | 85                                    | 2                                           | 2                                                        | ---                                                | 18                                       | 3                                     |
|                       | 71-073-0040      | 85                        | 85                                    | 2                                           | 2                                                        | ---                                                | ---                                      | 3                                     |
|                       | 71-073-0020      | 80                        | 80                                    | 2                                           | 2                                                        | 35                                                 | 18                                       | 3                                     |
|                       | UNDISTRIBUTED    | 106                       | 106                                   | ---                                         | ---                                                      | 103                                                | 18                                       | 6                                     |
| PROJECT -62 TOTALS    |                  | 334                       | 334                                   | 8                                           | 8                                                        | 1,493                                              | 88                                       | 15                                    |
| PROJECT -74 TOTALS    |                  | 531                       | 531                                   | 10                                          | 10                                                       | 513                                                | 90                                       | 28                                    |
| CONTRACT TOTALS       |                  | 865                       | 865                                   | 18                                          | 18                                                       | 2,005                                              | 178                                      | 43                                    |

NOTE: ALL ITEMS ON THIS  
SHEET ARE CATEGORY 0010  
UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL SUMMARY

|                    |                   | 643.0300         |       | 643.0420 |                        | 643.0715 |                             | 643.0900 |       | 643.1000 |                           |
|--------------------|-------------------|------------------|-------|----------|------------------------|----------|-----------------------------|----------|-------|----------|---------------------------|
| PROJECT            | LOCATION          | DAYS IN<br>PHASE | DRUMS |          | BARRICADES<br>TYPE III |          | WARNING<br>LIGHTS<br>TYPE C |          | SIGNS |          | SIGNS<br>FIXED<br>MESSAGE |
|                    |                   |                  | (NO.) | (DAYS)   | (NO.)                  | (DAYS)   | (NO.)                       | (DAYS)   | (NO.) | (DAYS)   | (SF)                      |
| 6320-00-62         | ADVANCED WARNING  | 53               | ---   | ---      | ---                    | ---      | ---                         | ---      | 5     | 265      | 32                        |
|                    | SIDERoadS         | 53               | ---   | ---      | ---                    | ---      | ---                         | ---      | 4     | 212      | ---                       |
|                    | 71-073-0150       | 1                | 8     | 8        | ---                    | ---      | ---                         | ---      | 1     | 1        | ---                       |
|                    | 71-073-0140       | 1                | 8     | 8        | ---                    | ---      | ---                         | ---      | 1     | 1        | ---                       |
|                    | 71-073-0130       | 1                | 8     | 8        | ---                    | ---      | ---                         | ---      | 1     | 1        | ---                       |
|                    | 71-073-0120       | 1                | 8     | 8        | ---                    | ---      | ---                         | ---      | 1     | 1        | ---                       |
| 6320-00-74         | SIDERoadS         | 53               | ---   | ---      | ---                    | ---      | ---                         | ---      | 7     | 371      | ---                       |
|                    | 71-073-0110       | 1                | 42    | 42       | ---                    | ---      | ---                         | ---      | 6     | 6        | ---                       |
|                    | 71-073-0080       | 3                | 23    | 69       | 1                      | 3        | 10                          | 30       | 16    | 48       | ---                       |
|                    | 71-073-0050       | 1                | 8     | 8        | ---                    | ---      | ---                         | ---      | 1     | 1        | ---                       |
|                    | 71-073-0040       | 1                | 8     | 8        | ---                    | ---      | ---                         | ---      | 1     | 1        | ---                       |
|                    | 71-073-0020       | 1                | 42    | 42       | ---                    | ---      | ---                         | ---      | 6     | 6        | ---                       |
|                    | WIDTH RESTRICTION | 5                | ---   | ---      | ---                    | ---      | ---                         | ---      | 12    | 60       | ---                       |
|                    | ADVANCED WARNING  | 53               | ---   | ---      | ---                    | ---      | ---                         | ---      | 5     | 265      | 32                        |
|                    | PROJECT WIDE      |                  | ---   | ---      | ---                    | ---      | ---                         | ---      | ---   | ---      | ---                       |
| PROJECT -62 TOTALS |                   |                  | 32    | 32       | ---                    | ---      | ---                         | ---      | 13    | 481      | 32                        |
| PROJECT -74 TOTALS |                   |                  | 123   | 169      | 1                      | 3        | 10                          | 30       | 54    | 758      | 32                        |
| CONTRACT TOTALS    |                   |                  | 155   | 201      | 1                      | 3        | 10                          | 30       | 67    | 1,239    | 64                        |

PAVEMENT MARKING

|                |                    | 646.1020<br>MARKING LINE<br>EPOXY<br>4-INCH |                         |                          | 646.1040<br>MARKING LINE<br>GROOVED WET REF EPOXY<br>4-INCH |                        |  | 649.0105<br>TEMPORARY MARKING<br>LINE PAINT<br>4-INCH |                          |                         | 649.0850<br>TEMPORARY MARKING<br>STOP LINE REMOVABLE<br>TAPE 18-INCH |  |
|----------------|--------------------|---------------------------------------------|-------------------------|--------------------------|-------------------------------------------------------------|------------------------|--|-------------------------------------------------------|--------------------------|-------------------------|----------------------------------------------------------------------|--|
| PROJECT        | STATION TO STATION | LOCATION                                    | YELLOW<br>SOLID<br>(LF) | YELLOW<br>DASHED<br>(LF) | WHITE<br>DASHED<br>(LF)                                     | WHITE<br>SOLID<br>(LF) |  | YELLOW<br>SOLID<br>(LF)                               | YELLOW<br>DASHED<br>(LF) | WHITE<br>DASHED<br>(LF) | WHITE<br>SOLID<br>(LF)                                               |  |
|                |                    |                                             |                         |                          |                                                             |                        |  |                                                       |                          |                         |                                                                      |  |
| 6320-00-74     | 499+21 - 500+49    | BEGINNING OF PROJECT TO STA. 500+49         | 128                     | 32                       | ---                                                         | 130                    |  | 256                                                   | 20                       | ---                     | ---                                                                  |  |
|                | 500+49 - 501+53    | CULVERT REPLACEMENT AREA                    | 104                     | 26                       | ---                                                         | 187                    |  | 208                                                   | 17                       | ---                     | ---                                                                  |  |
|                | 501+53 - 541+16    | STA. 501+53 TO 541+46                       | 640                     | 991                      | ---                                                         | 7,926                  |  | 1,280                                                 | 634                      | ---                     | ---                                                                  |  |
|                | 541+16 - 542+25    | CULVERT REPLACEMENT AREA                    | ---                     | 27                       | ---                                                         | 218                    |  | ---                                                   | 17                       | ---                     | 24                                                                   |  |
|                | 542+25 - 569+11    | STA. 542+25 TO 6TH AVENUE                   | ---                     | 672                      | ---                                                         | 5,318                  |  | ---                                                   | 430                      | ---                     | ---                                                                  |  |
|                | 569+11 - 622+05    | 6TH AVENUE TO 5TH AVENUE                    | ---                     | 1,324                    | ---                                                         | 10,505                 |  | ---                                                   | 847                      | ---                     | ---                                                                  |  |
|                | 622+05 - 674+26    | 5TH AVENUE TO CTH 'W'                       | ---                     | 1,305                    | 41                                                          | 10,320                 |  | ---                                                   | 835                      | 26                      | ---                                                                  |  |
|                | 674+26 - 678+53    | CTH 'W' TO STA. 678+53                      | 427                     | 107                      | 37                                                          | 798                    |  | 854                                                   | 68                       | 24                      | ---                                                                  |  |
|                | 678+53 - 679+57    | CULVERT REPLACEMENT AREA                    | 104                     | 26                       | ---                                                         | 208                    |  | 208                                                   | 17                       | ---                     | ---                                                                  |  |
|                | 679+57 - 701+79    | STA. 679+57 TO END OF PROJECT               | 990                     | 556                      | ---                                                         | 4,443                  |  | 1,980                                                 | 356                      | ---                     | ---                                                                  |  |
| SUBTOTALS      |                    |                                             | 2,393                   | 5,065                    | 78                                                          | 40,053                 |  | 4,786                                                 | 3,241                    | 50                      | 24                                                                   |  |
| PROJECT TOTALS |                    |                                             |                         | 7,536                    |                                                             | 40,053                 |  |                                                       | 8,077                    |                         | 24                                                                   |  |

NOTE: ALL ITEMS ON THIS  
SHEET ARE CATEGORY 0010  
UNLESS OTHERWISE NOTED.

SIGNING

| PROJECT        | LOCATION      | 634.0616                                  | 638.2102                           | 638.3000                                   |
|----------------|---------------|-------------------------------------------|------------------------------------|--------------------------------------------|
|                |               | POSTS WOOD<br>4X6-INCH<br>X 16-FT<br>(EA) | MOVING<br>SIGNS<br>TYPE II<br>(EA) | REMOVING<br>SMALL SIGN<br>SUPPORTS<br>(EA) |
| 6320-00-62     | UNDISTRIBUTED | 1                                         | 2                                  | 2                                          |
| 6320-00-74     | UNDISTRIBUTED | 1                                         | 2                                  | 2                                          |
| CONTRACT TOTAL |               | 2                                         | 4                                  | 4                                          |

LOCATING NO-PASSING ZONES

| PROJECT       | STATION - STATION | LOCATION                               | 648.0100<br>(MI) |
|---------------|-------------------|----------------------------------------|------------------|
| 6320-00-74    | 499+21 - 701+79   | BEGINNING OF PROJECT TO END OF PROJECT | 3.84             |
| PROJECT TOTAL |                   |                                        | 3.84             |

CONSTRUCTION STAKING

| PROJECT    | STATION - STATION | LOCATION                            | 650.6000<br>PIPE<br>CULVERTS<br>(EA) | 650.8000<br>RESURFACING<br>REFERENCE<br>(LF) | 650.9920<br>SLOPE<br>STAKES<br>(LF) |
|------------|-------------------|-------------------------------------|--------------------------------------|----------------------------------------------|-------------------------------------|
| 6320-00-74 | 499+21 - 500+49   | BEGINNING OF PROJECT TO STA. 500+49 | ---                                  | 128                                          | ---                                 |
|            | 500+49 - 501+53   | CULVERT REPLACEMENT AREA            | 1                                    | ---                                          | 104                                 |
|            | 501+53 - 541+16   | STA. 501+53 TO 541+46               | ---                                  | 3,963                                        | ---                                 |
|            | 541+16 - 542+25   | CULVERT REPLACEMENT AREA            | 1                                    | ---                                          | 109                                 |
|            | 542+25 - 569+11   | STA. 542+25 TO 6TH AVENUE           | ---                                  | 2,686                                        | ---                                 |
|            | 569+11 - 622+05   | 6TH AVENUE TO 5TH AVENUE            | ---                                  | 5,294                                        | ---                                 |
|            | 622+05 - 674+26   | 5TH AVENUE TO CTH 'W'               | ---                                  | 5,221                                        | ---                                 |
|            | 674+26 - 678+53   | CTH 'W' TO STA. 678+53              | ---                                  | 427                                          | ---                                 |
|            | 678+53 - 679+57   | CULVERT REPLACEMENT AREA            | 1                                    | ---                                          | 104                                 |
|            | 679+57 - 701+79   | STA. 679+57 TO END OF PROJECT       | ---                                  | 2,222                                        | ---                                 |
|            | PROJECT TOTALS    |                                     | 3                                    | 19,941                                       | 317                                 |

SAWING ASPHALT

| PROJECT       | STATION | LOCATION                    | 690.0150<br>(LF) |
|---------------|---------|-----------------------------|------------------|
| 6320-00-74    | 500+49  | STH 73, CULVERT REPLACEMENT | 39               |
|               | 501+53  | STH 73, CULVERT REPLACEMENT | 34               |
|               | 541+16  | STH 73, CULVERT REPLACEMENT | 30               |
|               | 542+25  | STH 73, CULVERT REPLACEMENT | 30               |
|               | 678+53  | STH 73, CULVERT REPLACEMENT | 30               |
|               | 679+57  | STH 73, CULVERT REPLACEMENT | 30               |
| PROJECT TOTAL |         |                             | 193              |

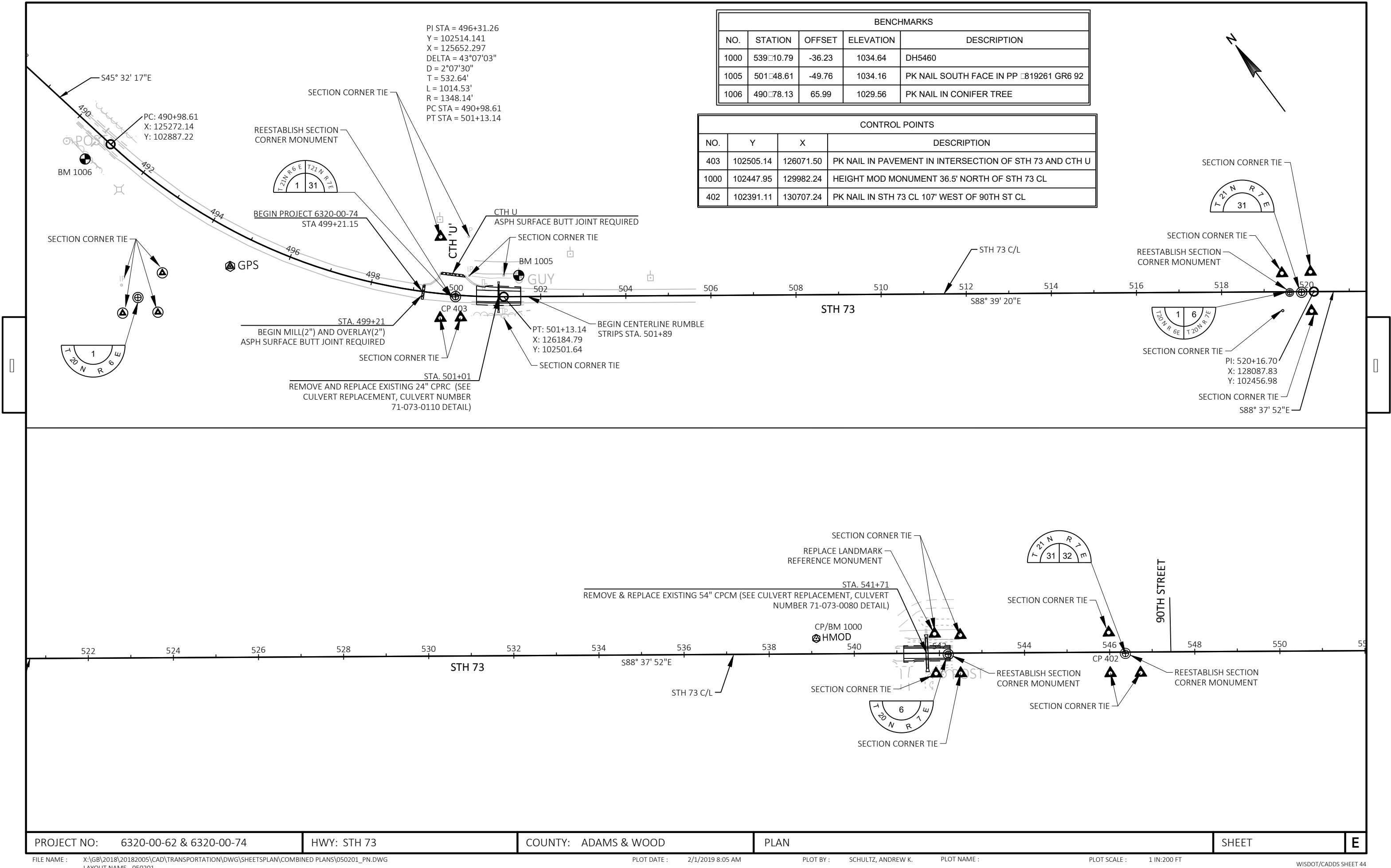
LANE SHIFT

| PROJECT       | STATION | LOCATION                    | SPV.0060.01<br>(EA) |
|---------------|---------|-----------------------------|---------------------|
| 6320-00-74    | 501+01  | STH 73, CULVERT REPLACEMENT | 2                   |
|               | 541+71  | STH 73, CULVERT REPLACEMENT | 2                   |
|               | 679+57  | STH 73, CULVERT REPLACEMENT | 2                   |
| PROJECT TOTAL |         |                             | 6                   |

PI STA = 496+31.26  
Y = 102514.141  
X = 125652.297  
DELTA = 43°07'03"  
D = 2°07'30"  
T = 532.64'  
L = 1014.53'  
R = 1348.14'  
PC STA = 490+98.61  
PT STA = 501+13.14

| BENCHMARKS |           |        |           |                                        |
|------------|-----------|--------|-----------|----------------------------------------|
| NO.        | STATION   | OFFSET | ELEVATION | DESCRIPTION                            |
| 1000       | 539+10.79 | -36.23 | 1034.64   | DH5460                                 |
| 1005       | 501+48.61 | -49.76 | 1034.16   | PK NAIL SOUTH FACE IN PP 819261 GR6 92 |
| 1006       | 490+78.13 | 65.99  | 1029.56   | PK NAIL IN CONIFER TREE                |

| CONTROL POINTS |           |           |                                                         |
|----------------|-----------|-----------|---------------------------------------------------------|
| NO.            | Y         | X         | DESCRIPTION                                             |
| 403            | 102505.14 | 126071.50 | PK NAIL IN PAVEMENT IN INTERSECTION OF STH 73 AND CTH U |
| 1000           | 102447.95 | 129982.24 | HEIGHT MOD MONUMENT 36.5' NORTH OF STH 73 CL            |
| 402            | 102391.11 | 130707.24 | PK NAIL IN STH 73 CL 107' WEST OF 90TH ST CL            |

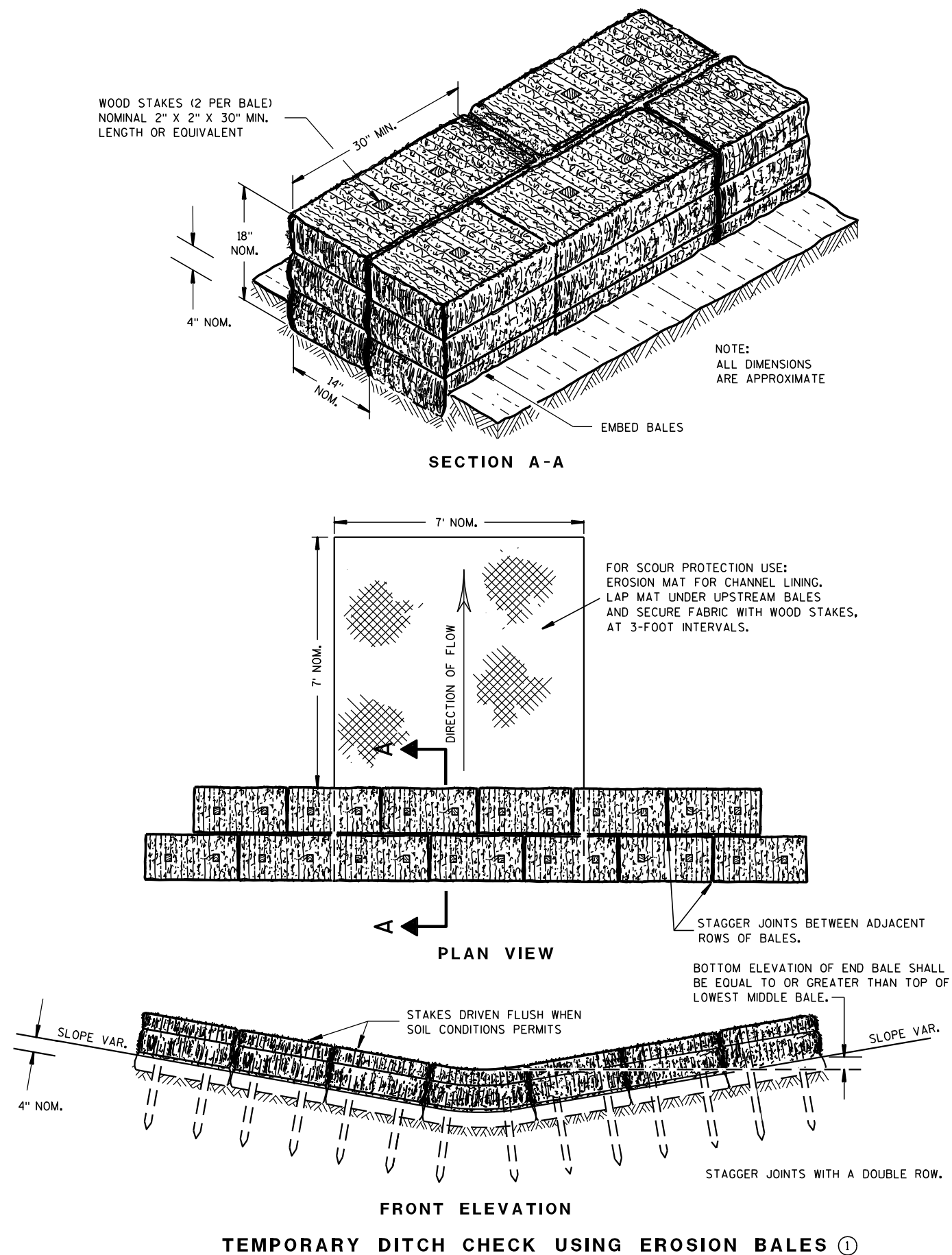






Standard Detail Drawing List

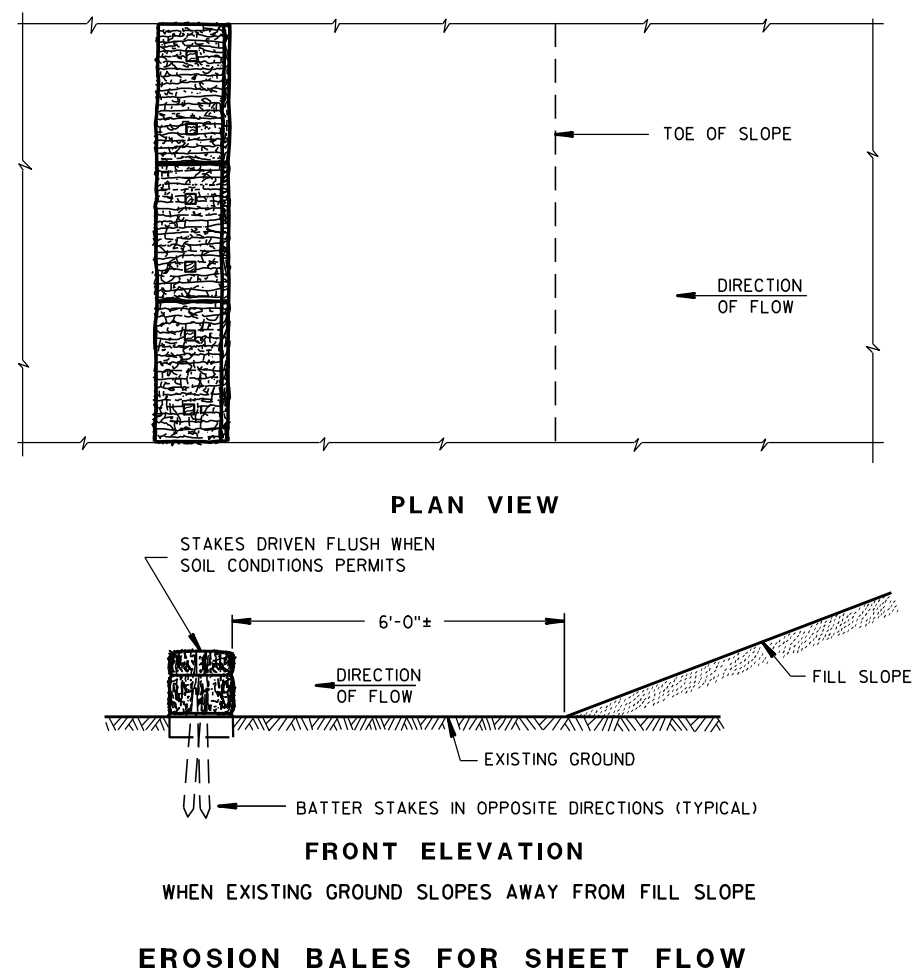
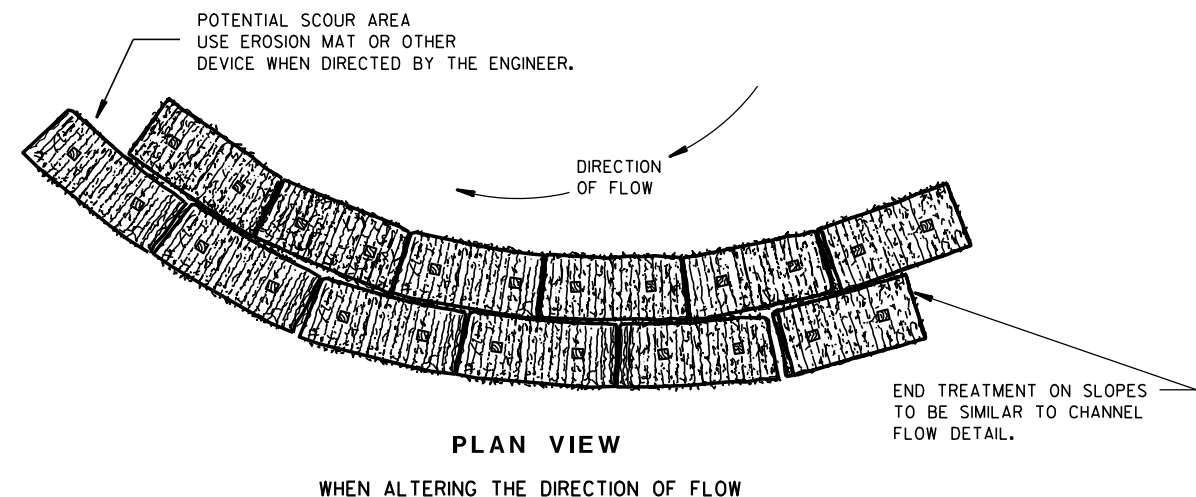
|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS                                    |
| 08E09-06  | SILT FENCE                                                                                         |
| 08E15-01  | CULVERT PIPE CHECK                                                                                 |
| 08F01-11  | APRON ENDWALLS FOR CULVERT PIPE                                                                    |
| 09G02-05A | BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION                                                       |
| 09G02-05B | BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION                                                       |
| 09G02-05C | BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION                                                       |
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 14B07-15A | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15B | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15C | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15D | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15E | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15F | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15G | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15H | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B07-15I | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"                                                         |
| 14B29-01  | SAFETY EDGE                                                                                        |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END                                                               |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END                                                               |
| 15C02-07F | ADVANCED WIDTH RESTRICTION SIGNING                                                                 |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C08-19A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C11-07B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS                                  |
| 15C12-07  | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C19-05A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY                                         |
| 15C35-03A | PAVEMENT MARKING (INTERSECTIONS)                                                                   |
| 15D28-03  | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY                               |
| 15D33-06  | TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS                                              |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING                                                            |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS                                                                       |
| 15D39-02  | TRAFFIC CONTROL, DROP-OFF SIGNING                                                                  |
| 16A01-07  | LANDMARK REFERENCE MONUMENTS AND COVERS                                                            |



## 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

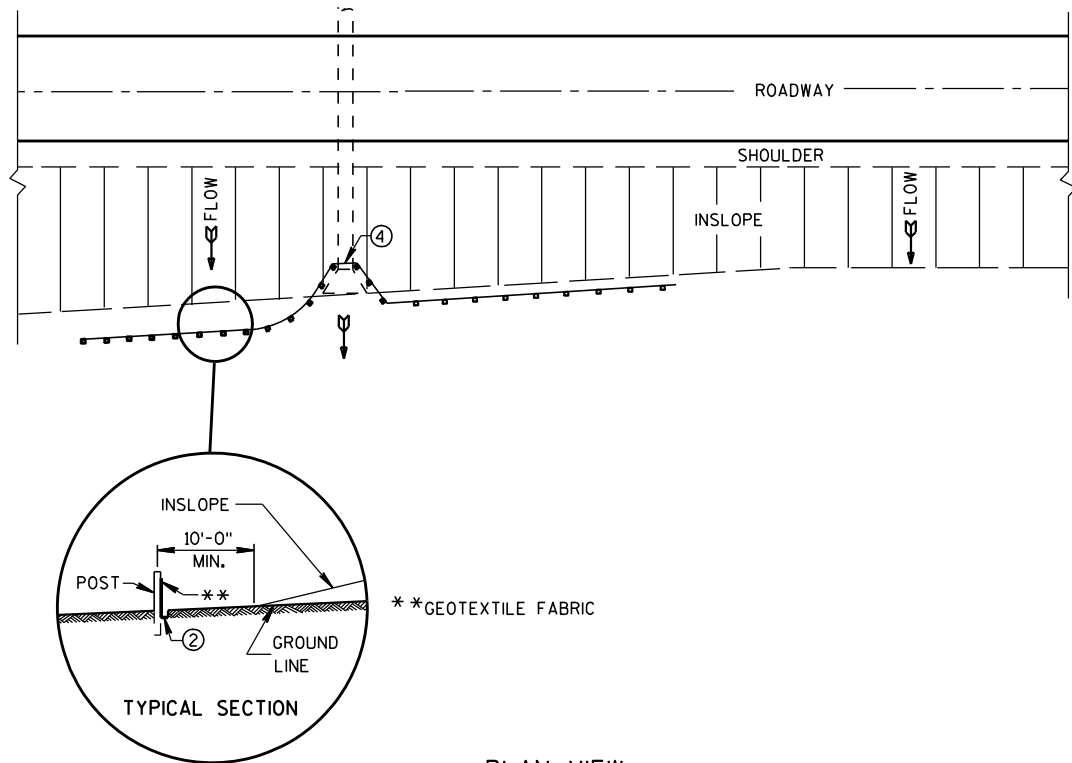
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

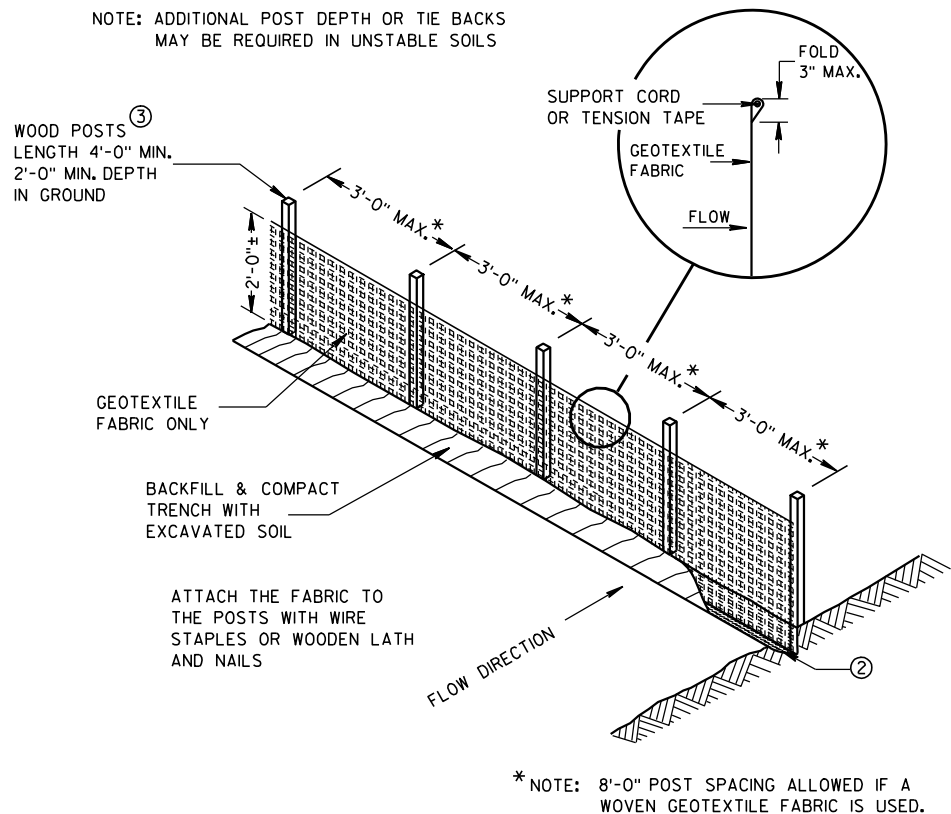
6/04/02  
DATE

FHWA

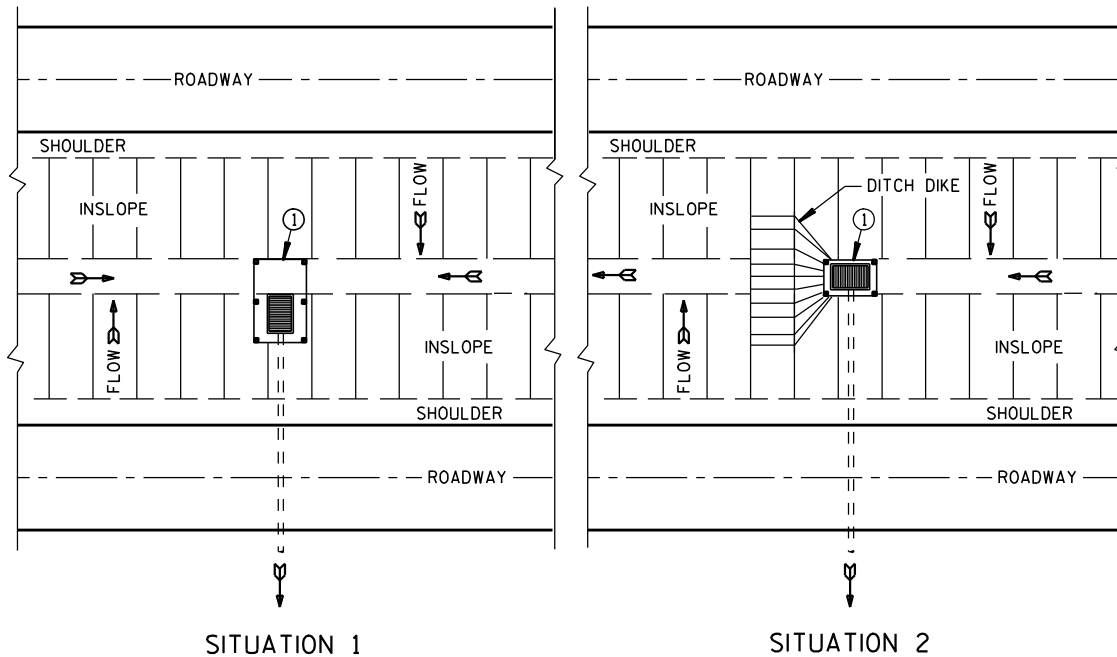
/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER



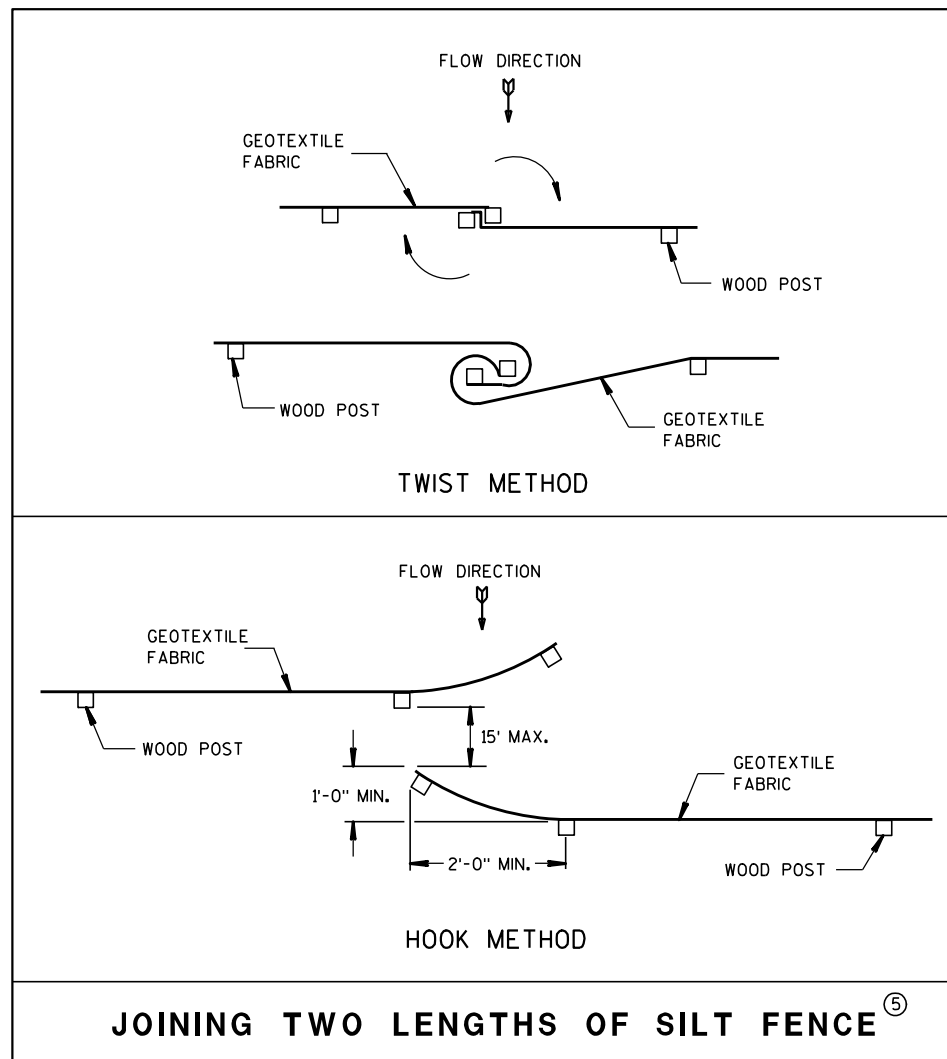
PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

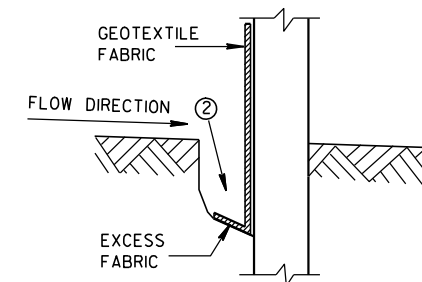


JOINING TWO LENGTHS OF SILT FENCE (5)

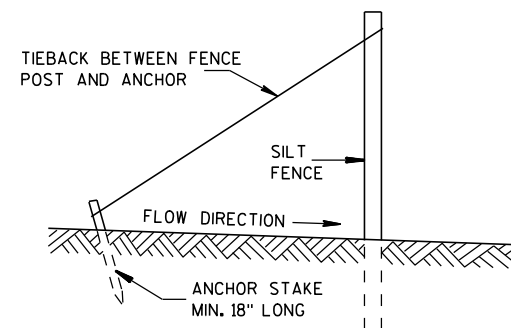
GENERAL NOTES

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 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.

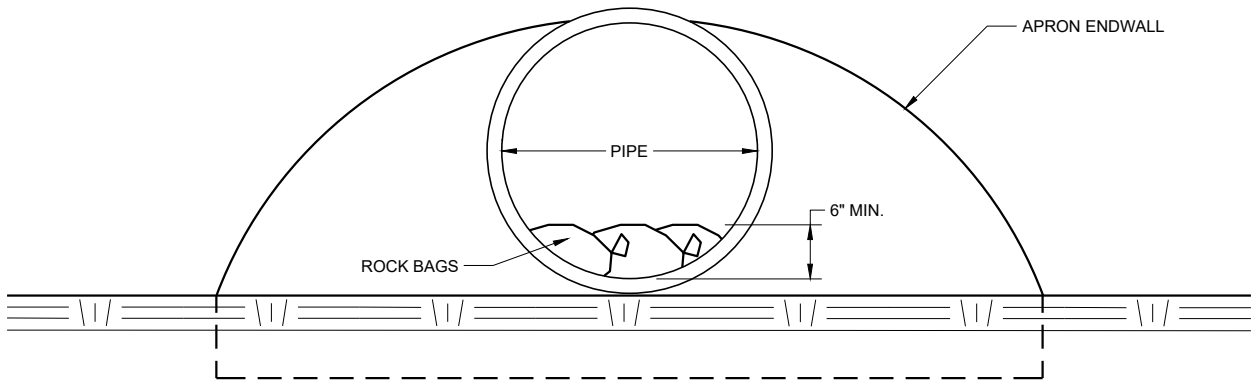


TRENCH DETAIL

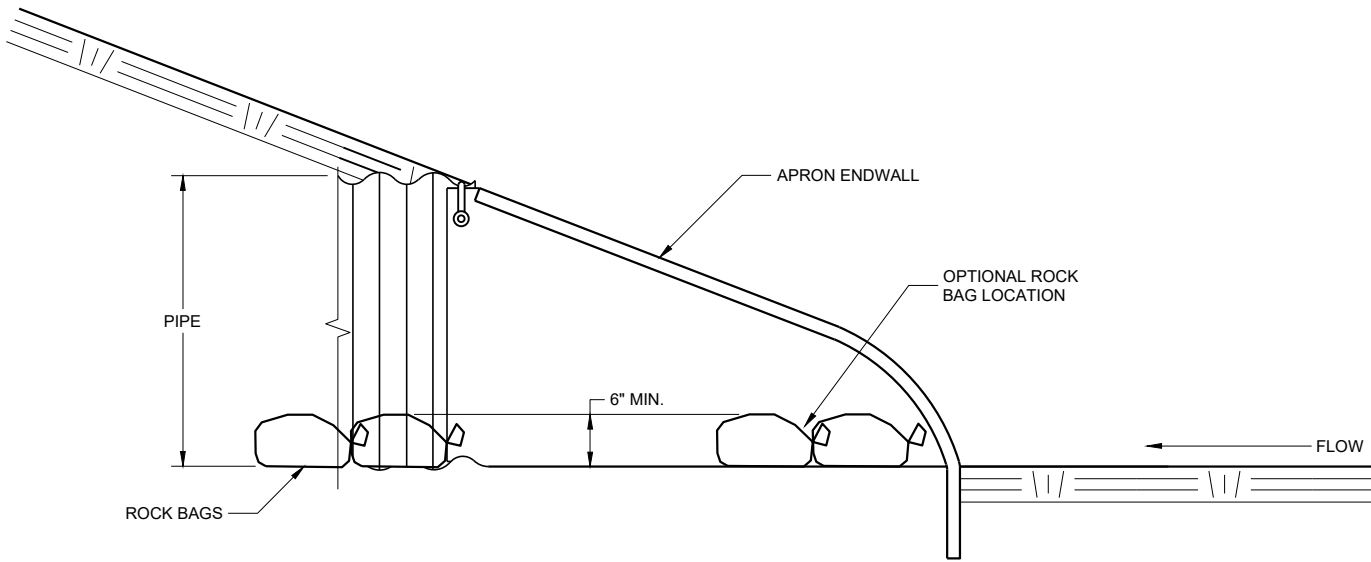


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

| SILT FENCE                                         |                                                         |
|----------------------------------------------------|---------------------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                         |
| APPROVED<br>4-29-05<br>DATE                        | /S/ Beth Canestra<br>CHIEF ROADWAY DEVELOPMENT ENGINEER |
| FHWA                                               |                                                         |



END VIEW



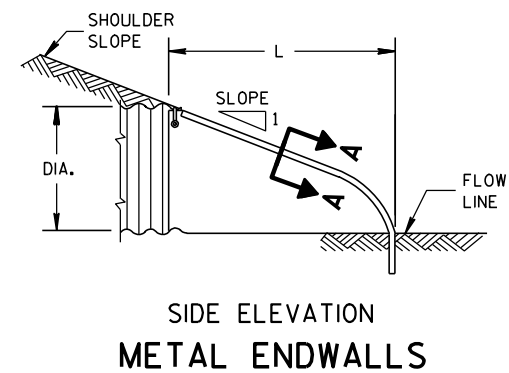
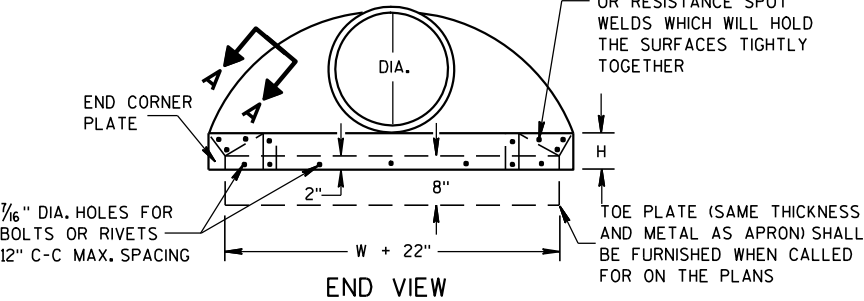
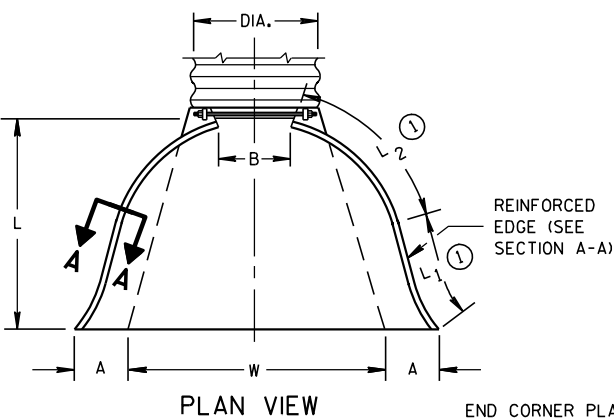
SIDE VIEW

**CULVERT PIPE CHECK**  
(INSTALL ON INLET END ONLY)

|                                                    |                                        |
|----------------------------------------------------|----------------------------------------|
| <b>CULVERT PIPE CHECK</b>                          |                                        |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                        |
| APPROVED<br>M 2019<br>DATE                         | /S/ D 2019<br>EROSION CONTROL ENGINEER |

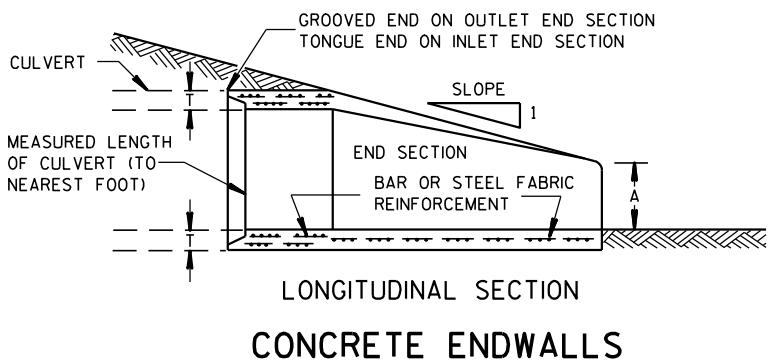
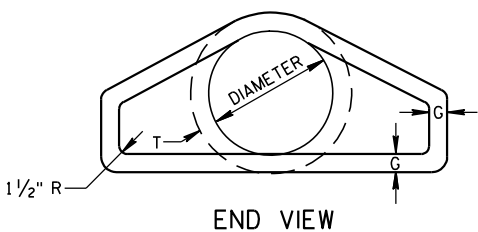
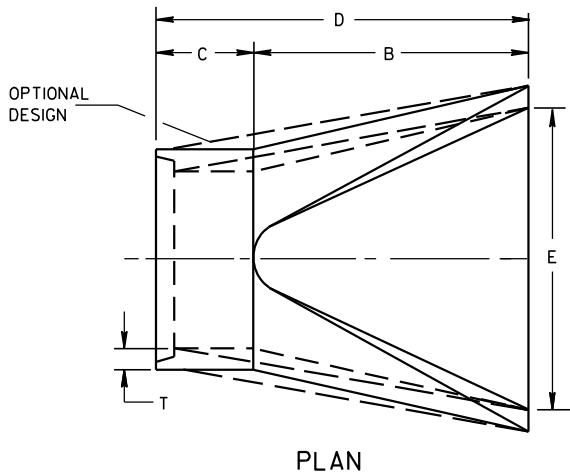
| METAL APRON ENDWALLS |                         |       |                     |             |            |             |                     |                     |            |                  |       |  |
|----------------------|-------------------------|-------|---------------------|-------------|------------|-------------|---------------------|---------------------|------------|------------------|-------|--|
| PIPE DIA.<br>(IN.)   | MIN. THICK.<br>(Inches) |       | DIMENSIONS (Inches) |             |            |             |                     |                     |            | APPROX.<br>SLOPE | BODY  |  |
|                      | STEEL                   | ALUM. | A<br>(±1")          | B<br>(MAX.) | H<br>(±1") | L<br>(±1½") | L <sub>1</sub><br>① | L <sub>2</sub><br>① | W<br>(±2") |                  |       |  |
| 12                   | .064                    | .060  | 6                   | 6           | 6          | 21          | 12                  | 17½                 | 24         | 2½ to 1          | 1 Pc. |  |
| 15                   | .064                    | .060  | 7                   | 8           | 6          | 26          | 14                  | 21¾                 | 30         | 2½ to 1          | 1 Pc. |  |
| 18                   | .064                    | .060  | 8                   | 10          | 6          | 31          | 15                  | 28¼                 | 36         | 2½ to 1          | 1 Pc. |  |
| 21                   | .064                    | .060  | 9                   | 12          | 6          | 36          | 18                  | 29⅝                 | 42         | 2½ to 1          | 1 Pc. |  |
| 24                   | .064                    | .075  | 10                  | 13          | 6          | 41          | 18                  | 37¼                 | 48         | 2½ to 1          | 1 Pc. |  |
| 30                   | .079                    | .075  | 12                  | 16          | 8          | 51          | 18                  | 52¼                 | 60         | 2½ to 1          | 1 Pc. |  |
| 36                   | .079                    | .105  | 14                  | 19          | 9          | 60          | 24                  | 59¾                 | 72         | 2½ to 1          | 2 Pc. |  |
| 42                   | .109                    | .105  | 16                  | 22          | 11         | 69          | 24                  | 75⅝                 | 84         | 2½ to 1          | 2 Pc. |  |
| 48                   | .109                    | .105  | 18                  | 27          | 12         | 78          | 24                  | 81                  | 90         | 2¼ to 1          | 3 Pc. |  |
| 54                   | .109                    | .105  | 18                  | 30          | 12         | 84          | 30                  | 85½                 | 102        | 2¼ 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        | 1½ to 1          | 3 Pc. |  |
| 84                   | .109x                   | .105x | 18                  | 45          | 12         | 87          | —                   | —                   | 138        | 1½ to 1          | 3 Pc. |  |
| 90                   | .109x                   | .105x | 18                  | 37          | 12         | 87          | —                   | —                   | 144        | 1½ to 1          | 3 Pc. |  |
| 96                   | .109x                   | .105x | 18                  | 35          | 12         | 87          | —                   | —                   | 150        | 1½ to 1          | 3 Pc. |  |

\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES

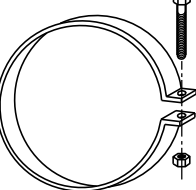


| REINFORCED CONCRETE APRON ENDWALLS |                               |                                                               |                                                               |                                                                |                                     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

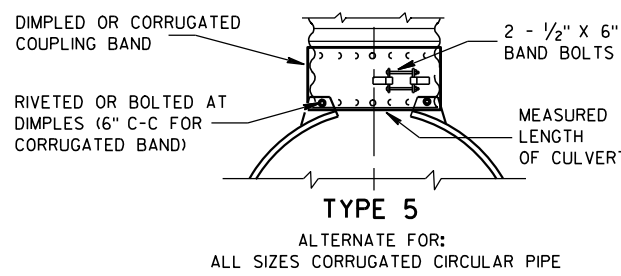
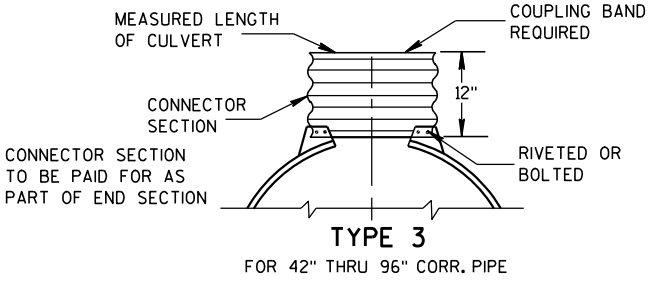
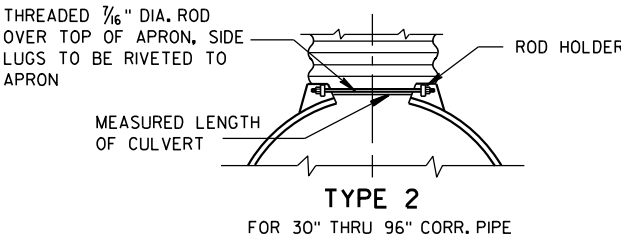
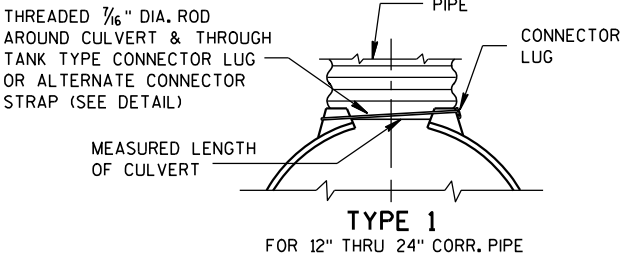
\* MINIMUM  
\*\* MAXIMUM



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



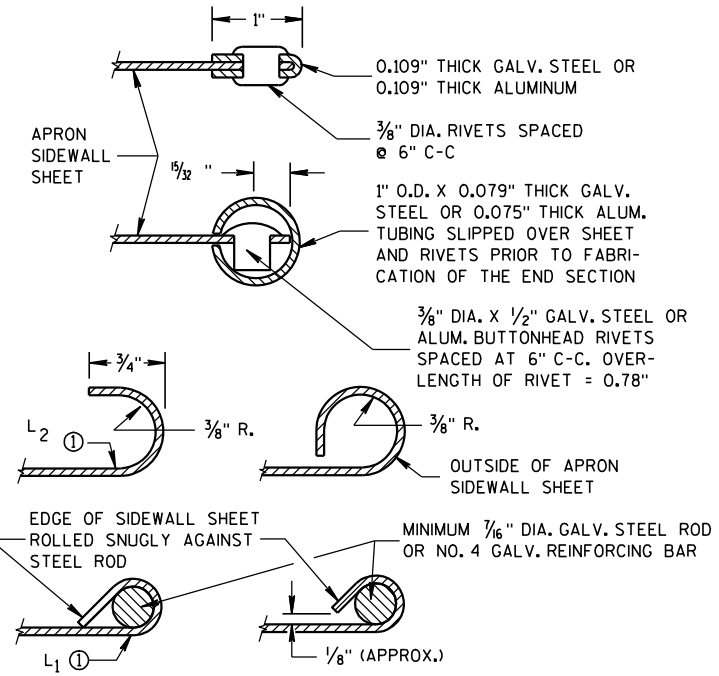
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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



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.

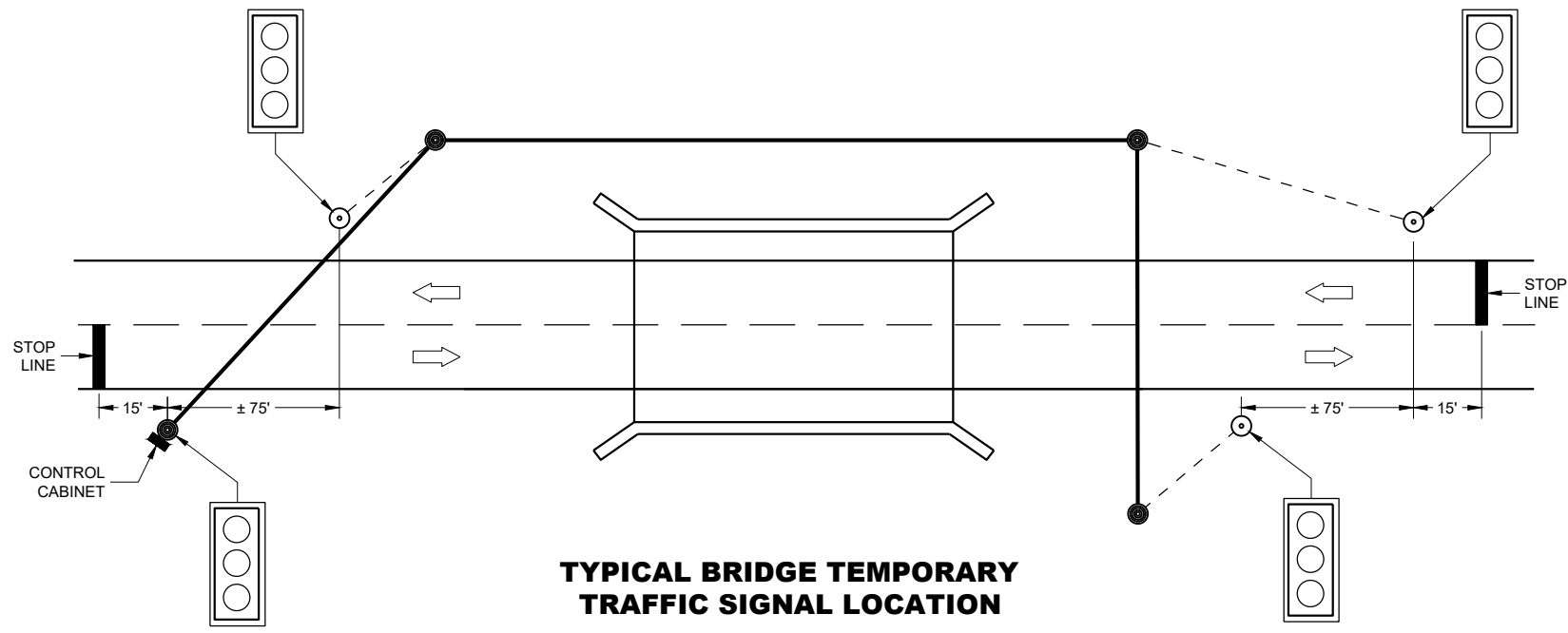
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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



TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

LEGEND

- WOOD POLE (NON-BREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- DIRECTION OF TRAFFIC
- LED TRAFFIC SIGNAL WITH BACKPLATE

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 MAY BE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES 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 (NON-BREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).

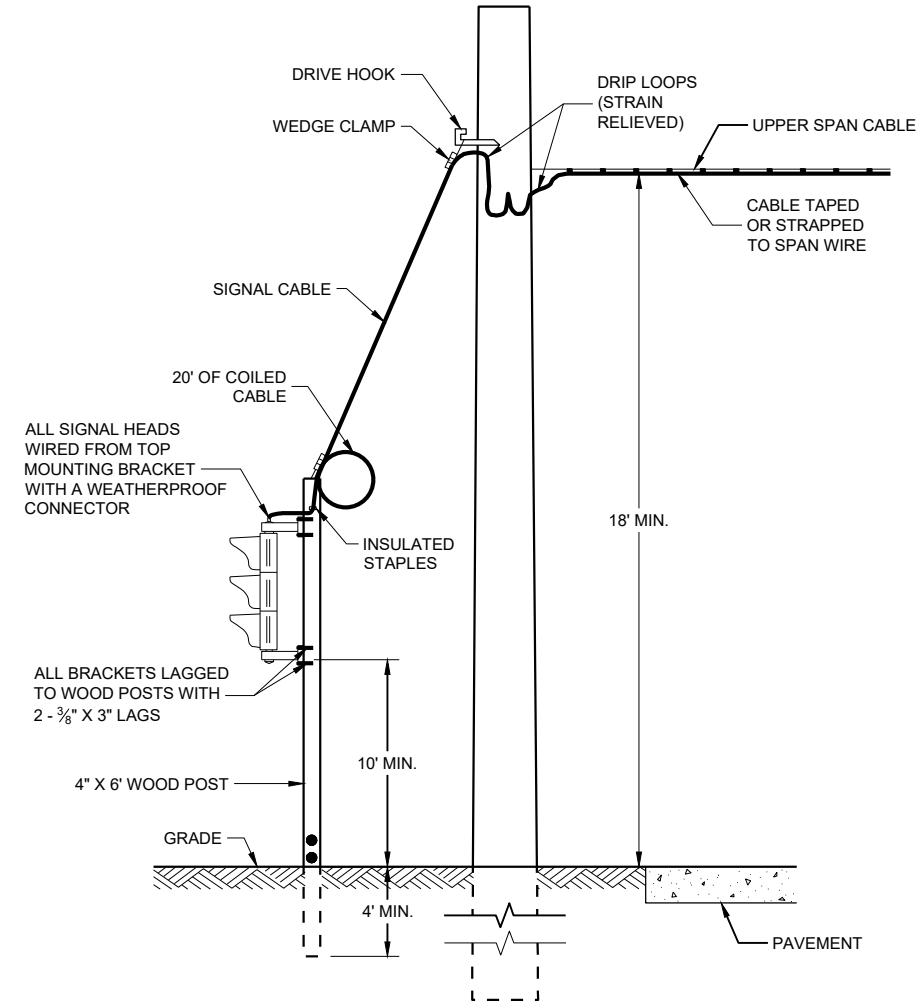
WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

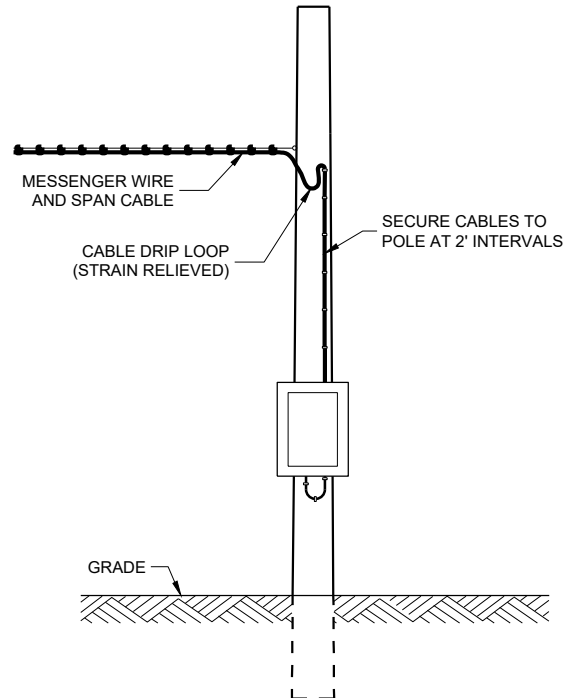
TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL SHALL HAVE A BACKPLATE.

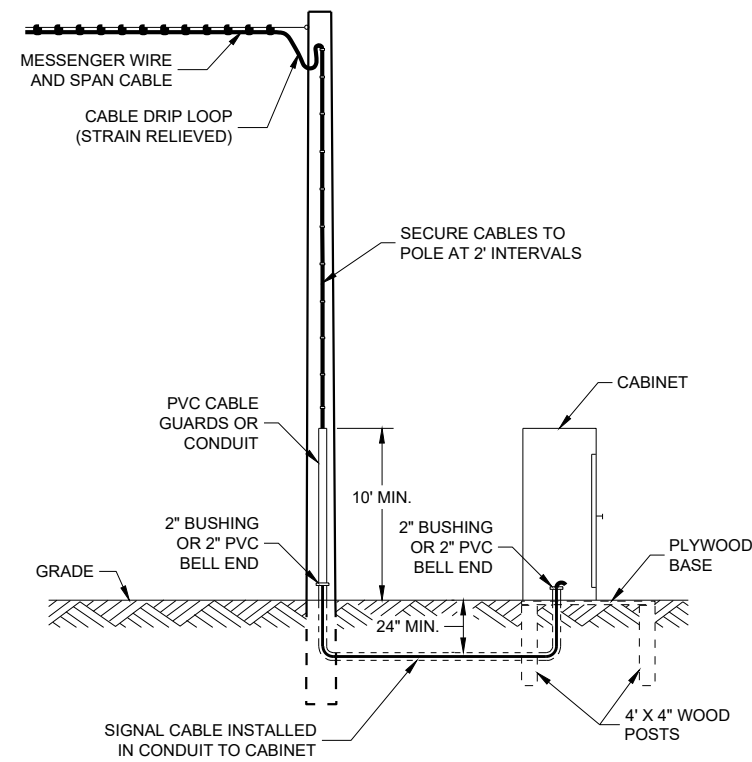
SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15D33.



TYPICAL DROP TO TRAFFIC SIGNAL FACE



POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

| MINIMUM POLE LENGTHS | CLASS | POLE BURIAL DEPTHS |
|----------------------|-------|--------------------|
| 25'                  | V     | 5'                 |
| 30'                  | V     | 6'                 |
| 35'                  | IV    | 7'                 |
| 40'                  | IV    | 8'                 |
| 45'                  | IV    | 9'                 |

| 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.

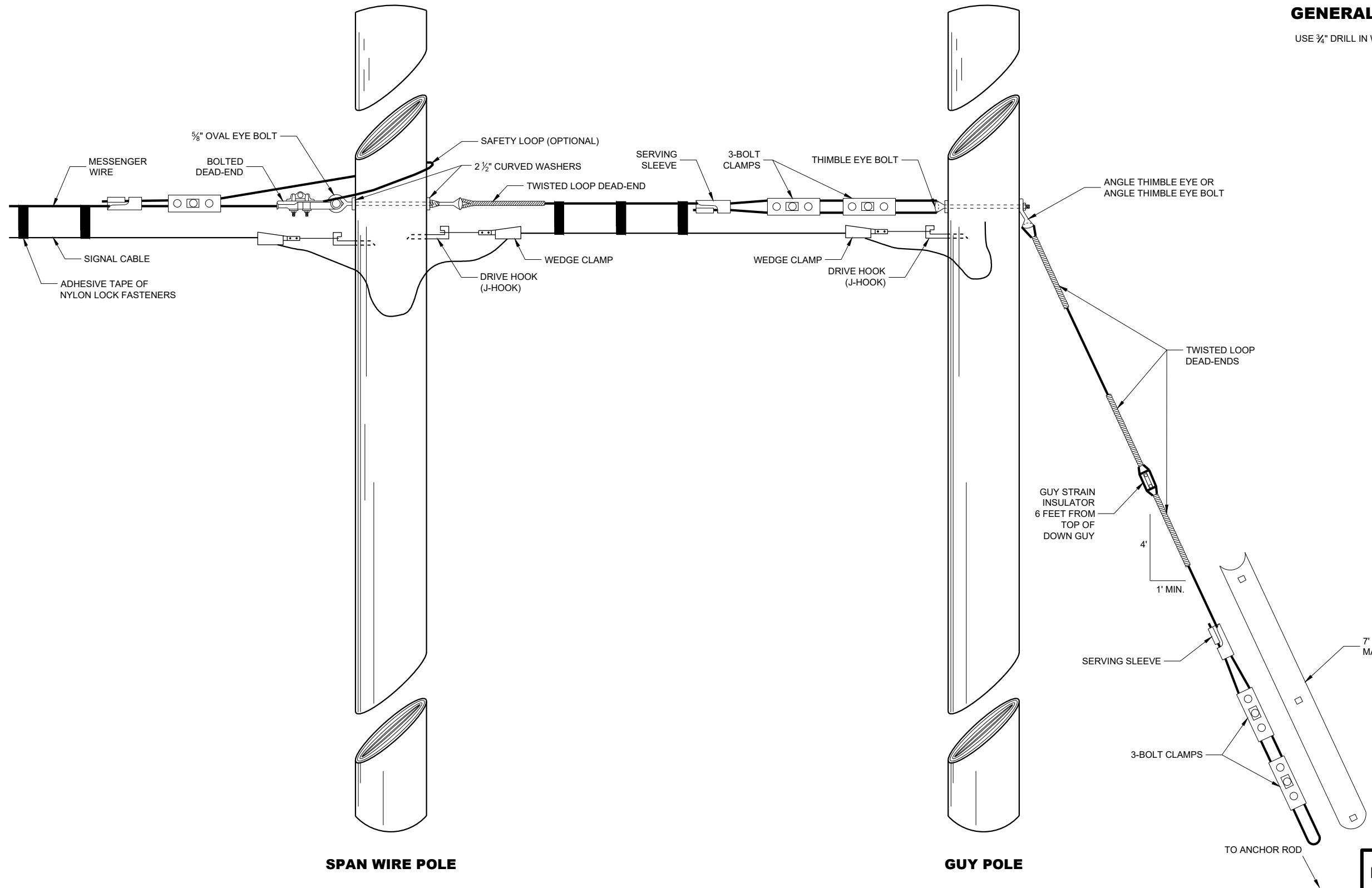
BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018  
DATE

/S/ Ahmet Demirelek  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

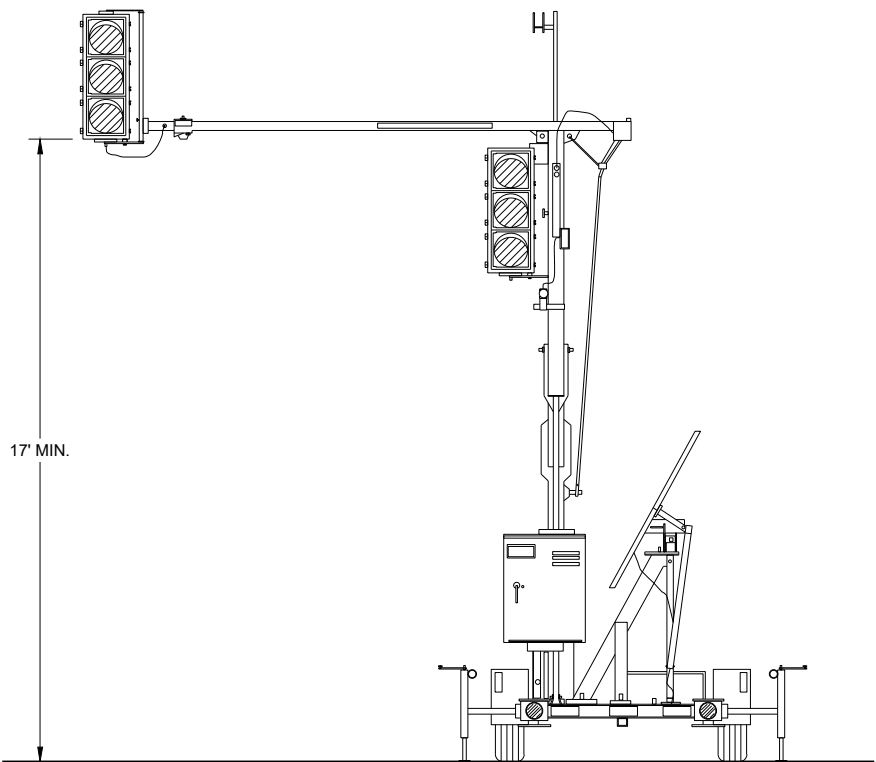
FHWA



**GENERAL NOTES**  
USE 3/4" DRILL IN WOOD POLE TO PROVIDE FOR 5/8" BOLTS.

**TYPICAL DEAD-ENDINGS OR GUYING**

|                                                     |                                                                   |
|-----------------------------------------------------|-------------------------------------------------------------------|
| <b>BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION</b> |                                                                   |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION  |                                                                   |
| APPROVED<br>June 2015<br>DATE                       | /S/ Ahmet Demerbilek<br>ROADWAY STANDARDS DEVELOPMENT<br>ENGINEER |
| FHWA                                                |                                                                   |

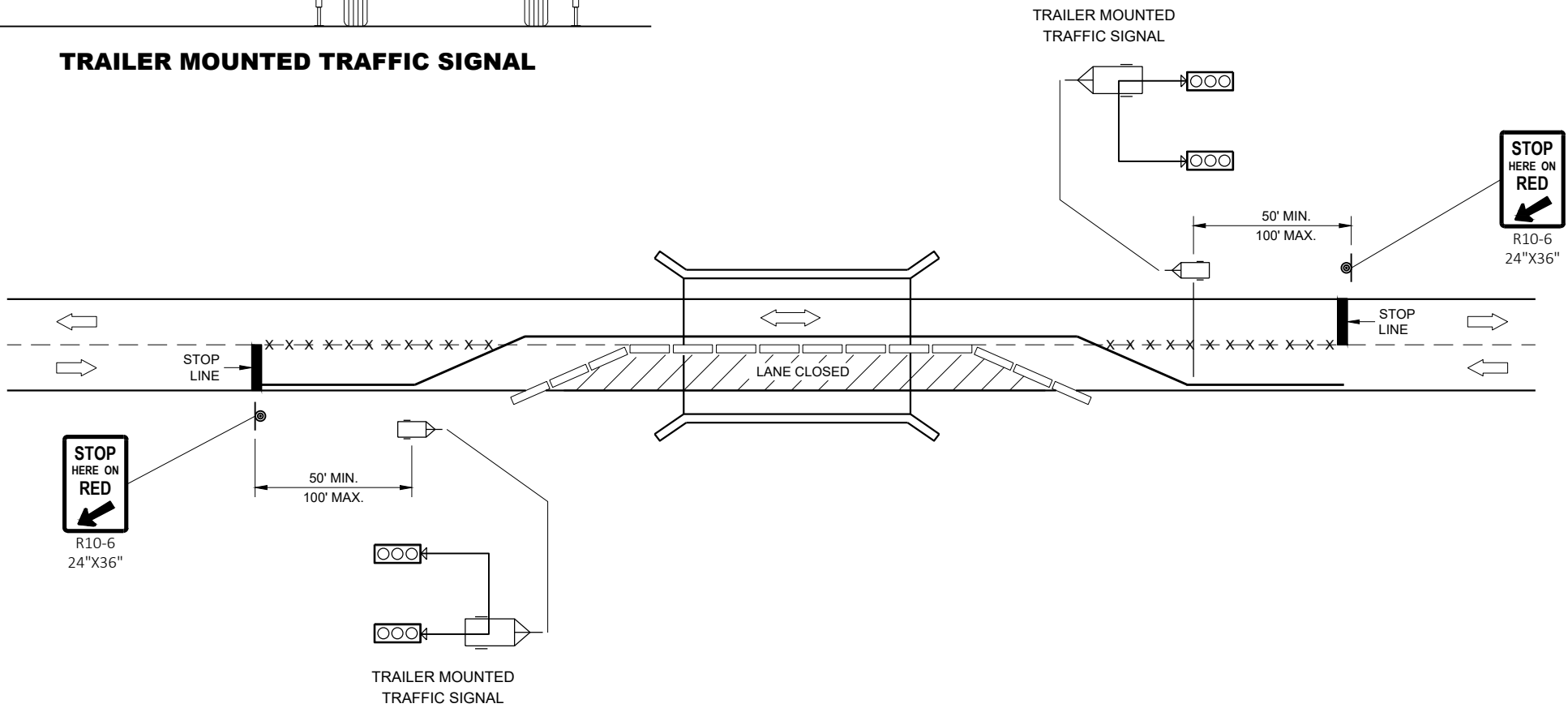


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

DETAIL 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 15D33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

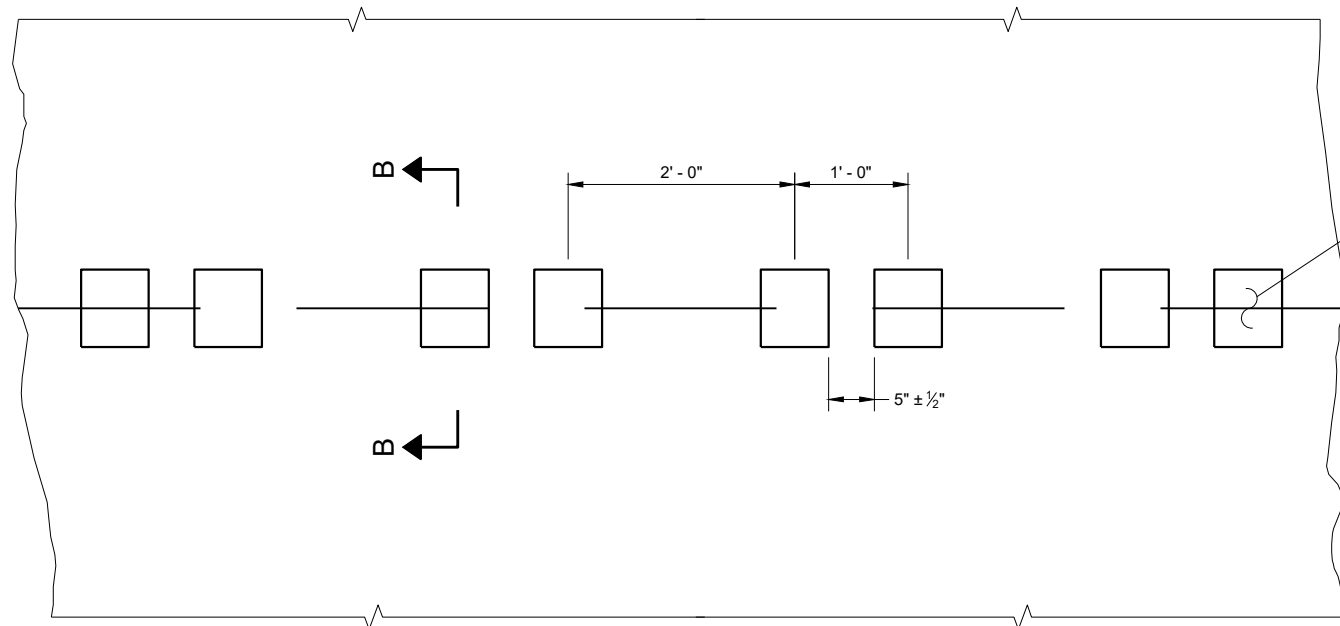
LEGEND

- POST MOUNTED SIGN
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- REMOVE PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

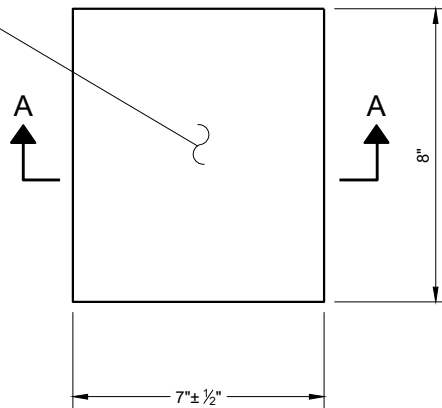
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2015  
DATE /S/ Ahmet Demerbilek  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



PLAN VIEW  
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW  
(SINGLE GROOVE)

GENERAL NOTES

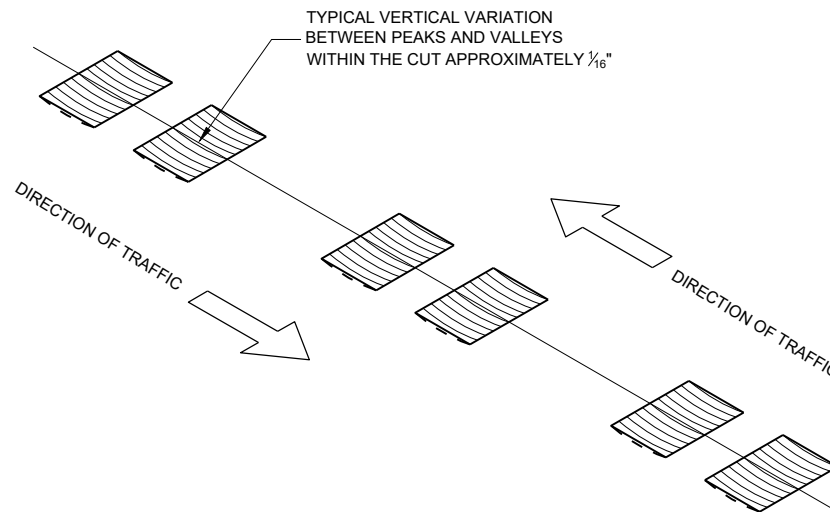
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

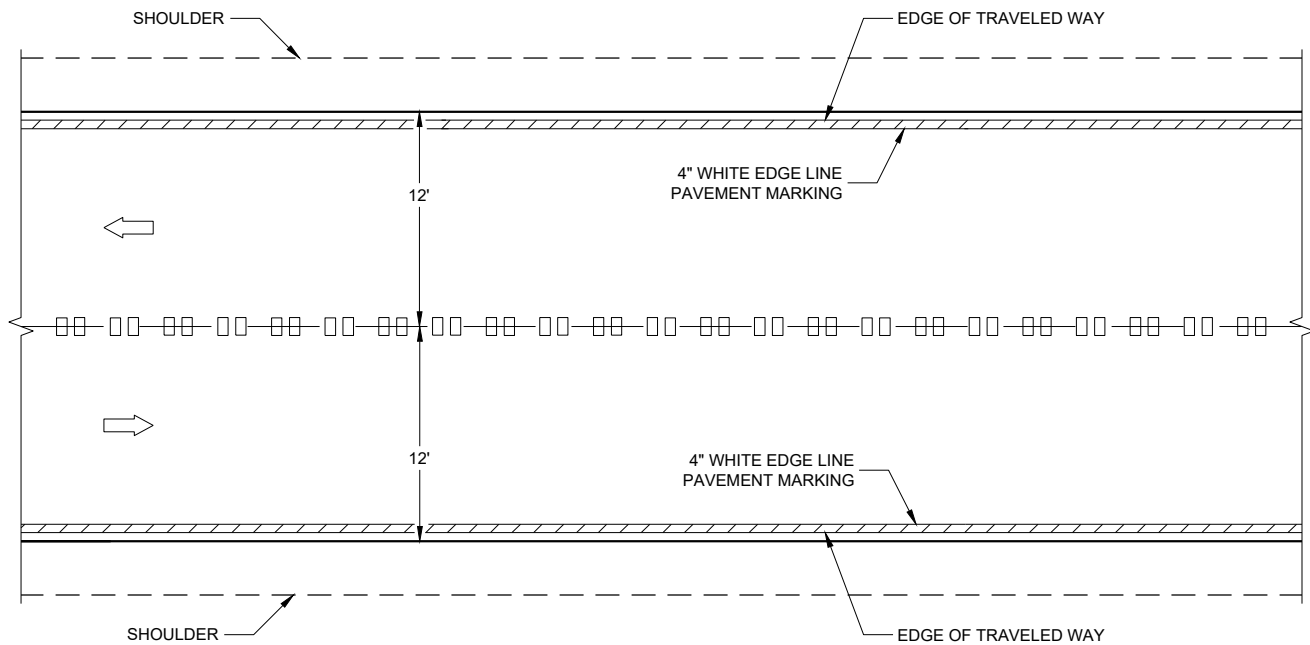
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

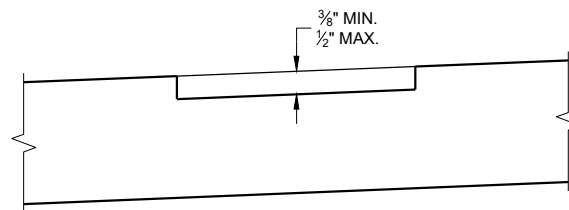
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



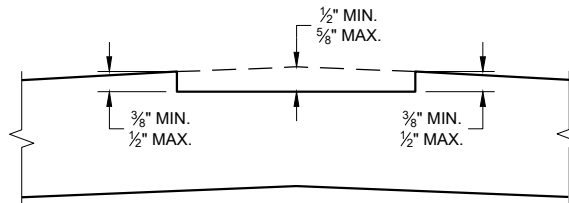
ISOMETRIC



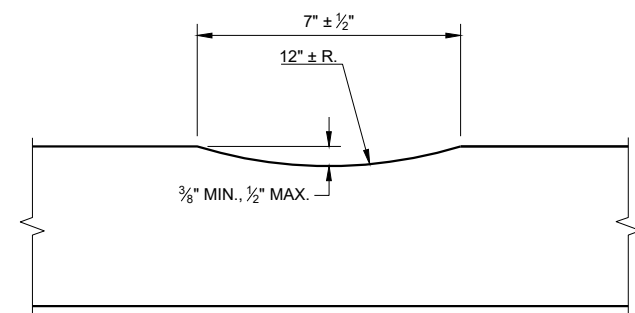
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B  
SUPERELEVATED ROADWAY



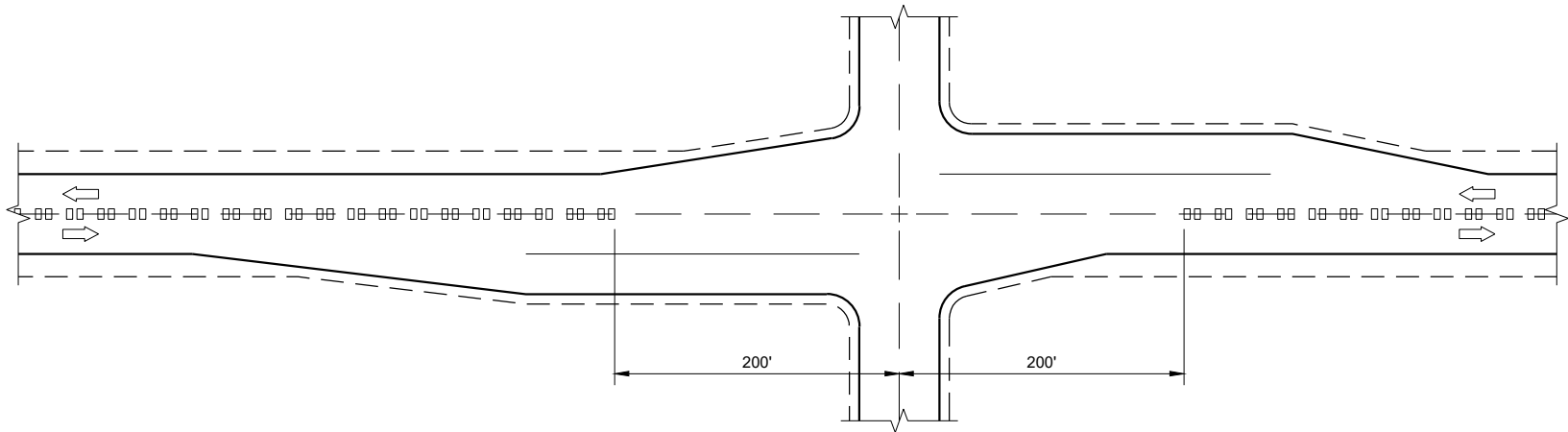
SECTION B - B  
CROWNED ROADWAY



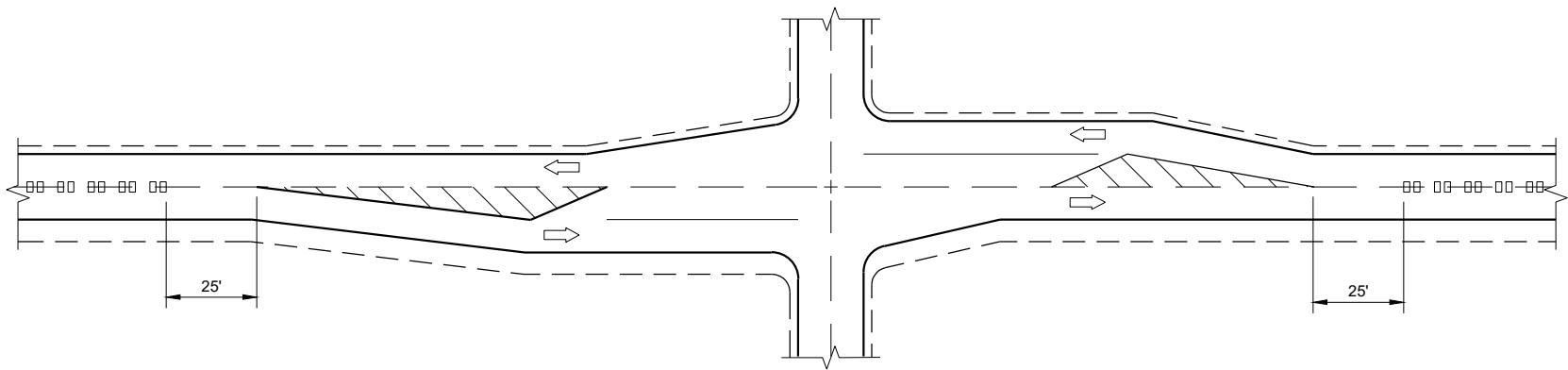
SECTION A - A

**2-LANE RURAL  
CENTER LINE RUMBLE STRIP,  
MILLING**

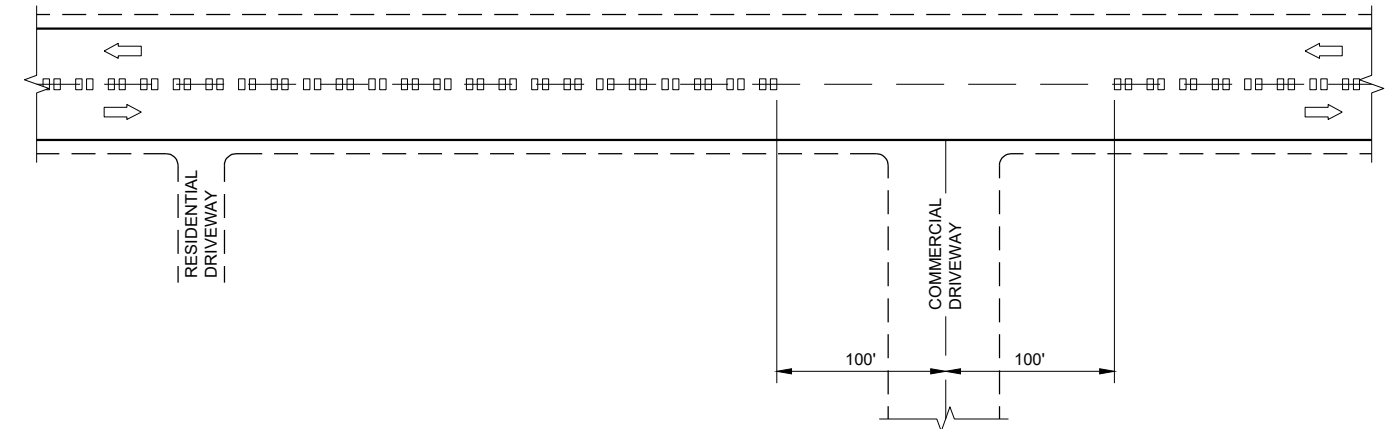
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



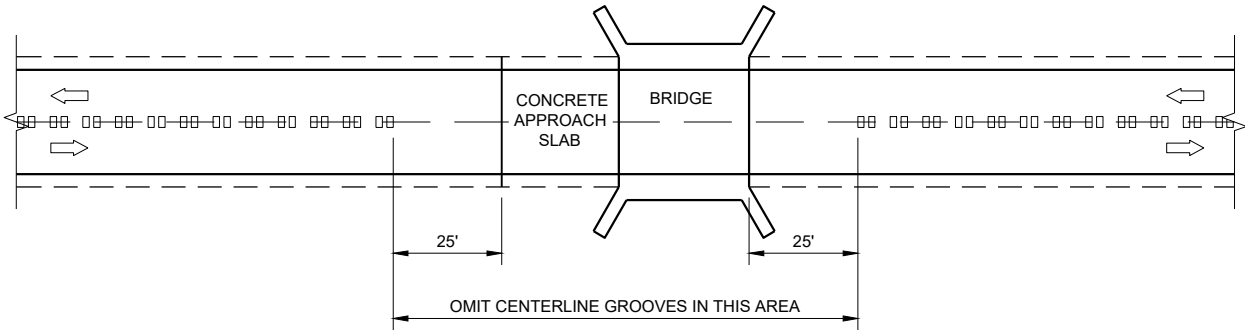
CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)



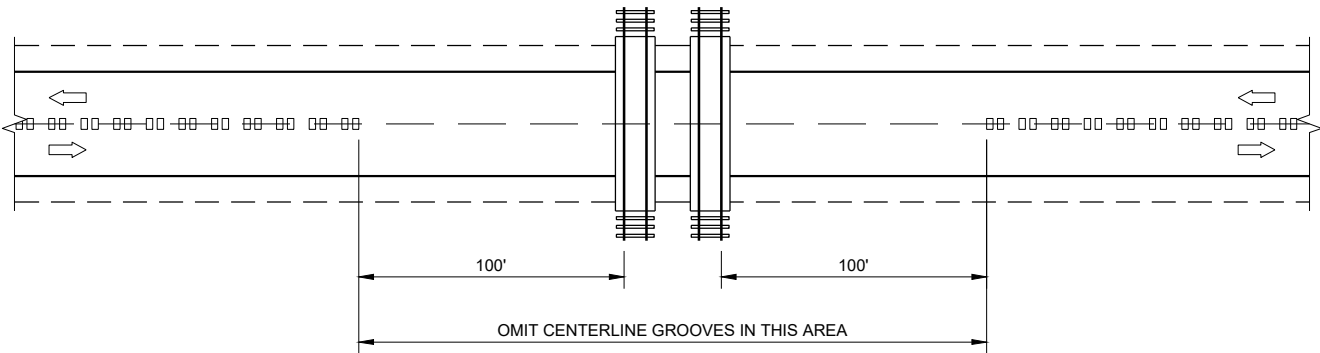
CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>

GENERAL NOTES

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL  
CENTERLINE RUMBLE STRIP,  
MILLING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

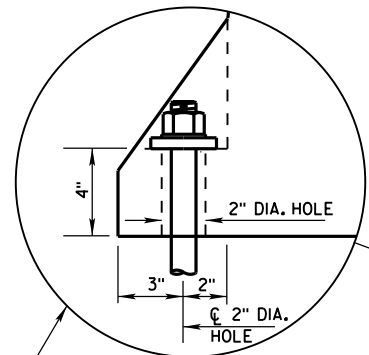
DATE

FHWA

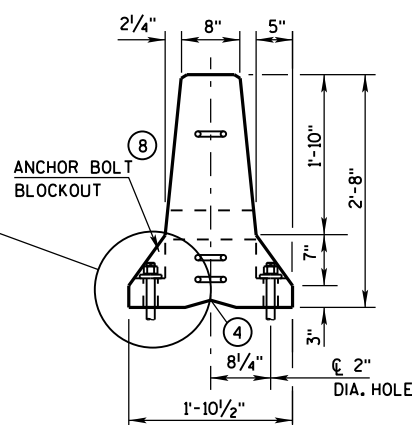
/S/ R. d. n. e. r

ROADWAY STANDARDS DEVELOPMENT

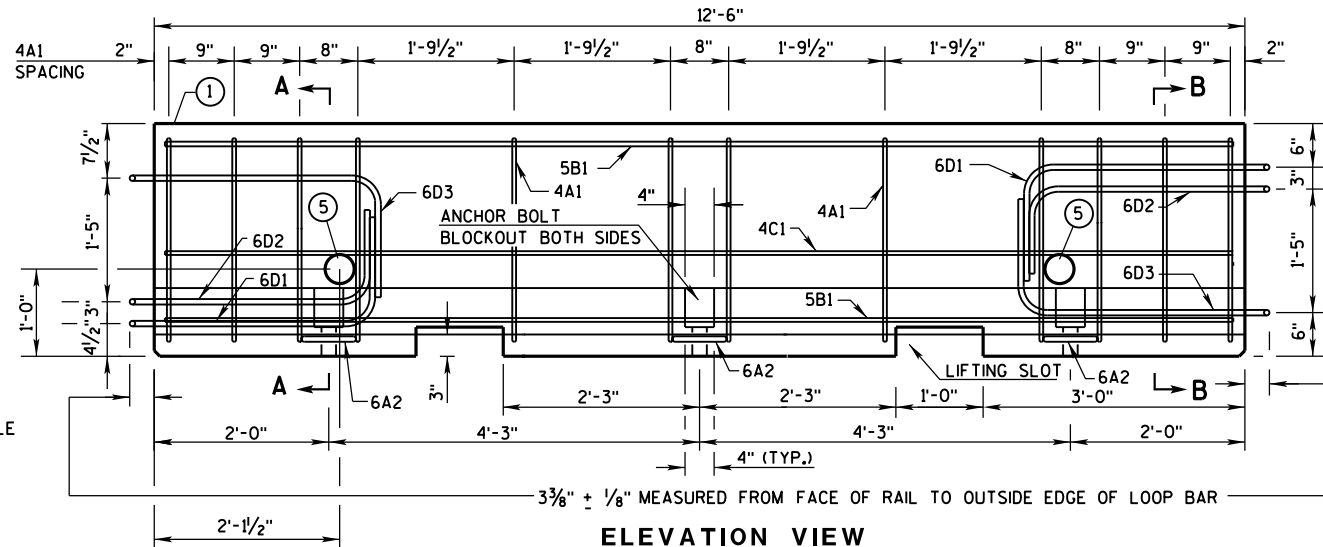
ENGINEER



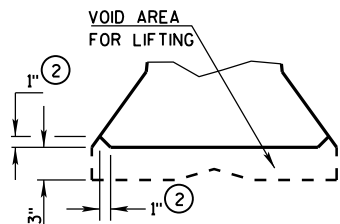
ANCHOR ON TRAFFIC SIDE  
ONLY WHEN REQUIRED  
(SEE SHEET D FOR ADDITIONAL  
ANCHOR DETAIL)



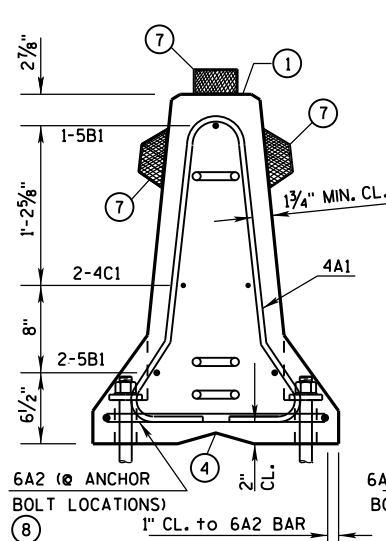
END VIEW



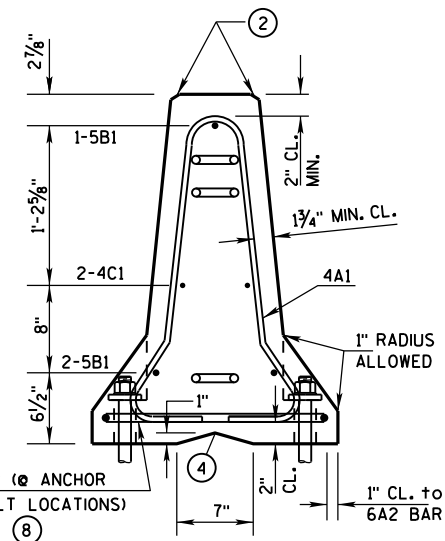
ELEVATION VIEW



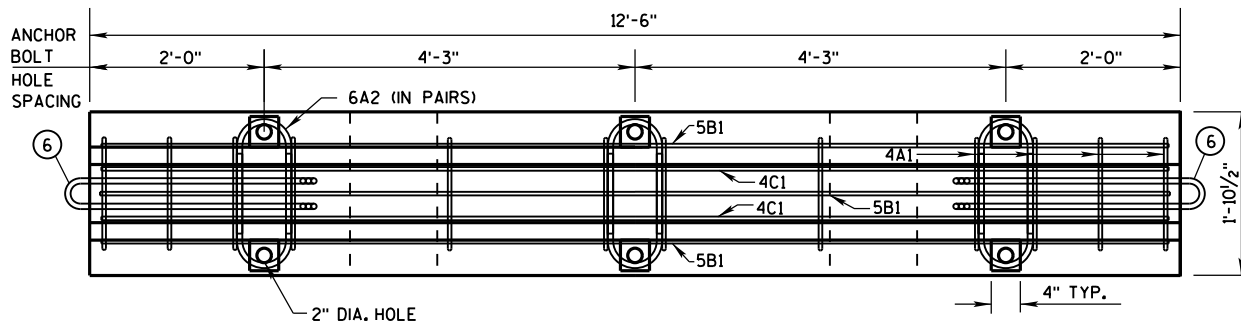
DETAIL "B"  
LIFTING SLOT DETAIL



SECTION A-A  
(STIRRUP PLACEMENT)

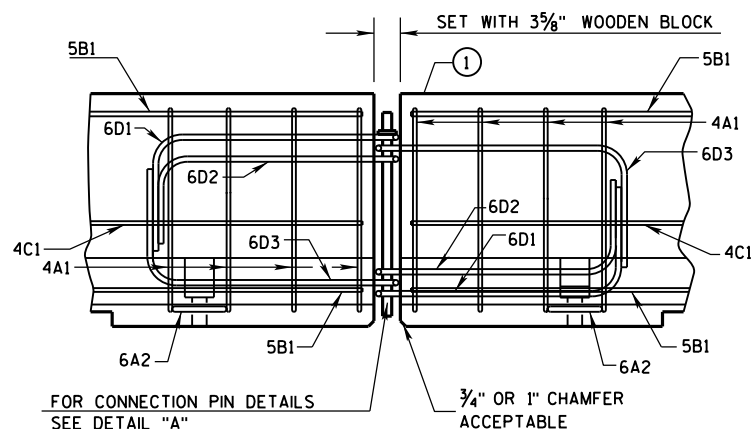


SECTION B-B  
(STIRRUP PLACEMENT)

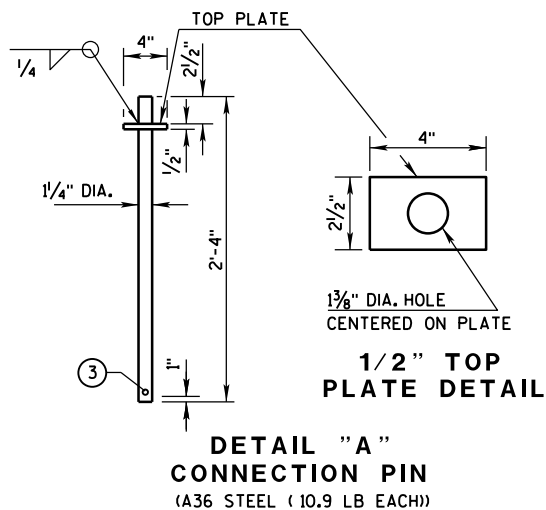


PLAN VIEW

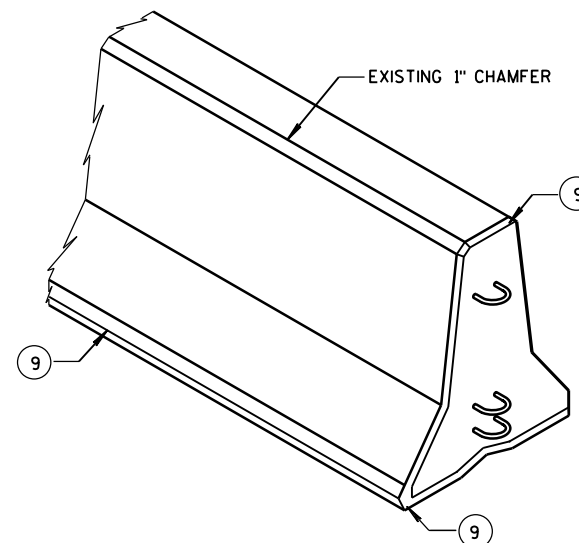
## DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"  
CONNECTION PIN  
(A36 STEEL (10.9 LB EACH))



## GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

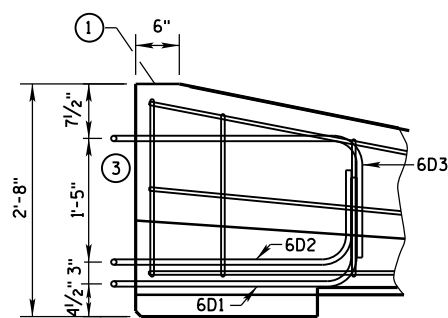
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
  - TYPE: WICBTP
  - MANUFACTURER
  - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

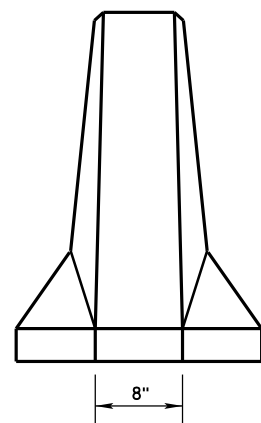
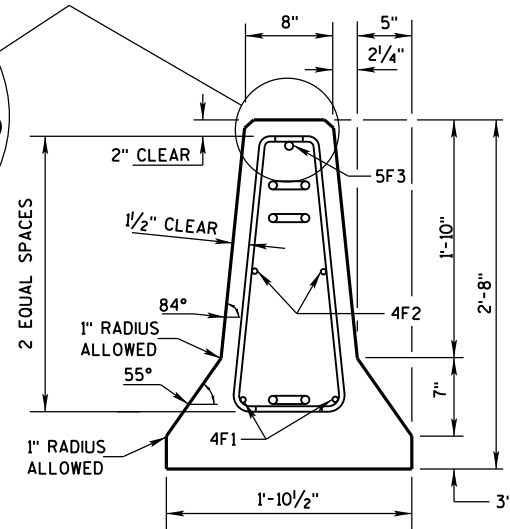
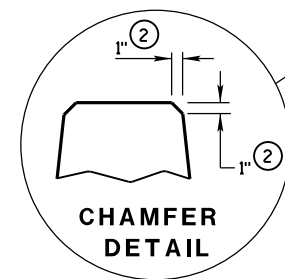
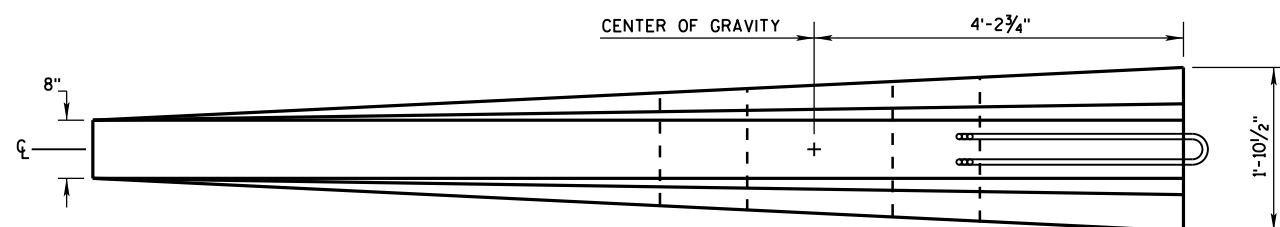
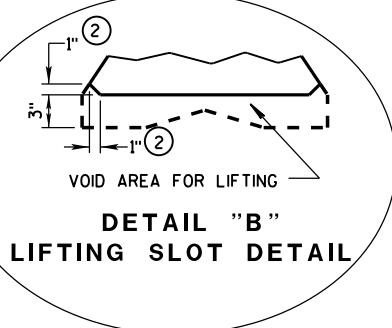
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
  - a. TYPE WICBTP
  - b. MANUFACTURER
  - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

LOOP BAR ASSEMBLY INVERTED  
FOR OPPOSITE END.  
(FOR CONNECTION TO RIGHT END OF BARRIER)



10'± OFFSET

5°± MAX.

12'-6"

12'-6"

**BARRIER ON CURVE**

END SECTION

12'-6"

**FLARE AT BARRIER END**

| POSTED<br>SPEED, (MPH) | FLARE<br>RATE |
|------------------------|---------------|
| 40 OR LESS             | 6:1           |
| 45 OR GREATER          | 8:1           |

### DETAILS OF BARRIER TAPER SECTION

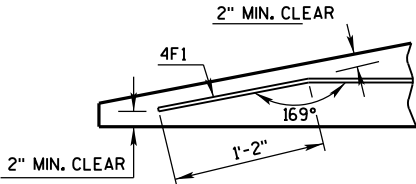
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

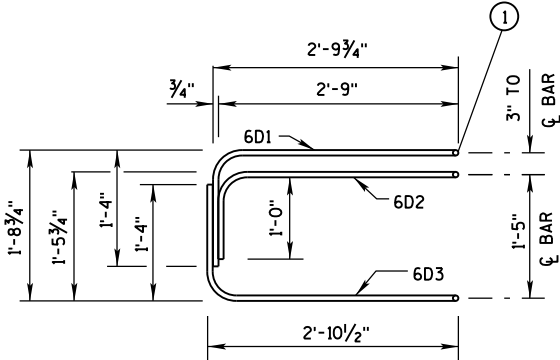
BARRIER TAPER SECTION  
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

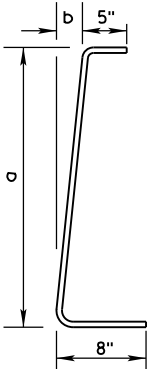
| BAR           | BAR SIZE | NO. OF BARS | LENGTH FT. |
|---------------|----------|-------------|------------|
| 4V1           | 4        | 2           | 1'-11"     |
| 4V2           | 4        | 2           | 2'-2"      |
| 4V3           | 4        | 2           | 2'-6"      |
| 4V4           | 4        | 2           | 2'-9"      |
| 4V5           | 4        | 2           | 3'-2"      |
| 4V6           | 4        | 2           | 3'-4"      |
| 4F1           | 4        | 2           | 12'-0"     |
| 4F2           | 4        | 2           | 7'-6"      |
| 5F3           | 5        | 1           | 11'-9"     |
| LOOP ASSEMBLY |          |             |            |
| 6D1           | 6        | 1           | 8'-5"      |
| 6D2           | 6        | 1           | 7'-7"      |
| 6D3           | 6        | 1           | 8'-6"      |



DETAIL "C"  
BENT BAR DETAIL



ELEVATION  
LOOP BAR ASSEMBLY



| BAR | a         | b      |
|-----|-----------|--------|
| V1  | 10"       | 1"     |
| V2  | 1'-1"     | 1 1/4" |
| V3  | 1'-5"     | 1 5/8" |
| V4  | 1'-8"     | 1 7/8" |
| V5  | 2'-0 1/2" | 2 3/8" |
| V6  | 2'-3"     | 2 3/4" |

4V BARS  
2 AT EACH SIZE REQUIRED  
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

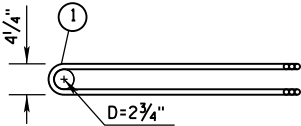
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION  
BILL OF MATERIALS

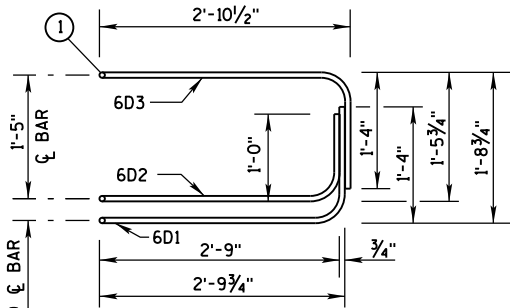
(PER 12'-6" BARRIER SECTION)

| BAR           | BAR SIZE | NO. OF BARS | LENGTH FT. |
|---------------|----------|-------------|------------|
| 4A1           | 4        | 12          | 6'-0"      |
| 6A2           | 6        | 6           | 2'-11"     |
| 5B1           | 5        | 3           | 12'-2"     |
| 4C1           | 4        | 2           | 12'-2"     |
| LOOP ASSEMBLY |          |             |            |
| 6D1           | 6        | 2           | 8'-5"      |
| 6D2           | 6        | 2           | 7'-7"      |
| 6D3           | 6        | 2           | 8'-6"      |

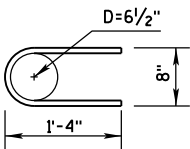


PLAN VIEW  
LOOP BAR ASSEMBLY

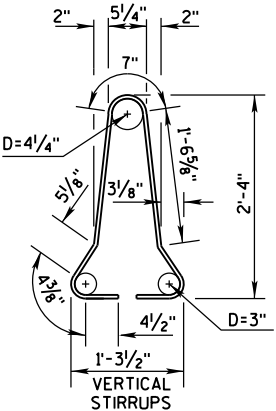
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

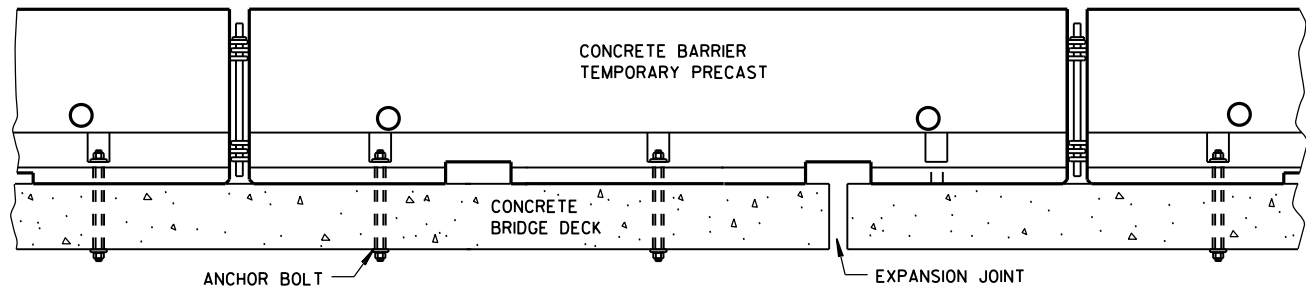
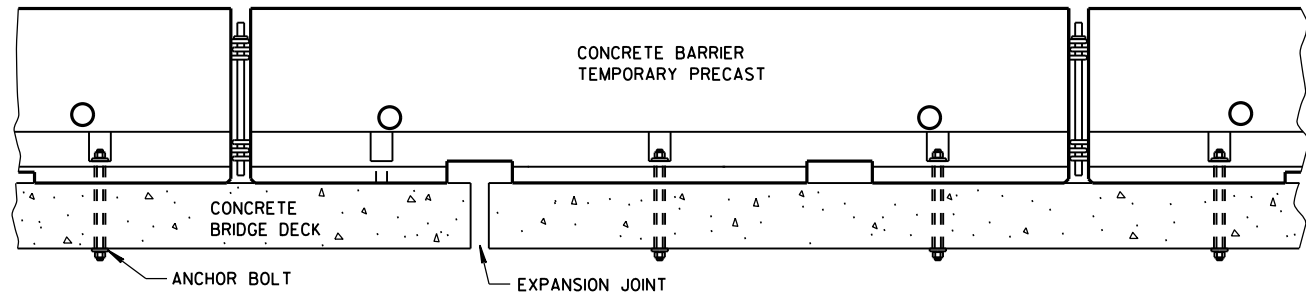


4A1

BARRIER SECTION

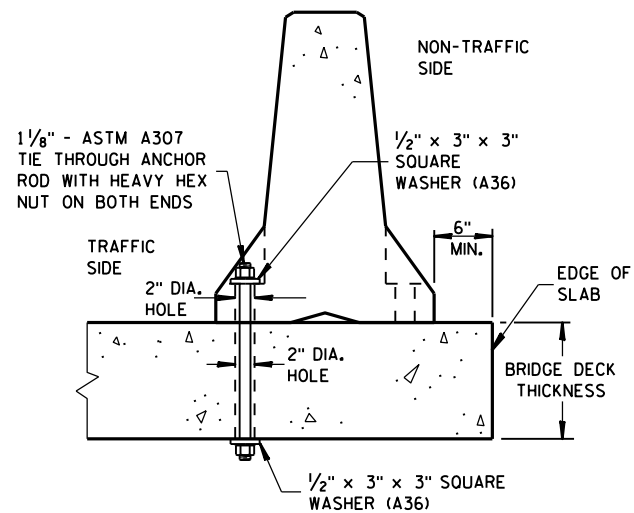
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



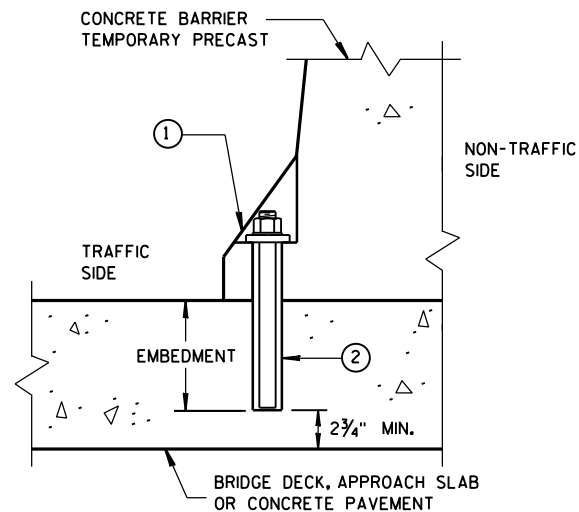
### TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



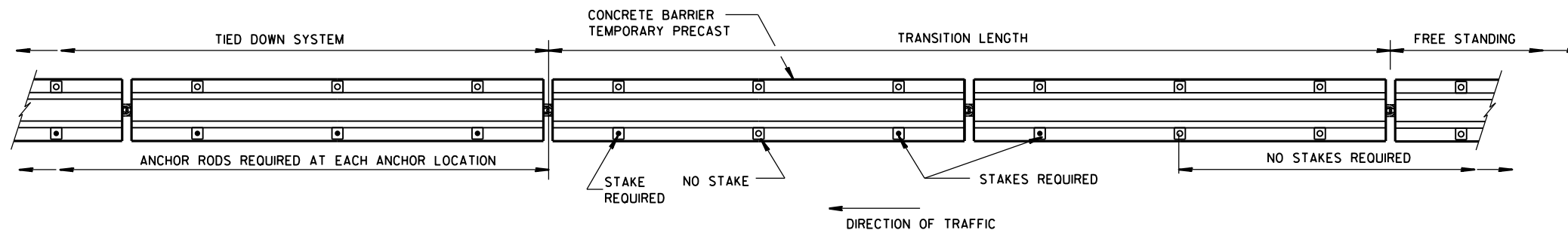
### THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



### REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



### PLAN VIEW

### FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

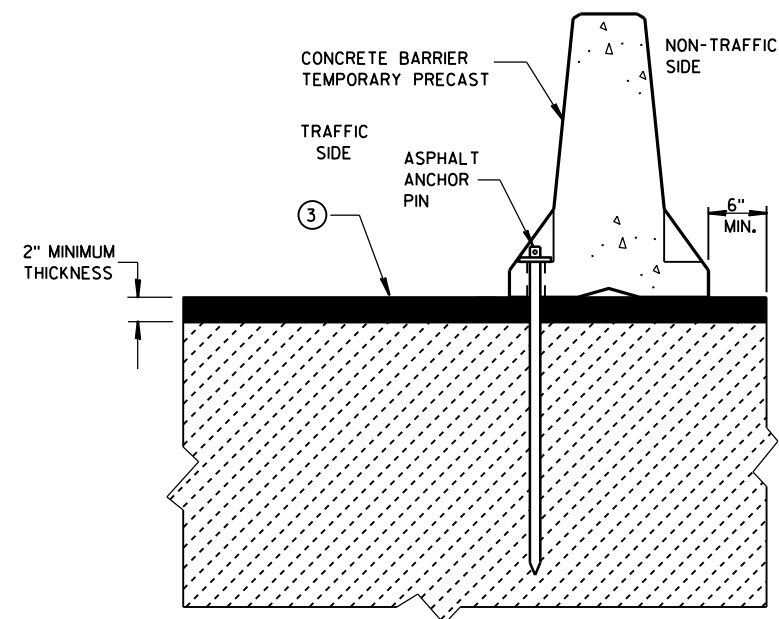
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

### GENERAL NOTES

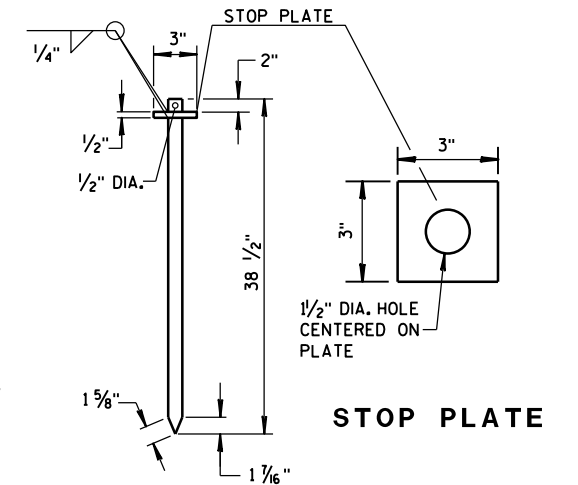
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



### STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

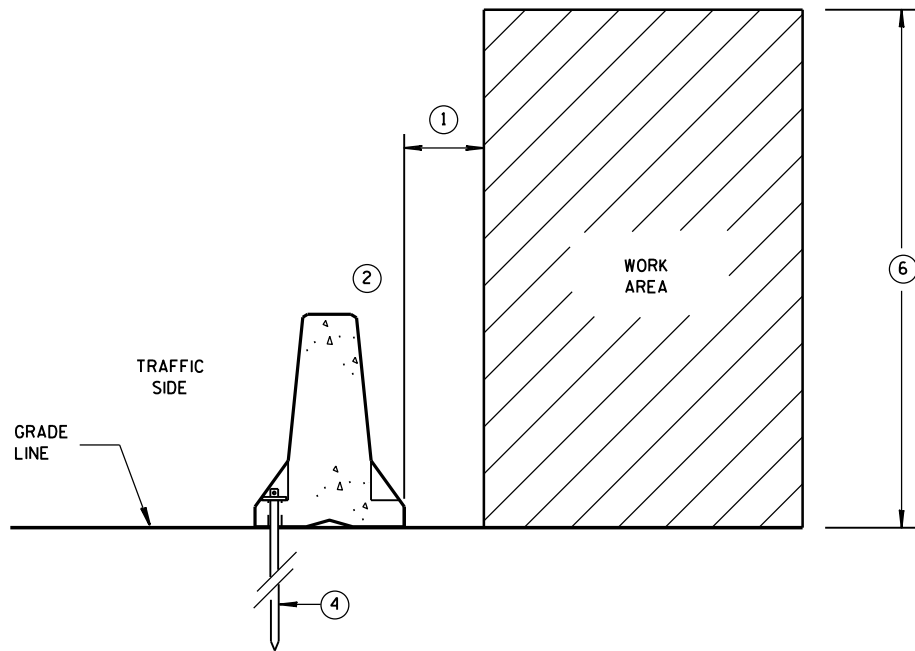


### ASPHALT ANCHOR PIN

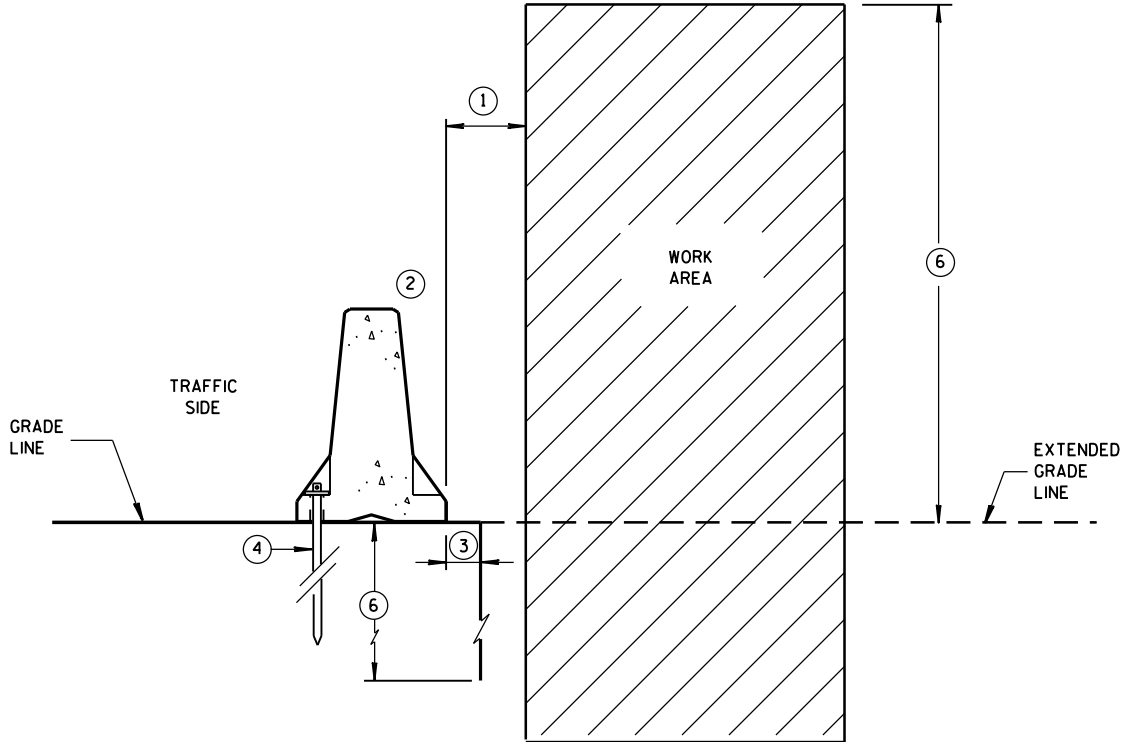
(ASTM A36 STEEL)

CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**ANCHORED BARRIER SPACE REQUIREMENTS  
FOR HAZARDS EXTENDED  
ABOVE THE GRADE LINE**

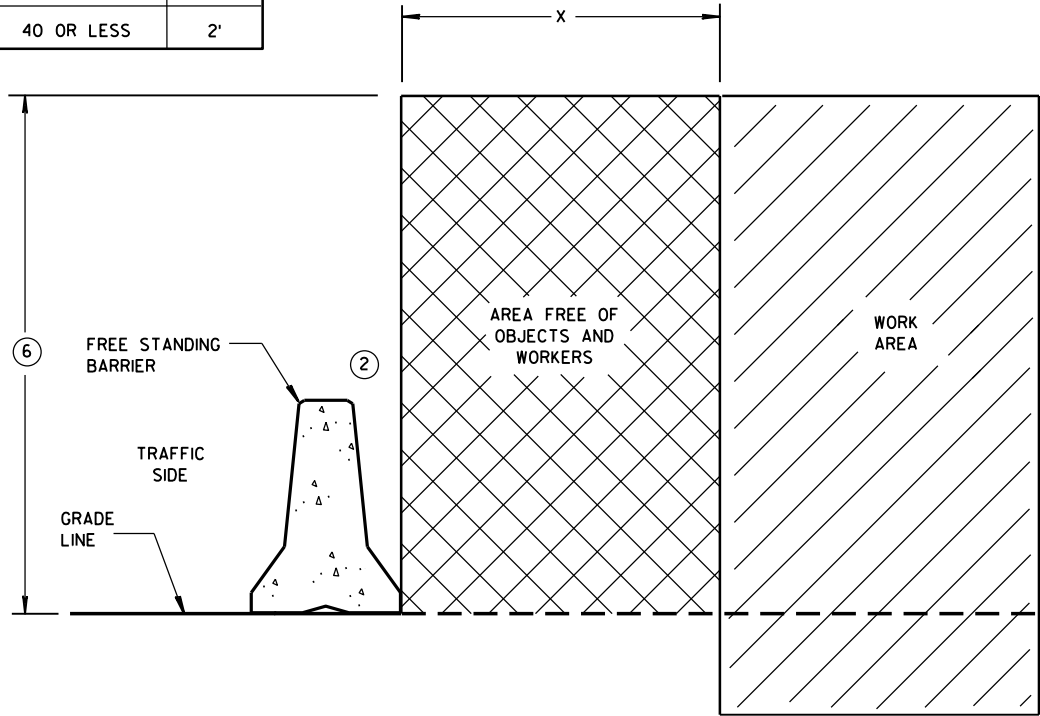


**ANCHORED BARRIER SPACE REQUIREMENTS  
ON VERTICAL DROP OFFS**

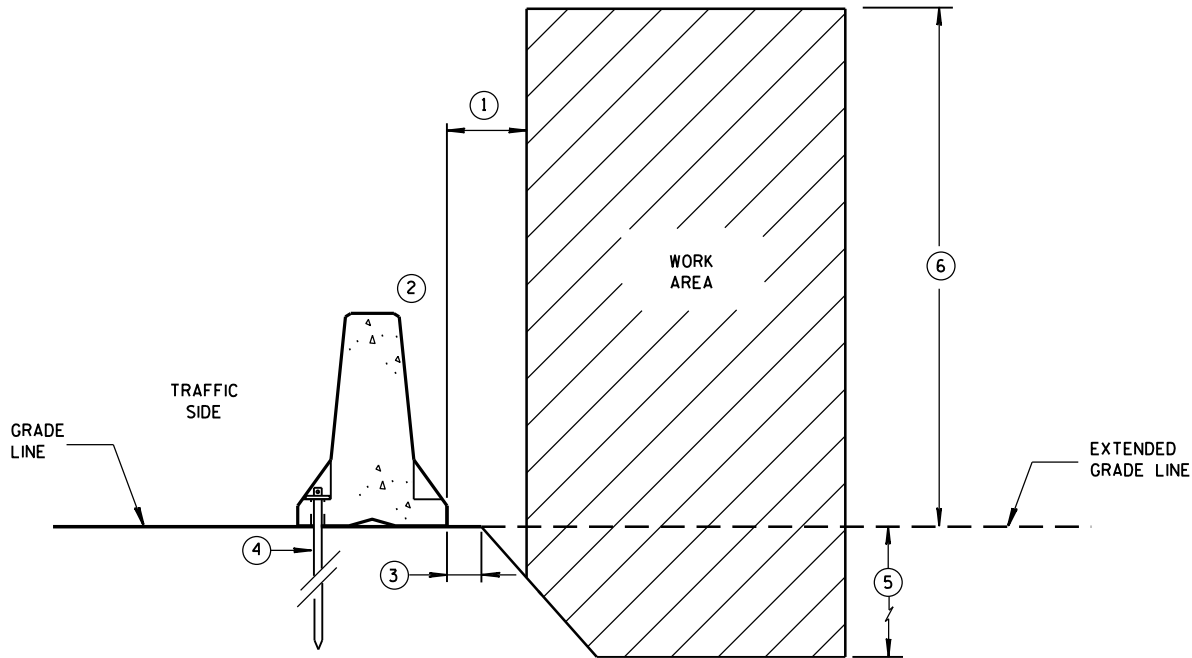
**GENERAL NOTES**

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

| POSTED SPEED<br>MPH | X  |
|---------------------|----|
| 45 OR GREATER       | 4' |
| 40 OR LESS          | 2' |



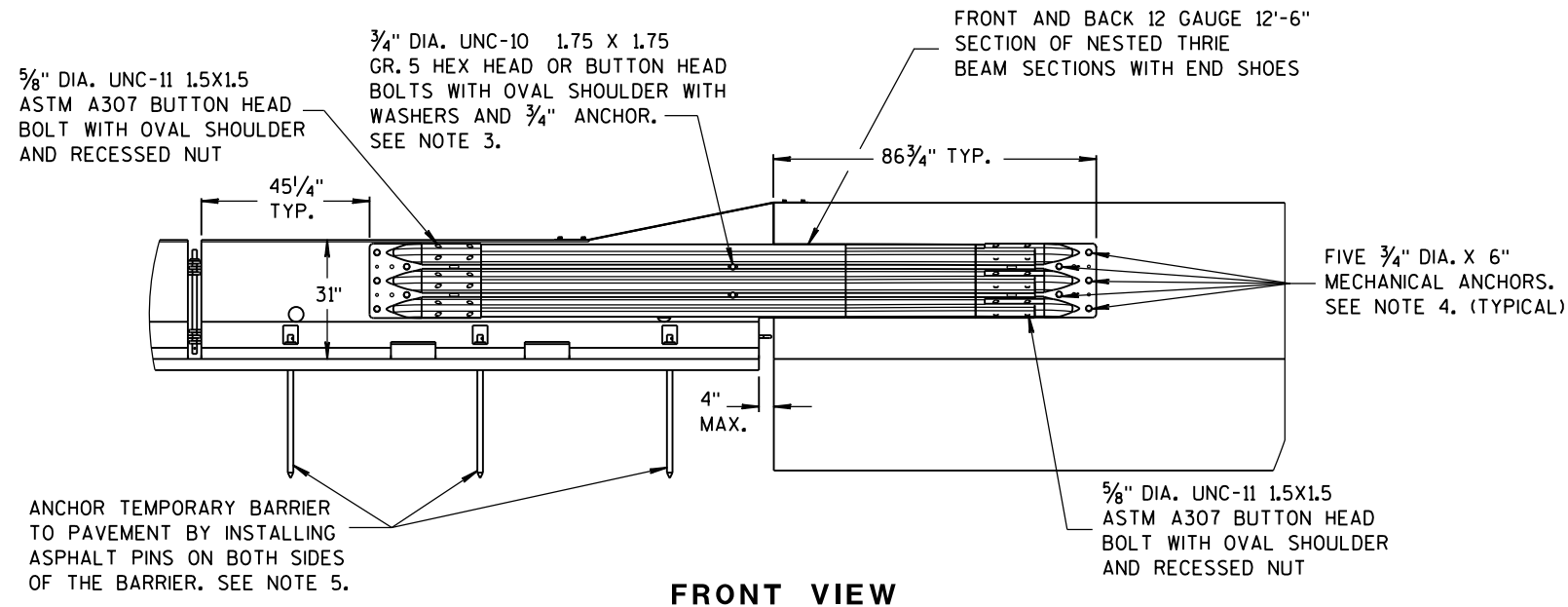
**FREE STANDING BARRIER SPACE REQUIREMENTS**



**ANCHORED BARRIER SPACE REQUIREMENTS  
ON SLOPES**

**CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"**

**STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION**



FRONT VIEW

# NOTES

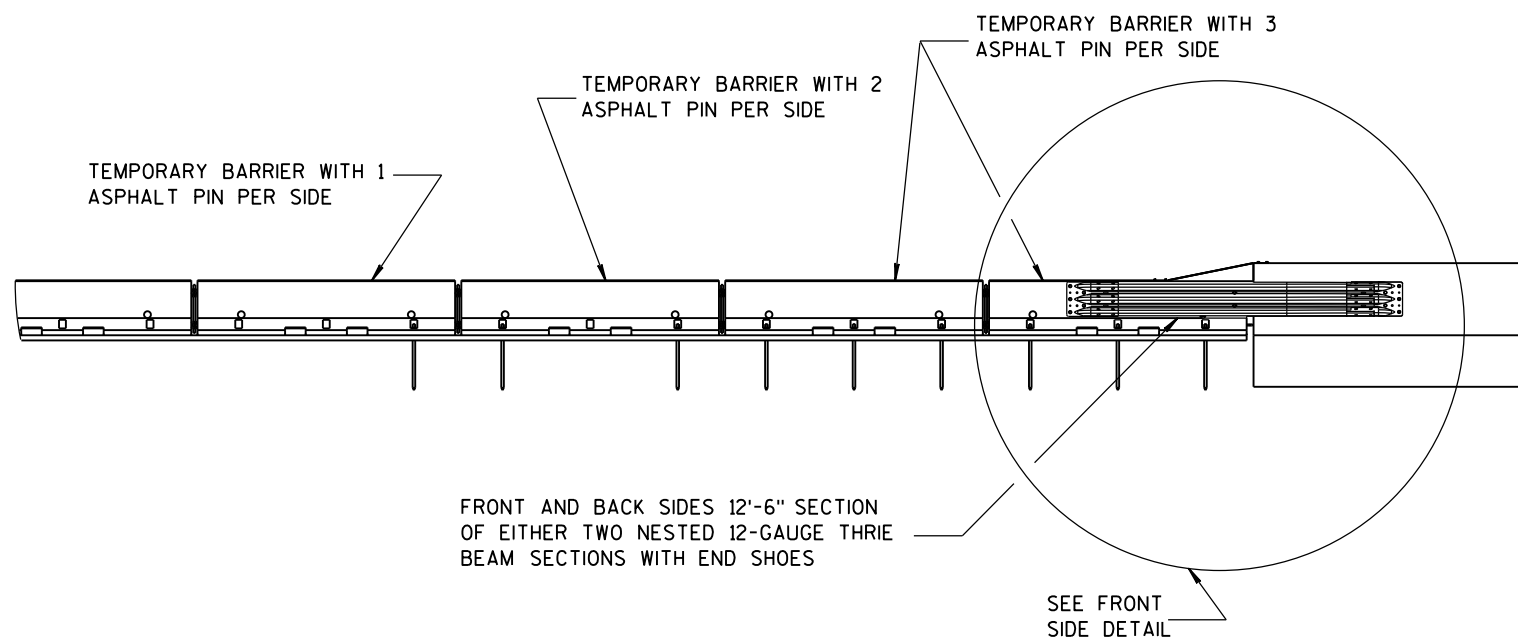
NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.

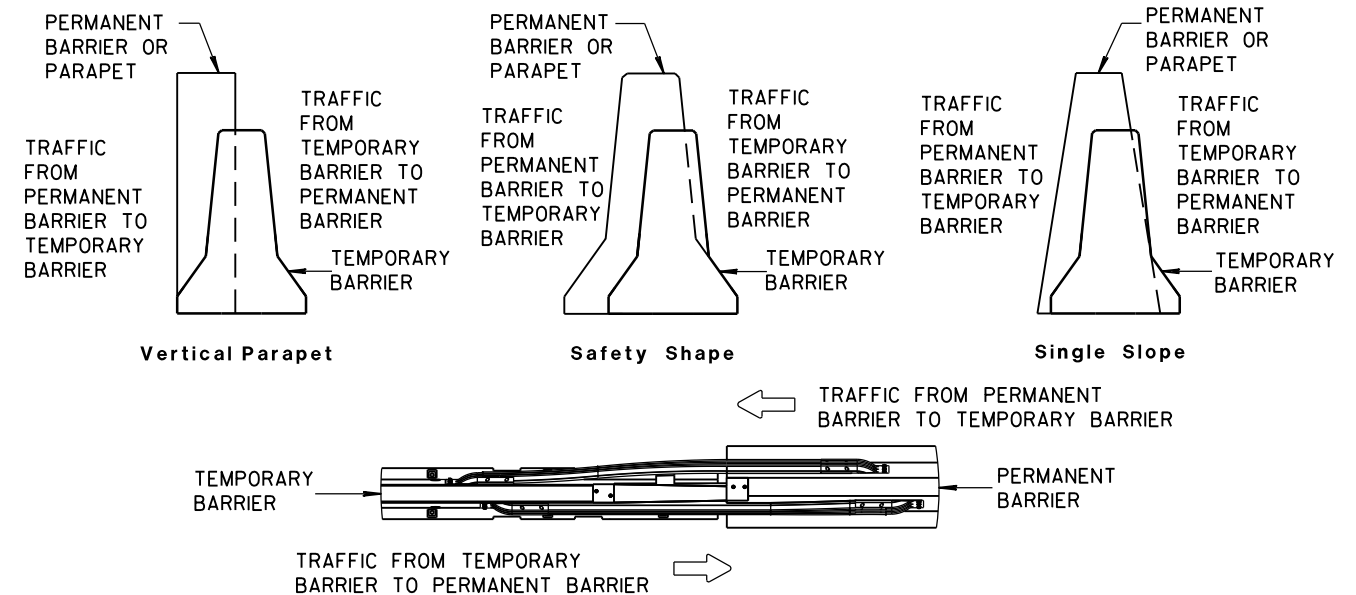
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.

6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

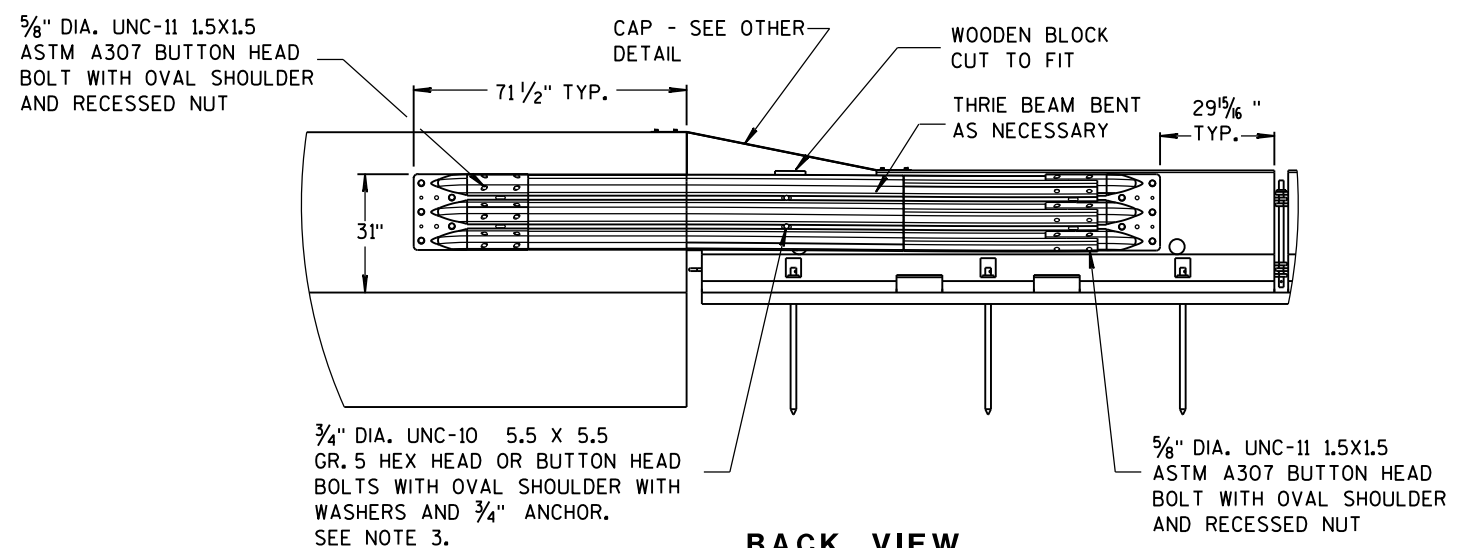


FRONT VIEW

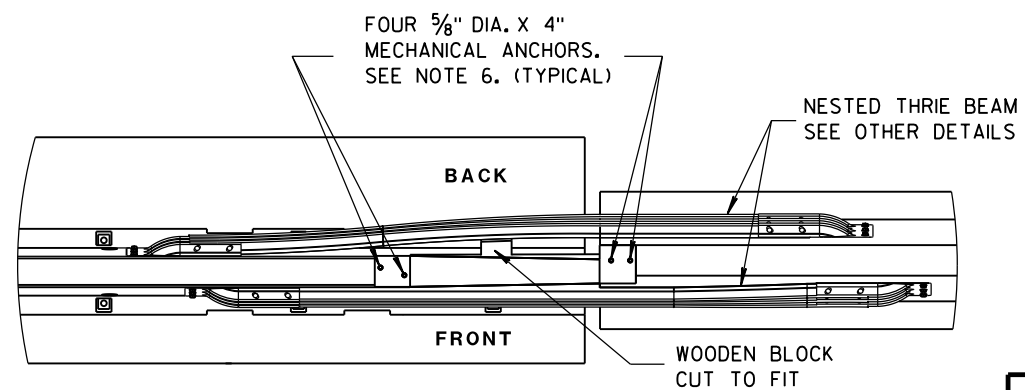
## BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



## TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



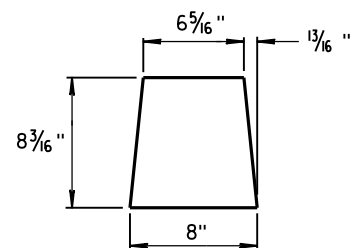
BACK VIEW



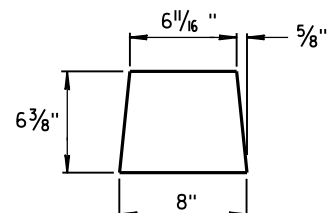
PLAN VIEW

CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

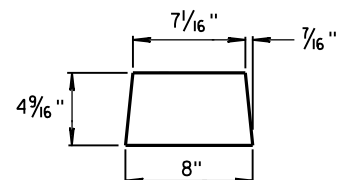
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



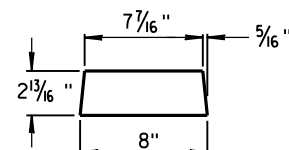
**GUSSET 1**



**GUSSET 2**

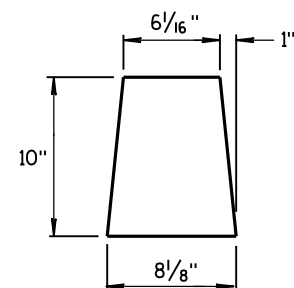


**GUSSET 3**

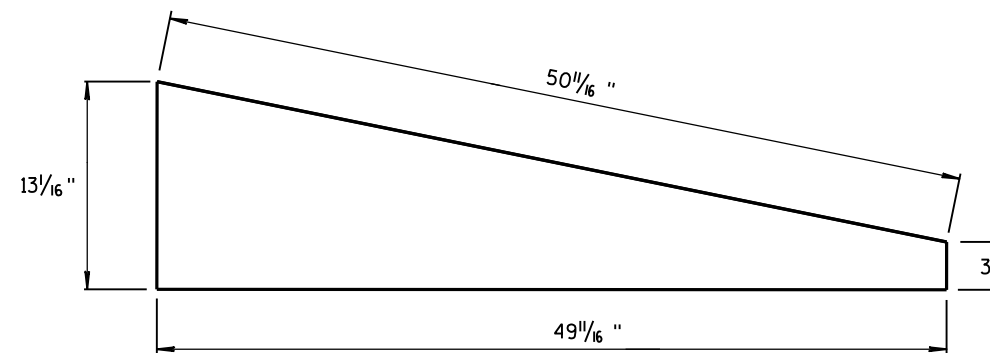


**GUSSET 4**

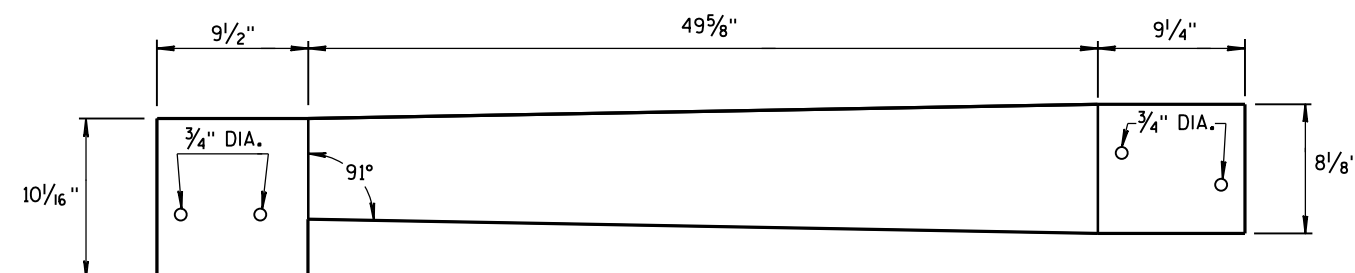
**GUSSETS**



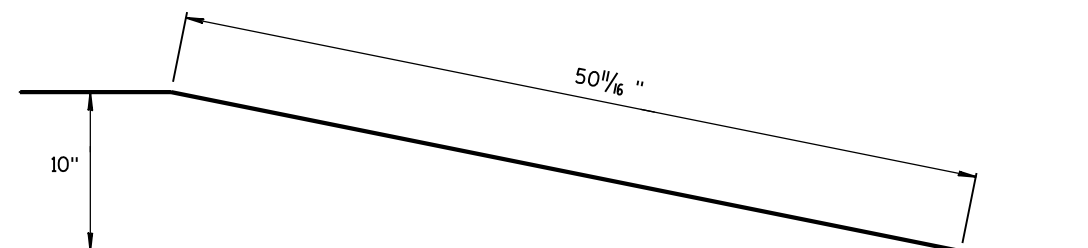
**END PLATE**



**SIDE PLATE**

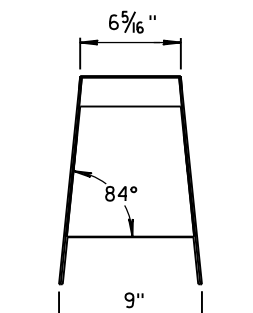


**TOP PLATE**

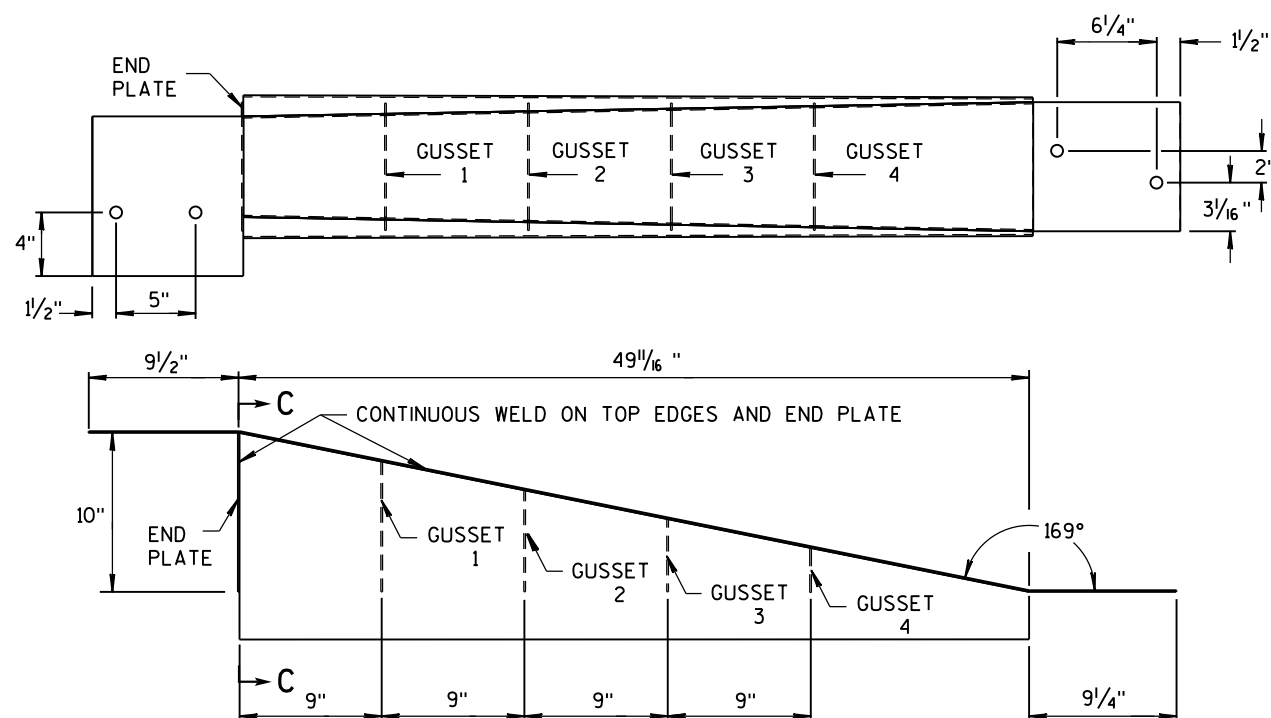


**SIDE, TOP AND END PLATES FOR CAP  
FROM TEMPORARY CONCRETE BARRIER  
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



**SECTION C-C**



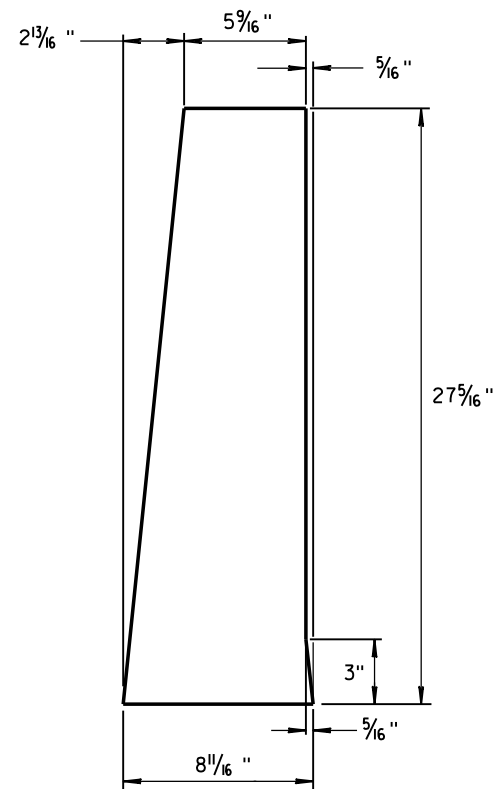
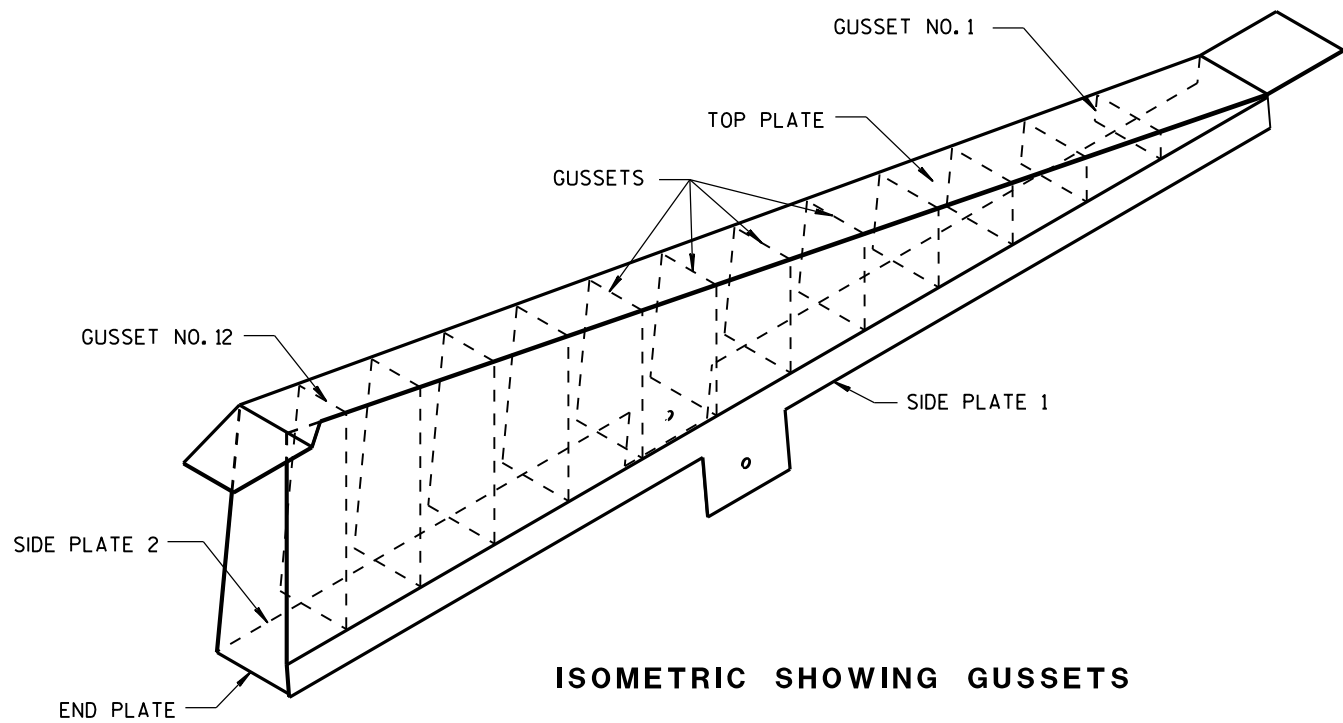
**NOTES**

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

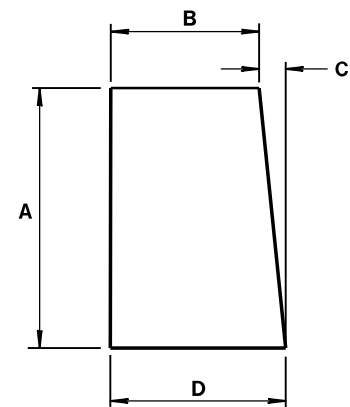
**CAP DETAILS FOR TEMPORARY CONCRETE  
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



END PLATE  
1/8" STEEL PLATE

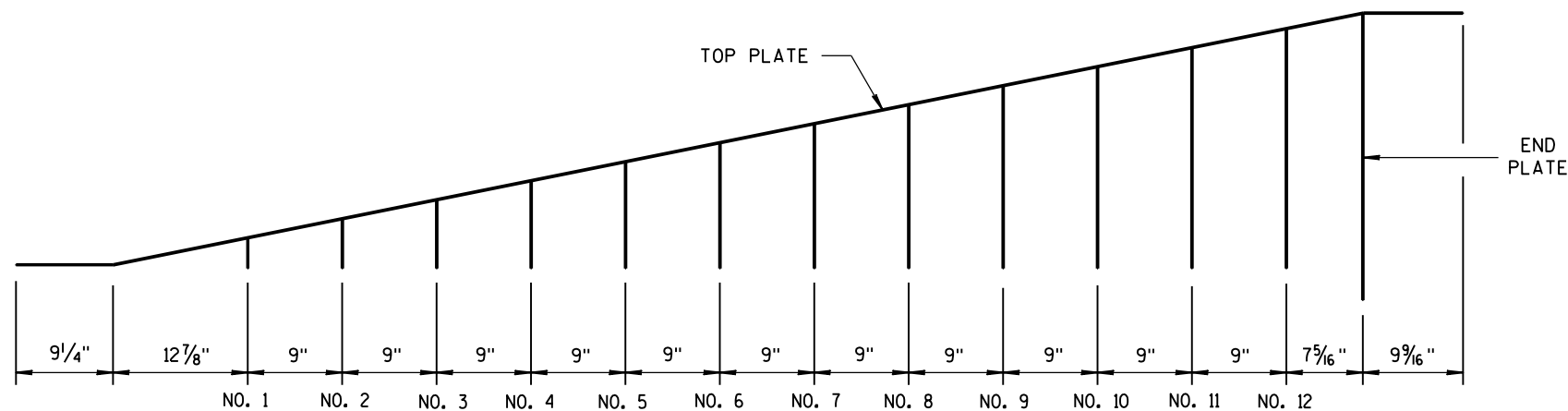


GUSSETS 1 - 12  
ALL GUSSETS 1/8" STEEL PLATE

| GUSSET DIMENSIONS |            |           |           |          |
|-------------------|------------|-----------|-----------|----------|
| GUSSET NO.        | A          | B         | C         | D        |
| 1                 | 2 7/8"     | 7 3/4"    | 1/4"      | 8        |
| 2                 | 4 1/16 "   | 7 9/16 "  | 1/2"      | 8        |
| 3                 | 6 1/2"     | 7 3/8 "   | 11/16 "   | 8 1/16 " |
| 4                 | 8 5/16 "   | 7 3/16 "  | 7/8"      | 8 1/16 " |
| 5                 | 10 1/8 "   | 7"        | 1 1/16 "  | 8 1/16 " |
| 6                 | 11 5/16 "  | 6 13/16 " | 1 1/4"    | 8 1/16 " |
| 7                 | 13 3/4"    | 6 5/8 "   | 1 7/16 "  | 8 1/16 " |
| 8                 | 15 9/16 "  | 6 7/16 "  | 1 9/16 "  | 8 1/16 " |
| 9                 | 17 3/8"    | 6 1/4"    | 1 13/16 " | 8 1/16 " |
| 10                | 19 3/16 "  | 6 1/16 "  | 1 15/16 " | 8 1/16 " |
| 11                | 21"        | 5 7/8 "   | 2 3/16 "  | 8 1/16 " |
| 12                | 22 13/16 " | 5 11/16 " | 2 5/16 "  | 8 1/16 " |

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.

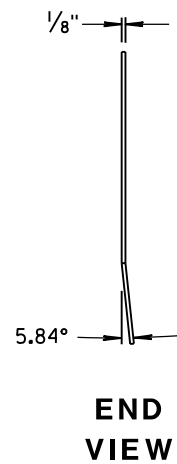
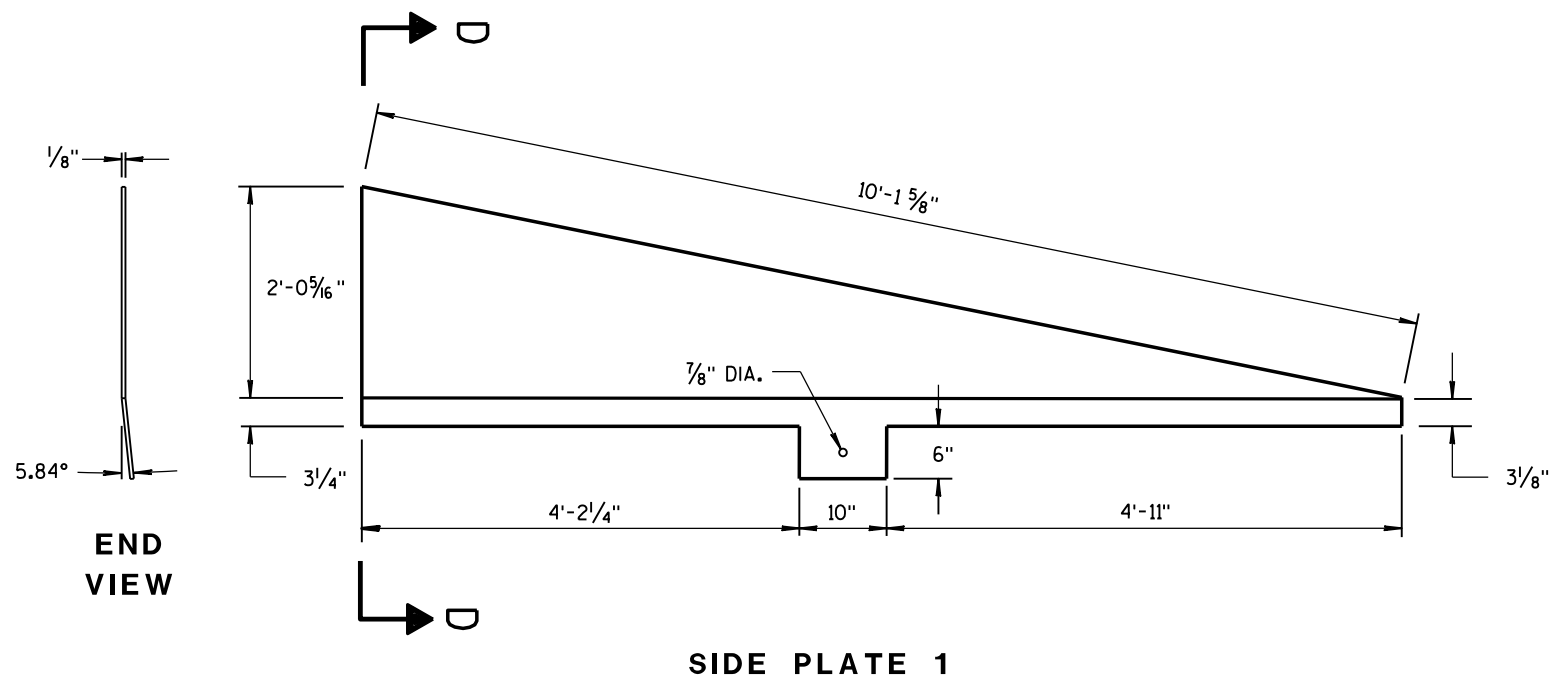
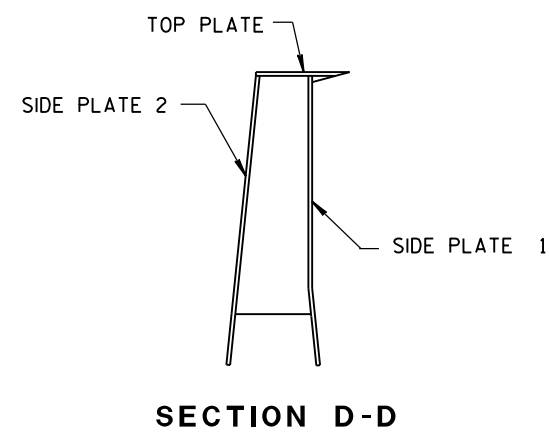
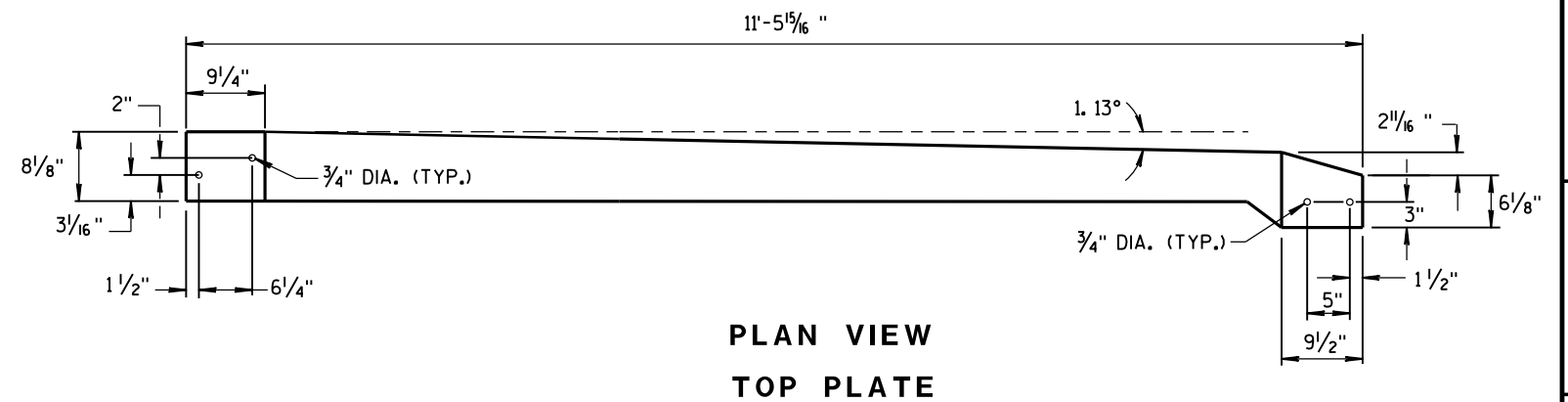
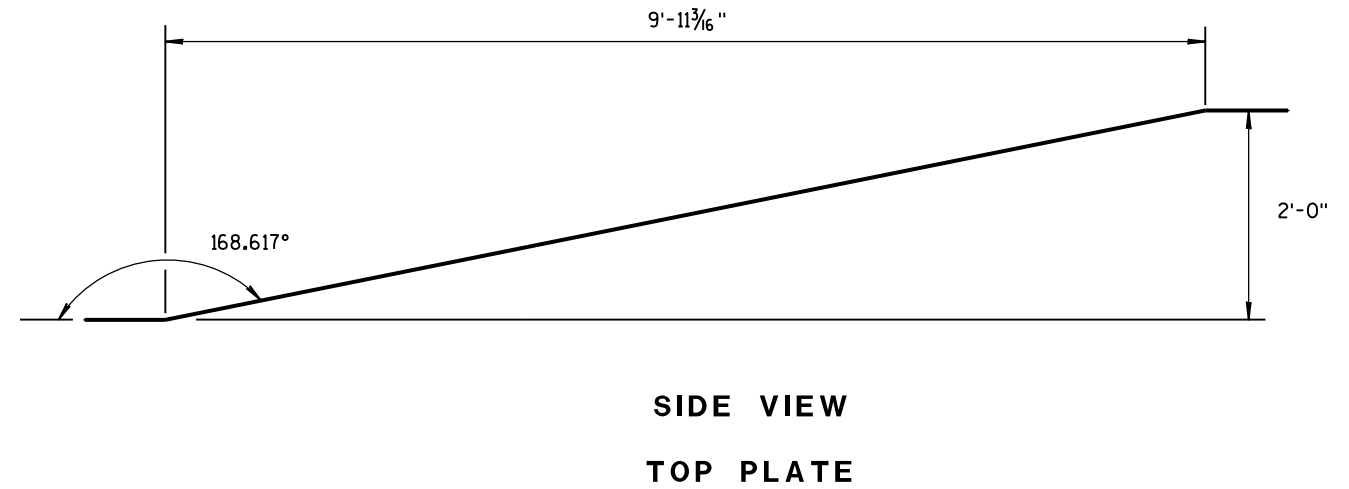
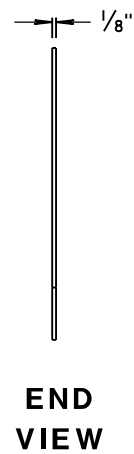
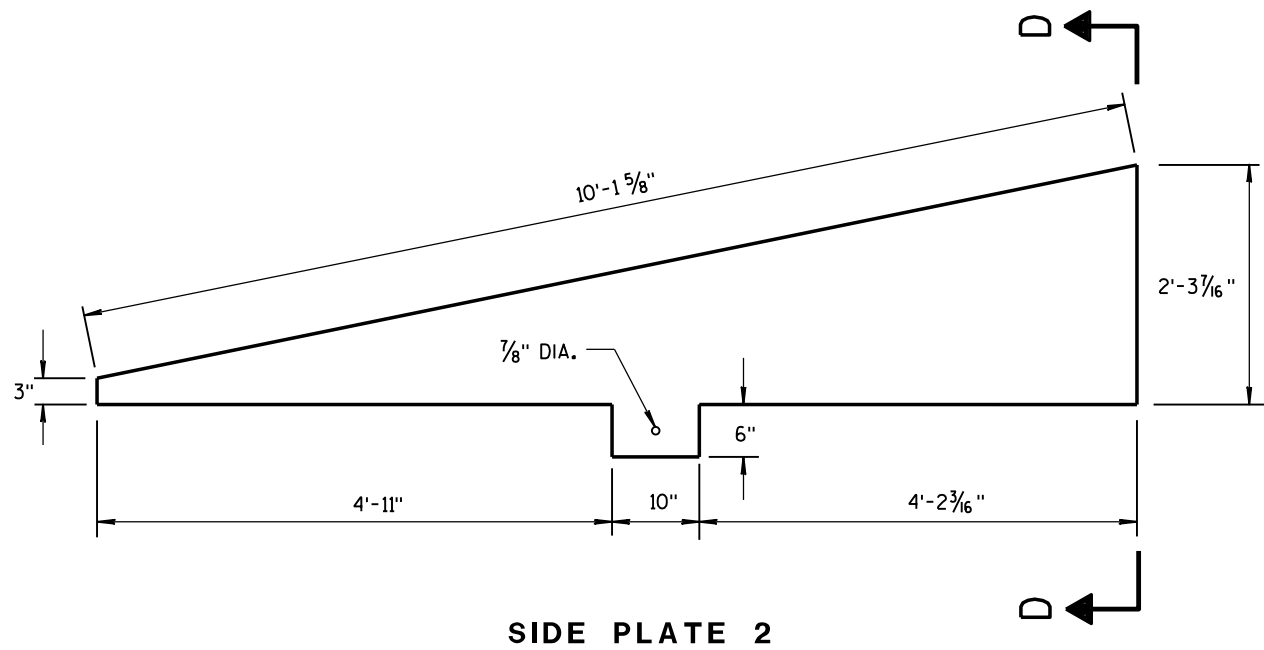


GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

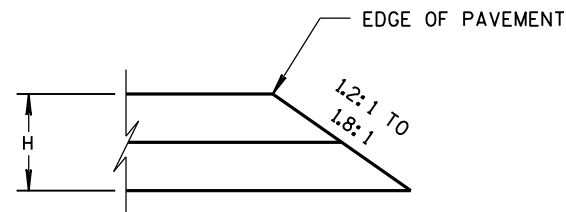
CONCRETE BARRIER  
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

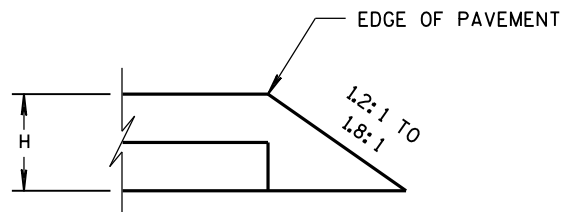


**CAP DETAILS FOR TEMPORARY CONCRETE  
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

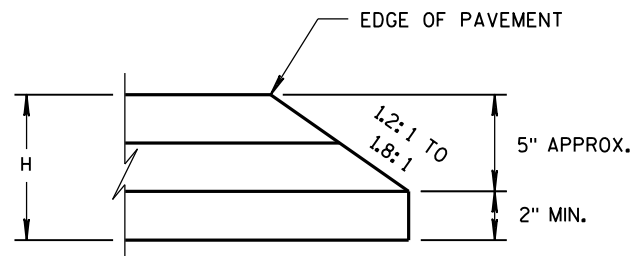
|                                                    |                                                                      |
|----------------------------------------------------|----------------------------------------------------------------------|
| CONCRETE BARRIER<br>TEMPORARY PRECAST, 12'-6"      |                                                                      |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                                      |
| APPROVED<br>June 2017<br>DATE                      | /S/ Rodney Taylor<br>ROADWAY STANDARD DEVELOPMENT<br>UNIT SUPERVISOR |
| FHWA                                               |                                                                      |



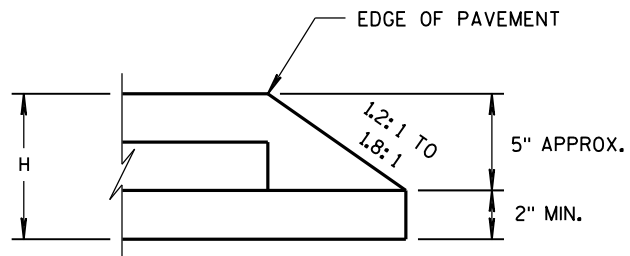
CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER  
FOR H 5" OR LESS

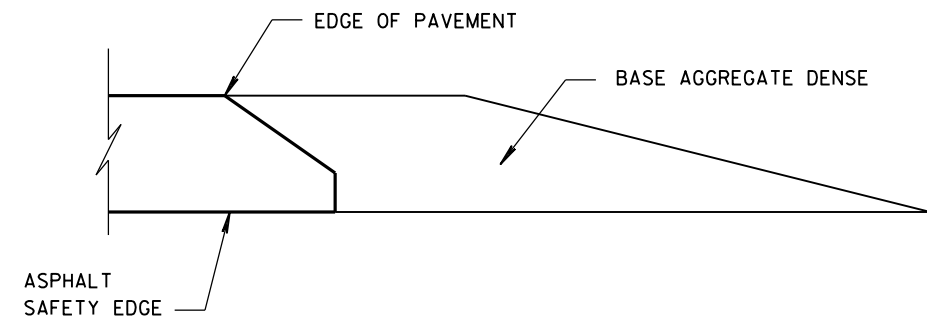


CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER  
FOR H GREATER THAN 5"

### HMA PAVEMENT AND HMA OVERLAYS



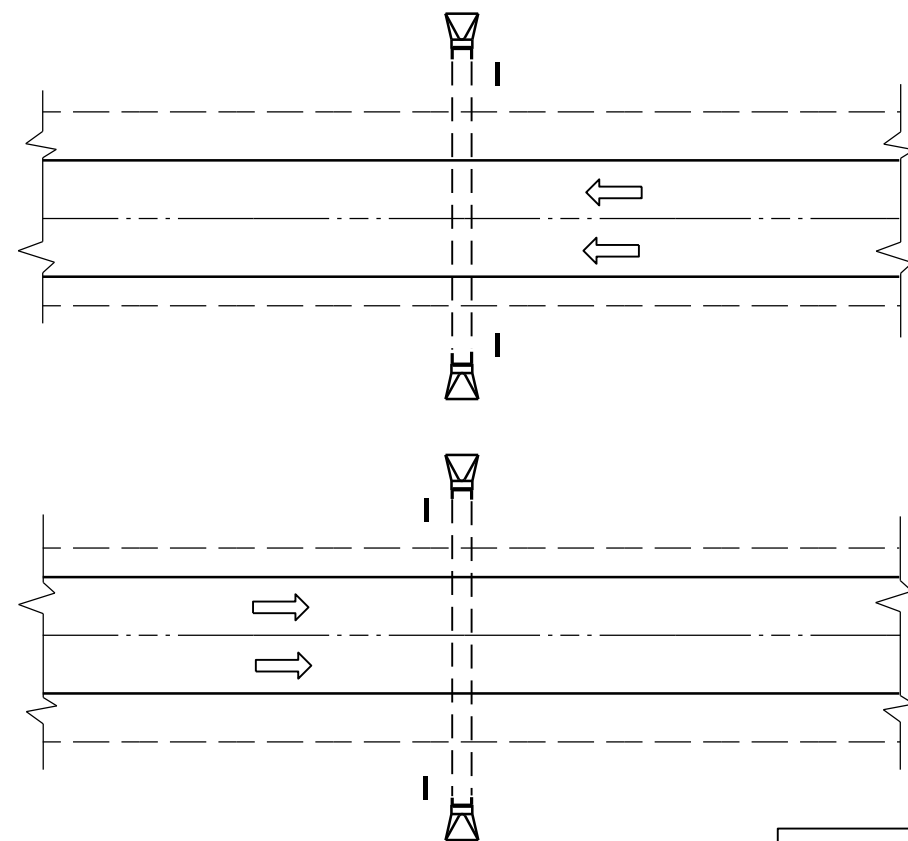
### FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE<sub>SM</sub>

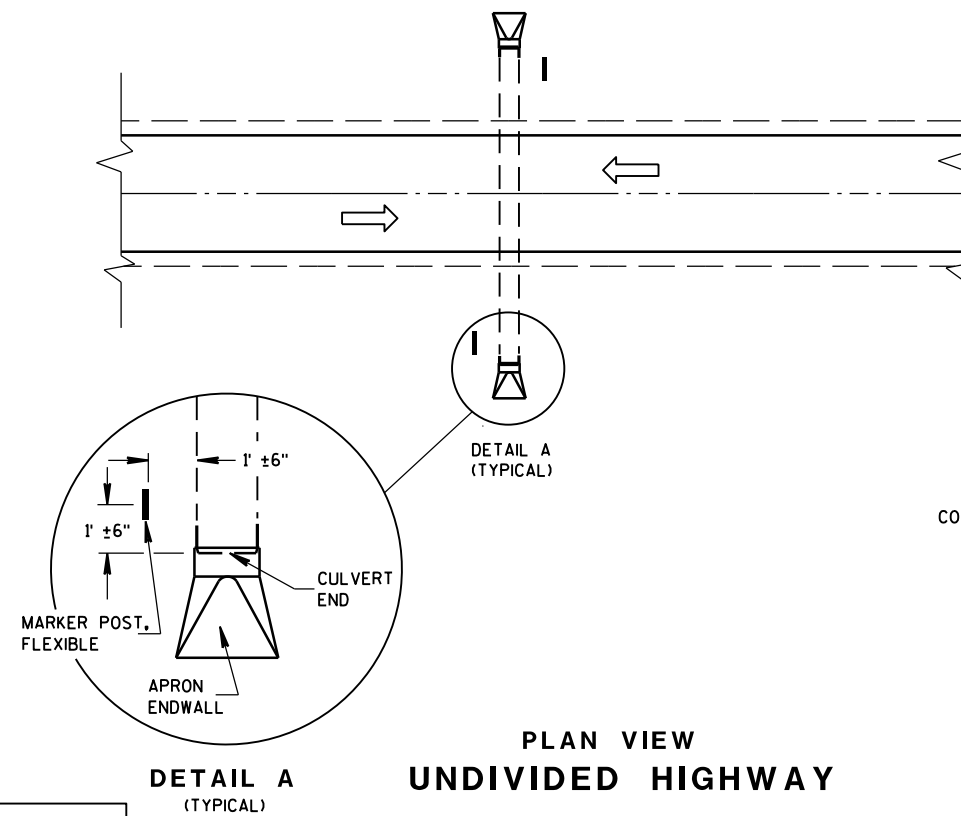
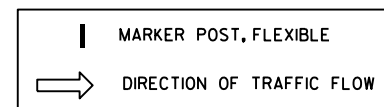
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11/30/2012  
DATE  
FHWA

/s/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



PLAN VIEW  
DIVIDED HIGHWAY

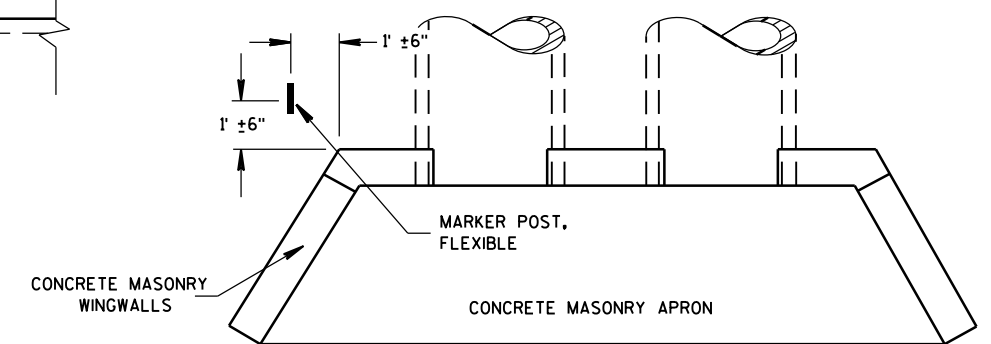


PLAN VIEW  
UNDIVIDED HIGHWAY

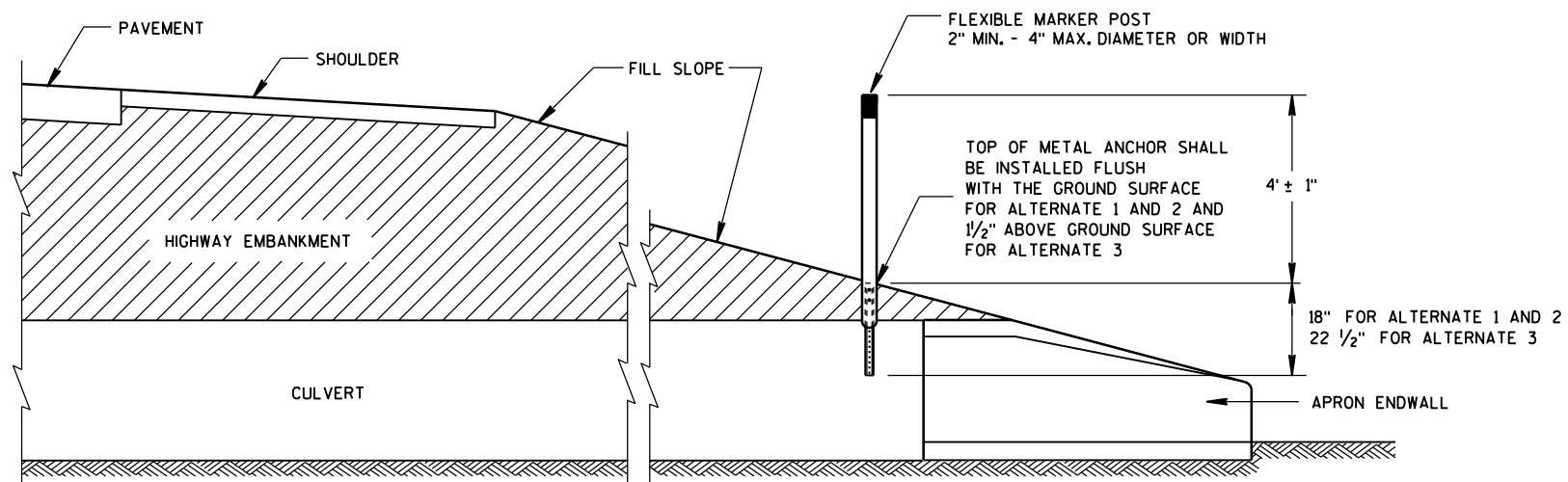
### FLEXIBLE MARKER POST LOCATION

### GENERAL NOTES

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



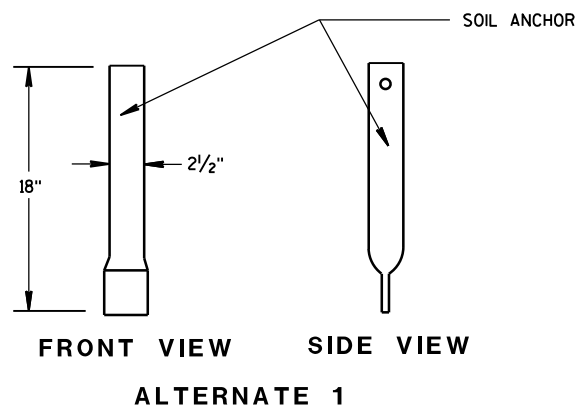
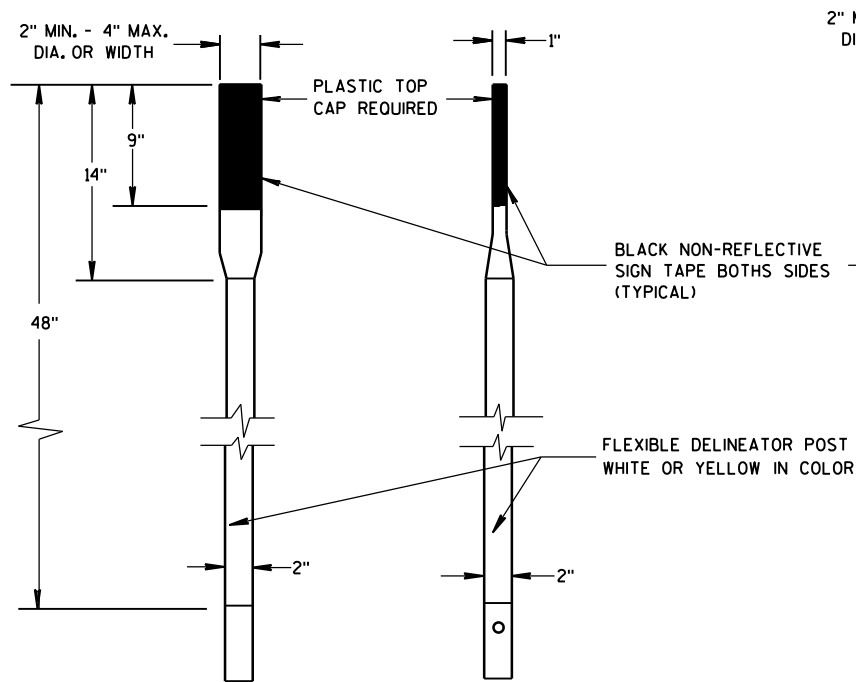
PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH



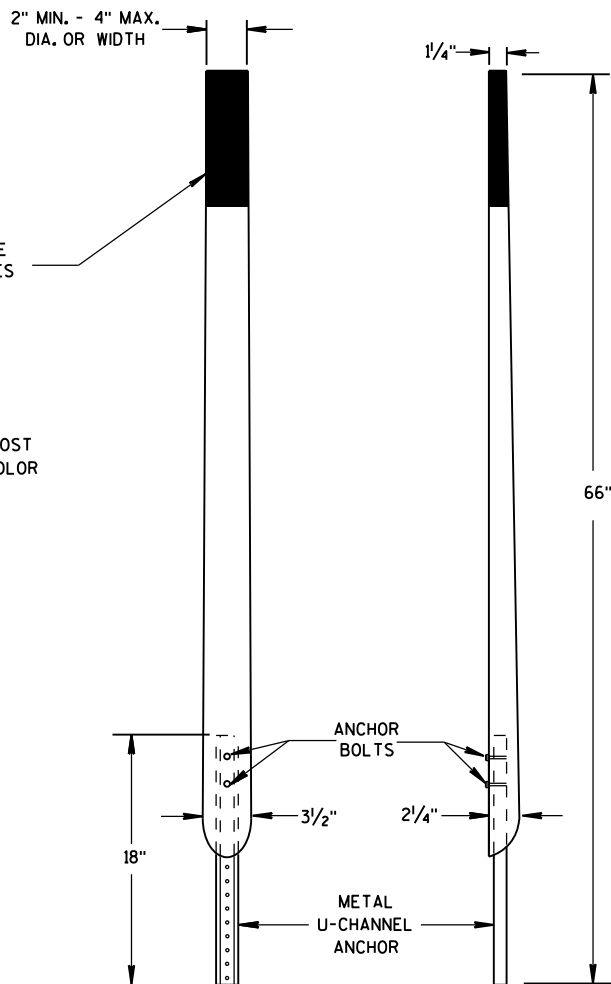
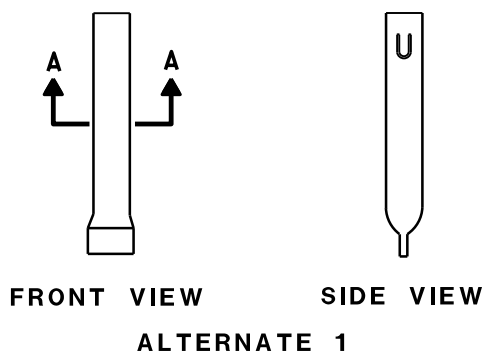
CROSS SECTION  
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST  
FOR CULVERT END

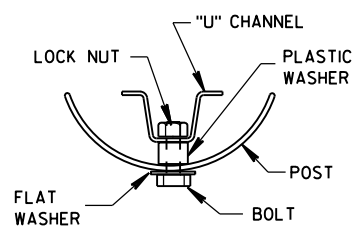
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



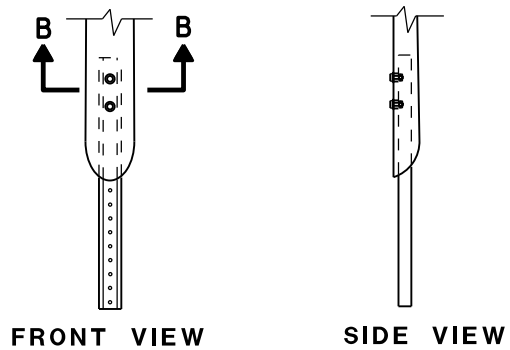
SECTION A-A

FRONT VIEW SIDE VIEW  
ALTERNATE 2

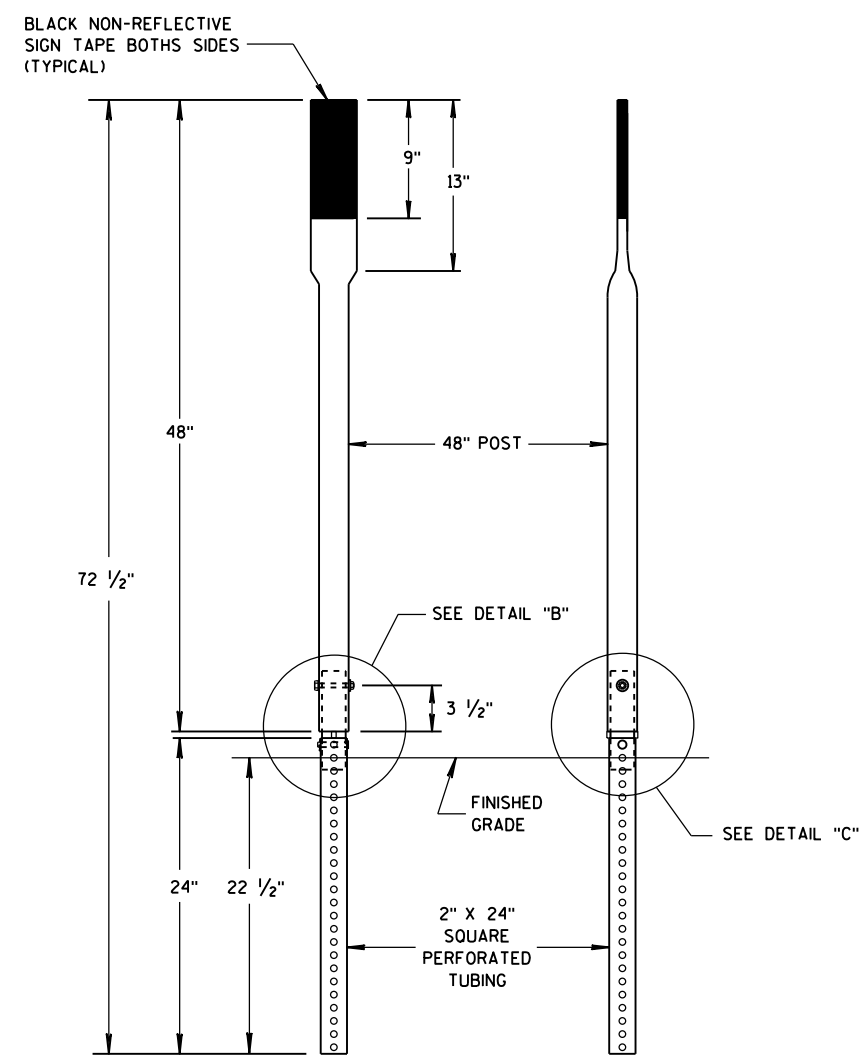
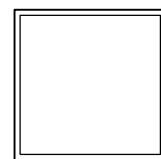
## FLEXIBLE MARKER POSTS



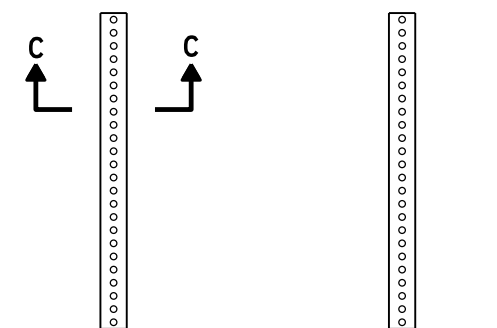
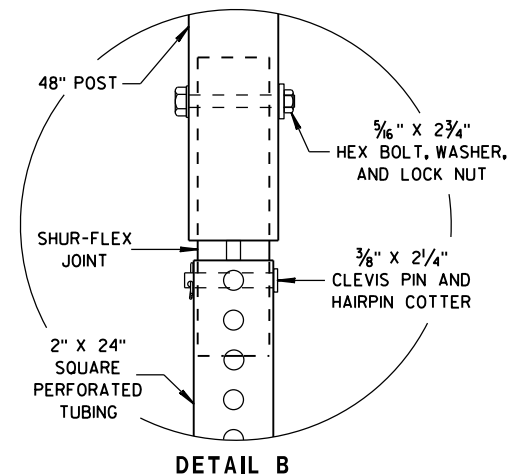
SECTION B-B

FRONT VIEW SIDE VIEW  
ALTERNATE 2

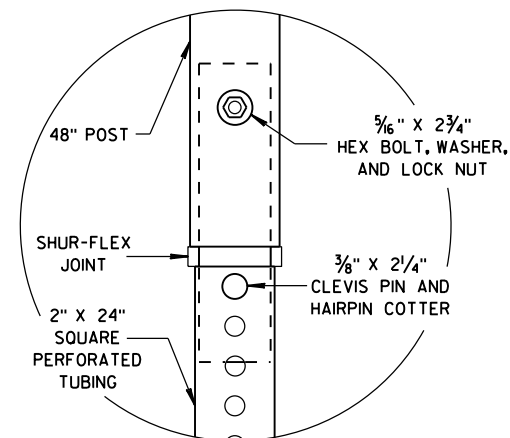
## FLEXIBLE MARKER POST ANCHORS

FRONT VIEW SIDE VIEW  
ALTERNATE 3

SECTION C-C

FRONT VIEW SIDE VIEW  
ALTERNATE 3

DETAIL B



DETAIL C

FLEXIBLE MARKER POST  
FOR CULVERT ENDSTATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

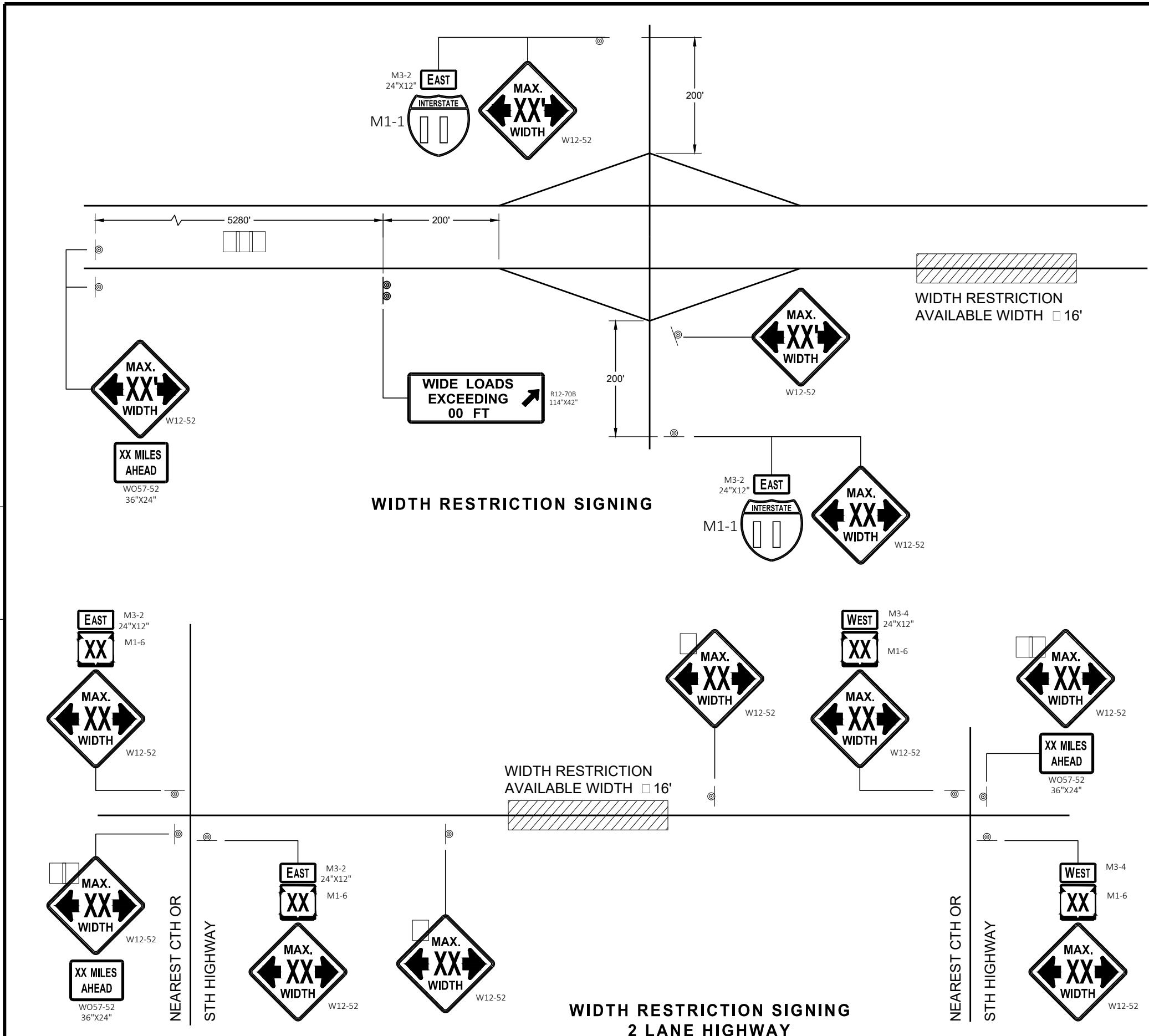
10/1/2012

DATE

FHWA

/S/ Travis Feltes

STATE TRAFFIC ENGINEER OF DESIGN



LEGEND

SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

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

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

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

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

WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

- PLACE 500 FEET BEFORE THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.
- SIGN SHALL BE VISIBLE FROM ROADWAY.
- ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.



ADVANCED WIDTH  
RESTRICTION SIGNING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Nicer 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA

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.

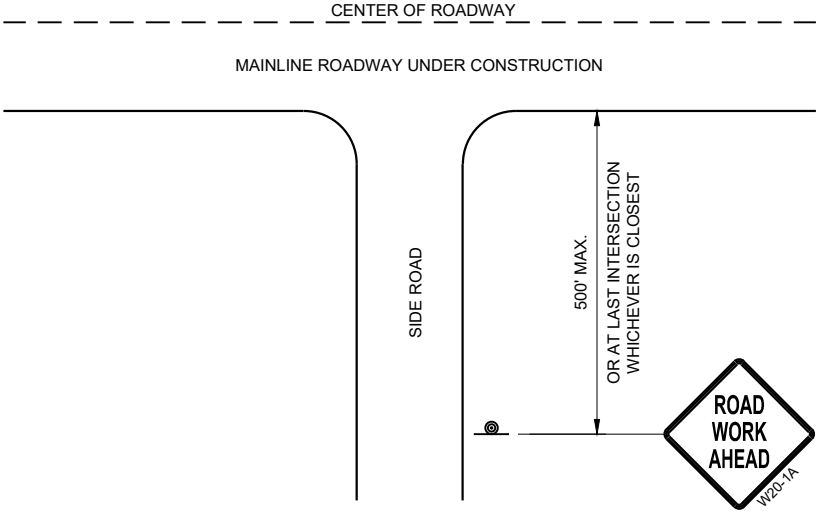
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

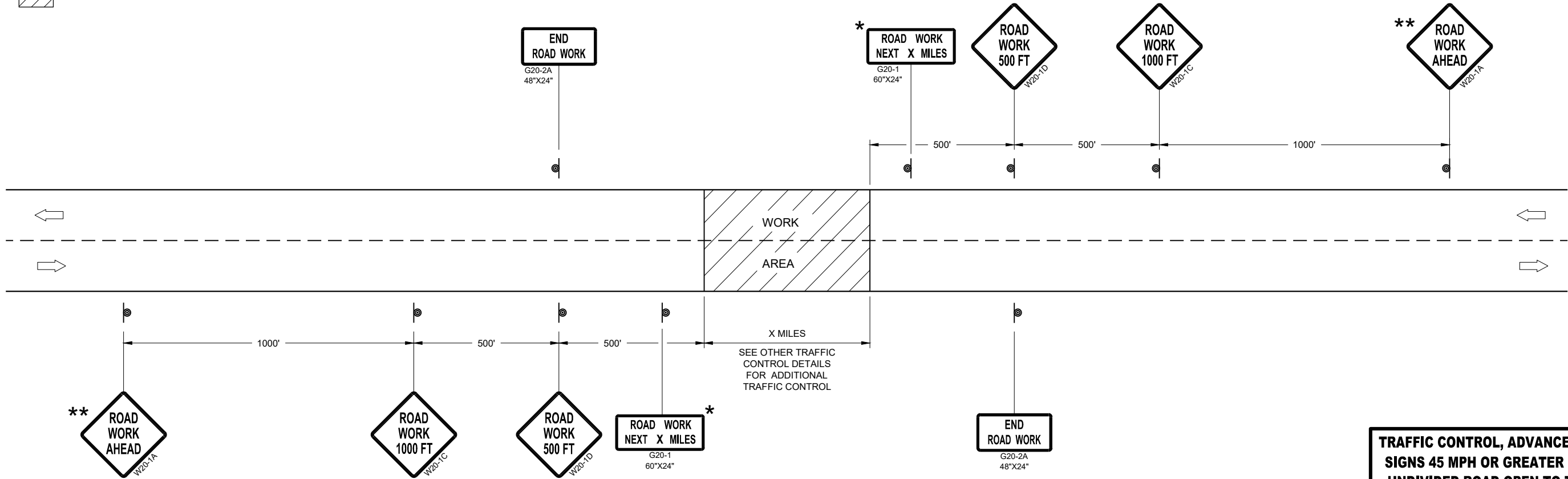
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL



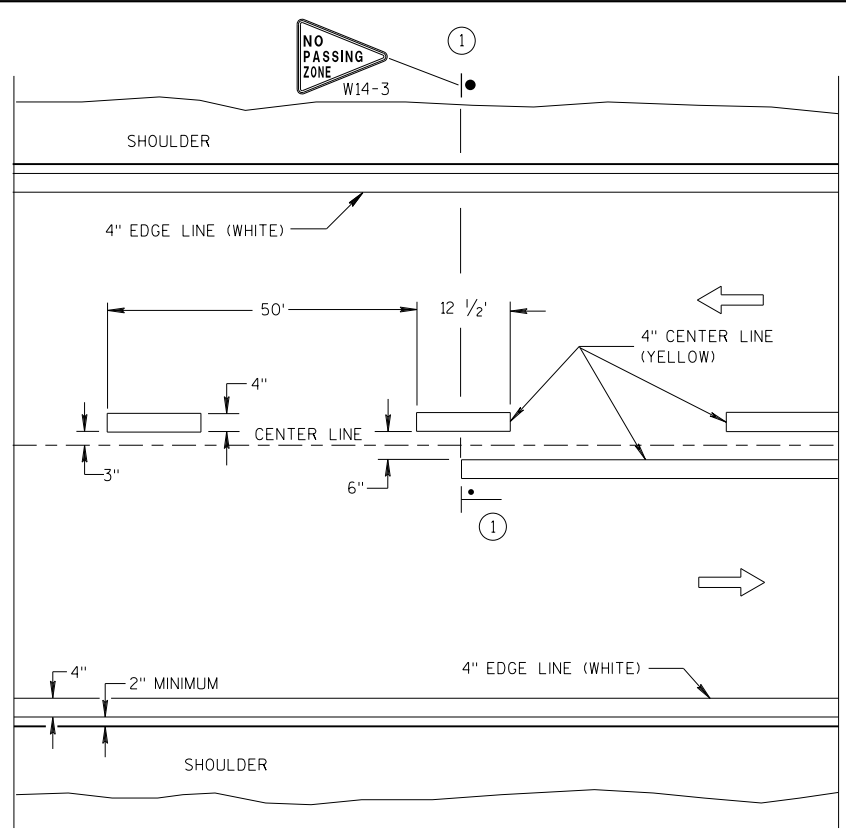
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 45 MPH OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFICE

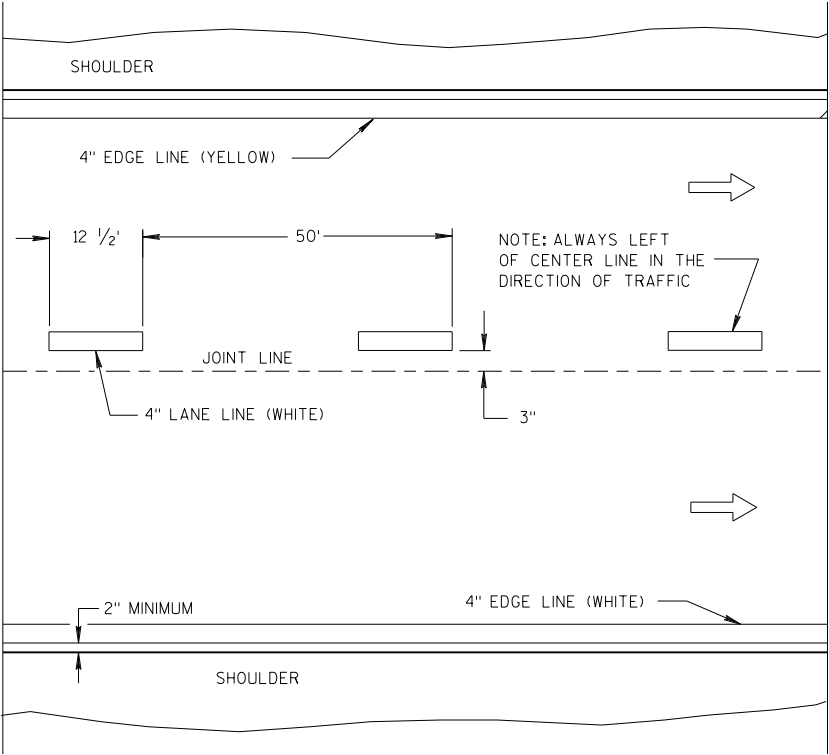
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
July 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

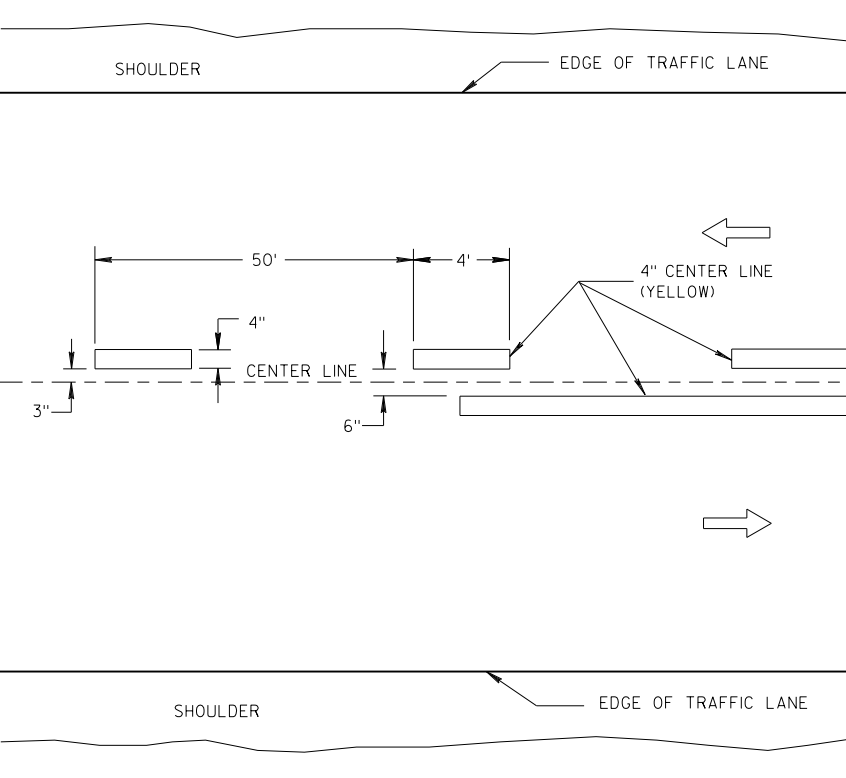


TWO WAY TRAFFIC

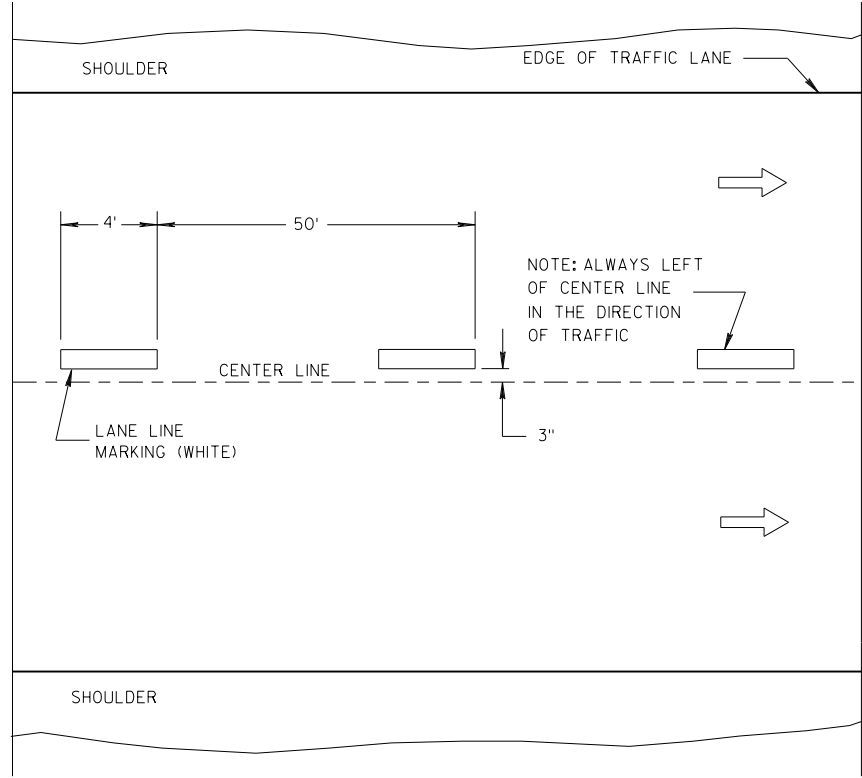


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

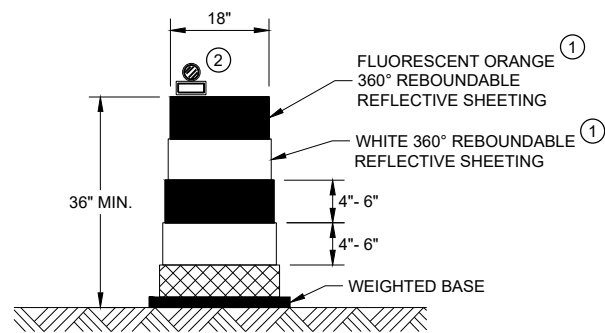
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

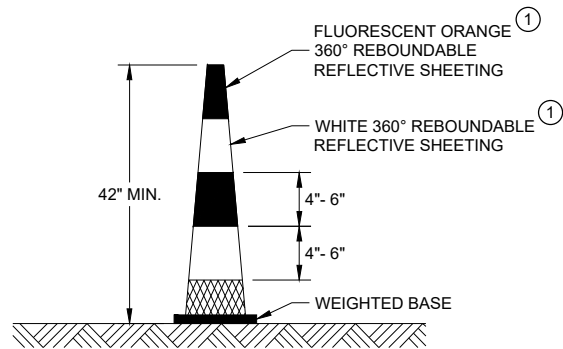
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018 /S/ Matthew R. Rauch  
DATE STATE SIGNING AND MARKING ENGINEER  
FHWA

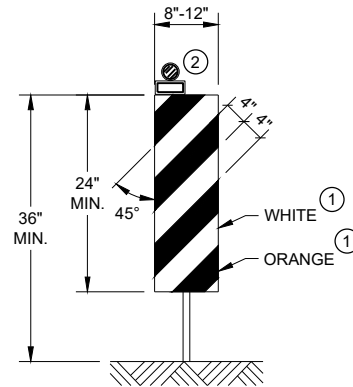


DRUM



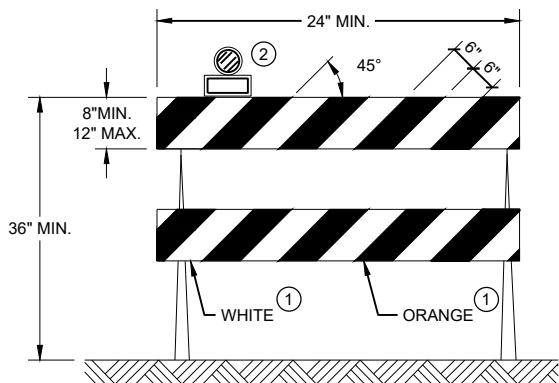
42" CONE

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS



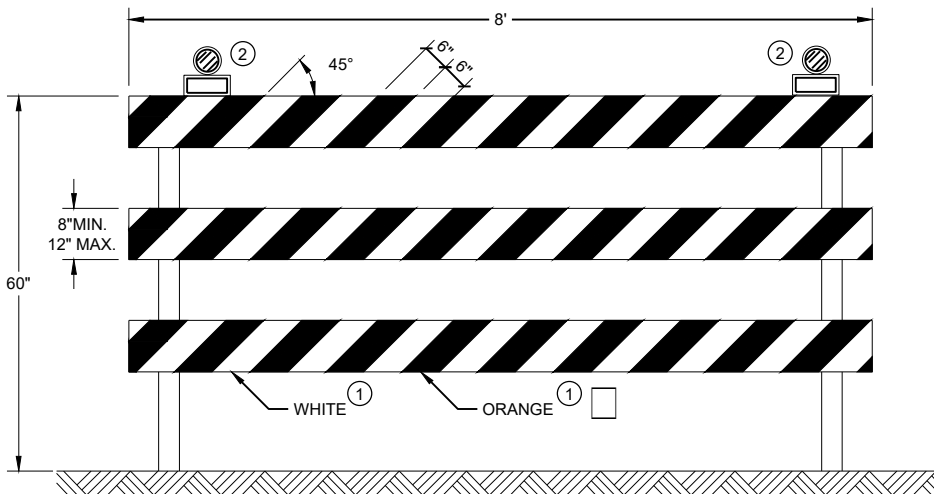
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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






CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2017 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

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.

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

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

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS, DEVICES, AND 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.

FLAGGING

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 REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' 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.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

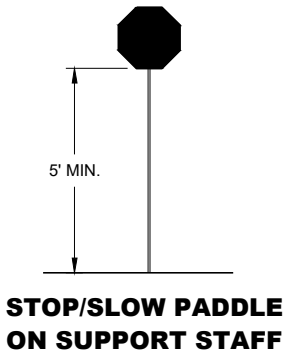
③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

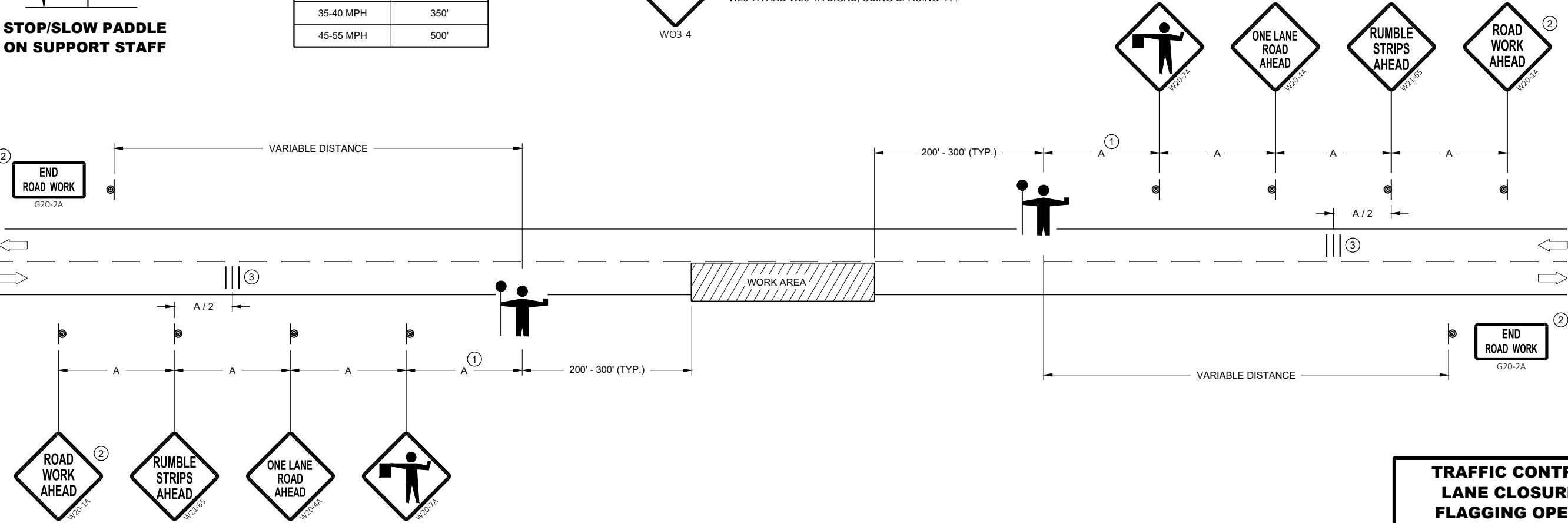


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH   | 200'        |
| 35-40 MPH   | 350'        |
| 45-55 MPH   | 500'        |

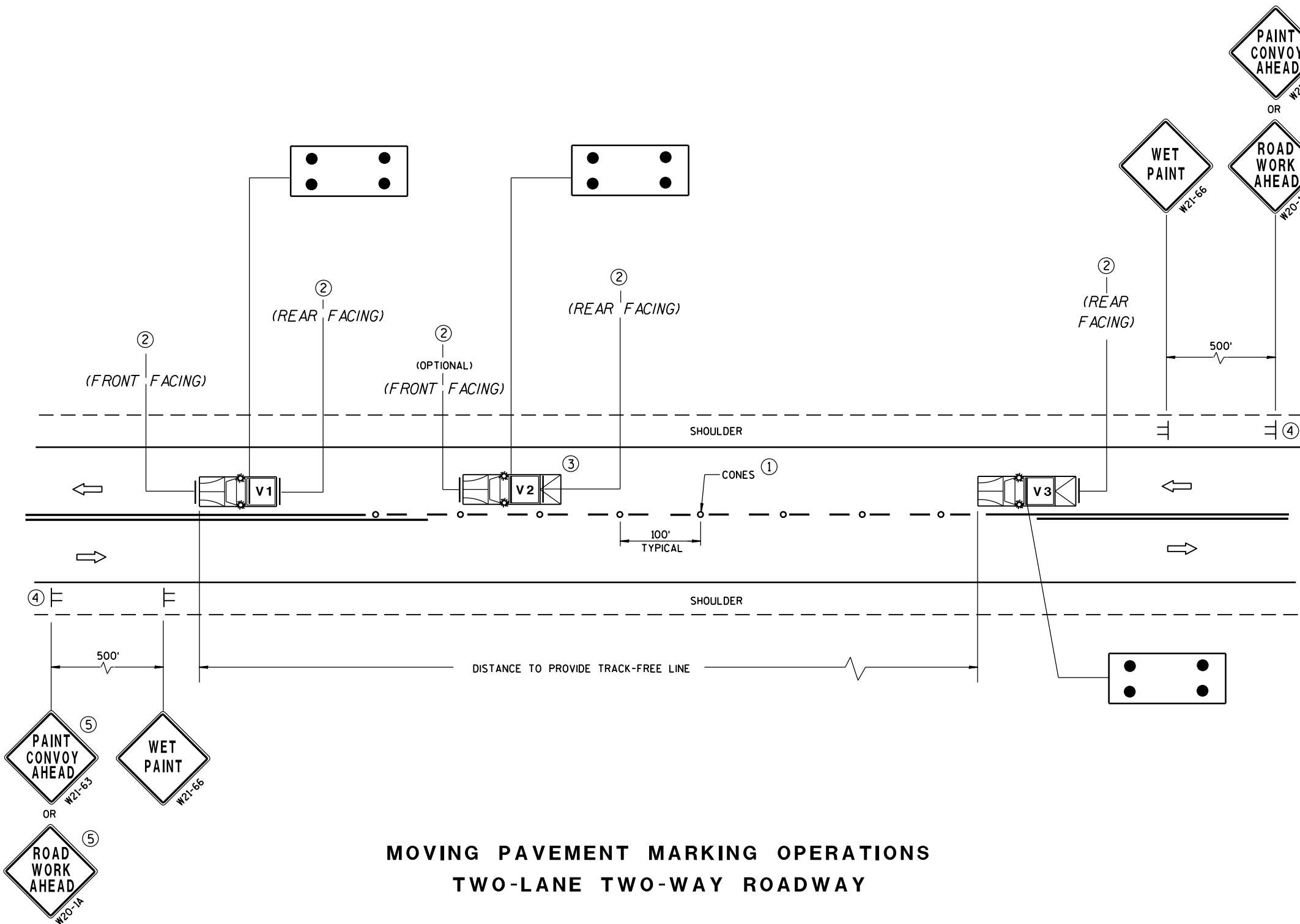


USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

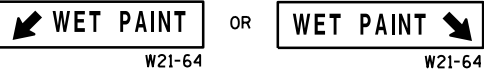
|                                                                 |                                          |
|-----------------------------------------------------------------|------------------------------------------|
| <b>TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION</b> |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION              |                                          |
| APPROVED<br>M 2019<br>DATE                                      | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                                            |                                          |



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.
- 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.



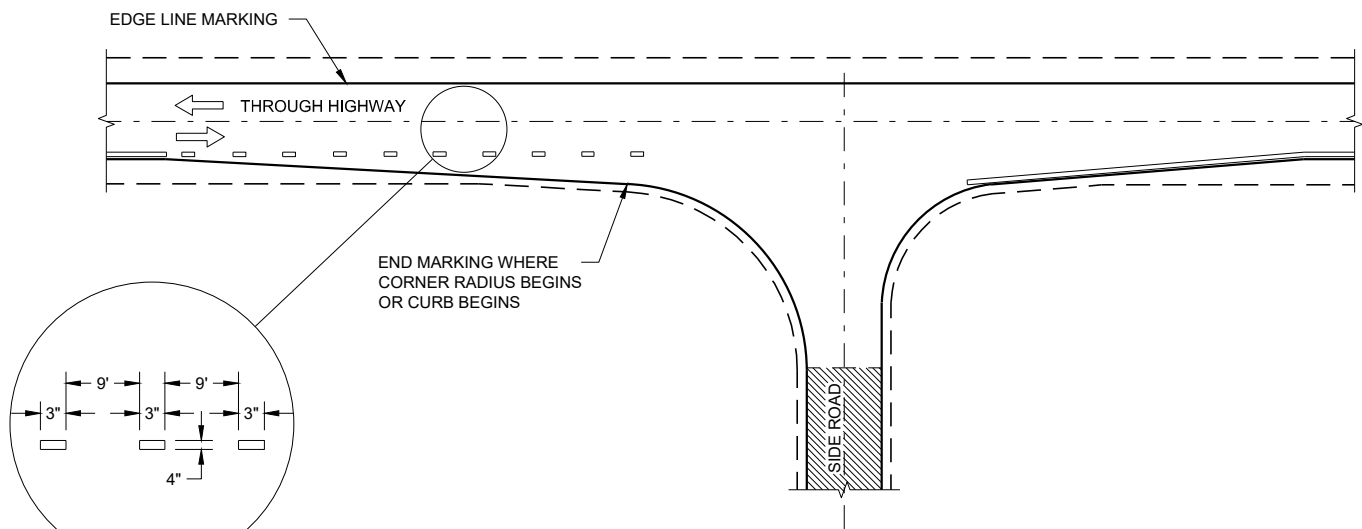
LEGEND

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

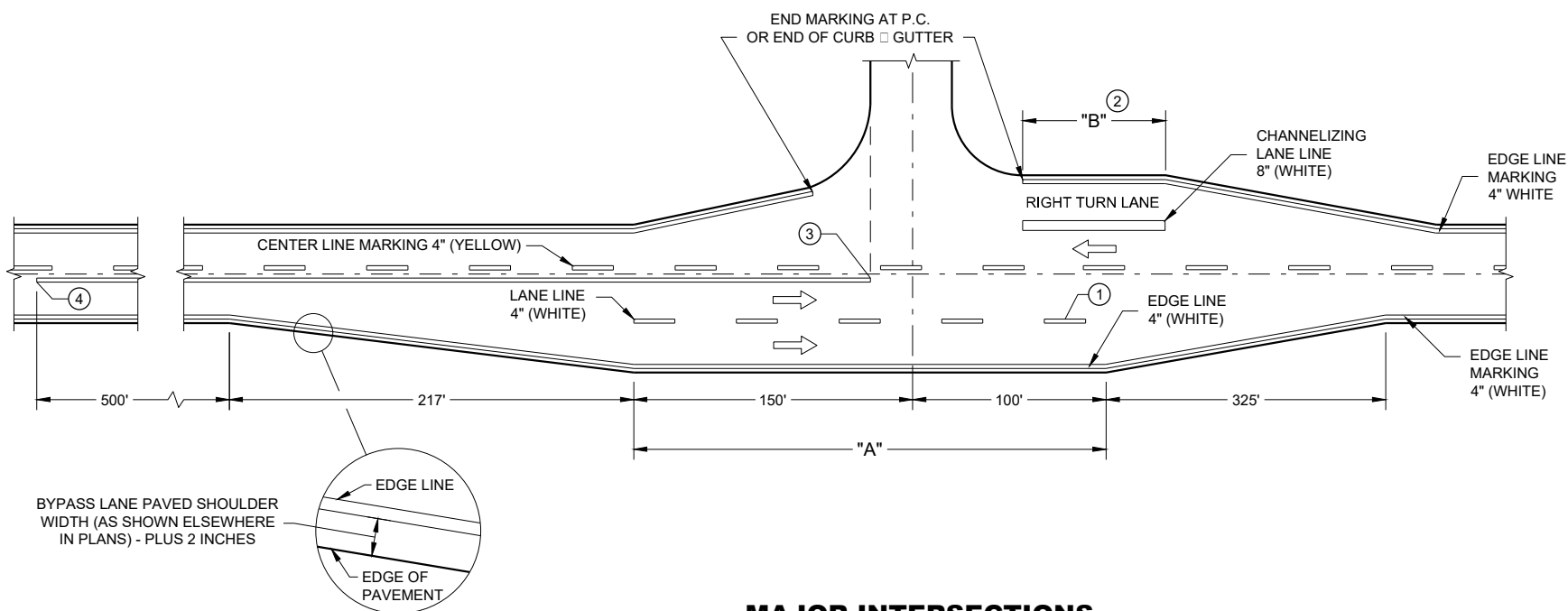
MOVING PAVEMENT MARKING  
OPERATION  
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: Sept., 2017 /S/ Andrew Heidtke  
WORK ZONE ENGINEER  
FHWA



MINOR INTERSECTION



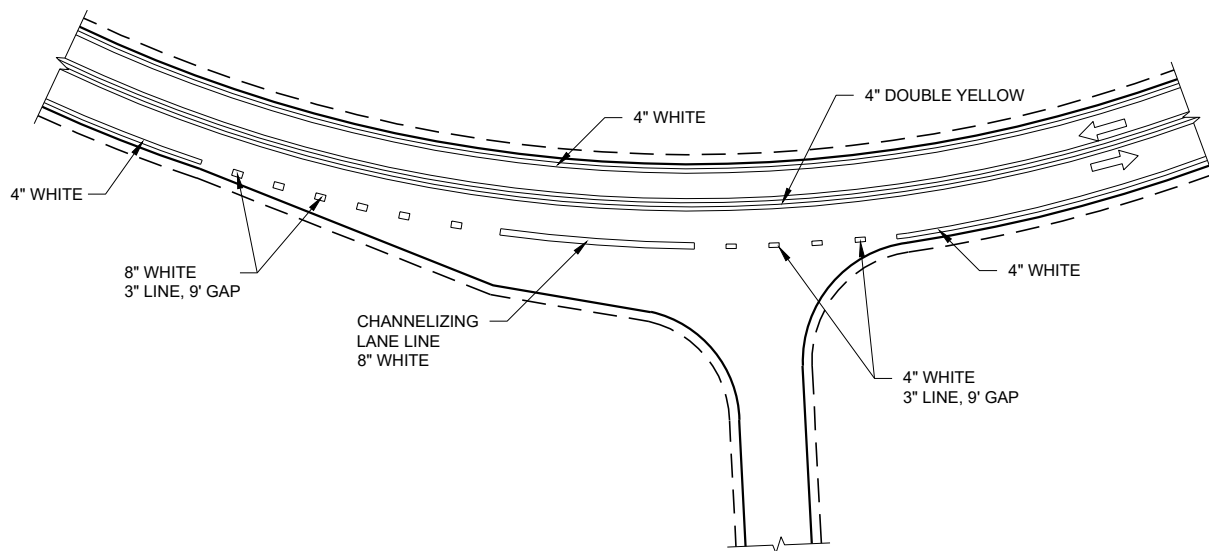
MAJOR INTERSECTIONS  
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES 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 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER

ARROW SYMBOL ( ➡ ) SHOWS DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING  
(INTERSECTIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND





-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

TABLE A

| SHOULDER TAPER LENGTH (FEET) |    |     |     |     | BUFFER SPACE (FEET) |
|------------------------------|----|-----|-----|-----|---------------------|
| S \ W                        | 4  | 6   | 8   | 10  |                     |
| 30                           | 20 | 30  | 40  | 50  | 200                 |
| 35                           | 30 | 45  | 55  | 70  | 250                 |
| 40                           | 40 | 55  | 75  | 90  | 305                 |
| 45                           | 60 | 90  | 120 | 150 | 360                 |
| 50                           | 70 | 100 | 135 | 170 | 425                 |
| 55                           | 75 | 110 | 150 | 185 | 495                 |

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

TAPER LENGTH

L □ WS AT 45 MPH OR GREATER  
L = WS² / 60 AT 40 MPH OR LESS

SHOULDER TAPER LENGTH □ 1/3L

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

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

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

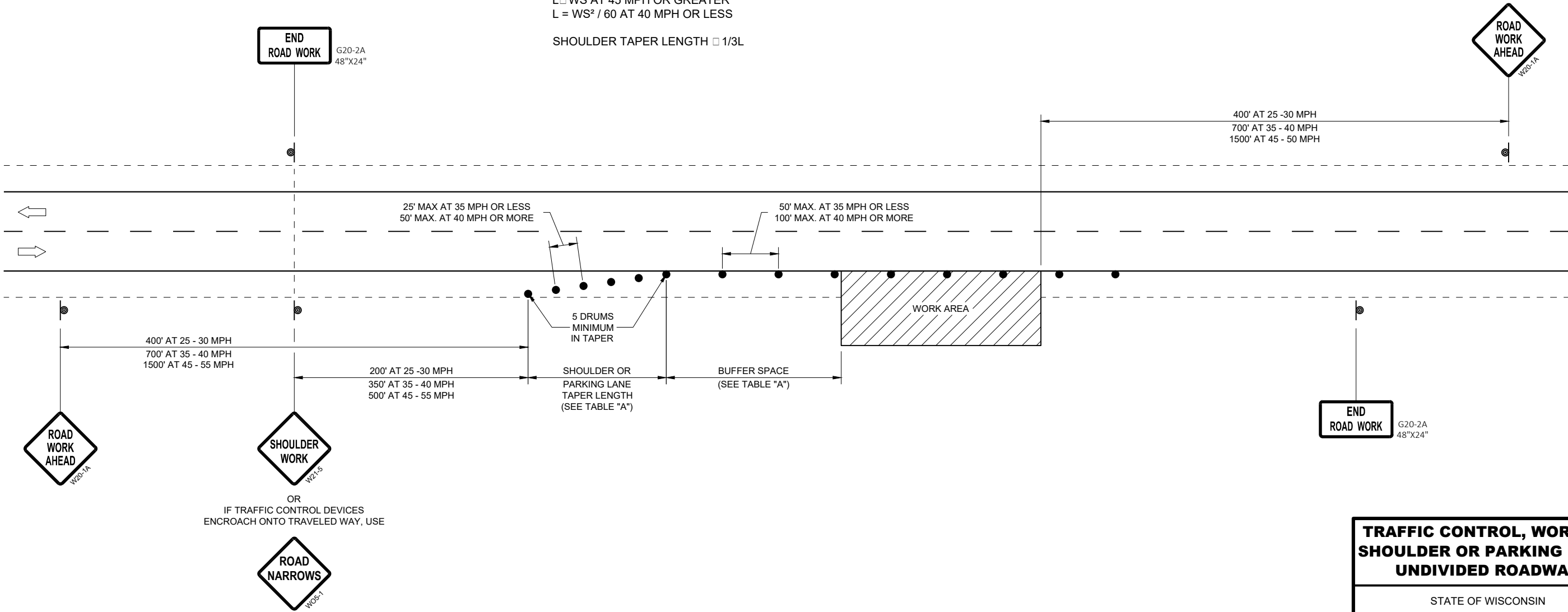
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

6

SDD 15D28 - 03



6

SDD 15D28 - 03

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





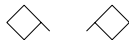





STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2019  
DATE

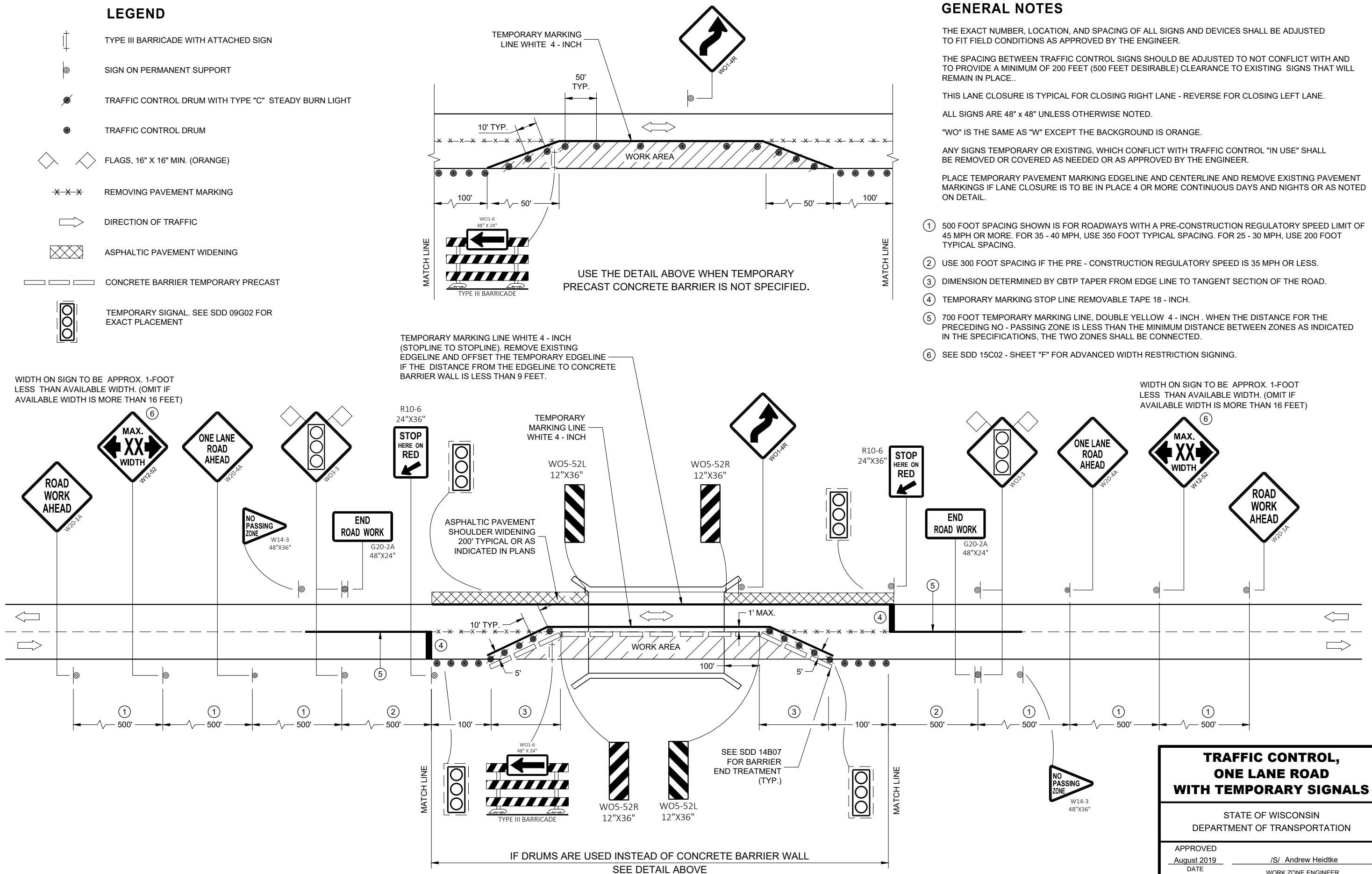
/S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

FHWA

## LEGEND

- |                                                                                   |                                                      |
|-----------------------------------------------------------------------------------|------------------------------------------------------|
|  | TYPE III BARRICADE WITH ATTACHED SIGN                |
|  | SIGN ON PERMANENT SUPPORT                            |
|  | TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT |
|  | TRAFFIC CONTROL DRUM                                 |
|  | FLAGS, 16" X 16" MIN. (ORANGE)                       |
|  | REMOVING PAVEMENT MARKING                            |
|  | DIRECTION OF TRAFFIC                                 |
|  | ASPHALTIC PAVEMENT WIDENING                          |
|  | CONCRETE BARRIER TEMPORARY PRECAST                   |
|  | TEMPORARY SIGNAL. SEE SDD 09G02 FOR EXACT PLACEMENT  |

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 AS APPROVED BY THE ENGINEER.

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

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

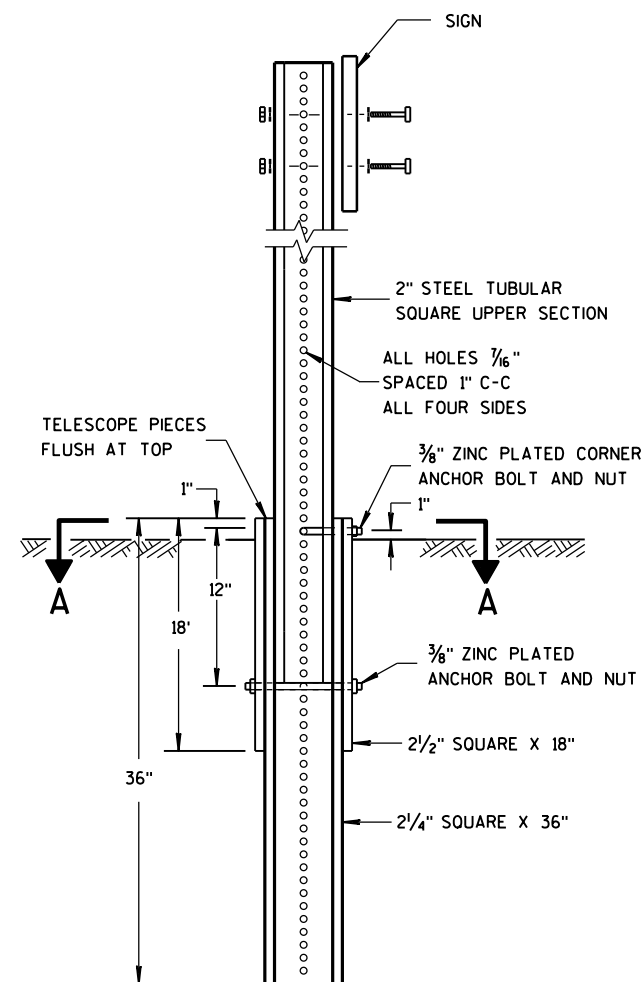
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR 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 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

- ① 500 FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35 - 40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25 - 30 MPH, USE 200 FOOT TYPICAL SPACING.
- ② USE 300 FOOT SPACING IF THE PRE - CONSTRUCTION REGULATORY SPEED IS 35 MPH OR LESS.
- ③ DIMENSION DETERMINED BY CBTP TAPER FROM EDGE LINE TO TANGENT SECTION OF THE ROAD.
- ④ TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18 - INCH.
- ⑤ 700 FOOT TEMPORARY MARKING LINE, DOUBLE YELLOW 4 - INCH . WHEN THE DISTANCE FOR THE PRECEDING NO - PASSING ZONE IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES AS INDICATED IN THE SPECIFICATIONS, THE TWO ZONES SHALL BE CONNECTED.
- ⑥ SEE SDD 15C02 - SHEET "F" FOR ADVANCED WIDTH RESTRICTION SIGNING.

WIDTH ON SIGN TO BE APPROX. 1-FOOT  
LESS THAN AVAILABLE WIDTH. (OMIT IF  
AVAILABLE WIDTH IS MORE THAN 16 FEET)

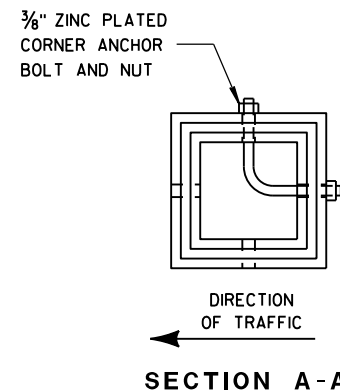


DETAIL OF TUBULAR  
STEEL SIGN POST

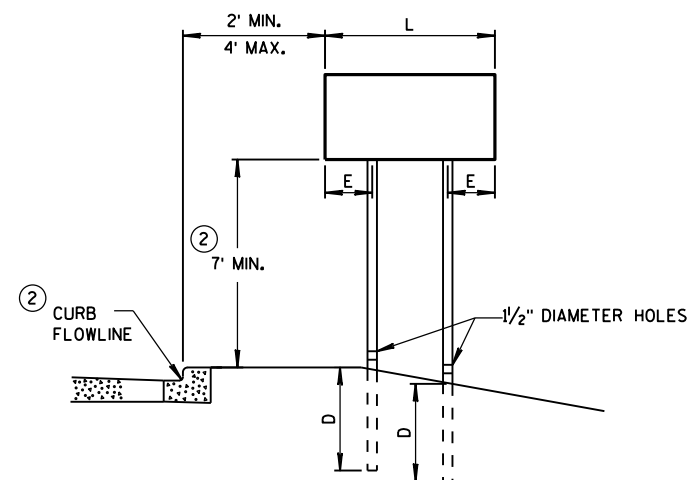
TUBULAR STEEL POSTS

| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.)      | NUMBER OF<br>REQUIRED TUBULAR<br>STEEL POSTS |
|------------------------------------------------|----------------------------------------------|
| 9 OR LESS                                      | 1                                            |
| GREATER THAN 9<br>LESS THAN OR EQUAL<br>TO 18  | 2                                            |
| GREATER THAN 18<br>LESS THAN OR EQUAL<br>TO 27 | 3                                            |

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL  
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).  
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED  
ON TUBULAR STEEL POSTS.



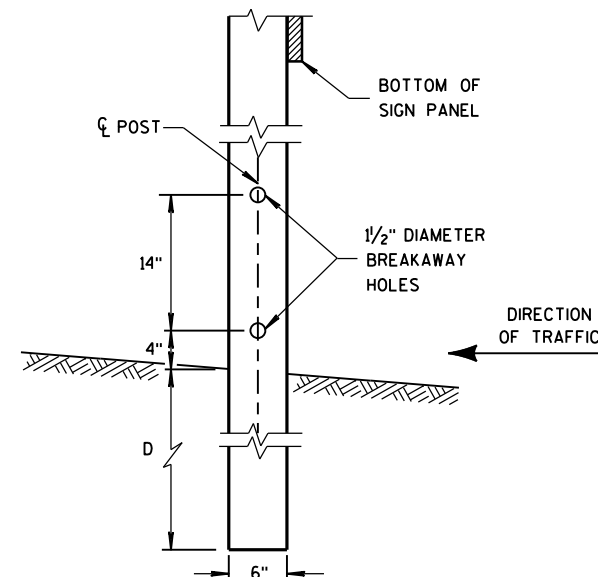
SECTION A-A



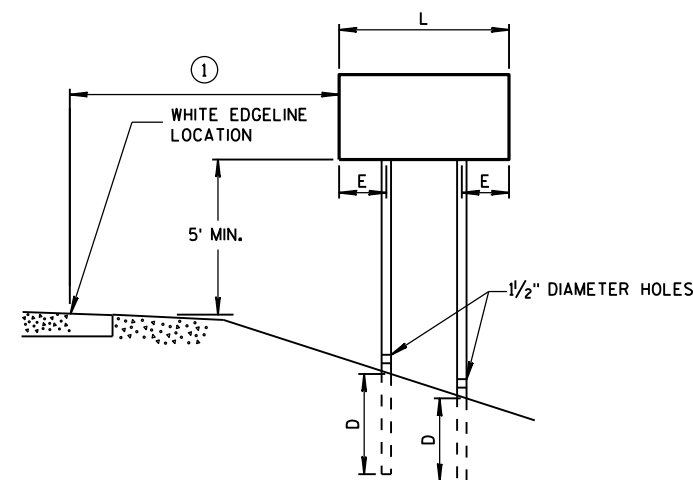
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

| WOOD POST<br>EMBEDMENT DEPTH              |            |
|-------------------------------------------|------------|
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.) | D<br>(MIN) |
| 20 OR LESS                                | 4'         |
| GREATER THAN 20                           | 5'         |



4 "x6 " WOOD POST  
MODIFICATION



RURAL AREA

| POST SPACING REQUIREMENTS               |     | NUMBER OF<br>WOOD POSTS<br>REQUIRED |
|-----------------------------------------|-----|-------------------------------------|
| L                                       | E   |                                     |
| 48" OR LESS AND<br>LESS THAN 20 SQ. FT. | -   | 1                                   |
| LESS THAN 60"                           | 12" | 2                                   |
| 60" TO 120"                             | L/5 | 2                                   |
| GREATER THAN 120"<br>LESS THAN 168"     | 12" | 3                                   |
| 168" AND GREATER                        | 12" | 4                                   |

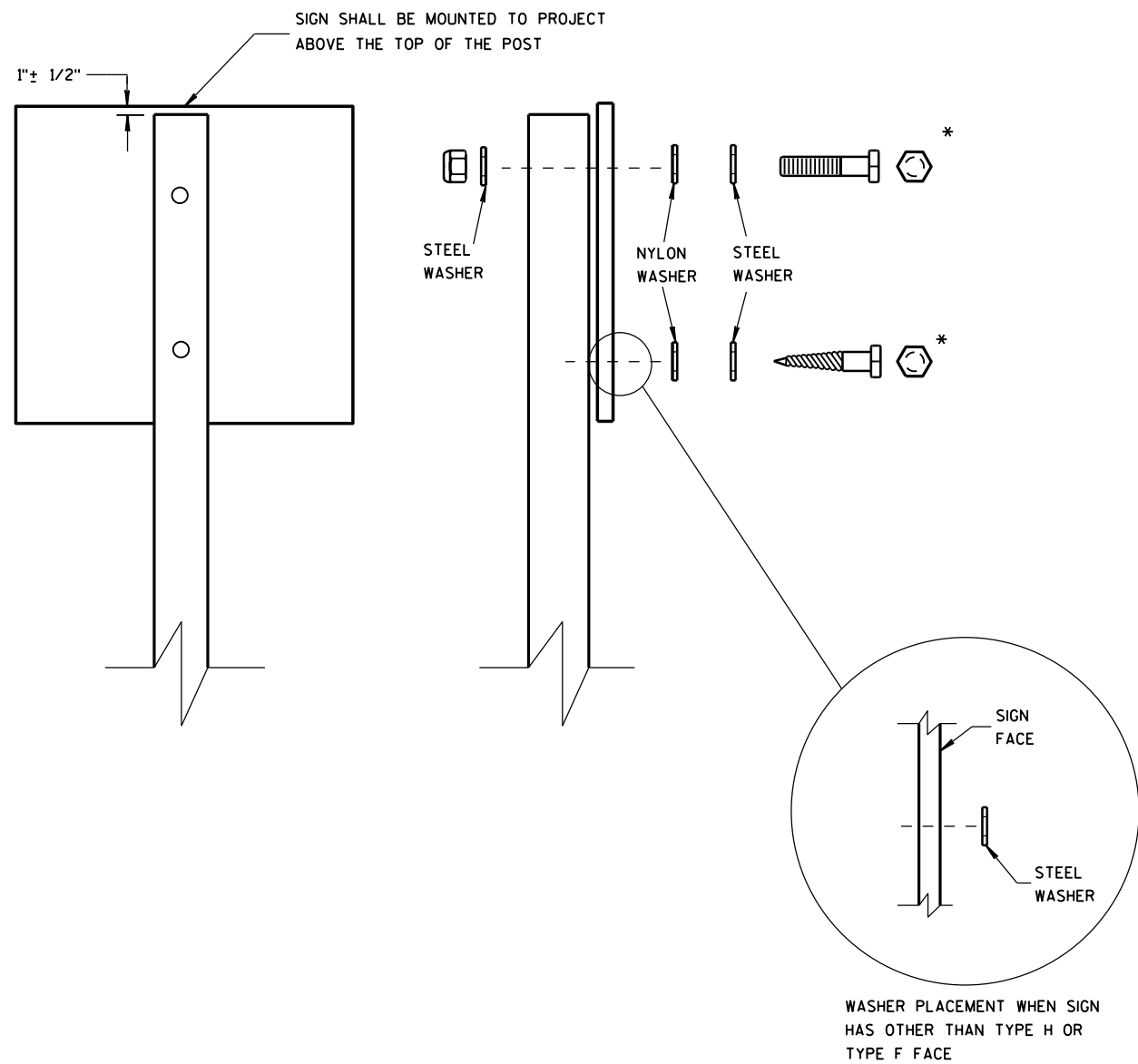
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL  
SIGN MOUNTING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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.

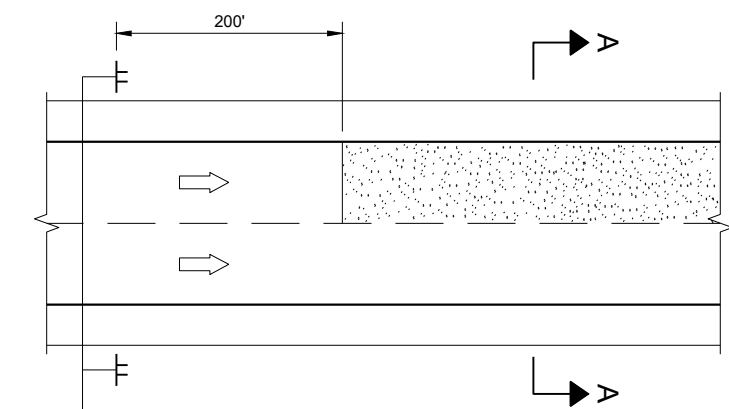
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
  - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- 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

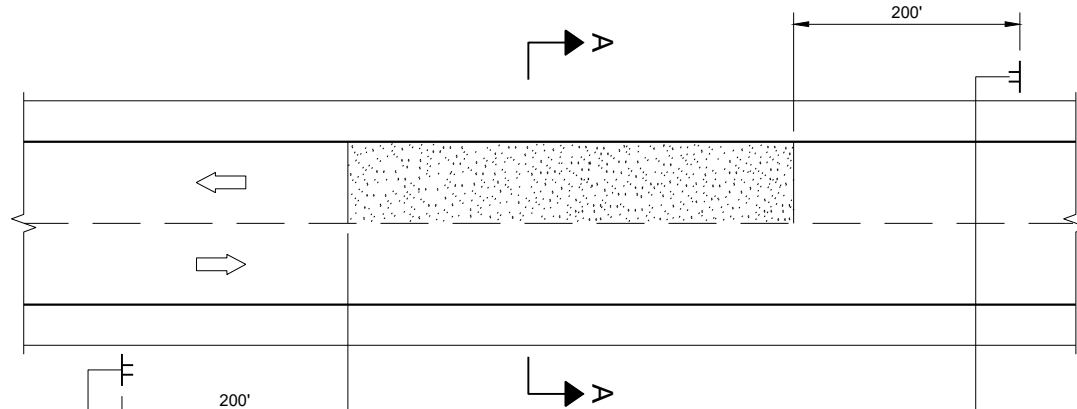
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
  - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

\* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

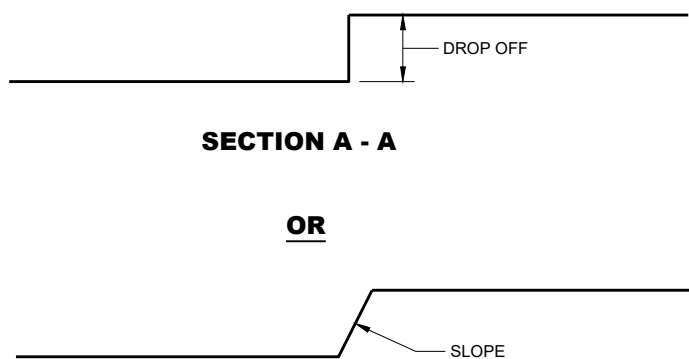
|                                                    |                                          |
|----------------------------------------------------|------------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS                    |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                          |
| APPROVED<br>June 2017<br>DATE                      | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                               |                                          |



MULTI-LANE



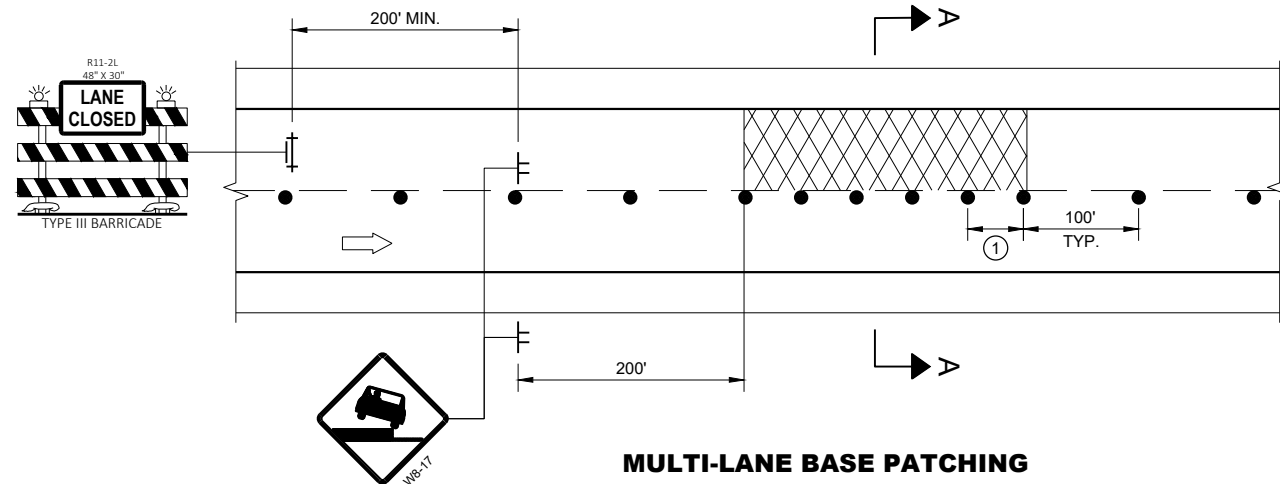
TWO-WAY TWO LANE



SECTION A - A

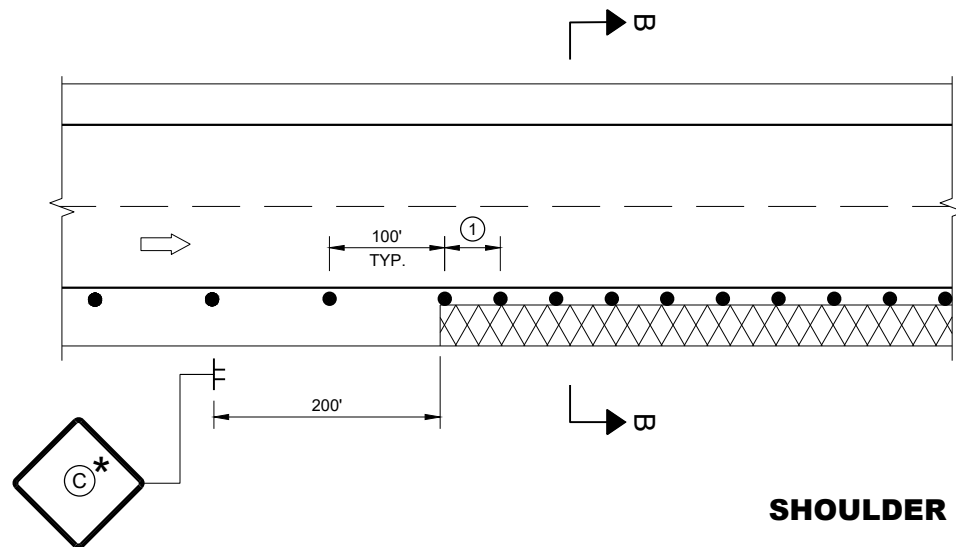
OR

SECTION A - A

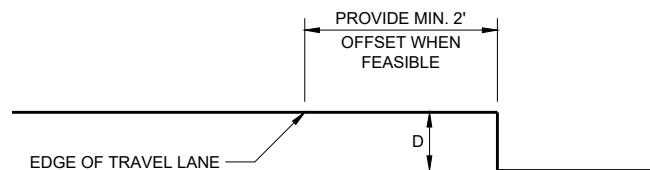


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B - B

| D                                     | SIGN (C)                                                                         |
|---------------------------------------|----------------------------------------------------------------------------------|
| < 2" WITH A SLOPE STEEPER THAN 3:1    | <br>WB-9                                                                         |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | <br>WB-9A<br>PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT |

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

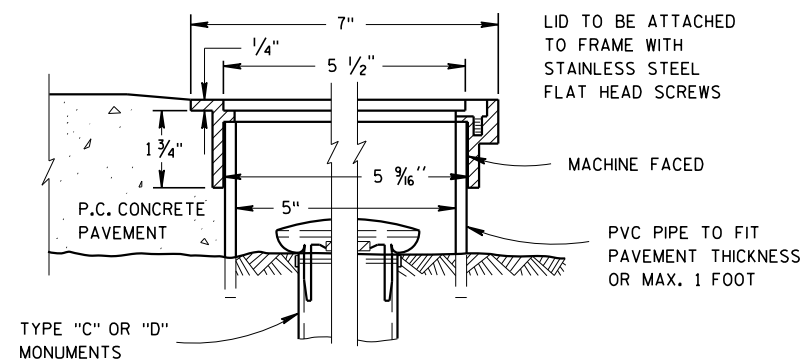
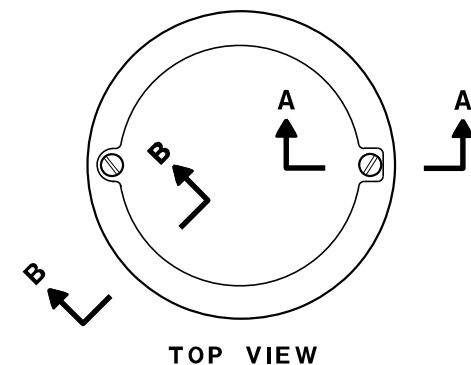
\* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

| TRAFFIC CONTROL, DROP-OFF SIGNING                  |                                          |
|----------------------------------------------------|------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                          |
| APPROVED<br>March 2018<br>DATE                     | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                               |                                          |

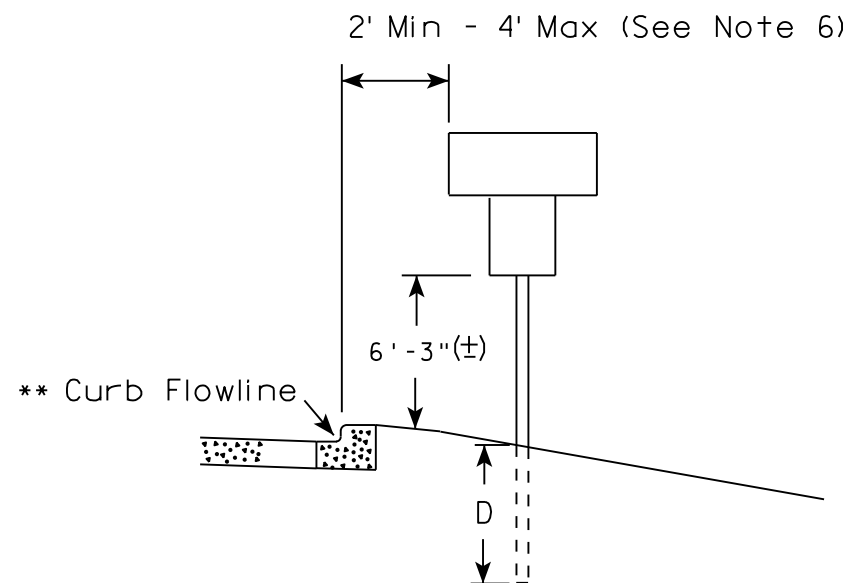
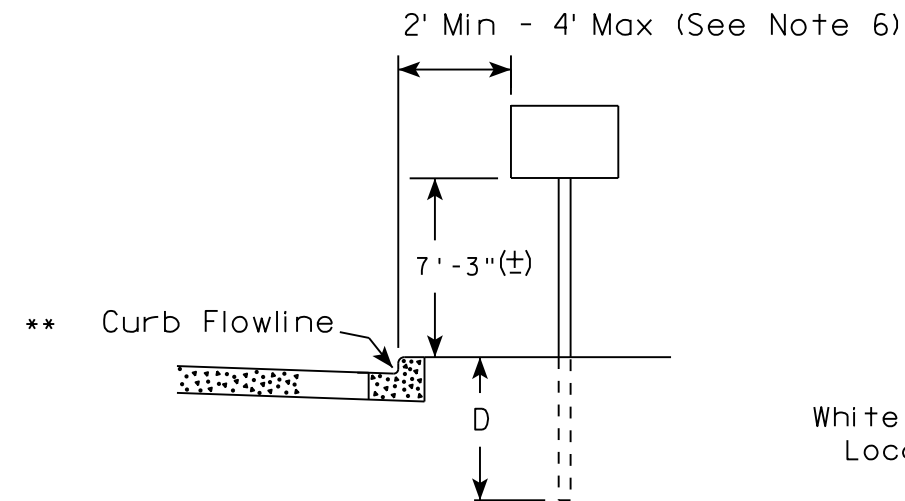


(APPROXIMATE WEIGHT 2 LBS)  
(FOR CONCRETE PAVEMENT ONLY)



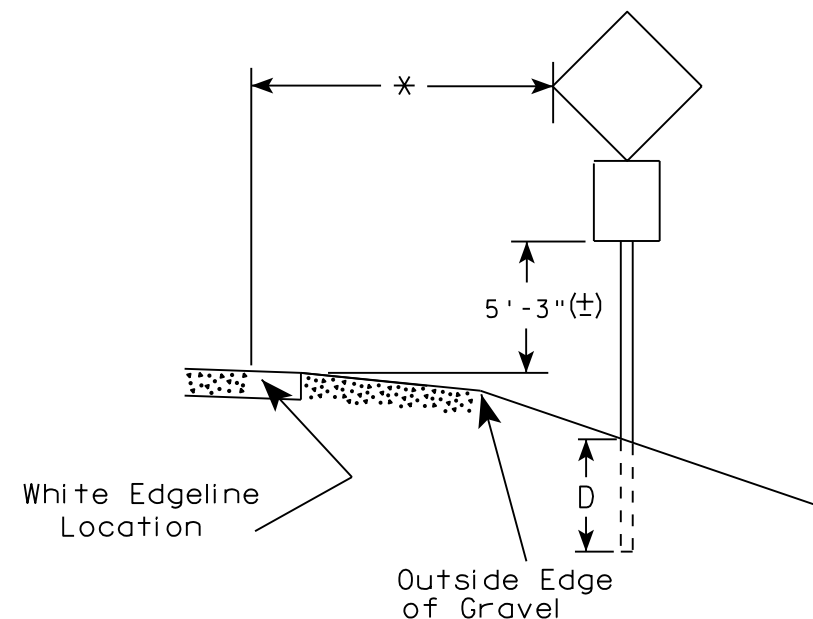
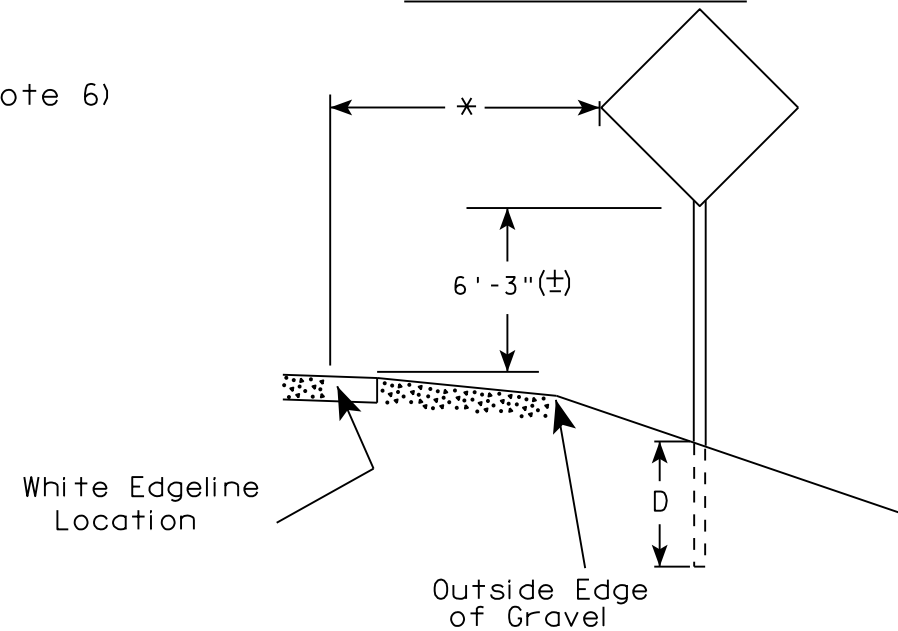
- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
- ② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.

## URBAN AREA



✱✱ 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.

## RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

| Area of Sign Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|------------------------------------------|--------------|
| 20 or Less                               | 4'           |
| Greater than 20                          | 5'           |

## GENERAL NOTES

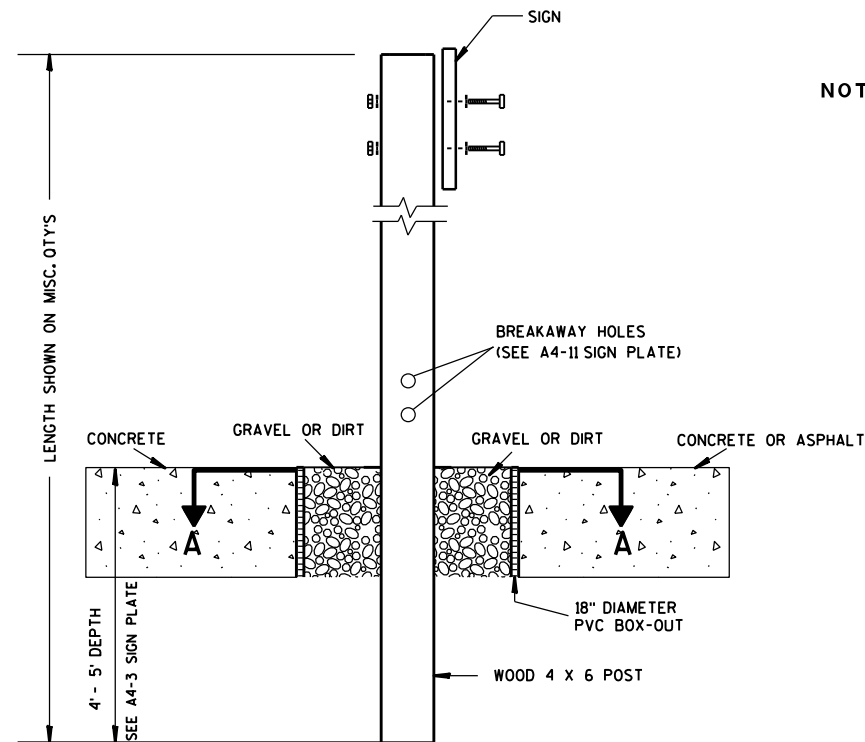
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies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

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

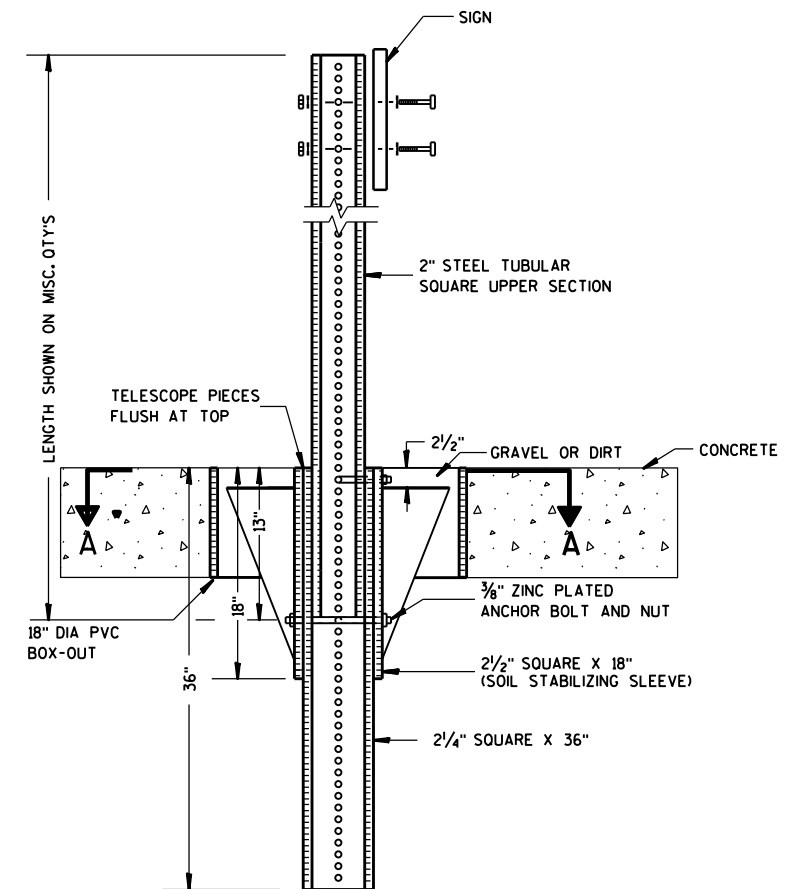
DATE 8/21/17 PLATE NO. A4-3.21



### ELEVATION VIEW

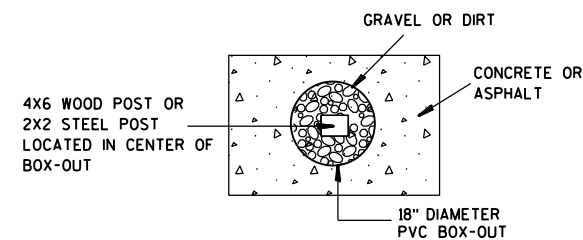
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



### ELEVATION VIEW

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



### PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST  
BOX-OUTS  
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

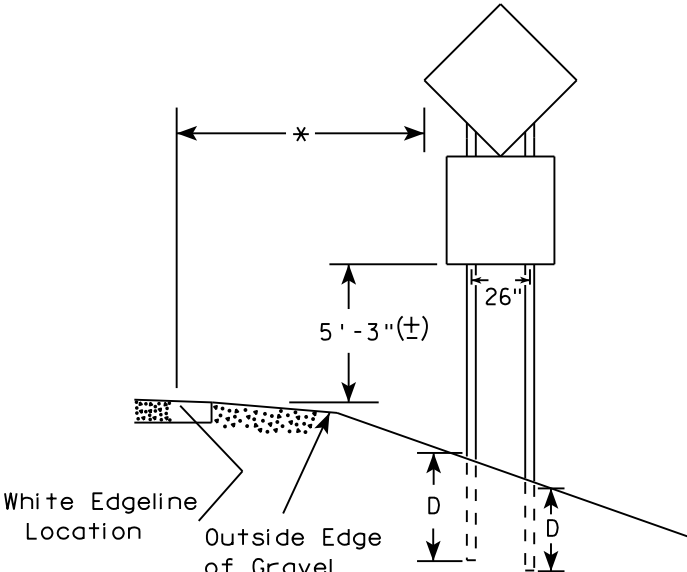
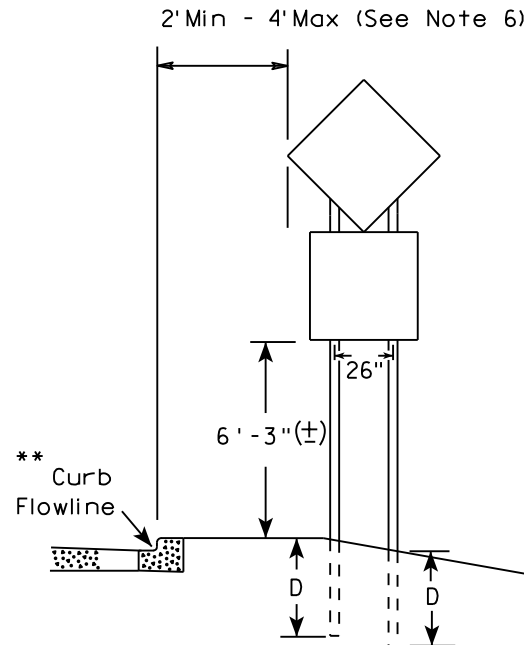
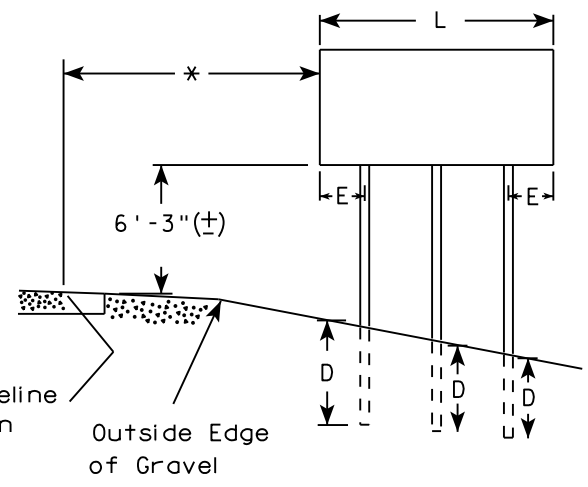
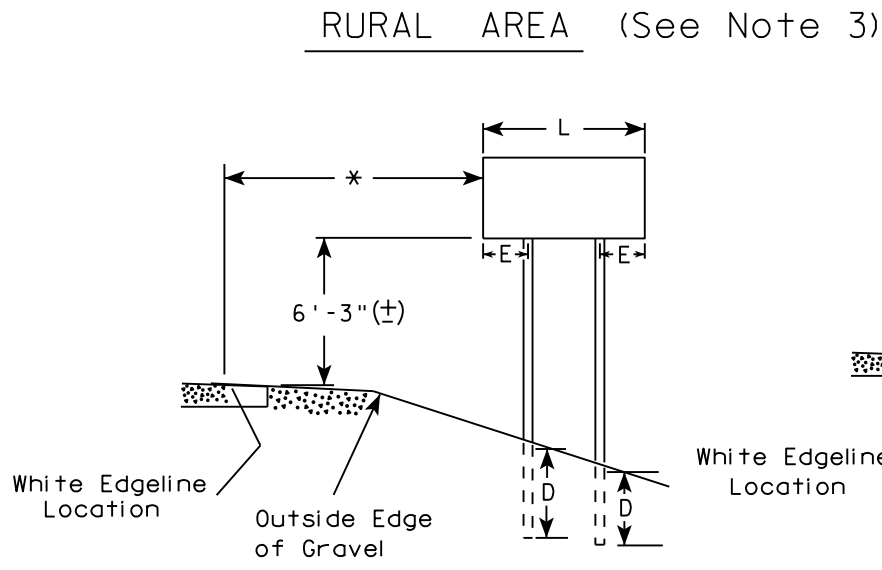
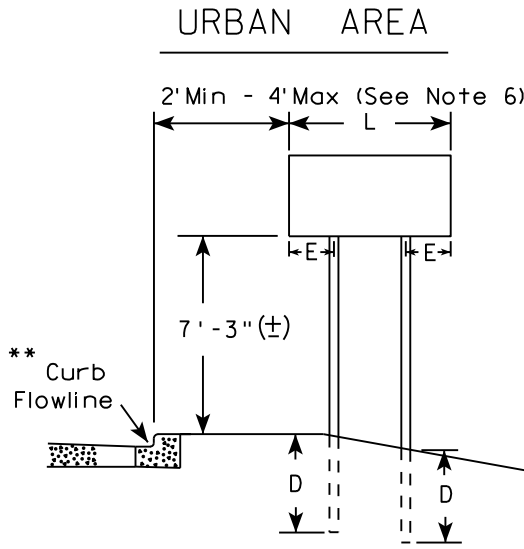
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

\*\*\*

| SIGN SHAPE OTHER THAN DIAMOND<br>(TWO POSTS REQUIRED) |     |
|-------------------------------------------------------|-----|
| L                                                     | E   |
| Greater than 48"<br>Less than 60"                     | 12" |
| 60" to 108"                                           | L/5 |

| SIGN SHAPE OTHER THAN DIAMOND<br>(THREE POSTS REQUIRED) |     |
|---------------------------------------------------------|-----|
| L                                                       | E   |
| Greater than 108"<br>to 144"                            | 12" |

POST EMBEDMENT DEPTH

| Area of Sign<br>Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|---------------------------------------------|--------------|
| 20 or Less                                  | 4'           |
| Greater than 20                             | 5'           |

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

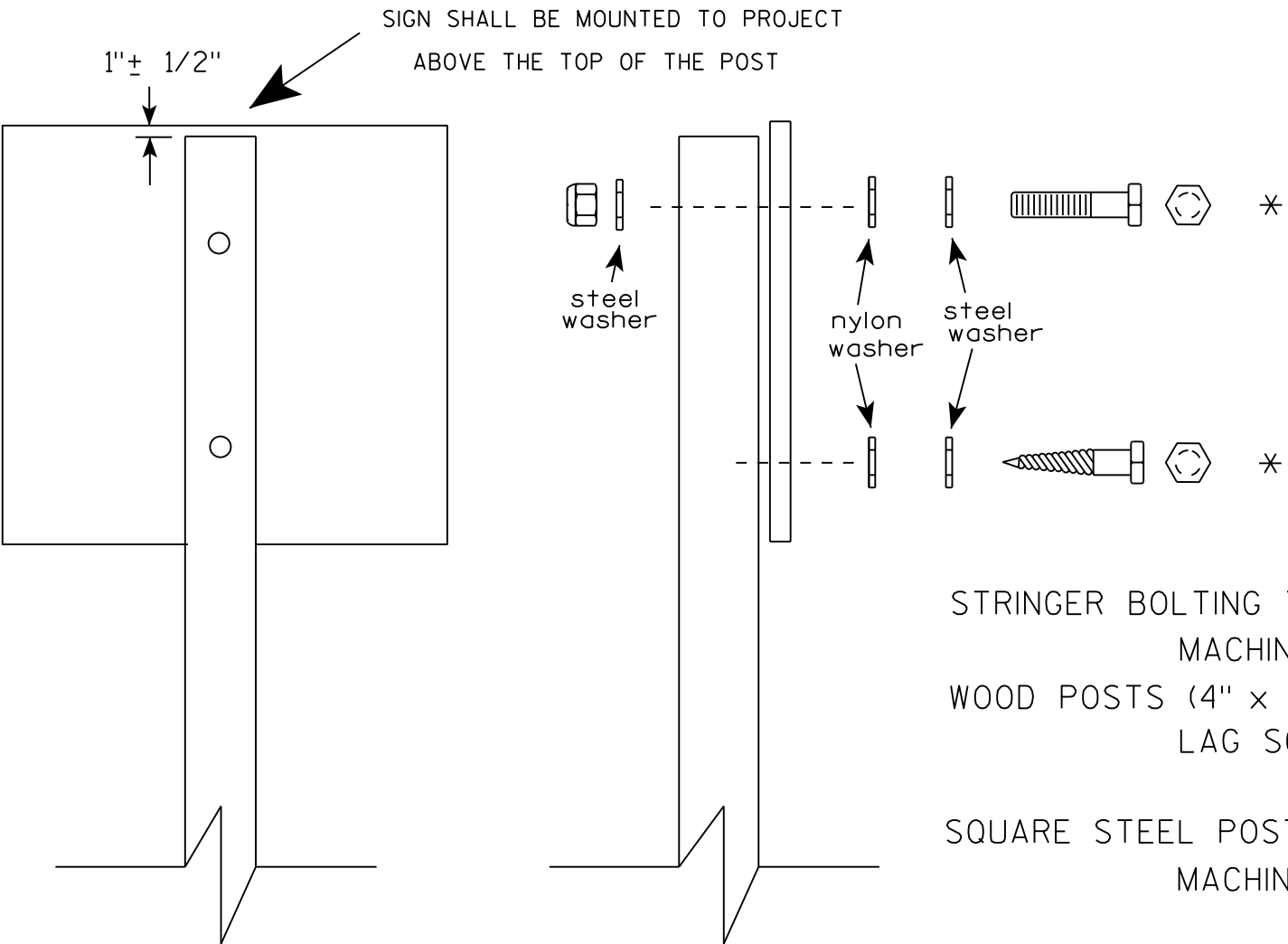
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

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

- \* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- \*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- \*\*\* See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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

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

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
  - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
  - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
  - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

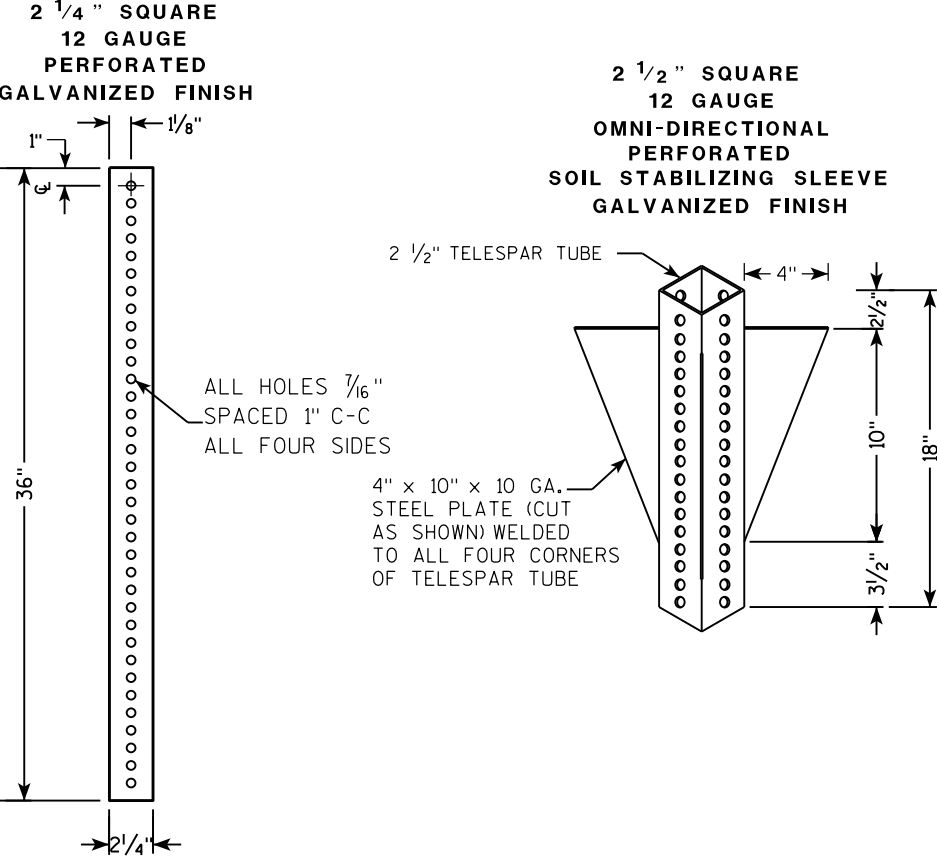
ATTACHMENT OF SIGNS  
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

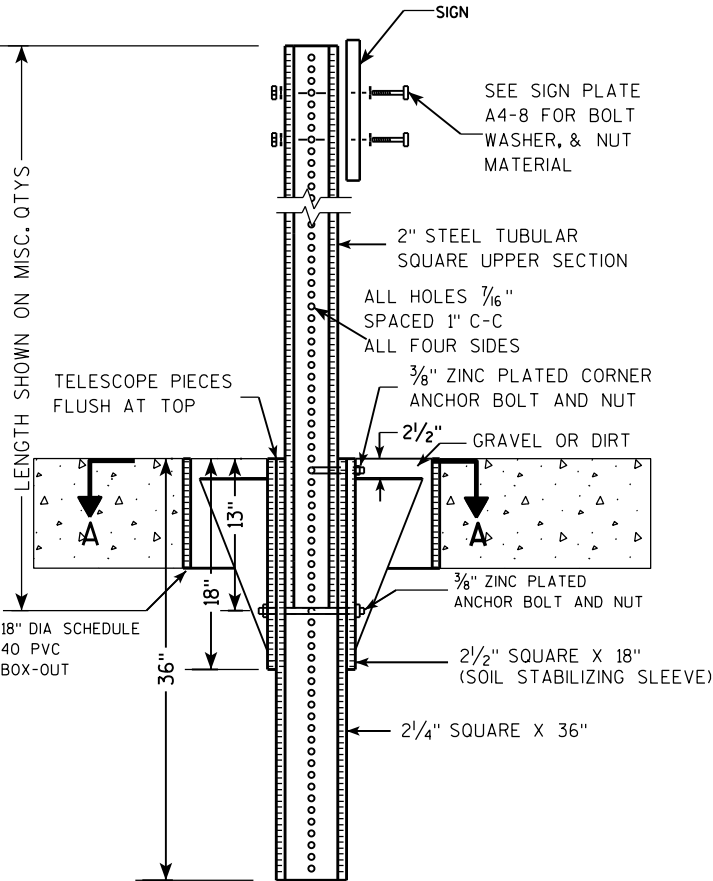
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8

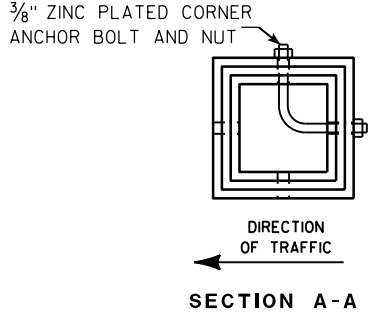
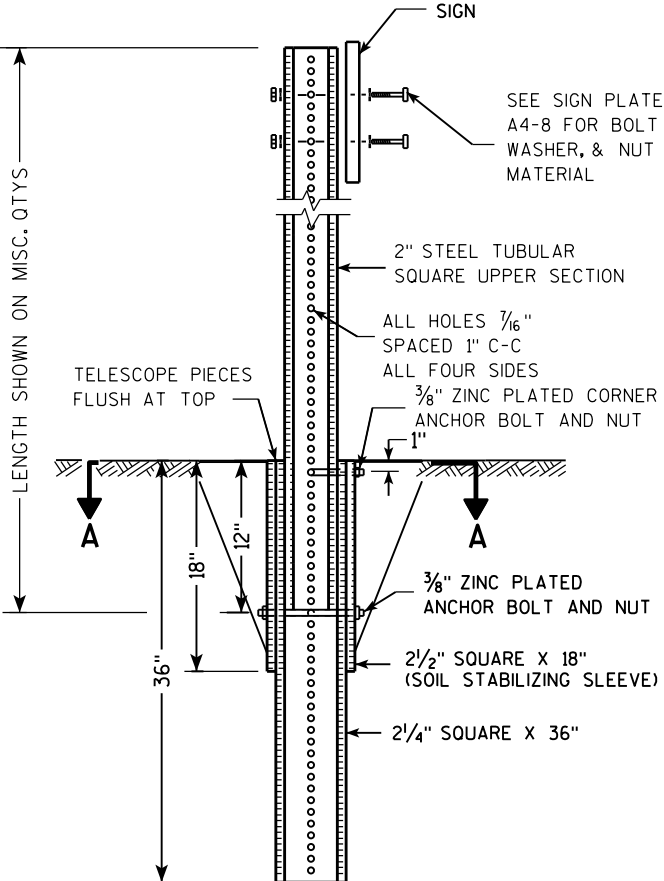
TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM



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



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



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

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

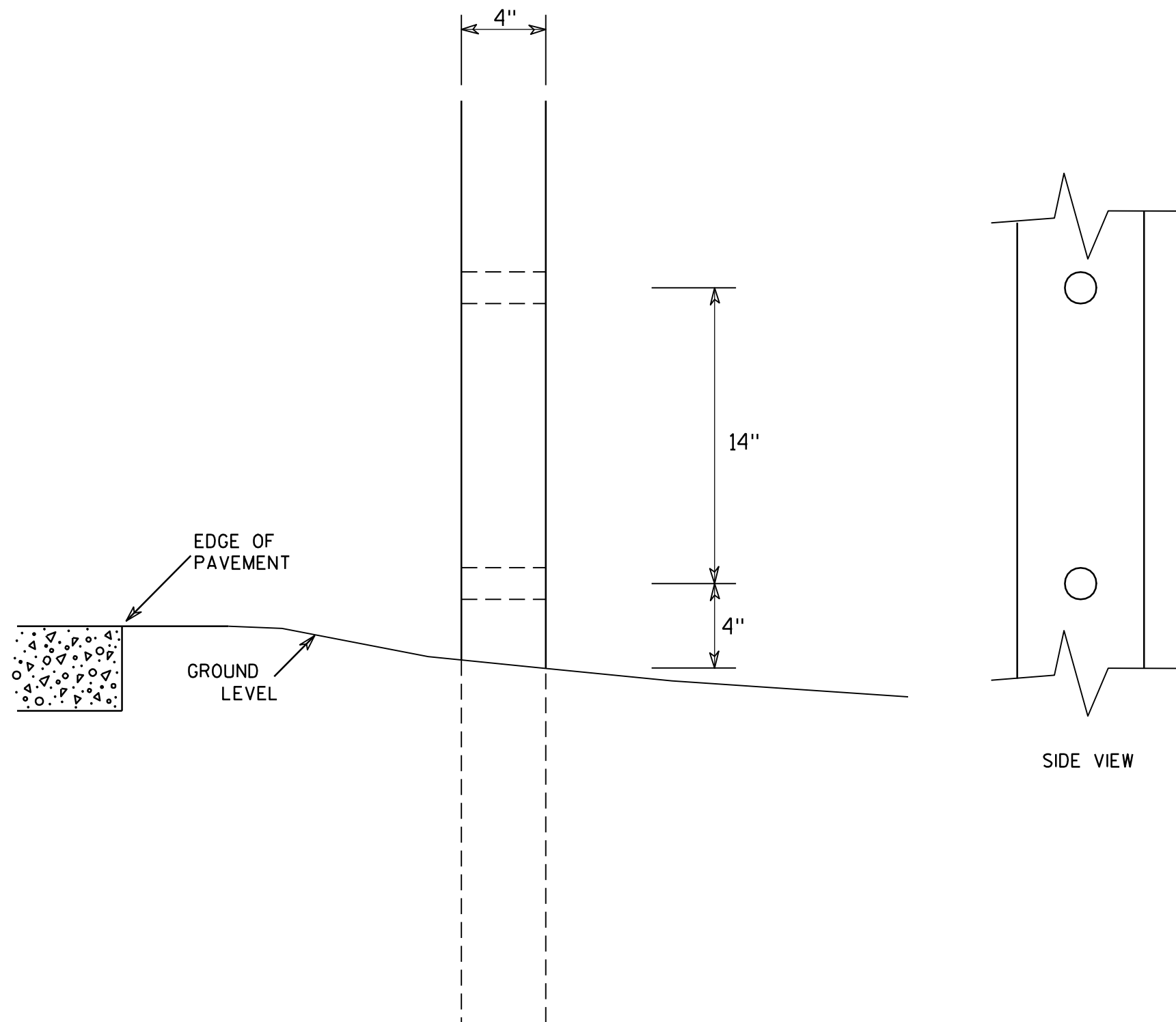
TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

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:

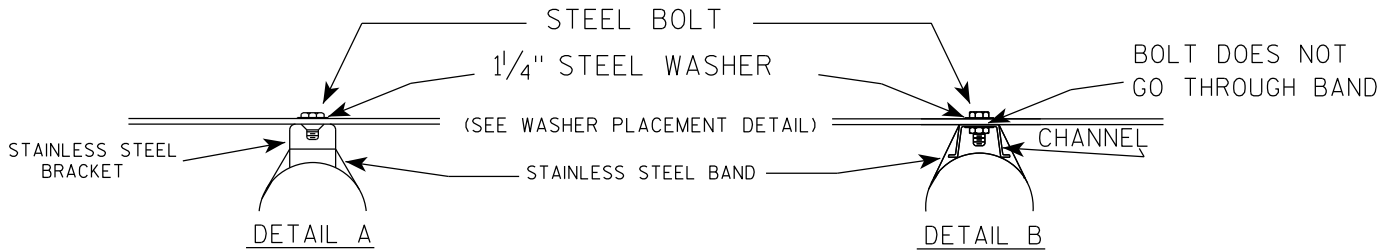
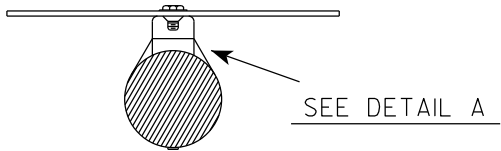
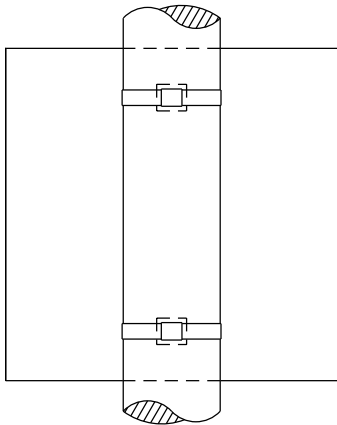
COUNTY:

SHEET NO:

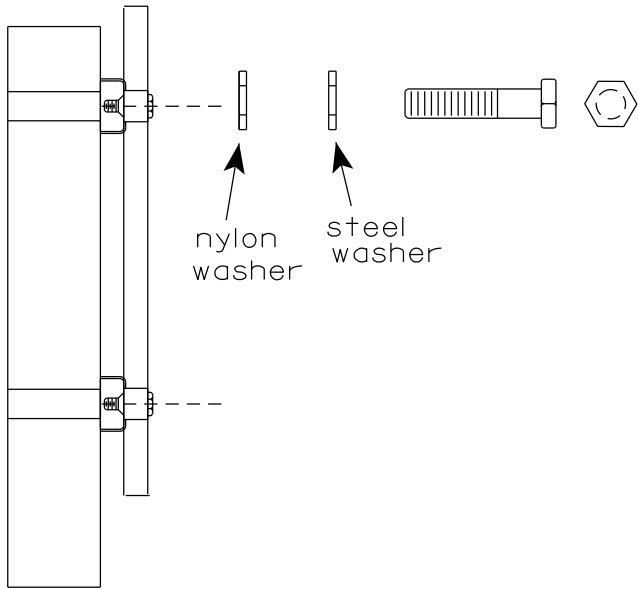
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

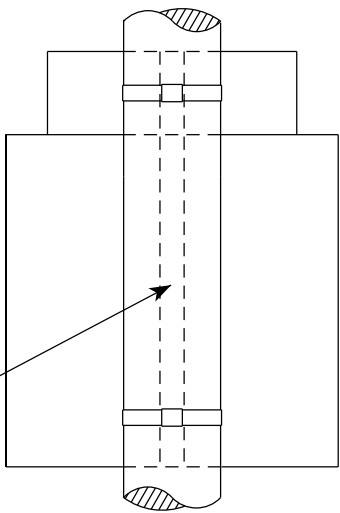


WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

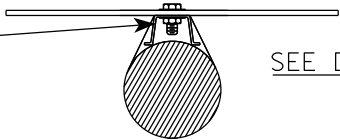
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
  - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
  - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

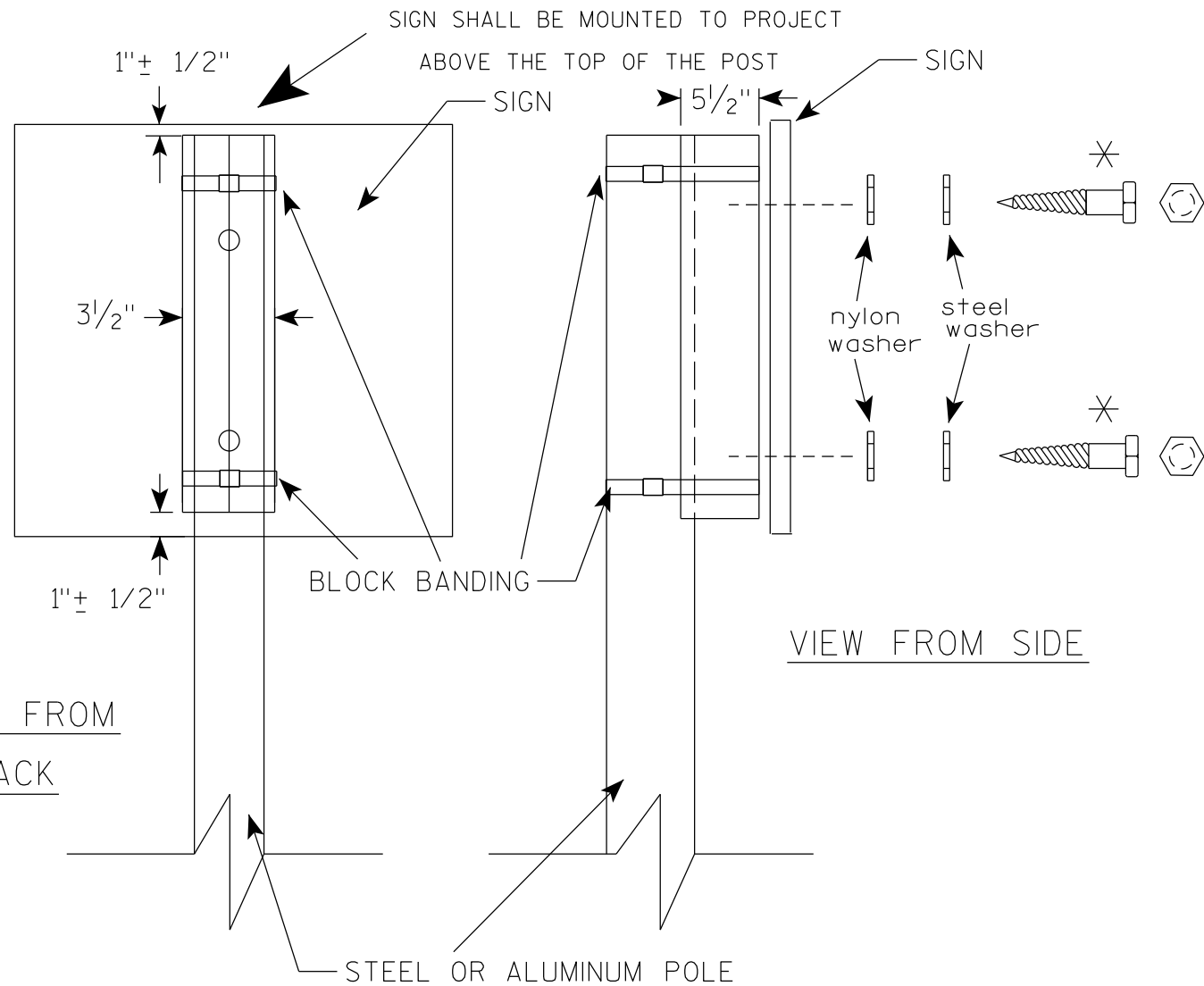


STANDARD SIGN  
SIGN BANDING DETAILS

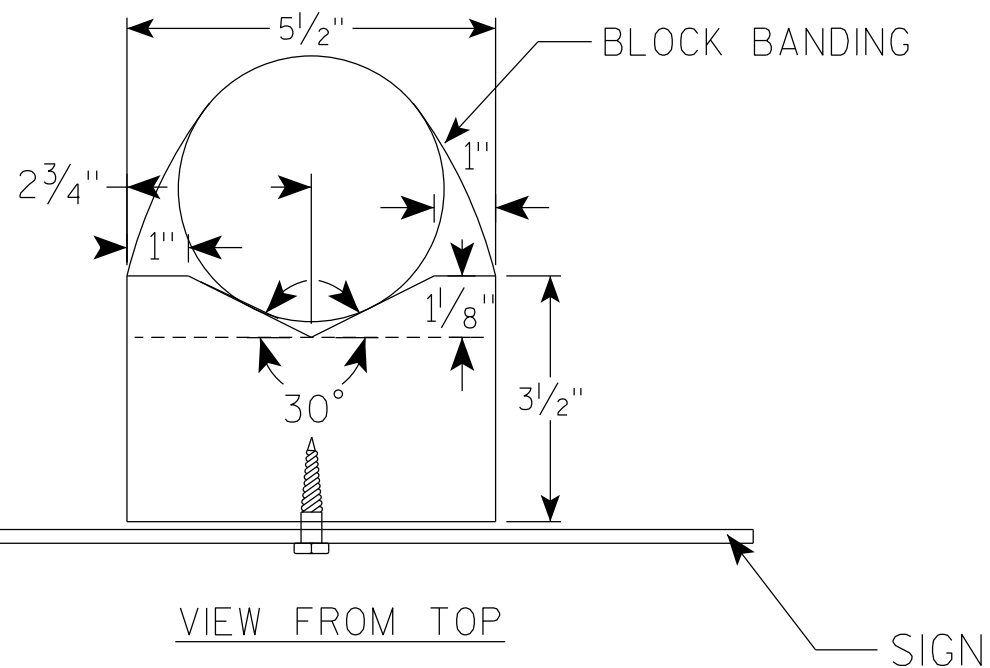
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer  
DATE 6/10/19 PLATE NO. A5-9.4

VIEW FROM  
BACK



VIEW FROM SIDE



## GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL,  $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
  - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
  - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE  $1\frac{1}{4}$ " O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE  $1\frac{1}{4}$ " O.D. X  $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE  $\frac{3}{8}$ " X  $2\frac{1}{2}$ "

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

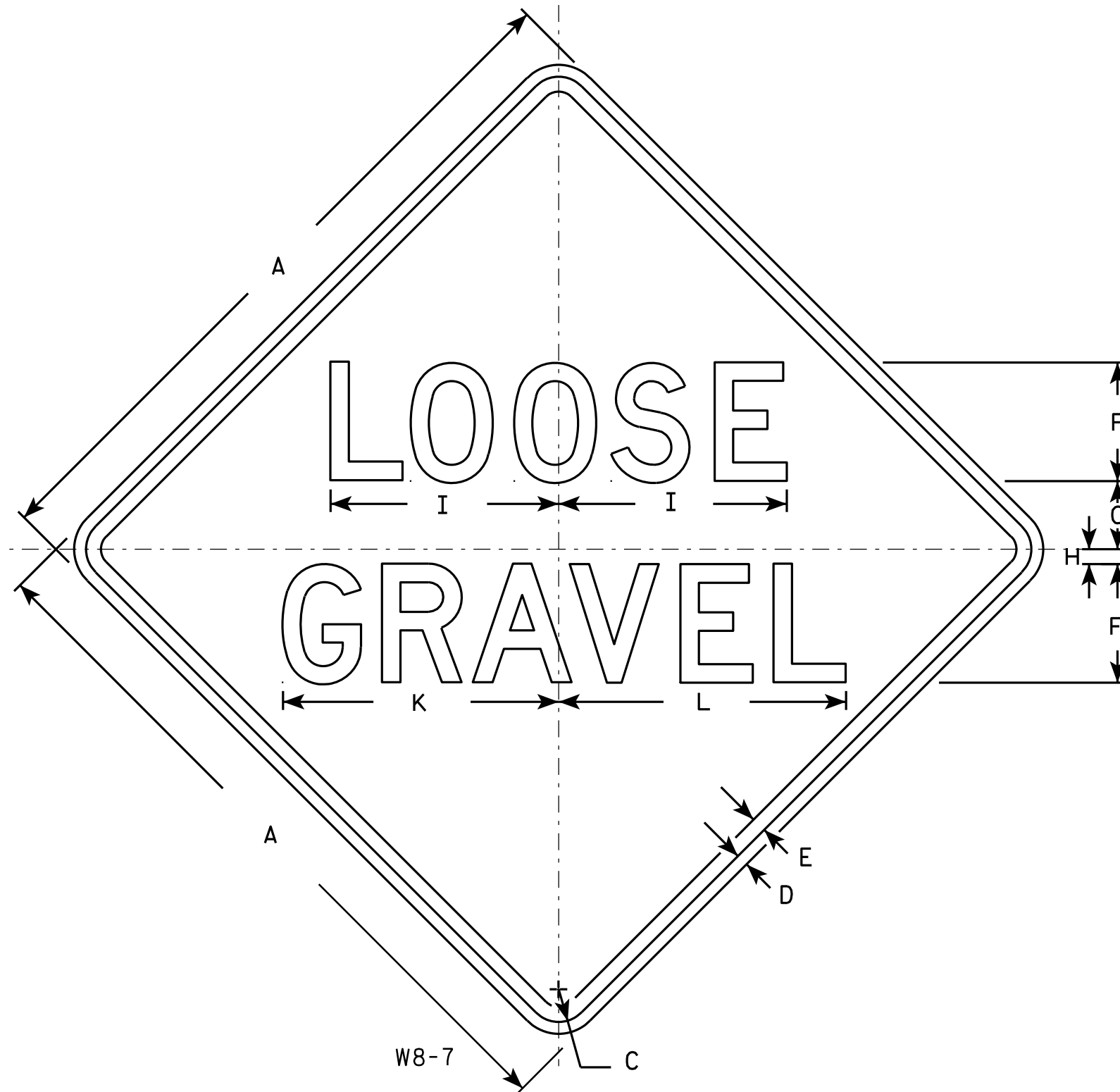
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO:

SHEET NO:

E



### NOTES

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

| SIZE | A  | B | C     | D   | E   | F | G     | H   | I      | J | K      | L      | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-----|--------|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 24 |   | 1 1/8 | 3/8 | 1/2 | 4 | 2 3/4 | 1/2 | 7 3/4  |   | 9 1/4  | 9 3/4  |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.0             |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 | 6 | 4 1/8 | 3/4 | 11 5/8 |   | 14     | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 6 | 4 1/8 | 3/4 | 11 5/8 |   | 14     | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    | 36 |   | 1 5/8 | 5/8 | 3/4 | 6 | 4 1/8 | 3/4 | 11 5/8 |   | 14     | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 4    | 36 |   | 1 5/8 | 5/8 | 3/4 | 6 | 4 1/8 | 3/4 | 11 5/8 |   | 14     | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 5 1/2 | 1   | 15 1/2 |   | 18 5/8 | 19 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

### STANDARD SIGN

W8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer  
DATE 5/30/12 PLATE NO. W8-7.7

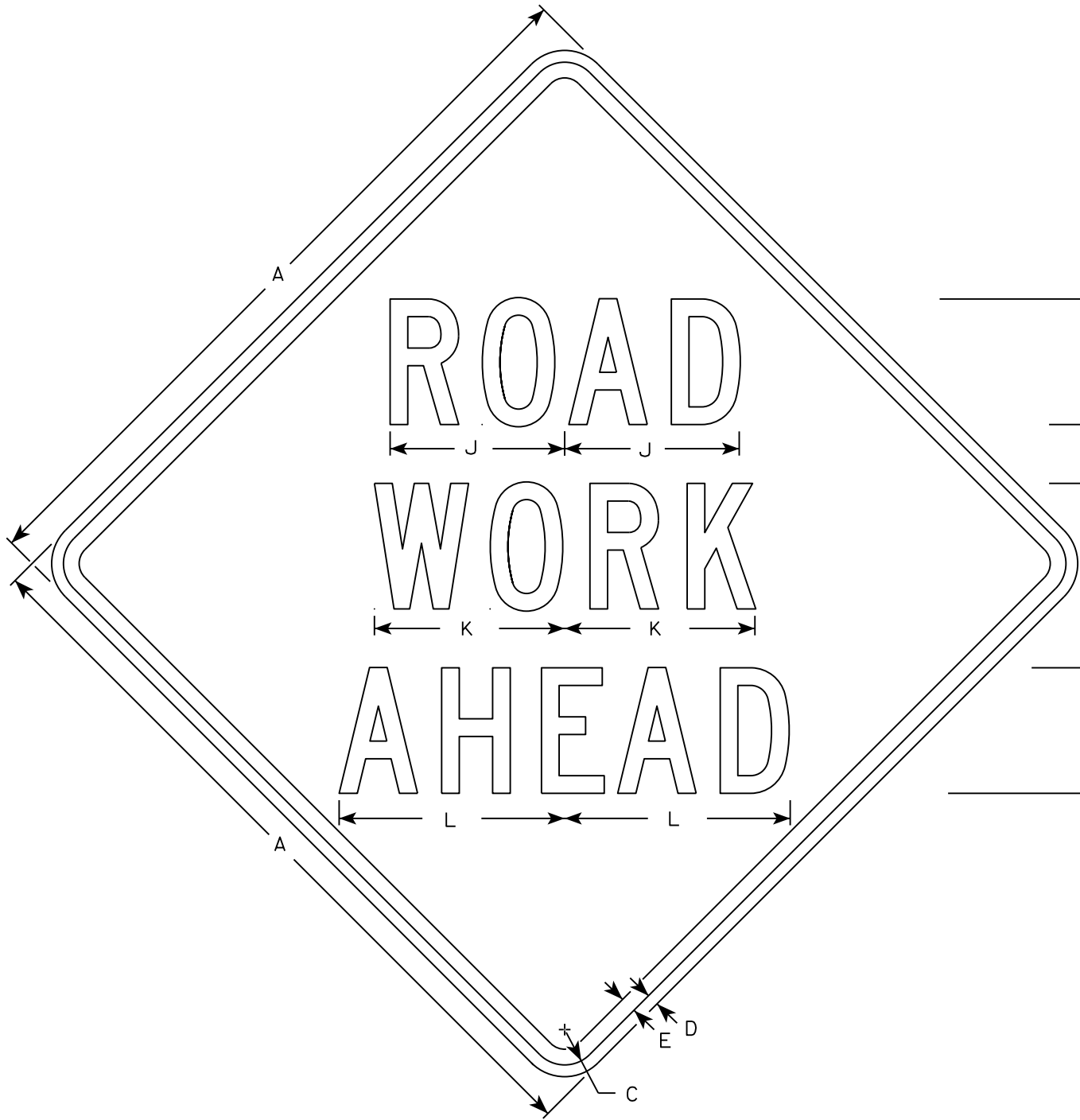
PROJECT NO:

HWY:

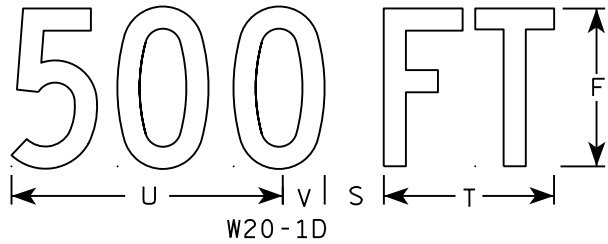
COUNTY:

SHEET NO:

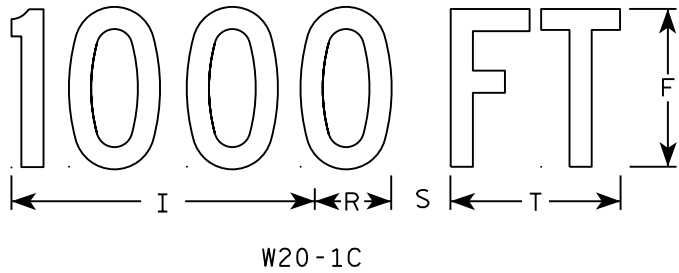
E



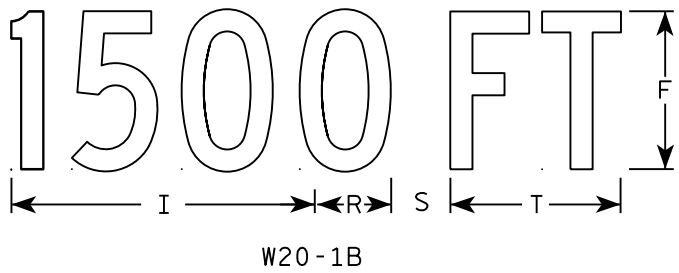
W20-1A



W20-1D



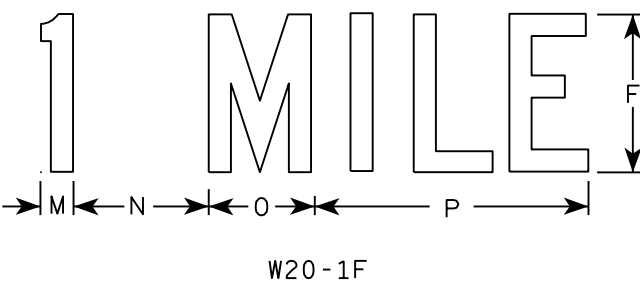
W20-1C



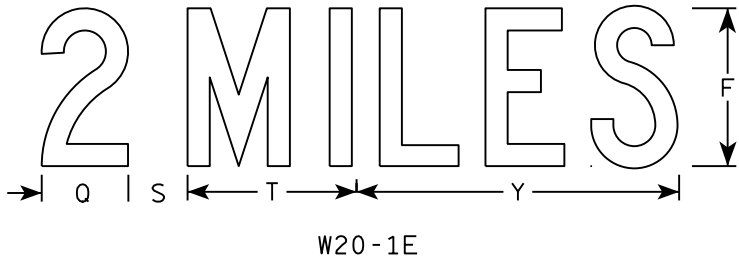
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

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

| SIZE | A  | B | C     | D   | E   | F | G     | H     | I      | J      | K      | L      | M     | N     | O     | P      | Q     | R     | S     | T     | U      | V     | W      | X     | Y      | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|---|-----------------|
| 1    | 36 |   | 1 3/8 | 1/2 | 5/8 | 5 | 2 5/8 | 3 1/4 | 10 1/8 | 7      | 7 5/8  | 8 7/8  | 1 1/8 | 4 1/2 | 3 1/2 | 9      |       | 2 1/2 | 2 1/4 | 5 5/8 | 9      | 1 3/8 | 8      | 1 3/4 | 10 3/4 | 6 | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3     | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3     | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3     | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3     | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 | 5 3/8 | 13 7/8 | 4 3/8 | 3 7/8 | 3     | 8 5/8 | 13 3/4 | 2 1/8 | 11 7/8 | 2 3/4 | 16 3/8 | 9 | 16.0            |

STANDARD SIGN

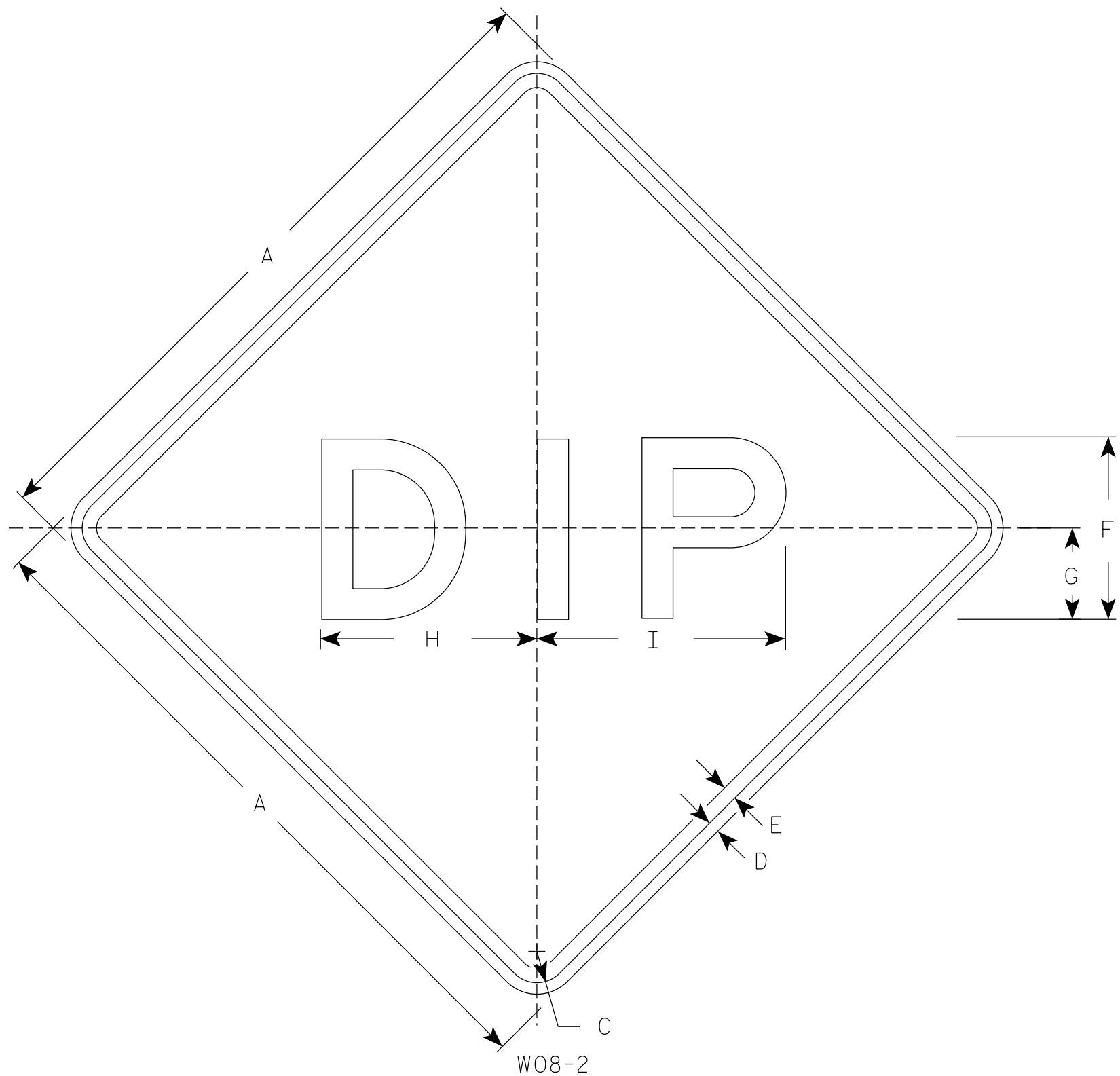
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

7



NOTES

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

7

| SIZE | A  | B | C     | D   | E   | F  | G | H      | I      | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|----|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 10 | 5 | 11 7/8 | 13 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 12 | 6 | 14 1/4 | 16 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

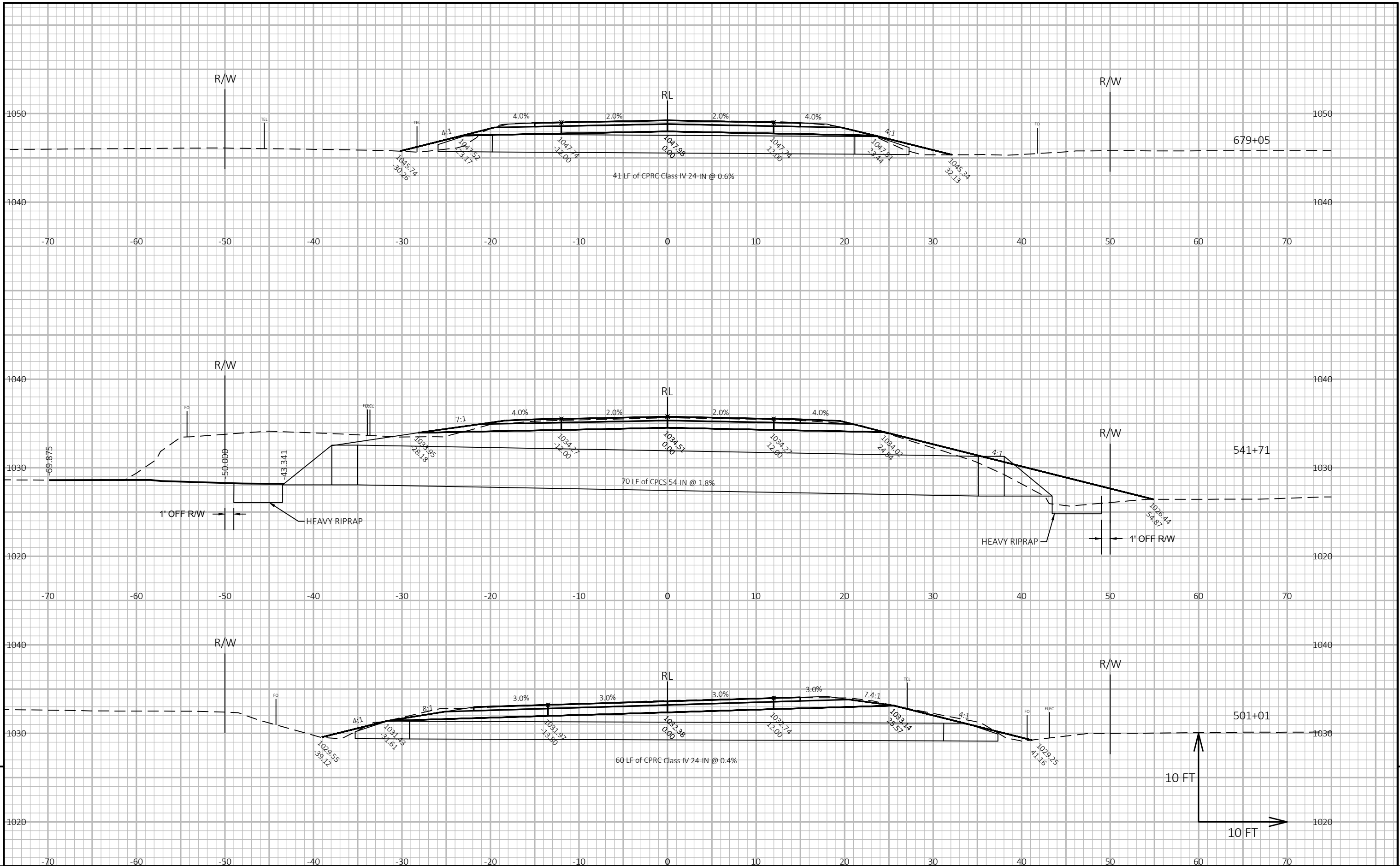
STANDARD SIGN  
W08-2

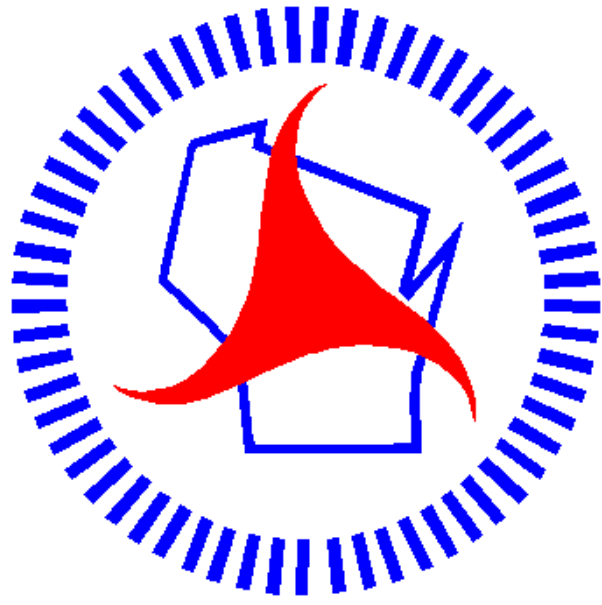
WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/7/19 PLATE NO. W08-2.2

SHEET NO: E





## ***Wisconsin Department of Transportation***

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