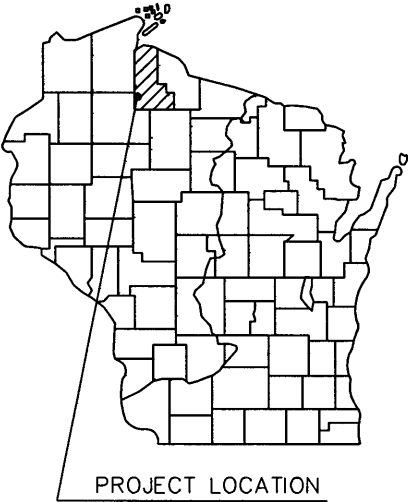


ORDER OF SHEETS

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

TOTAL SHEETS = 92



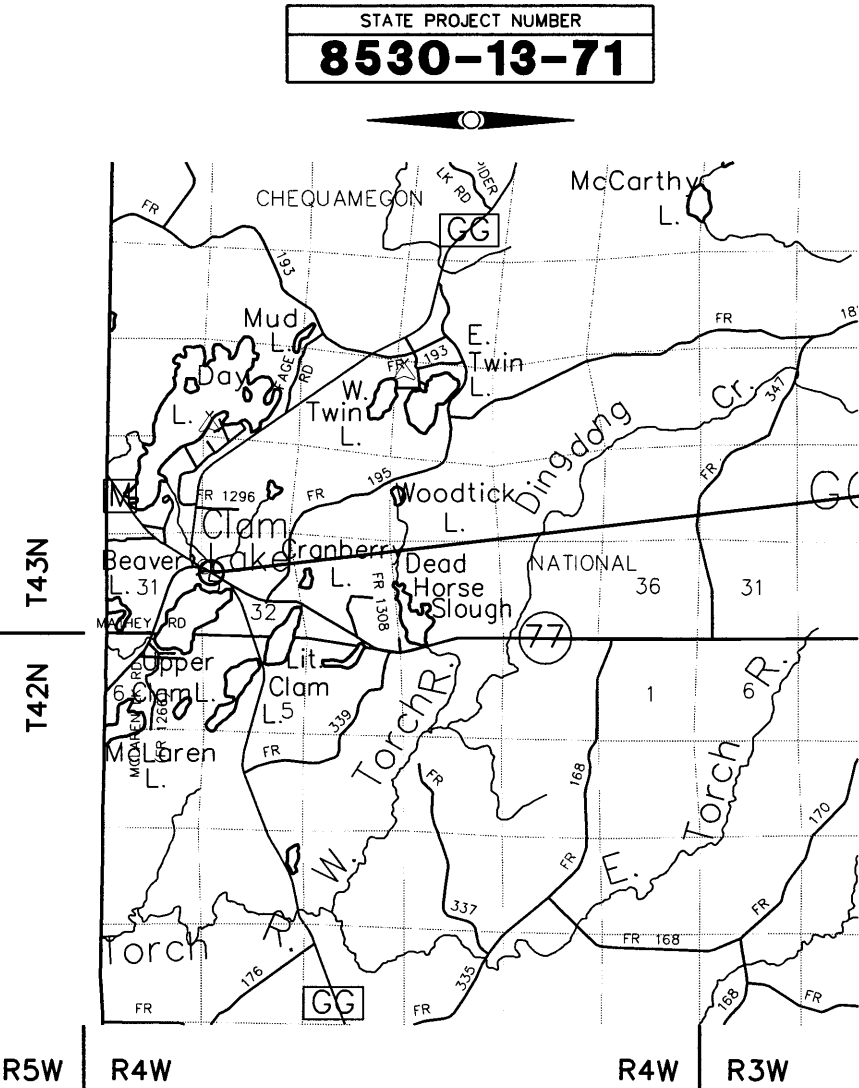
DESIGN DESIGNATION

AADT (2012)	=	685
AADT (2032)	=	835
DHV (2032)	=	104
D (%)	=	63/37
T (% OF ADT)	=	7.6%
DESIGN SPEED	=	45 MPH
ESALS	=	109,500

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	----
ORIGINAL GROUND	----
MARSH OR ROCK PROFILE (To be noted as such)	----
SPECIAL DITCH	----
GRADE ELEVATION	95.36
CULVERT (Profile View)	----
UTILITIES	
ELECTRIC	----
OVERHEAD LINES	----
FIBER OPTIC	----
GAS	----
SANITARY SEWER	----
STORM SEWER	----
TELEPHONE	----
WATER	----
UTILITY PEDESTAL	----
POWER POLE	----
TELEPHONE POLE	----



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.085 MI

END PROJECT
STA 12+50

Y - 166898.083
X - 496180.831

STRUCTURE C-02-0025

BEGIN PROJECT
STA 8+00

Y - 167135.115
X - 495798.329

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CLAM LAKE - STH 13

W FORK CHIPPEWA RIVER BRG C-02-0025

STH 77

ASHLAND COUNTY

STATE PROJECT NUMBER
8530-13-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8530-13-71		

ORIGINAL PLANS PREPARED BY
Cedar corporation
604 Wilson Avenue
Menomonie, Wisconsin 54751
715-235-9081
800-472-7372
715-235-2727
www.cedarcorp.com
engineers • architects • planners • environmental specialists
land surveyors • landscape architects • building inspectors

WISCONSIN
PROFESSIONAL ENGINEER
DENNIS W. MACK
E-35295
EAU CLAIRE
WI
10/25/12
DATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor CEDAR CORPORATION
Designer CEDAR CORPORATION
Regional Examiner PHILIP KEPPERS
Regional Supervisor DAVID OSTROWSKI
C.O. Examiner JE
APPROVED FOR THE DEPARTMENT
10/29/12
DATE
(Signature)
E

	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
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 = 1.22 ACRE
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.77 ACRE

LIST OF STANDARD ABBREVIATIONS

ABUT	ABUTMENT	PC	POINT OF CURVATURE
AGG	AGGREGATE	PI	POINT OF INTERSECTION
ET AL	AND OTHERS	PT	POINT OF TANGENCY
AADT	ANNUAL AVERAGE DAILY TRAFFIC	POL	POINT ON LINE
BF	BACK FACE	PE	PRIVATE ENTRANCE
BM	BENCHMARK	PL	PROPERTY LINE
C/L OR ☿	CENTERLINE	PSI	POUNDS/SQUARE INCH
△	CENTRAL ANGLE OR DELTA	PROP	PROPOSED
CLR	CLEAR	R	RADIUS
CONC	CONCRETE	RR	RAILROAD
CONST	CONSTRUCTION	REBAR	REINFORCEMENT BAR
COR	CORNER	REQD	REQUIRED
CMP	CORRUGATED METAL PIPE	RT	RIGHT
CTH	COUNTY TRUNK HIGHWAY	RHF	RIGHT-HAND FORWARD
CR	CREEK	R/W	RIGHT-OF-WAY
CFS	CUBIC FEET/SECOND	RD	ROAD
CULV	CULVERT	SEC	SECTION
D	DEGREE OF CURVE	S	SOUTH
DHV	DESIGN HOUR VOLUME	SE	SOUTHEAST
DIA	DIAMETER	SW	SOUTHWEST
E	EAST	STH	STATE TRUNK HIGHWAY
EL	ELEVATION	STA	STATION
EST	ESTIMATED	SE	SUPER ELEVATION
FPS	FEET PER SECOND	T	TANGENT
FE	FIELD ENTRANCE	TEL	TELEPHONE
FT	FOOT (FEET)	TEMP	TEMPORARY
FTG	FOOTING	TI	TEMPORARY INTEREST
FDN	FOUNDATION	TLE	TEMPORARY LIMITED EASEMENT
FF	FRONT FACE	TL OR T/L	TRANSIT LINE
IP	IRON PIN	T	TRUCKS
LT	LEFT	TYP	TYPICAL
LHF	LEFT-HAND FORWARD	U/G	UNDERGROUND
L	LENGTH OF CURVE	USH	UNITED STATES HIGHWAY
LF	LINEAR FOOT	VAR	VARIABLE
MAX	MAXIMUM	V	VELOCITY
MI	MILE	VPC	VERTICAL POINT OF CURVATURE
MIN	MINIMUM	VPI	VERTICAL POINT OF INTERSECTION
NC	NORMAL CROWN	VPT	VERTICAL POINT OF TANGENCY
N	NORTH	W	WEST
NE	NORTHEAST	YD	YARD
NW	NORTHWEST		
NO	NUMBER		

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

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

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE FERTILIZED, SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE IMMEDIATELY AFTER FINISHED GRADING IS COMPLETE.

SILT FENCE TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. SILT FENCE TO BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE SHALL OCCUR OUTSIDE OF THE SLOPE INTERCEPTS IN WETLAND AREAS.

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

SHRINKAGE IS ESTIMATED AT 30%.

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

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR A MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

ASPHALTIC SURFACE SPECIAL, WHEN INDICATED ON THE PLANS, SHALL CONSIST OF COURSES AS FOLLOWS UNLESS OTHERWISE NOTED ON THE PLANS.

5" TOTAL DEPTH	NOMINAL MAX SIZE GRADATION	PERFORMANCE GRADE
3-INCH LOWER	19 MM	PG58-34
2-INCH UPPER	12.5 MM	PG58-34

COORDINATES AND BEARINGS ON THIS PLAN ARE ORIENTATED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) ASHLAND COUNTY.

THE BENCHMARK IS REFERENCED TO NAVD BM "11-LNB 1969" MONUMENT IN NW WINGWALL DAM, STATION 9+97, 25.8' LT, ELEV 1421.25.

UTILITIES

BAYFIELD ELECTRIC
7400 IRON RIVER DAM ROAD
P.O. BOX 68
IRON RIVER, WI 54847
(715) 372-4287
GARY TARASEWICZ
gary.tarasewicz@bayfieldelectric.com

NORVADO
43705 US. HWY 63
P.O. BOX 67
CABLE, WI 54821
(715) 798-3303
STEVE FORSMAN
sforsman@norvado.com

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
810 W MAPLE STREET
SPOONER, WI 54801
(715) 635-4228
SHAWN HASELEAU
shawn.haseleau@wisconsin.gov

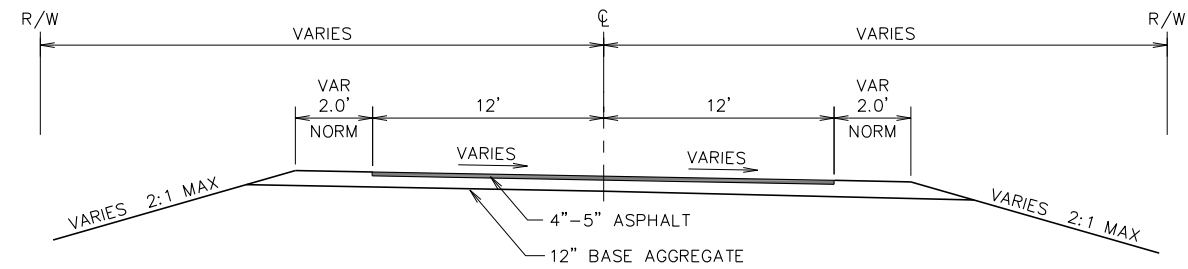
DESIGN CONSULTANT

CEDAR CORPORATION
604 WILSON AVENUE
MENOMONIE, WI 54751
(715) 235-9081
GREGORY M. WOLFE, PE
greg.wolfe@cedarcorp.com



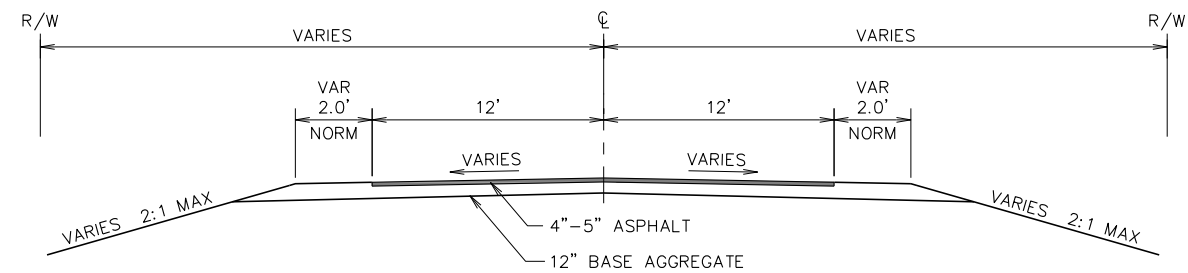
Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



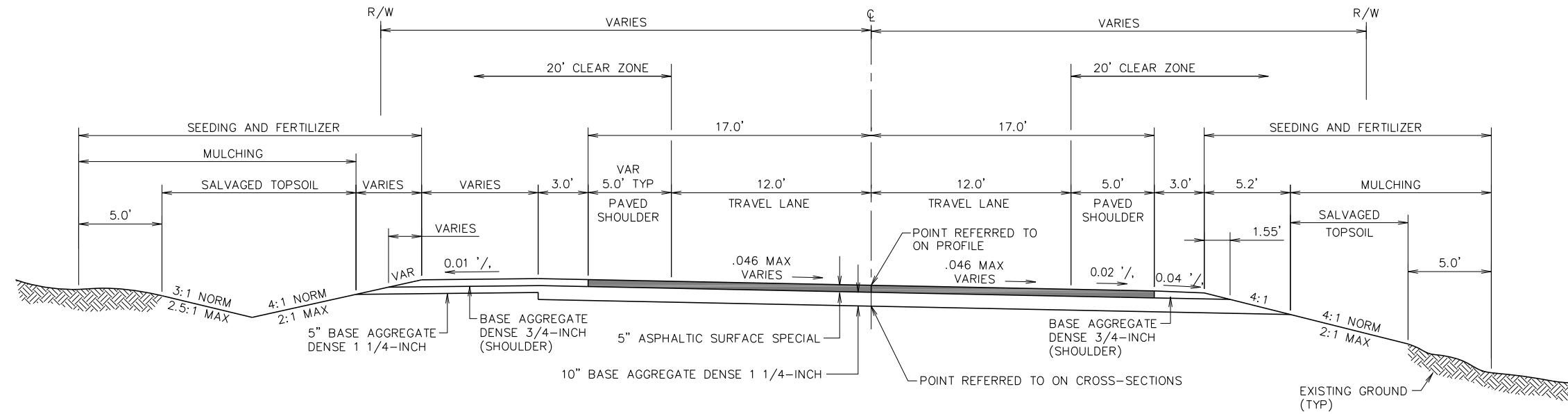
TYPICAL EXISTING SUPERELEVATED SECTION STH 77

STA 8+00 - STA 9+54



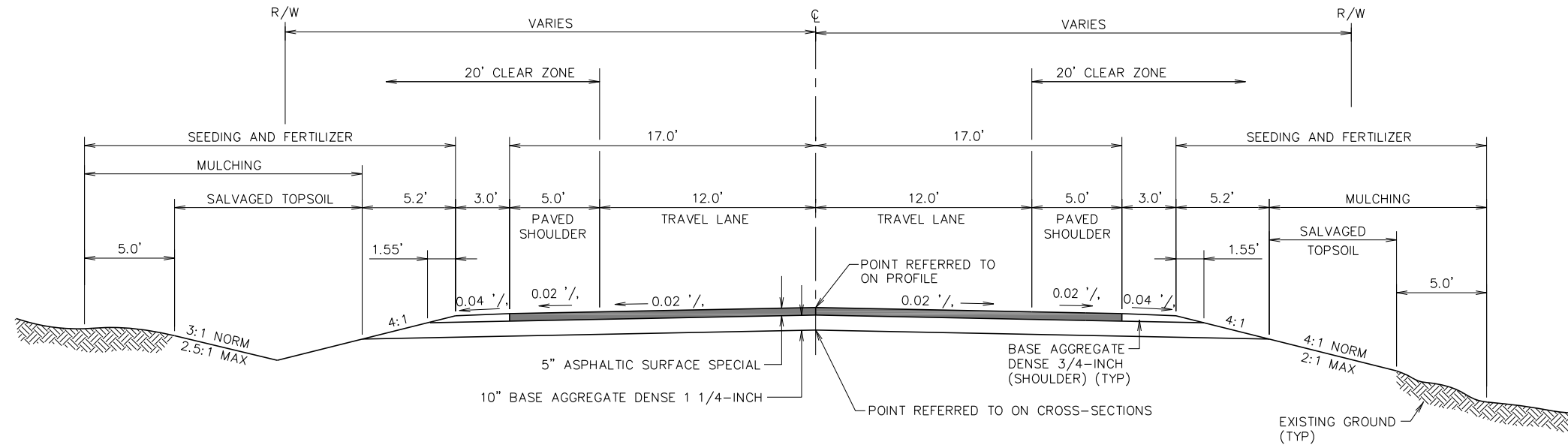
TYPICAL EXISTING SECTION STH 77

STA 9+54 - STA 12+50



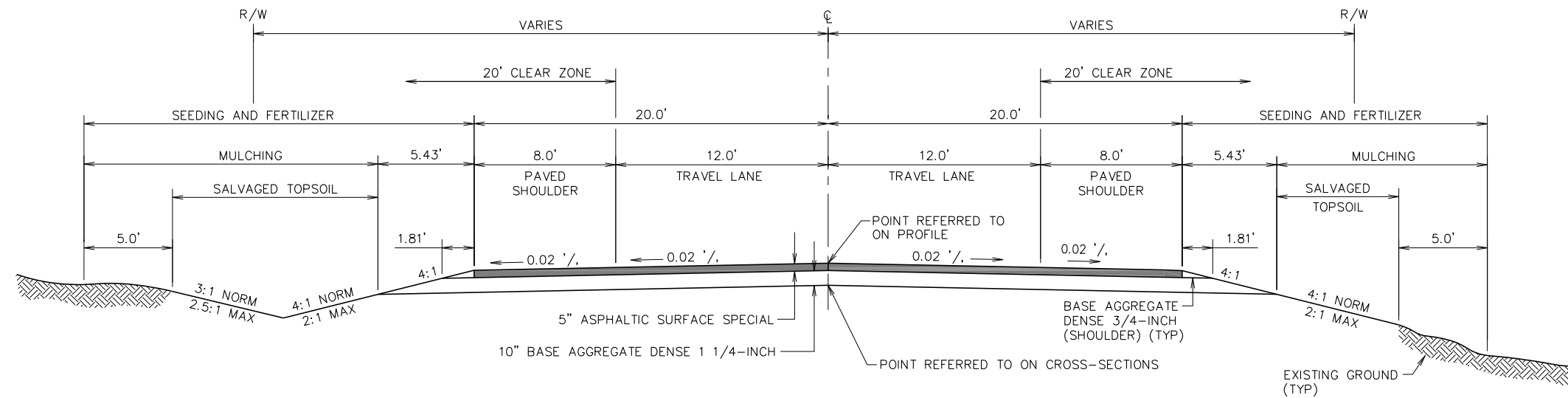
TYPICAL FINISHED SUPEREVELATED SECTION STH 77

STA 8+30 - STA 9+54



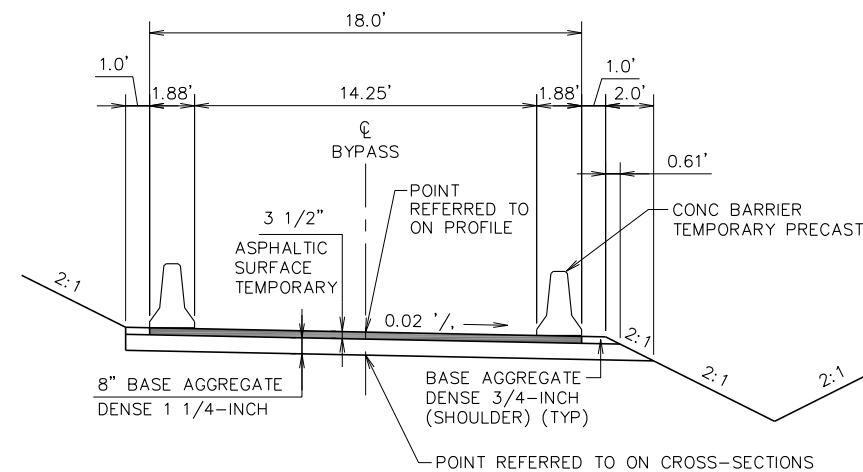
TYPICAL FINISHED SECTION STH 77

STA 9+54 - STA 9+80
STA 10+30 - STA 12+20



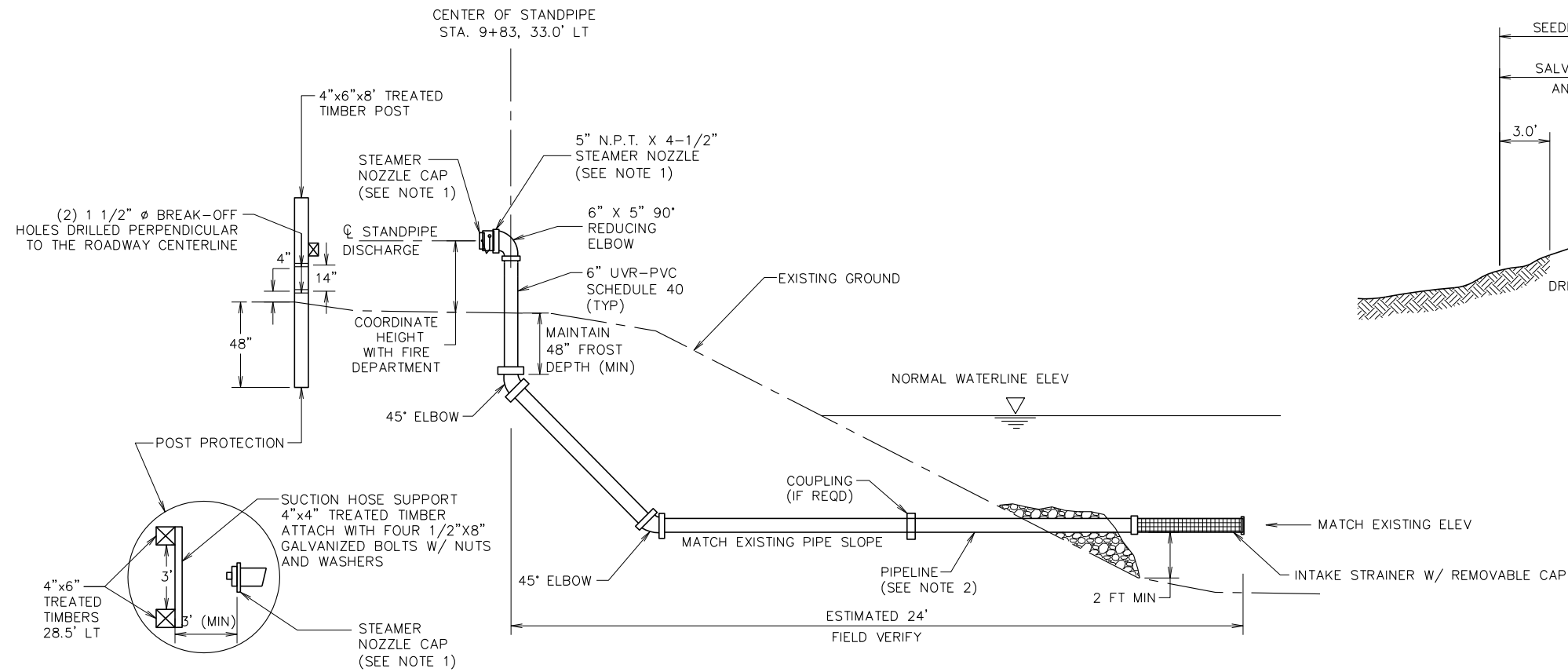
TYPICAL FINISHED SECTION STH 77

STA 9+80 - STA 10+30



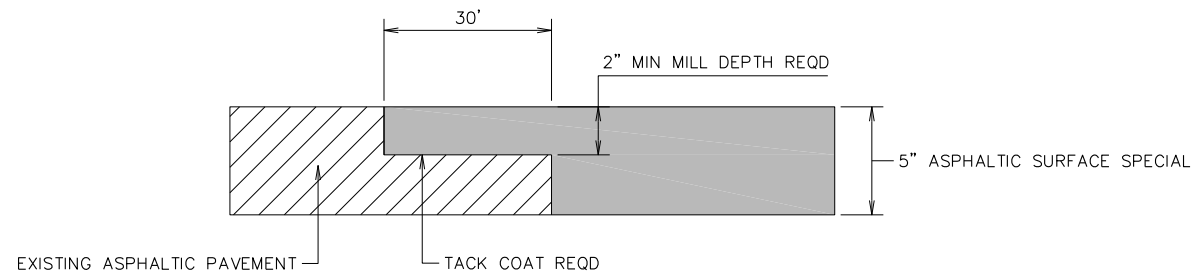
TYPICAL SECTION TEMPORARY BYPASS

STA 8'B'+00 - STA 12'B'+03.25

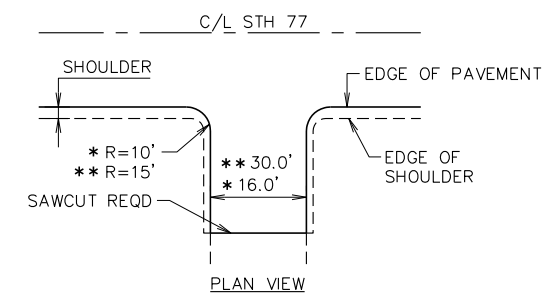
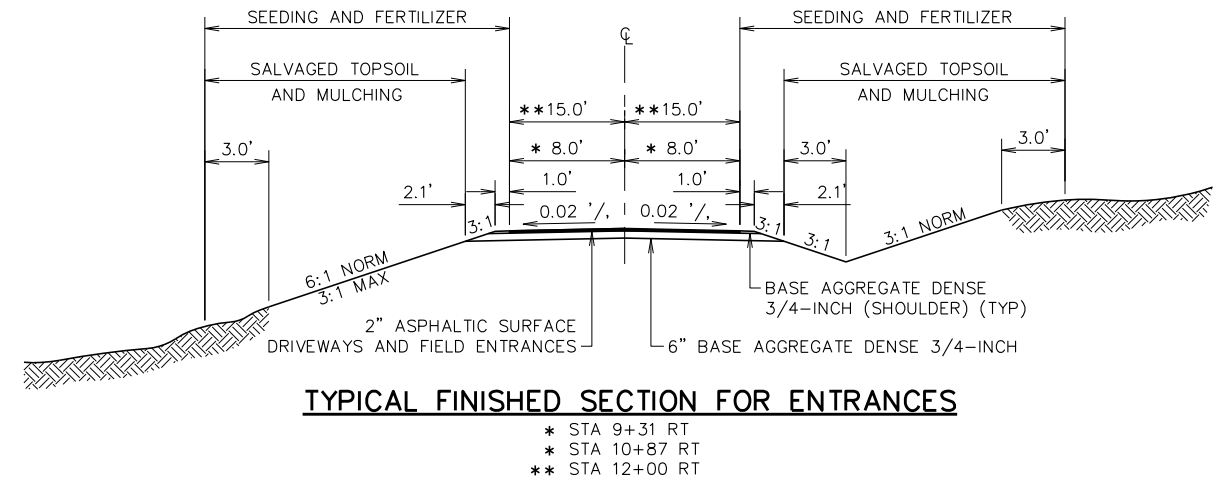


NOTES:

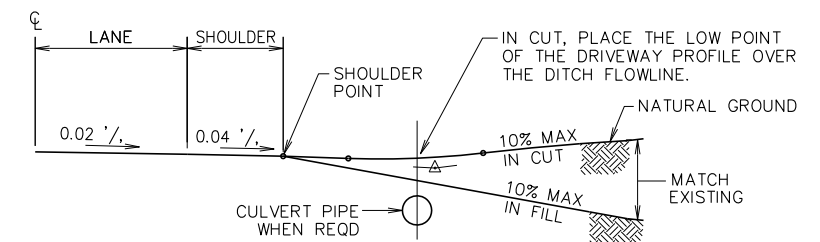
- 1) CHECK WITH LOCAL FIRE DEPARTMENT FOR APPROVED TYPE OF CONNECTION.
- 2) USE 20' LENGTH SECTION OF PIPE INTO WATER FOR CONNECTION TO INTAKE STRAINER.
- 3) COORDINATE REMOVAL AND REPLACEMENT WITH LOCAL FIRE DEPARTMENT.

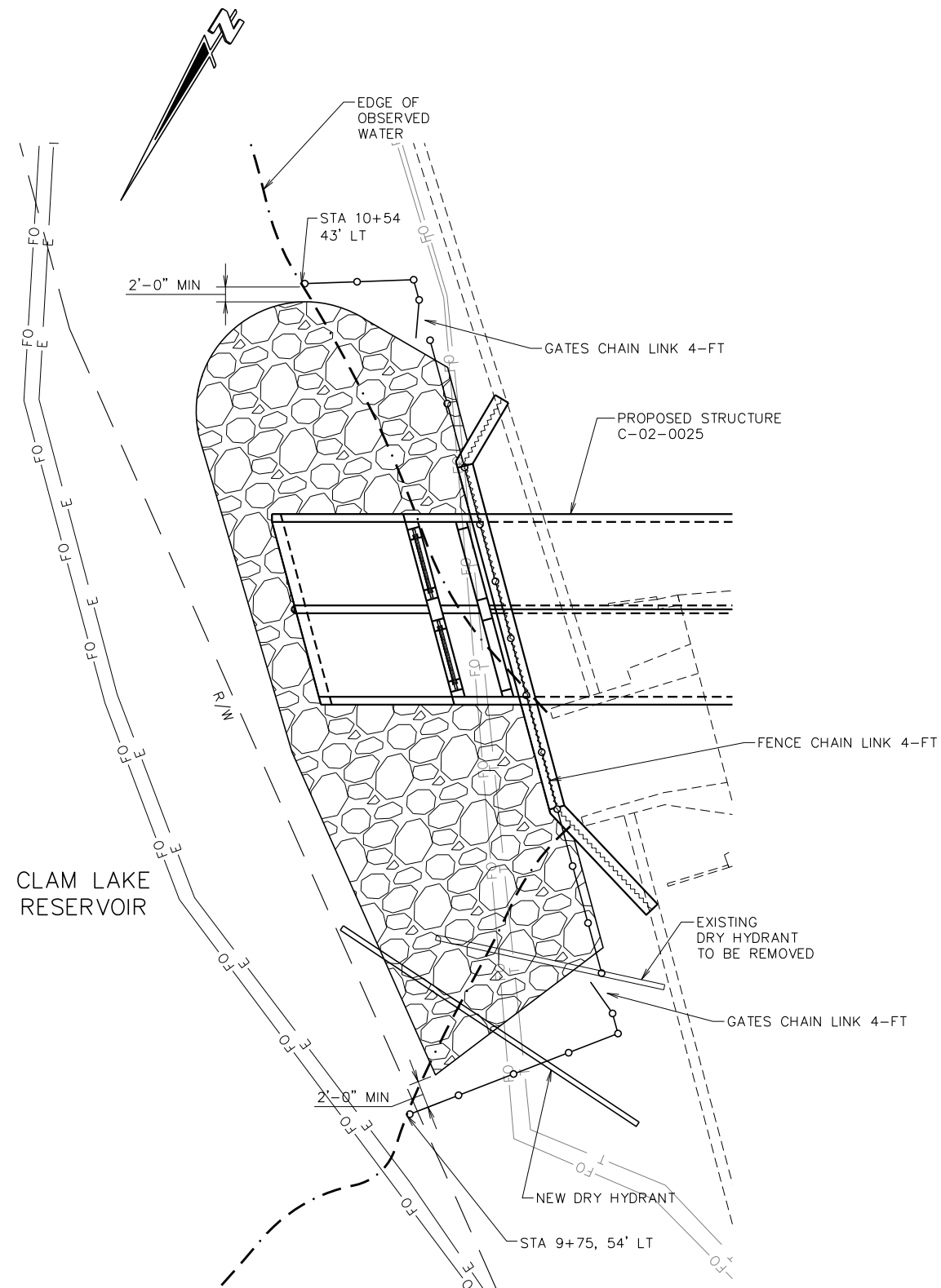
DRY HYDRANT**BUTT JOINT DETAIL**

STA 8+00 - STA 8+30
STA 12+20 - STA 12+50

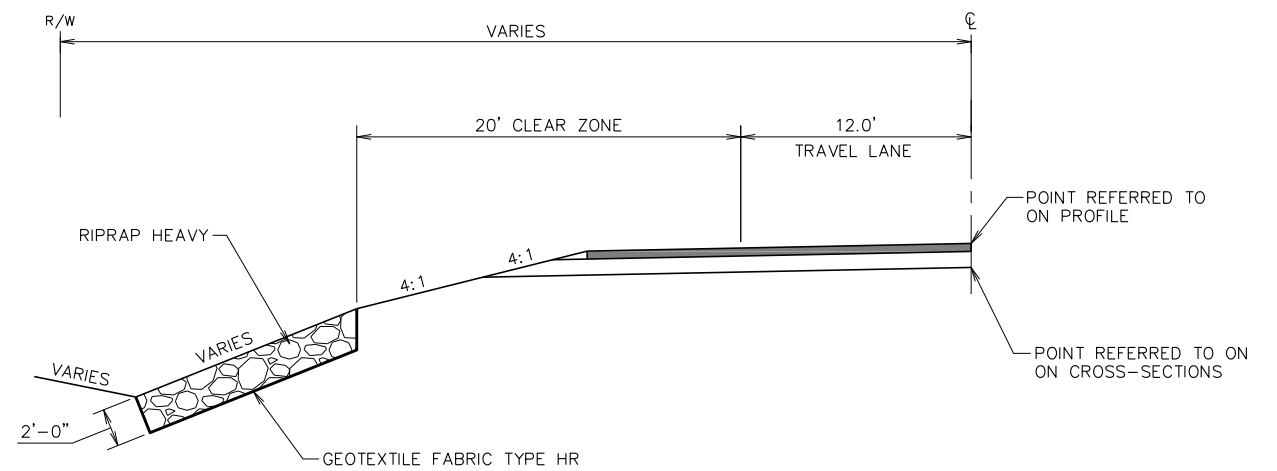
**ENTRANCE DETAIL**

* STA 9+31 RT
* STA 10+87 RT
** STA 12+00 RT

**TYPICAL PROFILE FOR ENTRANCES**

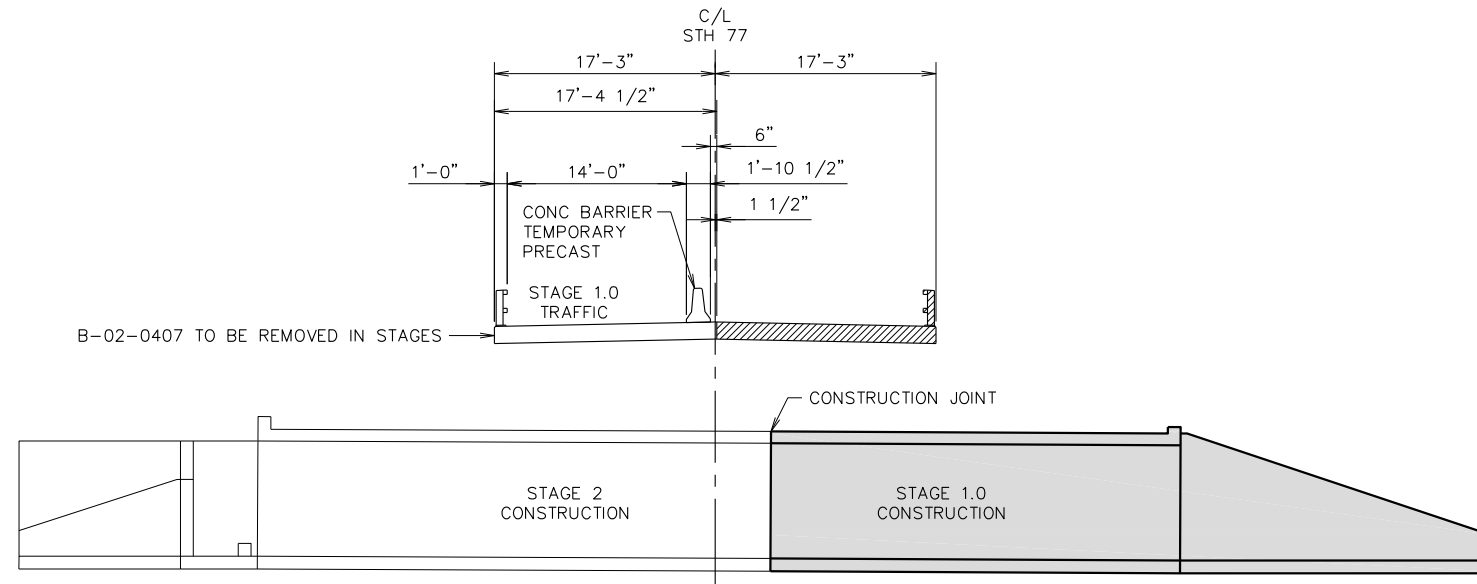


CHAIN LINK FENCE DETAIL



RIPRAP DETAIL

STA 10+50 - STA 12+50



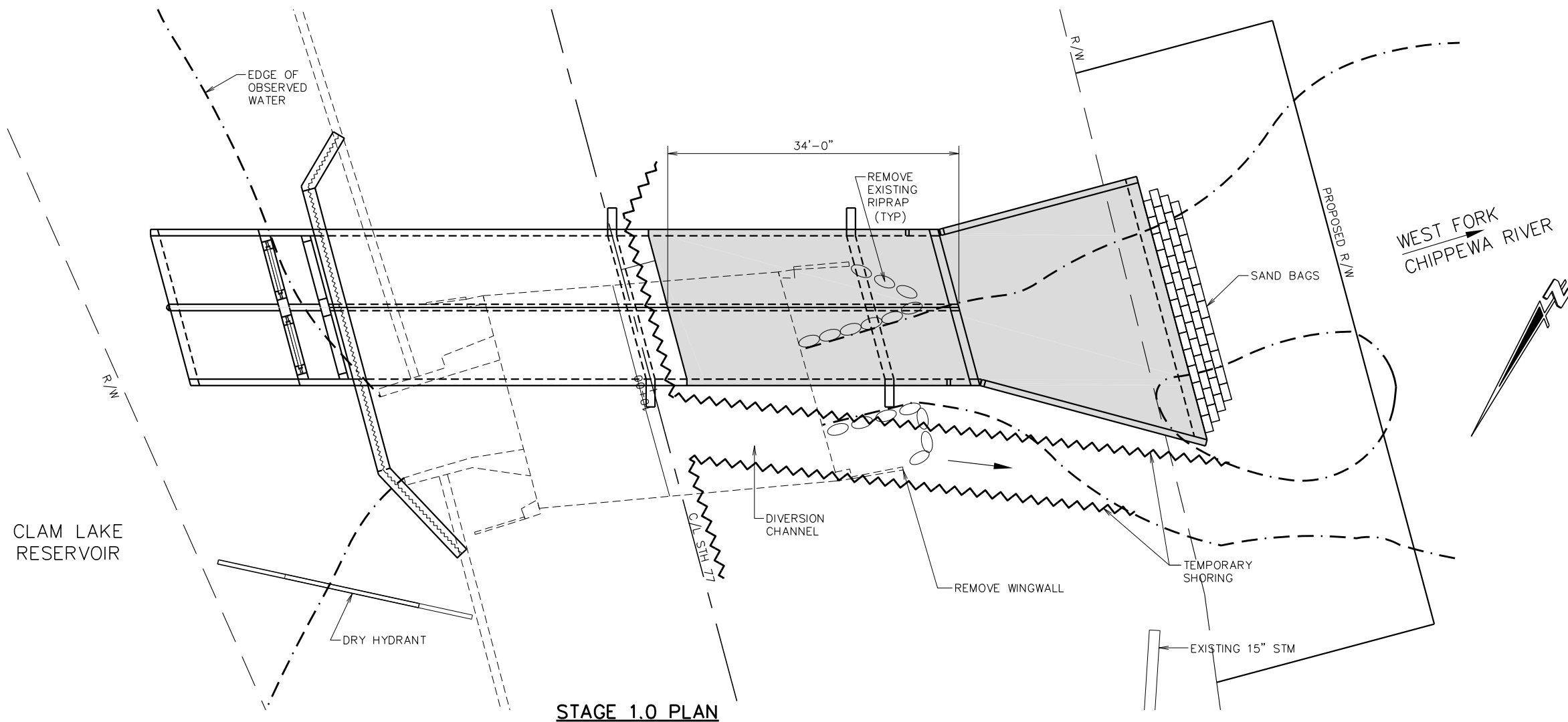
CROSS SECTION THRU ROADWAY @ STA 10+10

STAGE 1.0

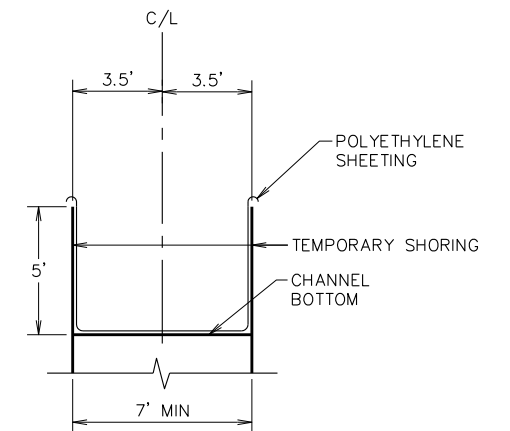
(LOOKING SOUTH)

STAGED REMOVAL LIMITS

STAGE 1.0 AREA TO BE CONSTRUCTED AND AREA OF EXISTING STRUCTURE REMOVAL

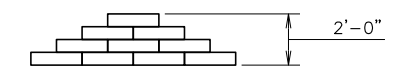


STAGE 1.0 PLAN

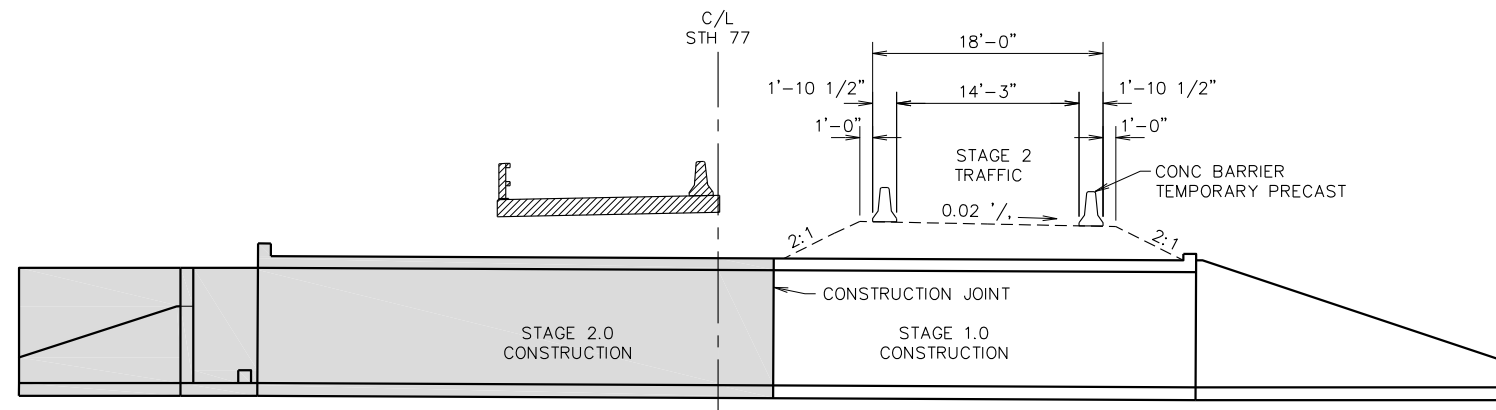


TEMPORARY DIVERSION CHANNEL

(LOOKING DOWNSTREAM)



SAND BAGS DETAIL



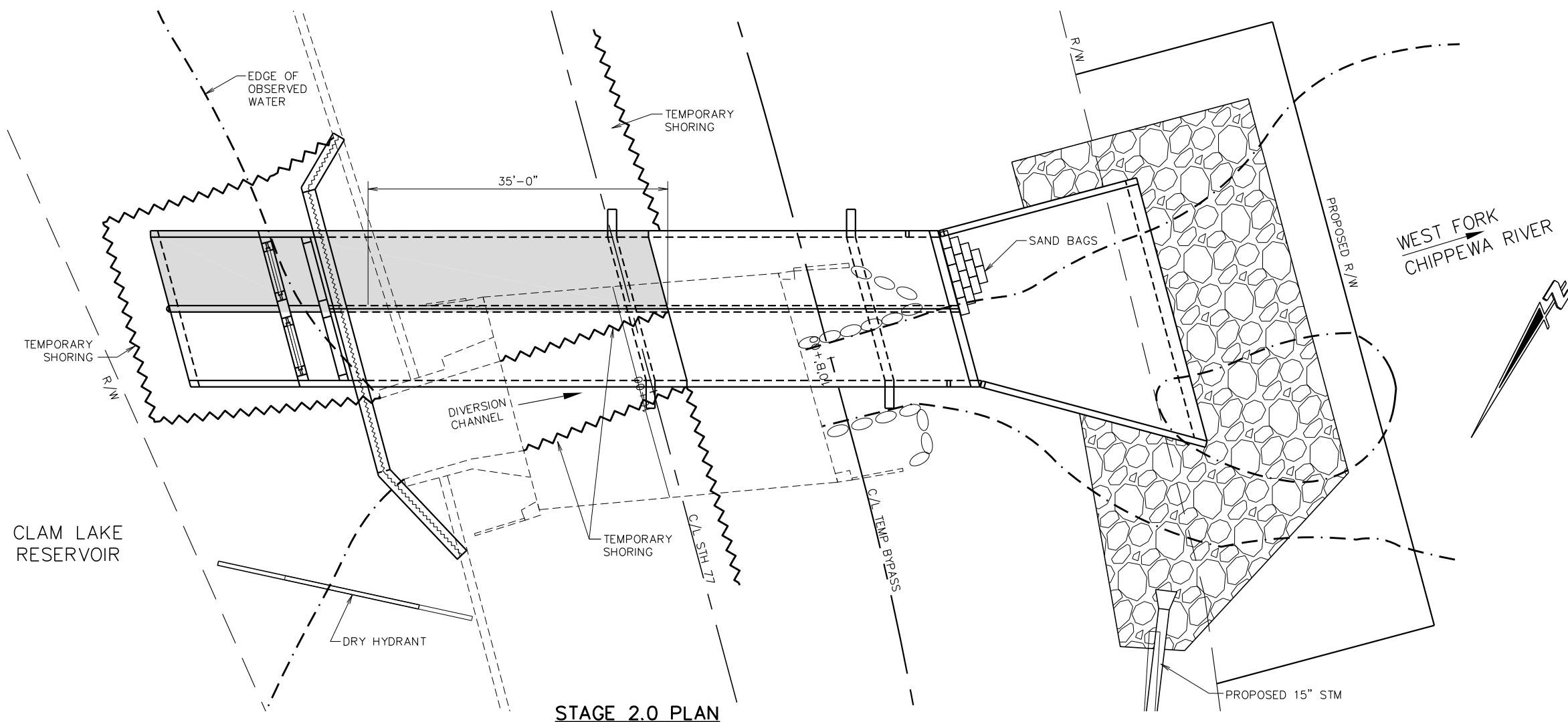
CROSS SECTION THRU ROADWAY @ STA 10+10

STAGE 2.0

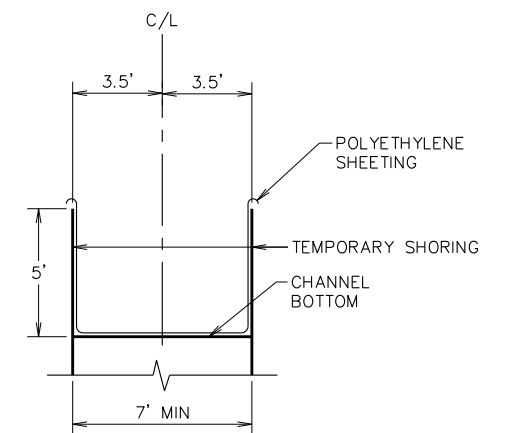
(LOOKING SOUTH)

STAGED REMOVAL LIMITS

STAGE 2.0 AREA TO BE CONSTRUCTED AND
AREA OF EXISTING STRUCTURE REMOVAL

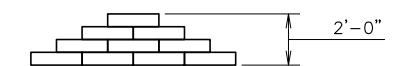


STAGE 2.0 PLAN

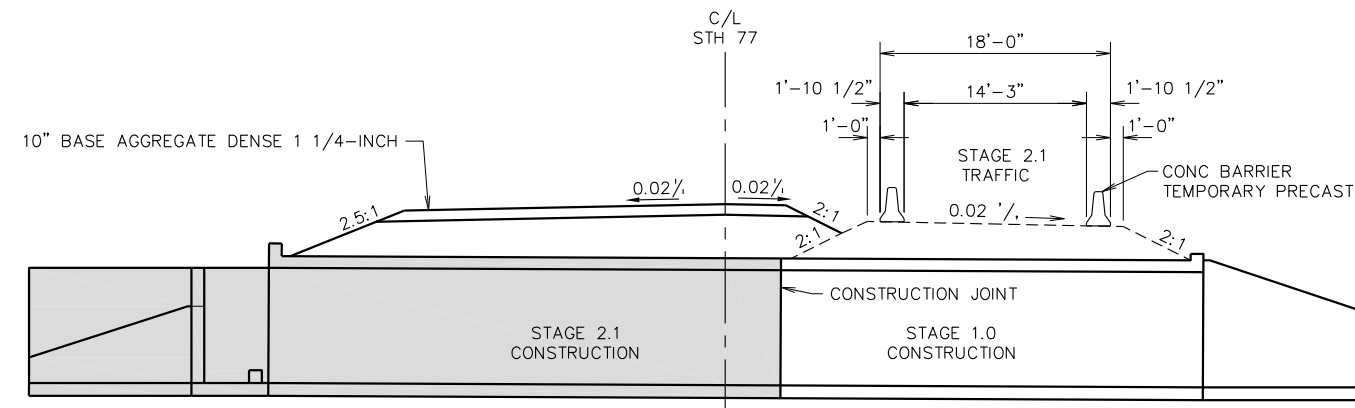


TEMPORARY DIVERSION CHANNEL

(LOOKING DOWNSTREAM)



SAND BAGS DETAIL



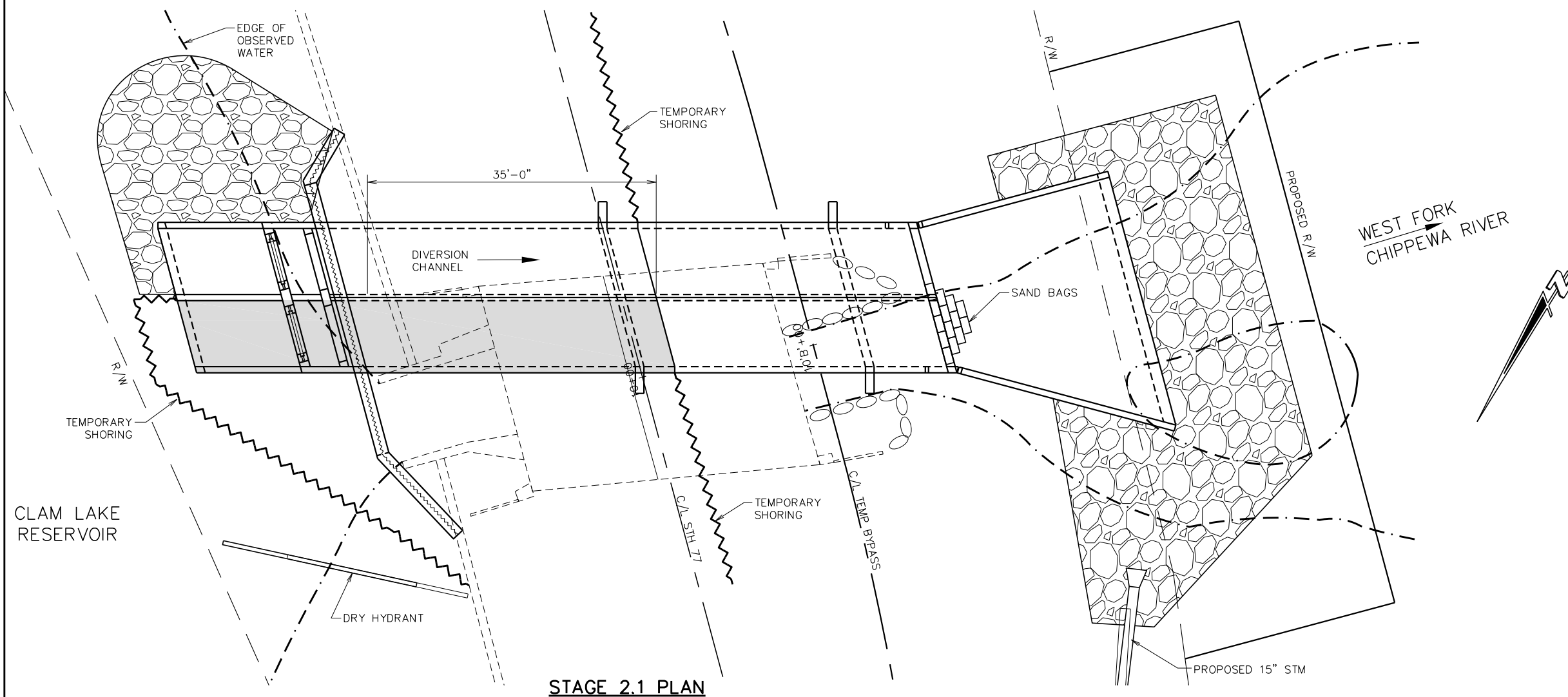
CROSS SECTION THRU ROADWAY @ STA 10+10

STAGE 2.1

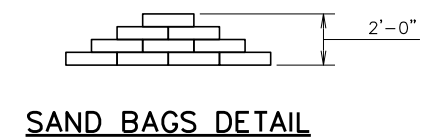
(LOOKING SOUTH)

STAGED REMOVAL LIMITS

STAGE 2.1 AREA TO BE CONSTRUCTED AND
AREA OF EXISTING STRUCTURE REMOVAL



STAGE 2.1 PLAN



PROJECT NO: 8530-13-71

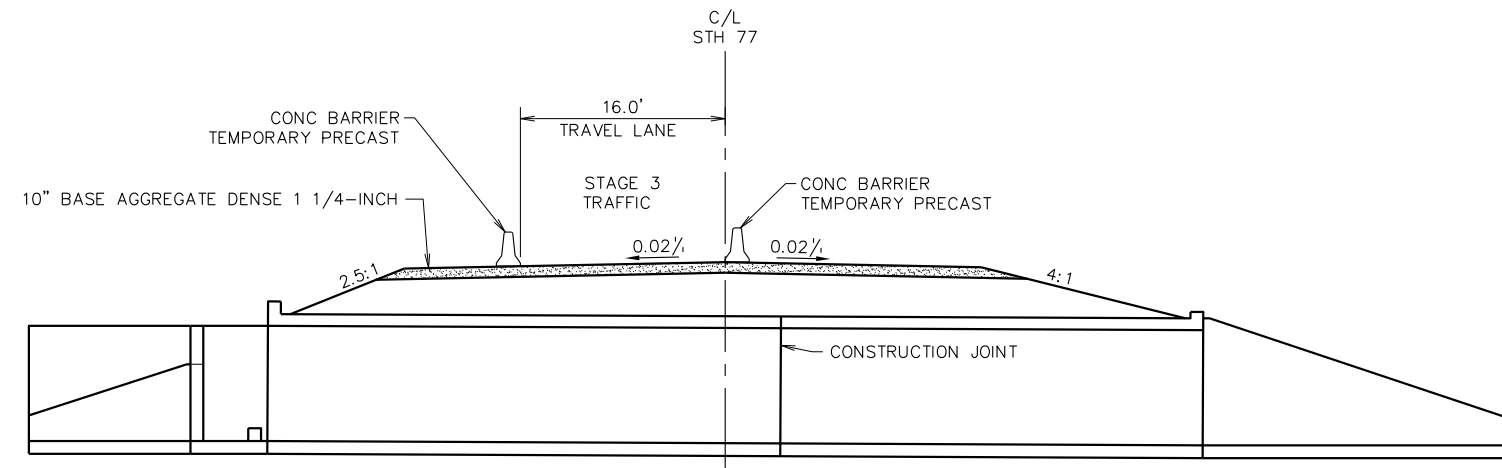
HWY: STH 77

COUNTY: ASHLAND

CONSTRUCTION STAGE 2.1

SHEET

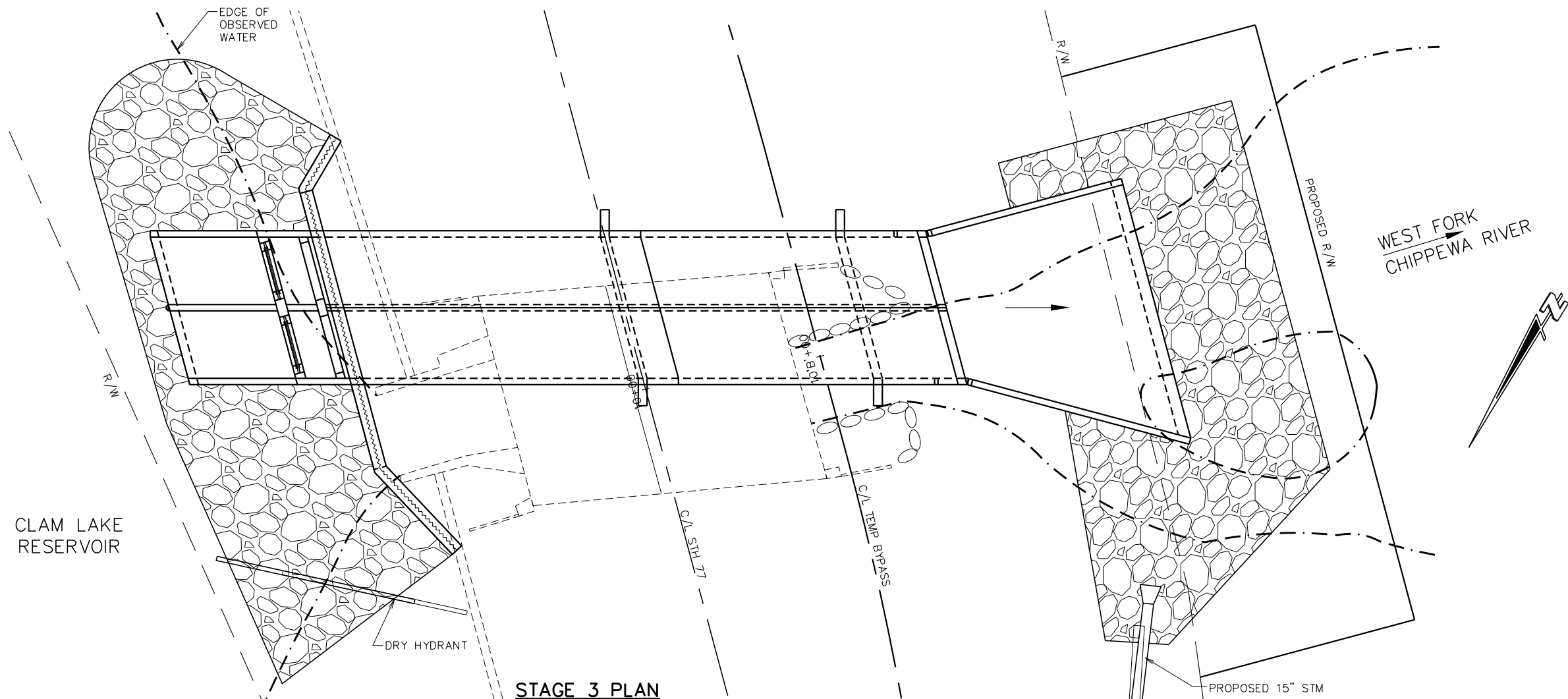
E



CROSS SECTION THRU ROADWAY @ STA 10+10

STAGE 3

(LOOKING SOUTH)



STAGE 3 PLAN

PROJECT NO: 8530-13-71

HWY: STH 77

COUNTY: ASHLAND

CONSTRUCTION STAGE 3

SHEET

E

LEGEND

EROSION MAT URBAN
CLASS I TYPE B



SILT FENCE



CULVERT PIPE CHECKS

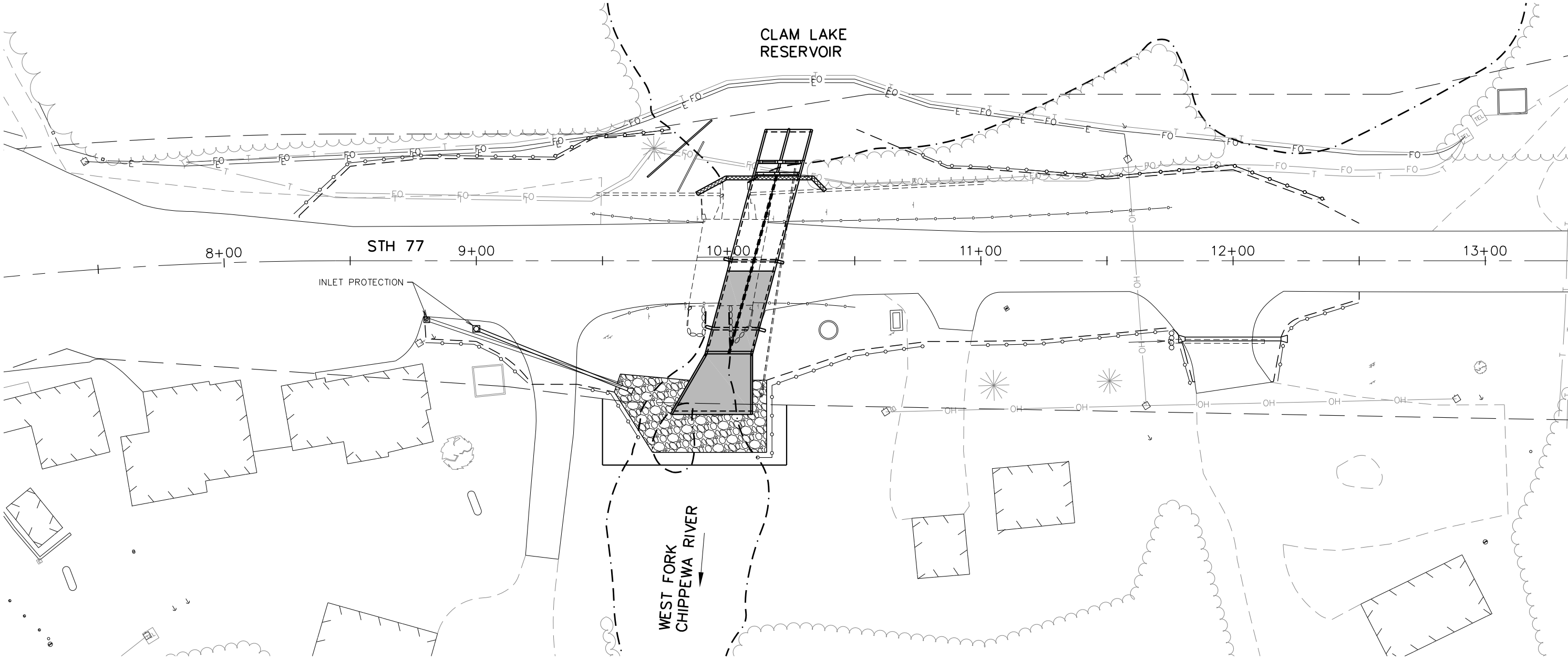
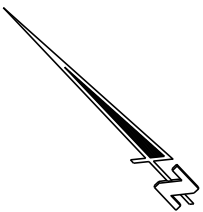


INLET PROTECTION TYPE C



NOTE: EROSION MAT REQUIRED WHERE
SLOPES > 3:1 ARE UTILIZED.

PORTION OF BOX
CULVERT BEING
CONSTRUCTED



LEGEND

EROSION MAT URBAN
CLASS I TYPE B



SILT FENCE



CULVERT PIPE CHECKS

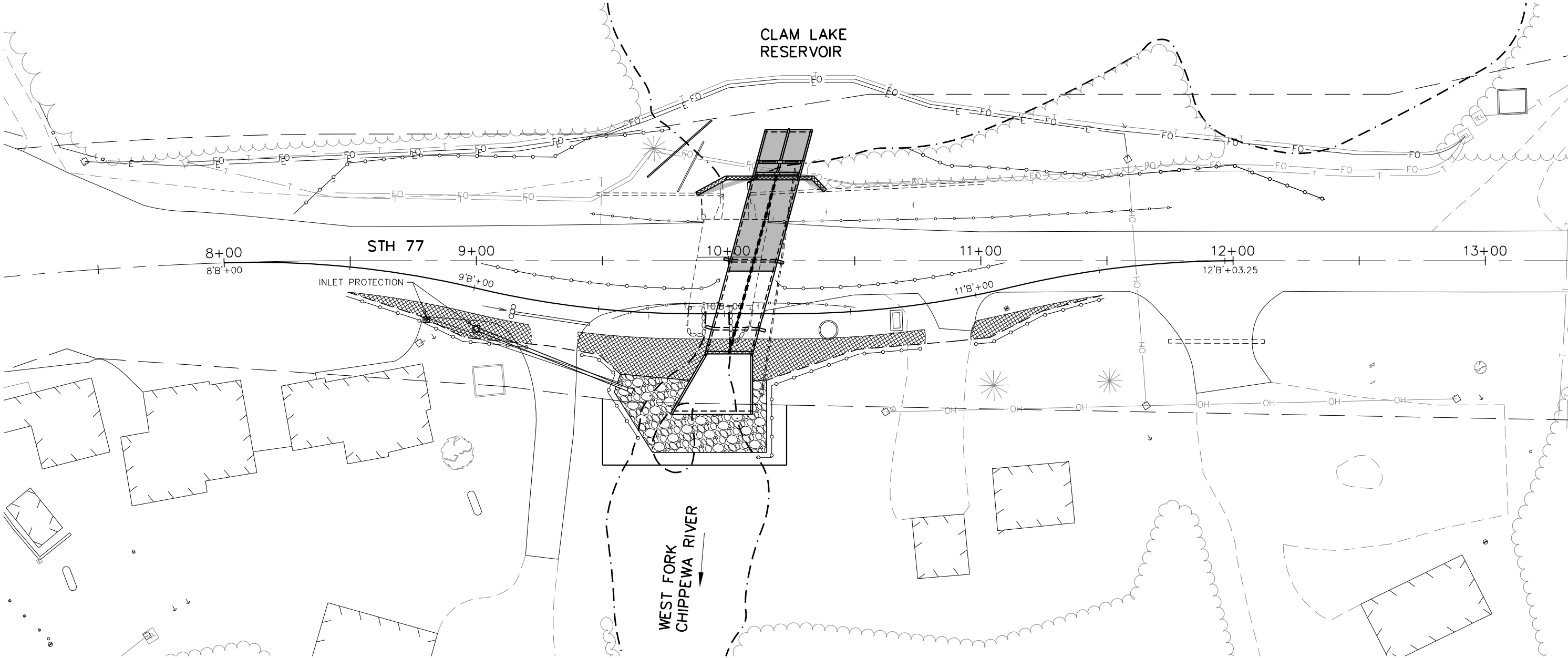


INLET PROTECTION TYPE C



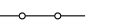
NOTE: EROSION MAT REQUIRED WHERE
SLOPES > 3:1 ARE UTILIZED.

PORTION OF BOX
CULVERT BEING
CONSTRUCTED



LEGENDEROSION MAT URBAN
CLASS I TYPE B

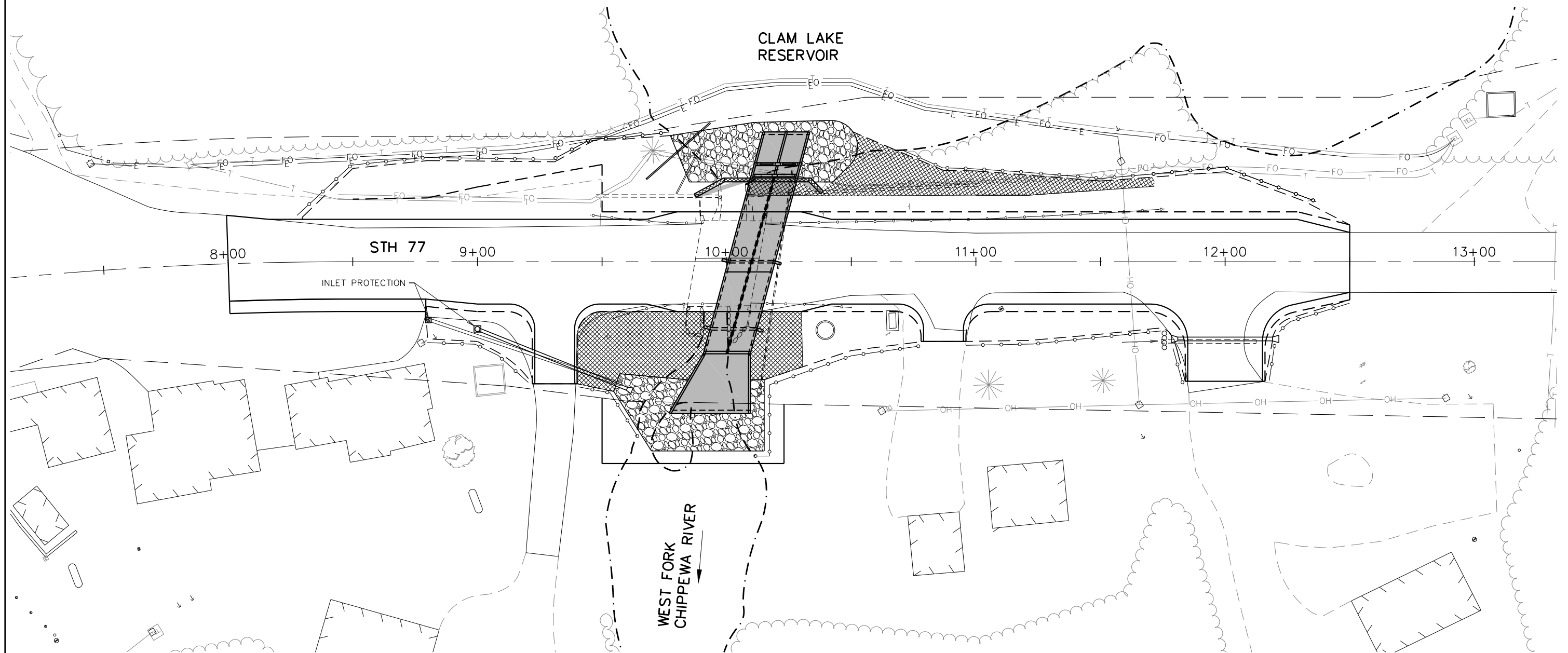
SILT FENCE



CULVERT PIPE CHECKS



INLET PROTECTION TYPE C

NOTE: EROSION MAT REQUIRED WHERE
SLOPES > 3:1 ARE UTILIZED.BOX CULVERT
CONSTRUCTION
COMPLETE

PROJECT NO: 8530-13-71

HWY: STH 77











COUNTY: ASHLAND

EROSION CONTROL STAGE 3

SHEET

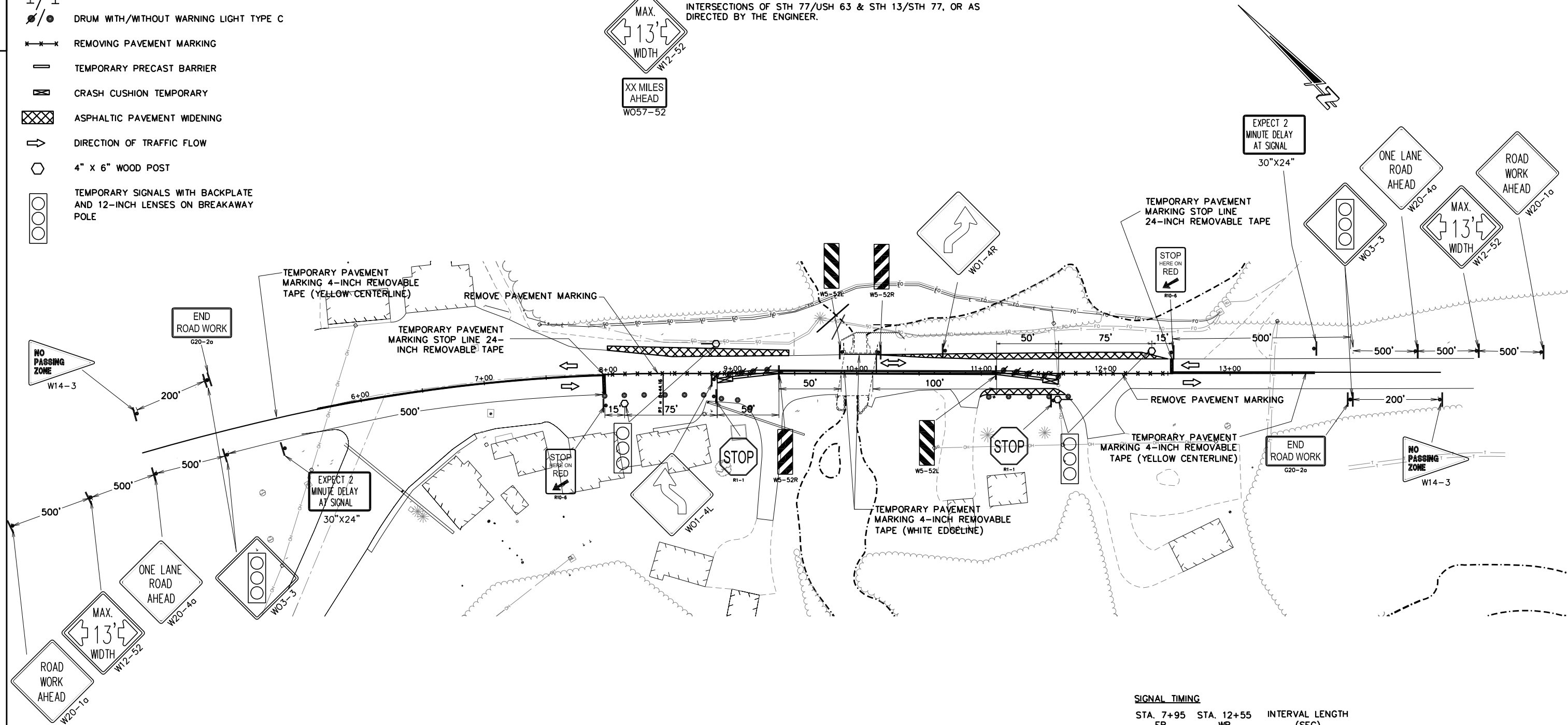
E

I:\Clients\W3901 WDOT NW Region - Superior\002 STH 77 Day Dam\dwg\022001_ec_sth 77.dwg 12/14/2012 4:41:04 PM CST

-  POST MOUNTED SIGN
 TYPE III BARRICADE WITH/WITHOUT SIGN
 DRUM WITH/WITHOUT WARNING LIGHT TYPE C
 REMOVING PAVEMENT MARKING
 TEMPORARY PRECAST BARRIER
 CRASH CUSHION TEMPORARY
 ASPHALTIC PAVEMENT WIDENING
 DIRECTION OF TRAFFIC FLOW
 4" x 6" WOOD POST
 TEMPORARY SIGNALS WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE













INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY AND NEAR THE INTERSECTIONS OF STH 77/USH 63 & STH 13/STH 77, OR AS DIRECTED BY THE ENGINEER.



SIGNAL TIMING

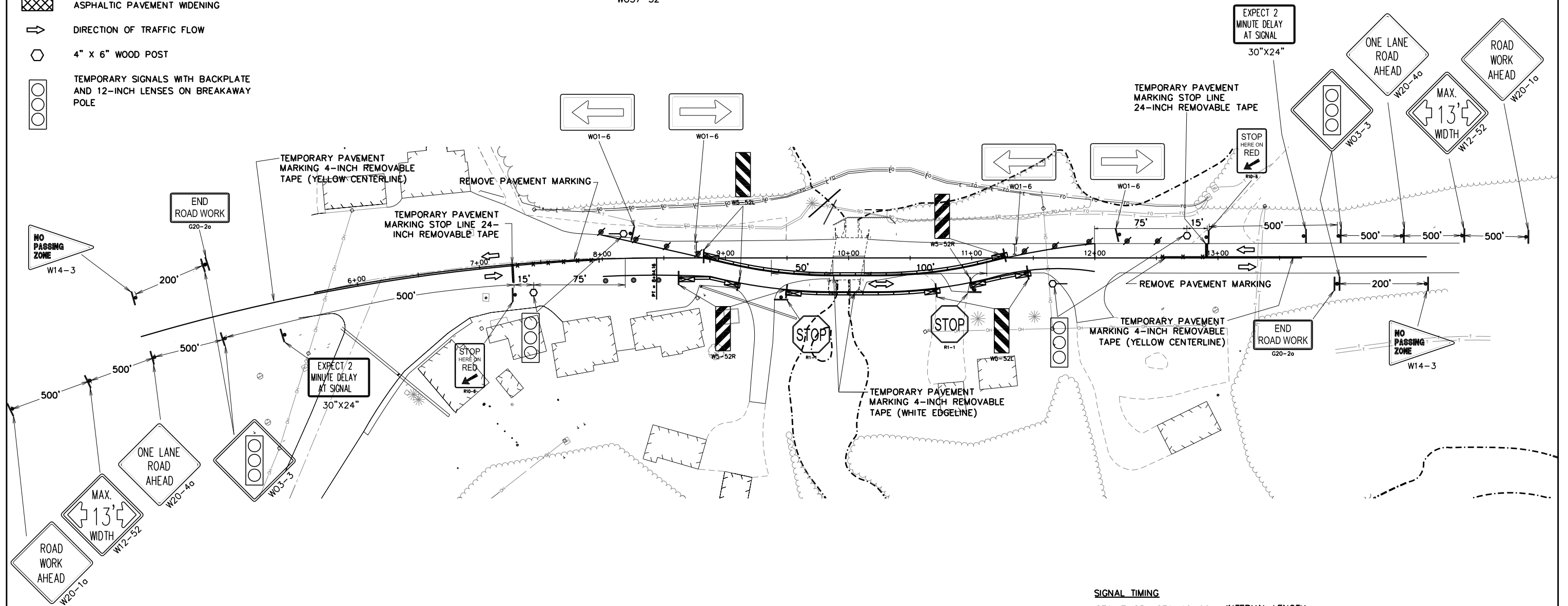
STA. 7+95	STA. 12+55	INTERVAL LENGTH
EB	WB	(SEC)
G	R	20
Y	R	4
R	R	33
R	C	20
R	Y	4
R	R	33

CYCLE LENGTH = 114 SEC

-  POST MOUNTED SIGN
 TYPE III BARRICADE WITH/WITHOUT SIGN
 DRUM WITH/WITHOUT WARNING LIGHT TYPE C
 REMOVING PAVEMENT MARKING
 TEMPORARY PRECAST BARRIER
 CRASH CUSHION TEMPORARY
 ASPHALTIC PAVEMENT WIDENING
 DIRECTION OF TRAFFIC FLOW
 4" x 6" WOOD POST
 TEMPORARY SIGNALS WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE












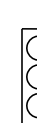
INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY AND NEAR THE INTERSECTIONS OF STH 77/USH 63 & STH 13/STH 77, OR AS DIRECTED BY THE ENGINEER.

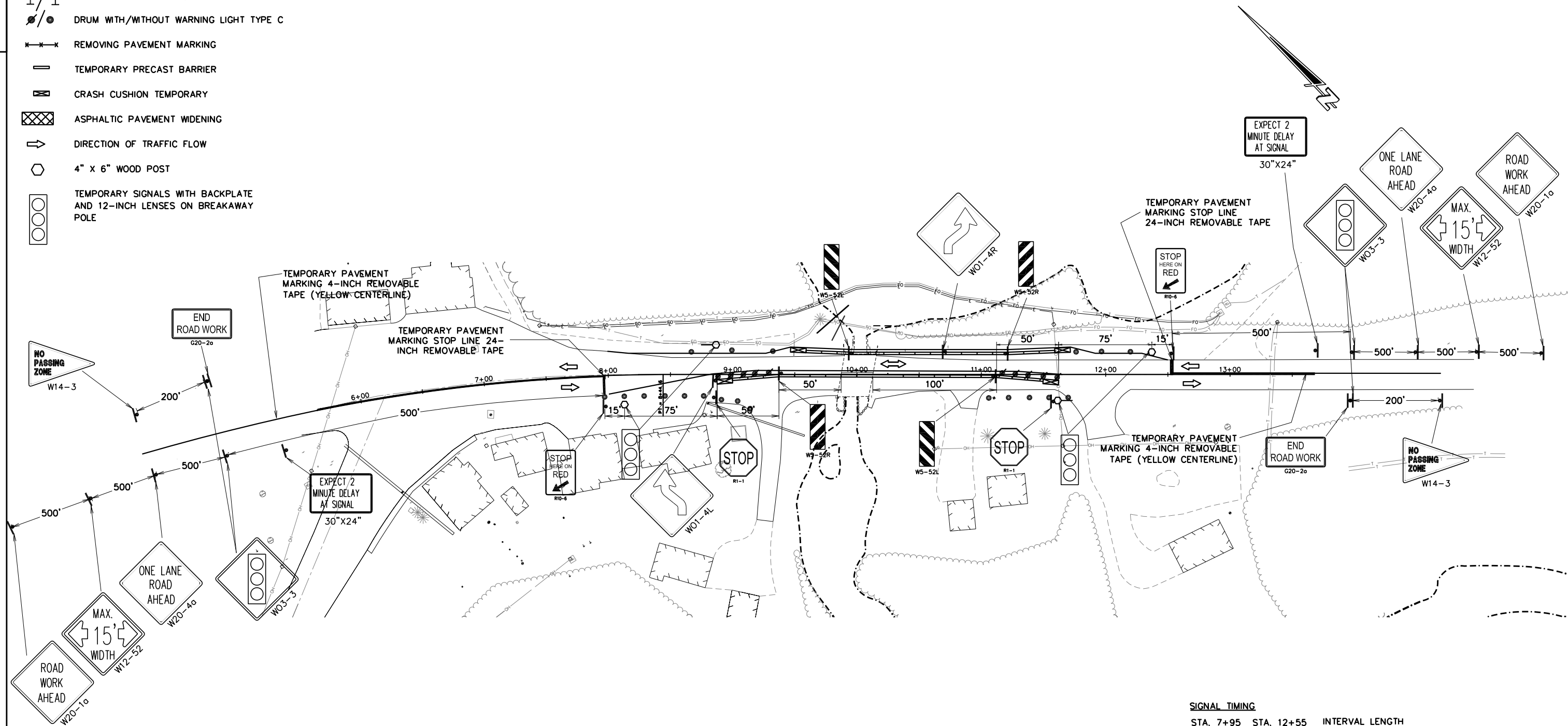


SIGNAL TIMING

STA. 7+25	STA. 12+90	INTERVAL LENGTH
EB	WB	(SEC)
G	R	20
Y	R	4
R	R	39
R	G	20
R	Y	4
R	R	39

CYCLE LENGTH = 126 SEC

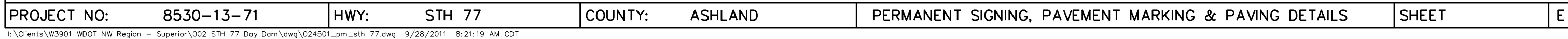
-  POST MOUNTED SIGN
 TYPE III BARRICADE WITH/WITHOUT SIGN
 DRUM WITH/WITHOUT WARNING LIGHT TYPE C
 REMOVING PAVEMENT MARKING
 TEMPORARY PRECAST BARRIER
 CRASH CUSHION TEMPORARY
 ASPHALTIC PAVEMENT WIDENING
 DIRECTION OF TRAFFIC FLOW
 4" X 6" WOOD POST
 TEMPORARY SIGNALS WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE



SIGNAL TIMING

STA. 7+95	STA. 12+55	INTERVAL LENGTH
EB	WB	(SEC)
G	R	20
Y	R	4
R	R	33
R	G	20
R	Y	4
R	R	33

CYCLE LENGTH = 114 SEC



C/L CURVE DATA
PC = 0+00
PI = 4+34.73
PT = 8+44.16
D = 03°59'57"
Δ = 33°45'33"
R = 1432.70'
T = 434.73'
L = 844.16'
C = 832.00'
SE = 4.6%

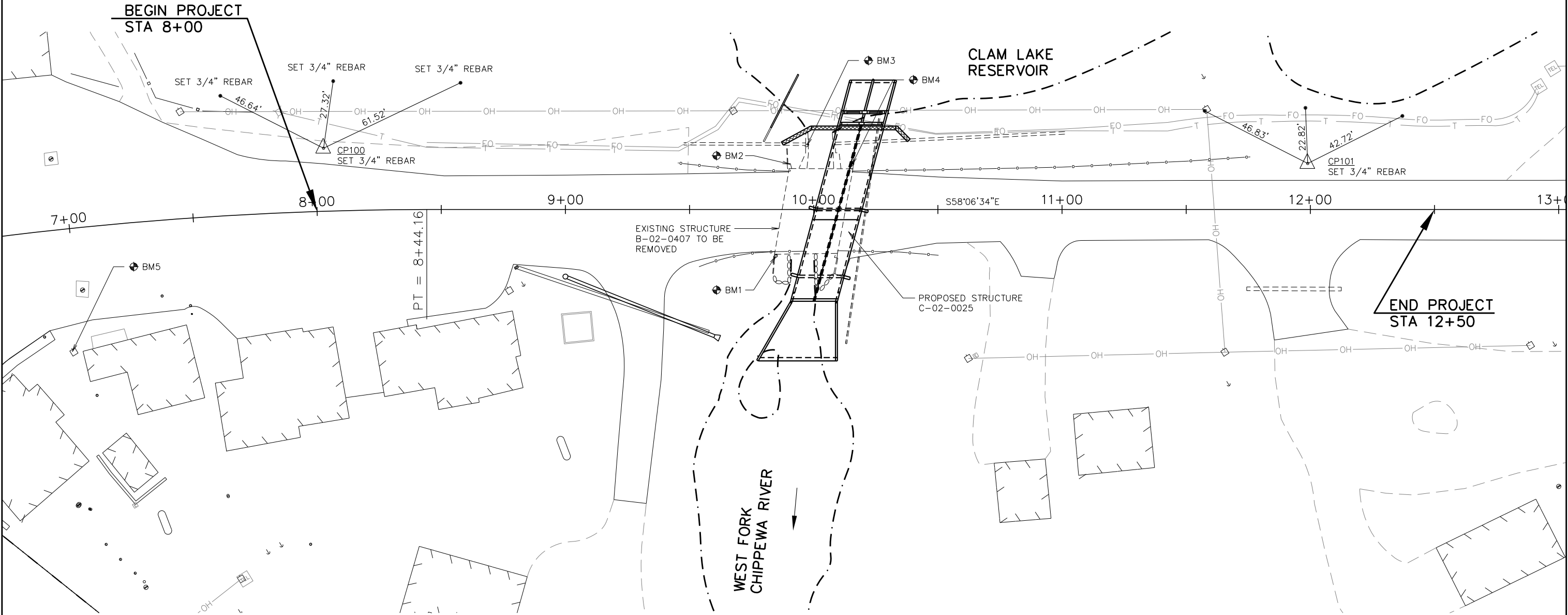
DESCRIPTION	STATION	LOCATION	NORTHING	EASTING
PC	0+00	C/L	167325.417	495031.956
PI	4+34.73	ALONG TANGENT LINE	167341.066	495468.890
BEGIN PROJECT	8+00	C/L	167135.115	495798.329
CP 100	8+03.37	25.38' LT OF C/L	167155.393	495813.971
PT	8+44.16	C/L	167112.488	495836.250
CP 101	11+98.94	18.51' LT OF C/L	166940.778	496147.256
END PROJECT	12+50	C/L	166898.083	496180.831

BENCHMARK			
NO.	STATION	DESCRIPTION	ELEV
1	9+85±	18.9' RT, MONUMENT SW BRIDGE WING	1427.26
2	9+90±	18.2' LT, CHISELED X NW BRIDGE WING	1427.16
3	9+97±	25.8' LT, MONUMENT NW WINGWALL DAM	1421.25
4	10+15±	18.0' LT, MONUMENT NE BRIDGE WING	1426.78
5	6+96±	49.3' LT, MAG NAIL IN PP	1430.60

NOTE: COORDINATES AND BEARINGS ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), ASHLAND COUNTY.

ORIGIN OF LEVEL

BM 11 LNB 1969
BM, CLAM LAKE, IN THE NW 1/4 SEC 32, T43N, R4W,
ABOUT 0.15 MI SE OF JCT OF STATE HWY 77 AND COUNTY HWY 'M',
27 FT N AND 5.9 FT LOWER THAN CENTER OF BRIDGE OVER WEST
FORK CHIPPEWA RIVER, 5 FT S OF N END OF W WALL OF CONCRETE
SPILLWAY; STANDARD TABLET STAMPED "11 LNB 1969"
ELEV 1421.25 FT
NGVD 1929



DATE 26DEC12		E S T I M A T E O F Q U A N T I T I E S			
LINE				8530-13-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	CLEARING	STA	2.000	2.000
0020	201.0205	GRUBBING	STA	2.000	2.000
0030	202.0105	ROADSIDE CLEARING	STA	2.000	2.000
0040	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	2.000	2.000
0050	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 01. B-02-47	LS	1.000	1.000
0060	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 10+00	LS	1.000	1.000
0070	204.0110	REMOVING ASPHALTIC SURFACE	SY	580.000	580.000
0080	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	190.000	190.000
0090	204.0165	REMOVING GUARDRAIL	LF	200.000	200.000
0100	204.0220	REMOVING INLETS	EACH	1.000	1.000
0110	204.0245	REMOVING STORM SEWER (SIZE) 01. 15-INCH	LF	81.000	81.000
0120	205.0100	EXCAVATION COMMON	CY	940.000	940.000
0130	206.2000	EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-02-0025	LS	1.000	1.000
0140	206.6000.S	TEMPORARY SHORING	SF	3,430.000	3,430.000
0150	208.0100	BORROW	CY	140.000	140.000
0160	210.0100	BACKFILL STRUCTURE	CY	1,070.000	1,070.000
0170	213.0100	FINISHING ROADWAY (PROJECT) 01. 8530-13-71	EACH	1.000	1.000
0180	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	215.000	215.000
0190	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,455.000	1,455.000
0200	455.0605	TACK COAT	GAL	45.000	45.000
0210	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	23.000	23.000
0220	465.0125	ASPHALTIC SURFACE TEMPORARY	TON	120.000	120.000
0230	502.6105	MASONRY ANCHORS TYPE S 5/8-INCH	EACH	28.000	28.000
0240	504.0100	CONCRETE MASONRY CULVERTS	CY	217.000	217.000
0250	505.0410	BAR STEEL REINFORCEMENT HS CULVERTS	LB	28,380.000	28,380.000
0260	505.0610	BAR STEEL REINFORCEMENT HS COATED CULVERTS	LB	290.000	290.000
0270	506.0105	STRUCTURAL STEEL CARBON	LB	335.000	335.000
0280	506.3015	WELDED STUD SHEAR CONNECTORS 7/8X6-INCH	EACH	112.000	112.000
0290	507.0200	TREATED LUMBER AND TIMBER	MBM	0.200	0.200
0300	512.0500	PILING STEEL SHEET PERMANENT DELIVERED	SF	1,145.000	1,145.000
0310	512.0600	PILING STEEL SHEET PERMANENT DRIVEN	SF	1,145.000	1,145.000
0320	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	55.000	55.000
0330	520.4012	CULVERT PIPE TEMPORARY 12-INCH	LF	30.000	30.000
0340	522.0118	CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	45.000	45.000
0350	522.1015	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH	EACH	1.000	1.000
0360	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	2.000	2.000
0370	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	450.000	450.000
0380	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	1,030.000	1,030.000
0390	606.0300	RI PRAP HEAVY	CY	230.000	230.000
0400	608.0315	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH	LF	70.000	70.000
0410	611.0612	INLET COVERS TYPE C	EACH	1.000	1.000
0420	611.3003	INLETS 3-FT DIAMETER	EACH	1.000	1.000
0430	614.0905	CRASH CUSHIONS TEMPORARY	EACH	14.000	14.000
0440	616.0204	FENCE CHAIN LINK 4-FT	LF	110.000	110.000

DATE 26DEC12		E S T I M A T E O F Q U A N T I T I E S			
LINE					8530-13-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0450	616.0329	GATES CHAIN LINK (WIDTH) 01. 4-FT	EACH	2.000	2.000
0460	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 8530-13-71	EACH	1.000	1.000
0470	619.1000	MOBILIZATION	EACH	1.000	1.000
0480	625.0105	TOPSOIL	CY	42.000	42.000
0490	625.0500	SALVAGED TOPSOIL	SY	745.000	745.000
0500	627.0200	MULCHING	SY	1,145.000	1,145.000
0510	628.1504	SILT FENCE	LF	800.000	800.000
0520	628.1520	SILT FENCE MAINTENANCE	LF	1,600.000	1,600.000
0530	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0540	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0550	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	705.000	705.000
0560	628.5505	POLYETHYLENE SHEETING	SY	460.000	460.000
0570	628.7015	INLET PROTECTION TYPE C	EACH	1.000	1.000
0580	628.7504	TEMPORARY DITCH CHECKS	LF	30.000	30.000
0590	628.7555	CULVERT PIPE CHECKS	EACH	4.000	4.000
0600	628.7570	ROCK BAGS	EACH	10.000	10.000
0610	629.0210	FERTILIZER TYPE B	CWT	1.200	1.200
0620	630.0120	SEEDING MIXTURE NO. 20	LB	47.000	47.000
0630	630.0200	SEEDING TEMPORARY	LB	55.000	55.000
0640	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	4.000	4.000
0650	637.0202	SIGNS REFLECTIVE TYPE II	SF	24.000	24.000
0660	638.2602	REMOVING SIGNS TYPE II	EACH	8.000	8.000
0670	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	8.000	8.000
0680	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0690	643.0100	TRAFFIC CONTROL (PROJECT) 01. 8530-13-71	EACH	1.000	1.000
0700	643.0300	TRAFFIC CONTROL DRUMS	DAY	3,575.000	3,575.000
0710	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,350.000	1,350.000
0720	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,398.000	2,398.000
0730	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	2,346.000	2,346.000
0740	643.0900	TRAFFIC CONTROL SIGNS	DAY	5,206.000	5,206.000
0750	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	390.000	390.000
0760	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	2,000.000	2,000.000
0770	646.0600	REMOVING PAVEMENT MARKINGS	LF	350.000	350.000
0780	648.0100	LOCATING NO-PASSING ZONES	MI	0.090	0.090
0790	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	5,230.000	5,230.000
0800	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	90.000	90.000
0810	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	2.000	2.000
0820	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	795.000	795.000
0830	650.5000	CONSTRUCTION STAKING BASE	LF	795.000	795.000
0840	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	1.000	1.000
0850	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. C-02-0025	LS	1.000	1.000
0860	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8530-13-71	LS	1.000	1.000
0870	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	795.000	795.000
0880	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. C-02-0025	LS	1.000	1.000
0890	690.0150	SAWING ASPHALT	LF	195.000	195.000
0900	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	1,308.000	1,308.000
0910	SPV.0060	SPECIAL 01. SAND BAGS	EACH	100.000	100.000
0920	SPV.0060	SPECIAL 02. DRY HYDRANT	EACH	1.000	1.000

DATE 26DEC12			E S T I M A T E O F Q U A N T I T I E S			
LINE						8530-13-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0930	SPV. 0060	SPECIAL 03. STAFF GAGE	EACH	1.000	1.000	
0940	SPV. 0105	SPECIAL 01. REMOVABLE ALUMINUM WALKWAY AND RAILING	LS	1.000	1.000	
0950	SPV. 0105	SPECIAL 02. DAVIT CRANE	LS	1.000	1.000	
0960	SPV. 0195	SPECIAL 01. ASPHALTC SURFACE SPECIAL	TON	460.000	460.000	

CLEARING, GRUBBING AND ROADSIDE CLEARING

STATION - STATION	LOCATION	201.0105 STA	201.0205 STA	202.0105 STA
10+00 - 11+00	STH 77	1	1	1
11+00 - 12+00	STH 77	1	1	1
TOTAL		2	2	2

REMOVING ASPHALTIC SURFACE

STATION - STATION	LOCATION	204.0110 SY
8B+00 - 12B+03.25	TEMPORARY BYPASS	580
TOTAL		580

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATION - STATION	LOCATION	204.0115 SY
8+00 - 8+30	STH 77	110
12+20 - 12+50	STH 77	80
TOTAL		190

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH
11+90 RT	STH 77	1
9B+10 RT	TEMPORARY BYPASS	1
TOTAL		2

REMOVING GUARDRAIL

STATION - STATION	LOCATION	204.0165 LF
9+45 - 9+90	STH 77, LT	45
10+15 - 11+70	STH 77, LT	155
TOTAL		200

EARTHWORK SUMMARY

STATION - STATION	LOCATION	205.0100 EXCAVATION COMMON	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (3)	UNEXPANDED FILL	EXPANDED FILL (1)	208.0100 BORROW	MASS ORDINATE +/- (2)
		CUT CY	CY	CY	CY	FACTOR 1.30		CY
8+30 - 12+20	STH 77	562	130	432	441	573	140	-140
8B+50 - 11B+53.1	TEMPORARY BYPASS	378	59	319	153	199	---	120
		940			594	772	140	

NOTES:

- (1) EXPANDED FILL FACTOR = 1.30.
EXPANDED FILL = UNEXPANDED FILL*FILL FACTOR
- (2) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITH THE DIVISION.
MINUS INDICATES A SHORTAGE OF MATERIAL WITH THE DIVISION.
- (3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

REMOVING INLETS

STATION	LOCATION	204.0220 EACH
8+80	STH 77, RT	1
TOTAL		1

FINISHING ROADWAY

PROJECT: 8530-13-71	213.0100 EACH
STH 77	1
TOTAL	1

REMOVING STORM SEWER (15")

STATION	LOCATION	204.0245 LF
9+20	STH 77, RT	81
TOTAL		81

BASE AGGREGATE DENSE 3/4-INCH

STATION - STATION	LOCATION	305.0110 TON	REMARKS
8+30 - 12+20	STH 77	125	SHOULDERS
8B+00 - 12B+03.25	TEMPORARY BYPASS	15	SHOULDERS
---	PRIVATE ENTRANCES	75	BASE
TOTAL		215	

BASE AGGREGATE DENSE 1-1/4-INCH

STATION - STATION	LOCATION	305.0120 TON	REMARKS
8+30 - 12+20	STH 77	1135	BASE
8B+00 - 12B+03.25	TEMPORARY BYPASS	320	BASE
TOTAL		1455	

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

<u>TACK COAT</u>	
STATION - STATION	455.0605 GAL
8+00 - 12+50	45
TOTAL	45

<u>ASPHALTIC SURFACE SPECIAL</u>	
STATION - STATION	SPV.0195.01 TON
8+00 - 12+50	460
TOTAL	460

<u>ASPHALTIC SURFACE DRIVEWAYS & FIELD ENTRANCES</u>		
STATION	LOCATION	465.0120 TON
9+31	PE, RT	6
10+87	PE, RT	4
12+00	PE, RT	13
TOTAL		23

<u>ASPHALTIC SURFACE TEMPORARY</u>		
STATION - STATION	LOCATION	465.0125 TON
8B+50 - 11B+53.1	TEMPORARY BYPASS	120
TOTAL		120

CULVERT PIPE AND APRON ENDWALLS

STATION	LOCATION	522.0118 CULVERT PIPE REINFORCED CONC. CLASS III 18-INCH	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONC. 15-INCH	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONC. 18-INCH	520.4012 CULVERT PIPE TEMPORARY 12-INCH	650.6000 CONSTRUCTION STAKING PIPE CULVERT EACH
		LF	EACH	EACH	LF	EACH
9+60	STH 77, RT	---	1	---	---	---
11+75	STH 77, RT	45	---	1	---	---
12+18	STH 77, RT	---	---	1	---	---
9'B'+32	TEMPORARY BYPASS	---	---	---	30	1
TOTAL		45	1	2	30	1

<u>TEMPORARY CONCRETE BARRIERS</u>			
	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED 603.8000 LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED 603.8125 LF	CRASH CUSHION TEMPORARY 614.0905 EACH
STAGE 1	245	245	2
STAGE 2	90	335	8
STAGE 3	115	450	4
TOTAL	450	1030	14

<u>STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH</u>		
STATION	LOCATION	608.0315 LF
9+30	STH 77, RT	70
TOTAL		70

INLETS

STATION	LOCATION	INLETS 3-FT DIAMETER 611.3003 EACH	INLET COVERS TYPE C 611.0612 EACH	INLET PROTECTION TYPE C 628.7015 EACH
9+00	STH 77, RT	1	1	1
TOTAL		1	1	1

RIP RAP

STATION - STATION	LOCATION	RIPRAP HEAVEY 606.0300 CY	GEOTEXTILE FABRIC TYPE HR 645.0120 SY
10+50 - 12+50	UNDISTRIBUTED	40	110
TOTAL		40	110

FENCE CHAIN LINK

STATION - STATION	LOCATION	FENCE CHAIN LINK 4 - FT 616.0204 LF	GATES CHAIN LINK 4 - FT 616.0329 EA
9+75 - 10+54	LEFT	110	2
TOTAL		110	2

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

<u>MOBILIZATION</u>				<u>RESTORATION</u>						<u>SILT FENCE</u>							
PROJECT	CATEGORY	LOCATION	619.1000	625.0105	625.0500	627.0200	629.0210	630.0120	630.0200	628.1504	628.1520						
			EACH	TOPSOIL	SALVAGED TOPSOIL	MULCHING	FERTILIZER	SEEDING	SEEDING			SILT FENCE	SILT FENCE				
				STATION - STATION	LOCATION	CY	SY	SY	TYPE B CWT	MIXTURE NO. 20 LB	TEMPORARY LB	STATION TO STATION	LOCATION	LF	LF		
8530-13-71	0010	ROADWAY	0.2	8+00 - 12+50	STH 77, LT	---	300	410	0.5	19	19	8+75 - 12+50	STH 77, LT	310	620		
8530-13-71	0020	STRUCTURE	0.8	8+00 - 12+50	STH 77, RT	---	295	505	0.5	18	18	8+75 - 12+50	STH 77, RT	330	660		
				8B+50 - 11B+50	TEMPORARY BYPASS, RT	---	---	---	---	---	7	UNDISTRIBUTED		160	320		
				UNDISTRIBUTED		42	150	230	0.2	10	11						
				TOTAL		42	745	1145	1.2	47	55	TOTAL				800	1600

MOBILIZATIONS EROSION CONTROL			MOBILIZATION EMERGENCY EROSION CONTROL	
			628.1905 EA	628.1910 EA
PROJECT ID 8530-13-71			2	2
TOTAL			2	2

EROSION MAT URBAN CLASS I TYPE B		
STATION TO STATION	LOCATION	628.2008 SY
9+40 - 10+30	STH 77, RT	210
10+10 - 11+70	STH 77, LT	140
8B+50 - 11B+50	TEMPORARY BYPASS, RT	255
UNDISTRIBUTED		100
TOTAL		705

<u>TEMPORARY DITCH CHECKS</u>	
	628.7504
STATION - STATION	LF
<hr/>	
UNDISTRIBUTED	30
<hr/>	
TOTAL	30

<u>ROCK BAGS</u>	
LOCATION	628.7570 EACH
UNDISTRIBUTED	10
TOTAL	10

CULVERT PIPE CHECKS		
STATION	LOCATION	628.7555 EACH
11+75	STH 77, RT	1
9B+10	TEMPORARY BYPASS, RT	1
UNDISTRIBUTED		2
TOTAL		4

	705
<u>FIELD OFFICE TYPE B</u>	
	642.5001 EACH
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PROJECT 8530-13-71	1
<hr/>	
TOTAL	1

PAVEMENT MARKING			
STATION TO STATION	LOCATION	646.0106 EPOXY 4-INCH LF	REMARKS
8+00 - 13+00	CL	1000	DOUBLE YELLOW
8+00 - 13+00	LT	500	EDGE LINE (WHITE)
8+00 - 13+00	RT	500	EDGE LINE (WHITE)
TOTAL		2000	

SIGNING									
STATION	LOCATION	NEW SIGN	SIGN CODE	634.0614 POSTS WOOD 4X6-INCH X 14 FT EACH	637.0202 SIGNS REFLECTIVE TYPE II SF	EXISTING SIGN	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
8+45	LT	---	---	---	---	100	1	1	CABLE
9+68	RT	501	I55-56	1	7.50	101	1	1	ADOPT-A-HIGHWAY
10+40	LT	502	I55-56	1	7.50	102	1	1	ADOPT-A-HIGHWAY
10+74	LT	503	D1-2	2	9.00	103	1	1	MELLEN / CABLE
9+82	RT	---	W5-5R	---	---	104	1	1	BRIDGE MARKER
10+13	RT	---	W5-5L	---	---	105	1	1	BRIDGE MARKER
9+88	LT	---	W5-5L	---	---	106	1	1	BRIDGE MARKER
10+17	LT	---	W5-5R	---	---	107	1	1	BRIDGE MARKER
TOTAL				4	24		8	8	

REMOVING PAVEMENT MARKING			
STAGE	STATION TO STATION	LOCATION	646.0600 EACH
1	7+97 - 9+17	STH 77	120
1	11+33 - 12+53	STH 77	120
2	7+27 - 7+97	STH 77	70
2	12+53 - 12+93	STH 77	40
TOTAL			350

ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED

TRAFFIC CONTROL												
		643.0100	643.0300		643.0420		643.0705		644.0715		643.0900	
		TRAFFIC CONTROL	DRUMS		BARRICADES		WARNING LIGHTS		WARNING LIGHTS		SIGNS	
CALENDAR		8560-13-71			TYPE III		TYPE A		TYPE C			
LOCATION	DAYS	EACH	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS
STAGE 1	52	---	25	1300	4	208	8	416	10	520	28	1456
STAGE 2	85		15	1275	6	510	12	1020	10	850	30	2550
STAGE 3	7	---	25	175	4	28	8	56	10	70	28	196
STAGE 4	7		10	70	---	---	---	---	---	---	14	98
UNDISTRIBUTED	151	1	5	755	4	604	6	906	6	906	6	906
TOTAL		1		3575		1350		2398		2346		5206

CONSTRUCTION STAKING STORM SEWER

STATION	LOCATION	650.4000 EACH
9+00	STH 77, RT	1
9+60	STH 77, RT	1
TOTAL		2

CONSTRUCTION STAKING PROJECT

650.9910 SUPPLEMENTAL CONTROL (8530-13-71)	
PROJECT ID	LS
8530-13-71	1
<hr/>	
TOTAL	1

CONSTRUCTION STAKING

		650.4500	650.5000	650.9920	* 650.6500
		SUBGRADE	BASE	SLOPE STAKES	STRUCTURE LAYOUT
STATION TO STATION	LOCATION	LF	LF	LF	LS
8+30 - 12+20	STH 77	390	390	390	
8B+00 - 12B+03.25	TEMPORARY BYPASS	405	405	405	
10+10	C-2-25				1
TOTAL		795	795	795	1

* CATEGORY 0020

TEMPORARY PAVEMENT MARKING

STOPLINE REMOVABLE TAPE 24-INCH

STAGE	STATION	649.1400 LF
1	7+97	15
1	12+53	15
2	7+27	15
2	12+91	15
3	7+97	15
3	12+93	15
TOTAL		90

LOCATING NO-PASSING ZONES

		648.0100 MI
PROJECT 8530-13-71	STH 77	0.09
TOTAL		0.09

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH

STAGE	STATION TO STATION	LOCATION	649.0400 LF	REMARKS
1	0+97 - 7+97	CL	1400	DOUBLE YELLOW
1	12+53 - 19+53	CL	1400	DOUBLE YELLOW
1	8+00 - 12+50	LT EDGETLINE	450	WHITE
1	9+00 - 11+50	RT EDGETLINE	250	WHITE
2	0+27 - 0+97	CL	140	DOUBLE YELLOW
2	19+53 - 19+91	CL	76	DOUBLE YELLOW
2	8+00 - 12+00	LT EDGETLINE	410	WHITE
2	8+00 - 12+00	RT EDGETLINE	404	WHITE
3	8+00 - 12+50	LT EDGETLINE	450	WHITE
3	9+00 - 11+50	RT EDGETLINE	250	WHITE
TOTAL			5,230	

TEMPORARY TRAFFIC SIGNALS FOR STRUCTURE

STRUCTURE	661.0100 LS
C-02-0025	1
TOTAL	1

SAND BAGS

SPV.0060.01	
PROJECT: 8530-13-71	EACH
STAGE 1.1	50
STAGE 2.0	15
STAGE 2.1	15
STAGE 3	0
UNDISTRIBUTED	20
TOTAL	100

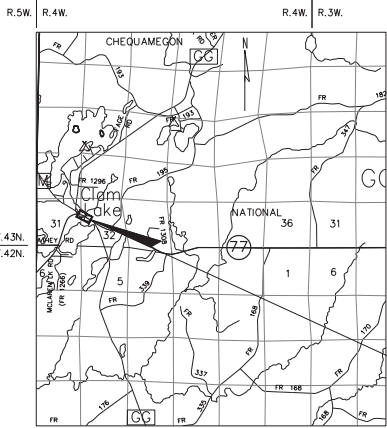
SAWING ASPAHLT

STATION	LOCATION	ASPHALT 690.0150 LF
8+00 - 8+80	C.E RT	80
8+00	STH 77	40
9+31	P.E RT	18
12+00	P.E RT	33
12+50	STH 77	24
TOTAL		195

DRY HYDRANT

STATION	LOCATION	SPV.0060.02 EACH
9+83	33' LT	1
TOTAL		1

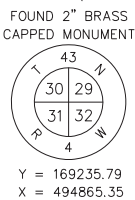
ALL ITEMS ARE CATEGORY 0010
UNLESS OTHERWISE NOTED



PROJECT LOCATION
SHEET LOCATION



R/L CURVE DATA	
PC	= 0+00.00
Y	= 167325.42
X	= 495031.96
PI	= 4+34.73
Y	= 167340.98
X	= 495466.41
PT	= 8+44.16
Y	= 167112.49
X	= 495836.25
D	= 3°59'57"
Δ	= 33°45'33"
R	= 1432.70'
T	= 434.73'
L	= 844.16'



EXISTING MONUMENTATION TABLE		
POINT	Y	X
1000	167176.25	495831.54
1001	167148.57	495874.75

STATION/OFFSET TABLE		
POINT	STATION	OFFSET
100	9+50.00	54.69
101	9+50.00	81.00
102	10+23.00	81.00
103	10+23.00	57.23
104	9+60.32	56.00
105	9+00.00	0.00
106	9+50.00	0.00

TRANSPORTATION PROJECT PLAT NO: 8530-13-21 - 4.01

PART OF LOT 2 CSM #279 & GOVERNMENT LOT 10, SECTION 32, T43N, R4W, TOWN OF GORDON, ASHLAND COUNTY, WISCONSIN

RELOCATION ORDER STH 77, CLAM LAKE - STH 13, (W FORK CHIPPEWA RIVER BRG B-02-0407), ASHLAND COUNTY TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND HIGHWAY ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE NAMED PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND SECTION 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE NAMED PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

COURSE TABLE		
COURSE	BEARING	DISTANCE
100-101	S 31° 53' 26" W	26.31
101-102	S 58° 06' 34" E	73.00
102-103	N 31° 53' 26" E	23.77
103-104	N 56° 59' 00" W	62.69
104-100	N 50° 51' 47" W	10.40
105-106	S 58° 06' 34" E	50.00
106-100	S 31° 53' 26" W	54.69

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

STATE, COUNTY, or TOWN LINE	ACCESS POINT	AP
SECTION LINE	ACCESS RIGHTS	AR
QUARTER LINE	ACRES	AC.
SIXTEENTH LINE	AND OTHERS	ET.AL.
PROPOSED REFERENCE LINE	C/L	CSM
PROPOSED R/W LINE	CERTIFIED SURVEY MAP	DOC.
EXISTING H.E. LINE	DOCUMENT	H.E.
PROPERTY LINE	HIGHWAY EASEMENT	LC
EASEMENT LINE	LAND CONTRACT	MON.
CORPORATE LIMITS	PAGE	P.
EXISTING CENTERLINE	PROPERTY LINE	PL
LOT & TIE LINES	PERMANENT LIMITED EASEMENT	PLE
UTILITIES	RECORDED AS	(100')
(TELEPHONE, GAS, ELECTRIC, CABLE TV, FIBER OPTIC)	REFERENCE LINE	R/L
NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	REMAINING	REM.
NO ACCESS (BY ACQUISITION)	RIGHT-OF-WAY	R/W
NO ACCESS (BY STATUTORY AUTHORITY)	SECTION	SEC.
FEE (HATCH VARIES)	SQUARE FEET	SQ.FT.
TEMPORARY LIMITED EASEMENT	STATION	STA.
PERMANENT LIMITED EASEMENT	TEMPORARY LIMITED EASEMENT	TLE
PARCEL NUMBER	VOLUME	V.
SIGN NUMBER (OFF PREMISE)	CURVE DATA	C
BUILDING	LONG CHORD	LCB
FOUND IRON PIPE/PIN	LONG CHORD BEARING	R
R/W MONUMENT	RADIUS	D
R/W STANDARD	DEGREE OF CURVE	Δ
SIGN	CENTRAL ANGLE OR DELTA	L
	LENGTH OF CURVE	T
	TANGENT	T
	POWER POLE	NON COMPENSABLE
	TELEPHONE POLE	COMPENSABLE
	TELEPHONE PEDESTAL	COMPENSABLE
	SECTION CORNER SYMBOL	
	SECTION CORNER MONUMENT	

NOTES:
COORDINATES AND BEARINGS ON THE PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, ASHLAND COUNTY ZONE, NAD 1983 (1991) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4" x 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEY OF RECORD.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. EXCLUDING RIGHT-OF-WAY LINES, THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: PREVIOUS R/W PROJECT 8530-03-21 DATED 2/5/88 AND DIVISION JOB 8645.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

UTILITY EASEMENT INFORMATION	
PARCEL 1	BAYFIELD ELECTRIC COOPERATIVE, INC. VOL580, PG916-920 (BLANKET EASEMENT)
PARCEL 2	BAYFIELD ELECTRIC COOPERATIVE, INC. VOL485, PG406-407 (BLANKET EASEMENT)

SCHEDULE OF LANDS & INTERESTS REQUIRED			OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER LAND INTERESTS TO THE DEPARTMENT.		
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	NEW	R/W ACRES REQUIRED EXISTING	TOTAL
1	DH & DH, LLC	FEE	0.01	0.00	0.01
2	DAVID M. SCHERSCHIEL & JENNIFER MILLER-SCHERSCHIEL	FEE	0.02	0.00	0.02
21	BAYFIELD ELECTRIC COOPERATIVE, INC.	RELEASE OF RIGHTS			

Cedar corporation
604 Wilson Avenue
Menomonie, Wisconsin 54751
715-235-9081
800-472-1772
FAX 715-235-2727
www.cedarcorp.com

engineers • architects • planners • environmental specialists
land surveys • landscape architects • interior designers

I, BRYON J. MOTSZKO, REGISTERED LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT, I HAVE SURVEYED AND MAPPED TRANSPORTATION PROJECT PLAT 8560-13-21 - 4.01 AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

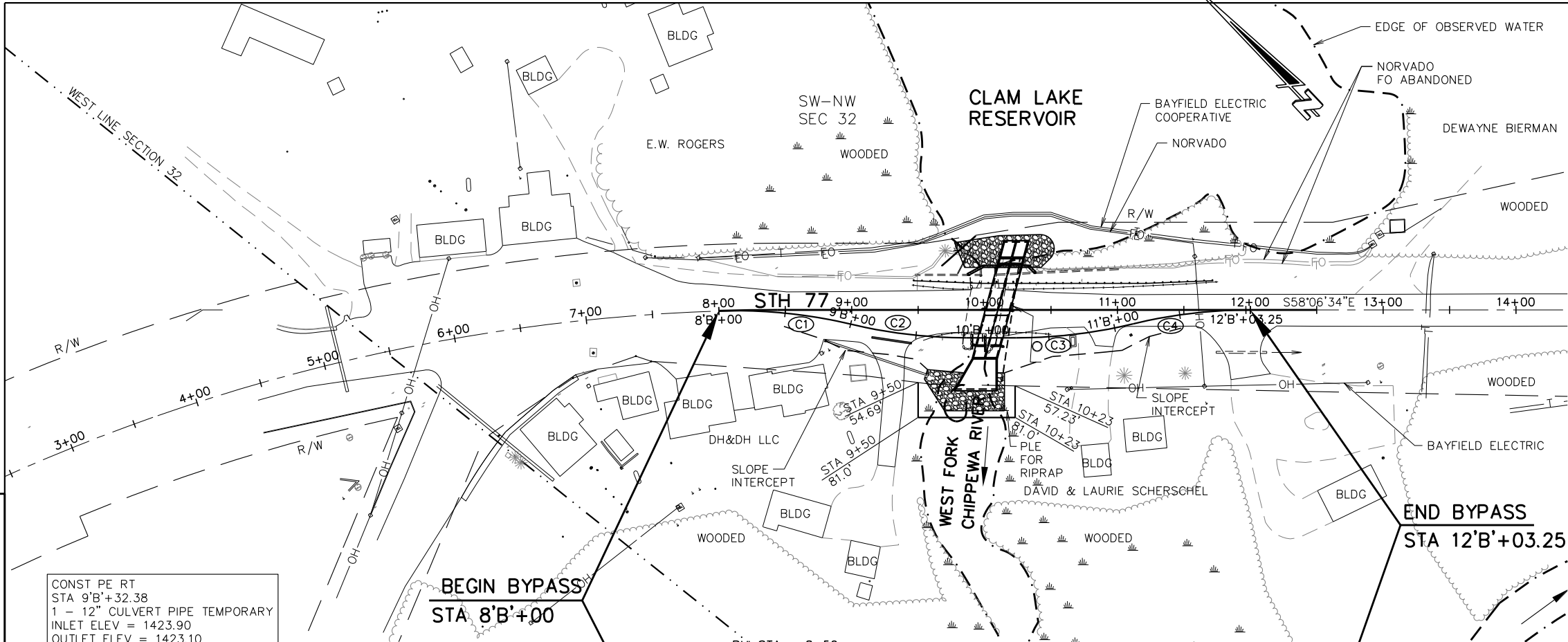
SIGNATURE: *Bryon J. Motzko* DATE: 6/24/11
BRYON J. MOTSZKO
R.L.S. NUMBER 2846

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
SIGNATURE: *Michael Piller* DATE: 6/27/2011
PRINTED NAME: MICHAEL PILLER

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 8530-13-21 - 4.01
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN ASHLAND COUNTY, WISCONSIN AT 9:30 AM ON JULY 8, 2011 AS DOCUMENT # 323213 AND FILED IN TBP-4

KAREN M. MILLER
SIGNATURE OF REGISTER OF DEEDS



C1	
BYPASS C/L CURVE DATA	
PC	= 8'B'+00.00
PI	= 8'B'+50.51
PT	= 9'B'+00.41
D	= 15'16'44"
Δ	= 15'20'29"
R	= 375.00'
T	= 50.51'
L	= 100.41'
C	= 100.11'

C2	
BYPASS C/L CURVE DATA	
PC	= 9'B'+00.41
PI	= 9'B'+44.44
PT	= 9'B'+88.06
D	= 15'16'44"
Δ	= 13'23'33"
R	= 375.00'
T	= 44.03'
L	= 87.65'
C	= 87.46'

C3	
BYPASS C/L CURVE DATA	
PC	= 10'B'+25.35
PI	= 10'B'+70.03
PT	= 10'B'+14.30
D	= 15'16'44"
Δ	= 13'35'26"
R	= 375.00'
T	= 44.68'
L	= 88.95'
C	= 88.74'

MAINLINE STA	OFFSET (RT TYP)	TEMP BYPASS STA	ELEVATION
8+00	0.00'	8'B'+00.00	MATCH
8+25	0.62'	8'B'+25.01	1429.48
8+50	2.46'	8'B'+50.05	1428.84
8+75	5.80'	8'B'+75.28	1427.94
9+00	10.89'	9'B'+00.80	1426.82
9+25	15.93'	9'B'+26.31	1425.89
9+50	19.22'	9'B'+51.53	1425.19
9+75	20.82'	9'B'+76.58	1424.71
10+00	21.00'	10'B'+01.59	1424.60
10+25	21.00'	10'B'+26.59	1424.61
10+50	20.08'	10'B'+51.61	1424.84
10+75	17.48'	10'B'+76.75	1425.07
11+00	13.17'	11'B'+02.12	1425.28
11+25	7.58'	11'B'+27.74	1425.25
11+50	3.35'	11'B'+53.10	1425.01
11+75	0.83'	11'B'+78.23	1424.77
12+00	0.00'	12'B'+03.25	MATCH

C4	
BYPASS C/L CURVE DATA	
PC	= 11'B'+14.30
PI	= 11'B'+58.98
PT	= 12'B'+03.25
D	= 15'16'44"
Δ	= 13'35'26"
R	= 375.00'
T	= 44.68'
L	= 88.95'
C	= 88.74'

CONST. PE RT
STA 9'B'+32.38
1 - 12" CULVERT PIPE TEMPORARY
INLET ELEV = 1423.90
OUTLET ELEV = 1423.10

EARTHWORK SUMMARY

CONSTRUCT TEMPORARY ROAD

STA 8'B'+00 TO STA 12'B'+03.25

EXCAVATION COMMON	378 CY
FILL (UNADJUSTED)	153 CY
SHRINKAGE	30 %
FILL (ADJUSTED)	199 CY
BORROW	0 CY

REMOVE TEMPORARY ROAD

EARTHWORK QUANTITIES INCLUDED
IN EARTHWORK MAINLINE SUMMARY

PVI STA = 8+50
PVI ELEV = 1429.13

A.D. = -3.061 PVI STA = 9+36.50
K = 24.5 PVI ELEV = 1425.15
75' VC
A.D. = 3.48
K = 28.2
98' VC

PVC STA = 8+12.50
PVC EL = 1429.71
PRC STA = 8+87.50
PRC EL = 1427.40
PVT STA = 9+85.50
PVT EL = 1424.60
PVI STA = 10+25
PVI ELEV = 1424.60

PVI STA = 11+00
PVI ELEV = 1425.28
PVI STA = 11+25
PVI ELEV = 1425.28
PVI STA = 12+03.25
PVI ELEV = 1424.53

EXISTING GROUND
FINISHED BYPASS
PROFILE ON C/L

OBSERVED WATER
DOWNSTREAM
EL 1413.3
(7-28-08)

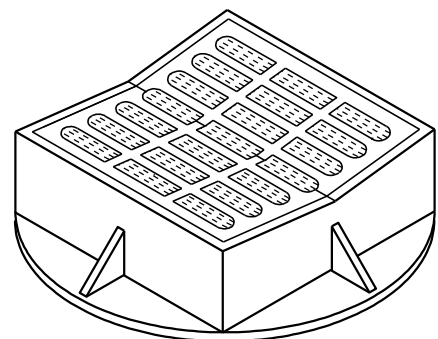
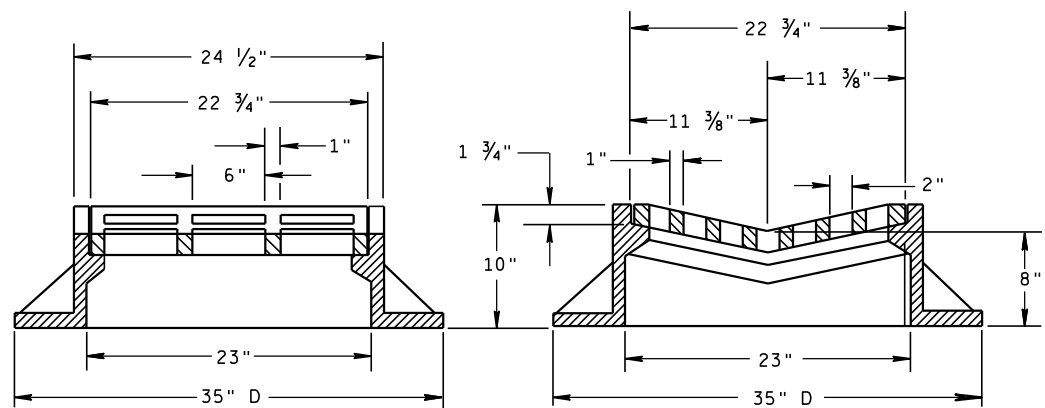
OBSERVED WATER
EL 1418.4
(7-28-08)

EXISTING GROUND ELEVATIONS PROPOSED PROFILE ON C/L

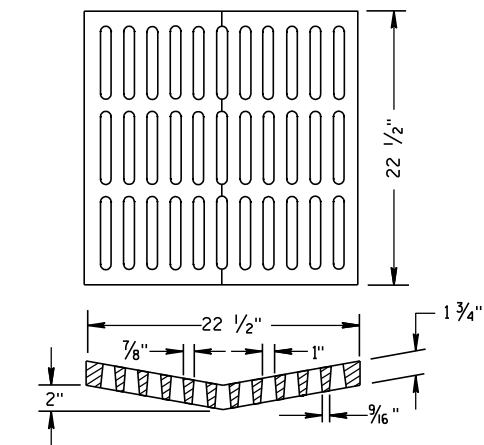
8'B'+00 9'B'+00 10'B'+00 11'B'+00 12'B'+03.25

Standard Detail Drawing List

08A05-18B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12' -6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
15B03-12A	CHAIN LINK FENCE
15B03-12B	CHAIN LINK FENCE
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C04-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C12-03	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D29-02	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D31-01	TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY
15D33-02	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



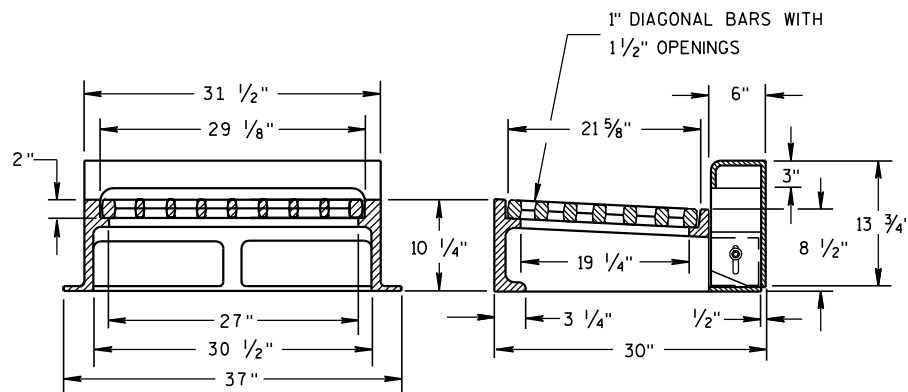
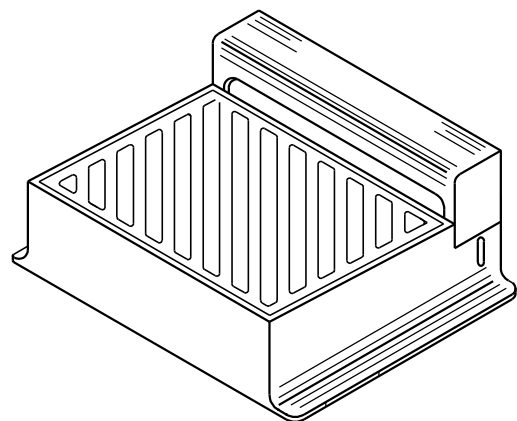
TYPE "B"
(APPROXIMATE WEIGHT 405 LBS.)
FRAME..... 294 LBS.
GRATE..... 111 LBS.



**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

(APPROXIMATE GRATE WEIGHT 134 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"
(APPROXIMATE WEIGHT 648 LBS.)

FRAME..... 355 LBS.
GRATE..... 156 LBS.
CURB BOX..... 137 LBS.

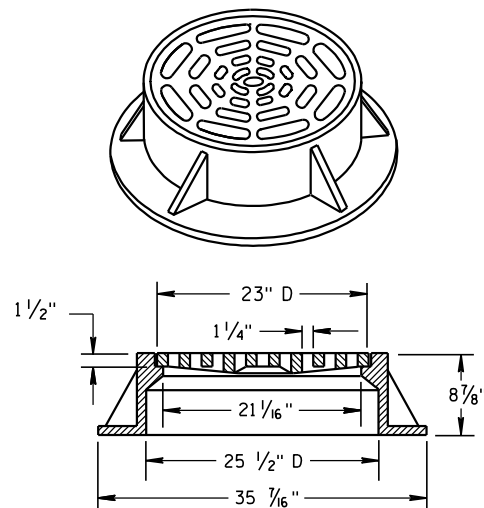
GENERAL NOTES

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

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

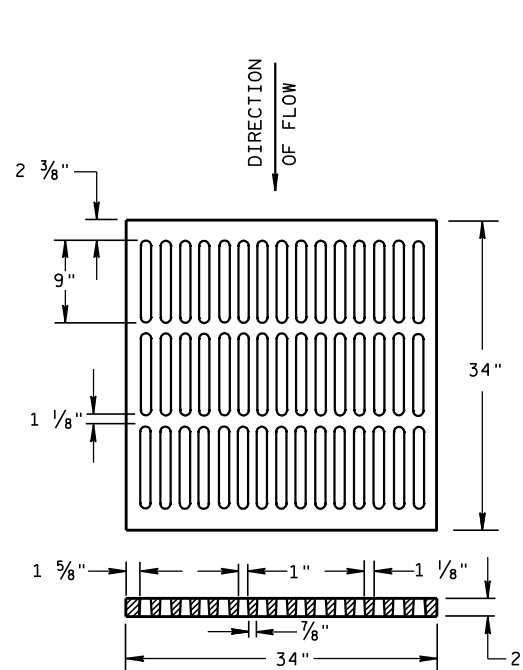
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



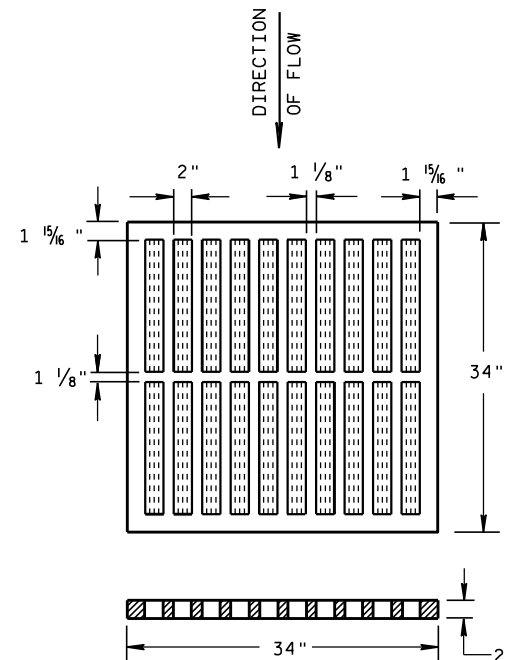
TYPE "C"
(APPROXIMATE WEIGHT 259 LBS.)

FRAME..... 152 LBS.
GRATE..... 107 LBS.



ALTERNATIVE TYPE "MS"
(APPROXIMATE GRATE WEIGHT 329 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



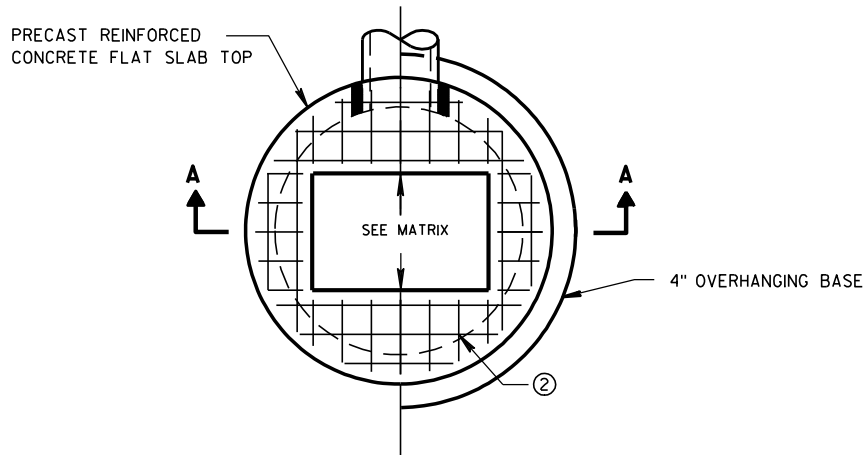
TYPE "MS"
(APPROXIMATE GRATE WEIGHT 268 LBS.)

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE

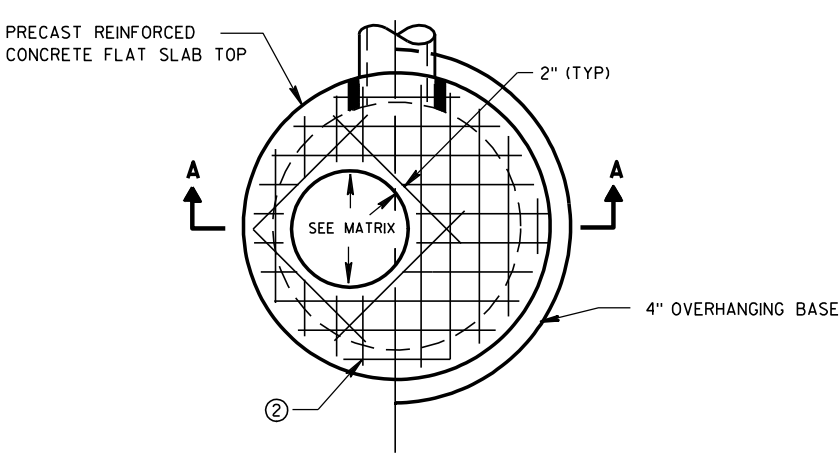
INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

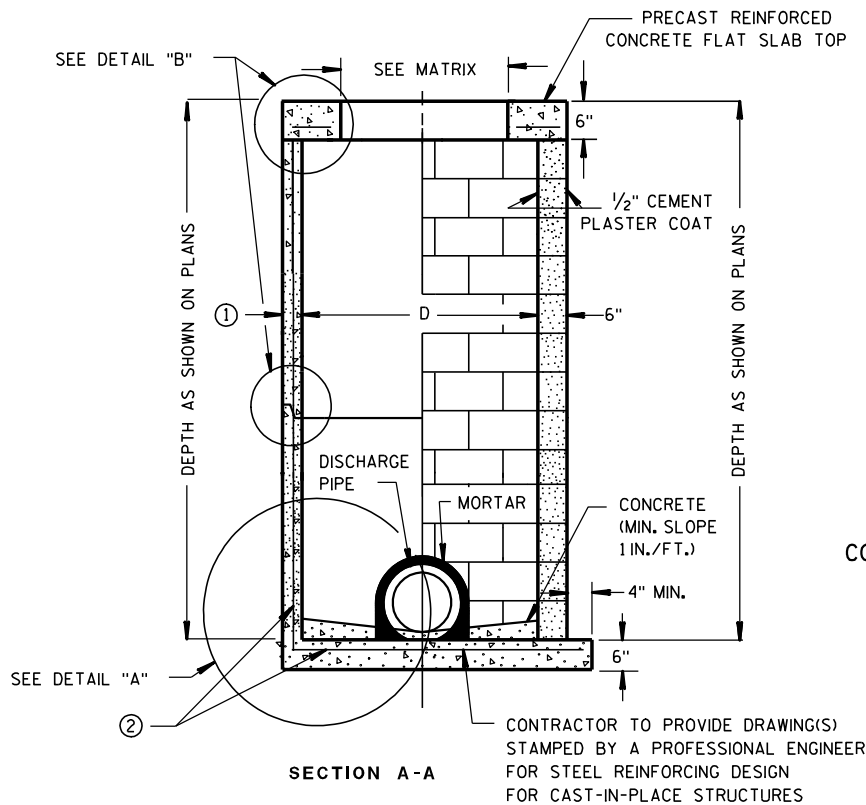
APPROVED
6/5/2012 DATE /S/ Jerry H. Zogg
FHWA ROADWAY STANDARDS DEVELOPMENT ENGINEER



PLAN VIEW RECTANGULAR OPENING

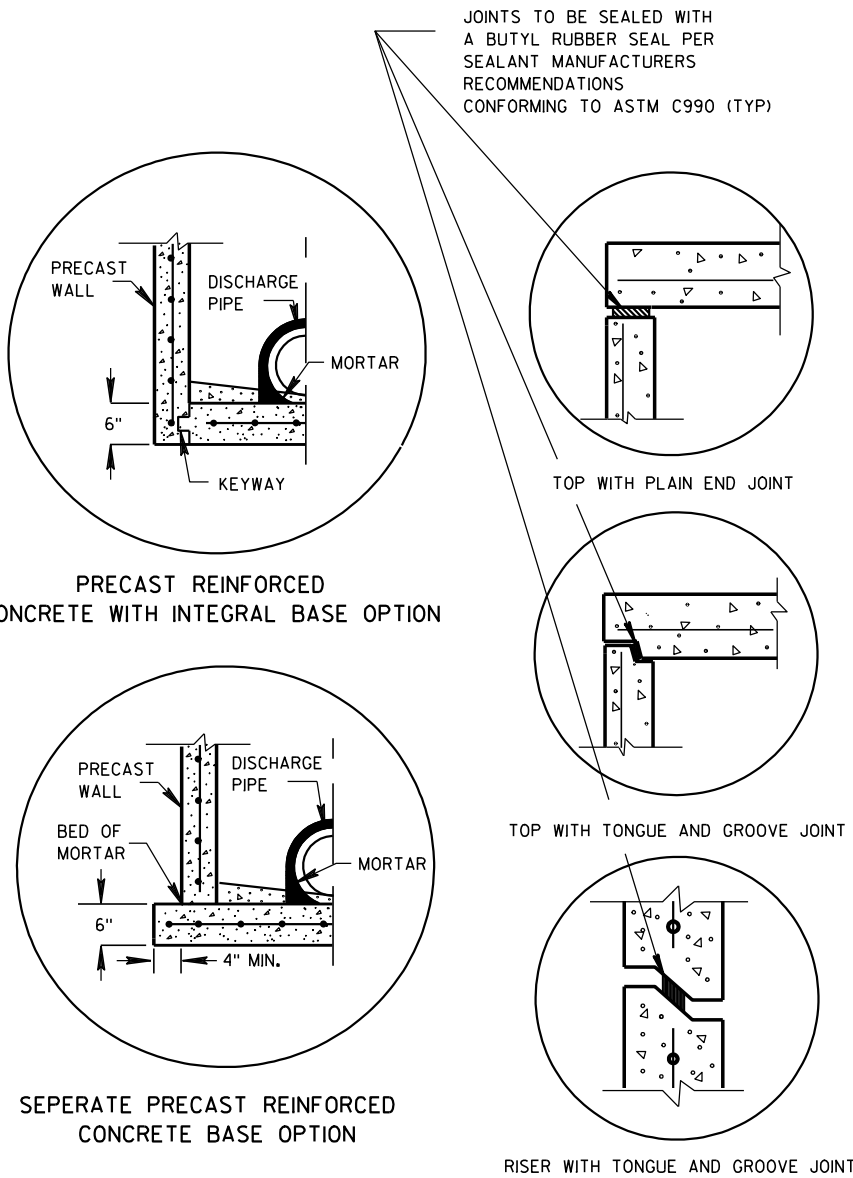


PLAN VIEW CIRCULAR OPENING



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

CIRCULAR INLETS W/ FLAT TOP



DETAIL "A"

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER

GENERAL NOTES

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

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

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

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

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

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

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

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

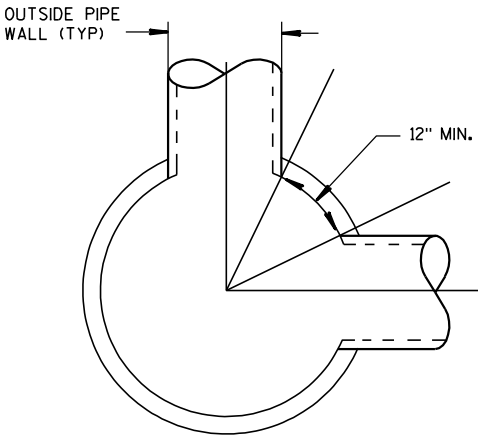
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPERATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

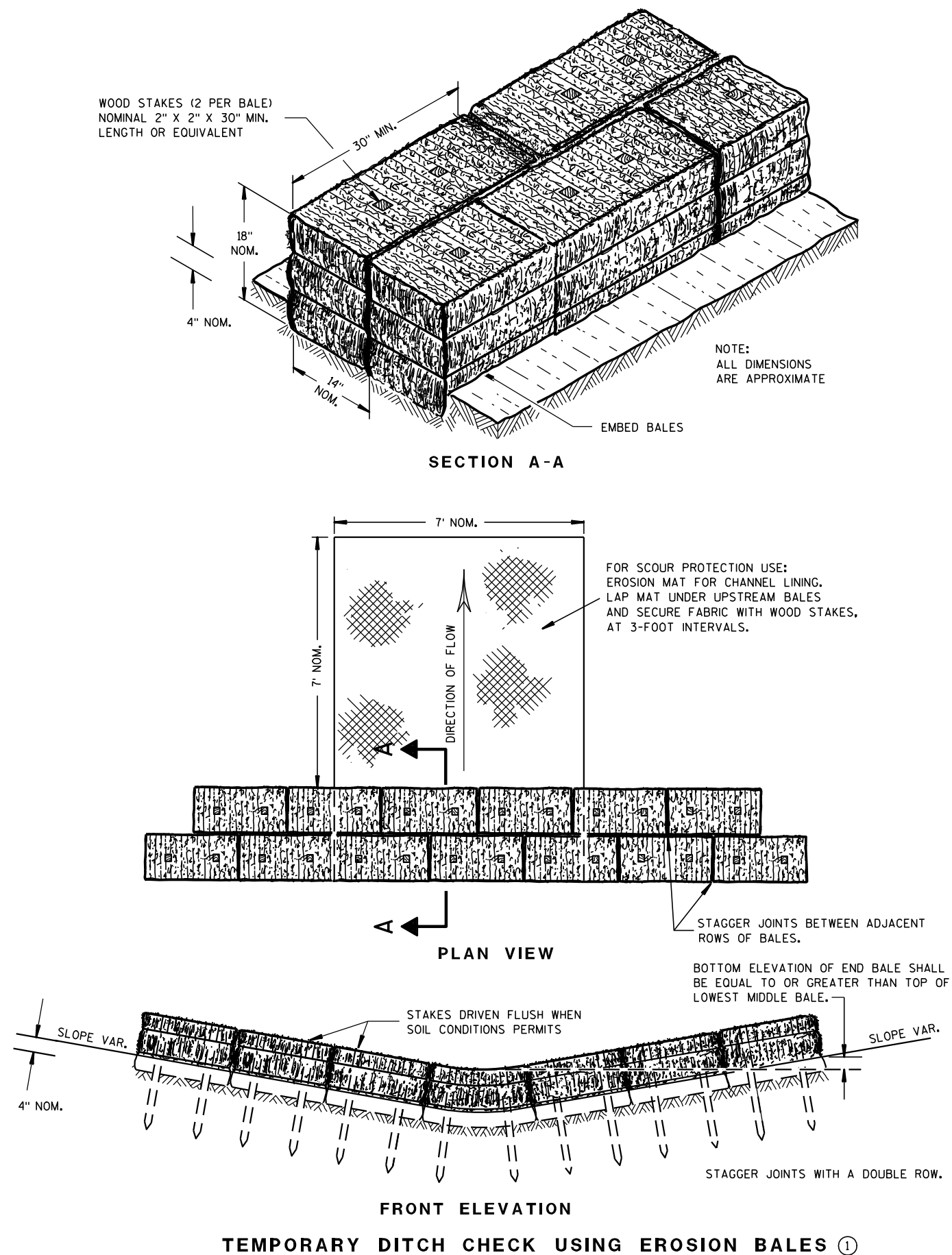
INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

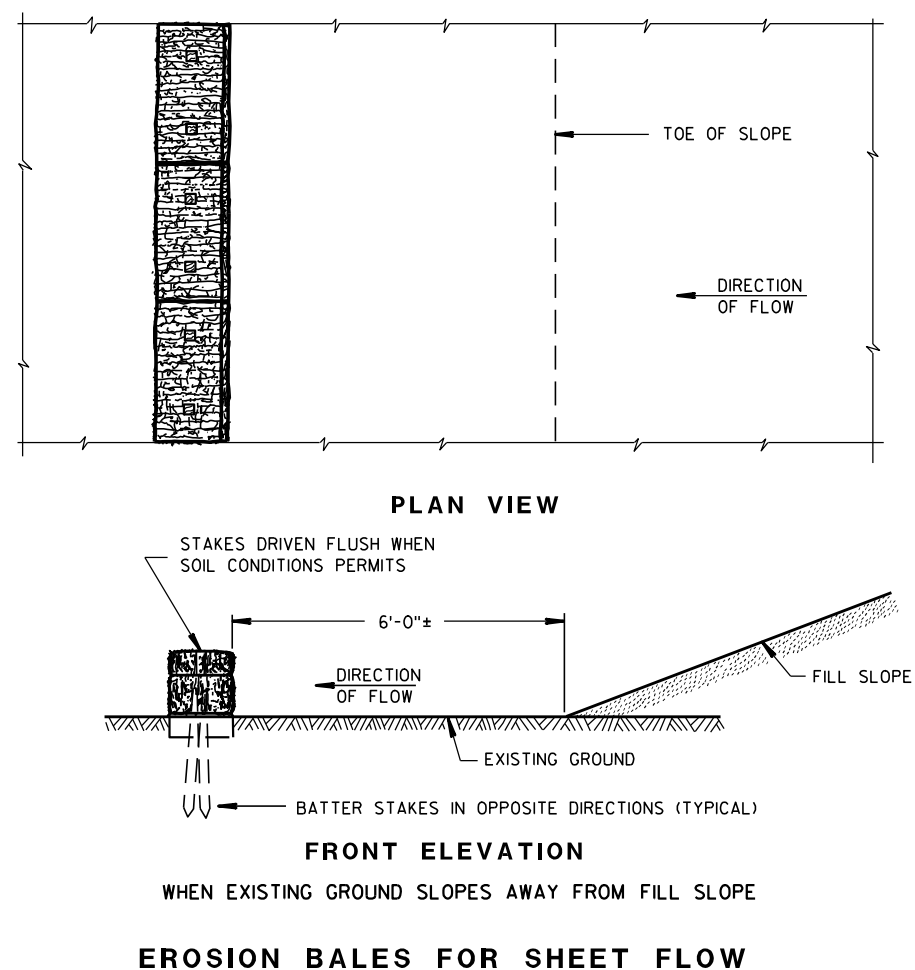
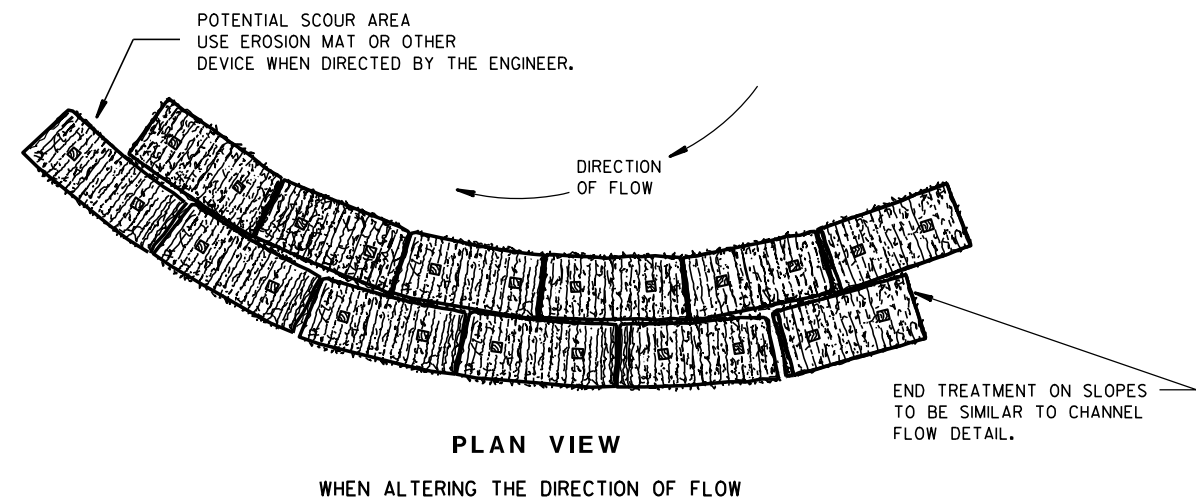
FHWA



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

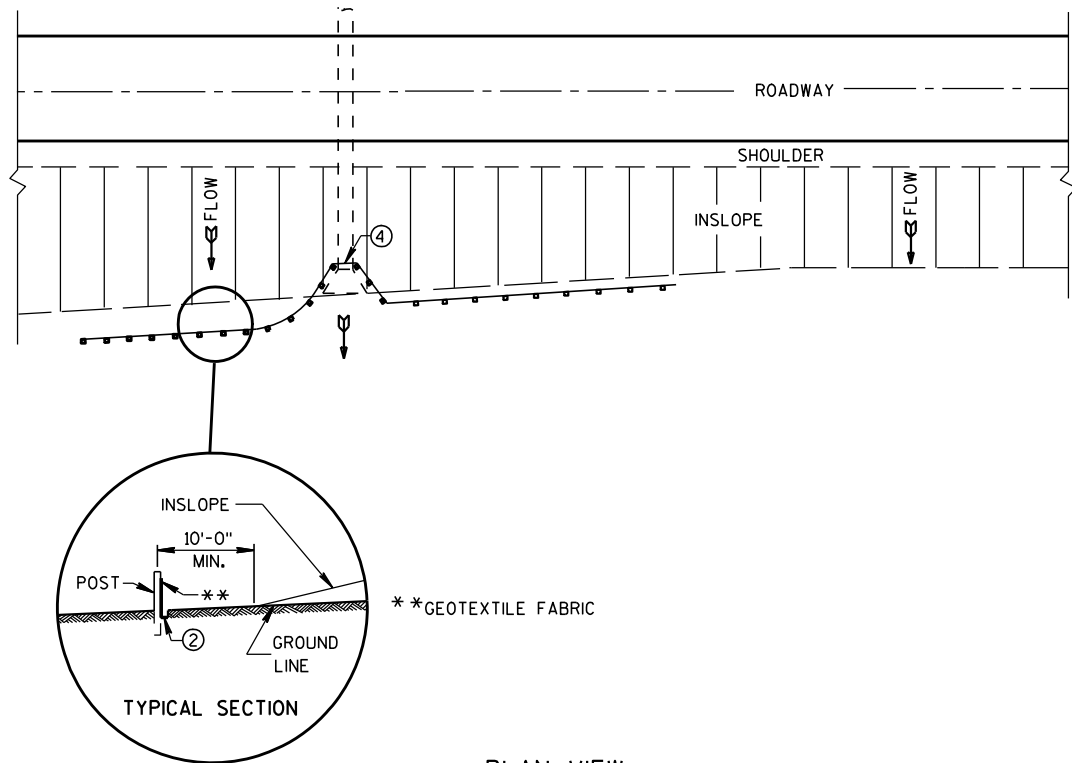
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

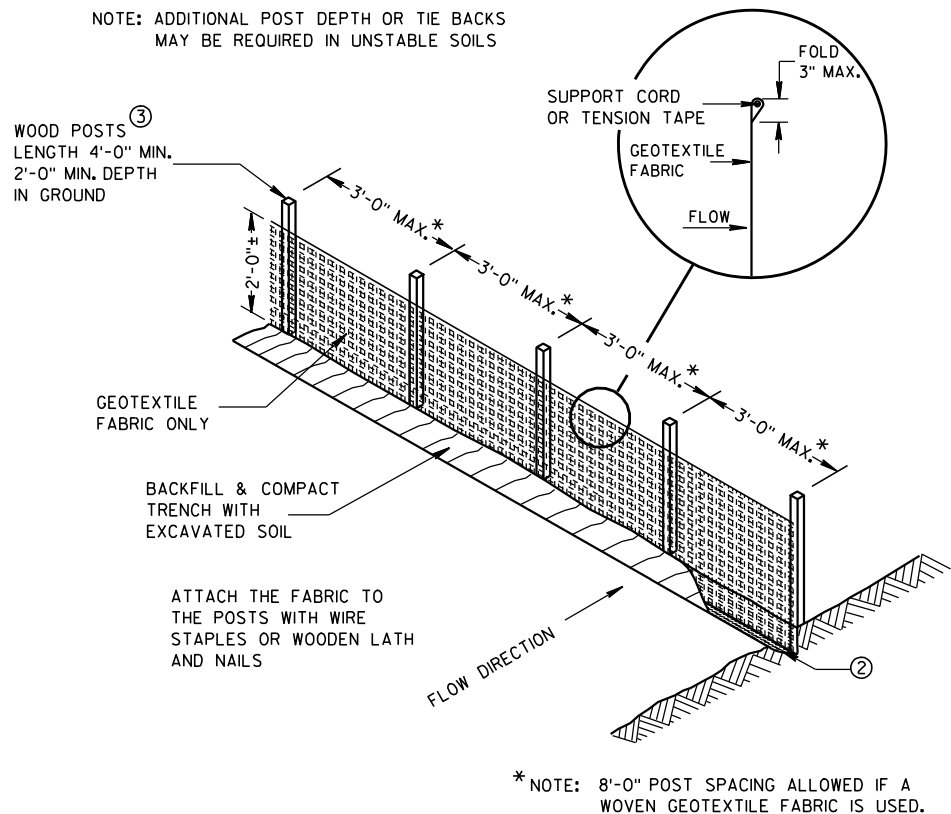
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

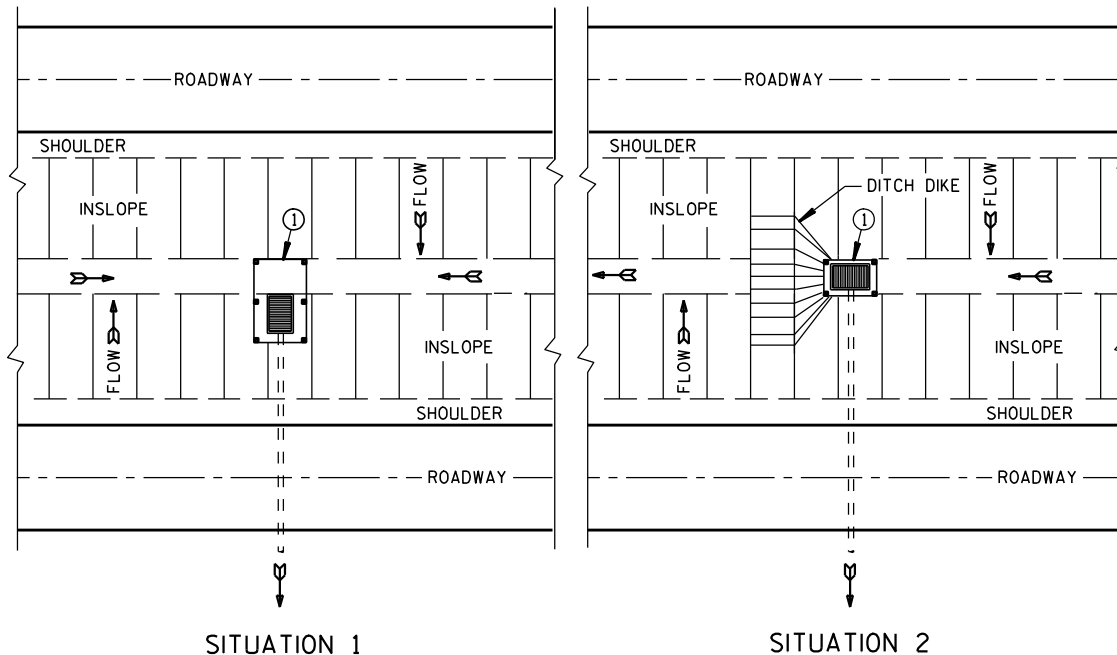
FHWA



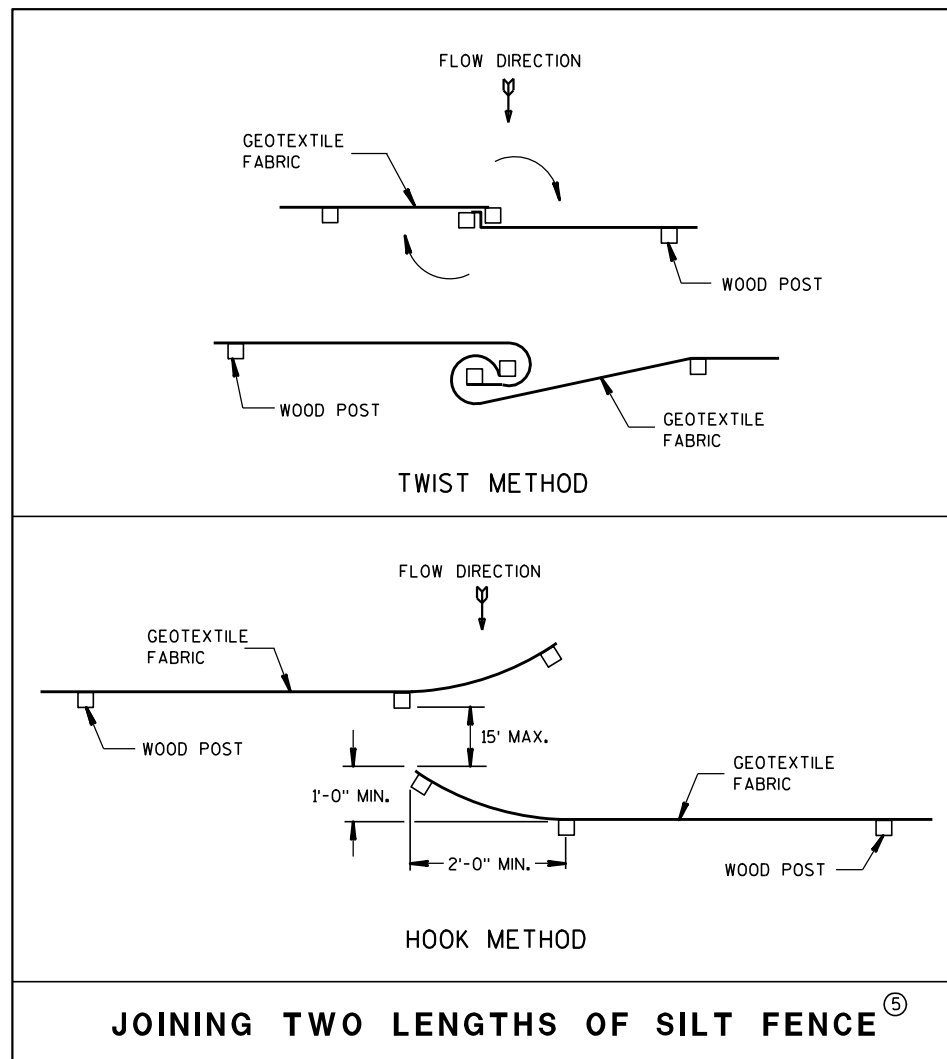
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

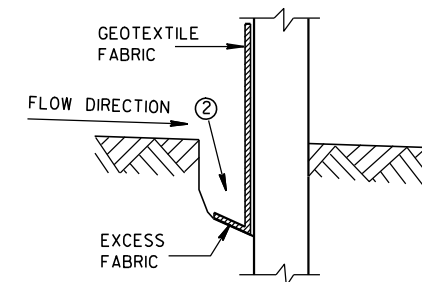


JOINING TWO LENGTHS OF SILT FENCE (5)

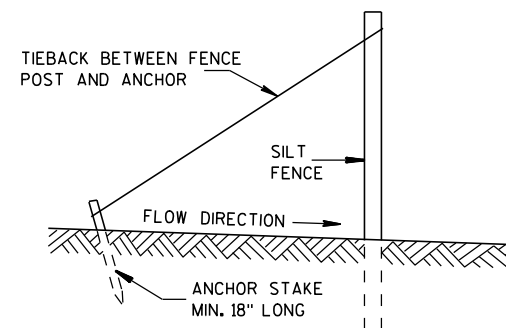
GENERAL NOTES

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

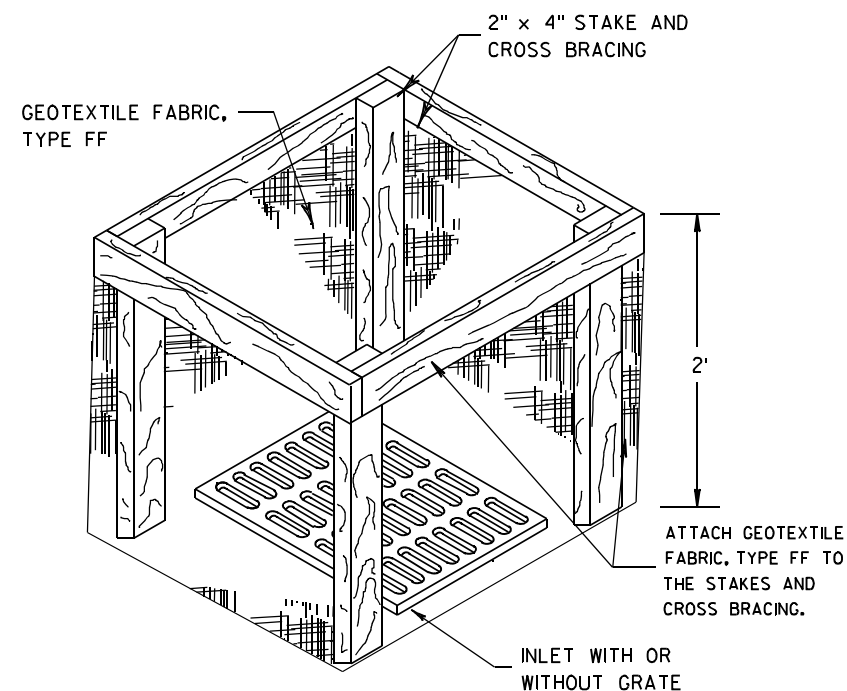
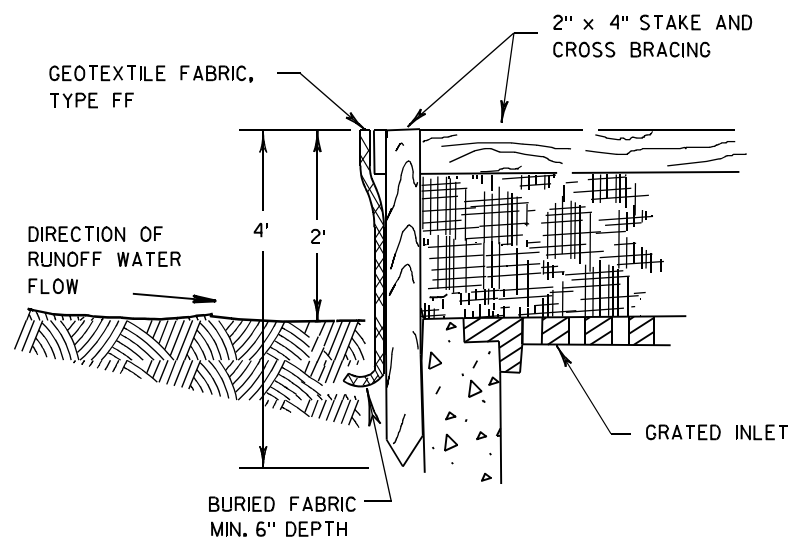


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



INLET PROTECTION, TYPE A

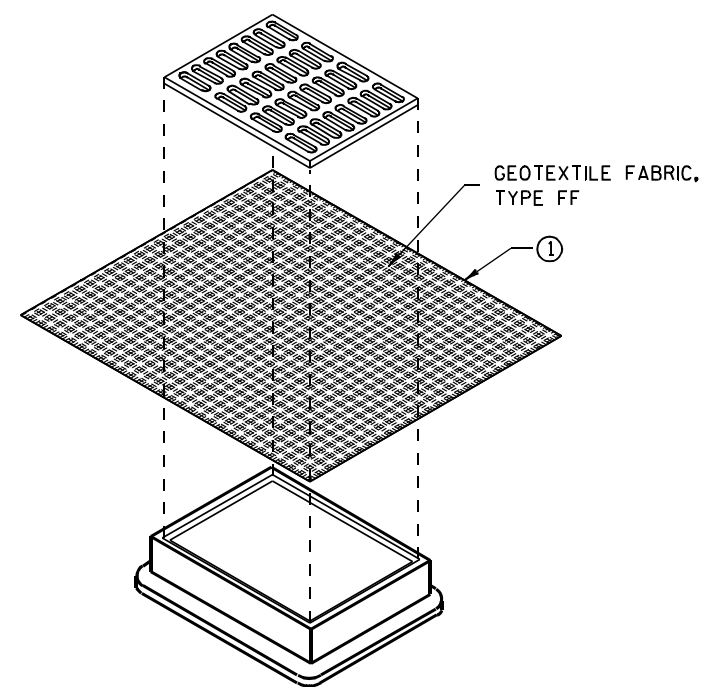
GENERAL NOTES

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

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

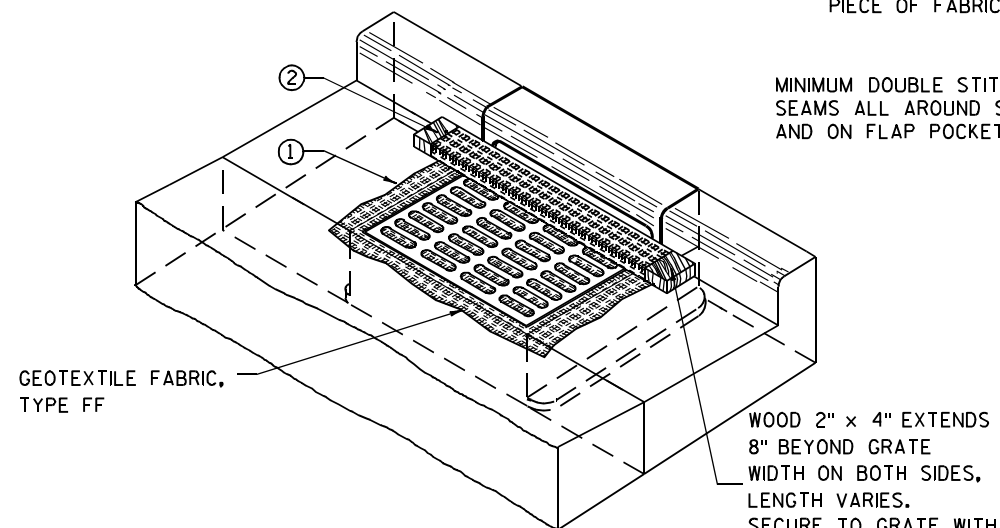
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

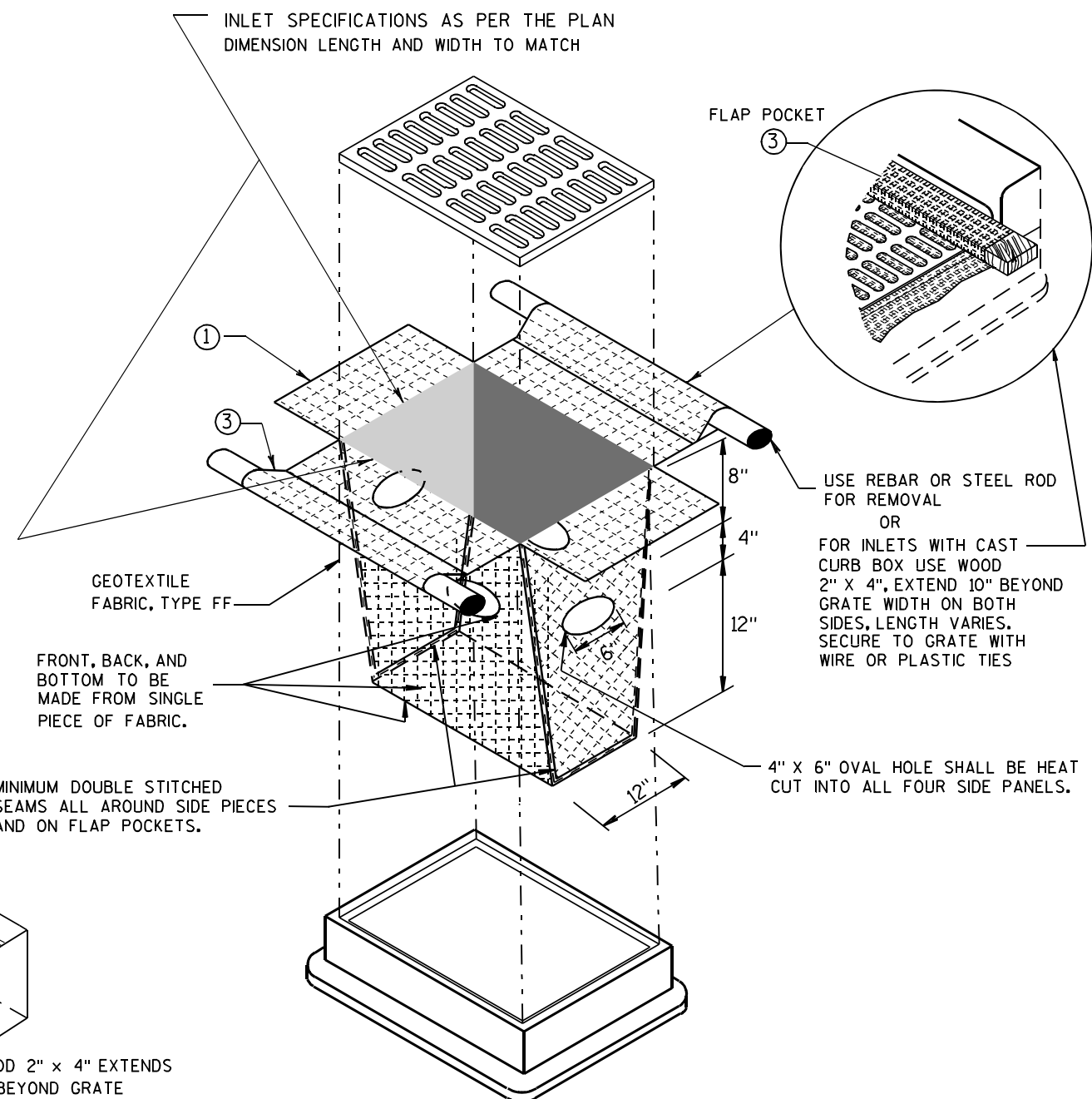
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

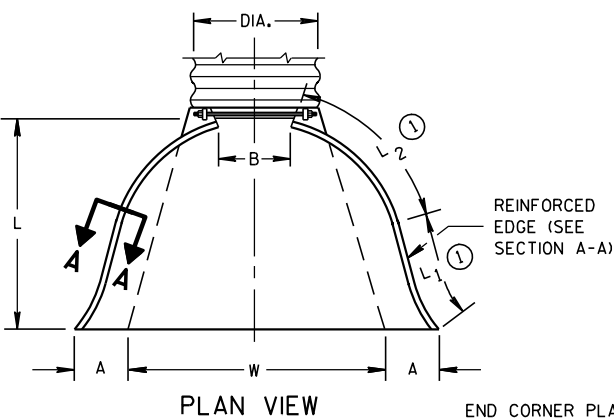
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Cannestra
DATE
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

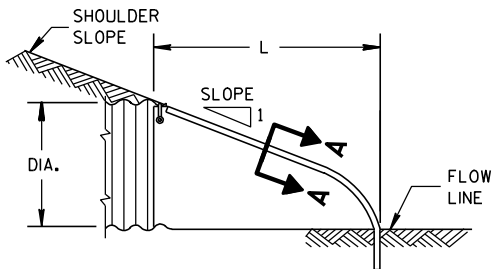
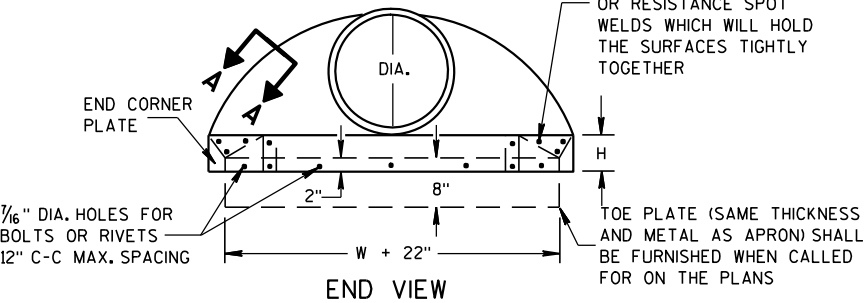
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



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

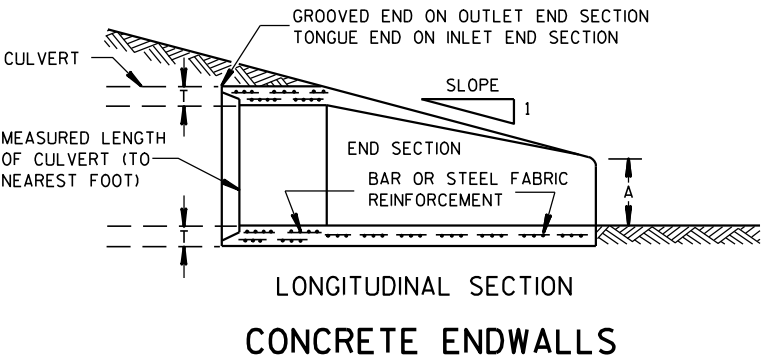
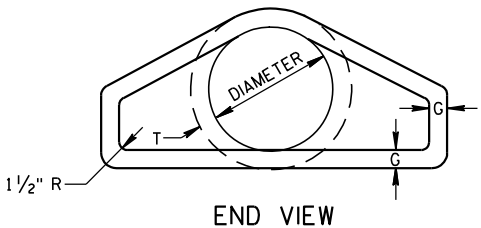
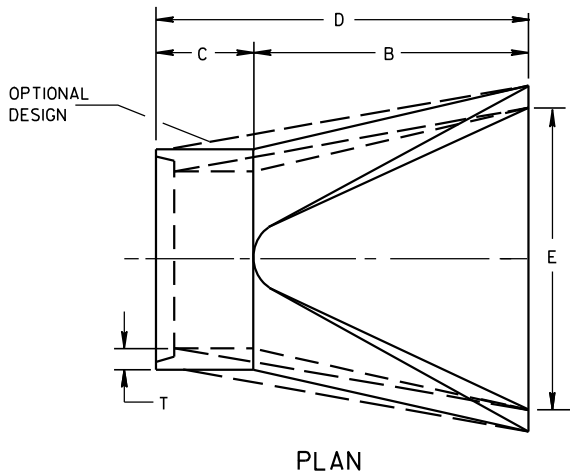
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

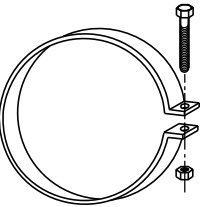
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43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

* MINIMUM
** MAXIMUM

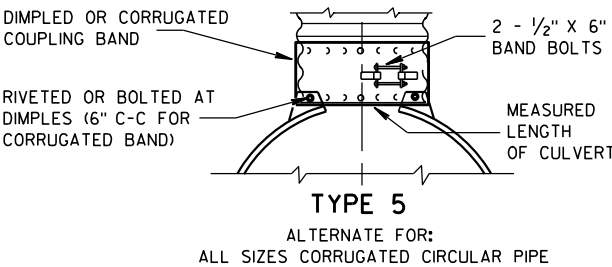
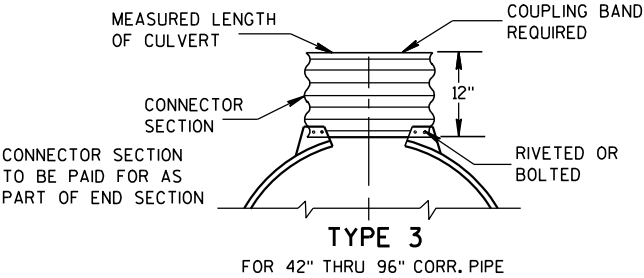
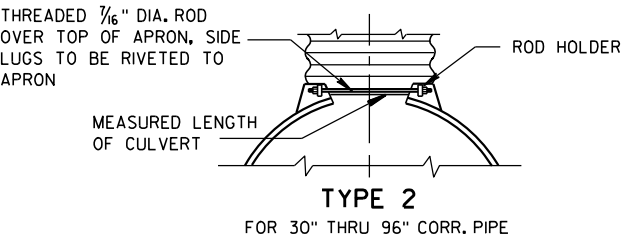
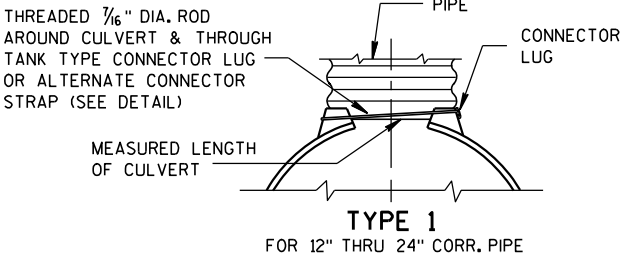


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



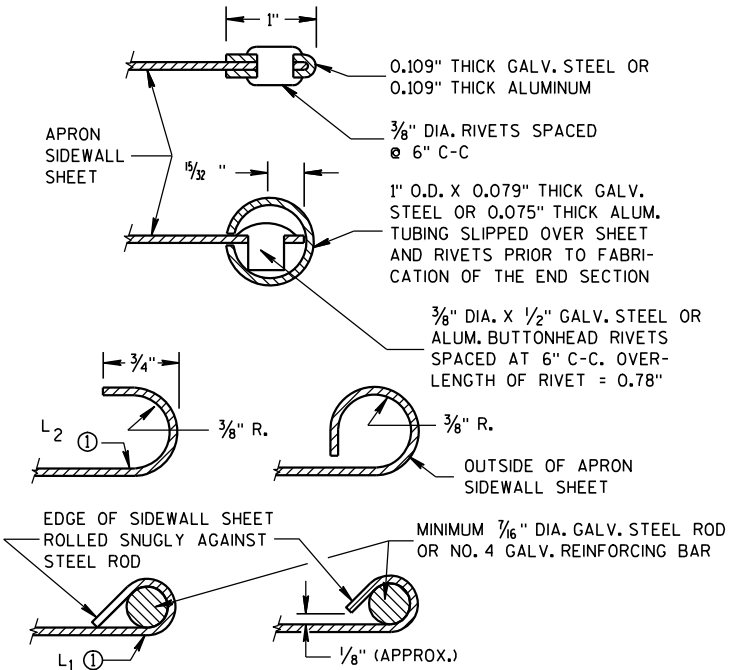
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

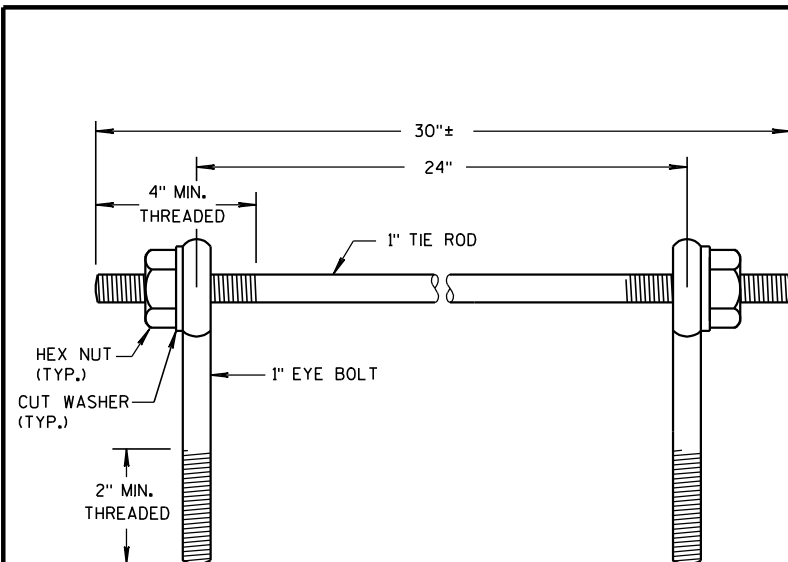
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

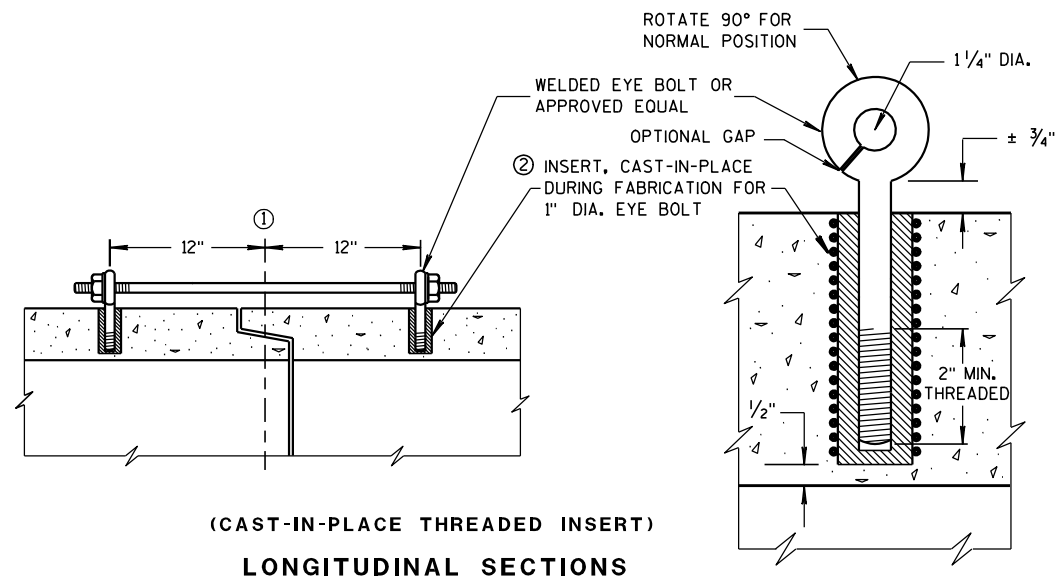
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



EYE BOLTS AND TIE ROD

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

(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

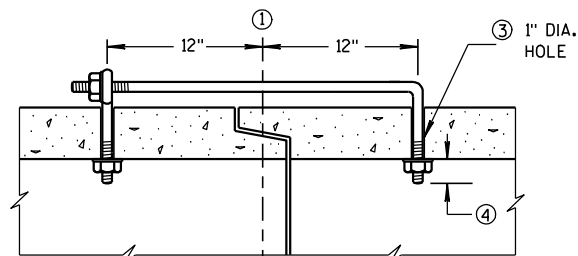
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

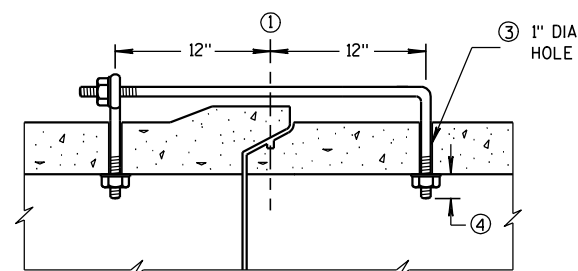
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.

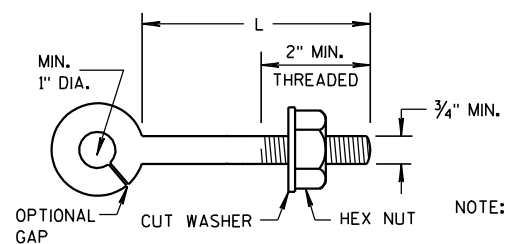


(TONGUE & GROOVE PIPE)

(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

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

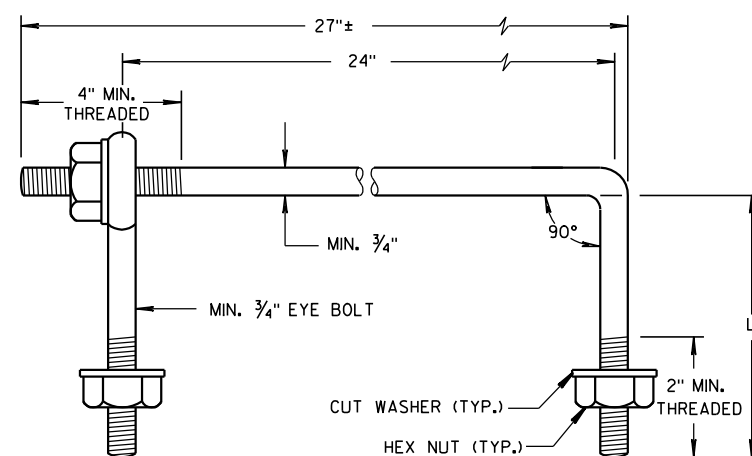


EYE BOLT

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

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

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

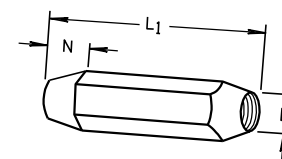


EYE BOLT AND TIE ROD

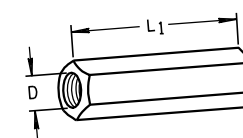
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/6

DIMENSIONS SHOWN ARE IN INCHES



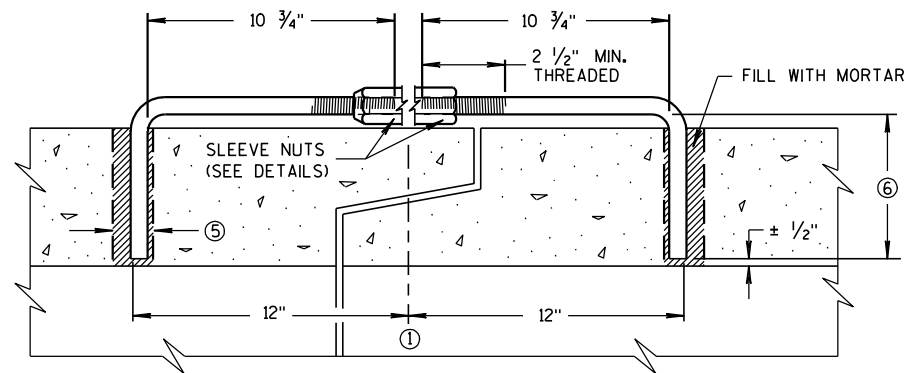
TAPERED



PLAIN

RIGHT AND LEFT THREADS

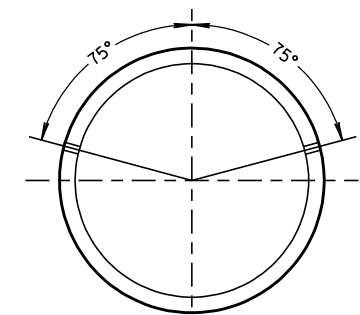
SLEEVE NUTS



LONGITUDINAL SECTION

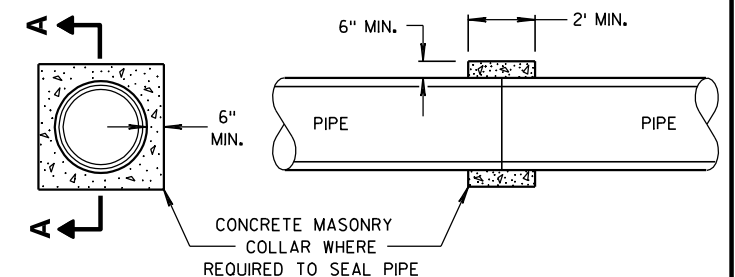
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

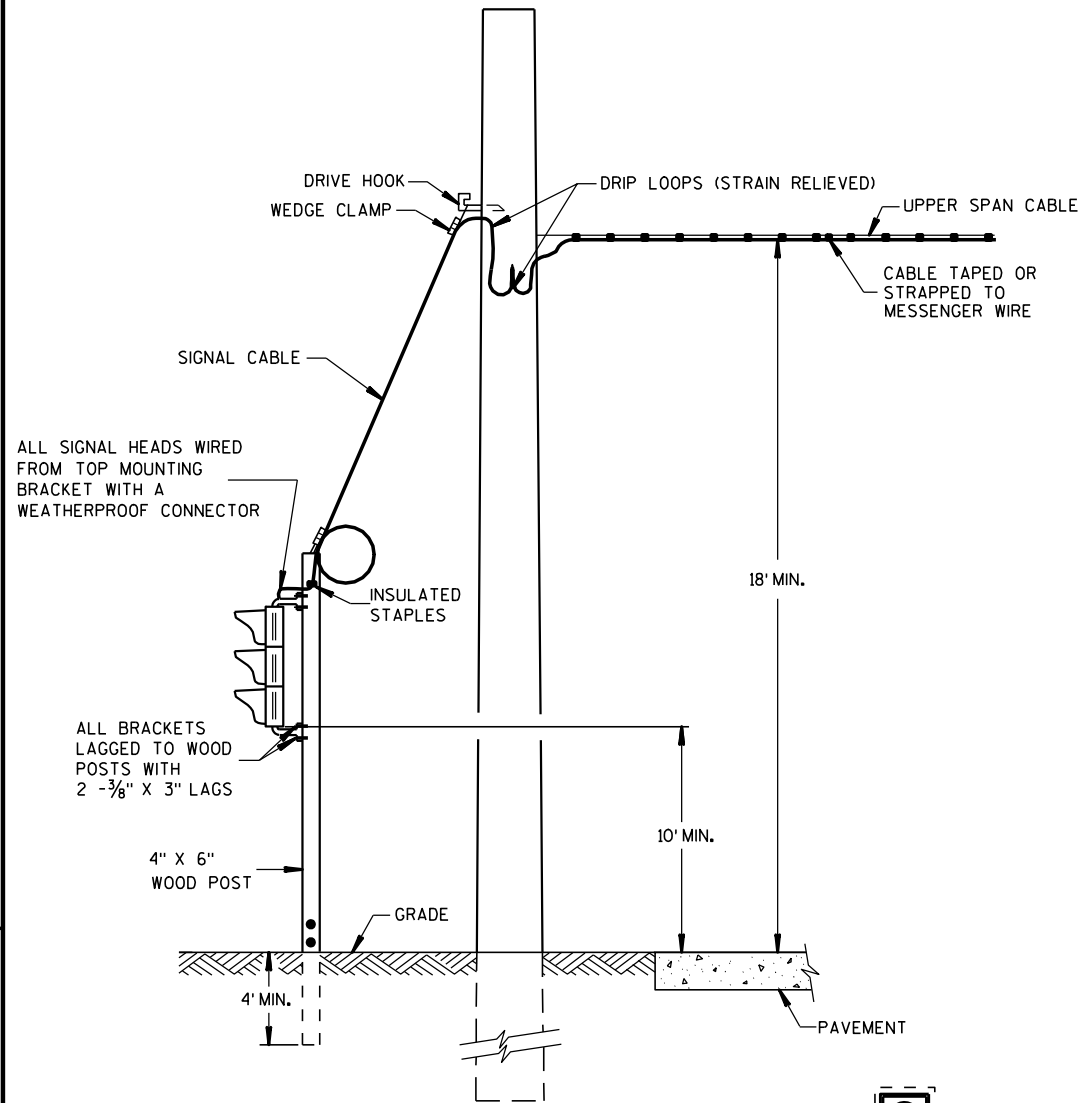
APPROVED

6/5/2012

DATE

FHWA

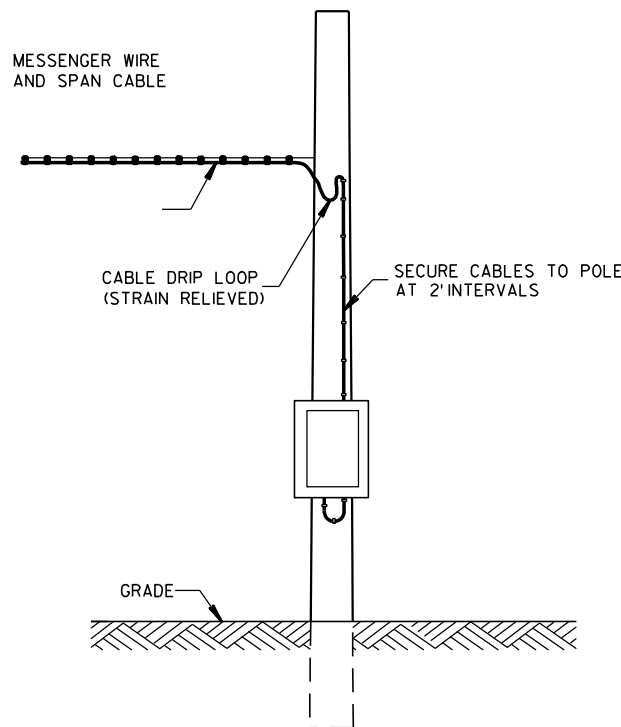
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPICAL DROP TO TRAFFIC SIGNAL FACE

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.	

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



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

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

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

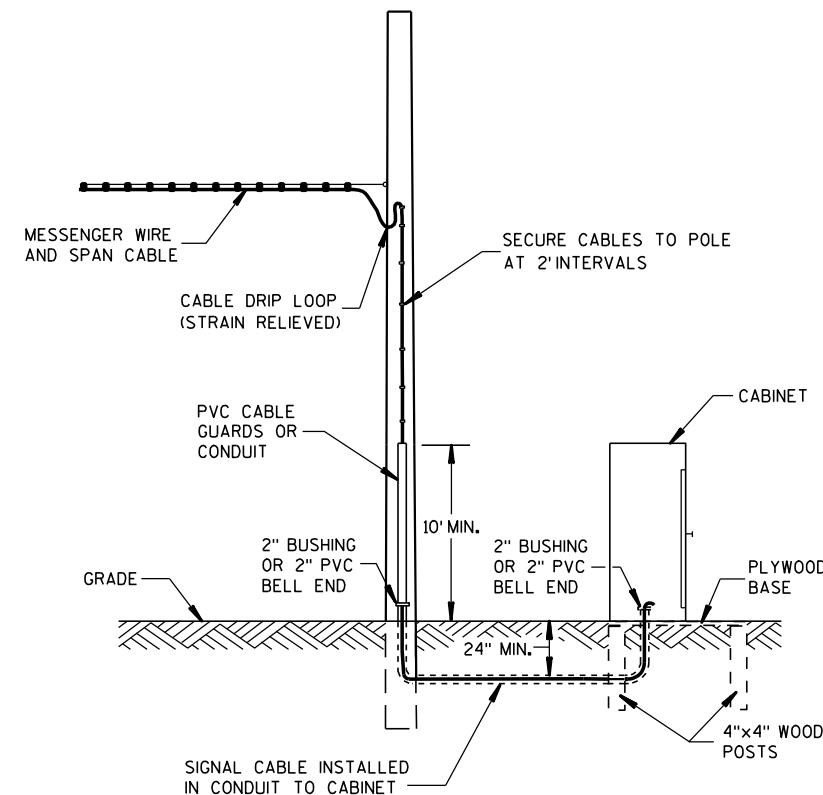
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

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

VERTICAL CLEARANCE ETC. PER NEC.

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

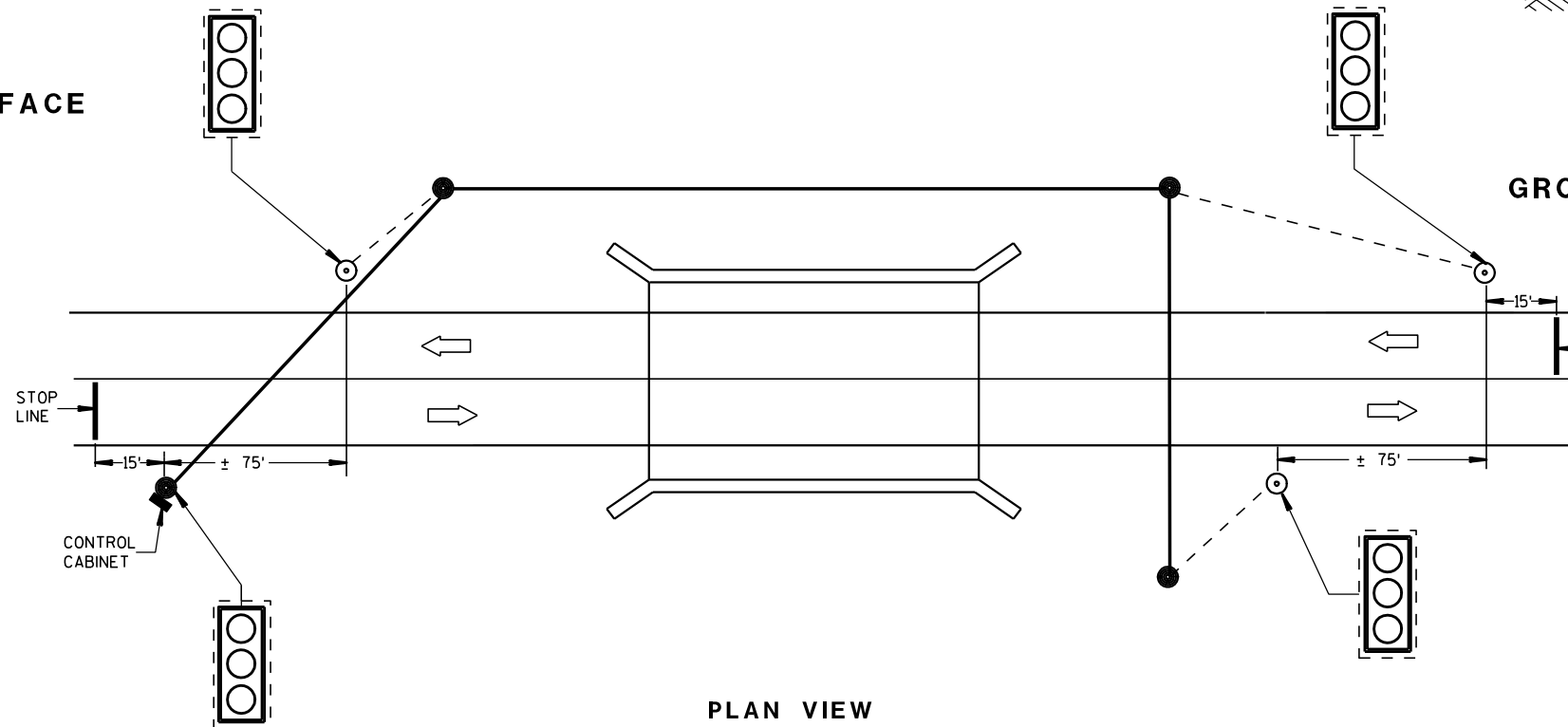
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

LEGEND

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

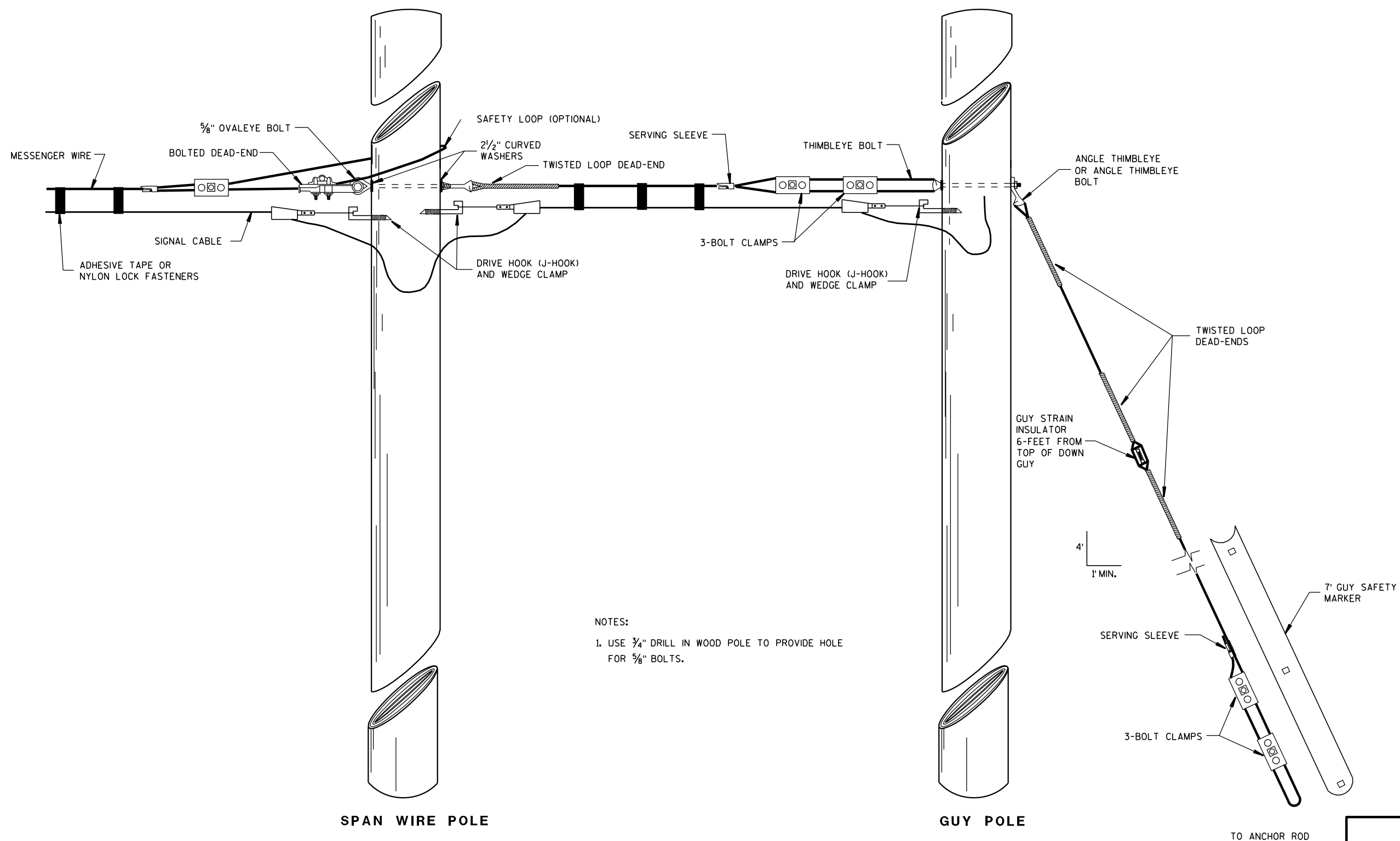


PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



NOTES:
 1. USE $\frac{3}{4}$ " DRILL IN WOOD POLE TO PROVIDE HOLE FOR $\frac{5}{8}$ " BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

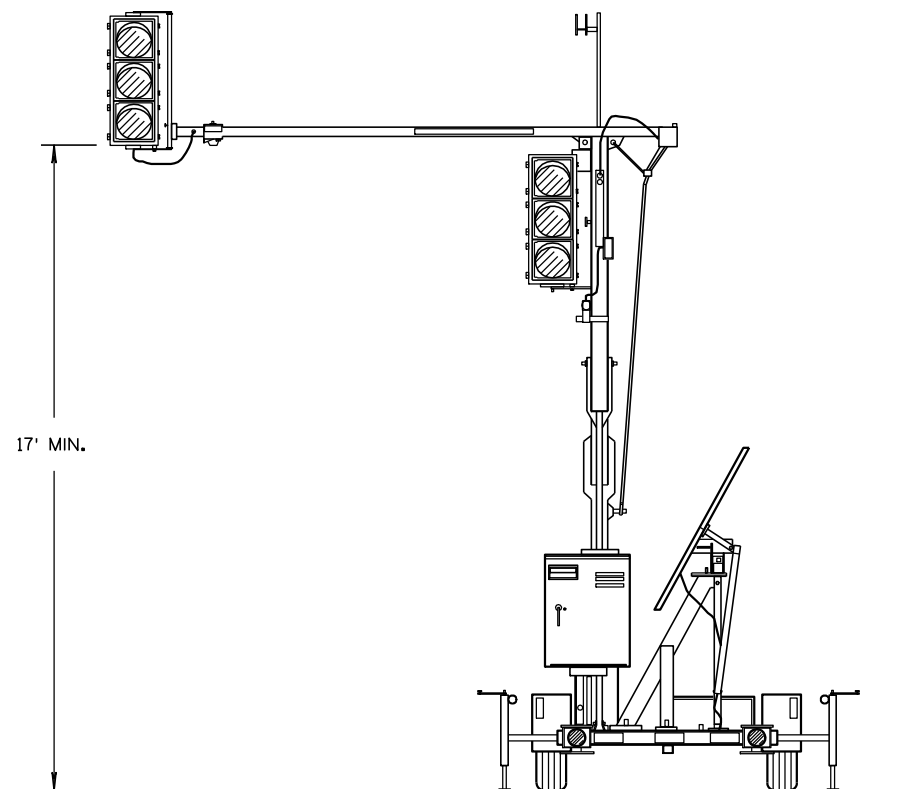
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA

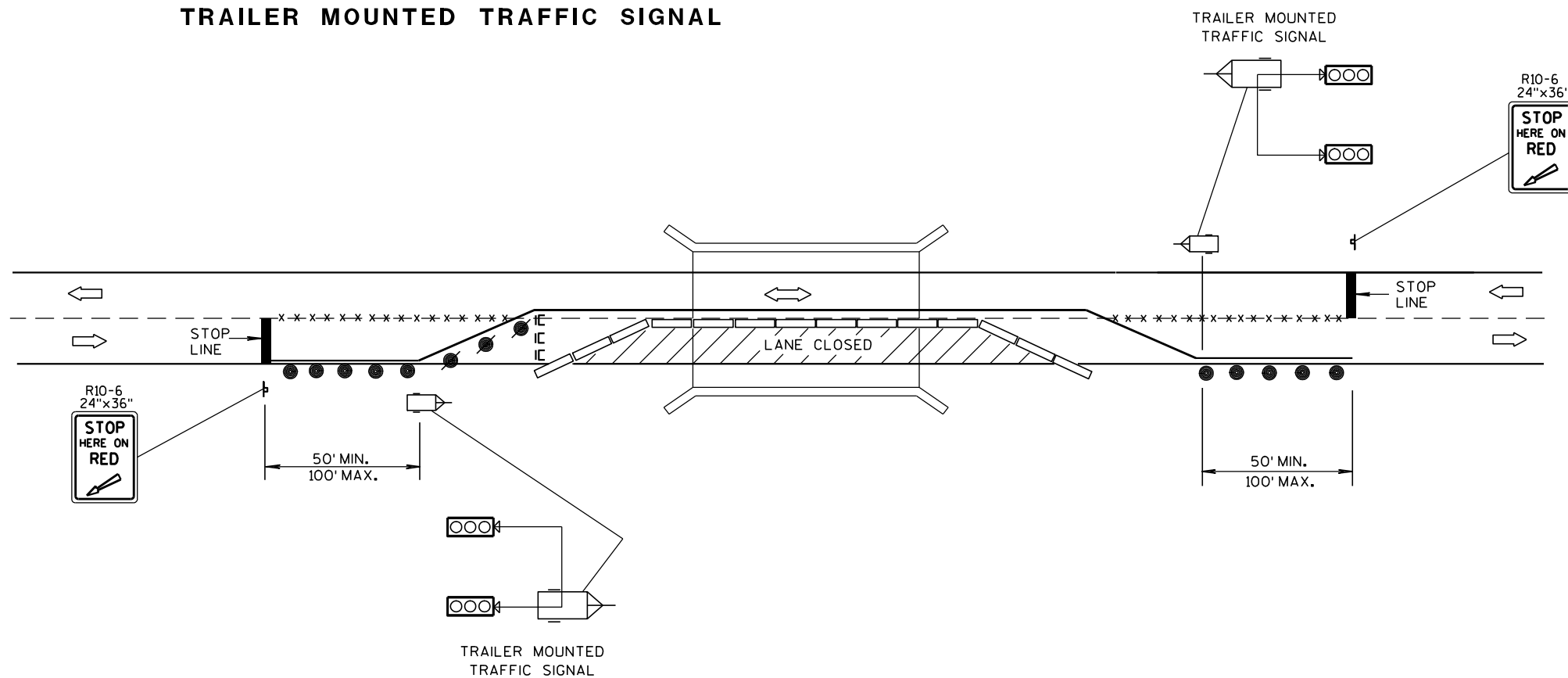


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

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



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

LEGEND

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

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

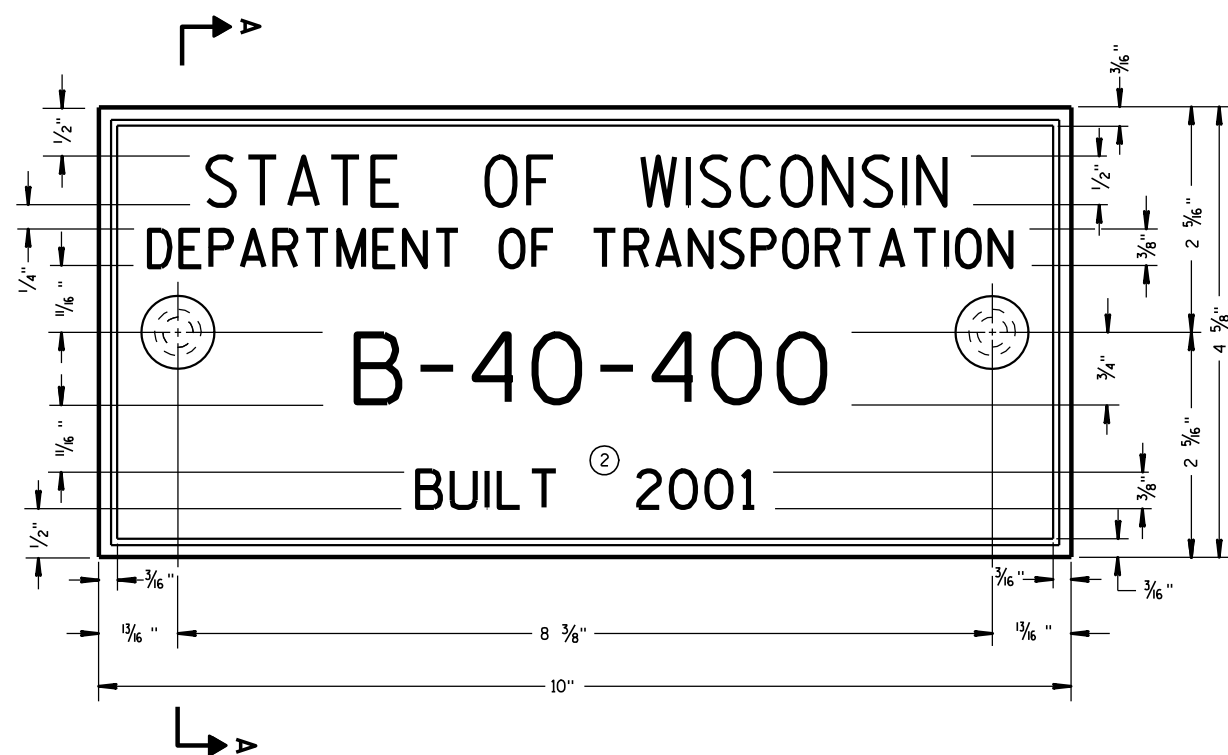
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE

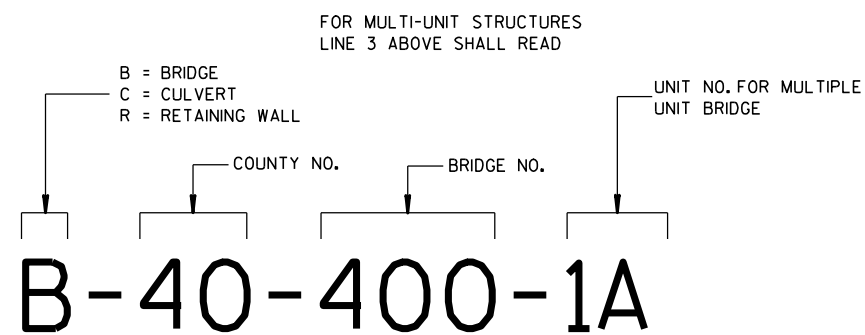
FHWA

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



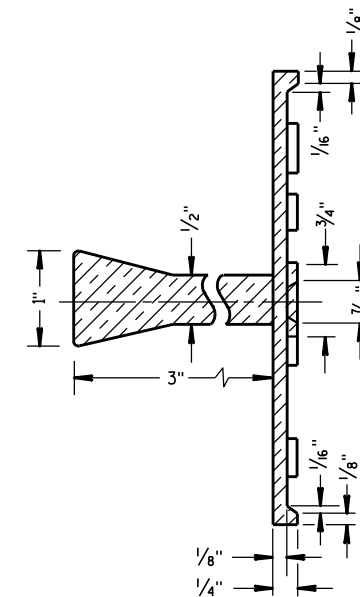
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

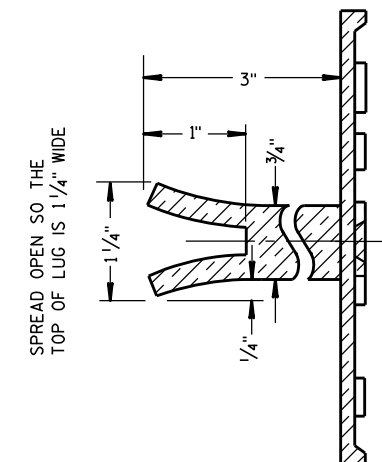
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

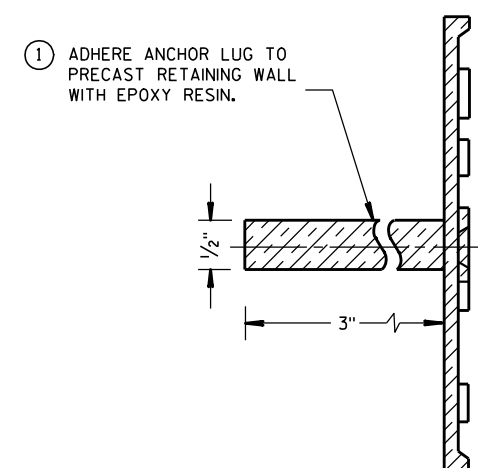
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE
(STRUCTURES)

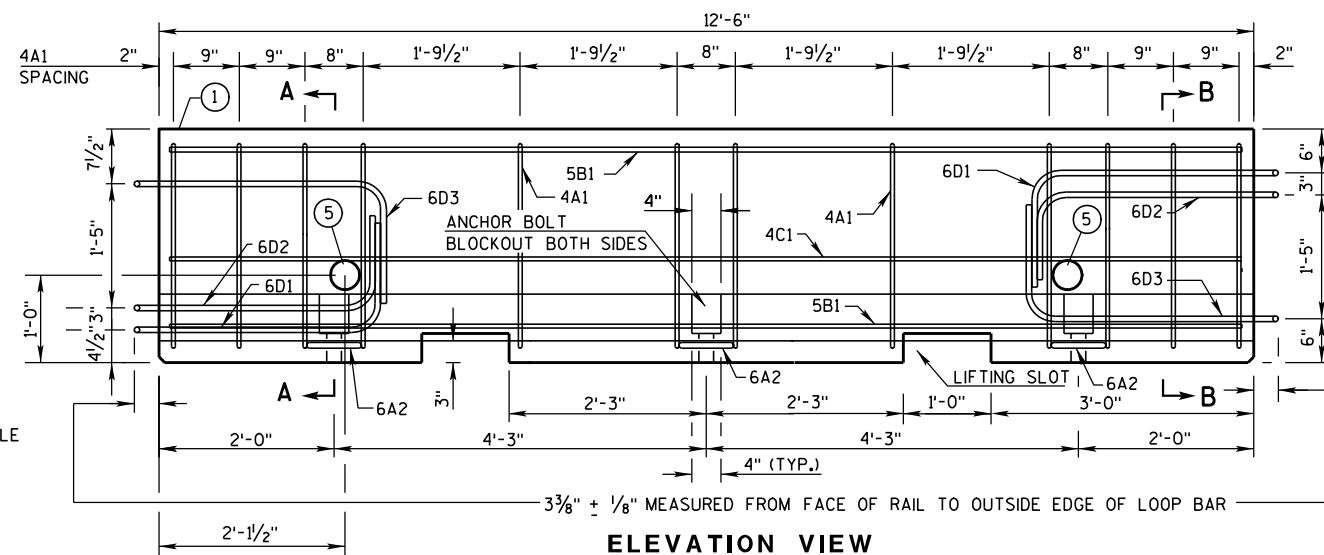
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

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.

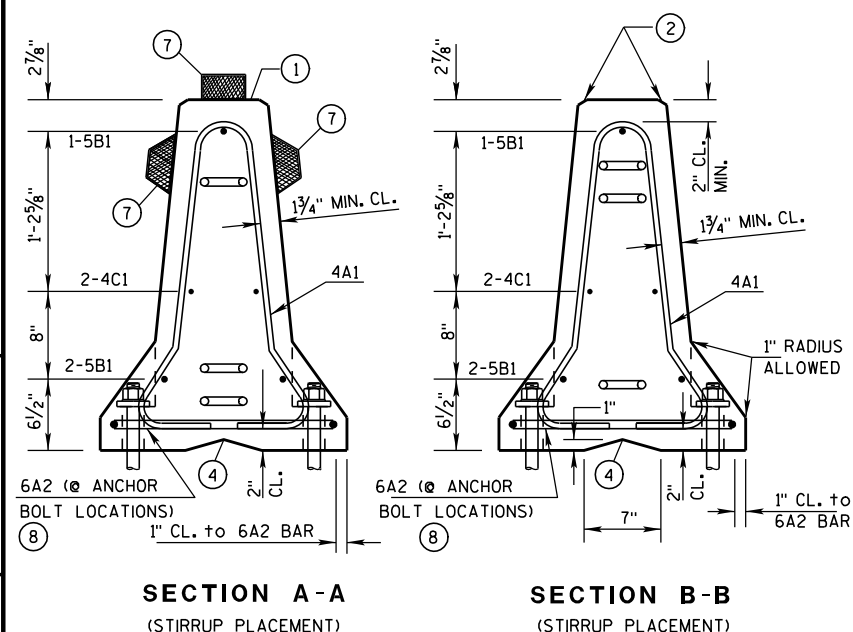
LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND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

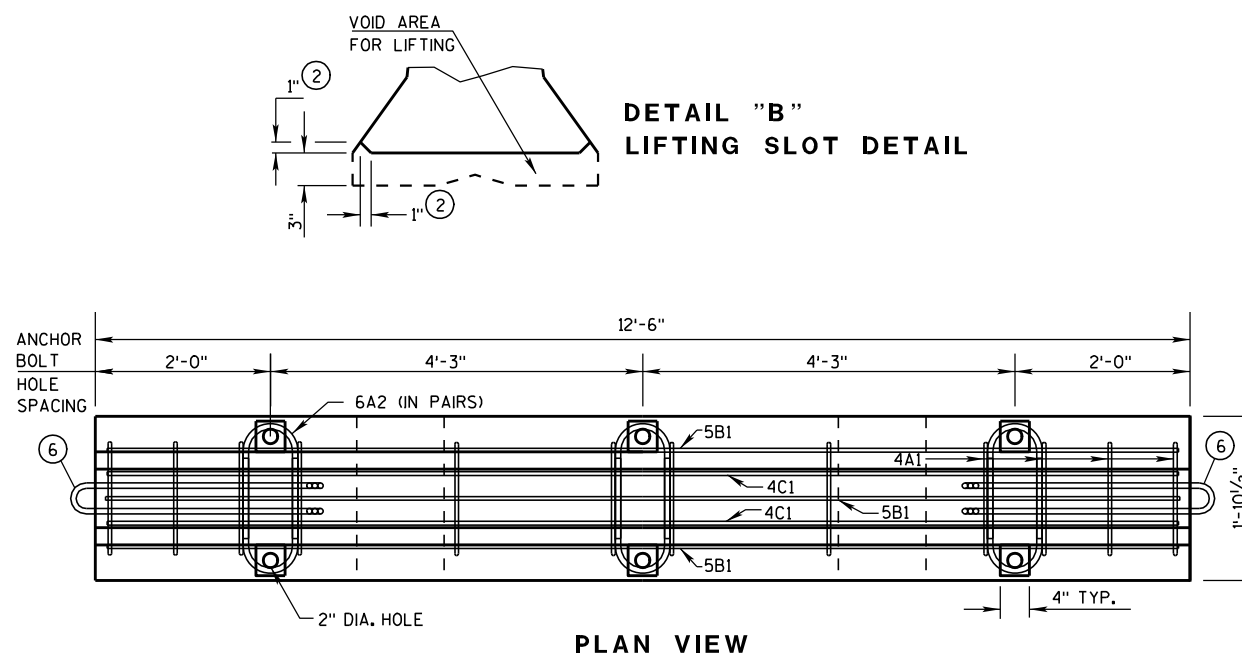
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

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

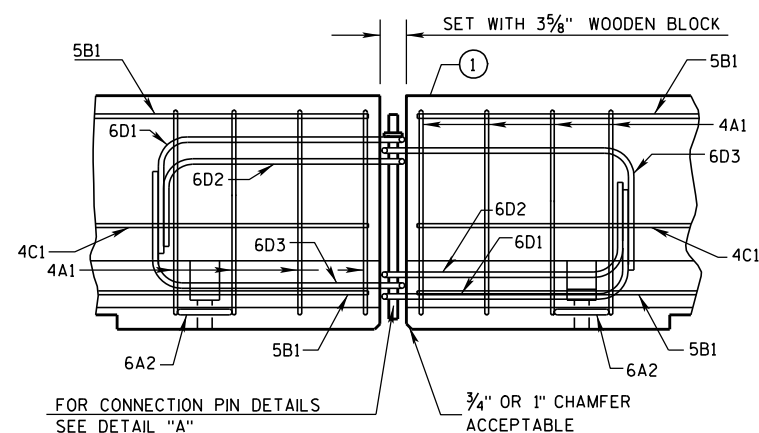
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE: WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A $\frac{3}{8}$ " HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- ④ "V" NOTCH IS OPTIONAL.
- ⑤ THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- ⑥ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- ⑦ USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S 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.
- ⑧ SEE SHEET D FOR ANCHORING CRITERIA.
- ⑨ 1" CHAMFER OPTIONAL.



DETAILS OF BARRIER SECTION

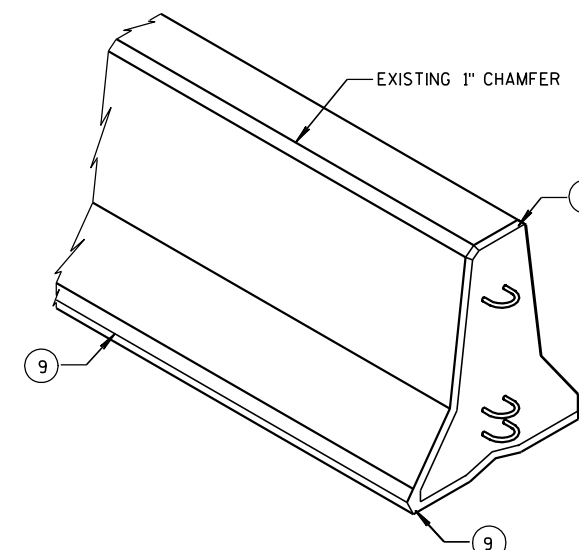
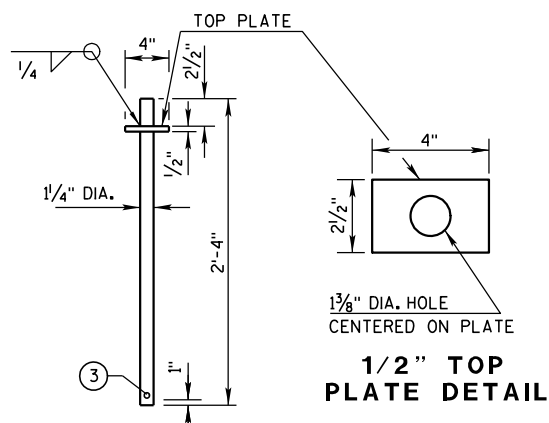


DETAILS OF BARRIER CONNECTION



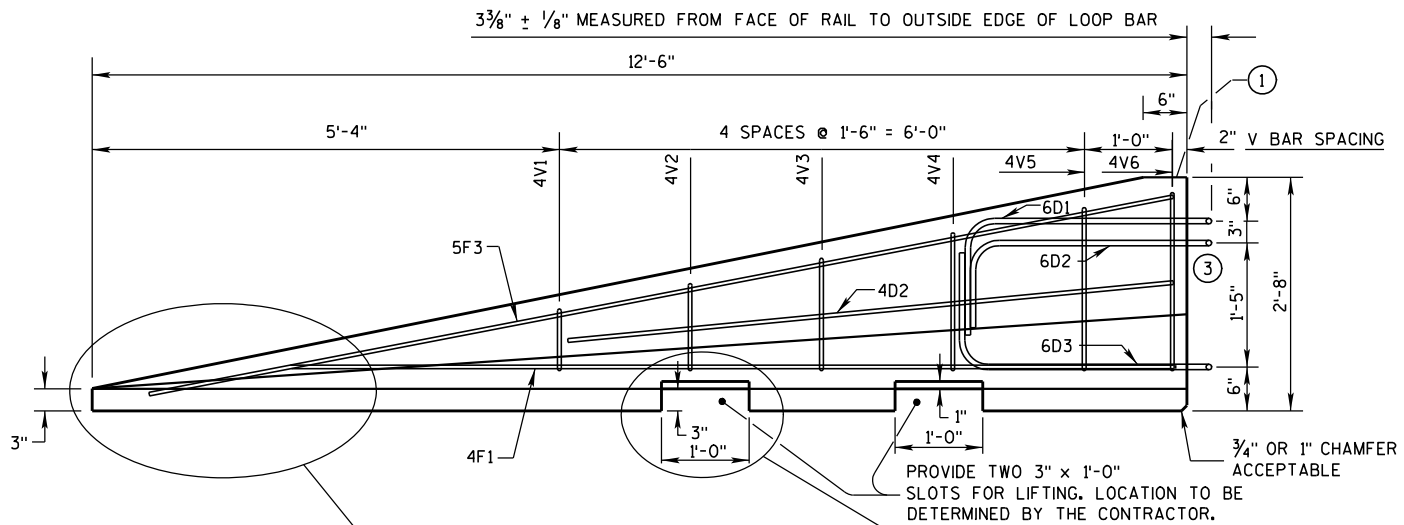
**1/2" TOP
PLATE DETAIL**

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



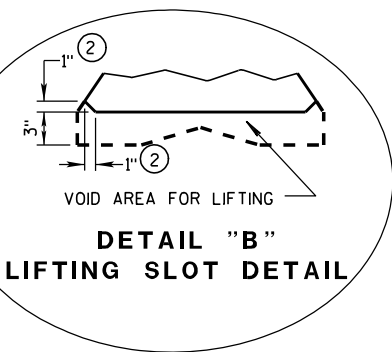
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

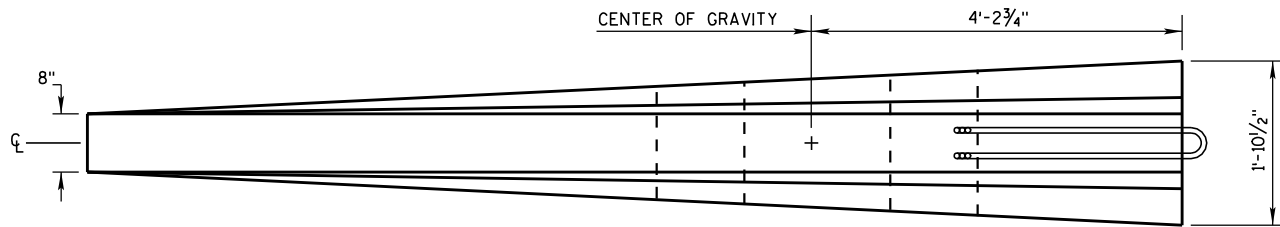


SEE DETAIL "C", BENT BAR DETAIL

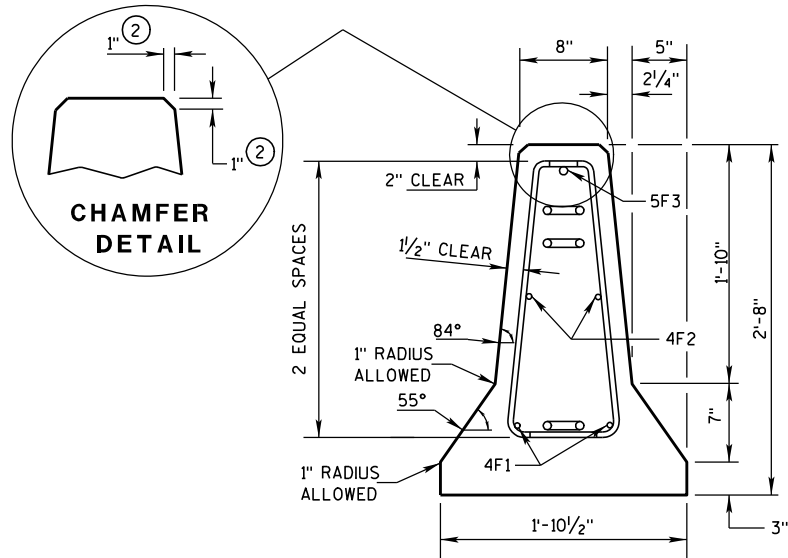
SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



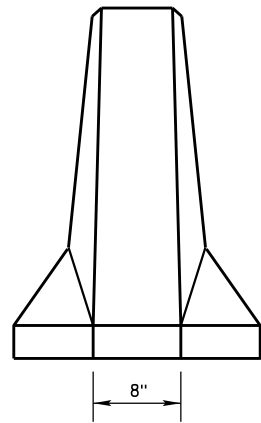
DETAIL "B"
LIFTING SLOT DETAIL



PLAN VIEW

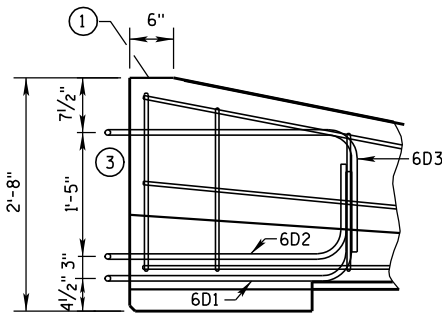


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION

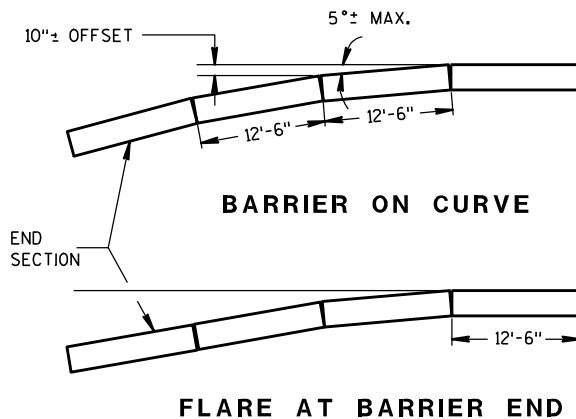


SIDE ELEVATION

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

GENERAL NOTES

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
a. TYPE W/CBTP
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.



POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

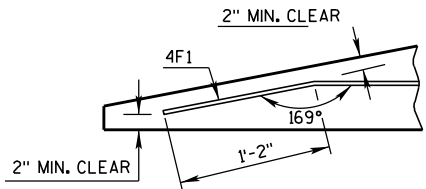
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

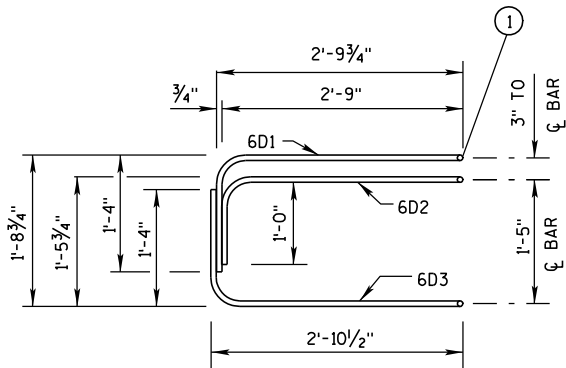
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

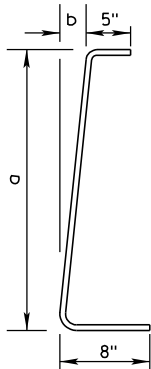
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS

2 AT EACH SIZE REQUIRED
FOR STIRRUP 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"

TAPER BARRIER SECTION

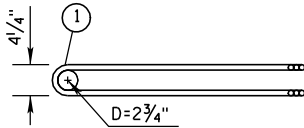
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

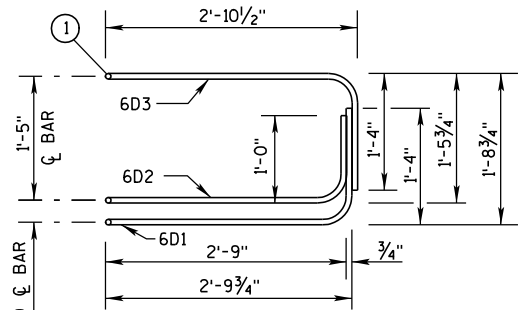
(PER 12'-6" BARRIER SECTION)

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"

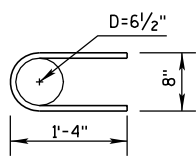


PLAN VIEW
LOOP BAR ASSEMBLY

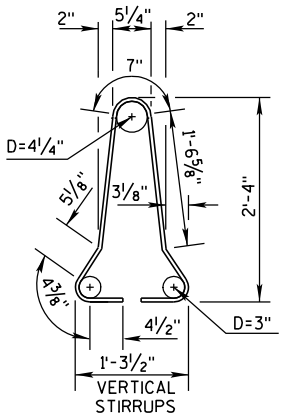
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

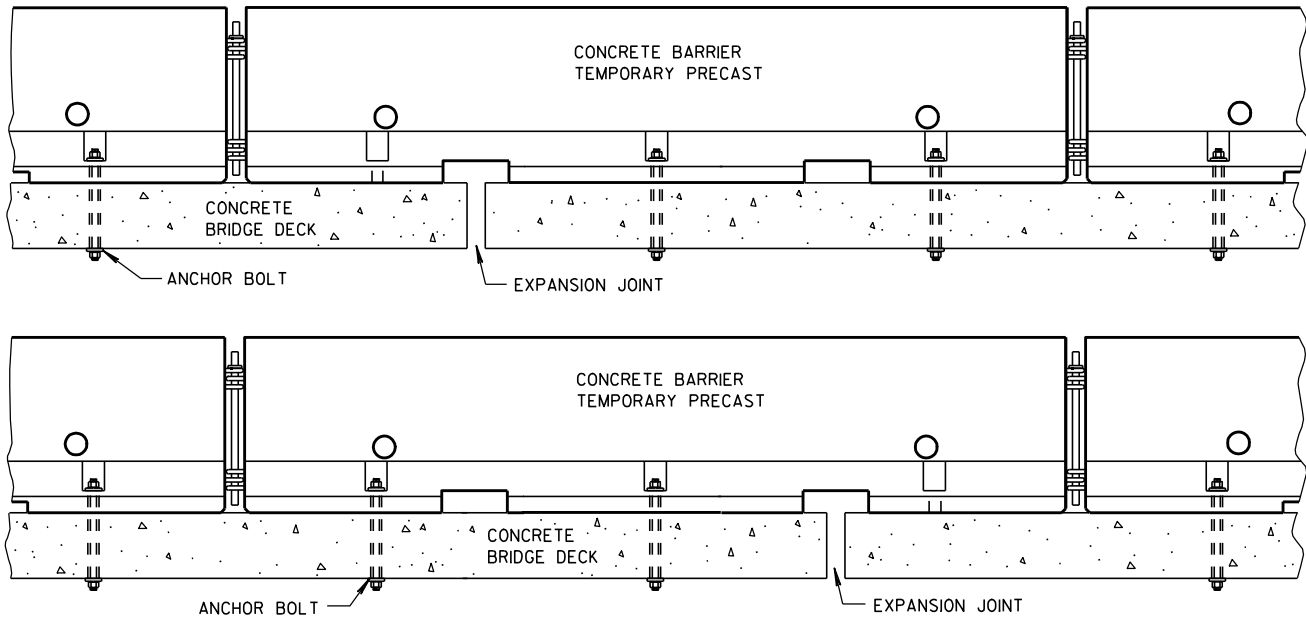


4A1

BARRIER SECTION

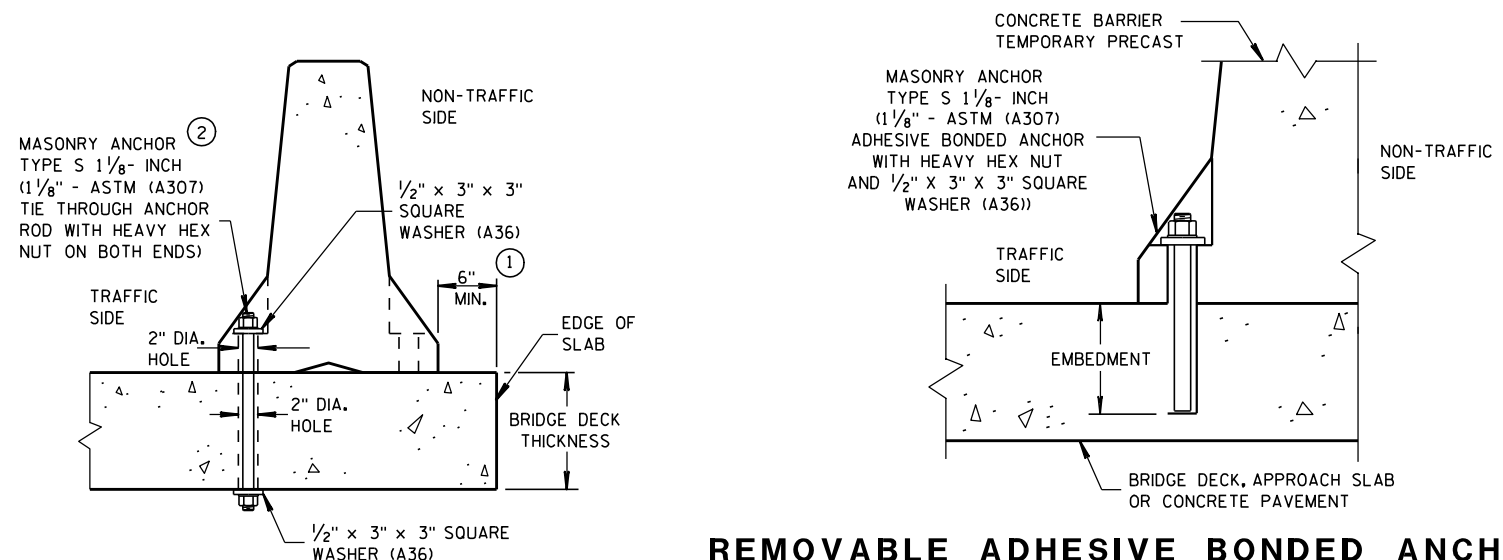
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

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.)

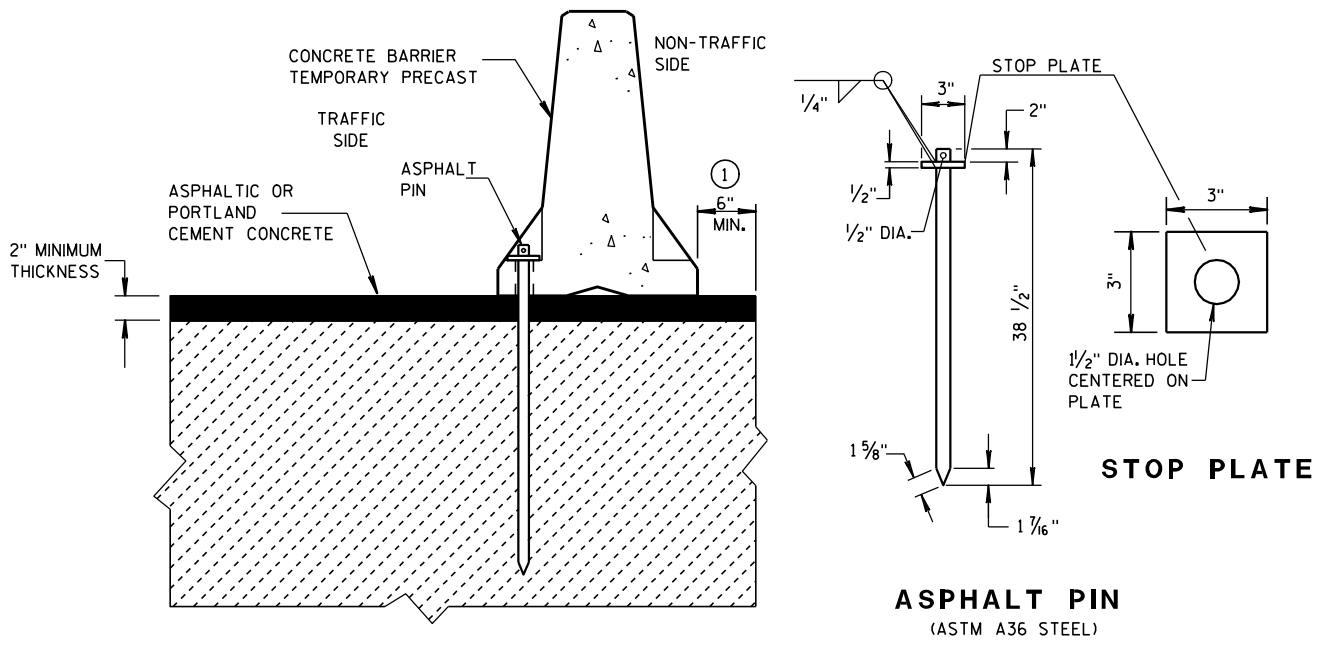


THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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

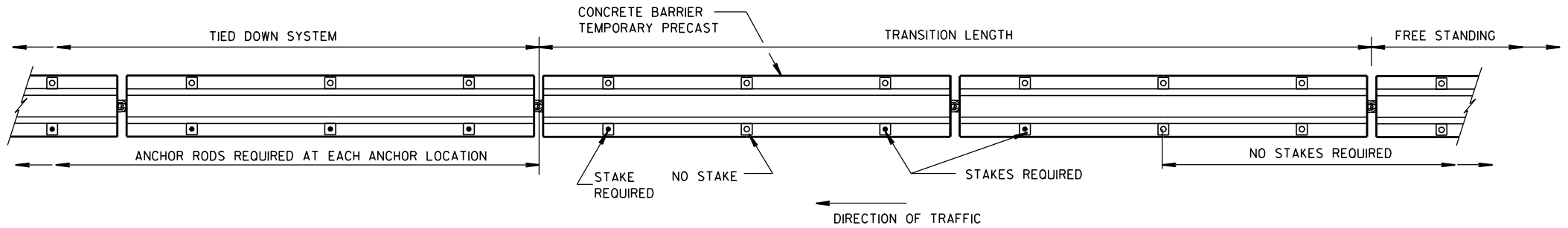
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



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

1 CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 40 MPH OR LESS.

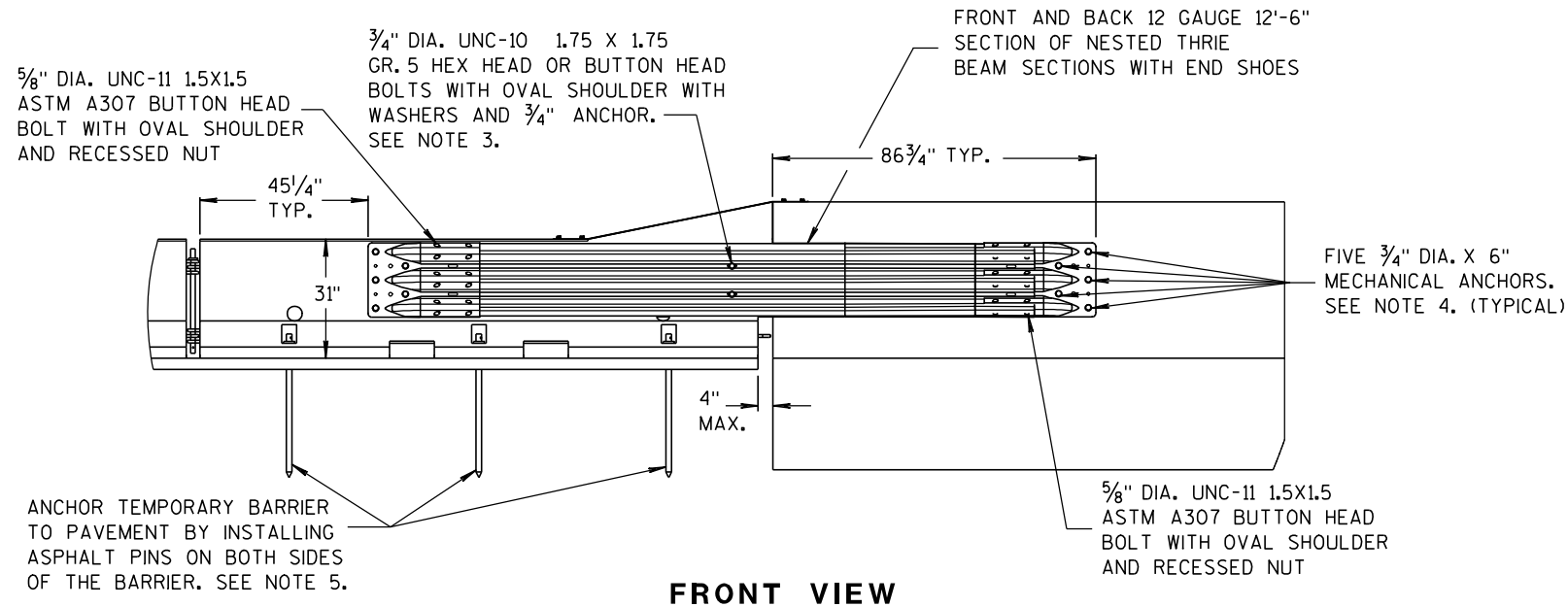
2 ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT
INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE
BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE
S 1 1/8-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE
ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY
FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CON-
CRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR EPOXY MATERIAL
IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

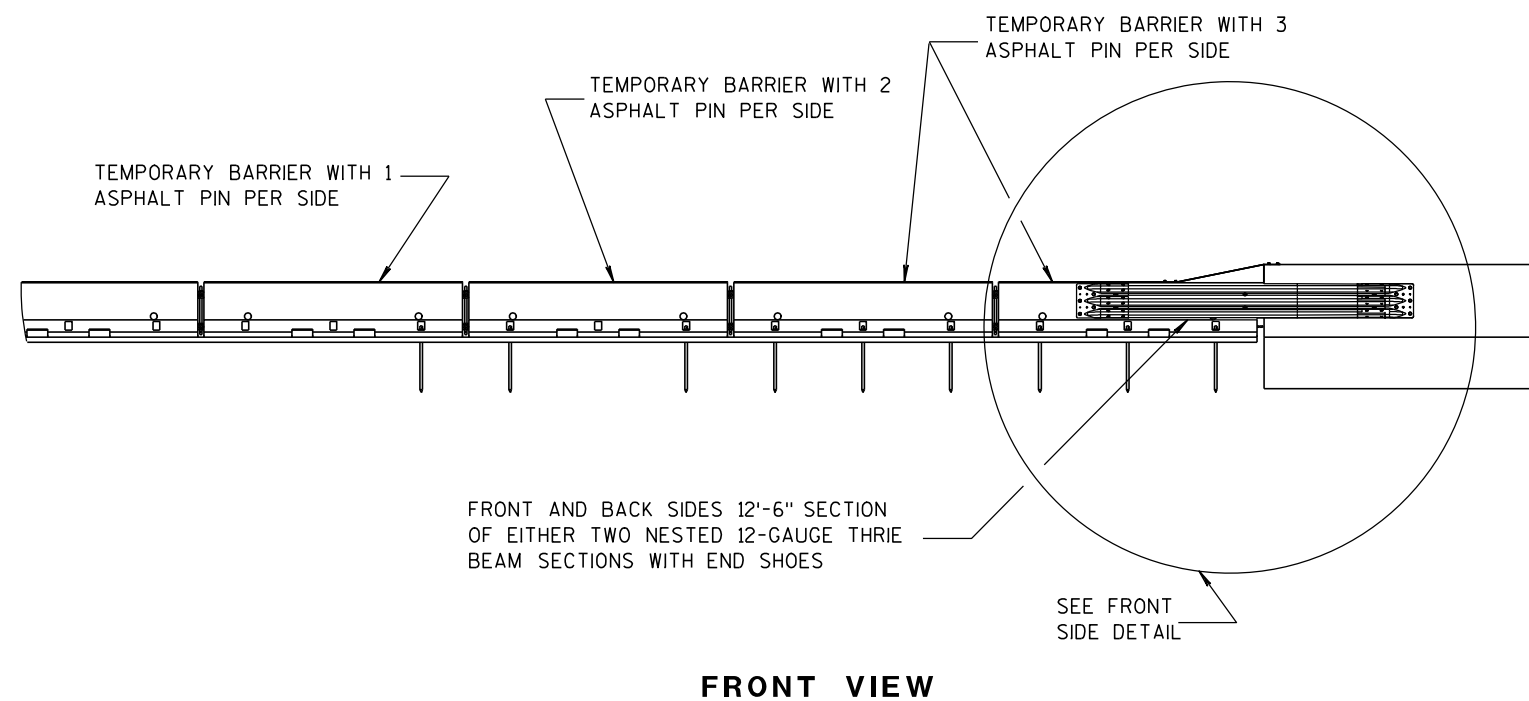
**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

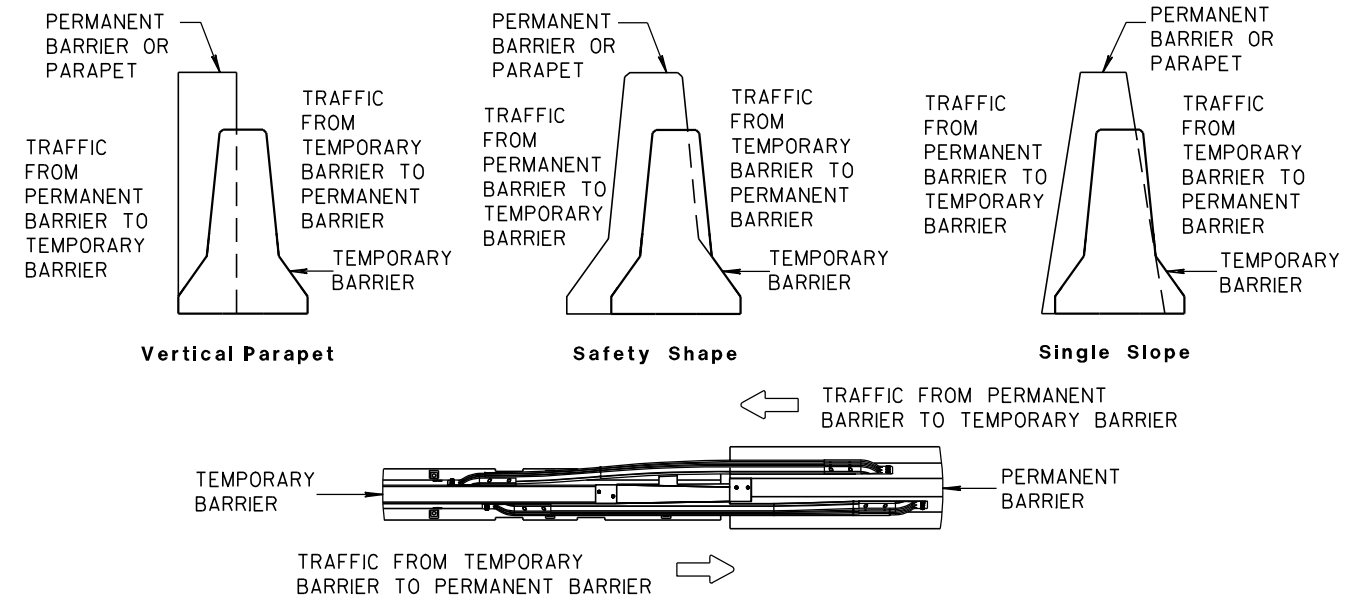


NOTES

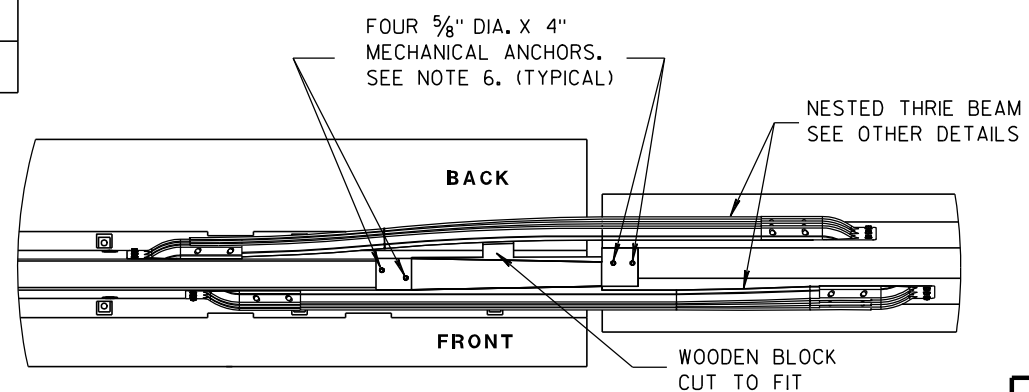
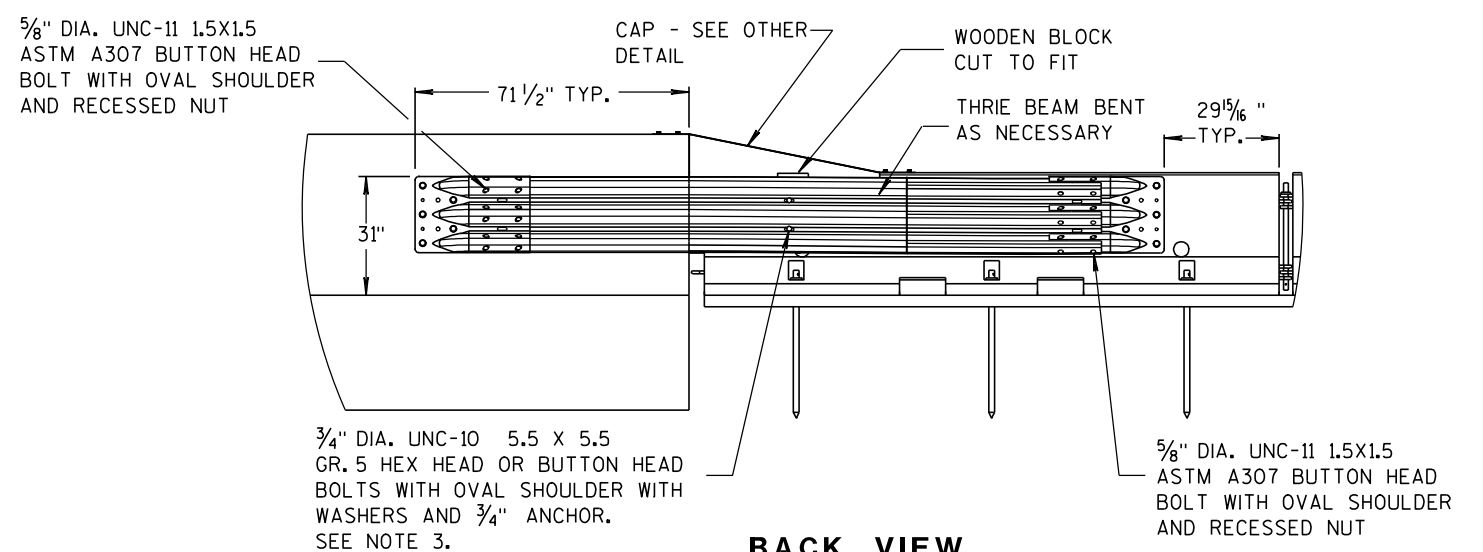
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY 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 EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

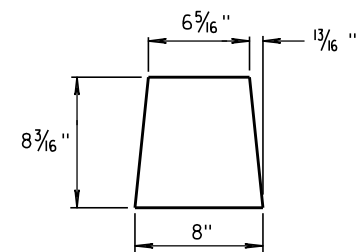


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

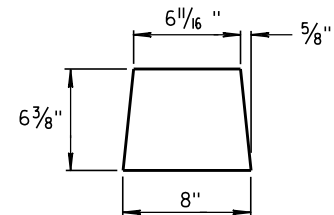


CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

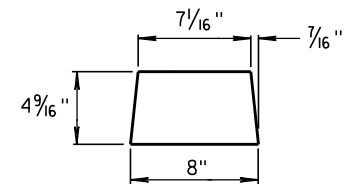
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



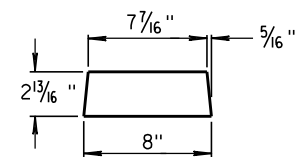
GUSSET 1



GUSSET 2

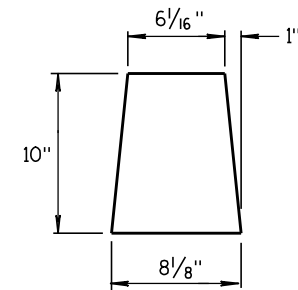


GUSSET 3

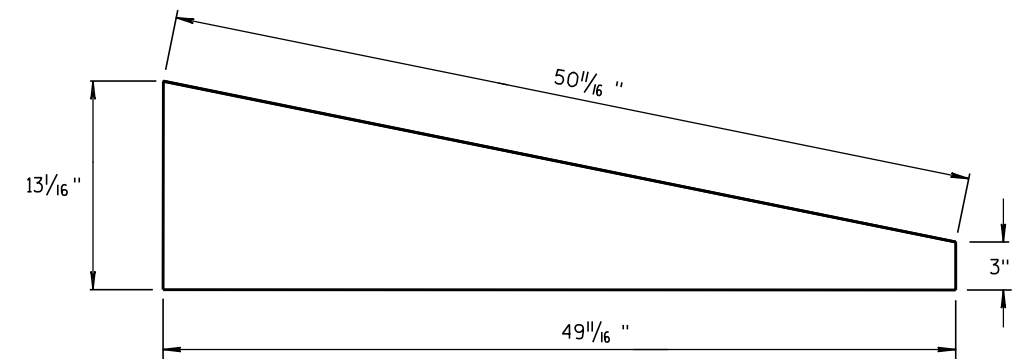


GUSSET 4

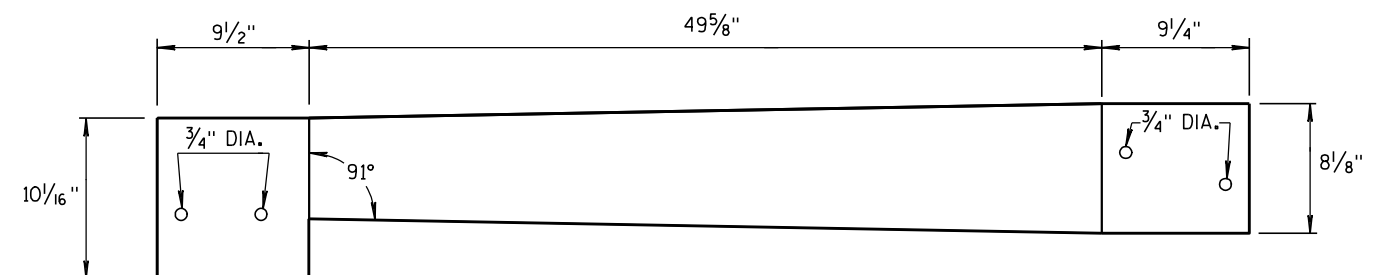
GUSSETS



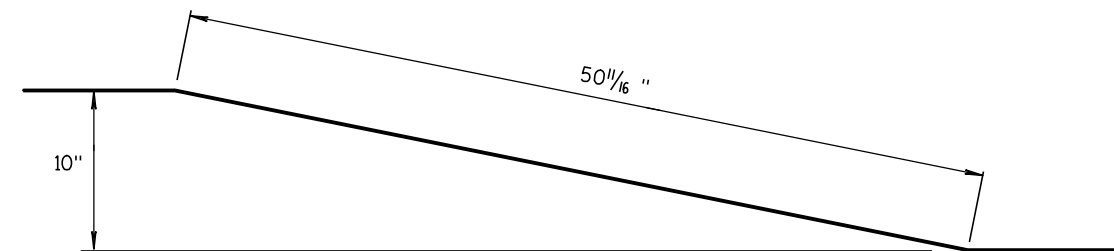
END PLATE



SIDE PLATE

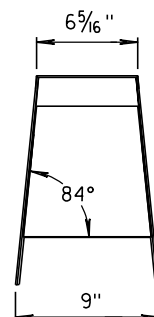


TOP PLATE

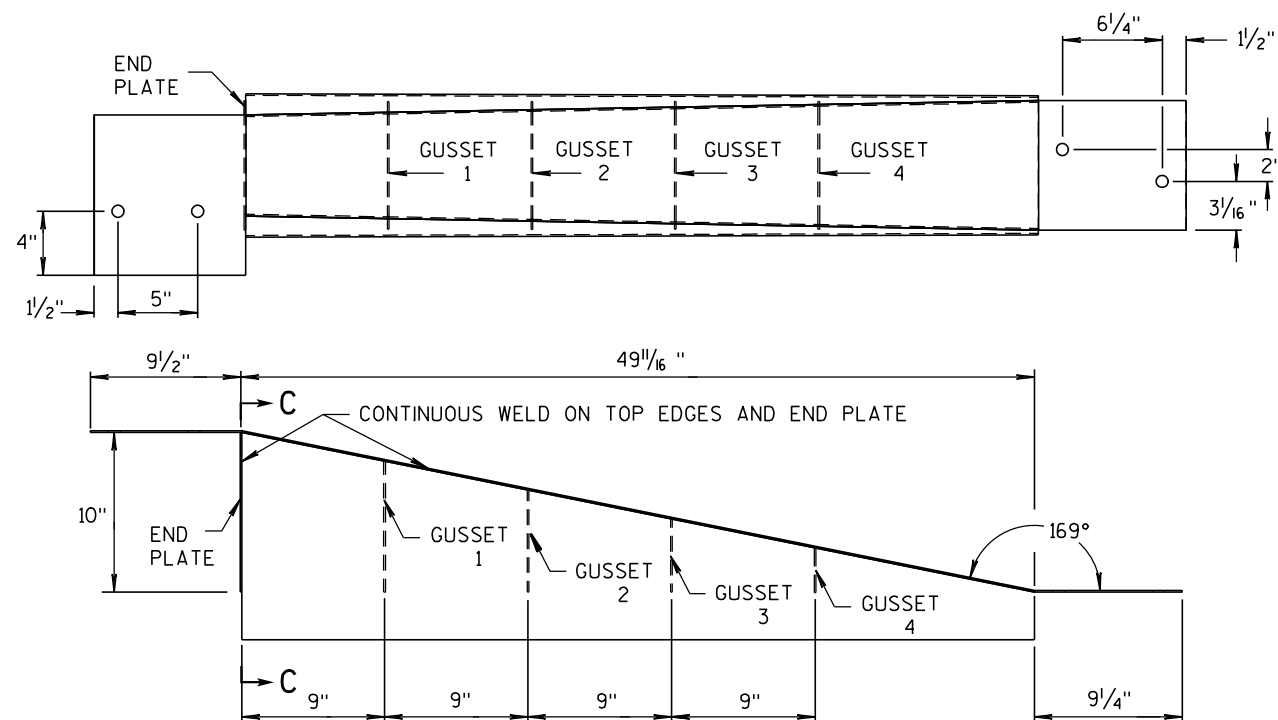


**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

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



SECTION C-C



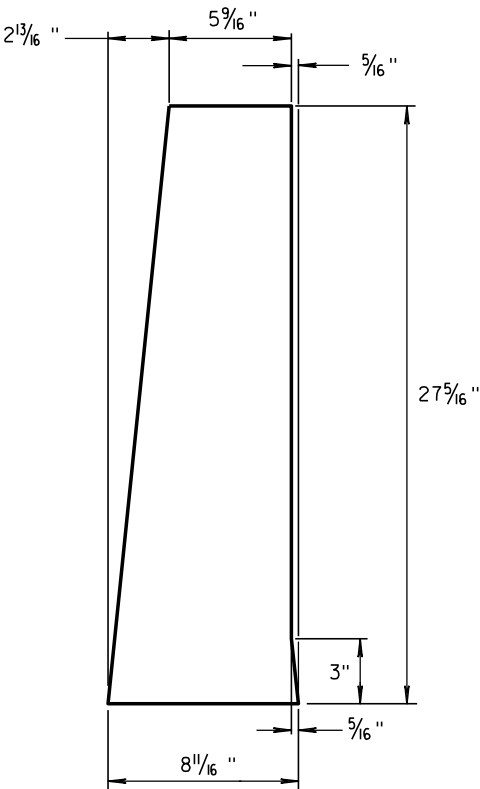
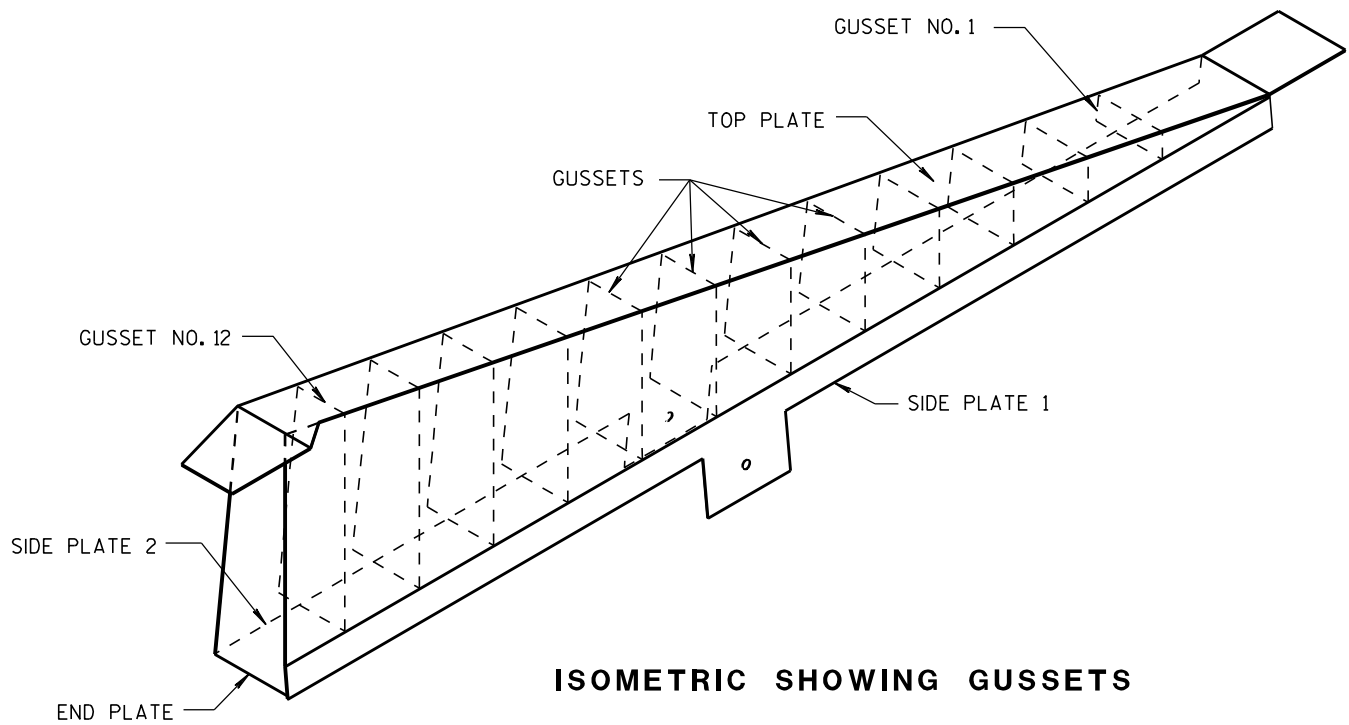
NOTES

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

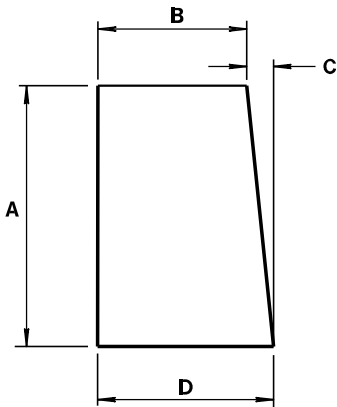
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

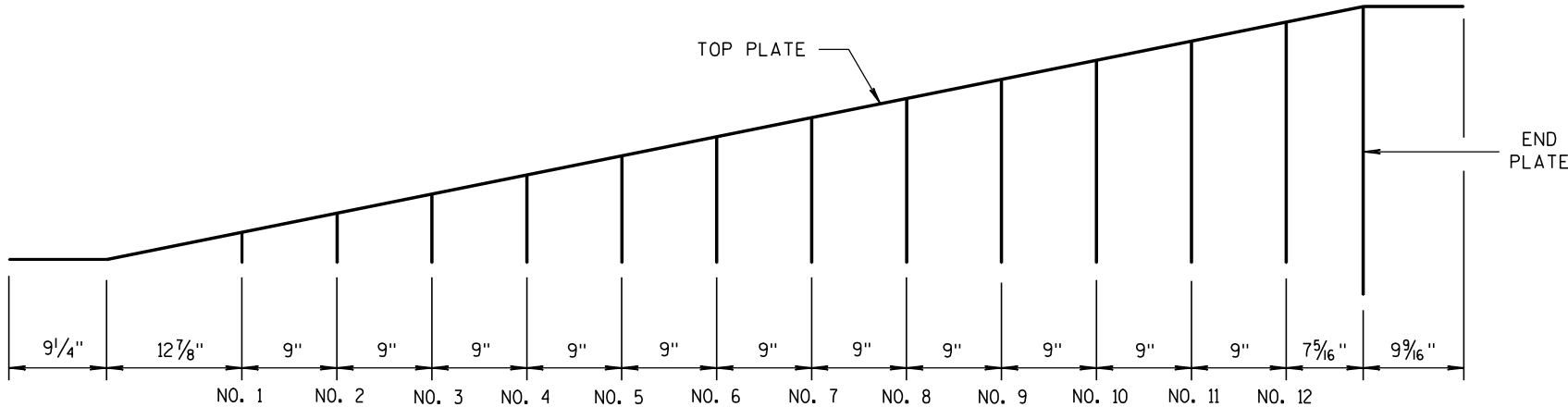


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	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.

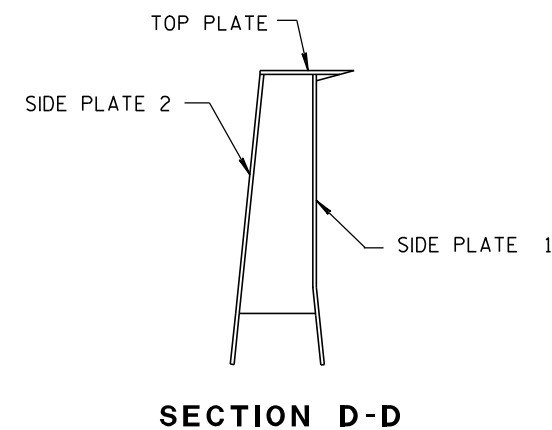
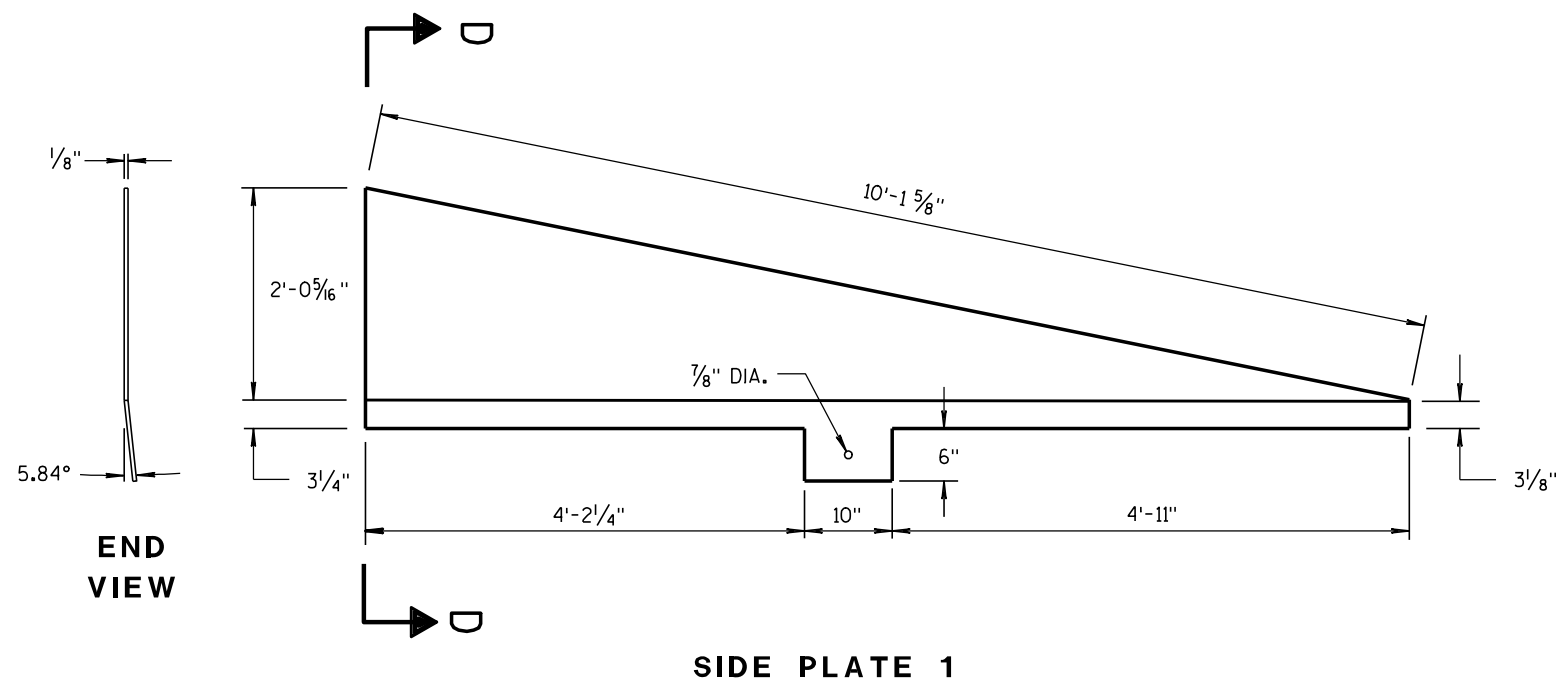
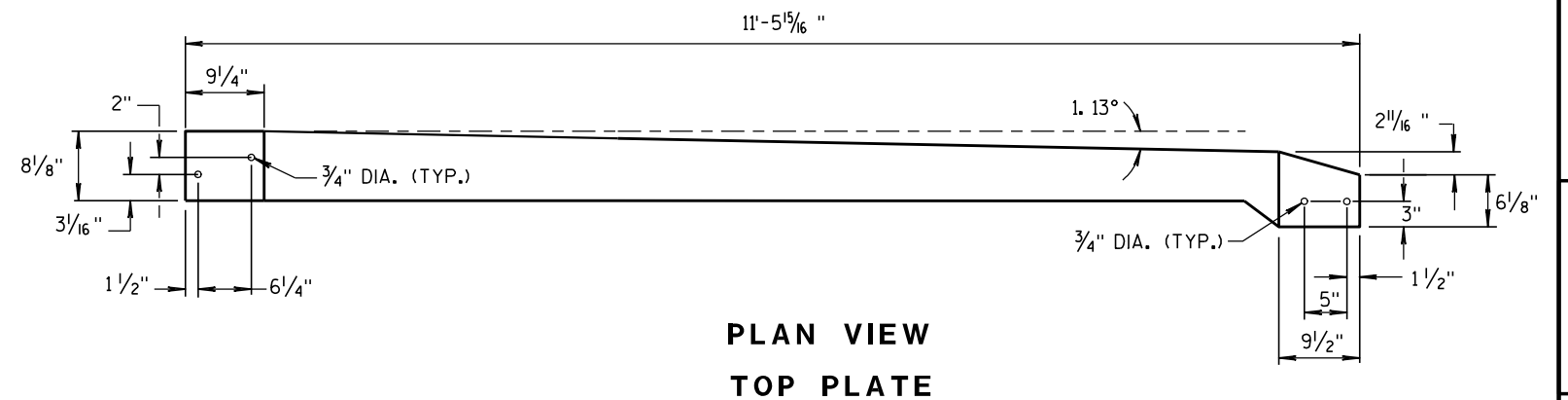
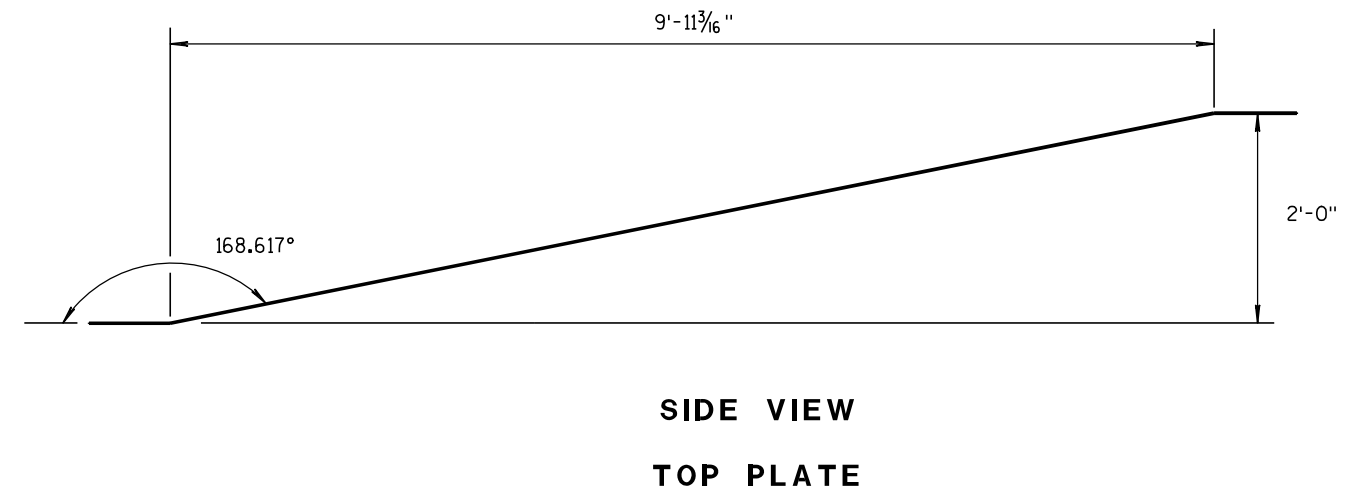
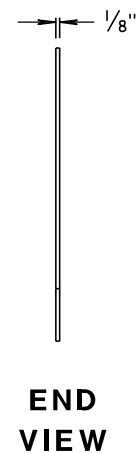
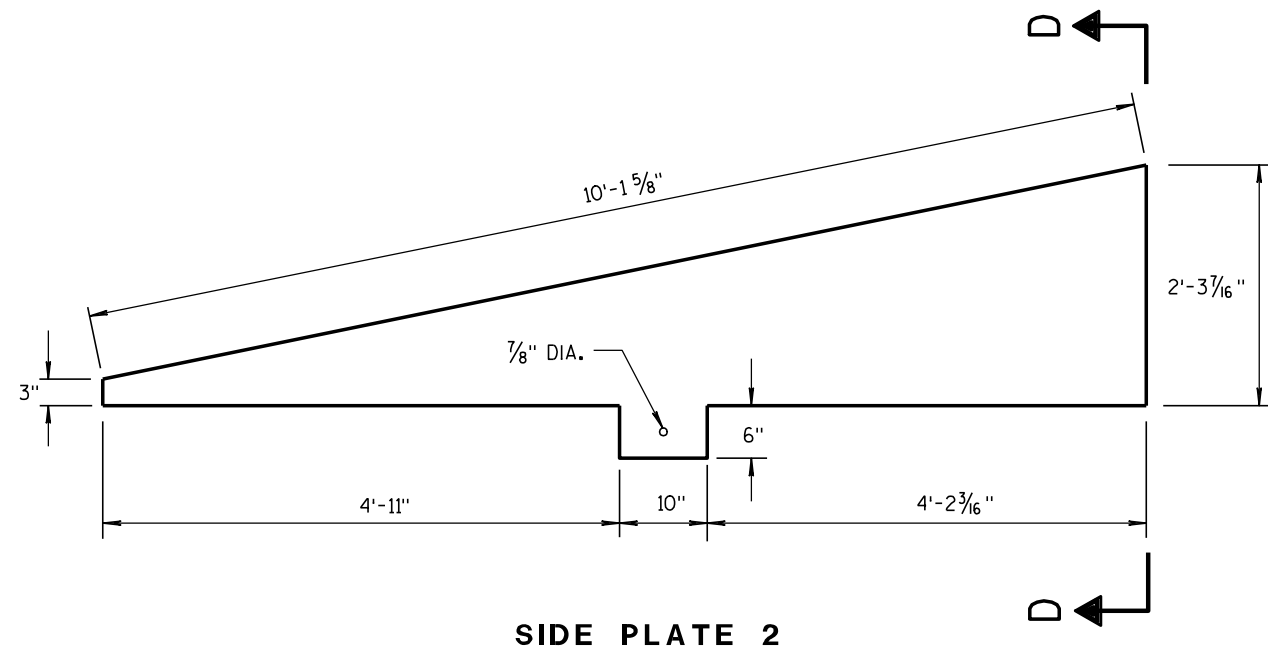
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



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
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

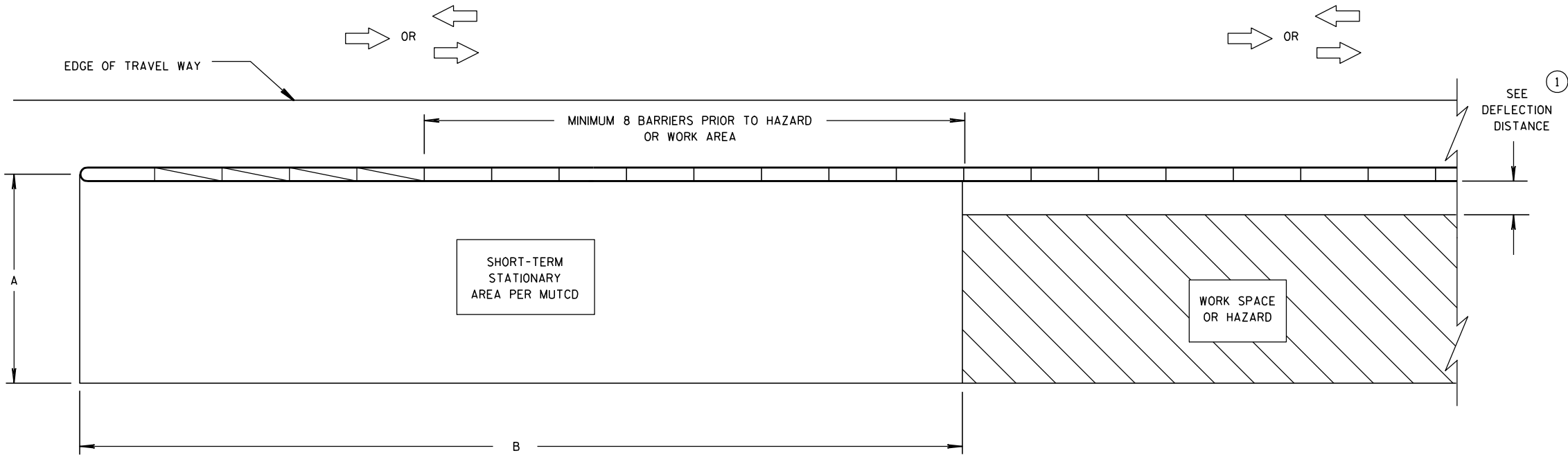
DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARD DEVELOPMENT

ENGINEER



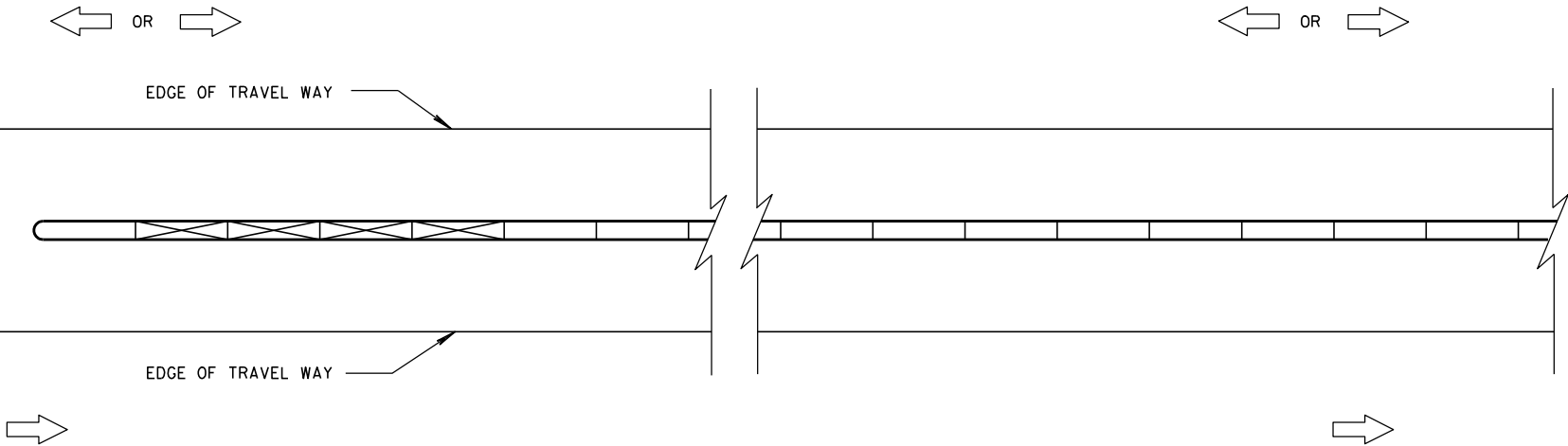
**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**

DIMENSION A TABLE ②

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE ②

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER**

LEGEND

DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

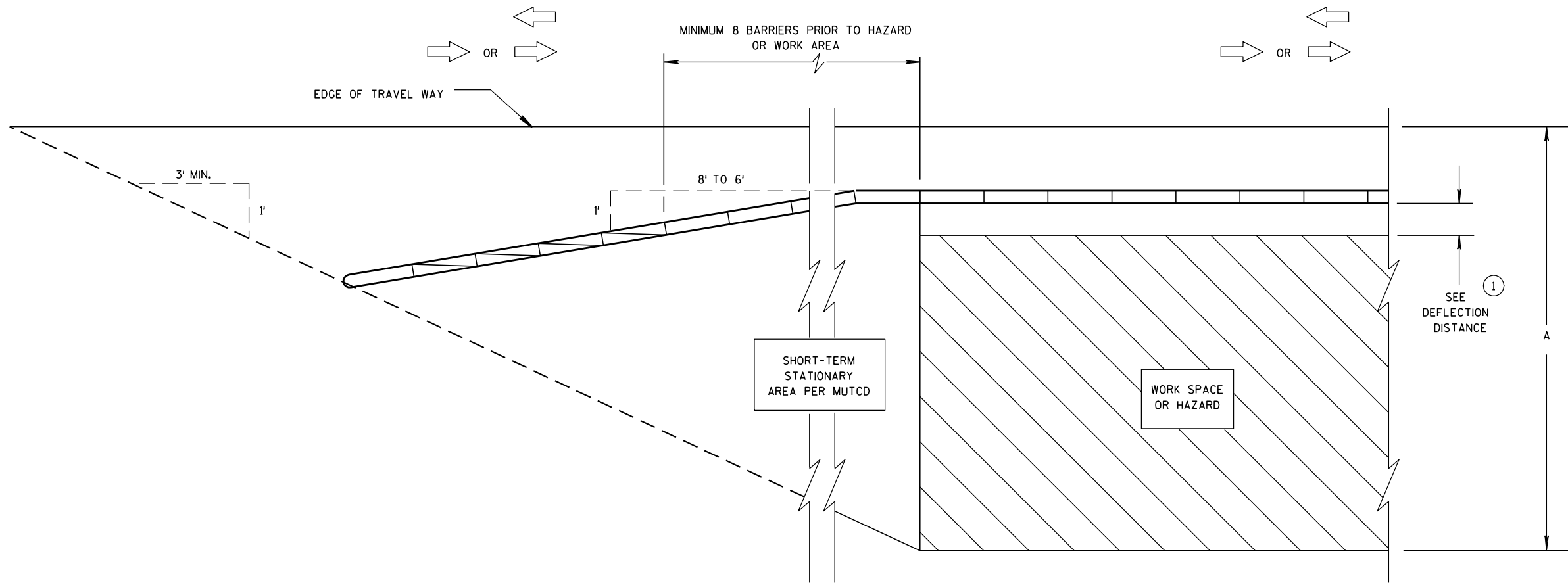
FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

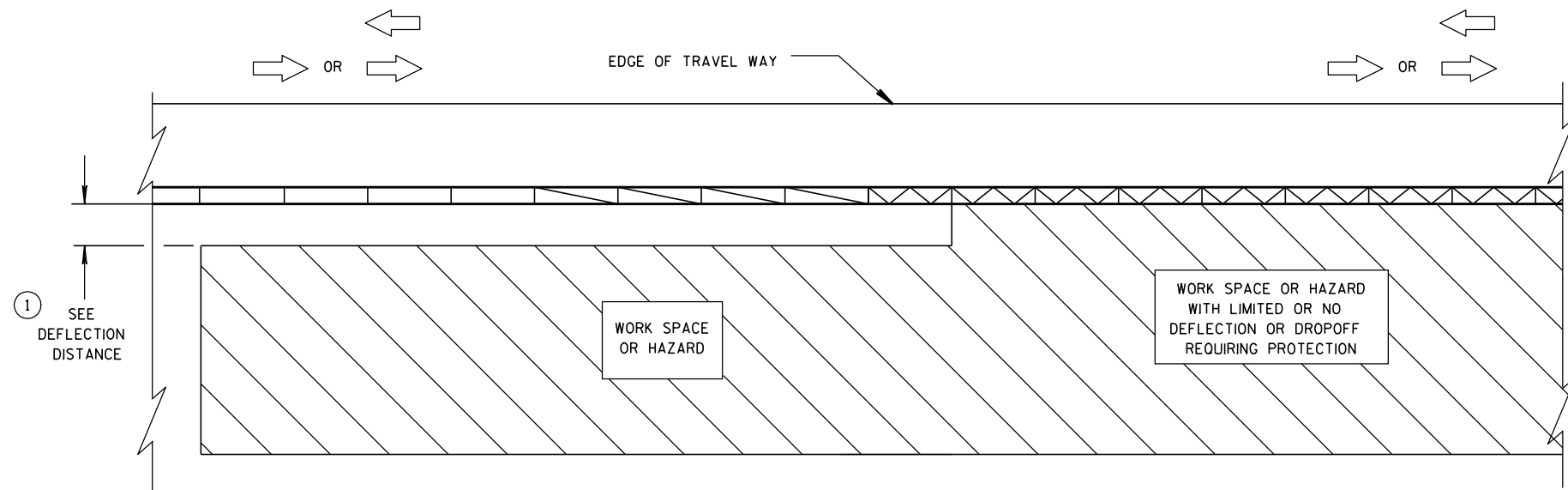
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

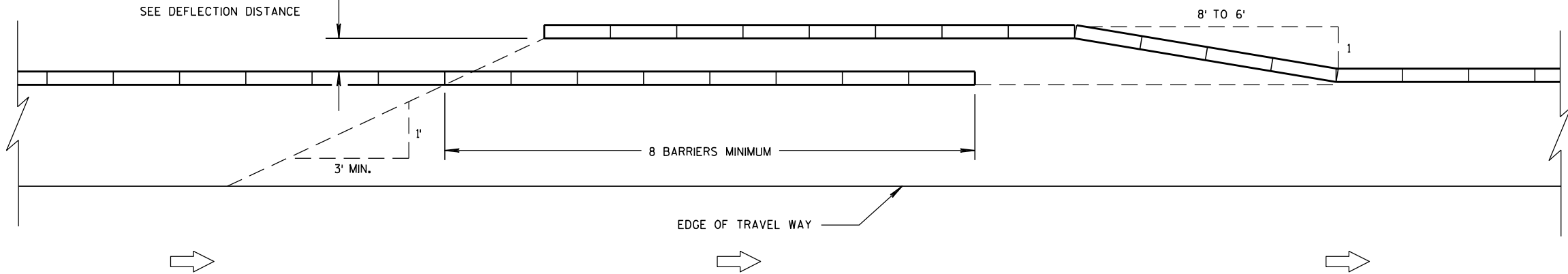
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

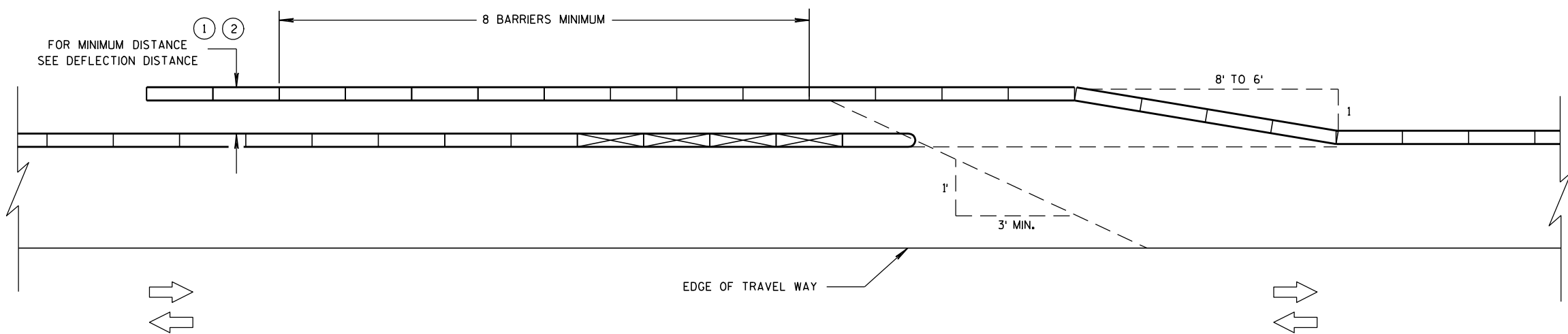
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

FOR MINIMUM DISTANCE
SEE DEFLECTION DISTANCE

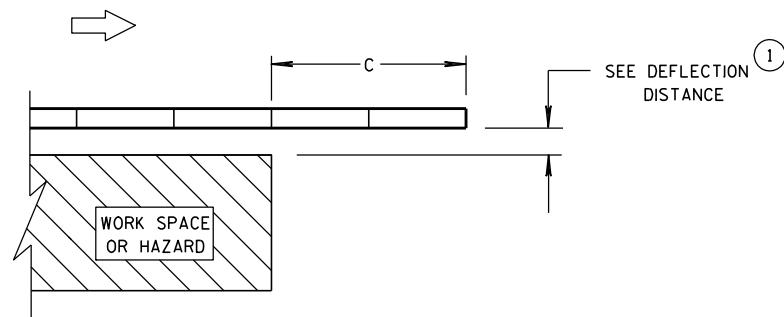


TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC

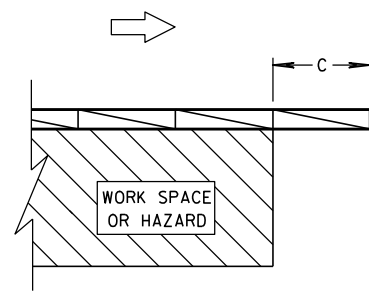
FOR MINIMUM DISTANCE
SEE DEFLECTION DISTANCE



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



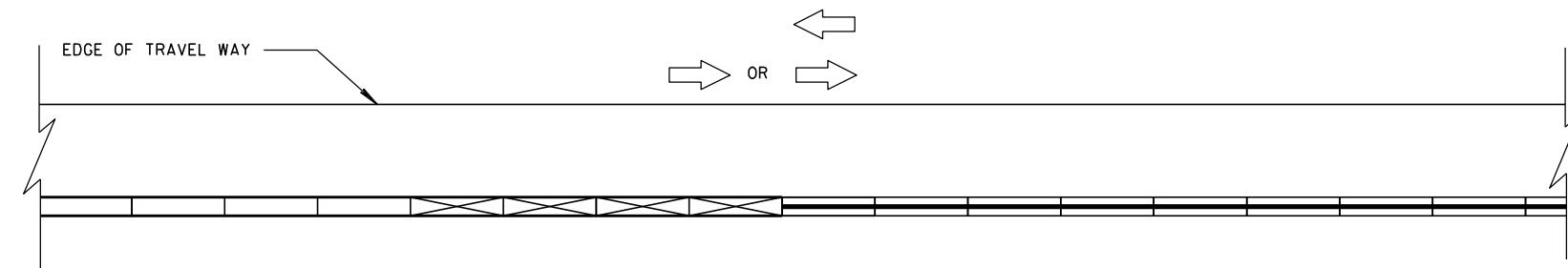
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

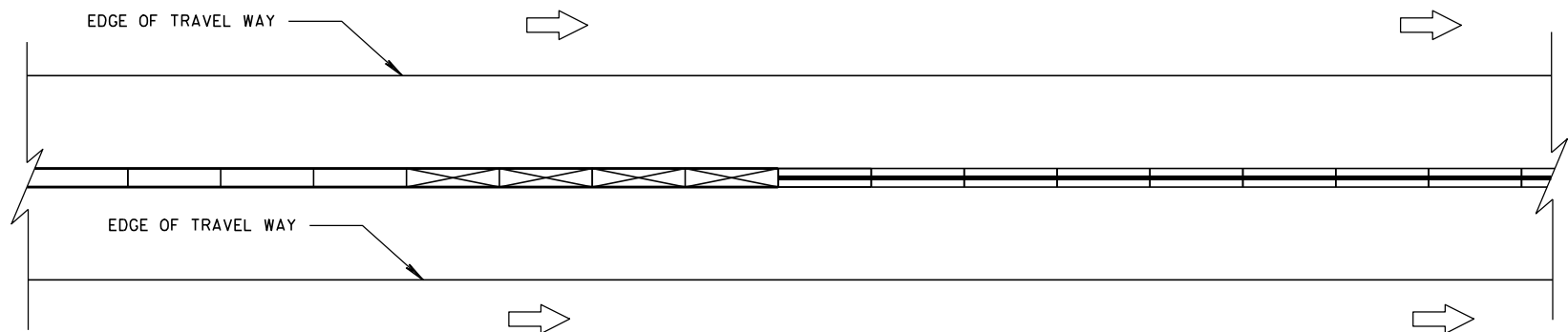
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



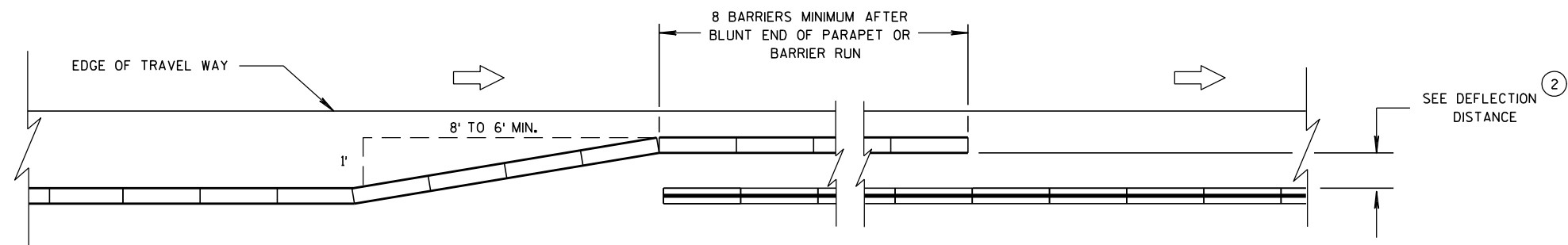
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



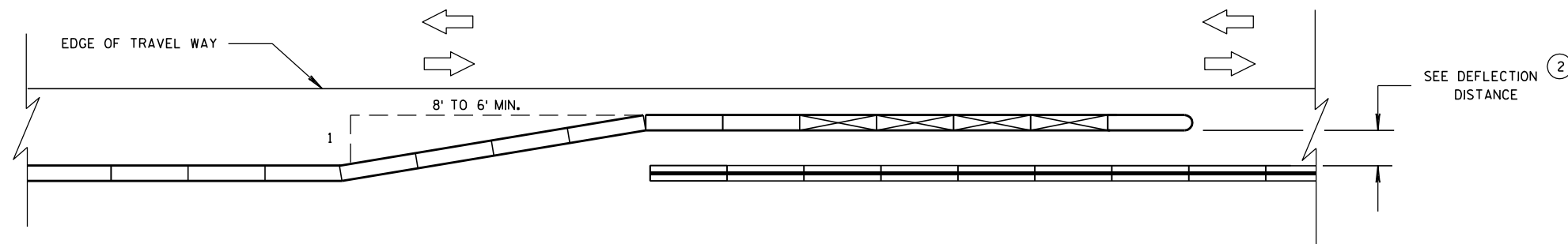
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL →
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC


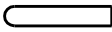
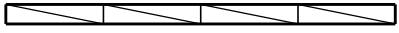

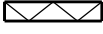

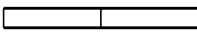


OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

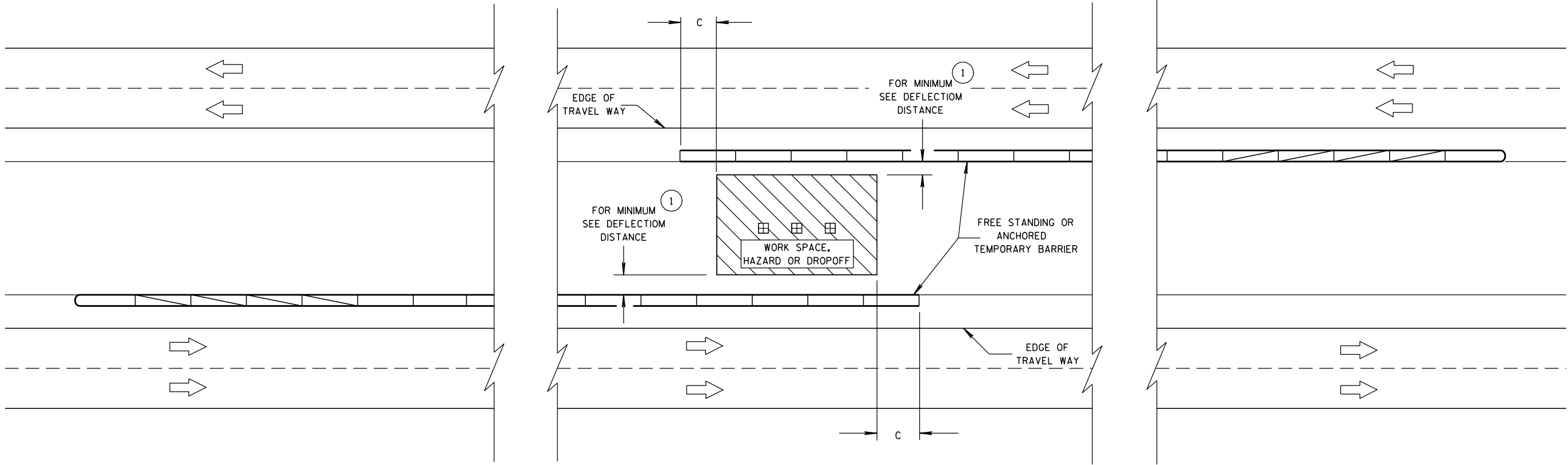
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

DIMENSION C TABLE

2

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100

6



6

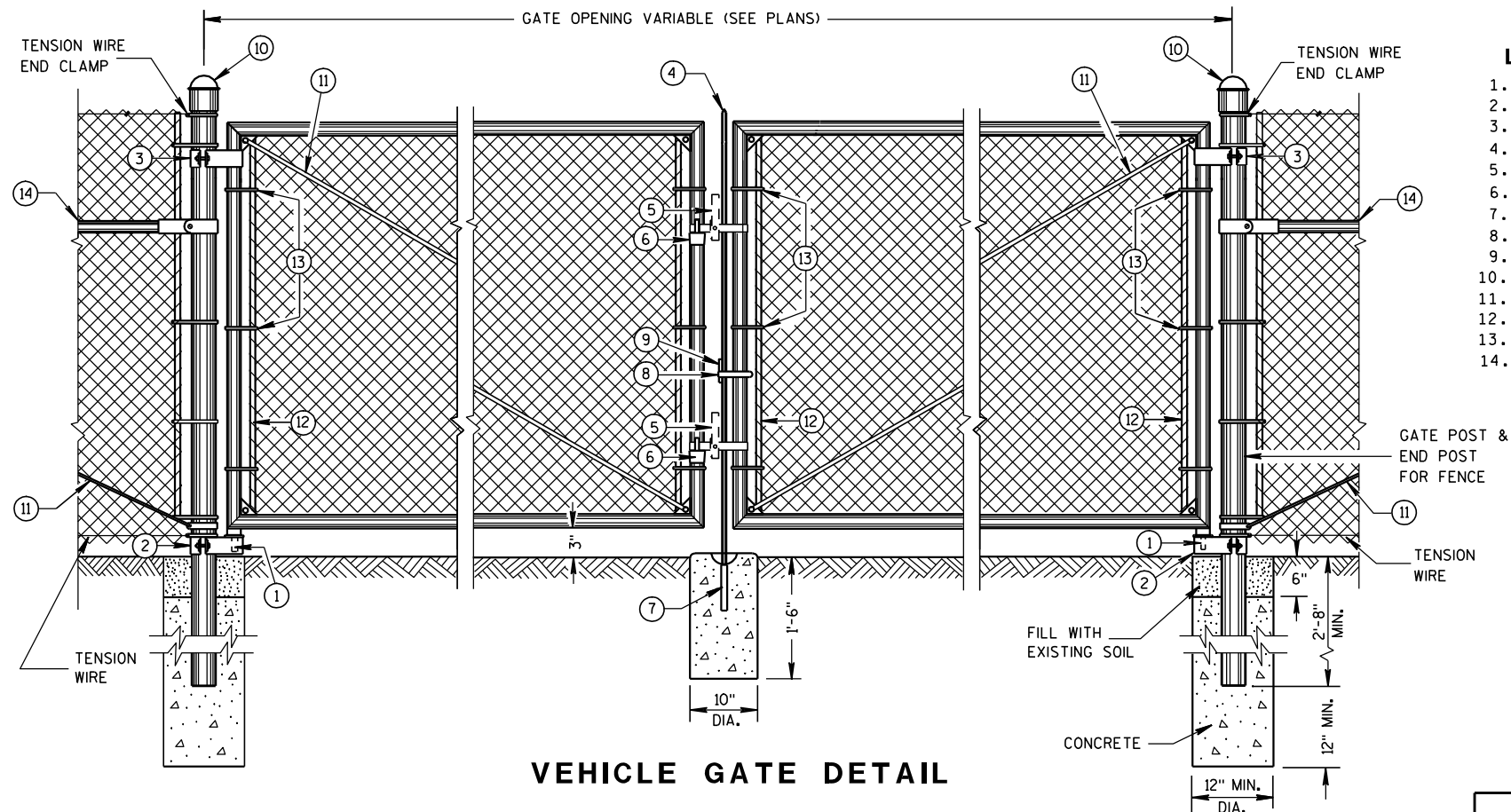
**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

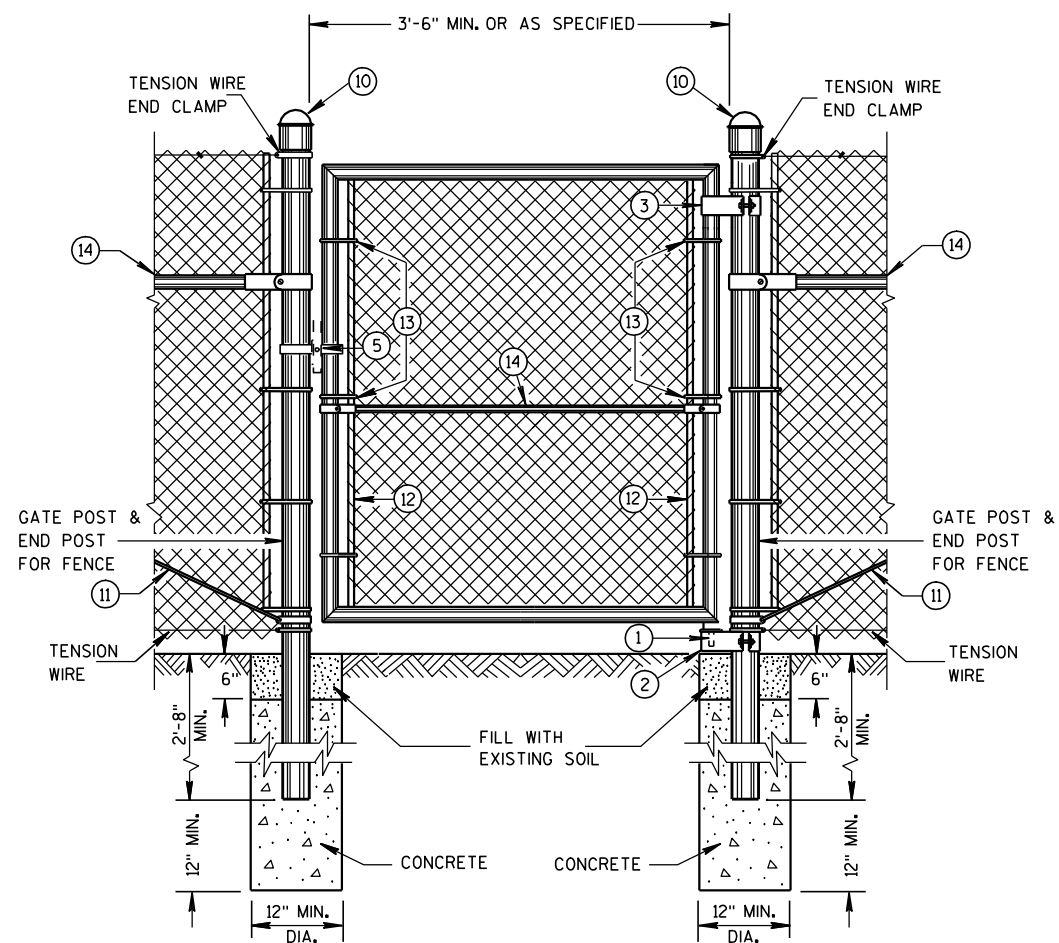
APPROVED
8/31/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

S.D.D. 14 B 8-1e

S.D.D. 14 B 8-1e



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
 2. BOTTOM HINGE
 3. TOP HINGE
 4. PLUNGER ROD
 5. FULCRUM LATCH
 6. FORK CATCH *
 7. PLUNGER ROD CATCH
 8. LOCK KEEPER GUIDE
 9. LOCK KEEPER
 10. DOME TOPS
 11. TRUSS RODS
 12. TENSION BAR
 13. TENSION BANDS
 14. BRACE RAIL
- *NOT REQUIRED ON SINGLE
SWING PEDESTRIAN GATE

GENERAL NOTES

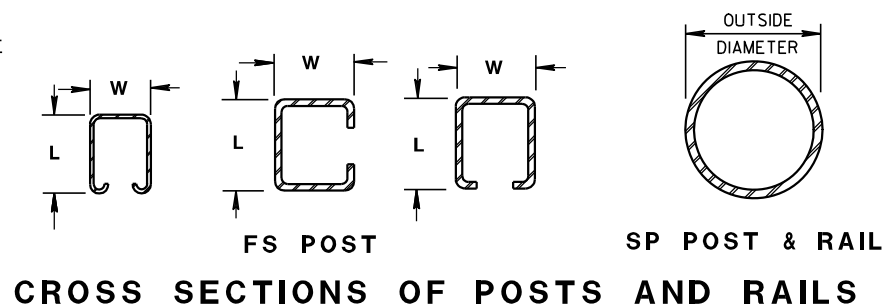
FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.



SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR FORMED STEEL FENCE POST

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2+	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR ROUND STEEL FENCE POST

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

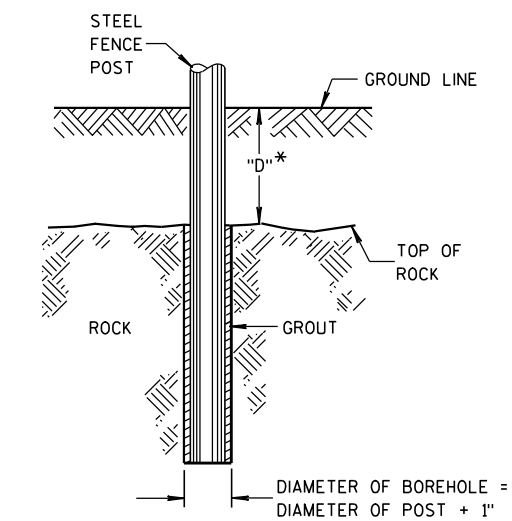
BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND
INTERMEDIATE BRACED POSTS

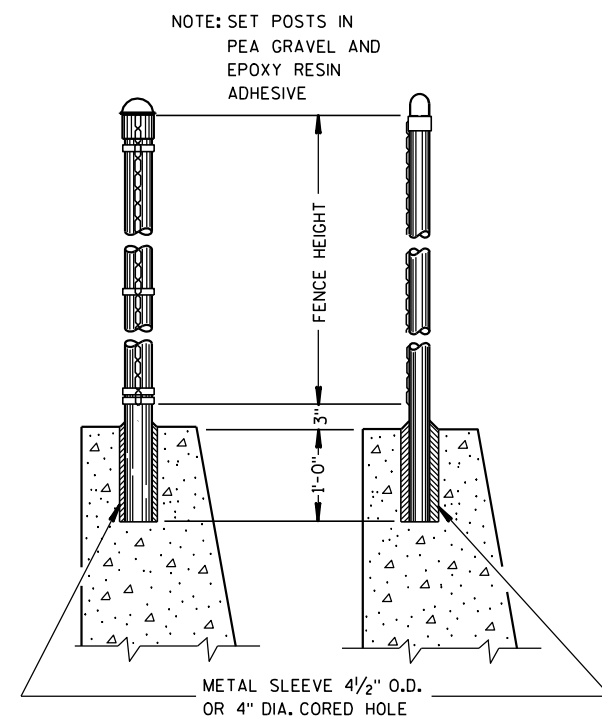
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



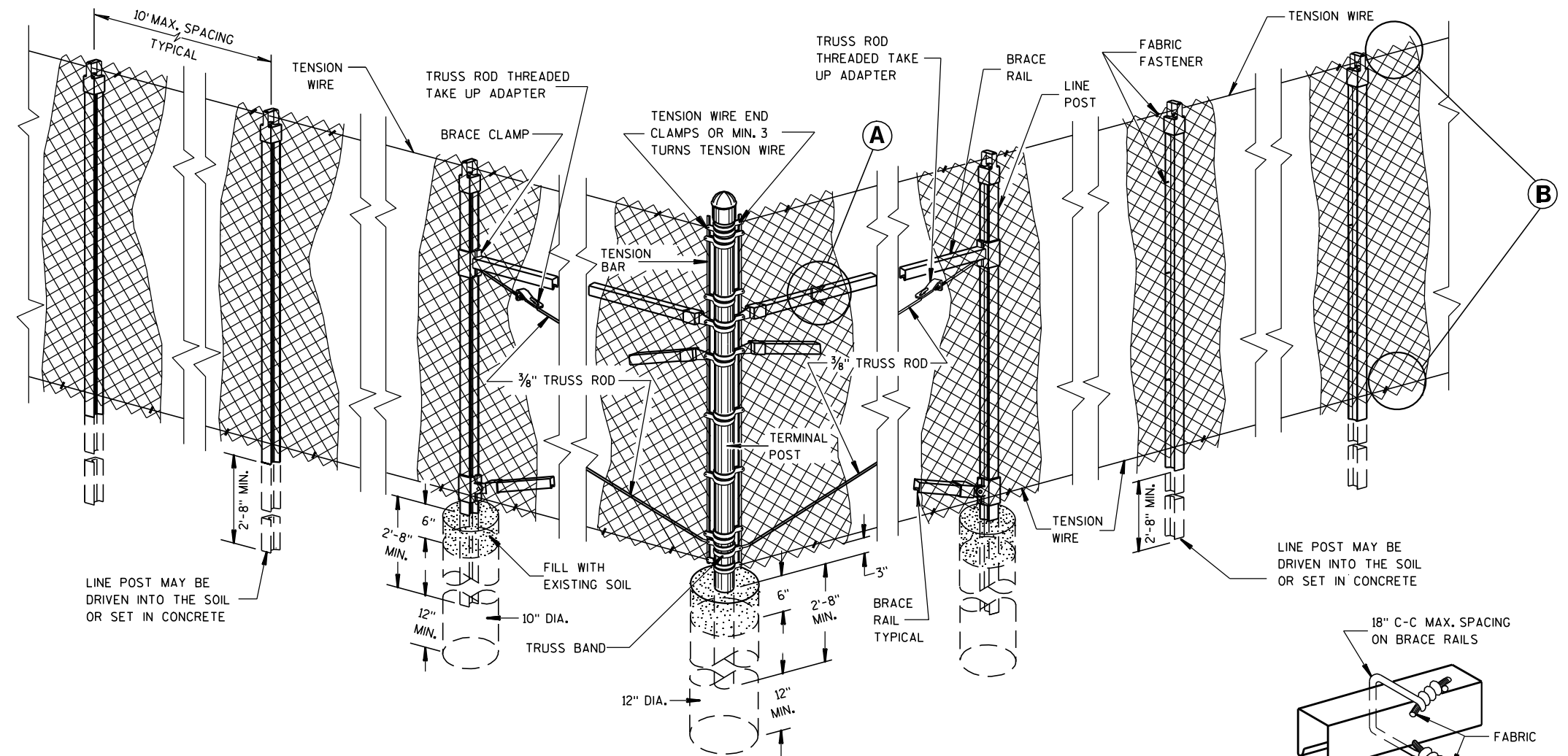
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

**ROCK INSTALLATION
OF LINE POST**

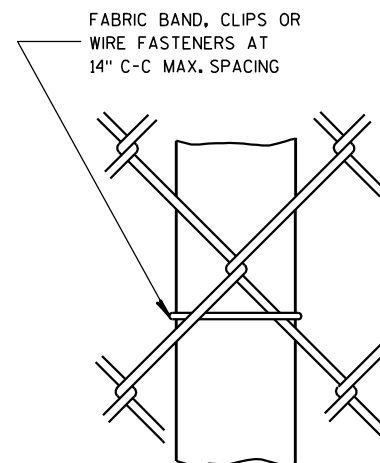


END POST & CORNER POST LINE POST

DETAILS OF FENCE ON WALL

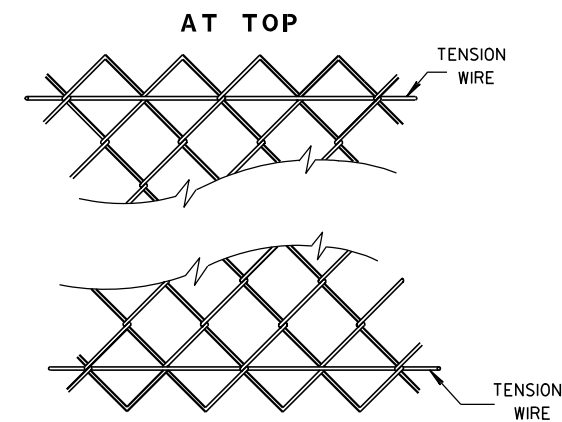


END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS

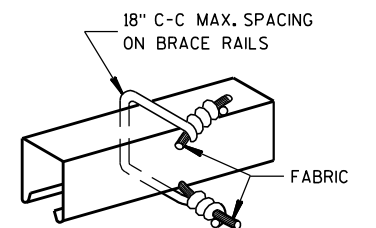


LINE POST

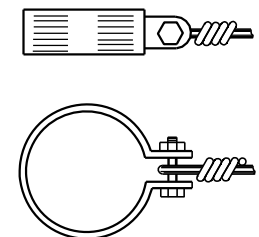
FABRIC FASTENER



AT BOTTOM SELVAGES

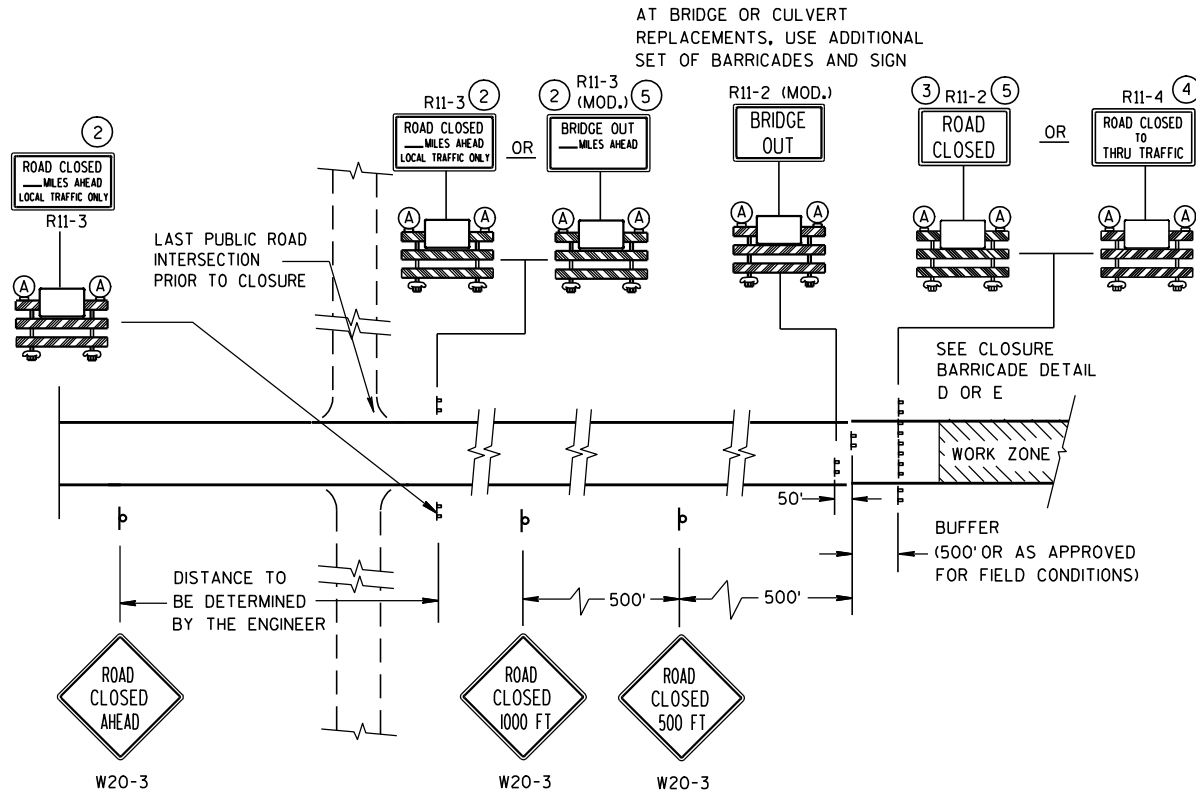
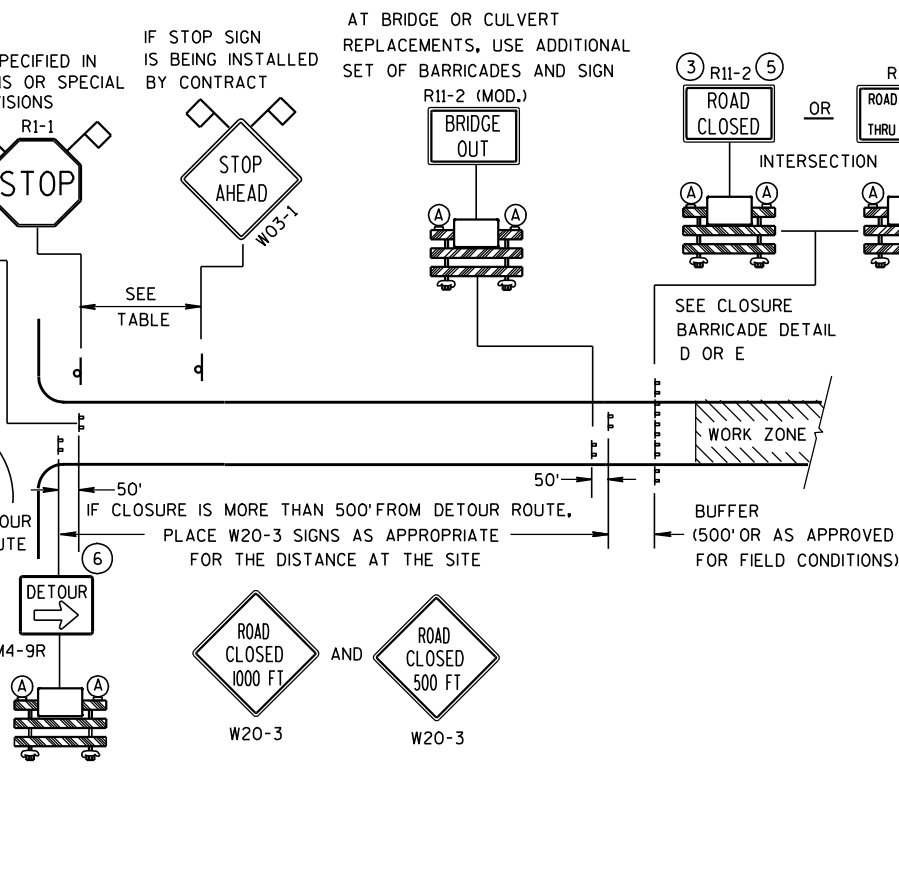
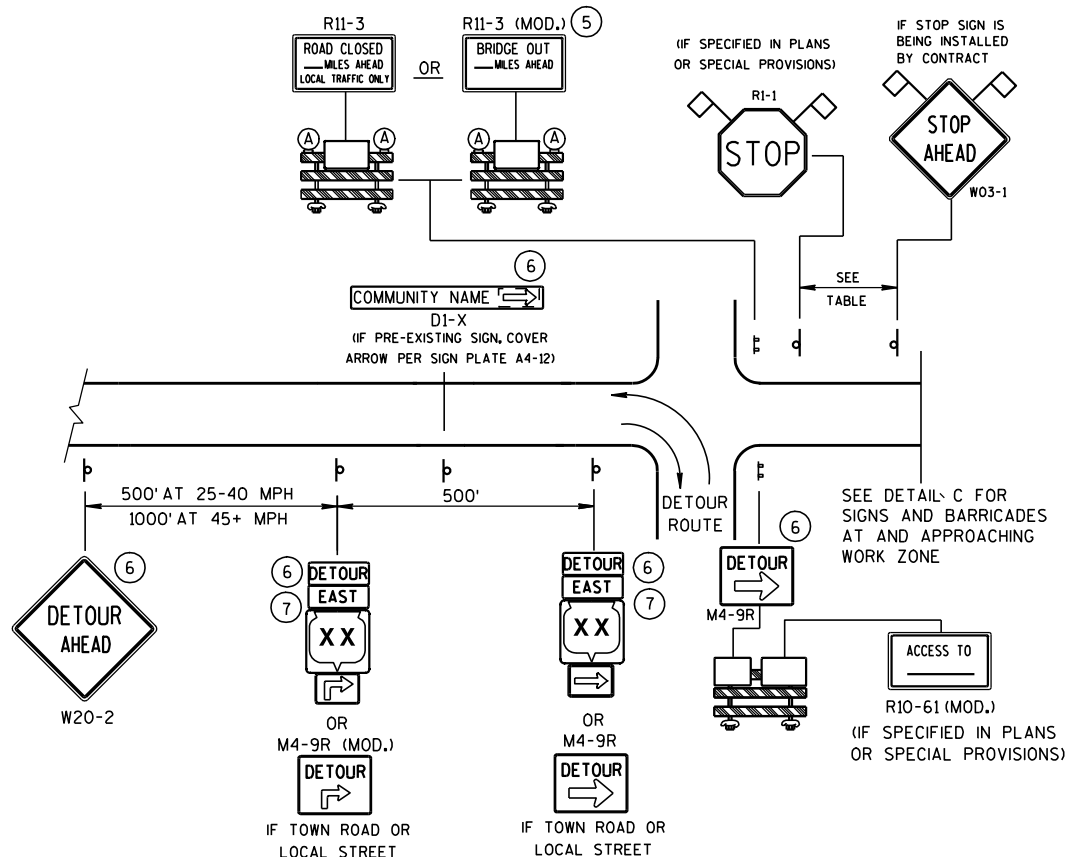


BRACE RAIL
FABRIC FASTENER
A



TENSION WIRE END CLAMP

FENCE CHAIN LINK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>3/19/2010</u> DATE	<u>/S/ Jerry H. Zogg</u> ROADWAY STANDARDS DEVELOPMENT ENGINEER



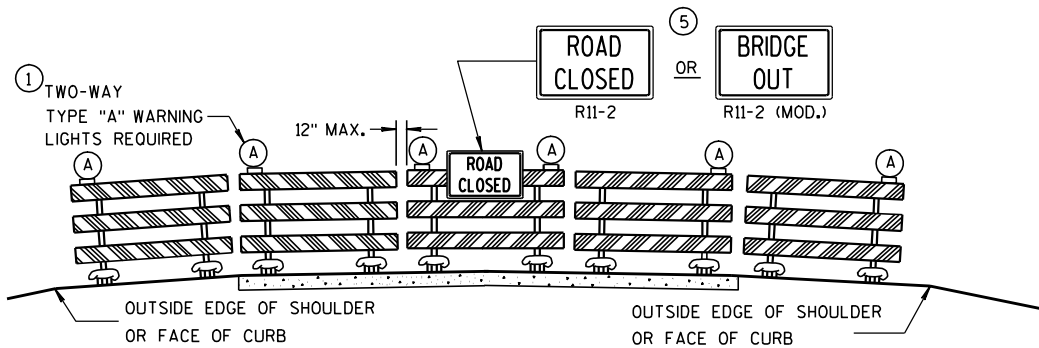
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

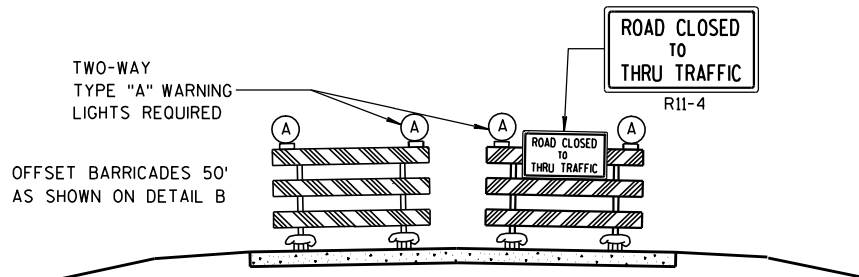
- LEGEND**
- POST MOUNTED SIGN
 - TYPE III BARRICADES
 - TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
 - WORK ZONE
 - DETOUR EAST M4-8 M3-X
 - MI-4 OR MI-5A OR MI-6
 - MO5-1 OR MO6-1
 - FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

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

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES

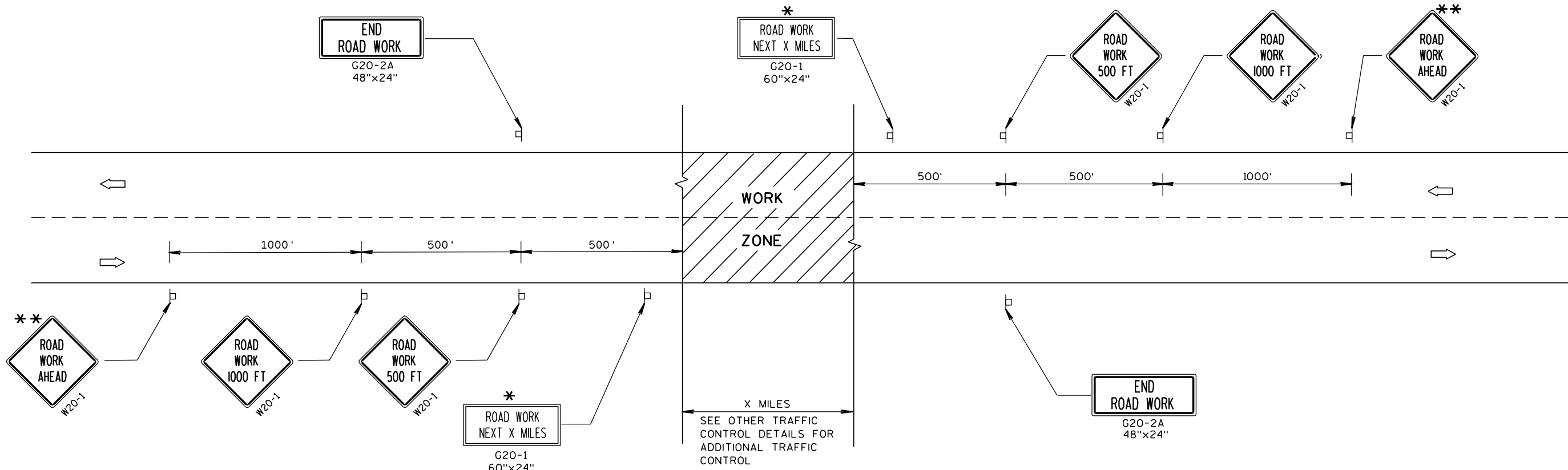
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03
DATE

/S/ Thomas N. Notbohm
CHIEF SIGNS AND MARKING ENGINEER

FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

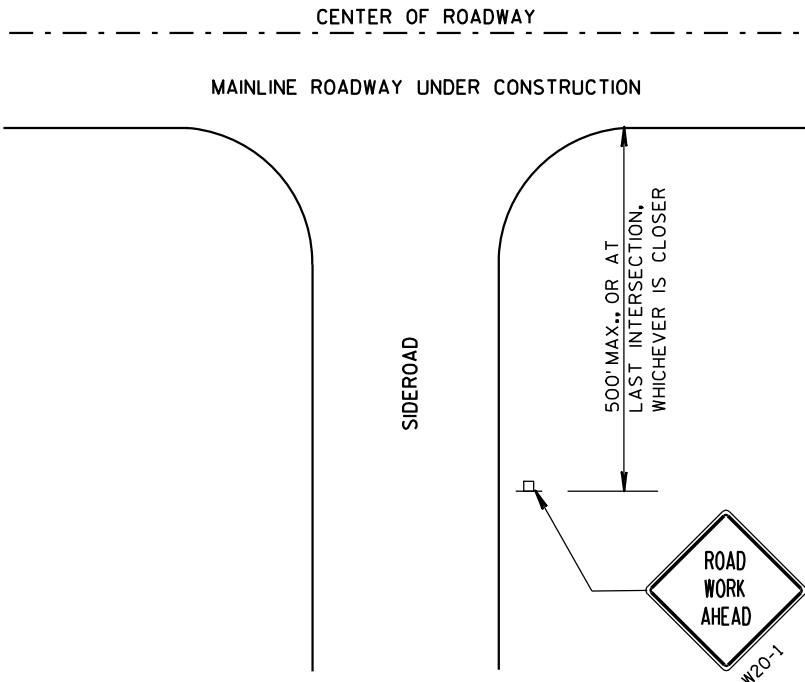
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA OR SIGNING.



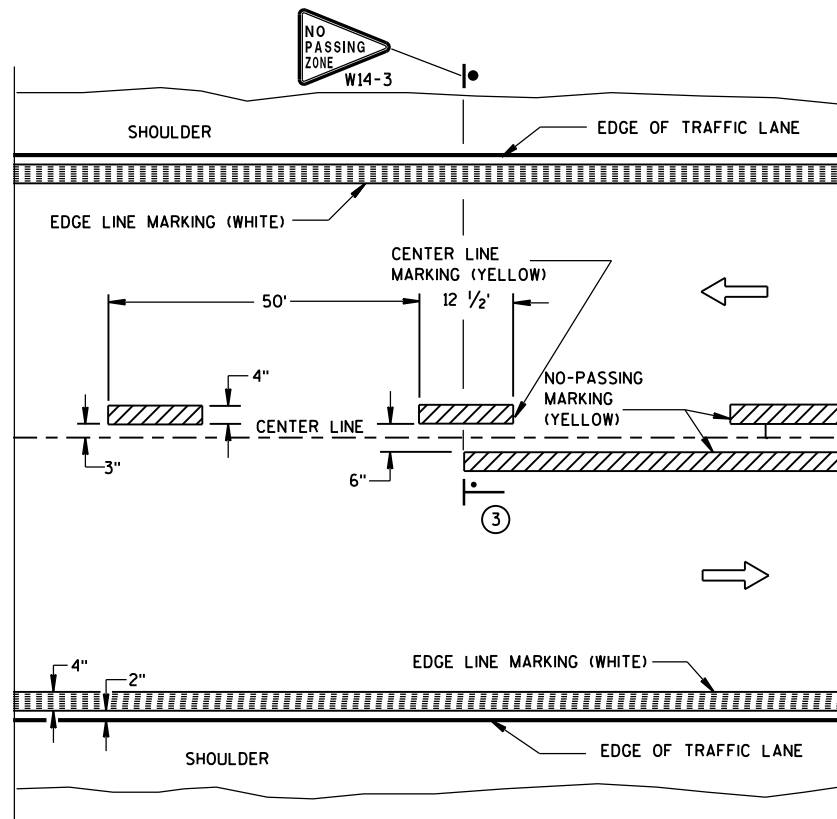
LEGEND

- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

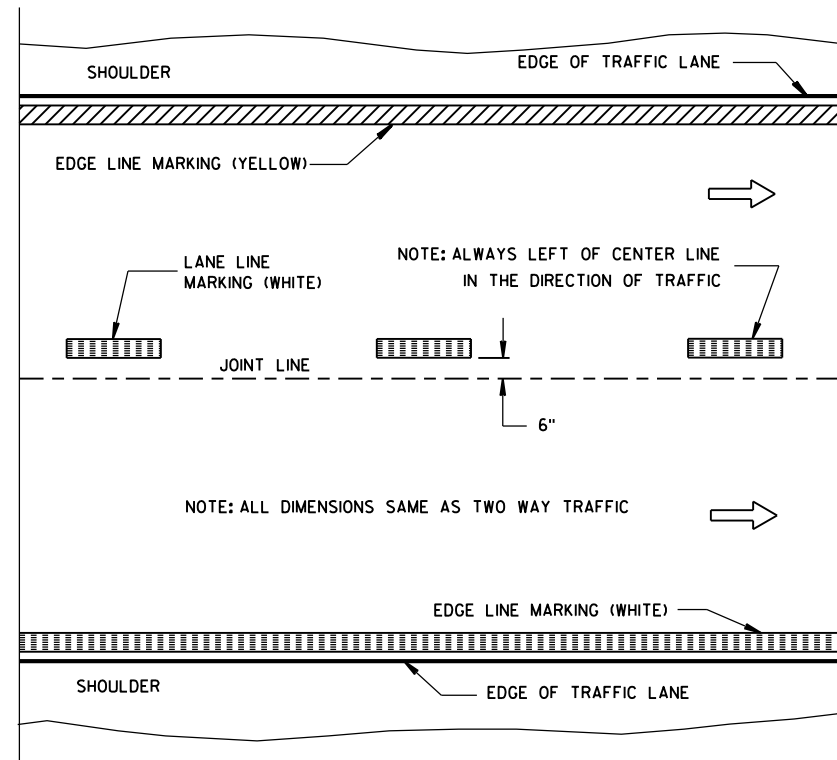
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. Spang
DATE CHIEF SIGNS AND MARKING ENGINEER
FHWA

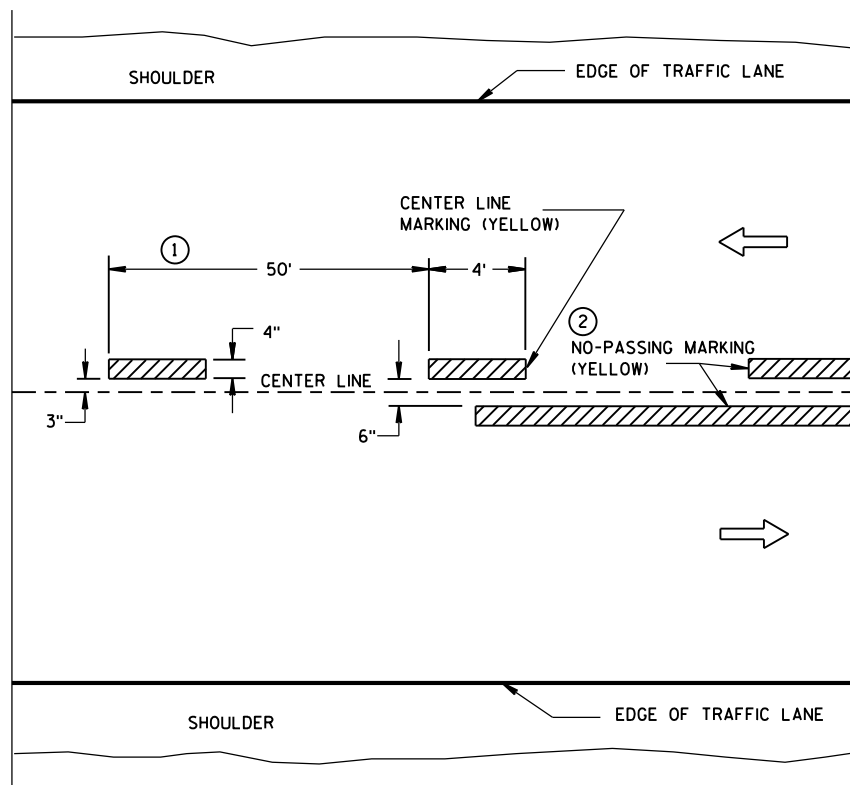


TWO WAY TRAFFIC

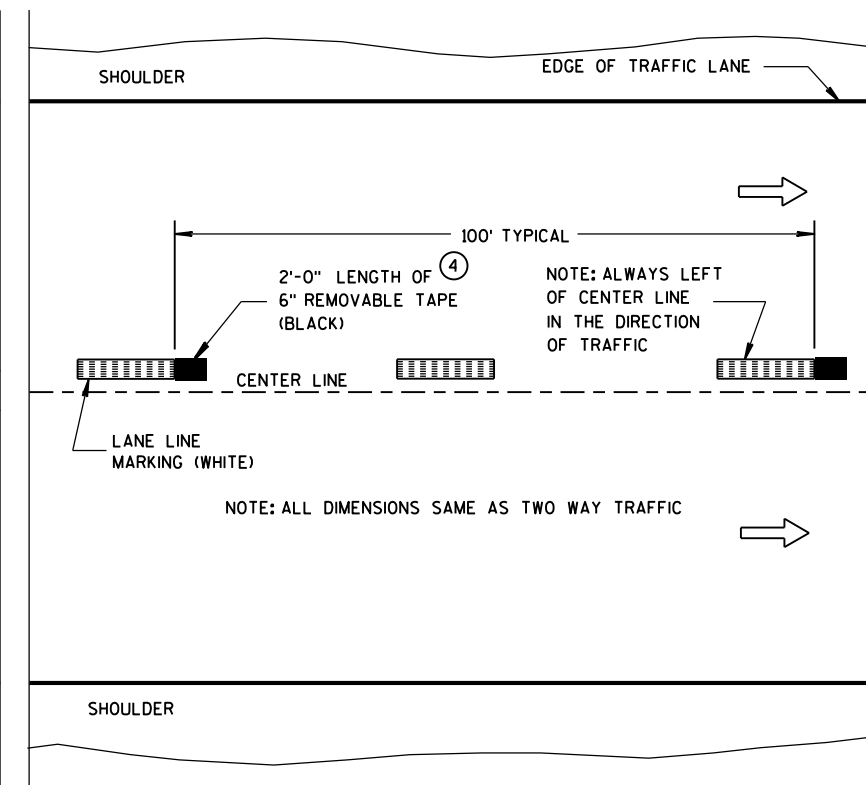


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

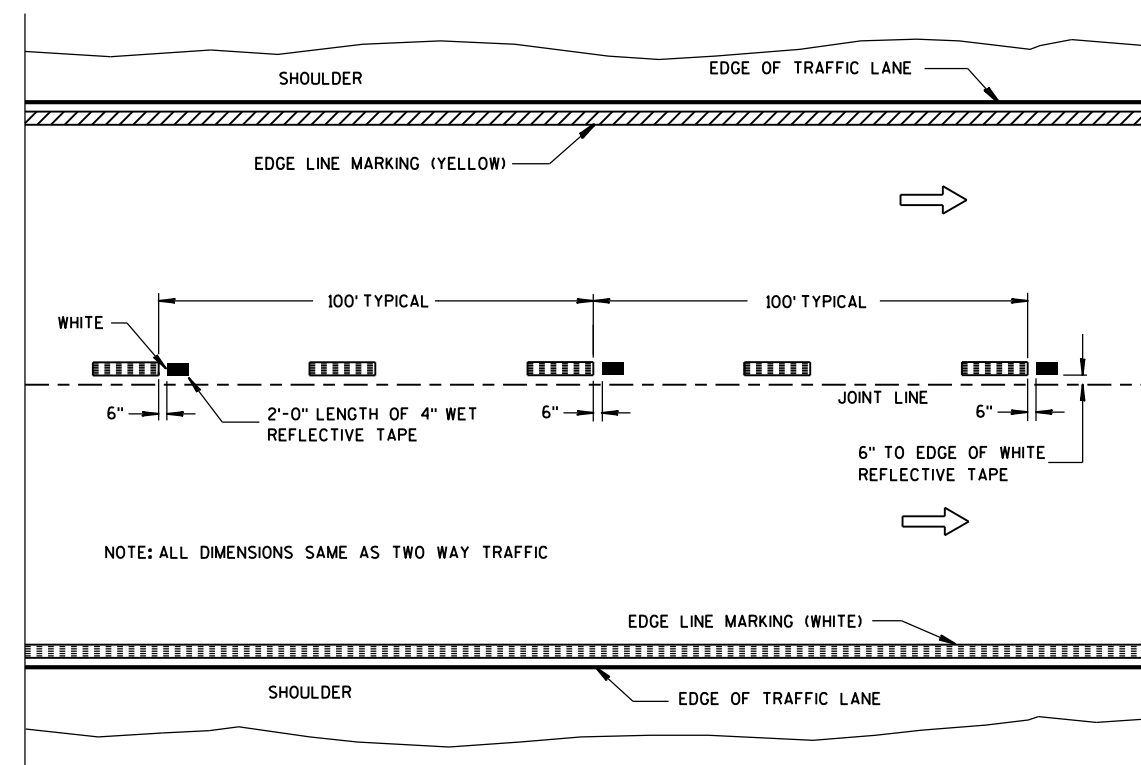
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

LEGEND

- "T" MARKING
- POST MOUNTED SIGN


PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION


APPROVED
10-1-2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

TWO-LANE ROADWAY


SYMBOLS



WORK AREA



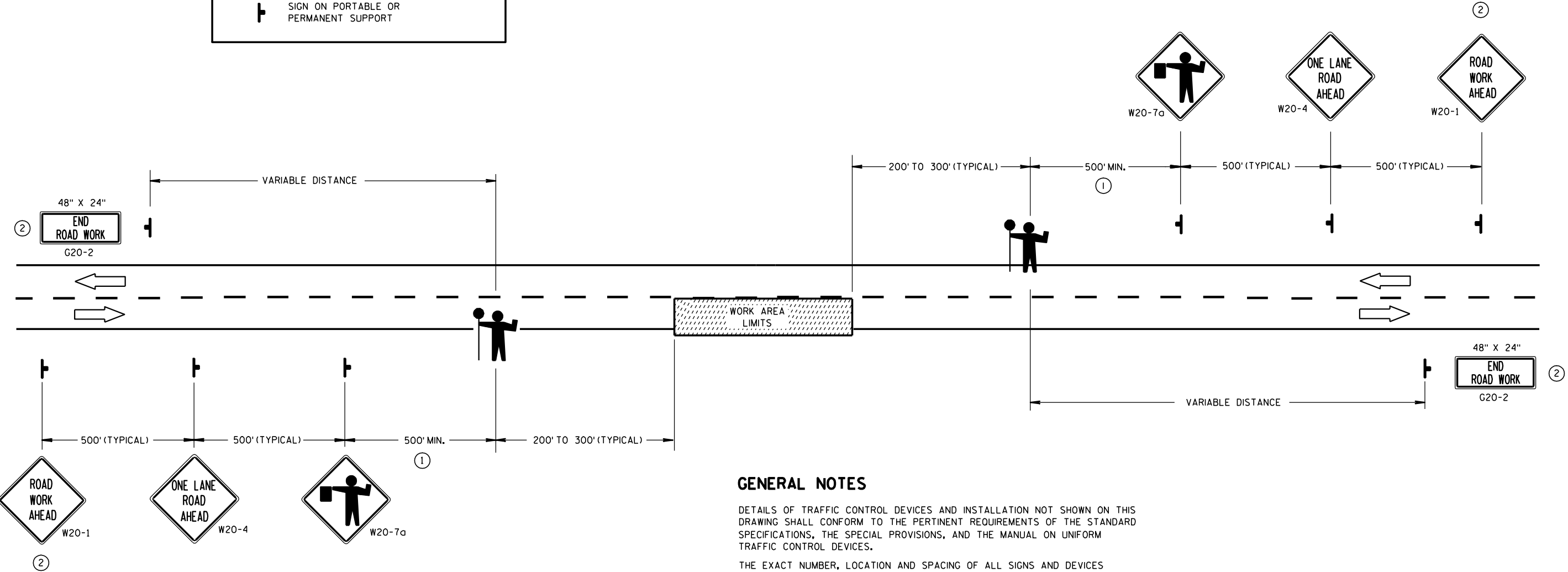
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



SIGN ON PORTABLE OR PERMANENT SUPPORT



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



GENERAL NOTES

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

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

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

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

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

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

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/5/06 /S/ Thomas N. Notbohm
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

GENERAL NOTES

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

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

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

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

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

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

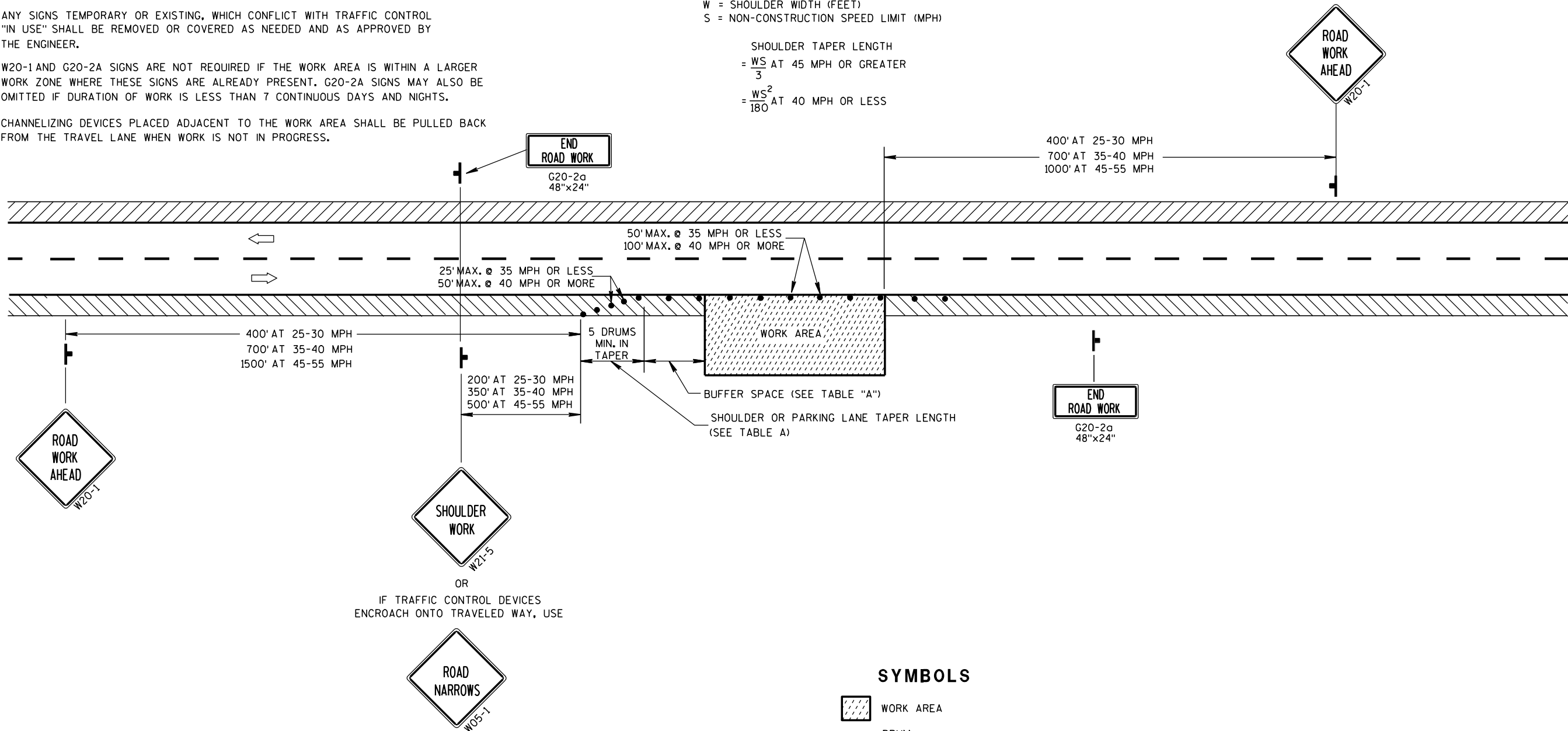
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

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

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

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



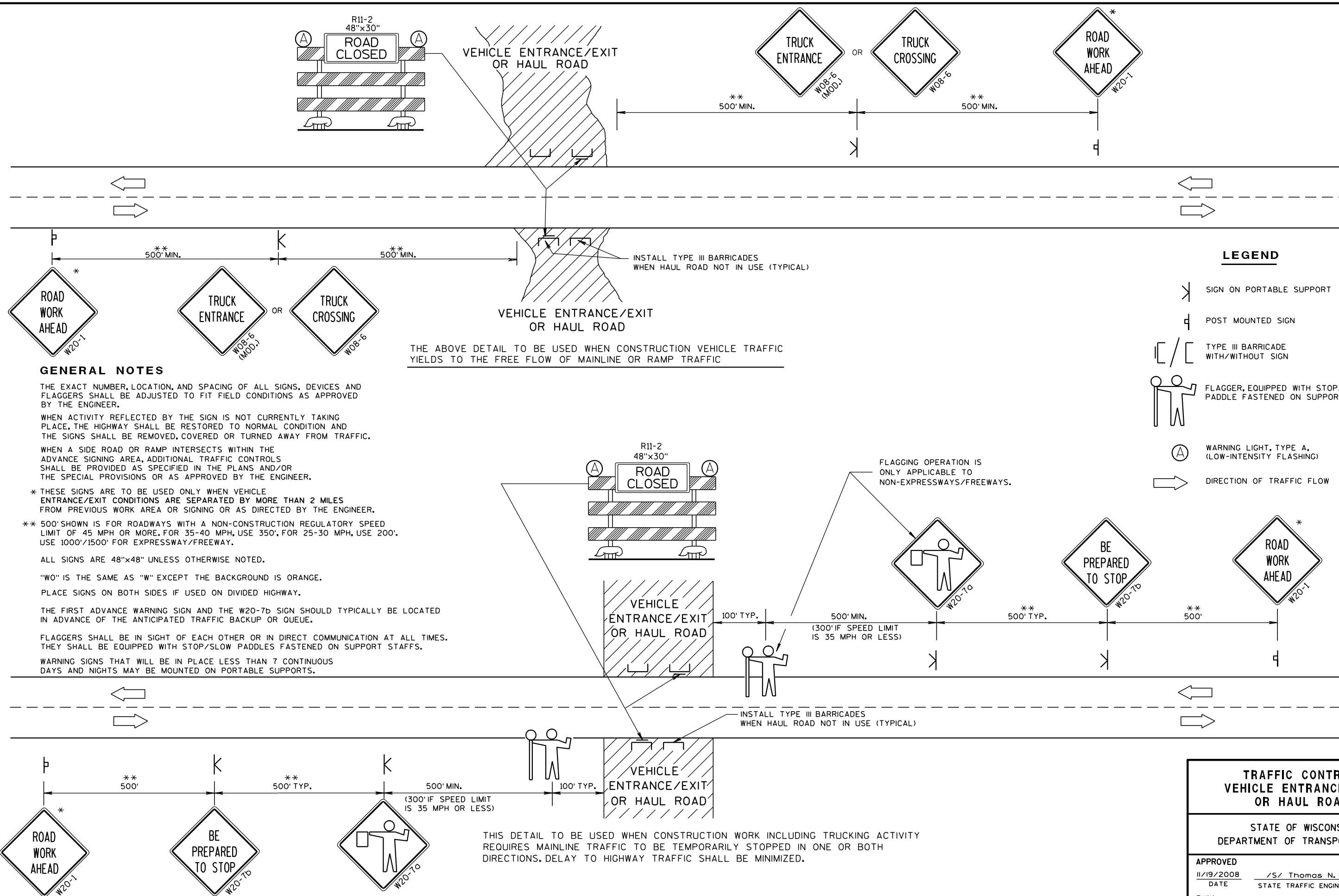
SYMBOLS

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

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

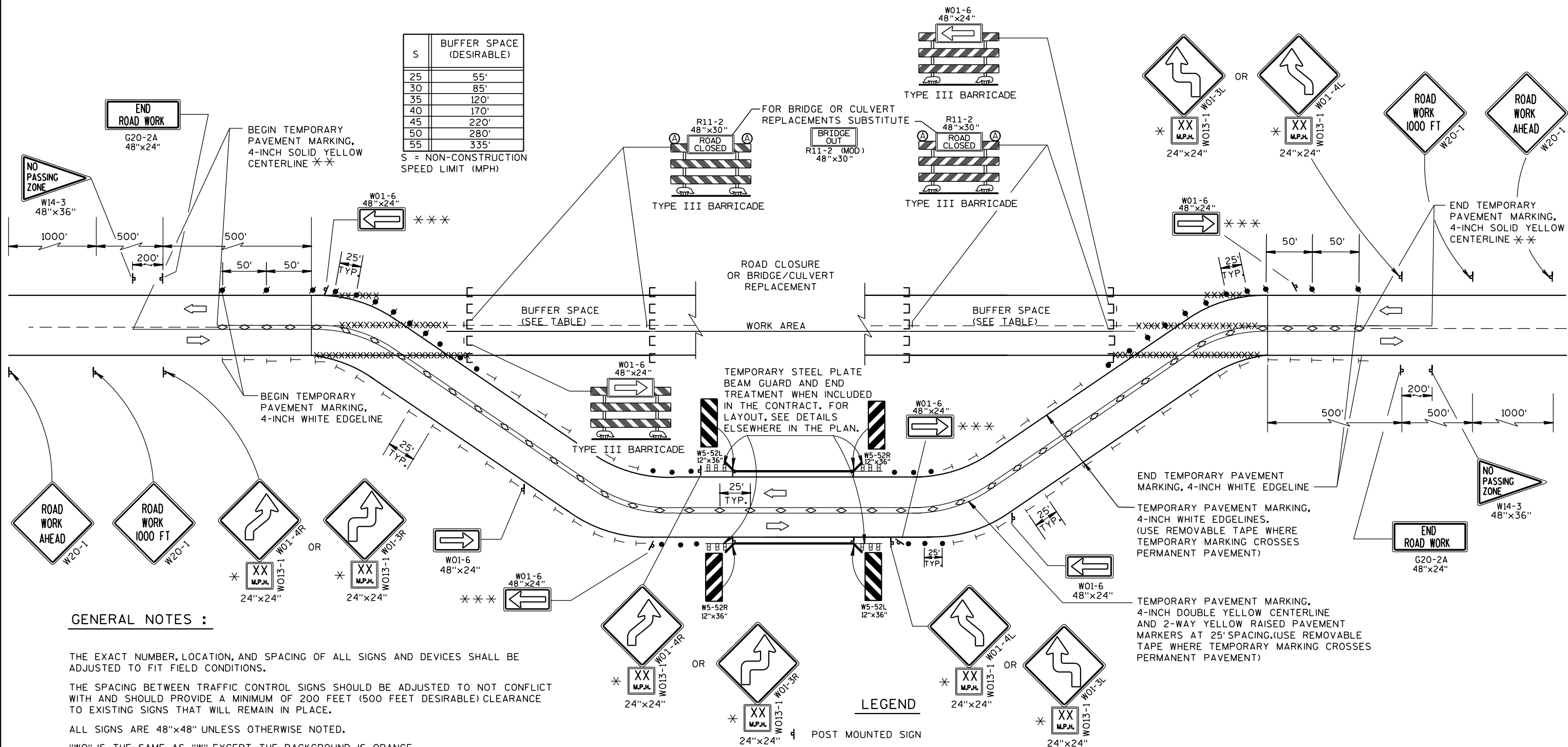
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. Spang
DATE CHIEF SIGNS AND MARKING ENGINEER
FHWA



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

S = NON-CONSTRUCTION
SPEED LIMIT (MPH)



GENERAL NOTES :

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

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

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

LEGEND

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

TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/2000

DATE

FHWA

/S/ Chester J. Spang
CHIEF SIGNS AND MARKING ENGINEER

LEGEND

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

GENERAL NOTES :

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

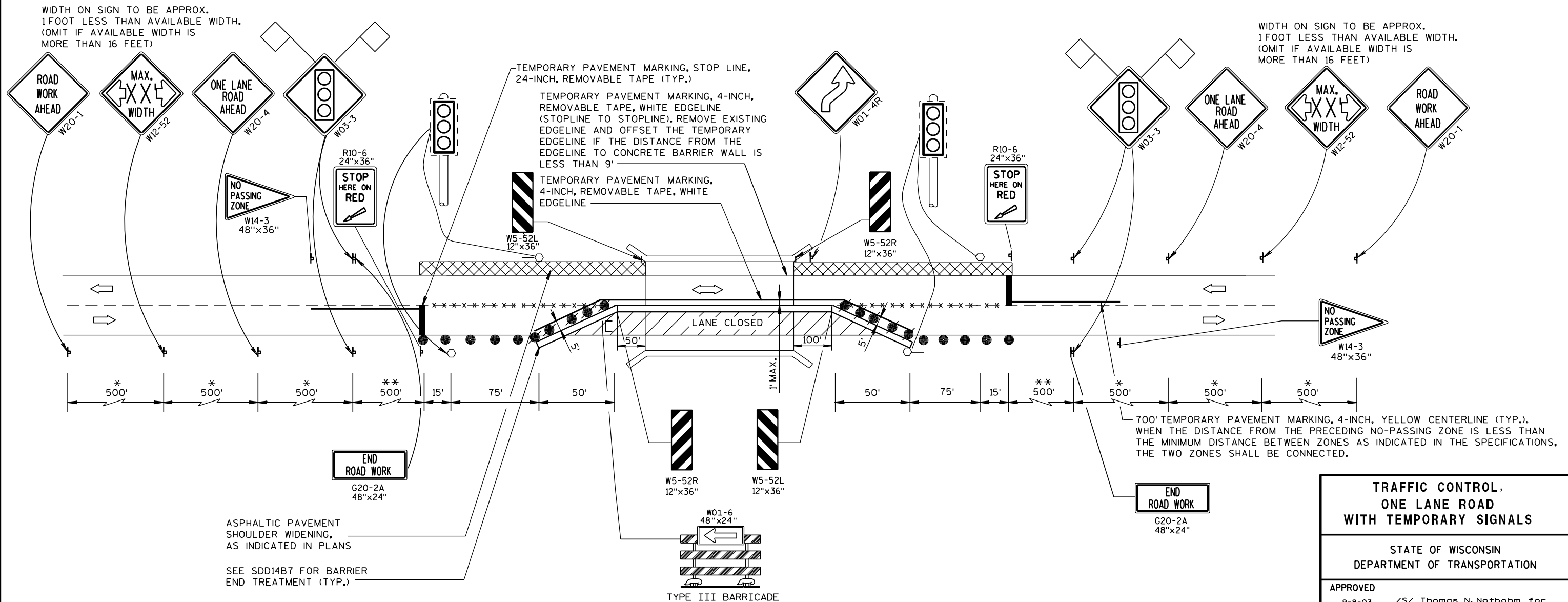
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

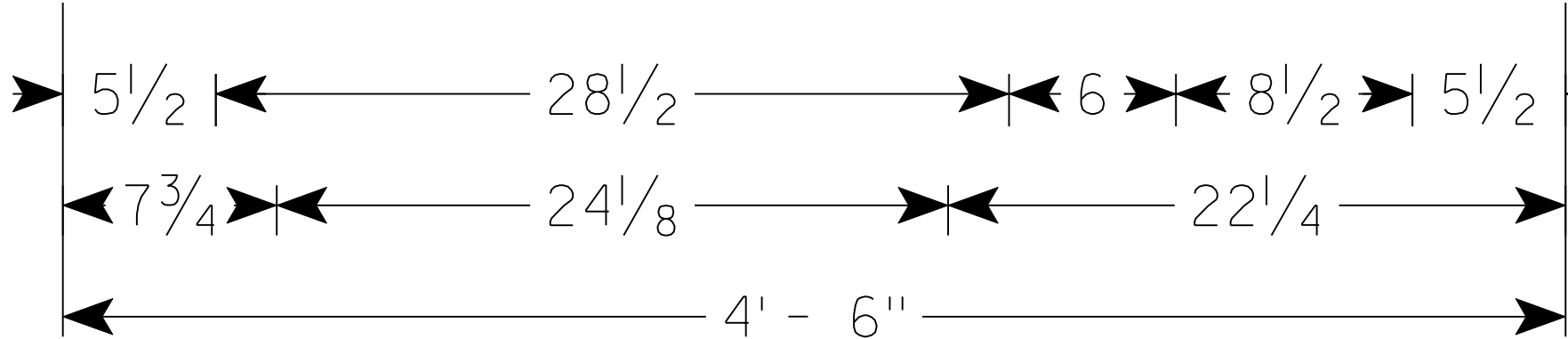
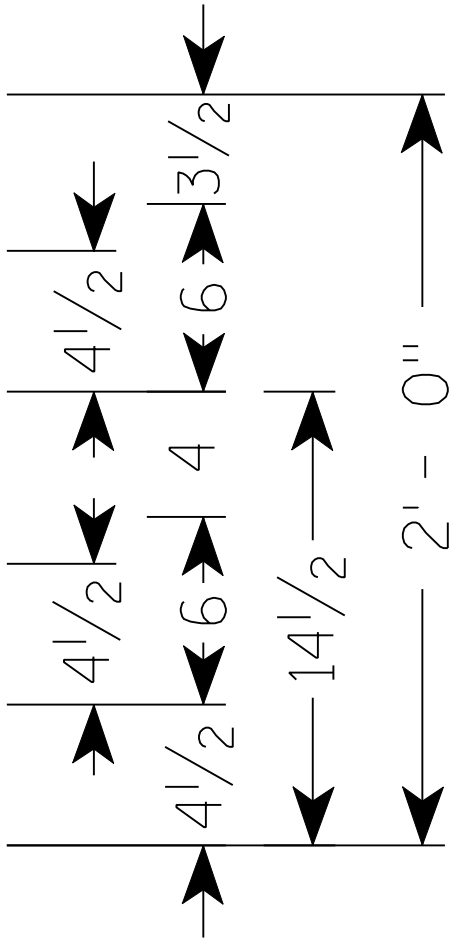
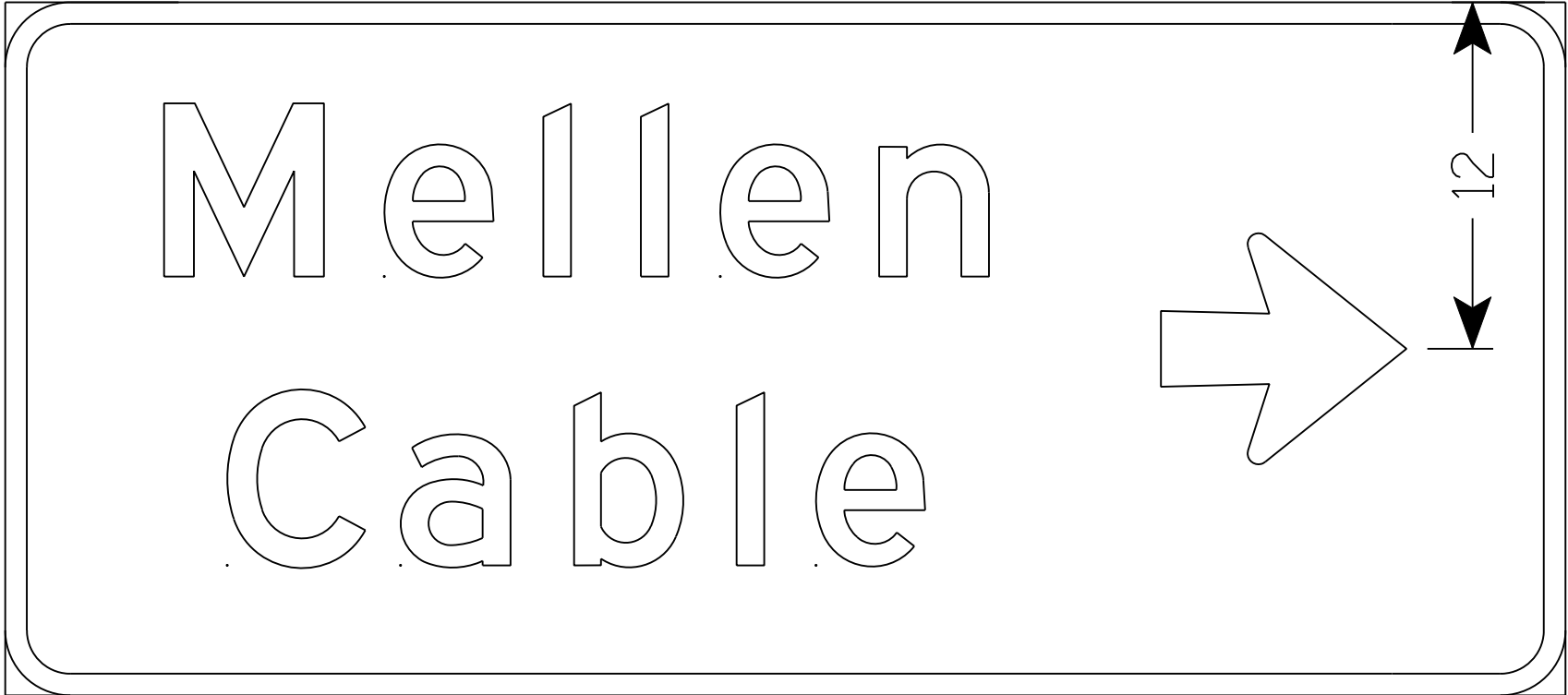
PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

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

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



7

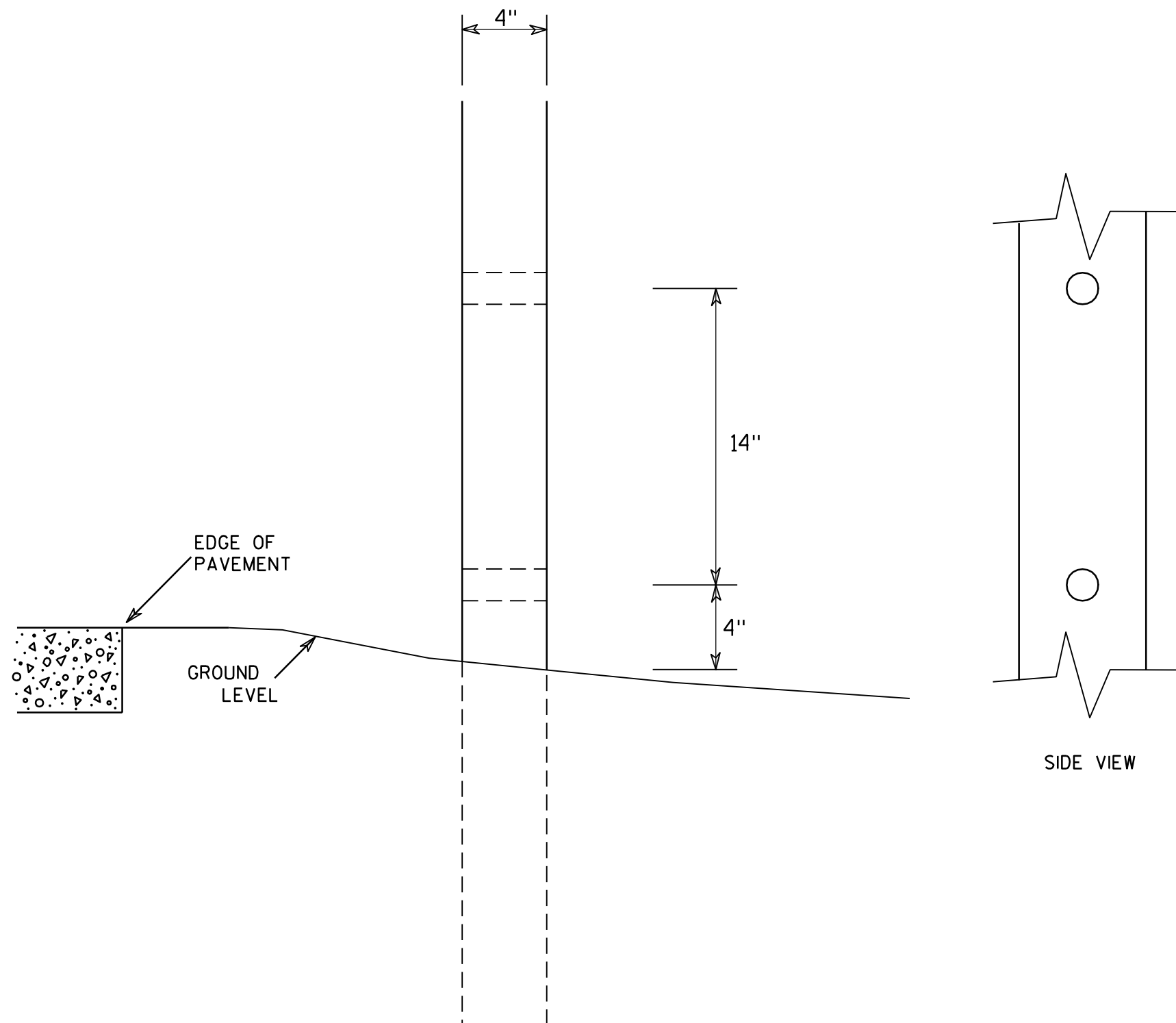


3/4" Border
2 1/4" Radius

D1-2

7

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

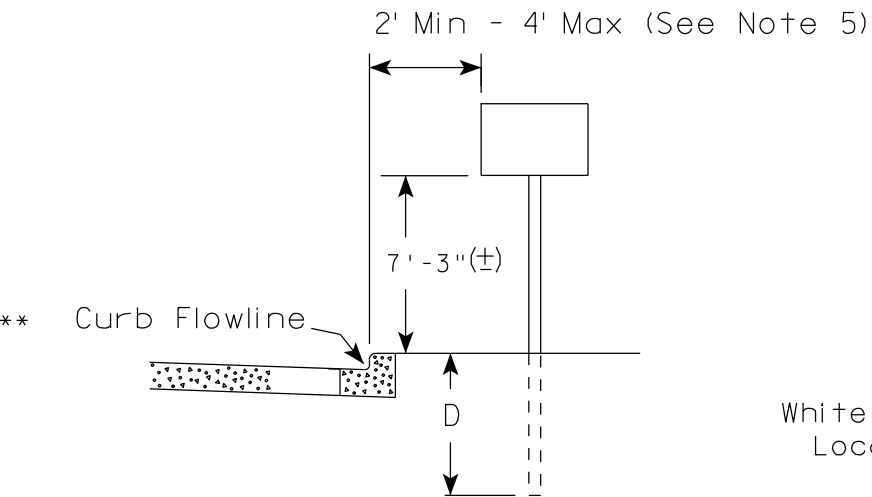
HWY:

COUNTY:

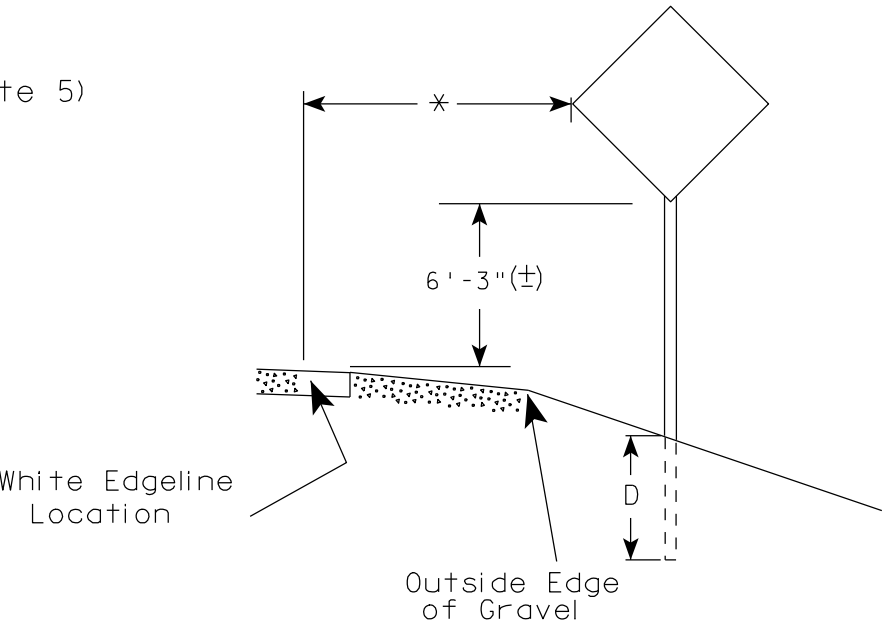
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

* 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.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

GENERAL NOTES

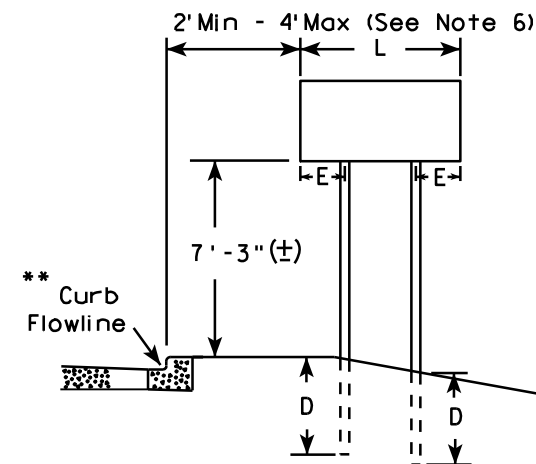
- For multiple post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.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

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

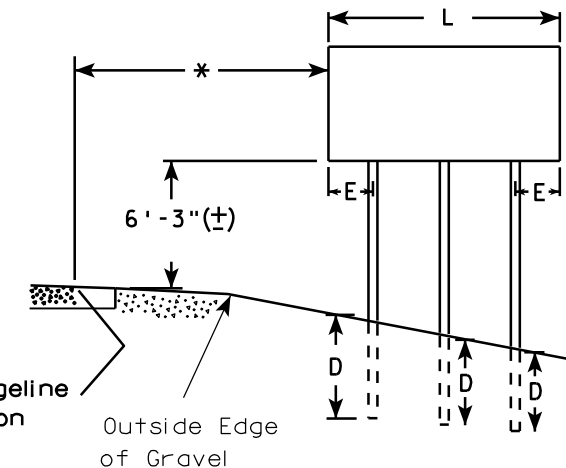
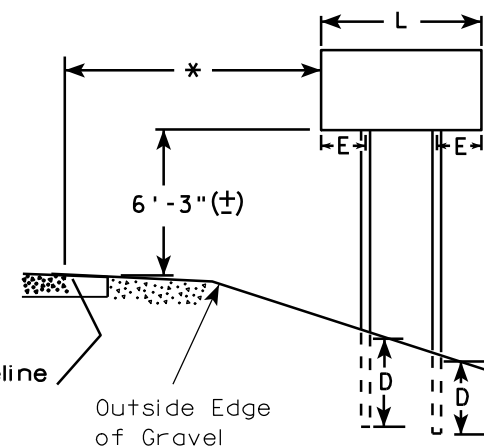
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

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

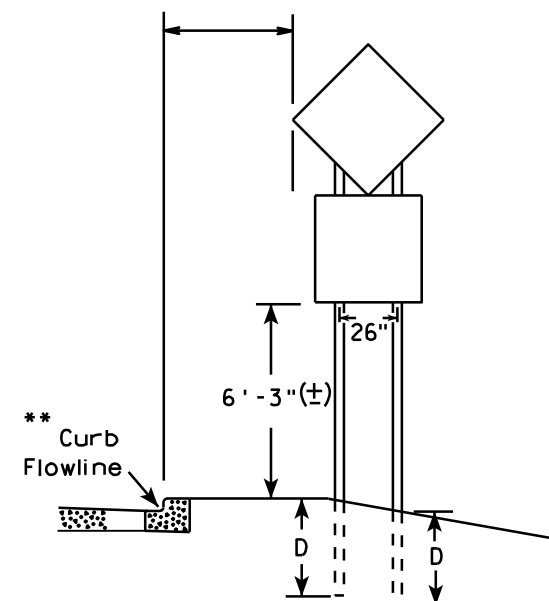
URBAN AREA



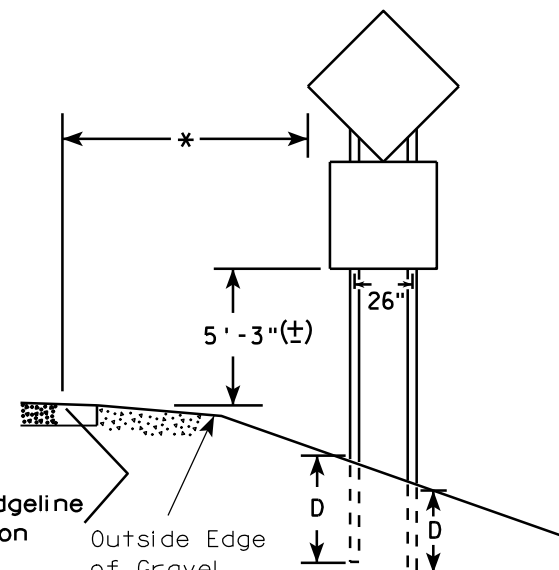
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 9/21/2011 PLATE NO. A4-4.11

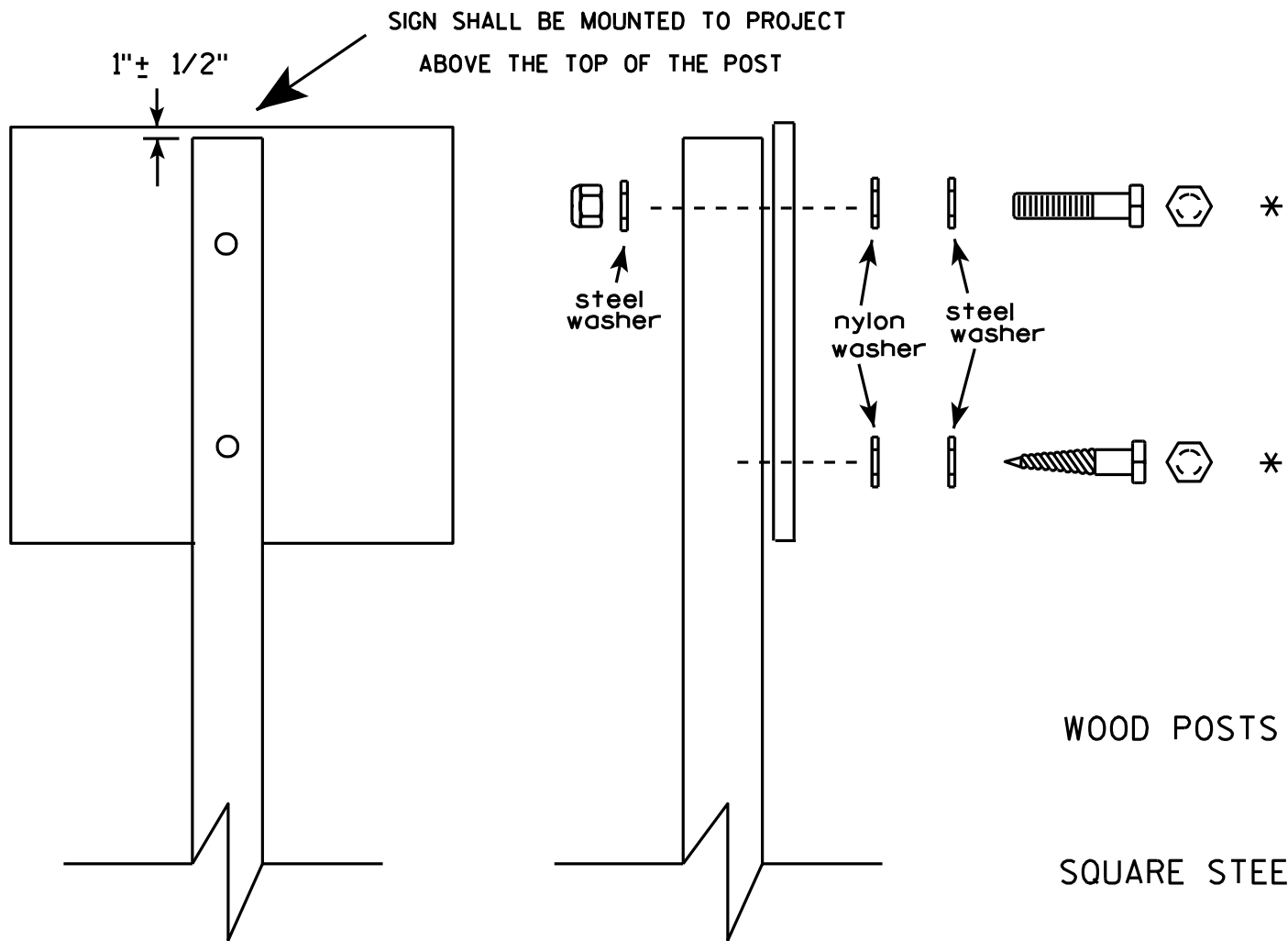
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

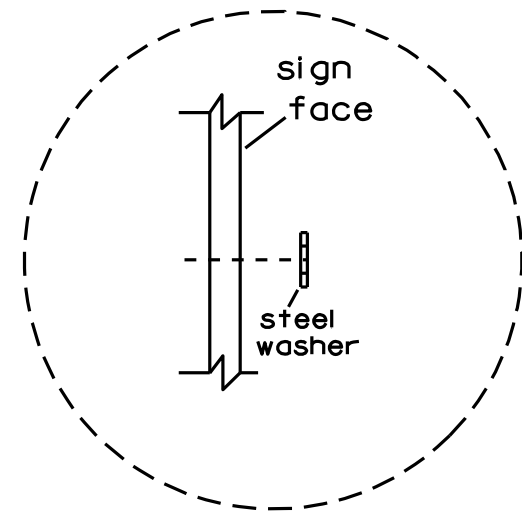


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

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



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

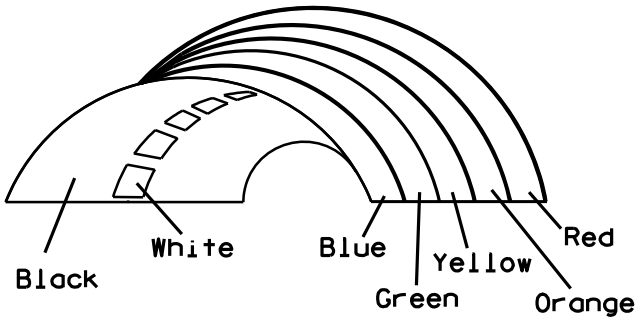
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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



* VARIES

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
Line 1 - Red
Line 2 - Black
Line 3-5 - Blue
6. Line 1 - Dutch 8011L
Line 2 - Series E
Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

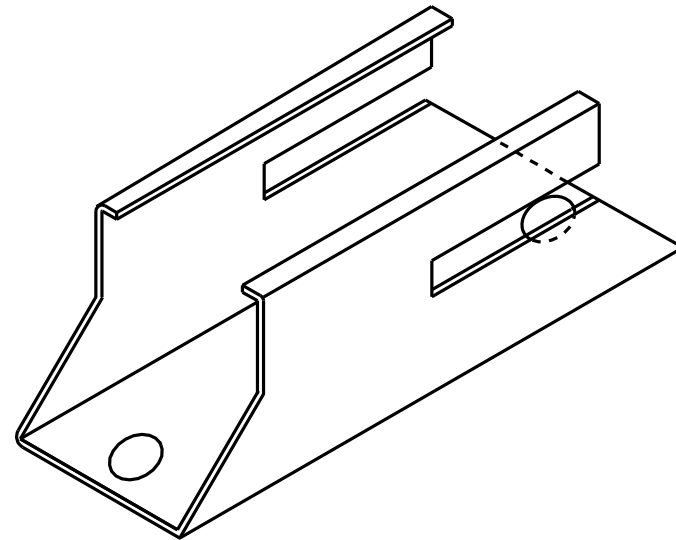
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

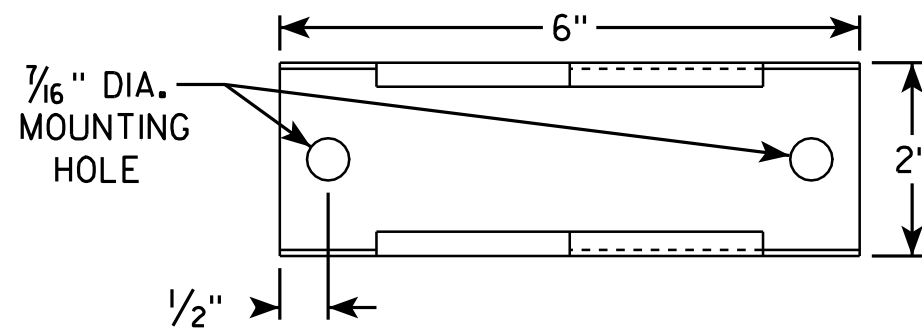
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/27/11 PLATE NO. I55-56.3

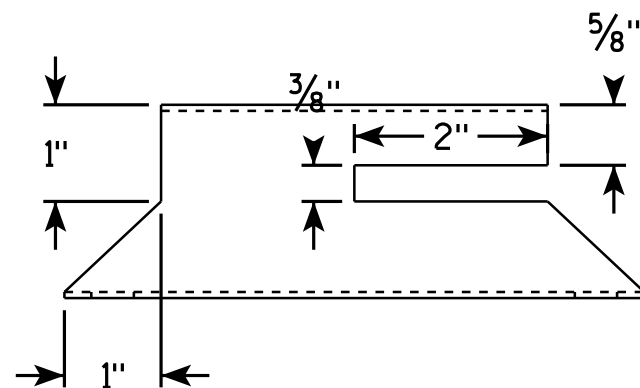
ISOMETRIC VIEW



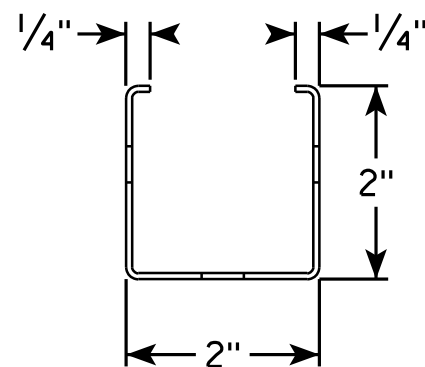
TOP VIEW



SIDE VIEW



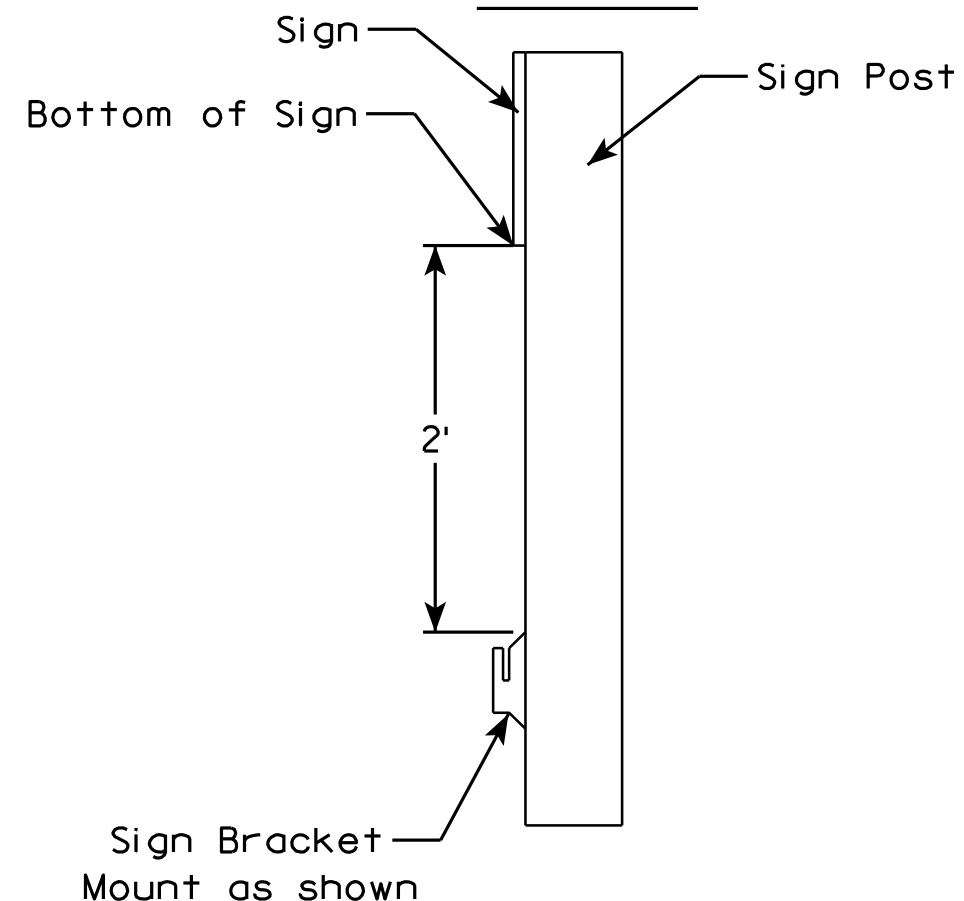
END VIEW



NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW



ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

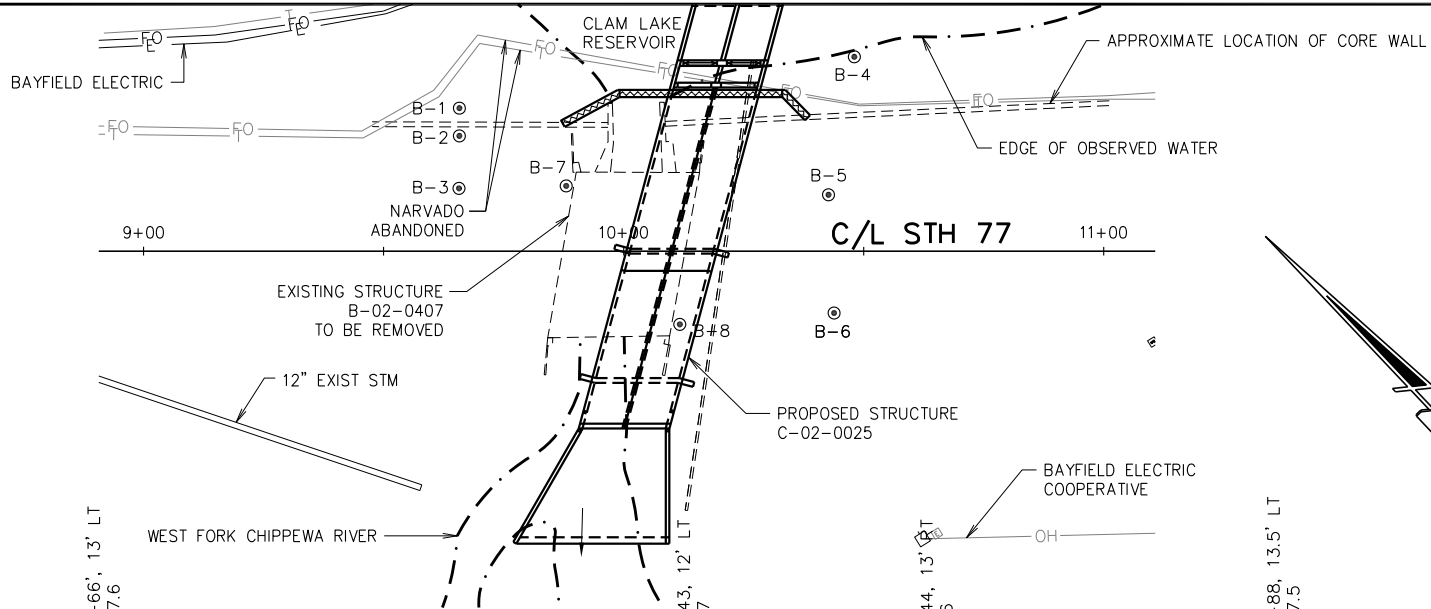
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

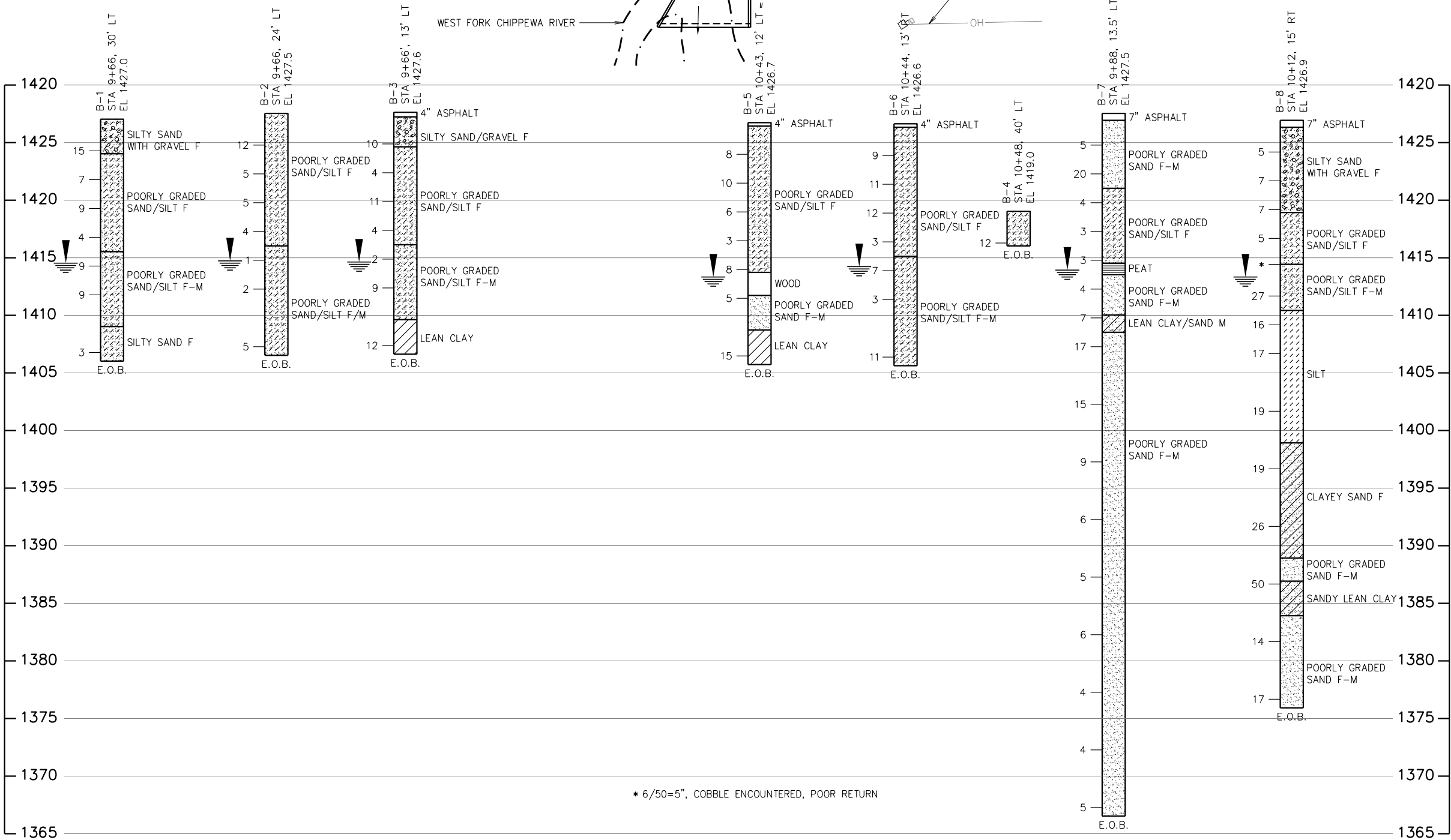
E



BORINGS TAKEN BY:
CHOSEN VALLEY TESTING, INC

WISCONSIN OFFICE
135 BUCKNER PLACE
LA CROSSE, WI 54603
(608) 782-5505

MINNESOTA OFFICE
1410 7TH STREET NW
ROCHESTER, MN 55901
(507) 281-0968
9-24-2009



* 6/50=5", COBBLE ENCOUNTERED, POOR RETURN

STATE PROJECT NO.

8530-13-71

ABBREVIATIONS

F---FINE M---MEDIUM C---COARSE
WS---WEATHERED SO---SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF BORING

95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.
PROBING NO. STA. ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING

UNCONFINED STRENGTH 7.7 *
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
BORING NO. STA. & OFFSET
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO. DATE REVISION BY

Cedar corporation
604 Wilson Avenue
Menomonie, Wisconsin 54751
715-235-9081
800-472-7372
engineers • architects • planners • environmental specialists
land surveyors • landscape architects • building inspectors
FAX 715-235-2727
www.cedarcorp.com

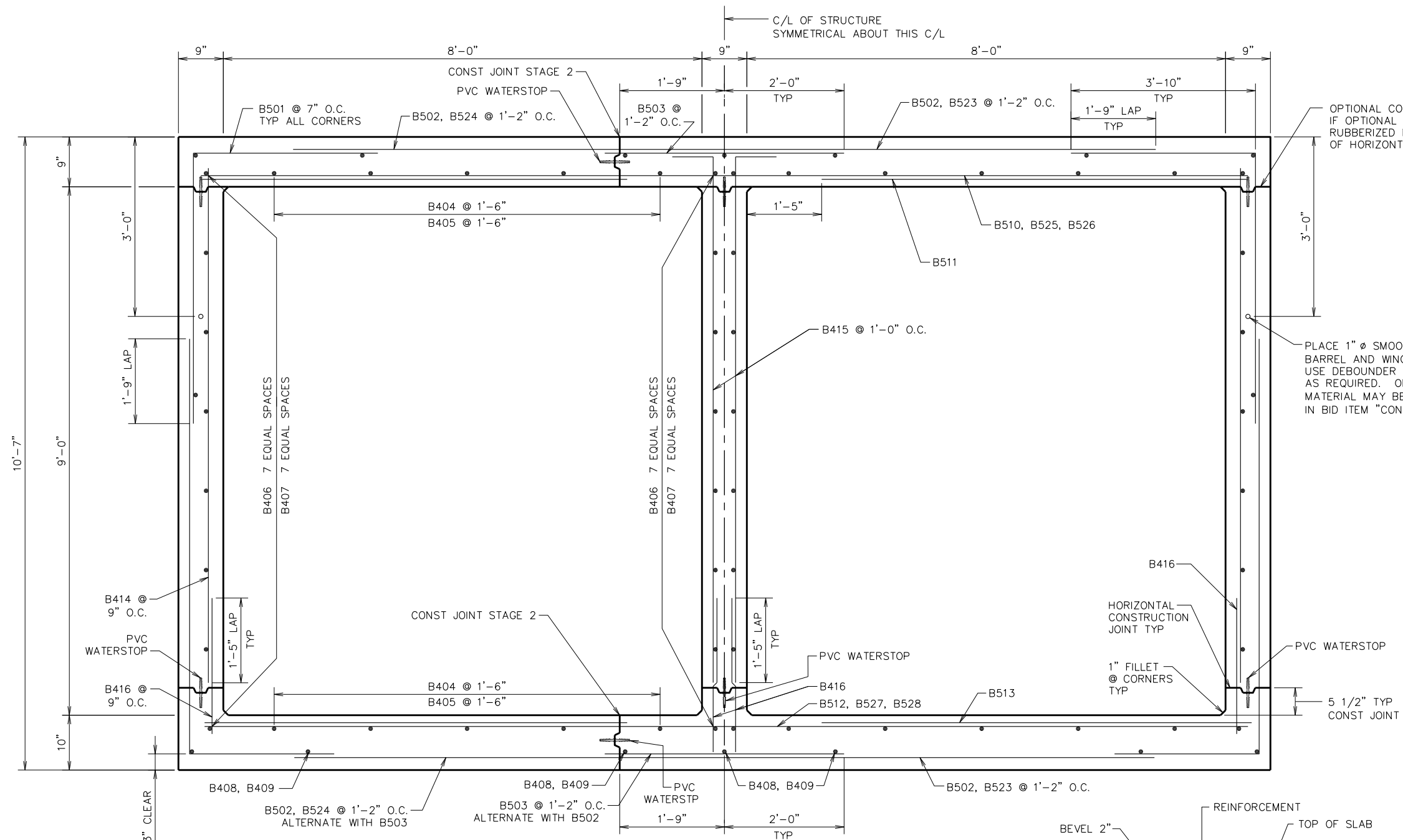
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-02-0025

CONST. SPEC. 2013 DRAWN BY PKF PLANS CHECKED TLP

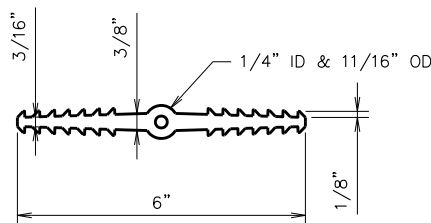
SUBSURFACE EXPLORATION

SHEET 2 of 10



OPTIONAL CONSTRUCTION JOINT. OMIT 1" FILLET IF OPTIONAL CONSTRUCTION JOINT IS USED, PROVIDE RUBBERIZED MEMBRANE WATERPROOFING FULL LENGTH OF HORIZONTAL JOINT.

PLACE 1" Ø SMOOTH ROUND BAR, 2'-6" LONG, BETWEEN BARREL AND WINGS. EMBED 1'-3" INTO BARREL WALL. USE DEBOUNDER ON EXTENSION INTO WING WALL. BEND AS REQUIRED. ONE BAR FOR EACH WINGWALL. ASTM A36 MATERIAL MAY BE SUBSTITUTED FOR AASHTO M31. INCLUDE IN BID ITEM "CONCRETE MASONRY CULVERTS".

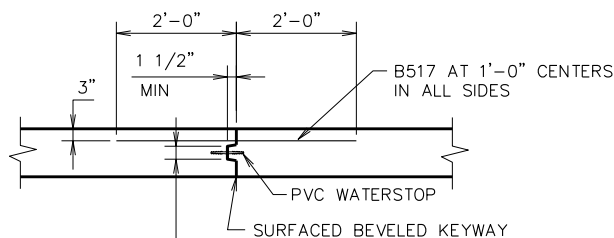


PVC WATERSTOP DETAIL

PROVIDE PVC WATERSTOP AT ALL CONSTRUCTION JOINTS

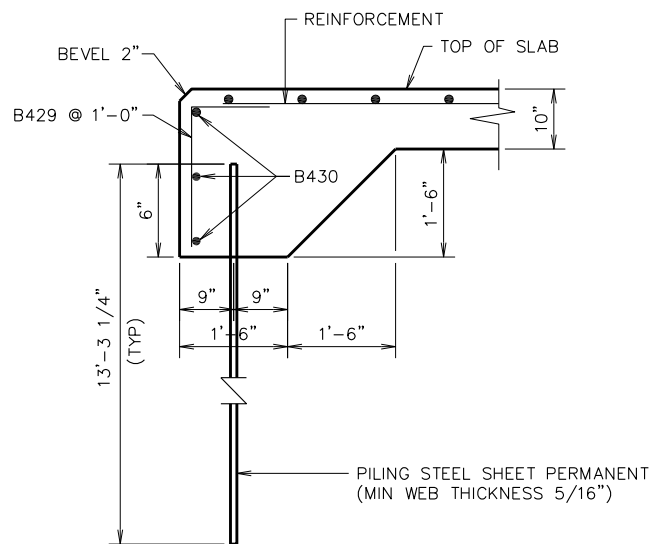
TYPICAL SECTION THRU BOX

(LOOKING UPSTREAM)

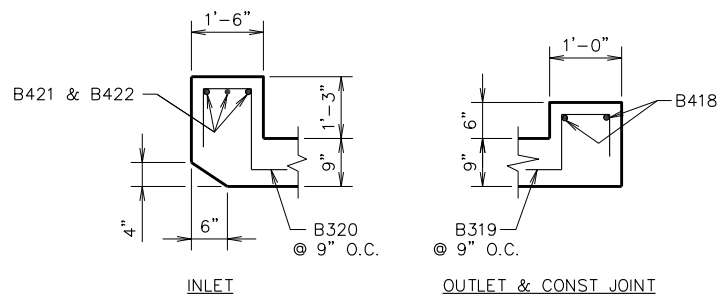


CONSTRUCTION JOINT

▲ IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAWCUTS WITHIN 12 HOURS AFTER POURING.



BOX INLET



HEADER DETAILS

BEVEL TO EXTEND BETWEEN INSIDE FACE OF BOX WALLS

NO.	DATE	REVISION	BY
Cedar corporation 604 Wilson Avenue Menomonie, Wisconsin 54751 715-235-9081 800-472-7372 engineers • architects • planners • environmental specialists land surveyors • landscape architects • building inspectors FAX 715-235-2727 www.cedarcorp.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-02-0025			
CONST SPEC	2013	DRAWN BY	PKF
		PLANS CK'D	TLP
BOX DETAILS			SHEET 3 OF 10

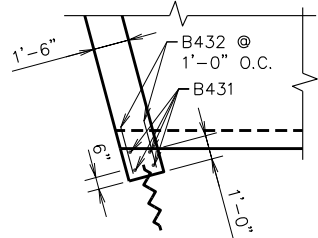
BILL OF BARS

18340# UNCOATED 290# COATED

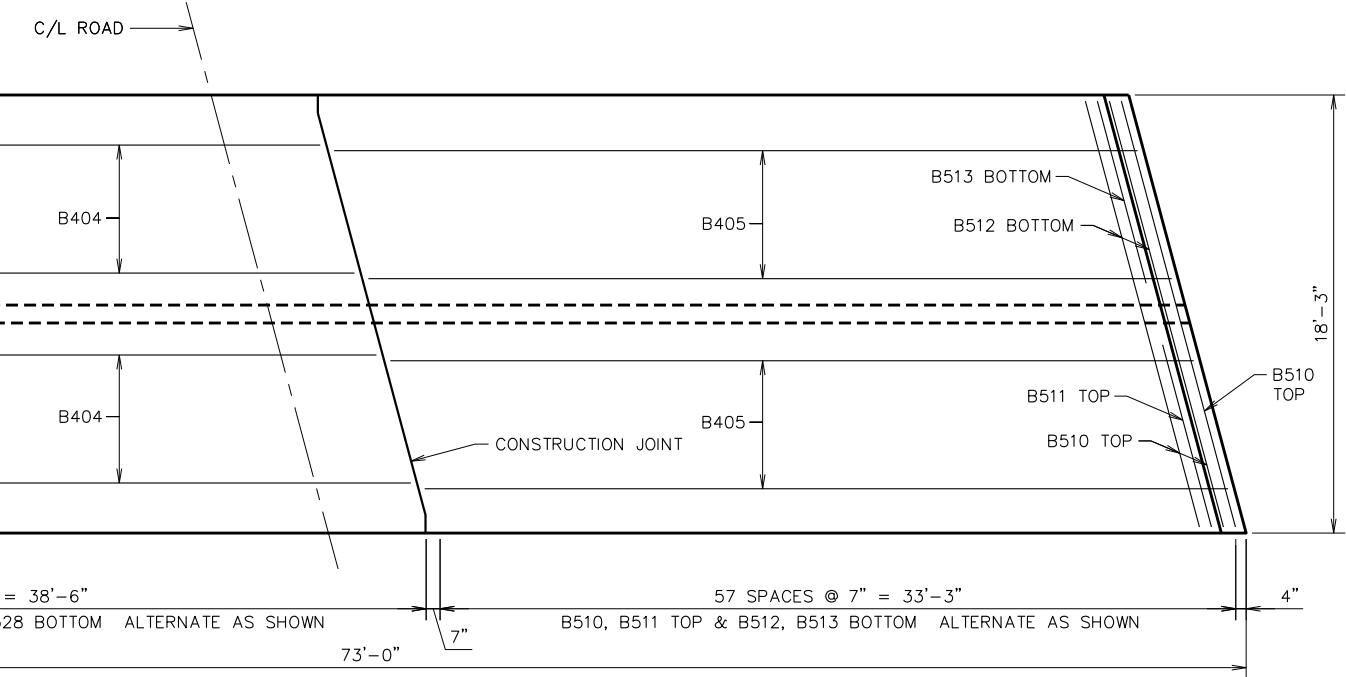
NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR.
THE FIRST DIGIT OF A THREE-DIGIT BAR MARK
OR THE FIRST TWO DIGITS OF A FOUR-DIGIT
BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQUIRED	LENGTH	BENT	BAR SERIES	LOCATION
B501		500	9'-9"	X		BOX CORNER
B502		58	14'-6"			BOX TOP & BOTTOM SLAB TRANS STAGE 1
B503		125	4'-0"			BOX TOP & BOTTOM SLAB TRANS
B404		20	38'-8"			BOX TOP & BOTTOM LONGIT
B405		20	33'-8"			BOX TOP & BOTTOM LONGIT
B406		32	38'-8"			BOX EXTERIOR & INTERIOR WALLS LONGIT
B407		32	33'-8"			BOX EXTERIOR & INTERIOR WALLS LONGIT
B408		16	38'-8"			BOX LONGIT OUTSIDE FACE
B409		16	33'-8"			BOX LONGIT OUTSIDE FACE
B510		29	18'-0"			BOX TOP SLAB TRANS
B511		125	7'-3"			BOX TOP SLAB TRANS
B512		29	18'-0"			BOX BOTTOM SLAB TRANS
B513		125	7'-3"			BOX BOTTOM SLAB TRANS
B414		196	8'-11"			BOX EXTERIOR WALLS VERT
B415		148	10'-0"	X		BOX INTERIOR WALL VERT
B416		344	2'-5"			BOX VERT DOWEL
B517	X	69	4'-0"			CONSTRUCTION JOINT DOWEL
B418		4	18'-6"			BOX HEADER LONGIT CONST JOINT & OUTLET END
B319		50	2'-6"	X		BOX HEADER STIRRUP CONST JOINT & OUTLET END
B320		25	3'-9"	X		BOX HEADER STIRRUP INLET
B421		3	12'-10"			BOX HEADER INLET
B422		3	7'-5"			BOX HEADER INLET
B523		67	10'-8"			BOX TOP & BOTTOM SLAB TRANS STAGE 2
B524		67	4'-11"			BOX TOP & BOTTOM SLAB TRANS STAGE 2
B525		34	12'-8"			BOX TOP SLAB TRANSVERSE INSIDE FACE STAGE 2
B526		34	7'-3"			BOX TOP SLAB TRANSVERSE INSIDE FACE STAGE 2
B527		34	12'-8"			BOX BOTTOM SLAB TRANS INSIDE FACE STAGE 2
B528		34	7'-3"			BOX BOTTOM SLAB TRANS INSIDE FACE STAGE 2
B429		19	2'-11"	X		BOX INLET BOTTOM @ SHEETING
B430		3	20'-6"			BOX INLET BOTTOM HORIZ @ SHEETING
B431		8	11'-9"			BOX VERT @ SHEETING
B432		48	2'-0"			BOX SHEETING EXTENSION DOWELS

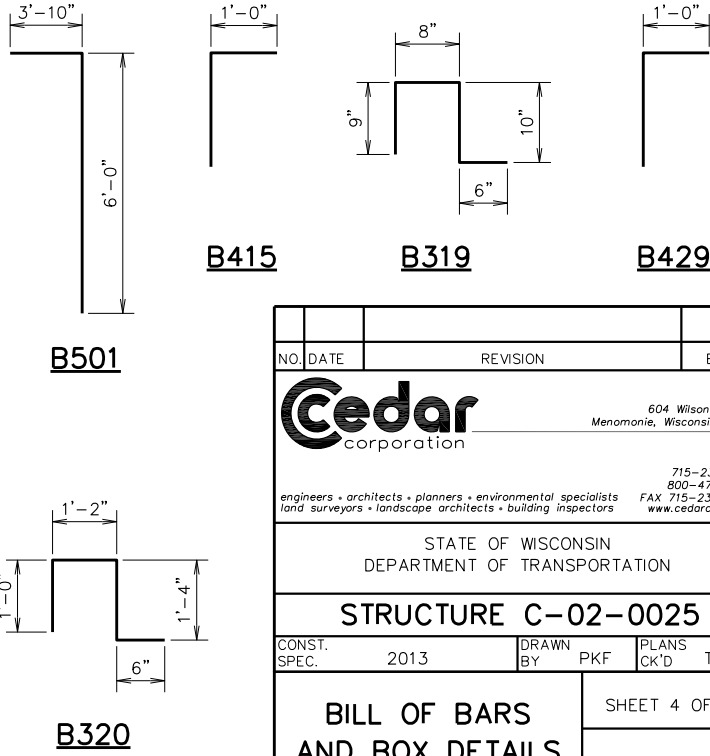
PLAN VIEW OUTSIDE FACE REINFORCEMENT



VERTICAL SHEETING DETAIL



PLAN VIEW INSIDE FACE REINFORCEMENT



NO. DATE

REVISION

BY

Cedar

corporation

604 Wilson Avenue
Menomonie, Wisconsin 54751

715-235-9081
800-472-7372
engineers • architects • planners • environmental specialists
land surveyors • landscape architects • building inspectors
FAX 715-235-2727
www.cedarcorp.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-02-0025

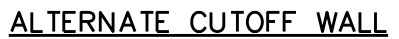
CONST. SPEC. 2013

DRAWN BY PKF

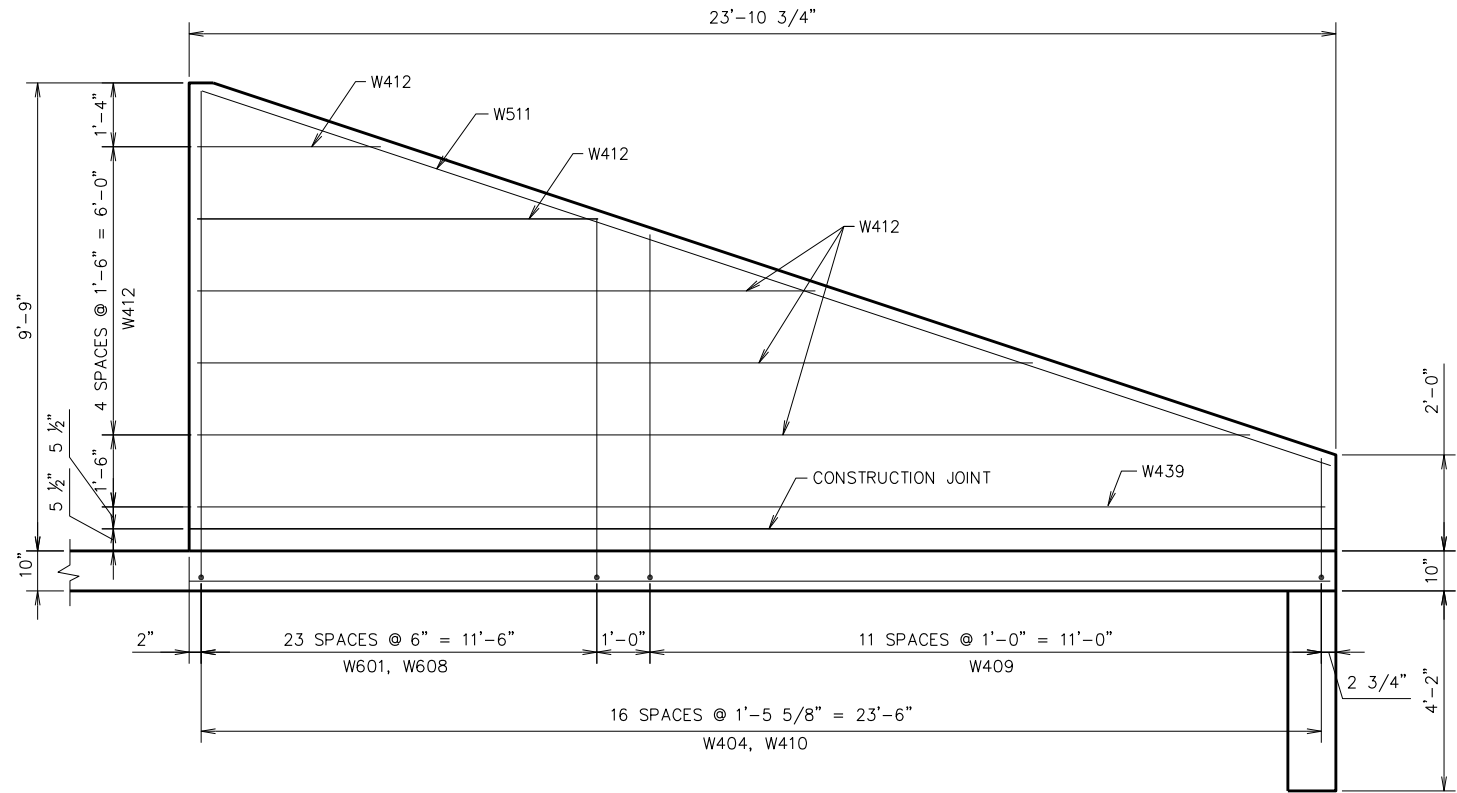
PLANS CK'D TLP

BILL OF BARS
AND BOX DETAILS

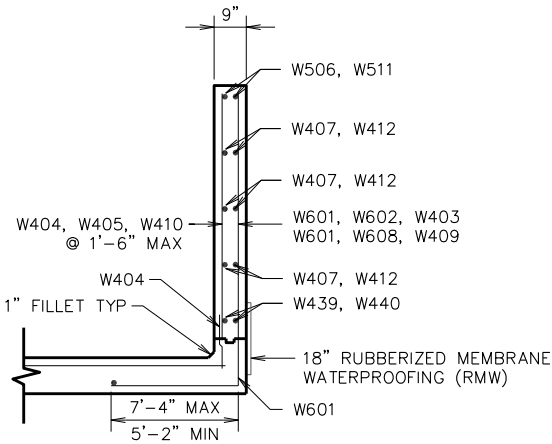
SHEET 4 OF 10



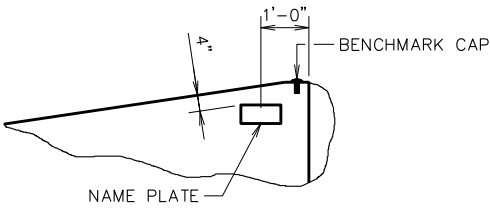
- (A) 18" RUBBERIZED MEMBRANE WATERPROOFING (RMW)
SEAL ALL HORIZ & VERT JOINTS ON BACKFACE
- (D) 3/4" FILLED (INCLUDED IN WING LENGTH): SEAL
EXPOSED HORIZ & VERT SURFACES OF 3/4" FILLER
WITH NON-STAINING GRAY BITUMINOUS JOINT SEALER.
(1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



WING 4

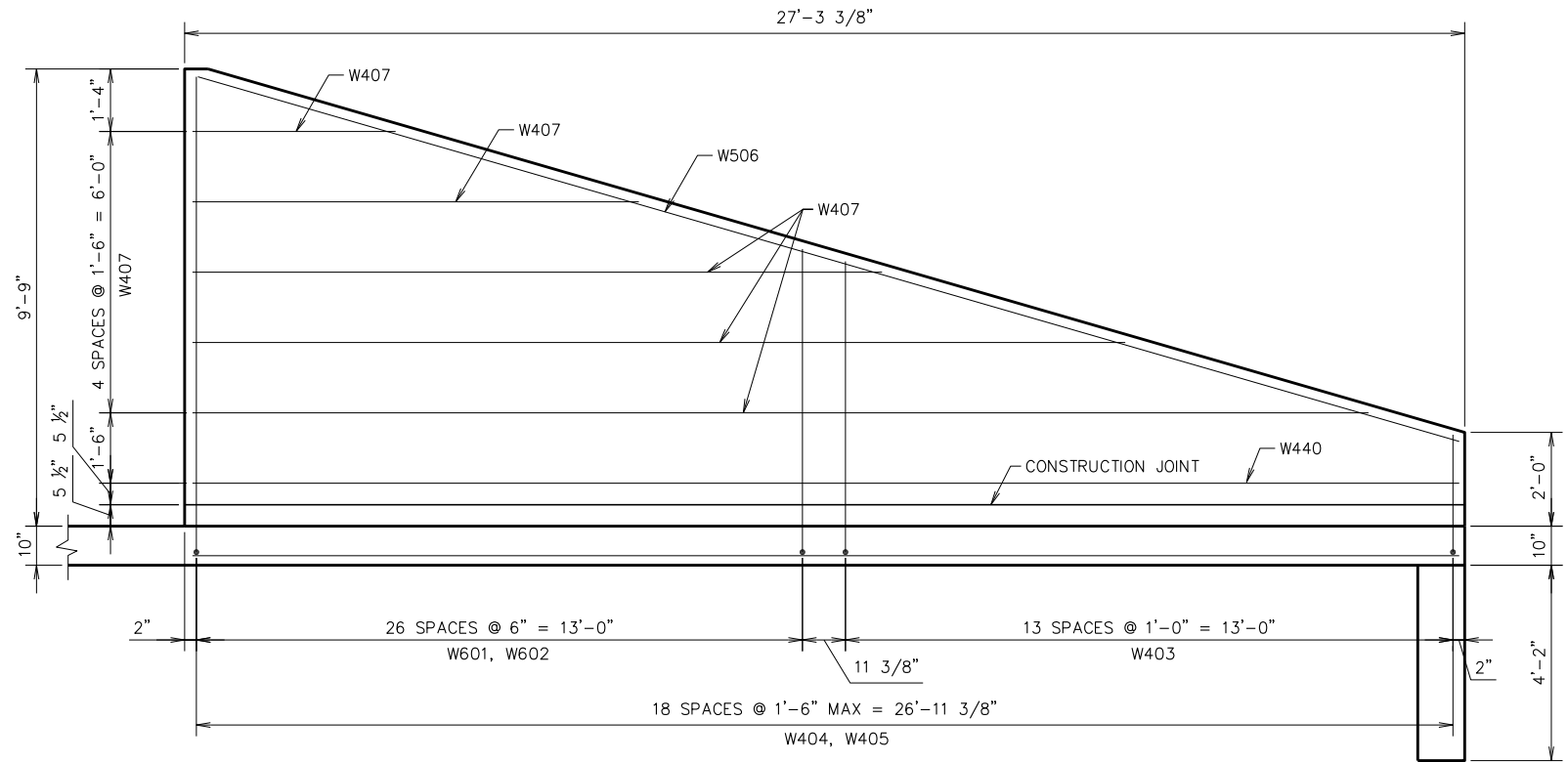


TYPICAL WINGWALL SECTION




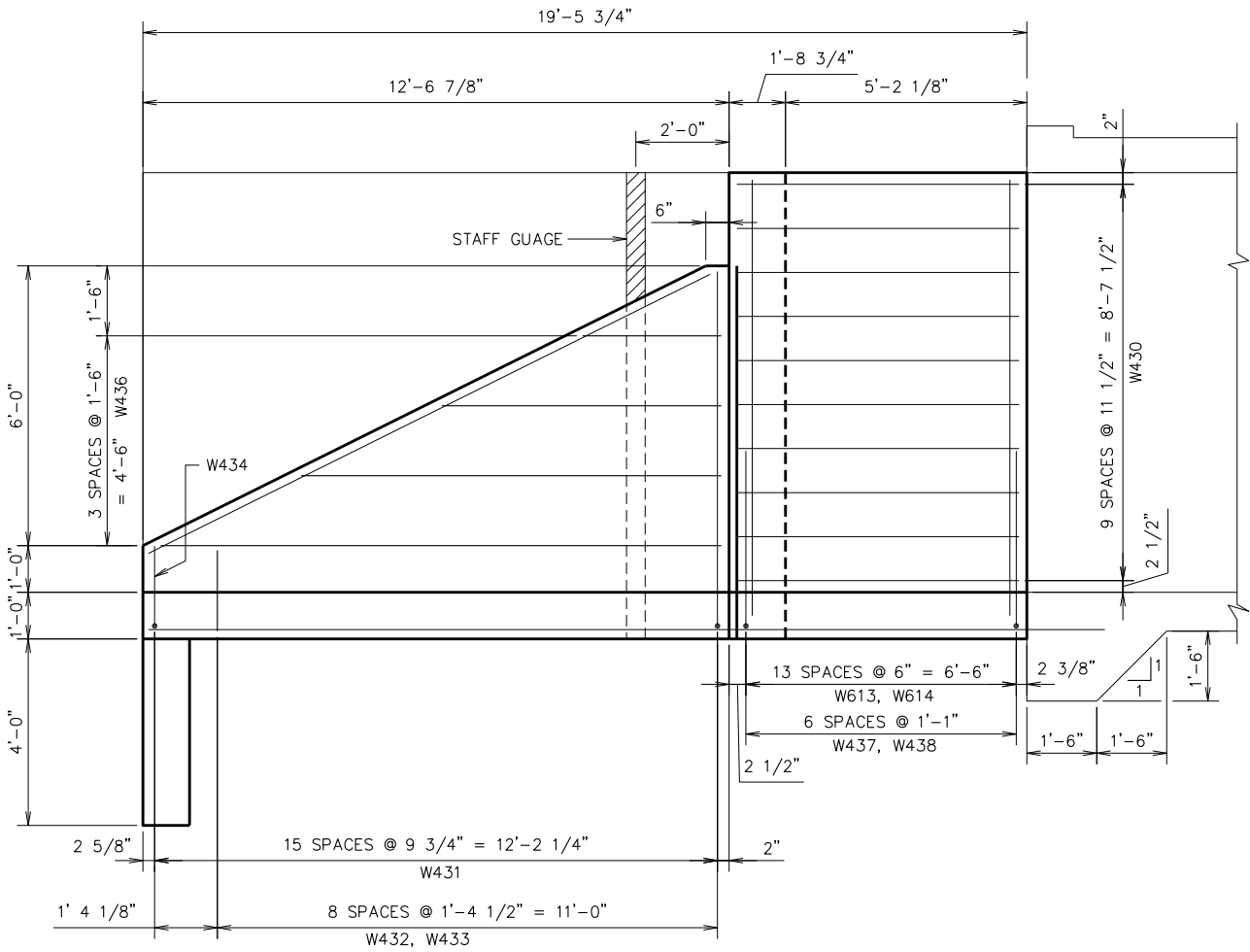
NAME PLATE LOCATION

(ON FRONT FACE OF WING 3)

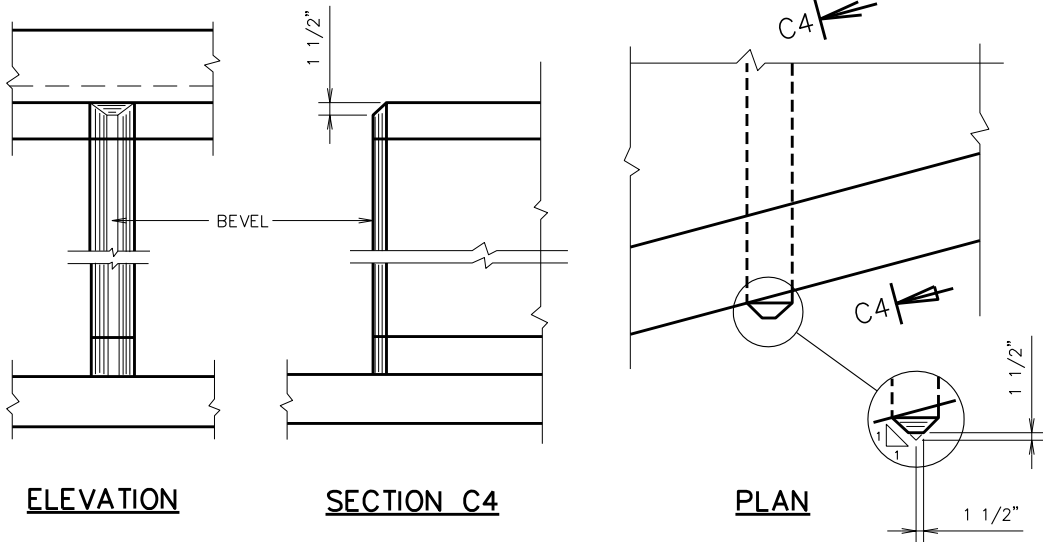


WING 3

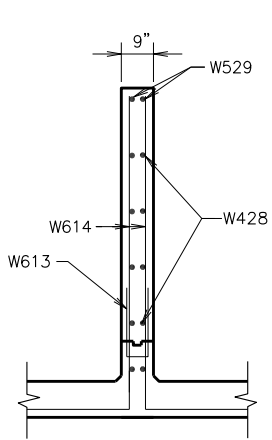
NO.	DATE	REVISION	BY
		604 Wilson Avenue Menomonie, Wisconsin 54751	
		715-235-9081 800-472-7372 engineers • architects • planners • environmental specialists land surveyors • landscape architects • building inspectors FAX 715-235-2727 www.cedarcorp.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-02-0025			
CONST. SPEC.	2013	DRAWN BY PKF	PLANS CK'D TLP
WING DETAILS		SHEET 6 OF 10	



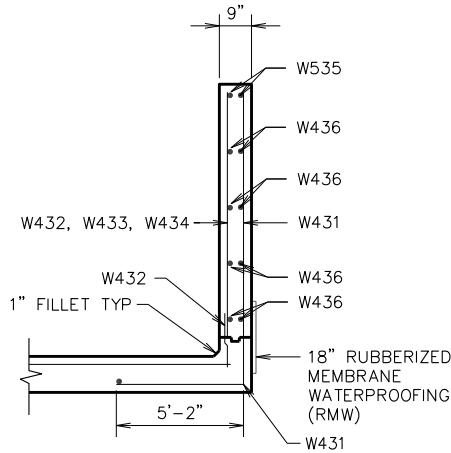
WINGS 1 & 2



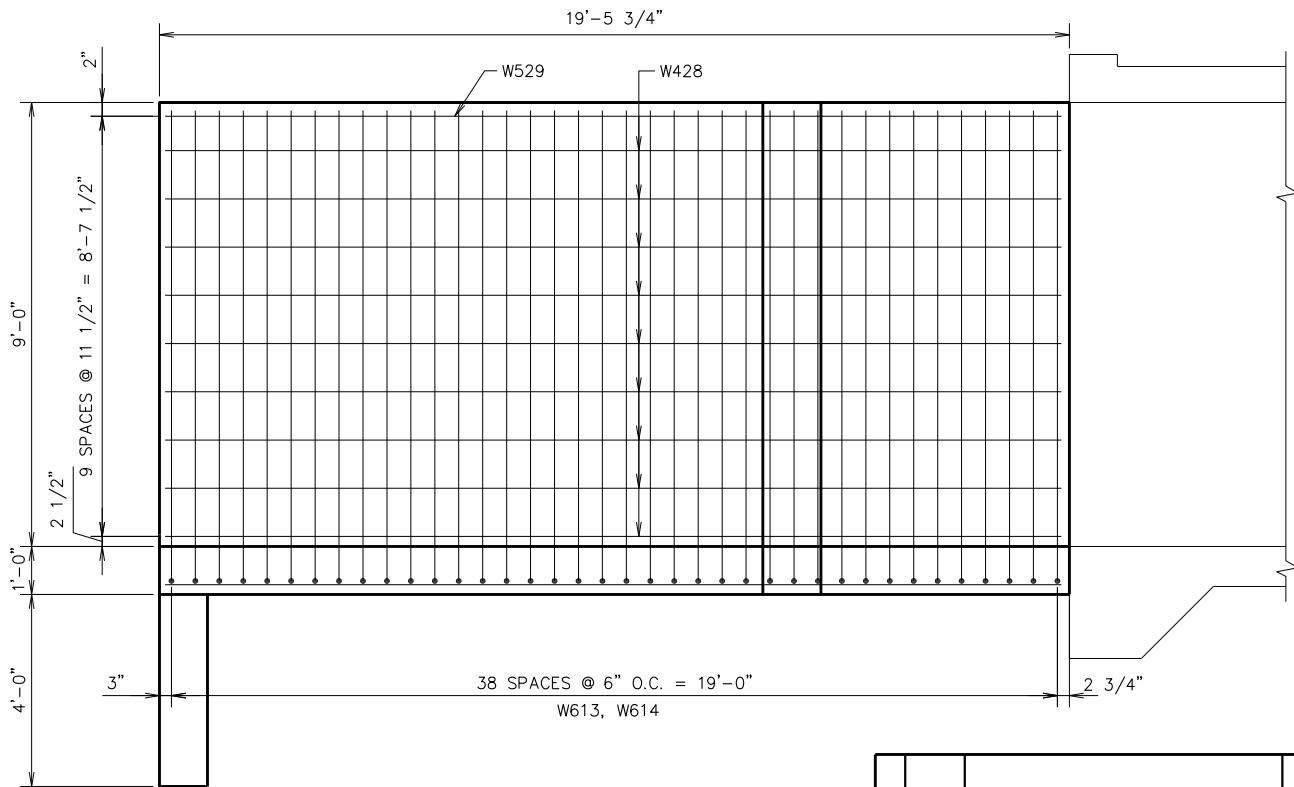
INLET NOSE CENTERWALL DETAILS



TYPICAL CENTERWALL SECTION



TYPICAL WINGWALL SECTION



CENTER WALL DETAIL

NO.	DATE	REVISION	BY
Cedar corporation			
604 Wilson Avenue Menomonie, Wisconsin 54751			
715-235-9081 800-472-7372 engineers • architects • planners • environmental specialists land surveyors • landscape architects • building inspectors			
FAX 715-235-2727 www.cedarcorp.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-02-0025			
CONST. SPEC.	2013	DRAWN BY PKF	PLANS CK'D TLP
INLET DETAILS			SHEET 7 OF 10

BILL OF BARS

10040# UNCOATED

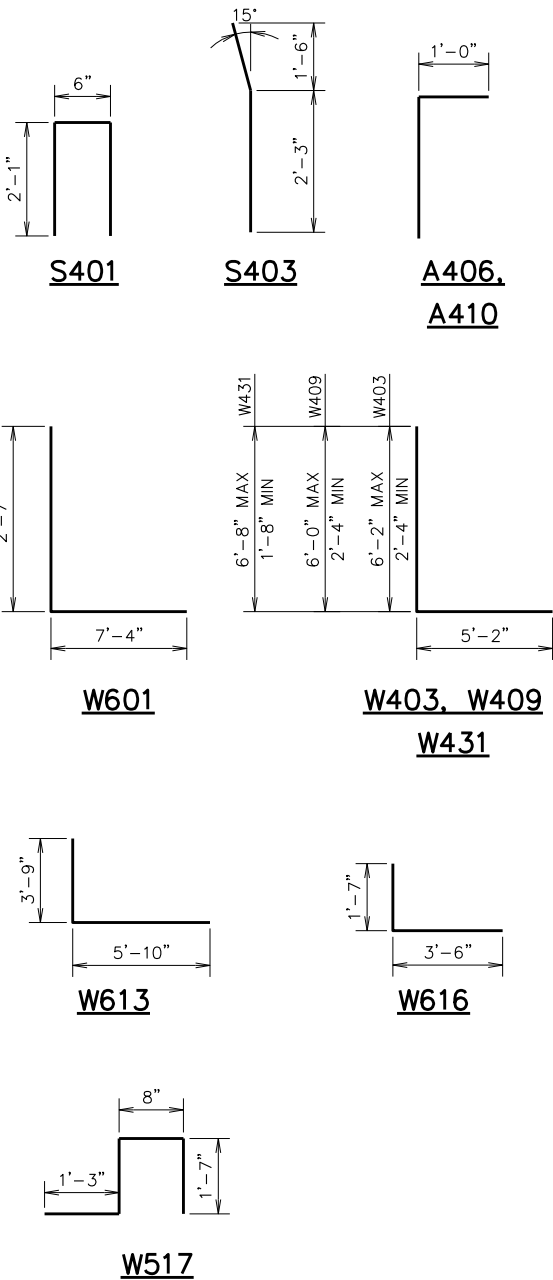
BAR MARK	COAT	NO. REQUIRED	LENGTH	BENT	BAR SERIES	LOCATION
A401		19	26-11			OUTLET APRON LONGIT
A402		6	13-2		☒	OUTLET APRON LONGIT
A403		6	12-8		☒	OUTLET APRON LONGIT
A404		25	25-4		☒	OUTLET APRON TRANS
A405		5	31-6			OUTLET CUTOFF WALL LONGIT
A406		32	5-6	X		OUTLET CUTOFF WALL VERT
A407		24	11-6			INLET APRON TRANS
A408		24	8-10			INLET APRON TRANS
A409		19	21-3			INLET APRON LONGIT
A410		19	5-6			INLET CUTOFF WALL VERT
W601		51	9-9	X		WING 3 & 4 VERT
W602		27	7-2		☒	WING 3 VERT
W403		14	9-4	X	☒	WING 3 VERT
W404		36	2-5			WING 3 & 4 VERT DOWELS
W405		19	5-2		☒	WING 3 VERT
W506		2	28-0			WING 3 HORIZ TOP
W407		10	14-11		☒	WING 3 HORIZ
W608		24	7-2		☒	WING 4 VERT
W409		12	9-3	X	☒	WING 4 VERT
W410		17	5-2		☒	WING 4 VERT
W511		2	24-9			WING 4 HORIZ
W412		10	13-0		☒	WING 4 HORIZ
W613		144	9-5	X		INLET STRUCTURE VERT
W614		128	8-4			INLET STRUCTURE VERT
W615		16	4-10			INLET STRUCTURE VERT
W616		36	5-0	X		INLET STRUCTURE VERT
W517		18	4-8	X		INLET STRUCTURE VERT
W518		4	11-6			INLET STRUCTURE HORIZ
W519		4	8-10			INLET STRUCTURE HORIZ
W420		8	1-2			HEADWALL HORIZ
W421		8	0-11			HEADWALL HORIZ
W422		8	1-8			HEADWALL HORIZ
W423		10	2-2			HEADWALL HORIZ
W424		10	1-11			HEADWALL HORIZ
W425		10	3-8			HEADWALL HORIZ
W426		4	11-6			HEADWALL HORIZ
W427		4	8-10			HEADWALL HORIZ
W428		18	19-1			CENTERWALL HORIZ
W529		2	19-1			CENTERWALL HORIZ
W430		40	6-6			INLET STRUCTURE HORIZ
W431		32	9-3	X	☒	WING 1 & 2 VERT
W432		18	2-5			WING 1 & 2 VERT
W433		18	3-9		☒	WING 1 & 2 VERT
W434		2	1-8			WING 1 & 2 VERT
W535		4	13-3			WING 1 & 2 HORIZ
W436		16	7-6		☒	WING 1 & 2 HORIZ
W437		14	2-5			INLET WALL VERT
W438		14	8-4			INLET WALL VERT
W439		2	23-6			WING 4 HORIZ
W440		2	26-11			WING 3 HORIZ
S401		84	4-6	X		SEEPAGE COLLAR STIRRUPS
S402		24	12-7			SEEPAGE COLLAR VERT
S403		24	3-9	X		SEEPAGE COLLAR HORIZ
S404		12	18-6			SEEPAGE COLLAR HORIZ
C401		35	2-8			SHEET WALL VERT
C402		35	3-2	X		SHEET WALL VERT
C403		6	12-8			SHEET WALL HORIZ
C404		6	6-5			SHEET WALL HORIZ
C405		6	4-8			SHEET WALL HORIZ
C406		6	9-8			SHEET WALL HORIZ
T501		28	2-3			SHEETING TIE TO EXIST WALL

☒ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

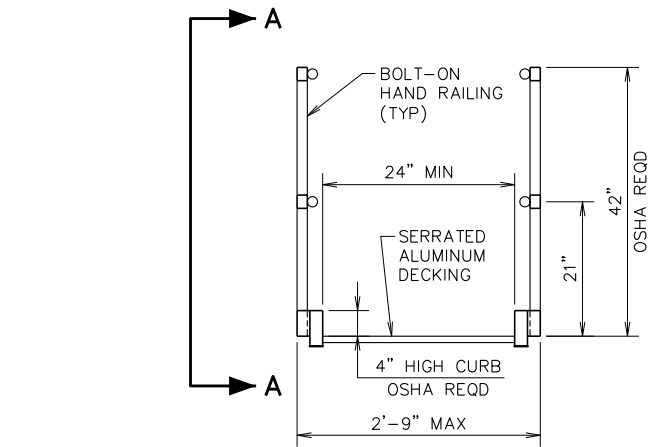
NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

BAR SERIES TABLE

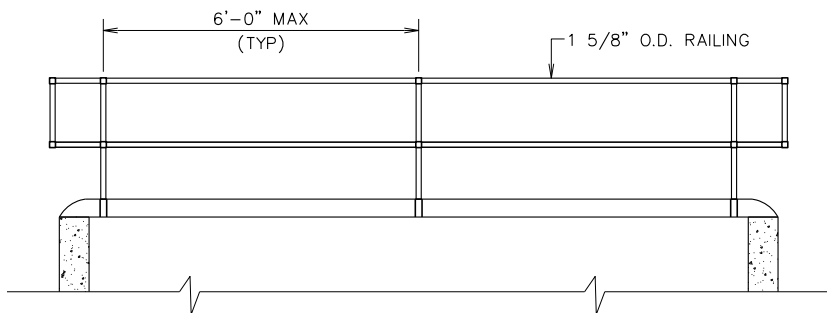
MARK	NO. REQUIRED	LENGTH
A402	1 SERIES OF 6	3'-8" TO 22'-8"
A403	1 SERIES OF 6	4'-0" TO 21'-4"
A404	1 SERIES OF 25	18'-8" TO 32'-0"
W602	1 SERIES OF 27	5'-4" TO 9'-0"
W403	1 SERIES OF 14	7'-5" TO 11'-3"
W405	1 SERIES OF 19	1'-4" TO 9'-0"
W407	2 SERIES OF 5	4'-4" TO 25'-6"
W608	1 SERIES OF 24	5'-4" TO 9'-0"
W409	1 SERIES OF 12	7'-5" TO 11'-1"
W410	1 SERIES OF 17	1'-4" TO 9'-0"
W412	2 SERIES OF 5	3'-9" TO 23'-2"
W431	2 SERIES OF 16	6'-9" TO 11'-9"
W433	2 SERIES OF 9	1'-2" TO 6'-4"
W436	4 SERIES OF 4	2'-10" TO 12'-2"



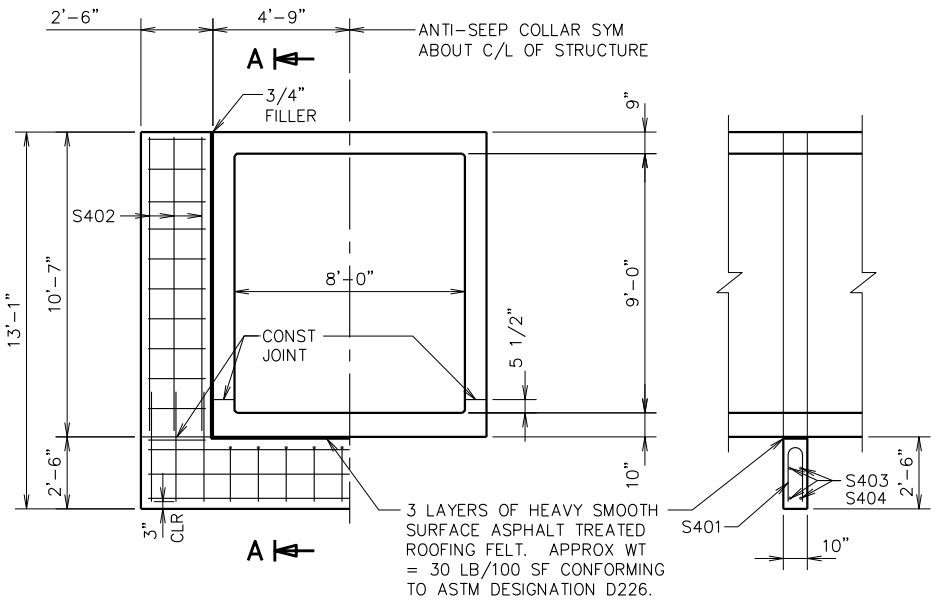
REMOVABLE ALUMINUM WALKWAY & RAILING



SECTION A-A



SECTION A-A



ELEVATION

SECTION A-A

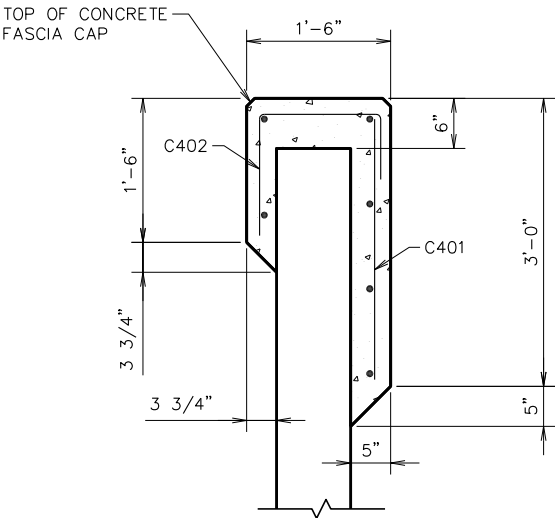
NOTE: ALL BARS ARE #4s SPACED AT 1'-0"

ANTI-SEEPAGE COLLAR

STATE PROJECT NUMBER

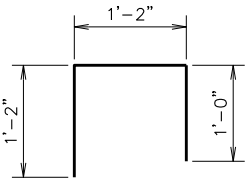
8530-13-71

NO.	DATE	REVISION	BY
Cedar corporation 604 Wilson Avenue Menomonie, Wisconsin 54751 715-235-9081 800-472-7372 engineers • architects • planners • environmental specialists land surveyors • landscape architects • building inspectors FAX 715-235-2727 www.cedarcorp.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-02-0025			
CONST. SPEC.	2013	DRAWN BY	PKF
BILL OF BARS AND DETAILS		PLANS CK'D	TLP
		SHEET 9 OF 10	

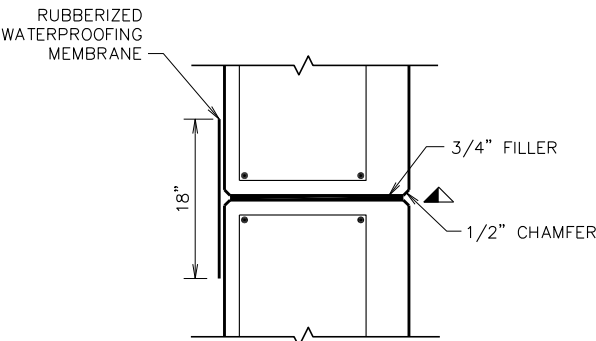


NOTE: HORIZONTAL BARS ARE C403, C404 & C405

TYPICAL WALL SECTION PZ22

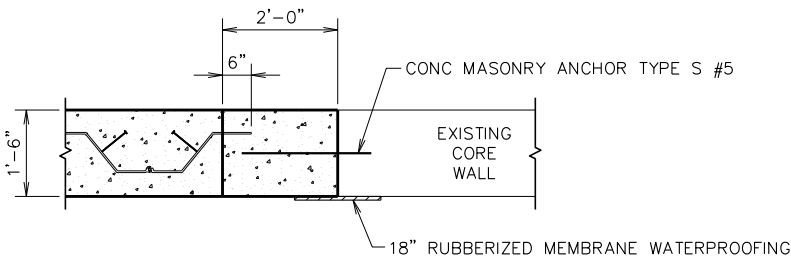


C402

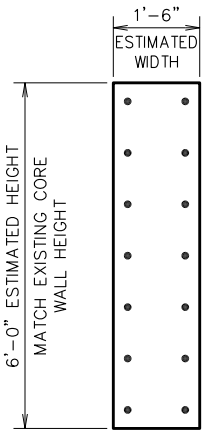


EXPANSION JOINT (TOP VIEW)

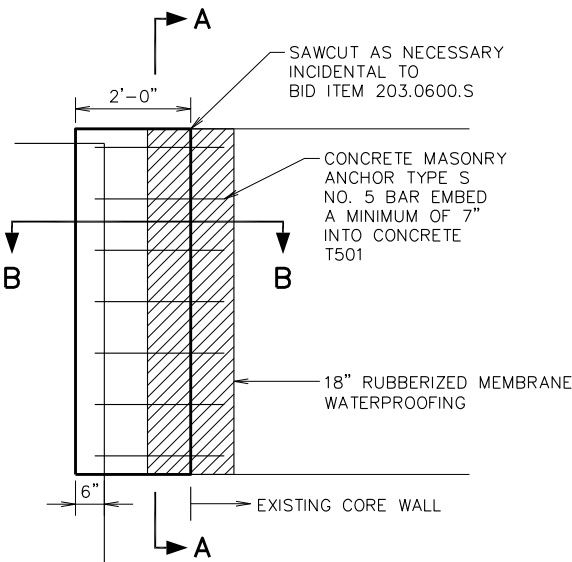
▲ EXPANSION JOINT NOTES:
CONSTRUCT 1/2" CHAMFERS ON ALL EXPOSED EDGES.
INSTALL 3/4" PREFORMED FILLER. OMIT REINFORCEMENT THROUGH JOINT. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD 1/8" BELOW SURFACE)
INSTALL 18"-WIDE RUBBERIZED WATERPROOFING MEMBRANE ON BACK FACE OF CAP.



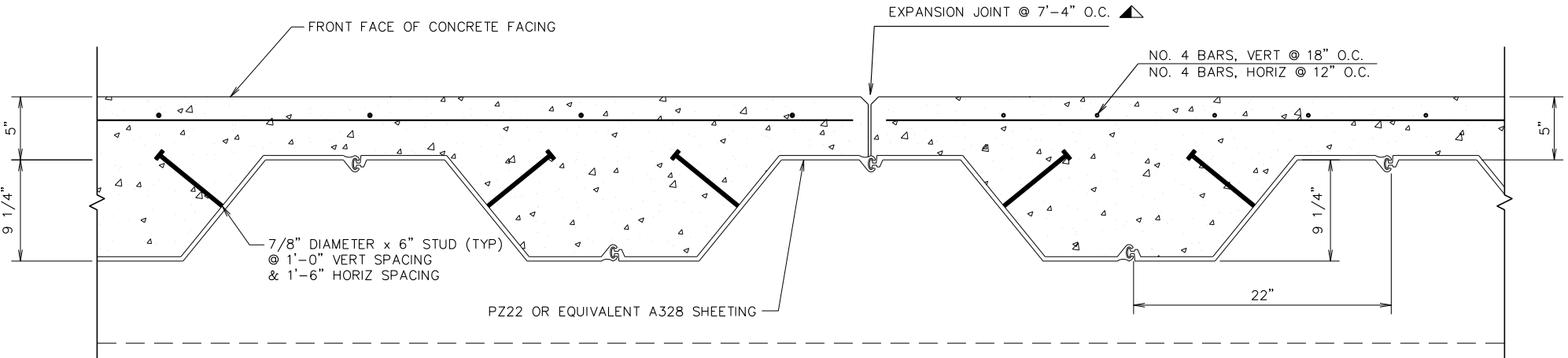
SECTION B-B




SECTION A-A



SHEETING TIE TO EXISTING CORE WALL



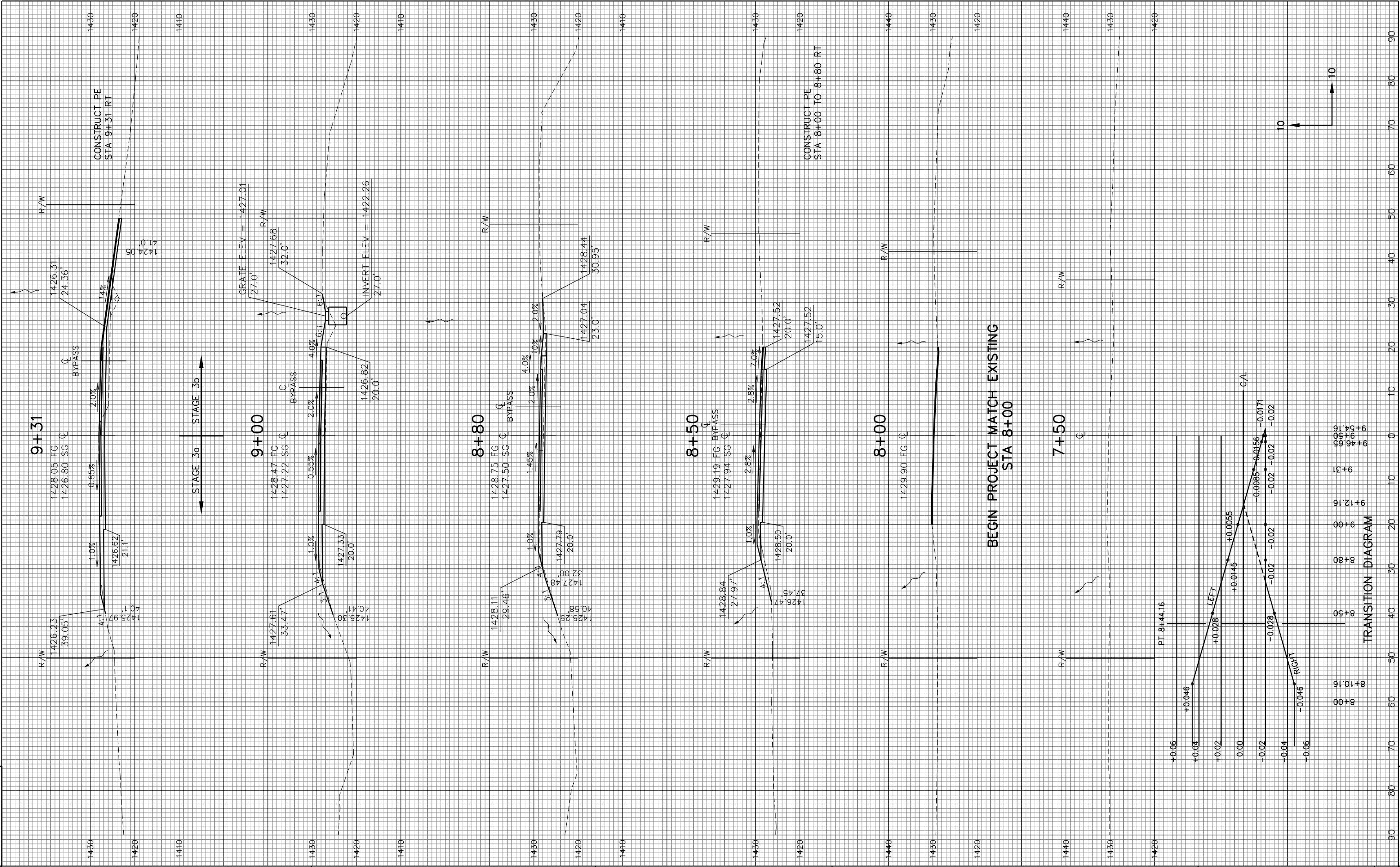
CONCRETE FACING DETAIL

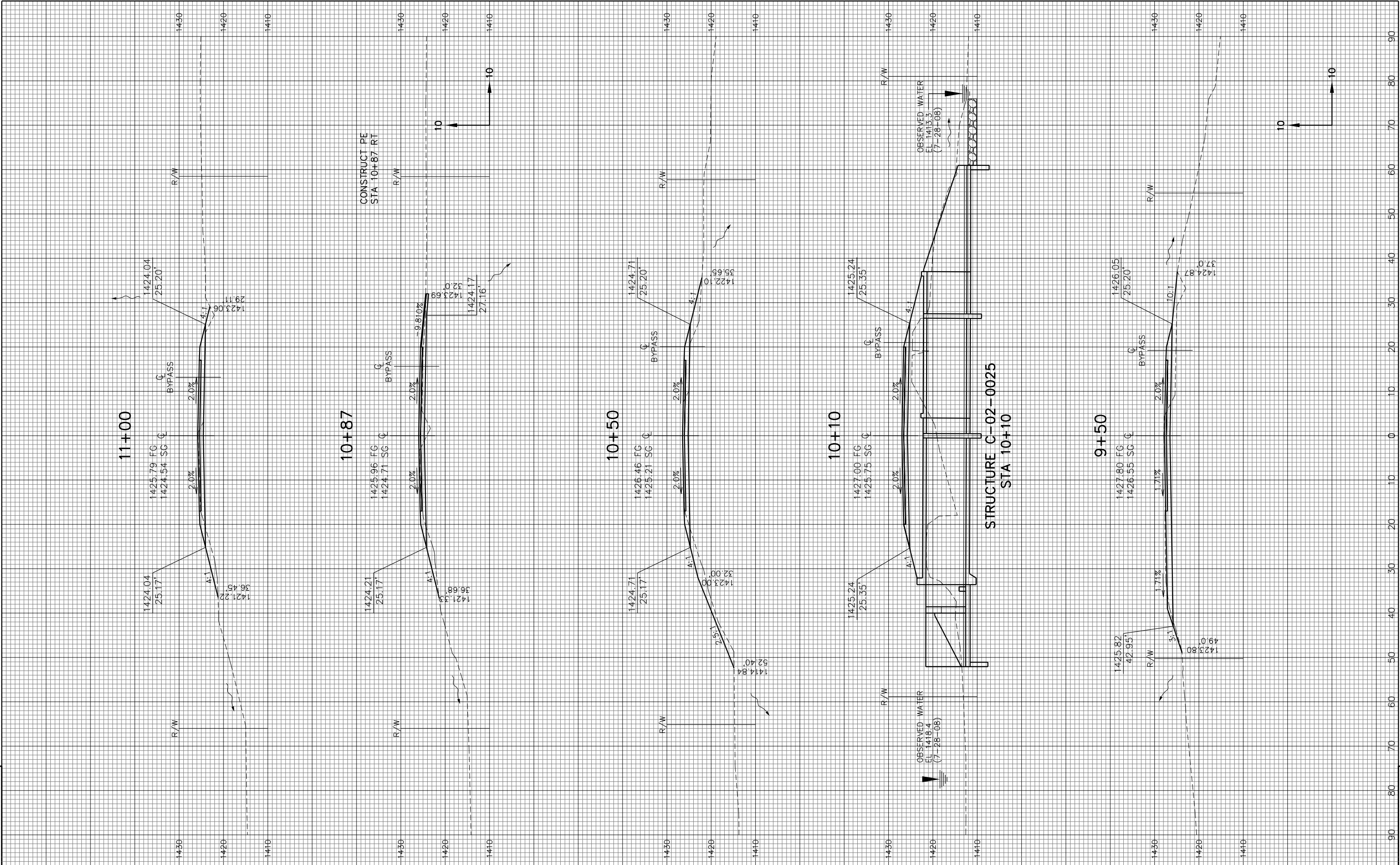
NO.	DATE	REVISION	BY
		604 Wilson Avenue Menomonie, Wisconsin 54751 715-235-9081 800-472-7372 engineers • architects • planners • environmental specialists land surveyors • landscape architects • building inspectors FAX 715-235-2727 www.cedarcorp.com	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-02-0025			
CONST. SPEC.	2013	DRAWN BY PKF	PLANS CK'D TLP
PERMANENT SHEETING DETAILS			SHEET 10 OF 10

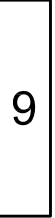
MAINLINE - STH 77																					
		Area (SF)					Incremental Volume (CY) - Unadjusted						Cumulative Volume								
Station	Cut	Salvaged/ Unuseable					Cut	Salvaged/ Unuseable					Cut 1.00	Salvaged/ Unuseable	Expanded Fill 1.30	Expanded Marsh Backfill 2.00	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduce Marsh in Fill 0.50	Reduce EBS in Fill 0.50	Mass Ordinate
		Pavement	Mat'l	Fill	Marsh Exc.	Rock Exc.		EBS	Pavement	Mat'l	Fill	Marsh Exc.									
8+30.0	40.1	9.0		2.2	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0	0	0	0	0	0		
8+50.0	40.1	9.0		7.5	0.0	0.0	0.0	29.7	6.7		3.6	0.0	0.0	30	7	5	0	0	0	18	
8+80.0	49.4	9.0		11.1	0.0	0.0	0.0	49.7	10.0		10.3	0.0	0.0	79	17	18	0	0	0	45	
9+00.0	31.5	9.0		25.3	0.0	0.0	0.0	30.0	6.7		14.2	0.0	0.0	109	23	37	0	0	0	49	
9+31.0	51.2	9.0		30.0	0.0	0.0	0.0	47.5	10.3		31.7	0.0	0.0	157	34	78	0	0	0	45	
9+46.6	52.9	9.0		36.3	0.0	0.0	0.0	30.1	5.2		19.2	0.0	0.0	187	39	103	0	0	0	45	
9+50.0	55.0	9.0		37.4	0.0	0.0	0.0	6.8	1.1		4.6	0.0	0.0	194	40	109	0	0	0	45	
9+71.6	39.0	9.0		29.0	0.0	0.0	0.0	37.6	7.2		26.6	0.0	0.0	231	47	143	0	0	0	41	
9+85.0	39.0	9.0		29.0	0.0	0.0	0.0	19.4	4.5		14.4	0.0	0.0	251	52	162	0	0	0	37	
9+85.0	0.0	9.0		161.8	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	251	52	162	0	0	0	37	
9+96.6	0.0	9.0		161.8	0.0	0.0	0.0	0.0	3.9		69.5	0.0	0.0	251	56	252	0	0	0	-57	
10+10.0	0.0	9.0		150.0	0.0	0.0	0.0	0.0	4.5		77.4	0.0	0.0	251	60	353	0	0	0	-162	
10+10.0	34.2	9.0		43.7	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	251	60	353	0	0	0	-162	
10+50.0	34.2	9.0		43.7	0.0	0.0	0.0	50.7	13.3		64.7	0.0	0.0	301	73	437	0	0	0	-209	
10+87.0	31.6	9.0		15.0	0.0	0.0	0.0	45.1	12.3		40.2	0.0	0.0	346	86	489	0	0	0	-229	
11+00.0	19.7	9.0		36.3	0.0	0.0	0.0	12.4	4.3		12.4	0.0	0.0	359	90	505	0	0	0	-237	
11+21.6	38.2	9.0		16.5	0.0	0.0	0.0	23.2	7.2		21.1	0.0	0.0	382	97	533	0	0	0	-248	
11+46.6	42.2	9.0		12.0	0.0	0.0	0.0	37.2	8.3		13.2	0.0	0.0	419	106	550	0	0	0	-236	
11+50.0	44.4	9.0		10.4	0.0	0.0	0.0	5.5	1.1		1.4	0.0	0.0	425	107	552	0	0	0	-234	
11+71.6	52.1	9.0		6.9	0.0	0.0	0.0	38.6	7.2		6.9	0.0	0.0	463	114	561	0	0	0	-212	
12+00.0	56.6	9.0		6.1	0.0	0.0	0.0	57.2	9.5		6.8	0.0	0.0	520	123	570	0	0	0	-173	
12+20.0	56.6	9.0		0.0	0.0	0.0	0.0	41.9	6.7		2.3	0.0	0.0	562	130	573	0	0	0	-140	
								562.3	130.0		440.6	0.0	0.0	0.0							

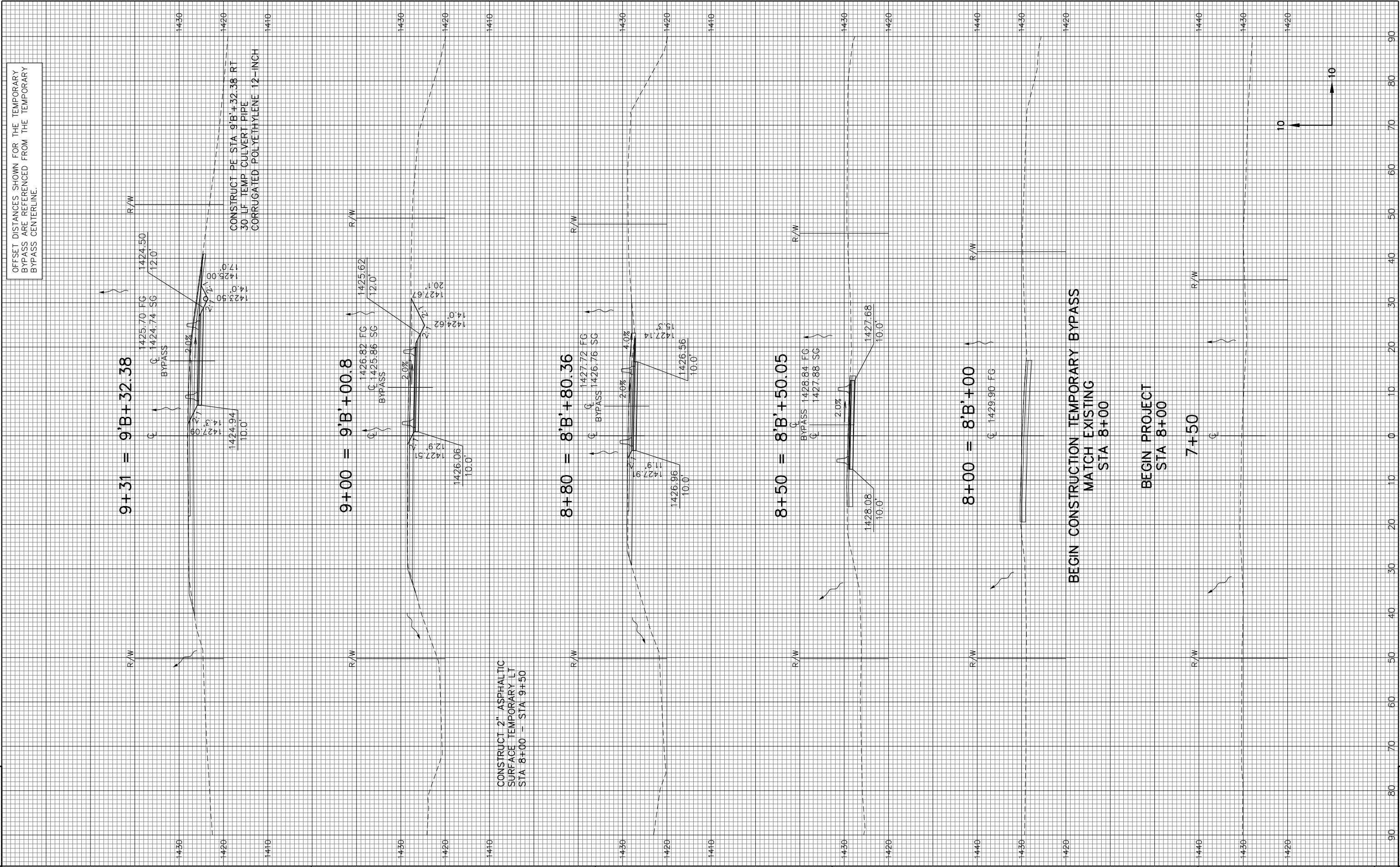
TEMPORARY BYPASS																					
		Area (SF)					Incremental Volume (CY) - Unadjusted						Cumulative Volume								
Station	Cut	Salvaged/ Unuseable					Cut	Salvaged/ Unuseable					Cut 1.00	Salvaged/ Unuseable	Expanded Fill 1.30	Expanded Marsh Backfill 2.00	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduce Marsh in Fill 0.50	Reduce EBS in Fill 0.50	Mass Ordinate
		Pavement	Mat'l	Fill	Marsh Exc.	Rock Exc.		EBS	Pavement	Mat'l	Fill	Marsh Exc.									
8+50.0	23.8	5.3		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0	0	0	0	0	0		
8+80.4	37.4	5.3		0.0	0.0	0.0	0.0	34.5	5.9		0.0	0.0	0.0	34	6	0	0	0	0	29	
9+00.8	64.5	5.3		0.0	0.0	0.0	0.0	38.5	4.0		0.0	0.0	0.0	73	10	0	0	0	0	63	
9+32.4	72.8	5.3		0.0	0.0	0.0	0.0	80.3	6.1		0.0	0.0	0.0	153	16	0	0	0	0	137	
9+48.2	55.3	5.3		0.0	0.0	0.0	0.0	37.5	3.1		0.0	0.0	0.0	191	19	0	0	0	0	172	
9+51.5	57.5	5.3		0.0	0.0	0.0	0.0	6.9	0.6		0.0	0.0	0.0	198	20	0	0	0	0	178	
9+73.2	51.0	5.3		115.0	0.0	0.0	0.0	43.6	4.2		46.2	0.0	0.0	241	24	60	0	0	0	157	
9+85.0	51.0	5.3		115.0	0.0	0.0	0.0	22.3	2.3		50.3	0.0	0.0	264	26	125	0	0	0	112	
9+85.0	0.0	5.3		34.9	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	264	26	125	0	0	0	112	
9+98.2	0.0	5.3		34.9	0.0	0.0	0.0	0.0	2.6		17.1	0.0	0.0	264	29	148	0	0	0	87	
10+11.6	0.0	5.3		34.9	0.0	0.0	0.0	0.0	2.6		17.3	0.0	0.0	264	31	170	0	0	0	62	
10+11.6	22.8	5.3		10.4	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	264	29	148	0	0	0	62	
10+51.6	22.8	5.3		10.4	0.0	0.0	0.0	33.8	7.8		15.4	0.0	0.0	297	39	190	0	0	0	68	
10+88.0	20.2	5.3		0.0	0.0	0.0	0.0	29.0	7.1		7.0	0.0	0.0	326	46	199	0	0	0	81	
11+02.1	42.7	5.3		0.0	0.0	0.0	0.0	16.4	2.7		0.0	0.0	0.0	343	49	199	0	0	0	94	
11+24.3	17.9	5.3		0.0	0.0	0.0	0.0	24.9	4.3		0.0	0.0	0.0	368	53	199	0	0	0	115	
11+24.3	9.5	5.3		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0	53	199	0	0	0	115	
11+53.1	9.5	5.3		0.0	0.0	0.0	0.0	10.1	5.6		0.0	0.0	0.0	378	59	199	0	0	0	120	
								377.8	58.9		153.3	0.0	0.0	0.0							

PROJECT NO: 8530-13-71	HWY: STH 77	COUNTY: ASHLAND	EARTHWORK	SHEET	E
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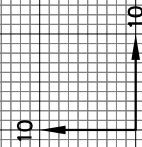
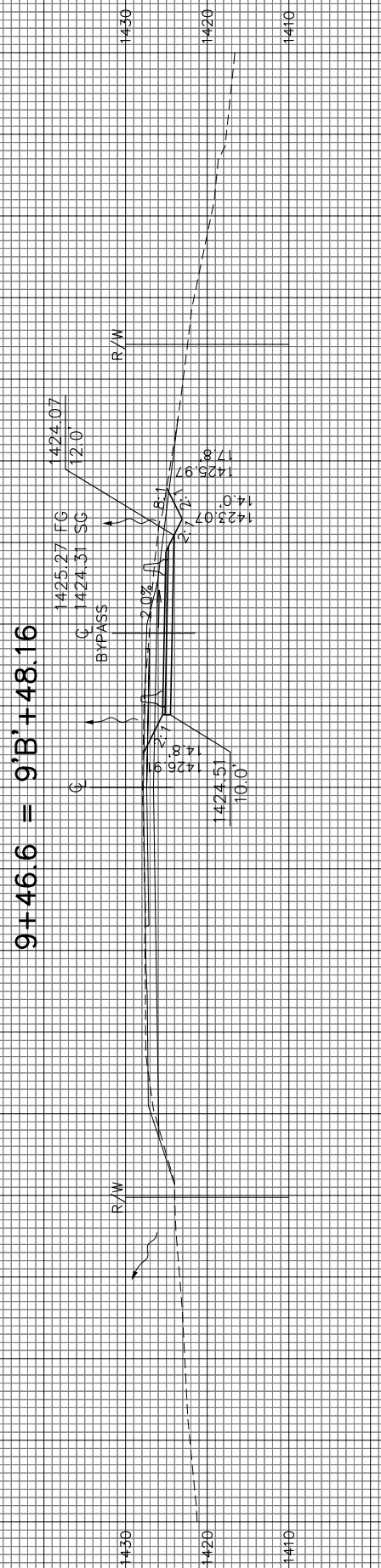
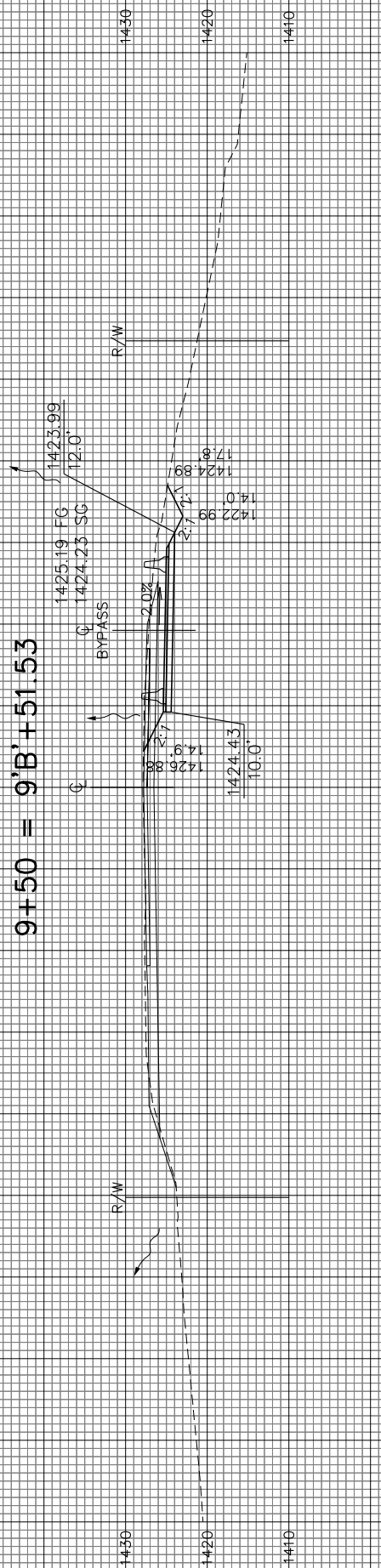
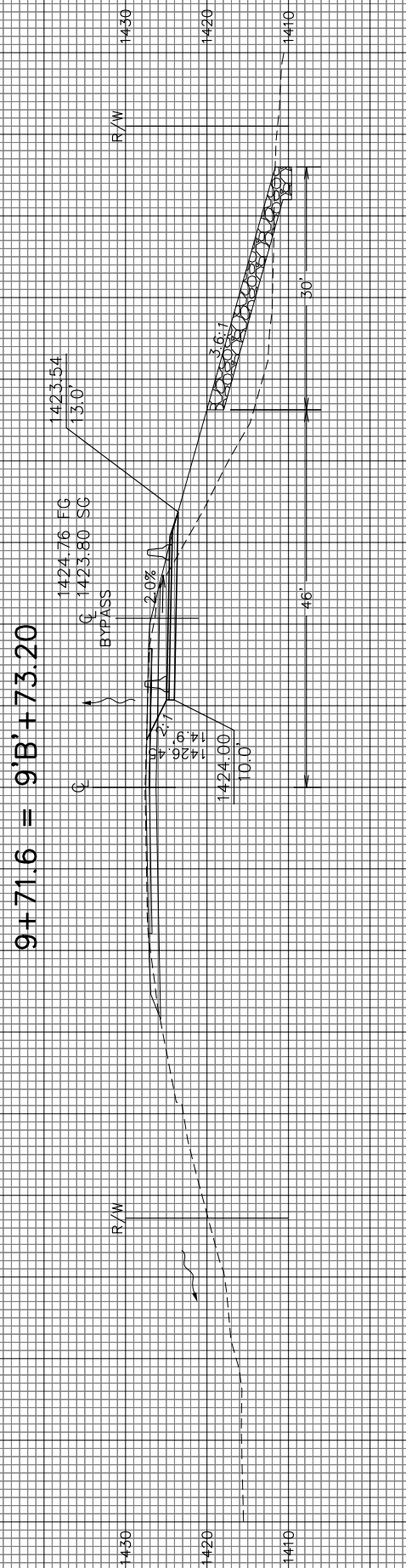
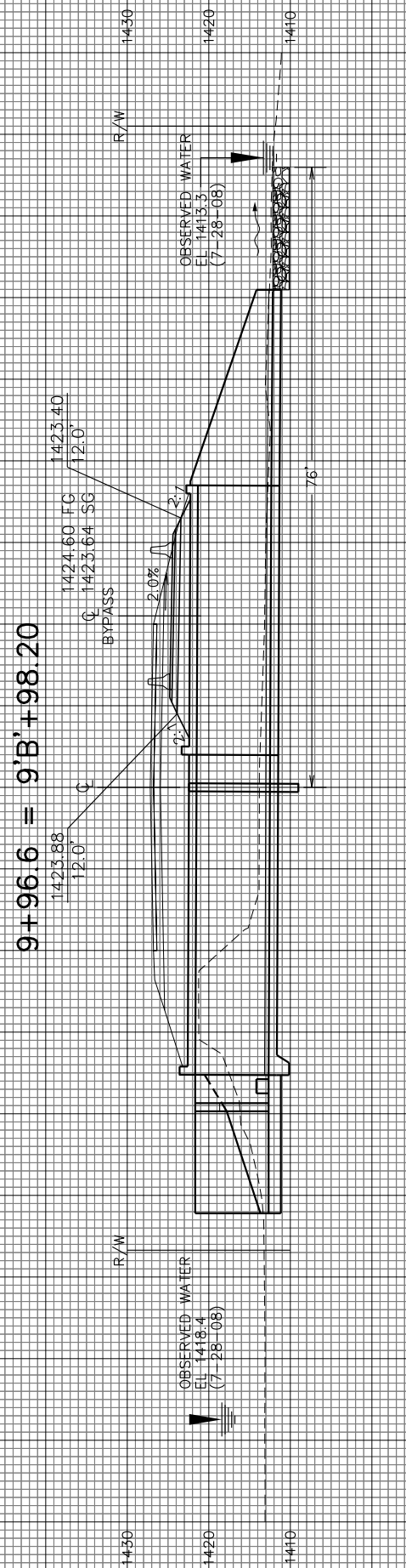
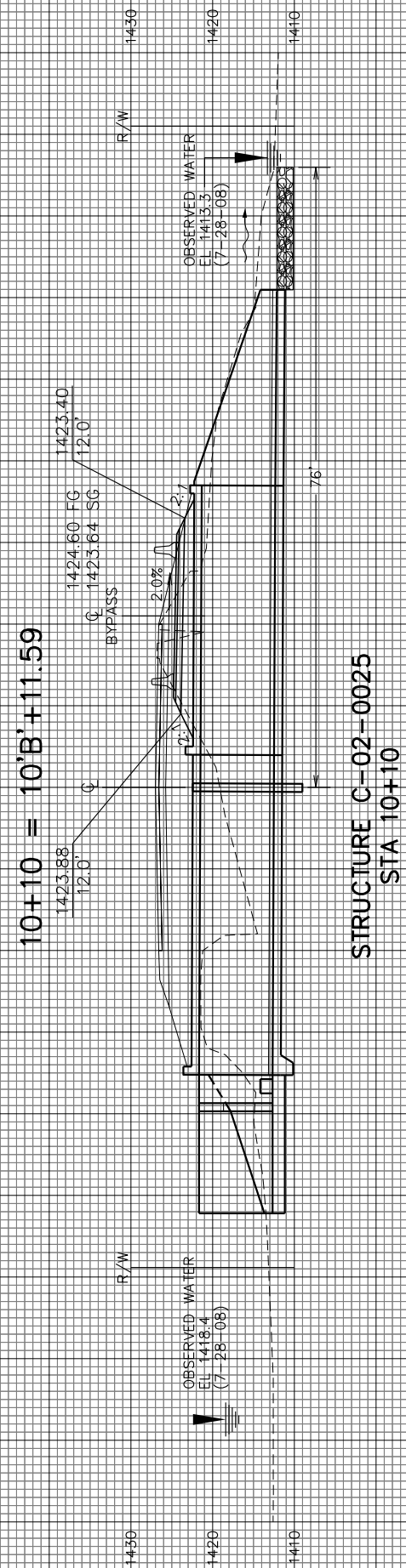






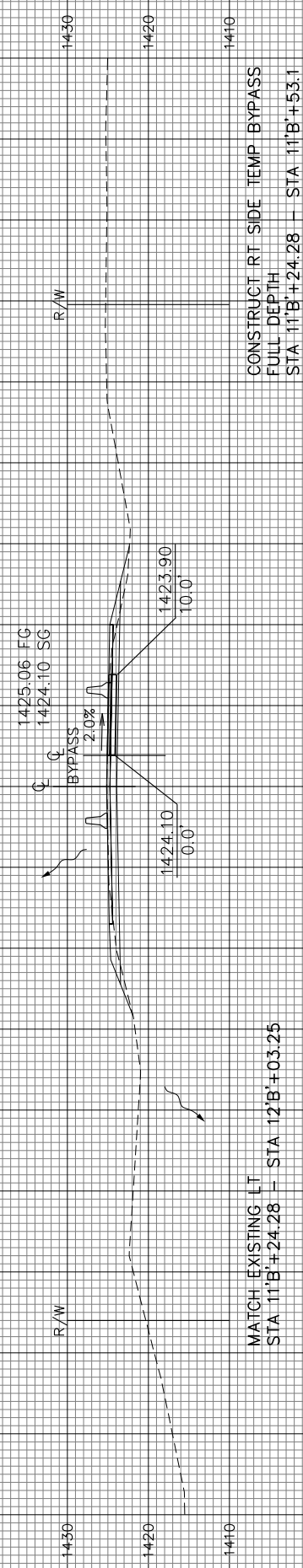
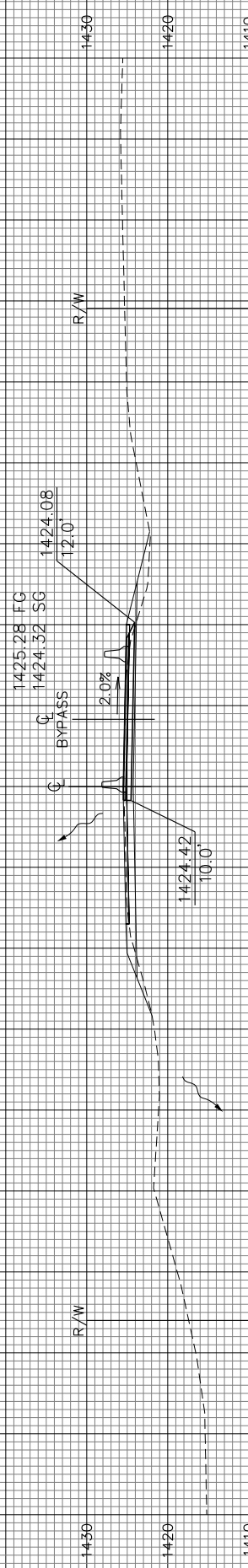


OFFSET DISTANCES SHOWN FOR THE TEMPORARY BYPASS ARE REFERENCED FROM THE TEMPORARY BYPASS CENTERLINE.



9

9


$$11 + 21.6 = 11'B' + 24.28$$


CONSTRUCT PE STA 10'B'+88 RT

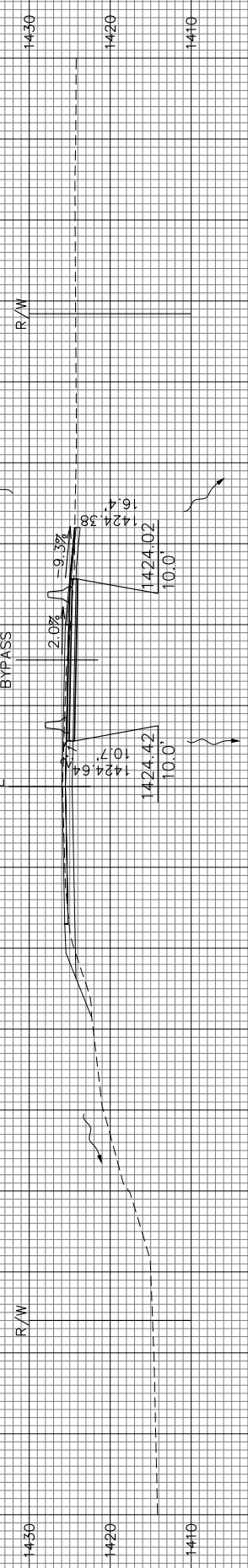
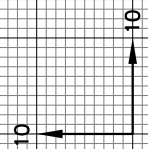
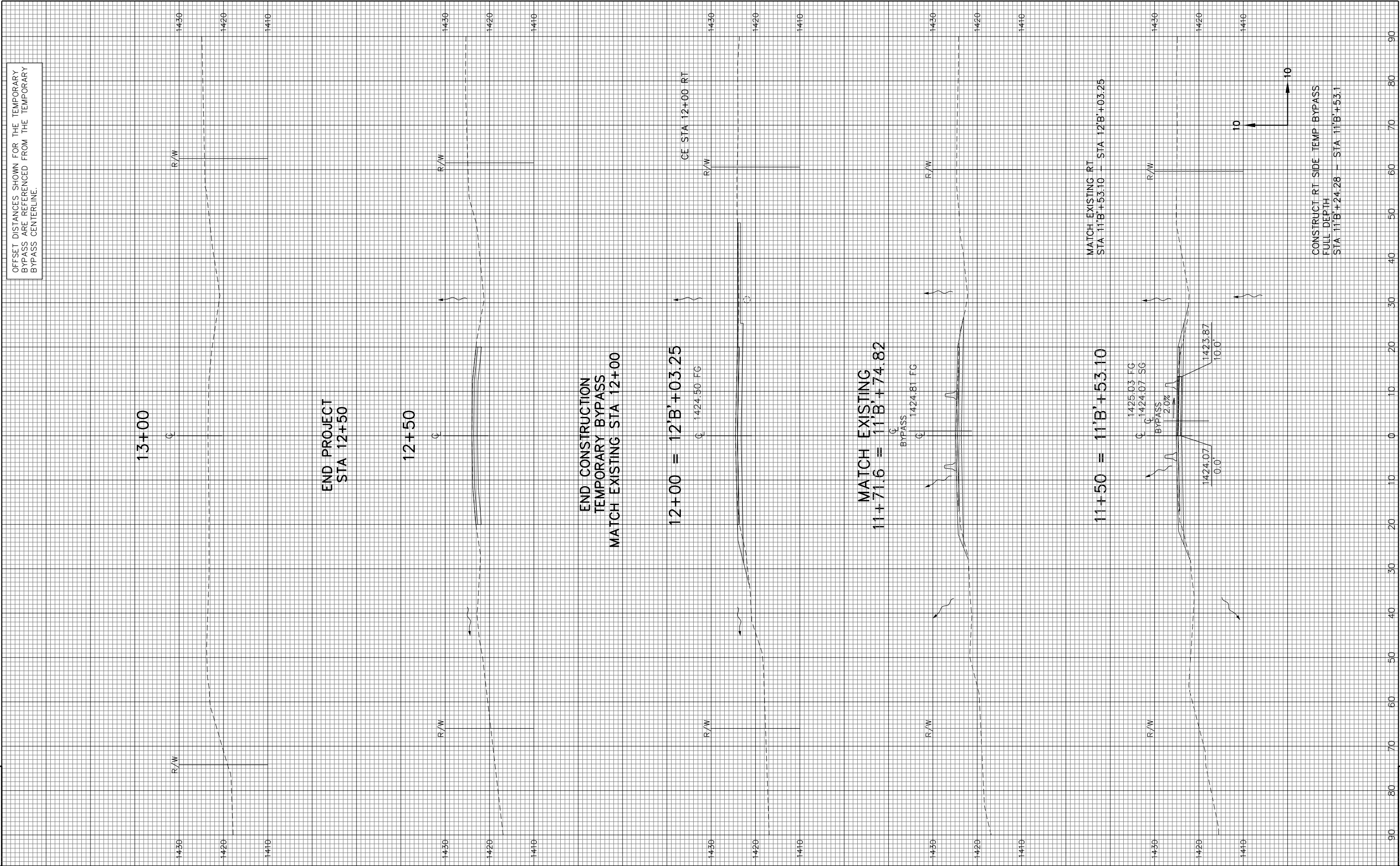


Figure 1 is a plan view of a road layout. It shows a main road (solid line) and a bypass (dashed line). The bypass is labeled "BYPASS" and has a 2.0% grade. Key points and dimensions are labeled: 1423.65, 1424.85 FG, 1423.89 SG, 12.0', 1422.10, 15.1', 1424.09, 12.5', 10.0', 1423.34, 2.1', 2.1', 2.0%, 1420, 1430, 1440, R/W, and Q.



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Notes



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