NWL

DEC 2014

PROJECT ID: 8385-06-70

WITH: N/A

COUNTY: DOUGLAS

ORDER OF SHEETS

TOTAL SHEETS = 40

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T DAIRYLAND, SWEDISH HIGHWAY

SPRUCE RIVER BRIDGE B160133

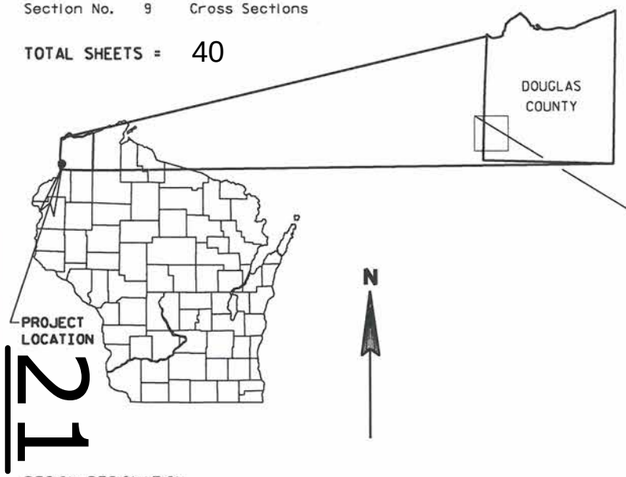
TOWN ROAD

DOUGLAS COUNTY

STATE PROJECT NUMBER

8385-06-70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8385-06-70	WISC 2014452	1



DESIGN DESIGNATION

A.D.T.	(2015)	=	<100
A.D.T.	(2035)	=	<100
D.H.V.		=	10
D.		=	50/50
T.		=	5%
DESIGN SPEED		=	25 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

PLAN

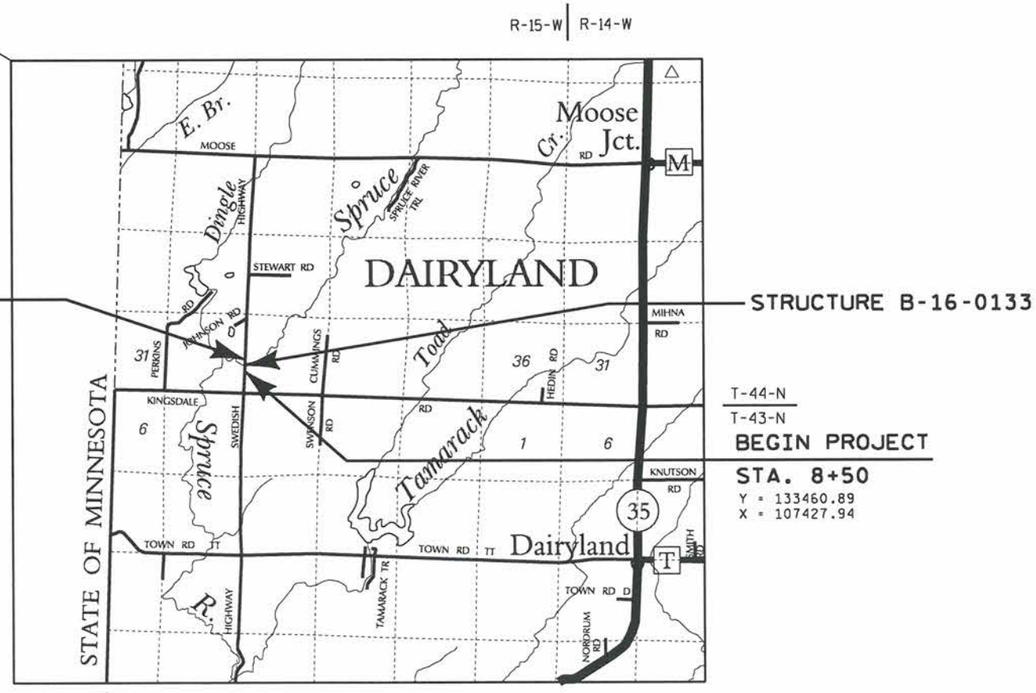
- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- HIGH VOLTAGE (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- OVERHEAD (OH)
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE



END PROJECT

STA. 11+50

Y = 133760.87

X = 107431.76

STRUCTURE B-16-0133

T-44-N

T-43-N

BEGIN PROJECT

STA. 8+50

Y = 133460.89

X = 107427.94

PINE COUNTY (MN) | DOUGLAS COUNTY (WI)

LAYOUT SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.049 MI.

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

ACCEPTED FOR

Town of Dairyland

7-15-14 (Date) Ron Dygo (Town Chairman)

ORIGINAL PLANS PREPARED BY

AYRES ASSOCIATES — 3433 Oakwood Hills Parkway, Eau Claire, WI 54701, www.AyresAssociates.com

WISCONSIN — DANIEL N. SYDOW E-38363 WI — PROFESSIONAL ENGINEER

DATE 7/1/2014

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor: AYRES ASSOCIATES INC

Designer: AYRES ASSOCIATES INC

Management Consultant: KNIGHT EA

C.O. Examiner:

APPROVED FOR THE DEPARTMENT

DATE: 7/23/14 Ryan B McKane (Management Consultant Signature)

E

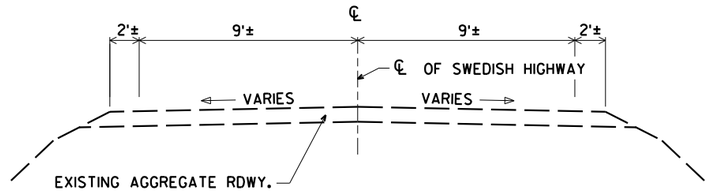
U:\42-0902.00 - Douglas Co, Tn Dairyland, Swedish Highway\RDWY\420902 t1.dgn

PENTABLE:BReau_shd_util.tbl

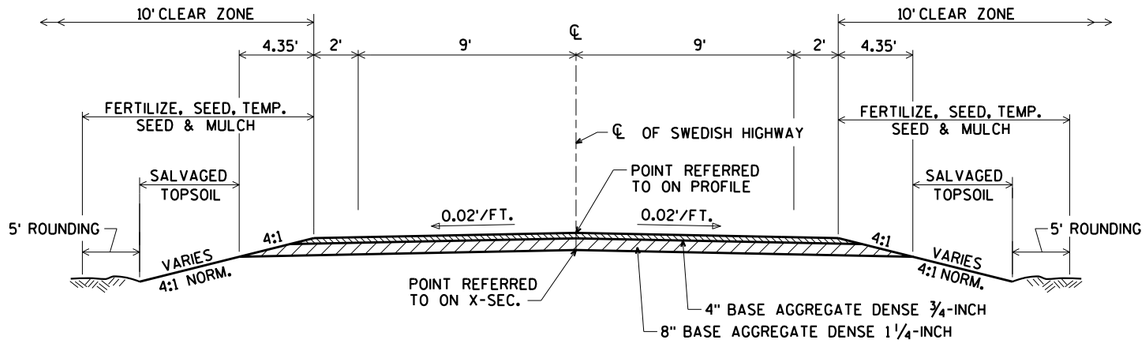
BRIDGE

1:200

WISDOT/CADDS SHEET 10

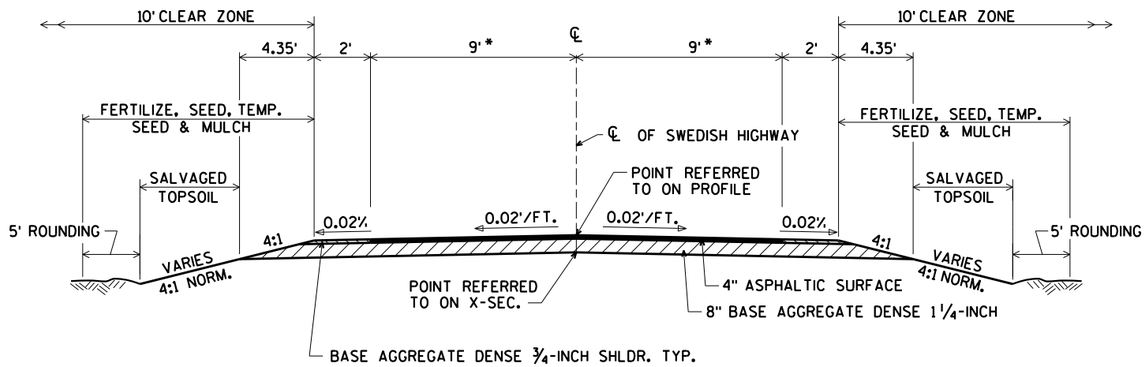


TYPICAL EXISTING SECTION



TYPICAL FINISHED SECTION

(STA. 8+50 TO STA. 9+29.75)
(STA. 10+70.25 TO STA. 11+50)



TYPICAL PAVED SECTION

(STA. 9+29.75 TO STA. 9+79.75)
(STA. 10+20.25 TO STA. 10+70.25)

* ASPHALTIC SURFACE SHALL BE PLACED 26' WIDE AT ENDS OF BRIDGE AND TAPER TO 18' WIDE AT 50' FROM THE ENDS OF THE BRIDGE.

ABBREVIATIONS

AC	ACRES
CHIS	CHISELED
℄	CENTERLINE
COR	CORNER
CWT	COUNT
CY	CUBIC YARD
EL	ELEVATION
GAL	GALLON
H	HOUSE
IP	IRON PIPE
LB	POUND
LF	LINEAR FEET
LS	LUMP SUM
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MON	MONUMENT
NORM	NORMAL
OAL	OVERALL LENGTH
PC	POINT OF CURVATURE
PD	PEDESTAL
PI	POINT OF INTERSECTION
PK	PARKER-KALON
PL	PROPERTY LINE
PLE	PERMANENT LIMITED EASEMENT
PP	POWER POLE
PT	POINT OF TANGENCY
R	RADIUS
REQ'D	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
SHLDR	SHOULDER
STA	STATION
SY	SQUARE YARD
TLE	TEMPORARY LIMITED EASEMENT
VAR	VARIES
WL	WELL

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

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

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

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) 1988.

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPTS.

ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH TWO 2" LAYERS USE 12.5 mm NOMINAL AGGREGATE SIZE.

UTILITIES

CENTURYLINK
2426 75th AVENUE
DRESSER, WI 54020
ATTN: MIKE VANDENBOS
715-294-2463
mike.vandenbos@centurylink.com

EAST CENTRAL ENERGY
P.O. BOX 39
BRAHAM, MN 55006
ATTN: DAVID WALETSKI
763-691-2037
612-390-0792 (cell)
dave.waletski@ecemn.com

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

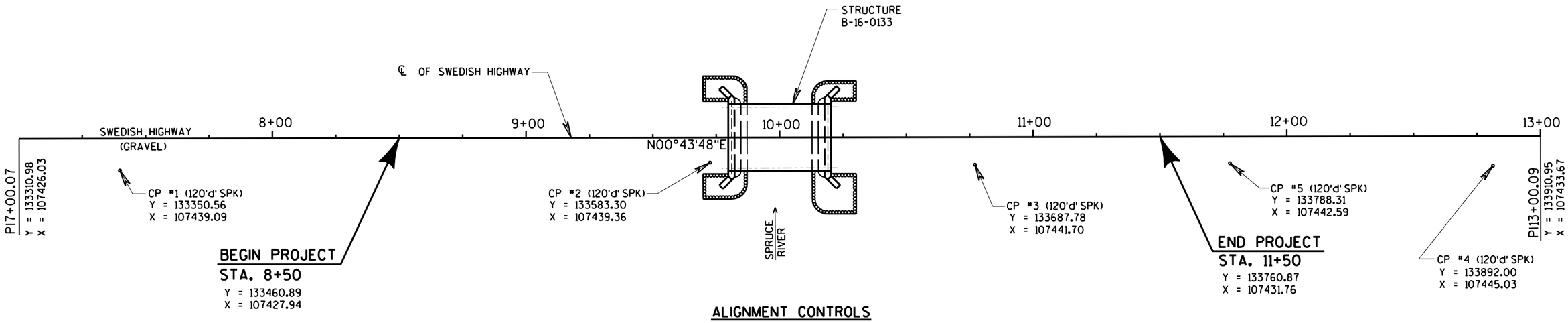
WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

AMY CRONK
810 WEST MAPLE ST.
SPOONER, WI. 54801
715-635-4229
amy.cronk@wisconsin.gov

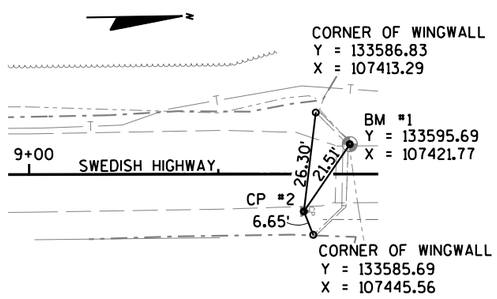
DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: DANIEL N. SYDOW
715-834-3161
sydowd@AyresAssociates.com

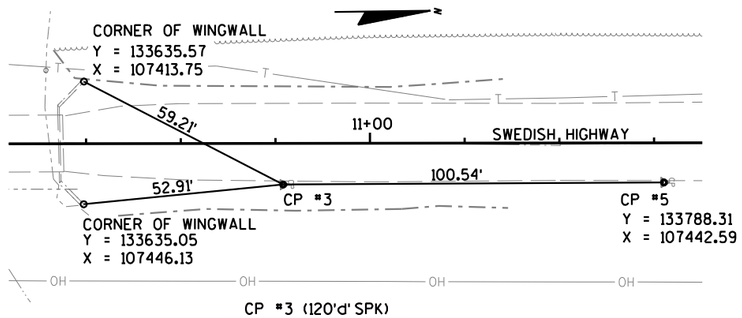
2



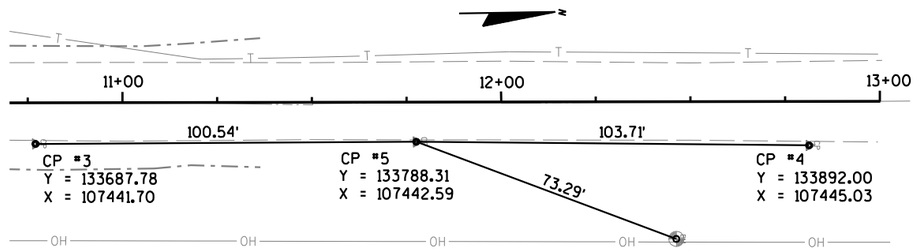
ALIGNMENT CONTROLS



CP #2 (120'd' SPK)
STA. 9+72.54, 9.86' RT.
Y = 133583.30
X = 107439.36



CP #3 (120'd' SPK)
STA. 10+77.04, 10.87' RT.
Y = 133687.78
X = 107441.70

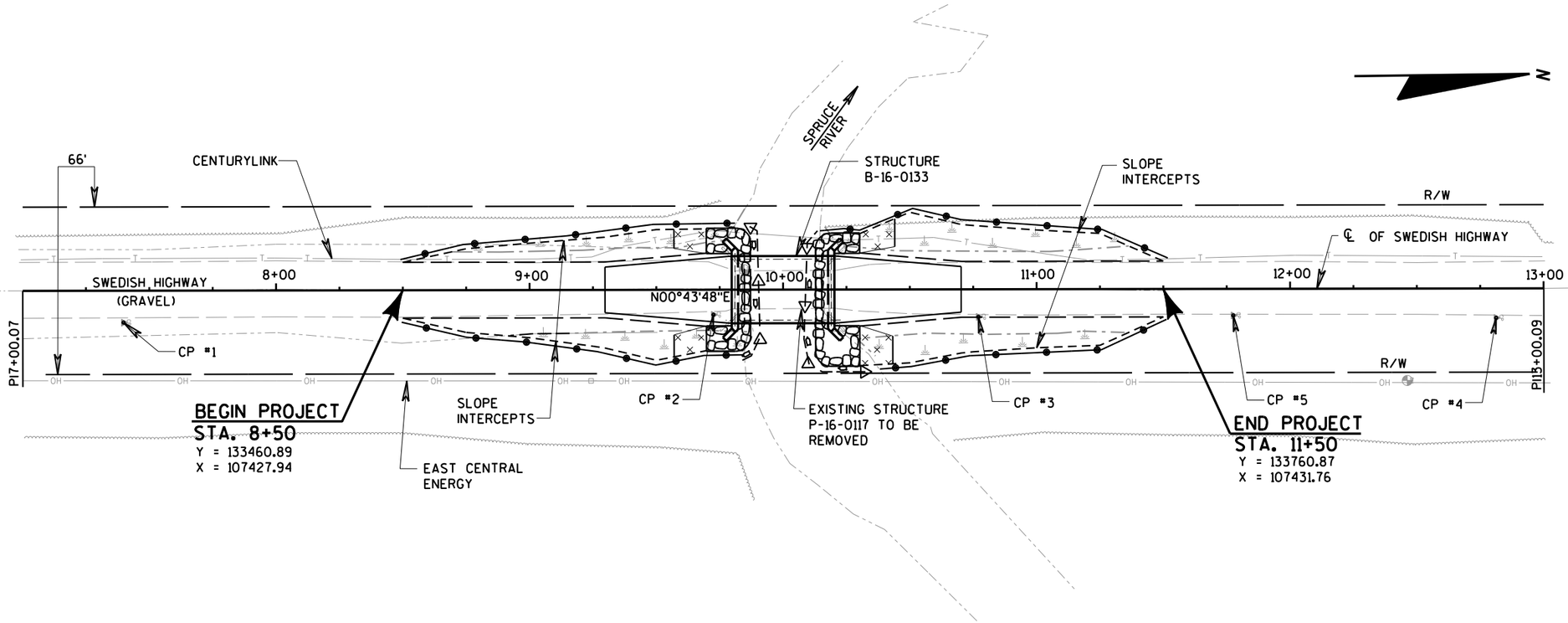


CP #5 (120'd' SPK)
STA. 11+77.58, 10.48' RT.
Y = 133788.31
X = 107442.59

ALIGNMENT TIES

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	ALIGNMENT CONTROLS	SHEET 3	E

2



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

TOTAL PROJECT AREA = 0.45 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.277 ACRES

HIGH WATER 2 EL. 1161.4

LEGEND

- EROSION MAT CLASS II TYPE B
- TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
- SILT FENCE
- RIPRAP HEAVY
- TURBIDITY BARRIERS

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	EROSION CONTROL	SCALE, FEET 0 25 50	SHEET 4	E

DATE 30SEP14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8385-06-70 QUANTITY
0010	201.0105	CLEARING	STA	3.000	3.000
0020	201.0205	GRUBBING	STA	3.000	3.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 10+00	LS	1.000	1.000
0040	205.0100	EXCAVATION COMMON	CY	169.000	169.000
0050	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-16-0133	LS	1.000	1.000
0060	208.0100	BORROW	CY	29.000	29.000
0070	210.0100	BACKFILL STRUCTURE	CY	176.000	176.000
0080	213.0100	FINISHING ROADWAY (PROJECT) 01. 8385-06-70	EACH	1.000	1.000
0090	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	98.000	98.000
0100	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	395.000	395.000
0110	455.0605	TACK COAT	GAL	8.000	8.000
0120	465.0105	ASPHALTIC SURFACE	TON	58.000	58.000
0130	502.0100	CONCRETE MASONRY BRIDGES	CY	121.000	121.000
0140	502.3200	PROTECTIVE SURFACE TREATMENT	SY	145.000	145.000
0150	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	4,040.000	4,040.000
0160	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	13,765.000	13,765.000
0170	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 01. B-16-0133	LS	1.000	1.000
0180	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	20.000	20.000
0190	550.0500	PILE POINTS	EACH	10.000	10.000
0200	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	300.000	300.000
0210	606.0300	RIPRAP HEAVY	CY	90.000	90.000
0220	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	140.000	140.000
0230	619.1000	MOBILIZATION	EACH	1.000	1.000
0240	625.0500	SALVAGED TOPSOIL	SY	475.000	475.000
0250	627.0200	MULCHING	SY	875.000	875.000
0260	628.1504	SILT FENCE	LF	530.000	530.000
0270	628.1520	SILT FENCE MAINTENANCE	LF	1,060.000	1,060.000
0280	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000
0290	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0300	628.2023	EROSION MAT CLASS II TYPE B	SY	90.000	90.000
0310	628.6005	TURBIDITY BARRIERS	SY	105.000	105.000
0320	628.7504	TEMPORARY DITCH CHECKS	LF	30.000	30.000
0330	629.0210	FERTILIZER TYPE B	CWT	0.800	0.800
0340	630.0120	SEEDING MIXTURE NO. 20	LB	45.000	45.000
0350	630.0200	SEEDING TEMPORARY	LB	40.000	40.000
0360	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	4.000	4.000
0370	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0380	638.2602	REMOVING SIGNS TYPE II	EACH	2.000	2.000
0390	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0400	643.0100	TRAFFIC CONTROL (PROJECT) 01. 8385-06-70	EACH	1.000	1.000
0410	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	205.000	205.000
0420	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	260.000	260.000
0430	650.5000	CONSTRUCTION STAKING BASE	LF	260.000	260.000
0440	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-16-0133	LS	1.000	1.000
0450	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8385-06-70	LS	1.000	1.000
0460	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	260.000	260.000
0470	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	726.000	726.000

3

DATE 30SEP14 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	8385-06-70 QUANTITY
0480	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	1,200.000	1,200.000
0490	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	300.000	300.000

3

CLEARING AND GRUBBING (CATEGORY 0010)

STATION TO STATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
Sta. 8+50 to Sta. 11+50	3	3

213.0100 FINISHING ROADWAY (CATEGORY 0010)

LOCATION	EACH
PROJECT 8385-06-70	1

*EARTHWORK SUMMARY (CATEGORY 0010)

STAGE	STATION TO STATION	LOCATION	205.0100 EXCAVATION COMMON CY	FILL CY	EXPANDED 208.0100 FILL CY	BORROW CY	WASTE CY
1 / Swedish Hwy	8+50 - 11+50	Swedish Hwy	169	134	175	29	23
TOTALS			169	134	175	29	23

*NOTE; SHRINKAGE = 30%

BASE AGGREGATE DENSE (CATEGORY 0010)

STATION TO STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
Sta. 8+50 to Sta. 9+29.75	Mainline	44	121
Sta. 9+29.75 to Sta. 9+79.75	Shoulders	5	---
Sta. 10+20.25 to Sta. 10+70.25	Shoulders	5	---
Sta. 10+70.25 to Sta 11+50	Mainline	44	---
Sta. 8+50 to Sta. 9+79.75	Mainline	---	76
Sta. 10+25 to Sta. 11+50	Mainline	---	198
TOTALS		98	395

455.0605 TACK COAT (CATEGORY 0010)

STATION TO STATION	LOCATION	GAL
Sta. 9+29.75 to Sta. 9+79.75	Mainline	4
Sta. 10+20.25 to Sta. 10+70.25	Mainline	4
TOTAL		8

465.0105 ASPHALTIC SURFACE (CATEGORY 0010)

STATION TO STATION	LOCATION	TON
Sta. 9+29.75 to Sta. 9+79.75	Mainline	29
Sta. 10+20.25 to Sta. 10+70.25	Mainline	29
TOTAL		58

619.1000 MOBILIZATION

LOCATION	EACH
PROJECT 8385-06-70 (CATEGORY 0010)	0.2
PROJECT 8385-06-70 (CATEGORY 0020)	0.8
TOTAL	1

3

SALVAGED TOPSOIL, MULCHING, FERTILIZER, SEED & TEMPORARY SEED (CATEGORY 0010)

STATION TO STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING NO. 20 LB	630.0200 SEEDING TEMPORARY LB
Sta. 8+50 to Sta. 11+50	Mainline	475	800	0.6	26	24
Undistributed		---	75	0.2	19	16
TOTALS		475	875	0.8	45	40

SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

STATION TO STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF
Sta. 8+50 to Sta. 9+85	LT&RT	270	540
Sta. 10+15 to Sta. 11+52	LT&RT	260	520
TOTALS		530	1,060

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 8385-06-70	4	2

628.2023 EROSION MAT CLASS II TYPE B (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 9+57 to Sta. 9+70	LT & RT	31
Sta. 10+30 to Sta. 10+43	LT & RT	40
Undistributed		19
TOTAL		90

628.6005 TURBIDITY BARRIERS (CATEGORY 0010)

LOCATION	SY
Sta. 9+90	36
Sta. 10+10	47
Undistributed	22
TOTAL	105

628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

LOCATION	LF
UNDISTRIBUTED	30

3

634.0612 POSTS WOOD 4X6 INCH X 12 FT (CATEGORY 0010)

STATION	LOCATION	EACH
Sta. 9+80	LT (Object Marker)	1
Sta. 9+80	RT (Object Marker)	1
Sta. 10+20.25	LT (Object Marker)	1
Sta. 10+20.25	RT (Object Marker)	1
TOTAL		4

637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

STATION			SF
Sta. 9+79.75	LT (Object Marker)	W5-52L	3
Sta. 9+79.75	RT (Object Marker)	W5-52R	3
Sta. 10+20.25	LT (Object Marker)	W5-52R	3
Sta. 10+20.25	RT (Object Marker)	W5-52L	3
TOTAL			12

638.2602 REMOVING SIGNS TYPE II (CATEGORY 0010)

STATION		EACH
Sta. 9+81	Weight Limit 7 Tons	1
Sta. 10+18	Weight Limit 7 Tons	1
TOTAL		2

642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)

LOCATION	EACH
PROJECT 8385-06-70	1

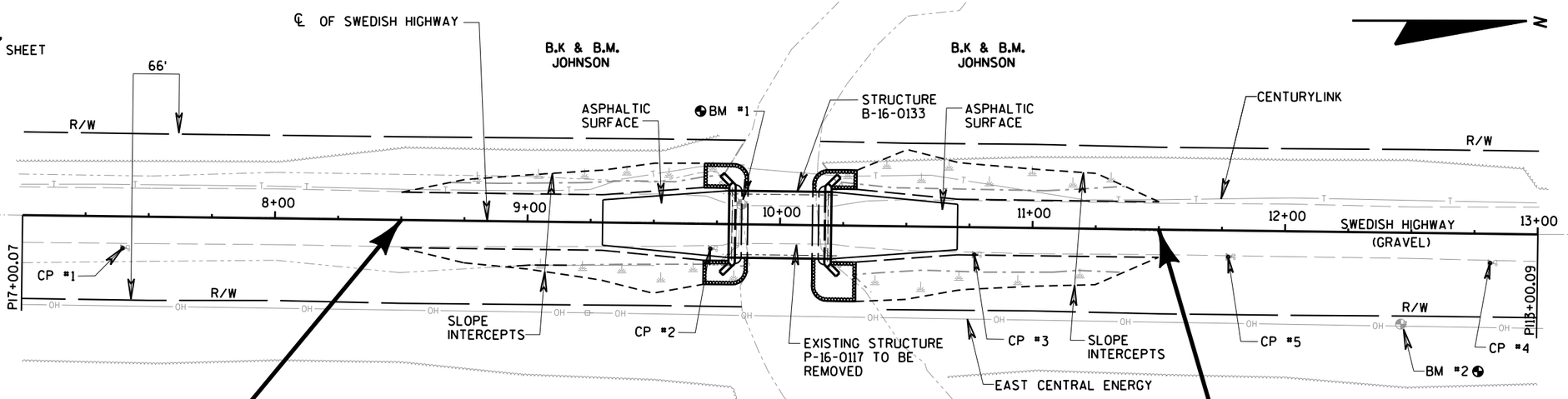
643.0100 TRAFFIC CONTROL (CATEGORY 0010)

LOCATION	EACH
PROJECT 8385-06-70	1

CONSTRUCTION STAKING

CATEGORY	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTAL CONTROL 8385-06-70 LS	650.9920 SLOPE STAKES LF
0010	Sta. 8+50 to 11+50	260	260	---	1	260
0020	B-16-0133	---	---	1	---	---
TOTALS		260	260	1	1	260

NOTE:
FOR ALIGNMENT CONTROLS,
SEE ALIGNMENT CONTROLS SHEET

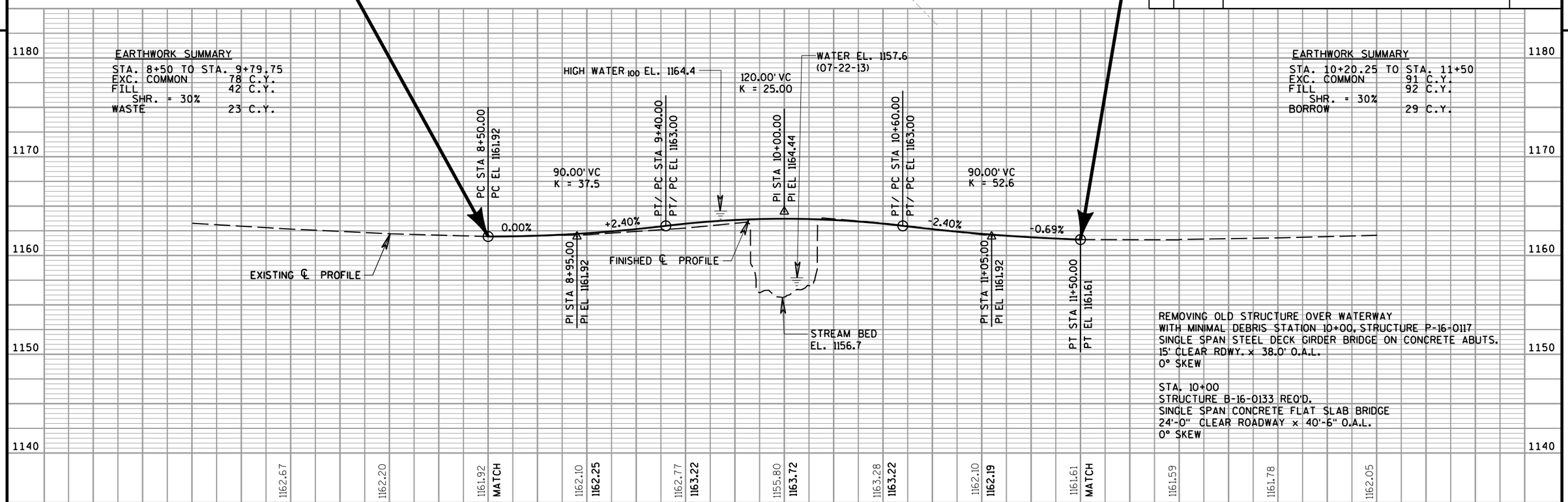


BEGIN PROJECT
STA. 8+50
Y = 133460.89
X = 107427.94

END PROJECT
STA. 11+50
Y = 133760.87
X = 107431.76

BENCH MARKS

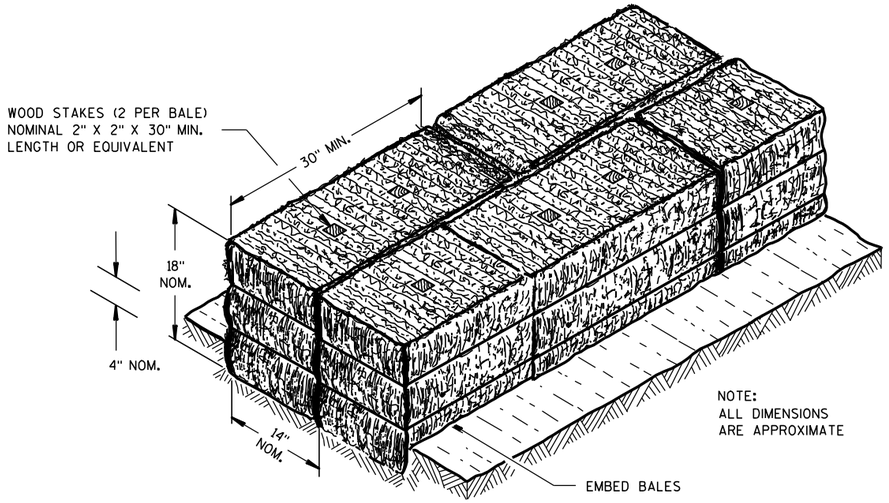
NO.	STA.	DESCRIPTION	ELEV.
1	9+85	CHISLED SQUARE IN SW CORNER OF BRIDGE	1163.64
2	12+46	120D SPIKE IN POWER POLE * 119372 (ECE)	1160.44



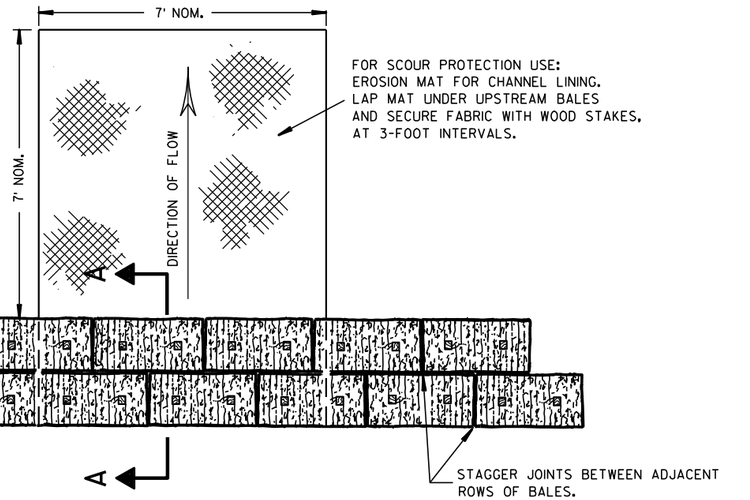
PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	PLAN AND PROFILE	SCALE, FEET 0 25 50	SHEET 10	E

Standard Detail Drawing List

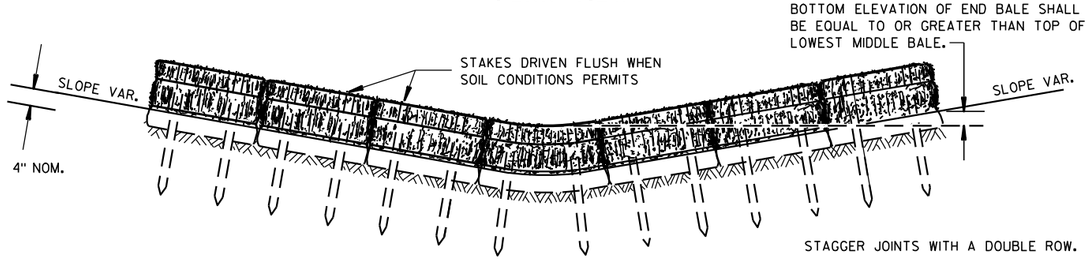
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES



SECTION A-A



PLAN VIEW



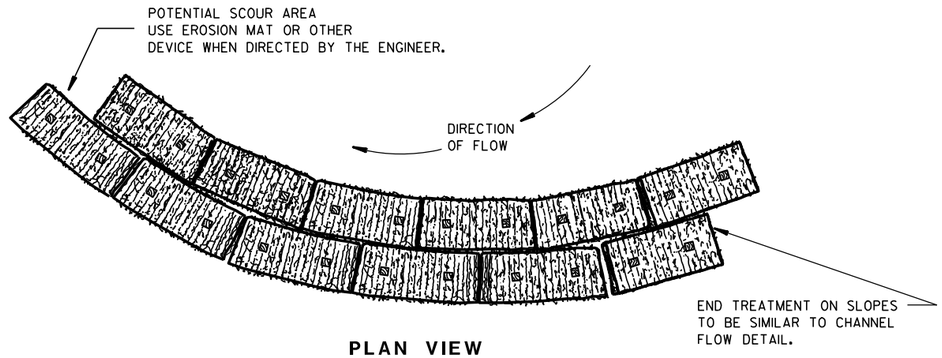
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

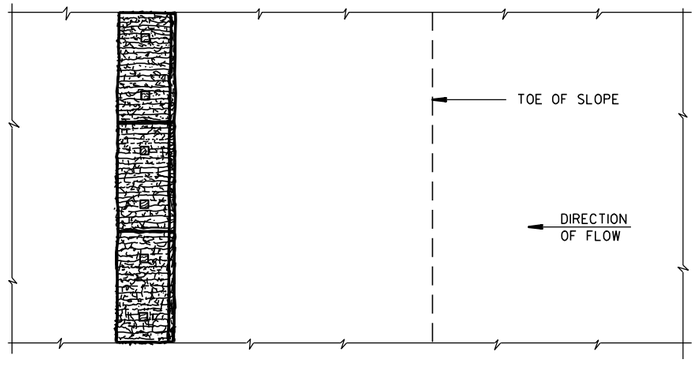
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

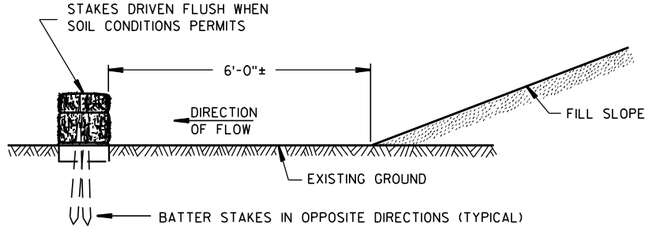


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

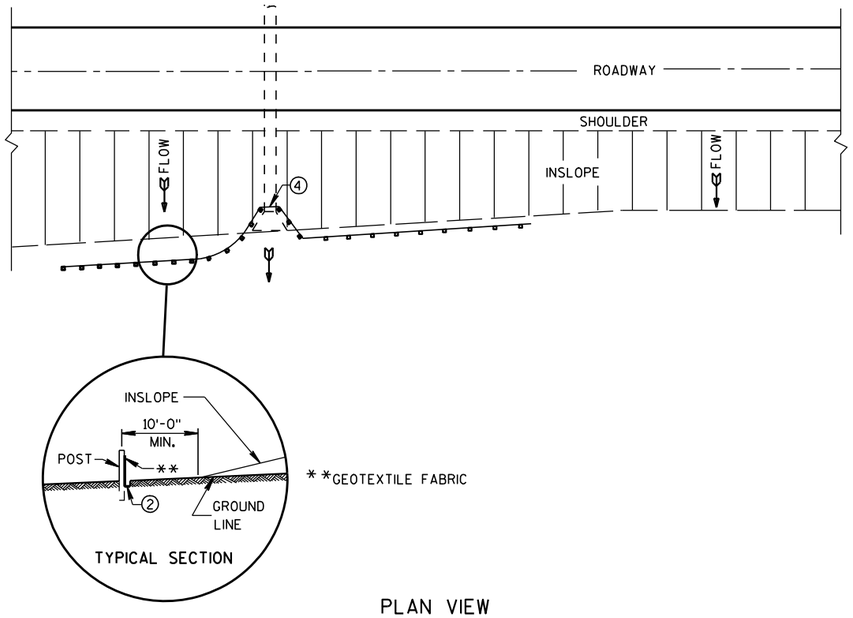
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

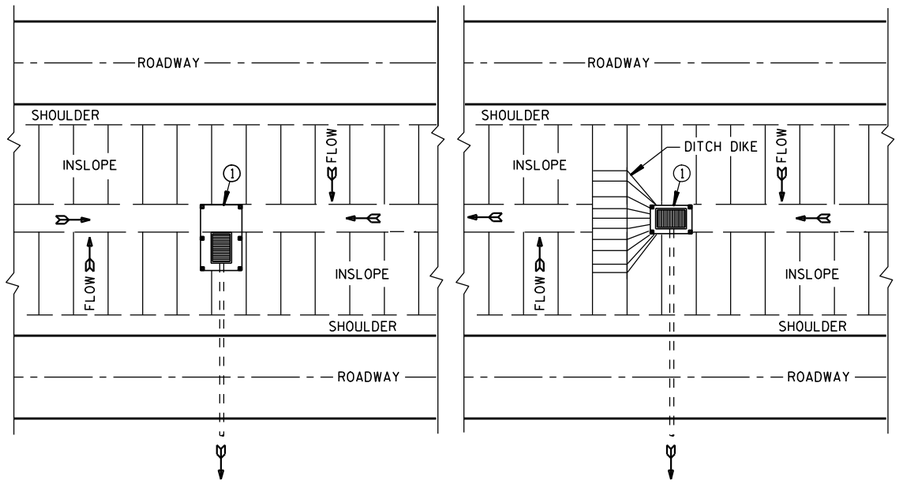
6

S.D.D. 8 E 8-3



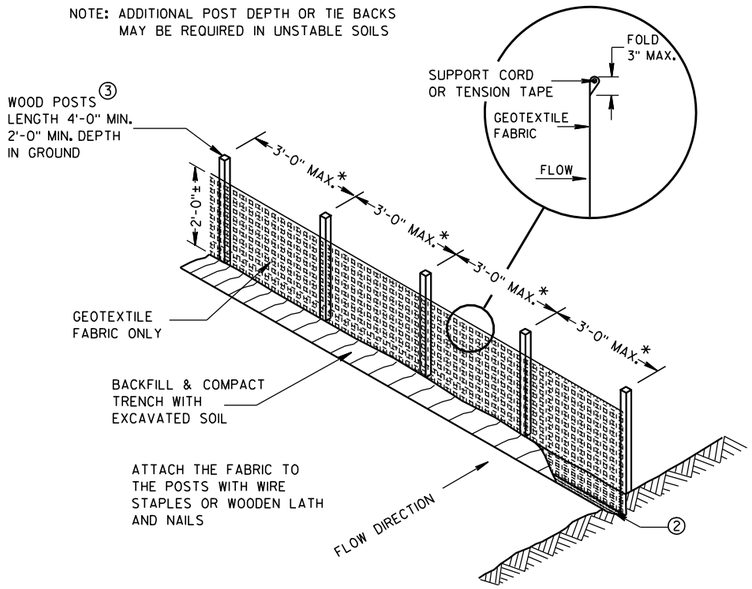
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



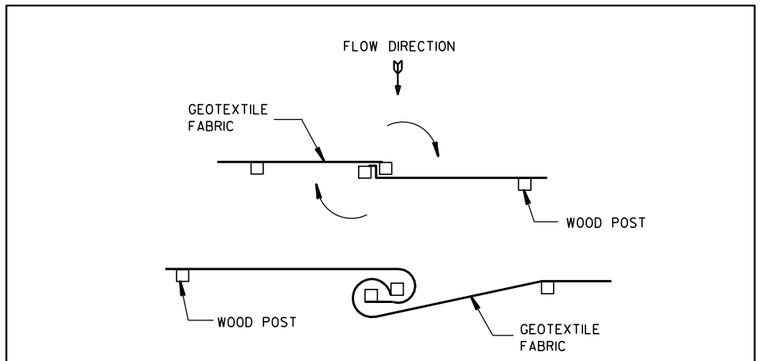
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

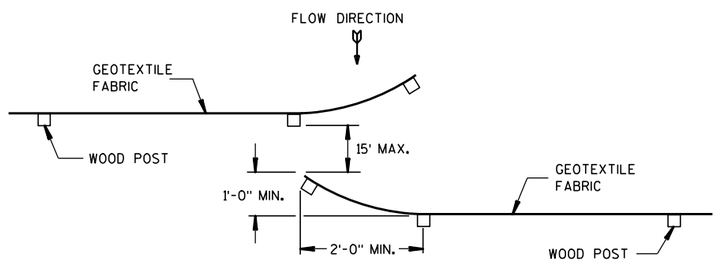


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE



TWIST METHOD



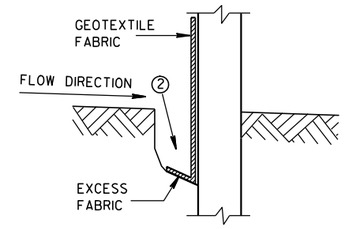
HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5

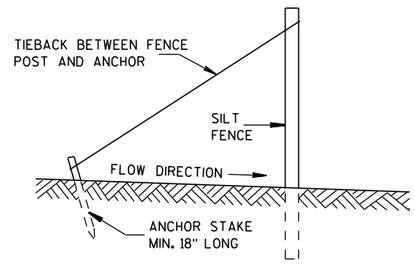
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

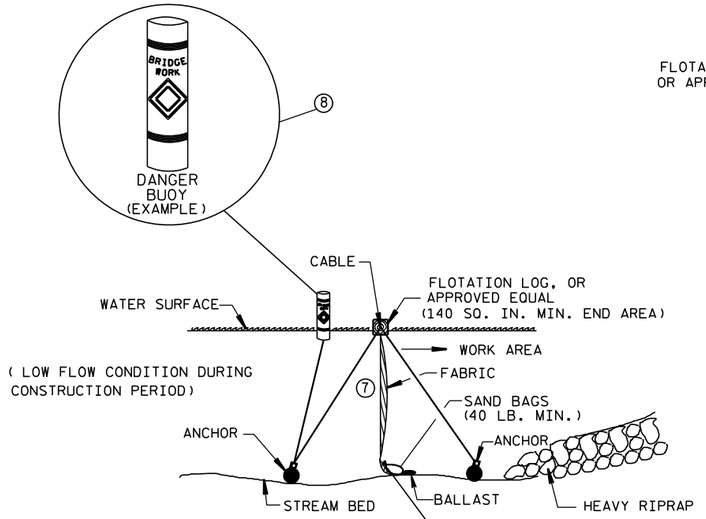
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

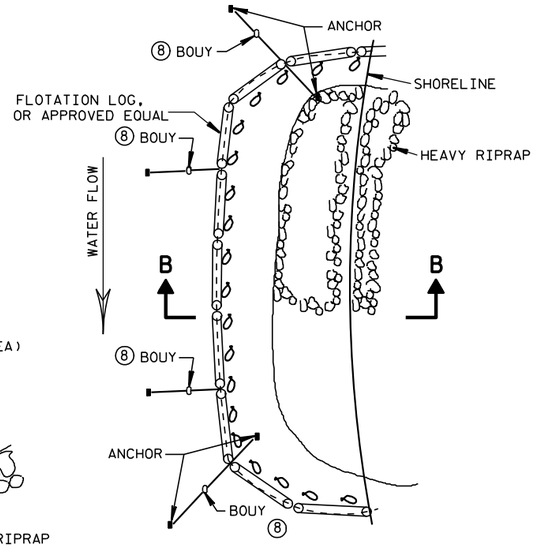
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

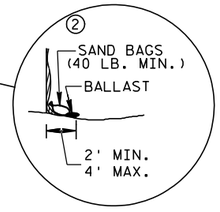
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6

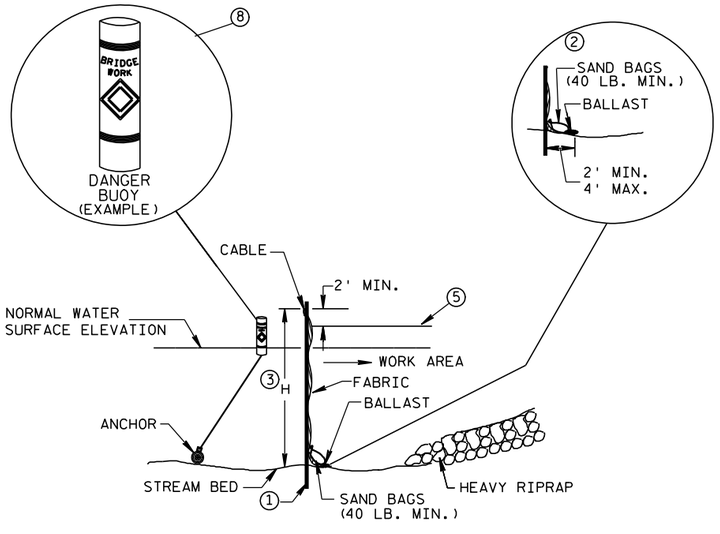


SECTION B-B

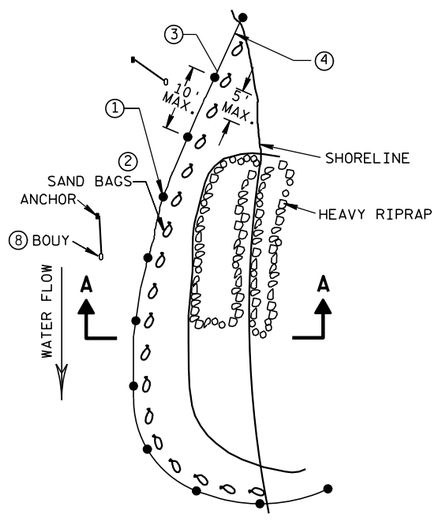




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

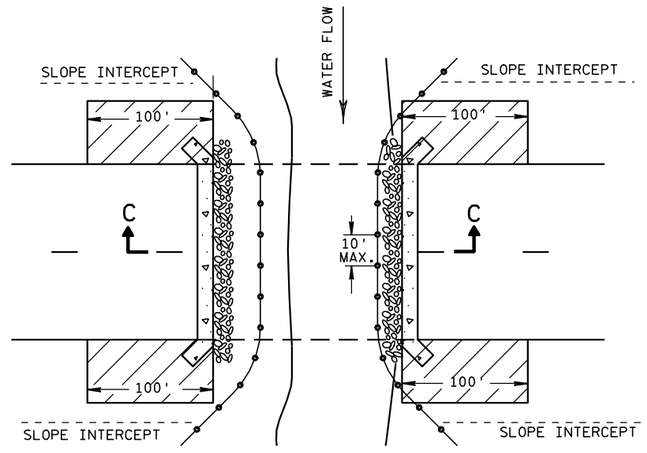
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

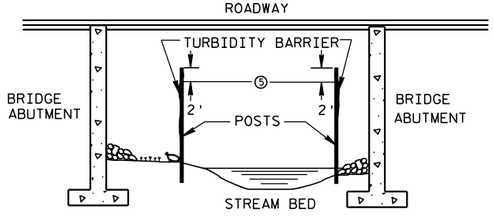
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

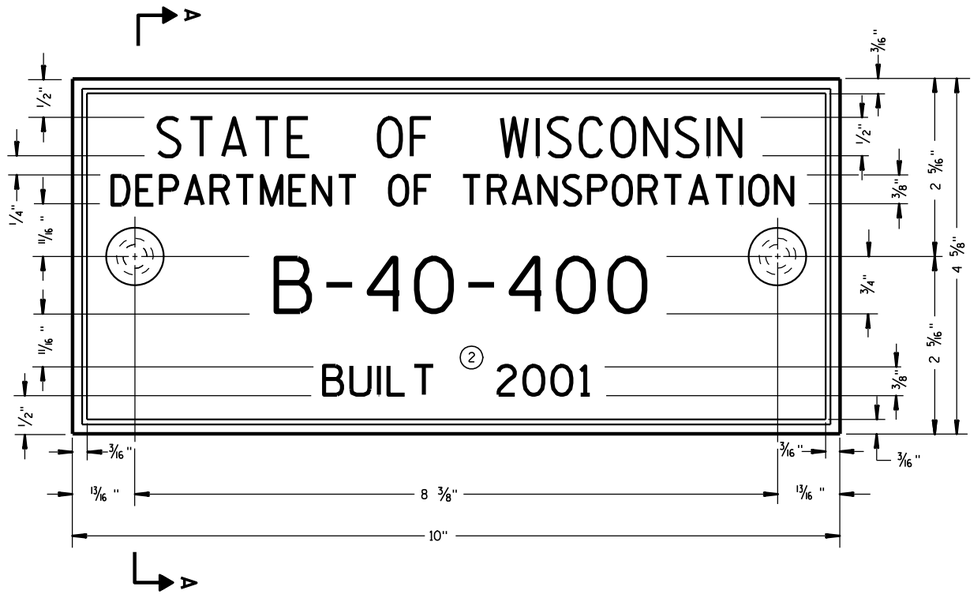
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

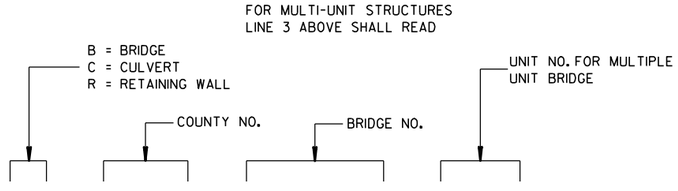
6

S.D.D. 8 E 11-2



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

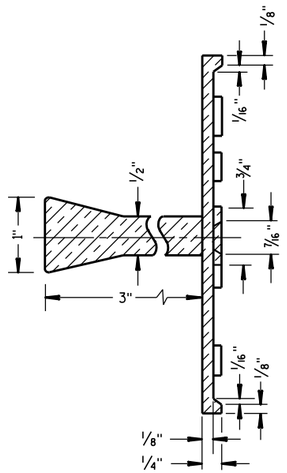
GENERAL NOTES

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.

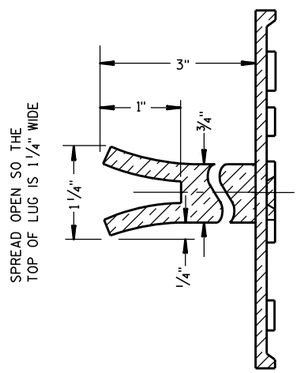
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

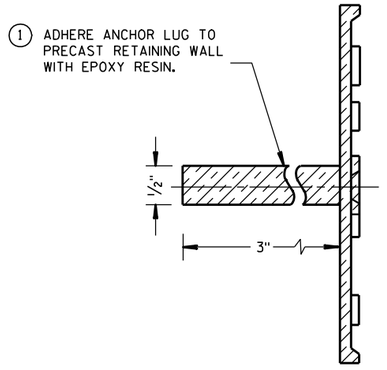
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

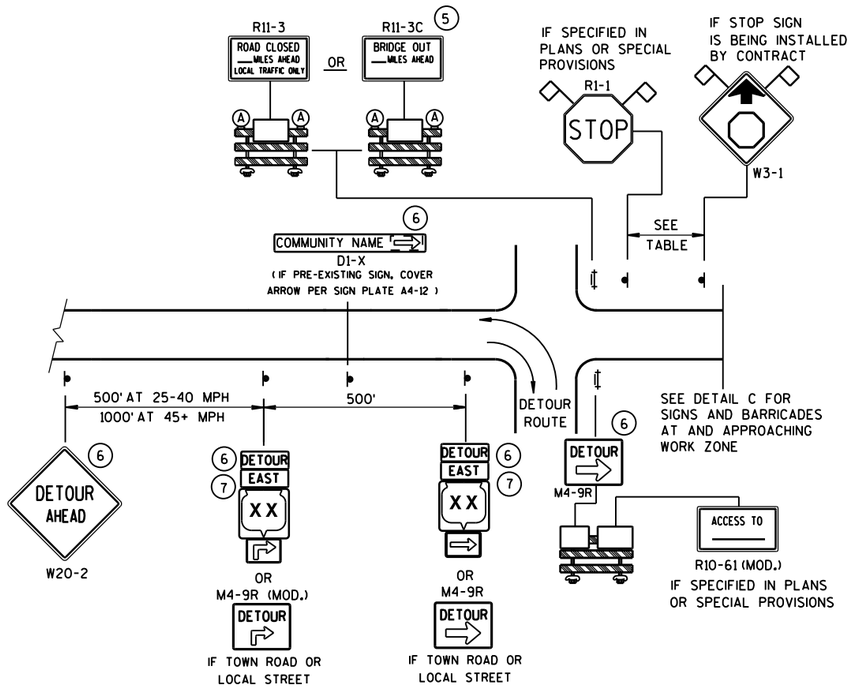
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER
FHWA	

6

S.D.D. 12 A 3-10

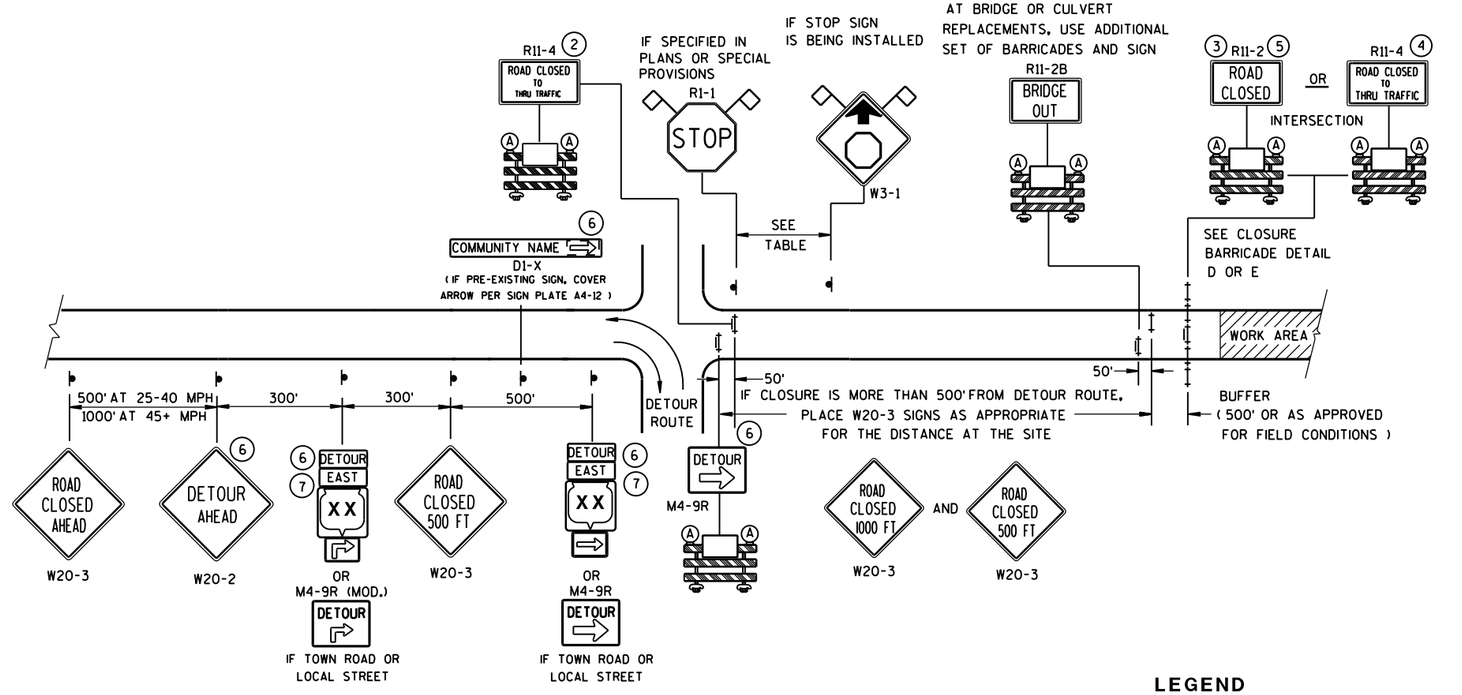
6

S.D.D. 12 A 3-10



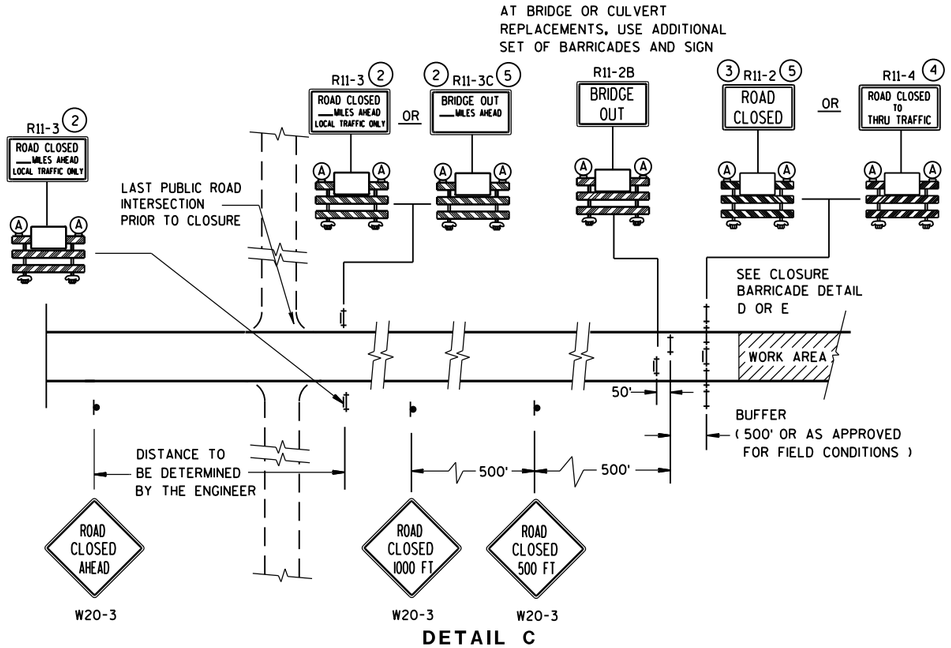
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

SEE SDD 15C2-SHEET "**b**"
FOR GENERAL NOTES
AND FOOTNOTES (1) THROUGH (7)

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

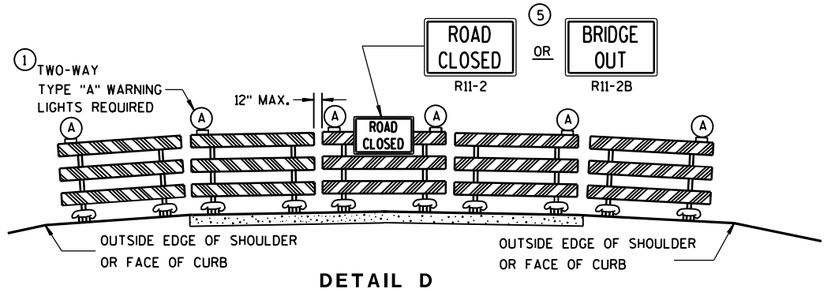
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE — /S/ Travis Feltes STATE TRAFFIC ENGINEER — DESIGN

FHWA

6

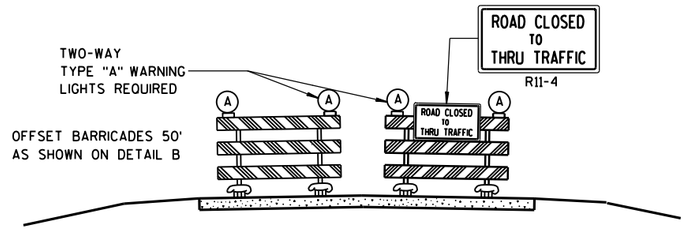
S.D.D. 15 C 2-5a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (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.

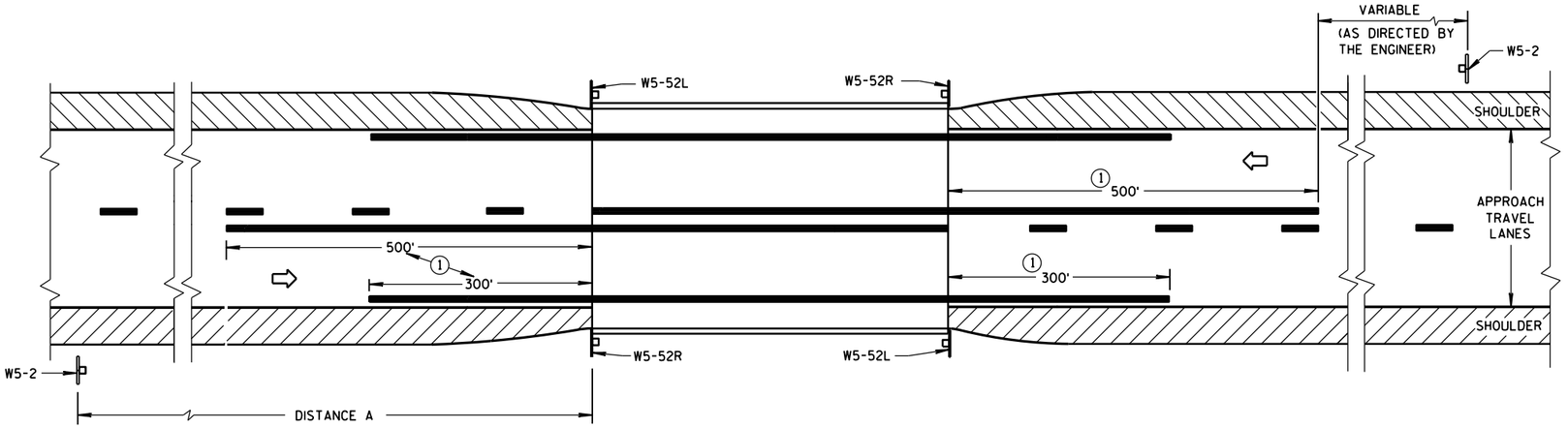
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 15 C 2-5b



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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

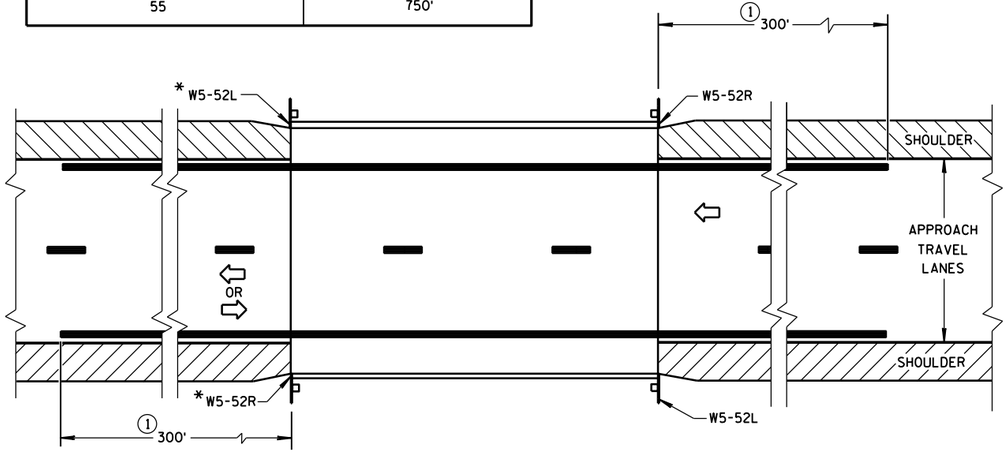
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

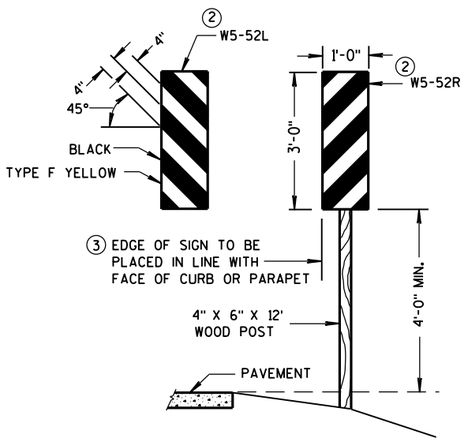


*OMIT ON ONE-WAY TRAVELLED WAYS

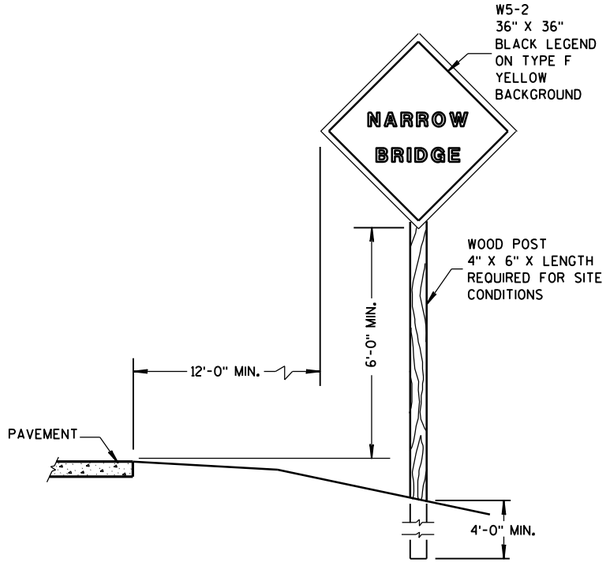
SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014 DATE

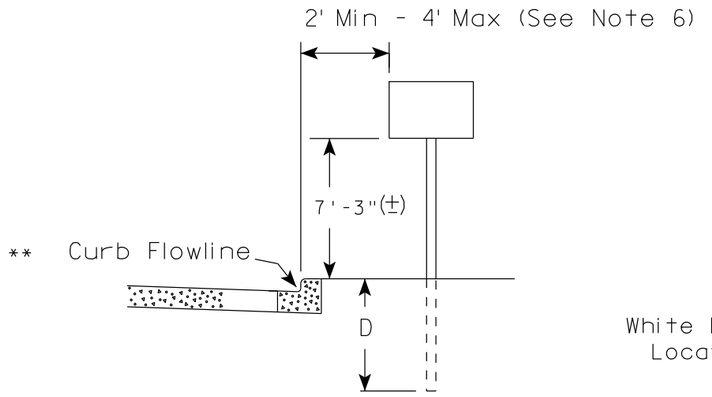
/S/ Travis Feltes STATE TRAFFIC ENGINEER

FHWA

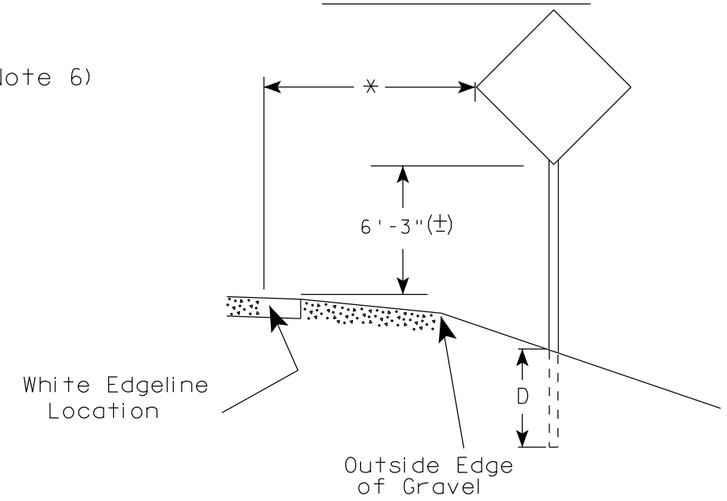
6

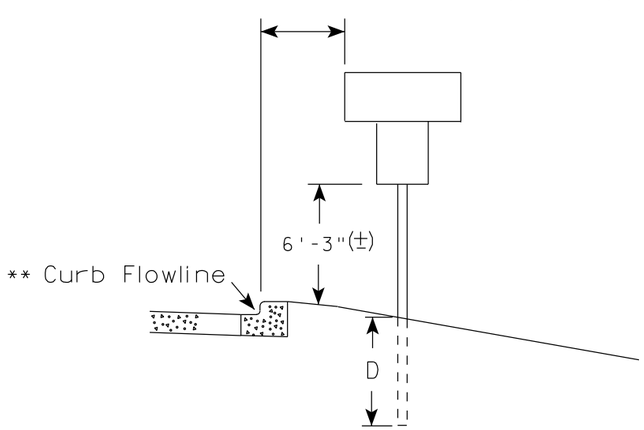
S.D.D. 15 C 6-7

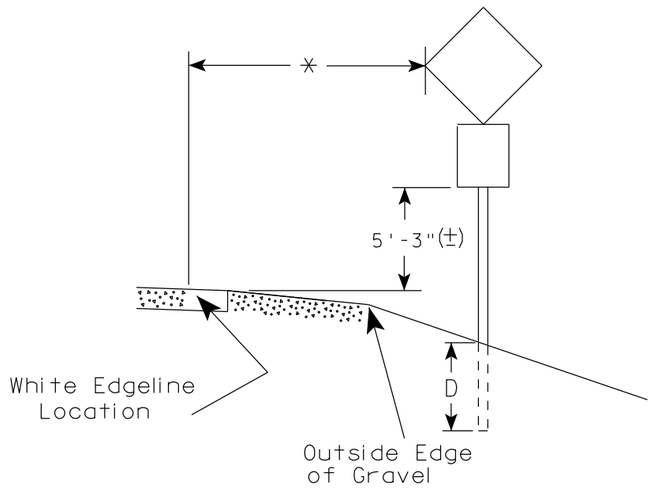
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. 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), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

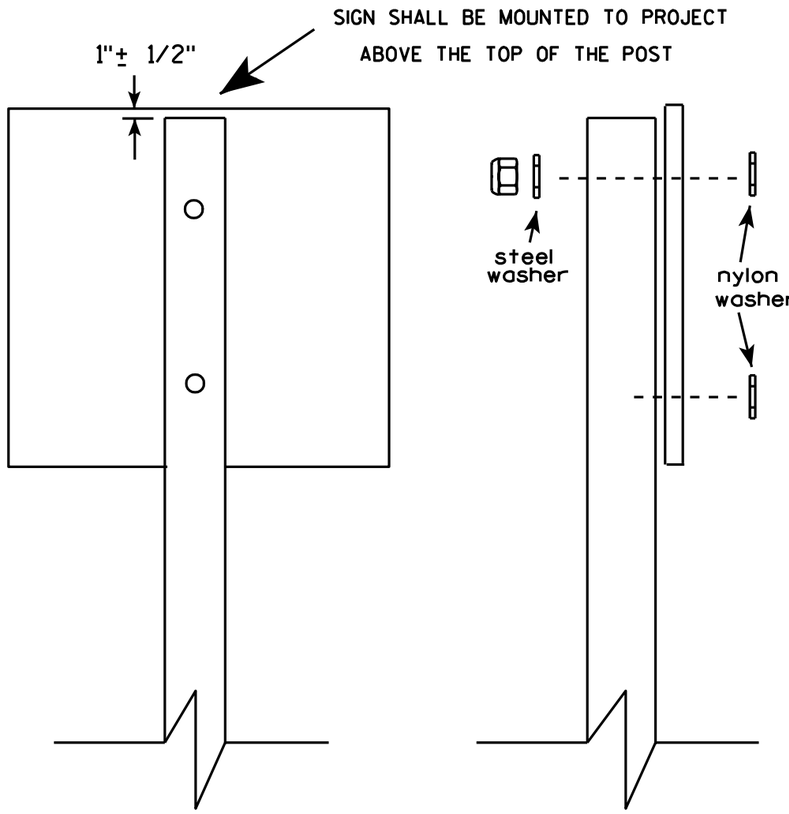
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

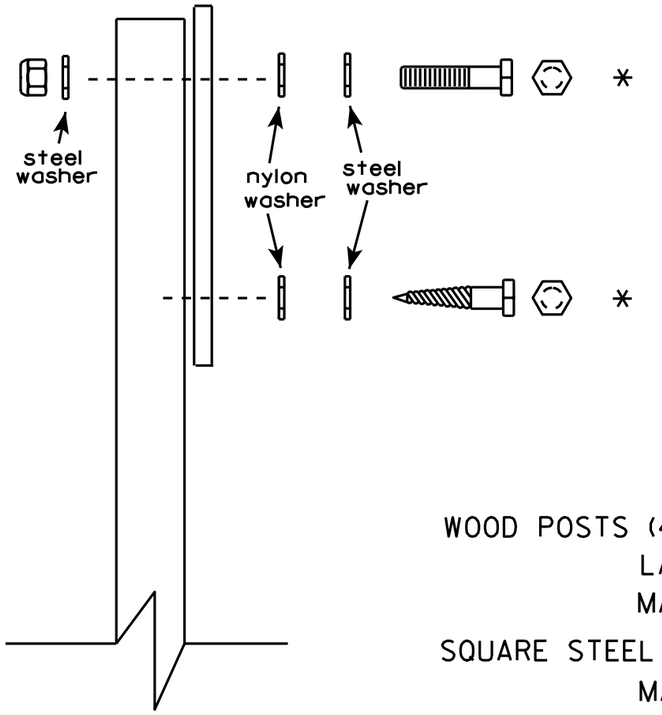
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18





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

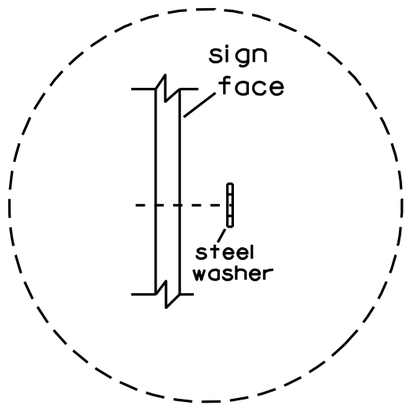
a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

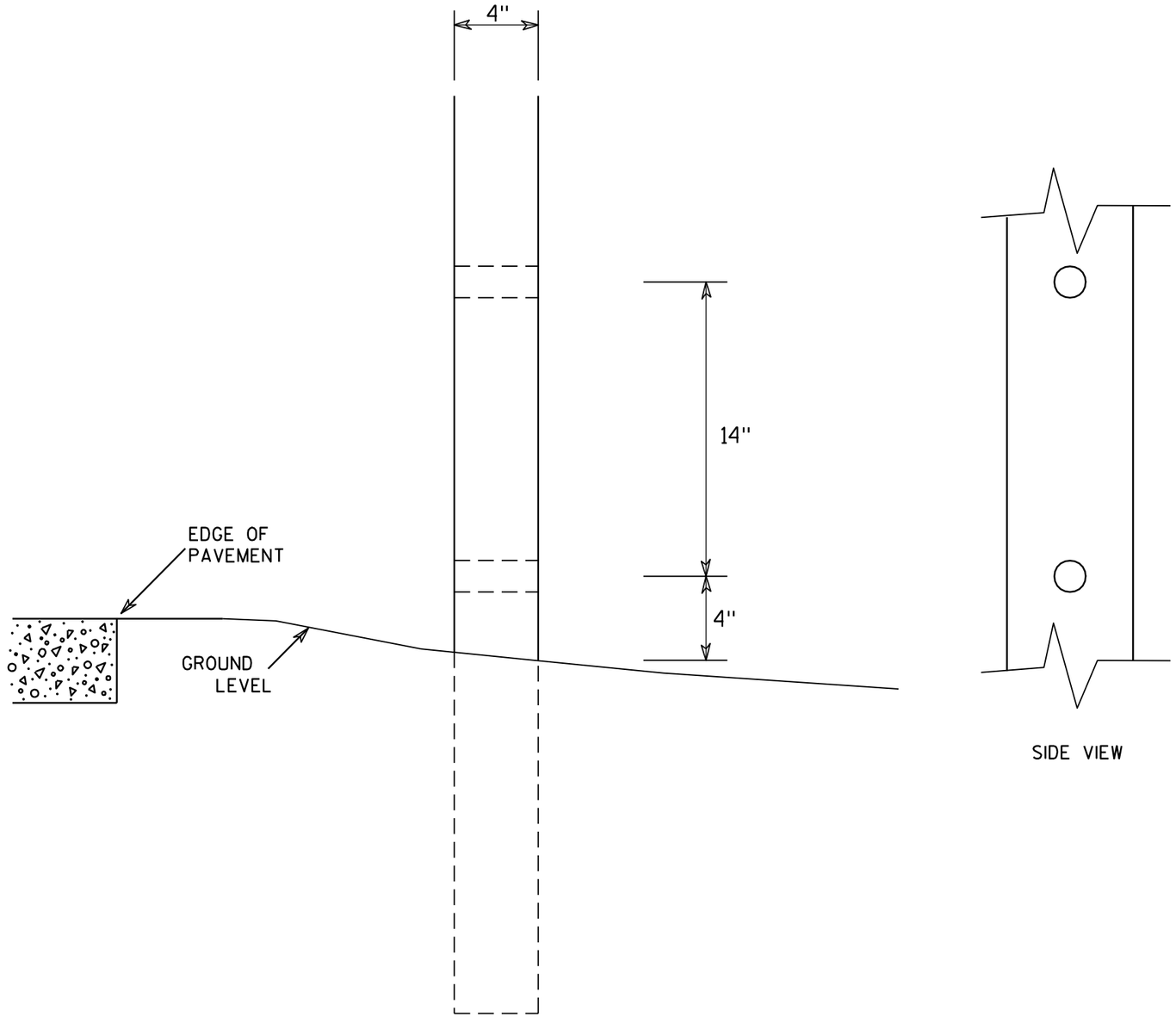
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS		SHEET NO: 20	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\A48.DGN PLOT DATE : 23-MAR-2010 10:15 PLOT BY : ditjph
WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

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

7

7

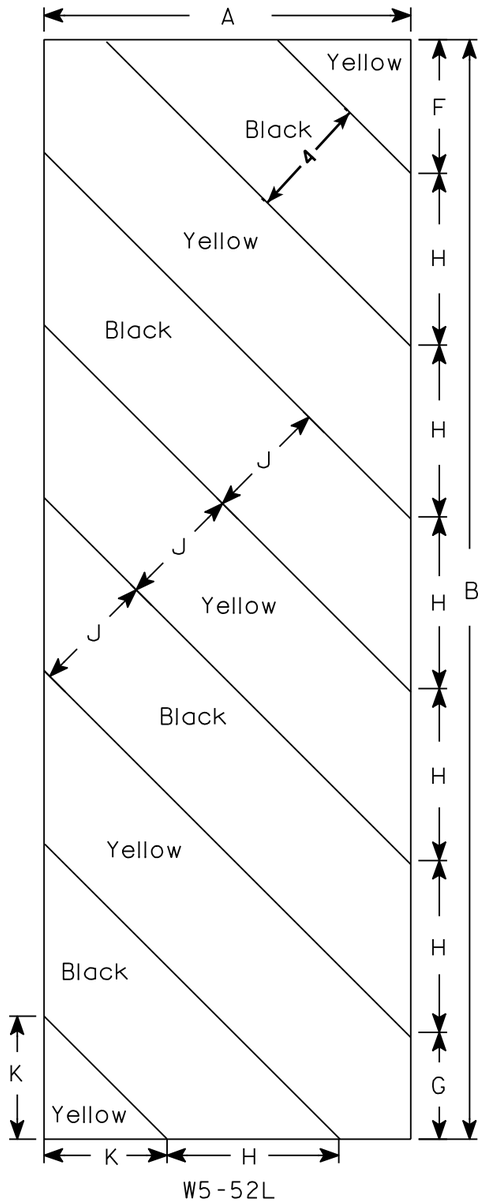
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

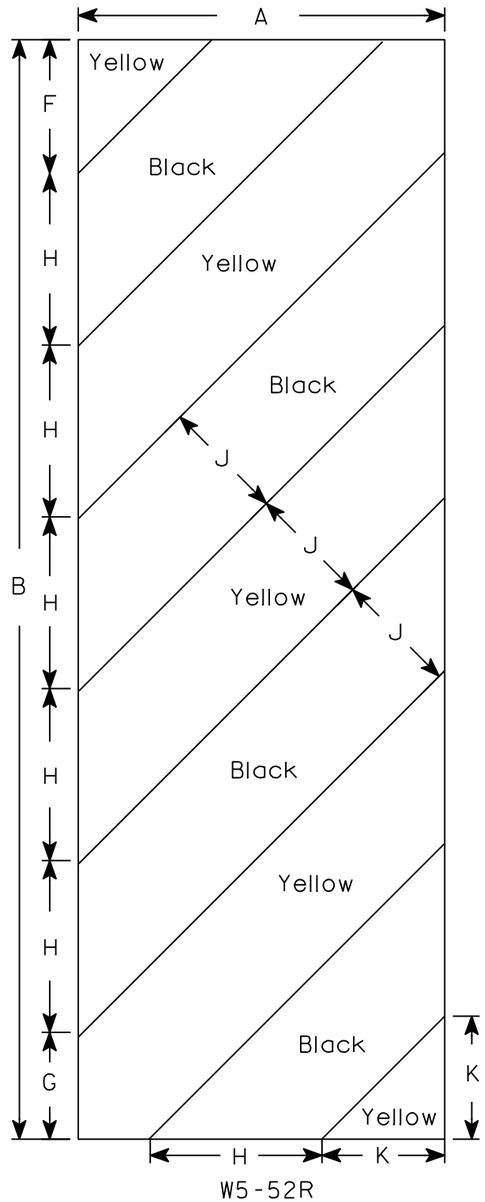
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS		SHEET NO: 21	E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. 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.
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

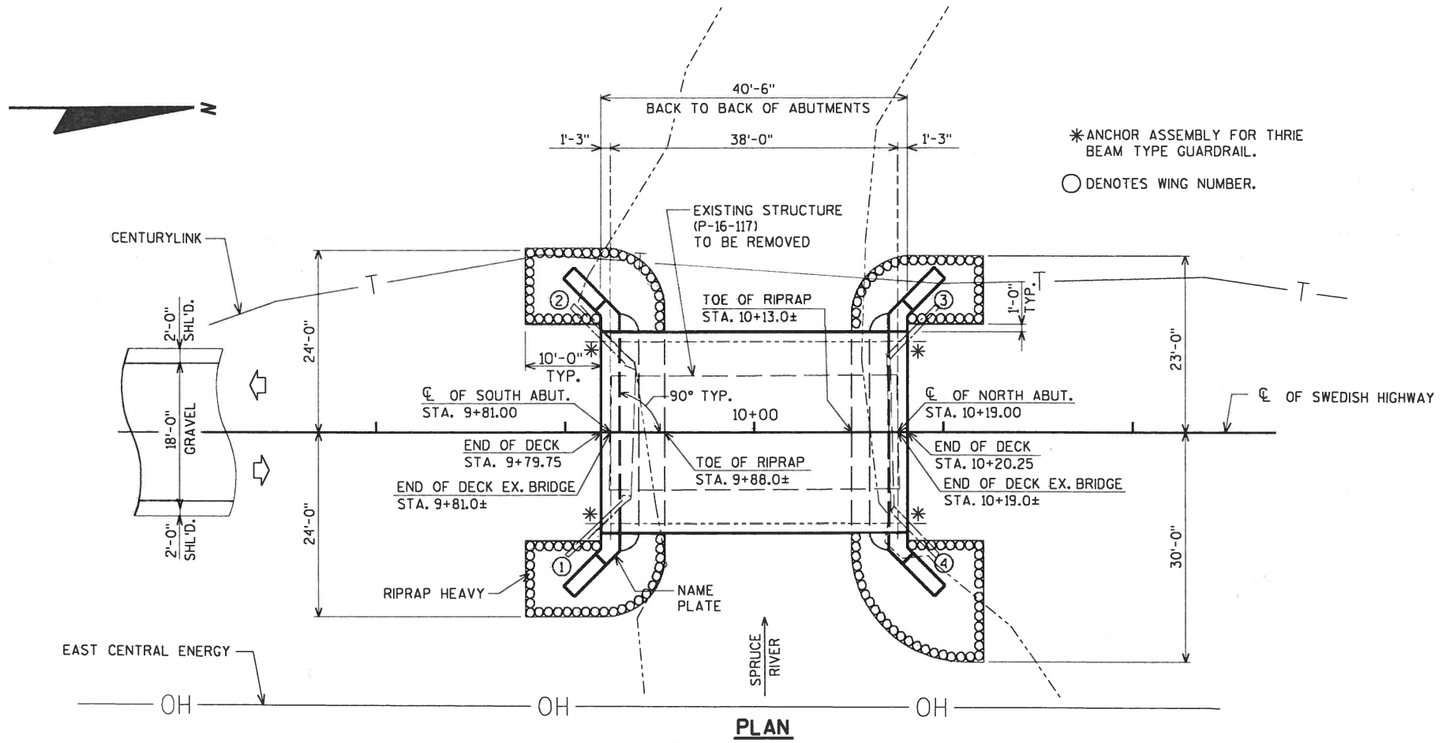
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 8385-06-70 | HWY: SWEDISH HIGHWAY | COUNTY: DOUGLAS | SHEET NO: 22 | E

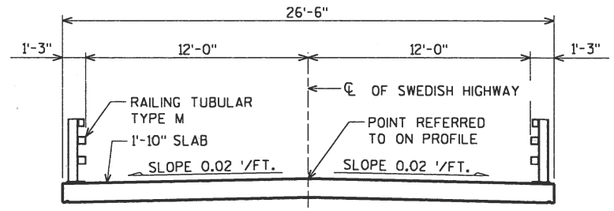
STATE PROJECT NUMBER

8385-06-70



PLAN

SINGLE SPAN CONCRETE FLAT SLAB



TYPICAL SECTION THRU BRIDGE

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.24
OPERATING RATING FACTOR : 1.61
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY { SLAB ____ f'_c = 4,000 p.s.i.
CONCRETE MASONRY { ALL OTHER ____ f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) ____ f_y = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD
DRAINAGE AREA = 26.2 sq. mi.
WATERWAY AREA = 162 sq. ft.
V = 1.2 f.p.s.
Q_{100} = 630 c.f.s.
HIGH WATER$_{100}$ EL. 1164.4
HIGH WATER$_2$ EL. 1161.4
RDWY. OVERFLOW = 444 c.f.s.
SCOUR CRITICAL CODE = 8
DATUM = NAVD88 (2007)
Q_2 = 182 C.F.S.

FREQUENCY OF OVERTOPPING
Q_2 = 200 C.F.S.
WATER SURFACE EL. = 1161.6

FOUNDATION DATA:

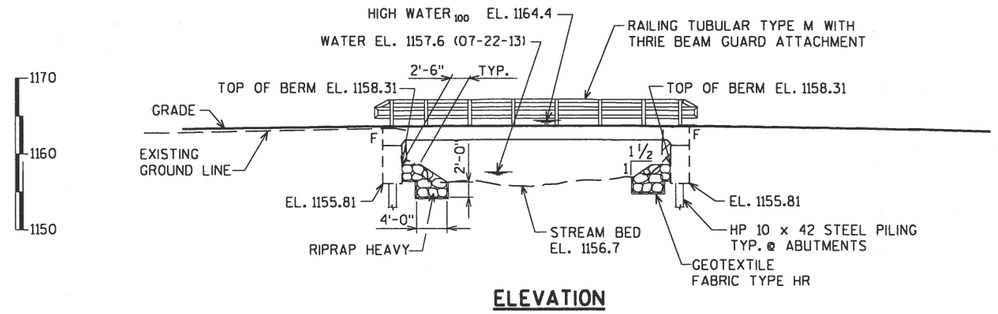
ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

‡ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

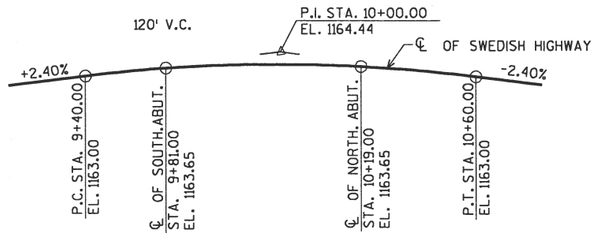
TRAFFIC DATA:

A.D.T. = <100 (2015)
A.D.T. = <100 (2035)
R.D.S. = 25 M.P.H.

▨ COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-16-133".



ELEVATION



PROFILE GRADE LINE

(SWEDISH HIGHWAY)

BENCH MARK:

CHISLED SQUARE AT SW CORNER OF BRIDGE ON CURB
STA. 9+84.7, 7.9'LT.
EL. 1163.66

LIST OF DRAWINGS

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 08/05/14
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-16-133

SWEDISH HIGHWAY OVER SPRUCE RIVER

COUNTY	TOWN/~~CITY/VILLAGE~~
DOUGLAS	DAIRYLAND

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
CJM	JCK	CJM/CLS	DNS

GENERAL PLAN

SHEET 1 OF 11
23

DATE:
DATE:
DATE:
CHECKED BY:
BACK CHECKED BY:
CORRECTED BY:

8

8

5/27/2014

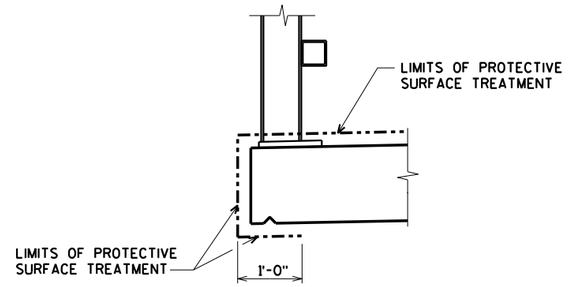
PENTABLE:BReau_shd_util.tbl

I.D.

DATE:

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-16-133	LS	-----	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	88	88	-----	176
502.0100	CONCRETE MASONRY BRIDGES	CY	22	22	77	121
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	145	145
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,020	2,020	-----	4,040
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	725	725	12,315	13,765
513.4060	RAILING TUBULAR TYPE M B-16-133	LS	-----	-----	-----	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-----	20
550.0500	PILE POINTS	EACH	5	5	-----	10
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	150	150	-----	300
606.0300	RIPRAP HEAVY	CY	45	45	-----	90
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	70	-----	140
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	100	105	-----	205
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	½" & ¾"



PROTECTIVE SURFACE TREATMENT DETAIL

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

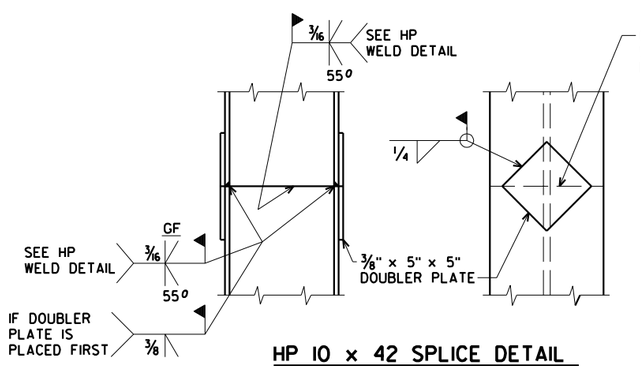
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, P-16-0117, TO BE REMOVED, IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE 38.0 FEET OVERALL LENGTH WITH A 15' CLEAR ROADWAY WIDTH.

AT BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.



HP 10 x 42 SPLICE DETAIL

GRINDING MAY BE USED IN LIEU OF BACKGOUGING

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

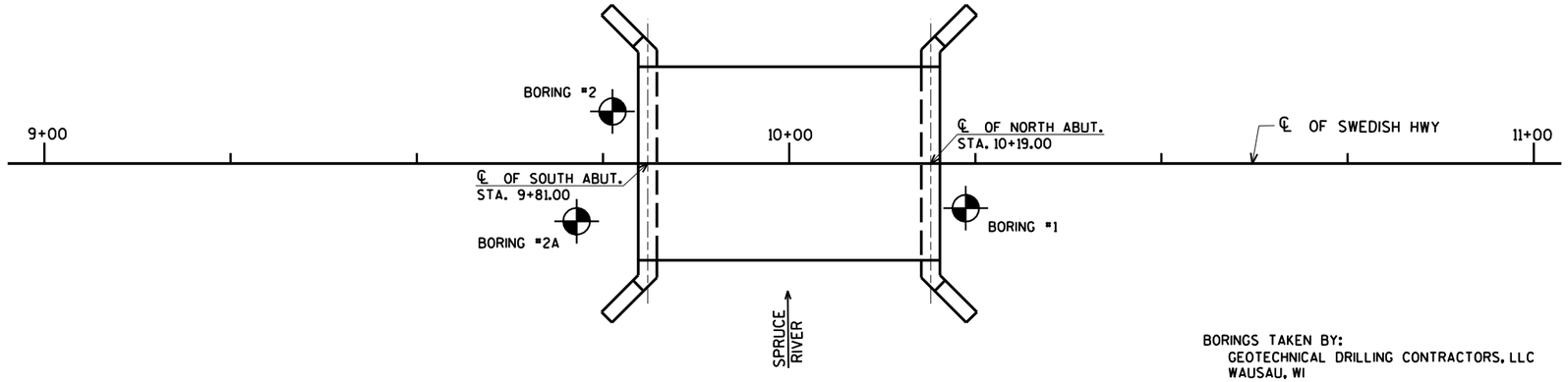
STRUCTURE B-16-133

DRAWN BY CJM | PLANS CK'D. CJM

QUANTITIES AND NOTES

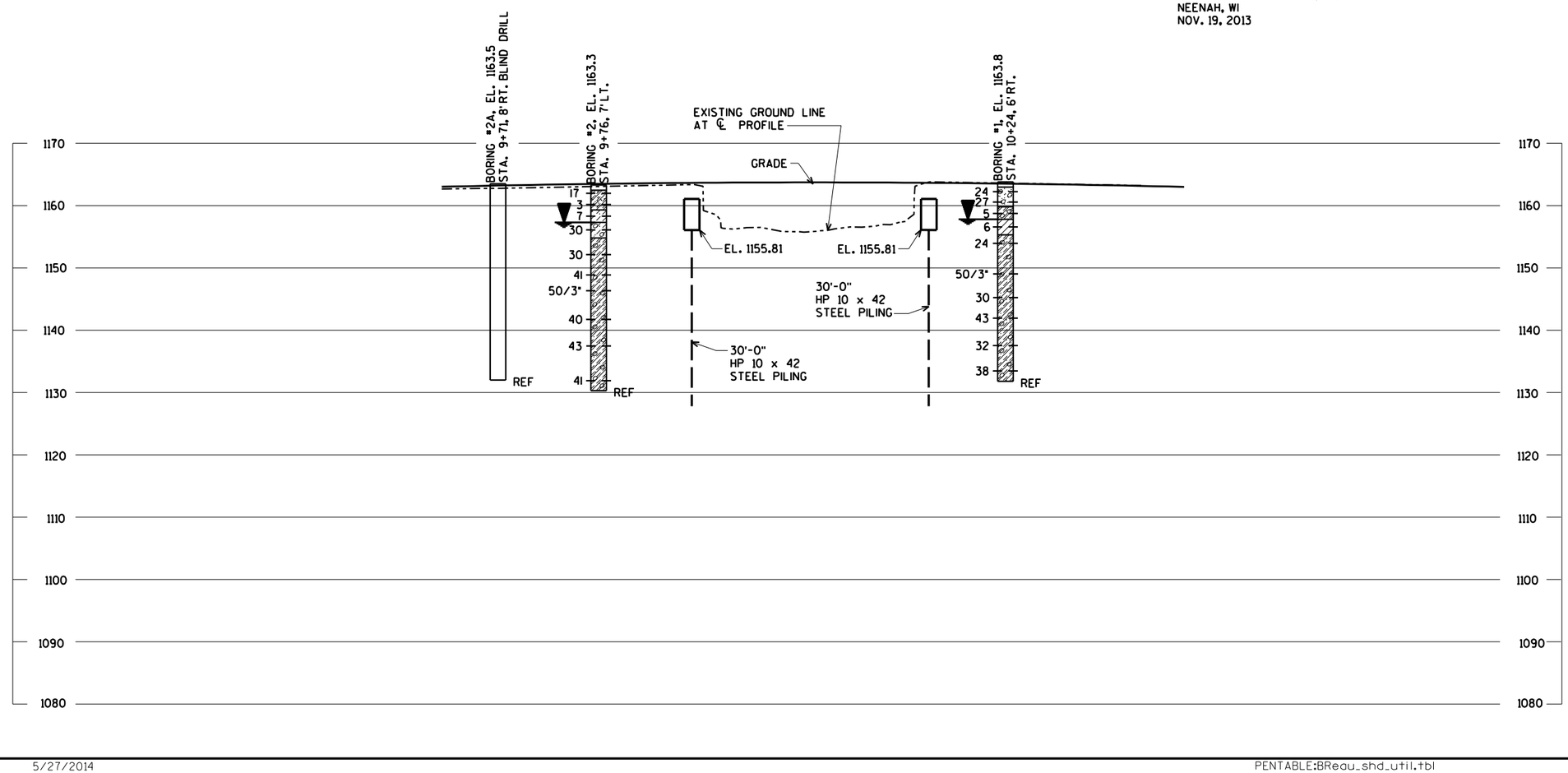
SHEET 2 OF 11
24

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



BORINGS TAKEN BY:
GEOTECHNICAL DRILLING CONTRACTORS, LLC
WAUSAU, WI
NOV. 4-5, 2013

GEOTECHNICAL REPORT BY:
RIVER VALLEY TESTING, INC.
NEENAH, WI
NOV. 19, 2013



STATE PROJECT NUMBER

8385-06-70

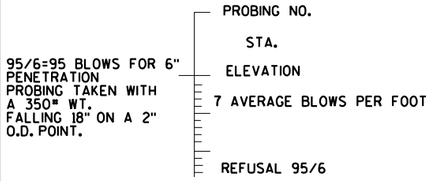
ABBREVIATIONS

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

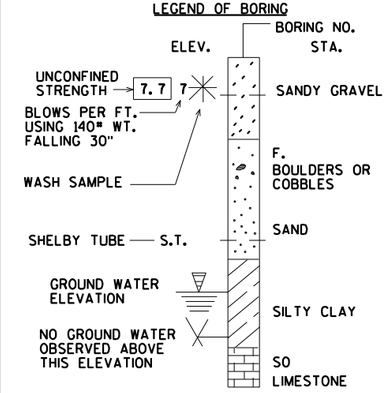
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CJM | PLANS CK'D. CJM

SUBSURFACE EXPLORATION

SHEET 3 OF 11
25

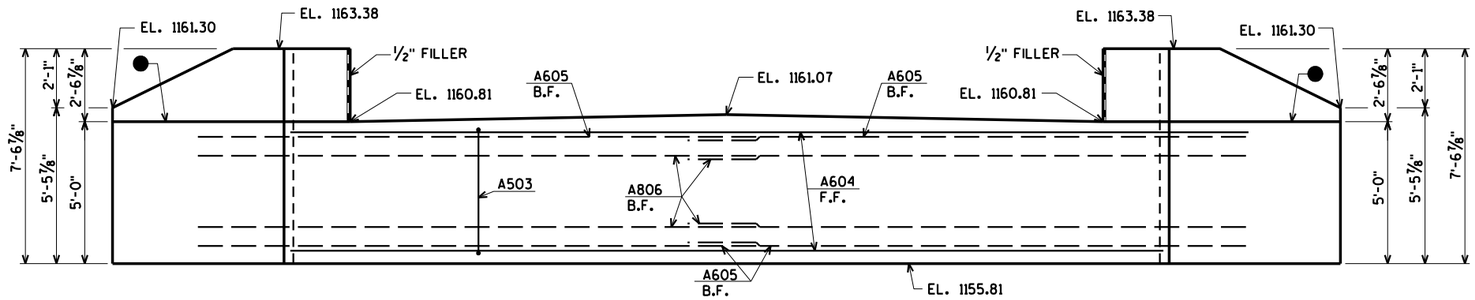
8

8

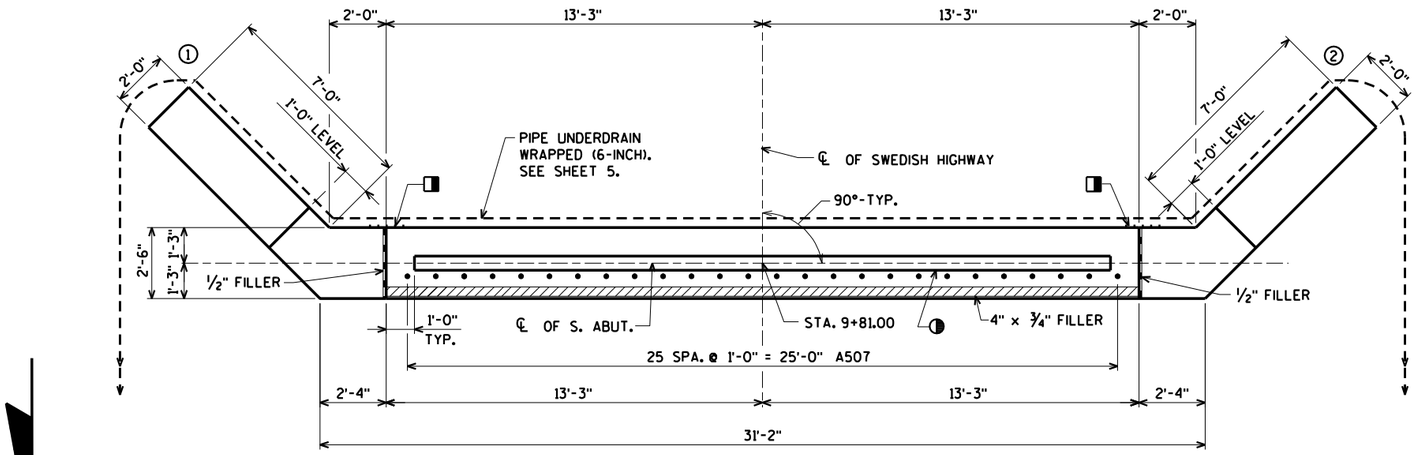
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

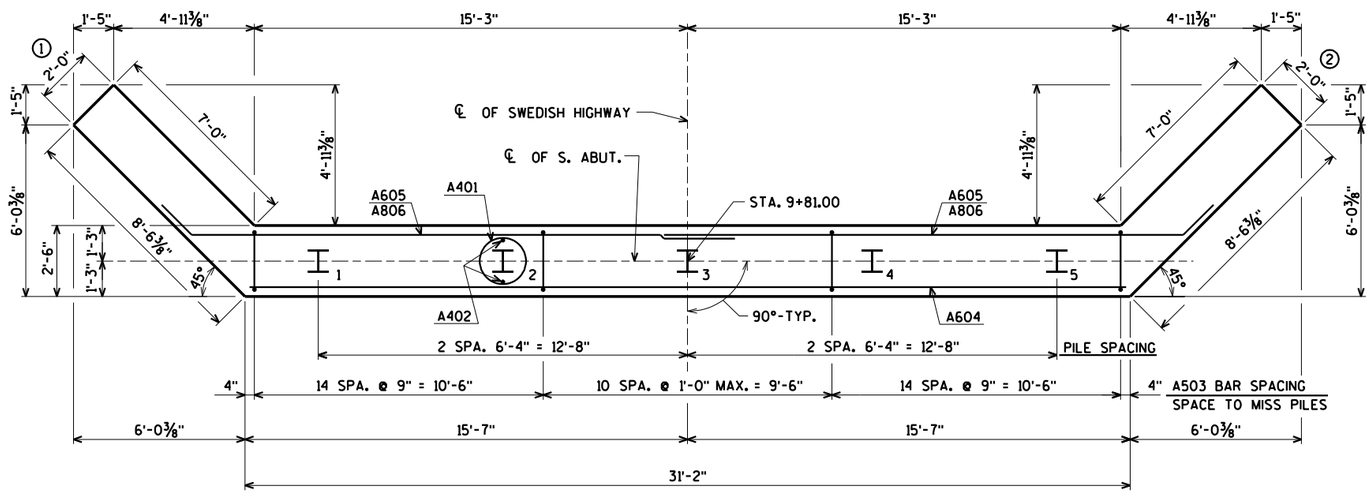
8385-06-70



ELEVATION
(LOOKING SOUTH)



PLAN



PILE LAYOUT

- ● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
- ◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
- ◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

SOUTH ABUTMENT

SHEET 4 OF 11
26

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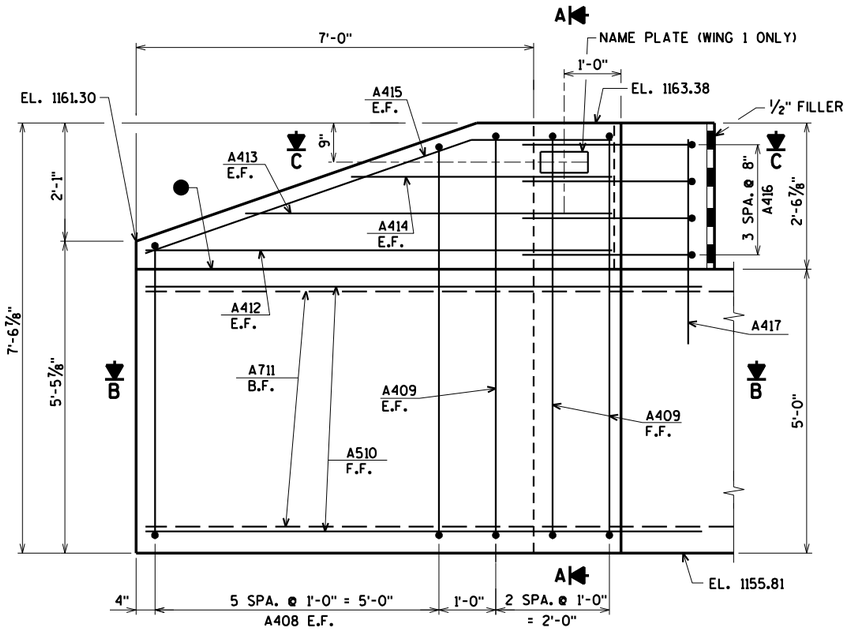
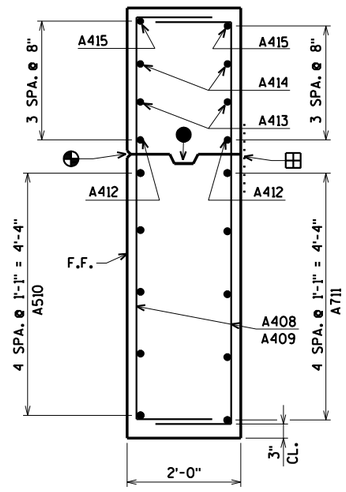
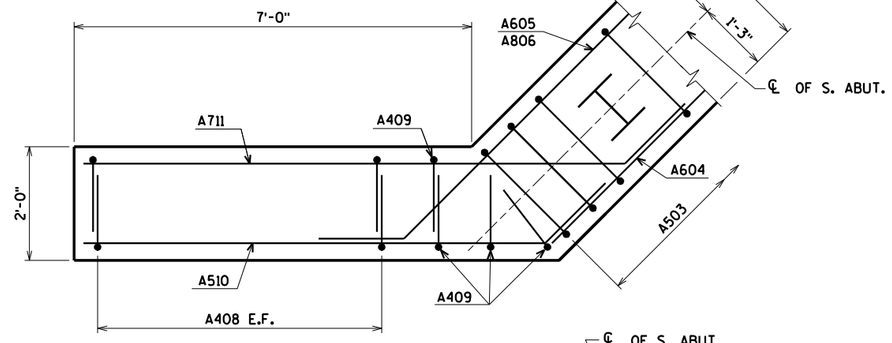
8



ELEVATION - WING 1
(WING 2 SIMILAR)



SECTION A



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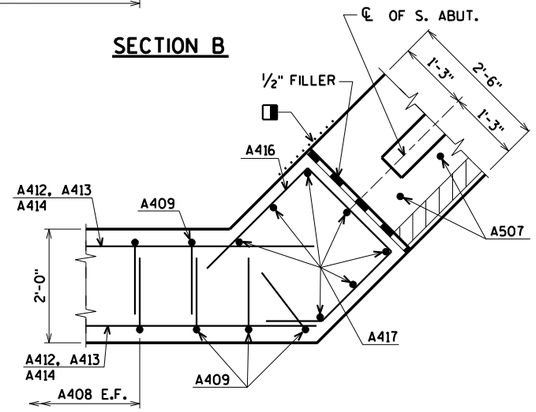

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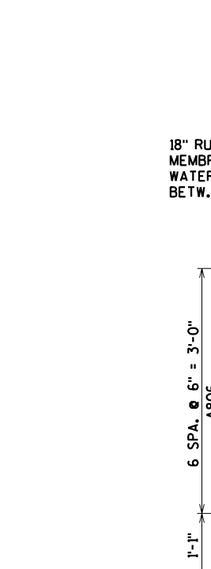
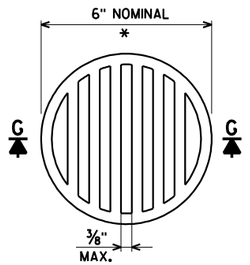
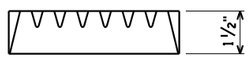


TYPICAL SECTION THRU BODY





SECTION G-G

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 × 1-INCH SHEET METAL SCREWS.

RODENT SHIELD DETAIL

⊖ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

◑ KEYED CONST. JOINT - FORMED BY A BEVELED 2" × 6".

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

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FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

SOUTH ABUTMENT WING DETAILS

SHEET 5 OF 11
27

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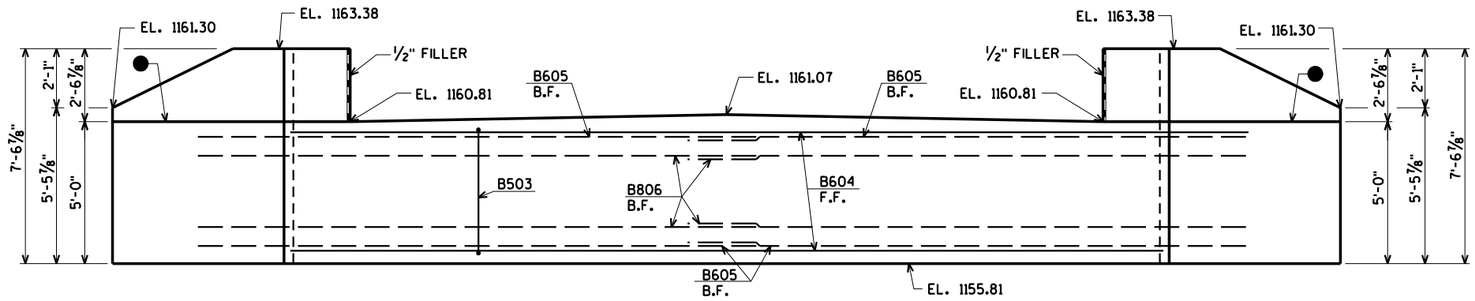
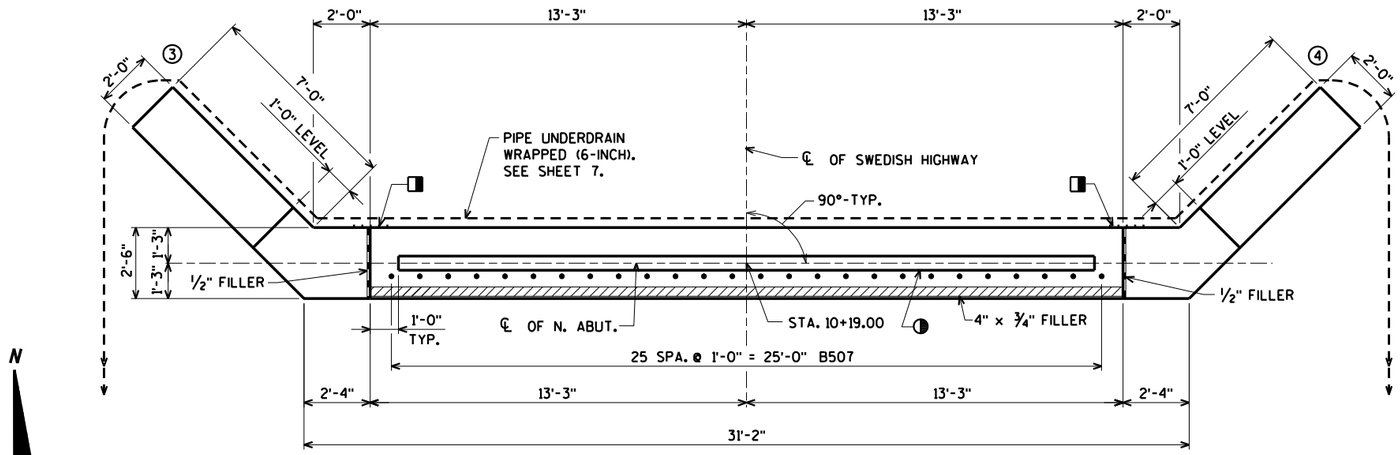
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

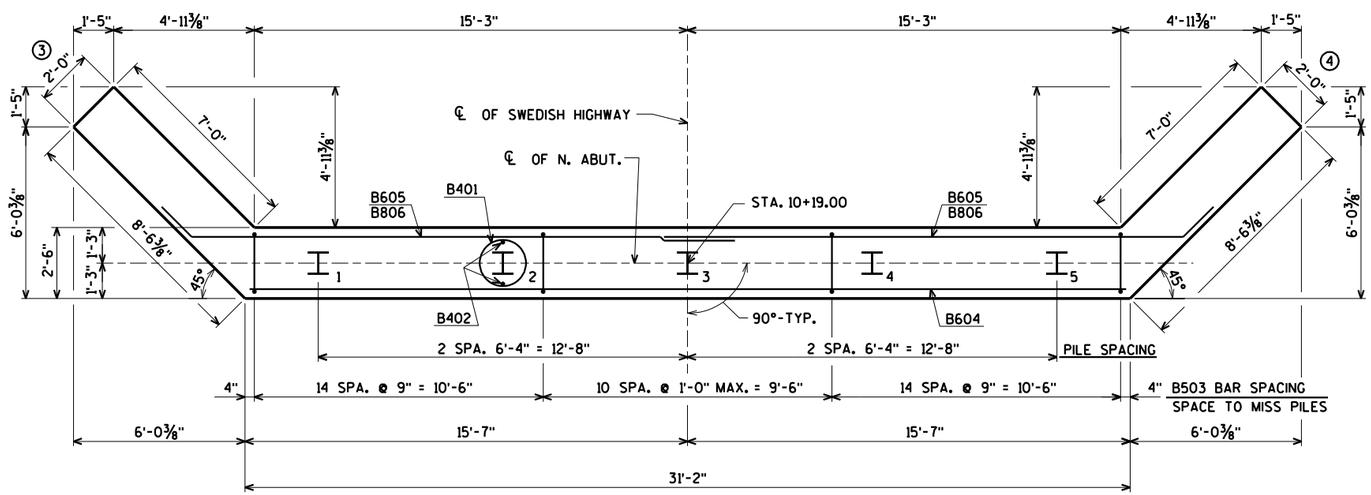
8385-06-70



ELEVATION
(LOOKING NORTH)



PLAN



PILE LAYOUT

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B.F. DENOTES BACK FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

NORTH ABUTMENT

SHEET 6 OF 11
28

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Eau Claire, WI 54701
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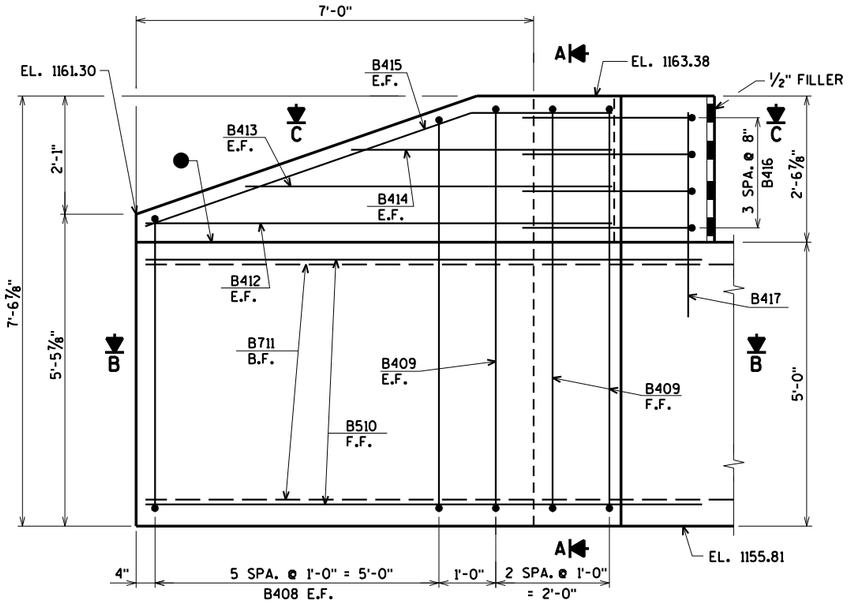
5/27/2014

PENTABLE:BReau_shd_util.tbl

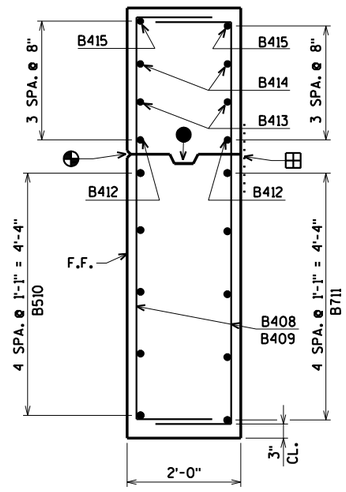
STATE PROJECT NUMBER

8385-06-70

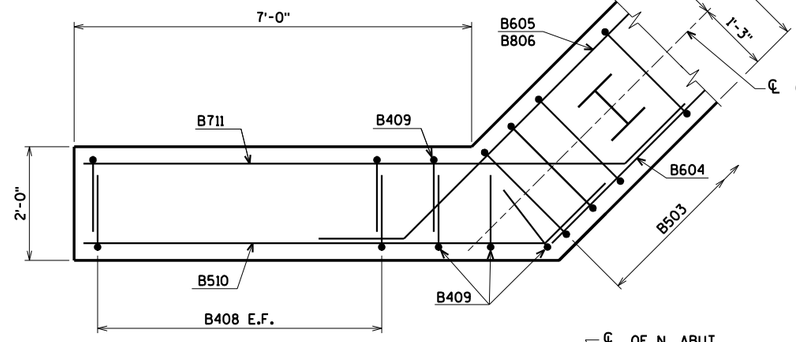


ELEVATION - WING 3

(WING 4 SIMILAR)



SECTION A



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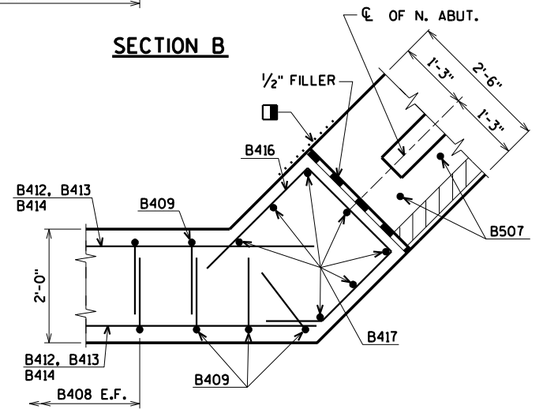

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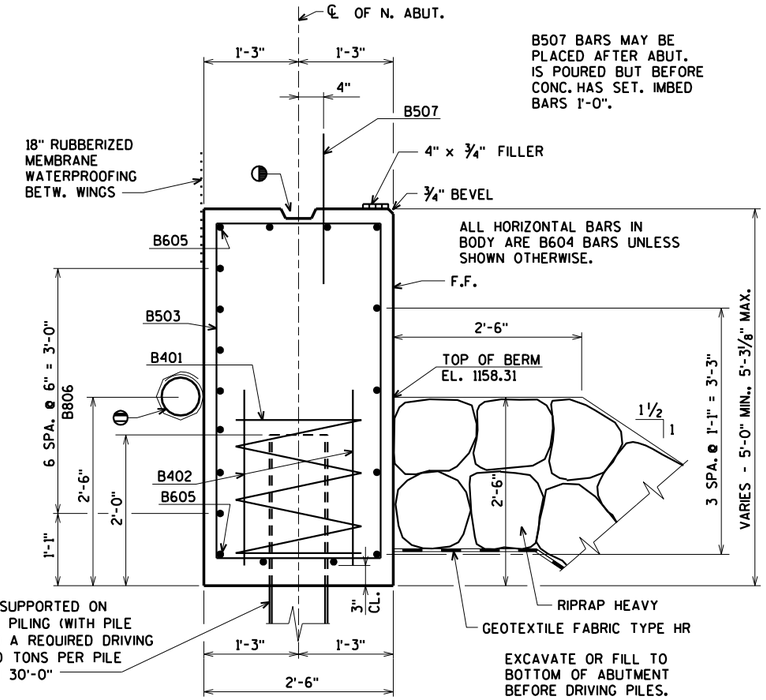
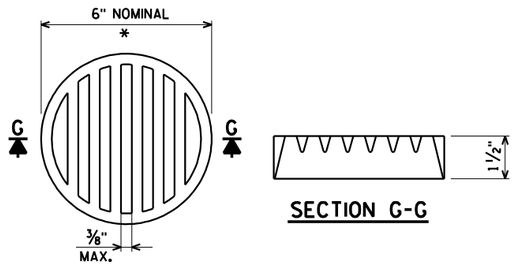


TYPICAL SECTION THRU BODY



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FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

NORTH ABUTMENT WING DETAILS

SHEET 7 OF 11
29

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Eau Claire, WI 54701
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8

STATE PROJECT NUMBER

8385-06-70

BILL OF BARS - SOUTH ABUTMENT

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	2,020# UNCOATED 720# COATED LOCATION
A401		5	28-0	X		BODY @ PILES
A402		10	2-3			BODY @ PILES
A503		39	13-10	X		BODY VERT.
A604		9	30-11			BODY HORIZ. F.F.
A605		4	20-6	X		BODY HORIZ. B.F.
A806		14	21-7	X		BODY HORIZ. B.F.
A507	X	26	2-0			BODY DOWELS
A408	X	24	8-5	X	⊗	WINGS 1 & 2 VERT. E.F.
A409	X	8	9-8	X		WINGS 1 & 2 VERT. E.F.
A510	X	10	9-6	X		WINGS 1 & 2 HORIZ. F.F.
A711	X	10	11-2	X		WINGS 1 & 2 HORIZ. B.F.
A412	X	4	8-3			WINGS 1 & 2 HORIZ. E.F.
A413	X	4	6-6			WINGS 1 & 2 HORIZ. E.F.
A414	X	4	4-7			WINGS 1 & 2 HORIZ. E.F.
A415	X	4	8-6	X		WINGS 1 & 2 DIAG. E.F.
A416	X	8	8-5	X		WINGS 1 & 2 HORIZ.
A417	X	14	3-10			WINGS 1 & 2 VERT.

BILL OF BARS - NORTH ABUTMENT

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	2,020# UNCOATED 720# COATED LOCATION
B401		5	28-0	X		BODY @ PILES
B402		10	2-3			BODY @ PILES
B503		39	13-10	X		BODY VERT.
B604		9	30-11			BODY HORIZ. F.F.
B605		4	20-6	X		BODY HORIZ. B.F.
B806		14	21-7	X		BODY HORIZ. B.F.
B507	X	26	2-0			BODY DOWELS
B408	X	24	8-5	X	⊗	WINGS 3 & 4 VERT. E.F.
B409	X	8	9-8	X		WINGS 3 & 4 VERT. E.F.
B510	X	10	9-6	X		WINGS 3 & 4 HORIZ. F.F.
B711	X	10	11-2	X		WINGS 3 & 4 HORIZ. B.F.
B412	X	4	8-3			WINGS 3 & 4 HORIZ. E.F.
B413	X	4	6-6			WINGS 3 & 4 HORIZ. E.F.
B414	X	4	4-7			WINGS 3 & 4 HORIZ. E.F.
B415	X	4	8-6	X		WINGS 3 & 4 DIAG. E.F.
B416	X	8	8-5	X		WINGS 3 & 4 HORIZ.
B417	X	14	3-10			WINGS 3 & 4 VERT.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

B.F. DENOTES BACK FACE

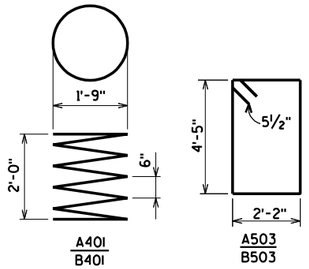
E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

BAR SERIES TABLE

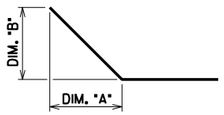
BAR MARK	NO REQ'D.	LENGTH
A408	4 SERIES OF 6	7'-6" TO 9'-4"
B408	4 SERIES OF 6	7'-6" TO 9'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY.

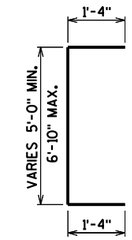


A401
B401

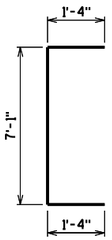
A503
B503



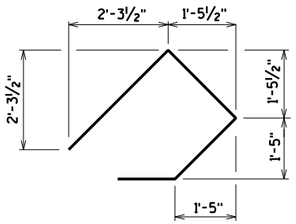
BAR NO.	DIM. "A"	DIM. "B"
A605	1'-0¾"	1'-0¾"
A806	1'-0¾"	1'-0¾"
A510	1'-0¾"	1'-0¾"
A711	1'-0¾"	1'-0¾"
A415	5'-9"	2'-1"
B605	1'-0¾"	1'-0¾"
B806	1'-0¾"	1'-0¾"
B510	1'-0¾"	1'-0¾"
B711	1'-0¾"	1'-0¾"
B415	5'-9"	2'-1"



A408
B408



A409
B409



A416
B416

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www.AyresAssociates.com

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

ABUTMENT
BILL OF BARS

SHEET 8 OF 11
30

8

8

$PRFNAME$
U:\42-0902.00 - Douglas Co. Tn Dairyland, Swedish Highway\BRIDGE\420902 sa.dgn

5/27/2014

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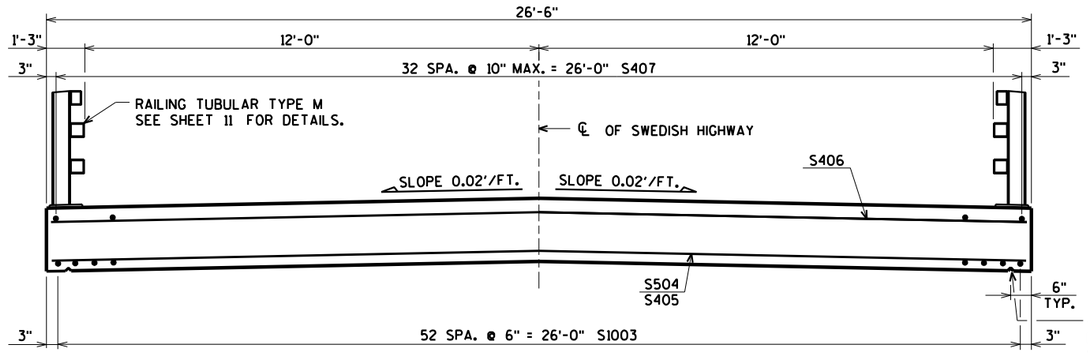


CROSS SECTION THRU ROADWAY

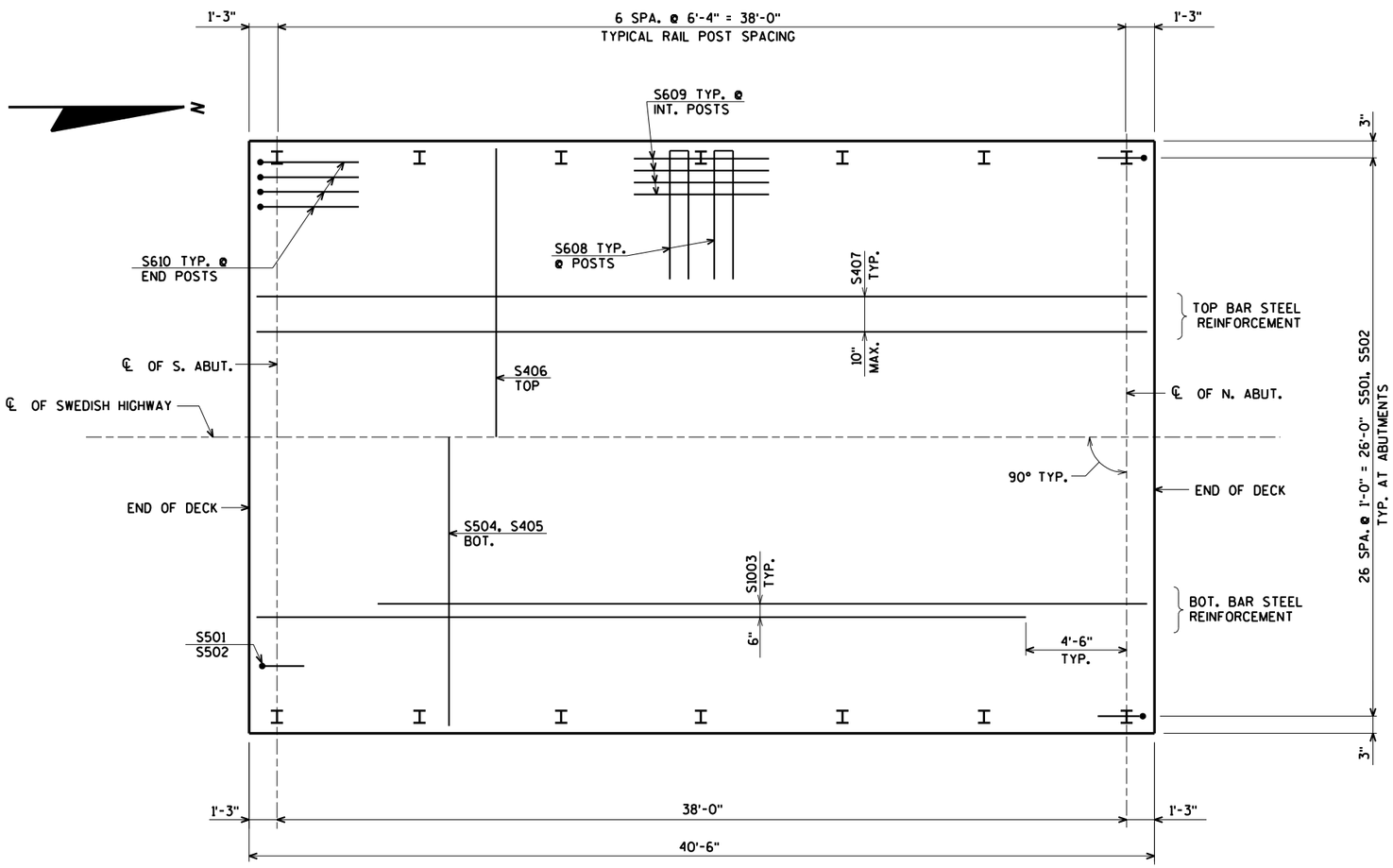
TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

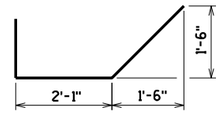
BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	12,310# COATED LOCATION
S501	X	54	5-5	X		SLAB @ ABUT.
S502	X	54	3-7	X		SLAB @ ABUT.
S1003	X	53	34-7			SLAB LONG. BOT.
S504	X	28	26-2			SLAB TRANS. BOT.
S405	X	24	26-2			SLAB TRANS. BOT.
S406	X	48	26-2			SLAB TRANS. TOP
S407	X	33	40-2			SLAB LONG. TOP
S608	X	28	12-0	X		SLAB @ RAIL POSTS
S609	X	40	6-0			SLAB @ INT. RAIL POSTS
S610	X	16	6-0	X		SLAB @ END RAIL POSTS

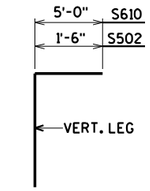
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

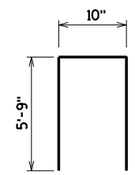


PLAN



S501





S608

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

SUPERSTRUCTURE

SHEET 9 OF 11
31

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8

$PRFNAME$
U:\42-0902.00 - Douglas Co. Tn Dairyland, Swedish Highway\BRIDGE\420902 sup.dgn

5/27/2014

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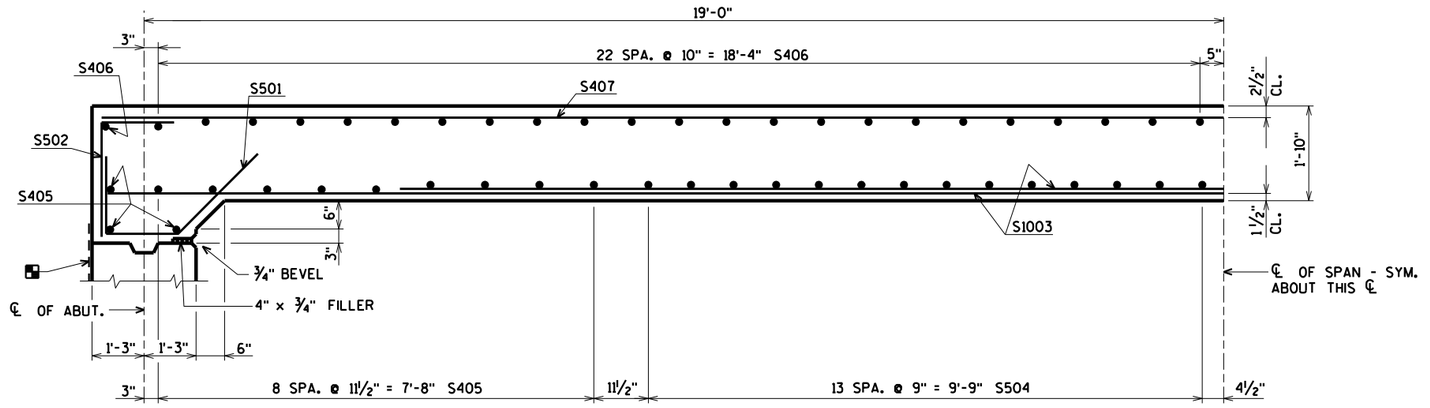
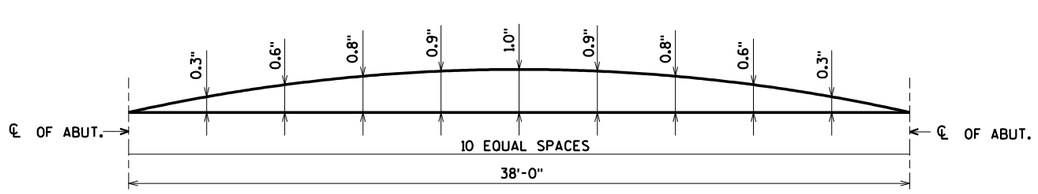


PART LONGITUDINAL SECTION

■ 18" RUBBERIZED MEMBRANE WATERPROOFING



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEADLOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR ℄.

TOP OF DECK ELEVATIONS

LOCATION	℄ OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF N. ABUT.
E. EDGE OF SLAB	1163.38	1163.41	1163.43	1163.44	1163.45	1163.46	1163.45	1163.44	1163.43	1163.41	1163.38
℄ OF STRUCTURE	1163.65	1163.67	1163.69	1163.71	1163.72	1163.72	1163.72	1163.71	1163.69	1163.67	1163.65
W. EDGE OF SLAB	1163.38	1163.41	1163.43	1163.44	1163.45	1163.46	1163.45	1163.44	1163.43	1163.41	1163.38

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

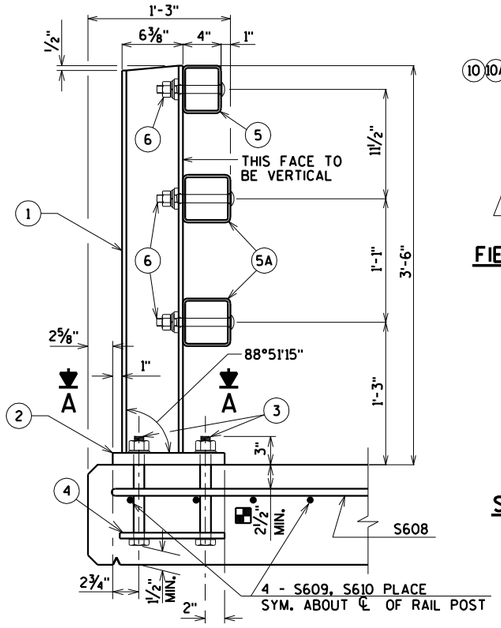
STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

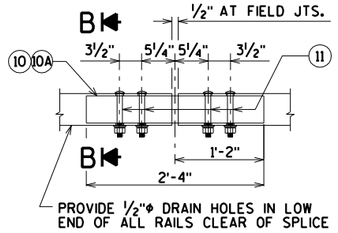
SUPERSTRUCTURE DETAILS

SHEET 10 OF 11
32

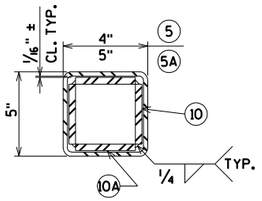
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



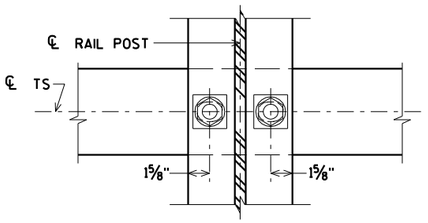
SECTION THRU RAILING ON DECK



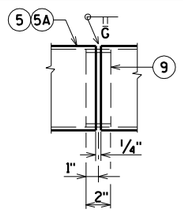
FIELD ERECTION JOINT DETAIL



SECTION B

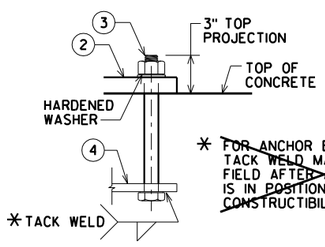


SECTION THRU POST WEB



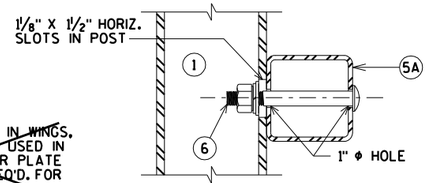
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



ANCHOR BOLTS

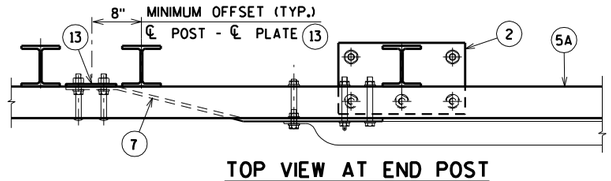
~~* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.~~



SECTION THRU RAIL

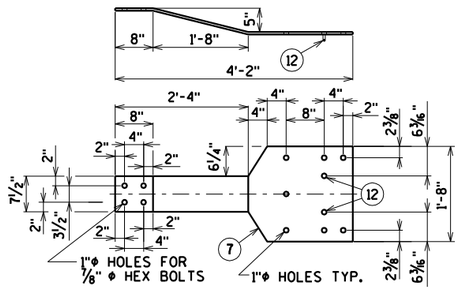
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



TOP VIEW AT END POST

(THRIE BEAM RAIL ATTACHMENT)

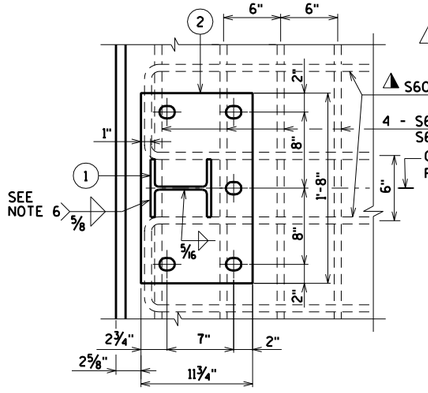


BACK-UP PLATE DETAIL

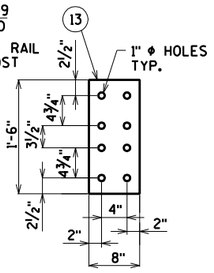
(AT BEAM GUARD ATTACHMENT)

PLACE BELOW TOP MAT SLAB REINFORCEMENT.

TIE TO TOP MAT OF STEEL.

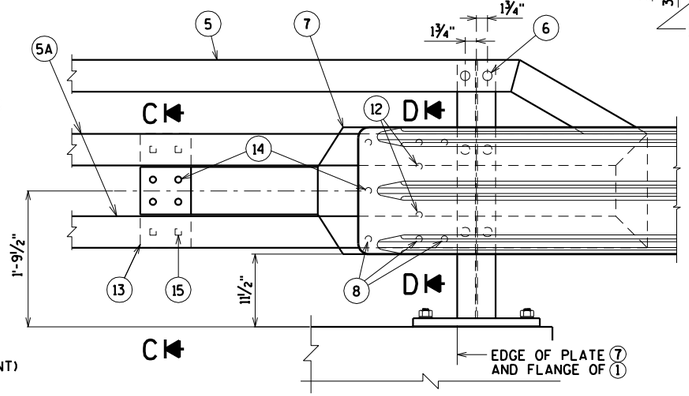


SECTION A



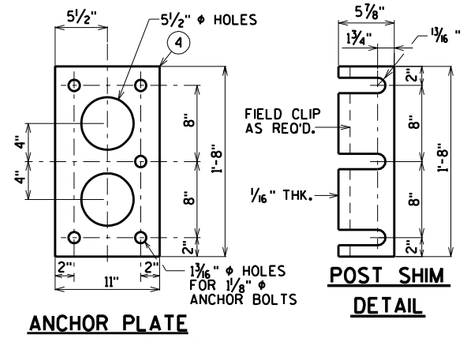
ANCHOR PLATE

(AT BEAM GUARD ATTACHMENT)



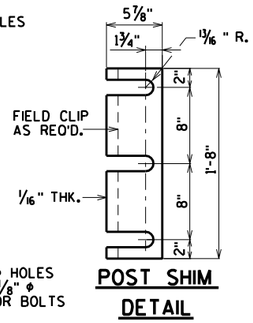
DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)

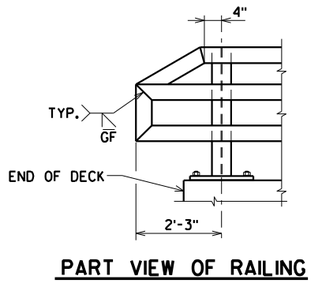


ANCHOR PLATE

(AT RAIL TO DECK CONNECTION)



POST SHIM DETAIL



PART VIEW OF RAILING

LEGEND

① W6 x 25 WITH 1⅛" X 1½" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

② PLATE 1¼" x 11¾" x 1'-8" WITH 1⅜" X 1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

③ ASTM A449 - 1⅛" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. ~~USE 1'-9" LONG IN ABUTMENT WINGS.~~ AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. ~~USE 10¾" LONG AT ALL OTHER LOCATIONS.~~ (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

④ ⅝" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1³⁄₁₆" DIA. HOLES FOR ANCHOR BOLTS NO. 3

⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3⁄16" X 1⅜" X 1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞" X 1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

⑩ ⅜" X 3⅝" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜" X 2⅝" X 2'-4" PLATE USED IN NO. 5, ⅜" X 3⅝" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1⅝" X 1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS ~~AND 1⅝" X 2¼" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS~~ IN PLATE NO. 10A.

⑫ ⅞" DIA. X 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

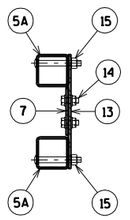
⑬ ⅜" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

⑭ ⅞" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

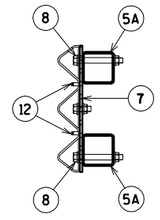
⑮ 1" φ HOLES IN TUBES NO. 5A FOR ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-16-133" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. ~~RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.~~
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. ~~WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.~~
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.



SECTION C



SECTION D

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-16-133

DRAWN BY CLS | PLANS CK'D. CJM

RAILING TUBULAR TYPE M

SHEET 11 OF 11
33

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

EARTHWORK SUMMARY (CATEGORY 0010)

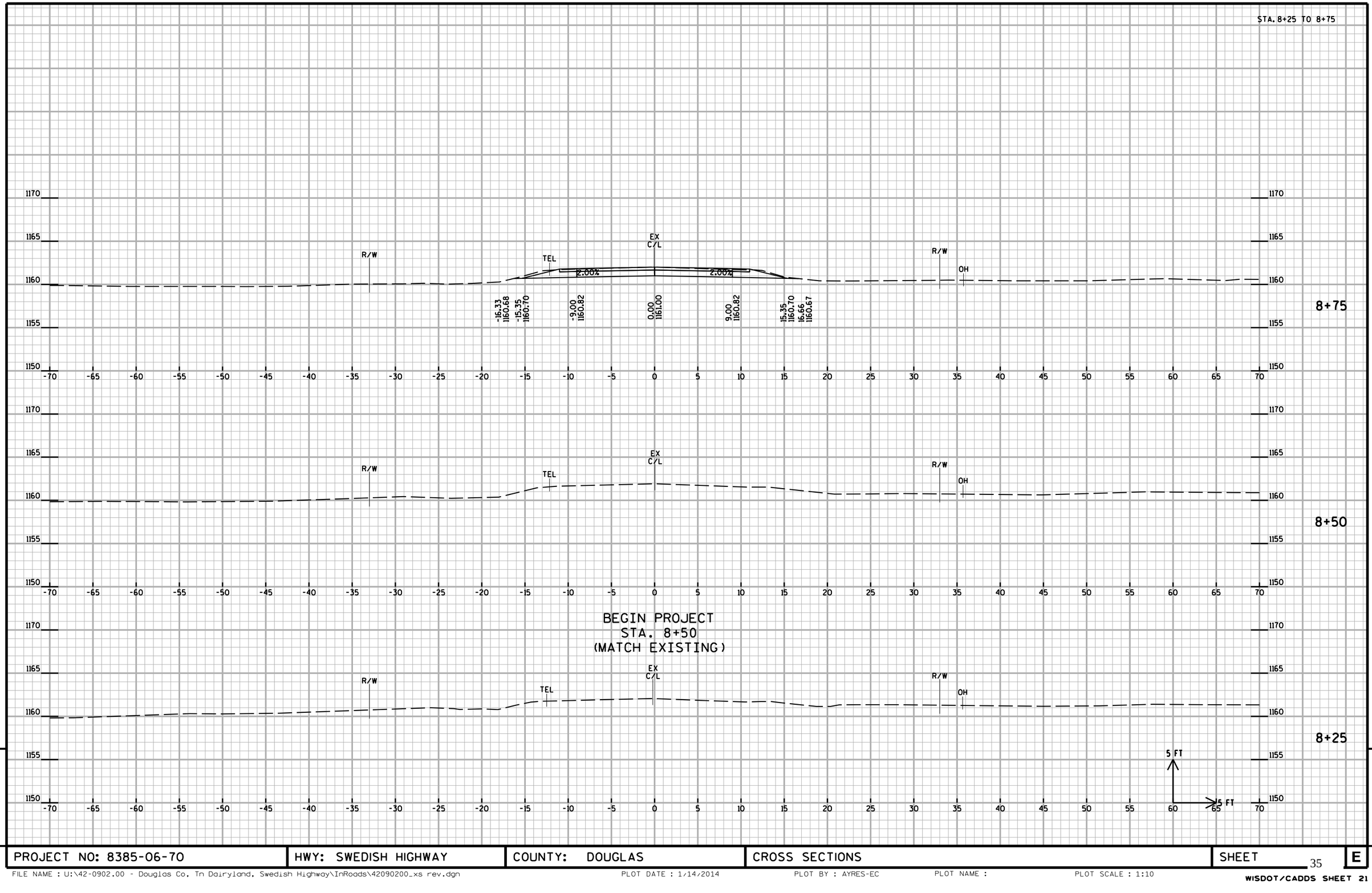
		AREA			INCREMENTAL VOLUME			CUMULATIVE VOLUME		
DIVISION	STATION	CUT SF	SALVAGED/ UNUSEABLE PAVEMENT MATERIAL SF	FILL SF	CUT (1) CY	SALVAGED/ UNUSEABLE PAVEMENT MATERIAL (2) CY	FILL (3) CY	CUT (1) 1.00 CY	EXPANDED FILL (4) 1.30 CY	MASS ORDINATE ±(5) CY
1	8+50	0	0	0						
SWEDISH HIGHWAY	8+75	27	0	0	12	0	0	12	0	12
	9+00	21	0	1	22	0	1	34	1	33
	9+25	18	0	10	18	0	5	52	8	44
	9+50	12	0	28	14	0	18	66	31	35
	9+75	13	0	10	12	0	18	78	55	23
	STRUCTURE (B-16-0133)									
	10+25	24	0	17	21	0	28	21	36	-15
	10+50	22	0	44	20	0	31	41	77	-36
	10+75	22	0	24	19	0	18	60	100	-40
	11+00	20	0	16	20	0	11	80	114	-34
	11+25	23	0	9	11	0	4	91	120	-29
	11+50	0	0	0						
TOTALS					169	0	134			

205.0100 EXCAVATION COMMON = SAY 169 **208.0100 BORROW = SAY 29**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSEABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
5) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.

PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STA. 8+25 TO 8+75



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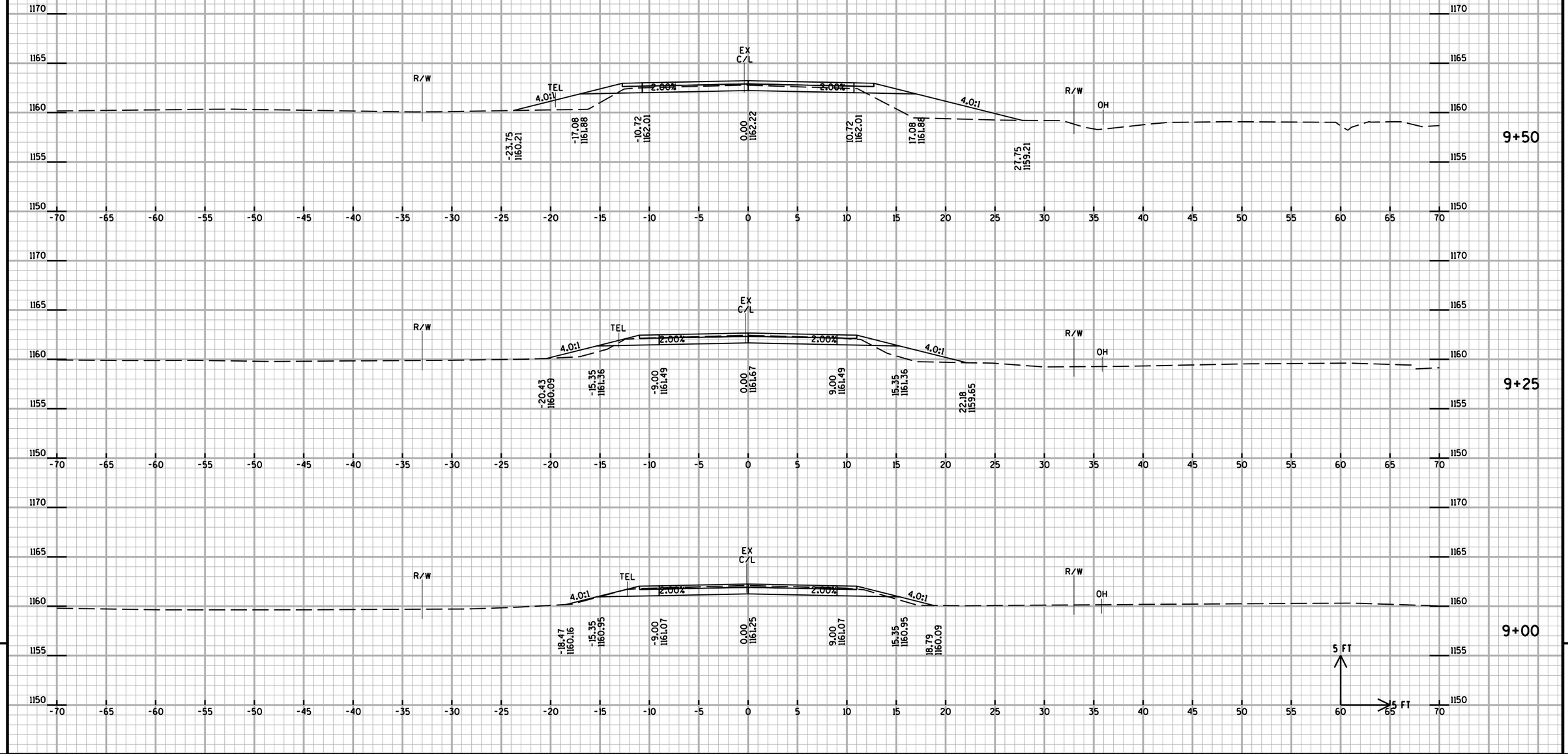
9

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	CROSS SECTIONS	SHEET 35	E

FILE NAME : U:\42-0902.00 - Douglas Co, Tn Dairyland, Swedish Highway\InRoads\42090200_xs rev.dgn PLOT DATE : 1/14/2014 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 9+00 TO 9+50



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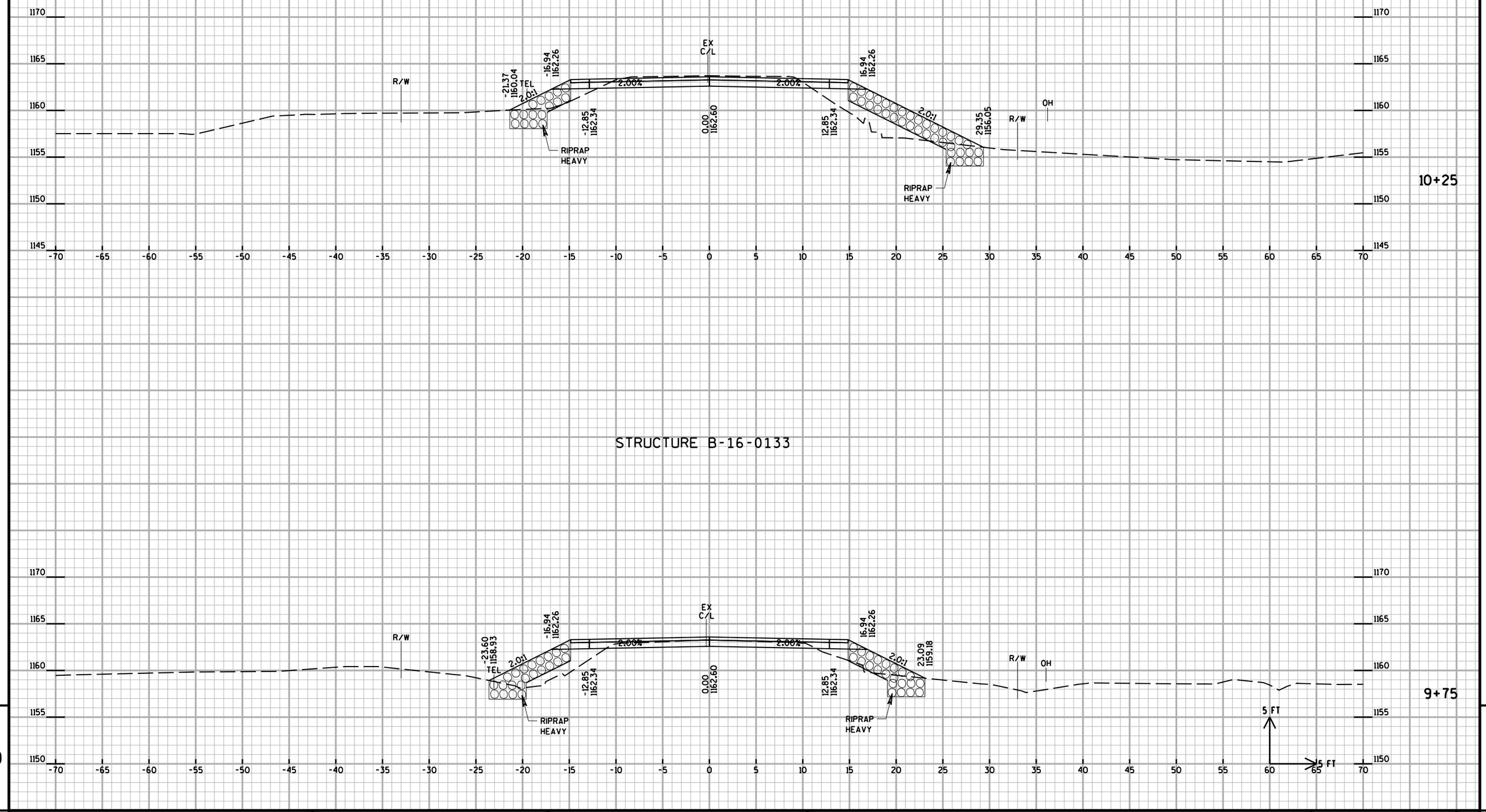
PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-0902.00 - Douglas Co, Tn Dairyland, Swedish Highway\InRoads\42090200_xs rev.dgn PLOT DATE : 1/14/2014 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 9+75 TO 10+25



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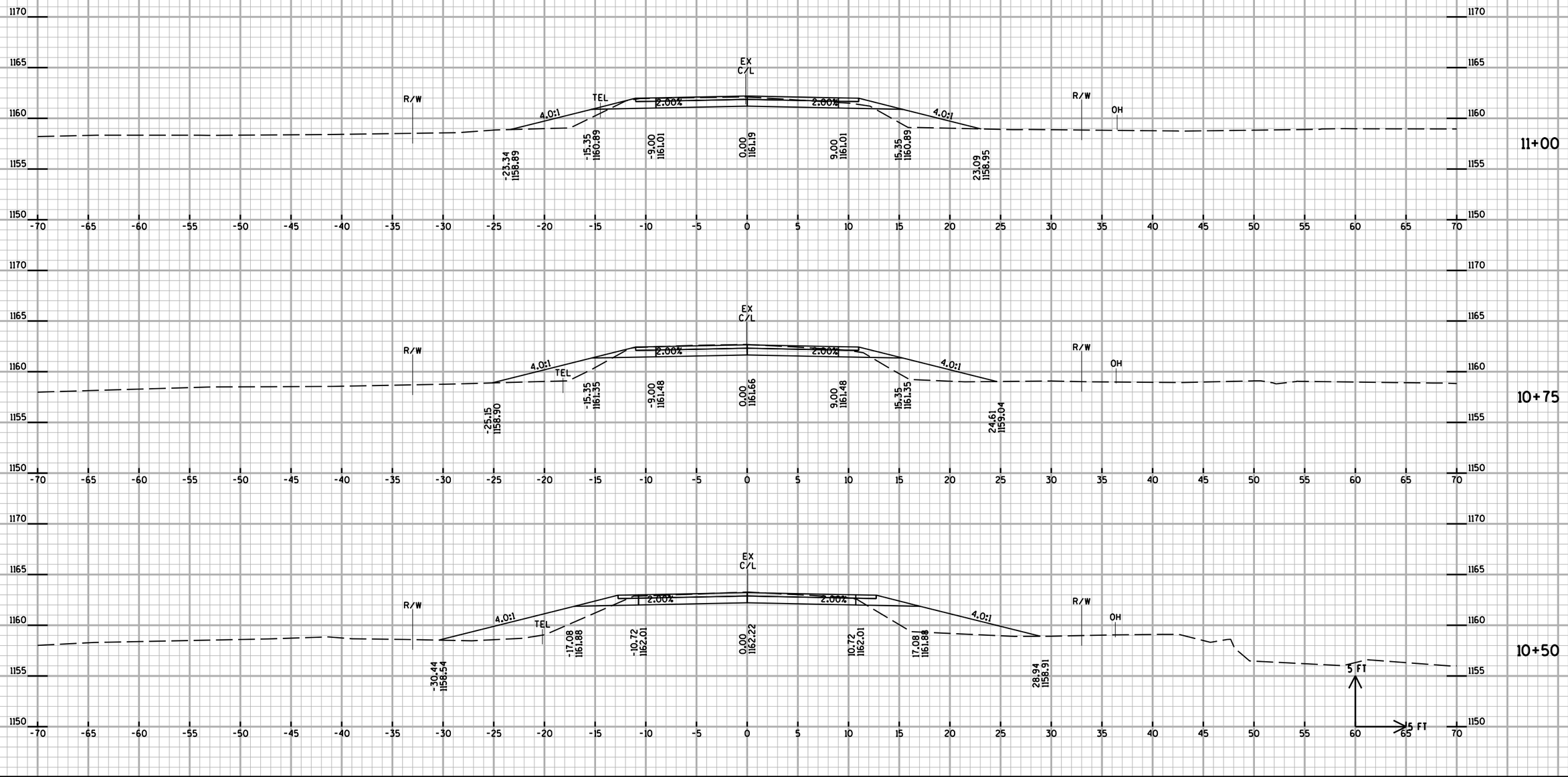
PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-0902.00 - Douglas Co, Tn Dairyland, Swedish Highway\InRoads\42090200_xs rev.dgn | PLOT DATE : 1/14/2014 | PLOT BY : AYRES-EC | PLOT NAME : | PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 10+50 TO 11+00



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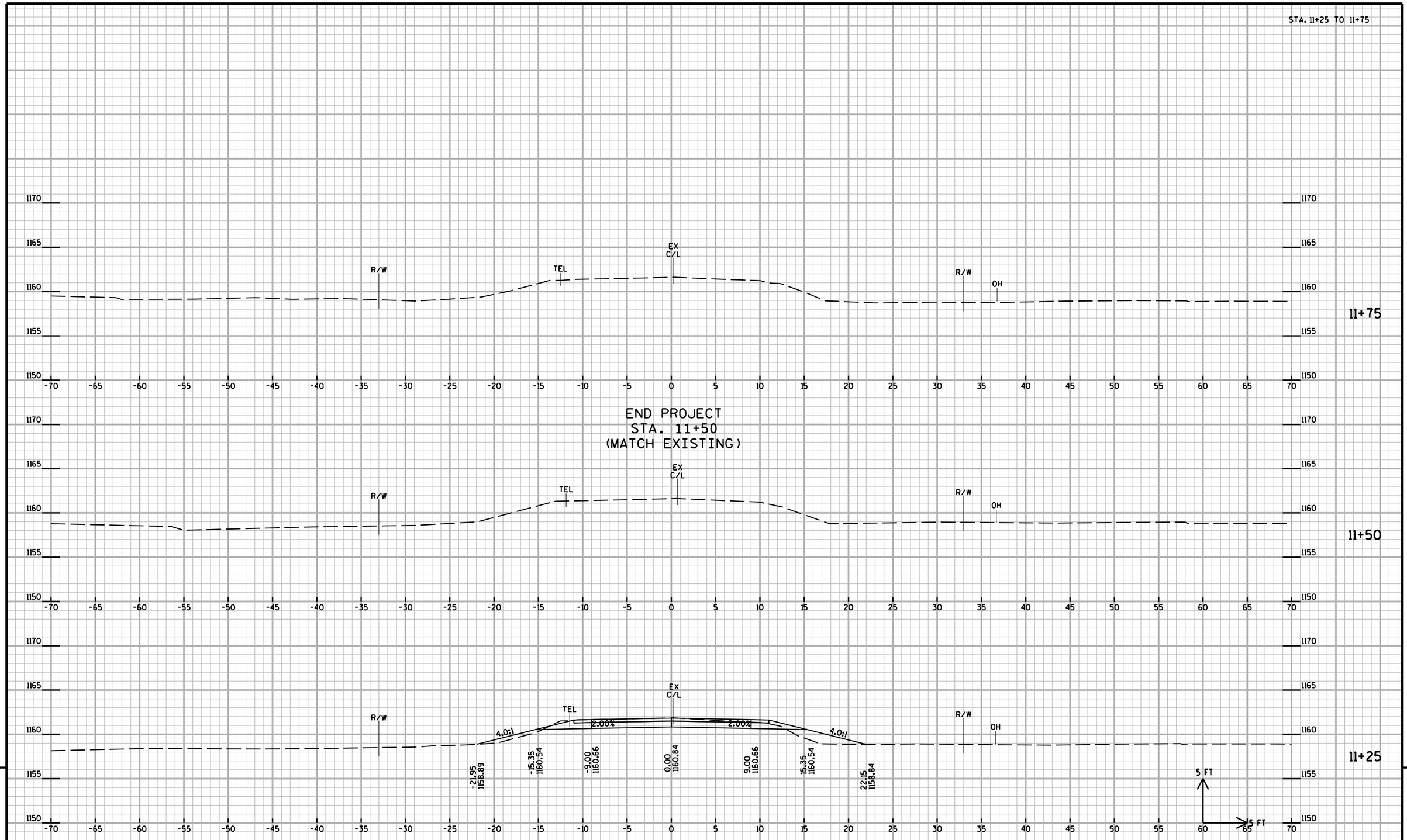
9

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	CROSS SECTIONS	SHEET 38	E

FILE NAME : U:\42-0902.00 - Douglas Co, Tn Dairyland, Swedish Highway\InRoads\42090200_xs rev.dgn PLOT DATE : 1/14/2014 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+25 TO 11+75



9 9

PROJECT NO: 8385-06-70	HWY: SWEDISH HIGHWAY	COUNTY: DOUGLAS	CROSS SECTIONS	SHEET 39	E

Wisconsin Department of Transportation

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