EAU

PROJECT ID: 7160-04-70

WITH: 7160-04-74

COUNTY: BUFFALO

DECEMBER 2018

ORDER OF SHEETS

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

TOTAL SHEETS = 238

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7160-04-70	WISC 2019017	1
7160-04-74	WISC 2019018	1

TREMPEALEAU - FOUNTAIN CITY

MISSISSIPPI RVR TRIBUTARY/2 BRIDGES

STH 35

BUFFALO COUNTY

STATE PROJECT NUMBER
7160-04-70

TREMPEALEAU - FOUNTAIN CITY

MISSISSIPPI RVR TRIBUTARY B-06-0202

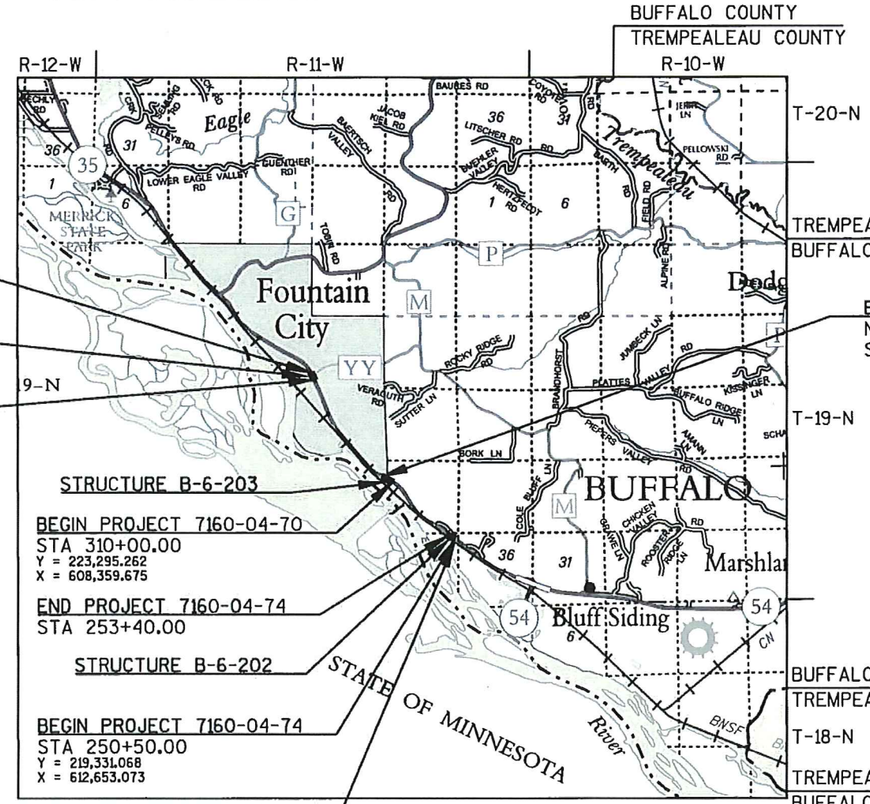
STH 35

BUFFALO COUNTY

STATE PROJECT NUMBER
7160-04-74



N



END PROJECT 7160-04-70
STA 417+00.00

STRUCTURE B-6-205

END EXCEPTION TO
NET CENTERLINE LENGTH
STA 411+50.00

STRUCTURE B-6-203

BEGIN PROJECT 7160-04-70
STA 310+00.00
Y = 223,295.262
X = 608,359.675

END PROJECT 7160-04-74
STA 253+40.00

STRUCTURE B-6-202

BEGIN PROJECT 7160-04-74
STA 250+50.00
Y = 219,331.068
X = 612,653.073

BEGIN CONSTRUCTION
STA 249+50.00

BEGIN EXCEPTION TO
NET CENTERLINE LENGTH
STA 314+35.00

7160-04-70 TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.
7160-04-74 TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), BUFFALO COUNTY NAD 83 (2011).

ELEVATIONS ON THIS PLAN ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NAVD 88).

DESIGN DESIGNATION

A.A.D.T.	2019	= 5,400
A.A.D.T.	2039	= 6,100
D.H.V.		= 10.0
D.D.		= 60/40
T.		= 8.2%
DESIGN SPEED		= 60 MPH
ESALS		= 890,000

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE	300'EP	ELECTRIC	E
EXISTING CULVERT		OVERHEAD UTILITY	OH
PROPOSED CULVERT (Box or Pipe)		FIBER OPTIC	FO
COMBUSTIBLE FLUIDS	CAUTION	GAS	G
		SANITARY SEWER	SAN
MARSH AREA		STORM SEWER	SS
		TELEPHONE	T
WOODED OR SHRUB AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
		TELEPHONE POLE	

ORIGINAL PLANS PREPARED BY

AECOM

WISCONSIN
SCOTT R. STEVENSON
E-43799
MENOMONEE FALLS, WI
PROFESSIONAL ENGINEER

7-31-18 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	FAA ENGINEERS
Designer	AECOM
Project Manager	NICOLE PASSUELLO
Regional Examiner	JENNIFER OLDENBERG
Regional Supervisor	JEFFREY OLSON

APPROVED FOR THE DEPARTMENT

DATE: 7/31/18 (Signature)

E

GENERAL NOTES

1. THE LOCATION 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.

2. EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS. LOCATIONS FOR EBS, IF REQUIRED, WILL BE DETERMINED BY THE ENGINEER.

3. FILL AS SHOWN ON THE PLAN SHEETS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM EXCAVATION COMMON OR BORROW. THE SHRINKAGE ALLOWANCE USED TO COMPUTE THE VOLUME OF MATERIAL NECESSARY TO COMPLETE THE FILL IS ESTIMATED AT 25 PERCENT.

4. THE 6.25" HMA PAVEMENT SHALL BE CONSTRUCTED IN 3 LAYERS.
THE LOWER LAYER SHALL BE 2.25-INCHES HMA PAVEMENT 3 MT 58-28 S.
THE MIDDLE LAYER SHALL BE 2.25-INCHES HMA PAVEMENT 3 MT 58-28 S.
THE UPPER LAYER SHALL BE 1.75-INCHES HMA PAVEMENT 4 MT 58-34 S.

5. DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREA WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SEEDED AND MULCHED. DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A WATER BODY OR WETLAND.

6. EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE ADJUSTED TO FIT FIELD CONDITIONS.

7. EXISTING SITE TOPOGRAPHIC INFORMATION OBTAINED FROM SURVEY BY FAA ENGINEERS.

UTILITY CONTACTS

CENTURYLINK
(FIBER OPTIC & TELEPHONE)
THOMAS MURRAY
333 NORTH FRONT STREET
LA CROSSE, WI 54601
608-796-7969 (OFFICE)
tom.murray@centurylink.com

COCHRANE CO-OP TELEPHONE COMPANY
(FIBER OPTIC)
MATT BIESTERVELD
103 W 5TH STREET
COCHRANE, WI 54622
608-248-2323 (OFFICE)
mblesterveld@cctcoop.com

XCEL ENERGY, INC.
(ELECTRIC TRANSMISSION & DISTRIBUTION)
BRUCE ZEMKE
414 NICOLLET MALL
5TH FLOOR
MINNEAPOLIS, MN 55401
612-330-7815 (OFFICE)
651-214-2620 (MOBILE)
bruce.m.zemke@xcelenergy.com

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

RUNOFF COEFFICIENT TABLE

	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 = 7.458 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.712 ACRES

DESIGN CONTACT

AECOM
ATTN: KEVIN HAGEN
200 INDIANA AVENUE
STEVENS POINT, WI 54481
715-342-3053
kevin.hagen@aecom.com

WISDOT
ATTN: NICOLE PASSUELLO
718 W CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
715-579-0013
nicole.passuello@dot.wi.gov

WDNR CONTACT

AMY LESIK (WDNR)
1300 CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
715-836-6571
AmyL.Lesik@wisconsin.gov

2

2

END PROJECT 7160-04-70
STA 417+00.00

STH 35

EXISTING STRUCTURE B-6-17
(TO BE REMOVED)

STRUCTURE B-6-205 REQUIRED

CTH YY

CTH M

N

END EXCEPTION TO
NET CENTERLINE LENGTH
STA 411+50.00

WAGNER RD

LN

SUTTER

VERAGUTH RD

CTH M

MISSISSIPPI RIVER

BORK LN

EXISTING STRUCTURE B-6-15
(TO BE REMOVED)

STRUCTURE B-6-203 REQUIRED

BEGIN EXCEPTION TO
NET CENTERLINE LENGTH
STA 314+35.00

BEGIN PROJECT 7160-04-70
STA 310+00.00

STH 35

END PROJECT 7160-04-74
STA 253+40.00

MIDWAY RD

EXISTING STRUCTURE B-6-14
(TO BE REMOVED)

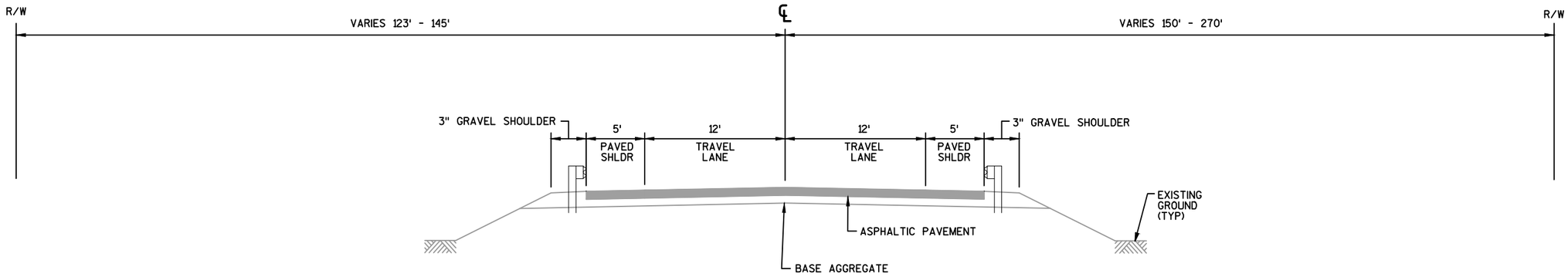
STRUCTURE B-6-202 REQUIRED

BEGIN PROJECT 7160-04-74
STA 250+50.00

OLD HWY 35

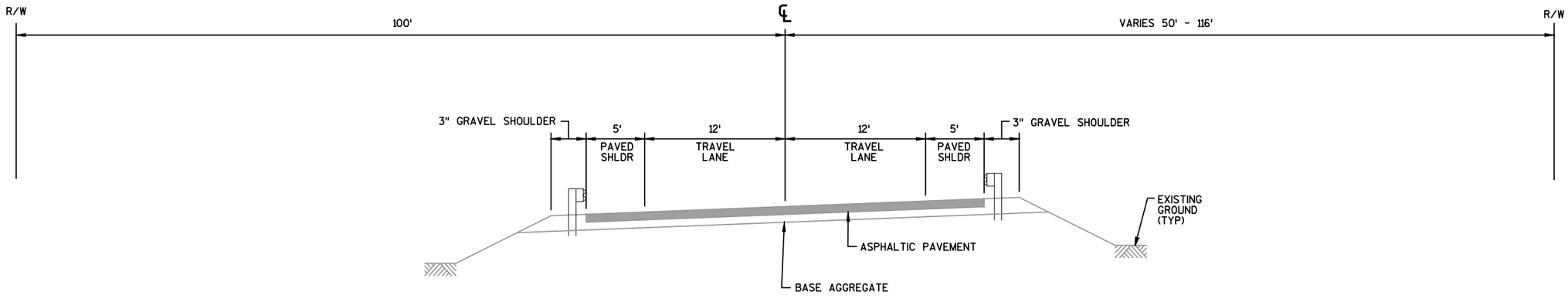
BEGIN CONSTRUCTION
STA 249+50.00

PROJECT NO: 7160-04-70/74	HWY: STH 35	COUNTY: BUFFALO	PROJECT OVERVIEW	SHEET 3 E



TYPICAL EXISTING SECTION - STH 35

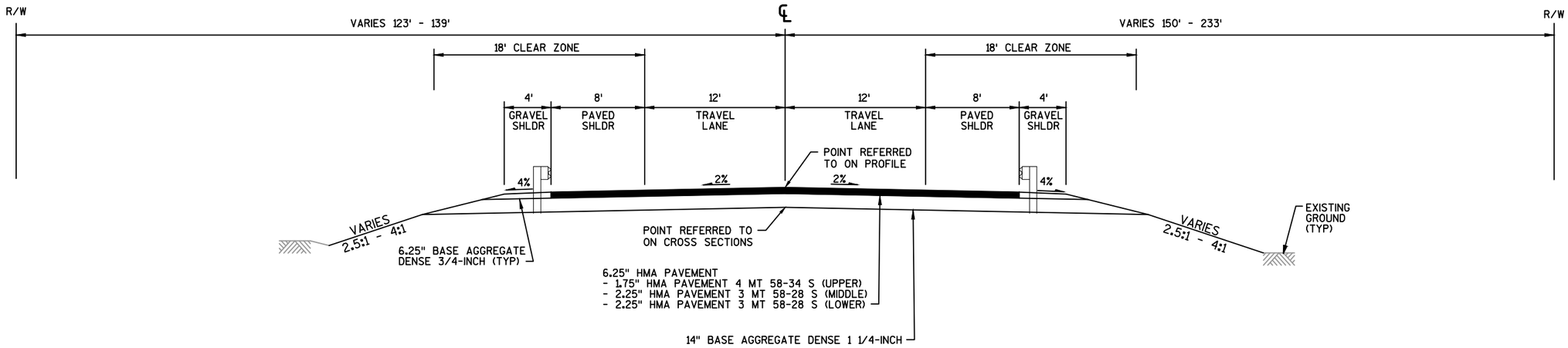
STA 249+50.00 - STA 251+81.53
STA 252+32.78 - STA 253+40.00



TYPICAL EXISTING SECTION - STH 35

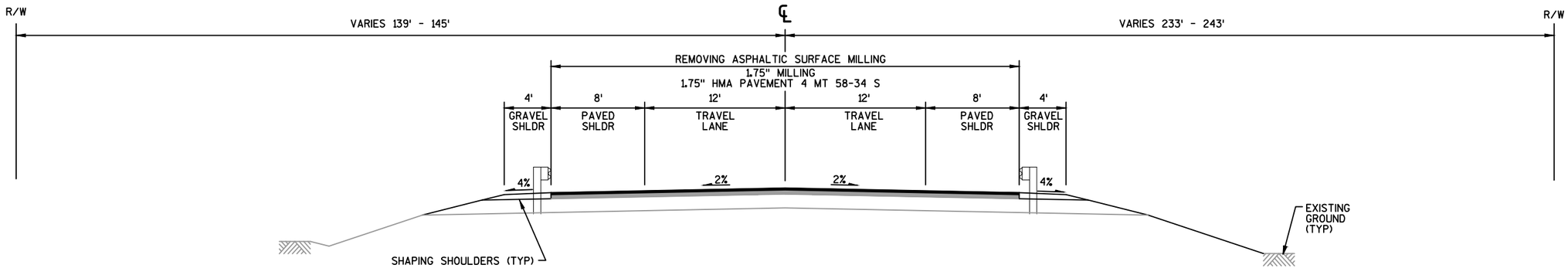
STA 310+00.00 - STA 311+04.00
STA 311+64.33 - STA 314+35.00
STA 411+50.00 - STA 414+60.94
STA 415+21.24 - STA 417+00.00

PROJECT NO: 7160-04-70/74	HWY: STH 35	COUNTY: BUFFALO	TYPICAL SECTIONS	SHEET 4	E



TYPICAL FINISHED SECTION - STH 35

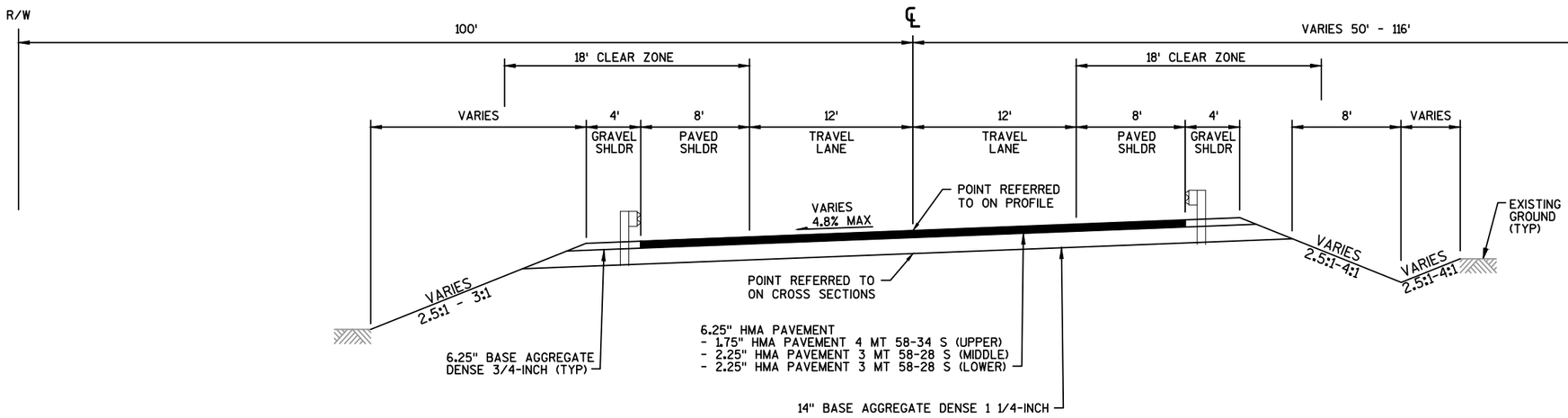
STA 249+50.00 - STA 251+76.37
STA 252+37.42 - STA 252+90.00



TYPICAL FINISHED SECTION - STH 35

STA 252+90.00 - STA 253+40.00

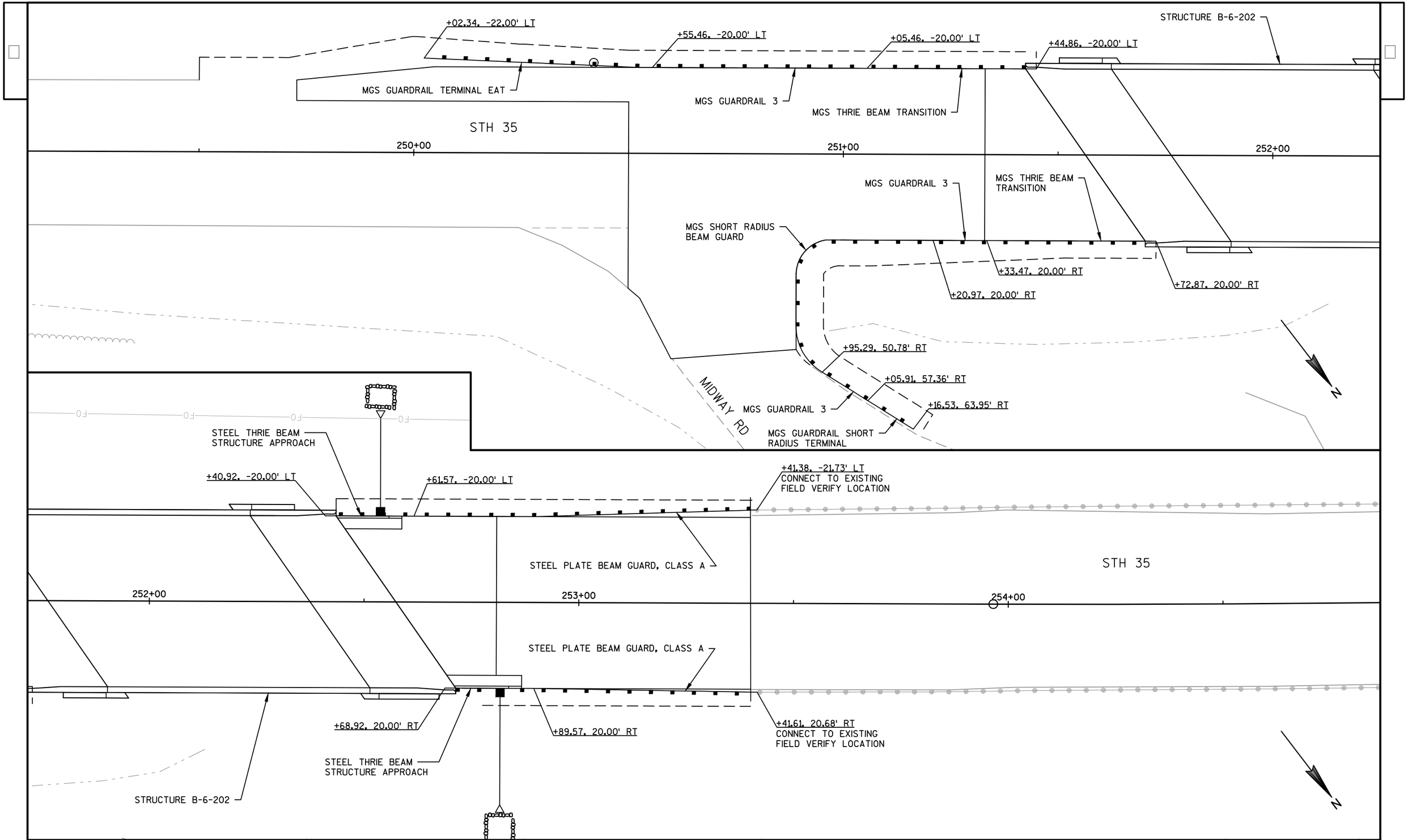
PROJECT NO: 7160-04-70/74	HWY: STH 35	COUNTY: BUFFALO	TYPICAL SECTIONS	SHEET 5	E



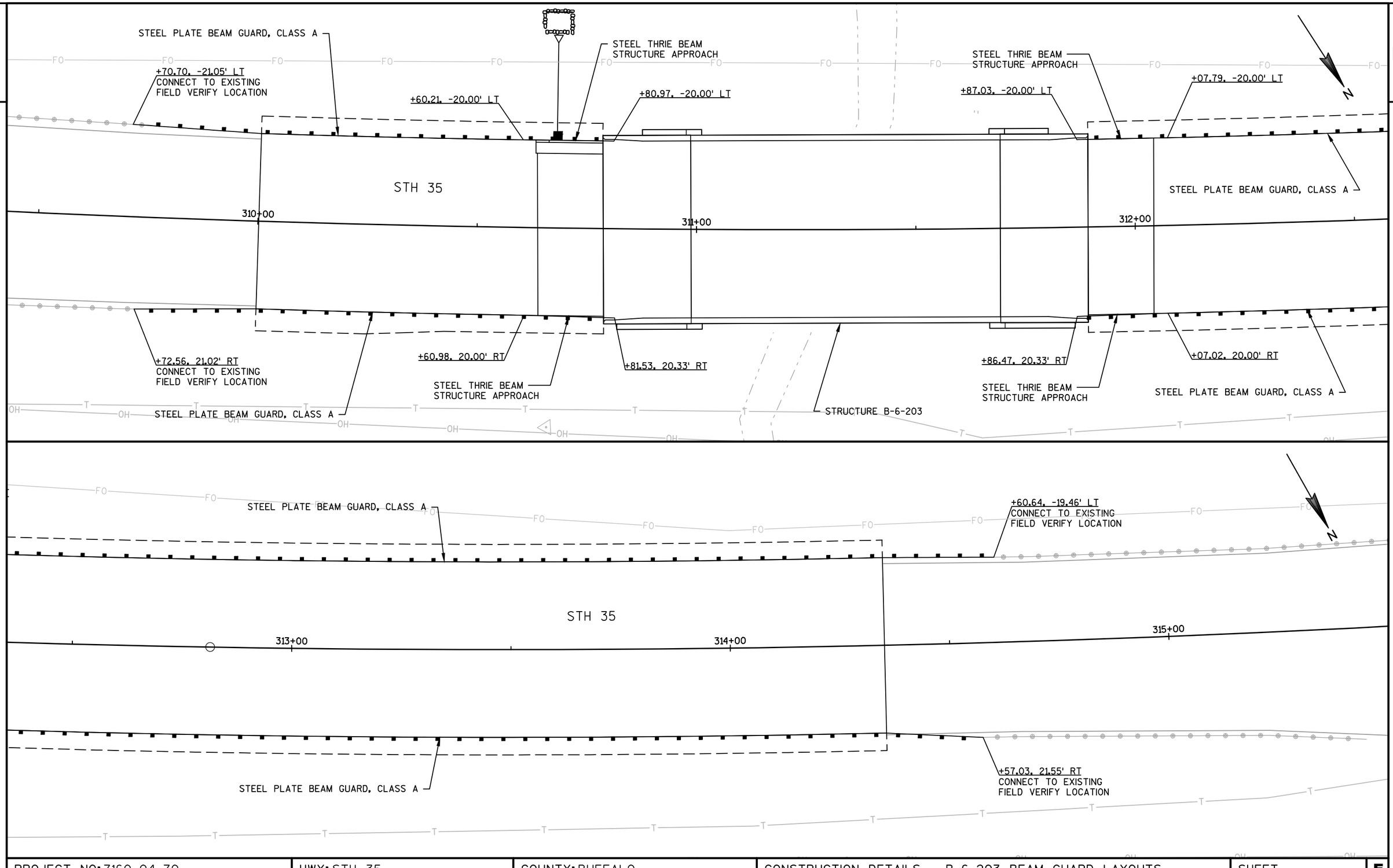
TYPICAL FINISHED SECTION - STH 35

STA 310+00.00 - STA 310+98.75
STA 311+69.25 - STA 314+35.00
STA 411+50.00 - STA 414+55.75
STA 415+26.25 - STA 417+00.00

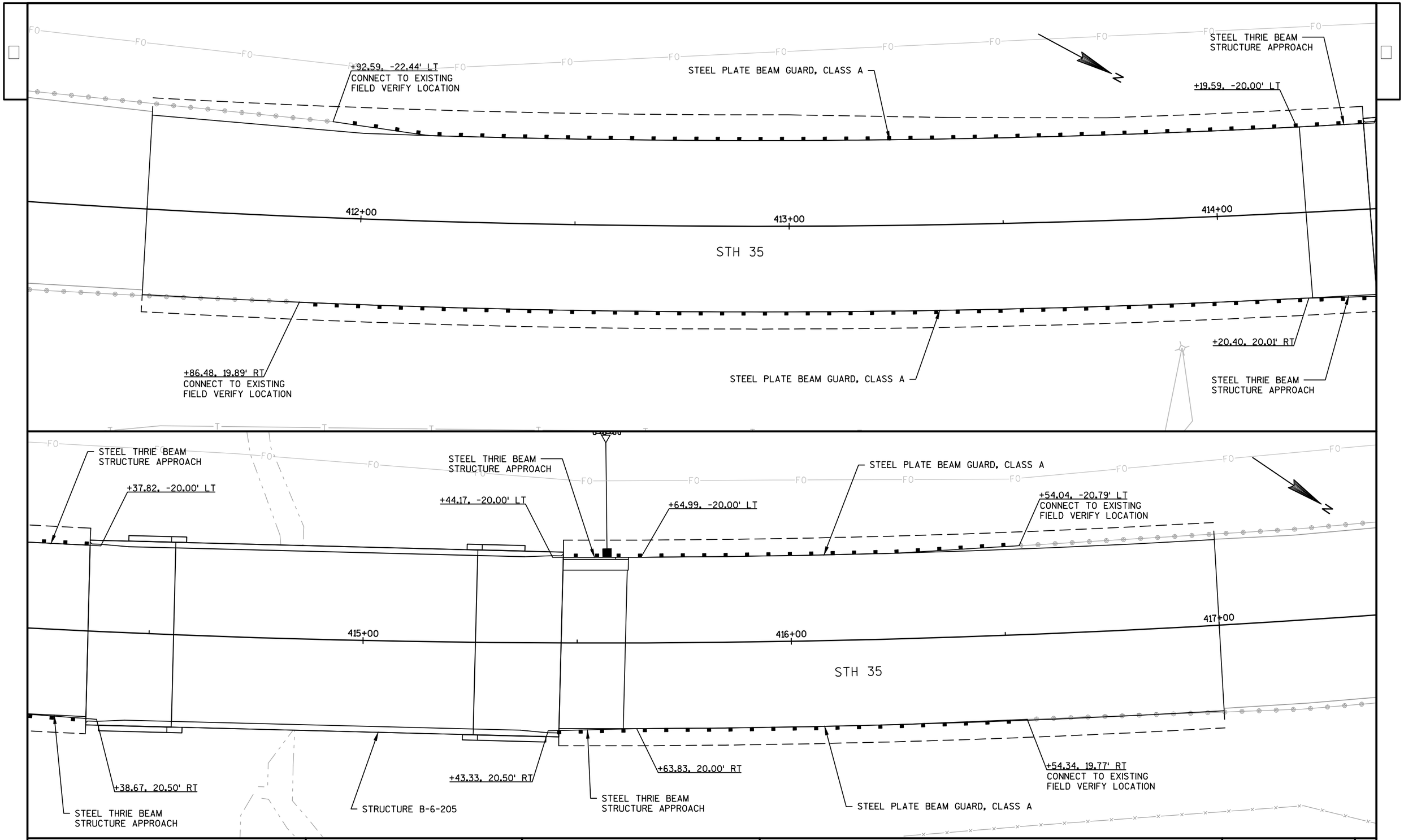
PROJECT NO: 7160-04-70/74	HWY: STH 35	COUNTY: BUFFALO	TYPICAL SECTIONS	SHEET 6	E



PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CONSTRUCTION DETAILS - B-6-202 BEAM GUARD LAYOUTS	SHEET 7	E



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CONSTRUCTION DETAILS - B-6-203 BEAM GUARD LAYOUTS	SHEET 8	E

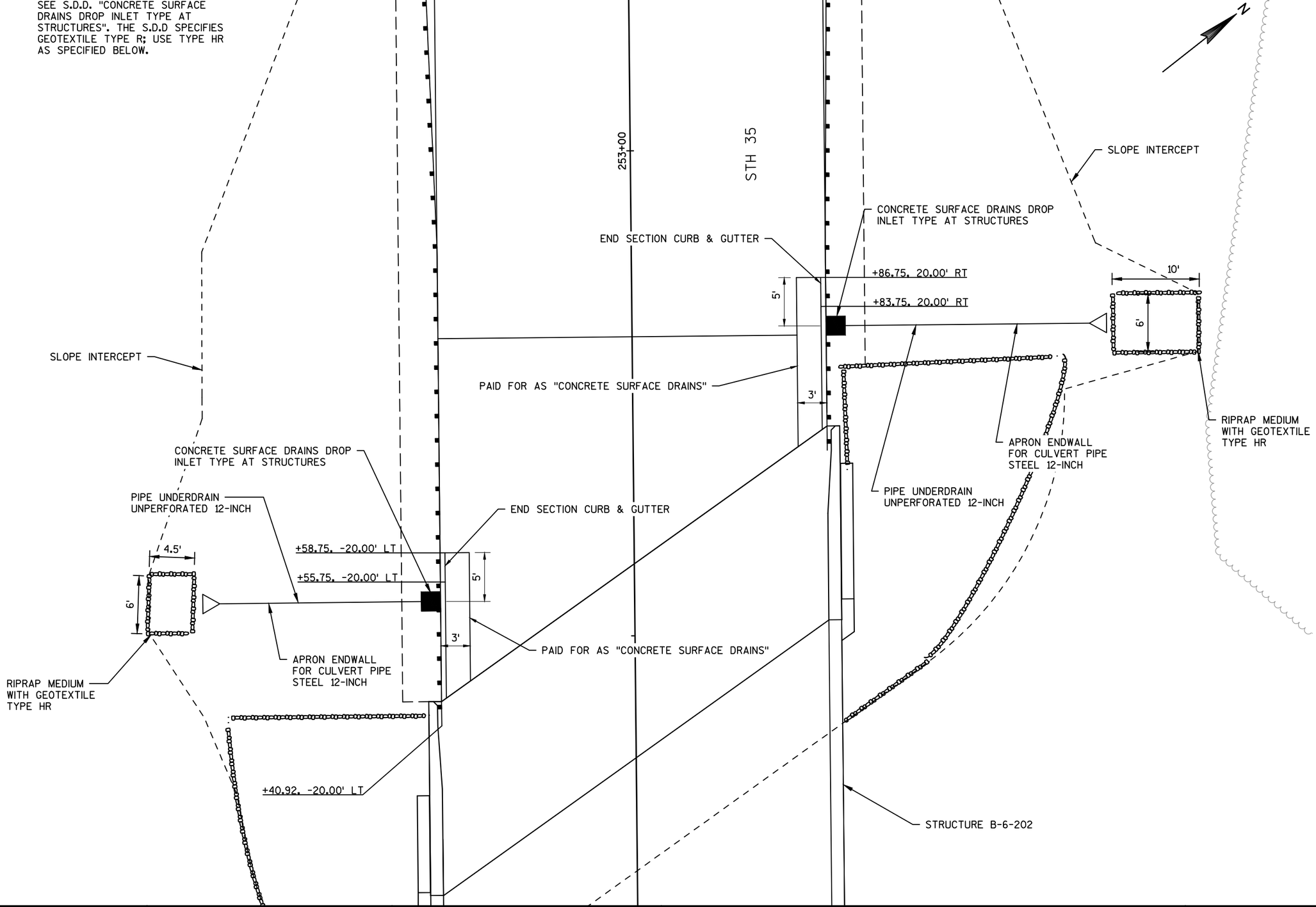


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CONSTRUCTION DETAILS - B-6-205 BEAM GUARD LAYOUTS	SHEET 9	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\0210_CD.DWG
LAYOUT NAME - ****

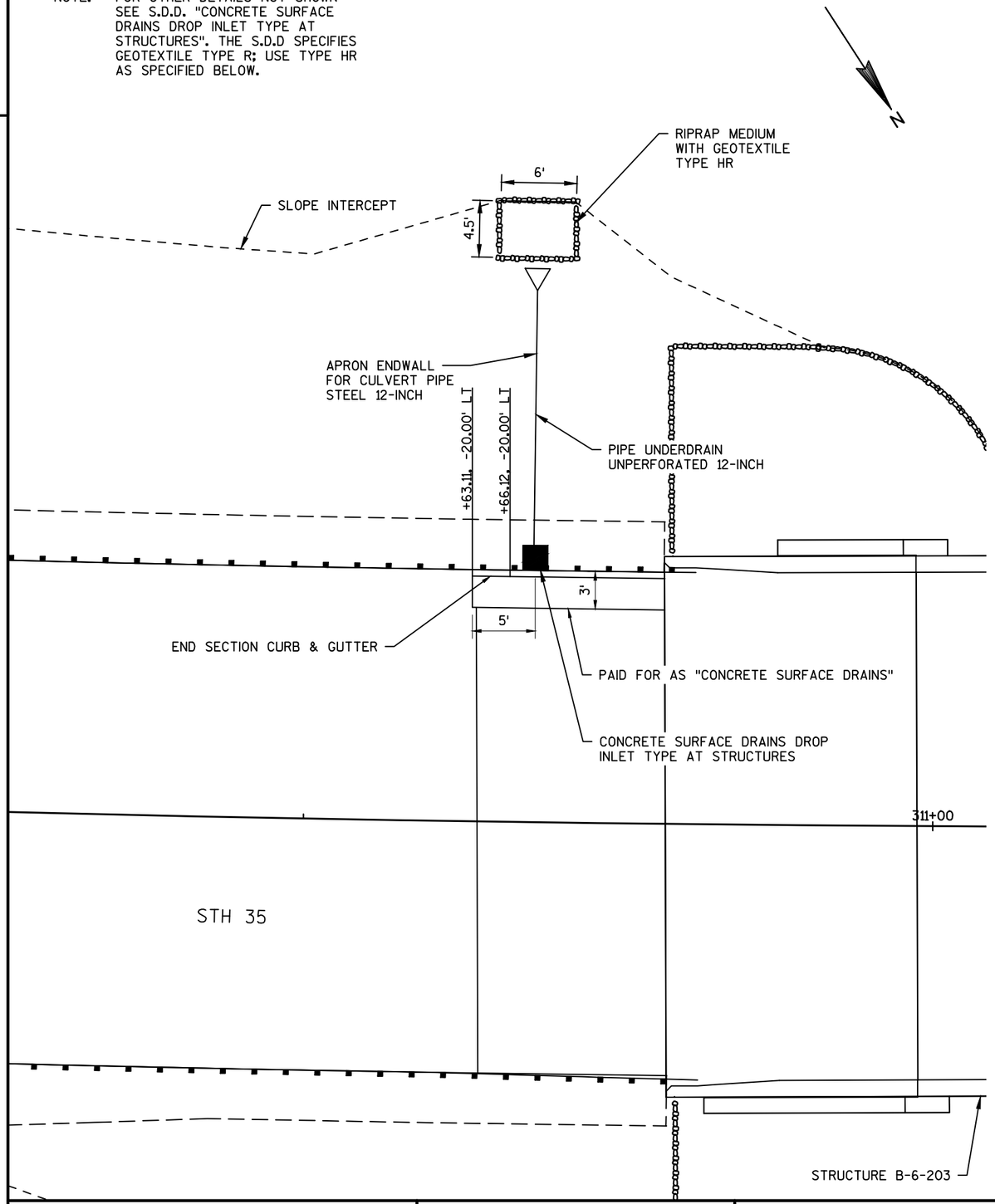
PLOT DATE : 6/1/2018 11:28 AM PLOT BY : KOCH, LARRY PLOT NAME : PLOT SCALE : 1 IN:20 FT

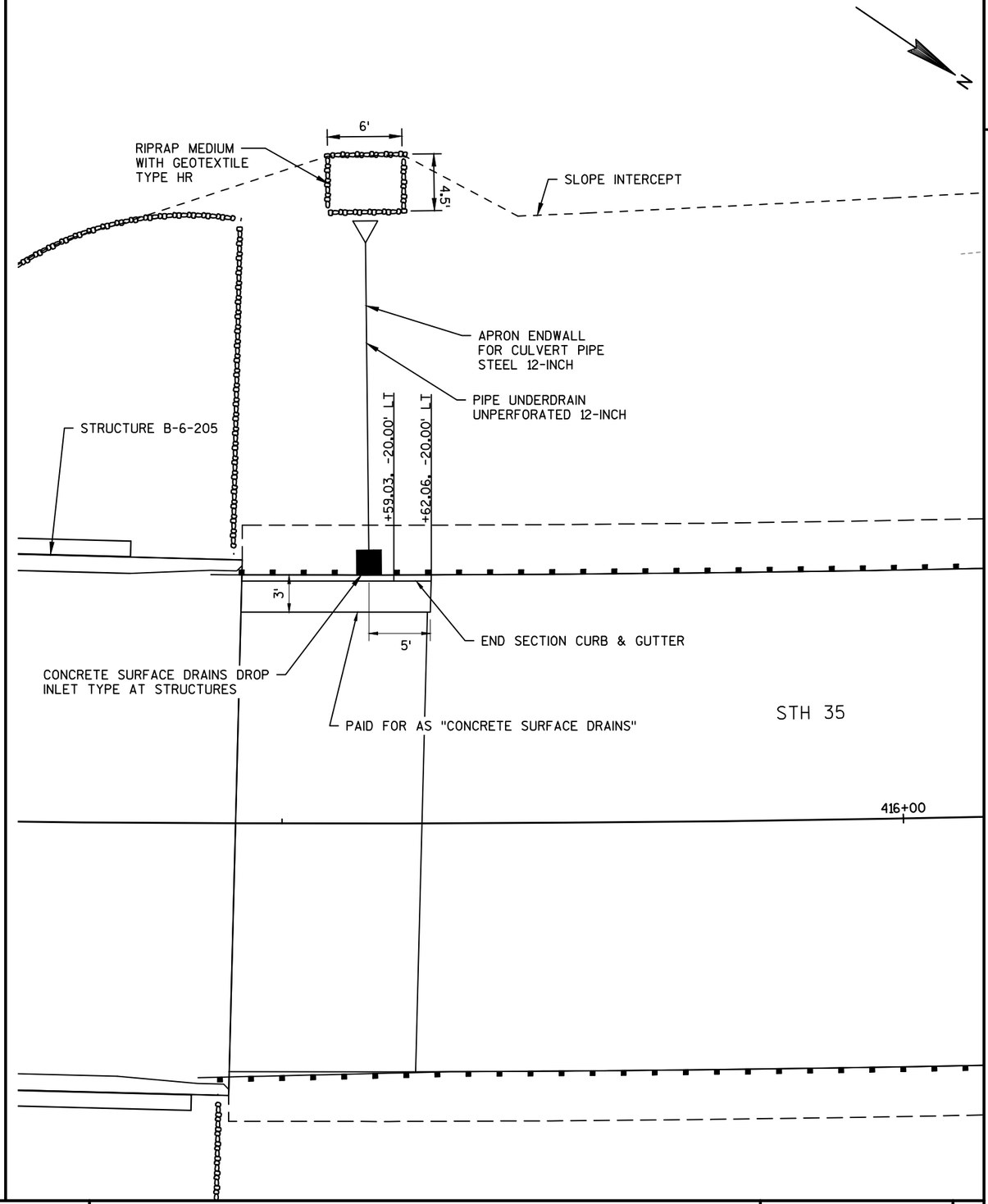
NOTE: FOR OTHER DETAILS NOT SHOWN SEE S.D.D. "CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES". THE S.D.D SPECIFIES GEOTEXTILE TYPE R; USE TYPE HR AS SPECIFIED BELOW.



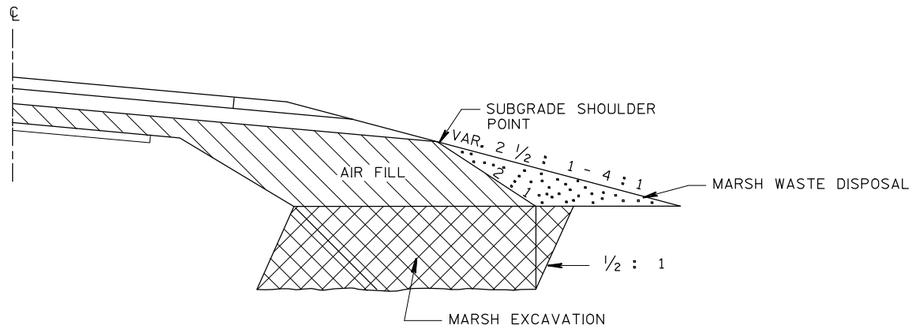
PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CONSTRUCTION DETAILS - B-6-202 INLET LAYOUTS	SHEET 10	E

NOTE: FOR OTHER DETAILS NOT SHOWN SEE S.D.D. "CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES". THE S.D.D SPECIFIES GEOTEXTILE TYPE R; USE TYPE HR AS SPECIFIED BELOW.

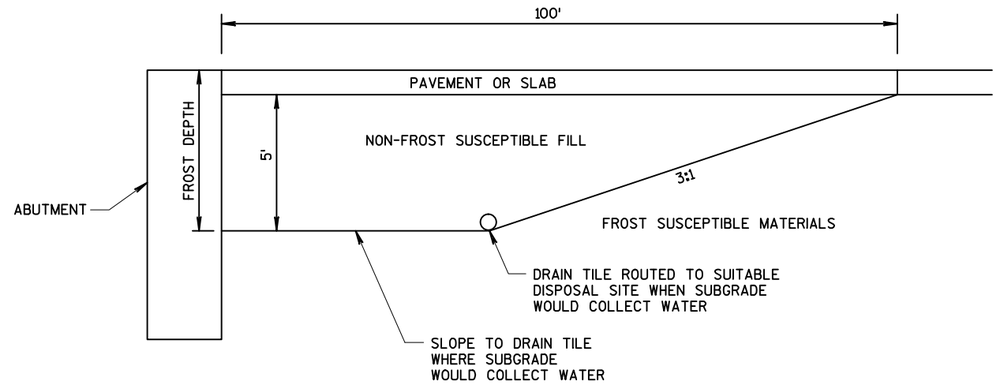




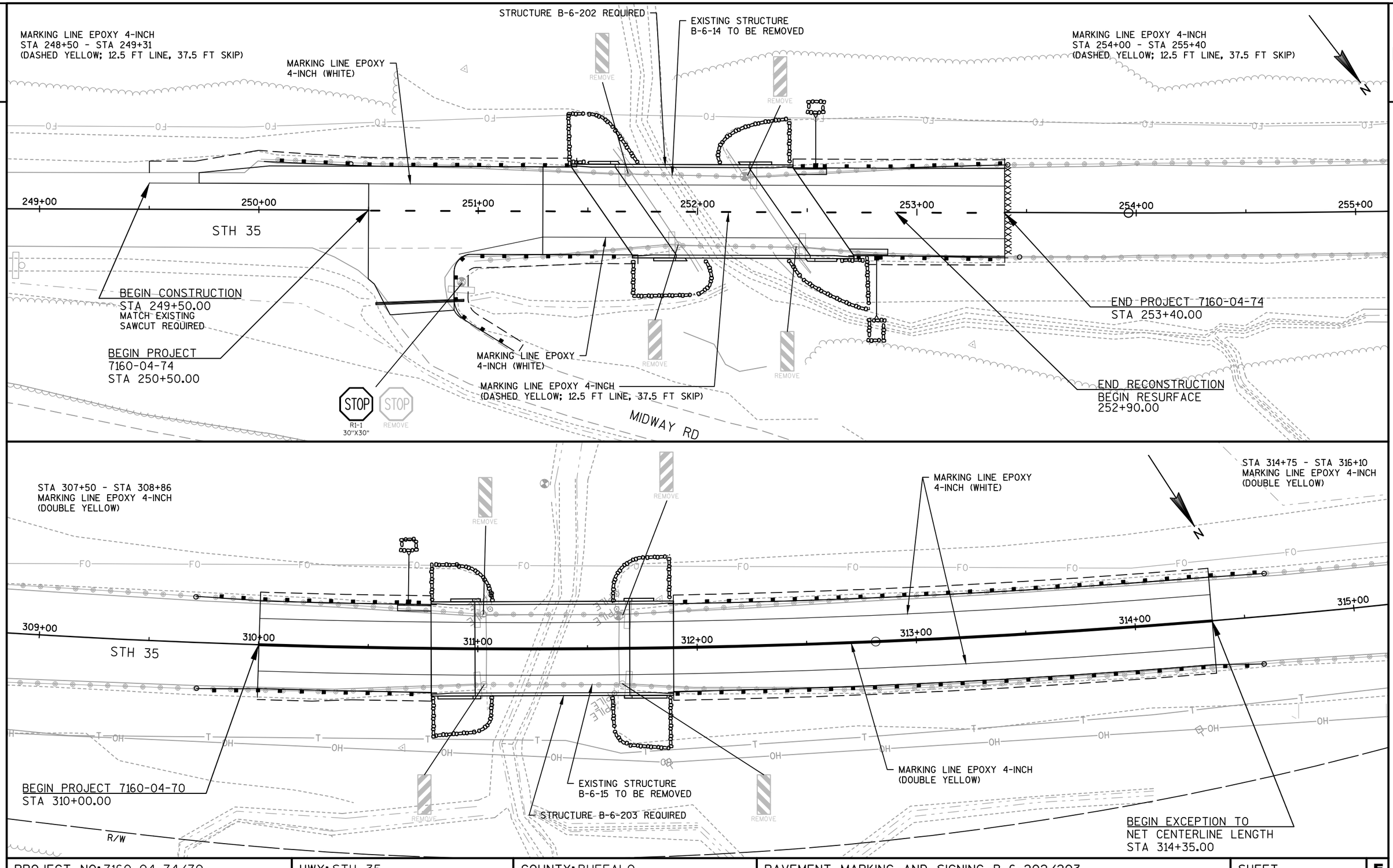
PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CONSTRUCTION DETAILS - B-6-203/205 INLET LAYOUTS	SHEET 11	E



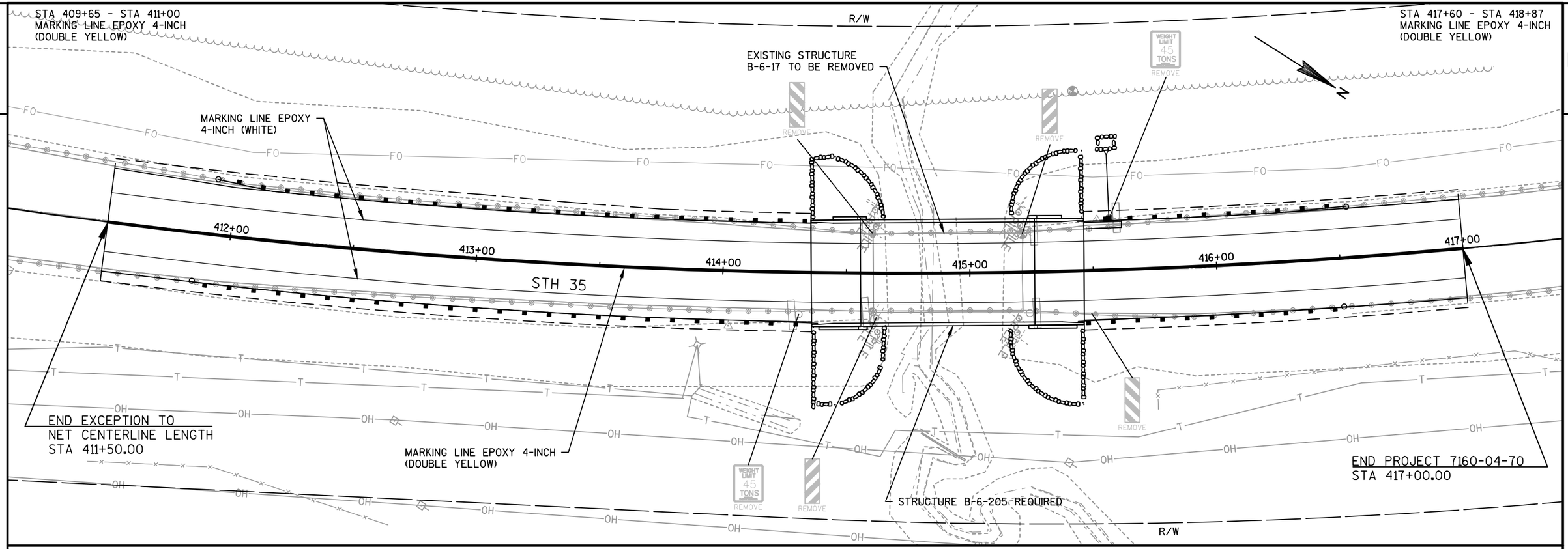
TYPICAL MARSH EXCAVATION FOR RECONSTRUCTION



EBS AT ABUTMENTS



PROJECT NO: 7160-04-74/70	HWY: STH 35	COUNTY: BUFFALO	PAVEMENT MARKING AND SIGNING B-6-202/203	SHEET 13	E



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	PAVEMENT MARKING AND SIGNING B-6-205	SHEET 14	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

N

R/W

NO PASSING ZONE
W14-3
48"X36"

W03-3
48"X48"

END ROAD WORK
G20-2A
48"X24"

W05-52L
12"X36"

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH (WHITE)

TEMPORARY MARKING
LINE PAINT 4-INCH
(WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH
(DOUBLE YELLOW)

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE 18-INCH (WHITE)

STA 250+50, LT
END REMOVABLE TAPE 4-INCH
BEGIN PAINT 4-INCH

STH 35

246+00 247+00 248+00 249+00 250+00 251+00

CRASH CUSHION TEMPORARY

500' 500' 500' 500' 50' 40' 100'

500'

ROAD WORK AHEAD
W20-1-A
48"X48"

MAX. 11 WIDTH
W12-52
48"X48"

ONE LANE ROAD AHEAD
W20-4-A
48"X48"

W03-3
48"X48"

STOP HERE ON RED
R10-6
24"X36"

TRAILER MOUNTED
TRAFFIC SIGNAL
SEE S.D.D. "BRIDGE
TEMPORARY TRAFFIC
SIGNAL INSTALLATION"

W01-6
48"X24"

W05-52R
12"X36"

ROAD CLOSED
R11-2
48"X30"

MIDWAY ROAD

ROAD CLOSED 500 FT
W20-3-D
48"X48"

ROAD CLOSED AHEAD
W20-3-A
48"X48"

R/W

PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 1 - B-6-202	SHEET 15	E

R/W

W05-52R
12"X36"

TRAILER MOUNTED
TRAFFIC SIGNAL
SEE S.D.D. "BRIDGE
TEMPORARY TRAFFIC
SIGNAL INSTALLATION"

ONE LANE
ROAD
AHEAD
W20-4-A
48"X48"

ROAD
WORK
AHEAD
W20-1-A
48"X48"

W03-3
48"X48"

STOP
HERE ON
RED
R10-6
24"X36"

MAX.
11'
WIDTH
W12-52
48"X48"

100'
40'
50'
500'
500'
500'
500'

TEMPORARY MARKING
LINE PAINT 4-INCH
(WHITE)

STA 253+40, LT
END PAINT 4-INCH
BEGIN REMOVABLE TAPE 4-INCH

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH
(WHITE)

253+00
254+00
255+00
256+00
257+00

STH 35

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE 18-INCH (WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH
(DOUBLE YELLOW)

END
ROAD WORK
G20-2A
48"X24"

NO
PASSING
ZONE
W14-3
48"X36"

W03-3
48"X48"

W05-52L
12"X36"

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- XXXXX PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 1 - B-6-202	SHEET 16	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- XXXXX PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

N

NO PASSING ZONE
W14-3
48"X36"

W03-3
48"X48"

END ROAD WORK
G20-2A
48"X24"

R/W

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE 18-INCH (WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH (WHITE)

W05-52L
12"X36"

W05-52R
12"X36"

STA 310+00, LT
END REMOVABLE TAPE 4-INCH
BEGIN PAINT 4-INCH

TEMPORARY MARKING
LINE PAINT 4-INCH
(WHITE)

306+00

307+00

STH 35

308+00

309+00

310+00

311+00

312

CRASH CUSHION TEMPORARY

500' 500' 500' 500' 50' 40' 100'

W01-6
48"X24"

ROAD WORK AHEAD
W20-1-A
48"X48"

MAX 11 WIDTH
W12-52
48"X48"

ONE LANE ROAD AHEAD
W20-4-A
48"X48"

W03-3
48"X48"

STOP HERE ON RED
R10-6
24"X36"

TRAILER MOUNTED
TRAFFIC SIGNAL
SEE S.D.D. "BRIDGE
TEMPORARY TRAFFIC
SIGNAL INSTALLATION"

W05-52R
12"X36"

R/W

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 1 - B-6-203	SHEET 17	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

N

TRAILER MOUNTED TRAFFIC SIGNAL SEE S.D.D. "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"

ONE LANE ROAD AHEAD W20-4-A 48"X48"

ROAD WORK AHEAD W20-1-A 48"X48"

STOP HERE ON RED R10-6 24"X36"

W03-3 48"X48"

MAX 11' WIDTH W12-52 48"X48"

500' 500' 500' 500'

R/W

100' 40' 50'

W05-52L 12"X36"

STA 314+35, LT
END PAINT 4-INCH
BEGIN REMOVABLE TAPE 4-INCH

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

TEMPORARY MARKING LINE PAINT 4-INCH (WHITE)

313+00 314+00 315+00 316+00 317+00 318+00

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH (WHITE)

R/W

END ROAD WORK G20-2A 48"X24"

NO PASSING ZONE W14-3 48"X36"

R3-2 24"X24"

W03-3 48"X48"

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 1 - B-6-203	SHEET 18	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- XXXXX PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

NO PASSING ZONE
W14-3
48"X36"

W03-3
48"X48"

END ROAD WORK
G20-2A
48"X24"

R/W

STH 35

408+00

409+00

410+00

411+00

412+00

413+00

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

W05-52L
12"X36"

STA 411+50, LT
END REMOVABLE TAPE 4-INCH
BEGIN PAINT 4-INCH

TEMPORARY MARKING LINE PAINT 4-INCH (WHITE)

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH (WHITE)

CRASH CUSHION TEMPORARY

500' 500' 500' 500'

50' 40' 100'

W01-6
48"X24"

ROAD WORK AHEAD
W20-1-A
48"X48"

MAX 11' WIDTH
W12-52
48"X48"

ONE LANE ROAD AHEAD
W20-4-A
48"X48"

W03-3
48"X48"

STOP HERE ON RED
R10-6
24"X36"

R/W

TRAILER MOUNTED TRAFFIC SIGNAL SEE S.D.D. "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 1 - B-6-205	SHEET 19	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

TRAILER MOUNTED TRAFFIC SIGNAL SEE S.D.D. "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"

ONE LANE ROAD AHEAD W20-4-A 48"X48"

ROAD WORK AHEAD W20-1-A 48"X48"

MAX. 11' WIDTH W12-52 48"X48"

STOP HERE ON RED R10-6 24"X36"

W03-3 48"X48"

100' 40' 50' 500' 500' 500' 500'

R/W

W05-52L 12"X36"

W05-52R 12"X36"

W05-52L 12"X36"

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

STA 417+00, LT
END PAINT 4-INCH
BEGIN REMOVABLE TAPE 4-INCH

TEMPORARY MARKING LINE PAINT 4-INCH (WHITE)

414+00 415+00 416+00 417+00 418+00 419+00 420+00

STH 35

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH (WHITE)

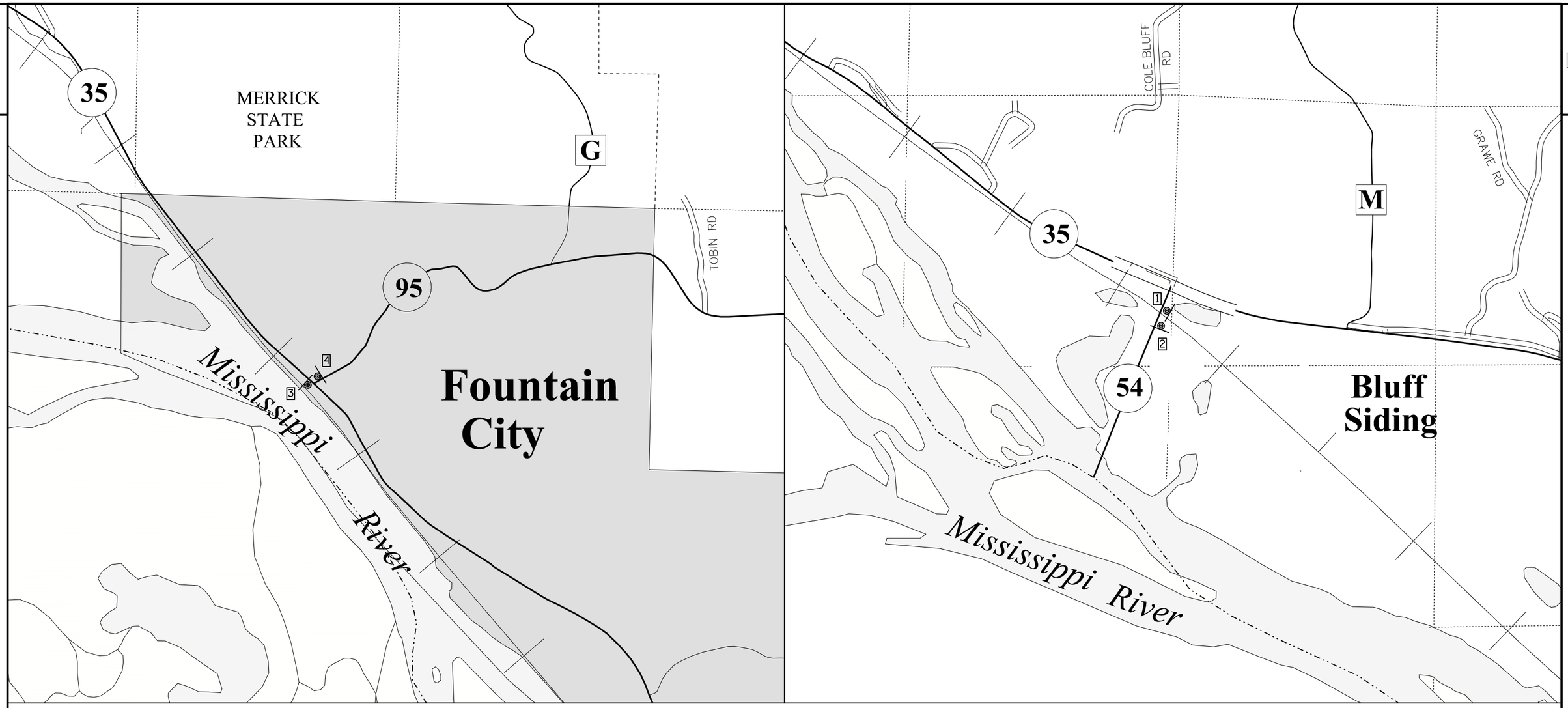
END ROAD WORK G20-2A 48"X24"

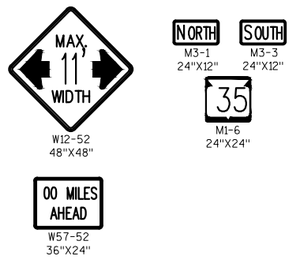
NO PASSING ZONE W14-3 48"X36"

W03-3 48"X48"

R/W

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 1 - B-6-205	SHEET 20	E





NOTES

ALL ASSEMBLIES TO BE PLACED ON NEW POSTS.

INCLUDE M1-4 AND EITHER M3-2 OR M3-4 OVER THE W12-52 AT ALL ASSEMBLIES NOT PLACED ON USH 2.

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

WIDTH RESTRICTION ADVANCE WARNINGS
1: STH 35 @ STH 54 - 1 MILE
2: STH 54 @ STH 35 - 1 MILE
3: STH 35 @ STH 95 - 2 MILES
4: STH 95 @ STH 35 - 2 MILES

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL - WIDTH RESTRICTION ADVANCED WARNING	SHEET 21	E

2

SEQUENCE OF OPERATION

	PHASE 1 ⇧			PHASE 2 ⇩		
NB STH 35 SIGNALS	G	Y	R	R	R	R
SB STH 35 SIGNALS	R	R	R	G	Y	R
DURATION (S)	-	5	15*	-	5	15*
MINIMUM GREEN TIME (S)	10	-	-	10	-	-
MAXIMUM GREEN TIME (S)	35	-	-	35	-	-
EXTENSION TIME (S/VEH)	3	-	-	3	-	-

N

* THE CONTRACTOR SHALL MONITOR TRAFFIC AND INCREASE THE ALL RED TIME IF VEHICLES FAIL TO CLEAR THE WORK ZONE DURING THE ALL RED TIME.

NOTES:

1. PHASE 1 AND PHASE 2 WILL EACH ACTIVATE ONLY WHEN CALLED.

2. PHASE 1 AND PHASE 2 WILL EACH REST IN RED WHEN NO DEMAND IS PRESENT.

TEMPORARY TRAFFIC SIGNALS - B-6-202

2

SEQUENCE OF OPERATION

	PHASE 1 ⇧			PHASE 2 ⇩		
NB STH 35 SIGNALS	G	Y	R	R	R	R
SB STH 35 SIGNALS	R	R	R	G	Y	R
DURATION (S)	-	5	17*	-	5	17*
MINIMUM GREEN TIME (S)	10	-	-	10	-	-
MAXIMUM GREEN TIME (S)	35	-	-	35	-	-
EXTENSION TIME (S/VEH)	3	-	-	3	-	-

N

* THE CONTRACTOR SHALL MONITOR TRAFFIC AND INCREASE THE ALL RED TIME IF VEHICLES FAIL TO CLEAR THE WORK ZONE DURING THE ALL RED TIME.

NOTES:

1. PHASE 1 AND PHASE 2 WILL EACH ACTIVATE ONLY WHEN CALLED.

2. PHASE 1 AND PHASE 2 WILL EACH REST IN RED WHEN NO DEMAND IS PRESENT.

TEMPORARY TRAFFIC SIGNALS - B-6-203

2

SEQUENCE OF OPERATION

	PHASE 1 ⇧			PHASE 2 ⇩		
NB STH 35 SIGNALS	G	Y	R	R	R	R
SB STH 35 SIGNALS	R	R	R	G	Y	R
DURATION (S)	-	5	18*	-	5	18*
MINIMUM GREEN TIME (S)	10	-	-	10	-	-
MAXIMUM GREEN TIME (S)	35	-	-	35	-	-
EXTENSION TIME (S/VEH)	3	-	-	3	-	-

N

* THE CONTRACTOR SHALL MONITOR TRAFFIC AND INCREASE THE ALL RED TIME IF VEHICLES FAIL TO CLEAR THE WORK ZONE DURING THE ALL RED TIME.

NOTES:

1. PHASE 1 AND PHASE 2 WILL EACH ACTIVATE ONLY WHEN CALLED.

2. PHASE 1 AND PHASE 2 WILL EACH REST IN RED WHEN NO DEMAND IS PRESENT.

TEMPORARY TRAFFIC SIGNALS - B-6-205

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

N

R/W

W03-3 48"X48"

NO PASSING ZONE W14-3 48"X36"

END ROAD WORK G20-2A 48"X24"

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (DOUBLE YELLOW)

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH (WHITE)

246+00 247+00 248+00 249+00 250+00 251+00 252

STH 35

500' 500' 500' 500' 50' 40' 100' 500'

ROAD WORK AHEAD W20-1-A 48"X48"

MAX 11 WIDTH W12-52 48"X48"

ONE LANE ROAD AHEAD W20-4-A 48"X48"

W03-3 48"X48"

STOP HERE ON RED R10-6 24"X36"

TRAILER MOUNTED TRAFFIC SIGNAL SEE S.D.D. "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"

W05-52L 12"X36"

R3-1 24"X24"

R3-2 24"X24"

W05-52R 12"X36"

ROAD CLOSED R11-2 48"X30"

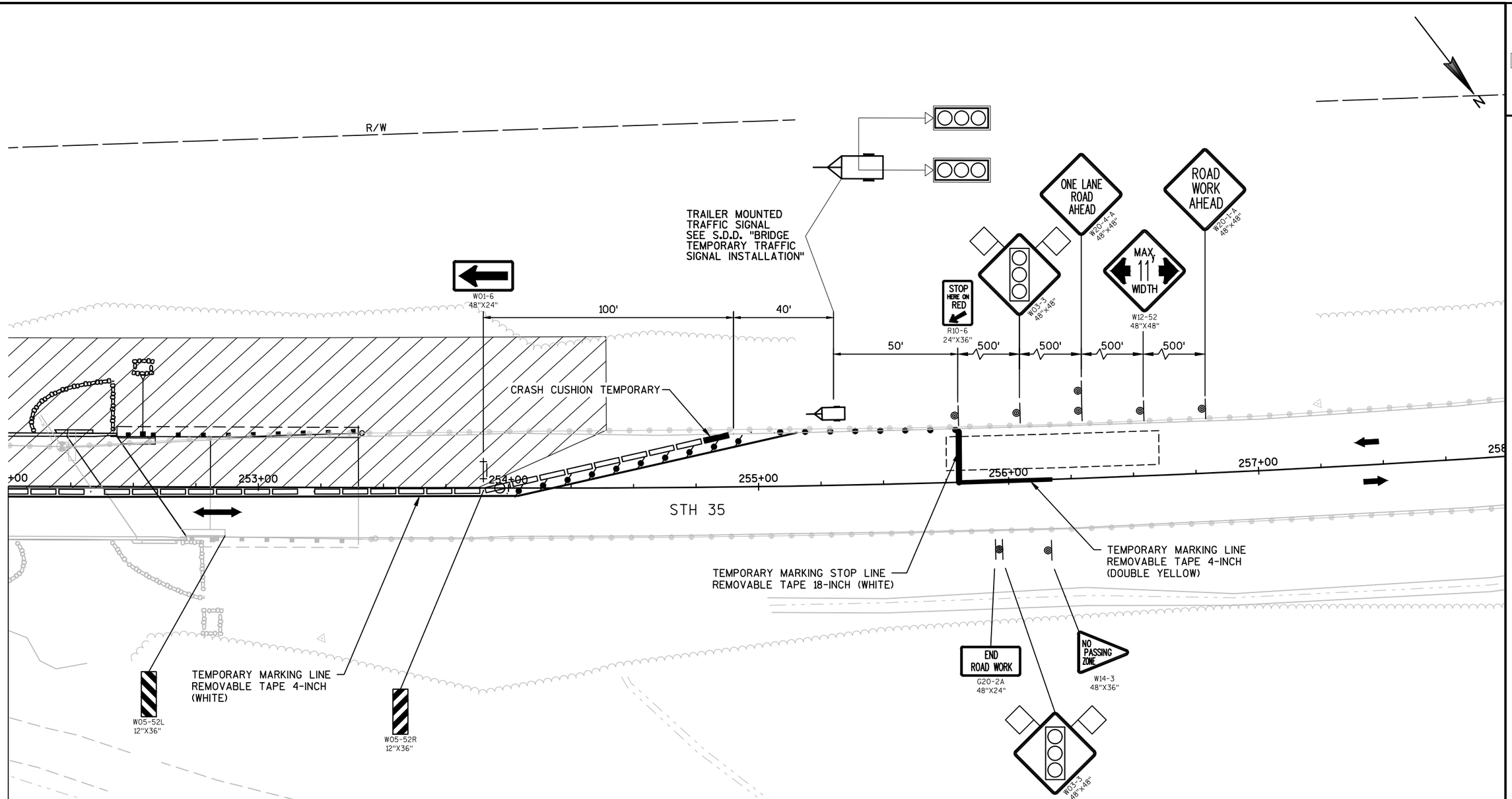
MIDWAY ROAD

ROAD CLOSED 500 FT W20-3-D 48"X48"

ROAD CLOSED AHEAD W20-3-A 48"X48"

R/W

PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 2 - B-6-202	SHEET 25	E



PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 2 - B-6-202	SHEET 26 E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- XXXXX PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

N

R/W

TEMPORARY MARKING STOP LINE
REMOVABLE TAPE 18-INCH (WHITE)

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH (WHITE)

NO PASSING ZONE
W14-3
48"X36"

W03-3
48"X48"

END ROAD WORK
G20-2A
48"X24"

306+00
307+00
308+00
309+00
310+00
311+00

STH 35

500' 500' 500' 500' 50' 40' 100'

ROAD WORK AHEAD
W20-1-A
48"X48"

MAX 11' WIDTH
W12-52
48"X48"

ONE LANE ROAD AHEAD
W20-4-A
48"X48"

W03-3
48"X48"

STOP HERE ON RED
R10-6
24"X36"

TRAILER MOUNTED
TRAFFIC SIGNAL
SEE S.D.D. "BRIDGE
TEMPORARY TRAFFIC
SIGNAL INSTALLATION"

W05-52L
12"X36"

W05-52R
12"X36"

W05-52L
12"X36"

R/W

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 2 - B-6-203	SHEET 27	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- XXXXX PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

N

TRAILER MOUNTED TRAFFIC SIGNAL SEE S.D.D. "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"

ONE LANE ROAD AHEAD W20-4-A 48"X48"

ROAD WORK AHEAD W20-1-A 48"X48"

MAX 11' WIDTH W12-52 48"X48"

STOP HERE ON RED R10-6 24"X36"

W03-3 48"X48"

500' 500' 500' 500'

R/W

W01-6 48"X24"

40' 50'

100'

CRASH CUSHION TEMPORARY

313+00 314+00 315+00 316+00 317+00 318+00

STH 35

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH (WHITE)

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

W05-52R 12"X36"

R/W

R3-2 24"X24"

END ROAD WORK G20-2A 48"X24"

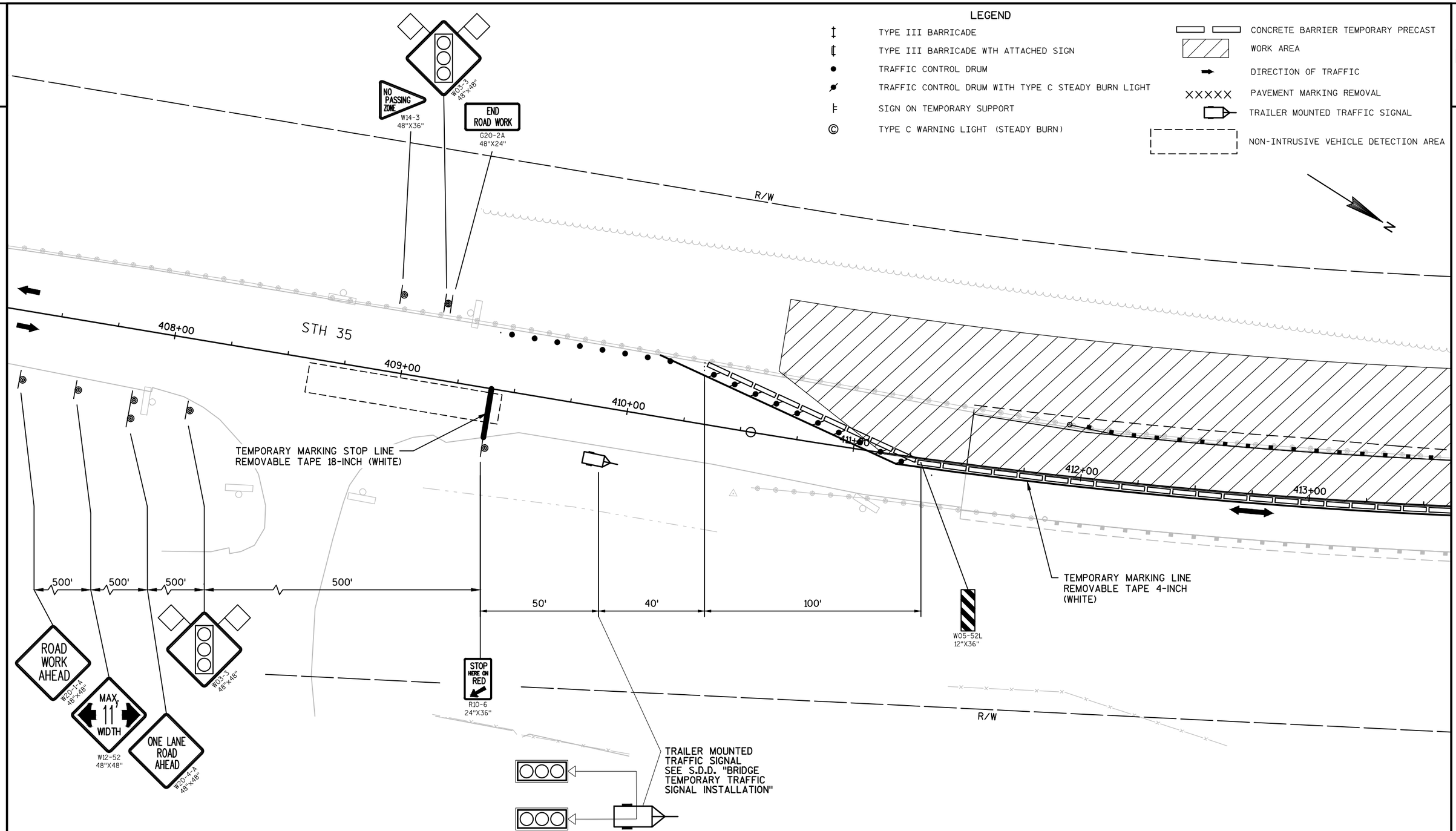
NO PASSING ZONE W14-3 48"X36"

W03-3 48"X48"

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 2 - B-6-203	SHEET 28	E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- XXXXX PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 2 - B-6-205	SHEET 29	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\0252_TC.DWG
LAYOUT NAME - ****

PLOT DATE : 7/30/2018 10:31 AM PLOT BY : KOCH, LARRY PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON TEMPORARY SUPPORT
- TYPE C WARNING LIGHT (STEADY BURN)
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- PAVEMENT MARKING REMOVAL
- TRAILER MOUNTED TRAFFIC SIGNAL
- NON-INTRUSIVE VEHICLE DETECTION AREA

TRAILER MOUNTED TRAFFIC SIGNAL SEE S.D.D. "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION"

W01-6 48"X24"

100' 40' 50' 500' 500' 500' 500'

STOP HERE ON RED R10-6 24"X36"

W03-3 48"X48"

ONE LANE ROAD AHEAD W20-4-A 48"X48"

ROAD WORK AHEAD W20-1-A 48"X48"

MAX 11' WIDTH W12-52 48"X48"

R/W

414+00 415+00 416+00 417+00 418+00 419+00 420+00

STH 35

W05-52R 12"X36"

W05-52L 12"X36"

W05-52R 12"X36"

TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)

TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH (WHITE)

END ROAD WORK G20-2A 48"X24"

NO PASSING ZONE W14-3 48"X36"

W01-3 48"X48"

R/W

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	TRAFFIC CONTROL STAGE 2 - B-6-205	SHEET 30	E

					7160-04-70	7160-04-74
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0002	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 252+07	LS	1.000		1.000
0004	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 02. 311+34	LS	1.000	1.000	
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 03. 414+91	LS	1.000	1.000	
0008	204.0120	Removing Asphaltic Surface Milling	SY	215.000		215.000
0010	204.0165	Removing Guardrail	LF	2,494.000	1,902.000	592.000
0012	205.0100	Excavation Common	CY	6,461.000	4,472.000	1,989.000
0014	205.0400	Excavation Marsh	CY	1,475.000	1,099.000	376.000
0016	206.1000	Excavation for Structures Bridges (structure) 01. B-06-202	LS	1.000		1.000
0018	206.1000	Excavation for Structures Bridges (structure) 02. B-06-203	LS	1.000	1.000	
0020	206.1000	Excavation for Structures Bridges (structure) 03. B-06-205	LS	1.000	1.000	
0022	208.0100	Borrow	CY	1,072.000	926.000	146.000
0024	209.1100	Backfill Granular Grade 1	CY	2,010.000	1,340.000	670.000
0026	210.1500	Backfill Structure Type A	TON	1,020.000	700.000	320.000
0028	213.0100	Finishing Roadway (project) 01. 7160-04-74	EACH	1.000		1.000
0030	213.0100	Finishing Roadway (project) 02. 7160-04-70	EACH	1.000	1.000	
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	620.000	480.000	140.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	6,143.000	4,815.000	1,328.000
0036	305.0500	Shaping Shoulders	STA	1.000		1.000
0038	312.0110	Select Crushed Material	TON	2,950.000	2,200.000	750.000
0040	415.0070	Concrete Pavement 7-Inch	SY	202.000	107.000	95.000
0042	415.0410	Concrete Pavement Approach Slab	SY	320.000	160.000	160.000
0044	416.0610	Drilled Tie Bars	EACH	20.000	10.000	10.000
0046	416.1010	Concrete Surface Drains	CY	4.000	2.000	2.000
0048	455.0605	Tack Coat	GAL	490.000	400.000	90.000
0050	460.2000	Incentive Density HMA Pavement	DOL	1,040.800	872.000	168.800
0052	460.6223	HMA Pavement 3 MT 58-28 S	TON	917.000	780.000	137.000
0054	460.6244	HMA Pavement 4 MT 58-34 S	TON	384.000	310.000	74.000
0056	502.0100	Concrete Masonry Bridges	CY	1,130.000	759.000	371.000
0058	502.3200	Protective Surface Treatment	SY	74.000	46.000	28.000
0060	502.3210	Pigmented Surface Sealer	SY	322.000	221.000	101.000
0062	503.0136	Prestressed Girder Type I 36-Inch	LF	1,379.000	966.000	413.000
0064	505.0400	Bar Steel Reinforcement HS Structures	LB	22,450.000	15,220.000	7,230.000
0066	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	143,930.000	96,630.000	47,300.000
0068	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	4,530.000	3,020.000	1,510.000
0070	505.0905	Bar Couplers No. 5	EACH	252.000	168.000	84.000

					7160-04-70	7160-04-74
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0072	505.0908	Bar Couplers No. 8	EACH	86.000	62.000	24.000
0074	505.0910	Bar Couplers No. 10	EACH	14.000	14.000	
0076	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	42.000	28.000	14.000
0078	506.4000	Steel Diaphragms (structure) 01. B-06-202	EACH	6.000		6.000
0080	506.4000	Steel Diaphragms (structure) 02. B-06-203	EACH	6.000	6.000	
0082	506.4000	Steel Diaphragms (structure) 03. B-6-205	EACH	6.000	6.000	
0084	509.5100.S	Polymer Overlay	SY	912.000	640.000	272.000
0086	511.1200	Temporary Shoring (structure) 01. B-06-202	SF	1,880.000		1,880.000
0088	511.1200	Temporary Shoring (structure) 02. B-06-203	SF	1,030.000	1,030.000	
0090	511.1200	Temporary Shoring (structure) 03. B-6-205	SF	1,030.000	1,030.000	
0092	516.0500	Rubberized Membrane Waterproofing	SY	70.000	44.000	26.000
0094	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	4.000	2.000	2.000
0096	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	1.000		1.000
0098	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	3.000		3.000
0100	550.2126	Piling CIP Concrete 12 3/4 X 0.375-Inch	LF	3,895.000	2,960.000	935.000
0102	603.8000	Concrete Barrier Temporary Precast Delivered	LF	2,451.000	1,736.000	715.000
0104	603.8125	Concrete Barrier Temporary Precast Installed	LF	4,875.000	3,458.000	1,417.000
0106	606.0200	Riprap Medium	CY	9.000	4.000	5.000
0108	606.0300	Riprap Heavy	CY	698.000	458.000	240.000
0110	611.0654	Inlet Covers Type V	EACH	4.000	2.000	2.000
0112	611.3220	Inlets 2x2-FT	EACH	4.000	2.000	2.000
0114	612.0106	Pipe Underdrain 6-Inch	LF	600.000	400.000	200.000
0116	612.0212	Pipe Underdrain Unperforated 12-Inch	LF	110.000	55.000	55.000
0118	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	502.000	320.000	182.000
0120	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	12.000	8.000	4.000
0122	614.0200	Steel Thrie Beam Structure Approach	LF	206.000	165.000	41.000
0124	614.0305	Steel Plate Beam Guard Class A	LF	1,513.000	1,364.000	149.000
0126	614.0905	Crash Cushions Temporary	EACH	6.000	4.000	2.000
0128	614.2300	MGS Guardrail 3	LF	125.000		125.000
0130	614.2350	MGS Guardrail Short Radius	LF	26.000		26.000
0132	614.2500	MGS Thrie Beam Transition	LF	79.000		79.000
0134	614.2610	MGS Guardrail Terminal EAT	EACH	1.000		1.000
0136	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000		1.000
0138	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7160-04-74	EACH	1.000		1.000
0140	618.0100	Maintenance And Repair of Haul Roads (project) 02. 7140-04-70	EACH	1.000	1.000	
0142	619.1000	Mobilization	EACH	1.000	0.700	0.300
0144	624.0100	Water	MGAL	63.000	50.000	13.000
0146	625.0100	Topsoil	SY	4,310.000	3,480.000	830.000

					7160-04-70	7160-04-74
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0148	628.1504	Silt Fence	LF	1,745.000	1,400.000	345.000
0150	628.1520	Silt Fence Maintenance	LF	1,745.000	1,400.000	345.000
0152	628.1905	Mobilizations Erosion Control	EACH	6.000	4.000	2.000
0154	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	4.000	2.000
0156	628.2027	Erosion Mat Class II Type C	SY	4,310.000	3,480.000	830.000
0158	628.6005	Turbidity Barriers	SY	775.000	530.000	245.000
0160	628.7020	Inlet Protection Type D	EACH	4.000	2.000	2.000
0162	628.7555	Culvert Pipe Checks	EACH	5.000		5.000
0164	628.7570	Rock Bags	EACH	50.000		50.000
0166	629.0210	Fertilizer Type B	CWT	4.000	3.000	1.000
0168	630.0110	Seeding Mixture No. 10	LB	84.000	66.000	18.000
0170	642.5001	Field Office Type B	EACH	1.000	0.700	0.300
0172	643.0300	Traffic Control Drums	DAY	26,307.000	17,693.000	8,614.000
0174	643.0420	Traffic Control Barricades Type III	DAY	1,707.000	776.000	931.000
0176	643.0715	Traffic Control Warning Lights Type C	DAY	13,386.000	8,730.000	4,656.000
0178	643.0900	Traffic Control Signs	DAY	17,538.000	10,864.000	6,674.000
0180	643.5000	Traffic Control	EACH	1.000	0.700	0.300
0182	645.0111	Geotextile Type DF Schedule A	SY	302.000	200.000	102.000
0184	645.0120	Geotextile Type HR	SY	1,303.000	822.000	481.000
0186	645.0135	Geotextile Type SR	SY	2,670.000	1,780.000	890.000
0188	646.1020	Marking Line Epoxy 4-Inch	LF	4,715.000	3,940.000	775.000
0190	646.9000	Marking Removal Line 4-Inch	LF	802.000	532.000	270.000
0192	649.0105	Temporary Marking Line Paint 4-Inch	LF	1,275.000	985.000	290.000
0194	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,663.000	1,939.000	724.000
0196	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	111.000	73.000	38.000
0198	650.4000	Construction Staking Storm Sewer	EACH	8.000	4.000	4.000
0200	650.4500	Construction Staking Subgrade	LF	903.000	763.000	140.000
0202	650.5000	Construction Staking Base	LF	903.000	763.000	140.000
0204	650.6500	Construction Staking Structure Layout (structure) 01. B-06-202	LS	1.000		1.000
0206	650.6500	Construction Staking Structure Layout (structure) 02. B-06-203	LS	1.000	1.000	
0208	650.6500	Construction Staking Structure Layout (structure) 03. B-06-205	LS	1.000	1.000	
0210	650.9910	Construction Staking Supplemental Control (project) 01. 7160-04-74	LS	1.000		1.000
0212	650.9910	Construction Staking Supplemental Control (project) 02. 7160-04-70	LS	1.000	1.000	
0214	650.9920	Construction Staking Slope Stakes	LF	1,230.000	877.000	353.000
0216	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-06-202	LS	1.000		1.000

					7160-04-70	7160-04-74
Line	**Item**	**Item Description**	**Unit**	**Total**	**Qty**	**Qty**
0218	661.0100	Temporary Traffic Signals for Bridges (structure) 02. B-06-203	LS	1.000	1.000	
0220	661.0100	Temporary Traffic Signals for Bridges (structure) 03. B-06-205	LS	1.000	1.000	
0222	690.0150	Sawing Asphalt	LF	325.000	160.000	165.000
0224	715.0502	Incentive Strength Concrete Structures	DOL	6,252.000	4,452.000	1,800.000
0226	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,400.000	1,200.000	1,200.000
0228	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	600.000	300.000	300.000
0230	SPV.0060	Special 01. Steel Plate Beam Guard Connection	EACH	10.000	8.000	2.000

Division	From/To Station	Location	Common Excavation (1) Cut (2)	Common Excavation (1) EBS Excavation (3) (Item #205.0100)	Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6) (Item #205.0500)	Unexpanded Fill	Expanded Fill (7) Factor 1.25	Mass Ordinate +/- (8)	Waste	Borrow (Item #208.0100)	Comment:
1	249+50 to 251+76	B-6-202	484	0	118	366	188	288	219	174			
	250+76 to 251+76	B-6-202	0	670	0	0		0	0	0			
	Temp Signal Pads	B-6-202	27			27							
	B-6-202 South Approach Subtotal		511	670	118	393	188	288	219	174			
2	252+37 to 252+90	B-6-202	138	0	73	65	188	165	66	-1			
	252+37 to 253+37	B-6-202	0	670	0	0		0	0	0			
	B-6-202 North Approach Subtotal		138	670	73	65	188	165	66	-1		173	See Note 9.
3	310+00 to 310+99	B-6-203	128	0	39	89	275	78	97	17			
	Temp Signal Pads	B-6-203	25			25							
	309+99 to 310+99	B-6-203	0	670	0	0		0	0	0			
	B-6-203 South Approach Subtotal		128	670	39	114	275	78	97	17			
4	311+69 to 314+35	B-6-203	554	0	179	376	275	740	925	-549			
	311+69 to 312+69	B-6-203	0	670	0	0		0	0	0			
	B-6-203 North Approach Subtotal		554	670	179	376	275	740	925	-549		533	
5	411+50 to 414+56	B-6-205	691	0	199	491	275	334	417	74			
	Temp Signal Pads	B-6-205	25			25							
	413+56 to 414+56	B-6-205	0	670	0	0		0	0	0			
	B-6-205 South Approach Subtotal		691	670	199	516	275	334	417	74			
6	415+26 to 417+00	B-6-205	396	0	113	283	275	581	727	-444			
	415+26 to 416+26	B-6-205	0	670	0	0		0	0	0			
	B-6-205 North Approach Subtotal		396	670	113	283	275	581	727	-444		369	See Note 10.
Grand Total			2441	4020	721	1720	1475	2186	2451	-729	0	1074	
		Total Common Exc		6461									

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item No. 205.0100.
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) EBS Excavation, refer to Construction Details. Use Backfill Granular Grade 1 to fill.
4) Salvaged/Unusable Pavement Material.
5) Available Material = Cut - Salvaged/Unusable Pavement Material
6) Marsh Excavation was assumed to be 20% of the total Common Excavation quantity for the 7160-04-74 Project ID and 25% for the 7160-04-70 Project ID. Use Select Crushed material to fill.
7) Expanded Fill. Factor = 1.25
Depending on selections:

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

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

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

Or Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor

8) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
9) Use available material from B-6-202 South Approach. Borrow Excavation item number 208.0100.
10) Use available material from B-6-203 South Approach. Borrow Excavation item number 208.0100.
11) Use available material from B-6-2-5 South Approach. Borrow Excavation item number 208.0100.

3

REMOVING ASPHALTIC SURFACE MILLING

STATION	-	STATION	LOCATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
252+90	-	253+40	STH 35, 1.75" Depth	215
PROJECT 7160-04-74 TOTAL				**215**

SUBSURFACE

STRUCTURE	STATION	-	STATION	OFFSET	209.1100 BACKFILL GRANULAR GRADE 1 CY	312.0110 SELECT CRUSHED MATERIAL TON	612.0106 PIPE UNDERDRAIN 6-INCH LF	645.0135 GEOTEXTILE FABRIC TYPE SR SY
B-6-202								
	250+00	-	253+44	STH 35,NORTHBOUND APPROACH	335	---	100	---
	250+98	-	253+45	STH 35, SOUTHBOUND APPROACH	335	---	100	---
	UNDISTRIBUTED				---	750	---	890
PROJECT 7160-04-74 TOTAL					**670**	**750**	**200**	**890**
B-6-203								
	309+71	-	341+61	STH 35, NORTHBOUND APPROACH	335	---	100	---
	309+72	-	314+57	STH 35, SOUTHBOUND APPROACH	335	---	100	---
	UNDISTRIBUTED				---	1100	---	890
B-6-205								
	411+90	-	416+51	STH 35, NORTHBOUND APPROACH	335	---	100	---
	411+86	-	416+51	STH 35, SOUTHBOUND APPROACH	335	---	100	---
	UNDISTRIBUTED				---	1100	---	890
PROJECT 7160-04-70 TOTAL					**1340**	**2200**	**400**	**1780**

3

REMOVING GUARDRAIL

STRUCTURE	STATION	-	STATION	OFFSET	204.0165 REMOVING GUARDRAIL LF
B-6-202					
	250+00	-	253+44	LT	344
	250+98	-	253+45	RT	248
PROJECT 7160-04-74 TOTAL					**592**
B-6-203					
	309+71	-	314+61	LT	488
	309+72	-	314+57	RT	488
B-6-205					
	411+90	-	416+51	LT	458
	411+86	-	416+51	RT	468
PROJECT 7160-04-70 TOTAL					**1902**

FINISHING ROADWAY

BRIDGE	PROJECT	213.0100 FINISHING ROADWAY EACH
B-6-202		
	7160-04-74	1
PROJECT 7160-04-74 TOTAL		**1**
B-6-203		
	7160-04-70	0.5
B-6-205		
	7160-04-70	0.5
PROJECT 7160-04-70 TOTAL		**1**

BASE AGGREGATE DENSE

STRUCTURE	STATION	-	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL
B-6-202							
	249+50	-	251+90	STH 35	95	740	8
	252+23	-	252+90	STH 35	30	170	2
	PADS FOR TEMP SIGNALS			SEE TRAFFIC CONTROL PLAN	0	55	0
	UNDISTRIBUTED				15	95	3
PROJECT 7160-04-74 TOTAL					**140**	**1060**	**13**
B-6-203							
	310+00	-	310+79	STH 35	45	390	4
	311+89	-	314+35	STH 35	135	1220	14
	PADS FOR TEMP SIGNALS			SEE TRAFFIC CONTROL PLAN	0	50	0
	UNDISTRIBUTED				19	165	5
B-6-205							
	411+50	-	414+36	STH 35	170	1420	16
	415+46	-	417+00	STH 35	85	760	8
	PADS FOR TEMP SIGNALS			SEE TRAFFIC CONTROL PLAN	0	50	0
	UNDISTRIBUTED				26	220	3
PROJECT 7160-04-70 TOTAL					**480**	**4,275**	**50**

3

SHAPING SHOULDERS

STATION	-	STATION	LOCATION	305.0500 SHAPING SHOULDERS STA
252+90	-	253+40	STH 35, LT/RT	1
PROJECT 7160-04-74 TOTAL				**1**

CONCRETE PAVEMENT

STRUCTURE	STATION	-	STATION	OFFSET	415.0070 7-INCH SY	415.0410 APPROACH SLAB SY
B-6-202						
	251+27	-	251+70	STH 35,NORTHBOUND APPROACH	52	80
	252+45	-	252+86	STH 35, SOUTHBOUND APPROACH	42	80
PROJECT 7160-04-74 TOTAL					**95**	**160**
B-6-203						
	309+71	-	341+61	STH 35, NORTHBOUND APPROACH	27	40
	309+72	-	314+57	STH 35, SOUTHBOUND APPROACH	27	40
B-6-205						
	411+90	-	416+51	STH 35, NORTHBOUND APPROACH	27	40
	411+86	-	416+51	STH 35, SOUTHBOUND APPROACH	27	40
PROJECT 7160-04-70 TOTAL					**107**	**160**

3

CONCRETE SURFACE DRAINS

STRUCTURE	STATION	OFFSET	416.0610 DRILLED TIE BARS EACH	416.1010 CONCRETE SURFACE DRAINS CY	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	611.0654 INLET COVERS TYPE V EACH	611.3220 INLETS 2X2 - FT EACH	612.0212 PIPE UNDERDRAIN UNPERFORATED 12-INCH LF	628.7020 INLET PROTECTION TYPE D EACH	645.0120 GEOTEXTILE TYPE HR SY	650.4000 CONSTRUCTION STAKING STORM SEWER EACH
B-6-202											
	252+52	LT	5	1	1	1	1	25	1	6	2
	252+83	RT	5	1	1	1	1	30	1	10	2
	B-6-202 SUBTOTALS		10	2	2	2	2	55	2	16	4
PROJECT 7160-04-74 TOTAL			**10**	**2**	**2**	**2**	**2**	**55**	**2**	**16**	**4**
B-6-203											
	310+68	LT	5	1	1	1	1	25	1	6	2
	B-6-203 SUBTOTALS		5	1	1	1	1	25	1	6	2
B-6-205											
	252+83	LT	5	1	1	1	1	30	1	6	2
	B-6-205 SUBTOTALS		5	1	1	1	1	30	1	6	2
PROJECT 7160-04-70 TOTAL			**10**	**2**	**2**	**2**	**2**	**55**	**2**	**12**	**4**

3

ASPHALT PAVEMENT ITEMS

STRUCTURE	STATION	-	STATION	LOCATION	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 S TON	460.6244 HMA PAVEMENT 4 MT 58-34 S TON
B-6-202							
	249+50	-	251+28	STH 35	60	130	50
	252+87	-	252+92	STH 35	10	7	3
	252+92	-	253+40	STH 35	20	0	21
PROJECT 7160-04-74 TOTAL					90	137	74
B-6-203							
	310+00	-	310+64	STH 35	30	70	30
	312+04	-	314+35	STH 35	150	255	100
B-6-205							
	411+50	-	414+22	STH 35	150	300	120
	415+61	-	417+00	STH 35	70	155	60
PROJECT 7160-04-70 TOTAL					400	780	310

CULVERT PIPES

STATION	LOCATION	CULVERT EXTENSION	521.1018 APRON ENDWALL FOR CULVERT PIPE STEEL 18-INCH EACH	521.3118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF
250+53	RT	1	1	3
PROJECT 7160-04-74 TOTAL			1	3

3

RIPRAP

STRUCTURE	STATION	-	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY
B-6-202					
	251+41	-	252+06	STH 35, SOUTH SIDE OF BRDGE	---
	252+10	-	252+78	STH 35, NORTH SIDE OF BRIDGE	---
	252+54			STH 35, LT	2
	252+82			STH 35, RT	3
PROJECT 7160-04-74 TOTALS					5
B-6-203					
	310+68			STH 35, LT	2
	310+79	-	311+07	STH 35, SOUTH SIDE OF BRIDGE	---
	311+62	-	311+87	STH 35, NORTH SIDE OF BRIDGE	---
B-6-205					
	414+37	-	414+65	STH 35, SOUTH SIDE OF BRIDGE	---
	415+16	-	415+46	STH 35, NORTH SIDE OF BRIDGE	---
	415+57			STH 35, LT	2
PROJECT 7160-04-70 TOTALS					4

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\0302_MQ.DWG
LAYOUT NAME - ****
PLOT DATE : 10/8/2018 4:59 PM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 42

GUARDRAIL

STRUCTURE	STATION - STATION	OFFSET	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	SPV.0060.01 STEEL PLATE BEAM GUARD CONNECTION EACH	614.2300 MGS GUARDRAIL 3 LF	614.2350 MGS GUARDRAIL SHORT RADIUS LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2630 MGS GUARDRAIL SHORT RADIUS TERMINAL EACH	COMMENTS
B-6-202											
	250+04 - 250+58	LT	----	----	----	----	----	----	1	----	
	250+58 - 251+08	LT	----	----	----	50.0	----	----	----	----	
	250+89 - 250+96	RT	----	----	----	12.5	26	----	----	----	MIDWAY ROAD
	250+98 - 251+08	RT	----	----	----	12.5	----	----	----	----	MIDWAY ROAD
	250+96 - 251+17	RT	----	----	----	12.5	----	----	----	1	MIDWAY ROAD
	251+08 - 251+47	LT	----	----	----	----	----	39.4	----	----	
	250+96 - 251+33	RT	----	----	----	37.5	----	----	----	----	
	251+33 - 251+73	RT	----	----	----	----	----	39.4	----	----	
	252+39 - 252+59	LT	20.6	----	----	----	----	----	----	----	
	252+59 - 253+41	LT	----	82	----	----	----	----	----	----	
	253+41	LT	----	----	1	----	----	----	----	----	
	252+67 - 252+87	RT	20.6	----	----	----	----	----	----	----	
	252+87 - 253+42	RT	----	54	----	----	----	----	----	----	
	253+42	RT	----	----	1	----	----	----	----	----	
	UNDISTRIBUTED		----	12.5	----	----	----	----	----	----	
	BRIDGE B-6-202 SUBTOTALS		41	149	2	125	26	79	1	1	
PROJECT 7160-04-74 TOTAL			**41**	**149**	**2**	**125**	**26**	**79**	**1**	**1**	

GUARDRAIL

STRUCTURE	STATION - STATION	OFFSET	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	SPV.0060.01 STEEL PLATE BEAM GUARD CONNECTION EACH	614.2300 MGS GUARDRAIL 3 LF	614.2350 MGS GUARDRAIL SHORT RADIUS LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2630 MGS GUARDRAIL SHORT RADIUS TERMINAL EACH	COMMENTS
B-6-203											
	309+71	LT	----	----	1	----	----	----	----	----	
	309+73	RT	----	----	1	----	----	----	----	----	
	309+71 - 310+63	LT	----	89	----	----	----	----	----	----	
	309+73 - 310+63	RT	----	89	----	----	----	----	----	----	
	310+63 - 310+83	LT	20.6	----	----	----	----	----	----	----	
	310+64 - 310+84	RT	20.6	----	----	----	----	----	----	----	
	311+85 - 312+06	LT	20.6	----	----	----	----	----	----	----	
	311+85 - 312+05	RT	20.6	----	----	----	----	----	----	----	
	312+06 - 314+61	LT	----	255	----	----	----	----	----	----	
	312+05 - 314+57	RT	----	255	----	----	----	----	----	----	
	314+61	LT	----	----	1	----	----	----	----	----	
	314+57	RT	----	----	1	----	----	----	----	----	
	UNDISTRIBUTED		----	12.5	----	----	----	----	----	----	
	BRIDGE B-6-203 SUBTOTALS		82	701	4	0	0	0	0	0	
B-6-205											
	411+93	LT	----	----	1	----	----	----	----	----	
	411+86	RT	----	----	1	----	----	----	----	----	
	411+93 - 414+20	LT	----	227	----	----	----	----	----	----	
	414+20 - 414+40	LT	20.6	----	----	----	----	----	----	----	
	411+86 - 414+20	RT	----	234	----	----	----	----	----	----	
	414+20 - 414+41	RT	20.6	----	----	----	----	----	----	----	
	415+41 - 415+62	RT	20.6	----	----	----	----	----	----	----	
	415+62 - 416+54	RT	----	95	----	----	----	----	----	----	
	415+42 - 415+62	LT	20.6	----	----	----	----	----	----	----	
	415+62 - 416+54	LT	----	95	----	----	----	----	----	----	
	416+54	LT	----	----	1	----	----	----	----	----	
	416+54	RT	----	----	1	----	----	----	----	----	
	UNDISTRIBUTED		----	12.5	----	----	----	----	----	----	
	BRIDGE B-6-205 SUBTOTALS		82	664	4	0	0	0	0	0	
PROJECT 7160-04-70 TOTAL			**165**	**1364**	**8**	**0**	**0**	**0**	**0**	**0**	

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MOBILIZATION

BRIDGE	PROJECT	619.1000 MOBILIZATION EACH
B-6-202		
	7160-04-74	0.3
PROJECT 7160-04-74 TOTAL		**0.3**
B-6-203		
	7160-04-70	0.35
B-6-205		
	7160-04-70	0.35
PROJECT 7160-04-70 TOTAL		**0.7**

LANDSCAPING

STRUCTURE	STATION	-	STATION	LOCATION	625.0100 TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0110 SEEDING MIXTURE NO. 10 LB
B-6-202							
	249+75	-	251+41	LT	310	0.3	7
	250+96	-	251+71	RT	160	0.1	3
	252+42	-	253+31	LT	140	0.1	3
	252+78	-	253+39	RT	80	0.1	2
	UNDISTRIBUTED				140	0.1	3
PROJECT 7160-04-74 TOTAL					**830**	**1.0**	**18**
B-6-203							
	310+00	-	310+80	LT	160	0.1	4
	310+00	-	310+79	RT	50	0.1	2
	311+87	-	314+35	LT	590	0.5	10
	311+87	-	314+35	RT	470	0.4	9
	UNDISTRIBUTED				260	0.2	5
				B-6-203 SUBTOTALS	1530	1.3	30
B-6-205							
	412+15	-	414+44	LT	280	0.3	6
	412+15	-	414+45	RT	520	0.4	10
	415+46	-	416+25	LT	400	0.3	7
	415+46	-	416+25	RT	420	0.3	7
	UNDISTRIBUTED				330	0.3	6
				B-6-205 SUBTOTALS	1950	1.6	36
PROJECT 7160-04-70 TOTAL					**3,480**	**3.0**	**66**

3

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\0302_MQ.DWG
LAYOUT NAME - ****
PLOT DATE : 10/8/2018 5:00 PM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : **********
WISDOT/CADDS SHEET 42

EROSION CONTROL

STRUCTURE	STATION	-	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2027 EROSION MAT CLASS II TYPE C SY	628.6005 TURBIDITY BARRIER SY	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH
B-6-202												
	249+50	-	251+42	LT	206	206	----	----	----	----	----	----
	251+53	-	252+08	SOUTH ABUTMENT	----	----	----	----	----	120	----	----
	252+07	-	252+75	NORTH ABUTMENT	----	----	----	----	----	125	----	----
	252+41	-	253+41	LT	108	108	----	----	----	----	----	----
	249+75	-	251+60	LT	----	----	----	----	310	----	----	----
	250+96	-	251+71	RT	----	----	----	----	160	----	----	40
	252+42	-	253+31	LT	----	----	----	----	140	----	----	----
	252+78	-	253+39	RT	----	----	----	----	80	----	----	----
	249+50	-	253+40	----	----	----	1	1	----	----	----	----
	252+41	-	253+41	----	----	----	1	1	----	----	----	----
	UNDISTRIBUTED			----	31	31	----	----	140	----	5	10
PROJECT 7160-04-74 TOTAL					**345**	**345**	**2**	**2**	**830**	**245**	**5**	**50**
B-6-203												
	310+00	-	310+80	----	----	----	1	1	----	----	----	----
	310+87	-	311+10	SOUTH ABUTMENT	----	----	----	----	----	130	----	----
	311+59	-	311+88	NORTH ABUTMENT	----	----	----	----	----	135	----	----
	311+87	-	314+35	----	----	----	1	1	----	----	----	----
	310+00	-	310+80	LT	92	92	----	----	160	----	----	----
	310+00	-	310+79	RT	85	85	----	----	50	----	----	----
	311+87	-	314+35	LT	257	257	----	----	590	----	----	----
	311+87	-	314+35	RT	252	252	----	----	470	----	----	----
	UNDISTRIBUTED			----	70	70	----	----	260	----	----	----
				B-6-203 SUBTOTALS	756	756	2	2	1530	265	----	----
B-6-205												
	411+50	-	414+44	LT	286	286	----	----	280	**----**	----	----
	411+50	-	414+45	RT	300	300	----	----	520	**----**	----	----
	414+35	-	414+69	SOUTH ABUTMENT	----	----	----	----	----	130	----	----
	415+13	-	415+46	NORTH ABUTMENT	----	----	----	----	----	135	----	----
	415+46	-	416+25	LT	----	----	----	----	400	----	----	----
	415+46	-	416+25	RT	----	----	----	----	420	----	----	----
	411+50	-	414+45	----	----	----	1	1	----	----	----	----
	415+46	-	417+00	----	----	----	1	1	----	----	----	----
	UNDISTRIBUTED			----	59	59	----	----	330	----	----	----
				B-6-205 SUBTOTALS	645	645	2	2	1950	265	----	----
PROJECT 7160-04-70 TOTAL					**1400**	**1400**	**4**	**4**	**3480**	**530**	**----**	**----**

PERMANENT SIGNING

STRUCTURE	STATION	OFFSET	SIGN CODE	SIGN SIZE IN x IN	634.0614 POSTS WOOD 4X6-INCH 14-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
B-6-202									
	250+92	RT	R1-1	30"X30"	1	5.18	1	**1**	STOP (MIDWAY ROAD)
	251+68	LT	W5-52-L	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	251+91	RT	W5-52-R	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	252+23	LT	W5-52-L	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	252+45	RT	W5-52-R	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
PROJECT 7160-04-74 TOTAL					**1**	**5.18**	**5**	5	
B-6-203									
	311+03	LT	W5-52-L	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	311+03	RT	W5-52-R	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	311+66	LT	W5-52-L	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	311+66	RT	W5-52-R	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
			B-6-203 SUBTOTALS		----	----	4	4	
B-6-205									
	414+60	LT	W5-52-L	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	414+61	RT	W5-52-R	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	415+23	LT	W5-52-L	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
	415+24	RT	W5-52-R	12"X36"	----	----	1	**1**	BRIDGE HASH MARKS
			B-6-205 SUBTOTALS		----	----	4	**4**	
PROJECT 7160-04-70 TOTAL					**----**	**----**	**8**	**8**	

FIELD OFFICE

BRIDGE	PROJECT	642.5001 FIELD OFFICE TYPE B EACH
B-6-202		
	7160-04-74	0.3
PROJECT 7160-04-74 TOTAL		**0.3**
B-6-203		
	7160-04-70	0.35
B-6-205		
	7160-04-70	0.35
PROJECT 7160-04-70 TOTAL		**0.7**

TRAFFIC CONTROL

BRIDGE	PROJECT	643.5000 EACH
B-6-202		
	7160-04-74	1
PROJECT 7160-04-74 TOTAL		**1**
B-6-203		
	7160-04-70	0.5
B-6-205		
	7160-04-70	0.5
PROJECT 7160-04-70 TOTAL		**1**

TRAFFIC CONTROL

LOCATION	DAYS IN SERVICE	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	643.0300 TRAFFIC CONTROL DRUMS NO.	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C NO.	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	661.0100 TEMPORARY TRAFFIC SIGNALS FOR BRIDGES LS
STAGE 1 B-6-202	97	650	650	37	3,589	4	388	20	1,940	24	2,328	----
STAGE 2 B-6-202	97	0	638	37	3,589	4	388	20	1,940	26	2,522	----
STAGE 1&2 B-6-202	194	----	----	----	----	----	----	----	----	4	776	1
UNDISTRIBUTED	194	65	129	7	1,436	1	155	4	776	5	1,048	----
PROJECT 7160-04-74 TOTAL		**715**	**1,417**		**8,614**		**931**		**4,656**		**6,674**	**1**
STAGE 1 B-6-203	97	765	765	42	4,074	1	97	20	1,940	22	2,134	----
STAGE 2 B-6-203	97	0	755	42	4,074	1	97	20	1,940	22	2,134	----
STAGE 1&2 B-6-203	194	----	----	----	----	----	----	----	----	0	0	1
UNDISTRIBUTED	194	77	152	8	1,630	1	194	4	776	4	854	----
B-6-203 SUBTOTALS		842	1,672		9,778		388		4,656		5,122	1
STAGE 1 B-6-205	97	813	813	34	3,298	1	97	20	1,940	21	2,037	----
STAGE 2 B-6-205	97	----	811	34	3,298	1	97	20	1,940	21	2,037	----
STAGE 1&2 B-6-205	194	----	----	----	----	----	----	----	----	4	776	1
UNDISTRIBUTED	194	81	162	7	1,319	1	194	1	194	5	892	----
B-6-205 SUBTOTALS		894	1,786		7,915		388		4,074		5,742	1
PROJECT 7160-04-70 TOTAL		**1,736**	**3,458**		**17,693**		**776**		**8,730**		**10,864**	**2**

CRASH CUSHIONS TEMPORARY

STRUCTURE	STAGE	STATION	LOCATION	BACK WIDTH FT	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS	614.0905 CRASH CUSHIONS TEMPORARY EACH
B-6-202										
	1	248+55	RT	2	OM3-R (WO5-58R)	TL-3	UNIDIRECTIONAL	LT	TEMP BARRIER	1
	2	254+84	LT	2	OM3-L (WO5-58L)	TL-3	UNIDIRECTIONAL	RT	TEMP BARRIER	1
PROJECT 7160-04-74 TOTALS										**2**
B-6-203										
	1	308+06	RT	2	OM3-R (WO5-58R)	TL-3	UNIDIRECTIONAL	LT	TEMP BARRIER	1
	2	315+55	LT	2	OM3-L (WO5-58L)	TL-3	UNIDIRECTIONAL	RT	TEMP BARRIER	1
B-6-205										
	1	410+35	RT	2	OM3-R (WO5-58R)	TL-3	UNIDIRECTIONAL	LT	TEMP BARRIER	1
	2	418+40	LT	2	OM3-L (WO5-58L)	TL-3	UNIDIRECTIONAL	RT	TEMP BARRIER	1
PROJECT 7160-04-70 TOTALS										**4**

PAVEMENT MARKING ITEMS

STRUCTURE	STATION	-	STATION	TYPE	646.1020 MARKING LINE EPOXY 4-INCH LF
B-6-202					
	249+50	-	253+40	LEFT EDGELINE SOLID (WHITE)	390
	248+00	-	253+40	CENTERLINE DASHED (YELLOW)	135
	250+91	-	253+40	RIGHT EDGELINE SOLID (WHITE)	250
PROJECT 71060-04-74 TOTAL					**775**
B-6-203					
	310+00	-	314+35	LEFT/RIGHT EDGELINE SOLID (WHITE)	870
	310+00	-	314+35	CENTERLINE DOUBLE SOLID (YELLOW)	870
	B-6-203 SUBTOTALS				1,740
B-6-205					
	411+50	-	417+00	LEFT/RIGHT EDGELINE SOLID (WHITE)	1,100
	411+50	-	417+00	CENTERLINE DOUBLE SOLID (YELLOW)	1,100
	B-6-205 SUBTOTALS				2,200
PROJECT 71060-04-70 TOTAL					**3,940**

3

TEMPORARY MARKING

STRUCTURE	STATION	-	STATION	LOCATION	646.9000 MARKING REMOVAL LINE 4-INCH LF	649.0105 MARKING LINE PAINT 4-INCH WHITE LF	649.0150 MARKING LINE REMOVABLE TAPE 4-INCH WHITE LF	649.0850 MARKING STOP LINE REMOVABLE TAPE 18-INCH WHITE LF
B-6-202 STAGE 1								
	248+00			STH 35, RT	----	----	----	17
	248+00	-	249+30	STH 35	130	----	----	----
	248+86	-	250+50	STH 35	----	---	100	----
	250+50	-	253+40	STH 35	----	290	----	----
	253+40	-	254+52	STH 35	----	----	117	----
	254+00	-	255+40	STH 35	140	----	----	----
	255+40			STH 35, LT	----	----	----	21
	B-6-202 STAGE 1 SUBTOTALS				270	290	217	38
B-6-202 STAGE 2								
	248+86	-	254+52	STH 35	----	----	507	----
	B-6-202 STAGE 2 SUBTOTALS				0	0	507	0
PROJECT 7160-04-74 TOTAL					**270**	**290**	**724**	**38**
B-6-203 STAGE 1								
	307+50			STH 35, RT	----	----	----	17
	307+50	-	308+85	STH 35	135	----	----	----
	308+38	-	310+00	STH 35	----	----	168	----
	310+00	-	314+35	STH 35	----	435	----	----
	314+35	-	315+24	STH 35	----	----	93	----
	314+75	-	316+10	STH 35	135	----	----	----
	316+10			STH 35	----	----	----	19
	B-6-203 STAGE 1 SUBTOTALS				270	435	261	36
B-6-203 STAGE 2								
	308+38	-	315+24	STH 35	----	----	696	----
	B-6-203 STAGE 2 SUBTOTALS				0	0	696	0
B-6-205 STAGE 1								
	409+65			STH 35, RT	----	----	----	17
	409+65	-	411+00	STH 35	135	----	----	----
	410+52	-	411+50	STH 35	----	----	106	----
	411+50	-	417+00	STH 35	----	550	----	----
	417+00	-	418+05	STH 35	----	----	110	----
	417+60	-	418+87	STH 35	127	----	----	----
	418+87			STH 35, LT	----	----	----	20
	B-6-205 STAGE 1 SUBTOTALS				262	550	216	37
B-6-205 STAGE 2								
	410+52	-	418+05	STH 35		----	766	----
	B-6-205 STAGE 2 SUBTOTALS				0	0	766	0
PROJECT 7160-04-70 TOTAL					**532**	**985**	**1939**	**73**

CONSTRUCTION STAKING

STRUCTURE	STATION	-	STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9920 SLOPE STAKES LF
B-6-202							
	250+50	-	251+56	STH 35	106	106	----
	250+74			MIDWAY RD	----	----	----
	252+57	-	253+40	STH 35	34	34	----
	249+50	-	253+40	STH 35	----	----	353
PROJECT 7160-04-74 TOTALS					**140**	**140**	**353**
B-6-203							
	310+00	-	310+79	STH 35	79	79	----
	311+90	-	314+35	STH 35	245	245	----
	310+00	-	314+35	STH 35	----	----	380
				B-6-203 SUBTOTALS	324	324	380
B-6-205							
	411+50	-	414+35	STH 35	285	285	----
	415+46	-	417+00	STH 35	154	154	----
	411+50	-	417+00	STH 35	----	----	497
				B-6-205 SUBTOTALS	439	439	497
PROJECT 7160-04-70 TOTALS					**763**	**763**	**877**

SAWING PAVEMENT

STRUCTURE	STATION	-	STATION	LOCATION	690.0150 SAWING ASPHALT LF
B-6-202					
	249+50	-	250+50	STH 35	125
	253+40			STH 35	40
PROJECT 7160-04-74 TOTAL					**165**
B-6-203					
	310+00			STH 35	38
	314+35			STH 35	40
	B-6-203 SUBTOTALS				78
B-6-205					
	411+50			STH 35	42
	417+00			STH 35	40
	B-6-205 SUBTOTALS				82
PROJECT 7160-04-70 TOTAL					**160**

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
3	250+92, RT	SPIKE IN STOP SIGN POST	660.47
4	252+21, LT	ALUM CAP NW CORNER OF BRIDGE DECK	659.48

STRUCTURE B-6-202 REQUIRED

EXISTING STRUCTURE B-6-14 TO BE REMOVED

SLOPE INTERCEPT

RIPRAP MEDIUM

INLET 2-2 TYPE V

SLOPE INTERCEPT

COCHRANE CO-OP TELEPHONE COMPANY (FIBER OPTIC)

WETLAND BOUNDARY (TYP)

PC: 253+86.53

+50.00 12.00'LT

+72.70 12.00'LT

ASPHALT

APPROACH SLAB

BM 4

ASPHALT

249+00 250+00 N52°25'19"W 251+00 252+00 253+00 254+00 255+00

REMOVING GUARDRAIL

APPROACH SLAB

REMOVING GUARDRAIL

BEGIN CONSTRUCTION
STA 249+50.00
MATCH EXISTING

STH 35

18"CP

BM 3

SLOPE INTERCEPT

END PROJECT 7160-04-74
STA 253+40.00
MATCH EXISTING
SAWCUT REQUIRED

END RECONSTRUCTION
BEGIN RESURFACE
252+90.00

SLOPE INTERCEPT

RIPRAP MEDIUM

INLET 2-2 TYPE V

BEGIN PROJECT
7160-04-74
STA 250+50.00
Y=219,331.068
X=612,653.073
MATCH EXISTING
SAWCUT REQUIRED

STA 250+74, RT
18" X 40' CMP

STA 250+52, RT
18" X 3' CULVERT PIPE
CORRUGATED STEEL 18-INCH
W/ AEW ENQUIRED
INV 655.65 (NW)
INV 655.53 (SE)

PI 259+00.22
Y=219849.568
X=611979.255
DELTA = 10°02'52"
D = 1°00'00"
T = 503.69'
L = 1004.79'
R = 5729.58'
PC = 253+96.53
PT = 264+01.32

PC 253+96.53
Y=219,542.40
X=612,378.44

PT 264+01.32
Y=220,082.38
X=611,532.60

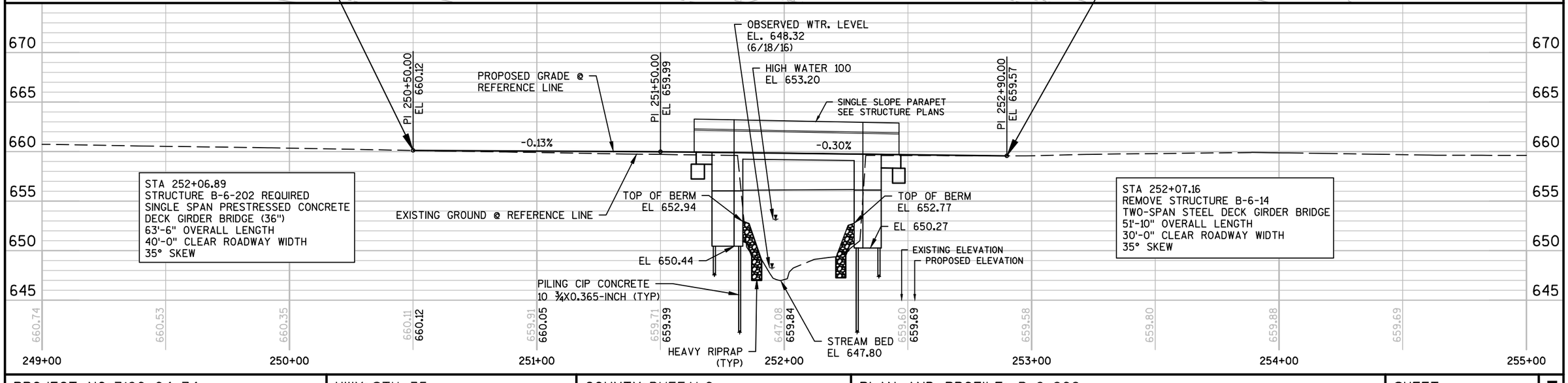
MIDWAY RD

CENTURYLINK
(COMMUNICATION LINE)

OH

LEGEND

- EROSION MAT URBAN CLASS 1 TYPE A
- SILT FENCE
- TURBIDITY BARRIER
- INLET PROTECTION TYPE D



PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	PLAN AND PROFILE: B-6-202	SHEET 46 E

LEGEND

- EROSION MAT URBAN CLASS 1 TYPE A
- SILT FENCE
- TURBIDITY BARRIER
- INLET PROTECTION TYPE D

BM 5

RIPRAP MEDIUM

SLOPE INTERCEPT

INLET 2-2 TYPE V

EXISTING STRUCTURE B-6-15 TO BE REMOVED

COCHRANE CO-OP TELEPHONE COMPANY (FIBER OPTIC)

SLOPE INTERCEPT

N

309+00

310+00

311+00

312+00

313+00

314+00

315+00

STH 35

APPROACH SLAB

REMOVING GUARDRAIL

BM 6

APPROACH SLAB

ASPHALT

REMOVING GUARDRAIL

BEGIN PROJECT 7160-04-70
STA 310+00.00
Y=223,295.262
X=608,359.675
MATCH EXISTING
SAWCUT REQUIRED

SLOPE INTERCEPT

CENTURYLINK (TELEPHONE)

XCEL ENERGY INC. (ELECTRIC TRANSMISSION LINE)

SLOPE INTERCEPT

WETLAND BOUNDARY (TYP)

STRUCTURE B-6-203 REQUIRED

PI: 312+87.07

BEGIN EXCEPTION TO NET CENTERLINE LENGTH
STA 314+35.00
MATCH EXISTING
SAWCUT REQUIRED

PI = 301+59.52
Y=222,762.455
X=609,023.011
DELTA = 20°07'19"
D = 2°00'00"
T = 508.28'
L = 1006.10'
R = 2864.79'
PC = 296+51.24
PT = 306+57.33

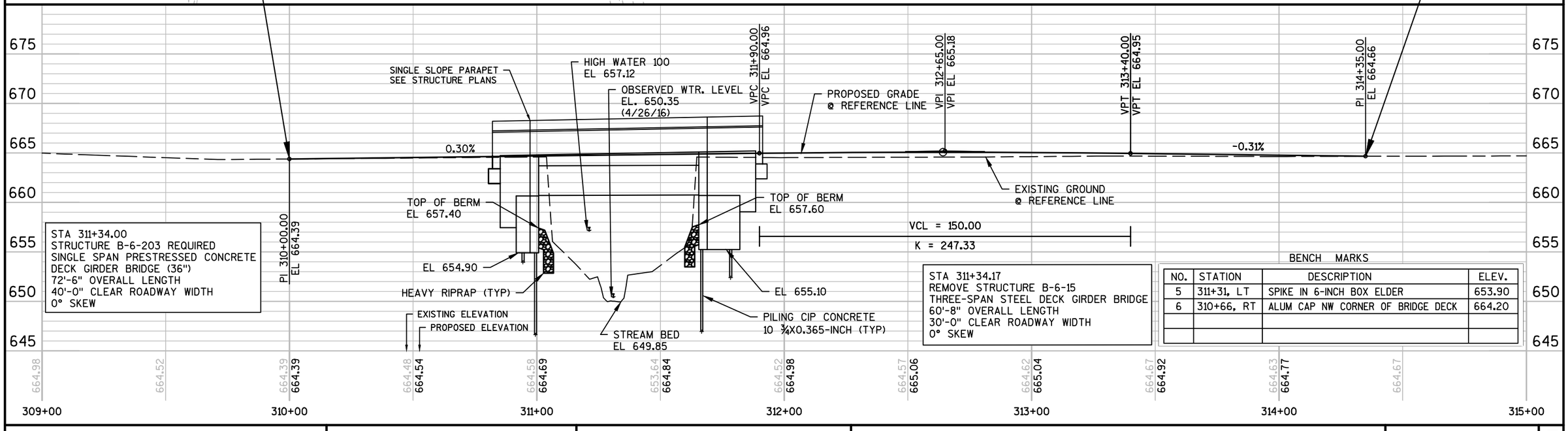
PC 296+51.24
Y=222,322.58
X=609,277.69

R/W

PCC 306+57.33
Y=223,087.86
X=608,632.55

PI = 312+87.07
Y=223,491.032
X=608,148.788
DELTA = 18°43'25"
D = 1°30'00"
T = 629.74'
L = 1248.25'
R = 3819.72'
PC = 306+57.33
PT = 319+05.58

PT 319+05.58
Y=223,717.57
X=607,561.21



STA 311+34.00
STRUCTURE B-6-203 REQUIRED
SINGLE SPAN PRESTRESSED CONCRETE
DECK GIRDER BRIDGE (36")
72'-6" OVERALL LENGTH
40'-0" CLEAR ROADWAY WIDTH
0° SKEW

STA 311+34.17
REMOVE STRUCTURE B-6-15
THREE-SPAN STEEL DECK GIRDER BRIDGE
60'-8" OVERALL LENGTH
30'-0" CLEAR ROADWAY WIDTH
0° SKEW

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
5	311+31, LT	SPIKE IN 6-INCH BOX ELDER	653.90
6	310+66, RT	ALUM CAP NW CORNER OF BRIDGE DECK	664.20

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	PLAN AND PROFILE: B-6-203	SHEET 47	E

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
9	415+21, LT	ALUM CAP NW CORNER OF BRIDGE DECK	672.09
10	415+44, LT	SPIKE IN 18-INCH WHITE ASH	664.49

LEGEND

- EROSION MAT URBAN CLASS 1 TYPE A
- SILT FENCE
- TURBIDITY BARRIER
- INLET PROTECTION TYPE D

R/W

EXISTING STRUCTURE B-6-17 TO BE REMOVED

BM 10

RIPRAP MEDIUM

INLET 2-2 TYPE V

WETLAND BOUNDARY (TYP)

SLOPE INTERCEPT

COCHRANE CO-OP TELEPHONE COMPANY (FIBER OPTIC)

BM 9

412+00

413+00

414+00

415+00

416+00

417+00

APPROACH SLAB

REMOVING GUARDRAIL

SLOPE INTERCEPT

STH 35

APPROACH SLAB

REMOVING GUARDRAIL

END EXCEPTION TO NET CENTERLINE LENGTH
STA 411+50.00
MATCH EXISTING
SAWCUT REQUIRED

PI = 419+58.27
Y=231,901.922
X=602,109.867
DELTA = 39°20'28"
D = 2°16'00"
T = 903.60'
L = 1735.64'
R = 2527.75'
PC = 410+54.66
PT = 427+90.30

PC 410+54.66
Y=231,069.70
X=602,461.87

PT 427+90.30
Y=232,322.40
X=601,310.06

XCEL ENERGY INC. (ELECTRIC TRANSMISSION LINE)

CENTURYLINK (TELEPHONE)

EXISTING CONCRETE WALL TO REMAIN

STRUCTURE B-6-205 REQUIRED

END PROJECT 7160-04-70
STA 417+00.00
MATCH EXISTING
SAWCUT REQUIRED

R/W

SLOPE INTERCEPT

685
680
675
670
665
660
655

VPC 412+57.50
VPC EL 672.73

VPI 413+50.00
VPI EL 673.08

VPT 414+42.50
VPT EL 672.76

HIGH WATER 100
EL 665.52

SINGLE SLOPE PARAPET
SEE STRUCTURE PLANS

PROPOSED GRADE
@ REFERENCE LINE

0.38%

-0.34%

PI 411+50.00
EL 672.33

STA 414+92.00
STRUCTURE B-6-205 REQUIRED
SINGLE SPAN PRESTRESSED CONCRETE
DECK GIRDER BRIDGE (36")
72'-6" OVERALL LENGTH
40'-0" CLEAR ROADWAY WIDTH
0° SKEW

EXISTING GROUND
@ REFERENCE LINE

VCL = 185.00
K = 257.48

TOP OF BERM
EL 665.25

EL 662.75

TOP OF BERM
EL 665.02

EL 662.52

HEAVY RIPRAP
(TYP)

OBSERVED
WTR. LEVEL
EL 657.81
(5/2006)

STREAM BED
EL 656.76

STA 414+91.09
REMOVE STRUCTURE B-6-17
THREE-SPAN STEEL DECK GIRDER BRIDGE
60'-8" OVERALL LENGTH
30'-0" CLEAR ROADWAY WIDTH
0° SKEW

EXISTING ELEVATION
PROPOSED ELEVATION

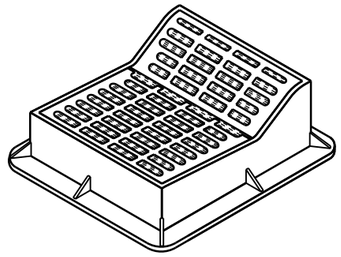
PI 417+00.00
EL 671.88

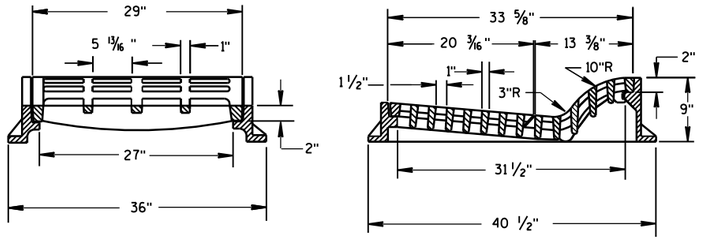
| | | |

Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D03-07	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09G02-05C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
13A03-06	CONCRETE PAVEMENT SHOULDERS
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11D	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

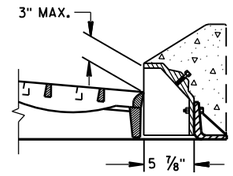
6





TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

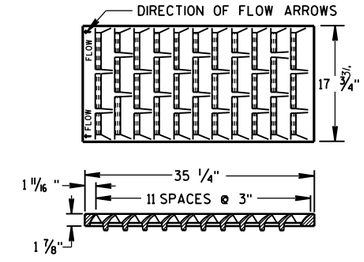
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

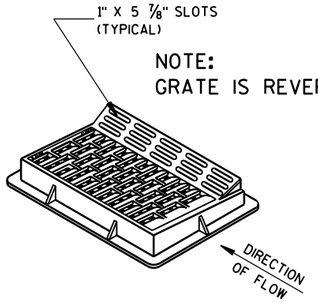
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

GENERAL NOTES

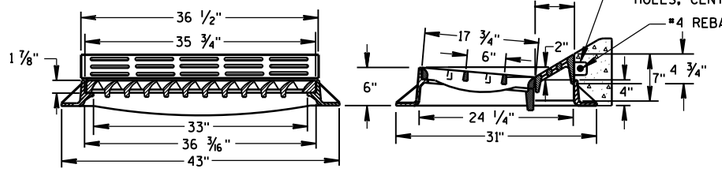
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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





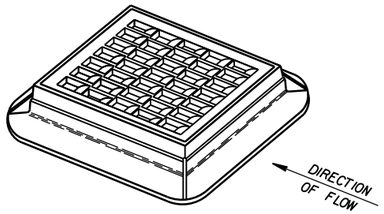
NOTE:
GRATE IS REVERSIBLE.

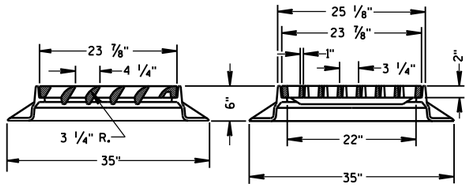


TYPE "HM"

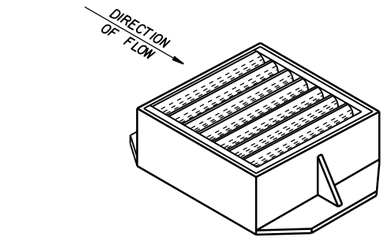
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

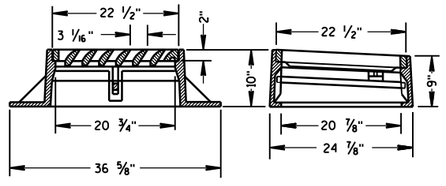
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



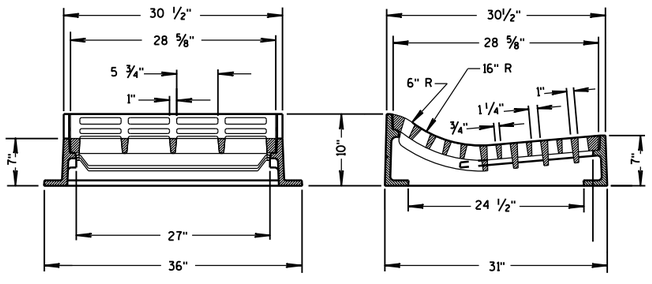


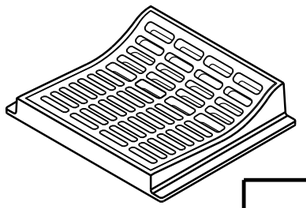
TYPE "S"





TYPE "V"





TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

INLET COVERS
TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

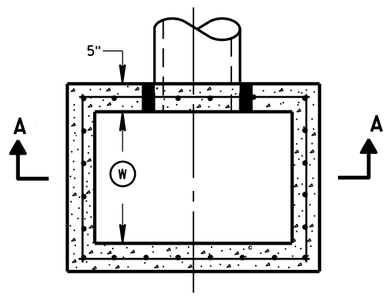
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE

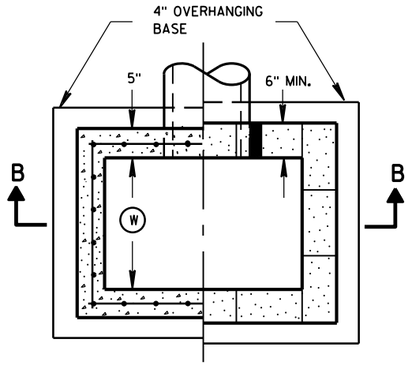
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

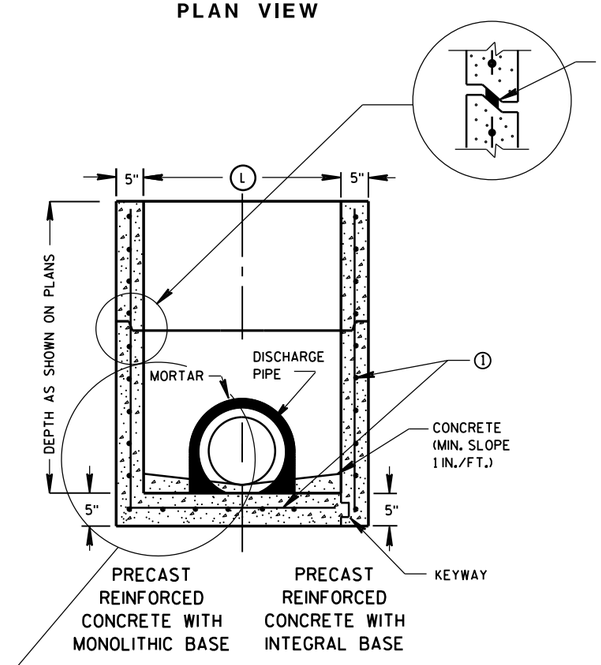
6
S.D.D. 8 A 5-19c



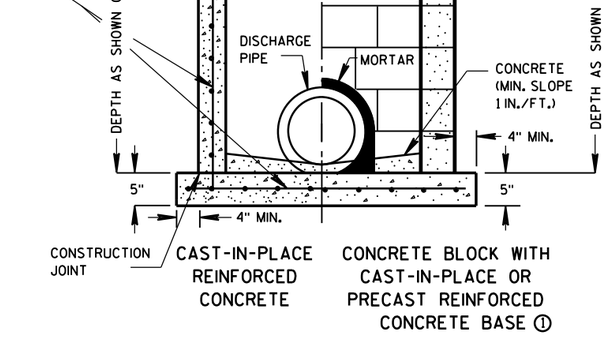
PLAN VIEW



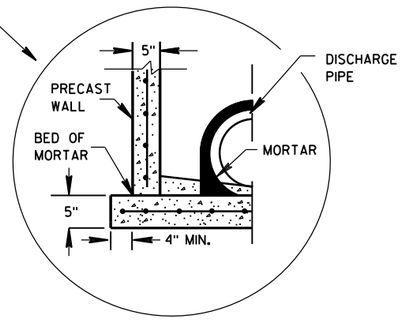
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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 PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES 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 FOUNDATION 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.

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

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

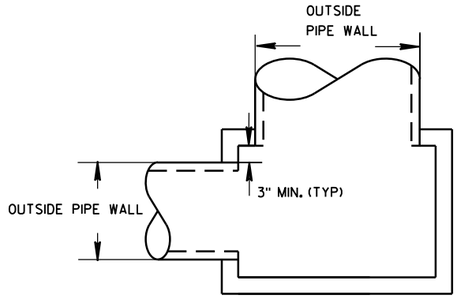
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH Ⓦ (FT)	LENGTH Ⓛ (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



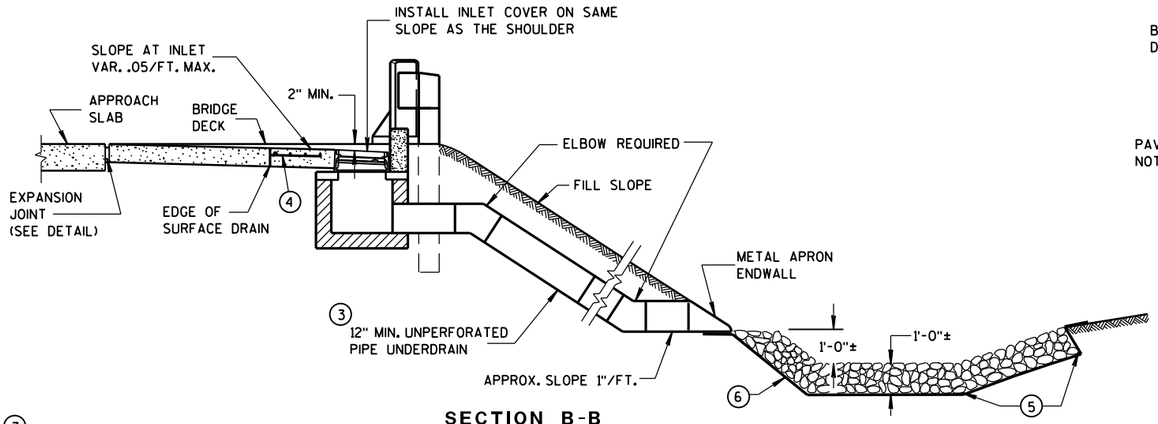
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

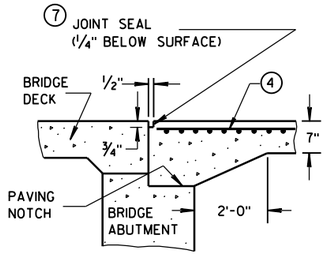
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT UNIT SUPERVIS
FHWA

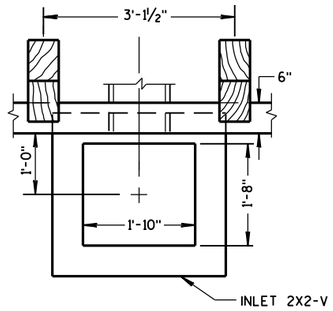
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



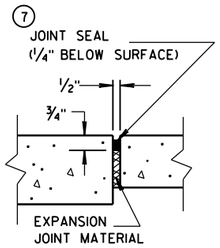
SECTION B-B



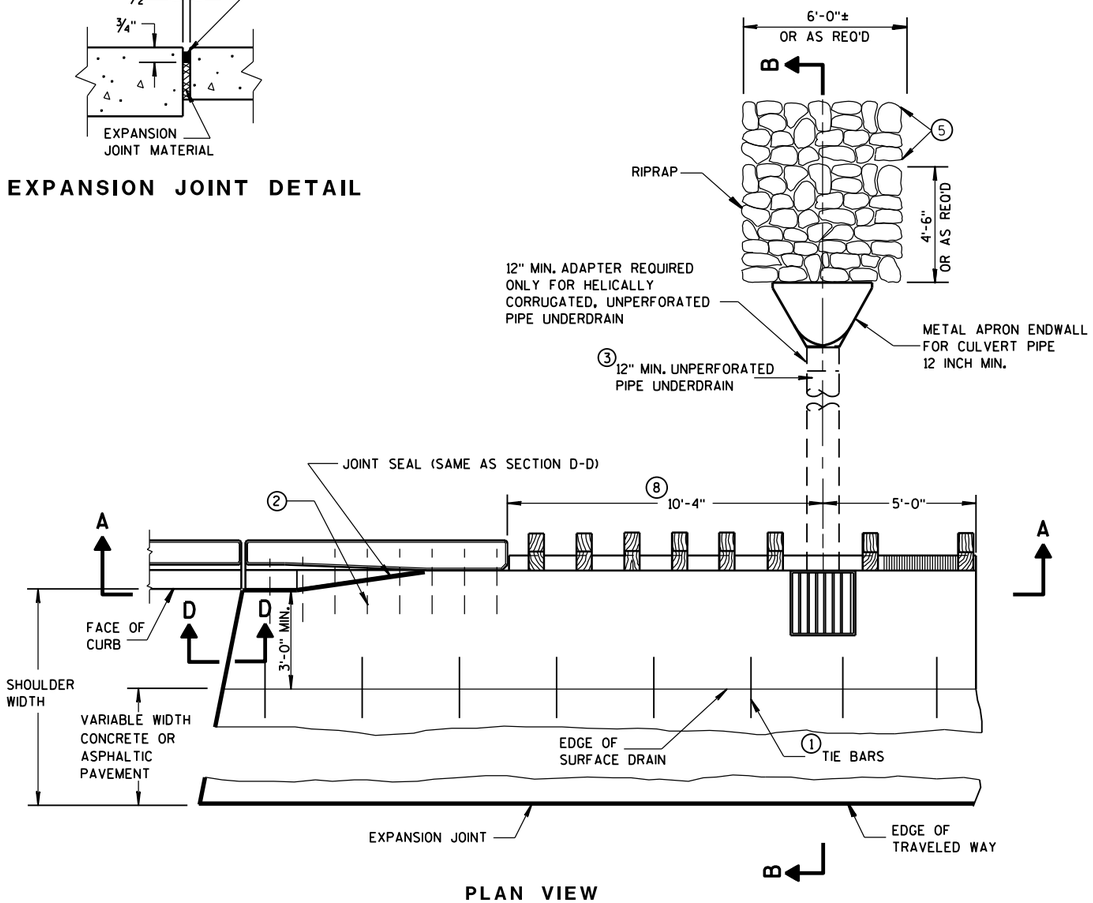
SECTION D-D



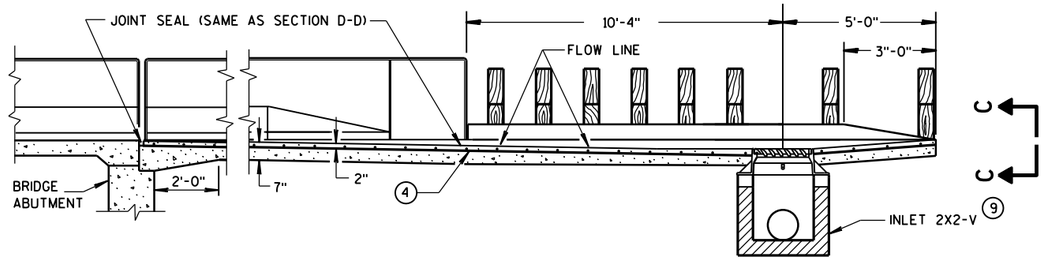
PLAN VIEW



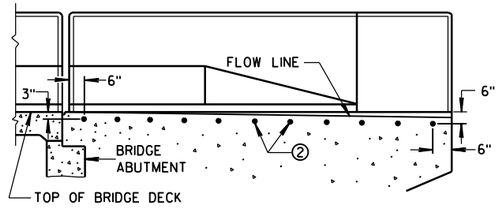
EXPANSION JOINT DETAIL



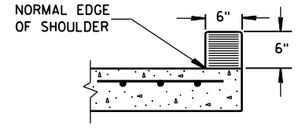
PLAN VIEW



SECTION A-A



LOCATION OF TIE BARS IN WINGWALL



SECTION C-C

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.

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

(1) NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.

(2) NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.

(3) THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

(5) LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

(6) GEOTEXTILE FABRIC.

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

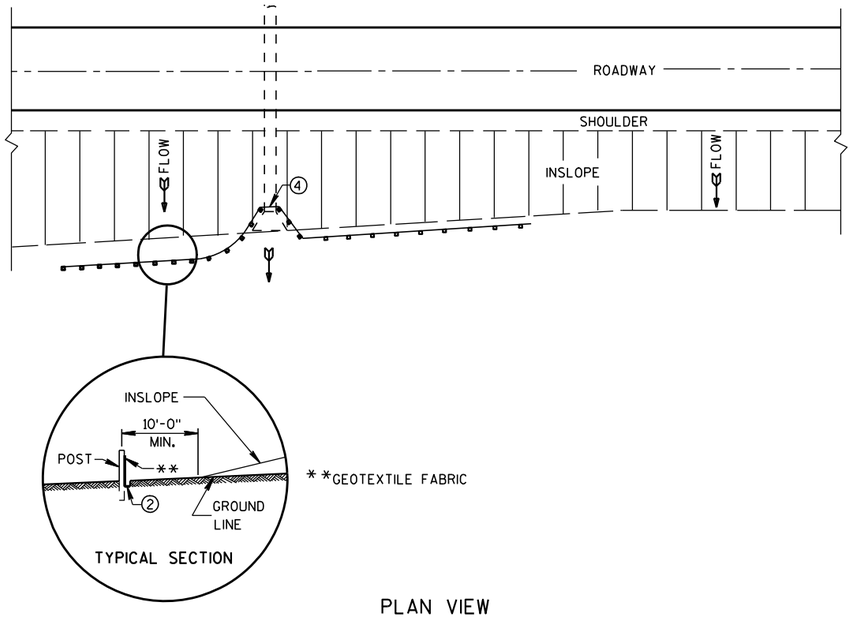
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".

(9) SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

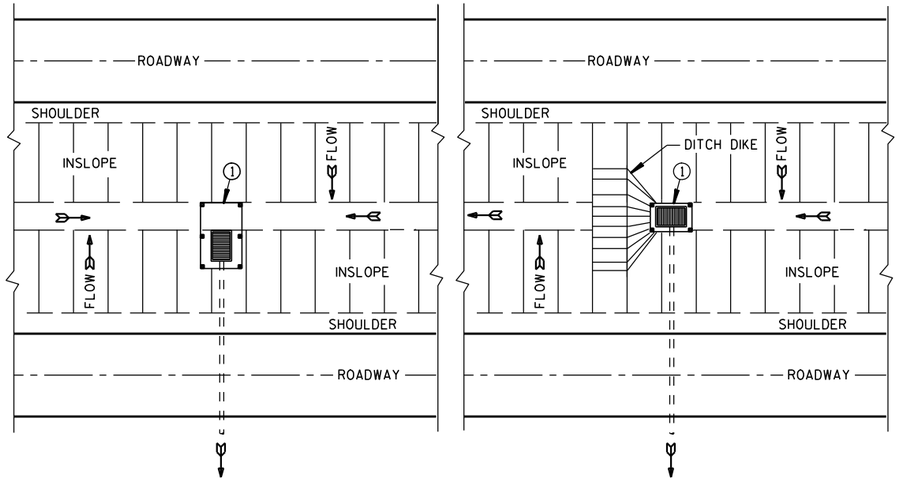
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERV[illegible]
FHWA



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

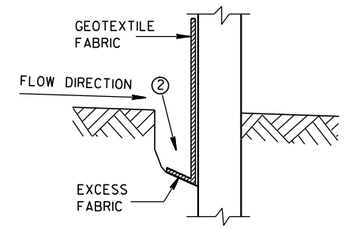
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

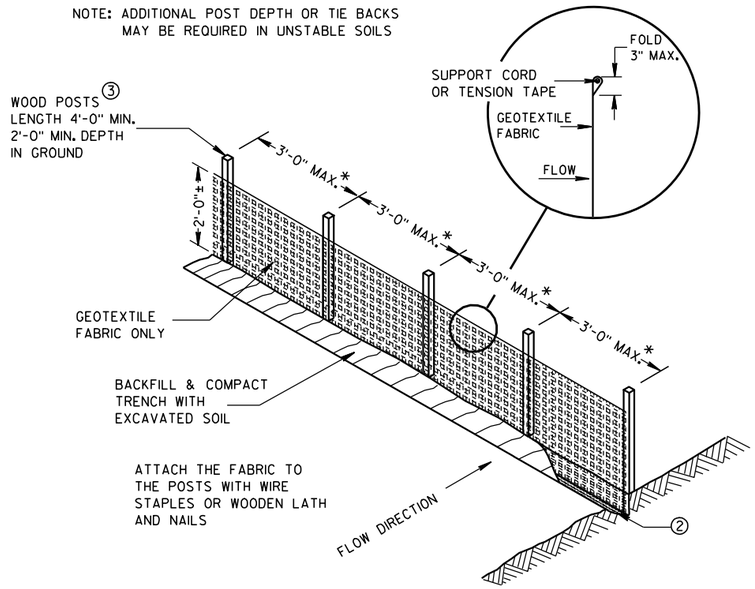
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

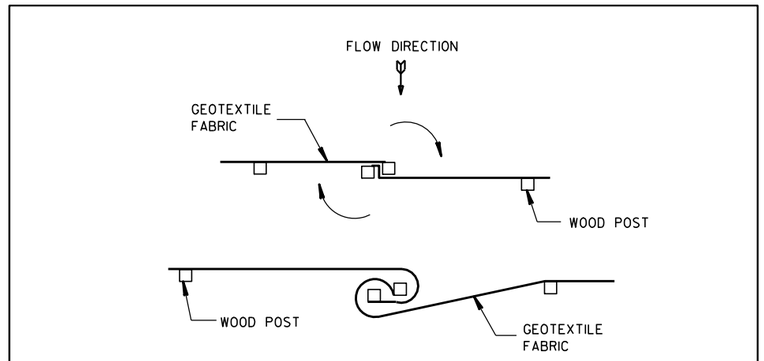
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



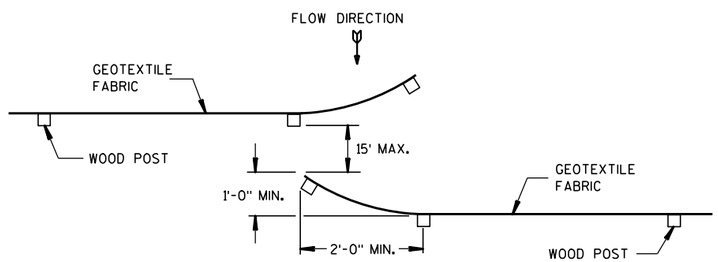
TRENCH DETAIL



SILT FENCE

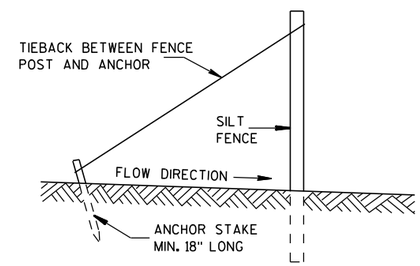


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

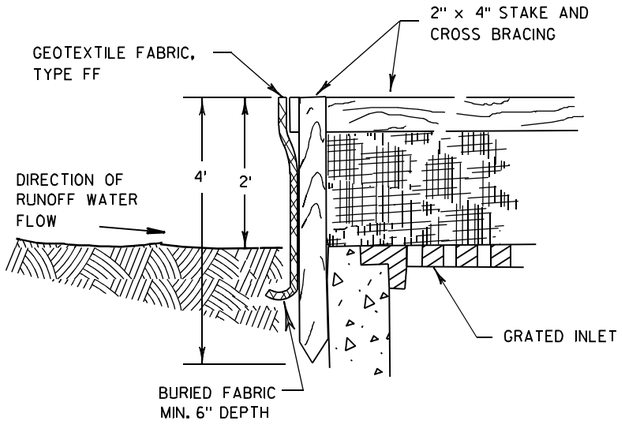
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

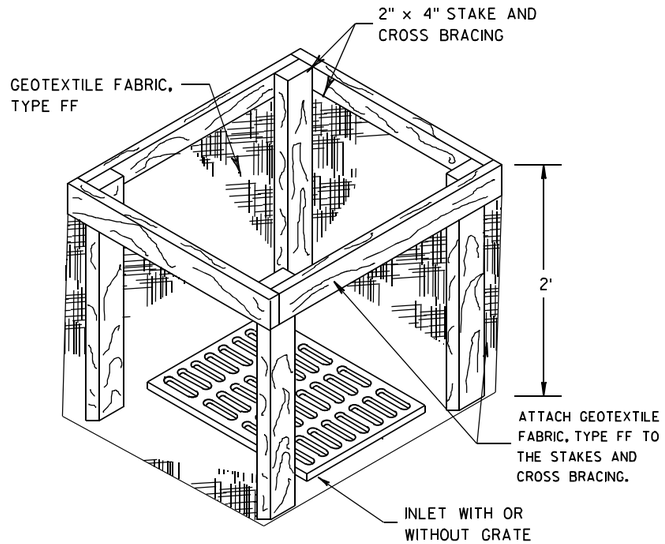
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S.D.D. 8 E 9-6

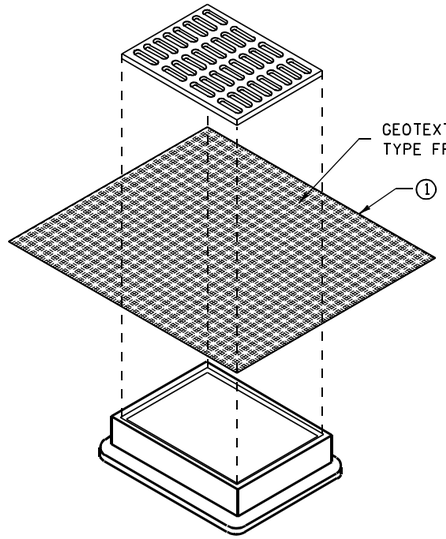
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S.D.D. 8 E 9-6



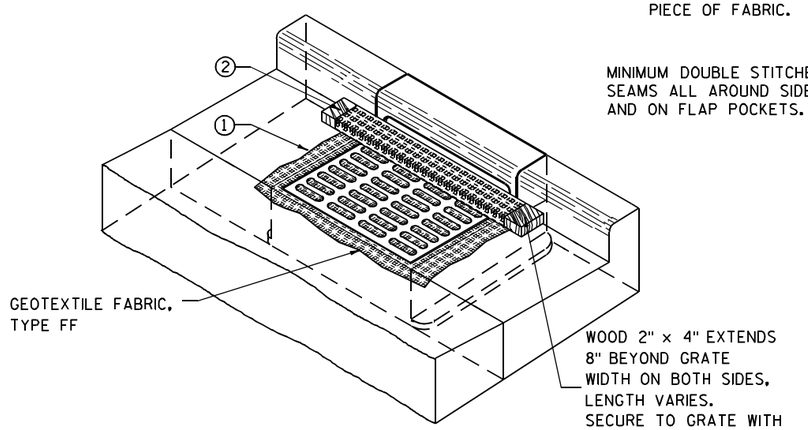


INLET PROTECTION, TYPE A

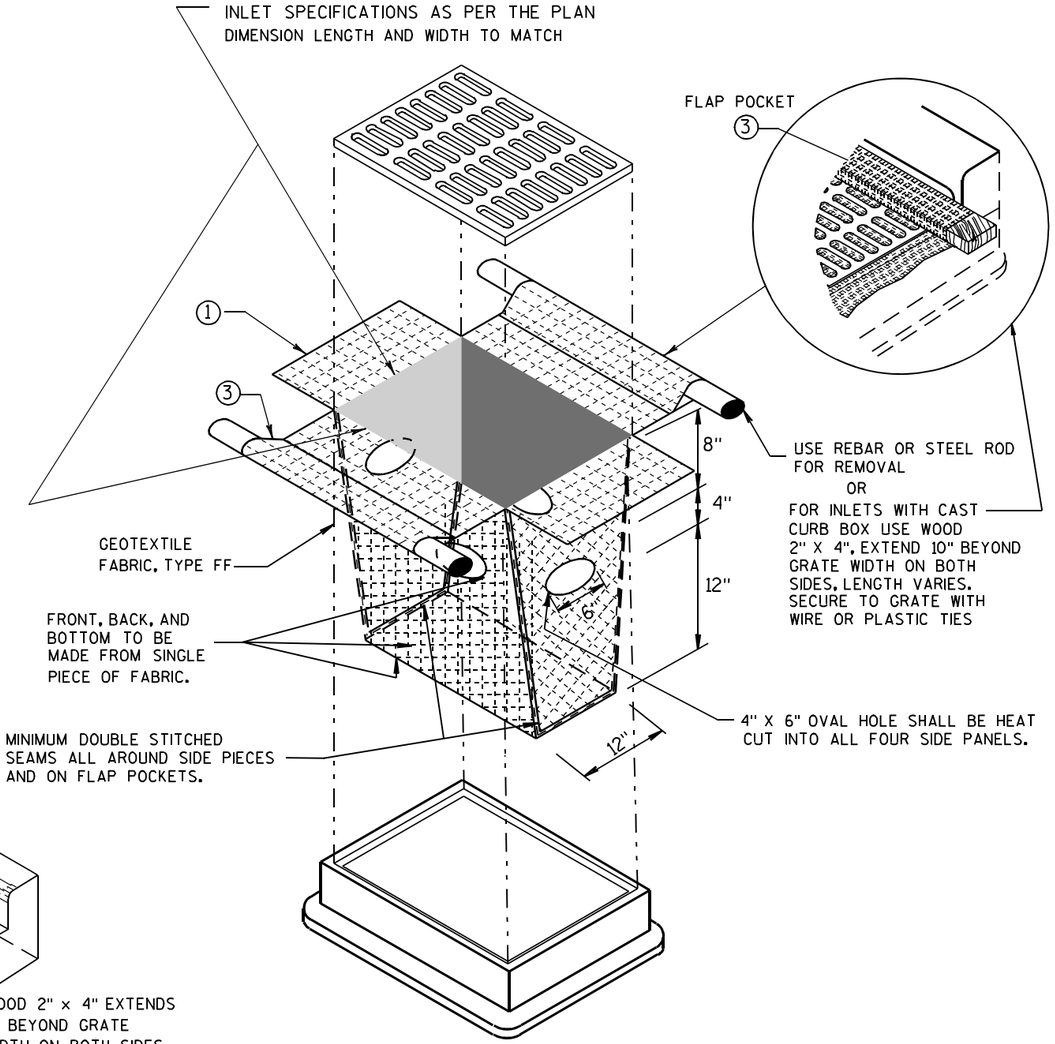


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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 A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

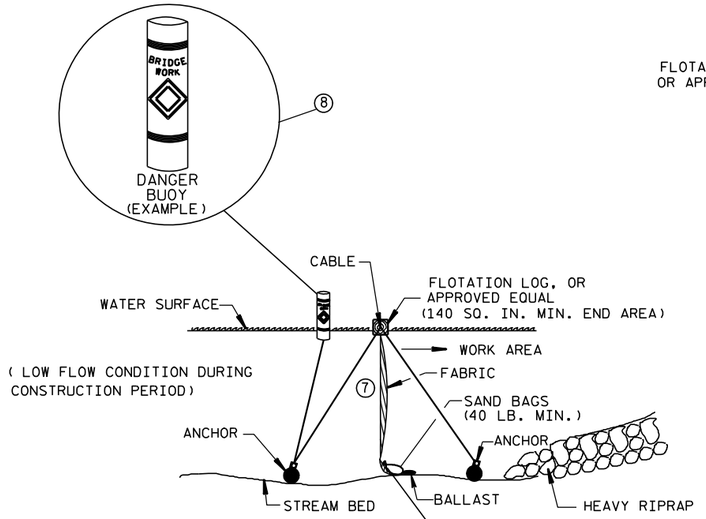
FHWA

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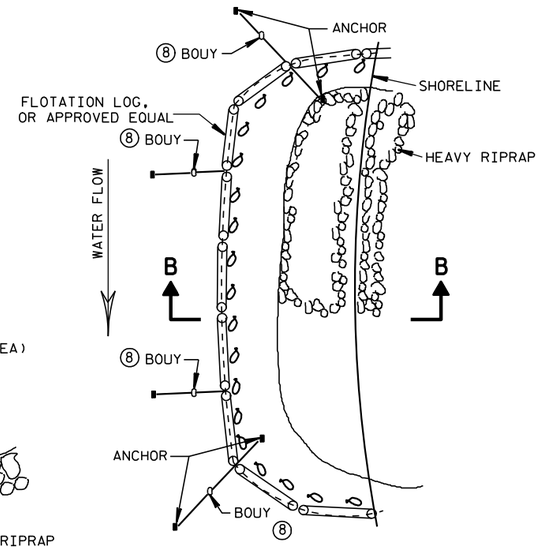
S.D.D. 8 E 10-2

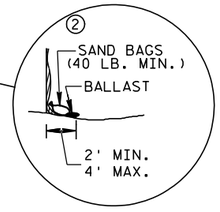
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S.D.D. 8 E 10-2

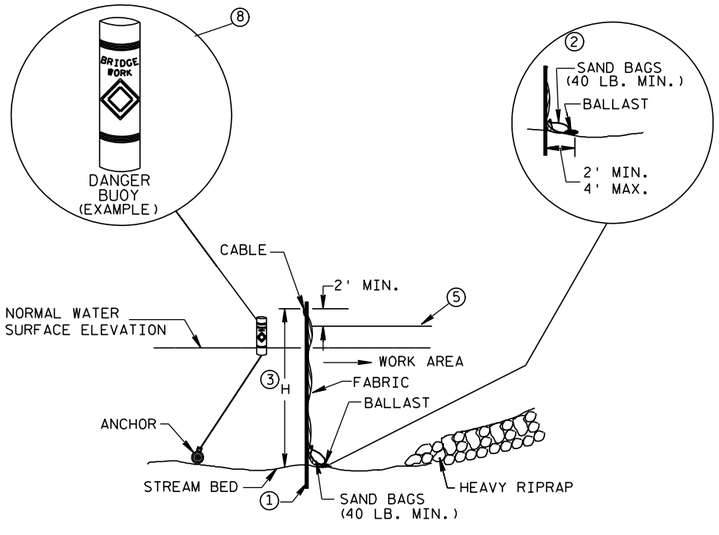


SECTION B-B

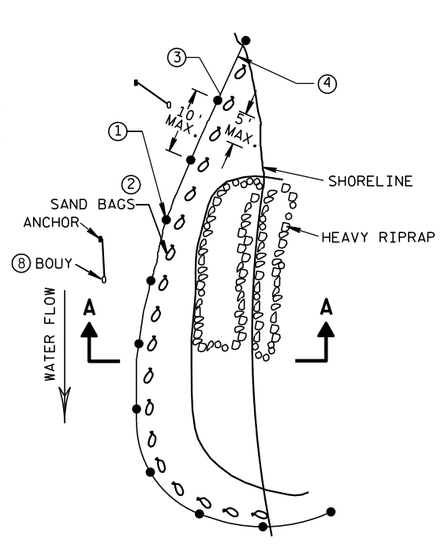




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

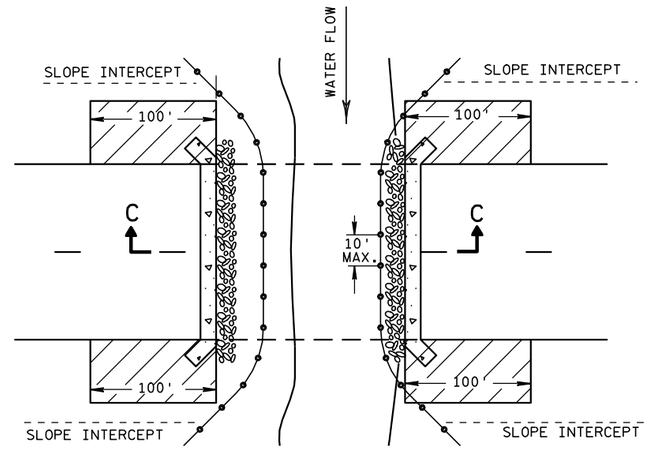
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

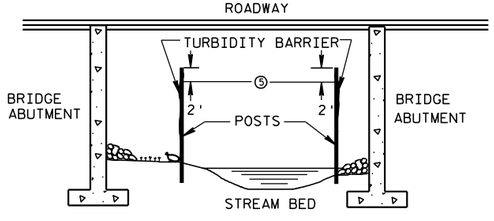
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

METAL APRON ENDWALLS

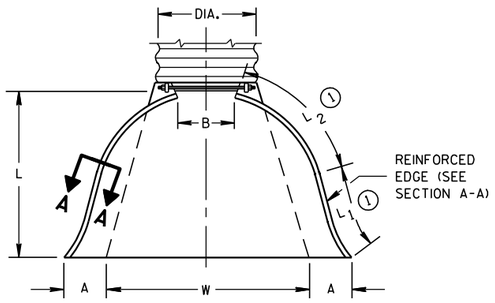
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

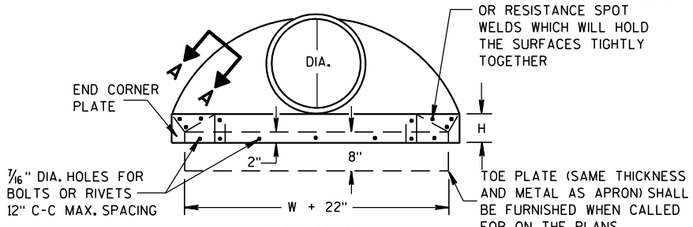
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	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 2/5 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

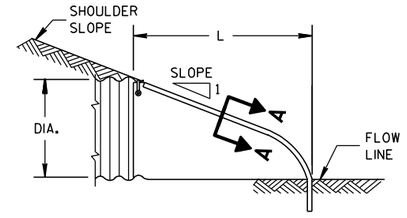
* MINIMUM
** MAXIMUM



PLAN VIEW

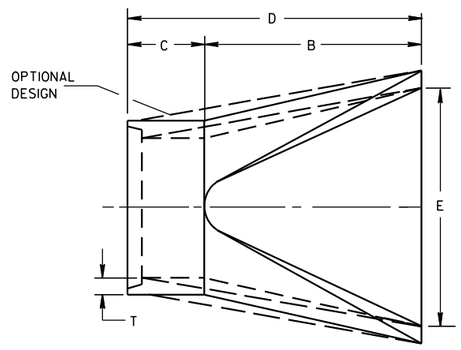


END VIEW

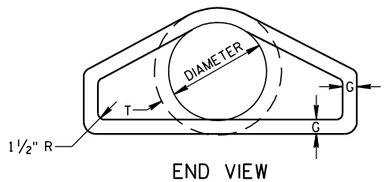


SIDE ELEVATION

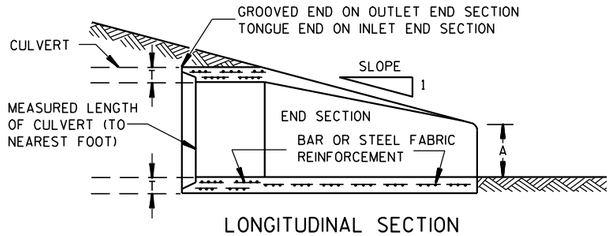
METAL ENDWALLS



PLAN

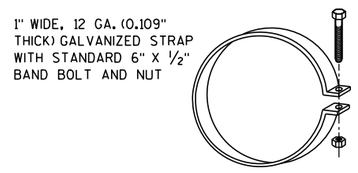


END VIEW



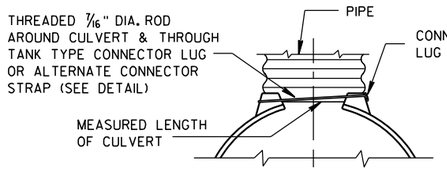
LONGITUDINAL SECTION

CONCRETE ENDWALLS

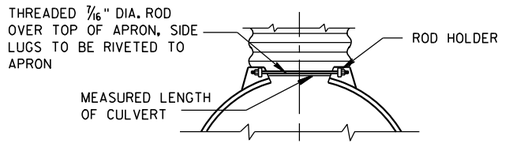


ALTERNATE FOR TYPE 1 CONNECTION

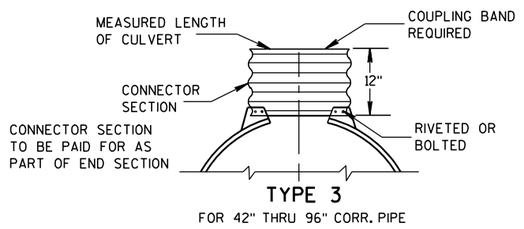
END SECTION CONNECTOR STRAP



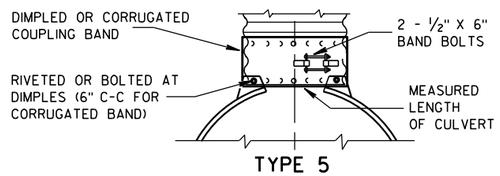
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

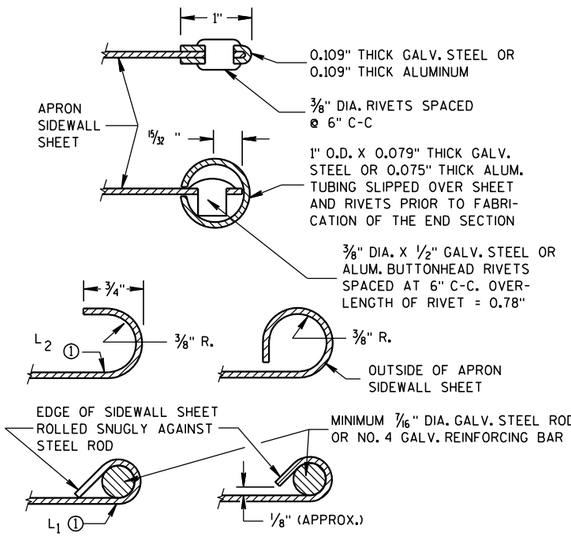
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

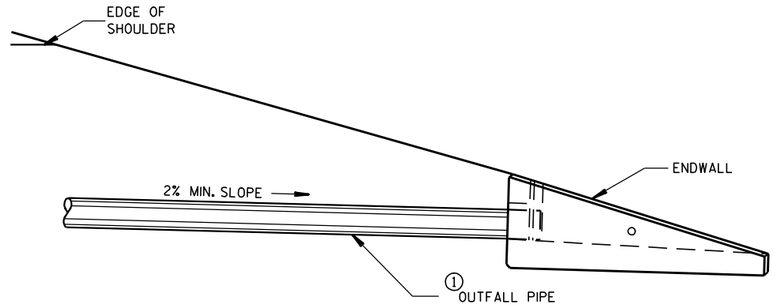
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 F 1-11

DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

**APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



INSTALLATION DETAIL

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.

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

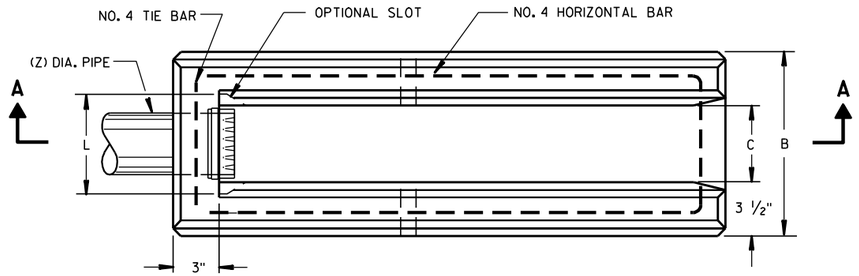
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

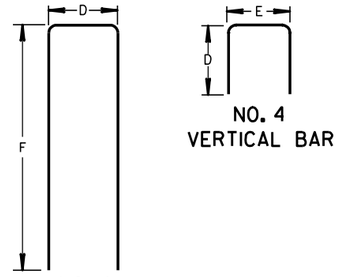
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

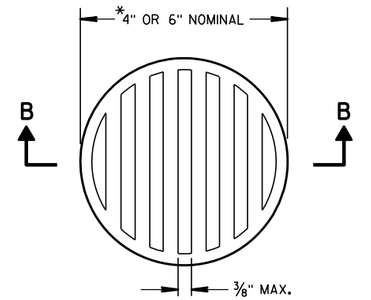
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



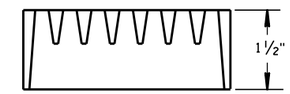
PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS



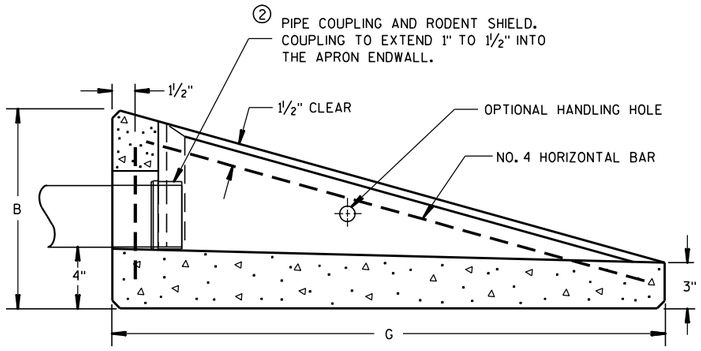
NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



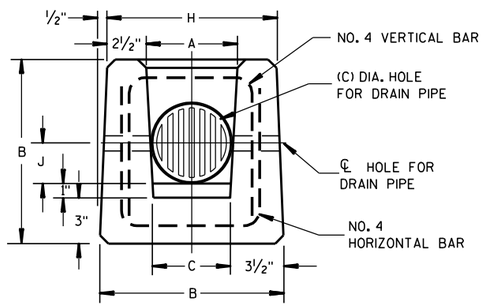
SECTION B-B

② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION A-A



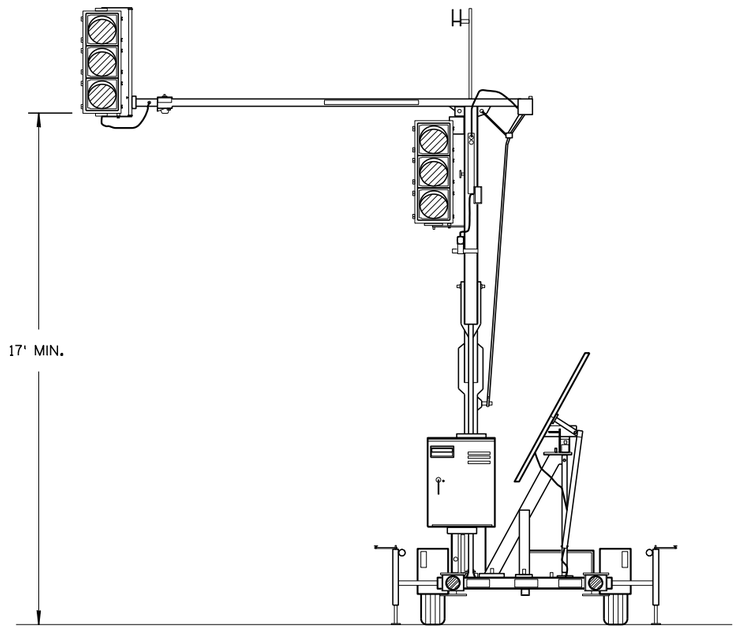
END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/10/98 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

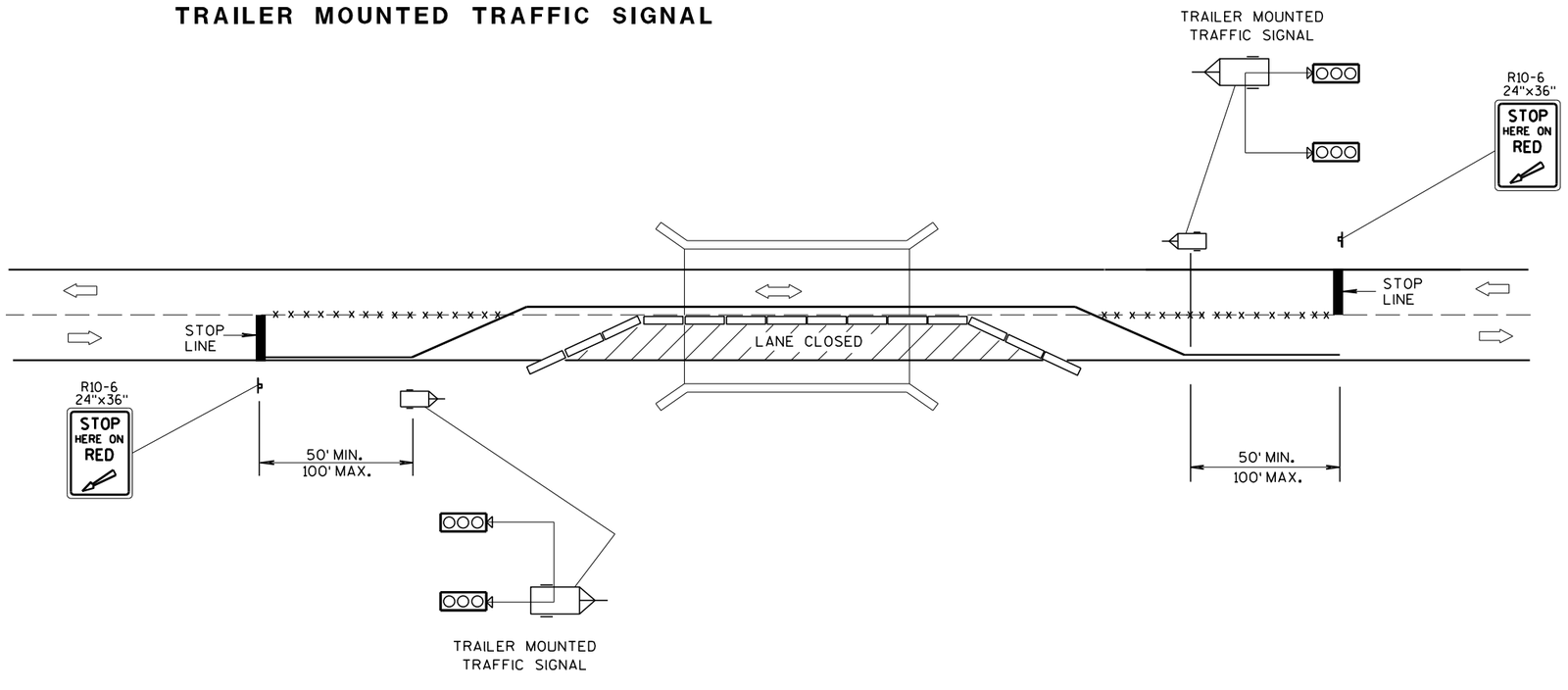


TRAILER MOUNTED TRAFFIC SIGNAL

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
- REMOVING PAVEMENT MARKING
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

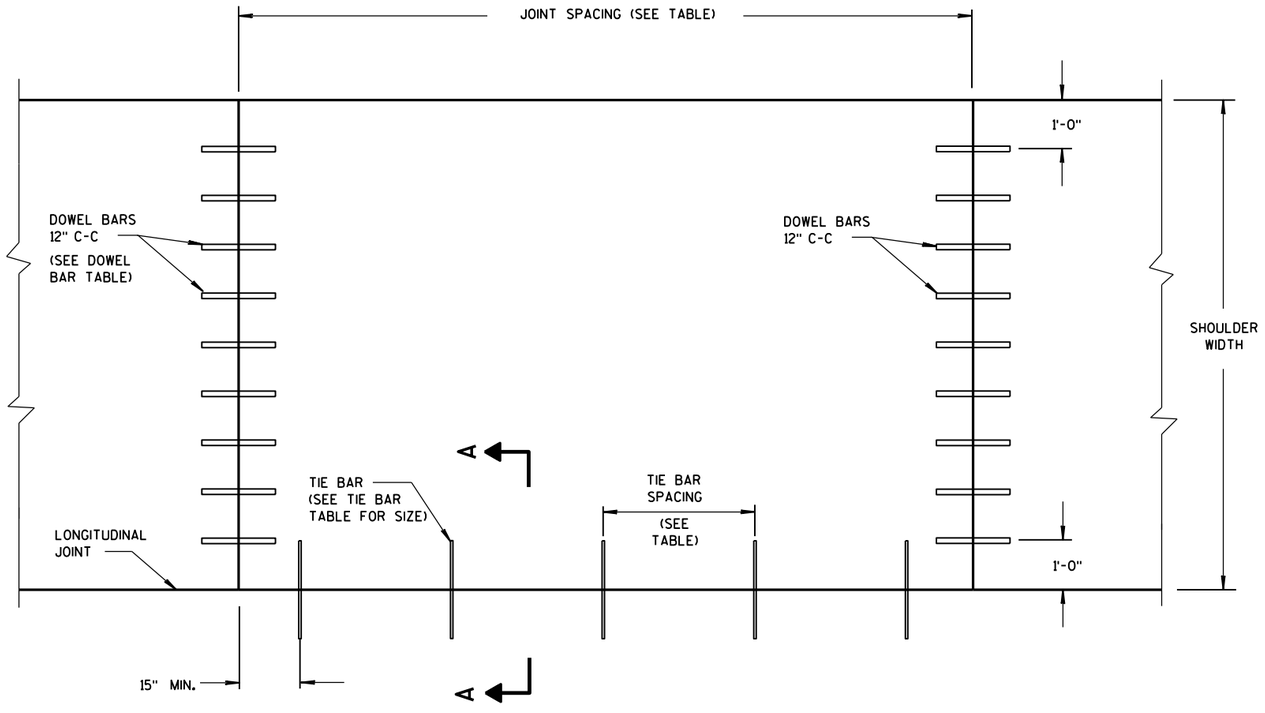
APPROVED
March 2018 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 9 G 2-5c

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S.D.D. 9 G 2-5c



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

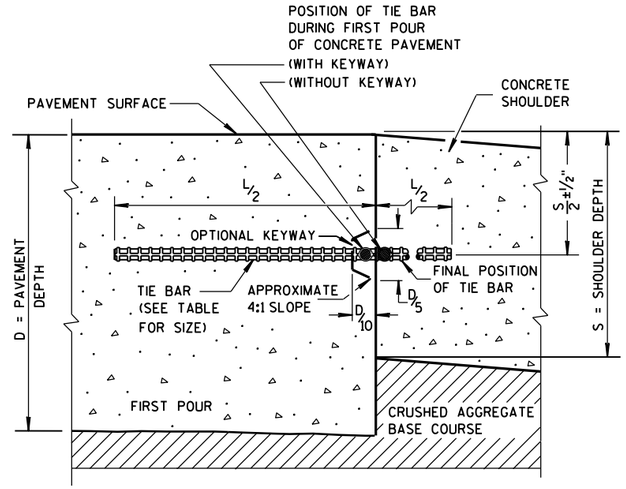
GENERAL NOTES

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.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

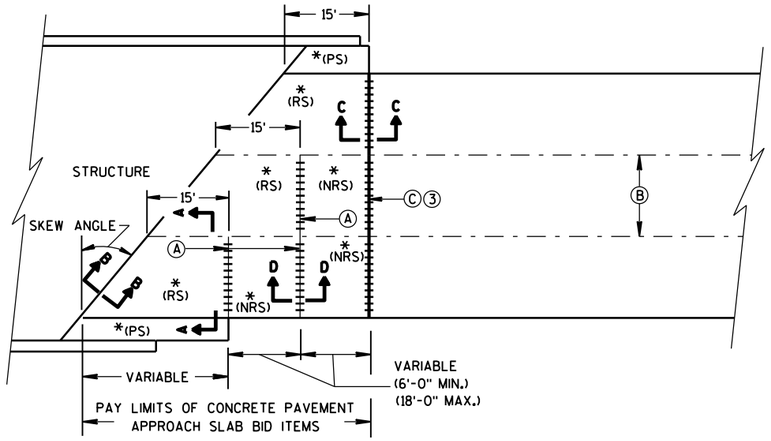
APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPERV
FHWA

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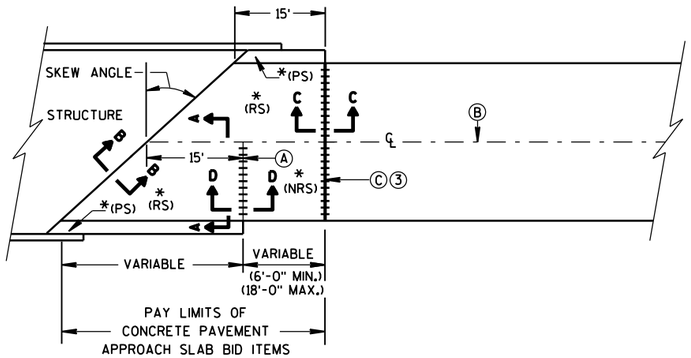
S.D.D. 13 A 3-6

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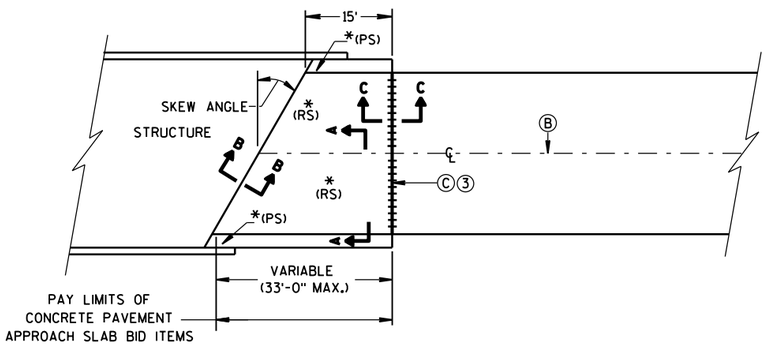
S.D.D. 13 A 3-6



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



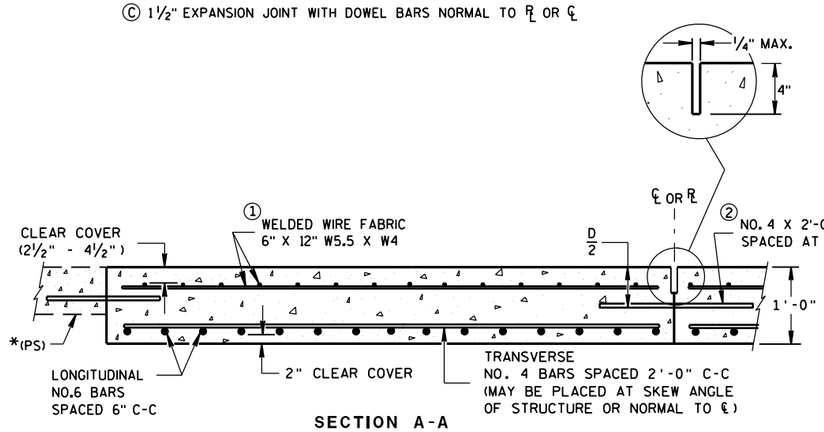
SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

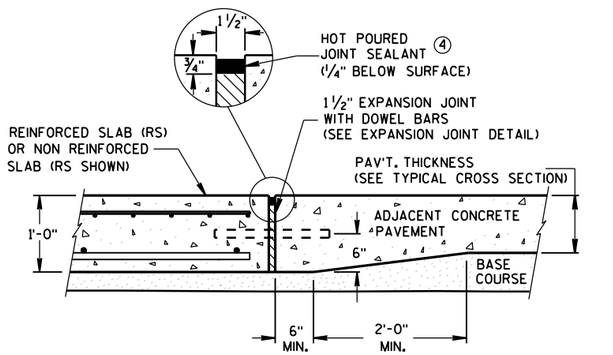
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

***STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

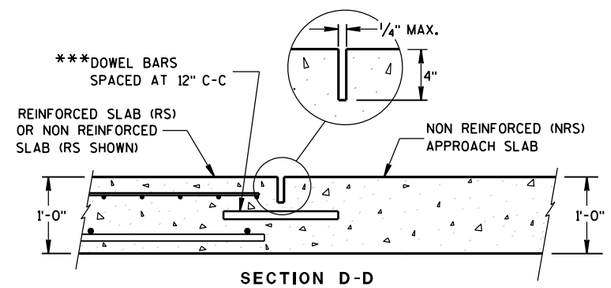
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

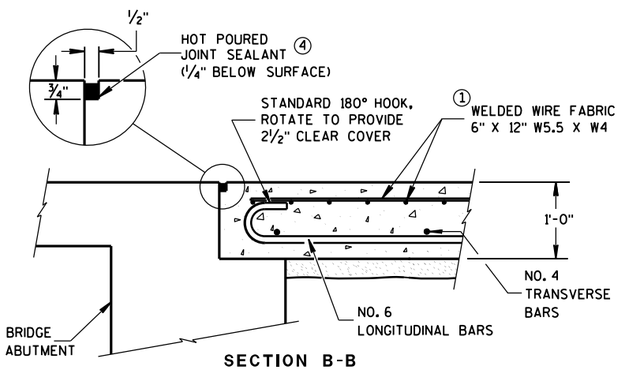
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

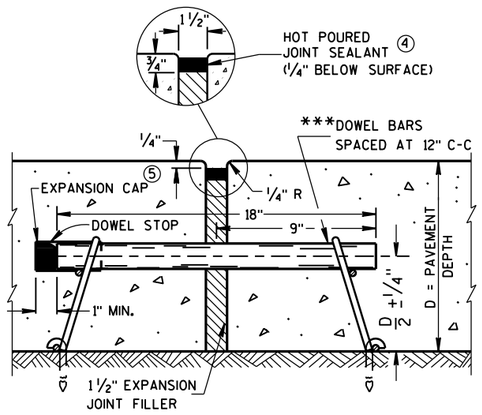
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

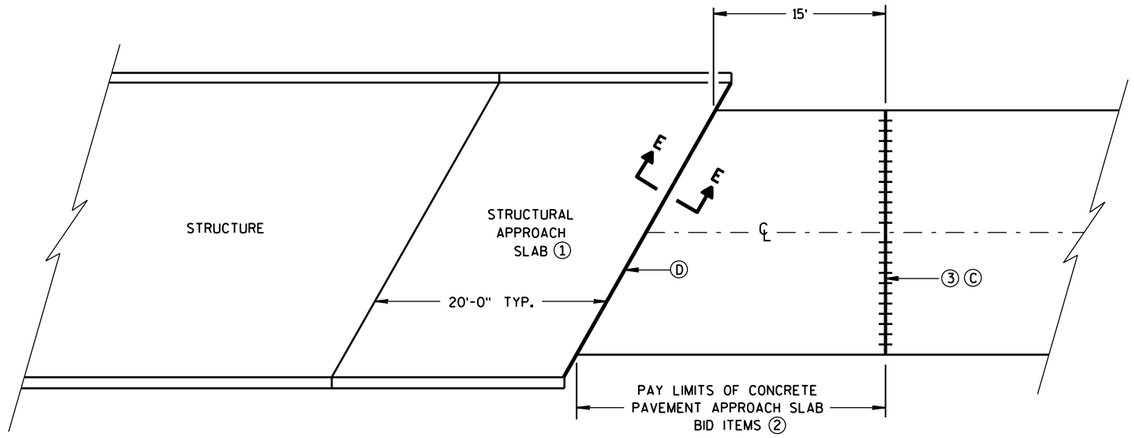
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

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S.D.D. 13 B 2-8a

BRIDGE APPROACHES



GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

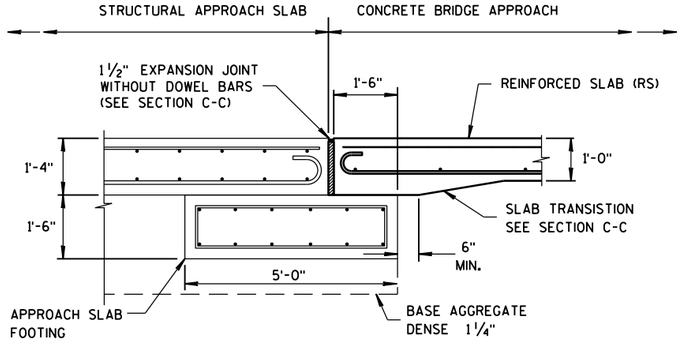
① SEE BRIDGE PLAN.

② CONFORM TO SHEET 13 B 2(A) FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS.

③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION E-E

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

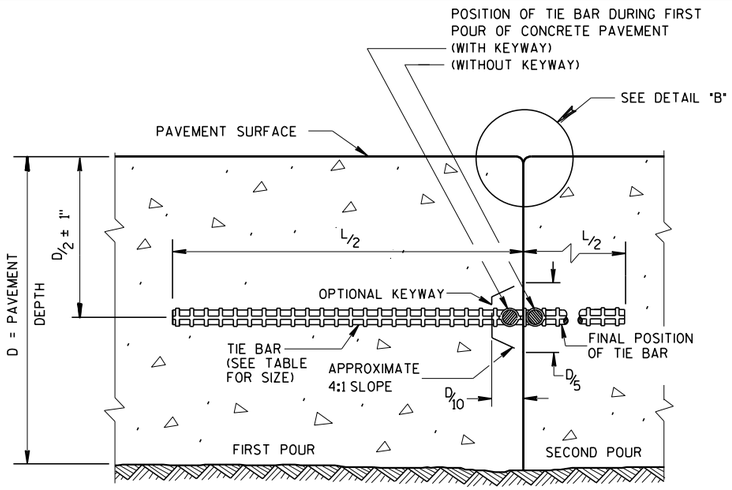
STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

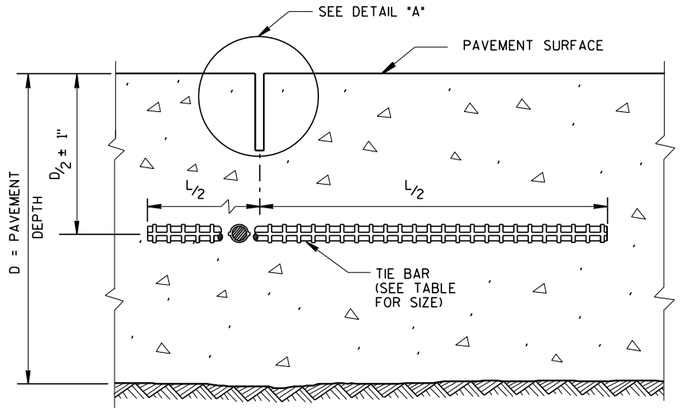
APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPEF
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S.D.D. 13 B 2-8b



CONSTRUCTION JOINT



SAWED JOINT

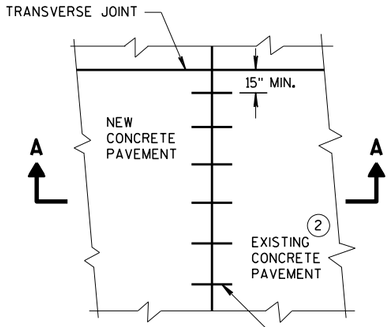
GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

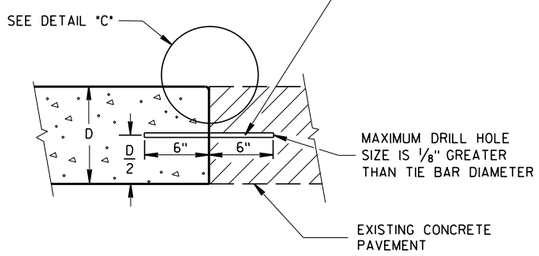
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

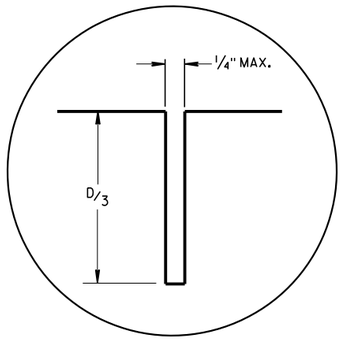


PLAN VIEW

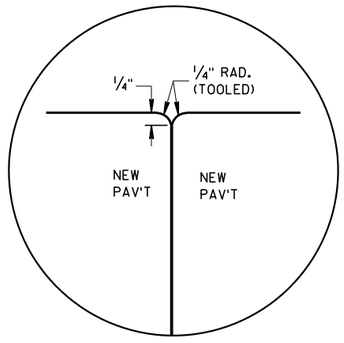


SECTION A-A

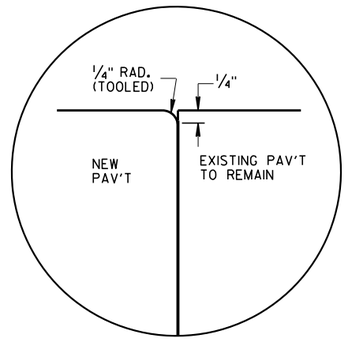
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



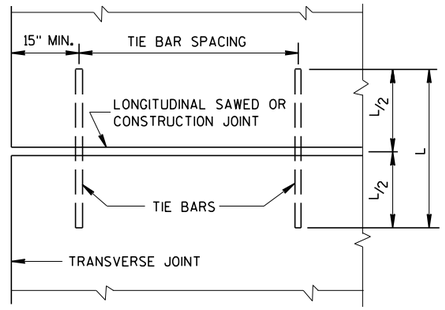
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



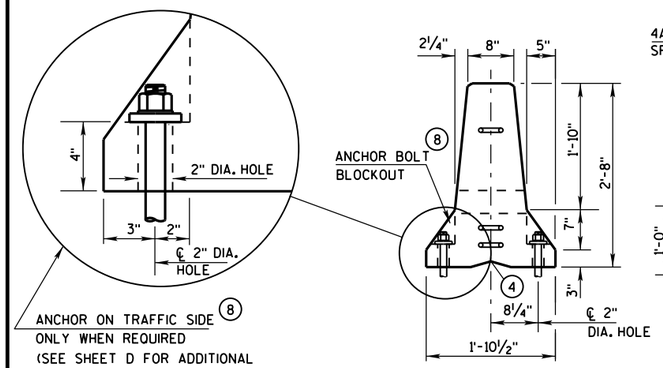
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

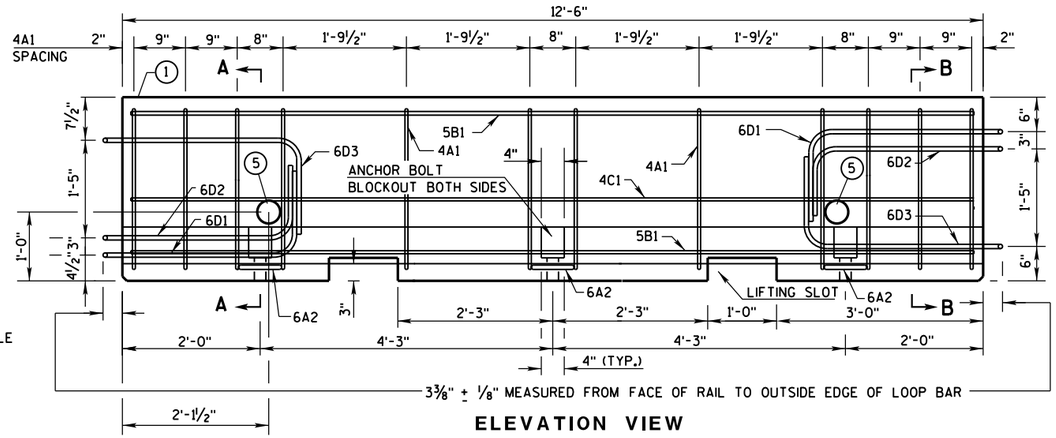
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter Kerr, P.E. — PAVEMENT SUPE
FHWA

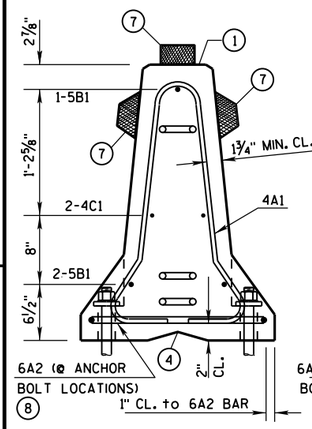
6
S.D.D. 13 C 1-19



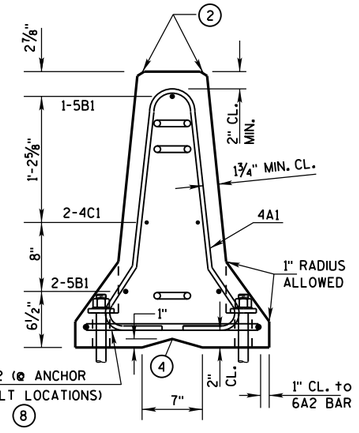
END VIEW



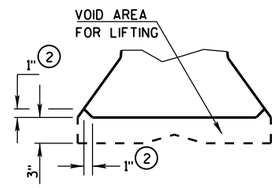
ELEVATION VIEW



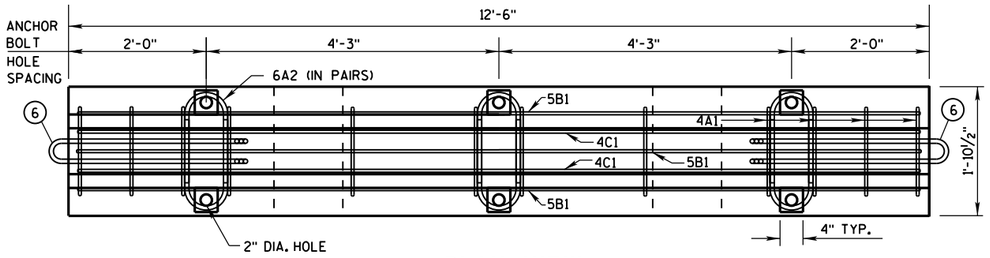
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)

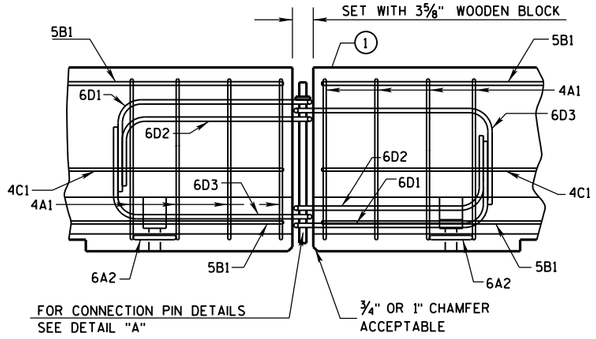


DETAIL "B"
LIFTING SLOT DETAIL

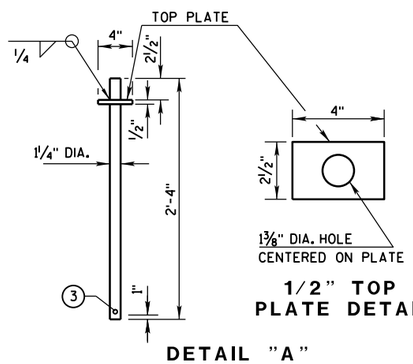


PLAN VIEW

DETAILS OF BARRIER SECTION

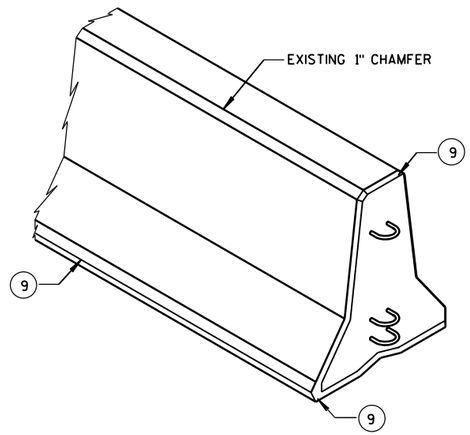


DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" 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 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" 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 MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

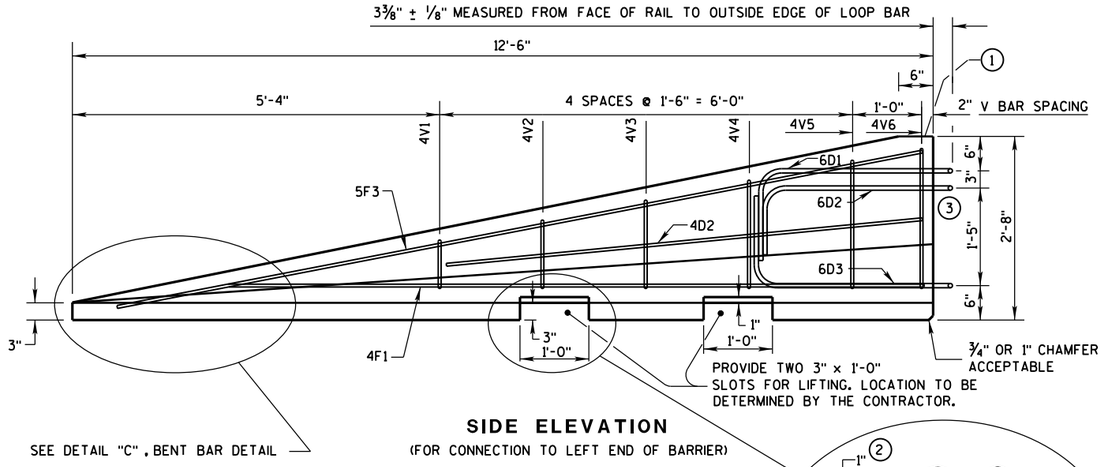
(9) 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

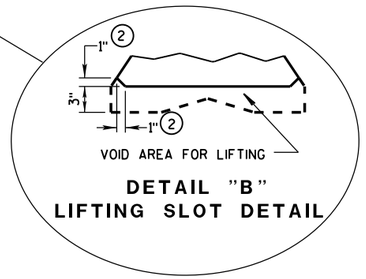
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 63

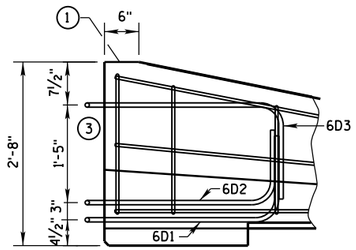
6
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



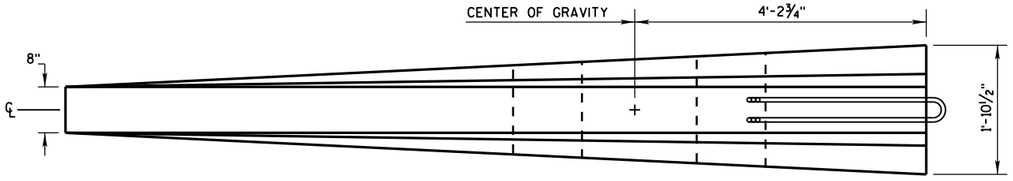
DETAIL "B"
LIFTING SLOT DETAIL



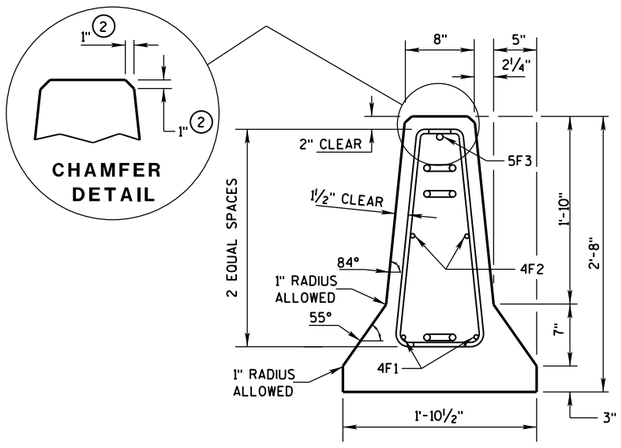
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

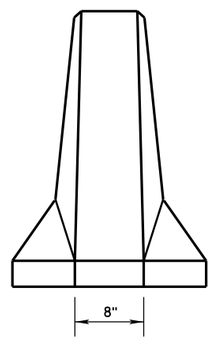
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



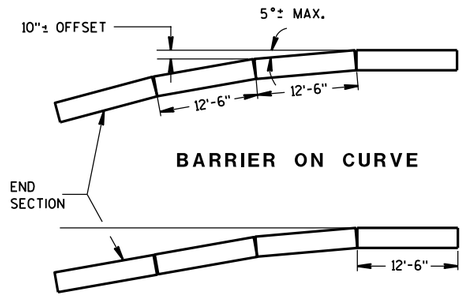
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

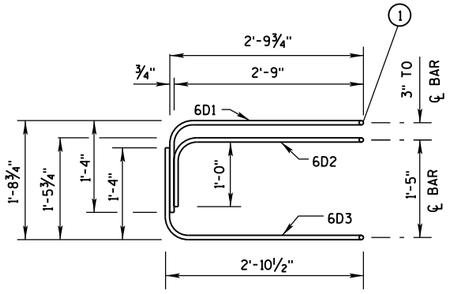
6

S.D.D. 14 B 7-15b

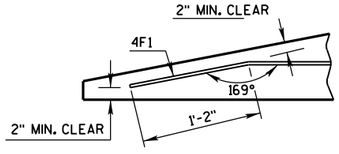
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

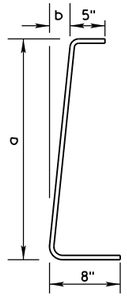
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

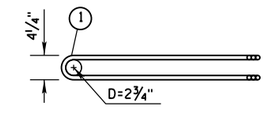
GENERAL NOTES

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

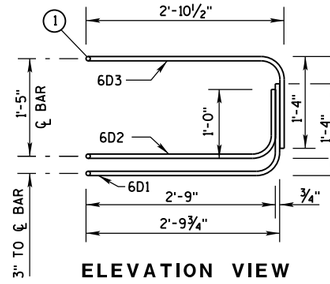
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

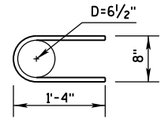
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



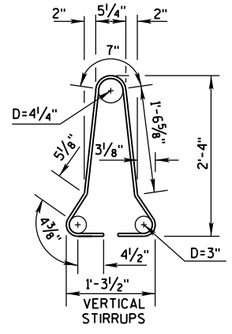
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



4A1

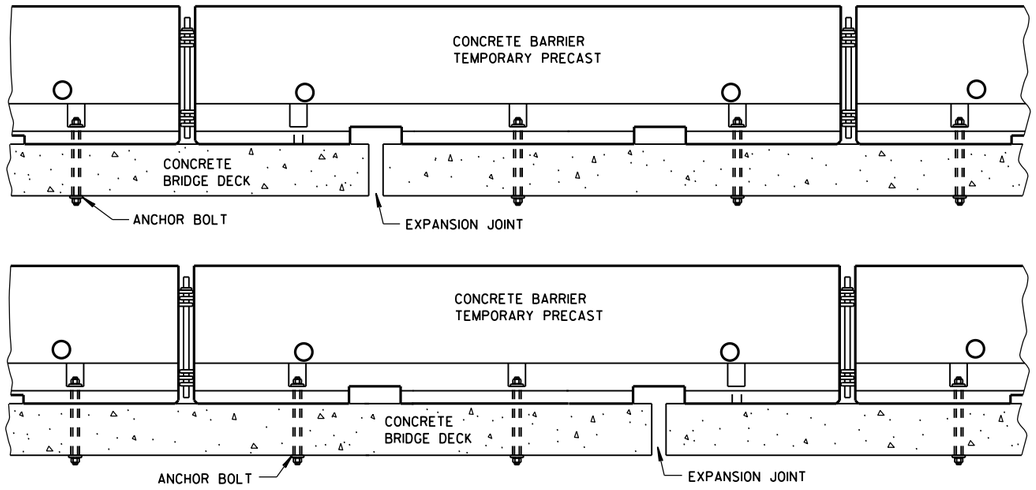
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 7-15c



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.)

GENERAL NOTES

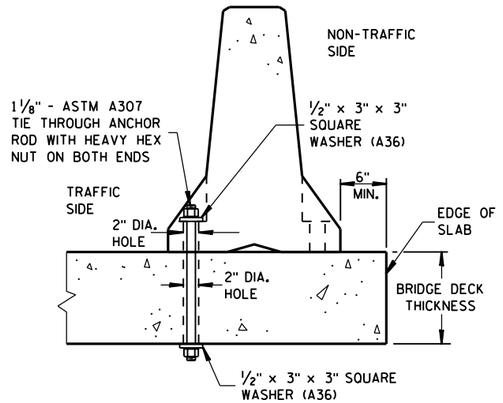
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

(1) 1⅛" DIAMENTER A307 THREADED ROD. ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL. ASTM A563A HEAVY HEX NUT.

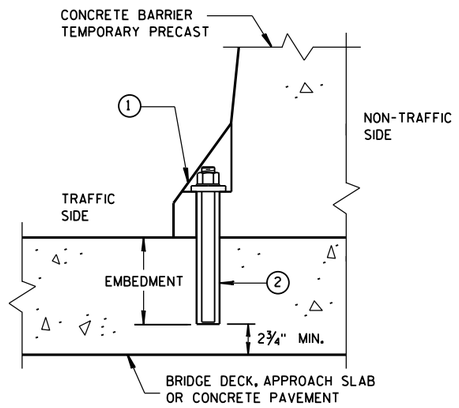
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

(3) ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THAN DRIVE ASPHALT ANCHOR PIN.



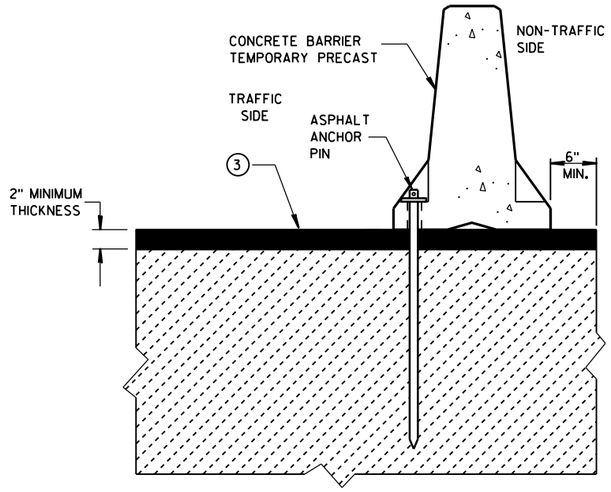
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

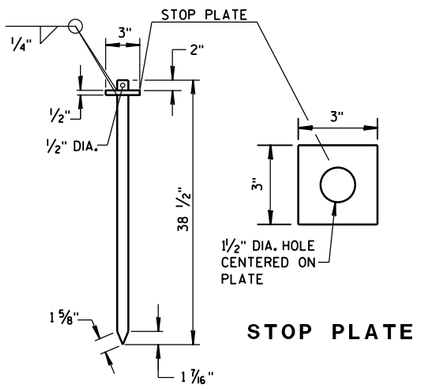


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



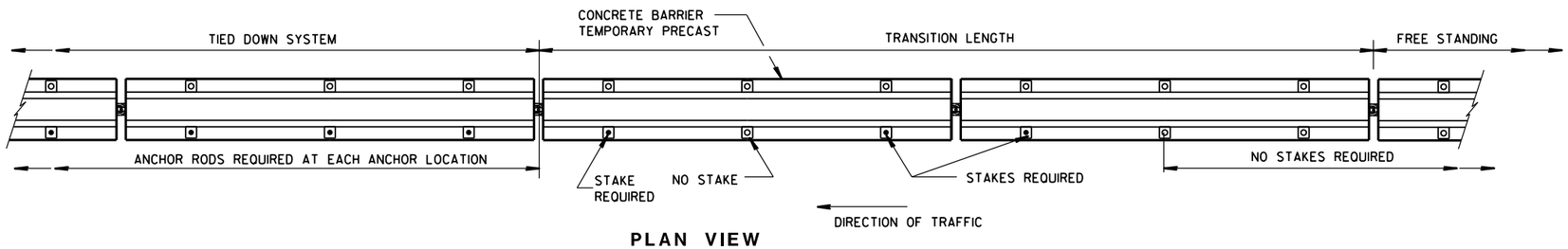
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

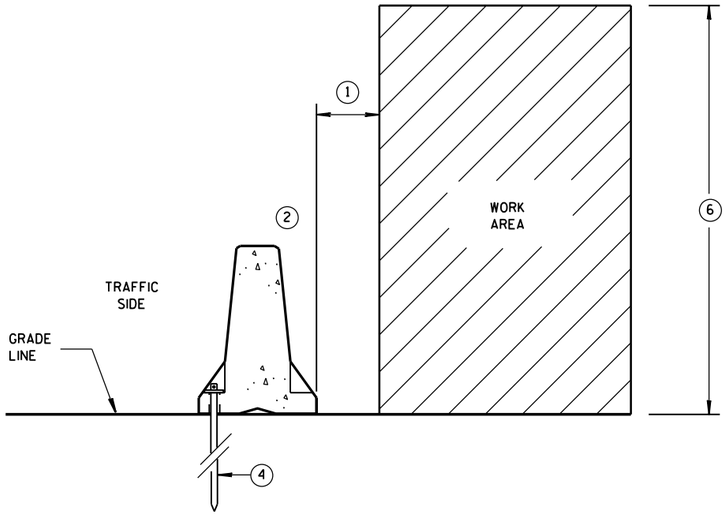
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

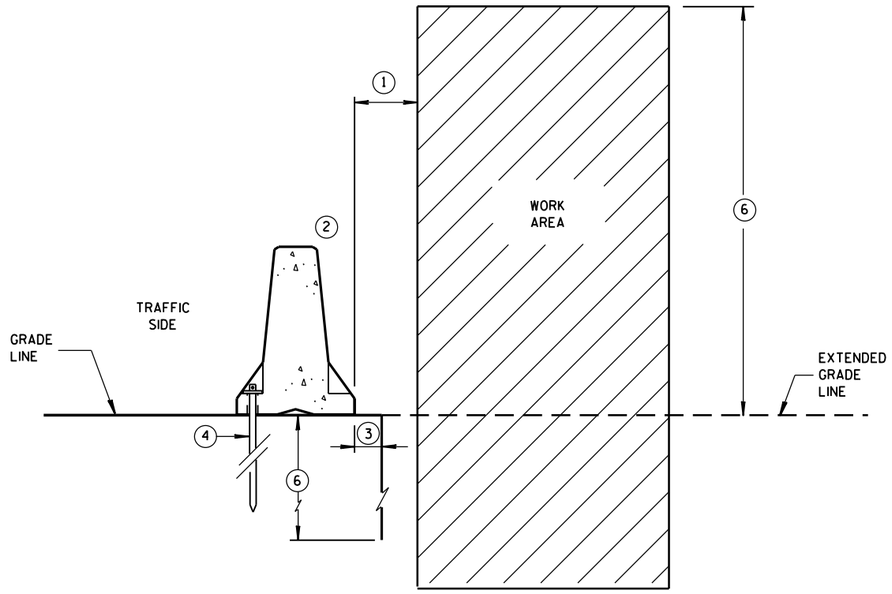
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-15d



ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

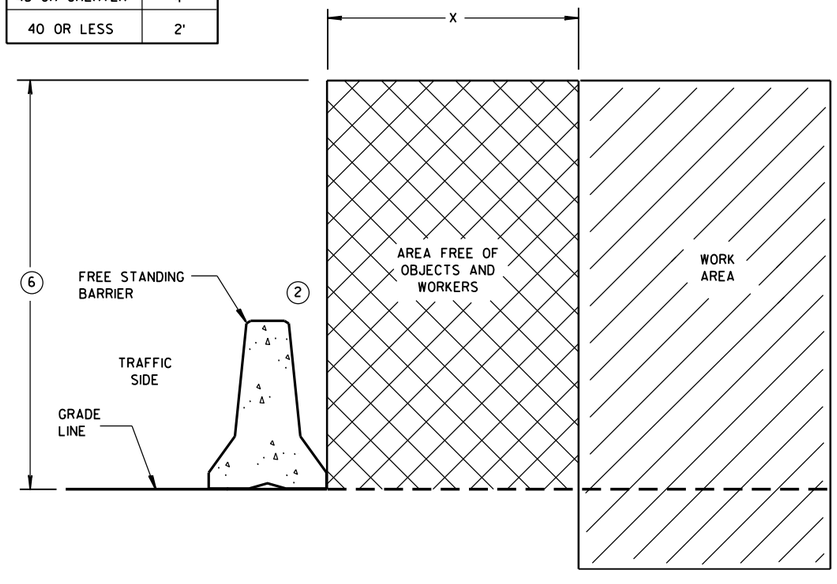


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

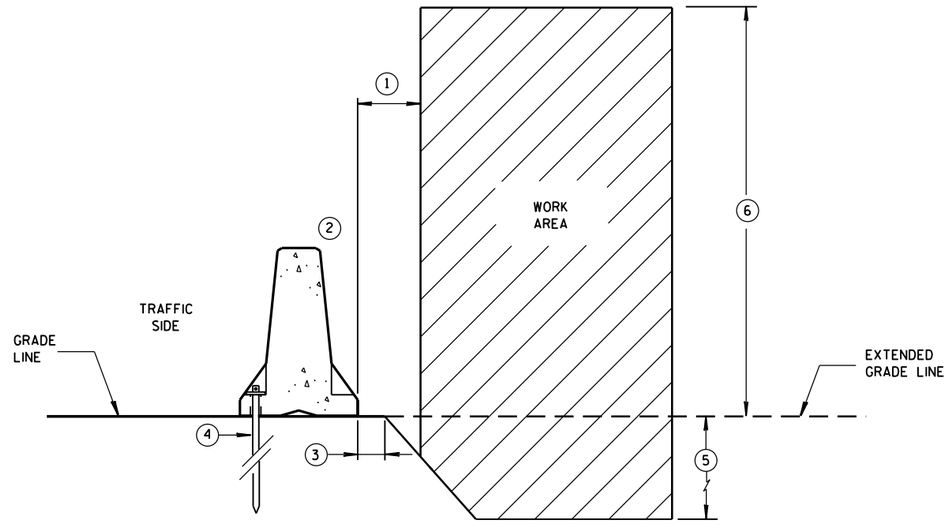
GENERAL NOTES

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

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



FREE STANDING BARRIER SPACE REQUIREMENTS



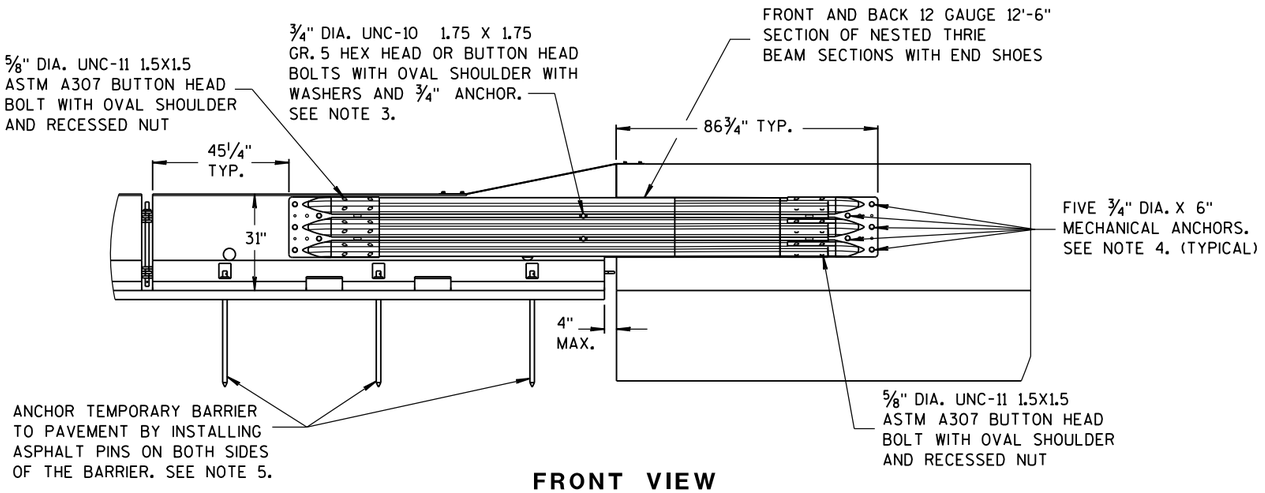
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

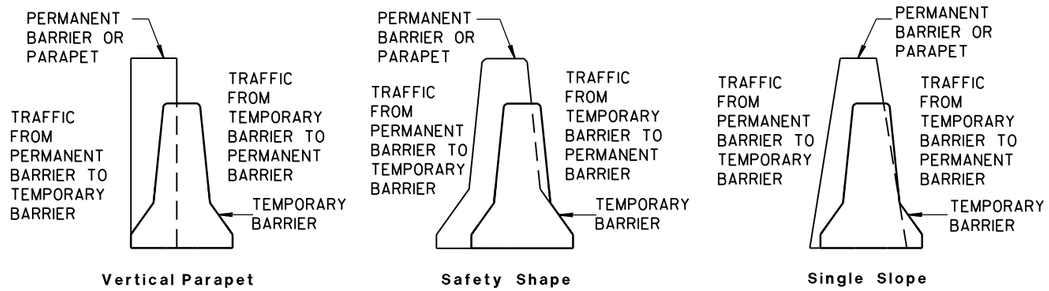
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-15e



FRONT VIEW



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

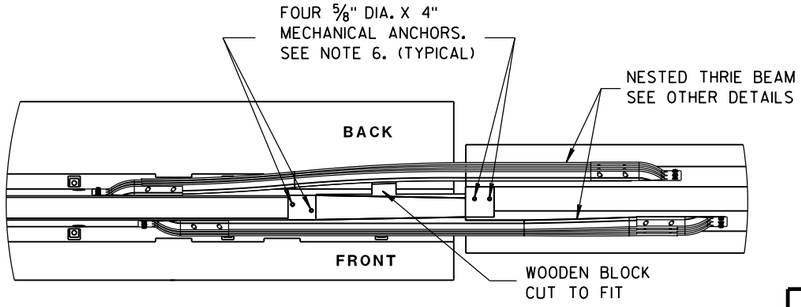
NOTES

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

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

BACK VIEW

FRONT VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

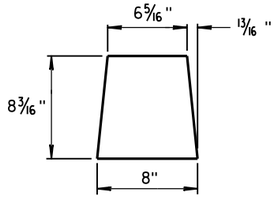
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO 68

6

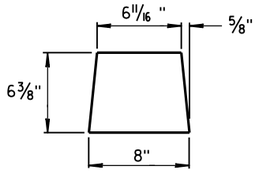
S.D.D. 14 B 7-15f

6

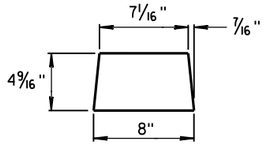
S.D.D. 14 B 7-15f



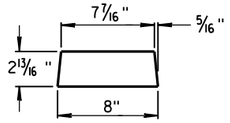
GUSSET 1



GUSSET 2

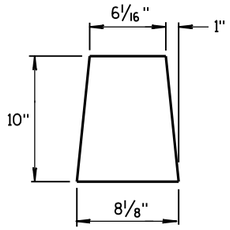


GUSSET 3

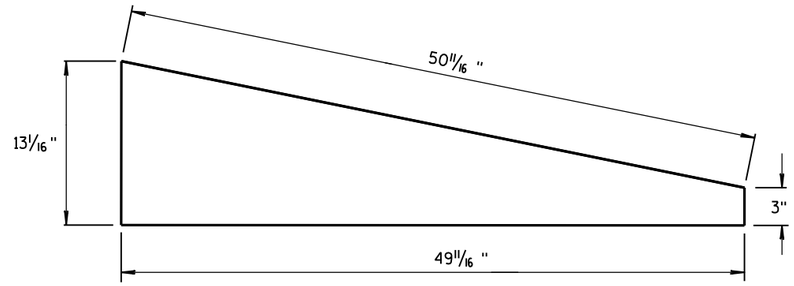


GUSSET 4

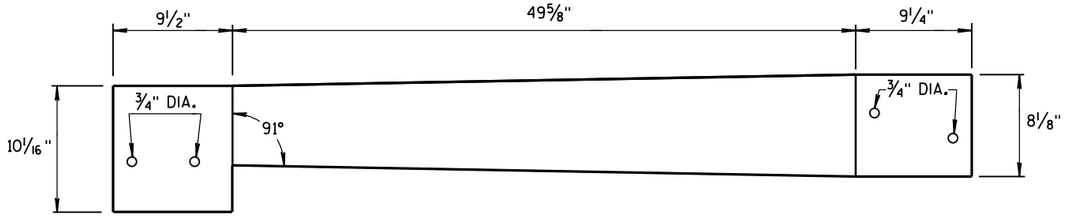
GUSSETS

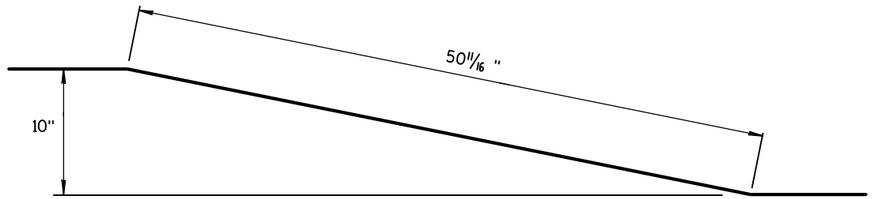


END PLATE



SIDE PLATE

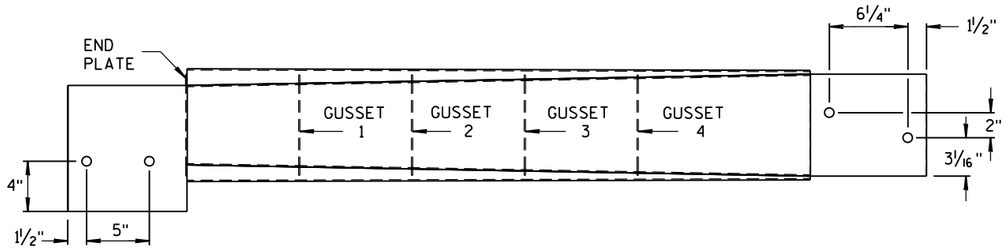


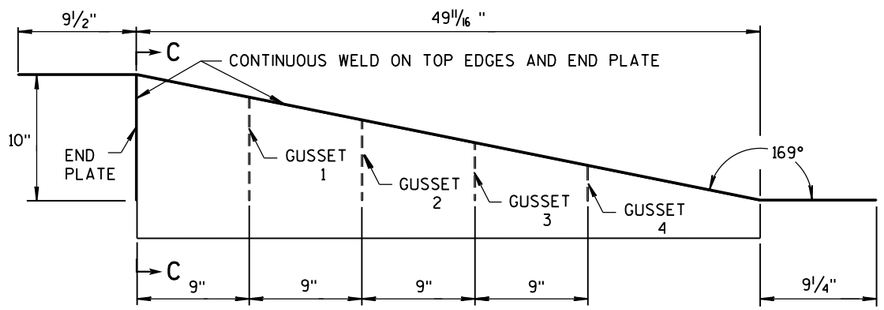


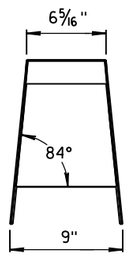
TOP PLATE

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

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







SECTION C-C

NOTES

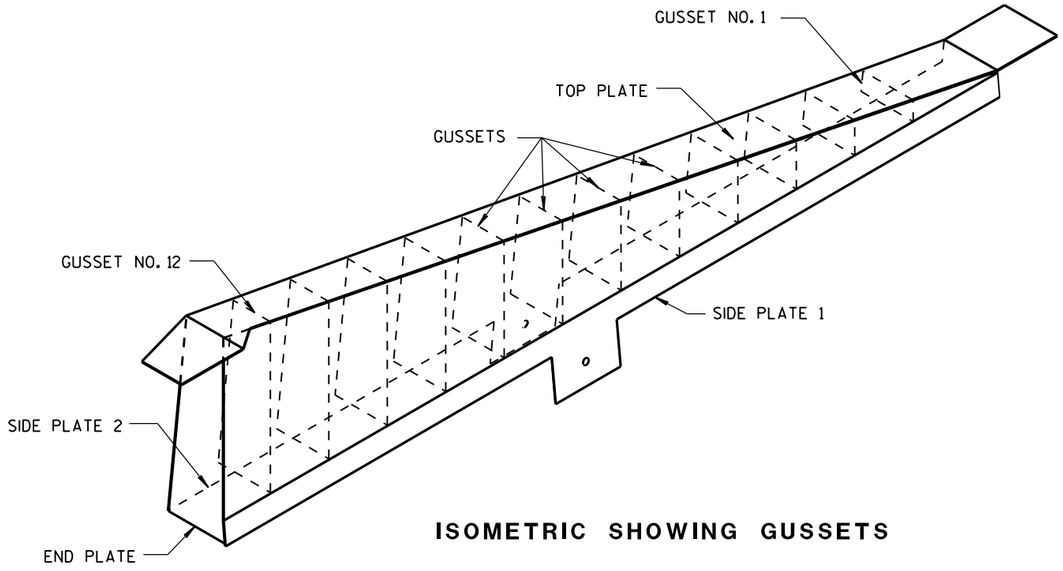
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

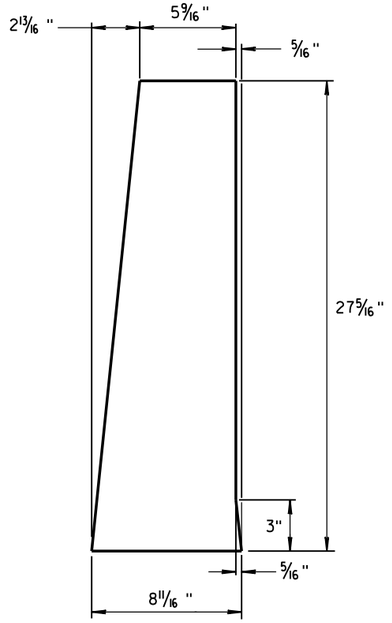
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 7-15g

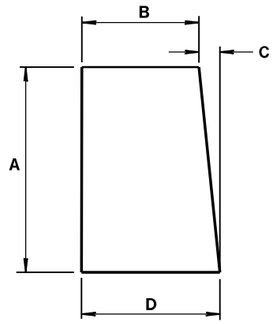


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



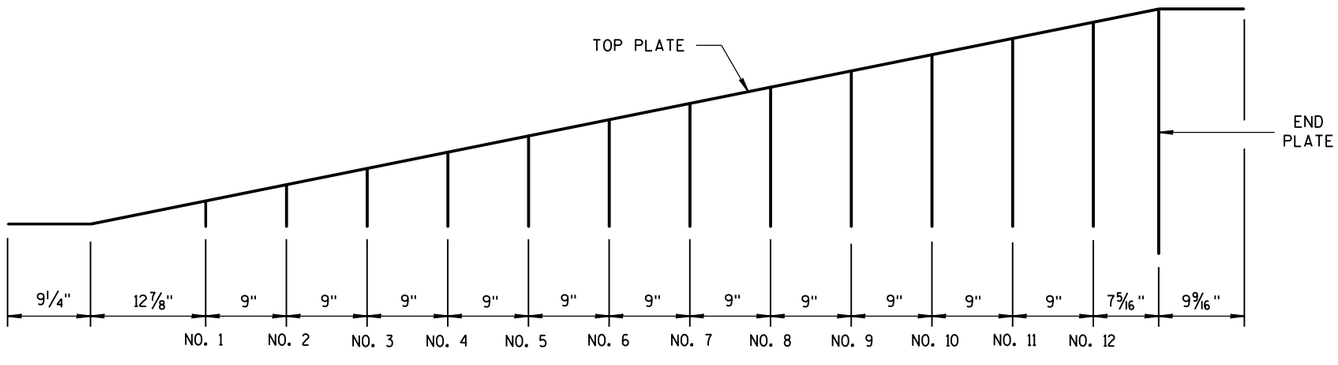
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

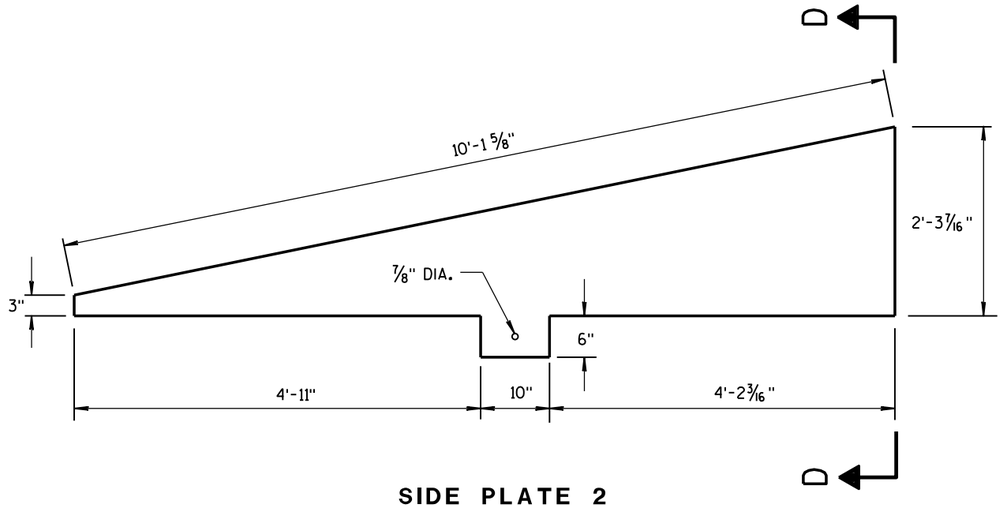
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

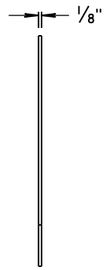
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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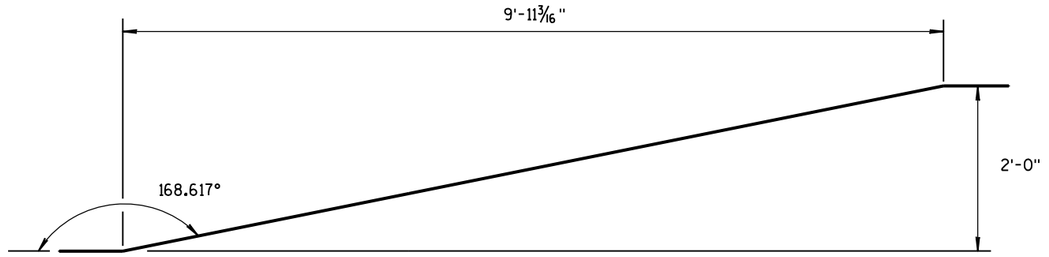
S.D.D. 14 B 7-15h



SIDE PLATE 2

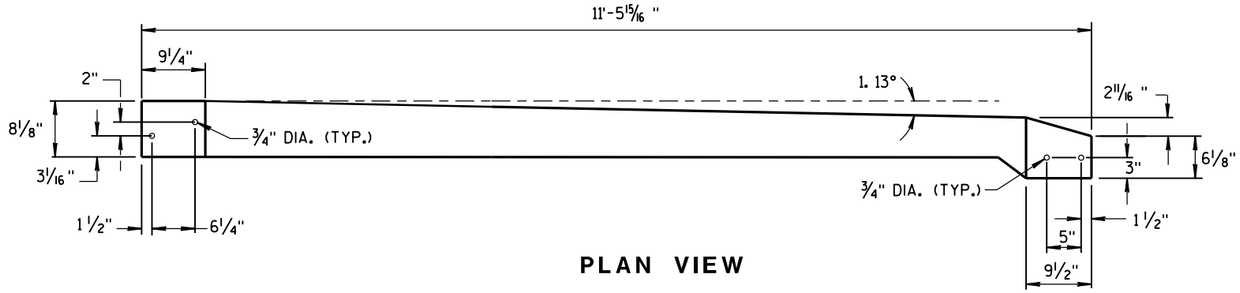


END VIEW



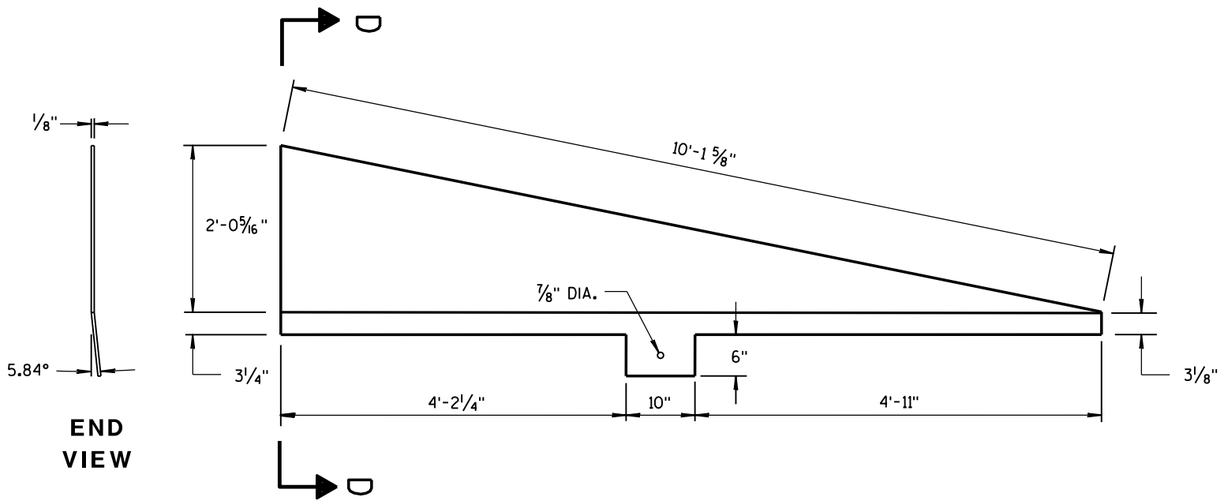
SIDE VIEW

TOP PLATE



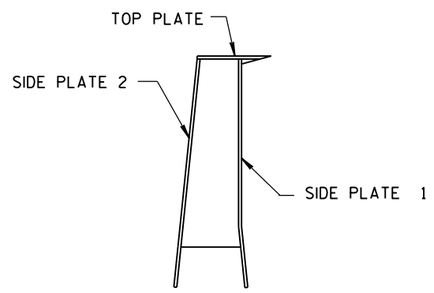
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 14 B 7-15i

6

S.D.D. 14 B 7-15i

GENERAL NOTES

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

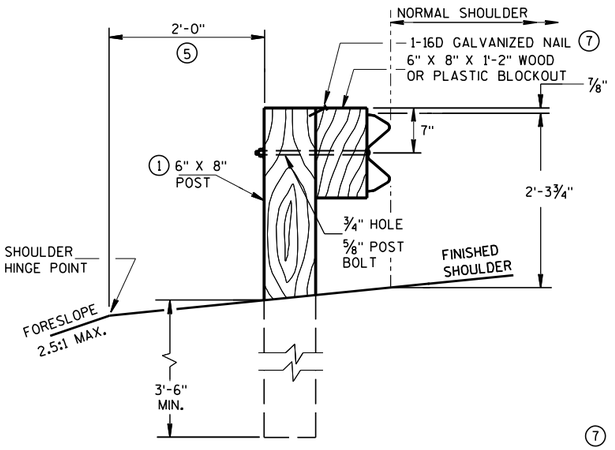
(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

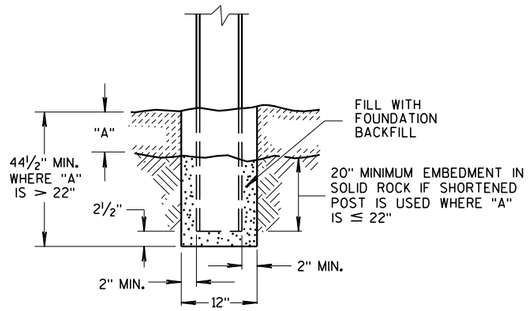
(7) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

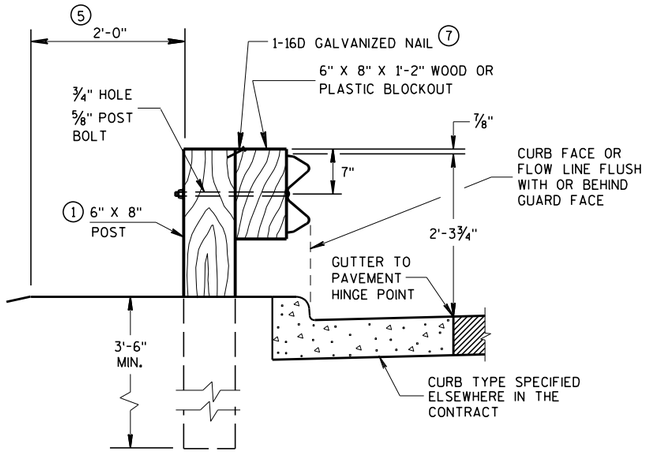
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



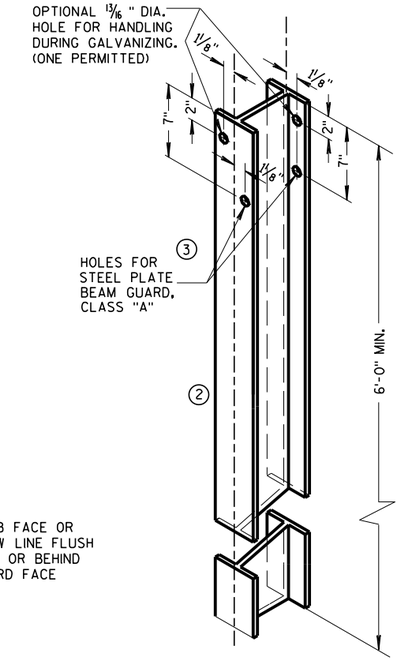
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)

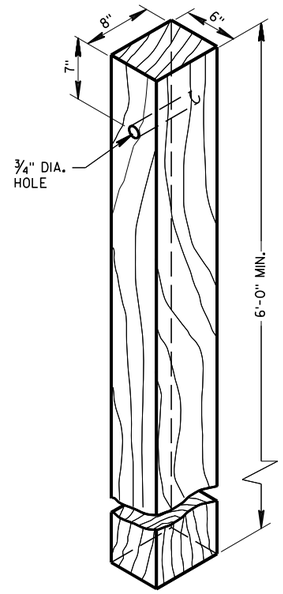


END VIEW
LOCATED ALONG A CURBED ROADWAY

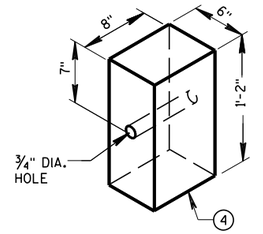


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

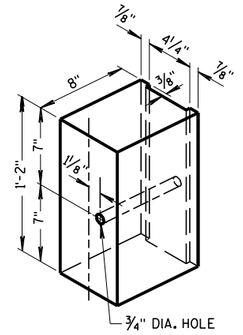
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



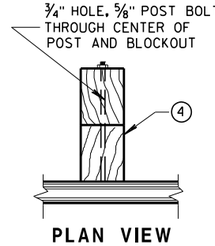
WOOD POST
(6"X8") NOMINAL



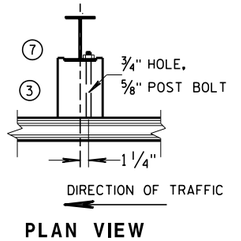
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



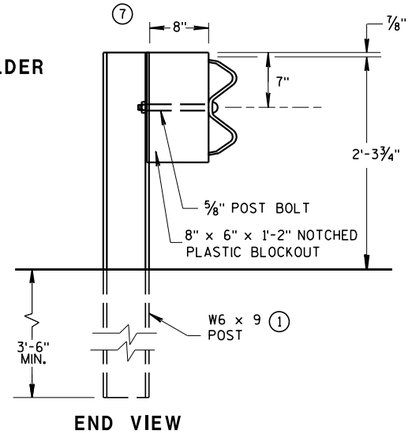
TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS (1)



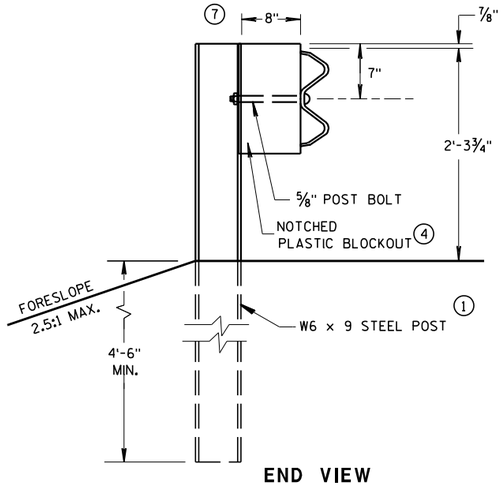
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



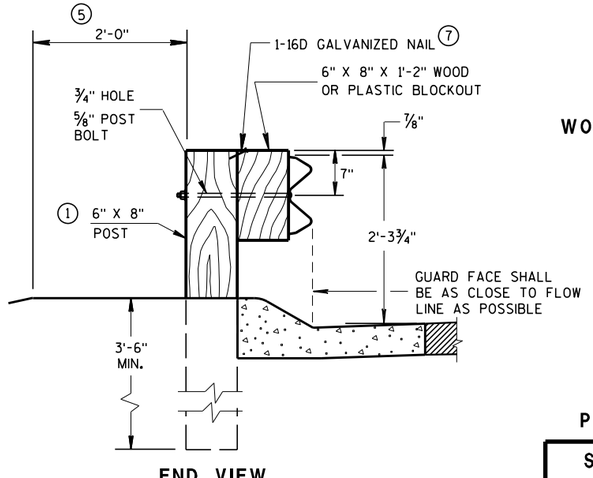
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

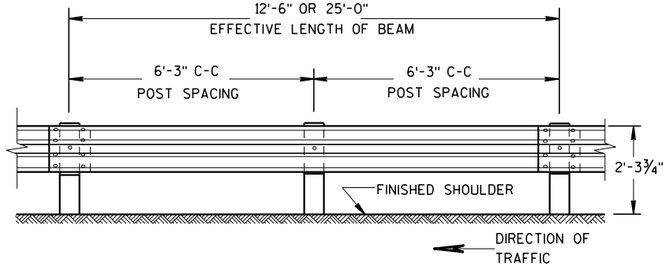


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

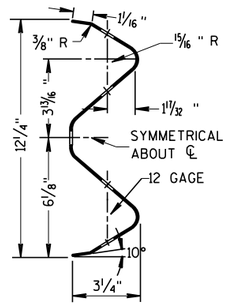
STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

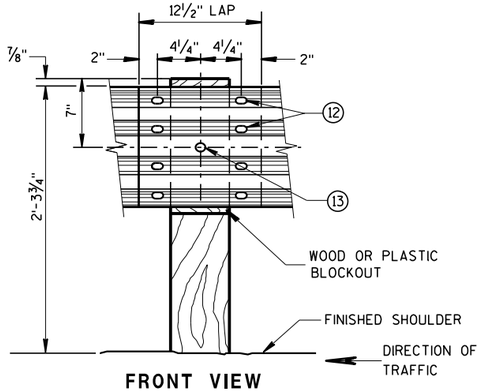


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

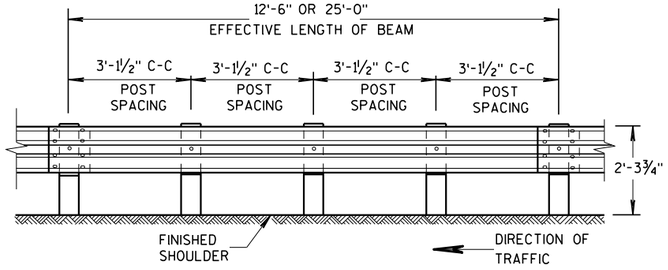
GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.

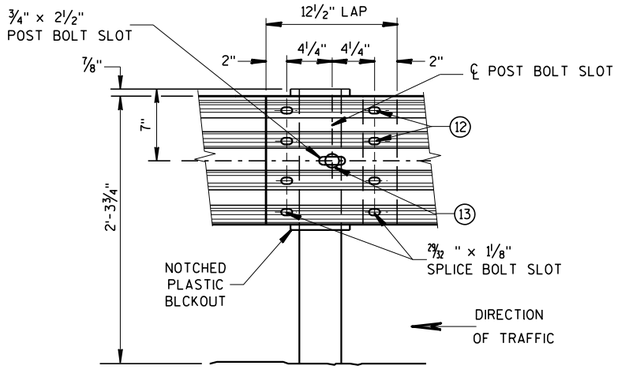
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



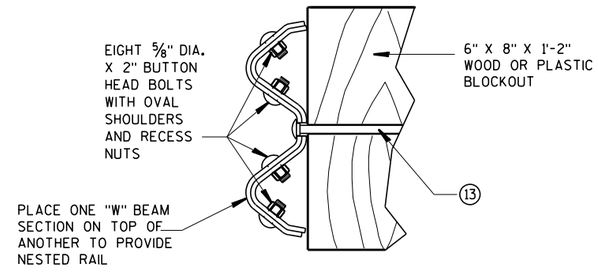
FRONT VIEW

POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

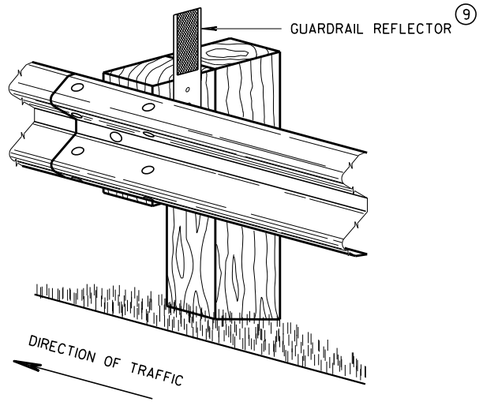


NESTED W BEAM (NW)

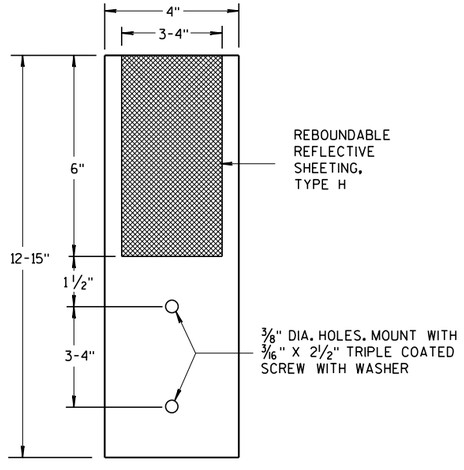
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

* USE DOUBLE SIDED WHITE GUADRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



4" X 12" GUARDRAIL REFLECTOR DETAIL AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

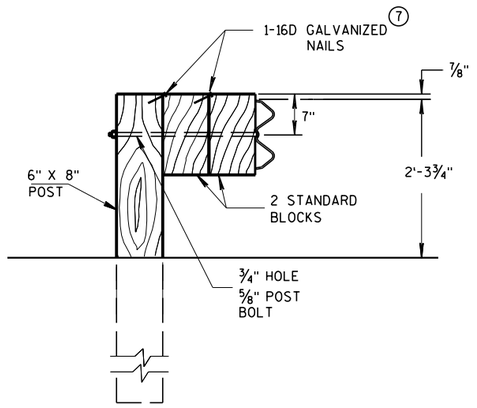
STATE OF WISCO 73
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 15-11b

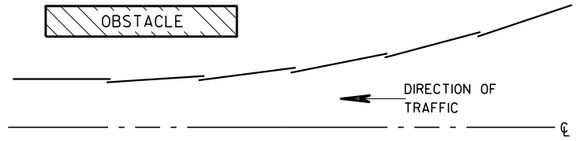
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S.D.D. 14 B 15-11b

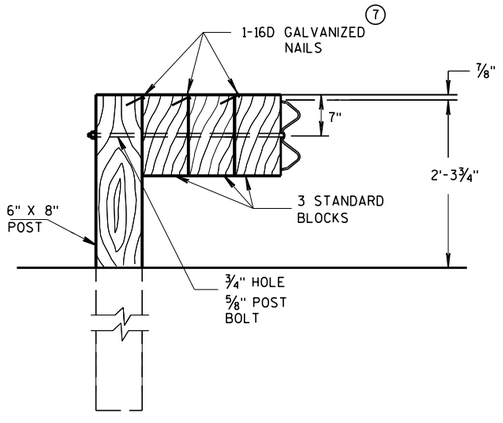


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

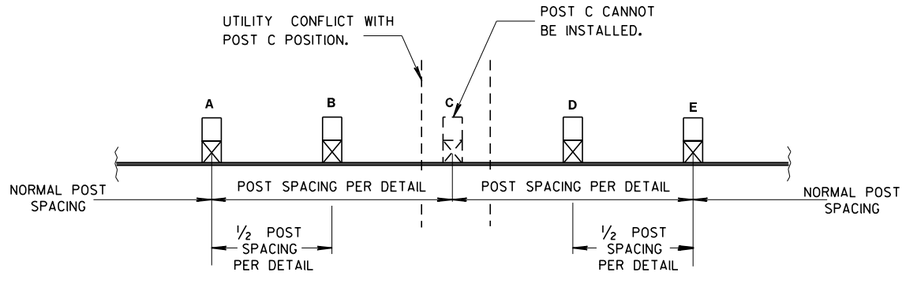


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

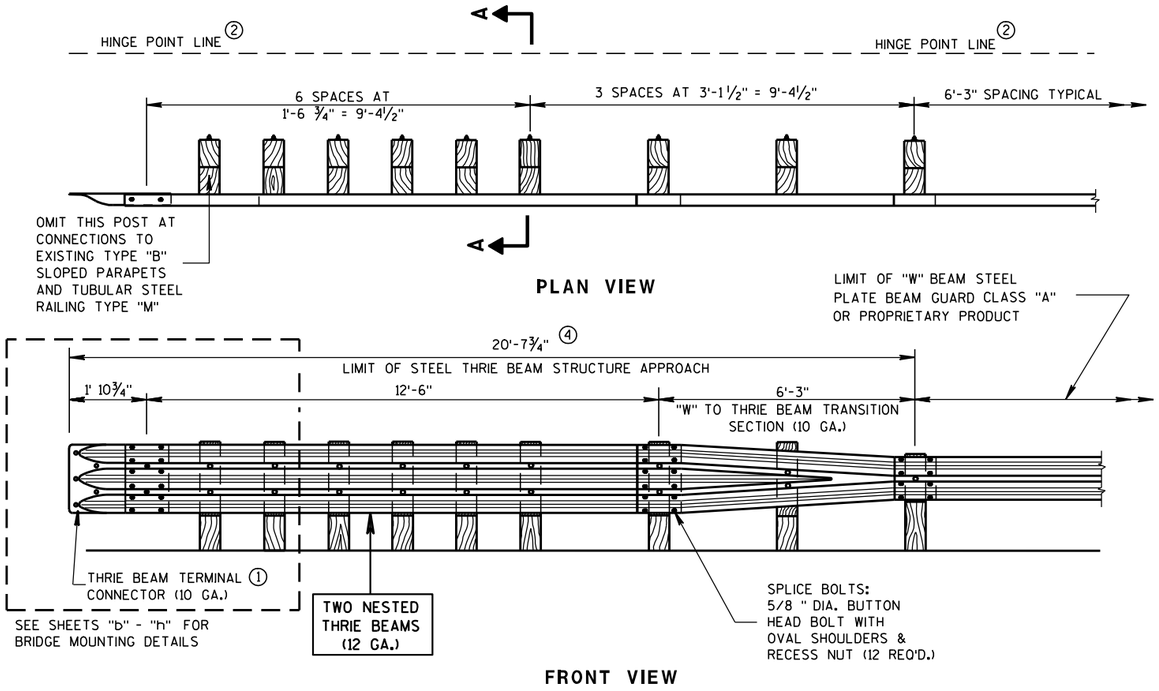
DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

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S.D.D. 14 B 15-11c



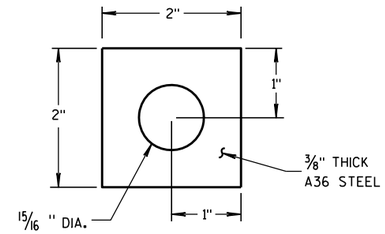


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

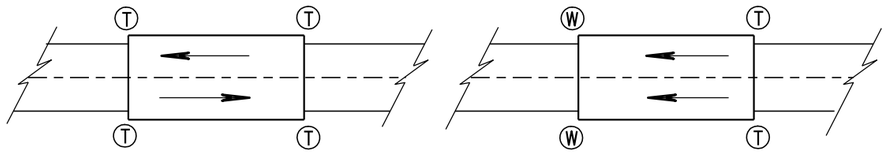
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



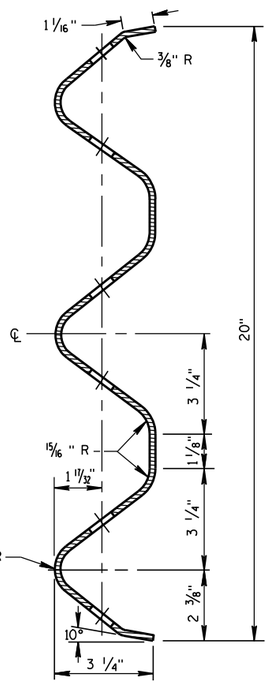
TWO WAY TRAFFIC

ONE WAY TRAFFIC

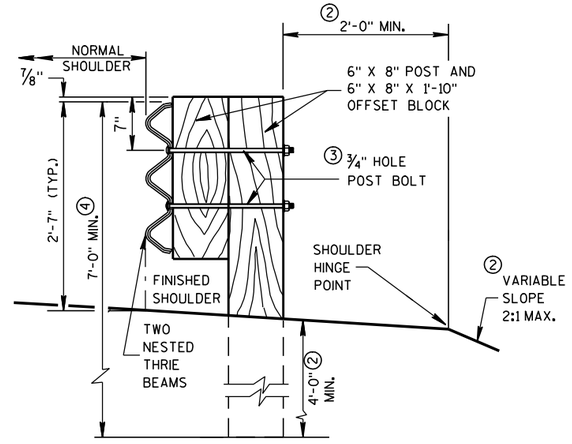
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

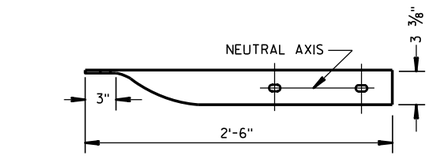
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

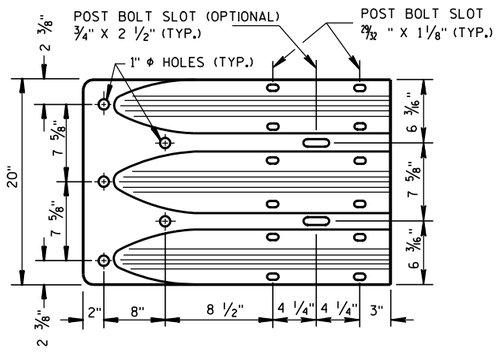


SECTION THRU THRIE BEAM RAIL ELEMENT

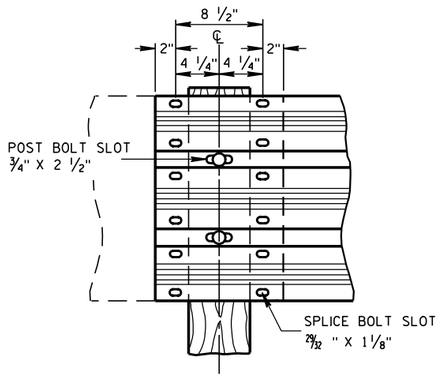


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS 175
ENGINEER

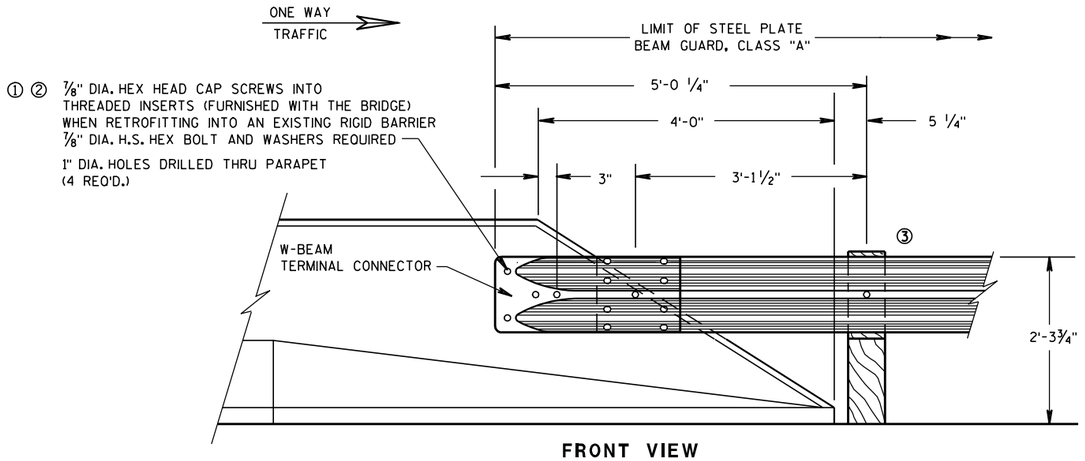
FHWA

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S.D.D. 14 B 20-11a



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

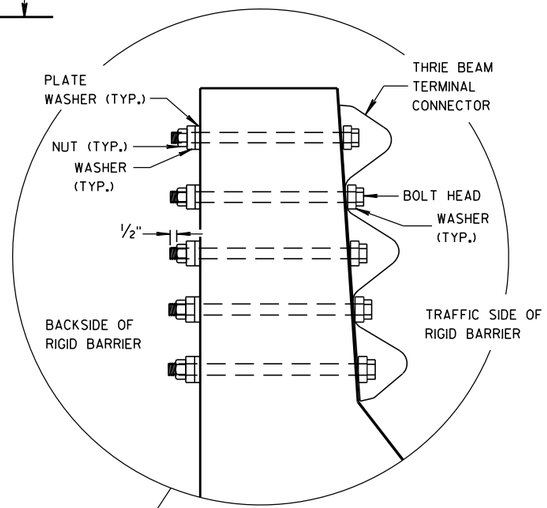
BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

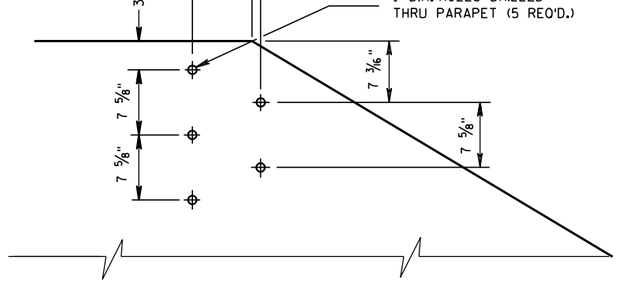
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

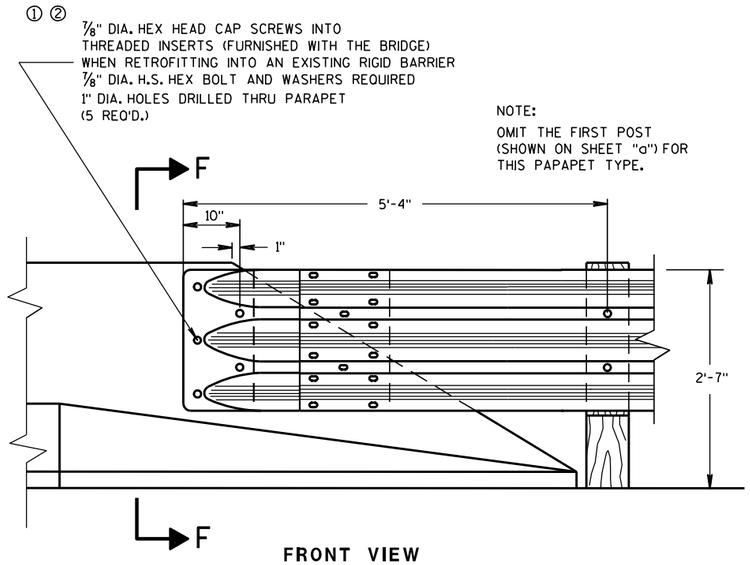
③ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

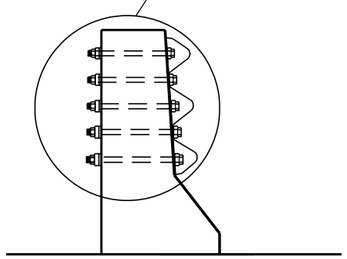




DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION F-F

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SLOPED END PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS [illegible] ENGINEER
FHWA

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

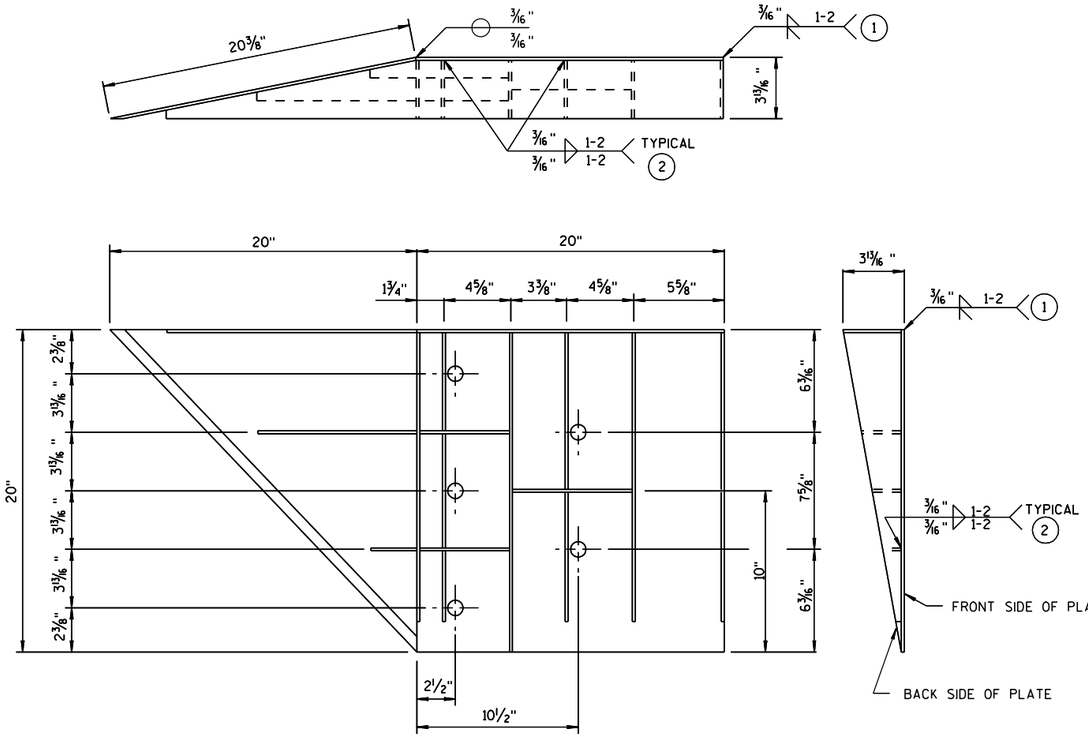
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

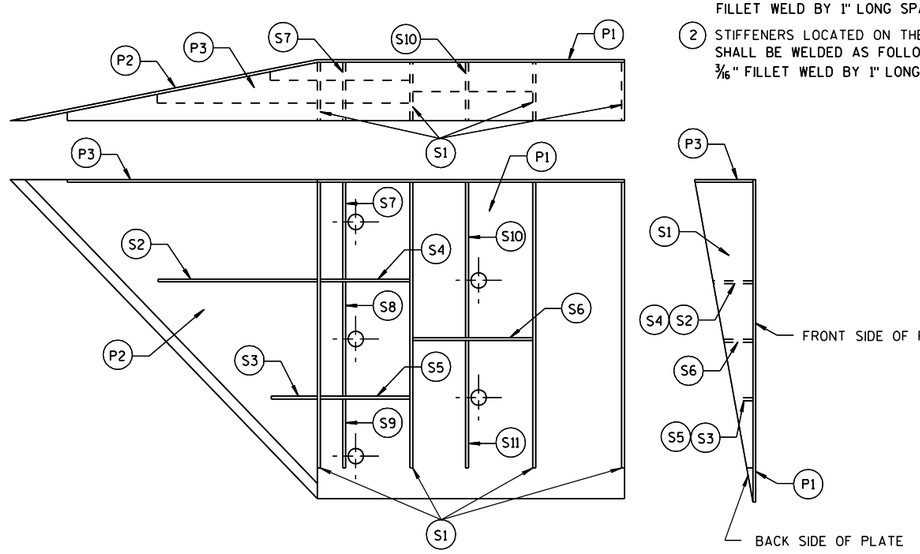


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
77
FHWA

6
S.D.D. 14 B 20-11g

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6½"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

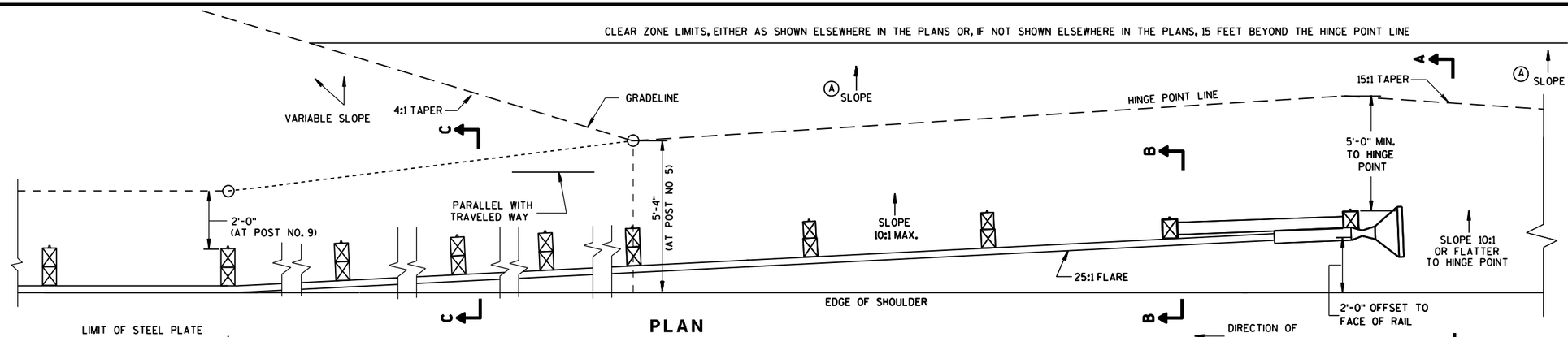
(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

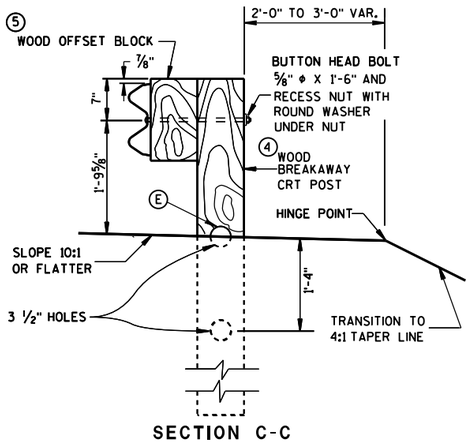
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

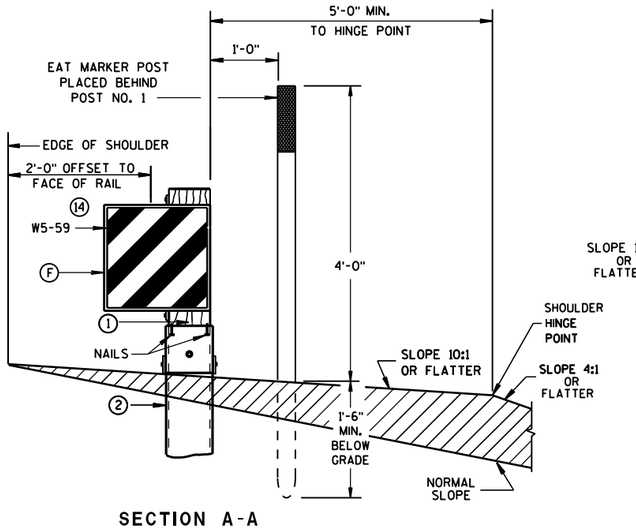
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

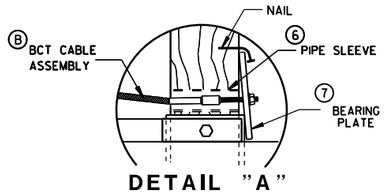
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

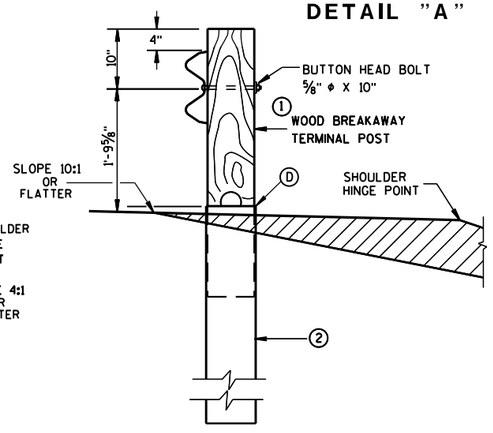
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

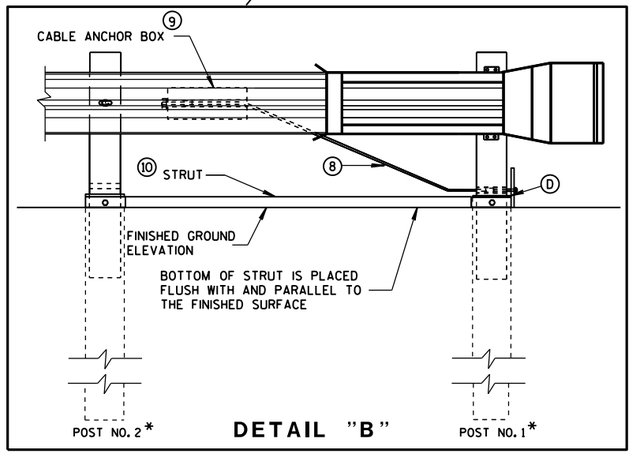










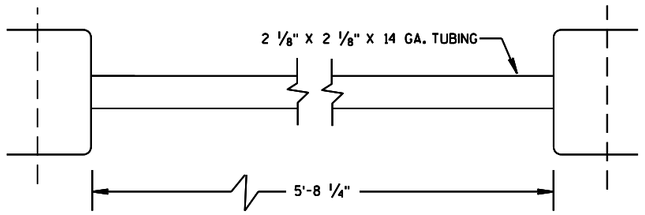


STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

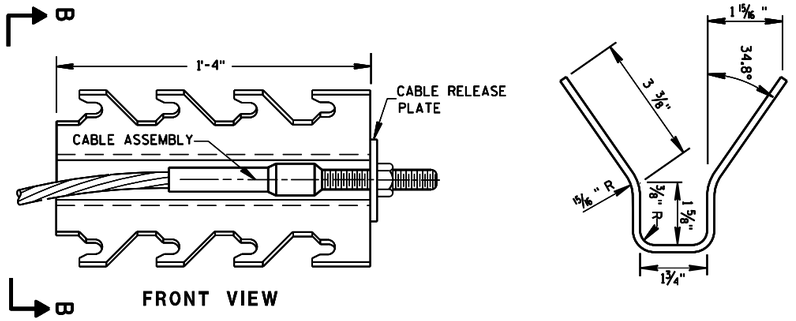
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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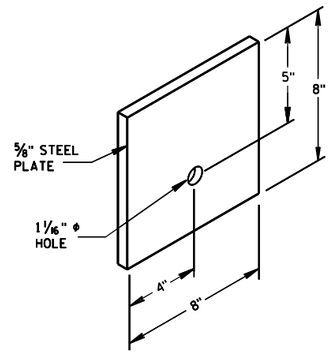
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL



⑨ CABLE ANCHOR BOX



⑦ STEEL BEARING PLATE

6

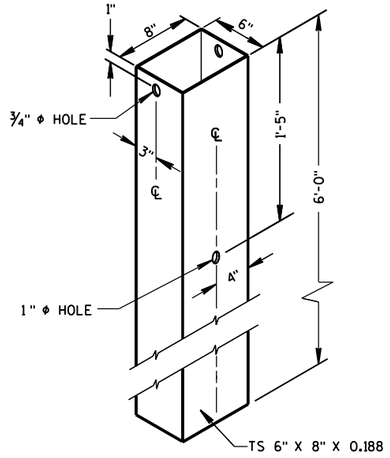
6

S.D.D. 14 B 24-9b

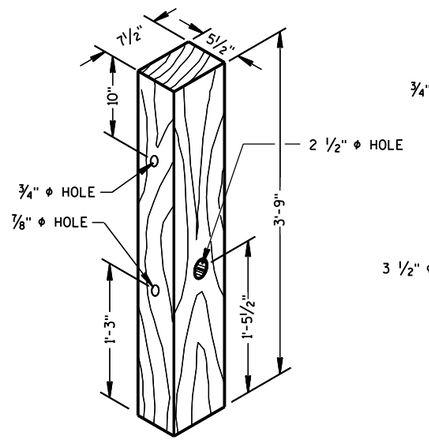
S.D.D. 14 B 24-9b

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

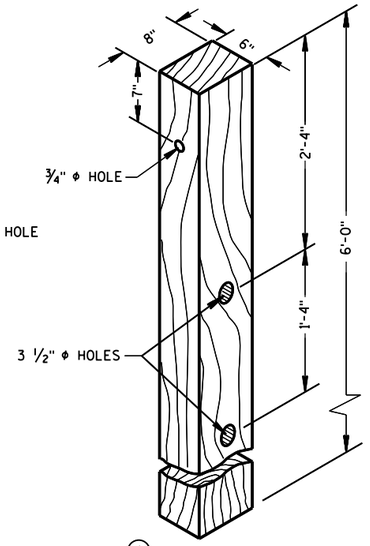
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



② 72" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST

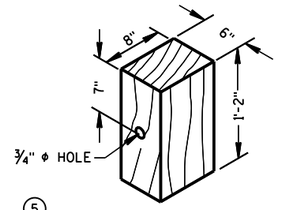


④ CRT POST
(POSTS NO'S 5-8)

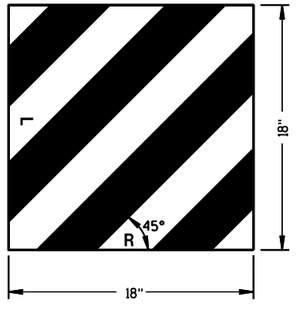
WOOD BREAKAWAY POSTS

GENERAL NOTES

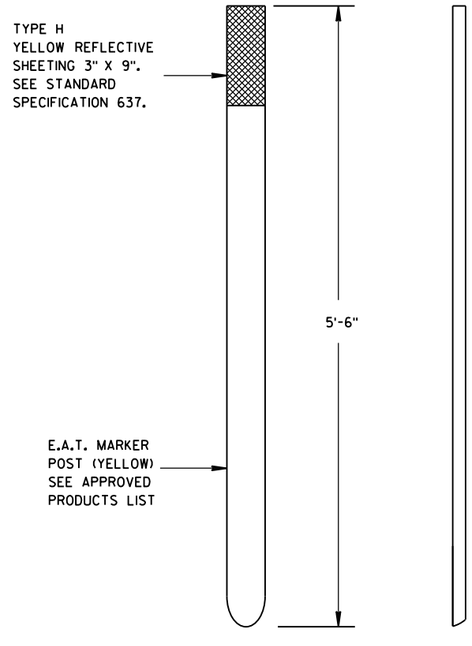
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ REFLECTIVE SHEETING DETAILS



E.A.T. MARKER POST

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

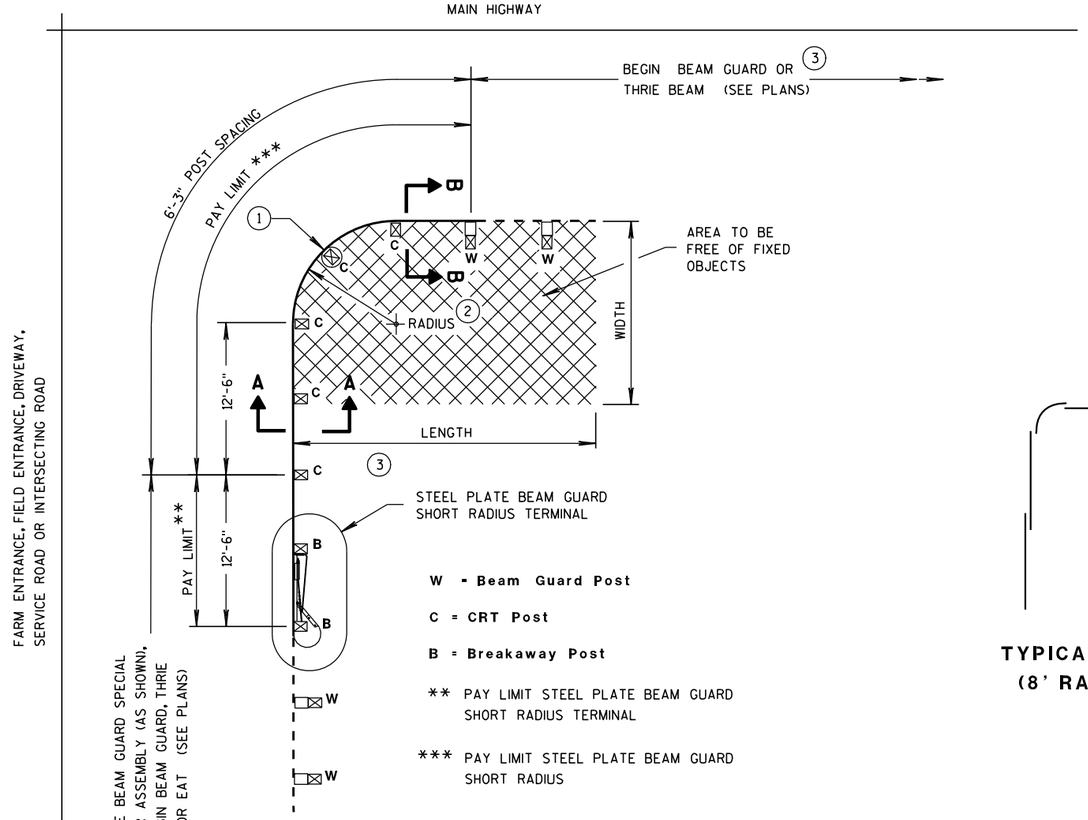
/S/ Rodney Taylor
ROADWAY STANDARDS 80 ENT
UNIT SUPERV...

6

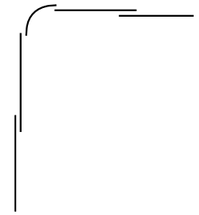
S.D.D. 14 B 24-9c

6

S.D.D. 14 B 24-9c



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

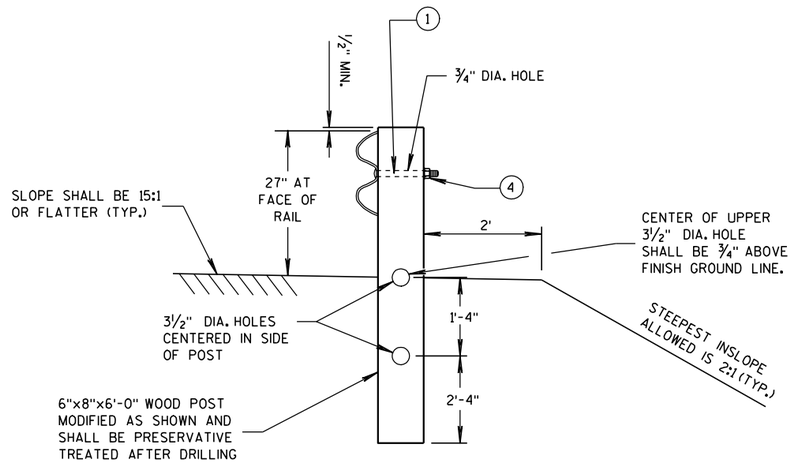
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

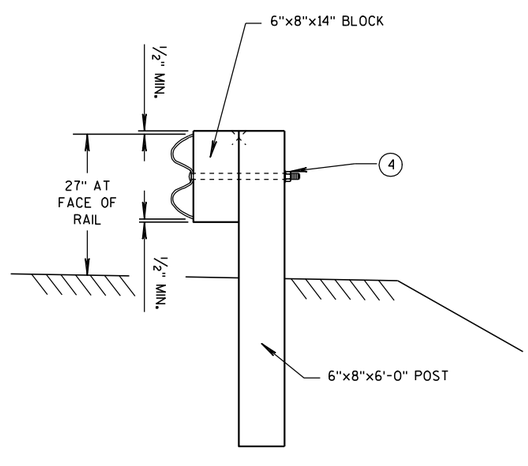
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

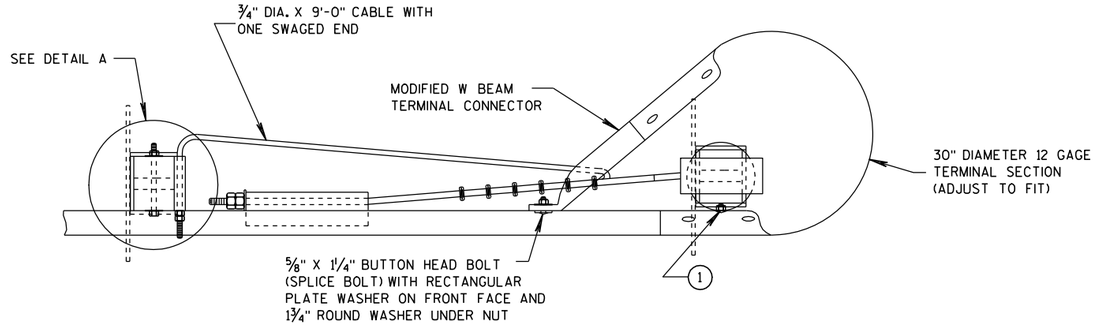
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

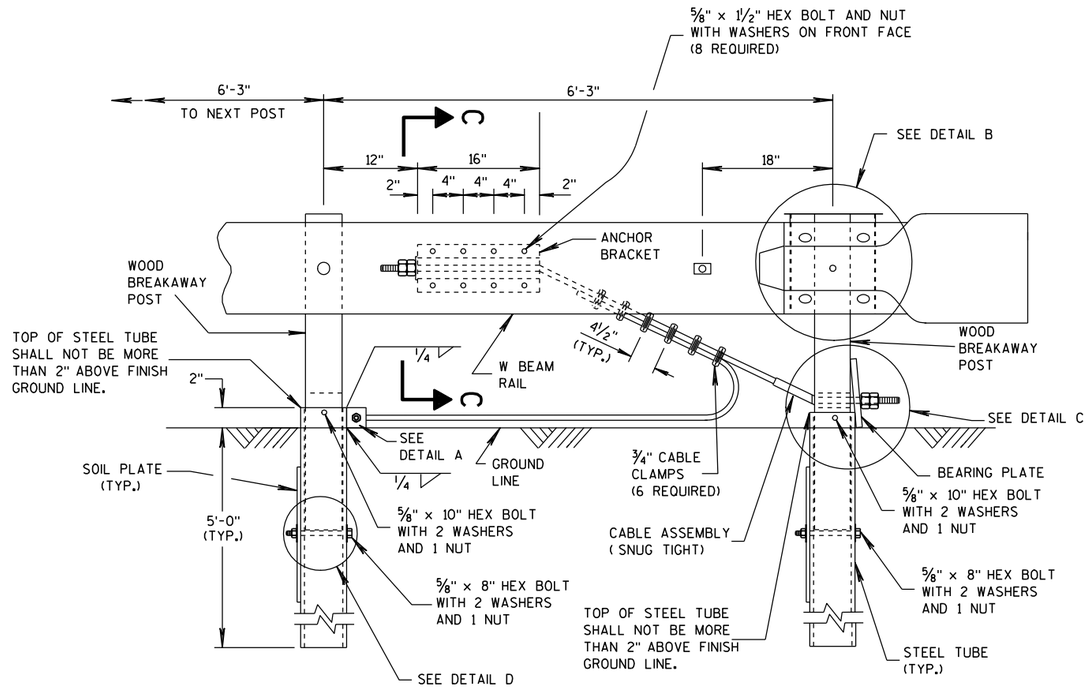
S.D.D. 14 B 27-1a

6

S.D.D. 14 B 27-1a



PLAN VIEW



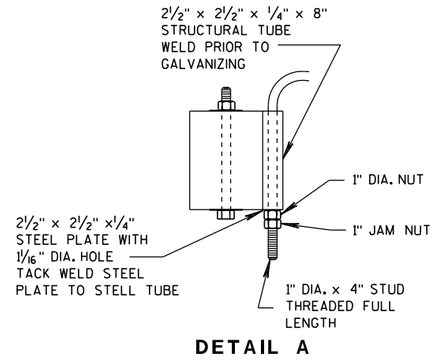
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

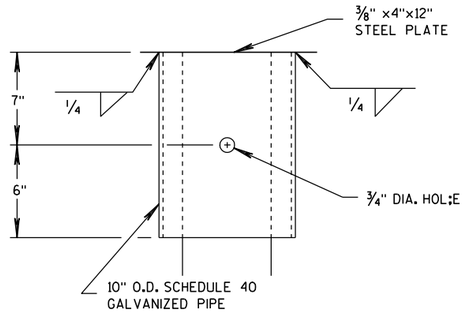
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

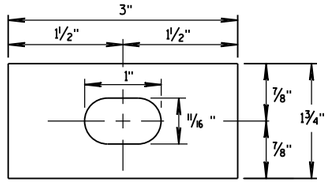
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

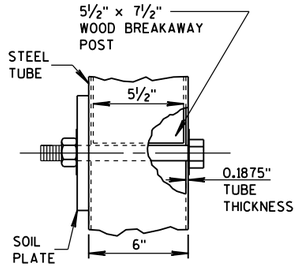
S.D.D. 14 B 27-1b

6

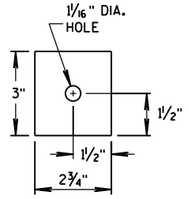
S.D.D. 14 B 27-1b



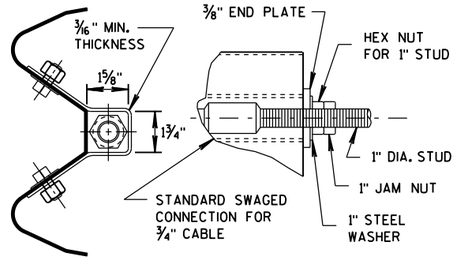
RECTANGULAR PLATE WASHER



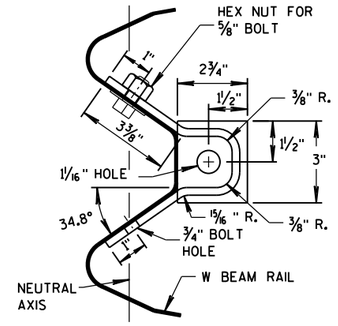
DETAIL D



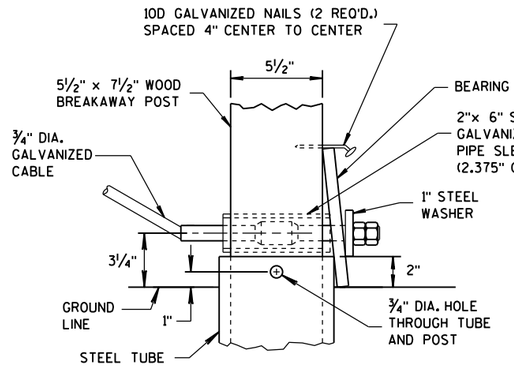
END PLATE



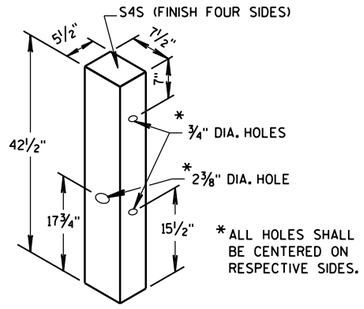
SECTION C-C
(END PLATE REMOVED)



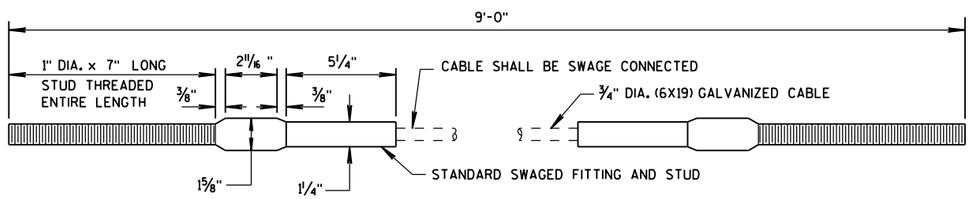
ANCHOR BRACKET



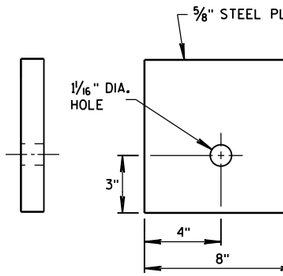
DETAIL C



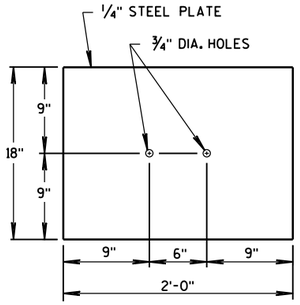
WOOD BREAKAWAY POST



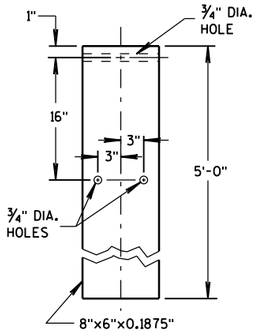
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 27-1c

6

S.D.D. 14 B 27-1c

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

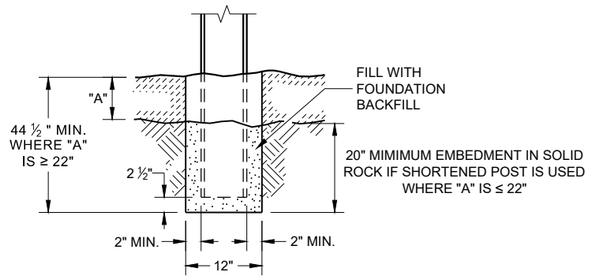
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

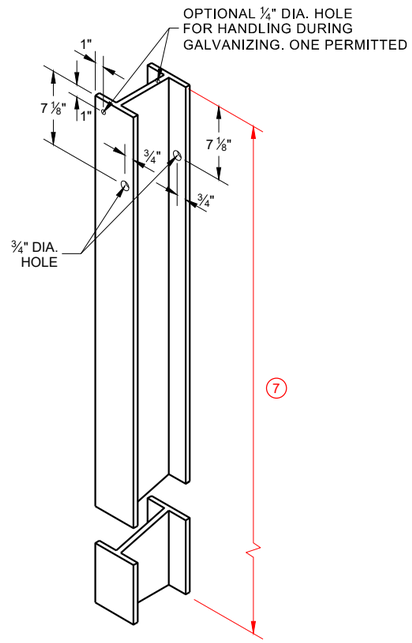
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

(6) WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

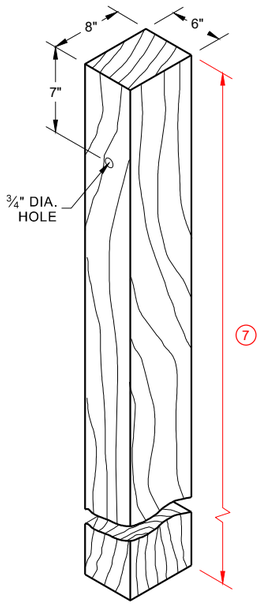
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



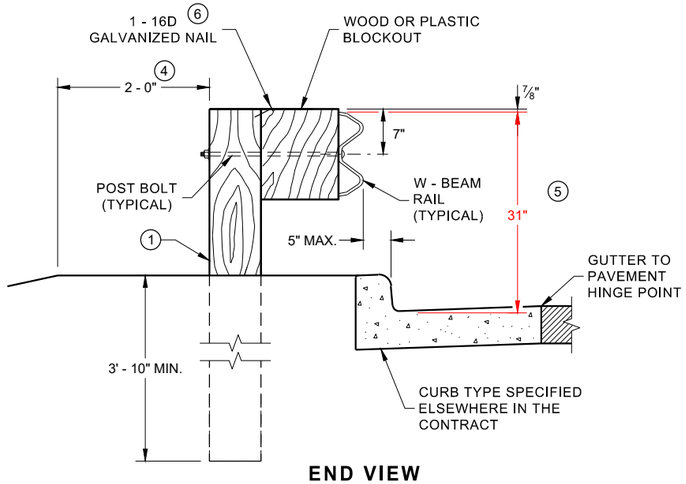
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



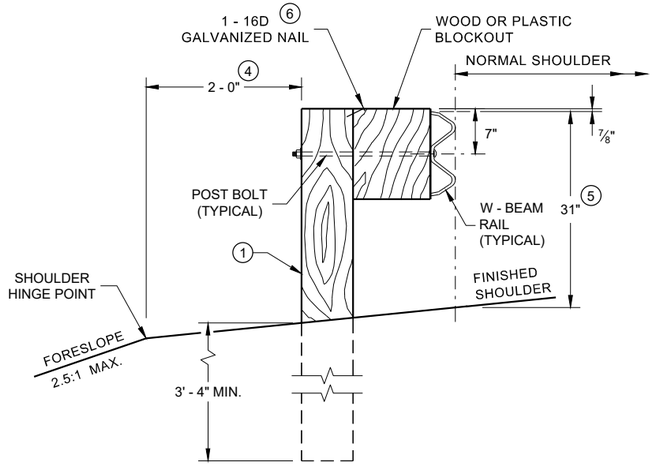
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



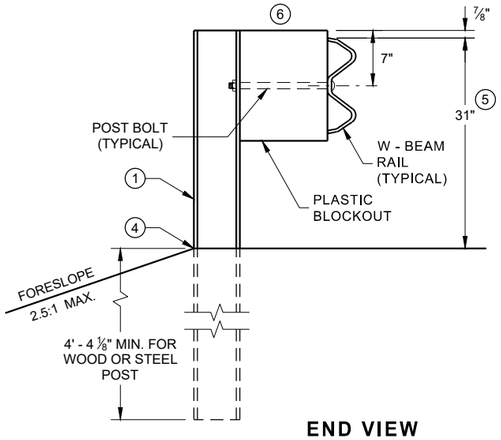
WOOD POST (6" X 8") NOMINAL (1)



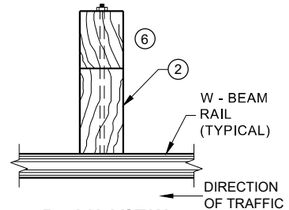
END VIEW
LOCATED ALONG A CURBED ROADWAY



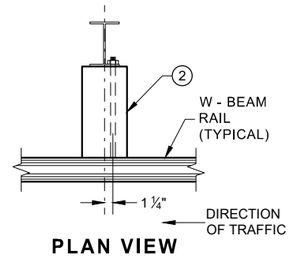
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



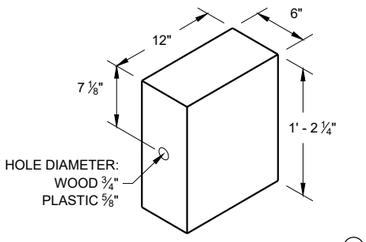
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM



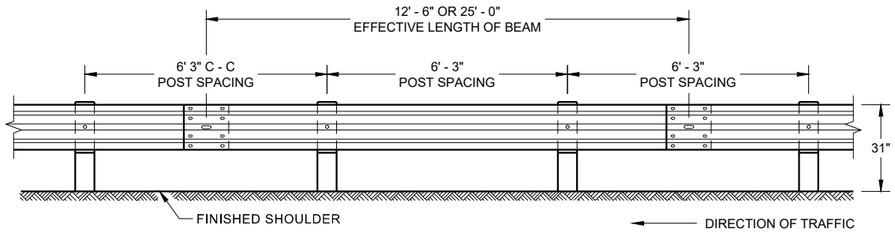
WOOD OR PLASTIC BLOCKOUT (2)

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

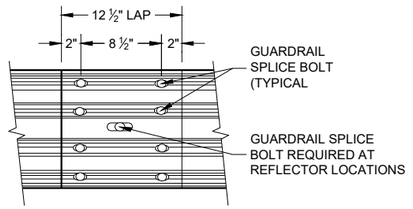
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD14B4□ - 0□□

SDD14B4□ - 0□□



FRONT VIEW
POST SPACING STANDARD INSTALLATION



FRONT VIEW
MID-SPAN BEAM SPLICE

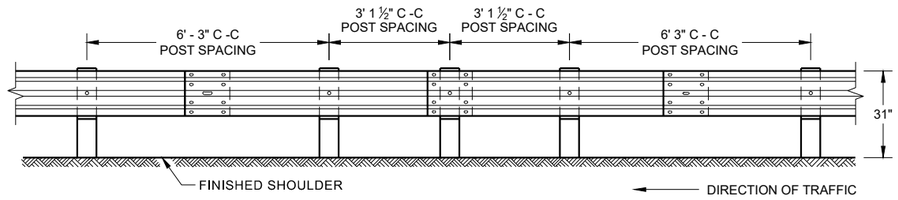
GENERAL NOTES

(8) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

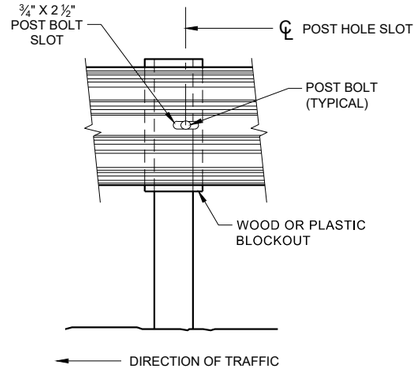
(9) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

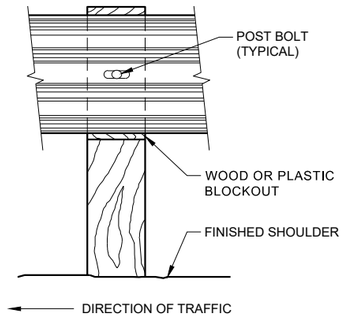
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



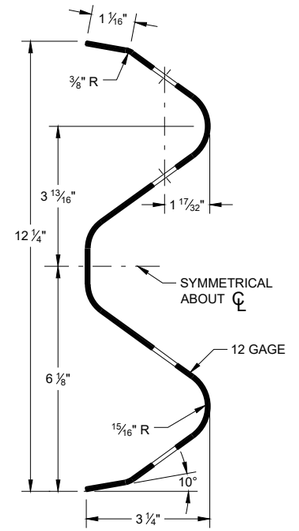
FRONT VIEW
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



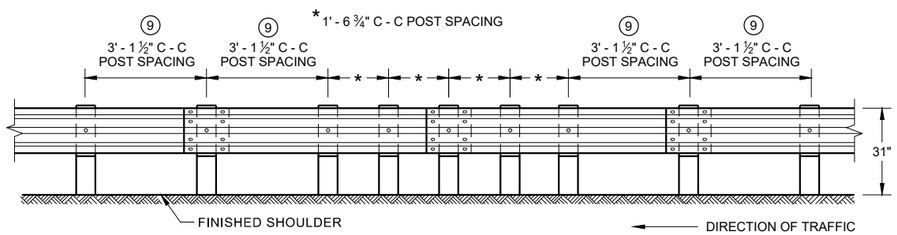
FRONT VIEW AT STEEL POST



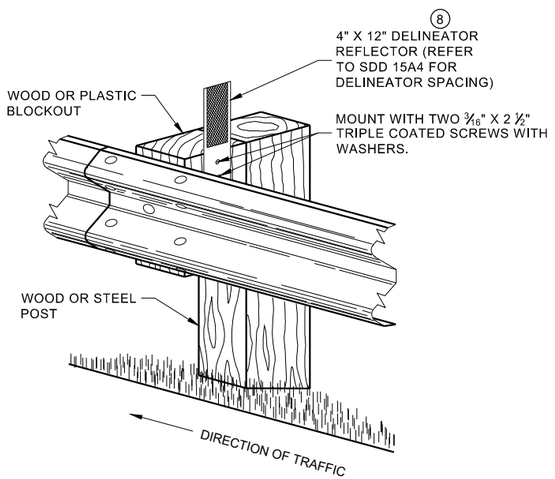
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



FRONT VIEW
QUARTER POST SPACING (QS)



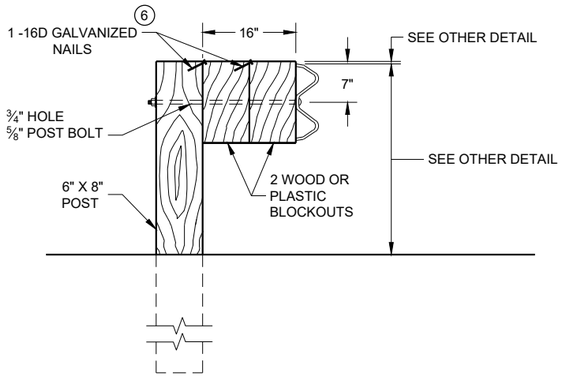
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B4□ - 0□□

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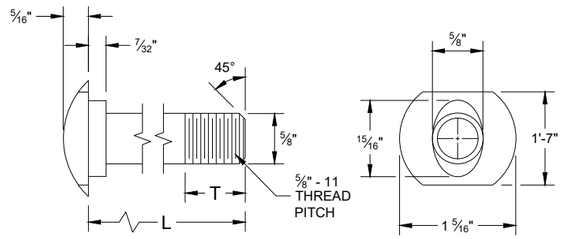


DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

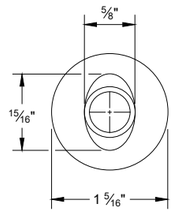
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

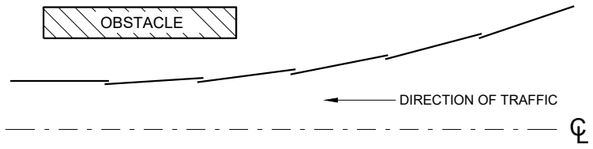


POST BOLT TABLE

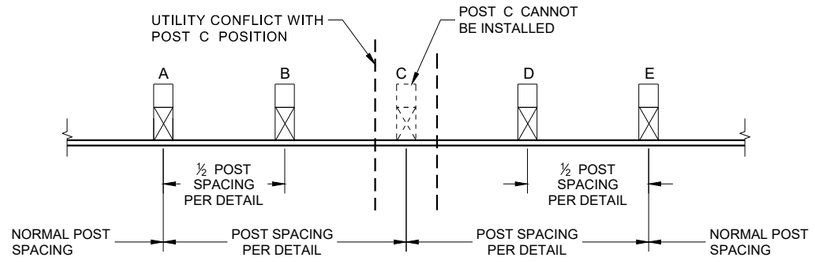
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



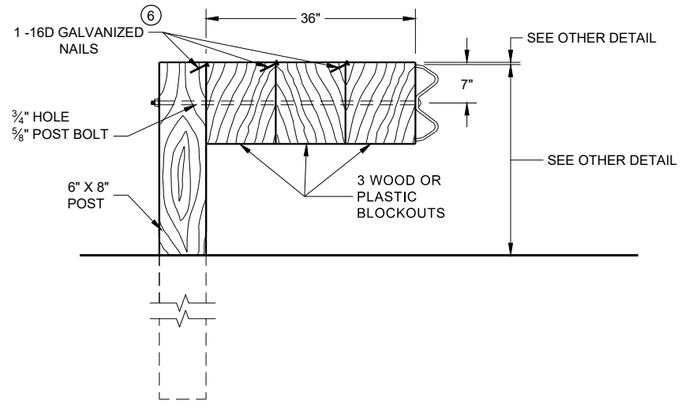
ALTERNATE BOLT HEAD



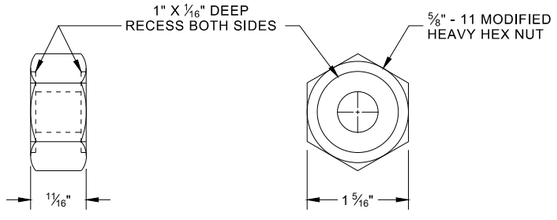
PLAN VIEW
BEAM LAPPING DETAIL



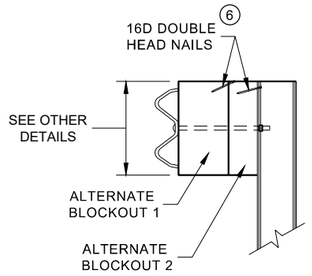
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



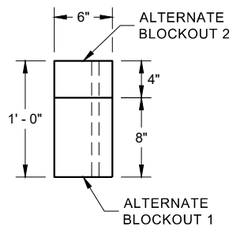
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

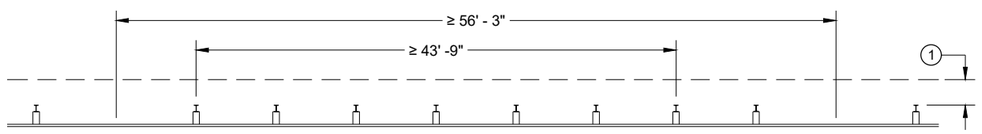
(6) WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

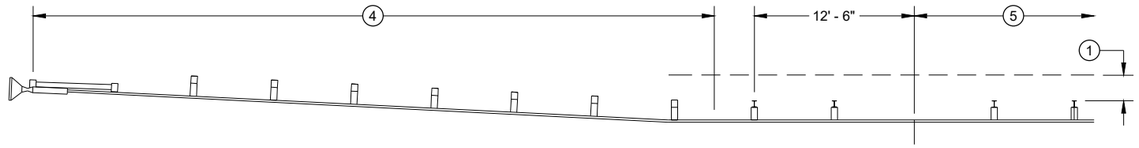
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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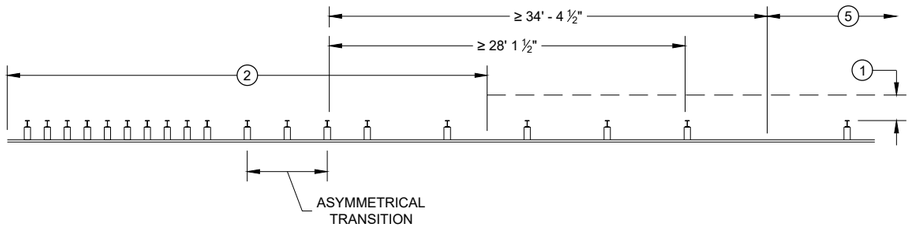
SDD14B4□ - 0□c



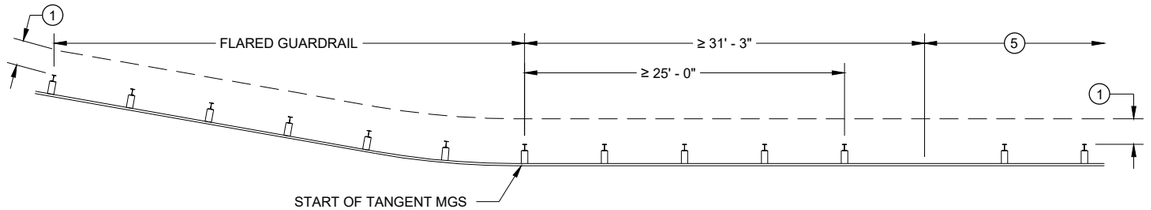
MISSING POST IN NORMAL BEAM GUARD RUN



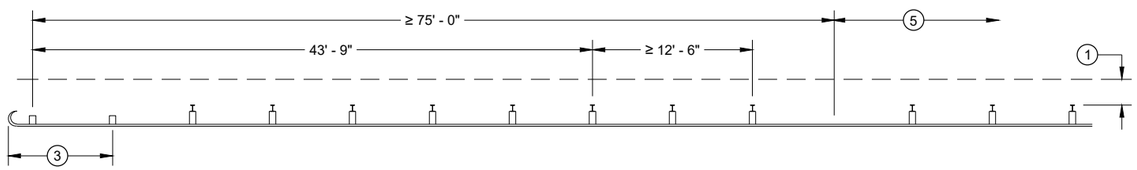
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



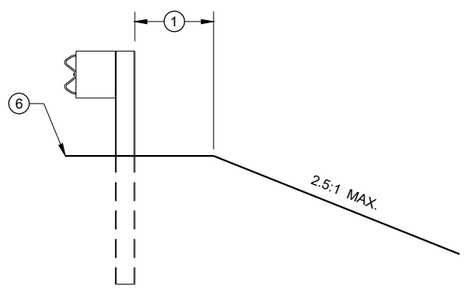
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

1. MINIMUM OF 2 FEET OF GRADING BEHIND POST.
2. SEE SDD 14B45 FOR MORE DETAILS.
3. SEE SDD 14B47 FOR MORE DETAILS.
4. SEE SDD 14B44 FOR MORE DETAILS.
5. SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
6. SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

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SDD 14B4□ - 0□d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

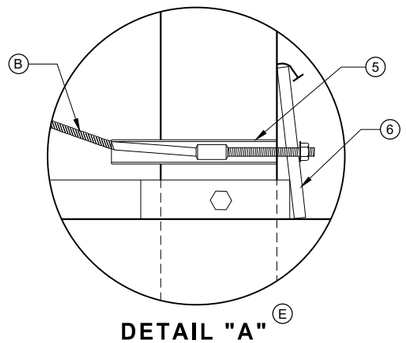
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

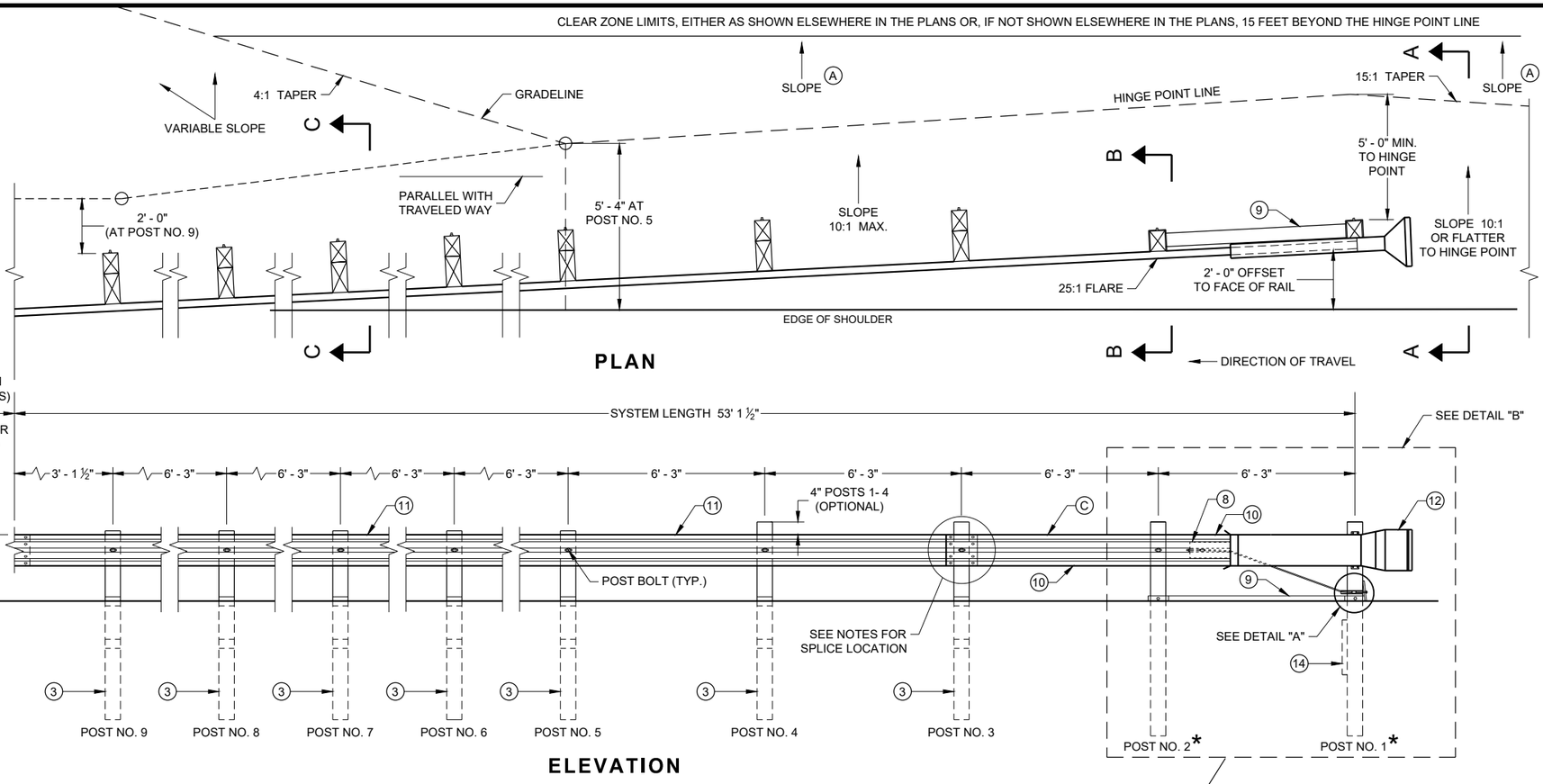
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

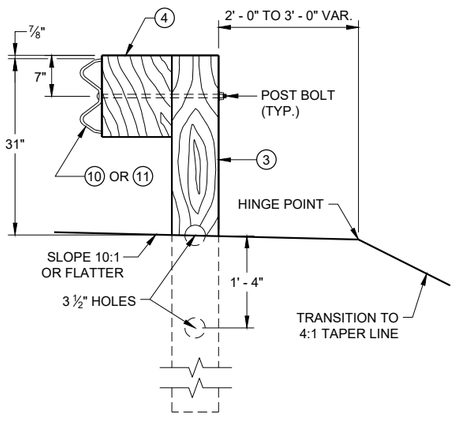
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

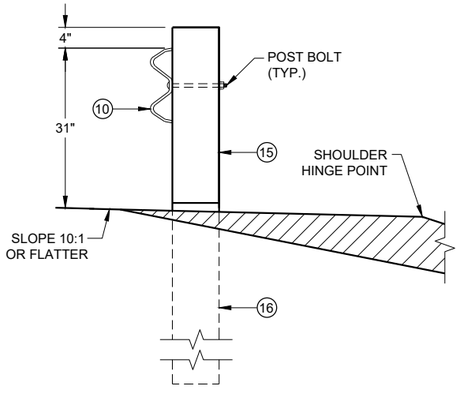


DETAIL "A" (E)

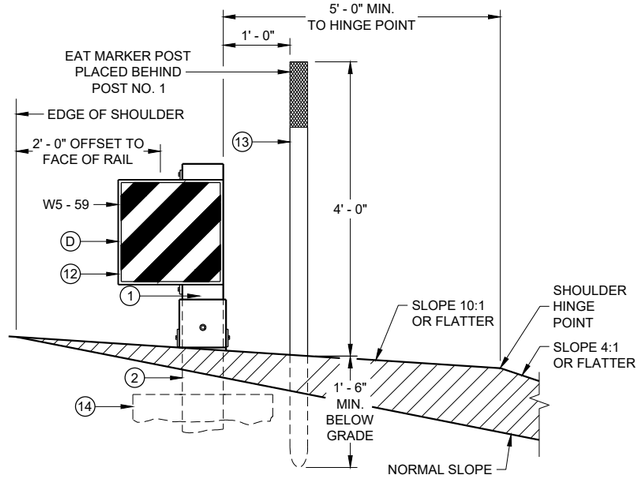




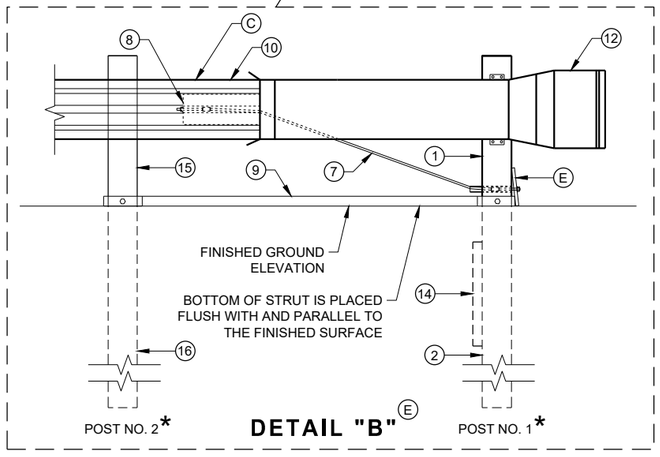
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



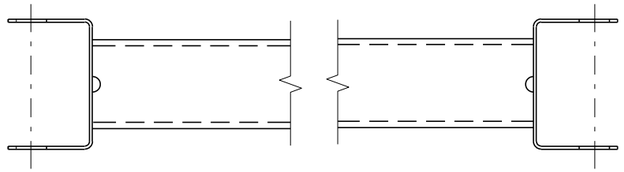
SECTION A - A
TYPICAL AT POST NO. 1*



MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

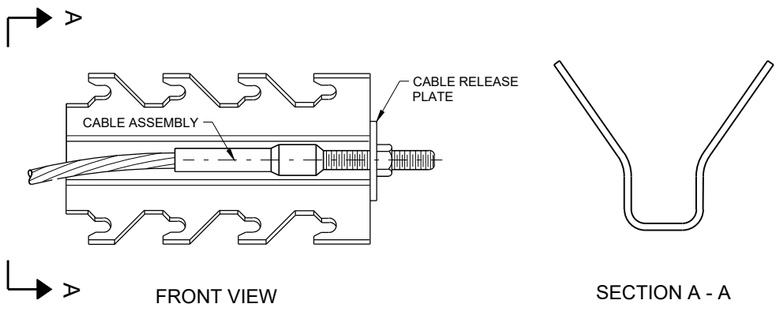
SDD 14B44 - 04



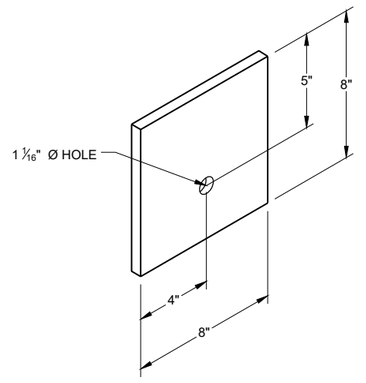
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUGACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

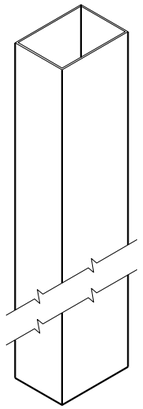
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SDD 14B4□ - 04□

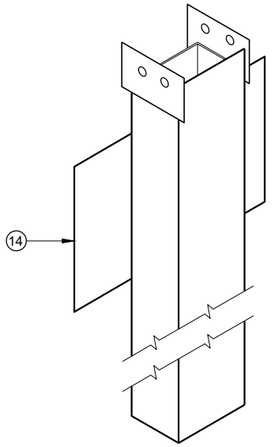
SDD 14B4□ - 04□

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

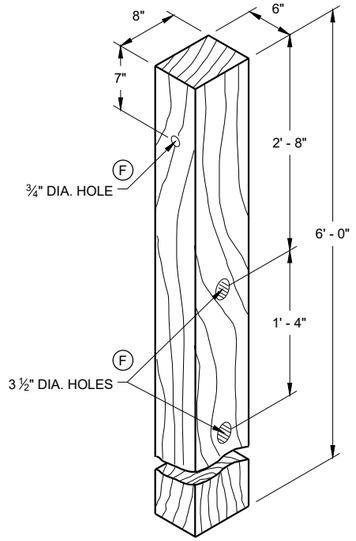
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



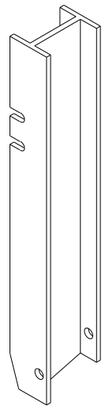
UPPER POST NO. 1 (1) (E)



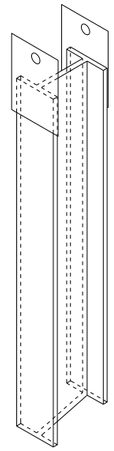
LOWER POST NO. 1 (2) (E)



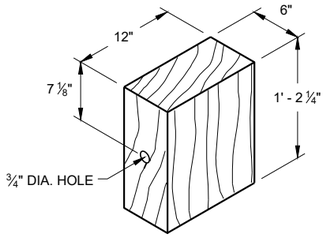
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



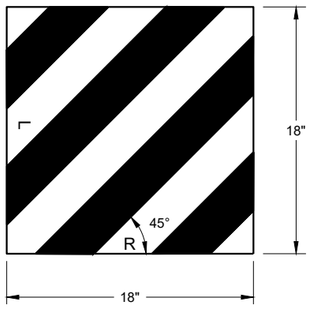
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

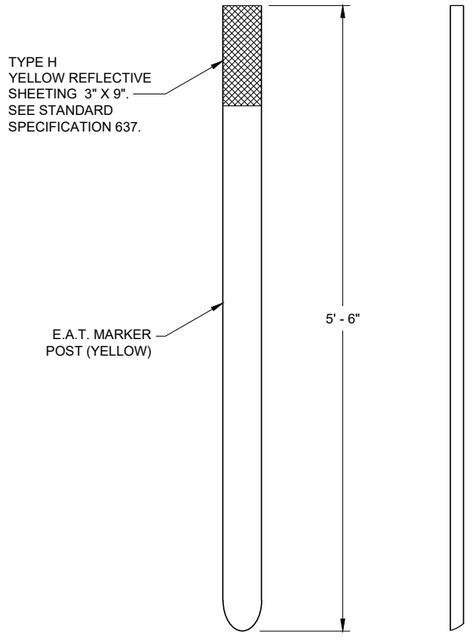


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



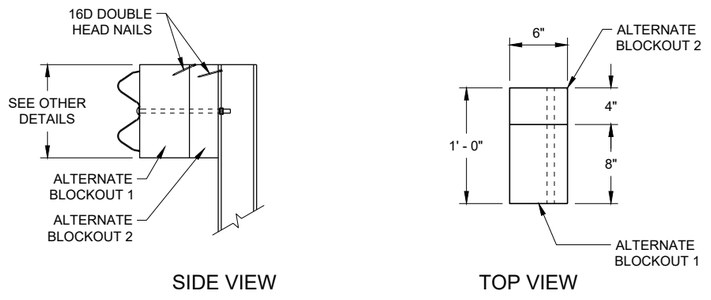
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

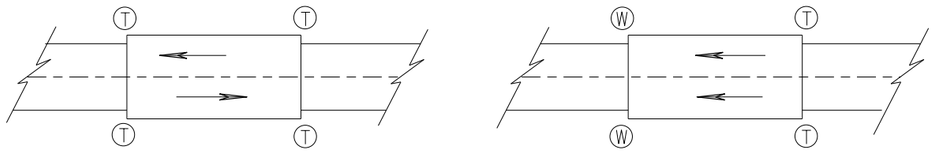
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

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SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

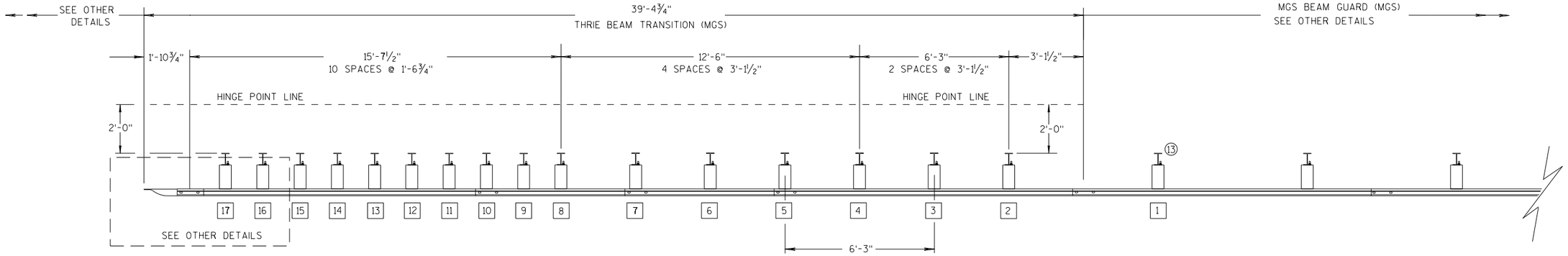
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

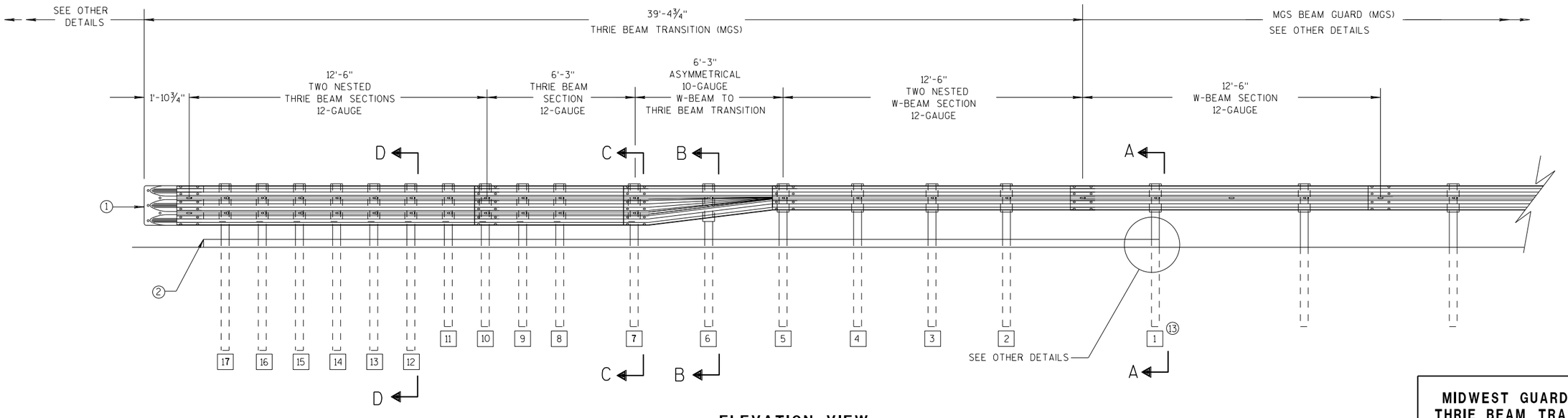
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 45-5a

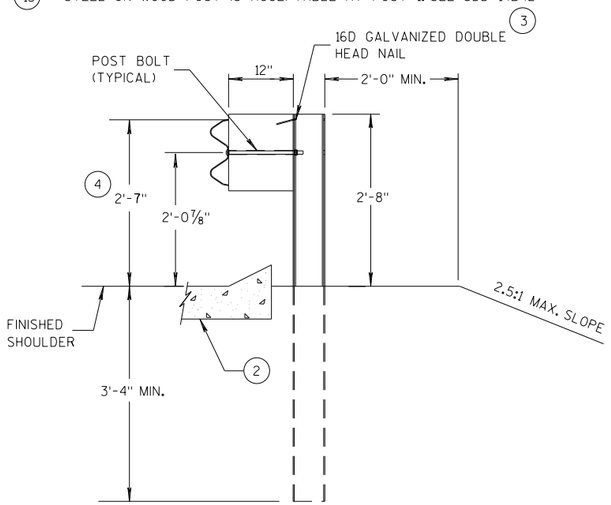
GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

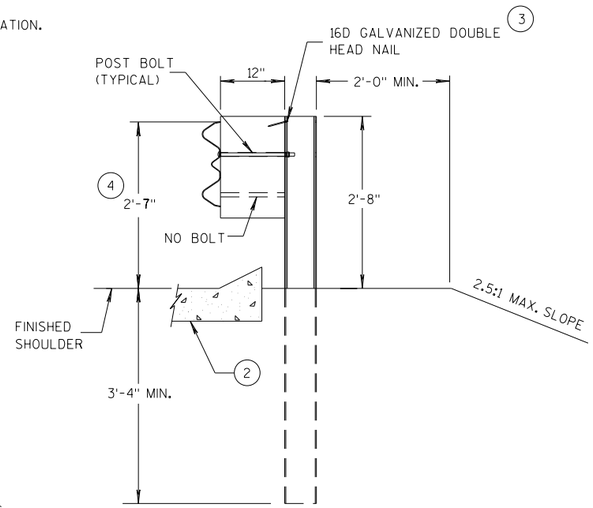
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



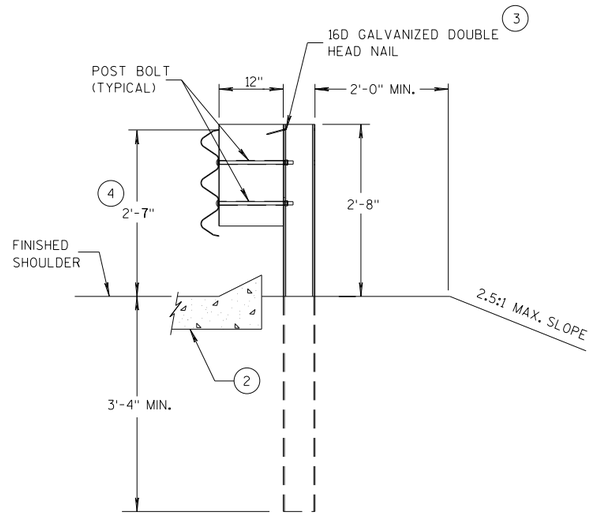
SECTION A-A (13)

POSTS 1-5



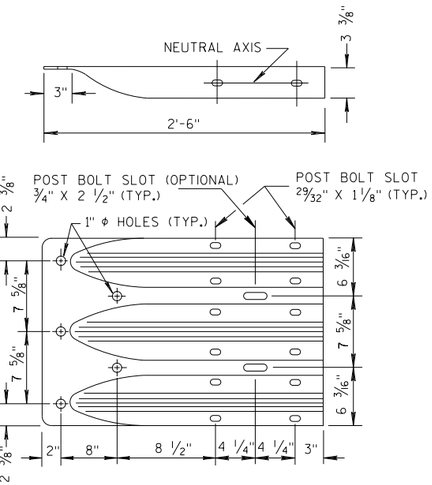
SECTION B-B

POST 6

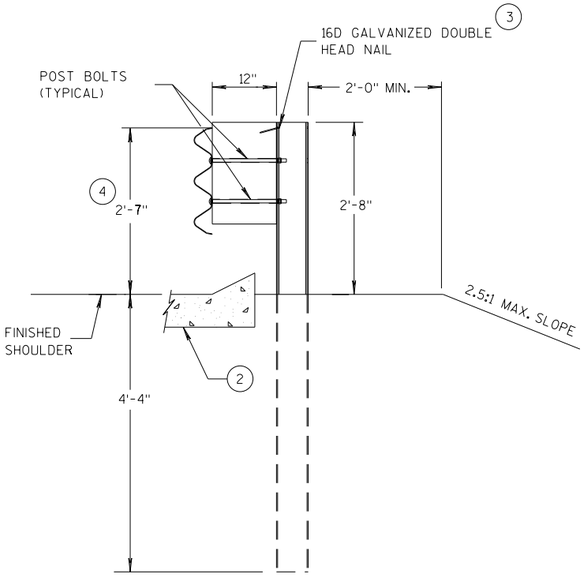


SECTION C-C

POSTS 7-11

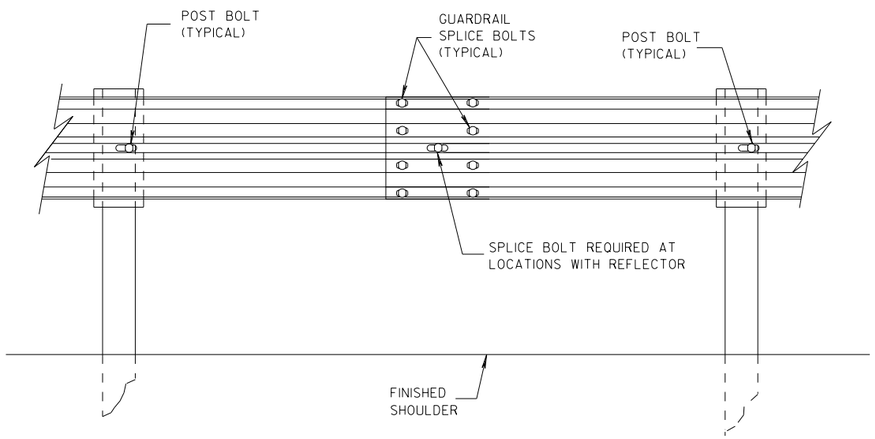


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

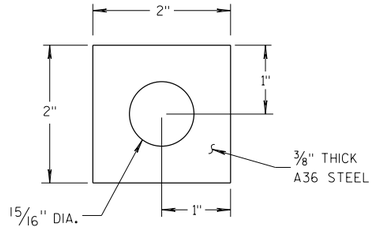
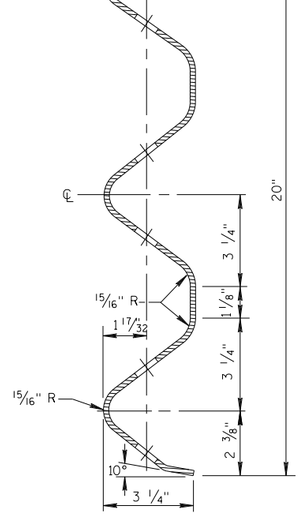


PLATE WASHER DETAIL



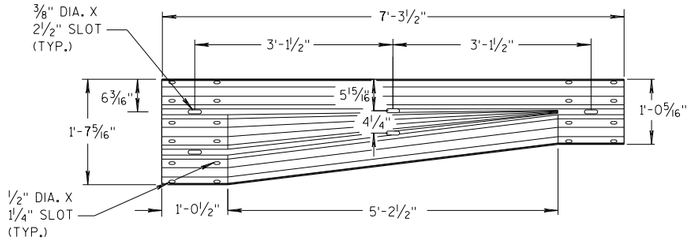
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

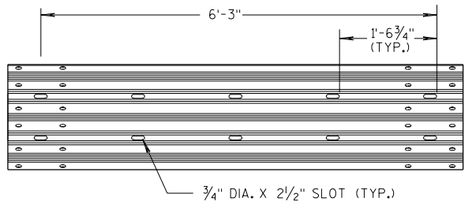
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOF

6

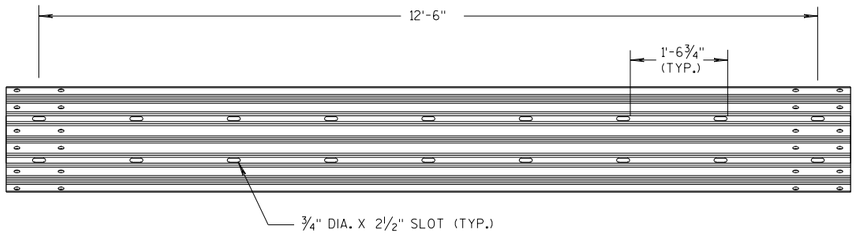
S.D.D. 14 B 45-5b



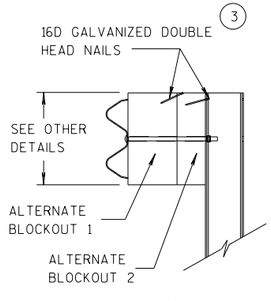
W-BEAM TO THRIE BEAM TRANSITION SECTION



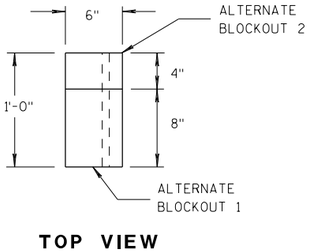
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

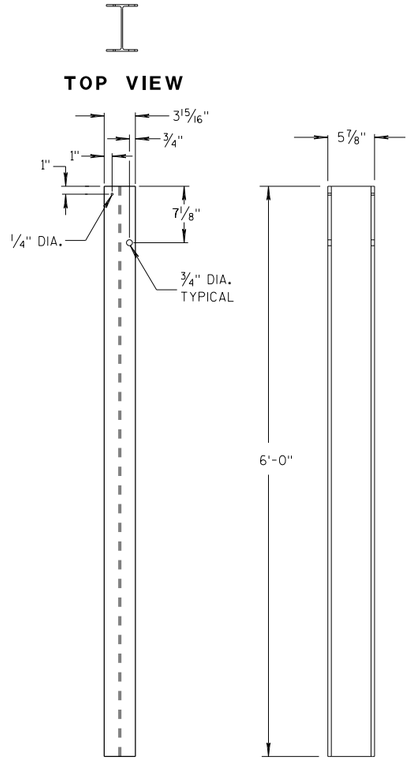


SIDE VIEW



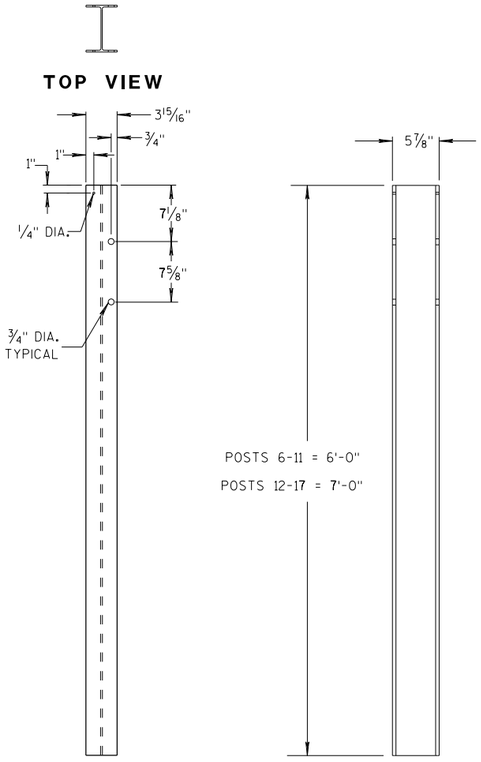
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



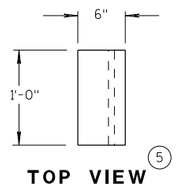
FRONT VIEW SIDE VIEW

STEEL POSTS 1-5 (13)

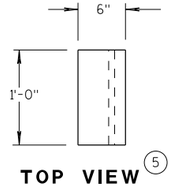


FRONT VIEW SIDE VIEW

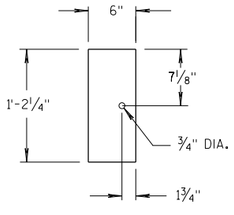
STEEL POSTS 6-17



TOP VIEW (5)

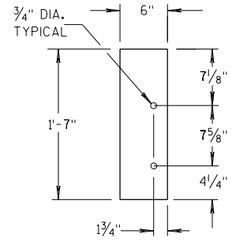


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

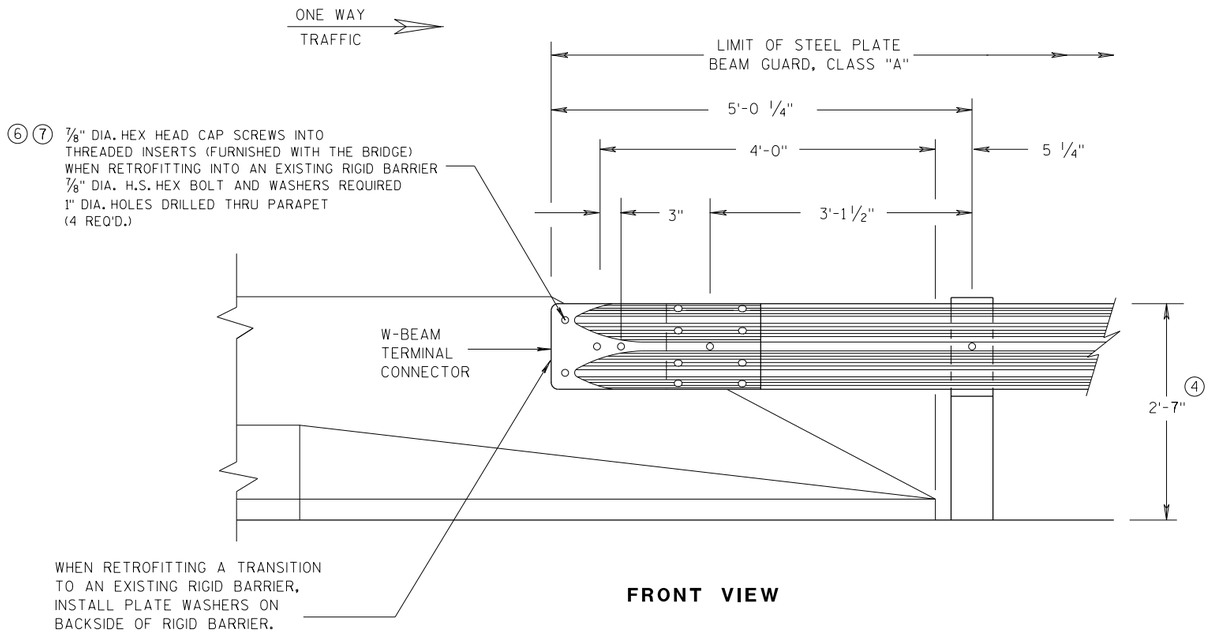
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 93

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S.D.D. 14 B 45-5c

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S.D.D. 14 B 45-5c



FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

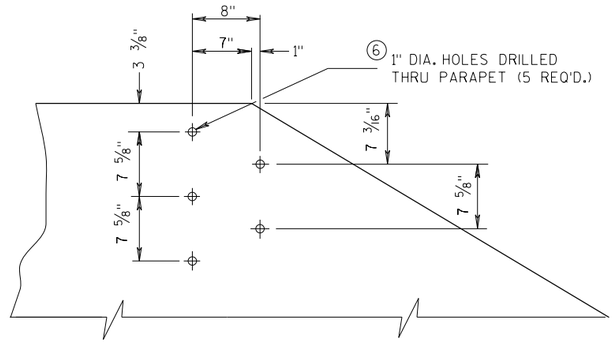
GENERAL NOTES

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

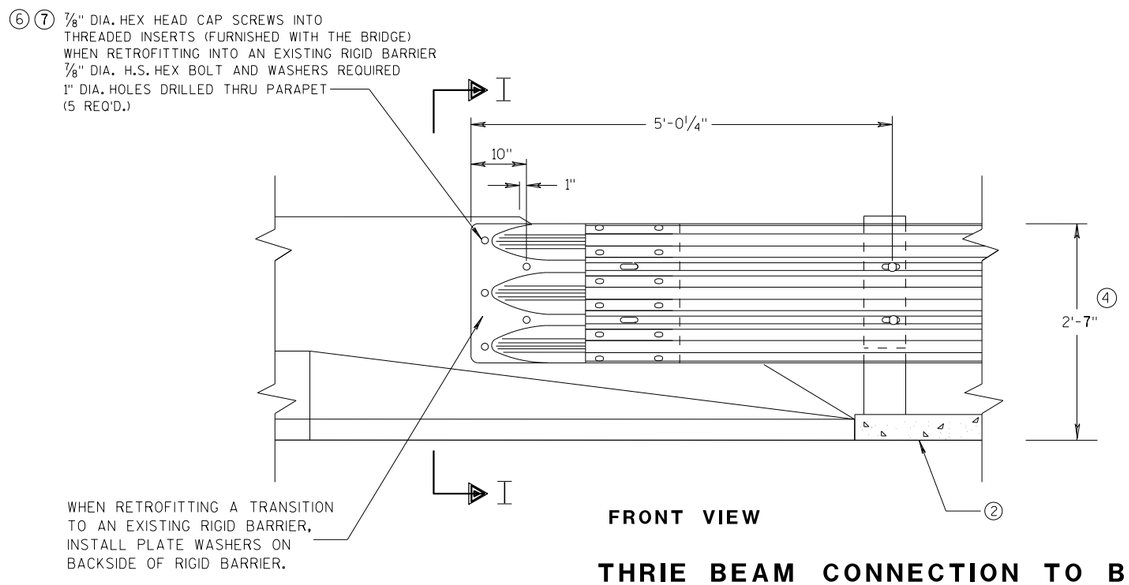
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

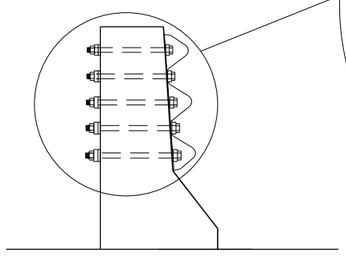
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



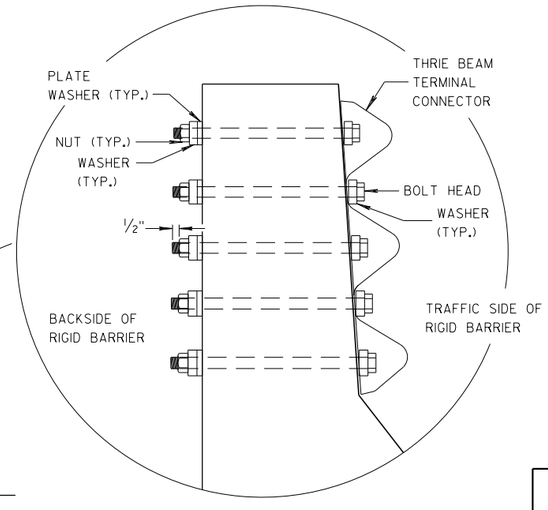
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW



SECTION I-I



THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

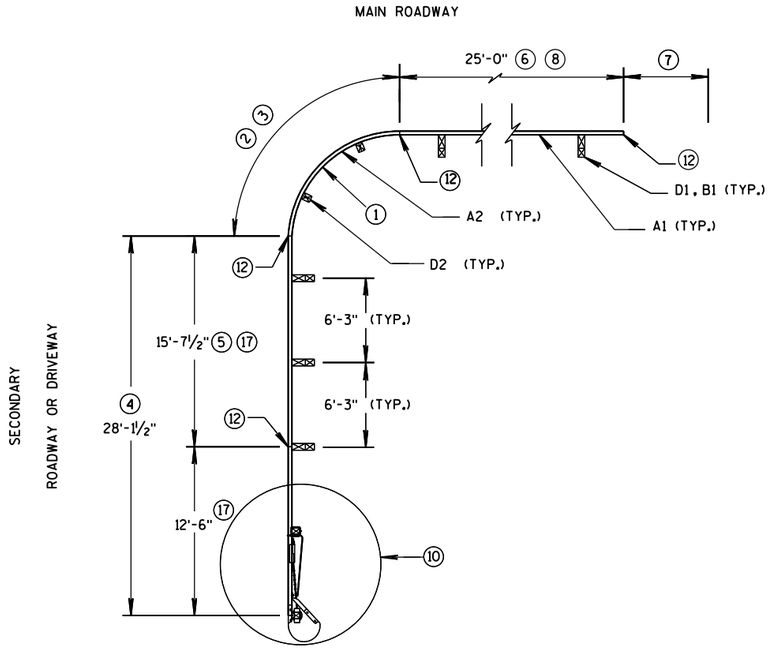
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

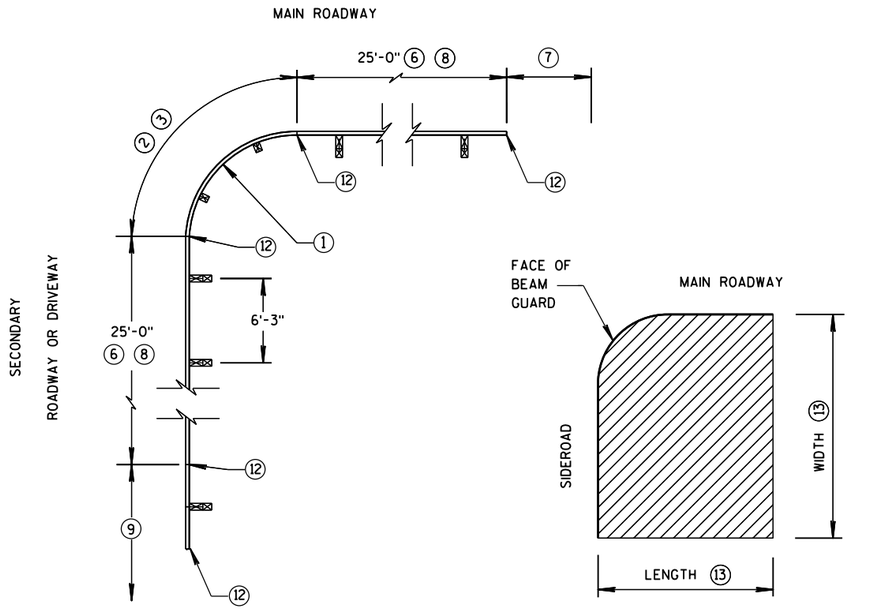
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS [illegible] UNIT SUPERVI[illegible]ENT
FHWA

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S.D.D. 14 B 45-5f



SHORT RADIUS BEAM GUARD WITH SHORT RADIUS TERMINAL ON SECONDARY ROAD OR DRIVEWAY PLAN VIEW



SHORT RADIUS BEAM GUARD WITH EAT, ADDITIONAL BEAM GUARD OR TRANSITION TO RIGID BARRIER ON SECONDARY ROAD OR DRIVEWAY PLAN VIEW

AREA FREE OF FIXED OBJECTS FOR RADIUS 32' AND LESS 16

TABLE FOR RADIUS OF 32' AND LESS

RADIUS FT	LENGTH FT	WIDTH FT
8	25	15
16	30	15
24	40	20
32	50	30

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING IS TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERITCAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUTS.

UNLESS NOTED OTHERWISE CUT OR PROVIDE BOLTS THAT ARE ¼" TO ½" BEYOND THE NUT

DRAWINGS ARE NOT TO SCALE.

(1) RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.

(2) CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6'-3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE TERMINAL (CRT) POSTS.

(3) WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAILS RESTED ON TOP OF LAG SCREW.

(4) MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID FOR WITH BEAM GUARD ITEM.

(5) ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.

(6) MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.

(7) BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. SEE PLAN.

(8) TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.

(9) ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.

(10) SHORT RADIUS TERMINAL (SEE OTHER DETAILS)

(11) HEIGHT VARIES. SEE NOTE (8) AND (17).

(12) BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRE PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.

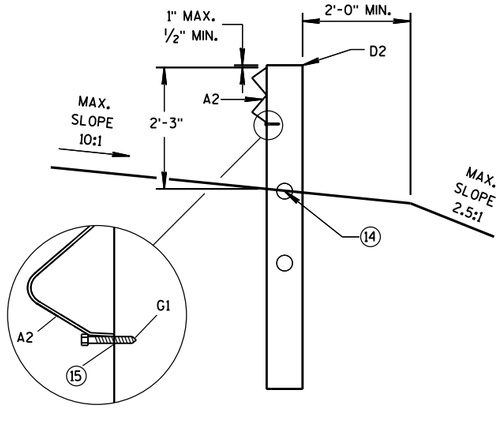
(13) SEE TABLE FOR VALUES.

(14) MAXIMUM HEIGHT FOR CENTER OF HOLE IS ¾" ABOVE FINISHED GROUND ±1".

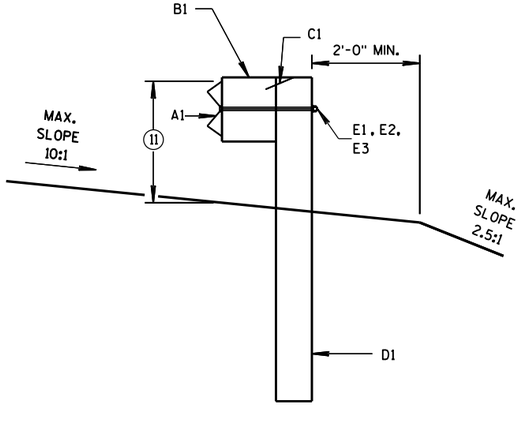
(15) DRILL 15/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.

(16) SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.

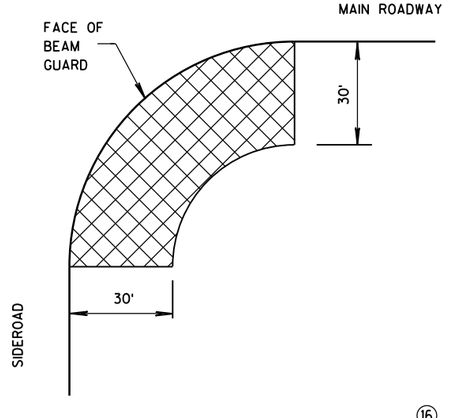
(17) TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL.



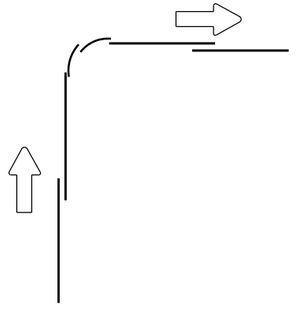
CONTROLLED RELEASE TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS IN HEIGHT TRANSITION



AREA FREE OF FIXED OBJECTS 16 RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

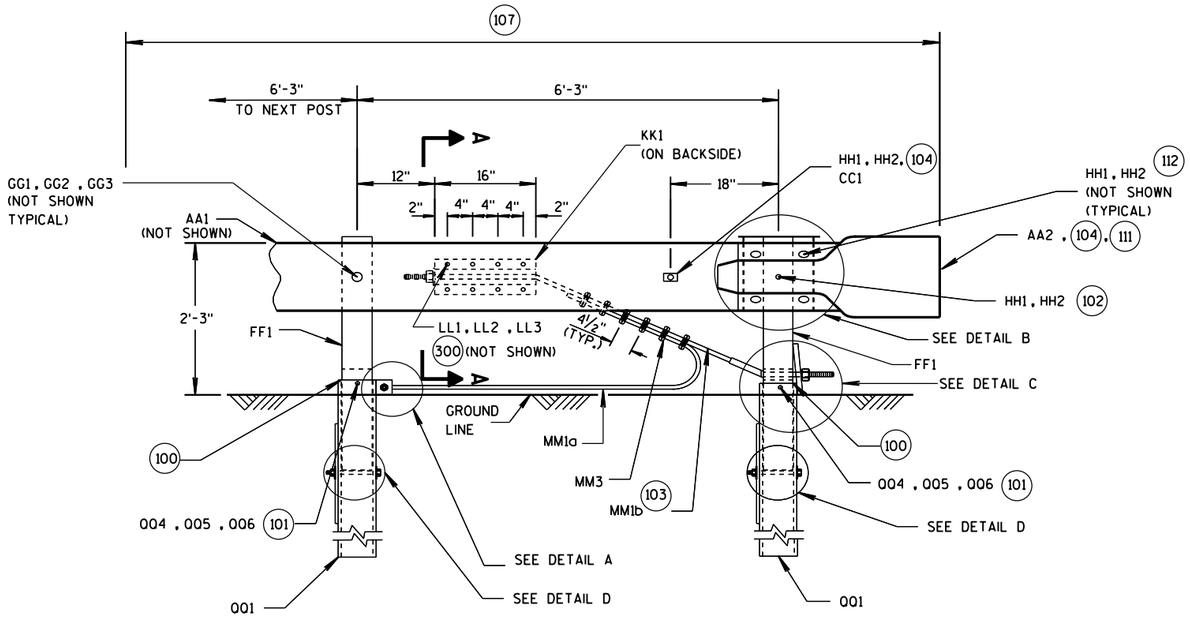
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 95

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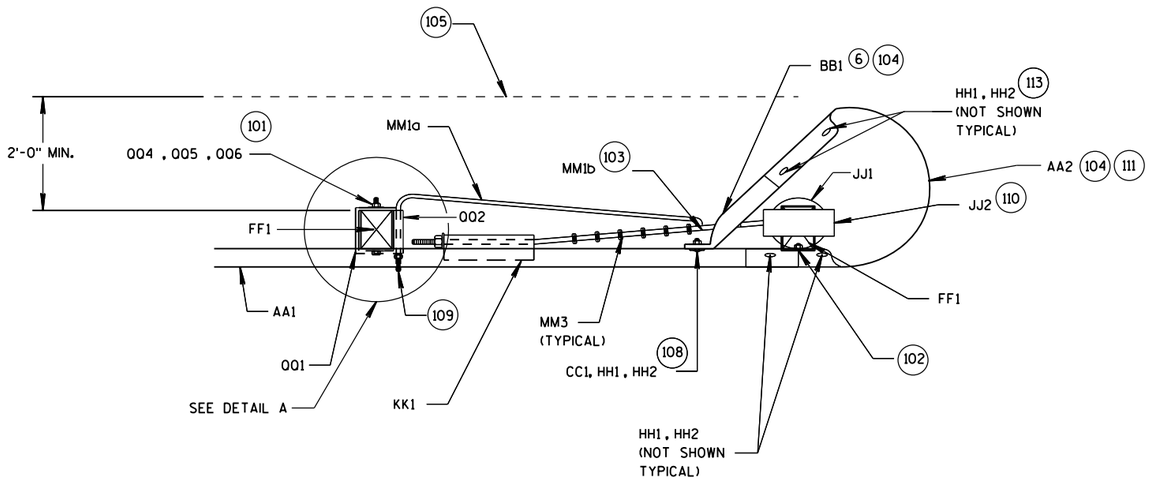
S.D.D. 14 B 53-1a

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S.D.D. 14 B 53-1a



SHORT RADIUS TERMINAL
PROFILE VIEW



SHORT RADIUS TERMINAL
TOP VIEW

(100) TOP OF FOUNDATION TUBE 2 INCHES MAXIMUM ABOVE FINISHED GROUND.

(101) WASHERS REQUIRED BETWEEN BOLT HEAD AND FOUNDATION TUBE AND BETWEEN NUT AND FOUNDATION TUBE.

(102) SPLICE BOLT AND NUT CONNECTS BEAM GUARD RAIL, W-BEAM END SECTION BUFFER, AND STEEL PIPE ASSEMBLY. NO WASHER REQUIRED. SEE DETAIL B.

(103) CABLE IS TAUT.

(104) ADJUST AA2 AND BB1 TO FIT.

(105) BREAK POINT OF SHOULDER.

(106) TACK WELD CABLE CONNECTOR TUBE PLATE TO CABLE CONNECTION TUBE. SEE DETAIL A PROFILE VIEW.

(107) PAY LIMIT FOR BEAM GUARD.

(108) SQUARE WASHER BETWEEN HEAD OF BOLT AND TRAFFIC FACE OF BEAM GUARD. ROUND WASHER REQUIRED BETWEEN NUT AND BB1.

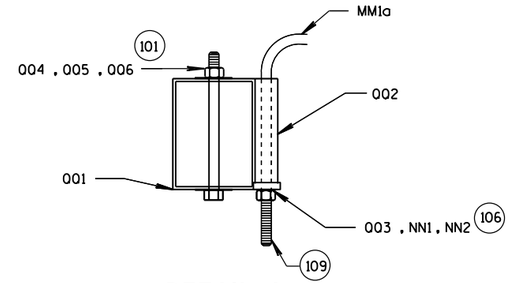
(109) CUT OR PROVIDE THREADED STUD THAT IS FLUSH WITH FACE OF BEAM GUARD RAIL KK1 (PLUS OR MINUS ½" TOLERANCE). DEBURR AFTER CUTTING.

(110) SEE STEEL PIPE ASSEMBLY DETAILS.

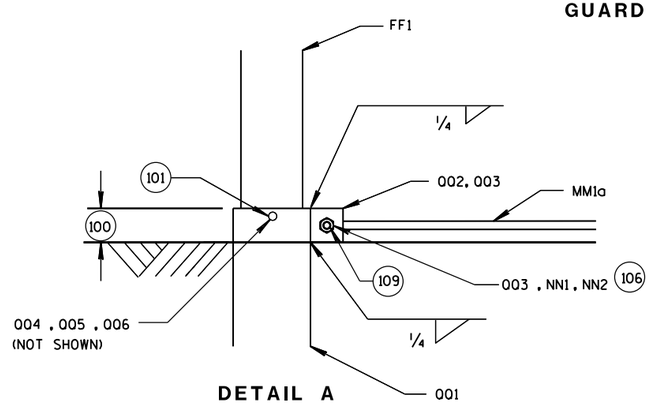
(111) ATTACH UU2 WITH UU3. SHOP APPLY UU1 TO UU2.

(112) FOUR HH1 AND HH2 REQUIRED TO ATTACH AA1 TO AA2.

(113) FOUR HH1 AND HH2 REQUIRED TO ATTACH AA2 TO BB1.



DETAIL A
TOP VIEW
(WOOD BREAKAWAY AND BEAM GUARD RAIL POSTS NOT SHOWN)



DETAIL A
PROFILE VIEW

STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL
MGS

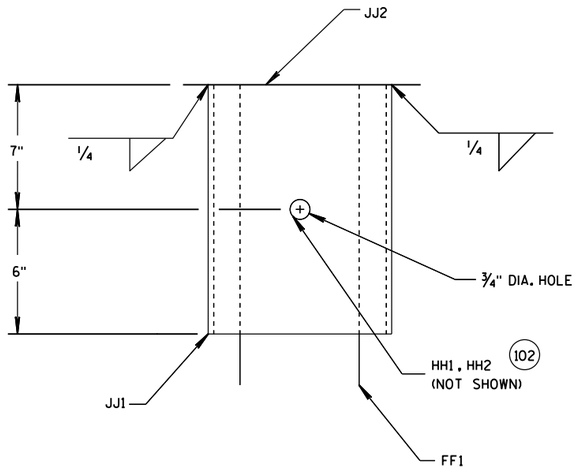
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 96

6

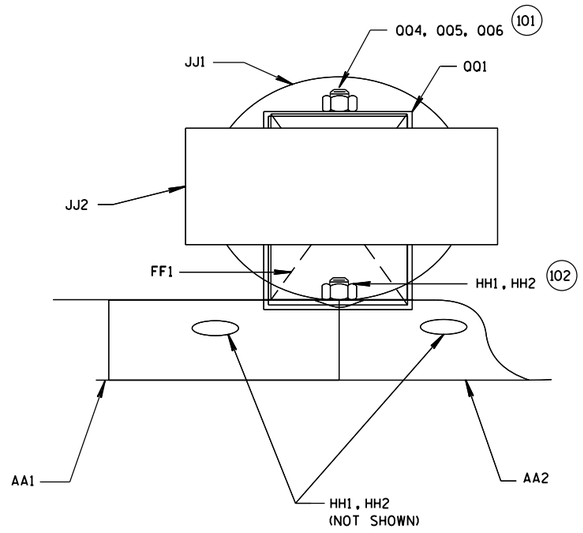
S.D.D. 14 B 53-1b

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S.D.D. 14 B 53-1b

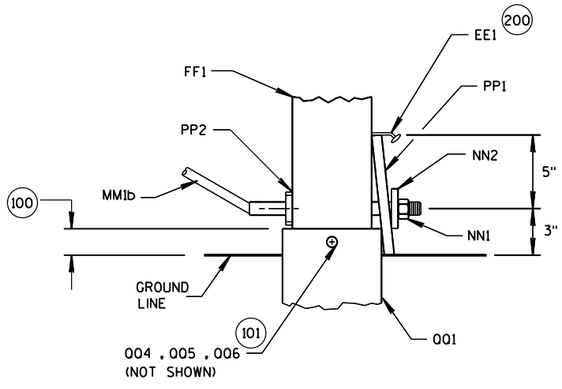


DETAIL B
PROFILE VIEW OF STEEL PIPE ASSEMBLY
(BEAM GUARD AND W-BEAM
END SECTION NOT SHOWN)

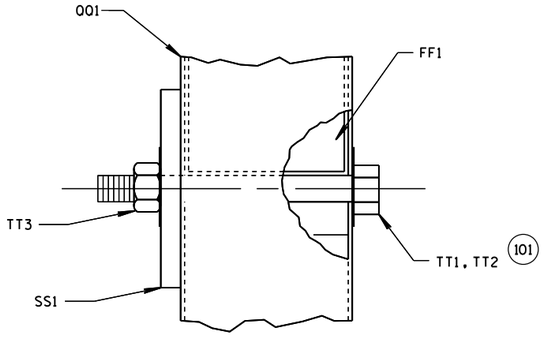


DETAIL B
PLAN VIEW OF STEEL PIPE ASSEMBLY

200 2 NAILS SPACED 4 INCHES CENTER TO CENTER.



DETAIL C
PROFILE VIEW



DETAIL D
PROFILE VIEW

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

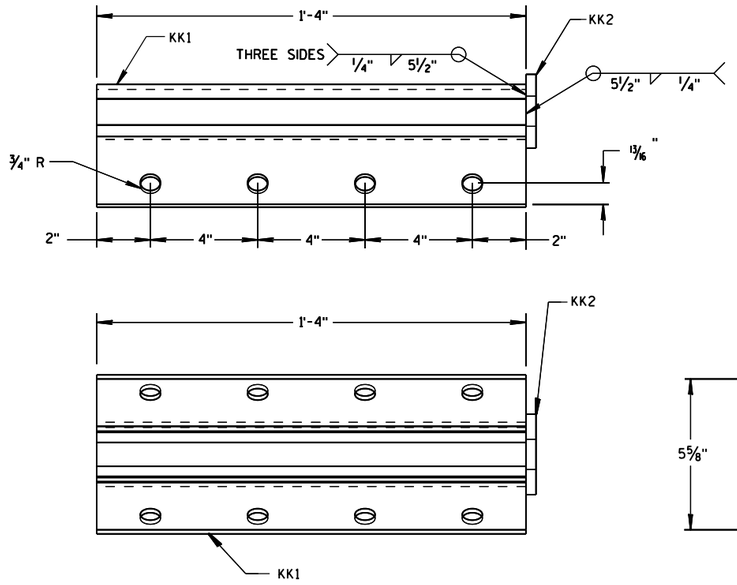
6

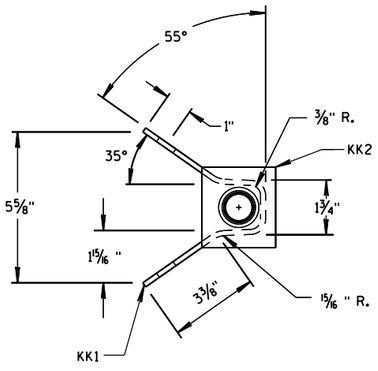
S.D.D. 14 B 53-1c

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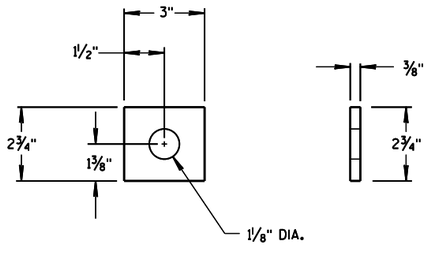
S.D.D. 14 B 53-1c

(300) WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT LL1 AND LL3 REQUIRED. SIXTEEN LL2 REQUIRED.

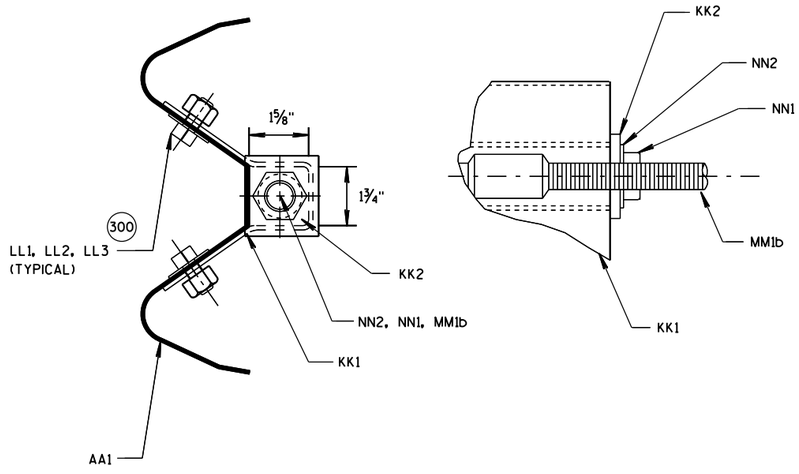




ANCHOR BRACKET (KK1, KK2)



ANCHOR BRACKET BEARING PLATE (KK2)

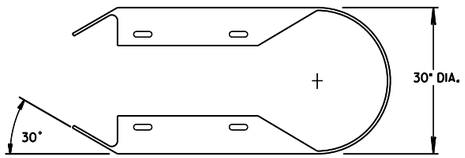


SECTION A-A

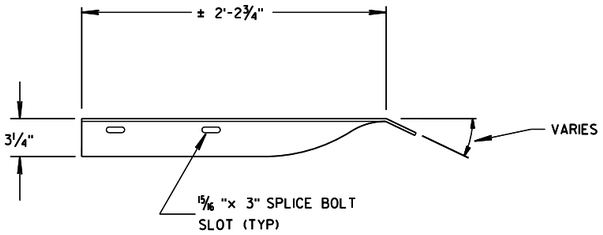
SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 53-1d



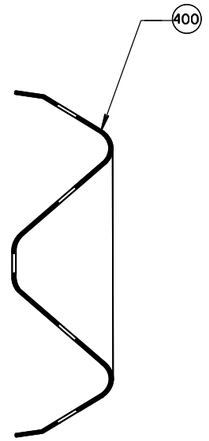
TOP VIEW



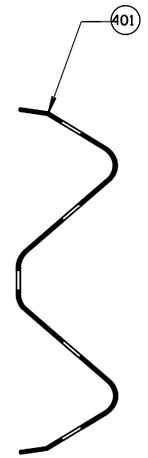
TOP VIEW

(400) CROSS SECTON OF PART IS TO FIT OVER AA1.

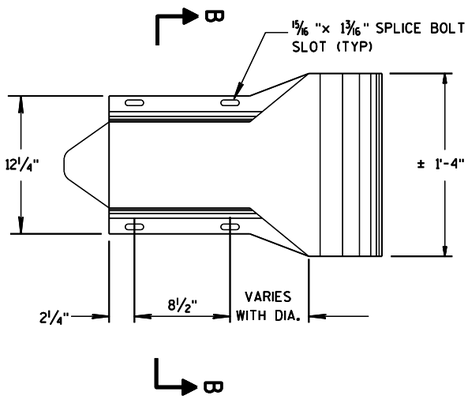
(401) CROSS SECTON OF PART IS TO FIT OVER OR UNDER AA1.



SECTION B-B

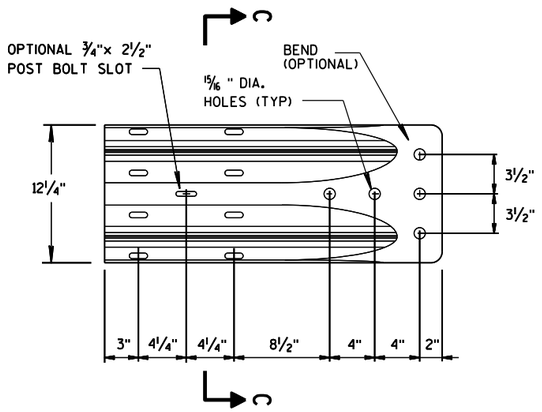


SECTION C-C



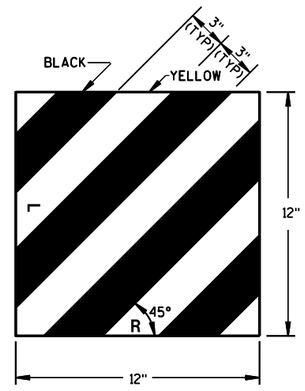
W-BEAM
END SECTION BUFFER (AA2)

PROFILE VIEW



W-BEAM
TERMINAL CONNECTOR (BB1)

PROFILE VIEW



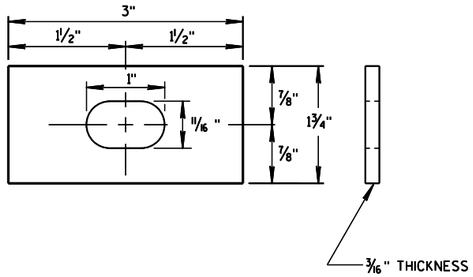
REFLECTIVE SHEETING
(UU1, UU2)

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

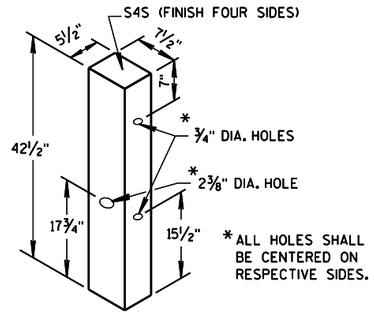
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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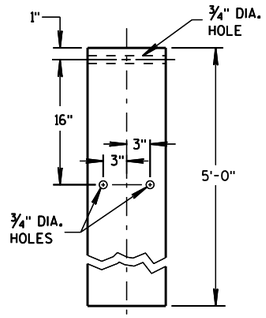
S.D.D. 14 B 53-1e



RECTANGULAR PLATE WASHER (CC1)



WOOD BREAKAWAY POST (FF1)



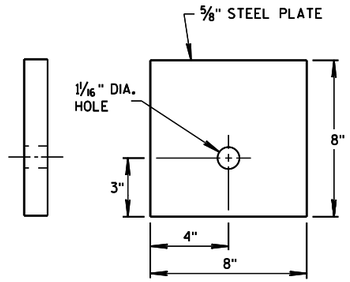
FOUNDATION TUBE (QQ1) (500)

(500) SEE DETAIL "D" FOR LOCATION AND ATTACHING SS1.

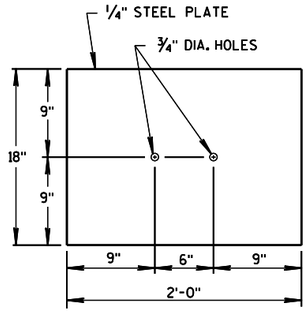
(501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.

(502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.

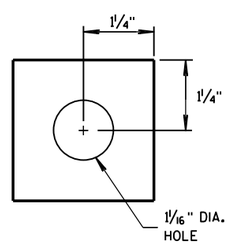
(503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



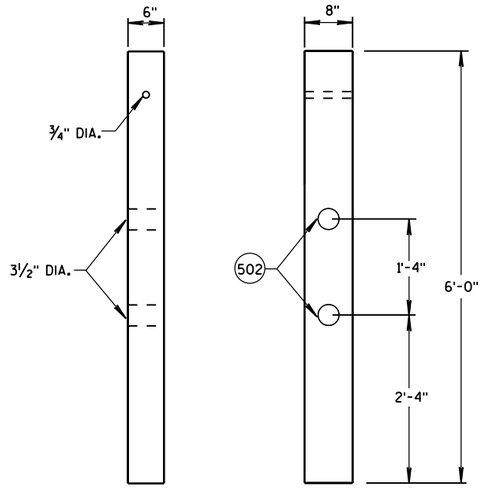
BEARING PLATE (PP1)



SOIL PLATE (SS1)

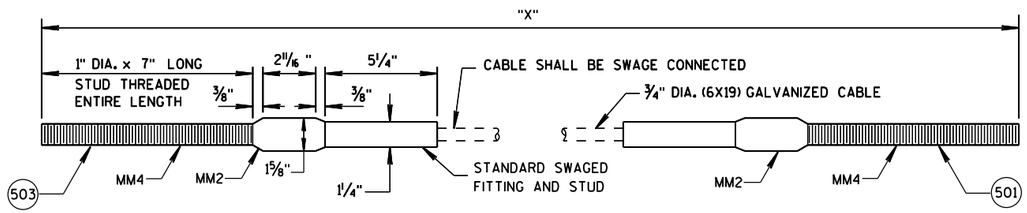


TUBE END PLATE (QQ3)



FRONT VIEW SIDE VIEW

CONTROLLED RELEASE TERMINAL POST (CRT) (D2)



"X" LENGTH	
MM1a	9'-0"
MM1b	6'-8"

CABLE ASSEMBLY (MM1a , MM1b)

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 53-1f

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT-WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP. TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329	
E3	POST BOLT - NUT		5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291/ ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY AND OTHER INFORMATION
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291/ ASTM A 563	
		UNC	
G1	LAG SCREW	ASTM A308 GRADE A ASTM A153 CLASS D	3/8" DIA. 3" LONG
H1	DELINEATOR - BEAM GUARD		SEE SDD 14B42 FOR MORE INFORMATION
H2	DELINEATION - SHEETING	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
		APPROVED PRODUCT LIST	
J1	FOUNDATION BACKFILL	STANDARD SPEC. 614	
AA1	BEAM GUARD RAIL - PUNCHED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
GG2	POST BOLT - WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	3/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 53-1g

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE 14B42 FOR GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	SEE 14B42 FOR GEOMETRY
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1'-0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIc CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	
NN2	ANCHOR CABLE - NUT - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	1" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
PP1	BEARING PLATE AT POST	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	

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S.D.D. 14 B 53-1h

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 53-1h

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
003	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2½" X 2½" X ¼"
		GALV. AASHTO M111 / ASTM A123	
004	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	⅝" DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
005	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	⅝" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
006	GROUND STRUT AND YOKE - NUT	HEAVY HEX	⅝" DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
SS1	SOIL PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	⅝" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	⅝" DIA.
		GALV. AASHTO M111 / ASTM A123 OR5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	⅝" DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING SHEETING TYPE FOR MARKER
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

6

S.D.D. 14 B 53-1i

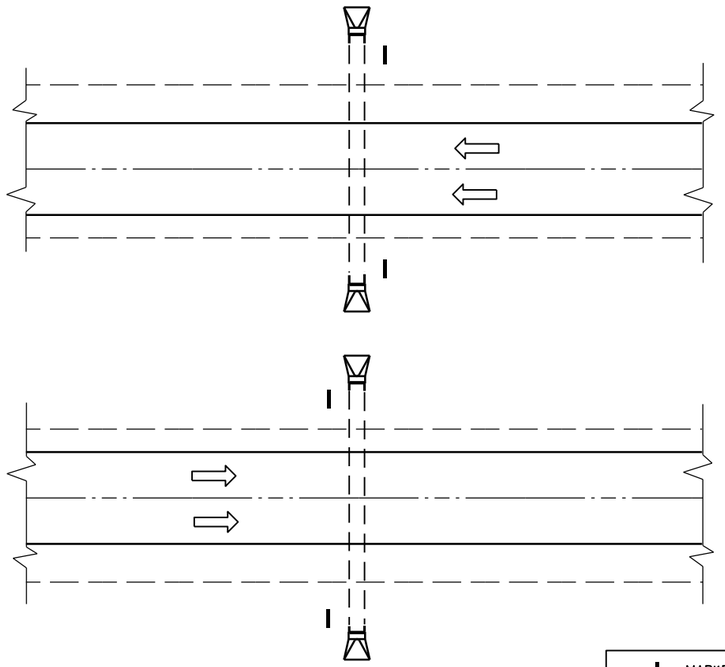
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI
NT
FHWA

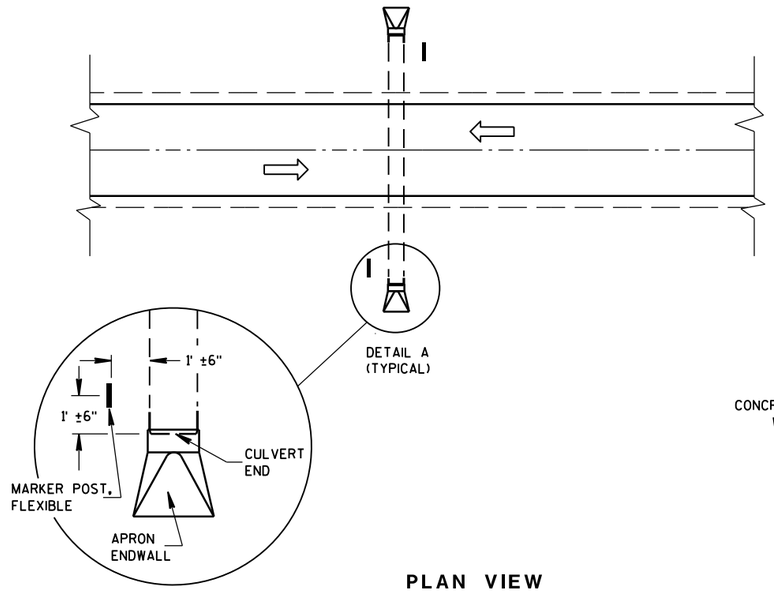
6

S.D.D. 14 B 53-1i



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

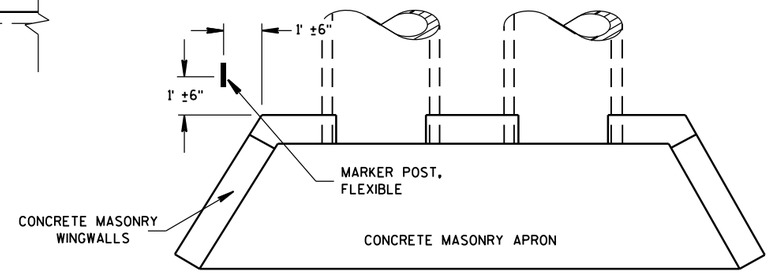
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

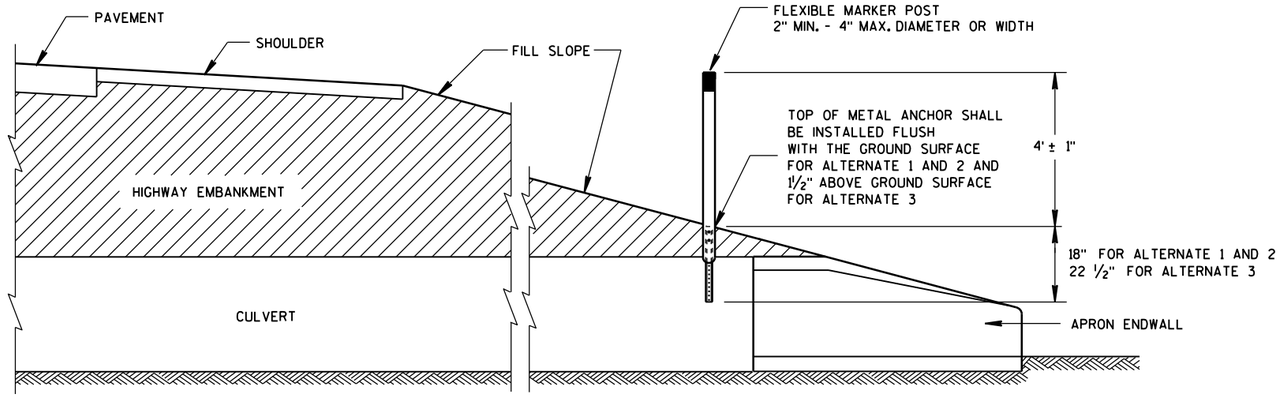
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

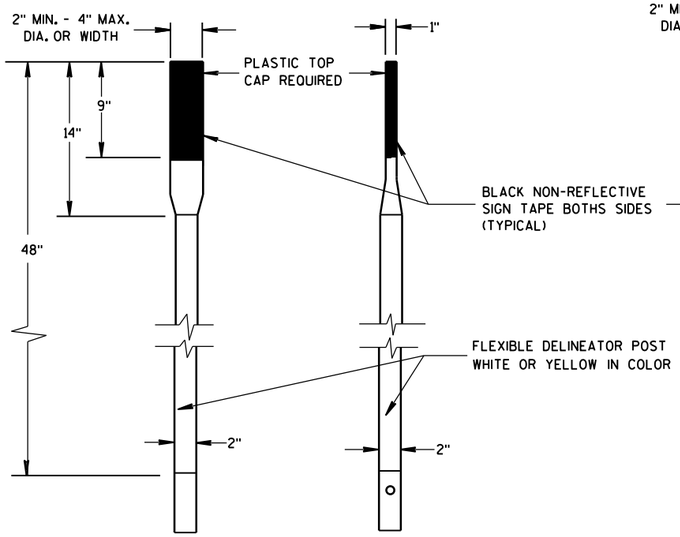
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

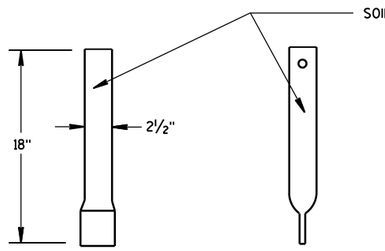
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S.D.D. 15 A 3-2a

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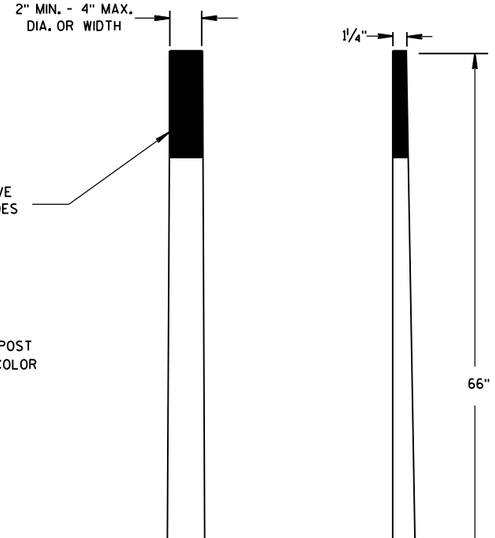
S.D.D. 15 A 3-2a





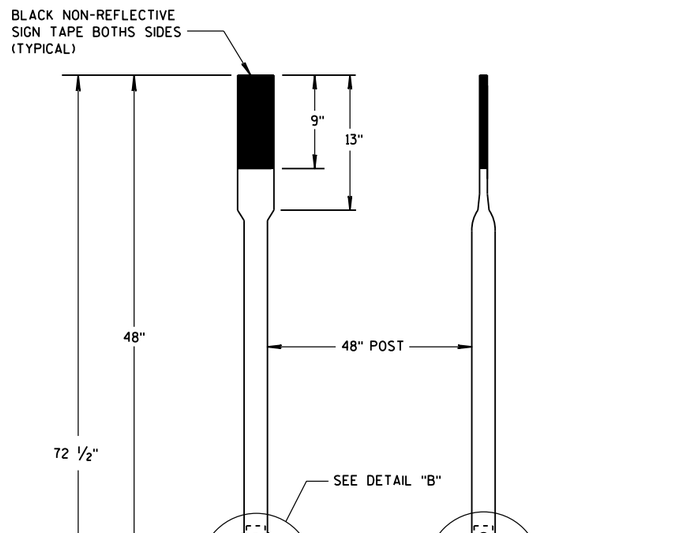
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

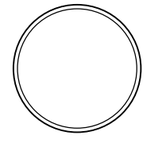
ALTERNATE 2



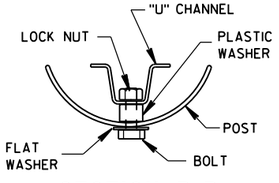
FRONT VIEW SIDE VIEW

ALTERNATE 3

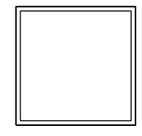
FLEXIBLE MARKER POSTS



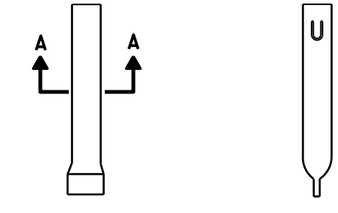
SECTION A-A



SECTION B-B

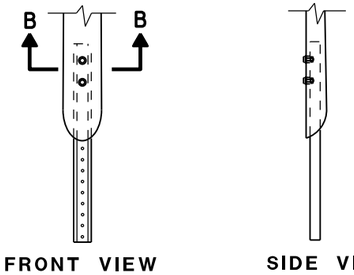


SECTION C-C



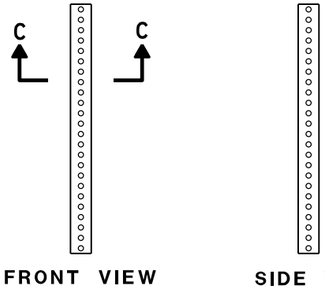
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

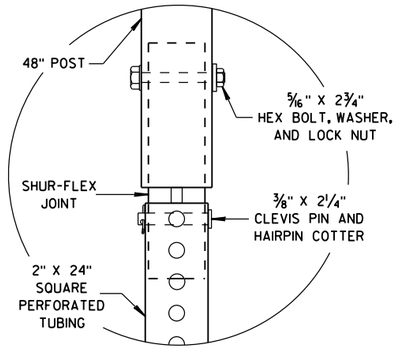
ALTERNATE 2



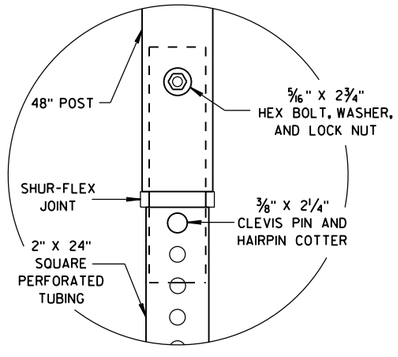
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

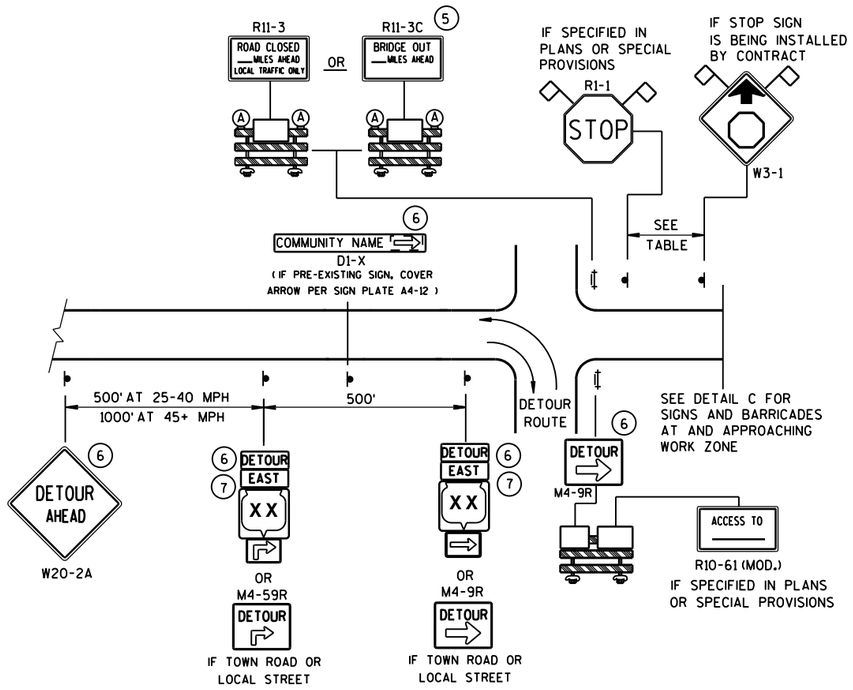
APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 3-2b

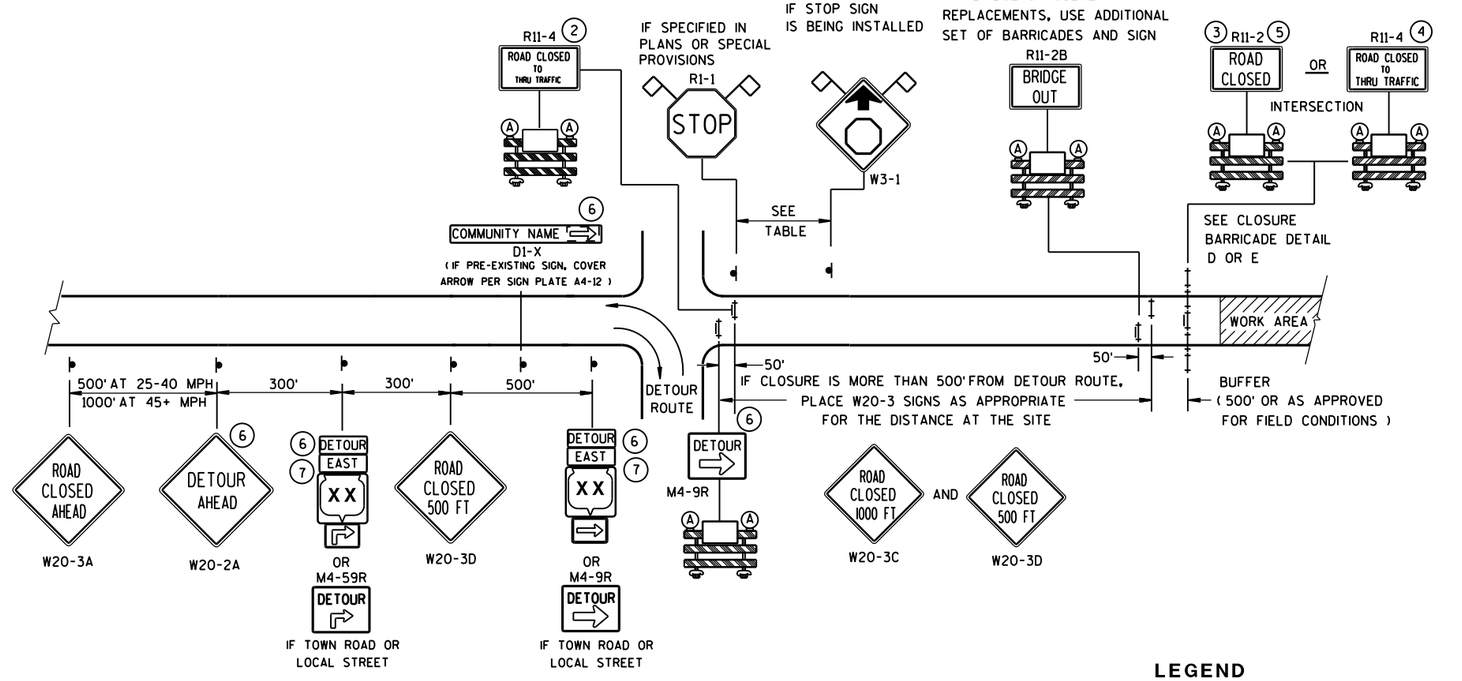
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S.D.D. 15 A 3-2b



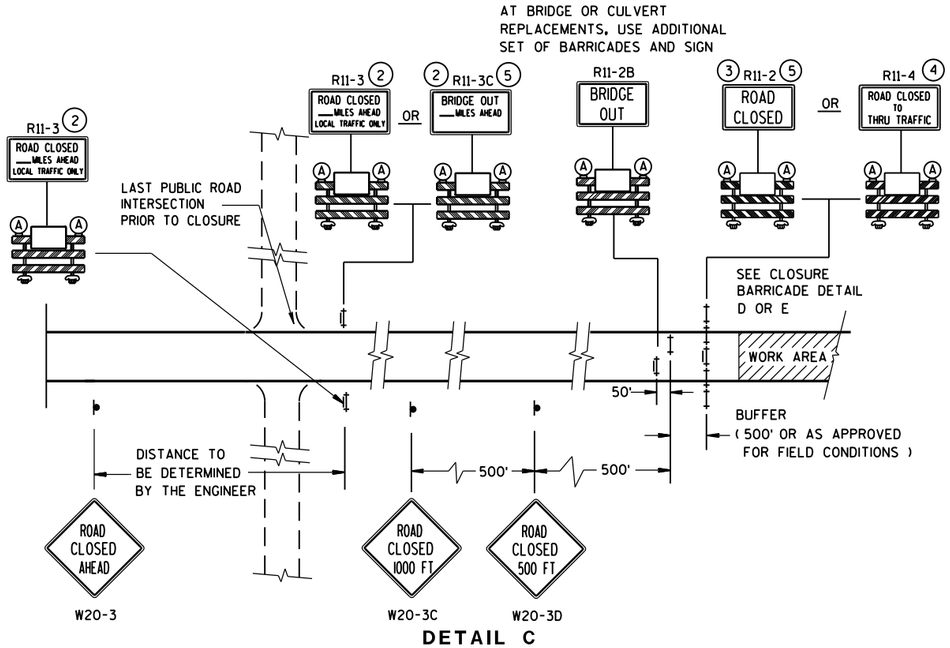
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

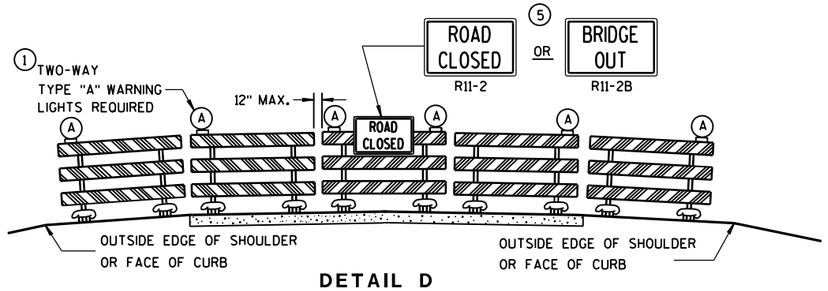
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

S.D.D. 15 C 2-6a

6

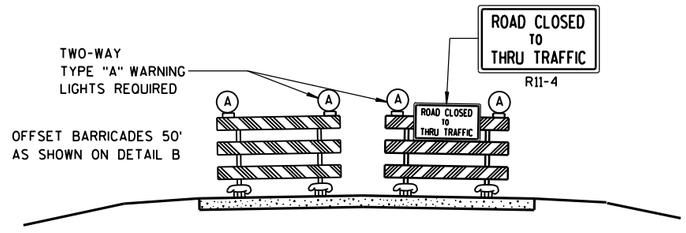
S.D.D. 15 C 2-6a



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

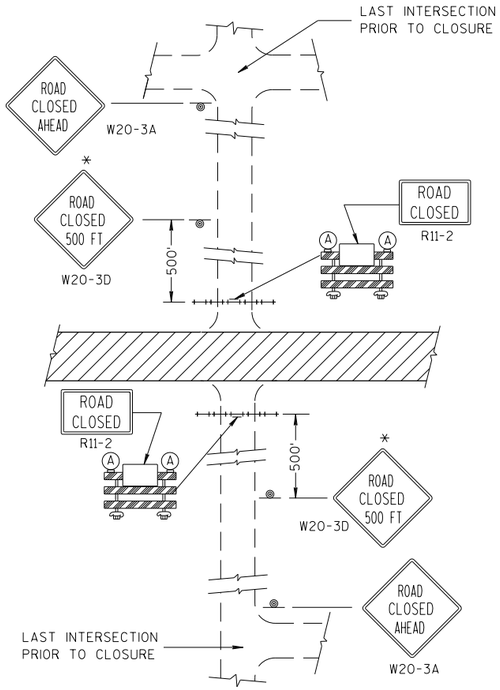
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FHWA

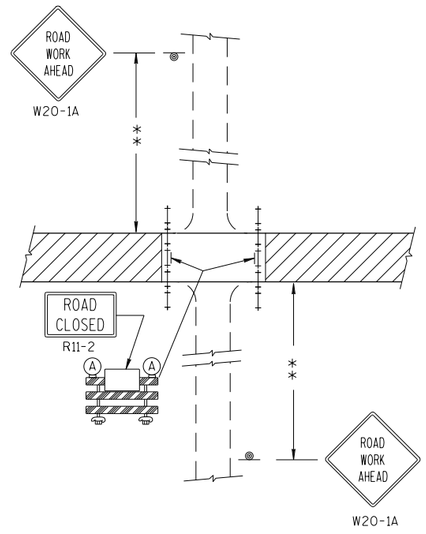
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S.D.D. 15 C 2-6b



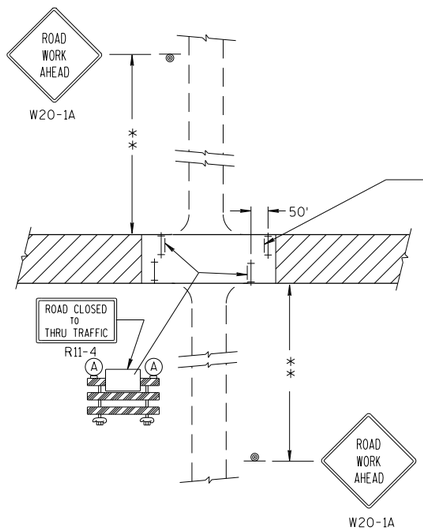
DETAIL 1

(NO ACCESS TO PROJECT)



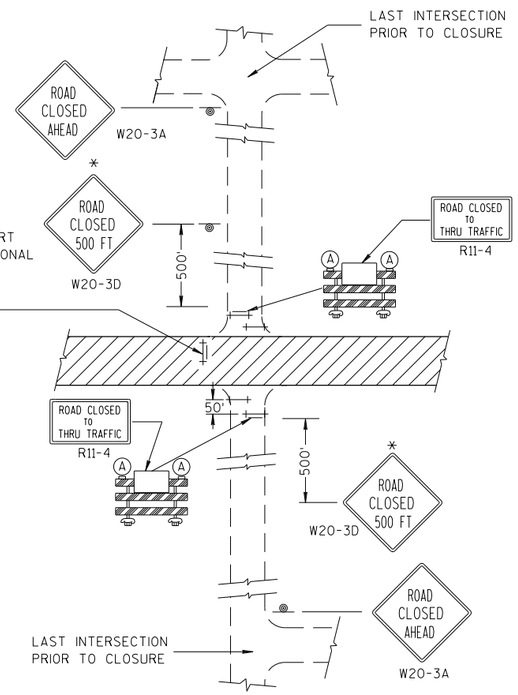
DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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.

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.

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 AND R11-4 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.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

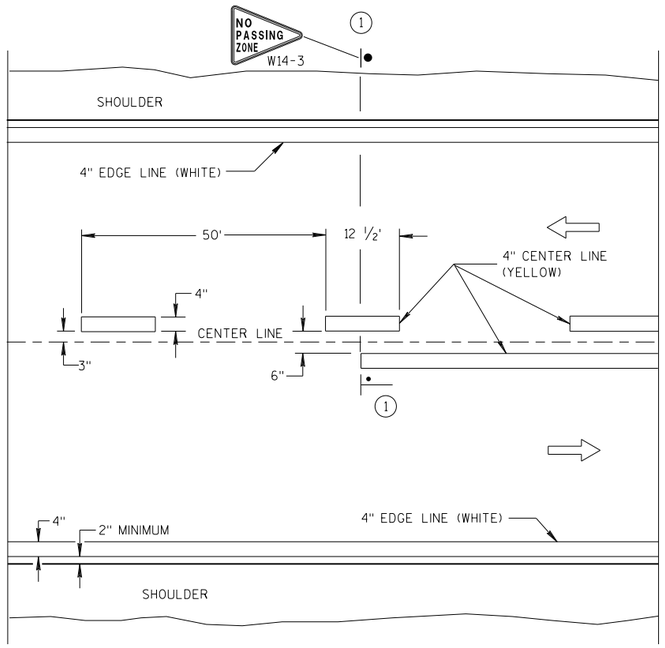
7/2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGI

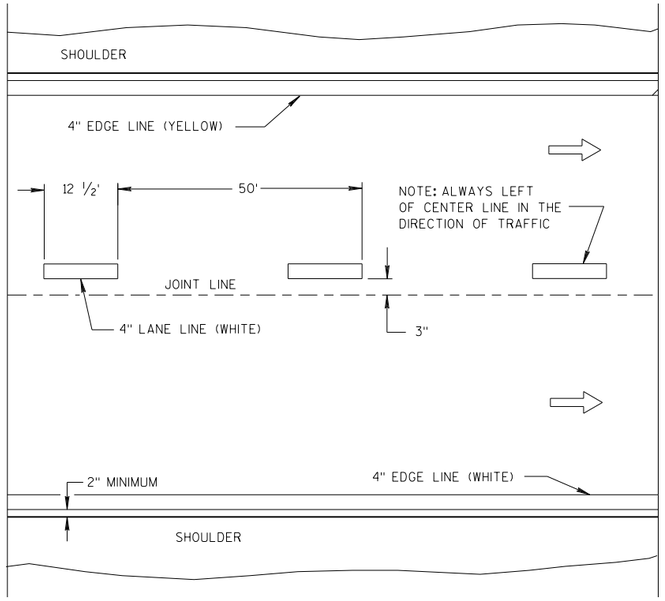
FHWA

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S.D.D. 15 C 3-5



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

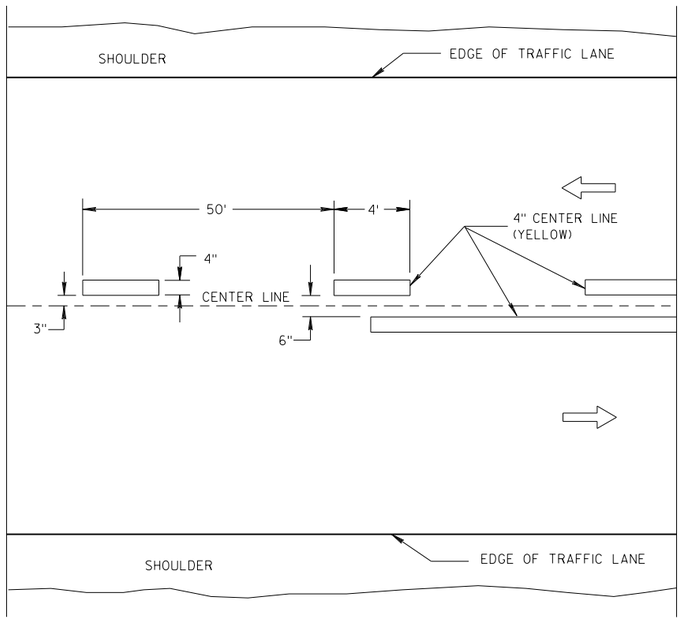
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

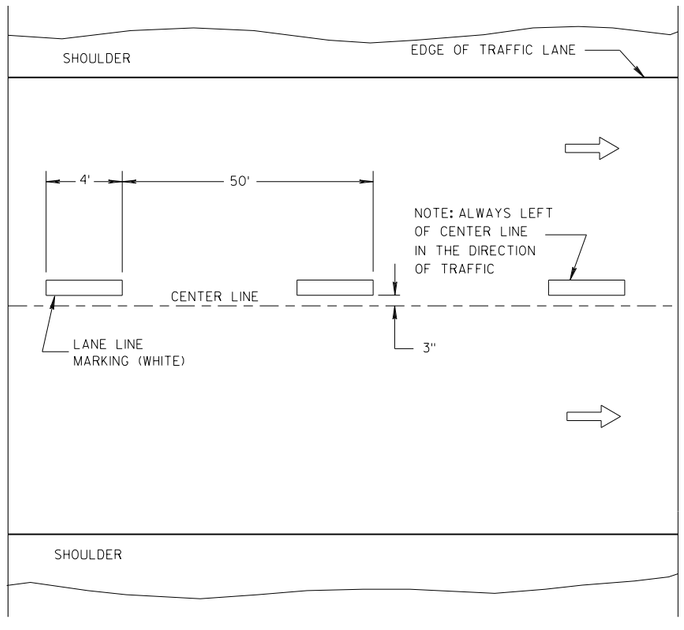
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

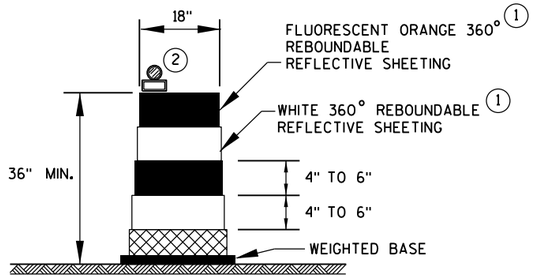
FHWA

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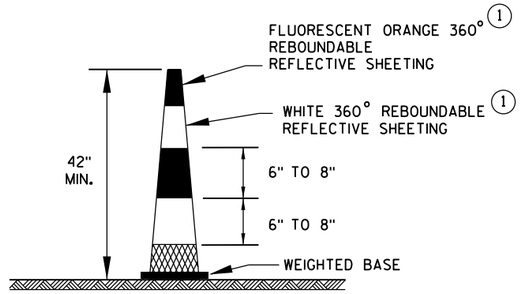
S.D.D. 15 C 8-19a

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S.D.D. 15 C 8-19a



DRUM

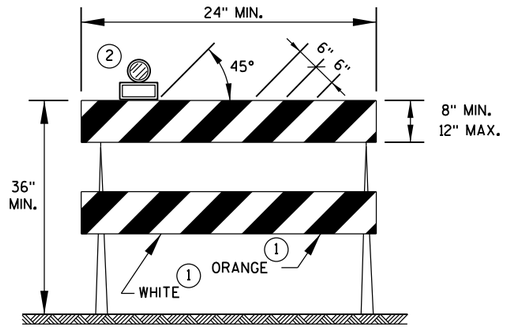


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

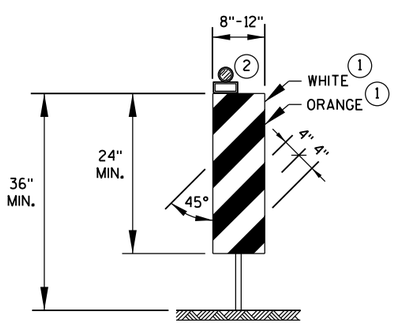
GENERAL NOTES

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



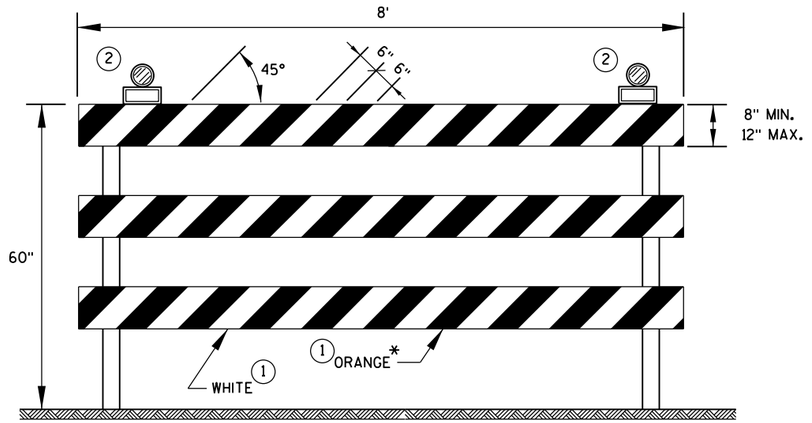
TYPE 2 BARRICADE

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



VERTICAL PANEL

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



TYPE 3 BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENG
FHWA	

6

S.D.D. 15 C 11-7b

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE



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

GENERAL NOTES

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

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.

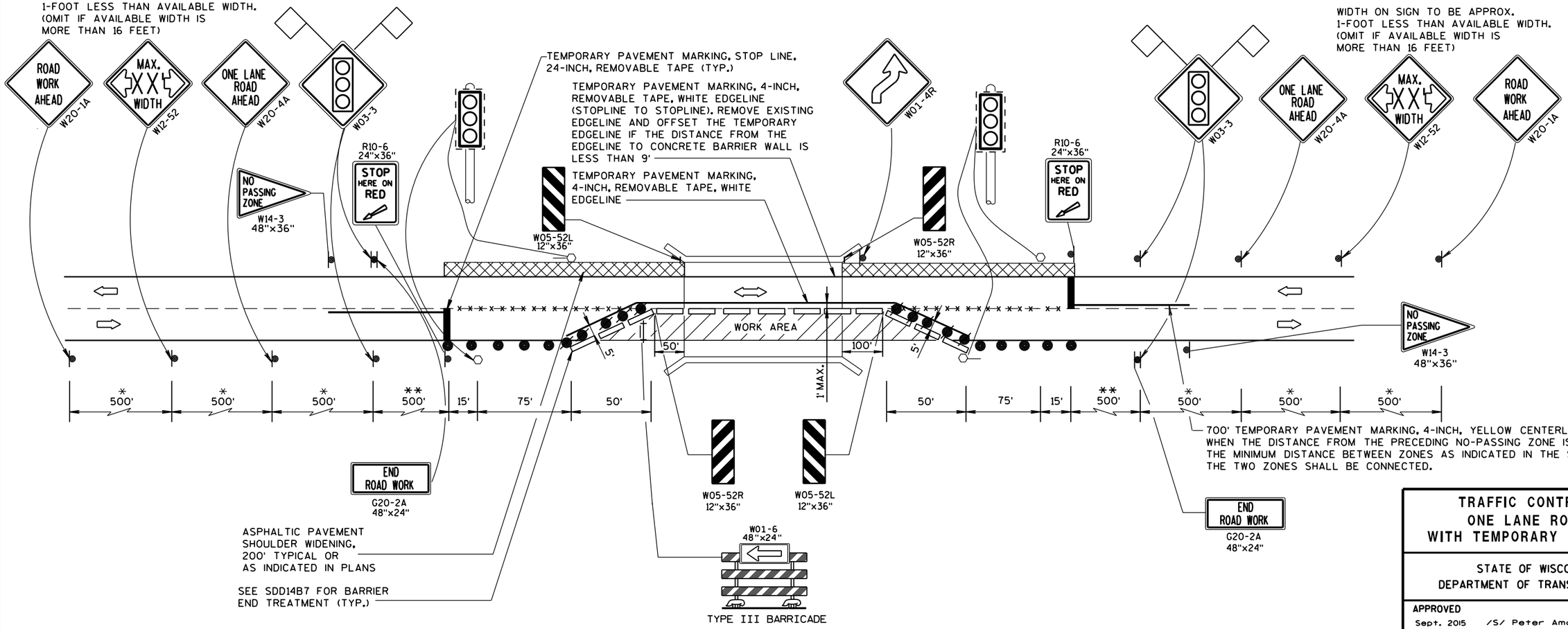
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

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

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



TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZO SAFETY ENGI

FHWA

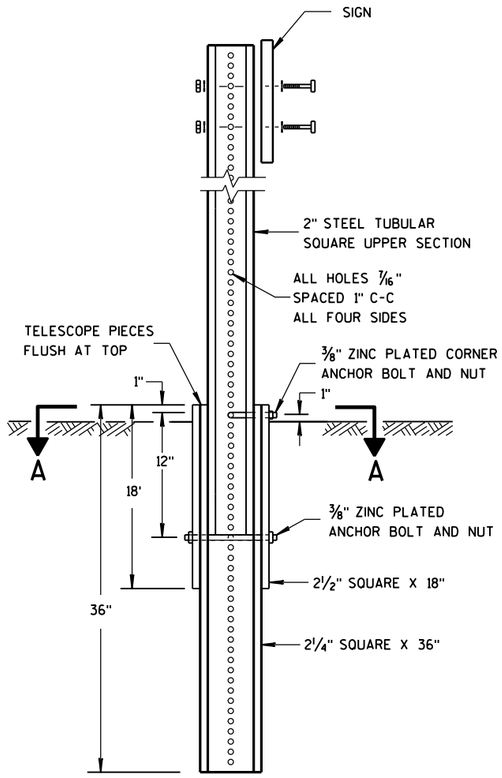
C

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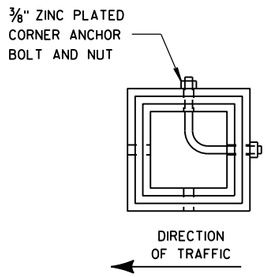
S.D.D. 15 D 33-4

6

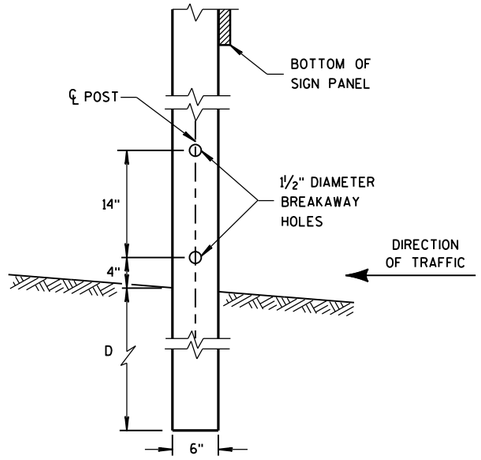
S.D.D. 15 D 33-4



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



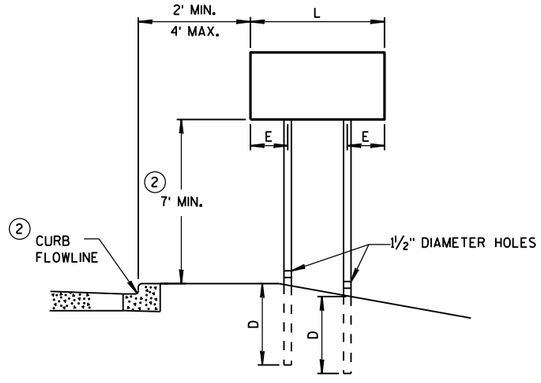
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

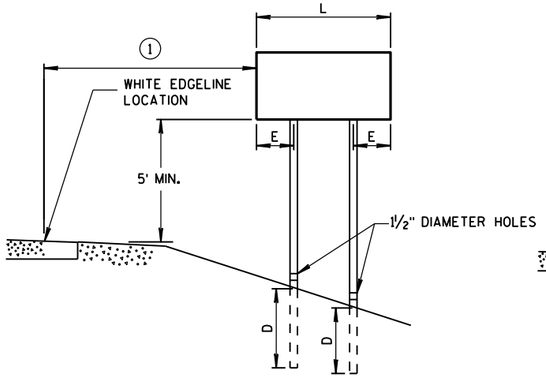
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

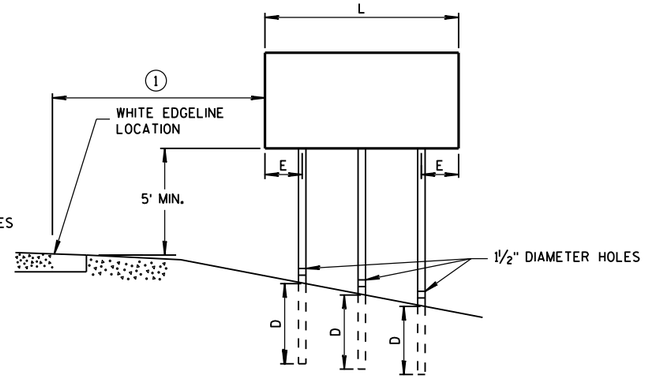
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

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

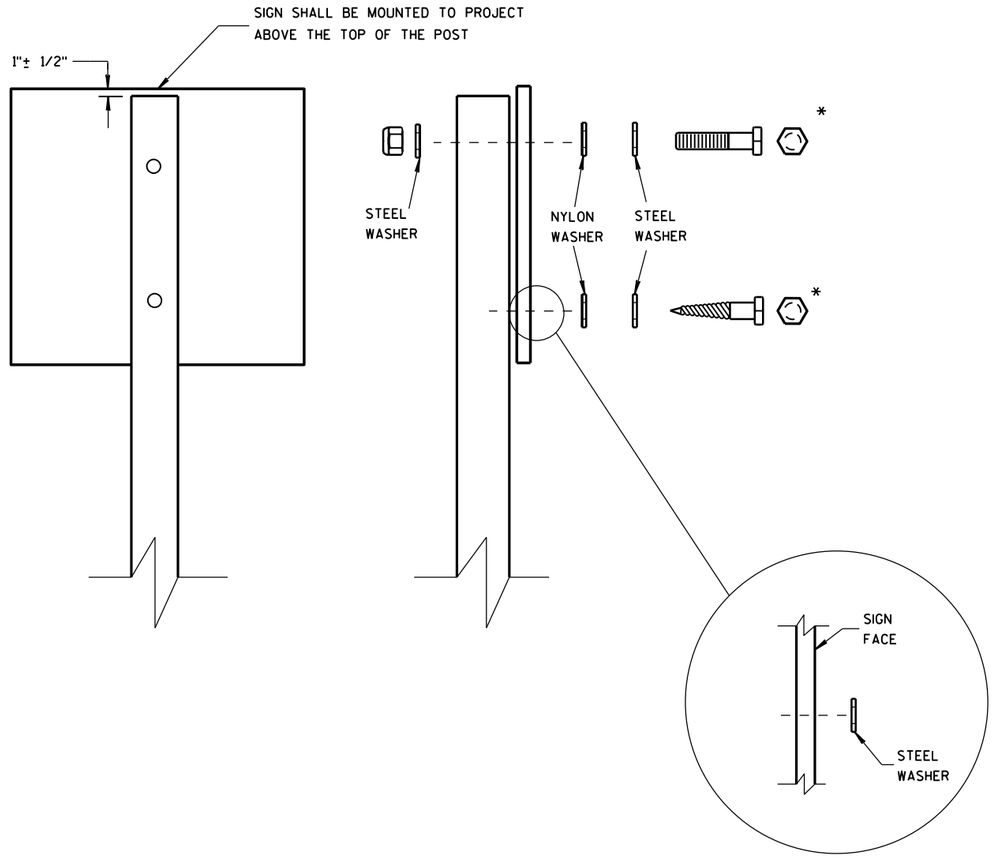
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

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S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

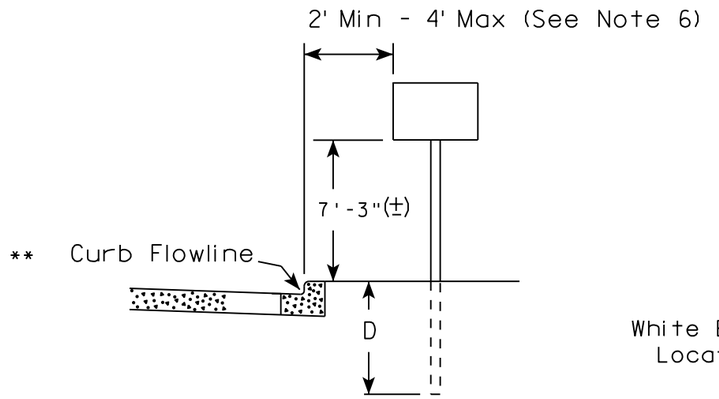
APPROVED

June 2017
DATE

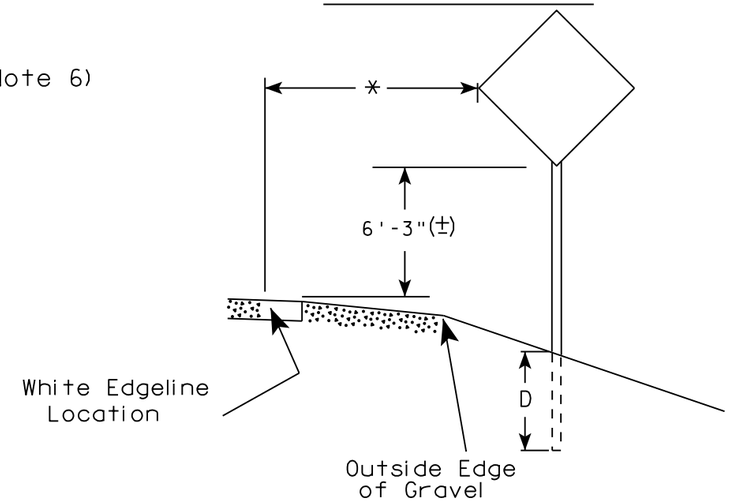
/S/ Andrew Heldtke
WORK ZONE ENG

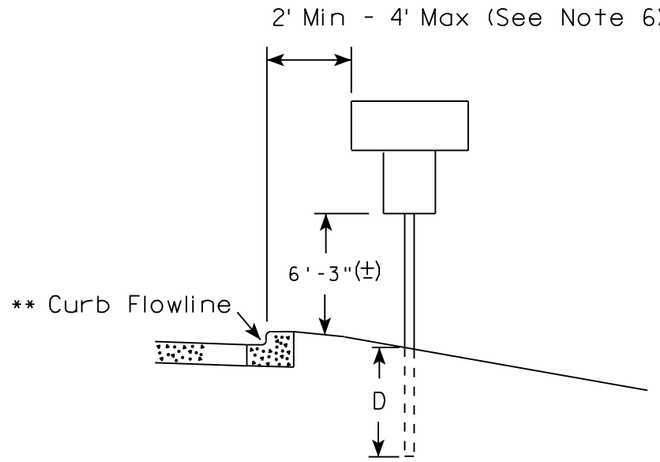
FHWA

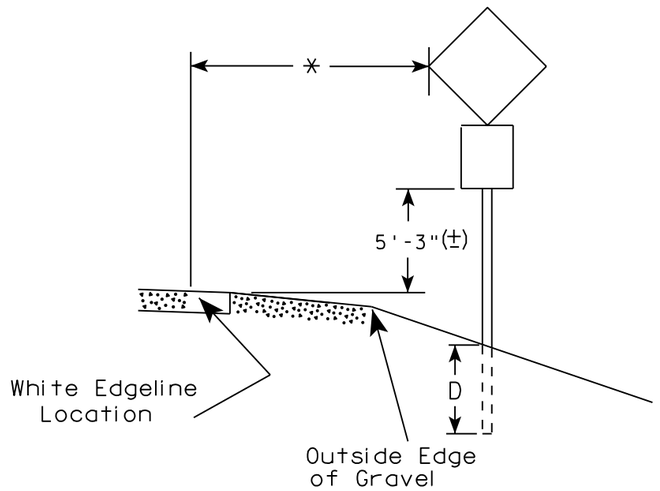
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

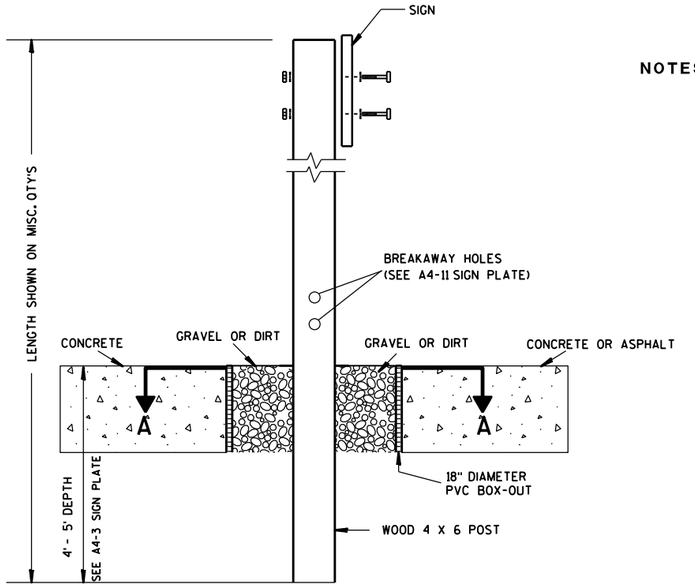
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

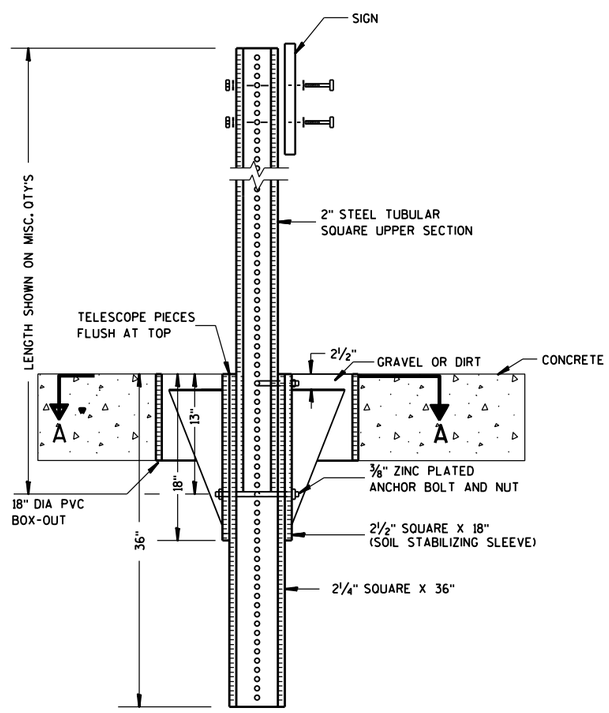
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 114	E



ELEVATION VIEW

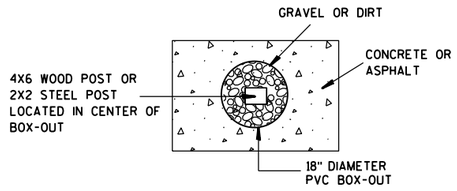
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

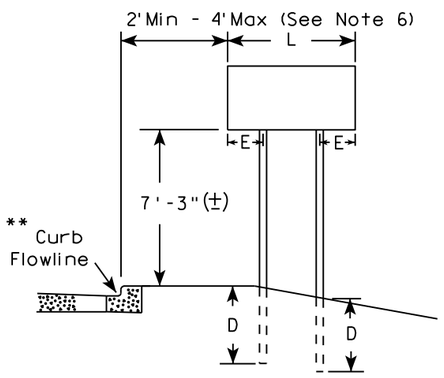
APPROVED Matthew R Rauch
for State Traffic Engineer

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

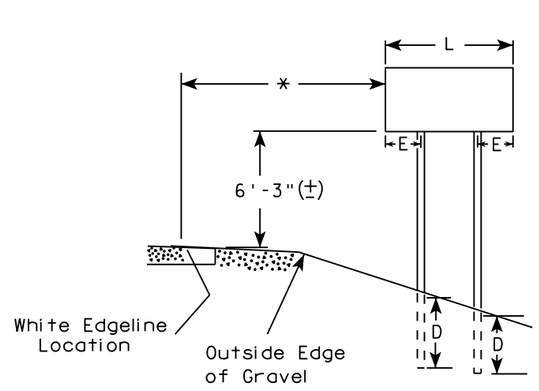
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

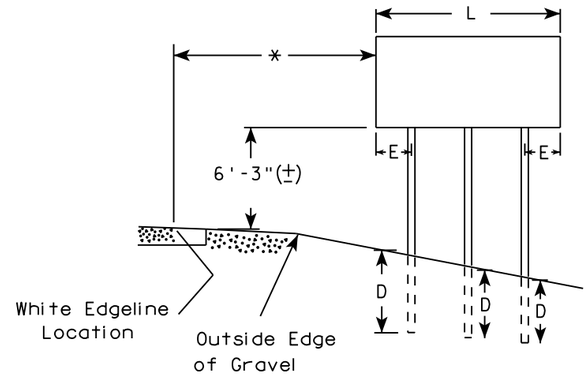
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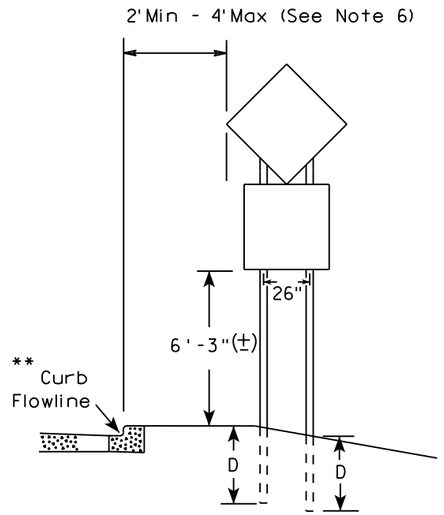
URBAN AREA



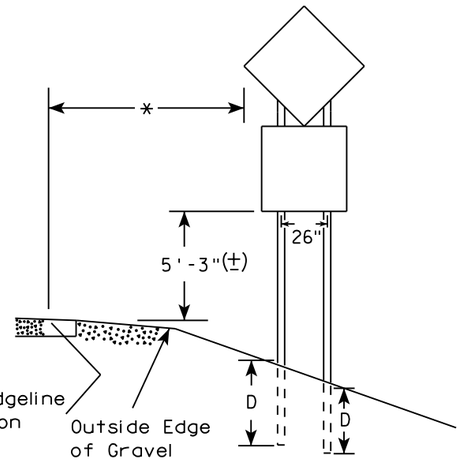
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)		
	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

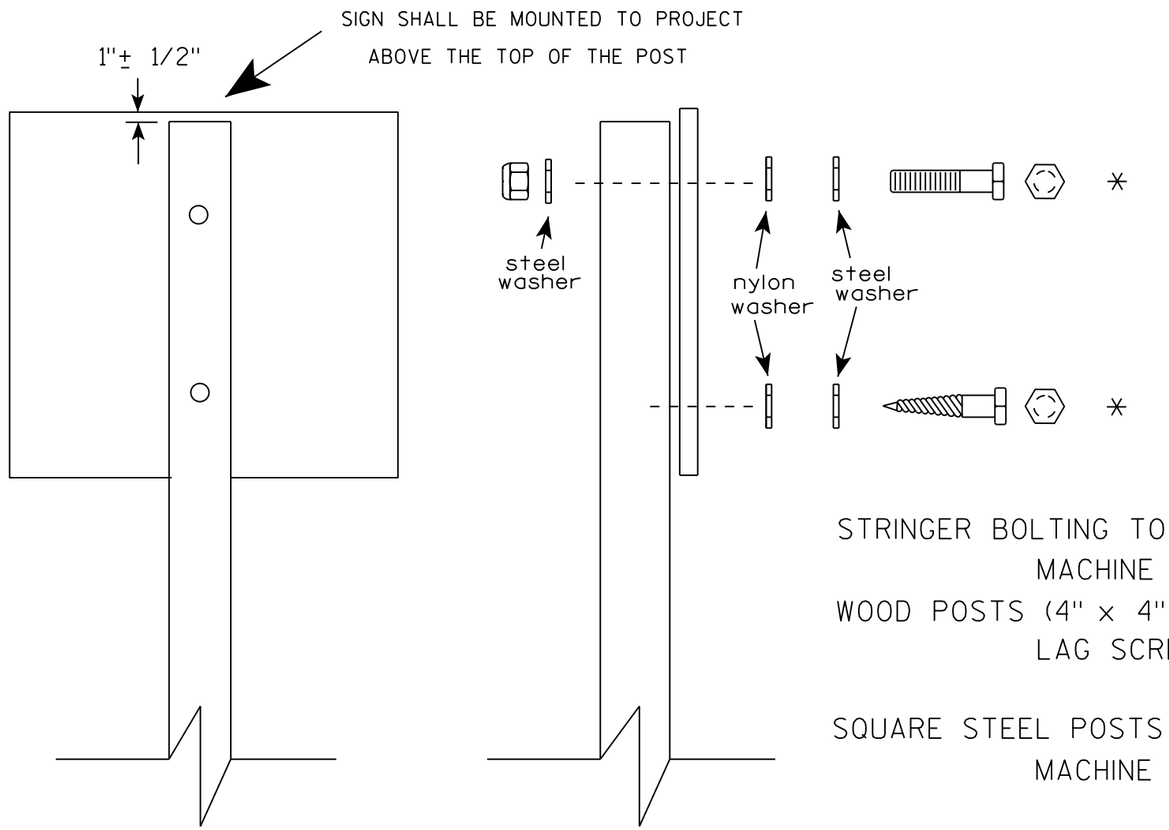
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 116	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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

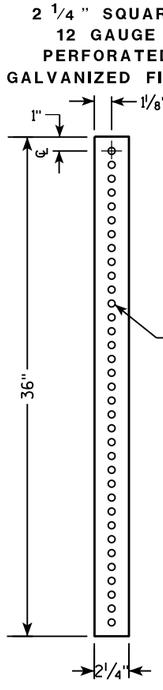
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

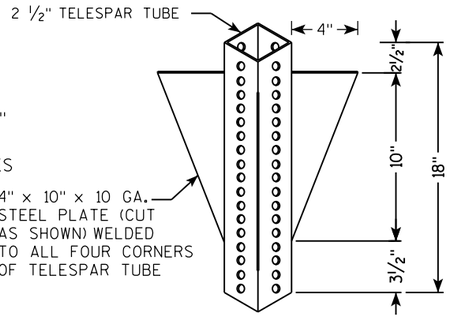
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

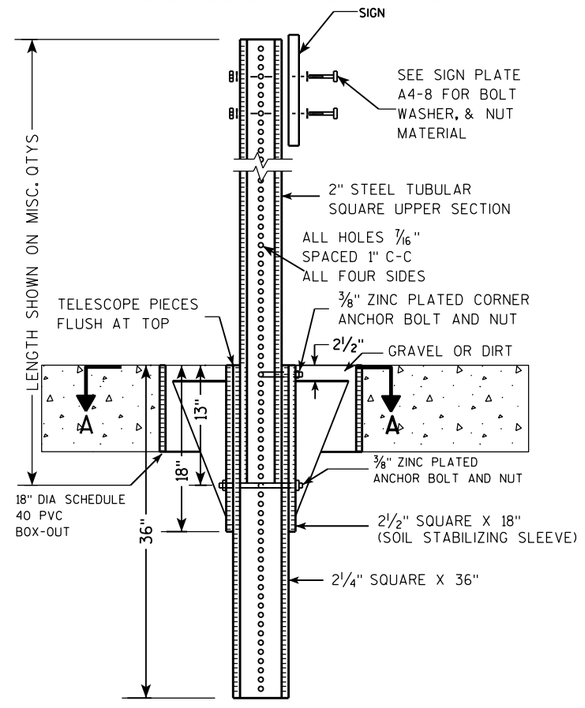
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



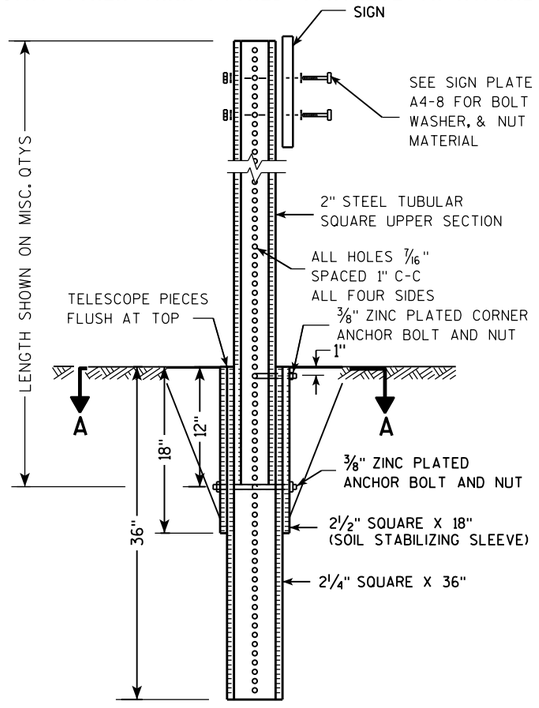
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

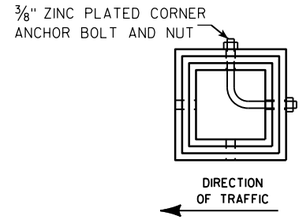


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

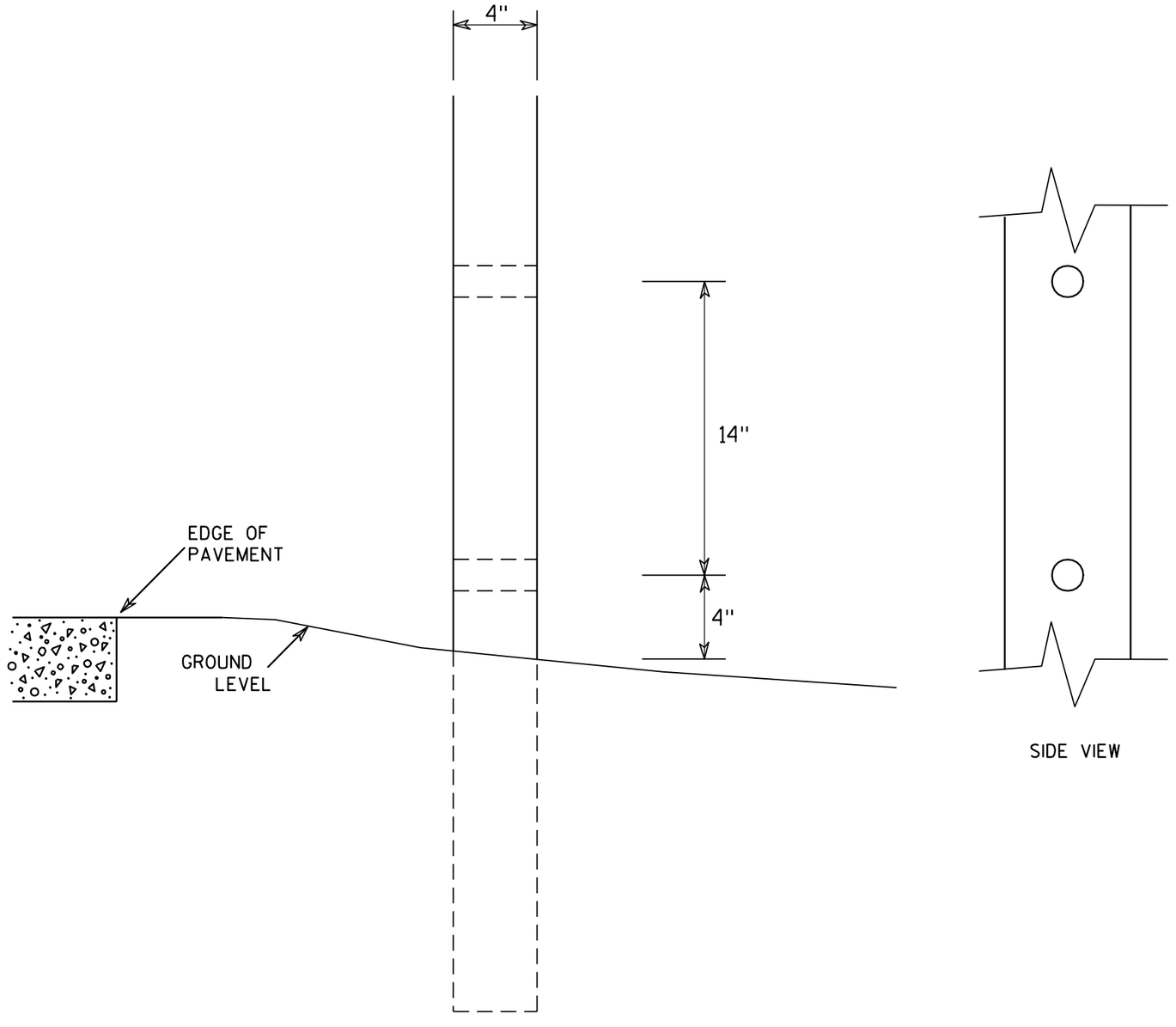
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 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.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

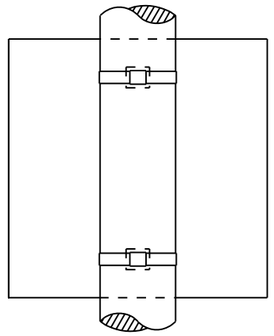
APPROVED Chester J Spang for State Traffic Engineer

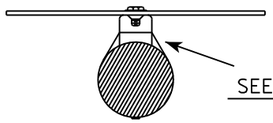
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 119	E

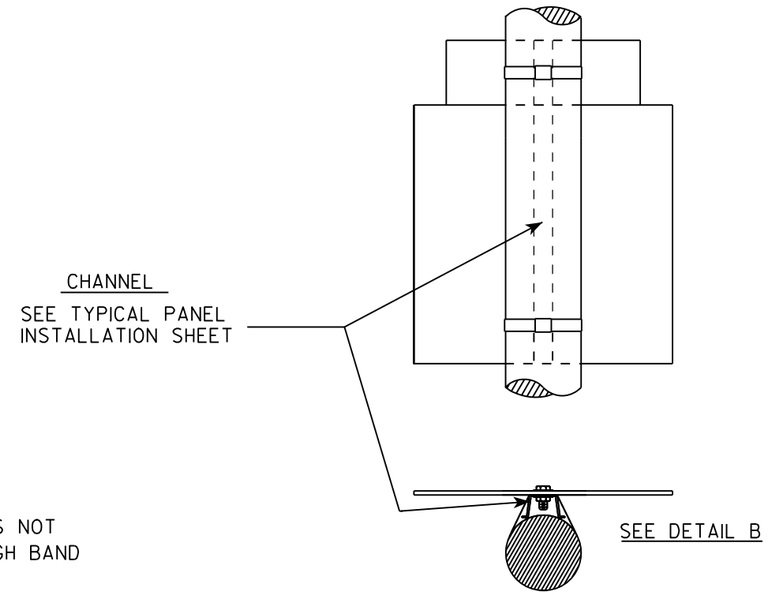
BANDING

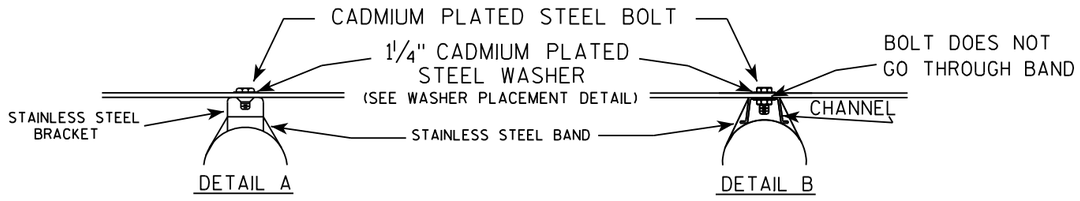
SINGLE SIGN



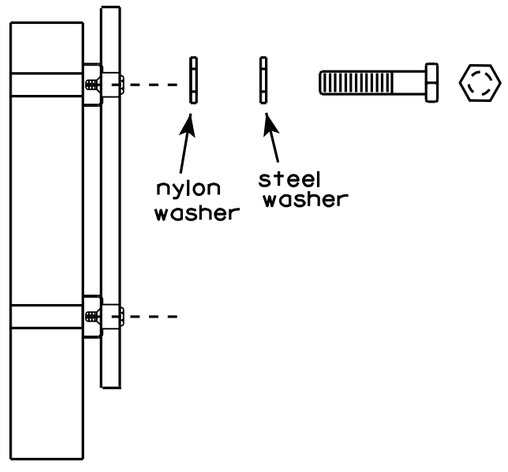


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

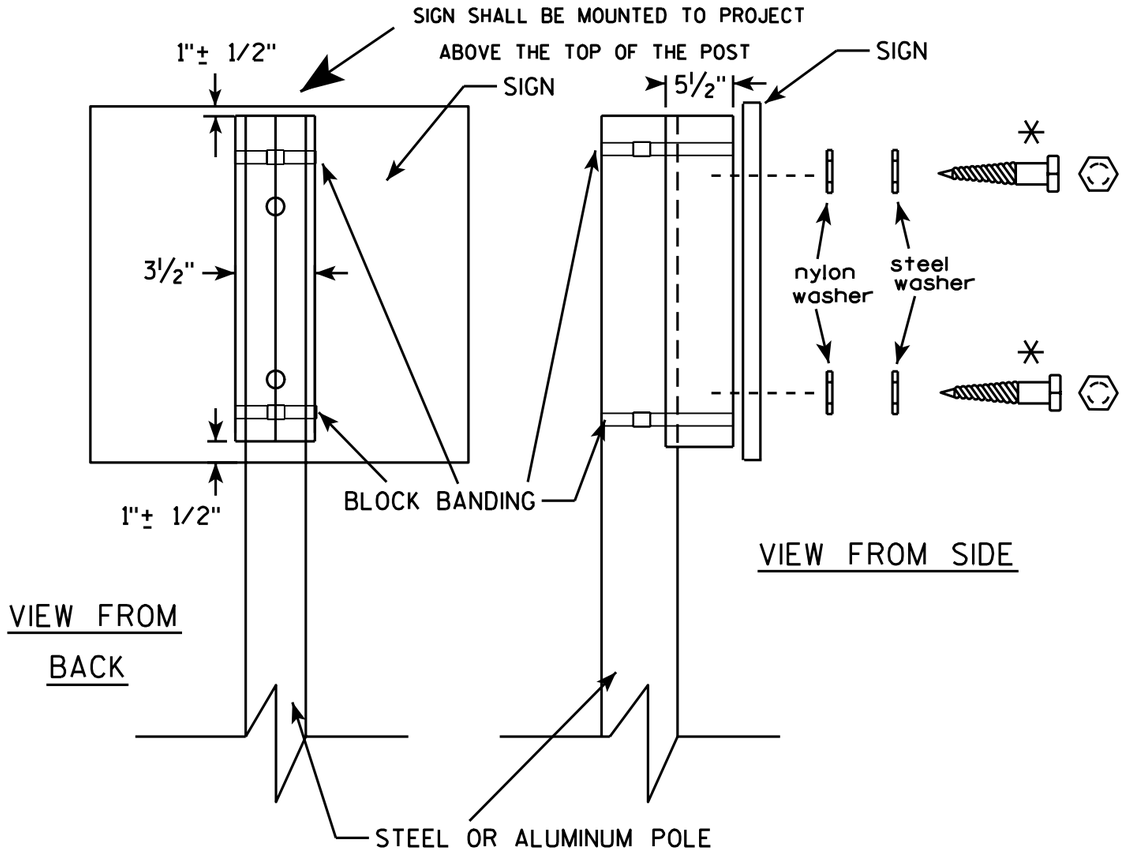
STANDARD SIGN
SIGN BANDING DETAILS

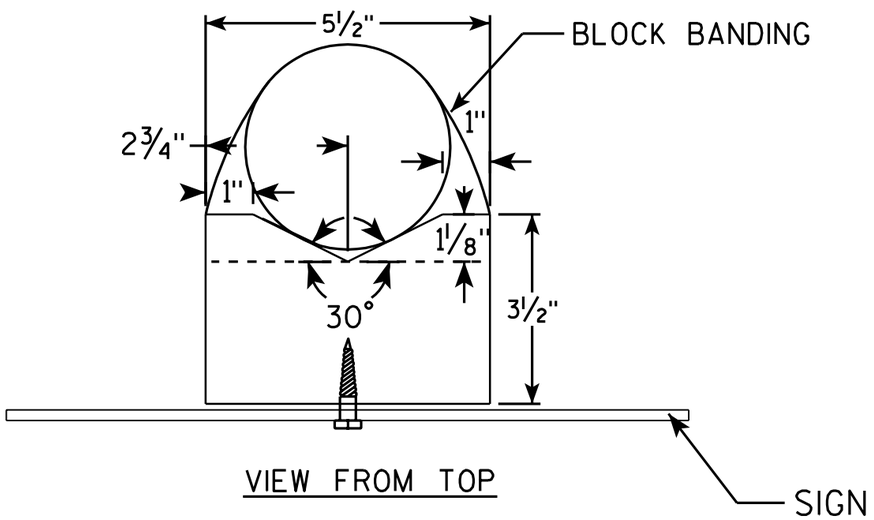
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 120	E





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
   b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
   c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

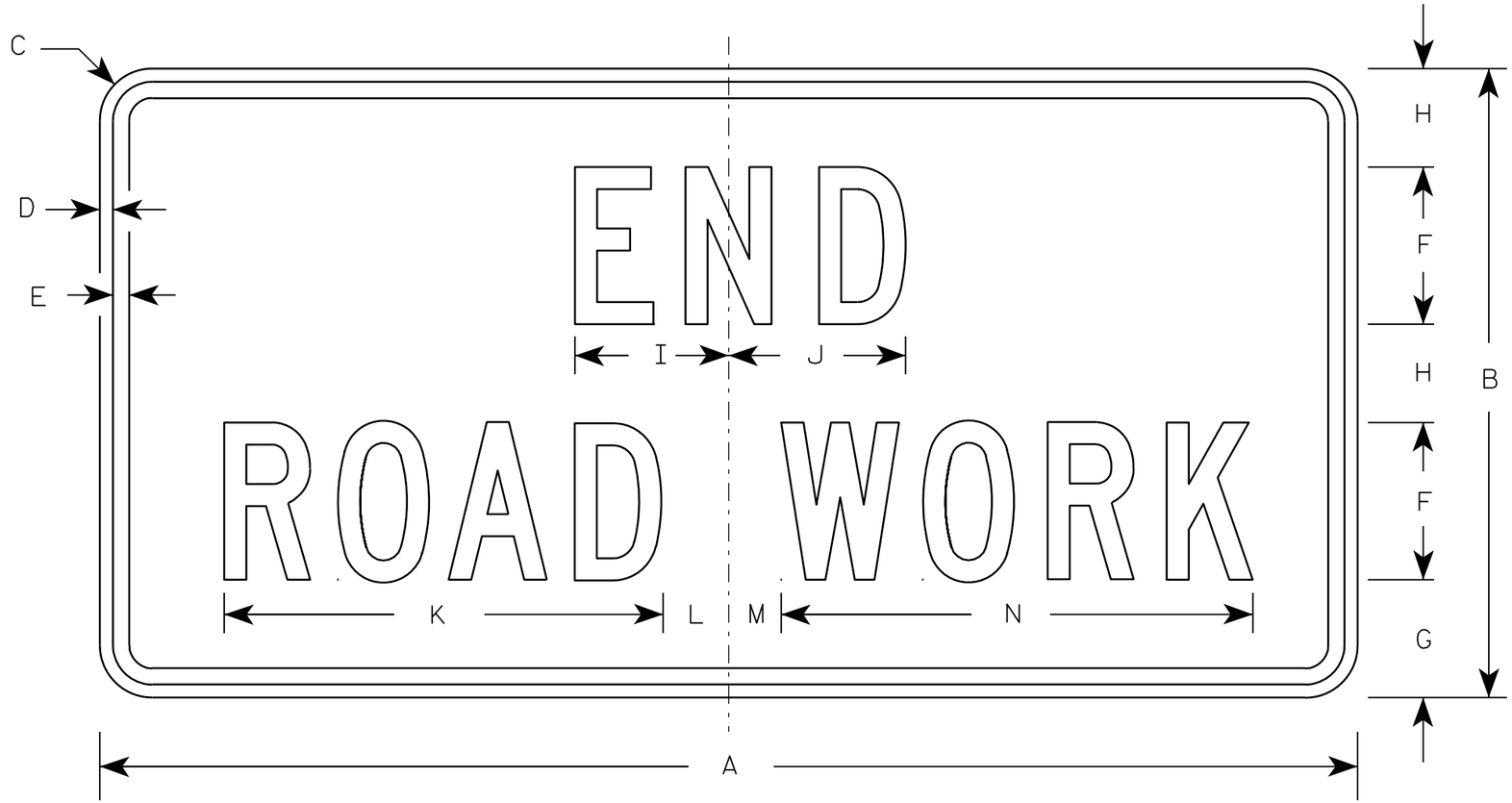
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 121 E

FILE NAME : C:\Users\Projects\tr_stdplate\A510.dgn PLOT DATE : 06-AUG-2007 13:37 PLOT BY : ditjph

WISDOT/CADDS SHEET 42



G20-2A

NOTES

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

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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.	Area m2
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

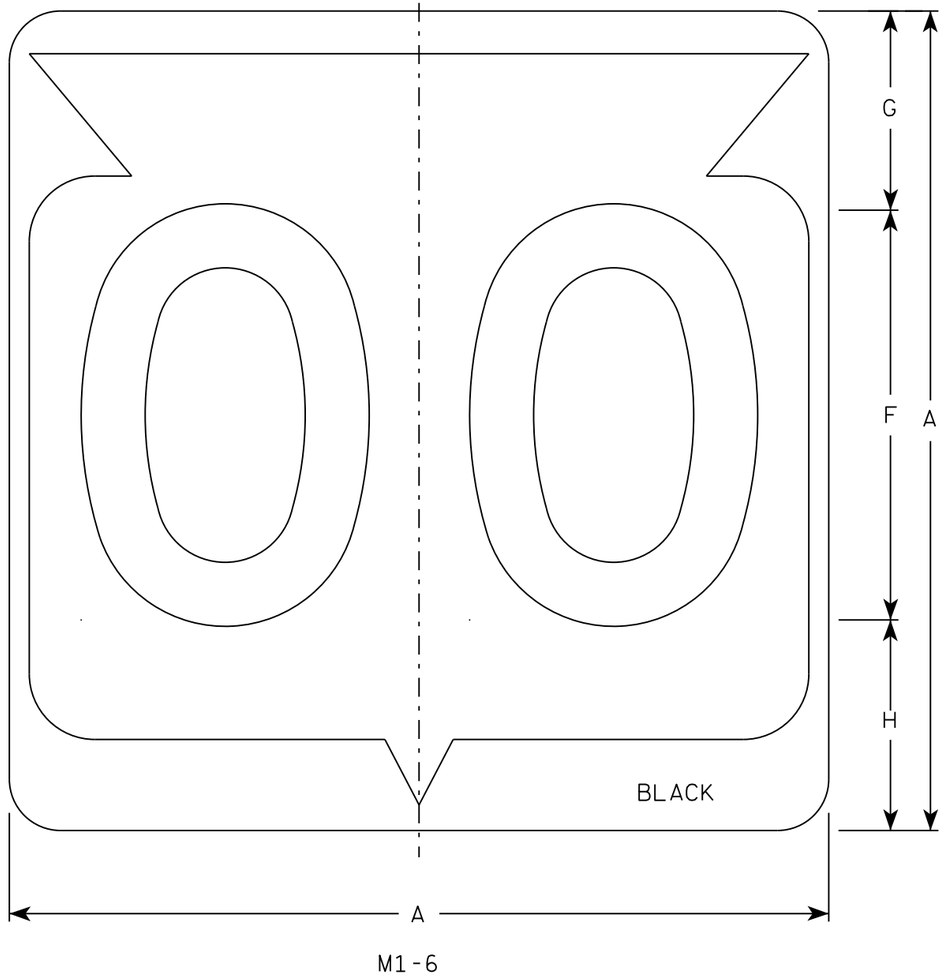
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

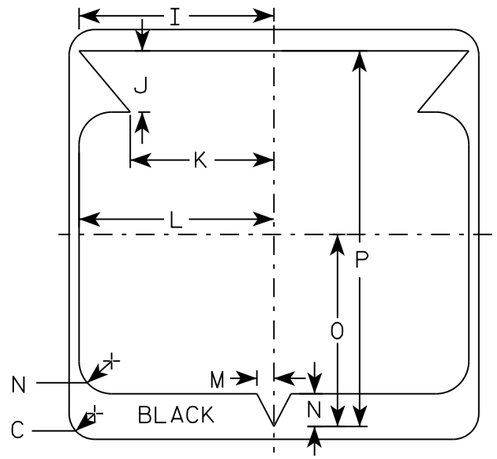
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 122	E



M1-6

NOTES

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



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

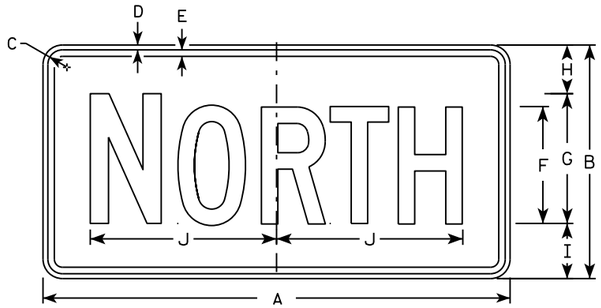
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

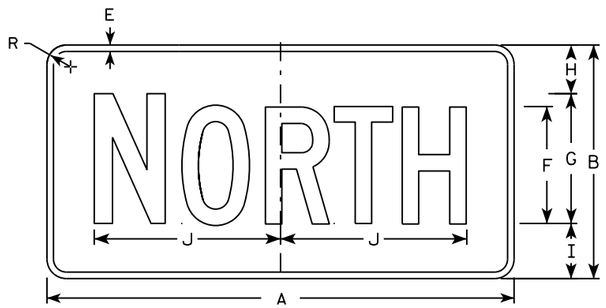
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 123	E



M3-1
MM3-1
MP3-1



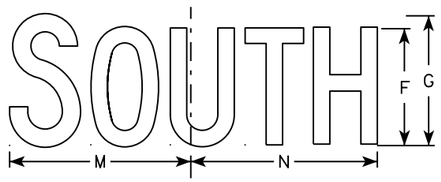
MB3-1
MK3-1
MN3-1



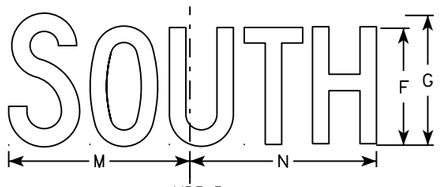
M3-2
MM3-2
MP3-2



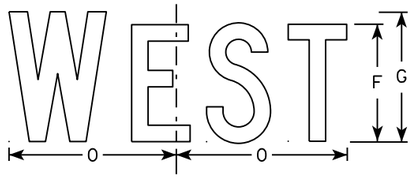
MB3-2
MK3-2
MN3-2



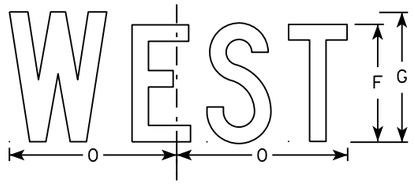
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thur M3-4
SERIES

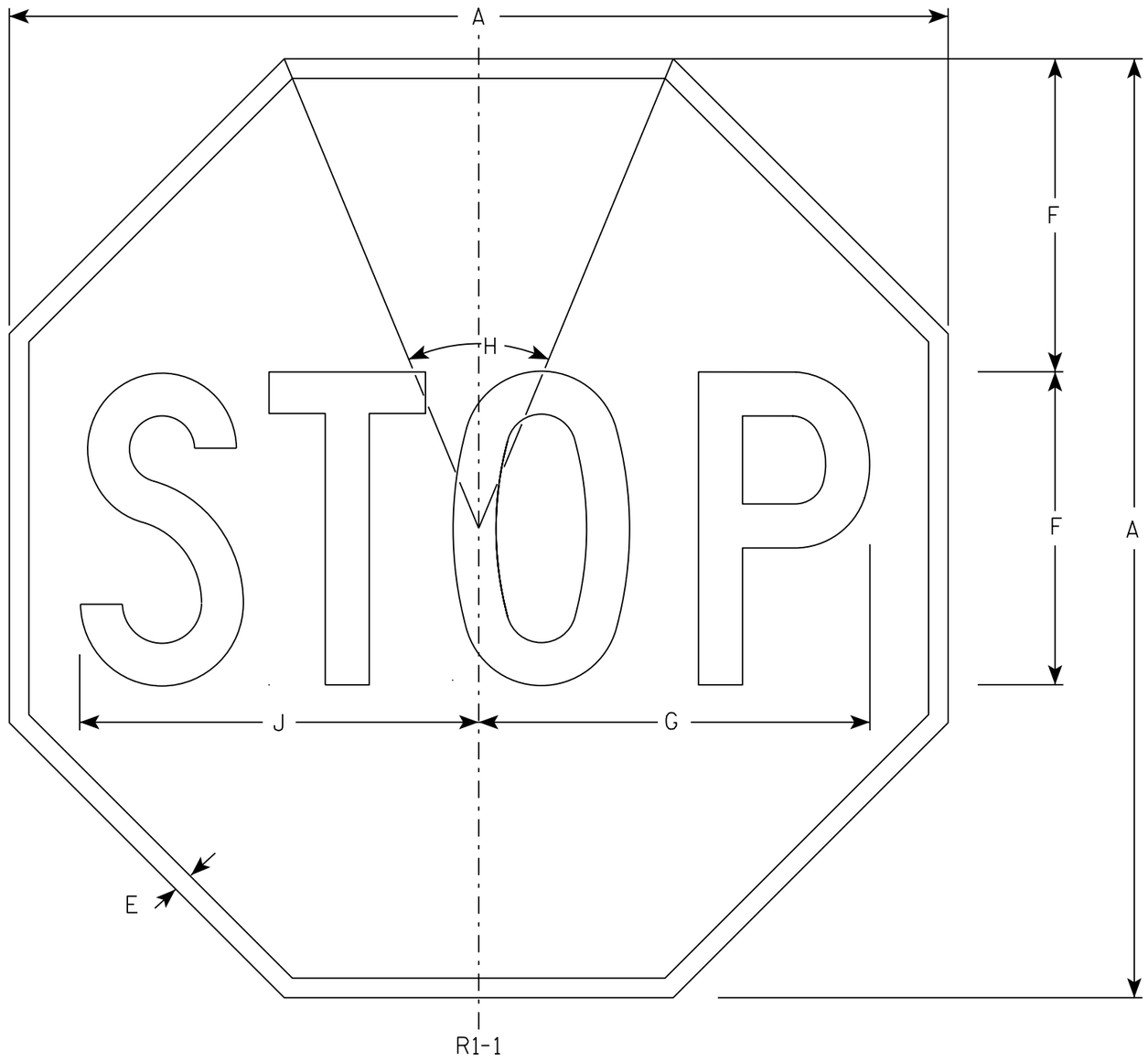
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

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	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

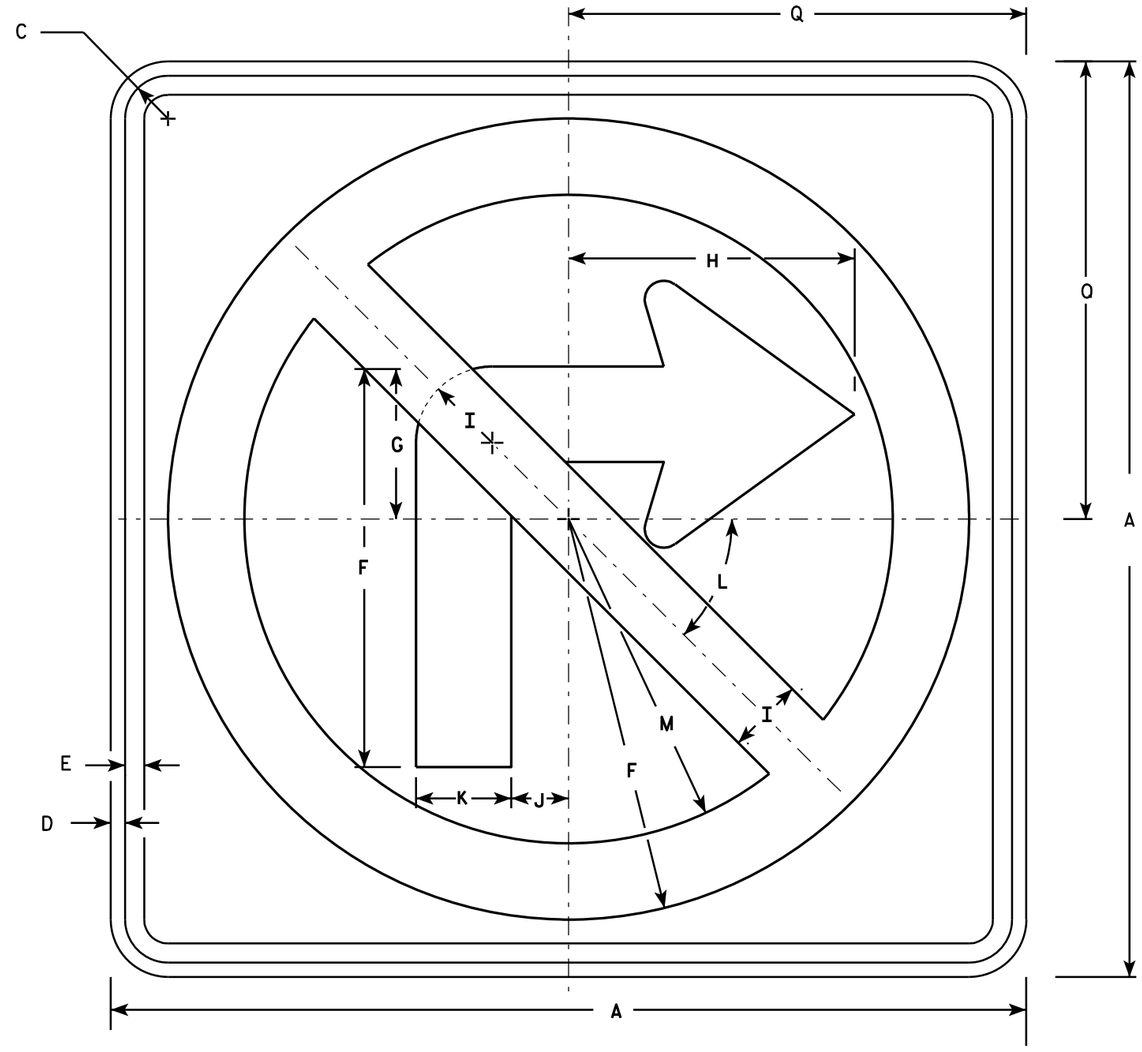
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

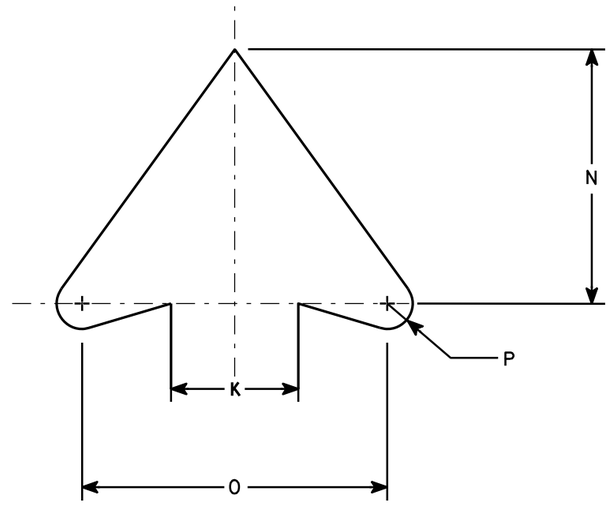
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 125	E



R3-1

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 4
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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW 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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

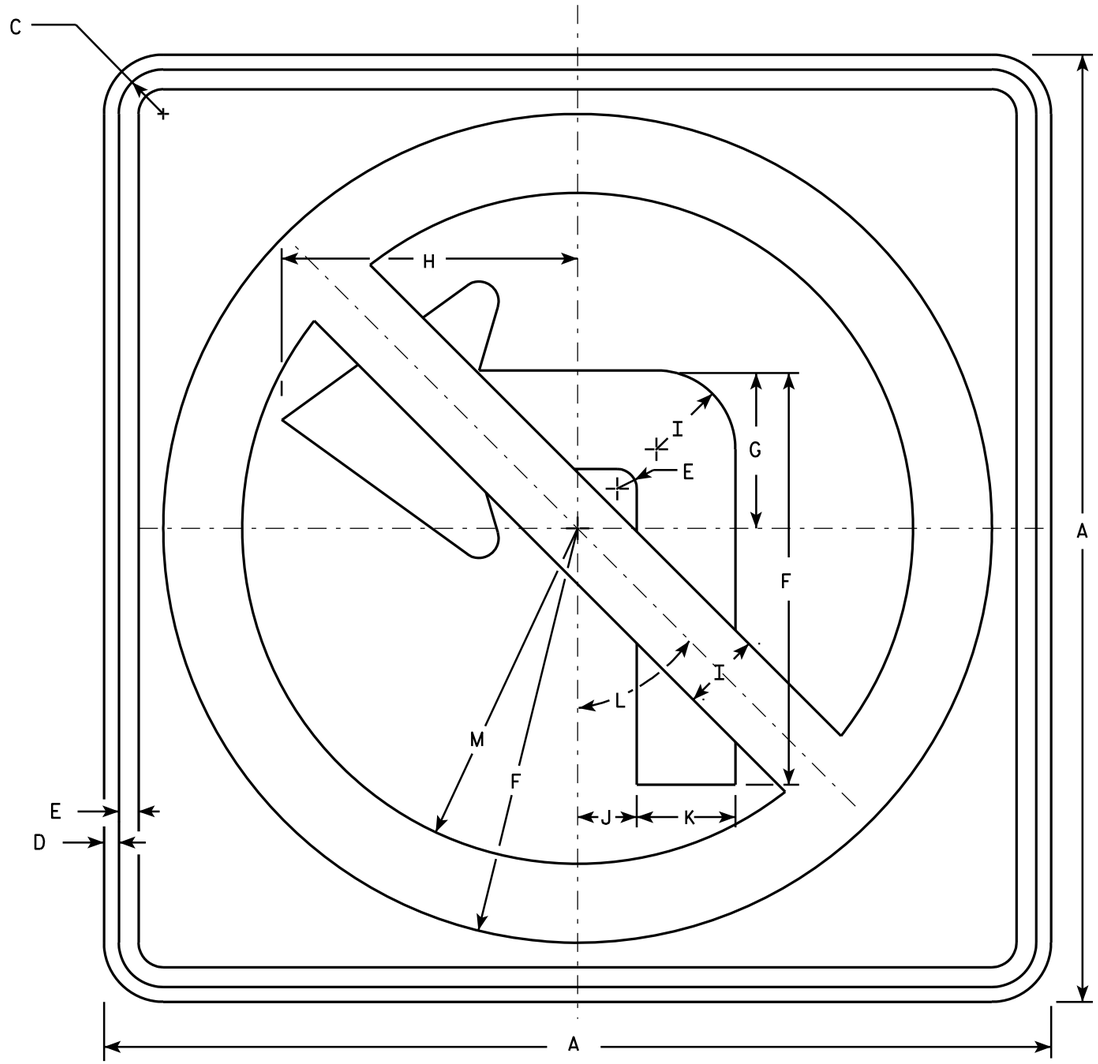
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

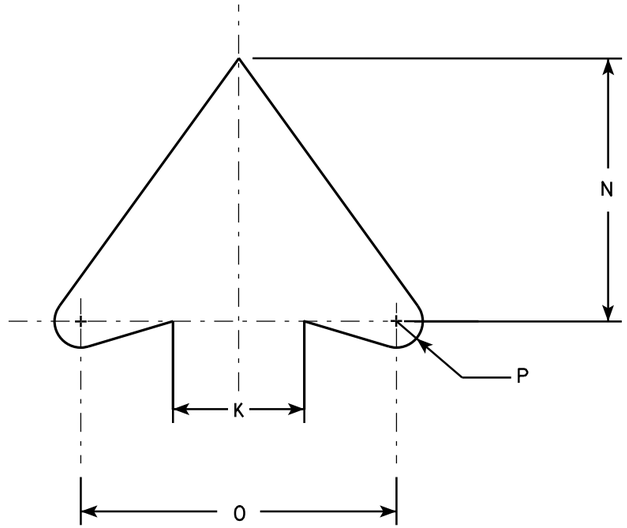
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 126	E



R3-2

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 4
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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW 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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

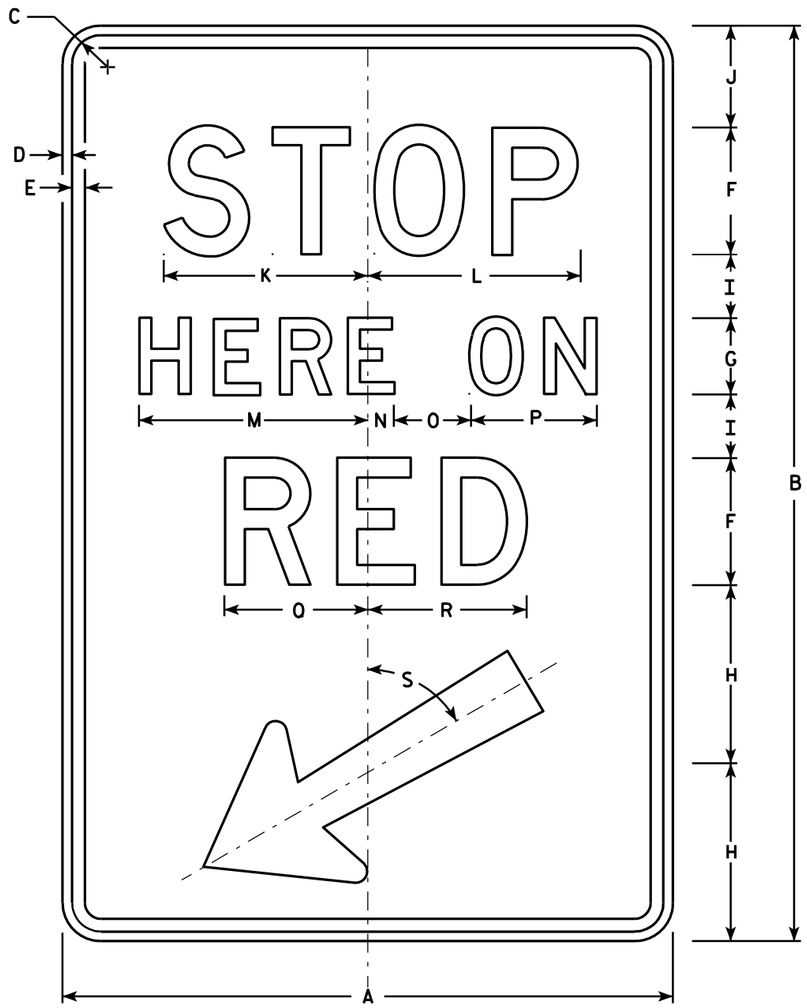
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

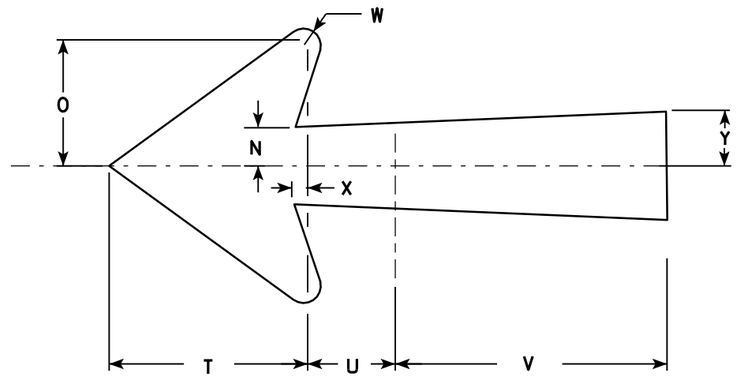
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 127	E



R10-6

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 - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
2M	24	36	1 1/8	3/8	1/2	5	3	7	2 1/2	4	8	8 3/8	9	1	3	5	5 5/8	6 1/4	60°	5 1/4	2 1/4	7 1/8	1/2	3/8	1 3/8		6.0
3																											
4																											
5																											

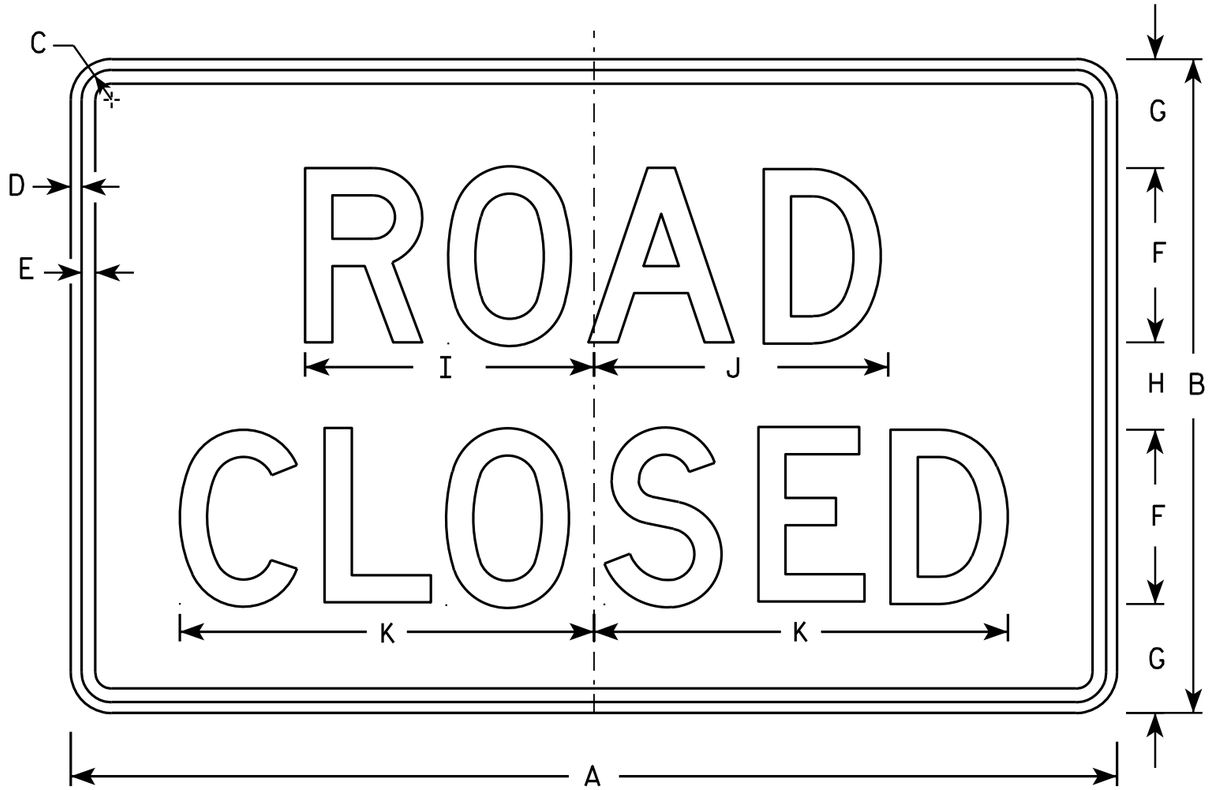
STANDARD SIGN
R10-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/5/11 PLATE NO. R10-6.6

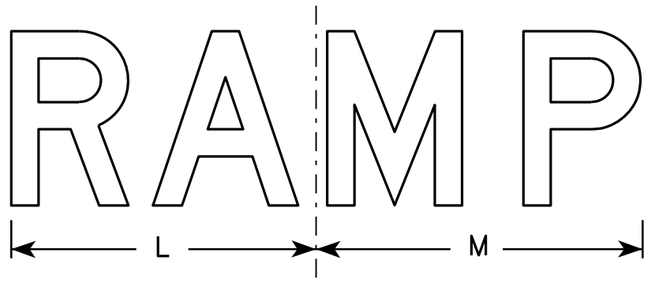
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 128	E



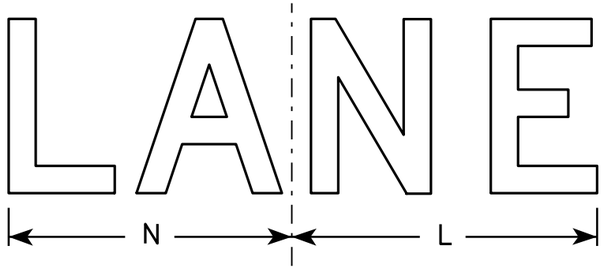
R11-2

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 - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



R11-2R



R11-2L

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	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

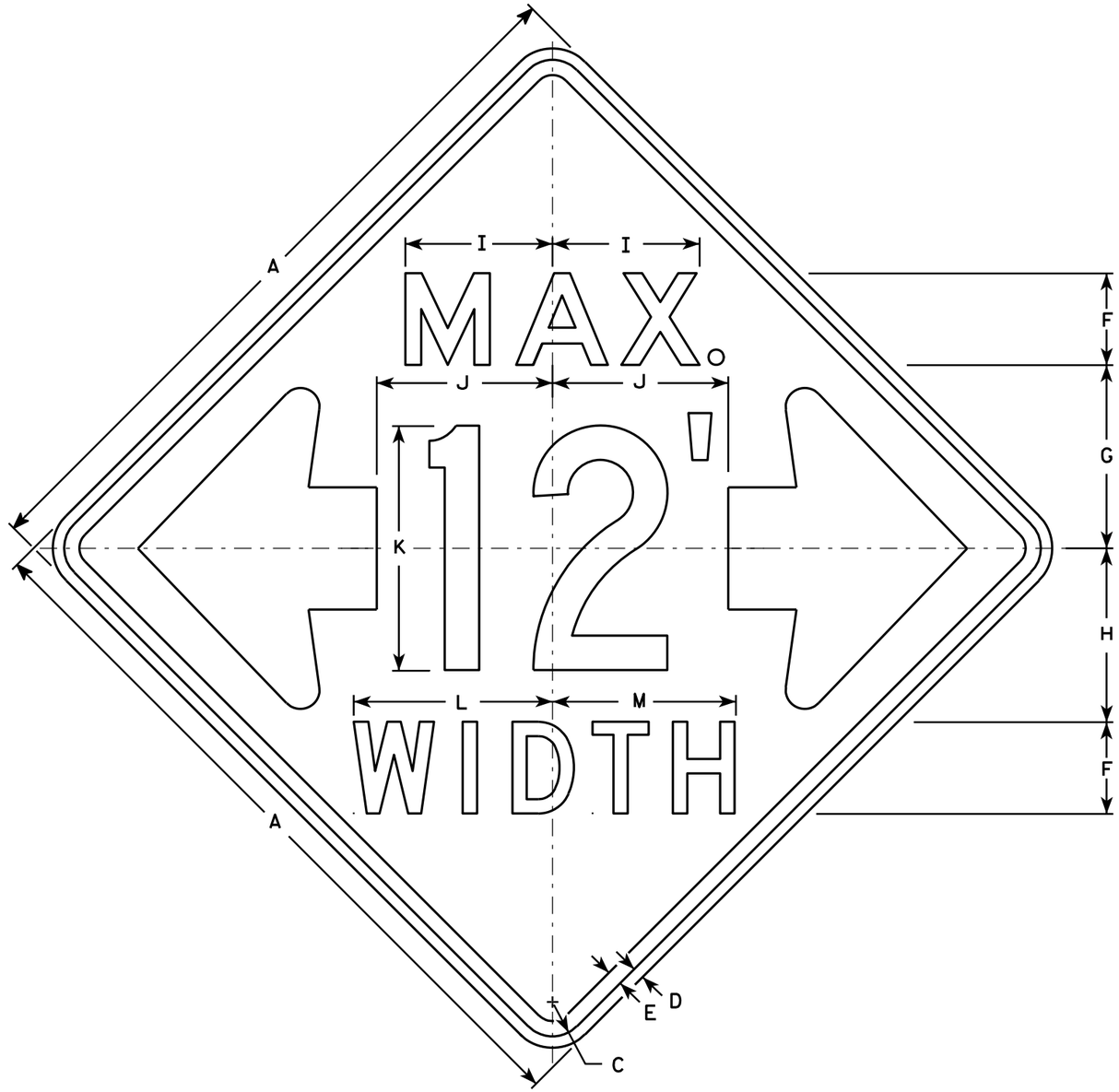
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

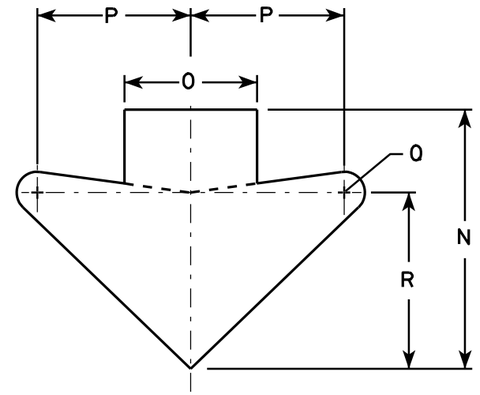
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 129 | E



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW 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																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

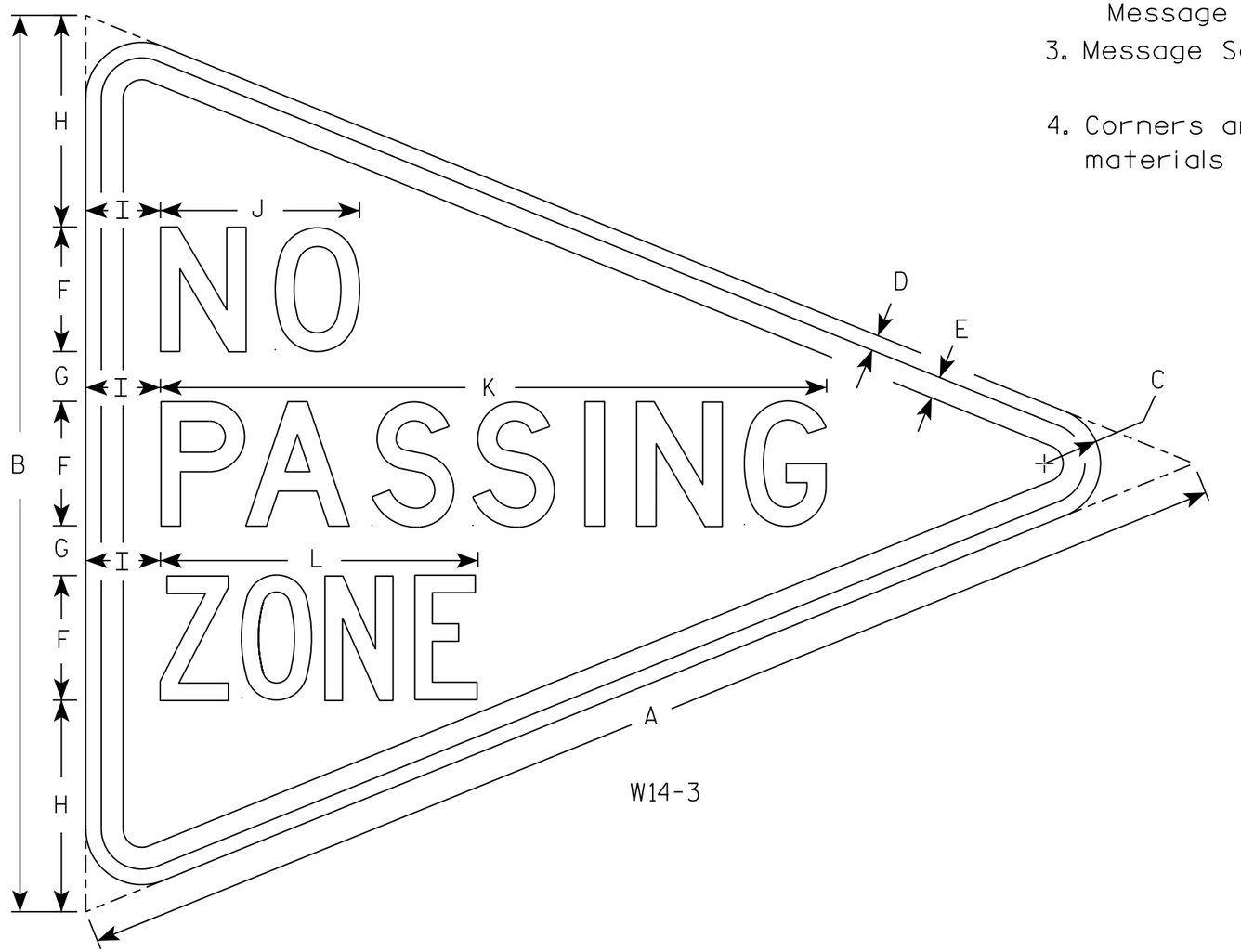
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 130 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W1252.DGN PLOT DATE : 16-MAR-2011 14:45 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.137199:1.000000
WISDOT/CADDS SHEET 42

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - Lines 1 and 2 are Series D.
   Line 3 is series C.
4. Corners and borders shall be rounded on all base materials for this sign.



W14-3

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	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

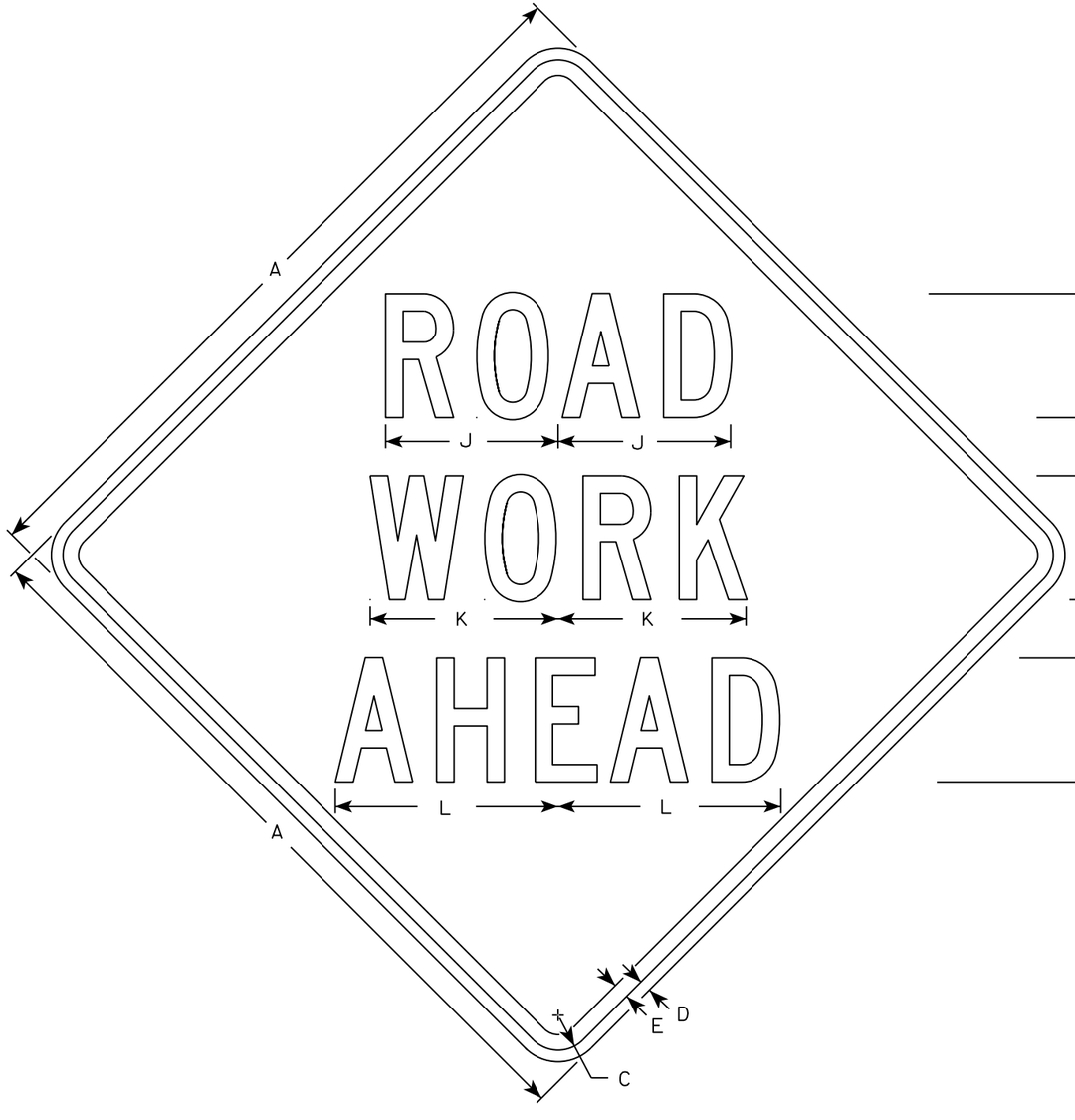
STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

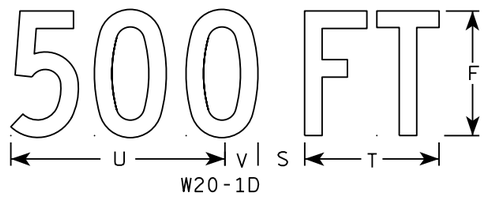
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W14-3.10

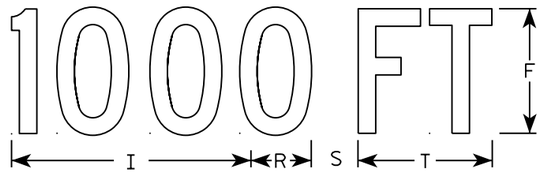
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 131 | E



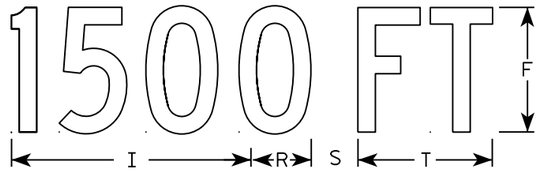
W20-1A



W20-1D



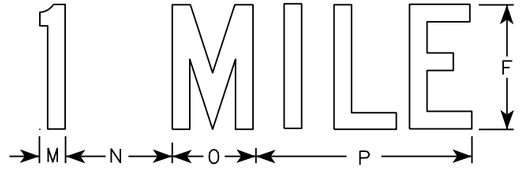
W20-1C



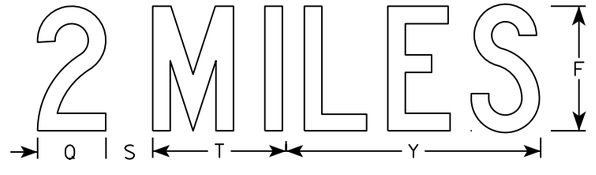
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

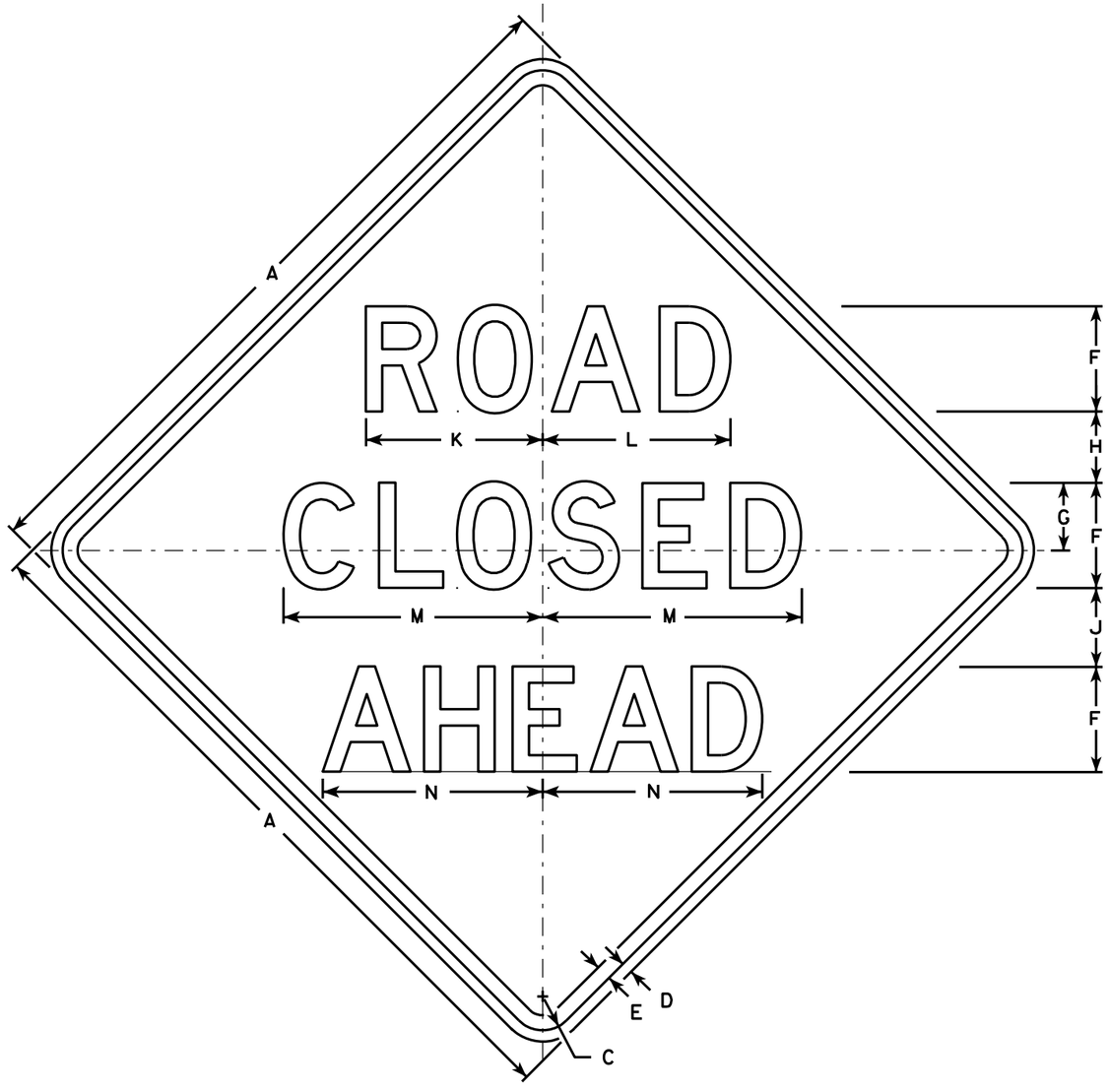
APPROVED Matthew R Rauch
for State Traffic Engineer

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

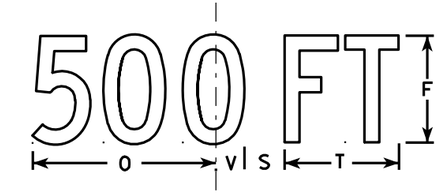
PROJECT NO:

SHEET NO: E

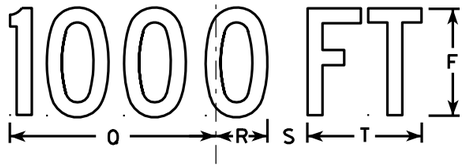
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



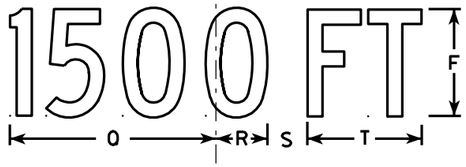
W20-3A



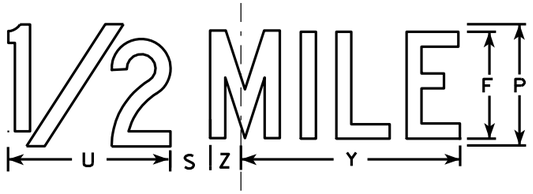
W20-3D



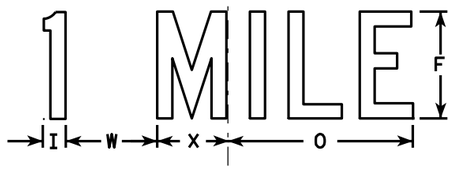
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
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. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

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	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

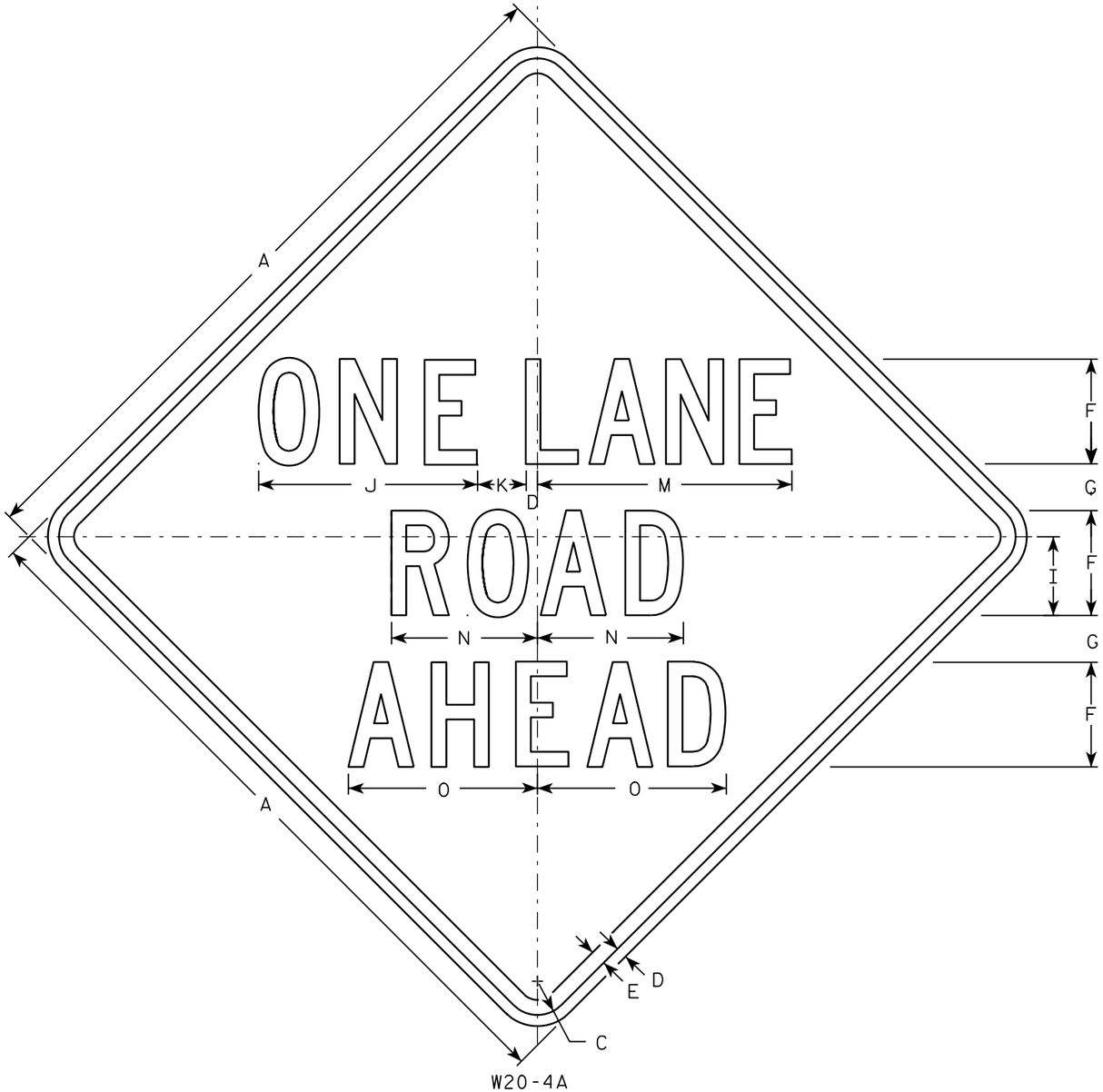
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

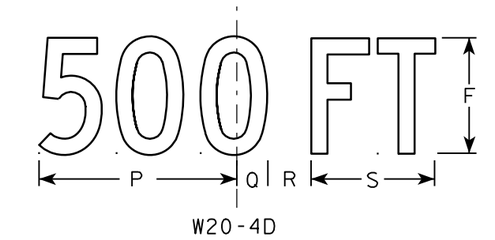
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 133 | E

7

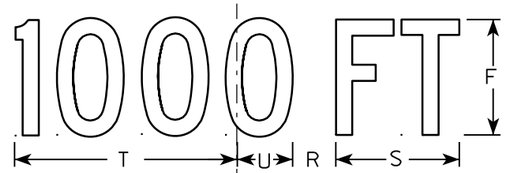
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42



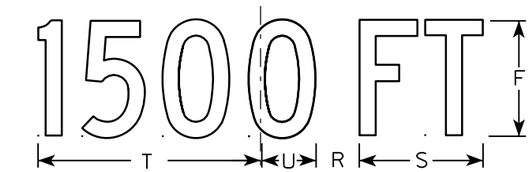
W20-4A



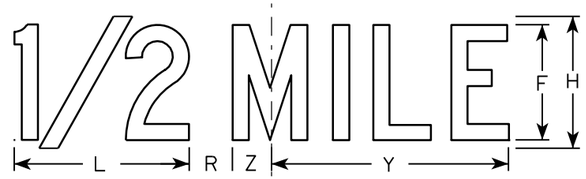
W20-4D



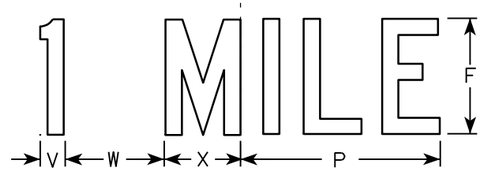
W20-4C



W20-4B



W20-4G



W20-4F

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

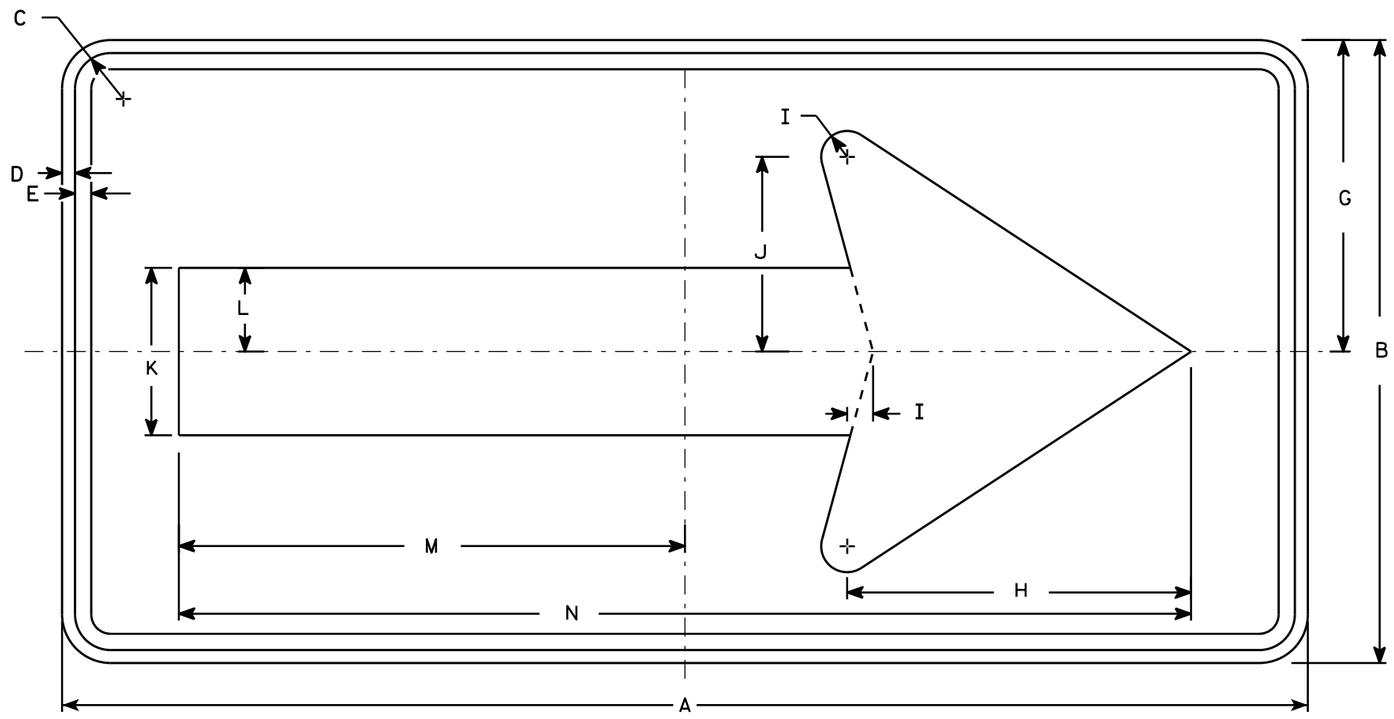
DATE 3/18/11 PLATE NO. W20-4.9

PROJECT NO:

SHEET NO: 134 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W204.DGN PLOT DATE : 18-MAR-2011 12:11 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42



W01-6

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

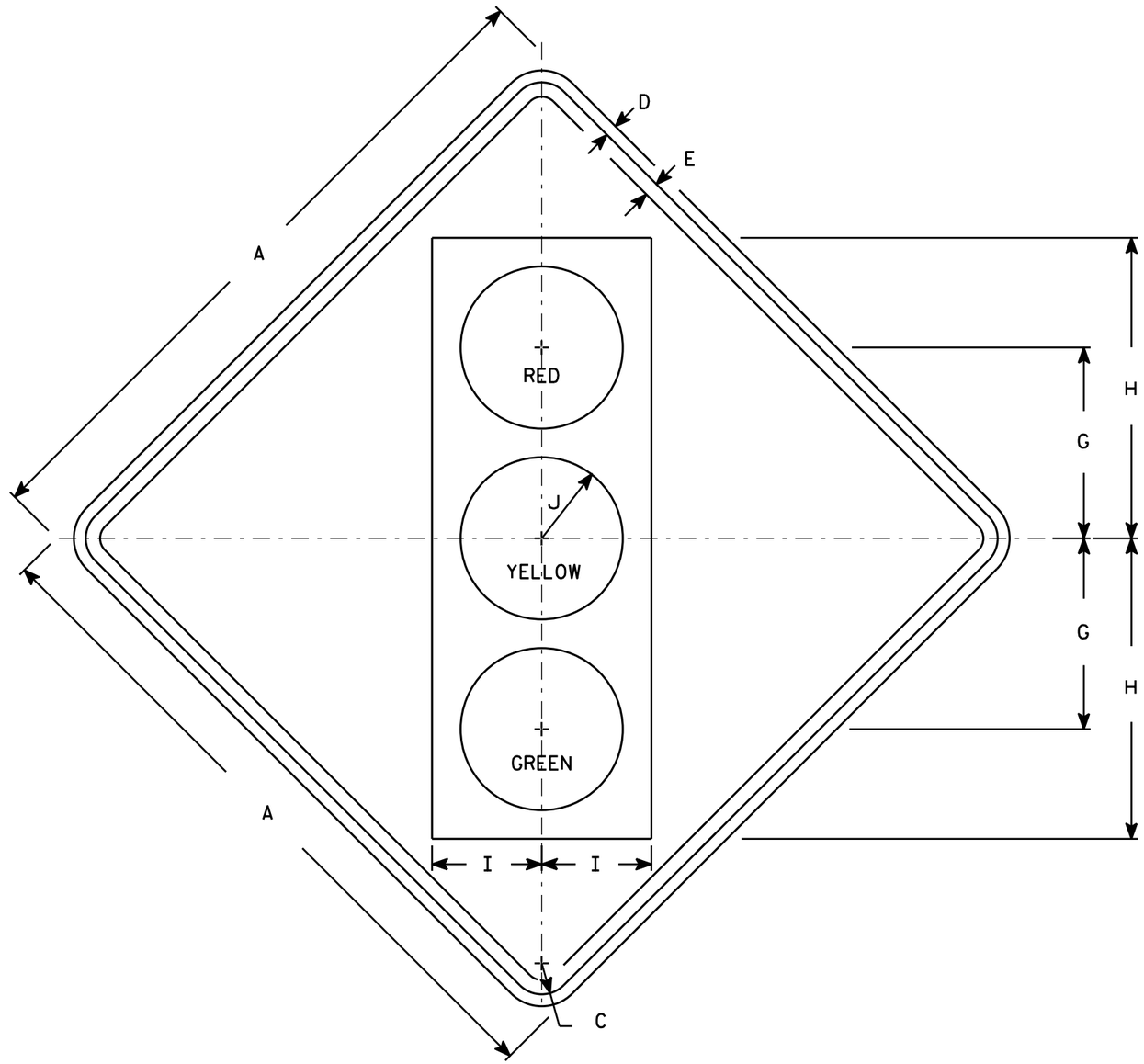
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



W03-3

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - See Note 4
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. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

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	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2S	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
2M	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
3	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

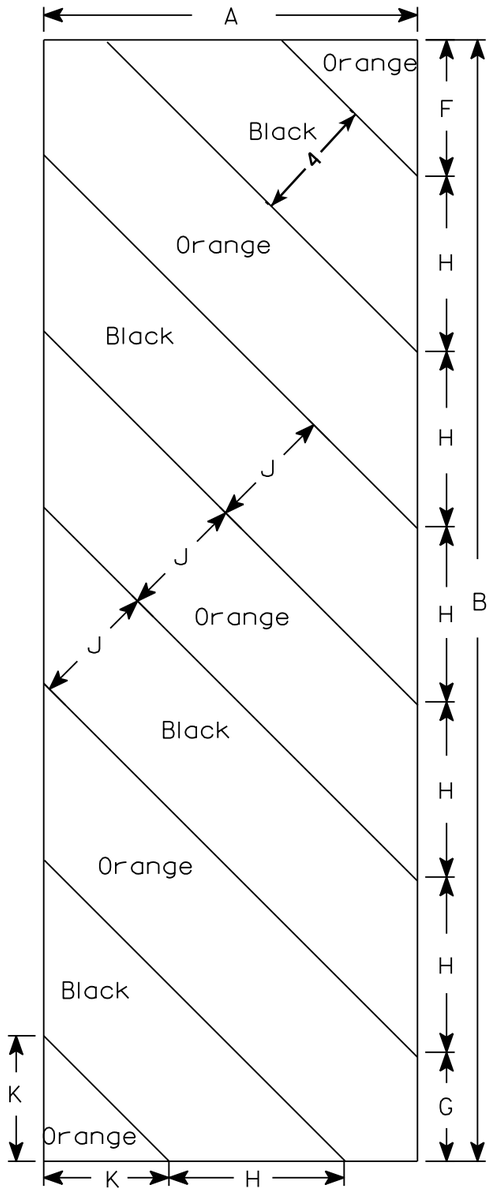
STANDARD SIGN
W03-3

WISCONSIN DEPT OF TRANSPORTATION

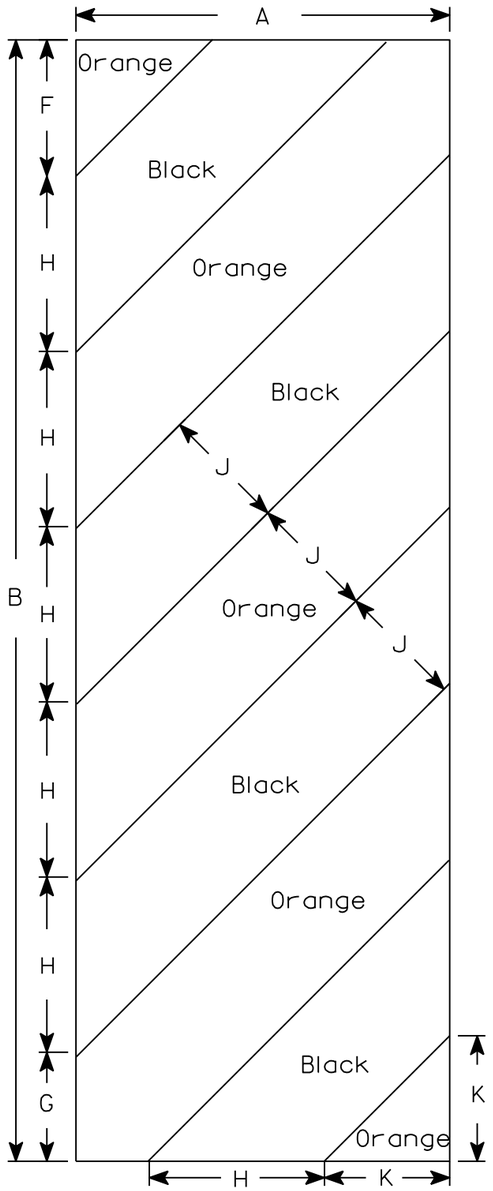
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 136 W03-3.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



W05-52L



W05-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   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
W05-52L & W05-52R

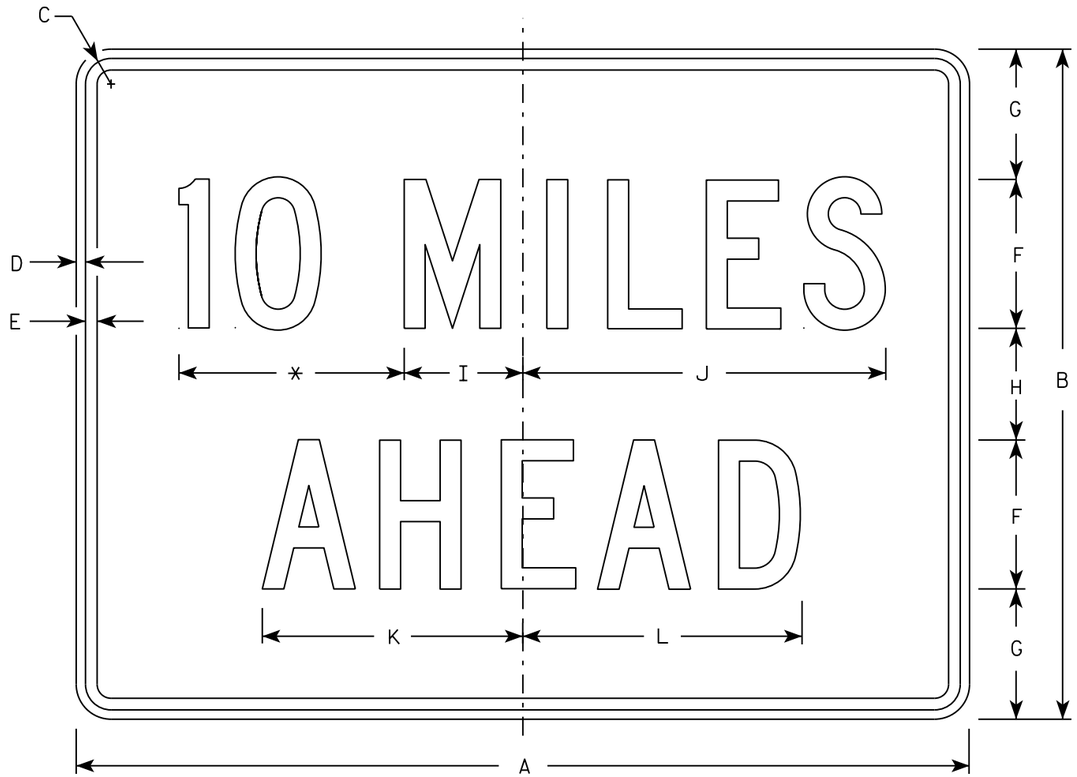
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

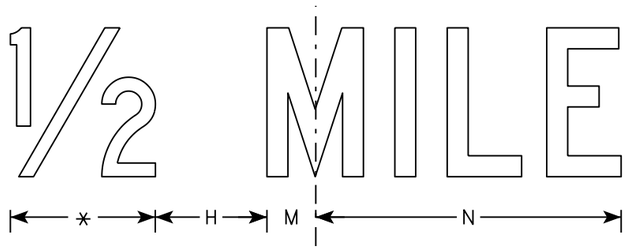
DATE 11/20/13 PLATE W05-52.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W0552.DGN PLOT DATE : 28-FEB-2014 11:39 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 4.864607:1.000000
WISDOT/CADDS SHEET 42



W057-52



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to the nearest quarter mile and optically adjust spacing to achieve proper balance.

* See note 5

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	36	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 138	E

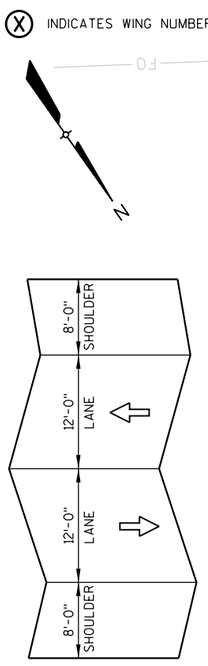
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PLOT DATE: 7/31/2018 PLOT TIME: 4:54:51 PM
BATCH PRINT SHEET 1 OF 26

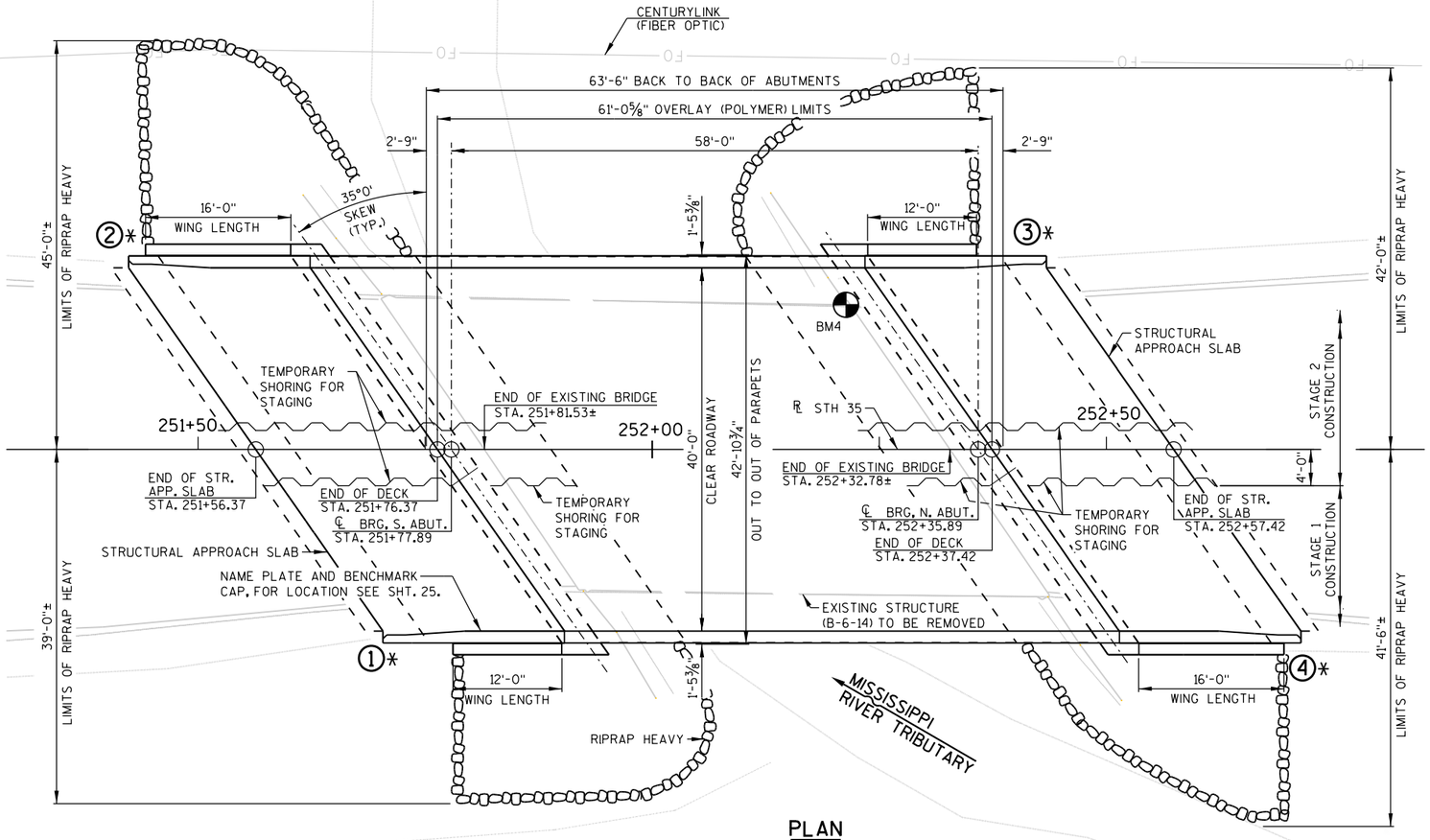
STATE PROJECT NUMBER

7160-04-74

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT.

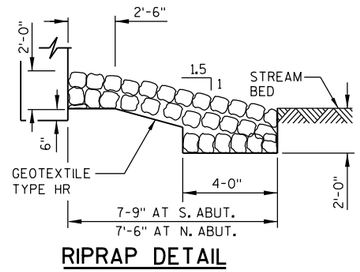
Ⓧ INDICATES WING NUMBER



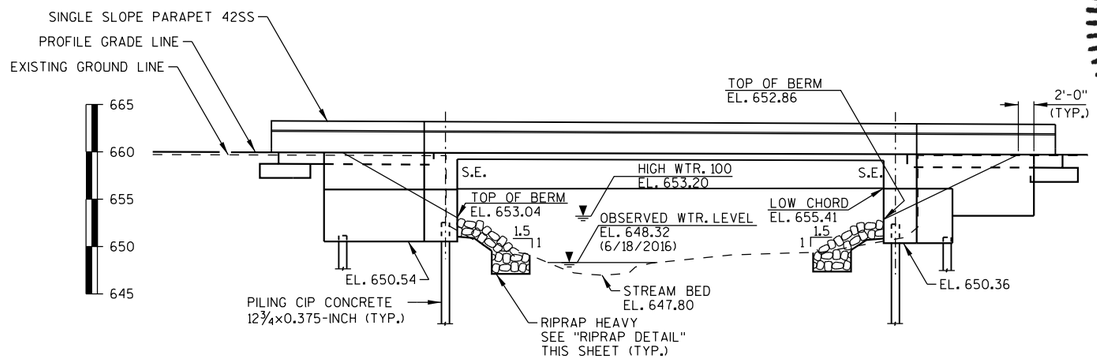


PLAN

(SINGLE SPAN - 36" PRESTRESSED GIRDERS)



RIPRAP DETAIL



ELEVATION

NORMAL TO MISSISSIPPI RIVER TRIBUTARY

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
BM3	250+92.52, 32.47' RT.	SPIKE IN STOP SIGN POST.	660.47
BM4	252+21.34, 15.93'LT.	ALUM. CAP NW CRNR. OF BRIDGE DECK.	659.48

HORIZ. COORDINATES TIED TO NAD 83 (2011). VERT. TIED TO NAVD 88. COORDINATE SYSTEM WCCS, 9606 ZONE.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.16
OPERATING RATING FACTOR = 1.51
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY
- DECK, PARAPET, DIAPHRAGMS, APPROACH SLAB, APPR. SLAB FOOTING — f'c = 4,000 P.S.I.
- ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
(INCLUDES STAINLESS STEEL REINFORCEMENT)

36" PRESTRESSED GIRDER
- CONCRETE MASONRY — f'c = 8,000 P.S.I.
- STRANDS - 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF — 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾×0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45'-0" LONG FOR THE SOUTH ABUTMENT AND 40'-0" LONG FOR THE NORTH ABUTMENT.

** 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 THE MODIFIED GATE DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

STH 35
A.D.T. (2019) = 5400
A.D.T. (2039) = 6100
DESIGN SPEED = 60 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

Q100	560 CFS
VELOCITY	7.1 FPS
HIGH WATER ELEVATION	653.20
WATERWAY AREA	78.5 SQ. FT.
DRAINAGE AREA	0.8 SQ. MI.
ROAD OVERTOPPING	N/A
SCOUR CRITICAL CODE	5

2 YEAR FREQUENCY

Q2	65 CFS
HIGH WATER 2 ELEVATION	650.62

WISCONSIN
ELIZABETH A. NEMEC
E-43409-6
STEVENS POINT, WI
7/30/18
PROFESSIONAL ENGINEER

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT:
BETH NEMEC (715) 342-3069

AECOM PROJECT NO. 60531793

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/06/18
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-6-202

STH 35 OVER MISSISSIPPI RIVER TRIBUTARY

COUNTY	TOWN ~~/CITY/VILLAGE~~
BUFFALO	BUFFALO

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
KB	EAN	KAM	EAN

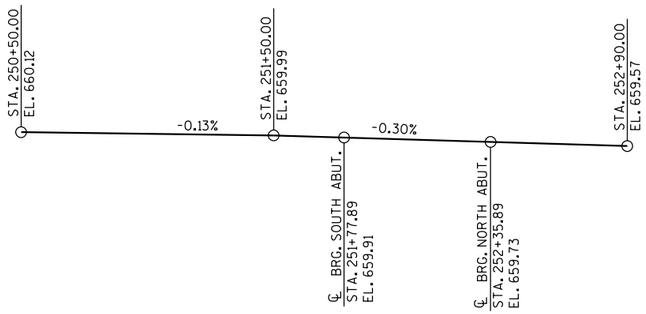
GENERAL PLAN

SHEET 1 OF 26
139

8

8

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PLOT DATE: 7/31/2018 PLOT TIME: 4:54:54 PM
BATCH PRINT SHEET 2 OF 26



PROFILE GRADE LINE, STH 35

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE 'HR' WITHIN THE LIMITS SHOWN ON SHEET 1, ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING STRUCTURE (B-6-14) IS A 2 SPAN STEEL DECK GIRDER BRIDGE, 51.8' LONG x 31.9' WIDE. TO BE REMOVED. CONTRACTOR SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE DURING STAGE 1 CONSTRUCTION IN ACCORDANCE WITH 108.7.3 OF THE STANDARD SPECIFICATIONS.

ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 252+07."

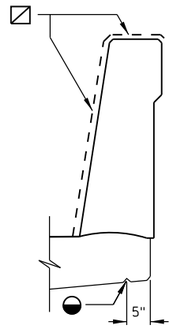
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAIL SHEET.

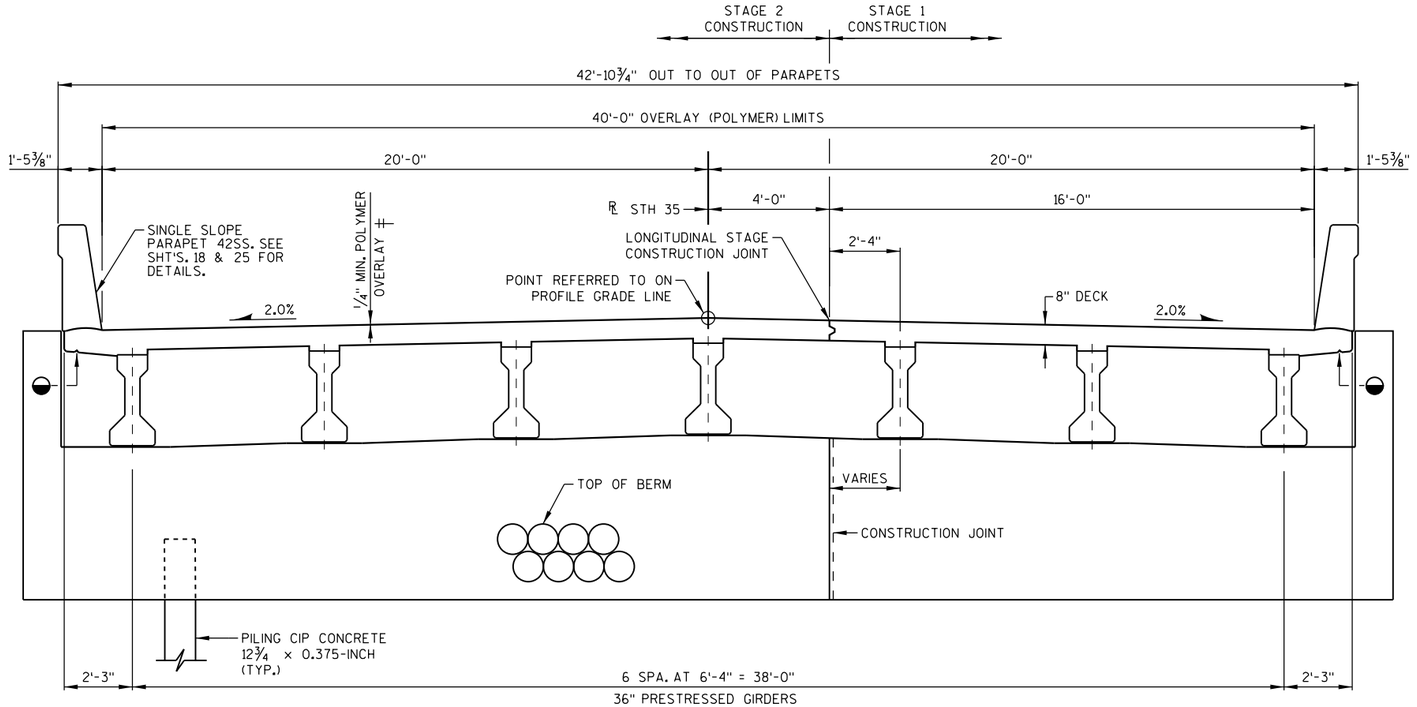
EXCAVATION REQUIRED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-6-202" IS NOT USED TO BALANCE THE EARTHWORK.

AT THE BACKFACE OF ABUTMENT, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

CONCRETE MASONRY REQUIRES A MINIMUM CURE TIME OF 28 DAYS BEFORE PLACING POLYMER OVERLAY.



SURFACE PROTECTION DETAIL



CROSS SECTION THRU ROADWAY

(LOOKING UPSTATION)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH APPROACH	SOUTH ABUTMENT	NORTH ABUTMENT	NORTH APPROACH	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 252+07	LS						1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-6-202	LS						1
210.1500	BACKFILL STRUCTURE TYPE A	TON		160	160			320
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	134			134		268
502.0100	CONCRETE MASONRY BRIDGES	CY	63	58	58	63	129	371
502.3200	PROTECTIVE SURFACE TREATMENT	SY					28	28
502.3210	PIGMENTED SURFACE SEALER	SY	20			20	61	101
503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF					413	413
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB		3,620	3,610			7,230
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	10,910	1,590	1,590	10,910	22,300	47,300
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB					1,510	1,510
505.0905	BAR COUPLERS NO. 5	EACH	42			42		84
505.0908	BAR COUPLERS NO. 8	EACH	12			12		24
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH		7	7			14
506.4000	STEEL DIAPHRAGMS B-6-202	EACH					6	6
509.5100.S	POLYMER OVERLAY	SY					272	272
511.1200	TEMPORARY SHORING B-6-202	SF		940	940			1,880
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		13	13			26
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF		495	440			935
606.0300	RIPRAP HEAVY	CY		125	115			240
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF		91	91			182
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH		2	2			4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY		51	51			102
645.0120	GEOTEXTILE TYPE HR	SY		242	223			465
	NON-BID ITEMS							
	FILLER	SIZE						1/2"

LIST OF DRAWINGS

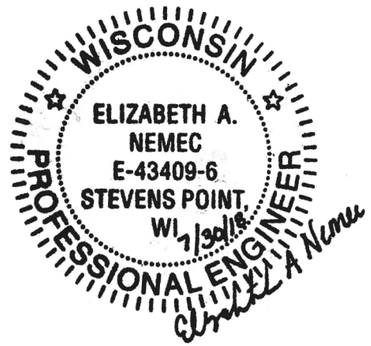
1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. CONSTRUCTION DETAILS
4. SUBSURFACE EXPLORATION - 1
5. SUBSURFACE EXPLORATION - 2
6. CONSTRUCTION STAGING - 1
7. CONSTRUCTION STAGING - 2
8. SOUTH ABUTMENT
9. SOUTH ABUTMENT PILE PLAN & SECTION
10. WINGS 1 & 2
11. SOUTH ABUTMENT DETAILS
12. NORTH ABUTMENT
13. NORTH ABUTMENT PILE PLAN & SECTION
14. WINGS 3 & 4
15. NORTH ABUTMENT DETAILS
16. 36" PRESTRESSED GIRDER
17. INTERMEDIATE STEEL DIAPHRAGM
18. SUPERSTRUCTURE CROSS SECTION
19. SUPERSTRUCTURE
20. SUPERSTRUCTURE DETAILS - 1
21. SUPERSTRUCTURE DETAILS - 2
22. SUPERSTRUCTURE DETAILS - 3
23. SOUTH STRUCTURAL APPROACH SLAB
24. NORTH STRUCTURAL APPROACH SLAB
25. PARAPET 42SS WITH STR. APPROACH SLAB
26. BAR SPLICER (COUPLER) DETAILS

LEGEND

☐ COAT WITH "PIGMENTED SURFACE SEALER" AS PER THE STANDARD SPECIFICATIONS.

◒ ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM.

‡ DECK SURFACE PREPARATION FOR APPLICATION OF POLYMER OVERLAY IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

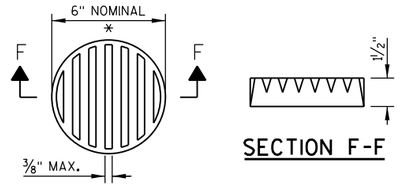
STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. EAN

CROSS SECTION & QUANTITIES

SHEET 2 OF 26
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8

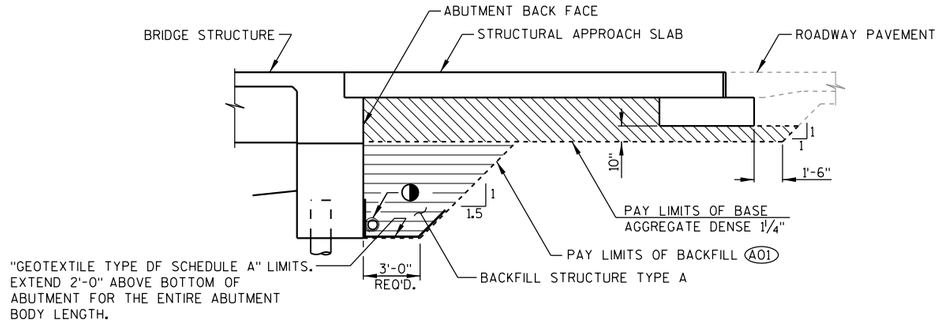


RODENT SHIELD DETAIL

* 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 A 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 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



BACKFILL STRUCTURE LIMITS

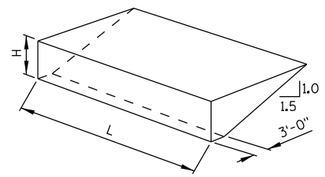
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-6-202" SHALL BE THE EXISTING GROUNDLINE.

(A01) BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE THE BOTTOM OF THE ABUTMENT.

◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



WINGS PARALLEL TO ROADWAY

ABUTMENT BACKFILL DIAGRAM

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS, AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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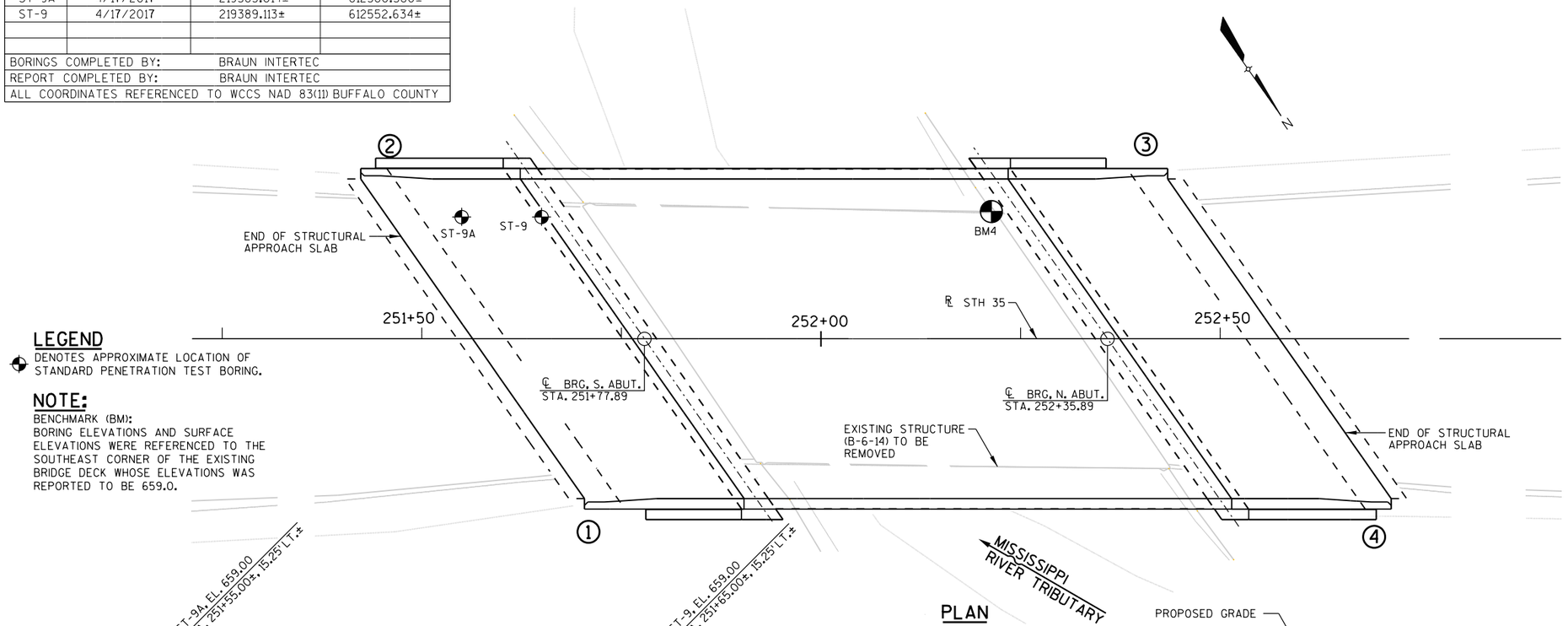
CONSTRUCTION DETAILS

SHEET 3 OF 26
141

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BATCH PRINT SHEET 3 OF 26

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-9A	4/17/2017	219383.014±	612560.560±
ST-9	4/17/2017	219389.113±	612552.634±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			



LEGEND

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

BENCHMARK (BM):
BORING ELEVATIONS AND SURFACE ELEVATIONS WERE REFERENCED TO THE SOUTHEAST CORNER OF THE EXISTING BRIDGE DECK WHOSE ELEVATIONS WAS REPORTED TO BE 659.0.

PLAN

PROPOSED GRADE

14 INCHES OF BITUMINOUS OVER 12 INCHES OF AGGREGATE BASE.
14 52 FILL: POORLY GRADED SAND WITH SILT AND GRAVEL AND COBBLES, FINE- TO MEDIUM-GRAINED, BROWNISH RED, MOIST.
END OF BORING EL. 652.00 (AUGER MET REFUSAL AT 7 FT.)

PILING CIP CONCRETE 12¾ × 0.375-INCH (TYP.)

660		BLIND DRILLED TO 7 FEET.
650	5	FILL: SILTY SAND WITH GRAVEL, FINE - TO MEDIUM-GRAINED, BROWN, MOIST.
	9	PEAT, ORGANIC, WITH WOOD PIECES, BLACK, WET. (SWAMP DEPOSIT)
	5	
	6	ORGANIC SILT, ORGANIC, WITH TRACE WOOD PIECES, BLACK, WET. (SWAMP DEPOSIT)
640	9	▽ EL. 638.00 POORLY GRADED SAND WITH GRAVEL, COARSE-GRAINED, DARK BROWN, WET TO WATERBEARING, LOOSE. (ALLUVIUM)
	9	
630	50/4"	SILTY SAND WITH GRAVEL, FINE - TO MEDIUM-GRAINED, DARK GRAY TO GRAY, WATERBEARING, LOOSE TO VERY DENSE. (ALLUVIUM)
	15	
620	19	POORLY GRADED SAND WITH SILT, FINE - TO MEDIUM-GRAINED, BROWN TO GRAY, WATERBEARING, LOOSE TO MEDIUM DENSE. (ALLUVIUM)
	9	-TRACE ORGANICS AT EL. 617.00 (42 FEET). -HARD DRILLING AT EL. 612.00 (47 FEET).
610	50/2" NO SAMPLE RECOVERY 50/1"	SILTY GRAVEL, FINE- TO MEDIUM-GRAINED, BROWNISH GRAY, WATERBEARING, VERY DENSE. (COLLUVIUM)
600	50/0"	POORLY GRADED SAND, FINE - TO MEDIUM-GRAINED, GRAY, WATERBEARING, VERY DENSE. (ALLUVIUM)
	50/1"	
590	50/0" NO SAMPLE RECOVERY 50/1" 50/0"	WONEWOC FORMATION, SANDSTONE, TANISH GRAY, WATERBEARING TO WET, DECOMPOSED TO HIGHLY WEATHERED, FINE - TO MEDIUM-GRAINED, WITH SAND SEAMS. RETRIEVED AS "SAND WITH GRAVEL (SP)" IN SPLIT-SPOON SAMPLER. (BEDROCK)
580	NO SAMPLE RECOVERY 50/0" NO SAMPLE RECOVERY	
570		END OF BORING EL. 576.00 (AUGER MET REFUSAL AT 83 FT.)
560		

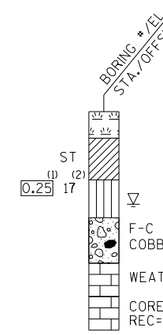
STATE PROJECT NUMBER

7160-04-74

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING
▼ END OF DRILLING
▼ AFTER DRILLING

ABBREVIATIONS

WH - SAMPLER PENETRATED SOIL UNDER WEIGHT OF HAMMER AND RODS ALONE; DRIVING NOT REQ'D.

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. KB

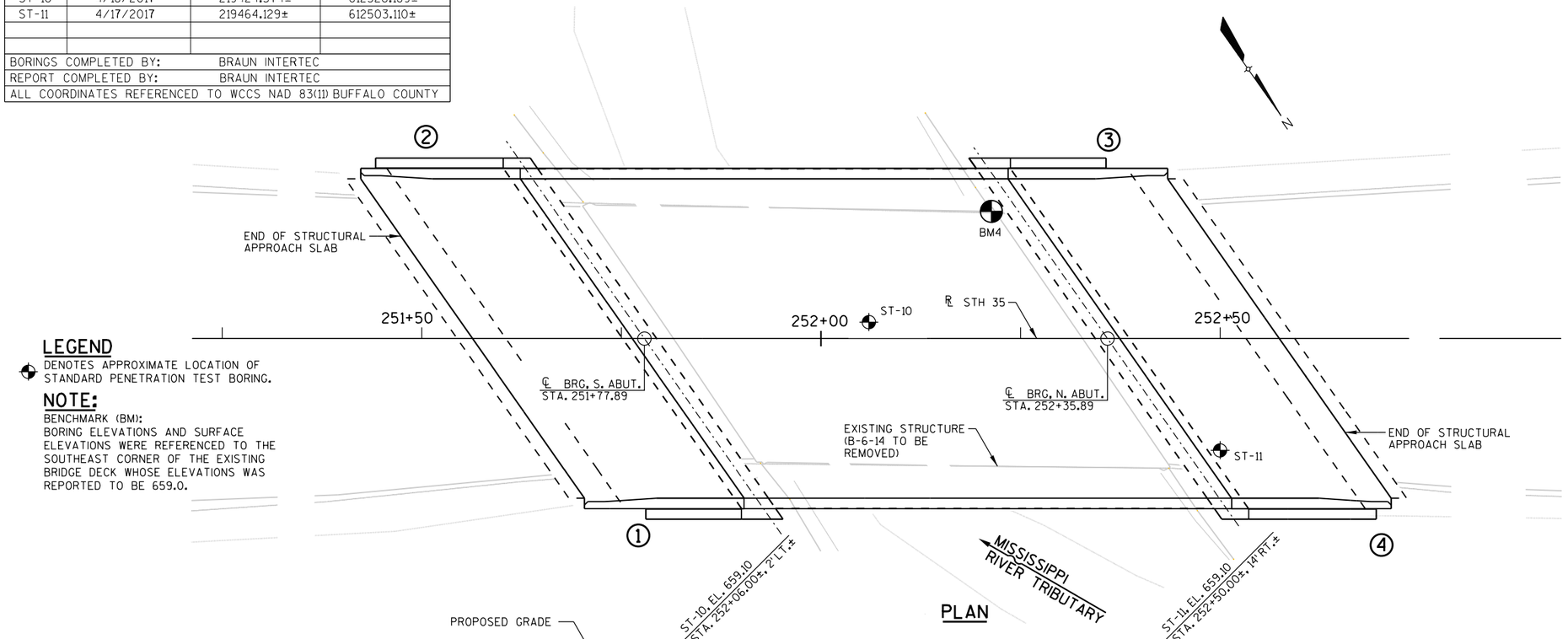
SUBSURFACE EXPLORATION-1

SHEET 4 OF 26
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-10	4/18/2017	219424.574±	612528.189±
ST-11	4/17/2017	219464.129±	612503.110±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			

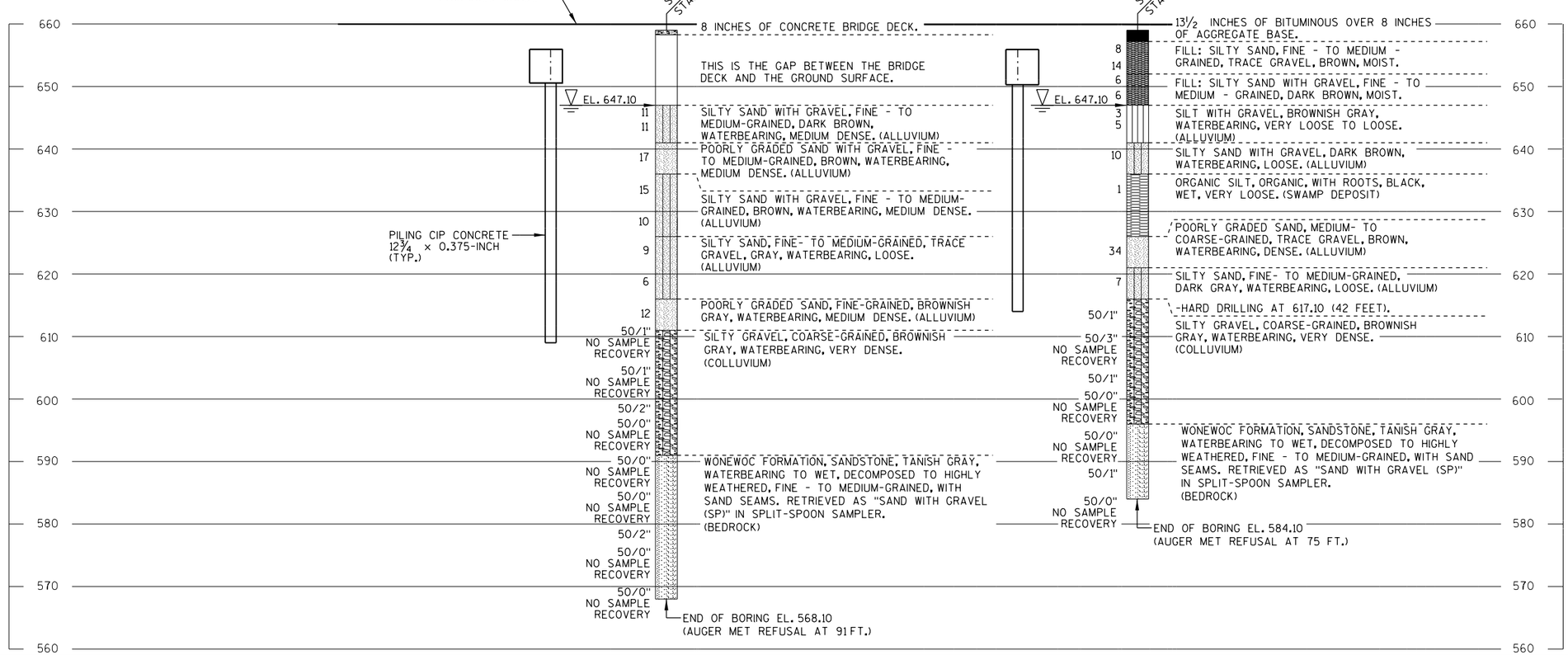


LEGEND

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

BENCHMARK (BM):
BORING ELEVATIONS AND SURFACE ELEVATIONS WERE REFERENCED TO THE SOUTHEAST CORNER OF THE EXISTING BRIDGE DECK WHOSE ELEVATIONS WAS REPORTED TO BE 659.0.



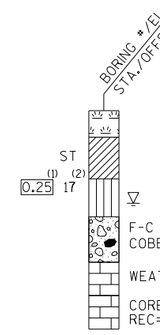
STATE PROJECT NUMBER

7160-04-74

MATERIAL SYMBOLS

ASPHALT, TOPSOIL, PEAT, CONCRETE, FILL, GRAVEL, SAND, CLAY, SILT, BOULDERS OR COBBLES, LIMESTONE, BEDROCK (UNKNOWN), SHALE, SANDSTONE, IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

WH - SAMPLER PENETRATED SOIL UNDER WEIGHT OF HAMMER AND RODS ALONE; DRIVING NOT REQ'D.

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SUBSURFACE EXPLORATION-2

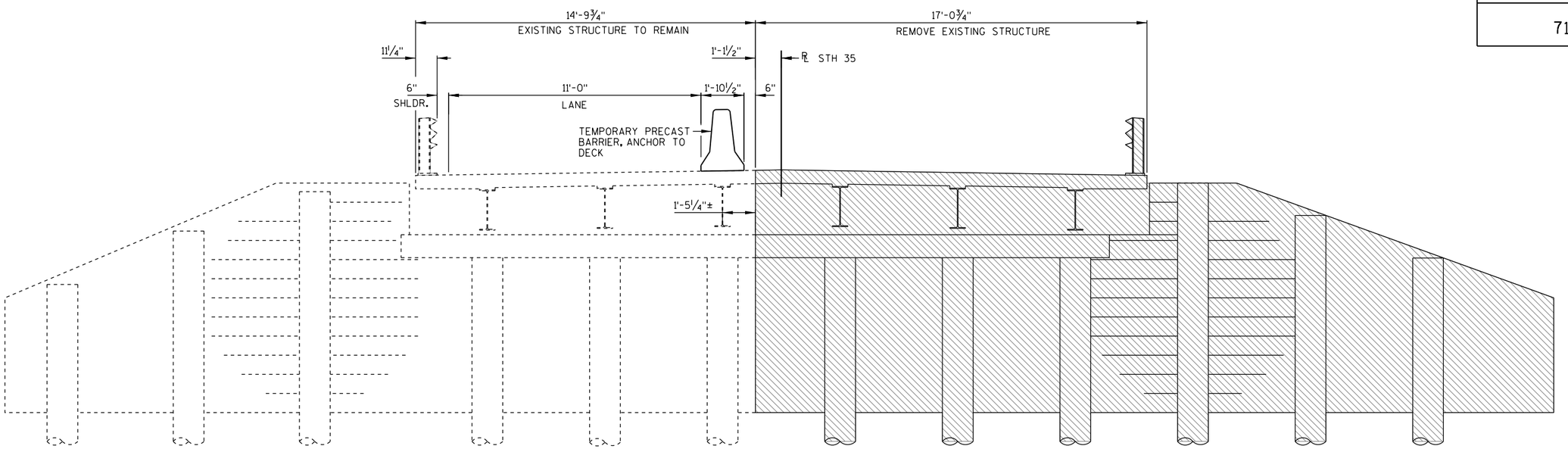
SHEET 5 OF 26
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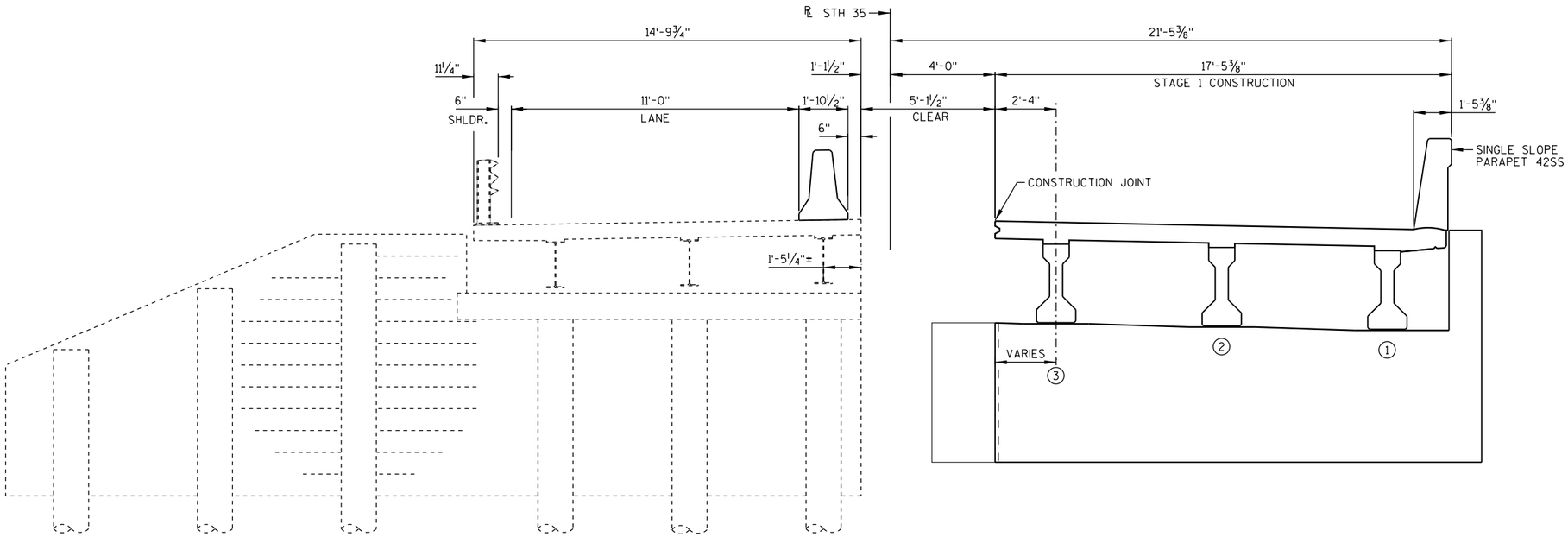
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STATE PROJECT NUMBER
7160-04-74



STAGE 1 REMOVAL

LOOKING UPSTATION - (NW)



STAGE 1 CONSTRUCTION

LOOKING UPSTATION - (NW)

LEGEND

EXISTING STRUCTURE REMOVAL

NOTES

SEE SHEET 18 FOR DETAILS AT STAGE CONSTRUCTION JOINT IN DECK.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY	KAM	PLANS CK'D.	EAN

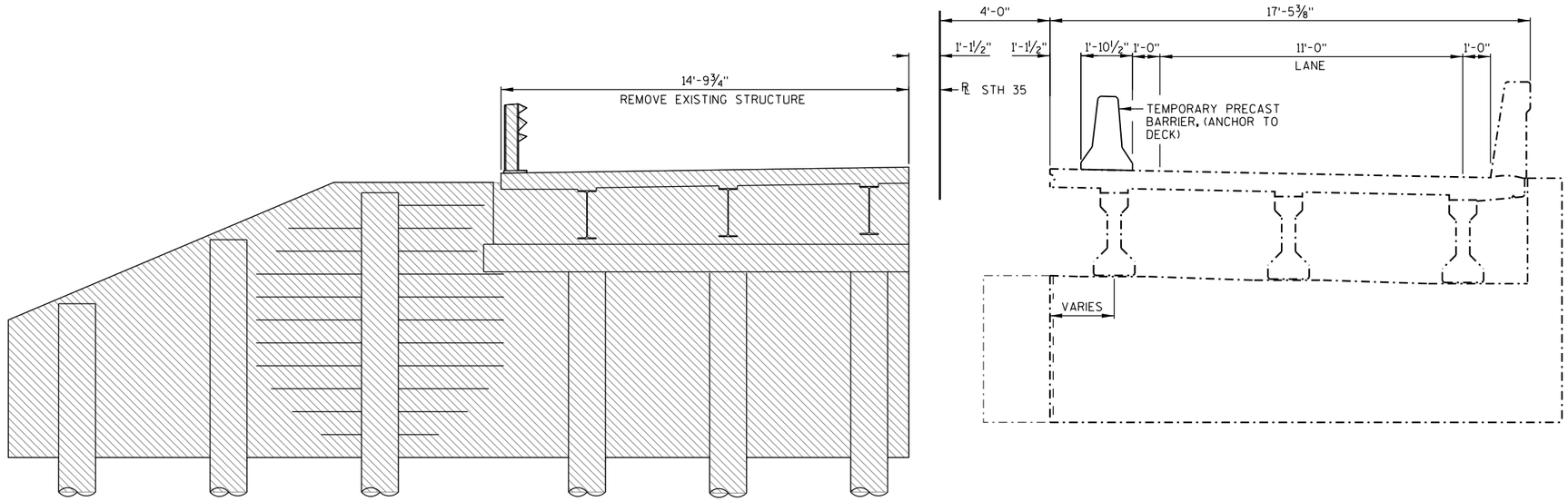
CONSTRUCTION STAGING - 1

SHEET 6 OF 26

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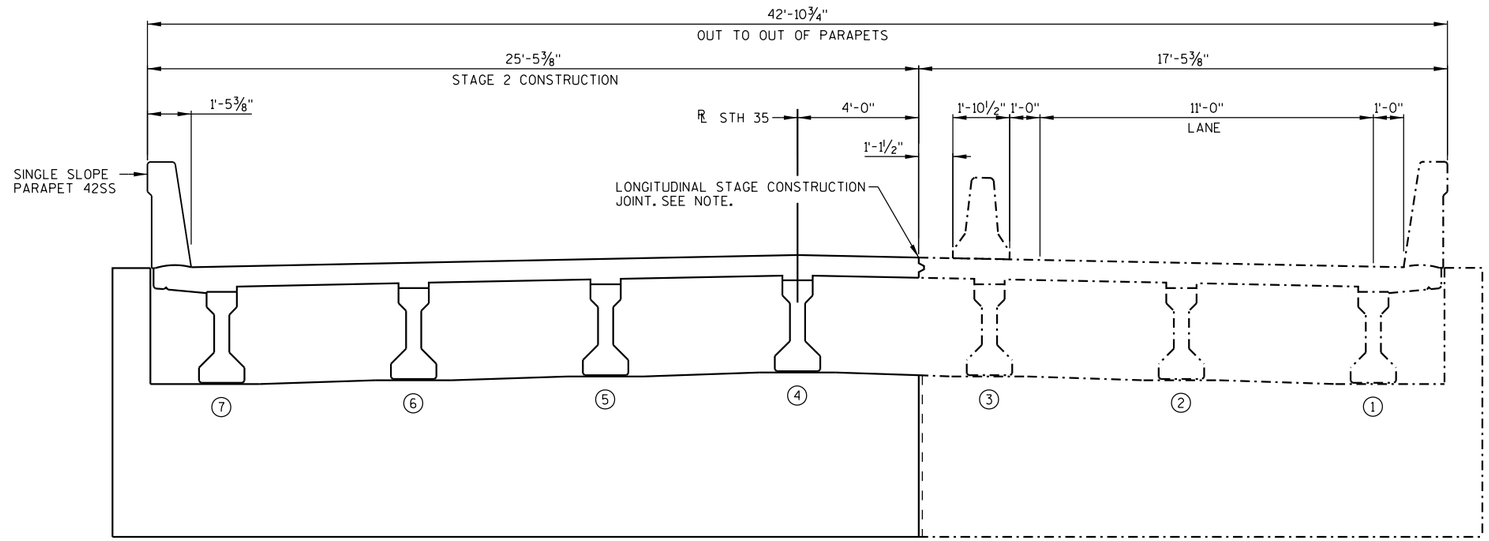
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BATCH PRINT SHEET 7 OF 26



STAGE 2 REMOVAL

LOOKING UPSTATION - (NW)



STAGE 2 CONSTRUCTION

LOOKING UPSTATION - (NW)

LEGEND

EXISTING STRUCTURE REMOVAL

NOTES

SEE SHEET 18 FOR DETAILS AT STAGE CONSTRUCTION JOINT IN DECK.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. EAN

CONSTRUCTION STAGING - 2

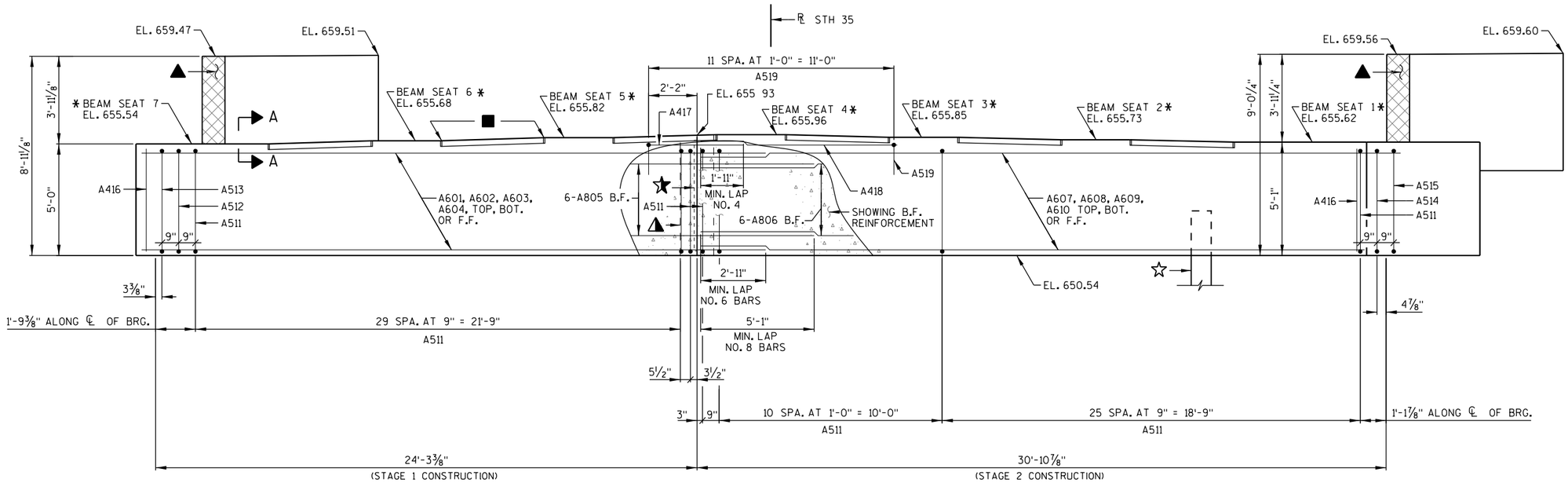
SHEET 7 OF 26
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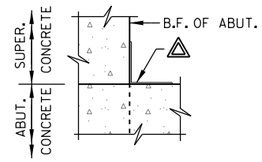
STATE PROJECT NUMBER

7160-04-74

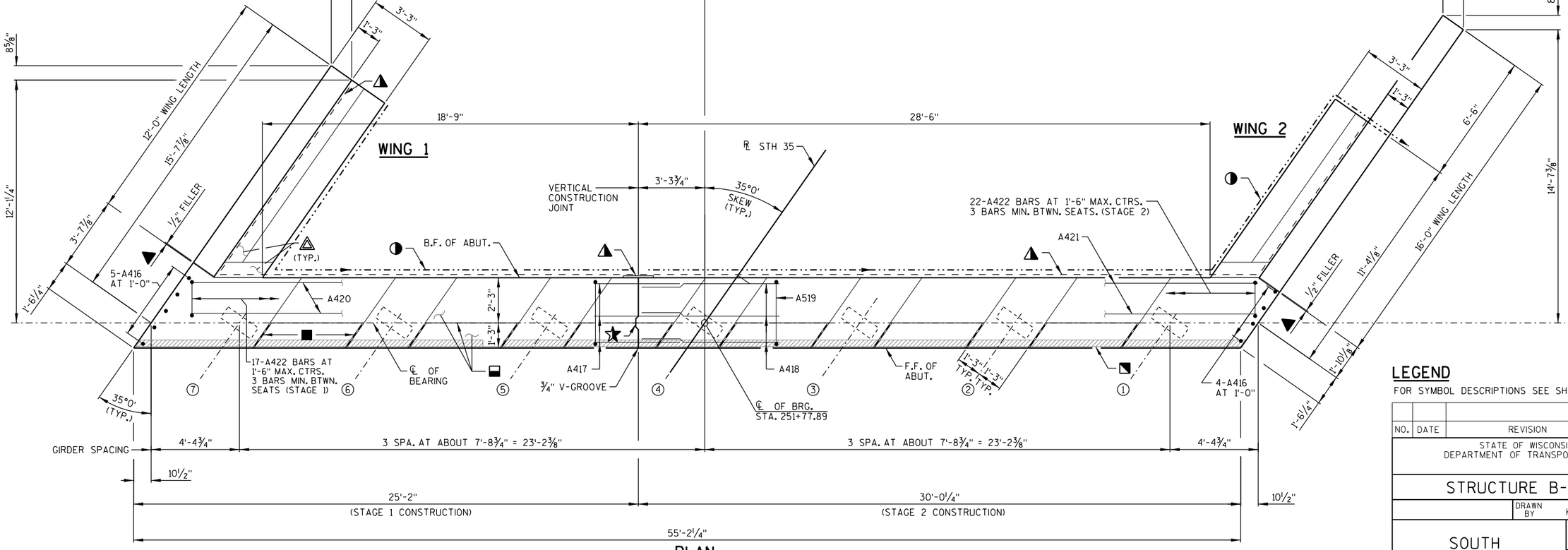


ELEVATION
(LOOKING SOUTH)

NOTE:
SPACE A511 BARS TO MISS PILINGS.



SECTION A-A



PLAN

LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SOUTH ABUTMENT

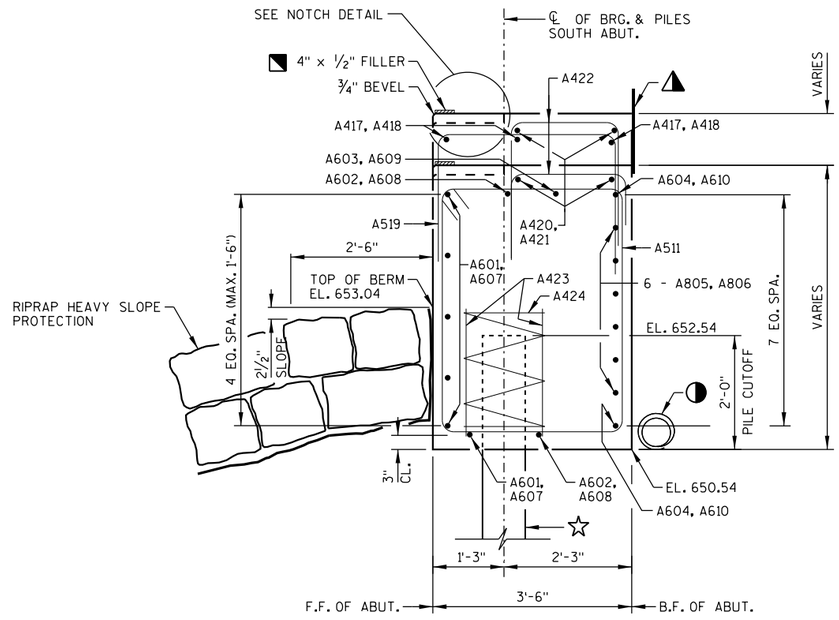
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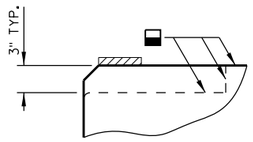
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TYP. SECTION THRU BODY



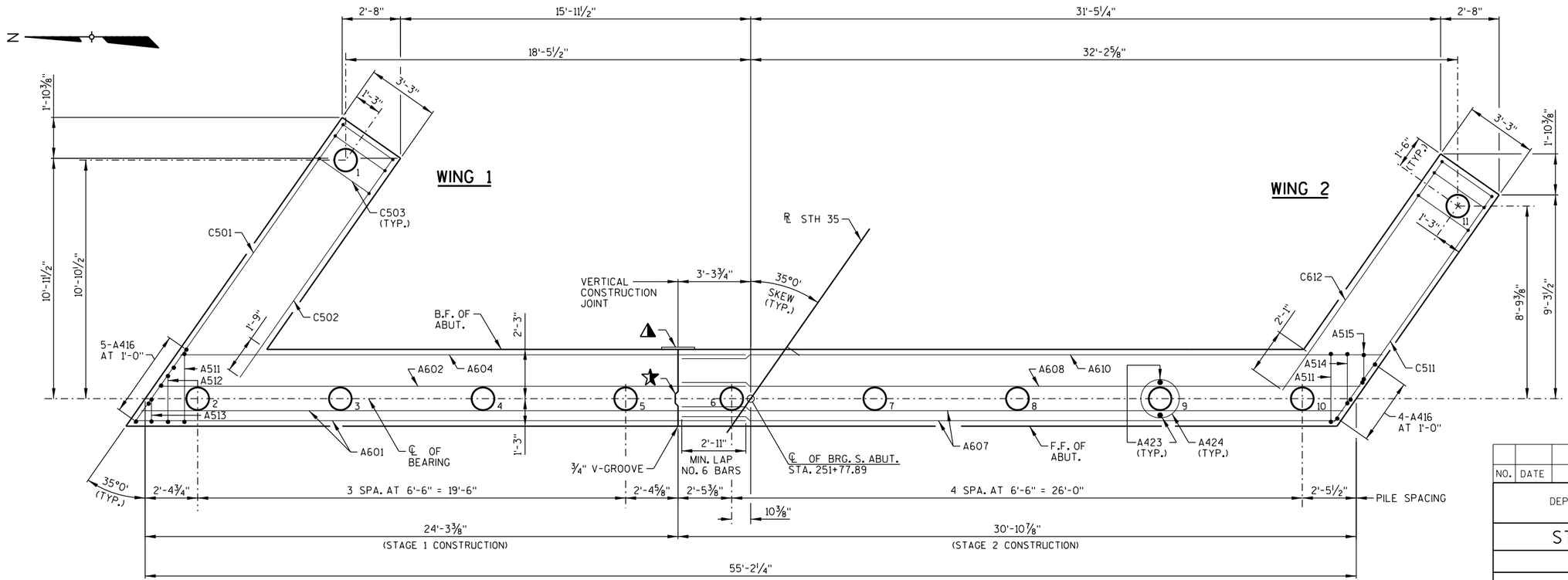
NOTCH DETAIL

LEGEND

- ☆ SUPPORT ABUTMENTS ON PILING CIP CONCRETE 12¾×0.375-INCH. SEE FOUNDATION DATA ON THIS SHEET AND PILE SPLICE DETAIL ON SHEET 11.
- ◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE. ATTACH RODENT SHIELD AT ENDS OF PIPE. SEE SHT. 3.
- ▲ ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. 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.)
- ◭ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◹ 4"×½" FILLER - TO EXTEND FULL LENGTH OF ABUTMENT BODY.
- □ OPTIONAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2"×6", WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE. ¾" BEVEL REQUIRED ON JOINT EDGES ON F.F., B.F. AND END OF WING.
- ◬ PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING, HORIZONTAL IN THIS AREA.
- ■ ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- ⬓ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING THE BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- ★ VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY BEVELED 2" × 8". RUN BAR STEEL THRU JOINT. ¾" "V" GROOVE AT FRONT FACE. SEAL BACKFACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- ⓧ INDICATES BEAM NUMBER
- ∗ ELEVATIONS GIVEN ARE AT TOP OF CONCRETE ℄ OF BRG.

PILE NOTE

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾×0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45'-0" LONG.



PILE PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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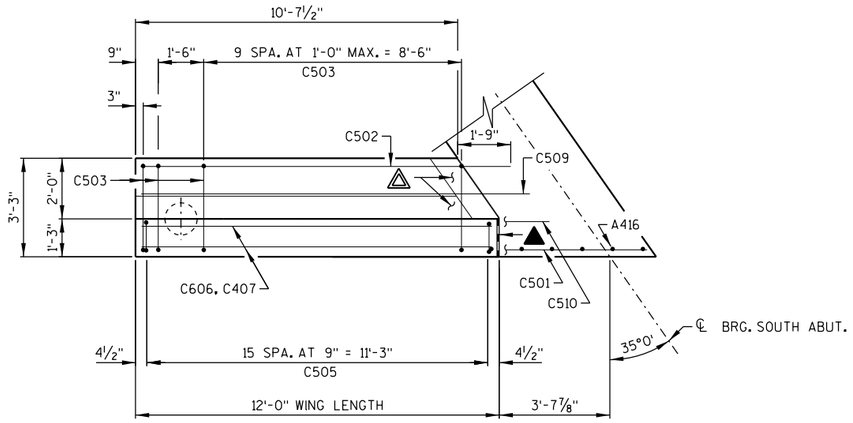
SOUTH ABUTMENT PILE PLAN & SECTION

SHEET 9 OF 26
147

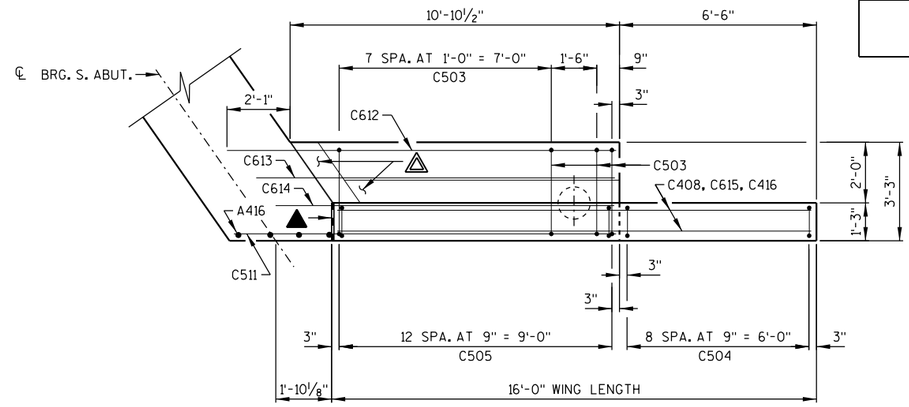
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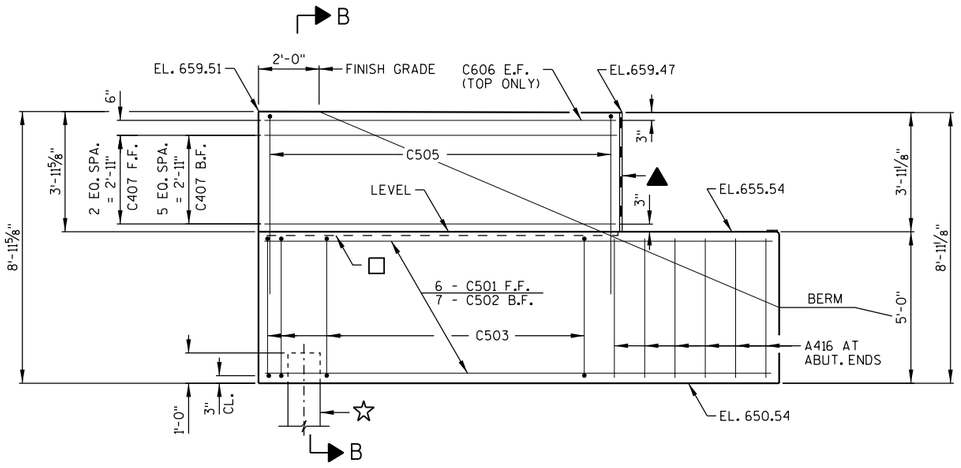
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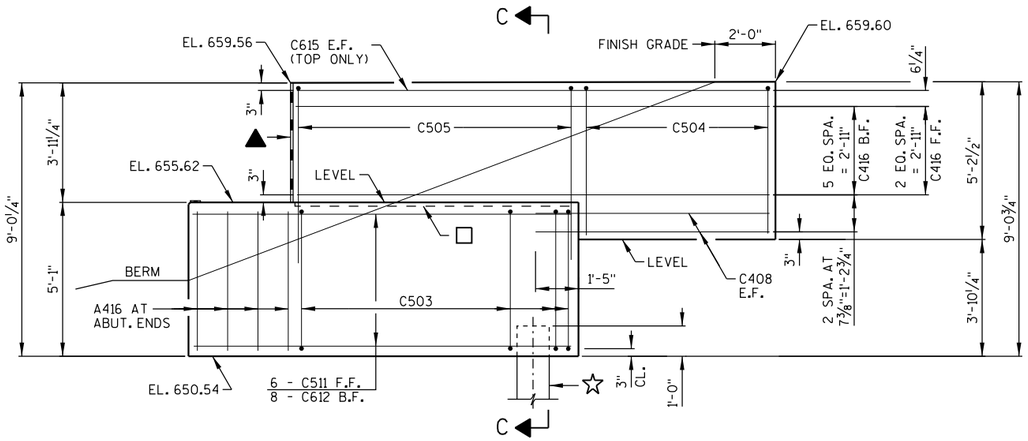
PLAN WING 1



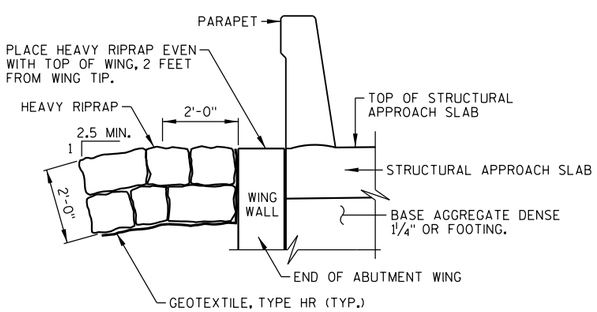
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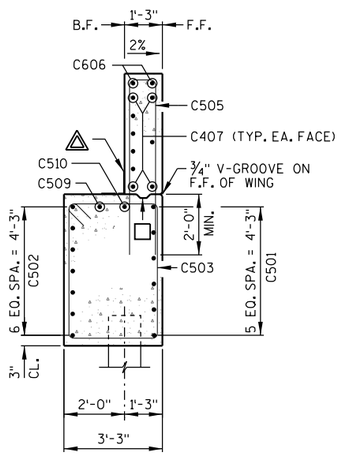
ELEVATION WING 1



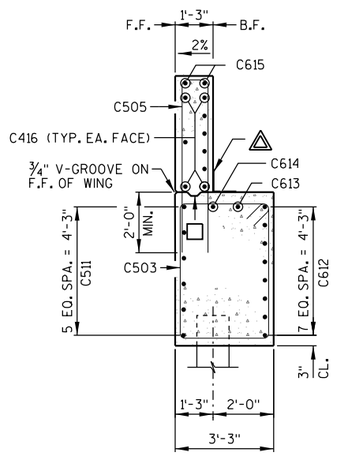
ELEVATION WING 2



TYPICAL FILL SECTION AT WING TIPS



SECTION B-B



SECTION C-C

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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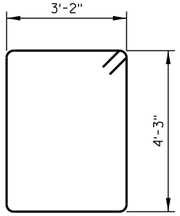
WINGS 1 AND 2

SHEET 10 OF 26
148

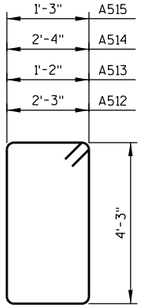
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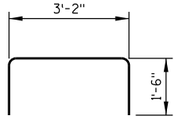
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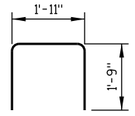
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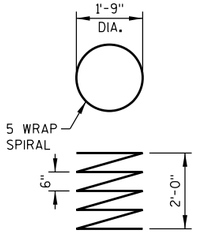
A512, A513, A514, A515



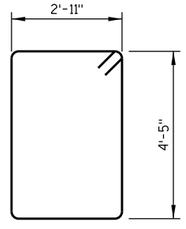
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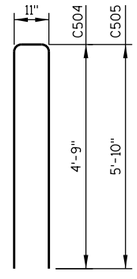
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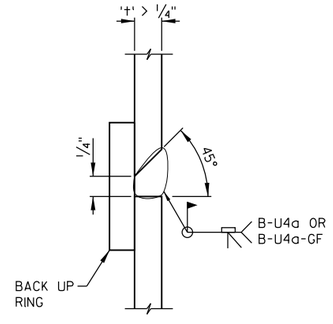


C504, C505

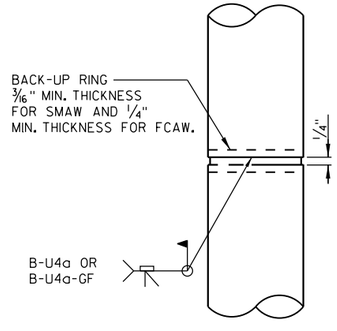
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 3,620 LBS
A601	6	-----	28-2		ABUTMENT F.F. HORIZ.
A602	2	-----	27-4		ABUTMENT TOP & BOT. HORIZ.
A603	1	-----	26-7		ABUTMENT TOP HORIZ.
A604	2	-----	25-10		ABUTMENT TOP & BOT. HORIZ.
A805	6	-----	28-0		ABUTMENT B.F. HORIZ.
A806	-----	6	32-0		ABUTMENT B.F. HORIZ.
A607	-----	6	29-9		ABUTMENT F.F. HORIZ.
A608	-----	2	30-6		ABUTMENT TOP & BOT. HORIZ.
A609	-----	1	31-3		ABUTMENT TOP HORIZ.
A610	-----	2	32-0		ABUTMENT TOP & BOT. HORIZ.
A511	31	37	15-6	X	ABUTMENT STIRRUP VERT.
A512	1	-----	13-8	X	ABUTMENT STIRRUP VERT.
A513	1	-----	11-6	X	ABUTMENT STIRRUP VERT.
A514	-----	1	13-10	X	ABUTMENT STIRRUP VERT.
A515	-----	1	11-8	X	ABUTMENT STIRRUP VERT.
A416	5	4	4-7		ABUTMENT ENDS VERT.
A417	3	-----	4-4		ABUTMENT TOP HORIZ.
A418	-----	3	8-8		ABUTMENT TOP HORIZ.
A519	3	9	5-11	X	ABUTMENT TOP VERT.
A420	2	-----	24-10		ABUTMENT TOP HORIZ.
A421	-----	2	30-7		ABUTMENT TOP HORIZ.
A422	17	22	5-3	X	ABUTMENT TOP VERT.
A423	8	10	2-3		ABUTMENT - PILE VERT.
A424	4	5	28-0	X	ABUTMENT - PILE VERT.
COATED BARS					TOTAL WEIGHT = 1,590 LBS
C501	6	-----	16-7		WING 1 F.F. HORIZ.
C502	7	-----	12-4		WING 1 B.F. HORIZ.
C503	12	10	15-4	X	WING 1 & 2 - STIRRUP VERT.
C504	-----	9	10-2	X	WING 2 VERT.
C505	16	13	12-4	X	WING 1 & 2 VERT.
C606	2	-----	11-7		WING 1 TOP HORIZ.
C407	9	-----	11-7		WING 1 TOP HORIZ.
C408	-----	4	7-9		WING 2 HORIZ.
C509	1	-----	13-0		WING 1 - TOP OF SUBSTRUCTURE HORIZ.
C510	1	-----	13-7		WING 1 - TOP OF SUBSTRUCTURE HORIZ.
C511	-----	6	12-5		WING 2 F.F. HORIZ.
C612	-----	8	12-10		WING 2 B.F. HORIZ.
C613	-----	1	11-11		WING 2 - TOP OF SUBSTRUCTURE HORIZ.
C614	-----	1	11-5		WING 2 - TOP OF SUBSTRUCTURE HORIZ.
C615	-----	2	15-7		WING 2 - TOP HORIZ.
C416	-----	9	15-7		WING 2 - TOP HORIZ.



C.I.P. PILE WELD DETAIL



C.I.P. 'PIPE PILE'

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STRUCTURES (LB)
STAGE 1	23	730	1,660
STAGE 2	31	860	1,960

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SOUTH ABUTMENT DETAILS

SHEET 11 OF 26
149

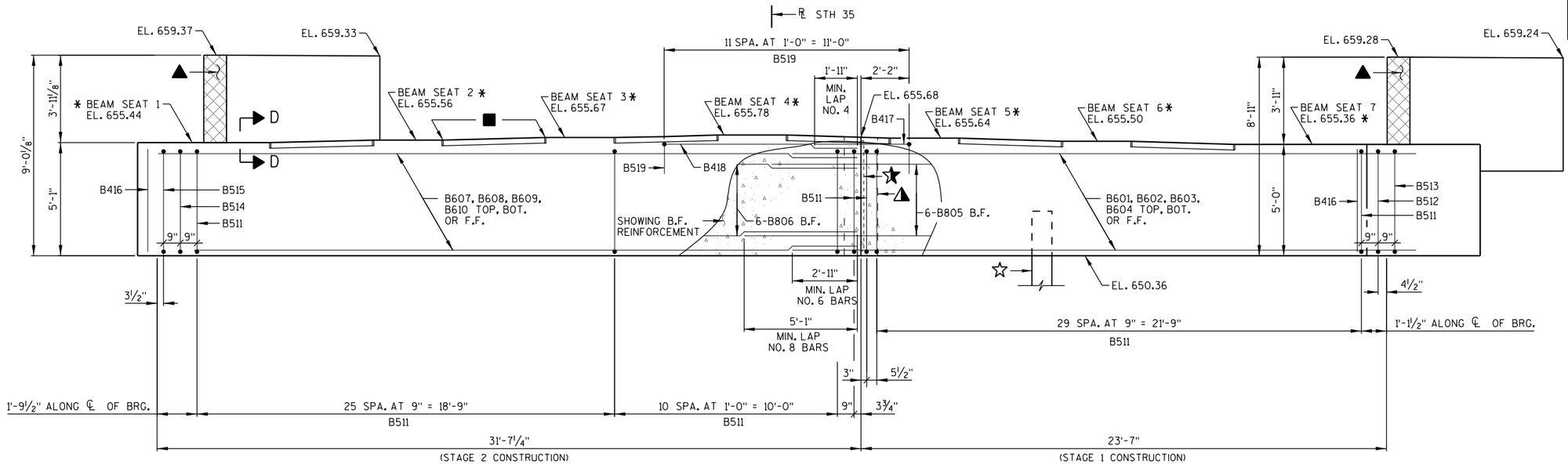
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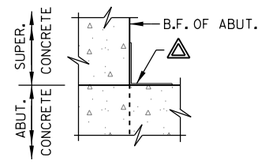
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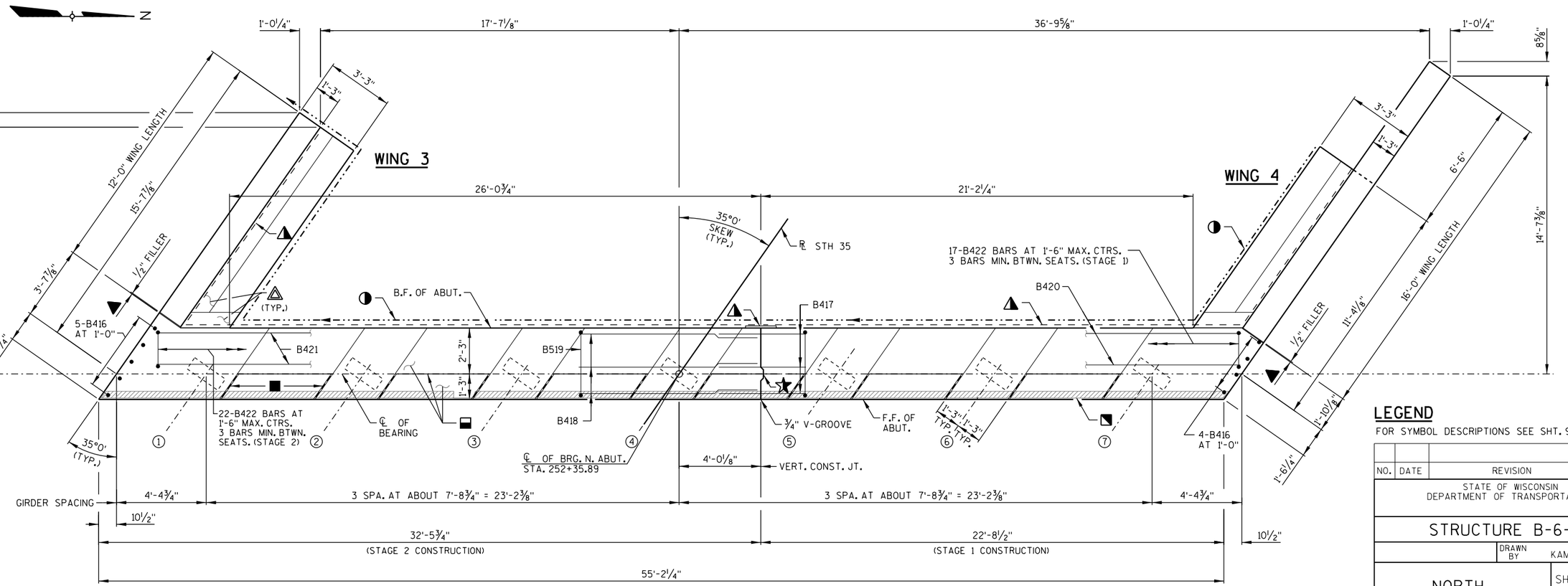


ELEVATION
(LOOKING NORTH)

NOTE:
SPACE B511 BARS TO MISS PILINGS.



SECTION D-D



PLAN

LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. EAN

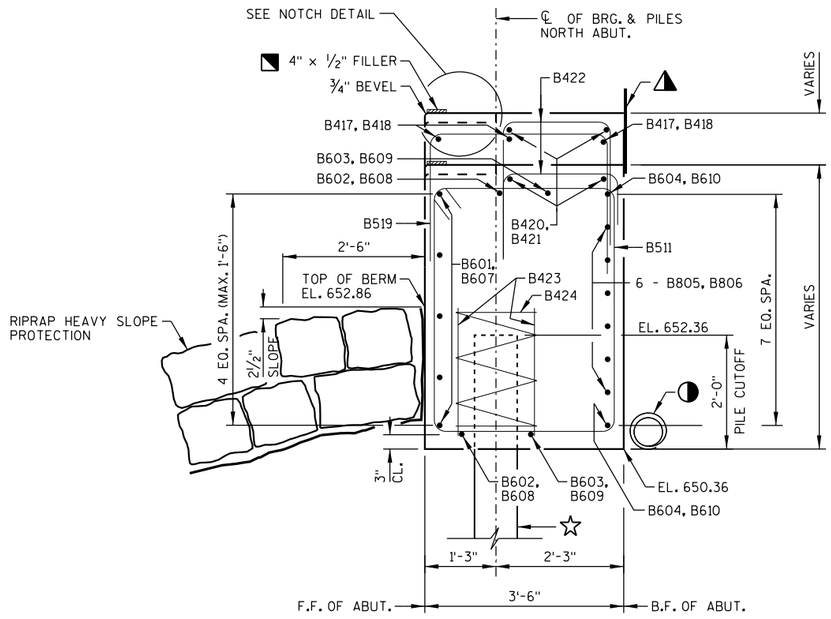
NORTH ABUTMENT

SHEET 12 OF 26
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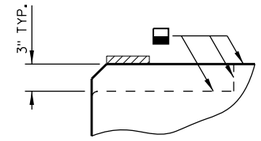
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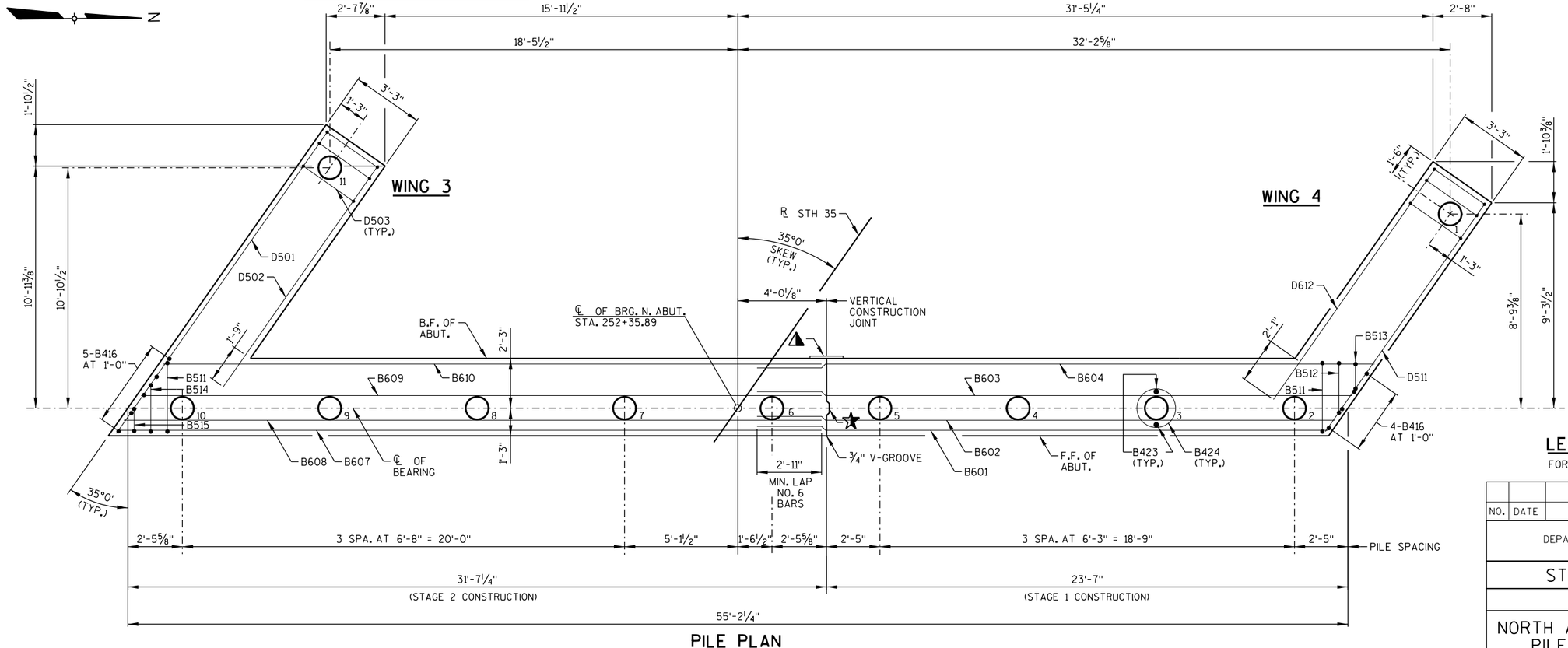
TYP. SECTION THRU BODY



NOTCH DETAIL

PILE NOTE

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾x0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 40'-0" LONG.



PILE PLAN

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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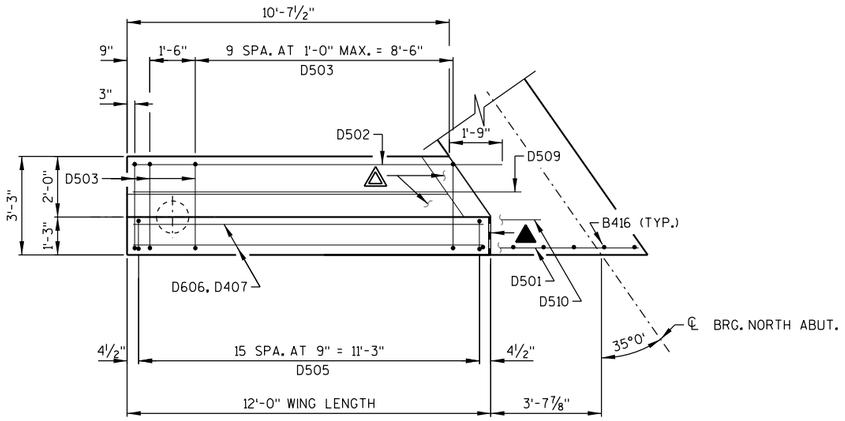
NORTH ABUTMENT PILE PLAN & SECTION

SHEET 13 OF 26
151

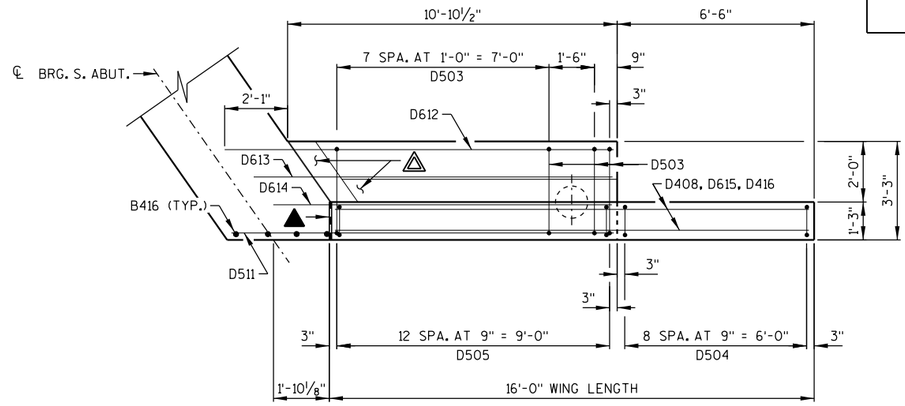
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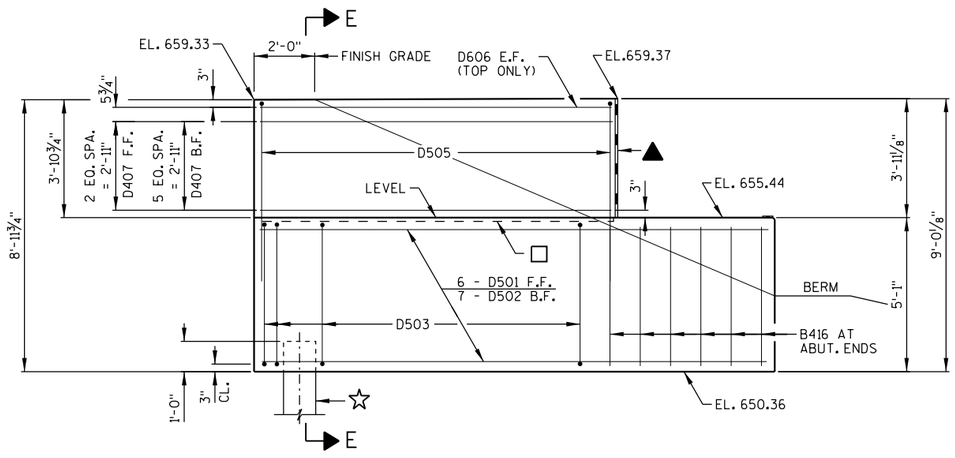
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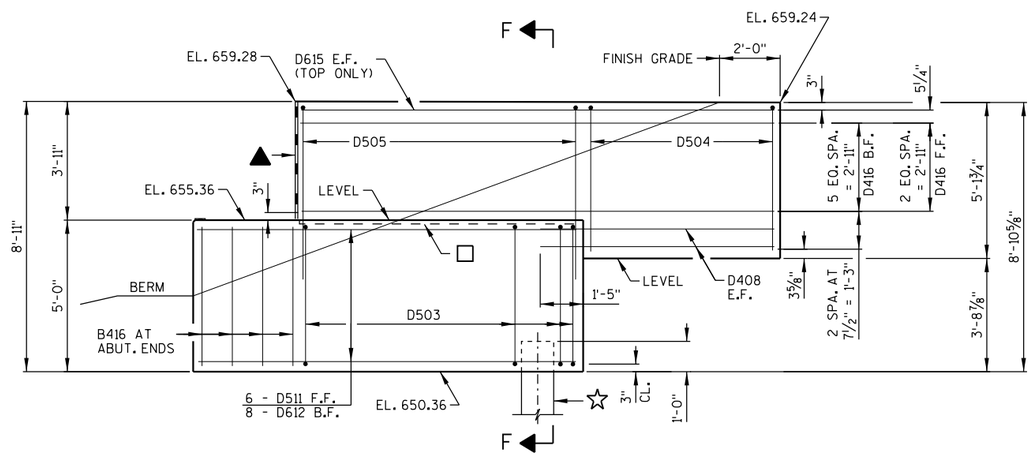
PLAN WING 3



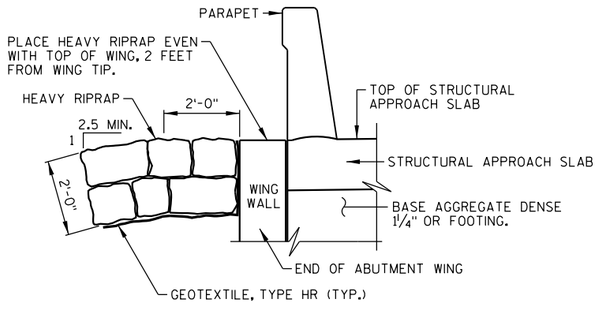
PLAN WING 4



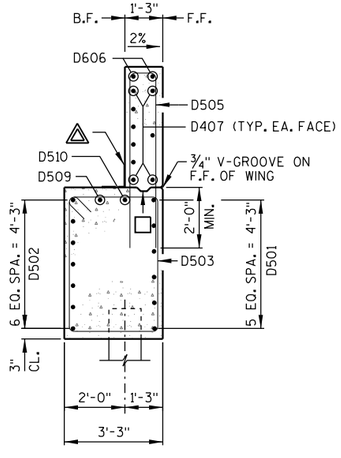
ELEVATION WING 3



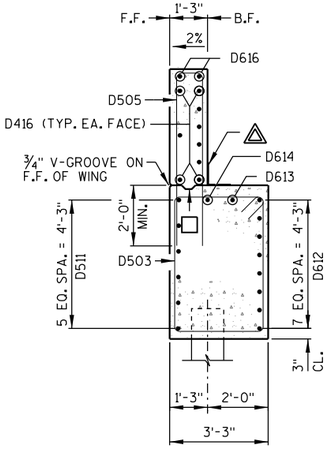
ELEVATION WING 4



TYPICAL FILL SECTION AT WING TIPS



SECTION E-E



SECTION F-F

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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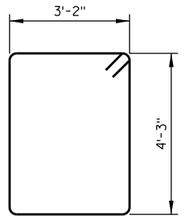
WINGS 3 & 4

SHEET 14 OF 26
152

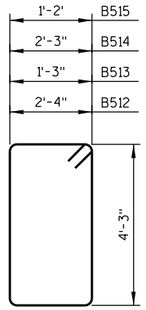
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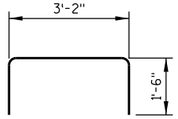
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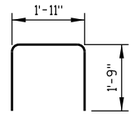
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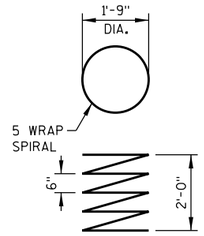
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B519



B422

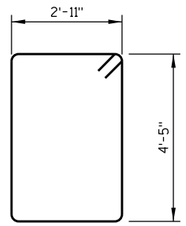


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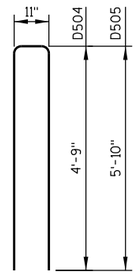
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	LOCATION	
NON-COATED BARS					TOTAL WEIGHT = 3,610 LBS	
B601	5	-----	25-10		ABUTMENT F.F.	HORIZ.
B602	2	-----	26-8		ABUTMENT TOP & BOT.	HORIZ.
B603	2	-----	27-5		ABUTMENT TOP	HORIZ.
B604	2	-----	28-1		ABUTMENT TOP & BOT.	HORIZ.
B805	6	-----	30-3		ABUTMENT B.F.	HORIZ.
B806	-----	6	29-9		ABUTMENT B.F.	HORIZ.
B607	-----	5	31-11		ABUTMENT F.F.	HORIZ.
B608	-----	2	31-2		ABUTMENT TOP & BOT.	HORIZ.
B609	-----	2	30-6		ABUTMENT TOP	HORIZ.
B610	-----	2	29-9		ABUTMENT TOP & BOT.	HORIZ.
B511	31	37	15-6	X	ABUTMENT STIRRUP	VERT.
B512	1	-----	13-10	X	ABUTMENT STIRRUP	VERT.
B513	1	-----	11-8	X	ABUTMENT STIRRUP	VERT.
B514	-----	1	13-8	X	ABUTMENT STIRRUP	VERT.
B515	-----	1	11-6	X	ABUTMENT STIRRUP	VERT.
B416	4	5	4-7		ABUTMENT ENDS	VERT.
B417	3	-----	4-4		ABUTMENT TOP	HORIZ.
B418	-----	3	8-8		ABUTMENT TOP	HORIZ.
B519	3	9	5-11	X	ABUTMENT TOP	VERT.
B420	2	-----	25-10		ABUTMENT TOP	HORIZ.
B421	-----	2	29-9		ABUTMENT TOP	HORIZ.
B422	17	22	5-3	X	ABUTMENT TOP	VERT.
B423	8	10	2-3		ABUTMENT - PILE	VERT.
B424	4	5	28-0	X	ABUTMENT - PILE	VERT.
COATED BARS					TOTAL WEIGHT = 1,590 LBS	
D501	-----	6	16-7		WING 3 F.F.	HORIZ.
D502	-----	7	12-4		WING 3 B.F.	HORIZ.
D503	10	12	15-4	X	WING 3 & 4 - STIRRUP	VERT.
D504	9	-----	10-2	X	WING 4	VERT.
D505	13	16	12-4	X	WING 3 & 4	VERT.
D606	-----	2	11-7		WING 3 TOP	HORIZ.
D407	-----	9	11-7		WING 3 TOP	HORIZ.
D408	4	-----	7-9		WING 4	HORIZ.
D509	-----	1	13-0		WING 3 - TOP OF SUBSTRUCTURE	HORIZ.
D510	-----	1	13-7		WING 3 - TOP OF SUBSTRUCTURE	HORIZ.
D511	6	-----	12-5		WING 4 F.F.	HORIZ.
D612	8	-----	12-10		WING 4 B.F.	HORIZ.
D613	1	-----	11-11		WING 4 - TOP OF SUBSTRUCTURE	HORIZ.
D614	1	-----	11-5		WING 4 - TOP OF SUBSTRUCTURE	HORIZ.
D615	2	-----	15-7		WING 4 - TOP	HORIZ.
D416	9	-----	15-7		WING 4 - TOP	HORIZ.



D503



D504, D505

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STRUCTURES (LB)
STAGE 1	23	860	1,680
STAGE 2	31	730	1,930

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STRUCTURE B-6-202

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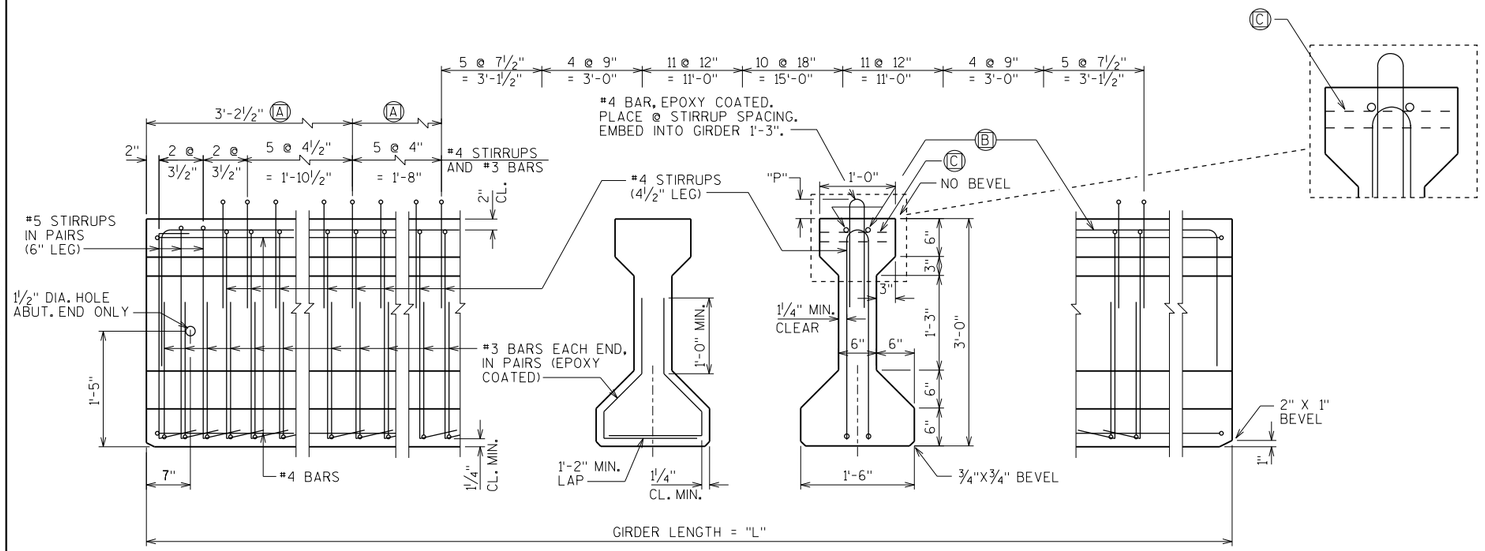
NORTH ABUTMENT DETAILS

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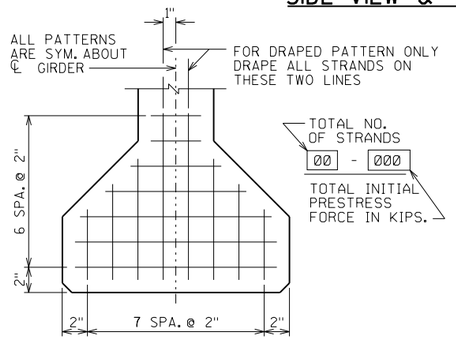


SIDE VIEW & TYPICAL SECTION IN SPAN

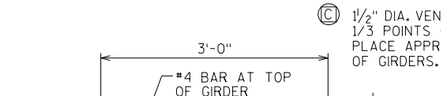
Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2 - #4 BARS, FULL LENGTH, MIN. LAP 2'-4". BEND DOWN 16 BAR DIA. AT ENDS.

Ⓒ 1½" DIA. VENT HOLE AT APPROX. 1/3 POINTS OF GIR. LENGTH TYP. ALL GIRDERS. PLACE APPROX. 3" DOWN FROM TOP OF GIRDERS. SPACE TO MISS REINF.



TYP. STRAND PATTERN



TOP VIEW OF GIRDER ENDS

DEAD LOAD DEFLECTION DIAGRAM

DECK HAUNCH DETAIL

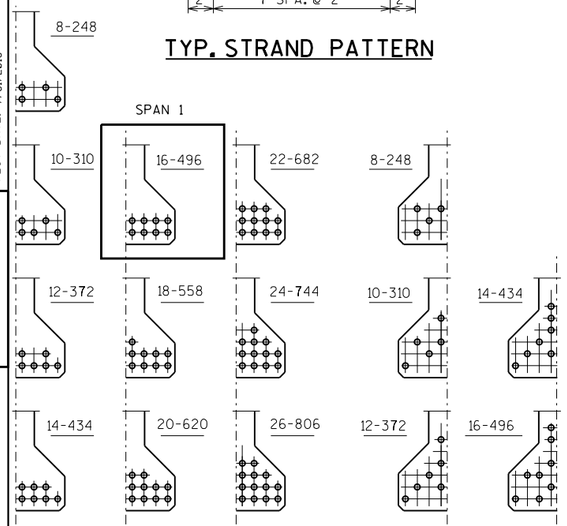
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

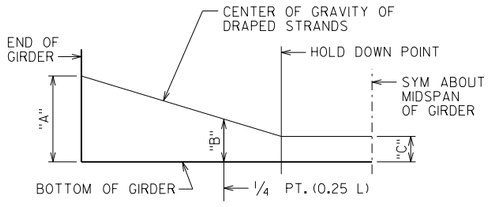


DRAPED PATTERN

0.5"ϕ STRANDS

UNDRAPED PATTERN

0.5"ϕ STRANDS



DRAPED STRAND PROFILE

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	1.26

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (P.S.I.)	"P" (IN.) 1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1 - 7	59'-0"	0.17	0.33	0.46	0.55	0.57	0.55	0.46	0.33	0.17	8,000	6.75	6.75	6.75	0.5	16	6,800	33	10.5	13.5	3		

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STRUCTURE B-6-202

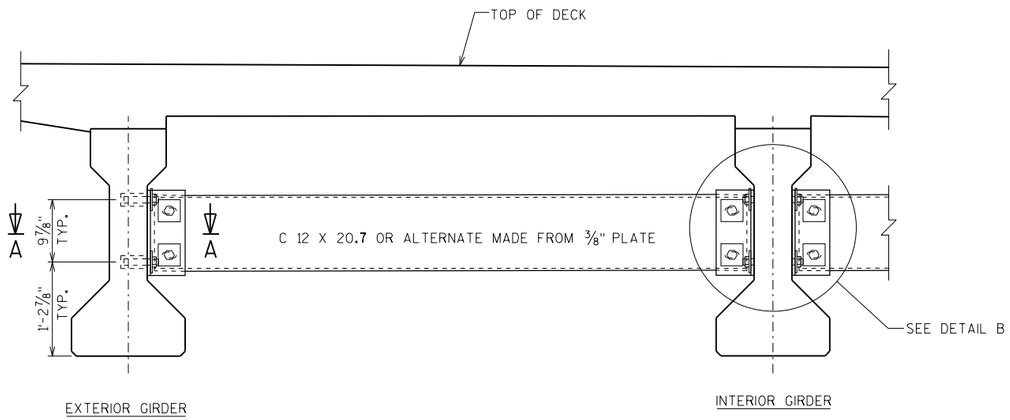
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36" PRESTRESSED GIRDER

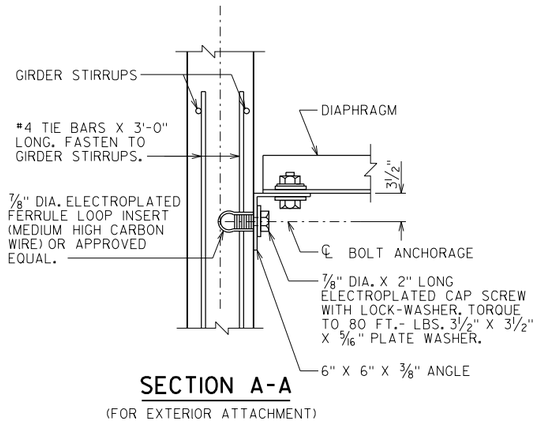
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PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)

NOTES

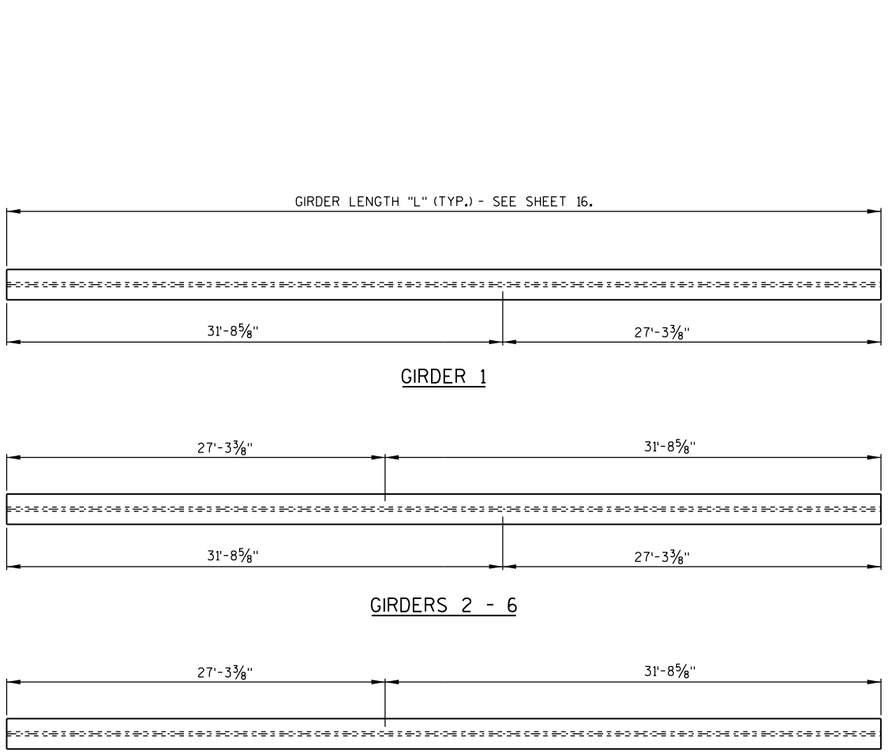
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-6-202", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

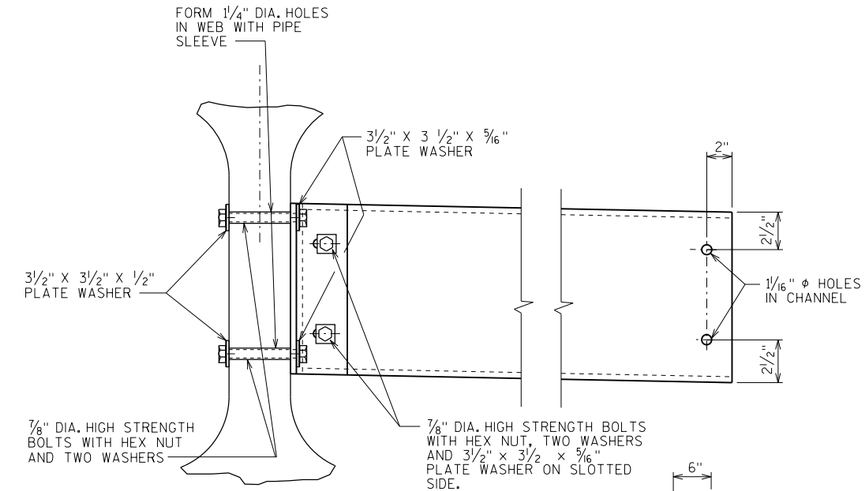
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



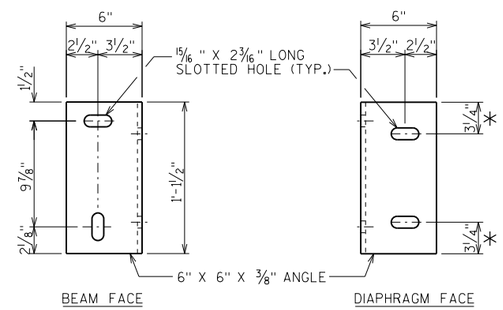
DIAPHRAGM CONNECTION SPACING



(FOR STAGGERED DIAPHRAGM)

DETAIL B

SECTION THRU ALTERNATE DIAPHRAGM



DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM

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STRUCTURE B-6-202

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INTERMEDIATE STEEL DIAPHRAGM

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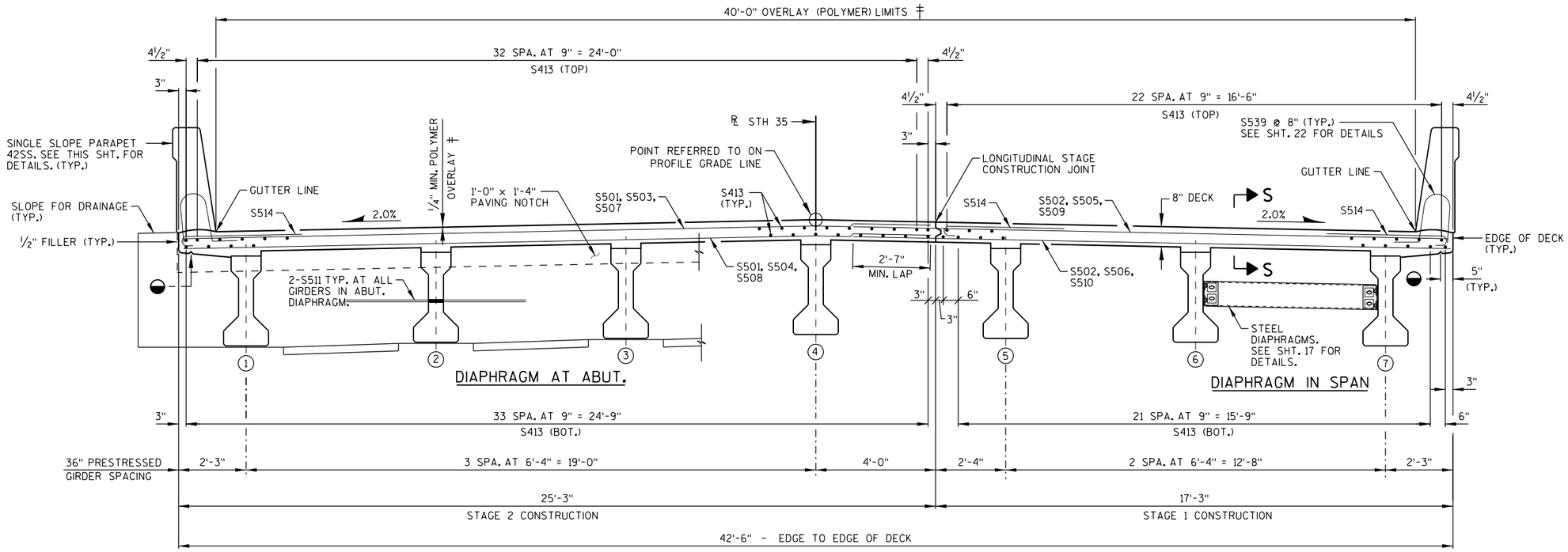
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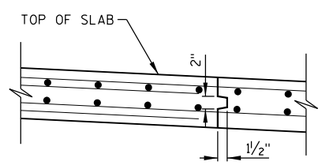
STATE PROJECT NUMBER

7160-04-74

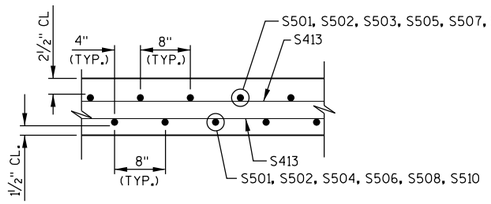


CROSS SECTION THRU ROADWAY

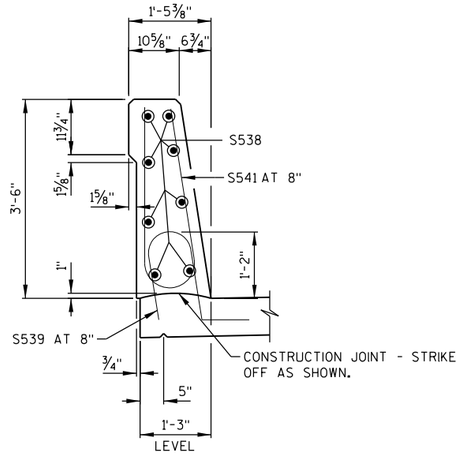
(LOOKING UPSTATION)



SECTION THRU LONGITUDINAL JOINT



SECTION S-S



SINGLE SLOPE PARAPET 42SS ON SUPERSTRUCTURE

TOP OF DECK ELEVATIONS

	CL BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. N. ABUT.
EOD	659.53	659.51	659.50	659.48	659.46	659.44	659.43	659.41	659.39	659.37	659.36
BEAM 1	659.57	659.55	659.53	659.51	659.50	659.48	659.46	659.44	659.43	659.41	659.39
BEAM 2	659.68	659.67	659.65	659.63	659.61	659.60	659.58	659.56	659.54	659.53	659.51
BEAM 3	659.79	659.77	659.75	659.74	659.72	659.70	659.69	659.67	659.65	659.63	659.62
BEAM 4	659.91	659.89	659.87	659.85	659.84	659.82	659.80	659.78	659.77	659.75	659.73
STAGE CONST. JOINT	659.82	659.80	659.78	659.77	659.75	659.73	659.71	659.70	659.68	659.66	659.64
BEAM 5	659.76	659.75	659.73	659.71	659.69	659.68	659.66	659.64	659.62	659.61	659.59
BEAM 6	659.63	659.61	659.59	659.58	659.56	659.54	659.53	659.51	659.49	659.47	659.46
BEAM 7	659.49	659.47	659.45	659.43	659.42	659.40	659.38	659.36	659.35	659.33	659.31
EOD	659.44	659.42	659.41	659.39	659.37	659.35	659.34	659.32	659.30	659.29	659.27

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 2.

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STRUCTURE B-6-202

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SUPERSTRUCTURE CROSS SECTION

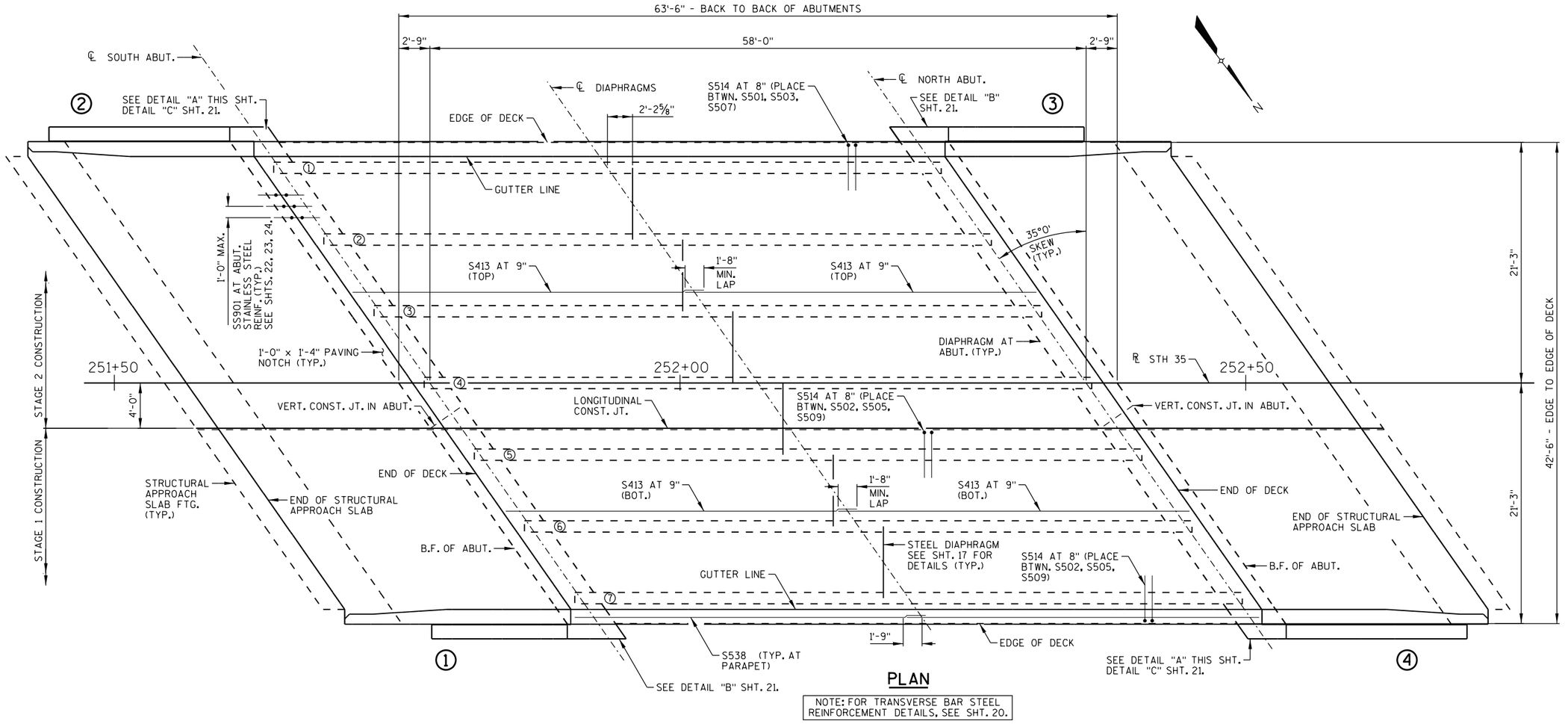
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STATE PROJECT NUMBER

7160-04-74



PLAN

NOTE: FOR TRANSVERSE BAR STEEL REINFORCEMENT DETAILS, SEE SHT. 20.

NOTES

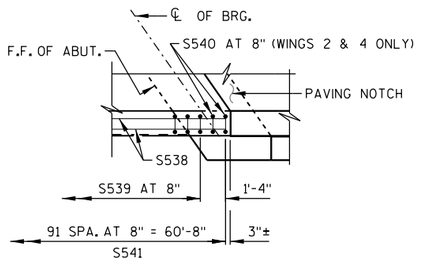
ALL TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO ℄ STH 35.

LAP LONGITUDINAL NO. 5 BARS IN PARAPET 1'-9" MIN.

LAP NO. 4 BARS 1'-8" MIN. IN DECK.

LAP NO. 5 TRANSVERSE BARS 2'-7" MIN. IN DECK.

SEE SHT. 18 'SUPERSTRUCTURE CROSS SECTION' FOR PARAPET REINFORCEMENT DETAIL.



DETAIL "A" PARAPET REINFORCING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SUPERSTRUCTURE

SHEET 19 OF 26

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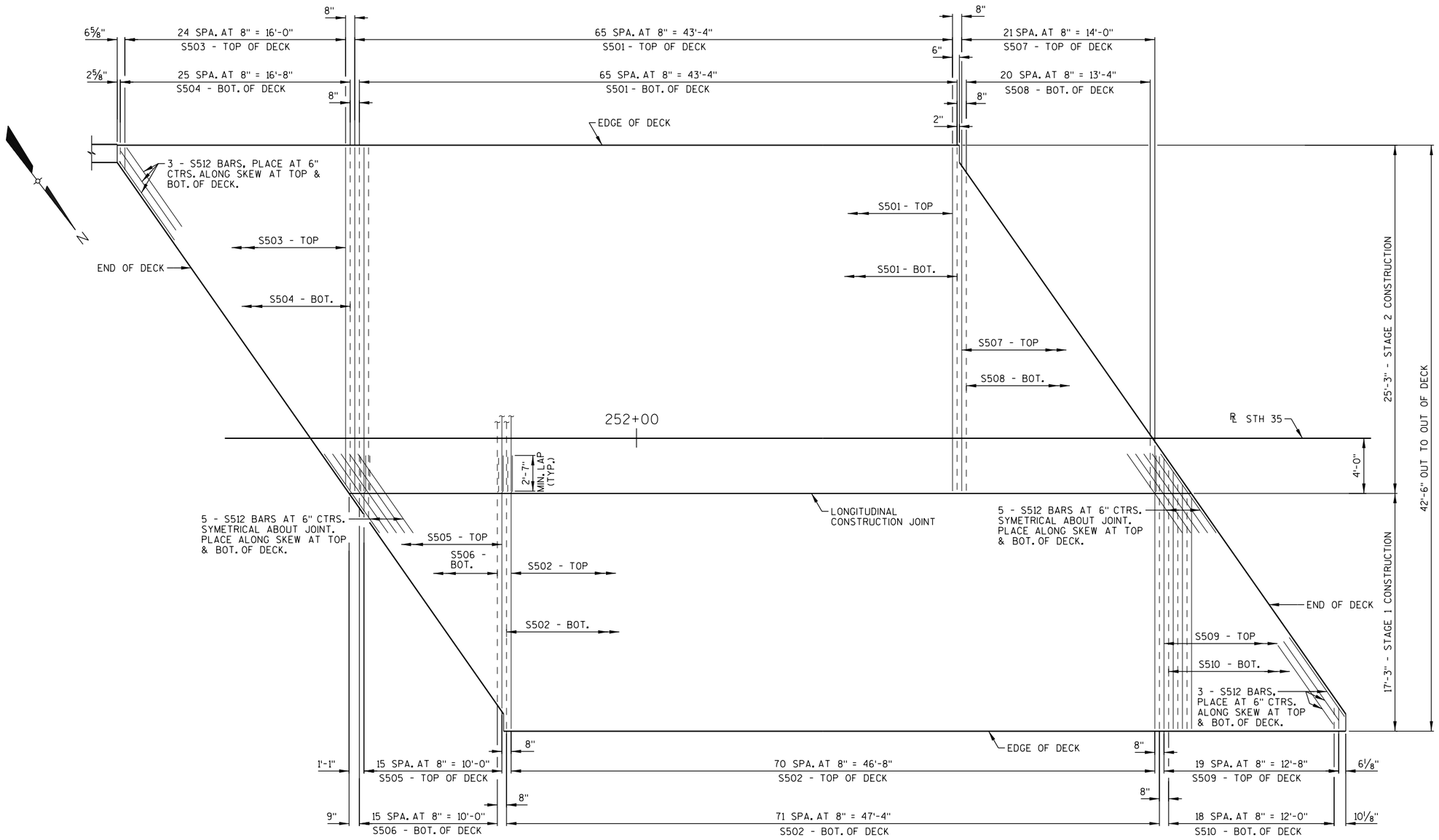
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STATE PROJECT NUMBER

7160-04-74



PLAN

(SHOWING TOP & BOTTOM TRANSVERSE BAR STEEL REINFORCEMENT)

FOR ADDITIONAL TRANSVERSE BARS SEE SHT. 19.

NO.	DATE	REVISION	BY

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STRUCTURE B-6-202

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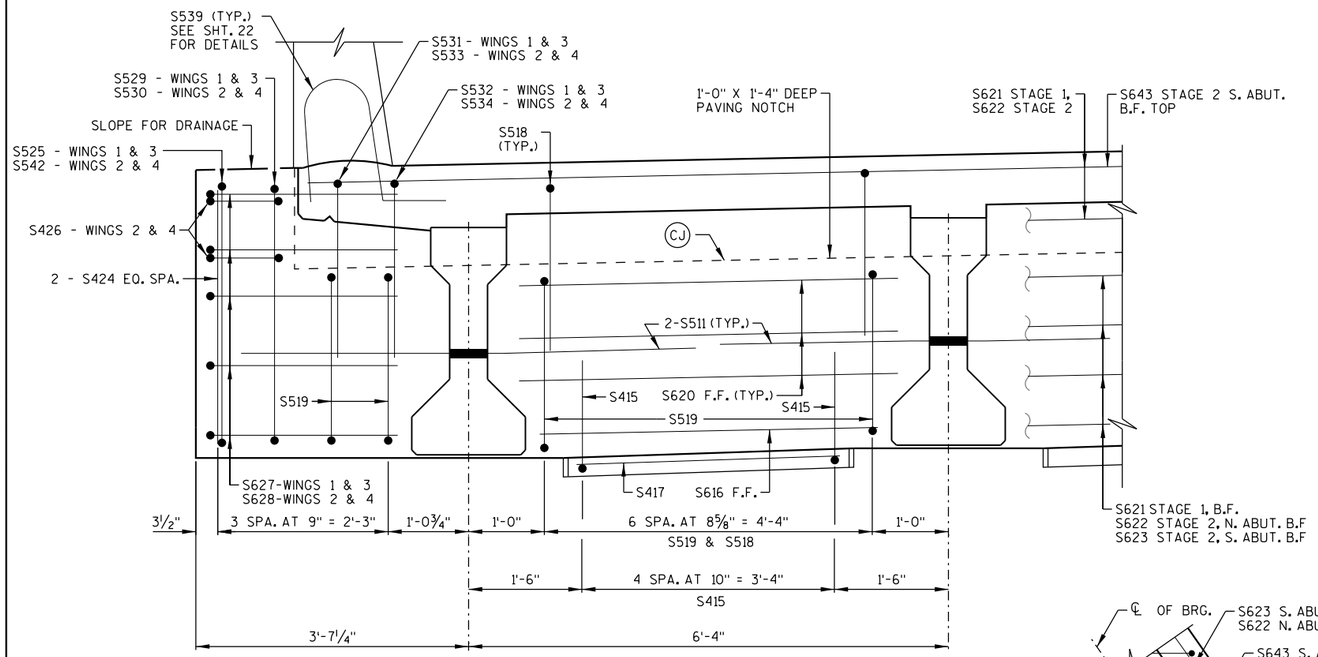
SUPERSTRUCTURE DETAILS - 1

SHEET 20 OF 26

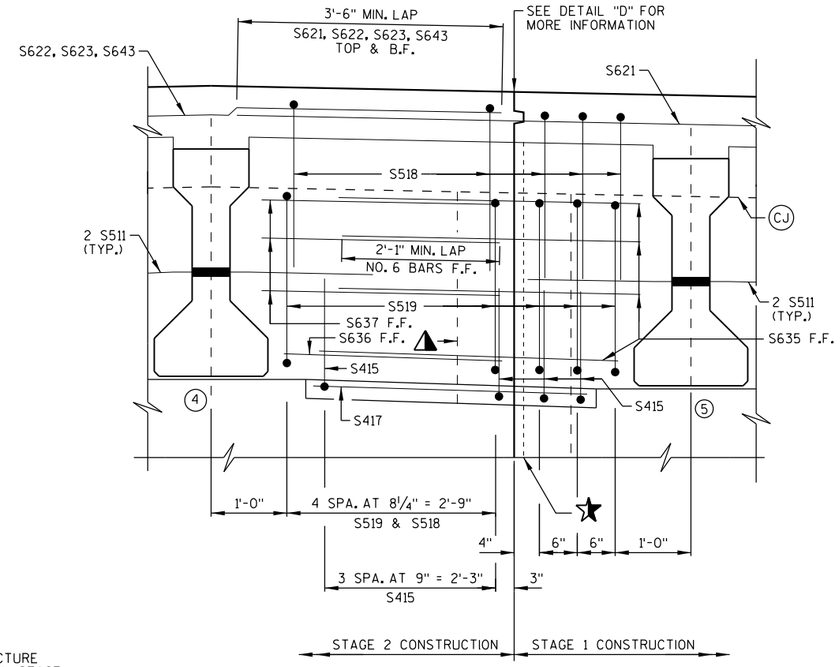
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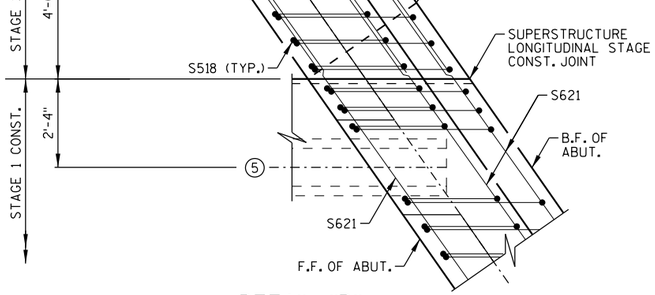
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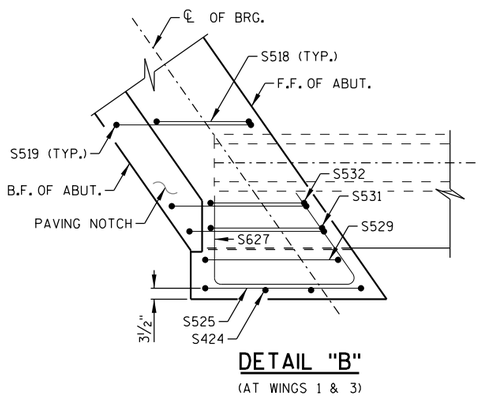
ABUTMENT DIAPHRAGM DETAILS
(LOOKING UPSTATION)



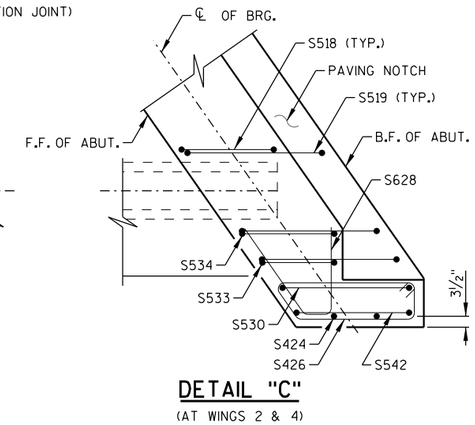
ABUTMENT DIAPHRAGM AT CONST. JOINT
(LOOKING UPSTATION)



DETAIL "D"
(DIAPHRAGM AT CONSTRUCTION JOINT)



DETAIL "B"
(AT WINGS 1 & 3)



DETAIL "C"
(AT WINGS 2 & 4)

LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SUPERSTRUCTURE DETAILS - 2

SHEET 21 OF 26
159

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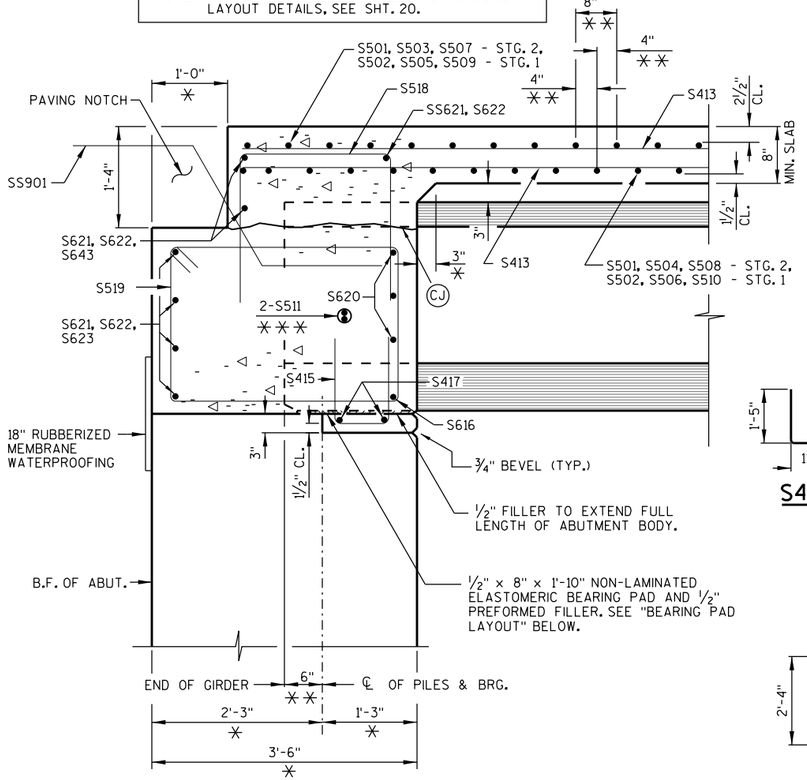
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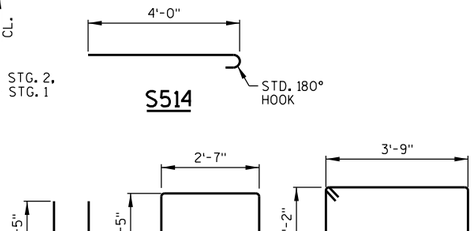
STATE PROJECT NUMBER

7160-04-74

NOTE: FOR TRANSVERSE BAR STEEL REINFORCEMENT LAYOUT DETAILS, SEE SHT. 20.



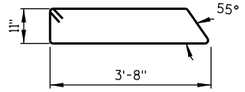
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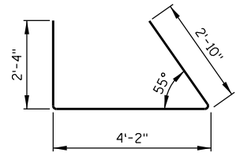
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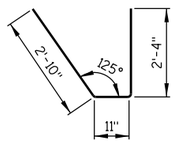
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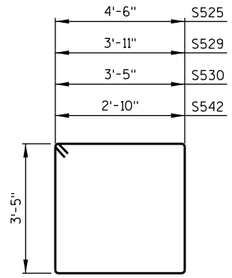
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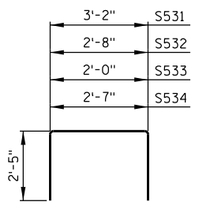
S627



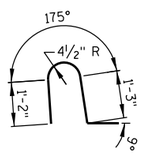
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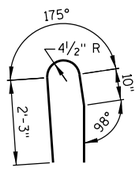
S525, S529, S530, S542



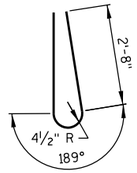
S531, S532, S533, S534



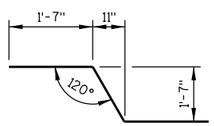
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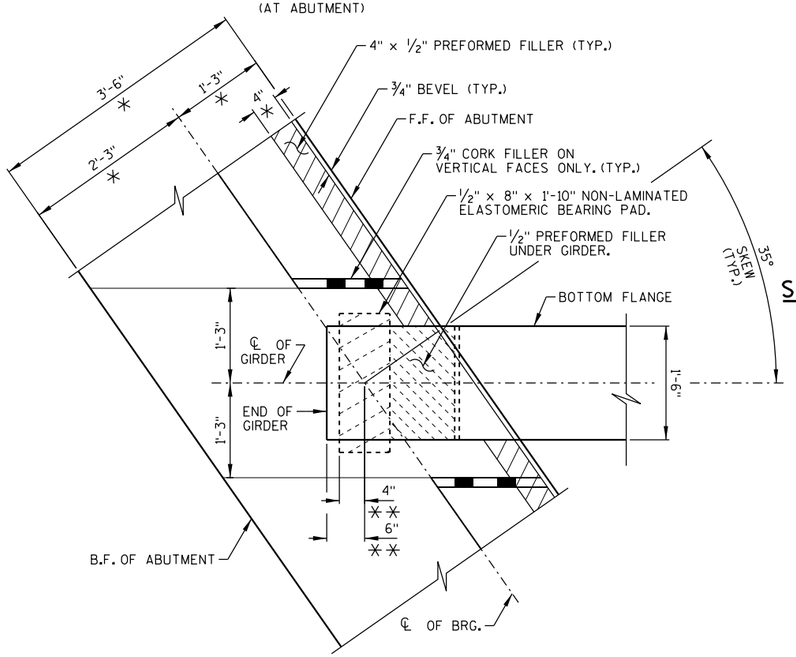
S540



S541



SS901



BEARING PAD LAYOUT

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
△ LENGTH SHOWN FOR BAR IS AN AVG. LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
	COATED BARS					TOTAL WEIGHT = 22,300 LBS	
S501	-----	132	24-11			SLAB - TOP & BOT.	TRANS.
S502	143	-----	19-10			SLAB - TOP & BOT.	TRANS.
S503	-----	25	13-0		△	SLAB - TOP	TRANS.
S504	-----	26	13-0		△	SLAB - BOT.	TRANS.
S505	16	-----	11-3		△	SLAB - TOP	TRANS.
S506	16	-----	10-9		△	SLAB - BOT.	TRANS.
S507	-----	22	13-3		△	SLAB - TOP	TRANS.
S508	-----	21	13-4		△	SLAB - BOT.	TRANS.
S509	20	-----	10-7		△	SLAB - TOP	TRANS.
S510	19	-----	10-1		△	SLAB - BOT.	TRANS.
S511	12	16	6-0			DIAPHRAGM - THRU GIRDER WEB	HORIZ.
S512	16	16	7-0			SLAB - ACUTE CORNERS TOP & BOT	TRANS.
S413	94	138	31-2			SLAB - TOP & BOT.	LONGIT.
S514	176	88	4-7	X		SLAB - OUTSIDE EDGES & STAGE CONS	TRANS.
S415	24	38	3-7	X		DIAPHRAGM - POCKET	VERT.
S616	4	6	5-3			DIAPHRAGM - F.F.	TRANS.
S417	12	12	4-3			DIAPHRAGM - POCKET	TRANS.
S518	34	52	7-2	X		DIAPHRAGM - TOP	VERT.
S519	38	56	12-6	X		DIAPHRAGM - BOTTOM STIRRUP	VERT.
S620	12	18	5-10			DIAPHRAGM - F.F.	TRANS.
S621	14	-----	26-3			DIAPHRAGM - B.F. & TOP, N. & S. ABUT	TRANS.
S622	-----	8	32-1			DIAPHRAGM - N. ABUT. & TOP OF S. ABUT	TRANS.
S623	-----	4	30-8			DIAPHRAGM - B.F. OF S. ABUT.	TRANS.
S424	4	4	3-6			DIAPHRAGM - ENDS	VERT.
S525	1	1	16-6	X		DIAPHRAGM - ENDS WINGS 1 & 3	HORIZ.
S426	2	2	9-3	X		DIAPHRAGM - ENDS WINGS 2 & 4	HORIZ.
S627	5	5	9-0	X		DIAPHRAGM - WINGS 1 & 3	TRANS.
S628	5	5	5-9	X		DIAPHRAGM - WINGS 2 & 4	TRANS.
S529	1	1	15-4	X		DIAPHRAGM - STIRRUP WINGS 1 & 3	VERT.
S530	1	1	14-4	X		DIAPHRAGM - STIRRUP WINGS 2 & 4	VERT.
S531	1	1	7-9	X		DIAPHRAGM - WINGS 1 & 3	VERT.
S532	1	1	7-3	X		DIAPHRAGM - WINGS 1 & 3	VERT.
S533	1	1	6-7	X		DIAPHRAGM - WINGS 2 & 4	VERT.
S534	1	1	7-2	X		DIAPHRAGM - WINGS 2 & 4	VERT.
S635	8	-----	4-7			DIAPHRAGM - AT CONST. JT.	TRANS.
S636	-----	2	3-6			DIAPHRAGM - AT CONST. JT.	TRANS.
S637	-----	6	4-1			DIAPHRAGM - AT CONST. JT.	TRANS.
S538	16	16	31-3			PARAPET	LONGIT.
S539	90	90	4-5	X		SLAB/PARAPET	VERT.
S540	2	2	5-10	X		SLAB/PARAPET	VERT.
S541	92	92	6-6	X		PARAPET	VERT.
S542	1	1	13-2	X		DIAPHRAGM - WINGS 2 & 4 (END)	VERT.
S643	-----	2	29-1			DIAPHRAGM - B.F. OF S. ABUT.	TRANS.
	STAINLESS STEEL BARS					TOTAL WEIGHT = 1,510 LBS	
SS901	36	52	5-0	X		APPROACH SLAB - ABUTMENT DIAPHRA	VERT.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES (LB)
STAGE 1	56	10,120	620
STAGE 2	73	12,180	890

BAR SERIES

MARK	NO. REQ'D	LENGTH
S503	1 SERIES OF 25	1'-7" TO 24'-5"
S504	1 SERIES OF 26	1'-1" TO 24'-11"
S505	1 SERIES OF 16	4'-1" TO 18'-4"
S506	1 SERIES OF 16	3'-7" TO 17'-10"
S507	1 SERIES OF 22	3'-3" TO 23'-3"
S508	1 SERIES OF 21	3'-9" TO 22'-10"
S509	1 SERIES OF 20	1'-6" TO 19'-7"
S510	1 SERIES OF 19	1'-0" TO 19'-1"

LEGEND

✳ DIMENSIONS ARE GIVEN NORMAL TO ℄ OF SUBSTRUCTURE UNITS.

✳✳ DIMENSIONS ARE GIVEN PARALLEL TO THE GIRDER ℄.

✳✳✳ 1½" DIA. HOLE IN WEB FOR S511 BARS. PLACE TWO S511 BARS SYMMETRICAL ABOUT THE ℄ OF EACH GIRDER. FIELD BEND ALONG SKEW.

(CJ) OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

NOTES

PLACE AND SPACE VERTICAL REINFORCMENT BARS PARALLEL TO THE GIRDER ℄.

LAP NO. 6 BARS IN ABUTMENT DIAPHRAGM 3'-6" MIN.

MATCH BOTTOM OF PAVING NOTCH WITH SLOPE OF 'TOP OF DECK'.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SUPERSTRUCTURE DETAILS - 3

SHEET 22 OF 26
160

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BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
COATED BARS						TOTAL WEIGHT = 9,730 LBS	
N801	30	42	21-4	X		APPROACH SLAB - BOTTOM	LONGIT.
N502	18	26	19-6			APPROACH SLAB - TOP	LONGIT.
N503	-----	40	30-8			APPROACH SLAB - TOP & BOT	TRANS.
N504	40	-----	20-11			APPROACH SLAB - TOP & BOT	TRANS.
N505	-----	2	29-3			APPROACH SLAB - TOP & BOT	TRANS.
N506	2	-----	20-9			APPROACH SLAB - TOP & BOT	TRANS.
N507	20	20	4-1	X		APPROACH SLAB - TOP	TRANS.
N808	-----	6	30-8			APPROACH SLAB FOOTING	TRANS.
N809	8	-----	20-11			APPROACH SLAB FOOTING	TRANS.
N810	-----	6	29-1			APPROACH SLAB FOOTING	TRANS.
N811	4	-----	19-4			APPROACH SLAB FOOTING	TRANS.
N512	17	25	13-10	X		APPROACH SLAB FOOTING	LONGIT.
N513	-----	1	8-8	X		APPROACH SLAB FOOTING	LONGIT.
N514	-----	1	9-10	X		APPROACH SLAB FOOTING	LONGIT.
N515	2	-----	10-4	X		APPROACH SLAB FOOTING	LONGIT.
N516	2	2	4-1	X		APPROACH SLAB - CORNER	TRANS.
N517	2	2	3-11	X		APPROACH SLAB - CORNER	TRANS.

ESTIMATED QUANTITIES

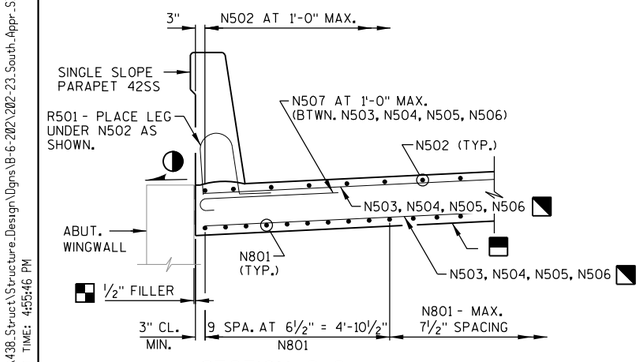
	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)
STAGE 1	26	4,020
STAGE 2	37	5,710

LEGEND

- STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.
- SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- SEE ROADWAY PLANS FOR DETAILS.
- SLOPE TO DRAIN.
- USE BAR COUPLERS TO CONTINUE BAR STEEL THROUGH JOINT. SEE SHT. 26 FOR DETAILS.

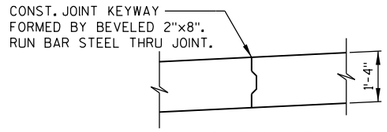
TOP OF APPROACH SLAB ELEVATIONS

LOCATION	DESCRIPTION	STATION	OFFSET TO ℄ (FEET)	ELEVATION (FEET)
'A'	WEST FLOW LINE AT END OF APPROACH SLAB	251+42.37	20.42 LT.	659.60
'B'	EAST FLOW LINE AT END OF APPROACH SLAB	251+70.37	20.42 RT.	659.52

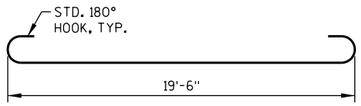


SECTION C-C

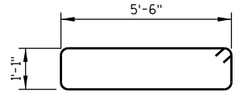
FOR PARAPET BARS AND DETAILS SEE SHEET 25.



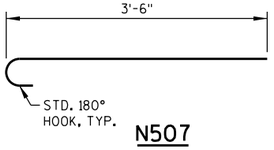
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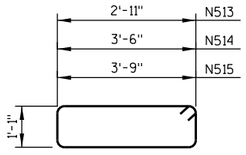
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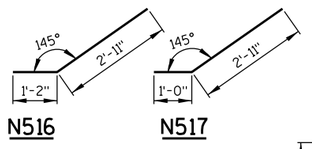
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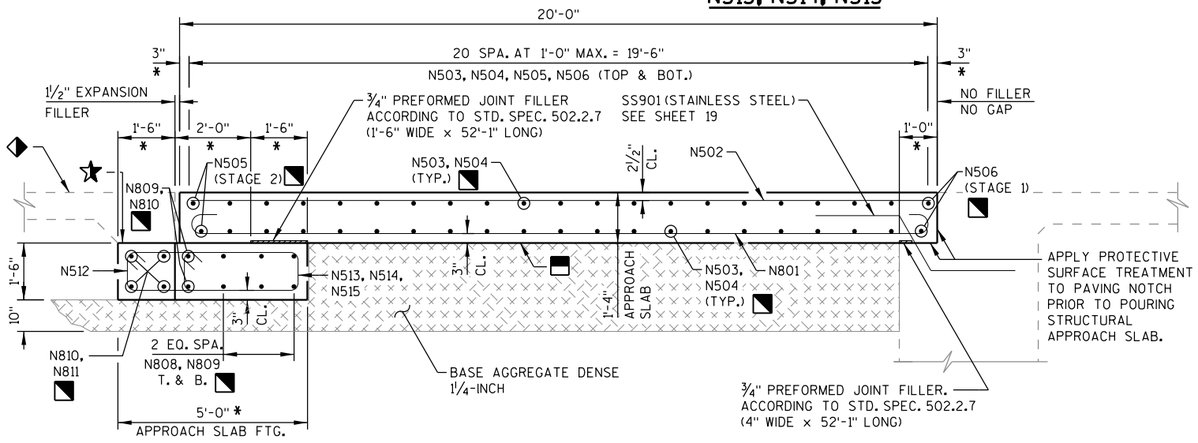
N507



N513, N514, N515



N516 N517

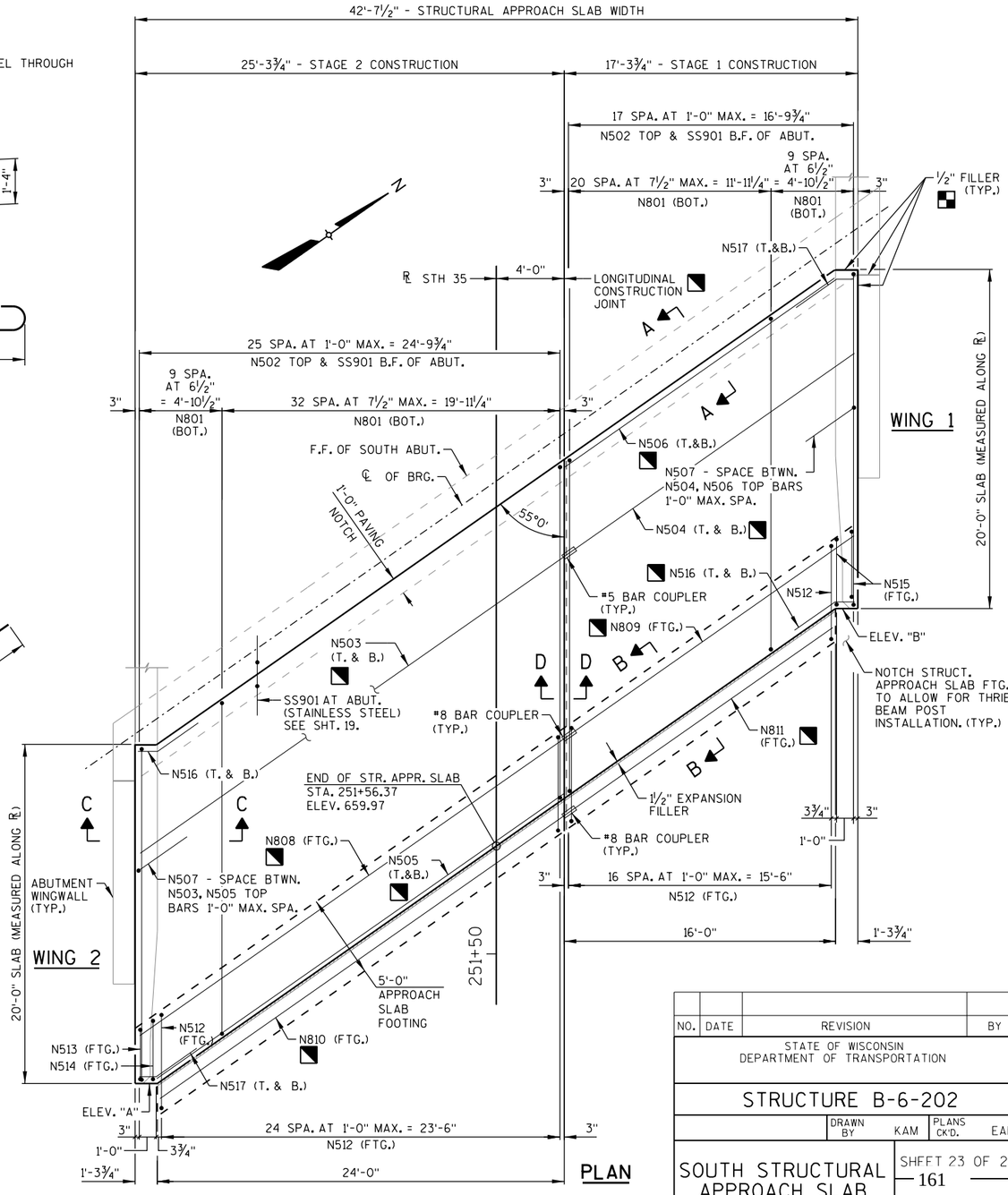


SECTION B - B

SECTION THRU APPROACH SLAB

* DIMENSIONS MEASURED NORMAL TO ABUTMENT

SECTION A - A



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

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SOUTH STRUCTURAL APPROACH SLAB

SHEET 23 OF 26
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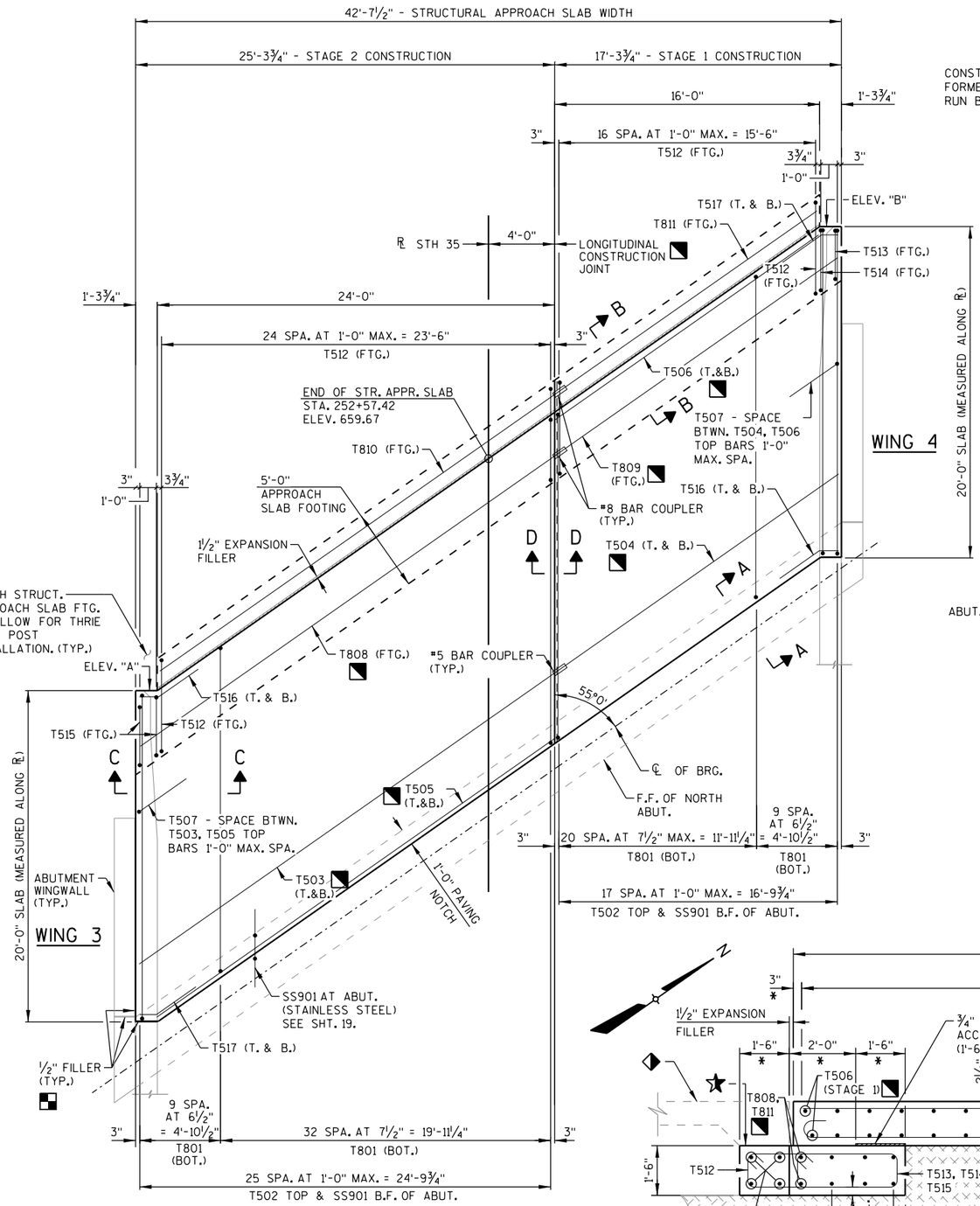
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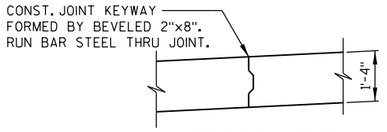
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STATE PROJECT NUMBER

7160-04-74



PLAN



SECTION D-D

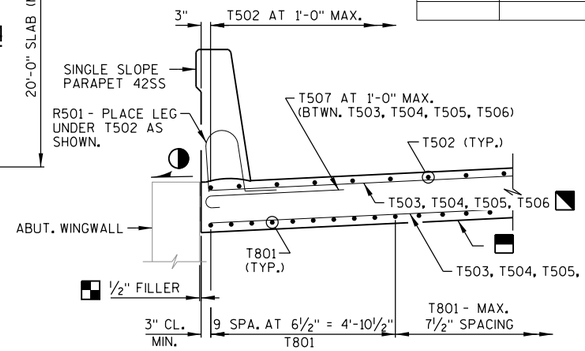
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
COATED BARS						TOTAL WEIGHT = 9,730 LBS	
T801	30	42	21-4	X		APPROACH SLAB - BOTTOM	LONGIT.
T502	18	26	19-6			APPROACH SLAB - TOP	LONGIT.
T503	-----	40	30-8			APPROACH SLAB - TOP & BOT.	TRANS.
T504	40	-----	20-11			APPROACH SLAB - TOP & BOT.	TRANS.
T505	-----	2	29-3			APPROACH SLAB - TOP & BOT.	TRANS.
T506	2	-----	20-9			APPROACH SLAB - TOP & BOT.	TRANS.
T507	20	20	4-1	X		APPROACH SLAB - TOP	TRANS.
T808	-----	8	30-8			APPROACH SLAB FOOTING	TRANS.
T809	6	-----	20-11			APPROACH SLAB FOOTING	TRANS.
T810	-----	4	29-1			APPROACH SLAB FOOTING	TRANS.
T811	6	-----	19-4			APPROACH SLAB FOOTING	TRANS.
T512	17	25	13-10	X		APPROACH SLAB FOOTING	LONGIT.
T513	1	-----	8-8	X		APPROACH SLAB FOOTING	LONGIT.
T514	1	-----	9-10	X		APPROACH SLAB FOOTING	LONGIT.
T515	-----	2	10-4	X		APPROACH SLAB FOOTING	LONGIT.
T516	2	2	4-1	X		APPROACH SLAB - CORNER	TRANS.
T517	2	2	3-11	X		APPROACH SLAB - CORNER	TRANS.

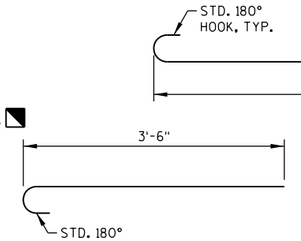
ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)
STAGE 1	26	4,010
STAGE 2	37	5,720



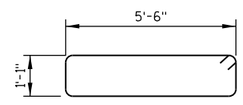
SECTION C-C

FOR PARAPET BARS AND DETAILS SEE SHEET 25.

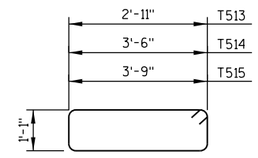


T801

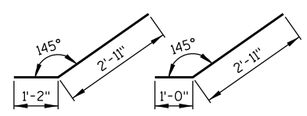
T507



T512



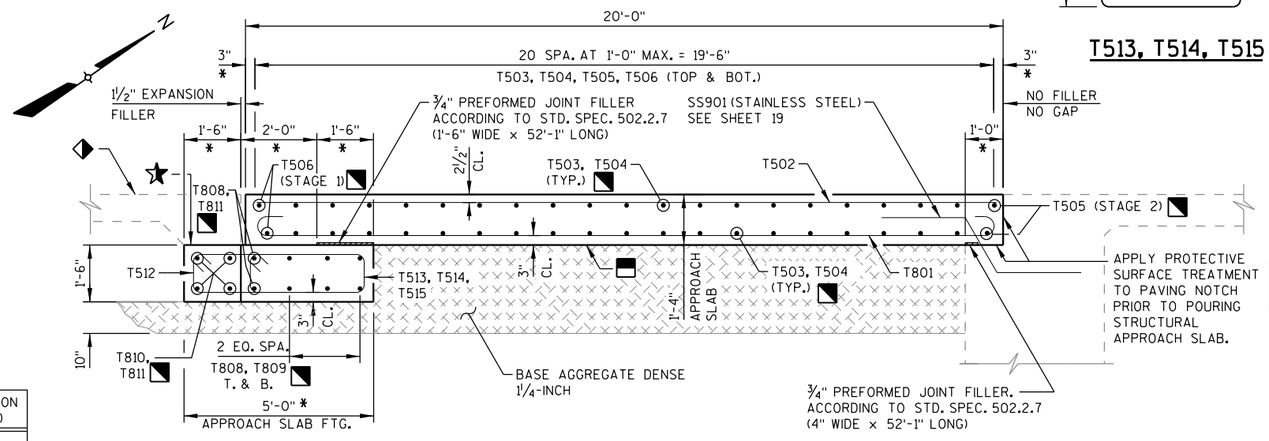
T513, T514, T515



T516 T517

TOP OF APPROACH SLAB ELEVATIONS

LOCATION	DESCRIPTION	STATION	OFFSET TO ℄ (FEET)	ELEVATION (FEET)
'A'	WEST FLOW LINE AT END OF APPROACH SLAB	252+43.42	20.42 LT.	659.30
'B'	EAST FLOW LINE AT END OF APPROACH SLAB	252+71.42	20.42 RT.	659.22



SECTION B - B

SECTION THRU APPROACH SLAB

* DIMENSIONS MEASURED NORMAL TO ABUTMENT

SECTION A - A

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 23.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. EAN

NORTH STRUCTURAL APPROACH SLAB

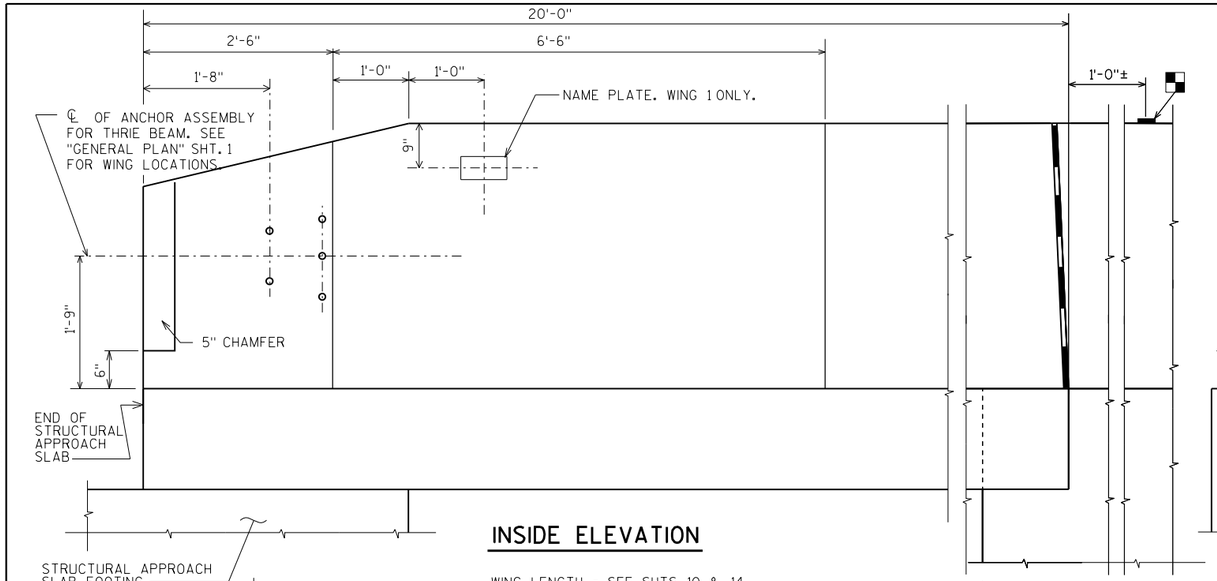
SHEET 24 OF 26
162

8

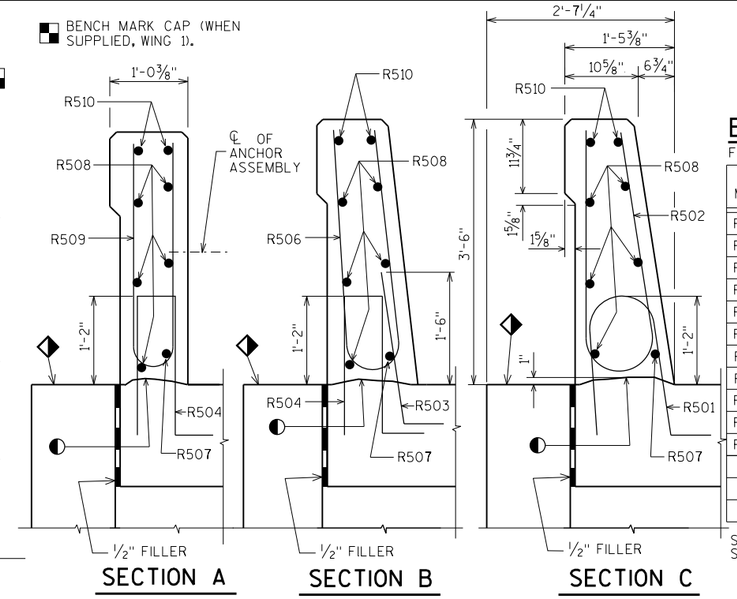
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BATCH PRINT SHEET 25 OF 26

STATE PROJECT NUMBER
7160-04-74



INSIDE ELEVATION



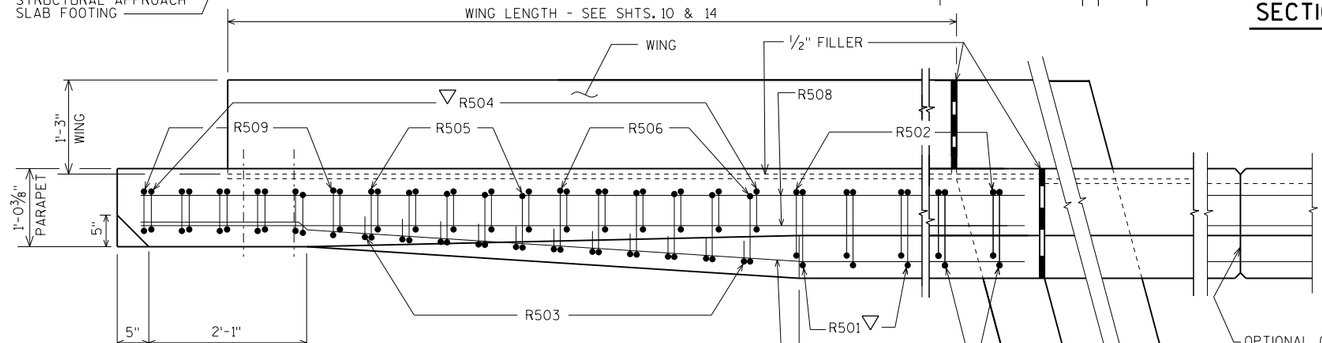
BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR MARK	COAT	STAGE 1	STAGE 2	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	4-5	X		PARAPET VERT.
R502	X	36	36	6-8	X		PARAPET VERT.
R503	X	22	22	2-9	X		PARAPET VERT.
R504	X	34	36	4-4	X		PARAPET VERT.
R505	X	10	10	6-5	X		PARAPET VERT.
R506	X	12	12	6-6	X		PARAPET VERT.
R507	X	2	2	19'-6"	X		PARAPET HORIZ.
R508	X	10	10	19'-6'			PARAPET HORIZ.
R509	X	12	12	5-5	X	⚠	PARAPET VERT.
R510	X	4	4	19'-6"	X		PARAPET HORIZ
R511	X	2	2	5'-0"	X		PARAPET VERT.

STAGE 1 WT. = 1,180 LBS.
STAGE 2 WT. = 1,180 LBS.

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



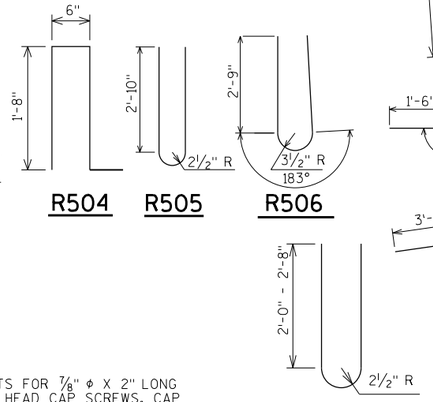
PLAN

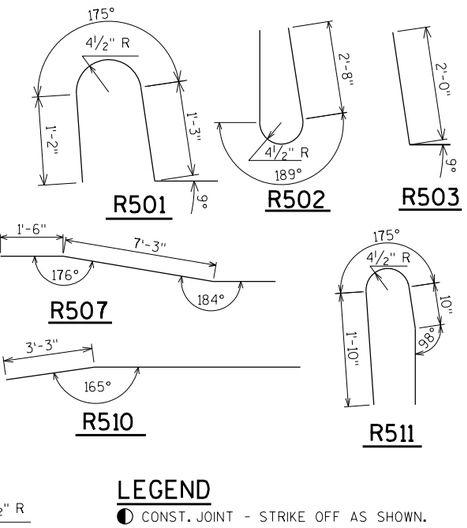
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" - 'V' GROOVE.

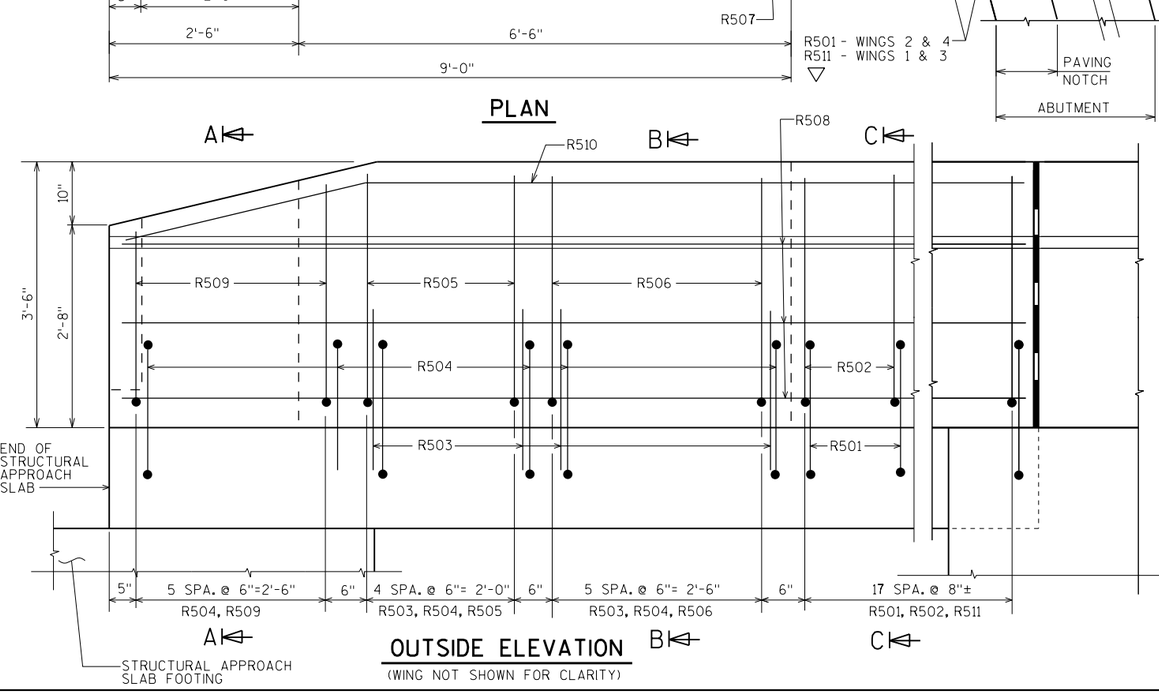
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

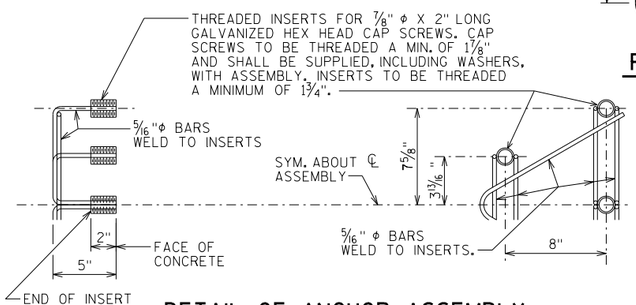






OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

LEGEND

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◆ SLOPE FOR DRAINAGE

▽ R501, R504 AND R511 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. EAN

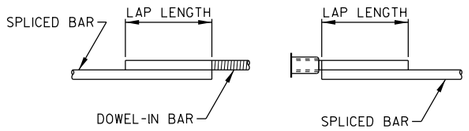
PARAPET 42SS WITH STR. APPROACH SLAB

SHEET 25 OF 26
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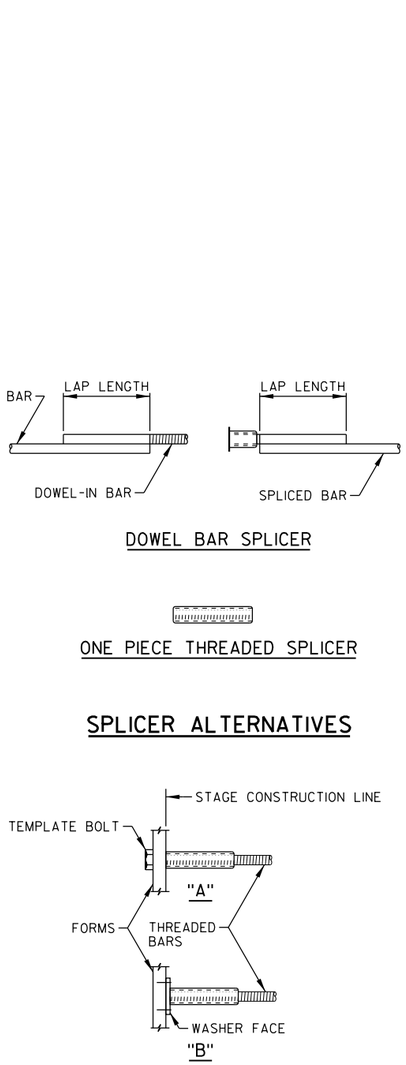
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BATCH PRINT SHEET 26 OF 26



DOWEL BAR SPLICER

ONE PIECE THREADED SPLICER

SPLICER ALTERNATIVES



INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT.
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.

NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE STRUCTURAL APPROACH SLABS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILIAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

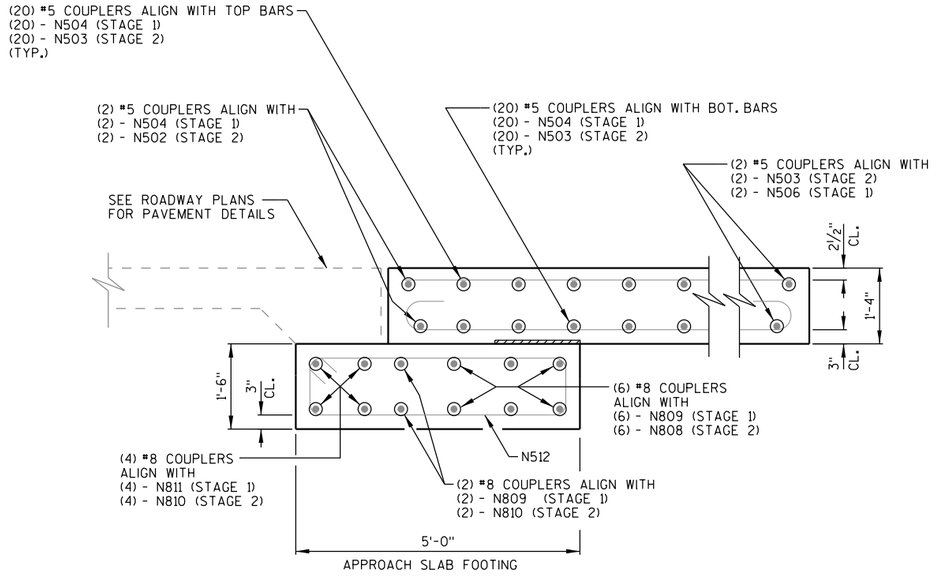
1. - MINIMUM CAPACITY = 1.25 x fy x AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICER LAP LENGTHS

CONCRETE UNDER BAR	BAR SIZE	4	5	6	7	8	9	10	11
12" OR LESS	f'c = 3500	1'-8"	2'-8"	3'-2"	4'-3"	5'-6"	7'-0"	8'-9"	10'-11"
	f'c = 4000	1'-8"	2'-8"	3'-2"	4'-0"	5'-2"	6'-6"	8'-3"	10'-2"
MORE THAN 12"	f'c = 3500	2'-3"	2'-11"	3'-6"	4'-8"	6'-1"	7'-10"	9'-10"	12'-1"
	f'c = 4000	2'-3"	2'-11"	3'-6"	4'-5'	5'-8"	7'-4"	9'-2"	11'-4"

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMENDATIONS. PAY BASED ON BARS AS DETAILED.



TYPICAL SECTION THRU APPROACH SLAB FOOTING AT CONSTRUCTION JOINT

(SOUTH APPROACH SLAB SHOWN, NORTH APPROACH SLAB SIMILIAR)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-202

DRAWN BY KAM | PLANS CK'D. EAN

BAR SPLICER (COUPLER) DETAILS

SHEET 26 OF 26
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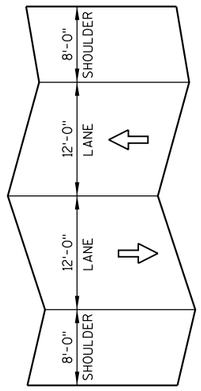
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BATCH PRINT SHEET 1 OF 25

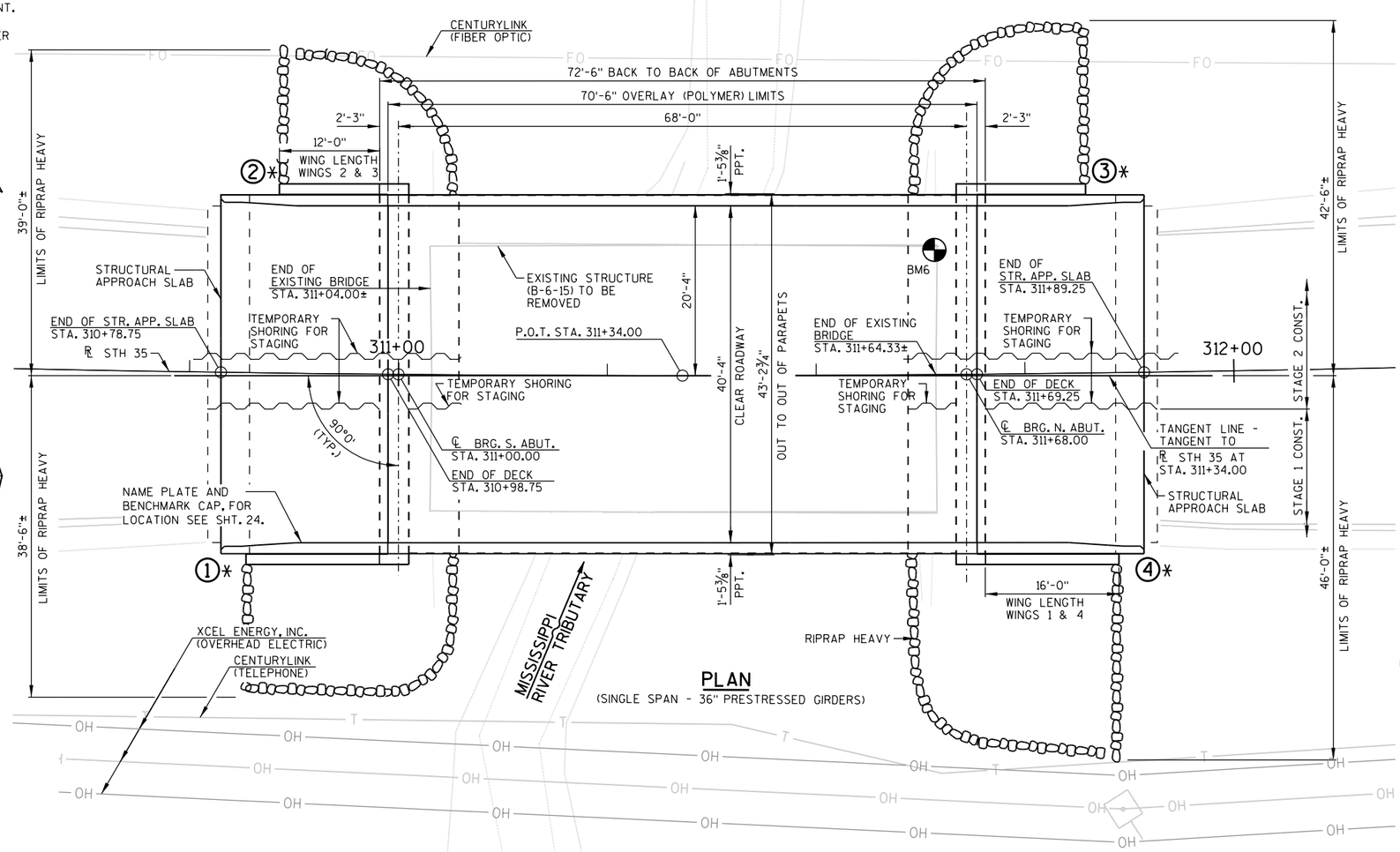
STATE PROJECT NUMBER

7160-04-70

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT.

Ⓧ INDICATES WING NUMBER





PLAN

(SINGLE SPAN - 36" PRESTRESSED GIRDERS)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.09
OPERATING RATING FACTOR = 1.61
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY
- DECK, PARAPET, DIAPHRAGMS, APPROACH SLAB, APPR. SLAB FOOTING. — f'c = 4,000 P.S.I.
- ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
(INCLUDES STAINLESS STEEL REINFORCEMENT)

36" PRESTRESSED GIRDER
- CONCRETE MASONRY — f'c = 8,000 P.S.I.
- STRANDS - 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF — 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾×0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45'-0" LONG FOR THE SOUTH ABUTMENT AND 60'-0" LONG FOR THE NORTH ABUTMENT.

** 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 THE MODIFIED GATE DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

STH 35
A.D.T. (2019) = 5400
A.D.T. (2039) = 6100
DESIGN SPEED = 60 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

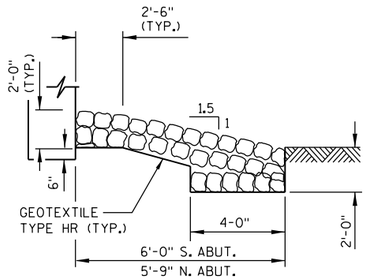
Q100	760 CFS
VELOCITY	4.1 FPS
HIGH WATER ELEVATION	657.08
WATERWAY AREA	184.4 SQ. FT.
DRAINAGE AREA	1.8 SQ. MI.
ROAD OVERTOPPING	N/A
SCOUR CRITICAL CODE	5

2 YEAR FREQUENCY

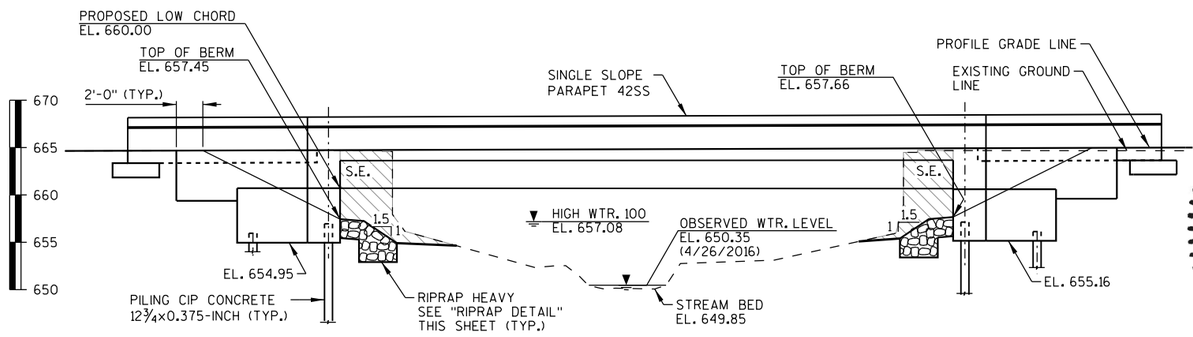
Q2	105 CFS
HIGH WATER 2 ELEVATION	653.62

CURVE DATA: STH 35

PI STA = 312+87.07
Y = 223491.032
X = 608148.788
DELTA = 18°43'25"
D = 1°30'00"
T = 629.74'
L = 1248.25'
R = 3819.72'
PC STA = 306+57.33
PT STA = 319+05.58
S.E. = 3.9%



RIPRAP DETAIL



ELEVATION

NORMAL TO MISSISSIPPI RIVER TRIBUTARY

COST FOR EXCAVATION IN THE HATCHED AREA SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-6-203".

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
BM5	311+31, 75.36' LT.	SPIKE IN 6-INCH BOX ELDER.	653.90
BM6	311+64, 14.93' LT.	ALUM. CAP NW CRNR. OF BRIDGE DECK	664.20

HORIZ. COORDINATES TIED TO NAD 83 (2011). VERT. TIED TO NAVD 88. COORDINATE SYSTEM WCCS, 9606 ZONE.

TANGENT OFFSETS ALONG ℄ SUBSTRUCTURE	
SUBSTRUCTURE	OFFSET FROM ℞ TO TANGENT LINE
S. ABUT.	1⅞" RT.
N. ABUT.	1⅞" RT.

WISCONSIN
ELIZABETH A. NEMEC
E-43409-6
STEVENS POINT, WI
7/30/18
PROFESSIONAL ENGINEER

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT:
BETH NEMEC (715) 342-3069

AECOM PROJECT NO. 60531793

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/06/18
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-6-203

STH 35 OVER MISSISSIPPI RIVER TRIBUTARY

COUNTY	TOWN ~~CITY/VILLAGE~~
BUFFALO	BUFFALO

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	KB	DESIGN CK'D.	EAN	DRAWN BY	KAM	PLANS CK'D.	EAN

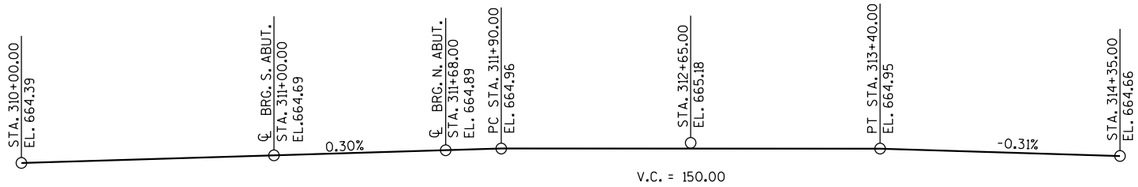
GENERAL PLAN

SHEET 1 OF 25
165

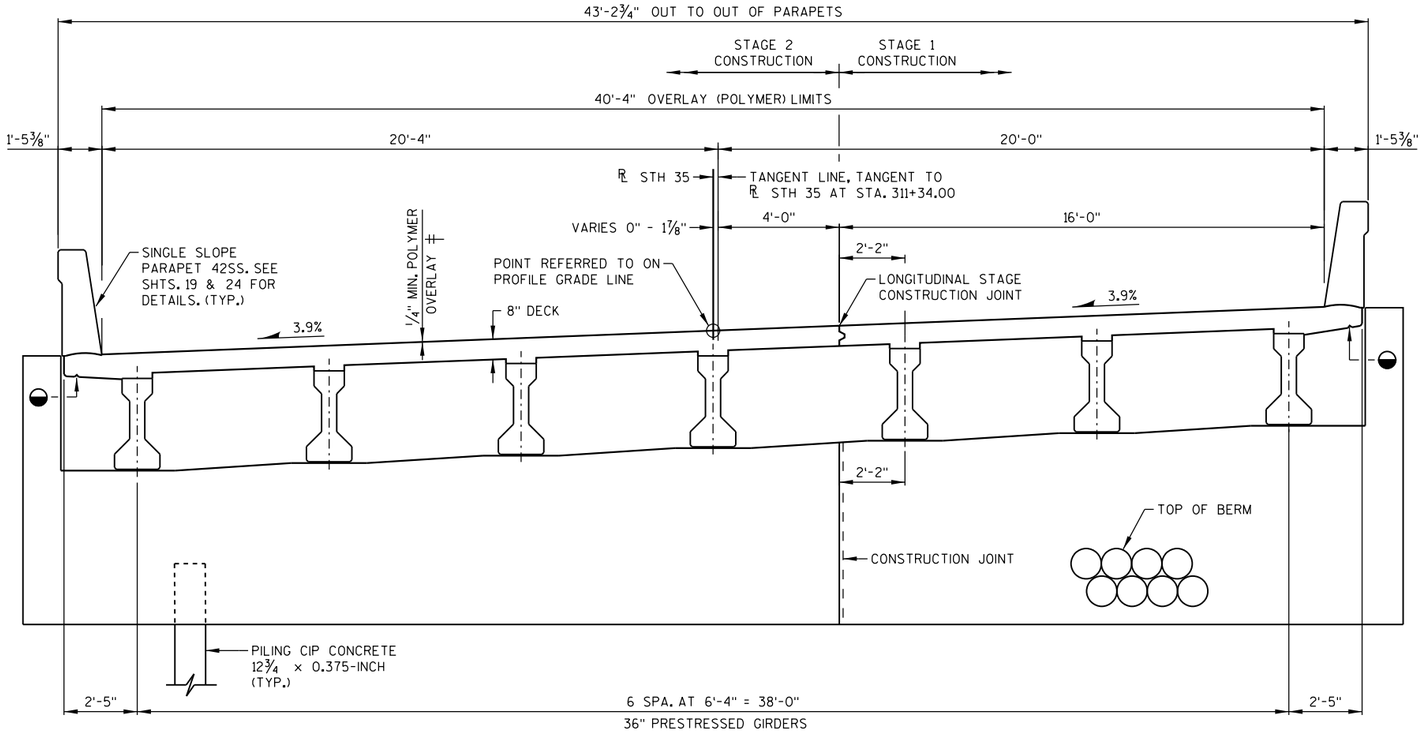
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BATCH PRINT SHEET 2 OF 25



PROFILE GRADE LINE, STH 35



CROSS SECTION THRU ROADWAY

(LOOKING UPSTATION)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH APPROACH	SOUTH ABUTMENT	NORTH ABUTMENT	NORTH APPROACH	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCUTRE OVER WATERWAY WITH MINIMAL DEBRIS STATION B-6-203	LS						1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-6-203	LS						1
210.1500	BACKFILL STRUCTURE TYPE A	TON		155	155			310
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	135			135		270
502.0100	CONCRETE MASONRY BRIDGES	CY	61	57	57	61	144	380
502.3200	PROTECTIVE SURFACE TREATMENT	SY	12			12		24
502.3210	PIGMENTED SURFACE SEALER	SY	20			20	71	111
503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF					483	483
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB		3,450	3,450			6,900
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	10,170	1,700	1,710	10,170	25,040	48,790
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB					1,510	1,510
505.0905	BAR COUPLERS NO. 5	EACH	42			42		84
505.0908	BAR COUPLERS NO. 8	EACH	12	7	7	12		38
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH		7	7			14
506.4000	STEEL DIAPHRAGMS B-6-203	EACH					6	6
509.5100.S	POLYMER OVERLAY	SY					320	320
511.1200	TEMPORARY SHORING B-6-203	SF		515	515			1,030
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		11	11			22
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF		405	540			945
606.0300	RIPRAP HEAVY	CY		80	100			180
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF		80	80			160
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2			2		4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY		50	50			100
645.0120	GEOTEXTILE TYPE HR	SY		190	230			420
	NON-BID ITEMS							
	FILLER	SIZE						1/2" & 3/4"

STATE PROJECT NUMBER

7160-04-70

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE 'HR' WITHIN THE LIMITS SHOWN ON SHEET 1, ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING STRUCTURE (B-6-15) IS A 3 SPAN STEEL DECK GIRDER BRIDGE, 60.7' LONG × 31.9' WIDE, TO BE REMOVED. CONTRACTOR SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE DURING STAGE 1 CONSTRUCTION IN ACCORDANCE WITH 108.7.3 OF THE STANDARD SPECIFICATIONS.

ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 311+34."

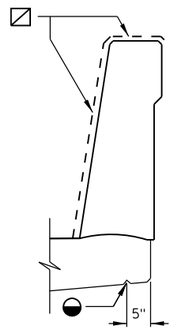
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAIL SHEET.

EXCAVATION REQUIRED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-6-203" IS NOT USED TO BALANCE THE EARTHWORK.

AT THE BACKFACE OF ABUTMENT, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

CONCRETE MASONRY REQUIRES A MINIMUM CURE TIME OF 28 DAYS BEFORE PLACING POLYMER OVERLAY.



SURFACE PROTECTION DETAIL

LEGEND

- ⊠ COAT WITH "PIGMENTED SURFACE SEALER" AS PER THE STANDARD SPECIFICATIONS.
- ◒ ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM.
- ‡ DECK SURFACE PREPARATION FOR APPLICATION OF POLYMER OVERLAY IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. CONSTRUCTION DETAILS
4. SUBSURFACE EXPLORATION - 1
5. SUBSURFACE EXPLORATION - 2
6. SUBSURFACE EXPLORATION - 3
7. CONSTRUCTION STAGING - 1
8. CONSTRUCTION STAGING - 2
9. SOUTH ABUTMENT
10. SOUTH ABUTMENT PILE PLAN AND SECTIONS
11. WINGS 1 AND 2
12. SOUTH ABUTMENT DETAILS
13. NORTH ABUTMENT
14. NORTH ABUTMENT PILE PLAN AND SECTIONS
15. WINGS 3 AND 4
16. NORTH ABUTMENT DETAILS
17. 36" PRESTRESSED GIRDER
18. INTERMEDIATE STEEL DIAPHRAGM
19. SUPERSTRUCTURE CROSS SECTION
20. SUPERSTRUCTURE
21. SUPERSTRUCTURE DETAILS
22. SOUTH STRUCTURAL APPROACH SLAB
23. NORTH STRUCTURAL APPROACH SLAB
24. PARAPET 42SS WITH STR. APPROACH SLAB
25. BAR SPLICER (COUPLER) DETAILS

WISCONSIN
ELIZABETH A. NEMEC
E-43409-6
STEVENS POINT, WI
7/30/18
PROFESSIONAL ENGINEER
Elizabeth A Nemec

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

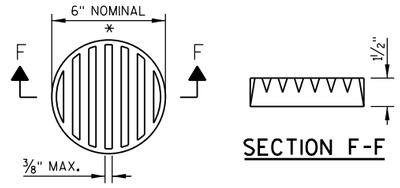
CROSS SECTION & QUANTITIES

SHEET 2 OF 25

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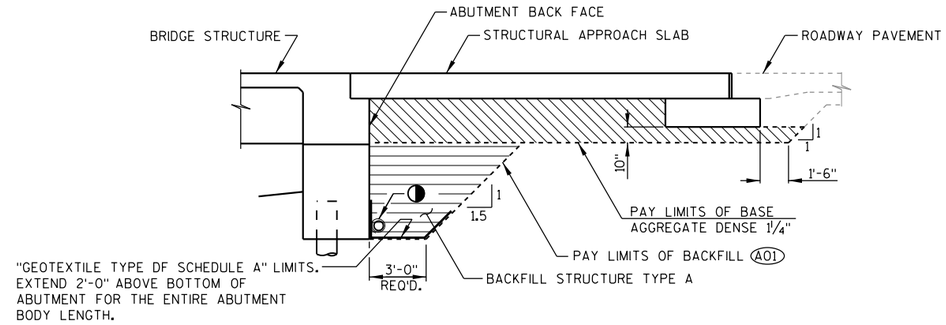


RODENT SHIELD DETAIL

* 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 A 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 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



BACKFILL STRUCTURE LIMITS

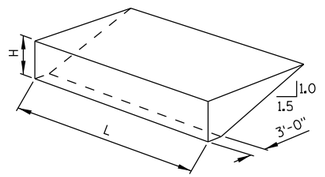
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-6-203" SHALL BE THE EXISTING GROUNDLINE.

(A01) BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE THE BOTTOM OF THE ABUTMENT.

◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



WINGS PARALLEL TO ROADWAY

ABUTMENT BACKFILL DIAGRAM

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS, AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

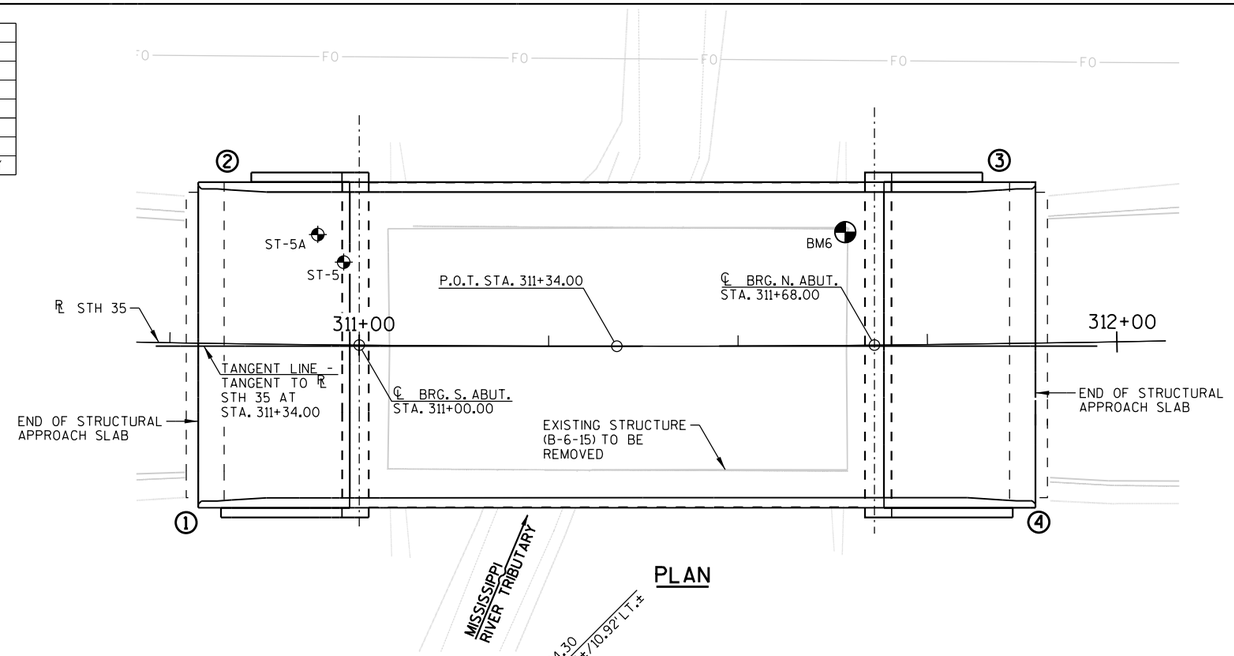
CONSTRUCTION DETAILS

SHEET 3 OF 25
167

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BATCH PRINT SHEET 3 OF 25

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-5	4/10/2017	223340.638±	608272.673±
ST-5A	4/10/2017	223335.720±	608273.581±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			



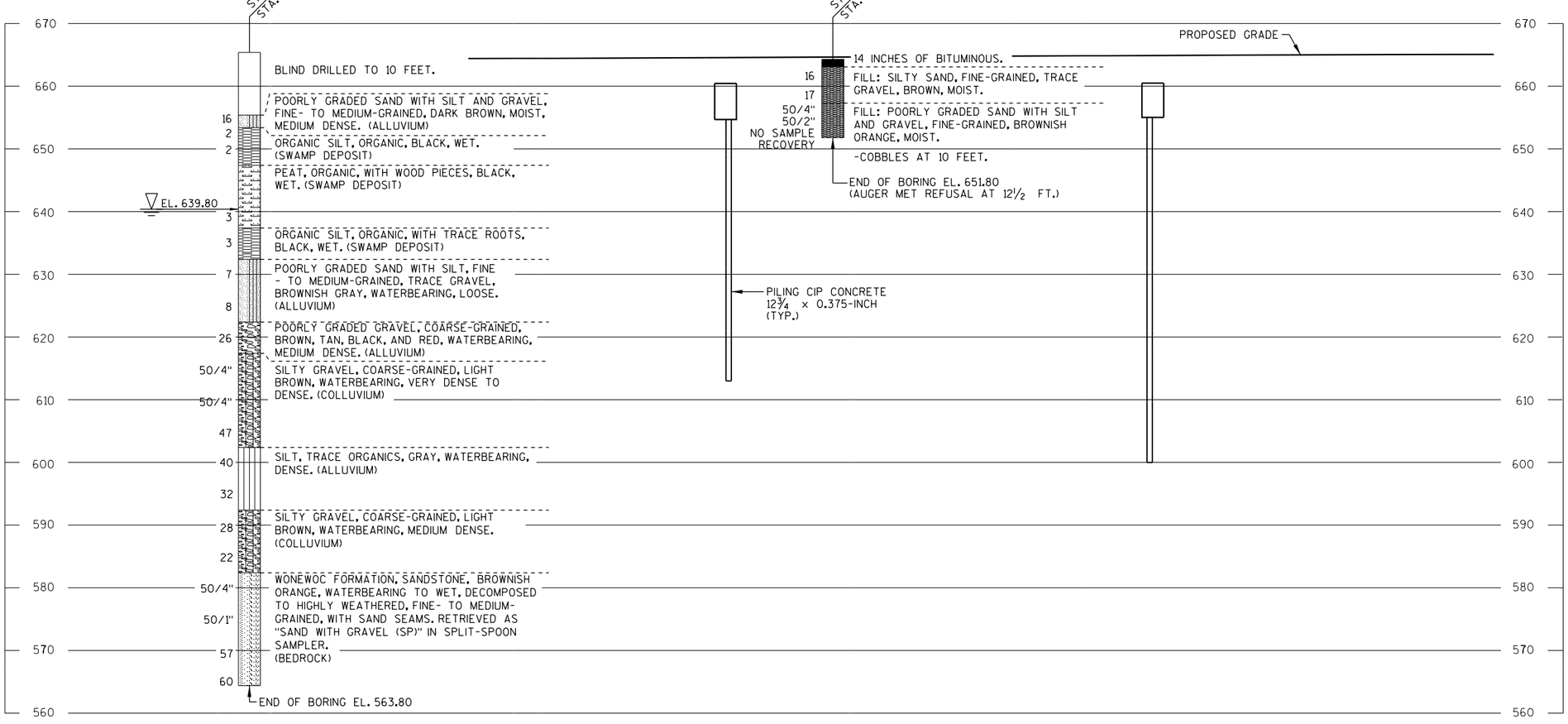
PLAN

LEGEND

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

BENCHMARK (BM):
BORING ELEVATIONS AND SURFACE ELEVATIONS WERE REFERENCED TO THE SOUTHEAST CORNER OF THE EXISTING BRIDGE DECK WHOSE ELEVATIONS WAS REPORTED TO BE 665.0.



8

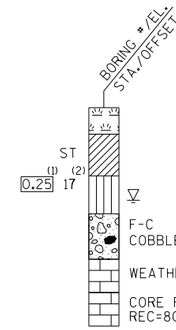
STATE PROJECT NUMBER

7160-04-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

WH - SAMPLER PENETRATED SOIL UNDER WEIGHT OF HAMMER AND RODS ALONE; DRIVING NOT REQ'D.

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

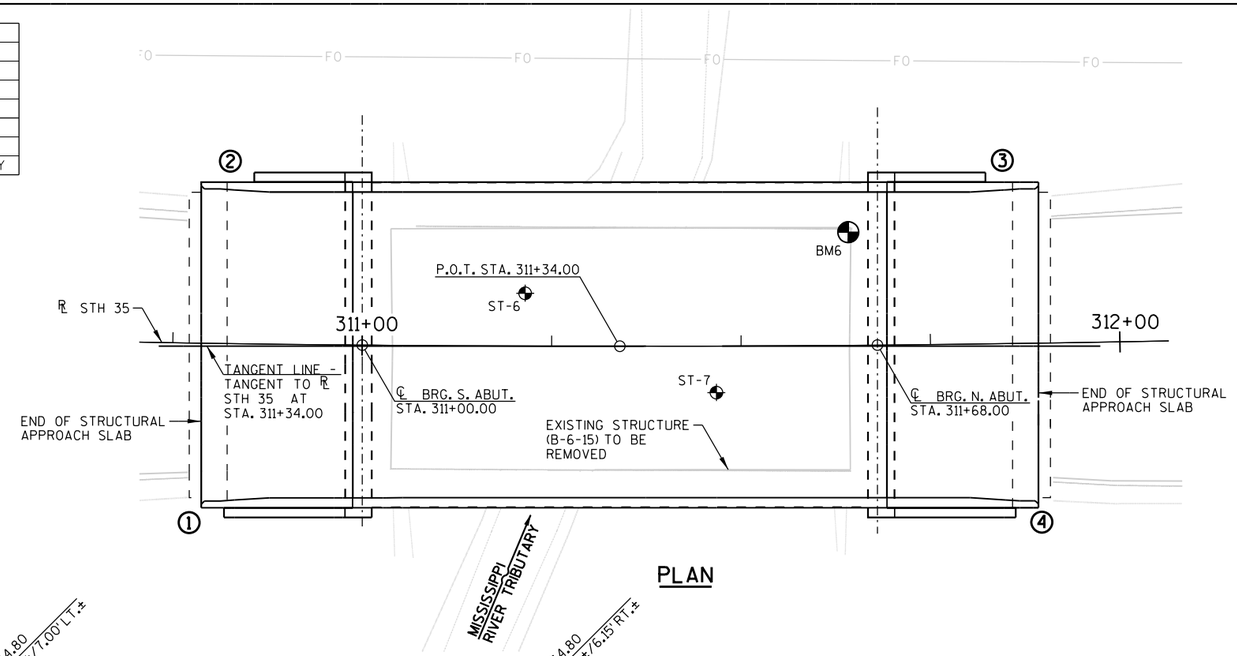
DRAWN BY	KAM	PLANS CK'D.	EAN

SUBSURFACE EXPLORATION-1

SHEET 4 OF 25
168

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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-6	4/11/2017	223356.808±	608255.062±
ST-7	4/12/2017	223381.454±	608240.883±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			



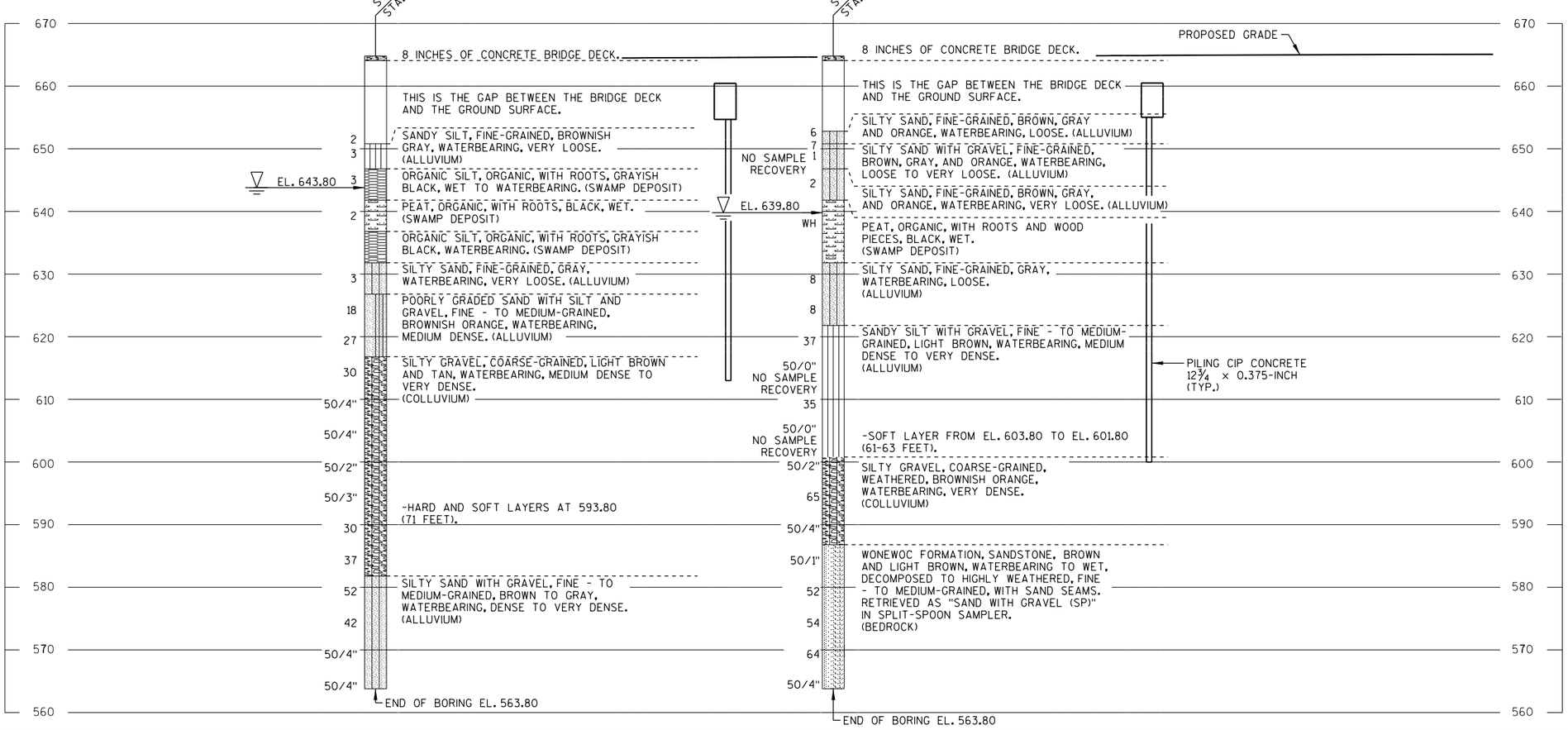
PLAN

LEGEND

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

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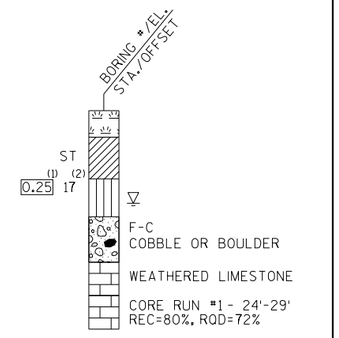
STATE PROJECT NUMBER

7160-04-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

SUBSURFACE EXPLORATION-2

SHEET 5 OF 25
169

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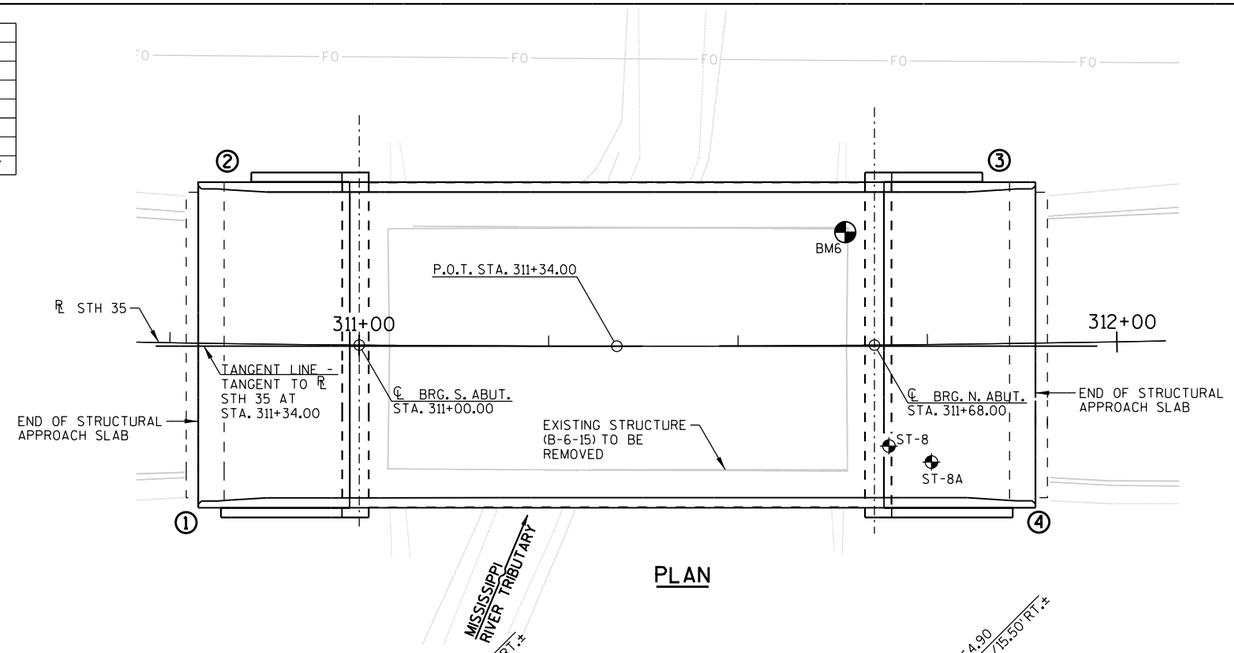
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-8	4/12/2017	223399.895±	608225.187±
ST-8A	4/12/2017	223404.705±	608221.601±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			

LEGEND

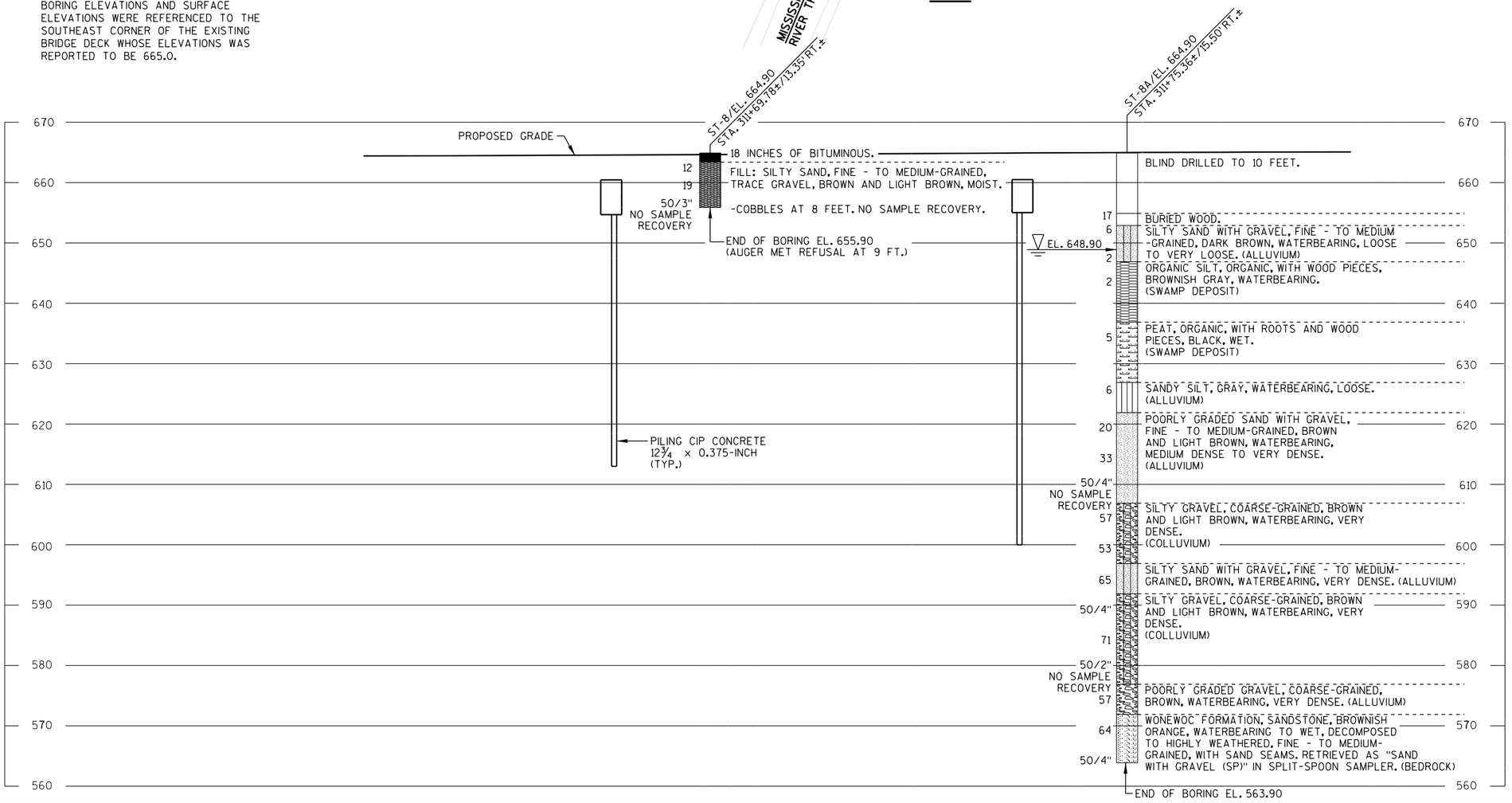
DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

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PLAN



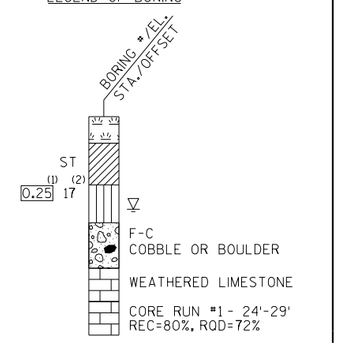
STATE PROJECT NUMBER

7160-04-70

MATERIAL SYMBOLS

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CONCRETE	FILL	GRAVEL
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STATE OF WISCONSIN
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STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

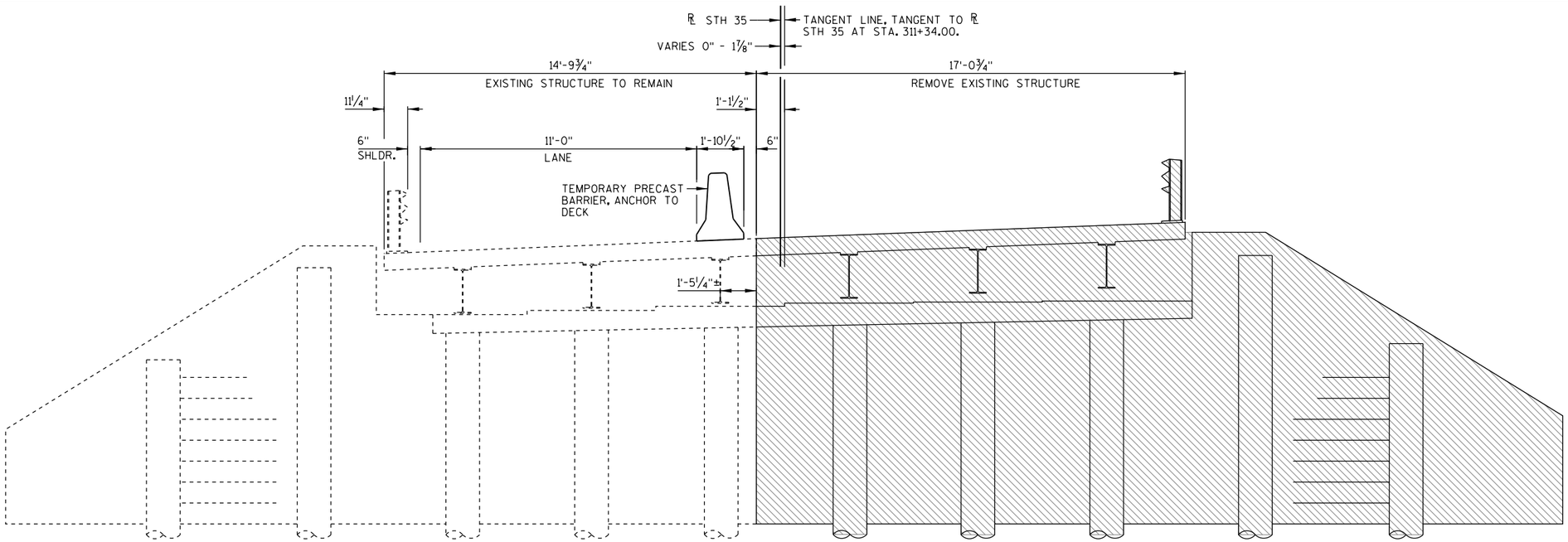
SUBSURFACE EXPLORATION-3

SHEET 6 OF 25
170

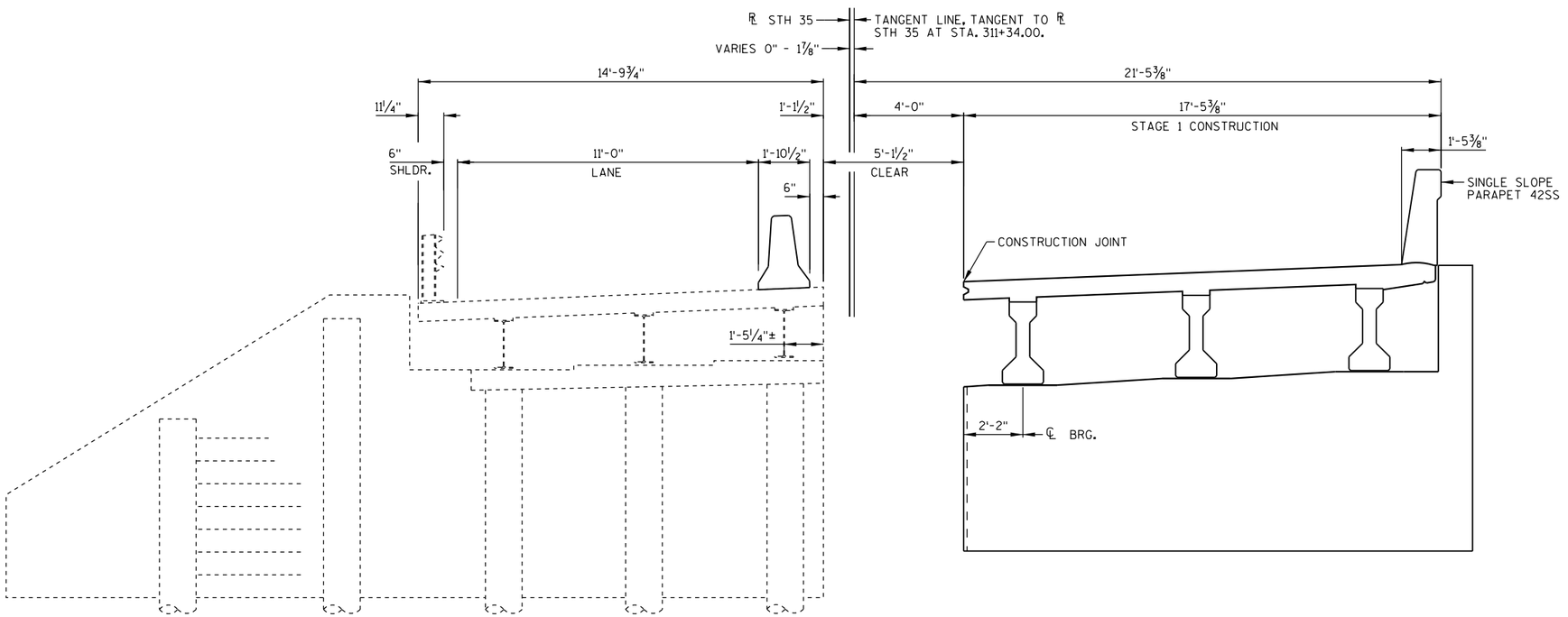
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BATCH PRINT SHEET 7 OF 25



STAGE 1 REMOVAL
LOOKING UPSTATION - (NW)



STAGE 1 CONSTRUCTION
LOOKING UPSTATION - (NW)

LEGEND

EXISTING STRUCTURE REMOVAL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

CONSTRUCTION STAGING - 1

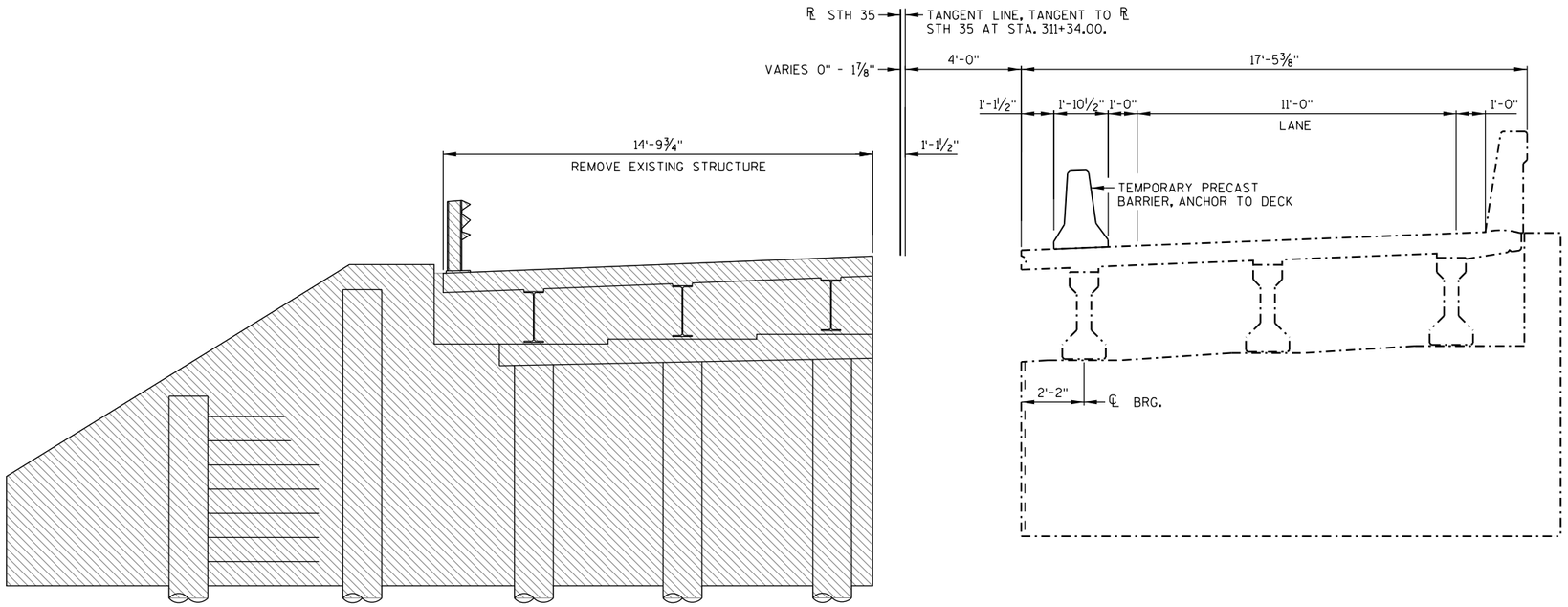
SHEET 7 OF 25
171

8

8

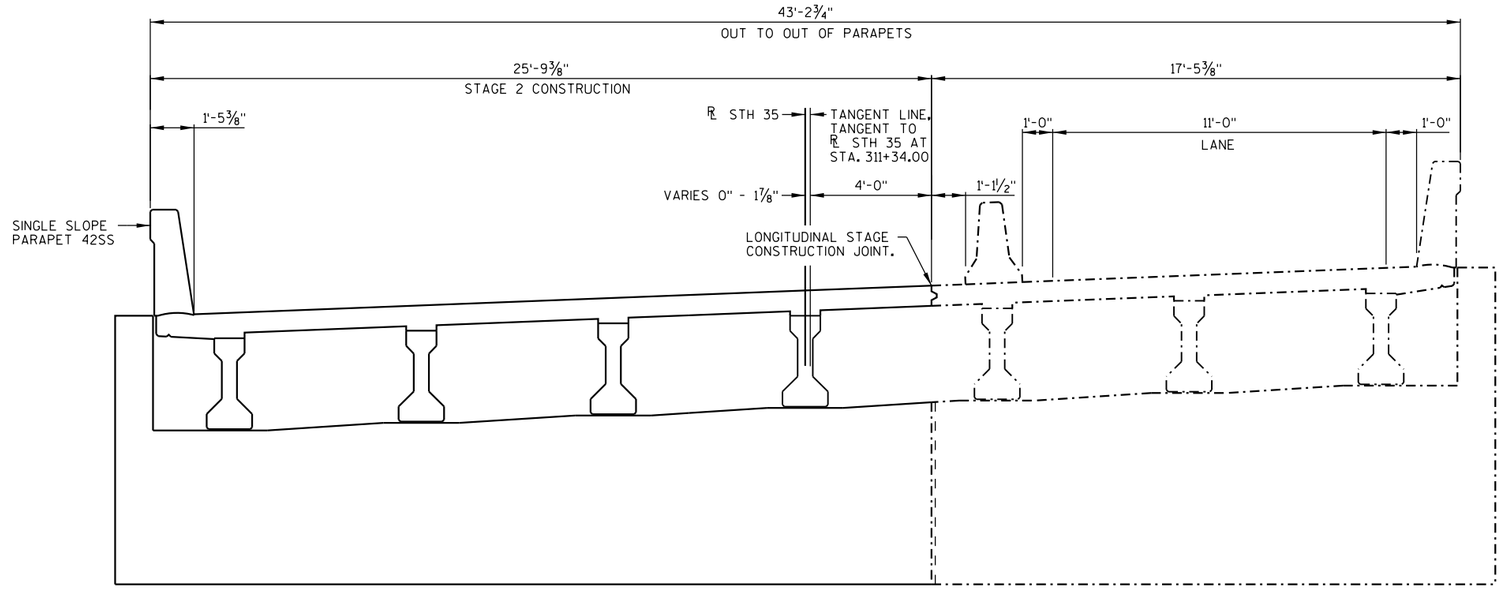
STATE PROJECT NUMBER

7160-04-70



STAGE 2 REMOVAL

LOOKING UPSTATION - (NW)



STAGE 2 CONSTRUCTION

LOOKING UPSTATION - (NW)

LEGEND

EXISTING STRUCTURE REMOVAL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

CONSTRUCTION STAGING - 2

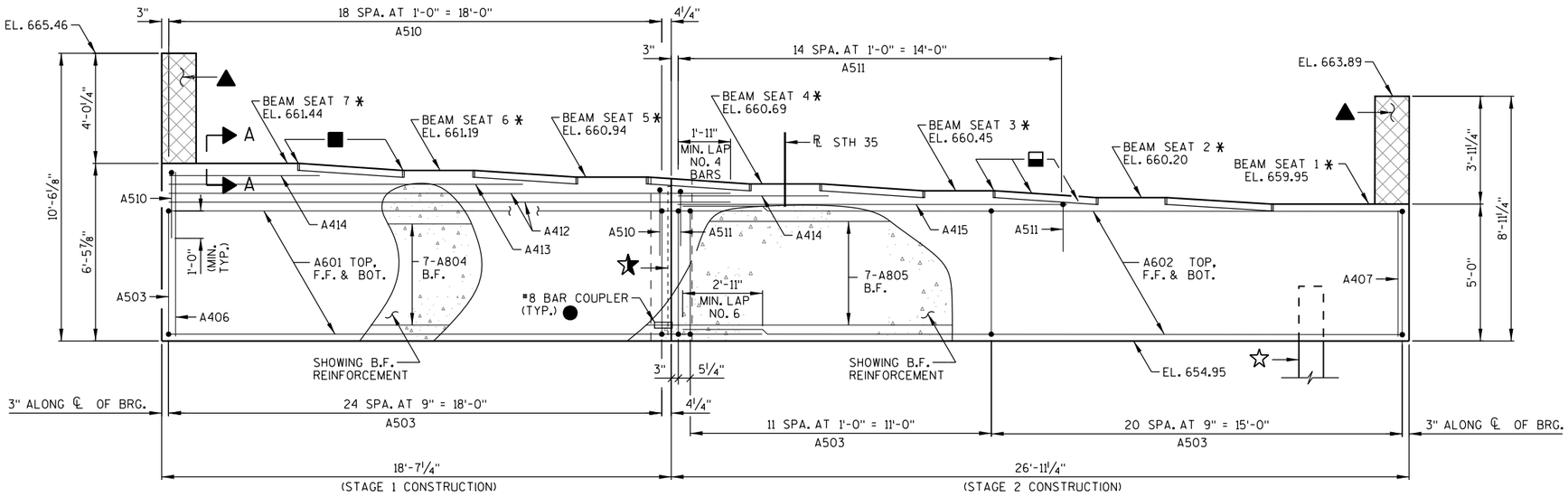
SHEET 8 OF 25
172

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8

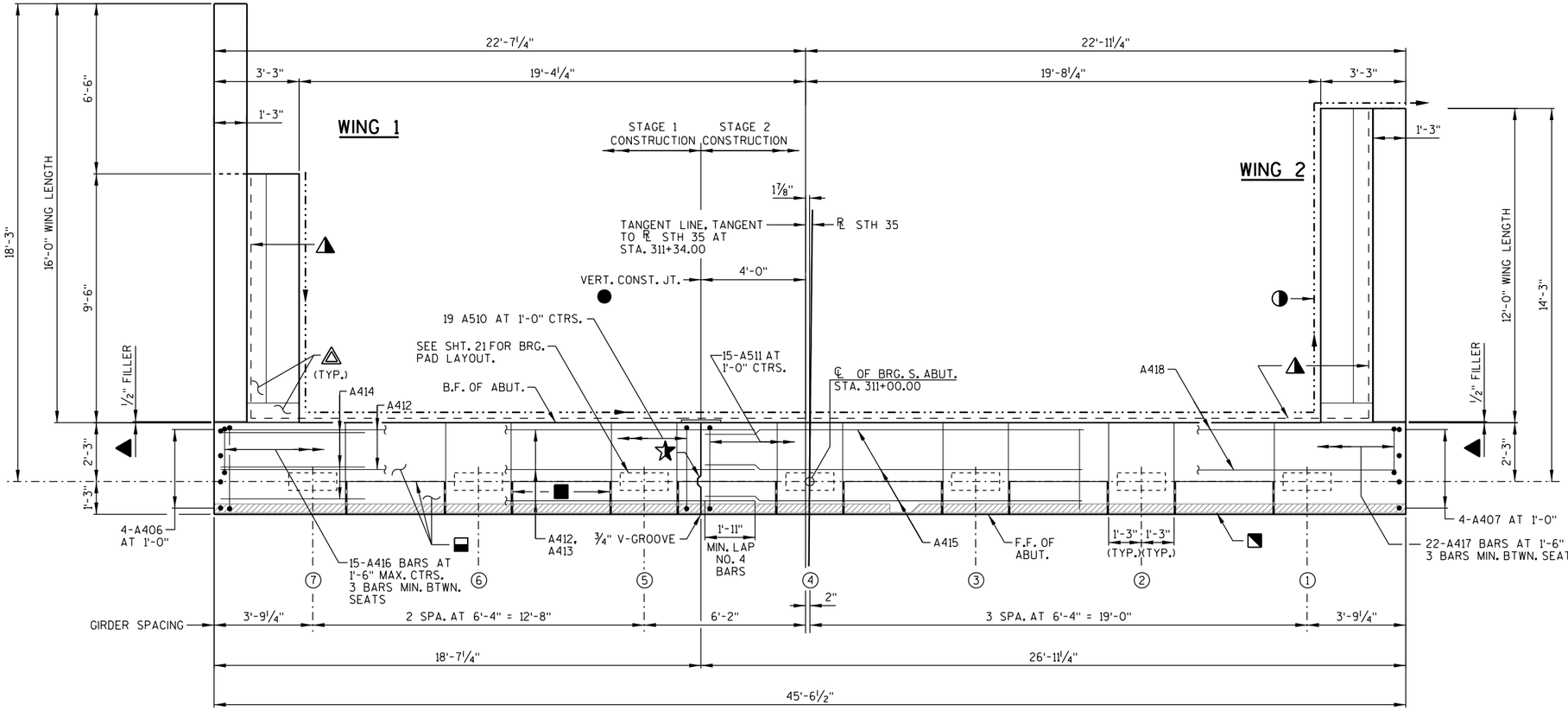
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BATCH PRINT SHEET 9 OF 25



ELEVATION
(LOOKING SOUTH)

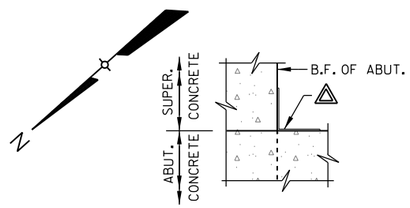
NOTE:
SPACE A503 BARS TO MISS PILINGS.



PLAN

NOTE
SEE SHT. 25 FOR BAR COUPLER DETAILS.

LEGEND
- ☆ SUPPORT ABUTMENTS ON PILING CIP CONCRETE 12¾×0.375-INCH. SEE PILE NOTE ON SHT. 10 AND SHT. 14. FOR PILE SPLICE DETAIL SEE SHT. 12.
- ◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE. ATTACH RODENT SHIELD AT ENDS OF PIPE. SEE SHT. 3.
- ▲ ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. 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.)
- ◭ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◥ 4"×½" FILLER - TO EXTEND FULL LENGTH OF ABUTMENT BODY.
- □ OPTIONAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2"×6", WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE. ¾" BEVEL REQUIRED ON JOINT EDGES ON F.F., B.F. AND END OF WING.
- ◬ PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING, HORIZONTAL IN THIS AREA.
- ■ ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- ⬓ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING THE BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- ★ VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY BEVELED 2" × 8". RUN BAR STEEL THRU JOINT. ¾" "V" GROOVE AT FRONT FACE. SEAL BACKFACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- Ⓧ INDICATES BEAM NUMBER
- * ELEVATIONS GIVEN ARE AT TOP OF CONCRETE ℄ OF BRG.
- ● USE BAR COUPLERS TO CONTINUE BAR STEEL THRU JOINT. SEE SHT. 25 FOR DETAILS.



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

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SOUTH ABUTMENT

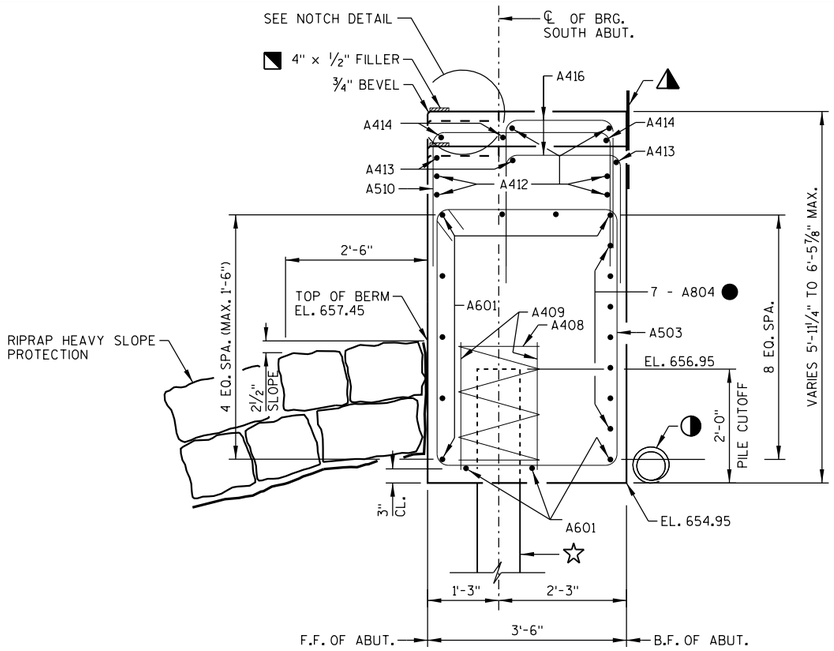
SHEET 9 OF 25
173

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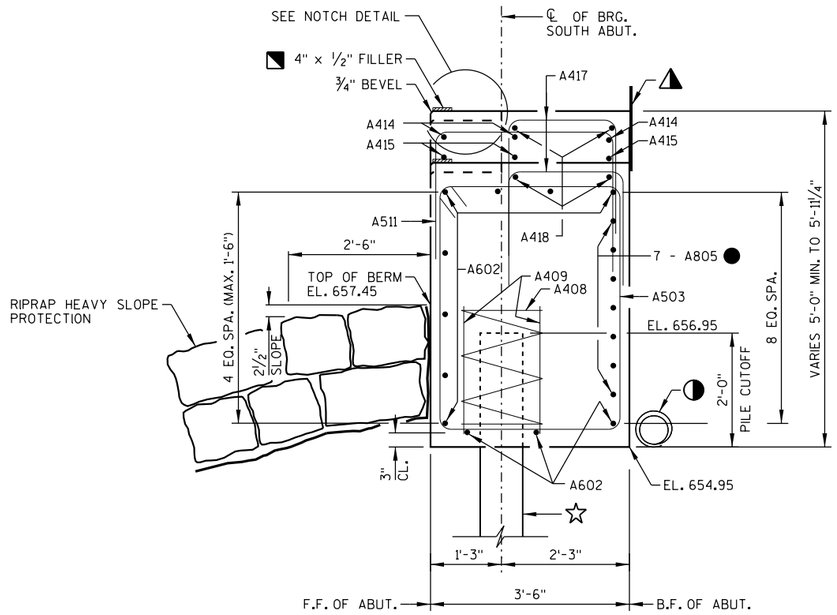
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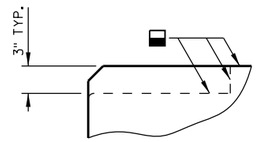
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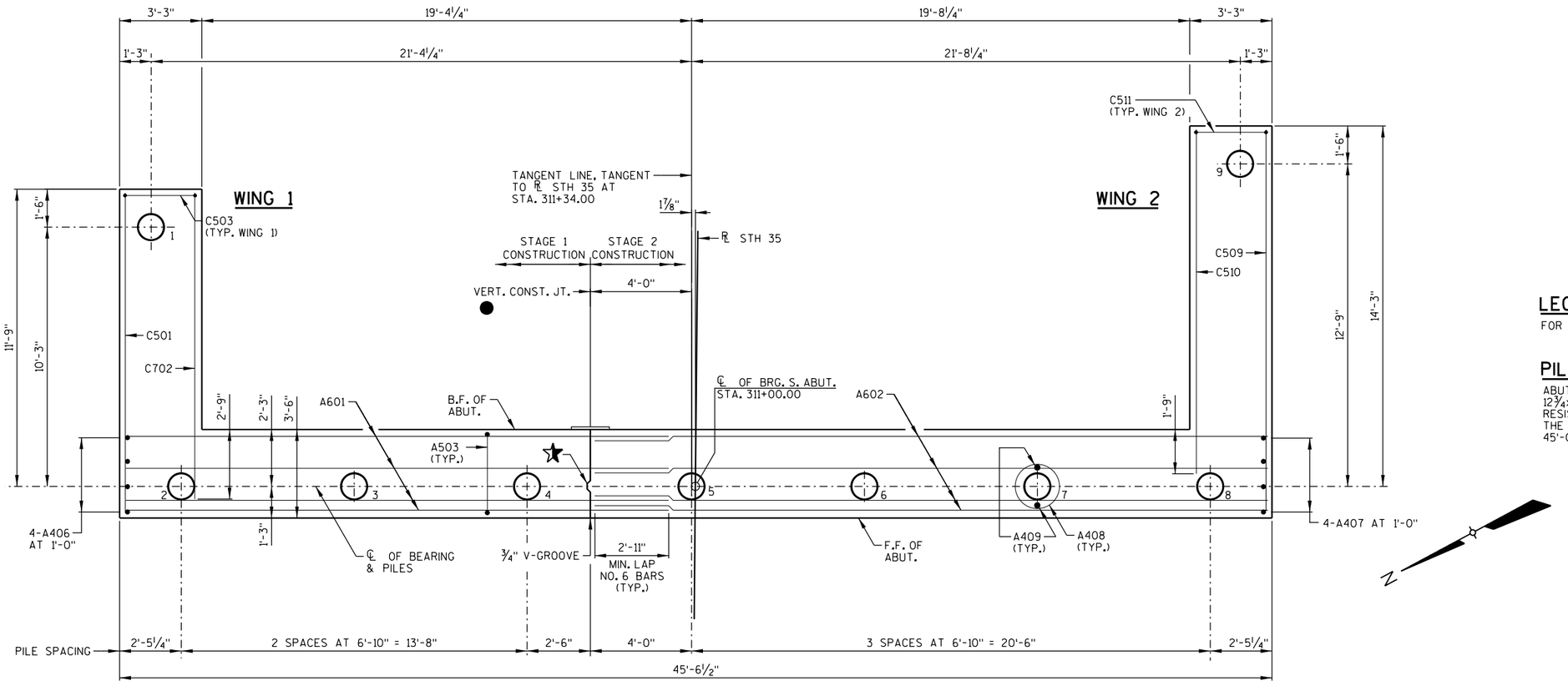
TYP. SECTION THRU BODY - STAGE 1



TYP. SECTION THRU BODY - STAGE 2



NOTCH DETAIL



PILE PLAN

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

PILE NOTE

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾×0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45'-0" LONG.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

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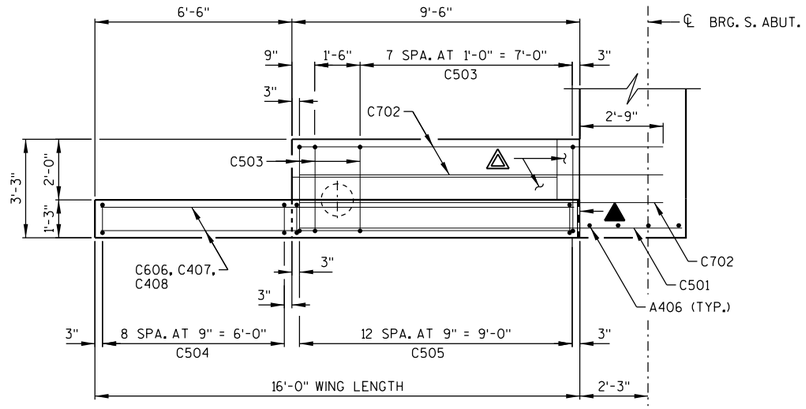
SOUTH ABUTMENT PILE PLAN AND SECTIONS

SHEET 10 OF 25
174

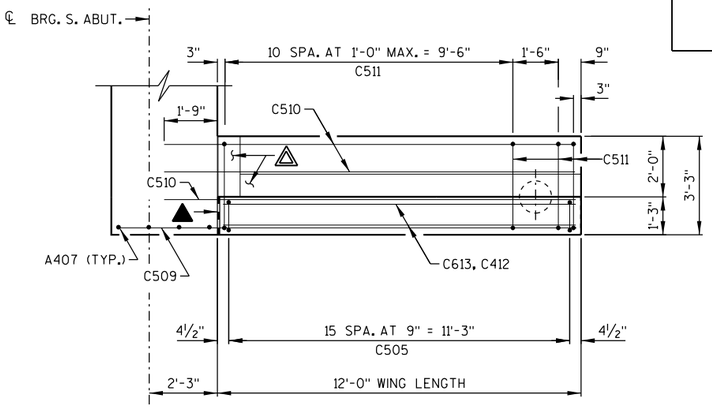
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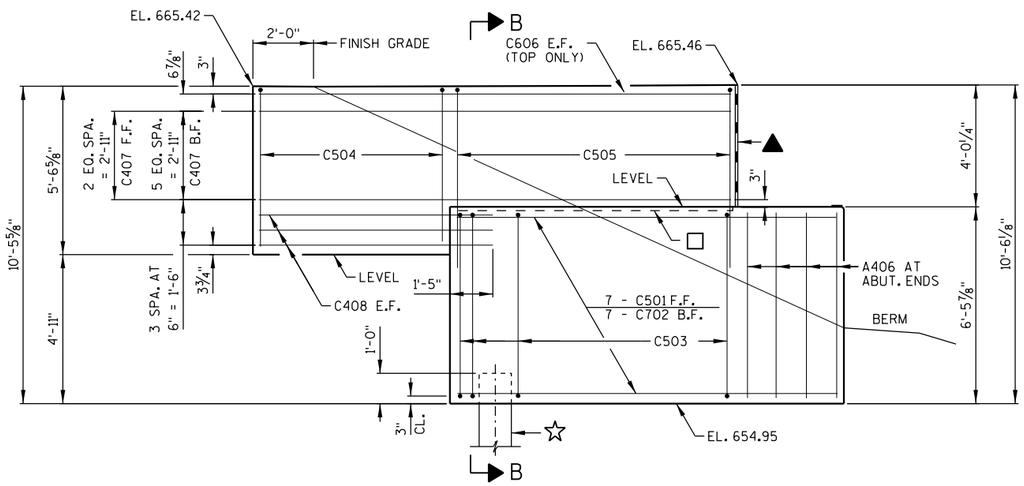
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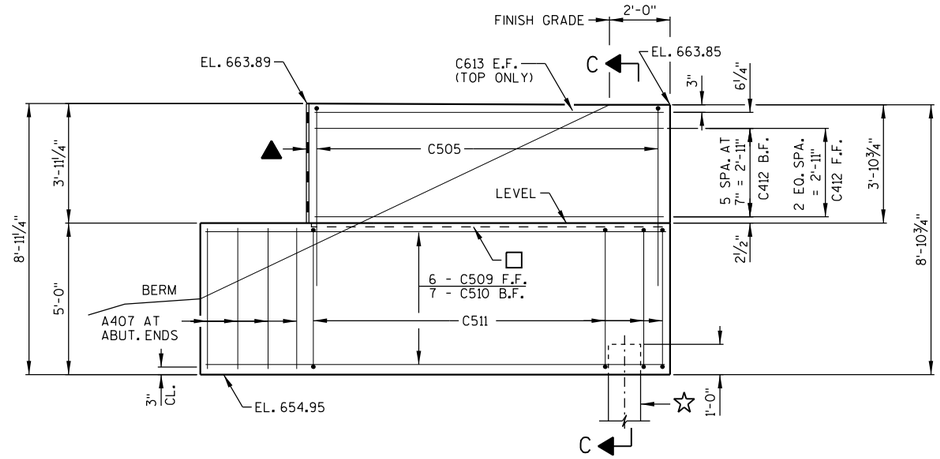
PLAN WING 1



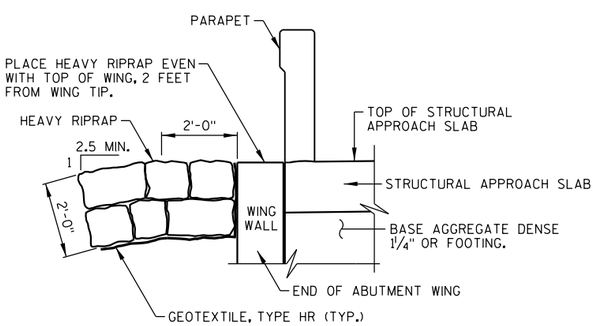
PLAN WING 2



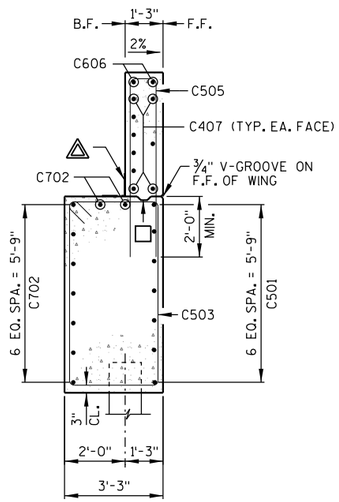
ELEVATION WING 1



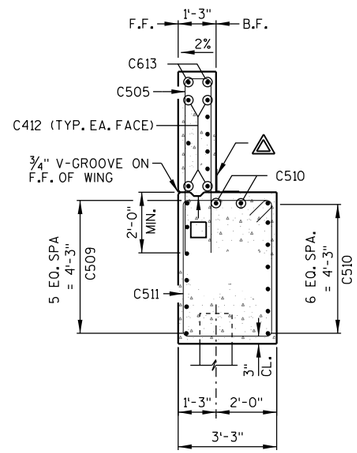
ELEVATION WING 2



TYPICAL FILL SECTION AT WING TIPS



SECTION B-B



SECTION C-C

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

WINGS 1 AND 2

SHEET 11 OF 25
175

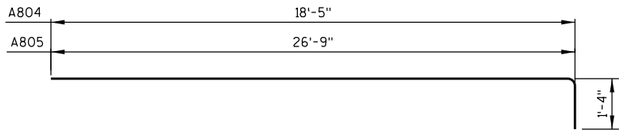
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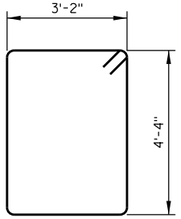
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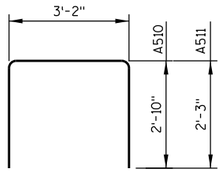
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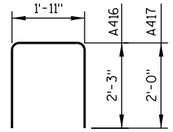
A804, A805



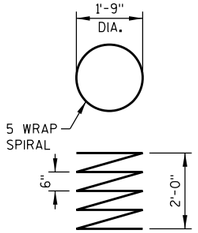
A503



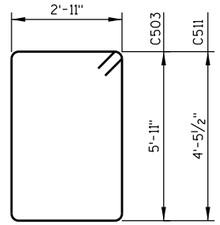
A510, A511



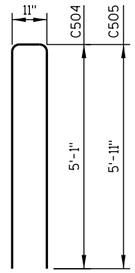
A416, A417



A408



C503, C511

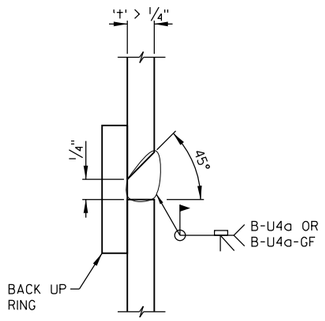


C504, C505

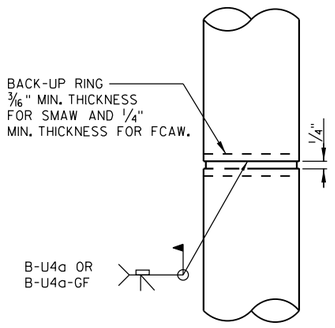
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS						TOTAL WEIGHT = 3,450 LBS
A601	11	-----	21-9			ABUT. TOP, F.F. & BOT. HORIZ.
A602	-----	11	26-7			ABUT. TOP, F.F. & BOT. HORIZ.
A503	25	33	15-8	X		ABUT. STIRRUP VERT.
A804	7	-----	19-7	X		ABUT. B.F. HORIZ.
A805	-----	7	27-11	X		ABUT. B.F. HORIZ.
A406	4	-----	6-0			ABUT. - EAST END VERT.
A407	-----	4	4-7			ABUT. - WEST END VERT.
A408	3	4	28-0	X		ABUT. PILES VERT.
A409	6	8	2-3			ABUT. PILES VERT.
S510	19	-----	8-7	X		ABUT. TOP VERT.
A511	-----	15	7-5	X		ABUT. TOP VERT.
A412	6	-----	20-7			ABUT. TOP HORIZ.
A413	3	-----	13-9			ABUT. TOP HORIZ.
A414	3	3	5-6			ABUT. TOP HORIZ.
A415	-----	3	14-0			ABUT. TOP HORIZ.
A416	15	-----	6-3	X		ABUT. TOP VERT.
A417	-----	22	5-9	X		ABUT. TOP VERT.
A418	-----	2	26-7			ABUT. TOP HORIZ.
COATED BARS						TOTAL WEIGHT = 1,700 LBS
C501	7	-----	12-8			WING 1 F.F. HORIZ.
C702	9	-----	12-1			WING 1 B.F. HORIZ.
C503	10	-----	18-4	X		WING 1 STIRRUP VERT.
C504	9	-----	10-10	X		WING 1 TOP VERT.
C505	13	16	12-6	X		WING 1 & 2 TOP VERT.
C606	2	-----	15-7			WING 1 TOP HORIZ.
C407	9	-----	15-7			WING 1 F.F. & B.F. HORIZ.
C408	6	-----	7-9			WING 1 & 2 F.F. & B.F. HORIZ.
C509	-----	6	15-2			WING 2 F.F. HORIZ.
C510	-----	9	13-7			WING 2 B.F. HORIZ.
C511	-----	13	15-5	X		WING 2 STIRRUP VERT.
C412	-----	9	11-7			WING 2 TOP HORIZ.
C613	-----	2	11-7			WING 2 TOP HORIZ.



C.I.P. PILE WELD DETAIL



C.I.P. 'PIPE PILE'

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STRUCTURES (LB)
STAGE 1	28	950	1,570
STAGE 2	29	750	1,880

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

SOUTH ABUTMENT DETAILS

SHEET 12 OF 25
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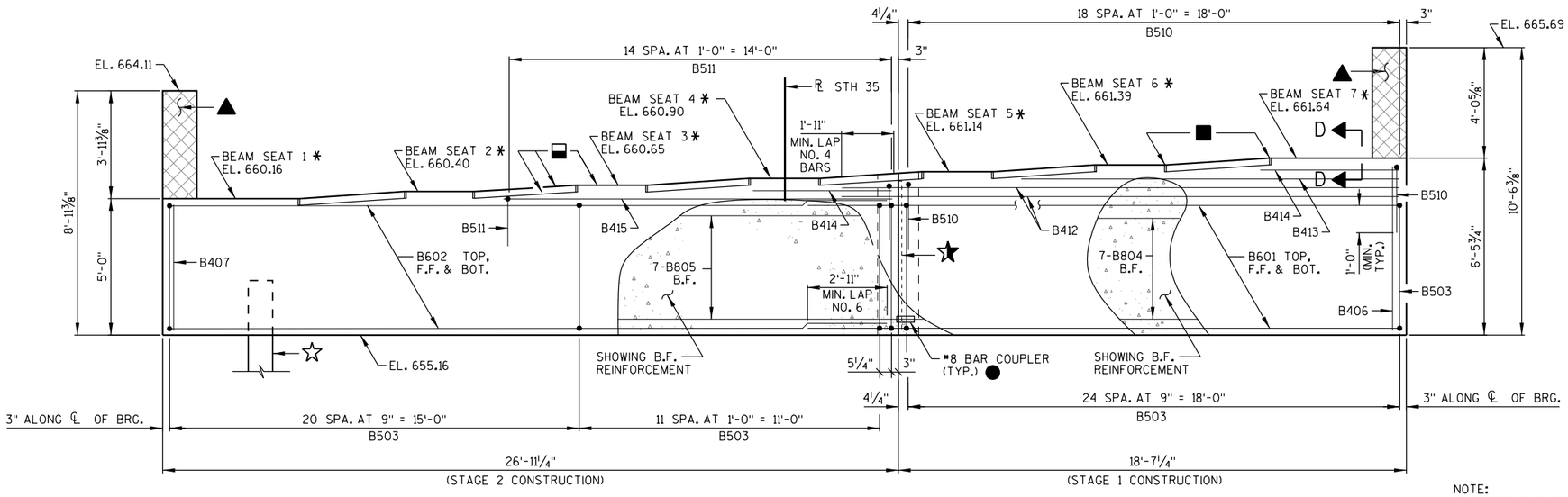
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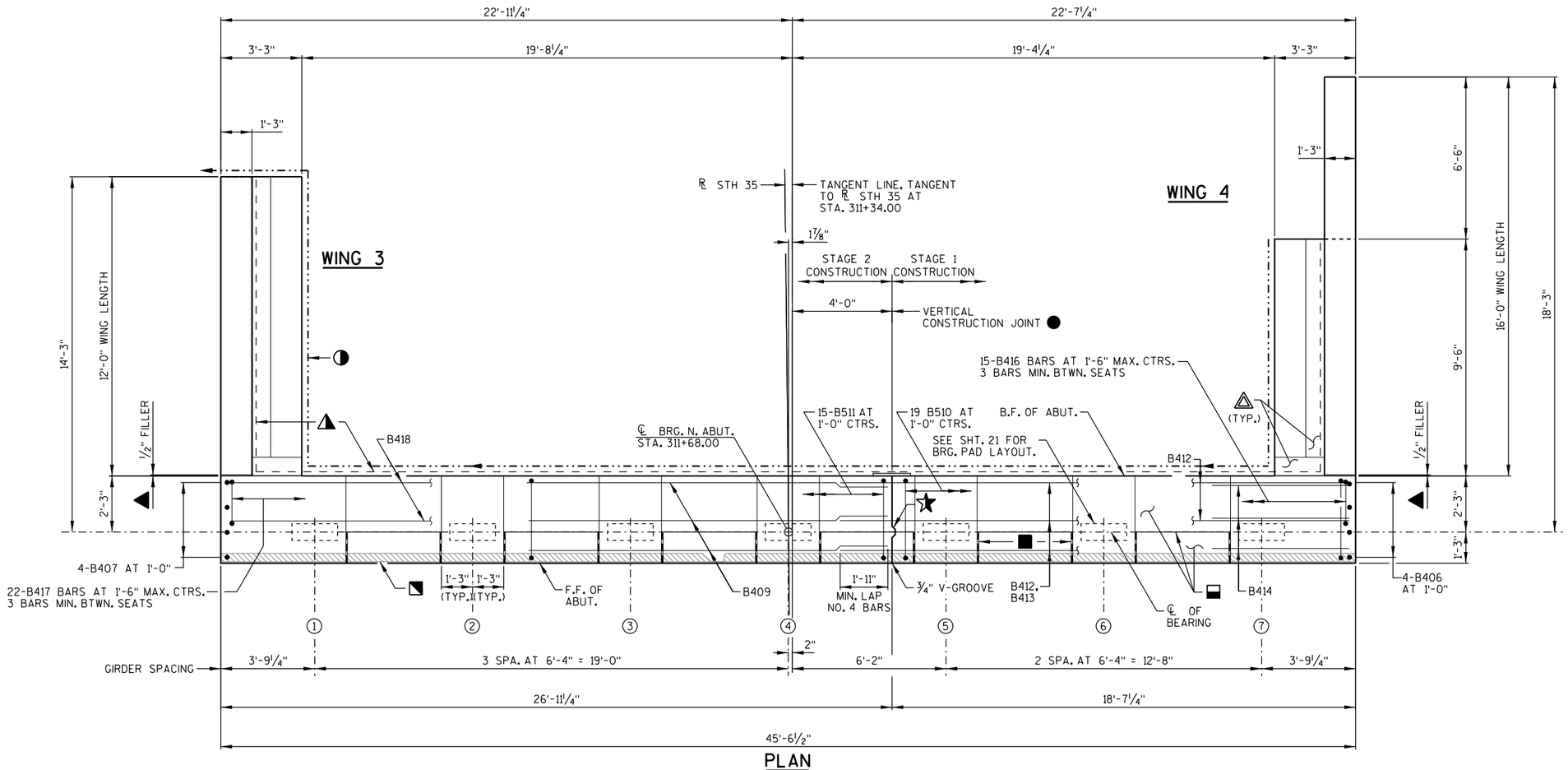
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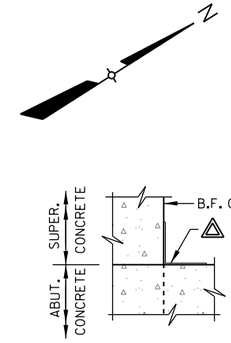


NOTE:
SPACE B503 BARS TO MISS PILINGS.

ELEVATION
(LOOKING NORTH)



PLAN



SECTION D-D

NOTE
SEE SHT. 25 FOR BAR COUPLER DETAILS.

LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

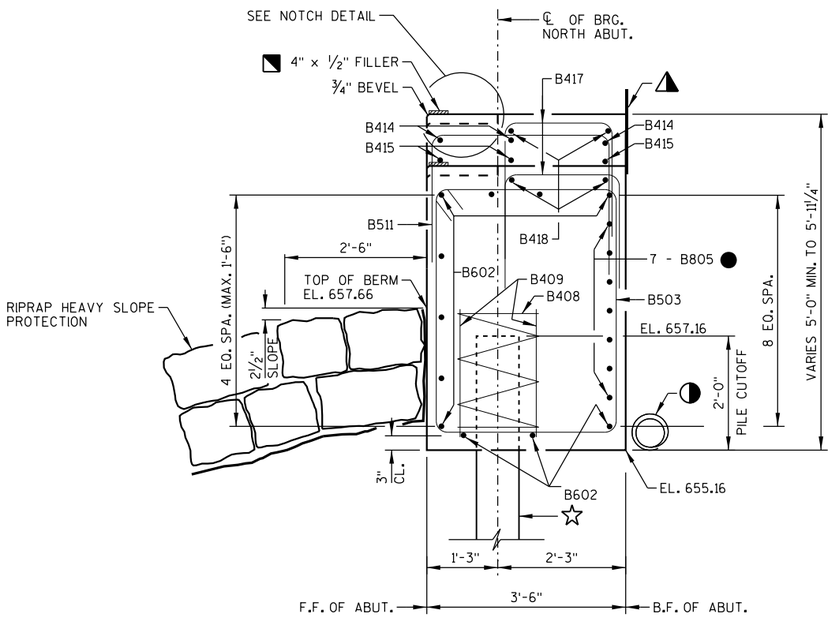
NORTH ABUTMENT

SHEET 13 OF 25
177

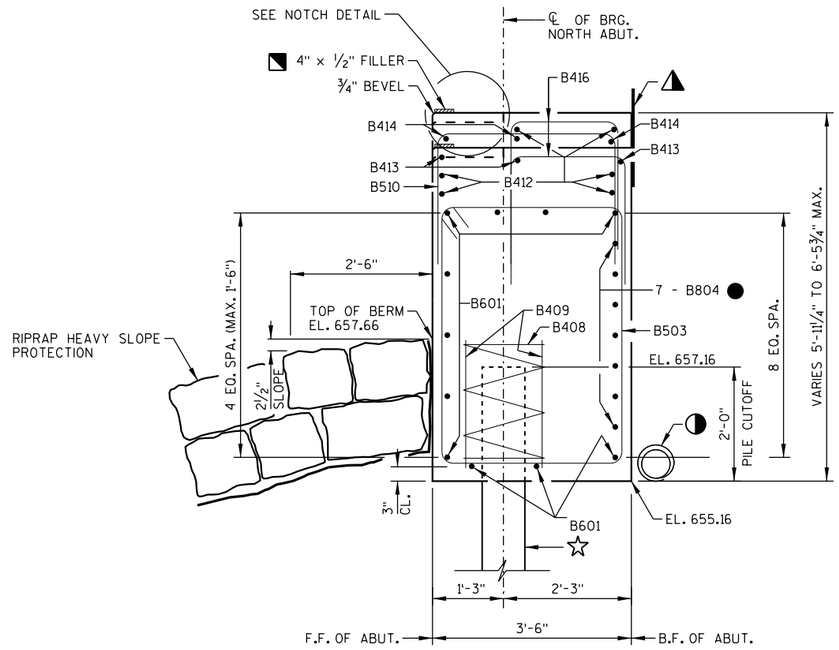
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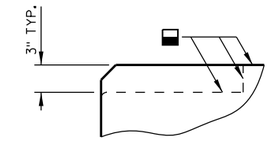
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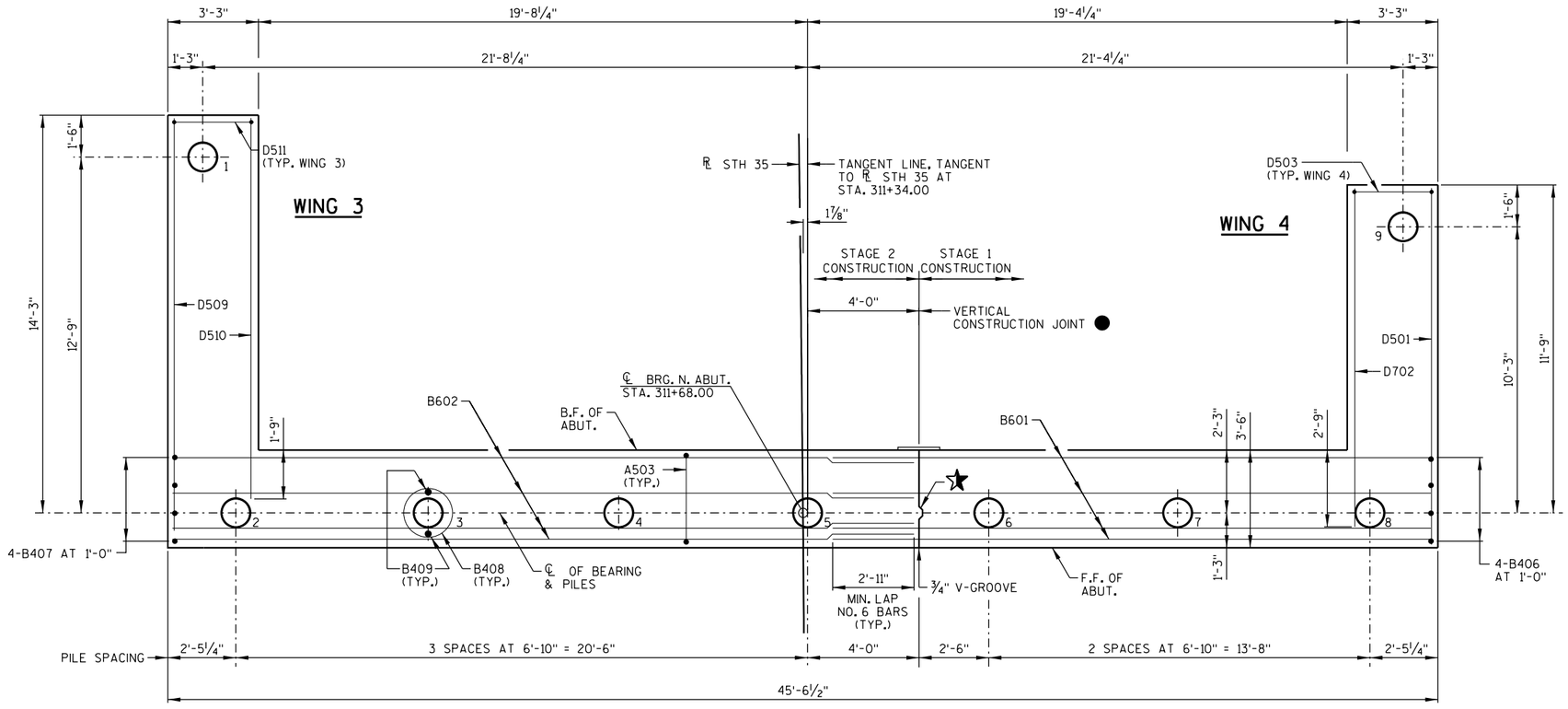
TYP. SECTION THRU BODY - STAGE 2



TYP. SECTION THRU BODY - STAGE 1



NOTCH DETAIL



PILE PLAN

N

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

PILE NOTE

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾x0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 60'-0" LONG.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

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NORTH ABUTMENT PILE PLAN AND SECTIONS

SHEET 14 OF 25
178

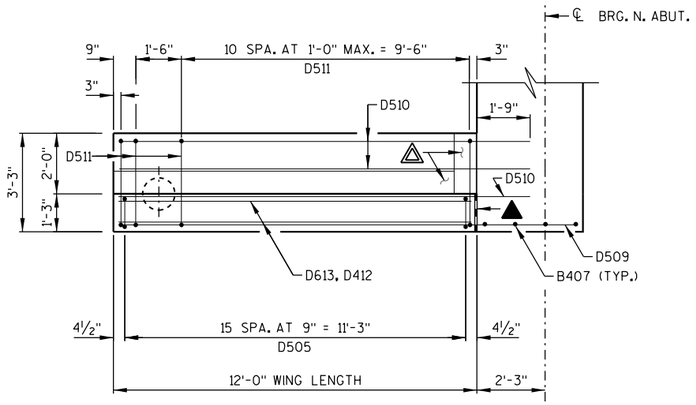
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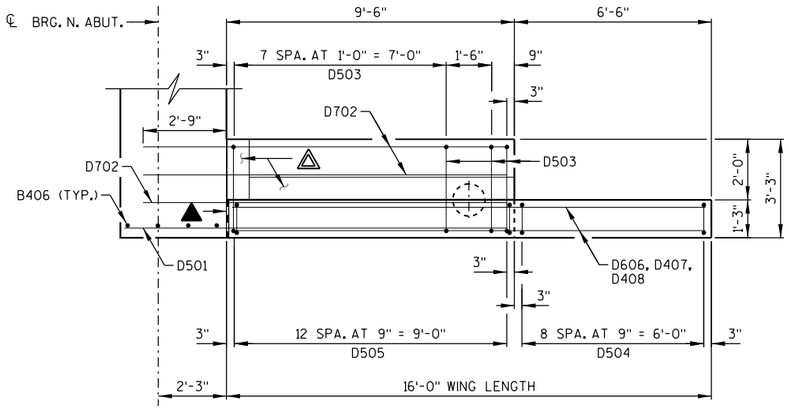
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BATCH PRINT SHEET 15 OF 25

STATE PROJECT NUMBER

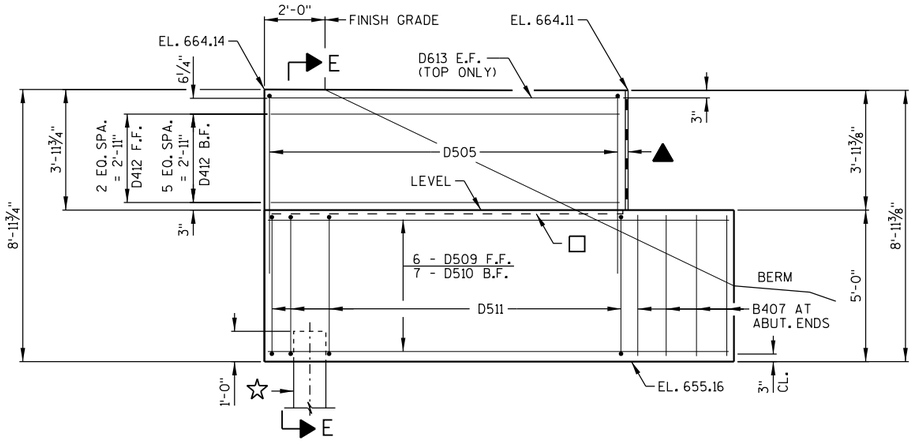
7160-04-70



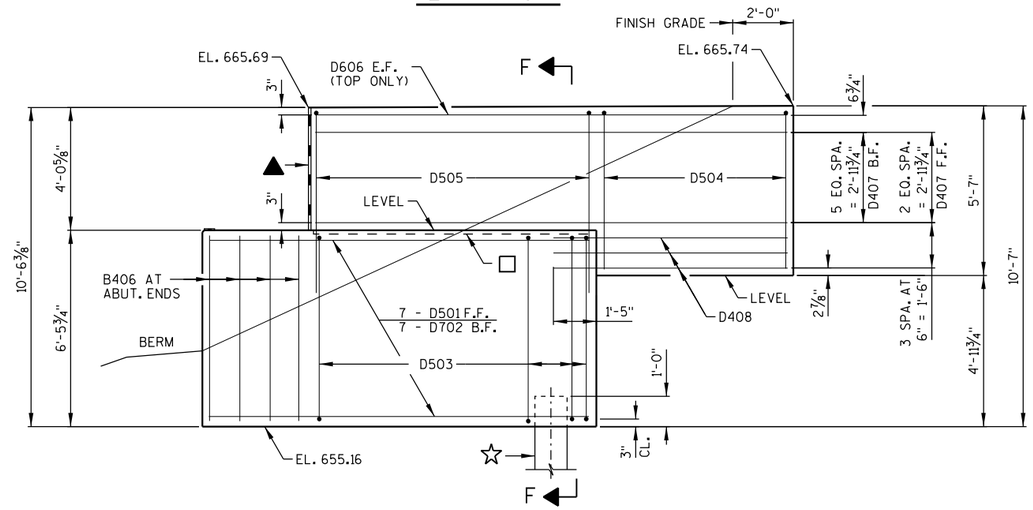
PLAN WING 3



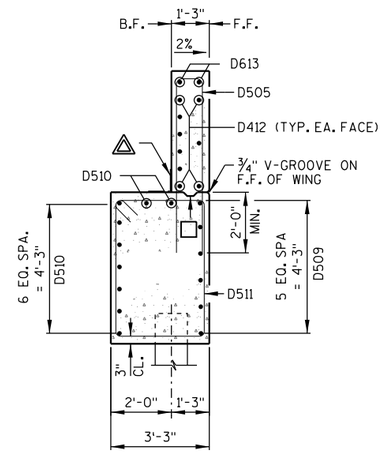
PLAN WING 4



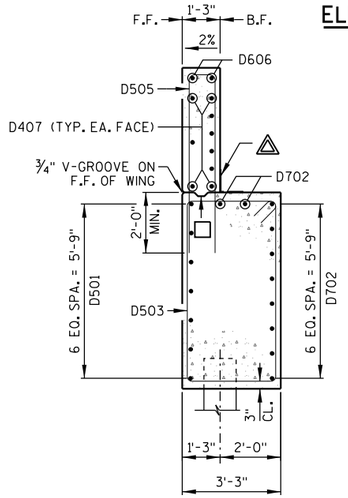
ELEVATION WING 3



ELEVATION WING 4



SECTION E-E



SECTION F-F

NOTE

FOR TYPICAL FILL SECTION AT WING TIPS, SEE DETAIL ON SHEET 11.

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 9.

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STRUCTURE B-6-203

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WINGS 3 AND 4

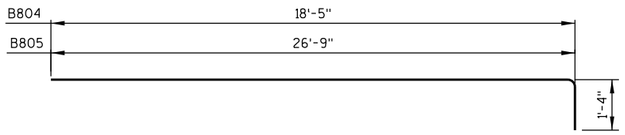
SHEET 15 OF 25
179

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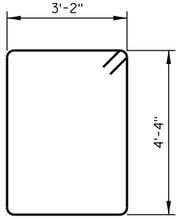
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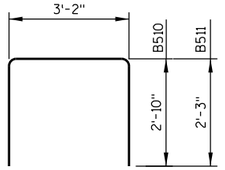
STATE PROJECT NUMBER
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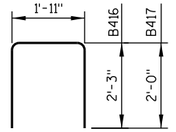
B804, B805



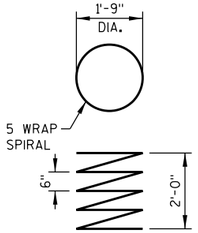
B503



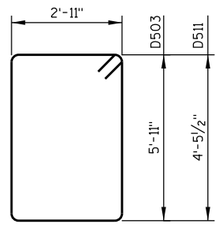
B510, B511



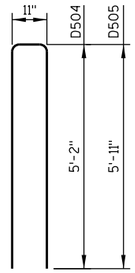
B416, B417



B408



D503, D511



D504, D505

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS						TOTAL WEIGHT = 3,450 LBS
B601	11	-----	21-9			ABUT. TOP, F.F. & BOT. HORIZ.
B602	-----	11	26-7			ABUT. TOP, F.F. & BOT. HORIZ.
B503	25	33	15-8	X		ABUT. STIRRUP VERT.
B804	7	-----	19-7	X		ABUT. B.F. HORIZ.
B805	-----	7	27-11	X		ABUT. B.F. HORIZ.
B406	4	-----	6-0			ABUT. - EAST END VERT.
B407	-----	4	4-7			ABUT. - WEST END VERT.
B408	3	4	28-0	X		ABUT. PILES VERT.
B409	6	8	2-3			ABUT. PILES VERT.
B510	19	-----	8-7	X		ABUT. TOP VERT.
B511	-----	15	7-5	X		ABUT. TOP VERT.
B412	6	-----	20-7			ABUT. TOP HORIZ.
B413	3	-----	13-9			ABUT. TOP HORIZ.
B414	3	3	5-6			ABUT. TOP HORIZ.
B415	-----	3	14-0			ABUT. TOP HORIZ.
B416	15	-----	6-3	X		ABUT. TOP VERT.
B417	-----	22	5-9	X		ABUT. TOP VERT.
B418	-----	2	26-7			ABUT. TOP HORIZ.
COATED BARS						TOTAL WEIGHT = 1,710 LBS
D501	7	-----	12-8			WING 4 F.F. HORIZ.
D702	9	-----	12-1			WING 4 B.F. HORIZ.
D503	10	-----	18-4	X		WING 4 STIRRUP VERT.
D504	9	-----	11-0	X		WING 4 TOP VERT.
D505	13	16	12-6	X		WING 3 & 4 TOP VERT.
D606	2	-----	15-7			WING 4 TOP HORIZ.
D407	9	-----	15-7			WING 4 F.F. & B.F. HORIZ.
D408	6	-----	7-9			WING 3 & 4 F.F. & B.F. HORIZ.
D509	-----	6	15-2			WING 3 F.F. HORIZ.
D510	-----	9	13-7			WING 3 B.F. HORIZ.
D511	-----	13	15-5	X		WING 3 STIRRUP VERT.
D412	-----	9	11-7			WING 3 TOP HORIZ.
D613	-----	2	11-7			WING 3 TOP HORIZ.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STRUCTURES (LB)
STAGE 1	28	960	1,570
STAGE 2	29	750	1,880

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STRUCTURE B-6-203

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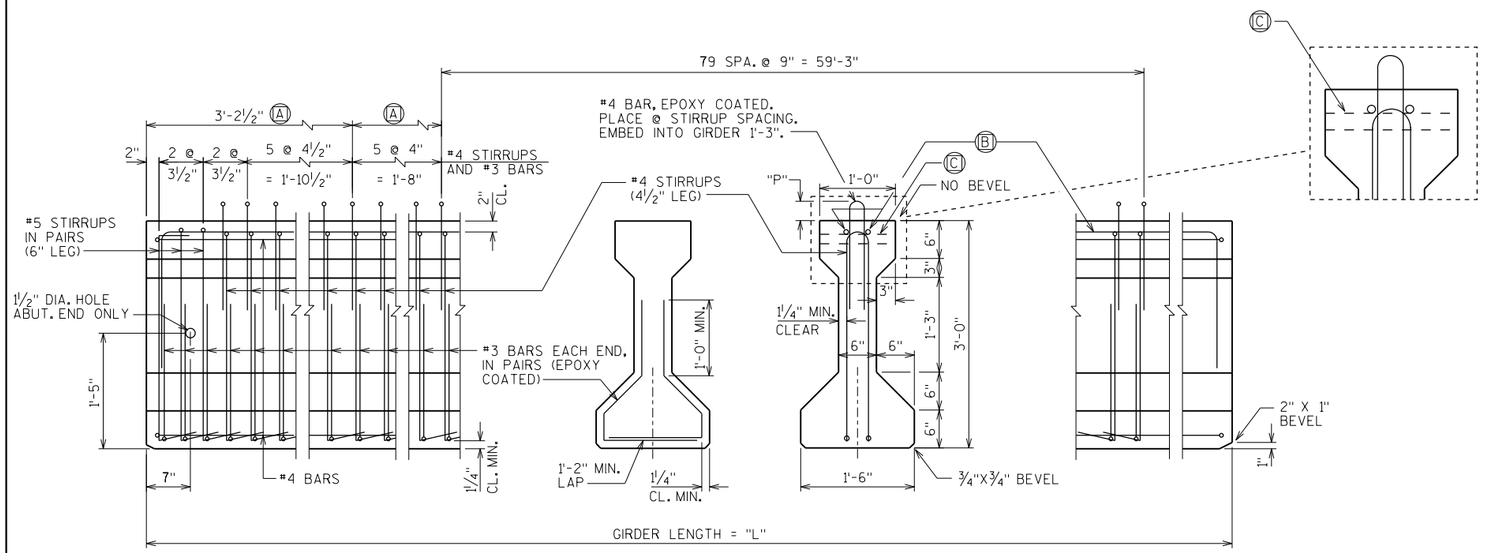
NORTH ABUTMENT DETAILS

SHEET 16 OF 25
180

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BATCH PRINT SHEET 17 OF 25

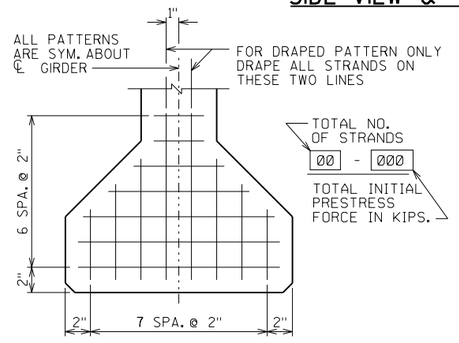


SIDE VIEW & TYPICAL SECTION IN SPAN

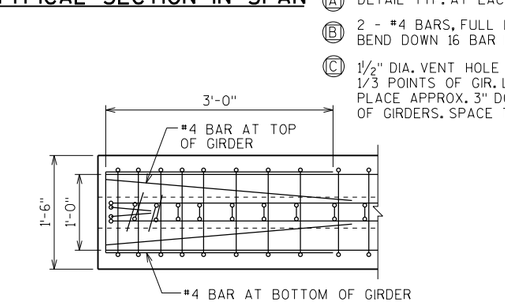
Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2 - #4 BARS, FULL LENGTH, MIN. LAP 2'-4". BEND DOWN 16 BAR DIA. AT ENDS.

Ⓒ 1½" DIA. VENT HOLE AT APPROX. 1/3 POINTS OF GIR. LENGTH TYP. ALL GIRDERS. PLACE APPROX. 3" DOWN FROM TOP OF GIRDERS. SPACE TO MISS REINF.

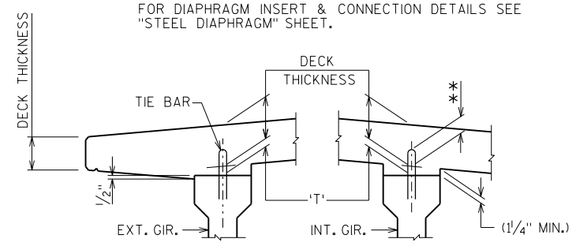


TYP. STRAND PATTERN



TOP VIEW OF GIRDER ENDS

DEAD LOAD DEFLECTION DIAGRAM



DECK HAUNCH DETAIL

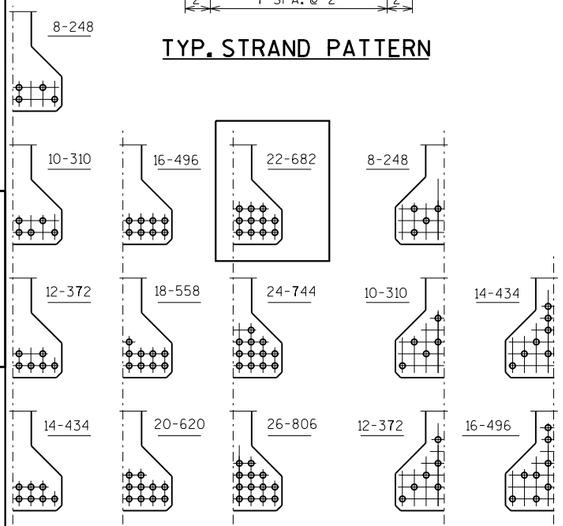
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3.25" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

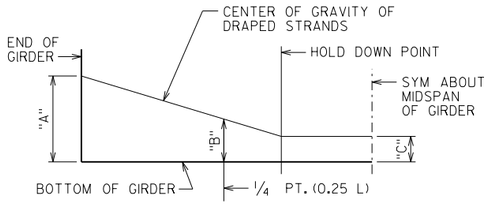


DRAPED PATTERN

0.5"ϕ STRANDS

UNDRAPED PATTERN

0.5"ϕ STRANDS



DRAPED STRAND PROFILE

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	2.13

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (P.S.I.)	"P" (IN.) 1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1 - 7	69	0.32	0.64	0.88	1.04	1.09	1.04	0.88	0.64	0.32	8,000	7	6.5	7	0.5	22	6,800	32	11	14	4		

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STRUCTURE B-6-203

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36" PRESTRESSED GIRDER

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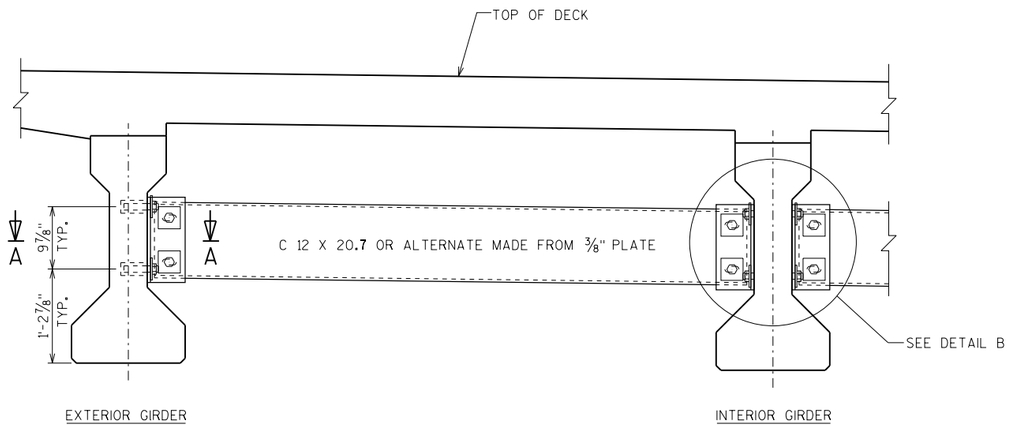
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-6-203", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

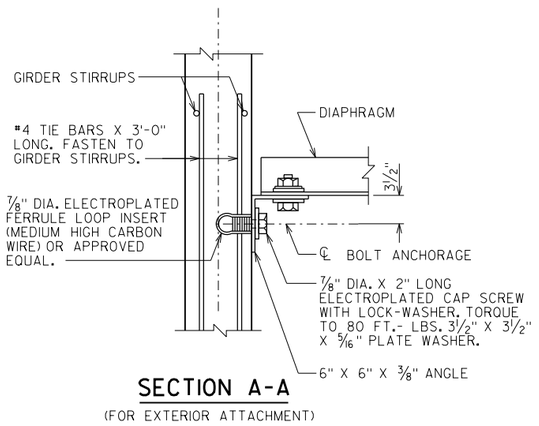
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

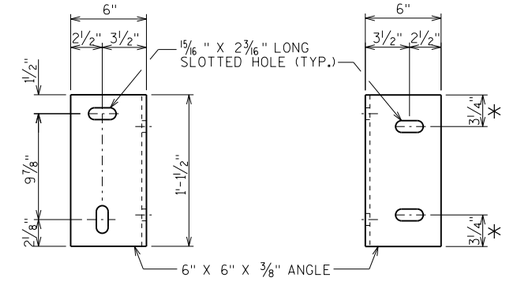


PART TRANSVERSE SECTION AT DIAPHRAGM



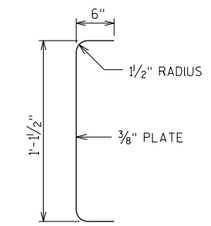
SECTION A-A

(FOR EXTERIOR ATTACHMENT)

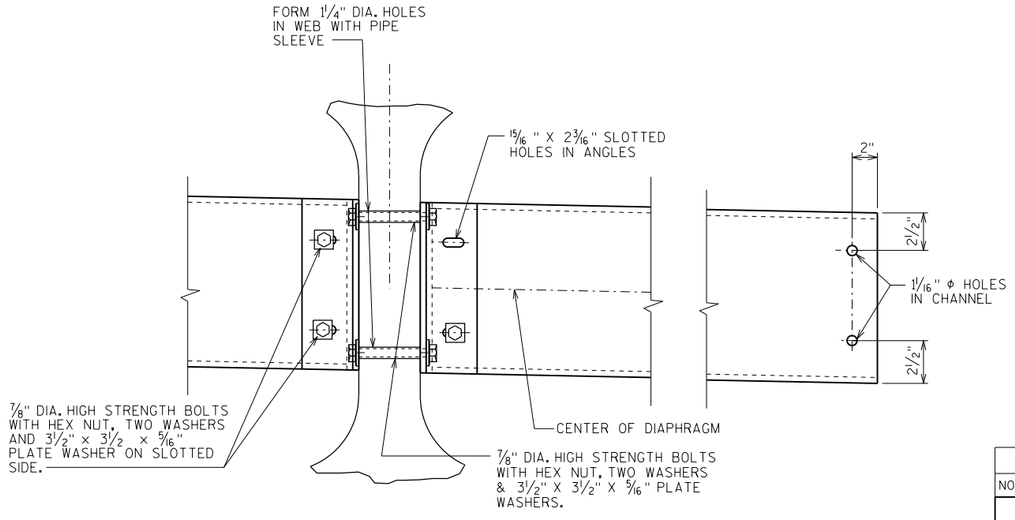


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM

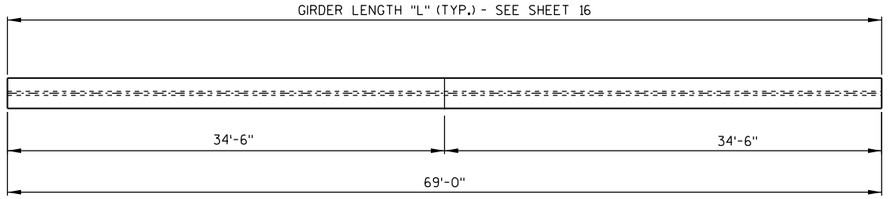


SECTION THRU ALTERNATE DIAPHRAGM



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B



DIAPHRAGM CONNECTION SPACING

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STRUCTURE B-6-203

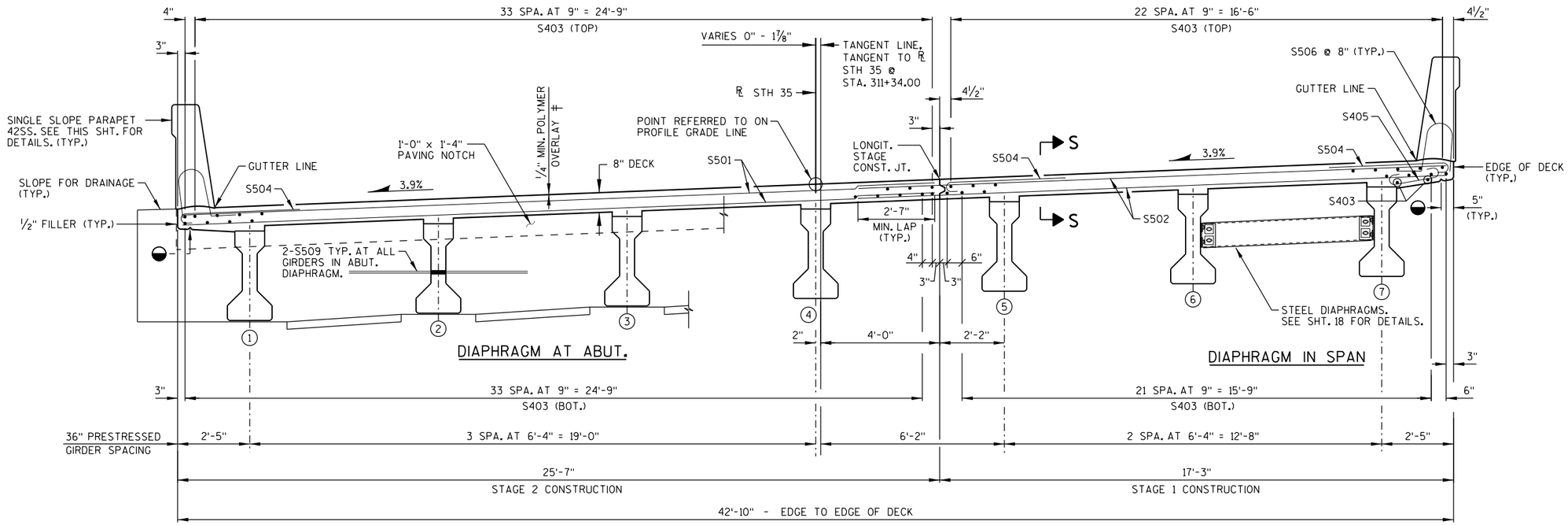
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INTERMEDIATE STEEL DIAPHRAGM

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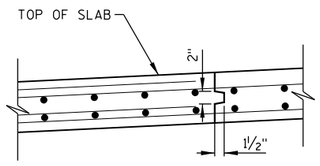
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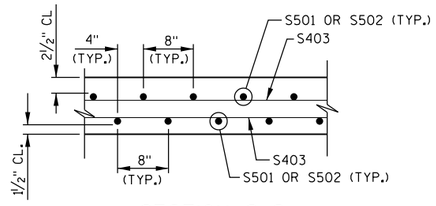


CROSS SECTION THRU ROADWAY

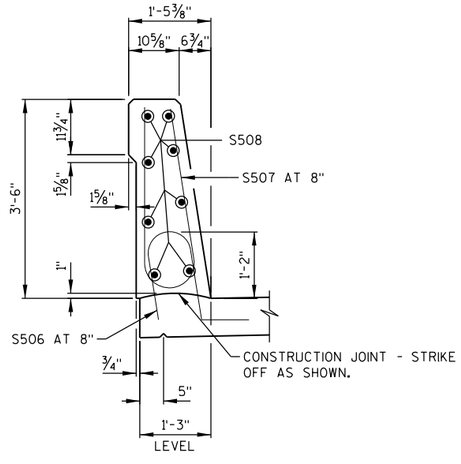
(LOOKING UPSTATION)



SECTION THRU LONGITUDINAL JOINT



SECTION S-S



SINGLE SLOPE PARAPET 42SS ON SUPERSTRUCTURE

TOP OF DECK ELEVATIONS

	CL BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. N. ABUT.
EOD	663.85	663.87	663.89	663.91	663.93	663.95	663.97	663.99	664.01	664.04	664.06
BEAM 1	663.95	663.97	663.99	664.00	664.02	664.04	664.07	664.09	664.11	664.13	664.15
BEAM 2	664.20	664.21	664.23	664.25	664.27	664.29	664.31	664.33	664.36	664.38	664.40
BEAM 3	664.44	664.46	664.48	664.50	664.52	664.54	664.56	664.58	664.60	664.62	664.65
BEAM 4	664.69	664.71	664.72	664.74	664.76	664.78	664.80	664.82	664.85	664.87	664.89
STAGE CONST. JOINT	664.85	664.87	664.89	664.91	664.93	664.95	664.97	664.99	665.01	665.03	665.06
BEAM 5	664.94	664.95	664.97	664.99	665.01	665.03	665.05	665.07	665.10	665.12	665.14
BEAM 6	665.18	665.20	665.22	665.24	665.26	665.28	665.30	665.32	665.34	665.36	665.39
BEAM 7	665.43	665.45	665.47	665.49	665.51	665.53	665.55	665.57	665.59	665.61	665.63
EOD	665.53	665.54	665.56	665.58	665.60	665.62	665.64	665.66	665.68	665.71	665.73

LEGEND

- ◒ ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM.
- ‡ DECK SURFACE PREPARATION FOR APPLICATION OF POLYMER OVERLAY IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".
- ★ VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY BEVELED 2" x 8". RUN BAR STEEL THRU JOINT. ¾" "V" GROOVE AT FRONT FACE. SEAL BACKFACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- ⓧ INDICATES BEAM NUMBER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

SUPERSTRUCTURE CROSS SECTION

SHEET 19 OF 25
183

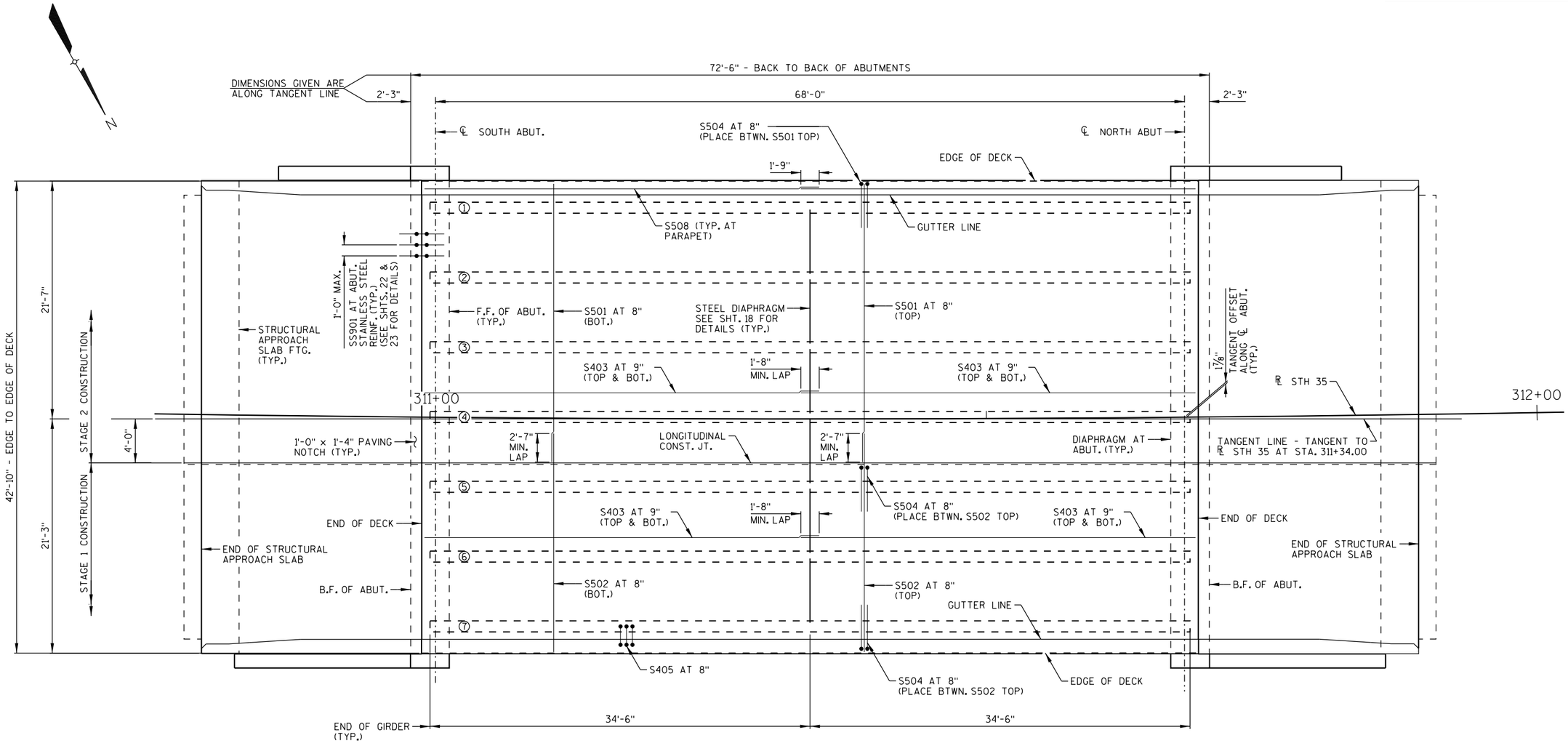
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BATCH PRINT SHEET 20 OF 25

STATE PROJECT NUMBER

7160-04-70



PLAN

NOTES

ALL TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE PLACED PARALLEL TO SUBSTRUCTURE UNITS.

LAP LONGITUDINAL NO. 5 BARS IN PARAPET 1'-9" MIN.

LAP NO. 4 BARS 1'-8" MIN. IN DECK.

LAP NO. 5 BARS 2'-7" MIN. IN DECK.

SEE SHT. 19 'SUPERSTRUCTURE CROSS SECTION' FOR PARAPET REINFORCEMENT DETAIL.

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 19.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

SUPERSTRUCTURE

SHEET 20 OF 25

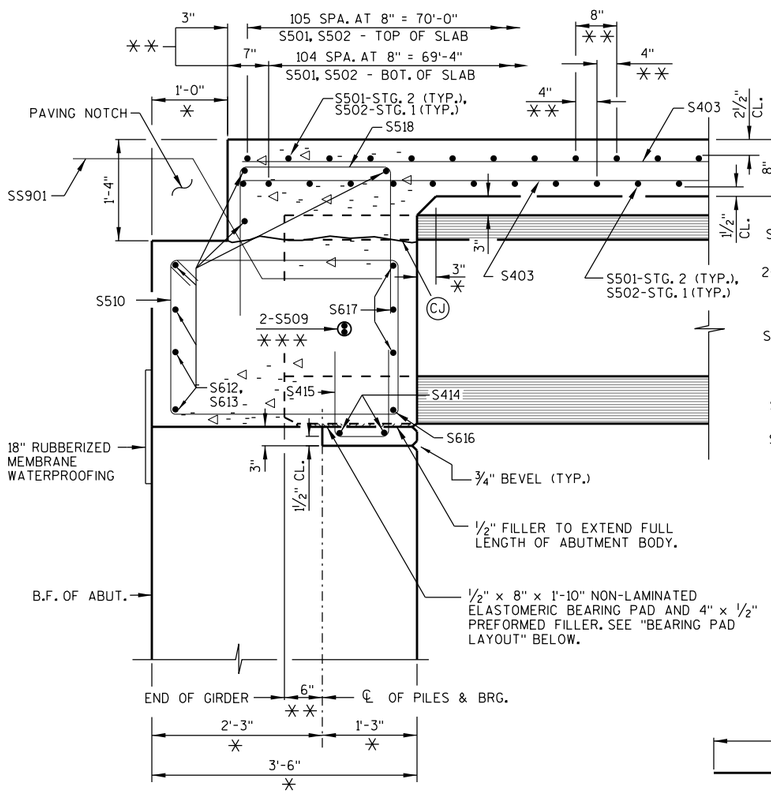
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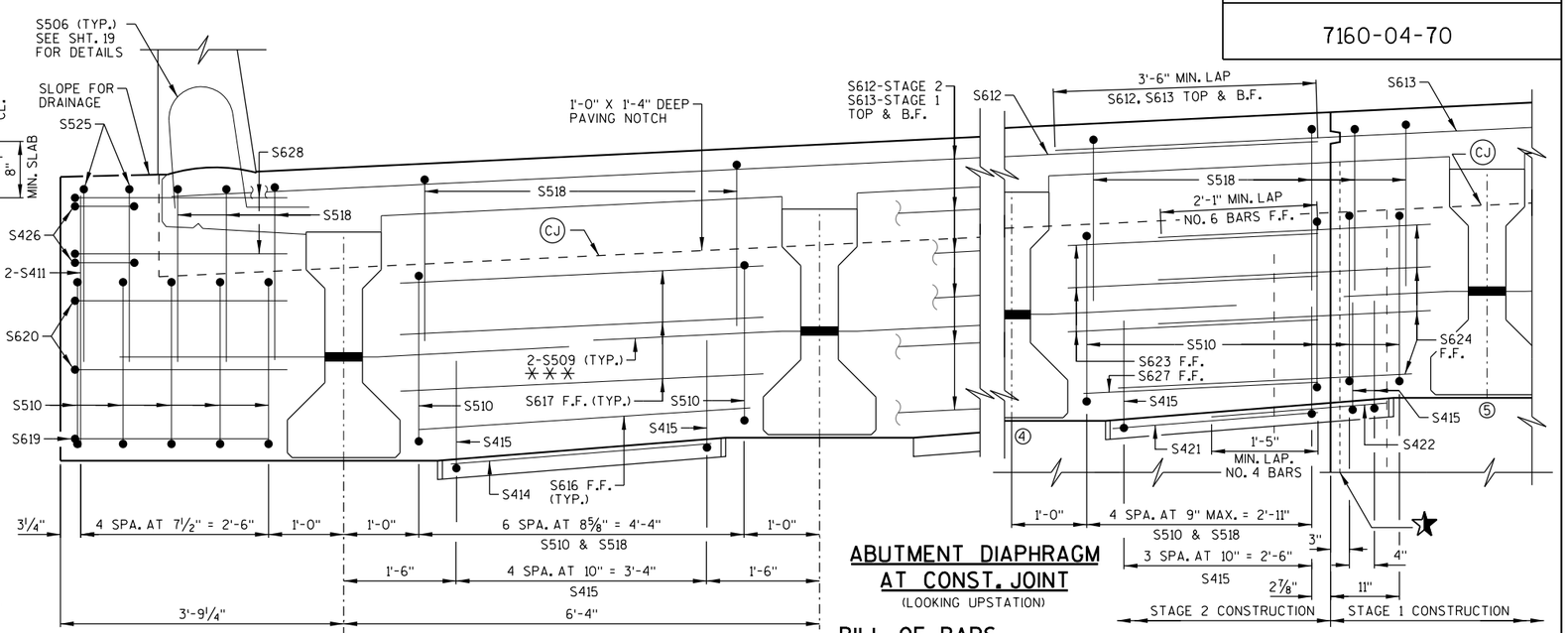
STATE PROJECT NUMBER

7160-04-70



PART LONGITUDINAL SECTION

(AT ABUTMENT)

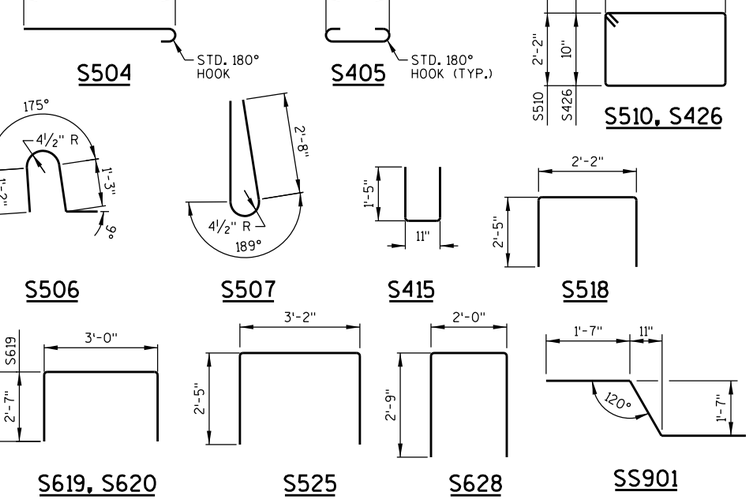


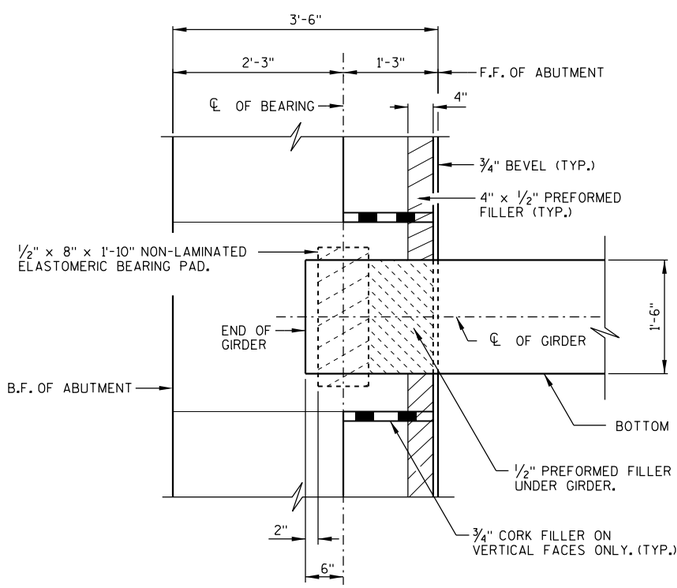
ABUTMENT DIAPHRAGM DETAILS

(LOOKING UPSTATION)

ABUTMENT DIAPHRAGM AT CONST. JOINT

(LOOKING UPSTATION)





BEARING PAD LAYOUT

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	LOCATION
COATED BARS					TOTAL WEIGHT = 25,040 LBS
S501	-----	213	25-3		SUPERSTRUCTURE TOP & BOT. TRANS.
S502	213	-----	19-11		SUPERSTRUCTURE TOP & BOT. TRANS.
S403	94	140	35-11		SUPERSTRUCTURE TOP & BOT. LONGIT.
S504	210	105	4-7	X	SUPERSTRUCTURE EDGE OF DECK TRANS.
S405	106	-----	2-8	X	SUPERSTRUCTURE EDGE OF DECK TRANS.
S506	106	106	4-5	X	SUPERSTRUCTURE - PARAPET TRANS.
S507	106	106	6-8	X	PARAPET VERT.
S508	16	16	36-0		PARAPET LONGIT.
S509	12	16	6-0		DIAPHRAGM - THRU GIRDER WEB TRANS.
S510	42	62	11-4	X	DIAPHRAGM - STIRRUP VERT.
S411	4	4	3-6		DIAPHRAGM - ENDS VERT.
S612	-----	14	26-6		DIAPHRAGM - TOP & B.F. TRANS.
S613	14	-----	22-3		DIAPHRAGM - TOP & B.F. TRANS.
S414	8	12	3-4		DIAPHRAGM - F.F. POCKET TRANS.
S415	24	38	3-7	X	DIAPHRAGM VERT.
S616	4	6	4-4		DIAPHRAGM - F.F. TRANS.
S617	12	18	4-10		DIAPHRAGM - F.F. TRANS.
S518	38	58	6-9	X	DIAPHRAGM VERT.
S619	2	2	7-10	X	DIAPHRAGM - ENDS LONGIT.
S620	4	4	8-4	X	DIAPHRAGM - ENDS LONGIT.
S421	-----	4	2-6		DIAPHRAGM - CONST. JT. TRANS.
S422	4	-----	2-4		DIAPHRAGM - CONST. JT. TRANS.
S623	-----	6	3-3		DIAPHRAGM - BTWN. GIRDERS F.F TRANS.
S624	8	-----	3-9		DIAPHRAGM - CONST. JT. TRANS.
S525	4	4	7-9	X	DIAPHRAGM ENDS VERT.
S426	4	4	8-2	X	DIAPHRAGM ENDS - STIRRUP TRANS.
S627	-----	2	3-1		DIAPHRAGM - CONST. JT. TRANS.
S628	4	4	7-2	X	DIAPHRAGM - ENDS TRANS.

STAINLESS STEEL BARS					TOTAL WEIGHT = 1,510 LBS
SS901	36	52	5-0	X	APPROACH SLAB - ABUTMENT DIAPHRAGM VERT.

LEGEND

- ✳ DIMENSIONS ARE GIVEN NORMAL TO ℄ OF SUBSTRUCTURE UNITS.
- ✳✳ DIMENSIONS ARE GIVEN PARALLEL TO THE GIRDER ℄.
- ✳✳✳ 1½" DIA. HOLE IN WEB FOR S509 BARS. PLACE TWO S509 BARS SYMMETRICAL ABOUT THE ℄ OF EACH GIRDER.
- (CJ) OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

SEE SHT. 19 FOR ADDITIONAL SYMBOL DESCRIPTIONS.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES (LB)
STAGE 1	61	11,430	620
STAGE 2	83	13,610	890

NOTES

PLACE AND SPACE VERTICAL REINFORCMENT BARS PARALLEL TO THE GIRDER ℄.

LAP S612 & S613 BARS IN ABUTMENT DIAPHRAGM 3'-6" MIN.

MATCH BOTTOM OF PAVING NOTCH WITH SLOPE OF 'TOP OF DECK'.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

SUPERSTRUCTURE DETAILS

SHEET 21 OF 25
185

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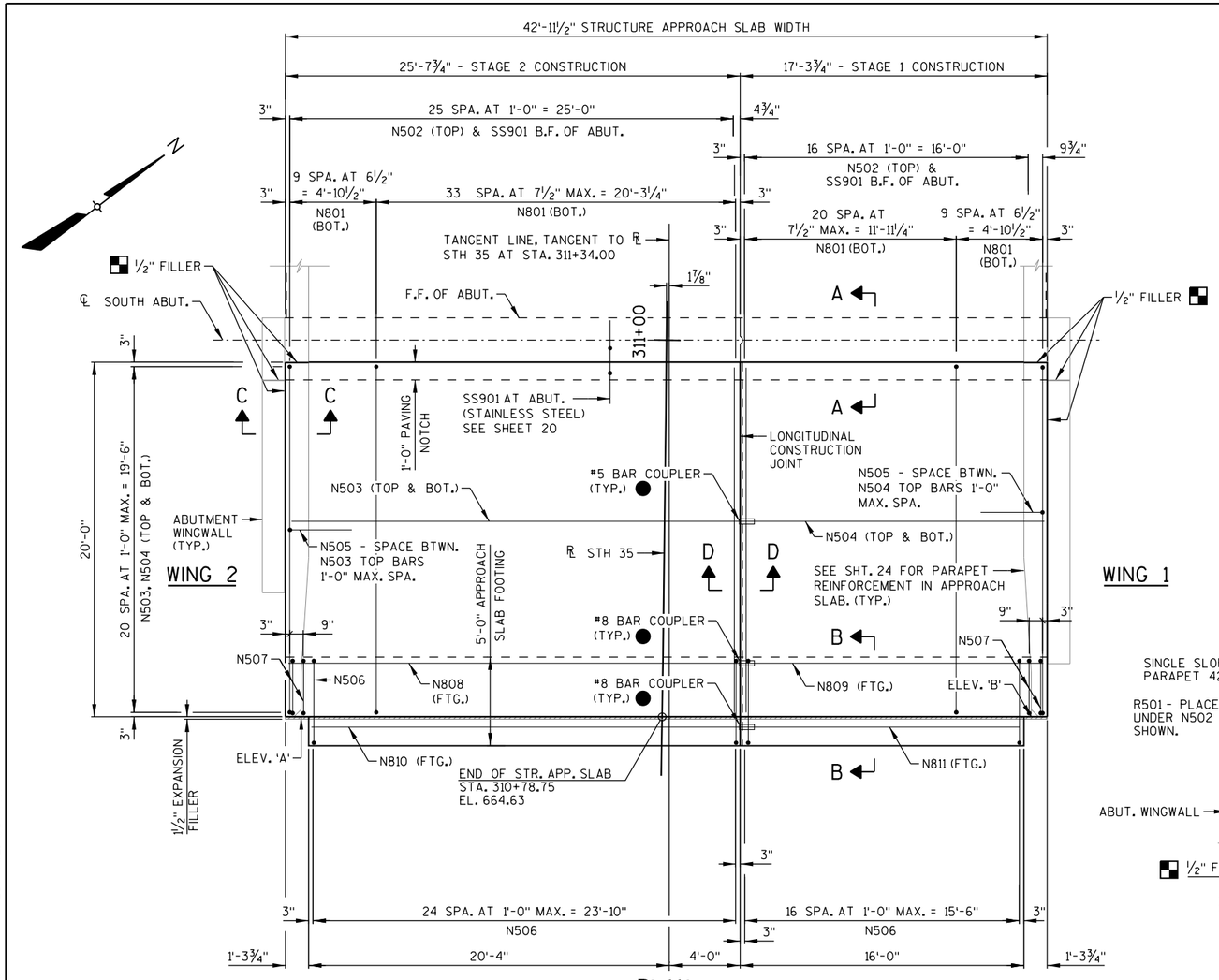
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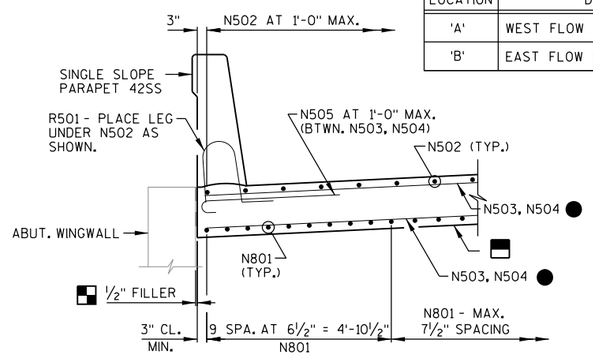
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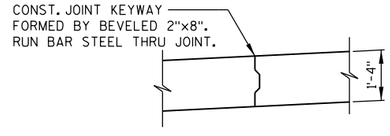
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BATCH PRINT SHEET 22 OF 25

STATE PROJECT NUMBER

7160-04-70







BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

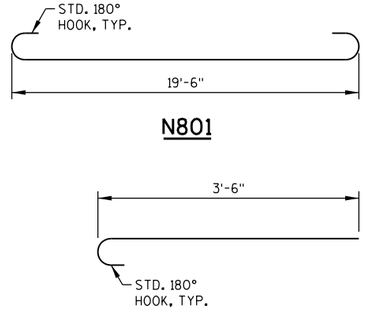
MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	LOCATION
	COATED BARS				TOTAL WEIGHT = 8,990 LBS
N801	30	43	21-4	X	APPROACH SLAB - BOTTOM LONGIT.
N502	18	26	19-6		APPROACH SLAB - TOP LONGIT.
N503	-----	42	25-5		APPROACH SLAB - TOP & BOTTOM TRANS.
N504	42	-----	17-1		APPROACH SLAB - TOP & BOTTOM TRANS.
N505	20	20	4-1	X	APPROACH SLAB - TOP TRANS.
N506	17	25	11-10	X	APPROACH SLAB FOOTING LONGIT.
N507	2	2	8-10	X	APPROACH SLAB FOOTING LONGIT.
N808	-----	8	25-5		APPROACH SLAB FOOTING TRANS.
N809	8	-----	17-1		APPROACH SLAB FOOTING TRANS.
N810	-----	4	24-2		APPROACH SLAB FOOTING TRANS.
N811	4	-----	15-10		APPROACH SLAB FOOTING TRANS.

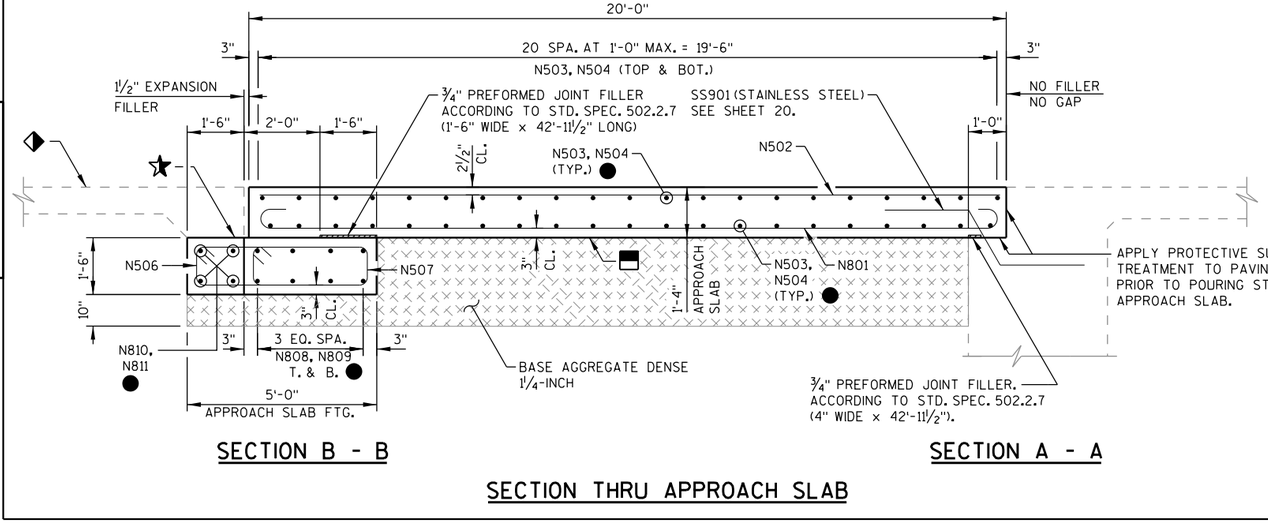
ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)
STAGE 1	25	3,680
STAGE 2	36	5,310

TOP OF APPROACH SLAB ELEVATIONS

LOCATION	DESCRIPTION	STATION	OFFSET TO ℄ (FEET)	ELEVATION (FEET)
'A'	WEST FLOW LINE AT END OF APPROACH SLAB	310+78.45	20.35 LT.	663.83
'B'	EAST FLOW LINE AT END OF APPROACH SLAB	310+79.05	20.81 RT.	665.44





LEGEND

- ★ STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- ▬ PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.
- ▩ SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF AS NOTED FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).
- ◆ SEE ROADWAY PLANS FOR DETAILS.
- ● USE BAR COUPLERS TO CONTINUE BAR STEEL THRU JOINT. SEE SHT. 25 FOR DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

SOUTH STRUCTURAL APPROACH SLAB

SHEET 22 OF 25
186

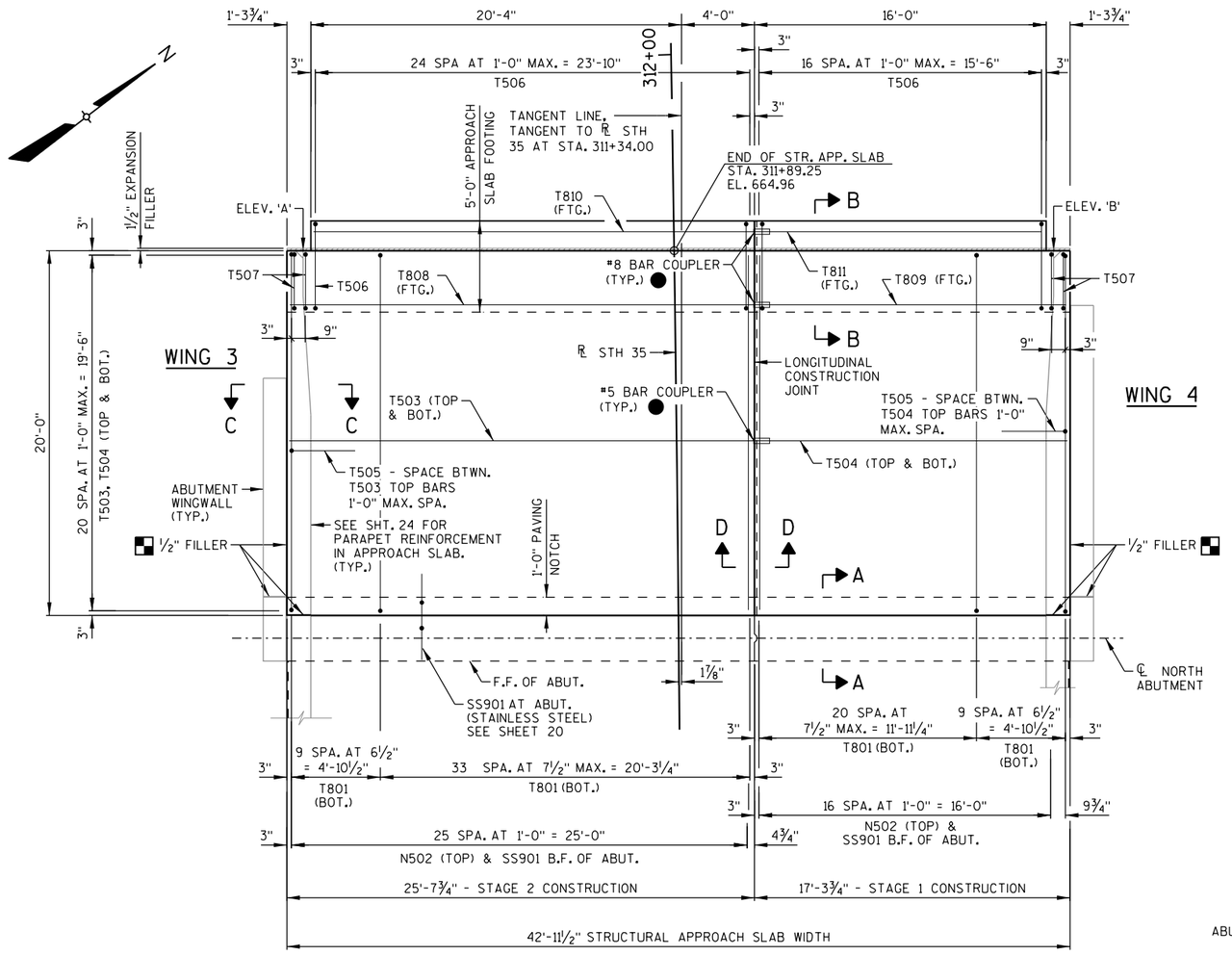
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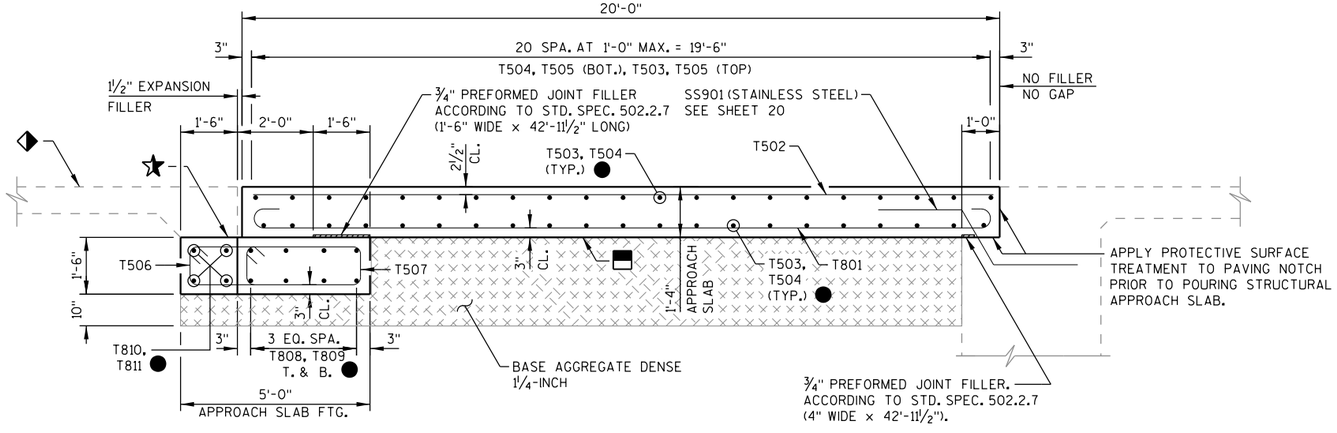
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BATCH PRINT SHEET 23 OF 25

STATE PROJECT NUMBER

7160-04-70



PLAN



SECTION B - B

SECTION A - A

SECTION THRU APPROACH SLAB

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

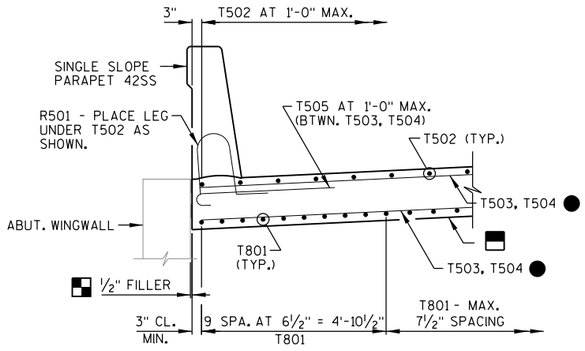
MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	LOCATION
COATED BARS					TOTAL WEIGHT = 8,990 LBS
T801	30	43	21-4	X	APPROACH SLAB - BOTTOM LONGIT.
T502	18	26	19-6		APPROACH SLAB - TOP LONGIT.
T503	-----	42	25-5		APPROACH SLAB - TOP & BOTTOM TRANS.
T504	42	-----	17-1		APPROACH SLAB - TOP & BOTTOM TRANS.
T505	20	20	4-1	X	APPROACH SLAB - TOP TRANS.
T506	17	25	11-10	X	APPROACH SLAB FOOTING LONGIT.
T507	2	2	8-10	X	APPROACH SLAB FOOTING LONGIT.
T808	-----	8	25-5		APPROACH SLAB FOOTING TRANS.
T809	8	-----	17-1		APPROACH SLAB FOOTING TRANS.
T810	-----	4	24-2		APPROACH SLAB FOOTING TRANS.
T811	4	-----	15-10		APPROACH SLAB FOOTING TRANS.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)
STAGE 1	25	3,680
STAGE 2	36	5,310

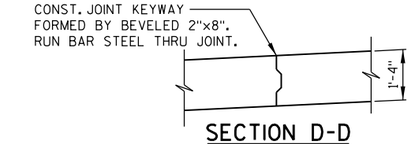
TOP OF APPROACH SLAB ELEVATIONS

LOCATION	DESCRIPTION	STATION	OFFSET TO ℄ (FEET)	ELEVATION (FEET)
'A'	WEST FLOW LINE AT END OF APPROACH SLAB	311+89.55	20.35 LT.	664.16
'B'	EAST FLOW LINE AT END OF APPROACH SLAB	311+88.95	20.81 RT.	665.77

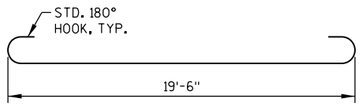


SECTION C-C

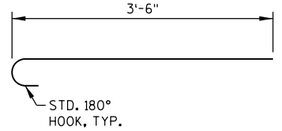
FOR PARAPET BARS AND DETAILS SEE SHEET 24.



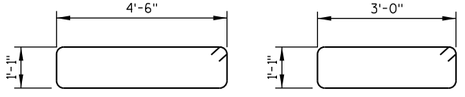
SECTION D-D



T801



T505



T506 T507

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 22.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

NORTH STRUCTURAL APPROACH SLAB

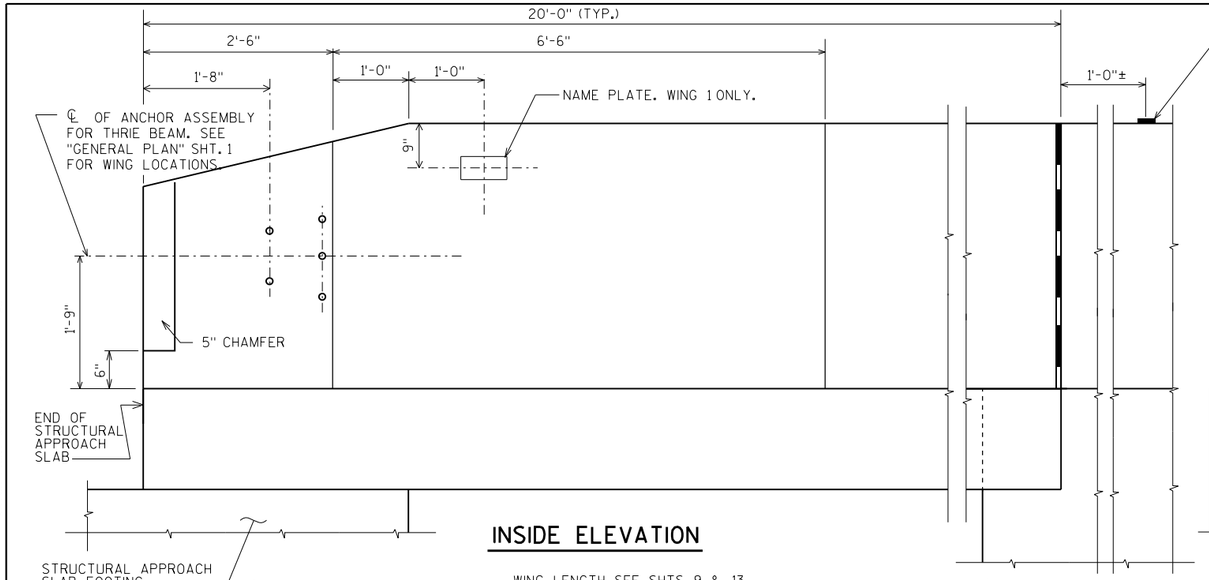
SHEET 23 OF 25
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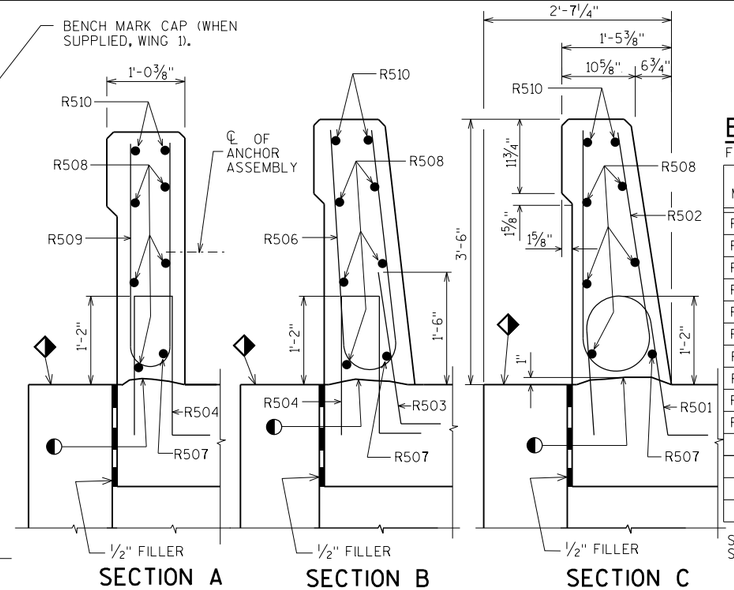
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BATCH PRINT SHEET 24 OF 25

STATE PROJECT NUMBER
7160-04-70



INSIDE ELEVATION



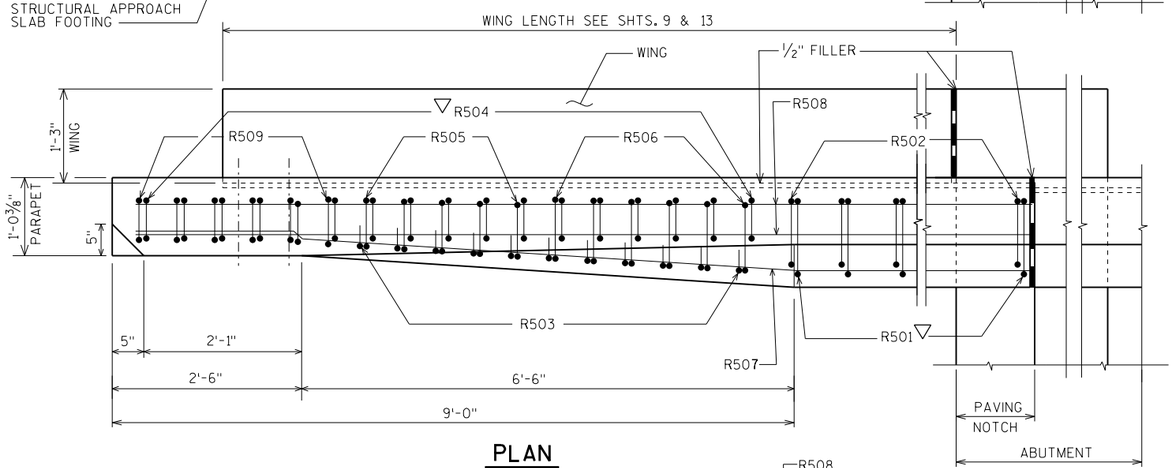
BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

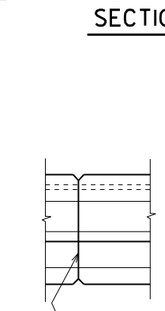
BAR MARK	COAT	STAGE 1	STAGE 2	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	36	36	4-5	X		PARAPET VERT.
R502	X	36	36	6-8	X		PARAPET VERT.
R503	X	22	22	2-9	X		PARAPET VERT.
R504	X	34	34	4-4	X		PARAPET VERT.
R505	X	10	10	6-5	X		PARAPET VERT.
R506	X	12	12	6-6	X		PARAPET VERT.
R507	X	2	2	19-6	X		PARAPET HORIZ.
R508	X	10	10	19-6			PARAPET HORIZ.
R509	X	12	12	5-5	X	⚠	PARAPET VERT.
R510	X	4	4	19-6	X		PARAPET HORIZ

STAGE 1 WT. = 1,180 LBS.
STAGE 2 WT. = 1,180 LBS.

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



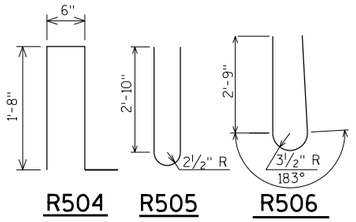
PLAN

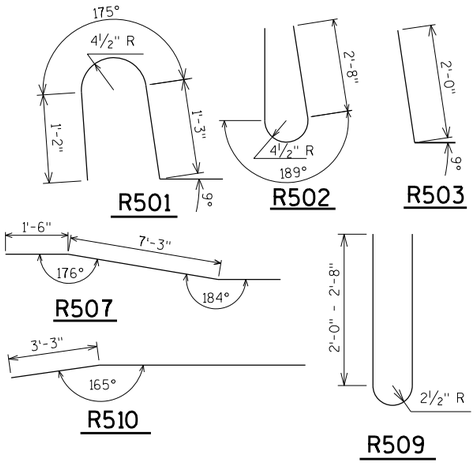


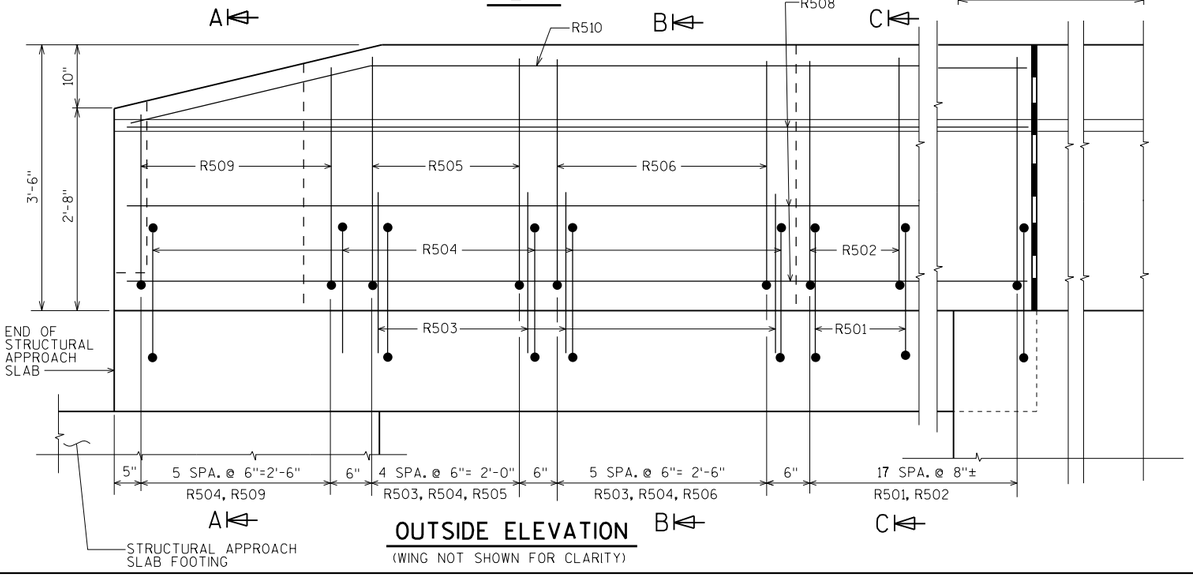
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

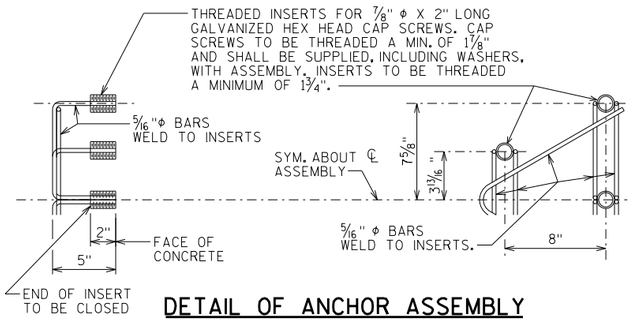






OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

LEGEND

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

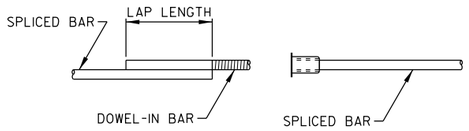
PARAPET 42SS WITH STR. APPROACH SLAB

SHEET 24 OF 25
188

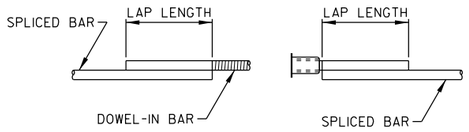
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DOWEL BAR SPLICER

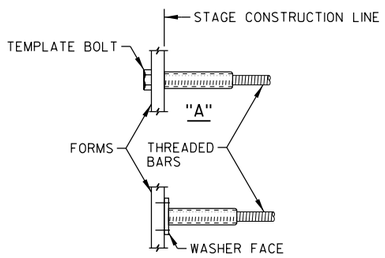


DOWEL BAR SPLICER



ONE PIECE THREADED SPLICER

SPLICER ALTERNATIVES



INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT.
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.

NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE STRUCTURAL APPROACH SLABS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILIAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

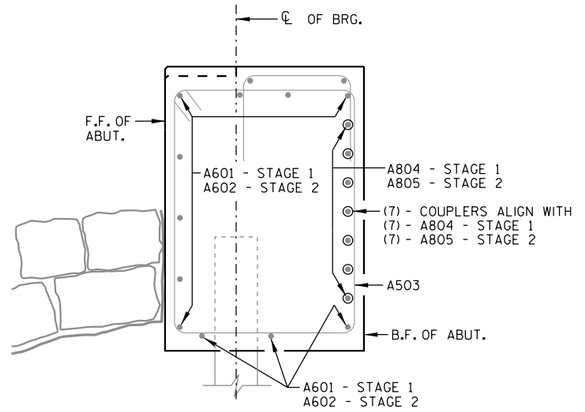
1. - MINIMUM CAPACITY = 1.25 x fy x AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICER LAP LENGTHS

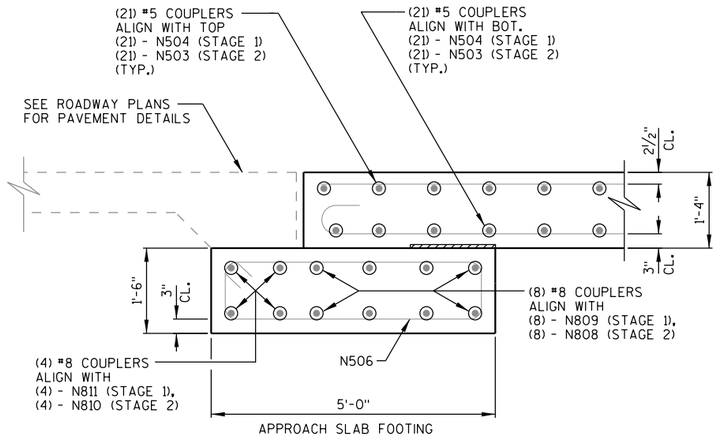
CONCRETE UNDER BAR	BAR SIZE	4	5	6	7	8	9	10	11
12" OR LESS	f'c = 3500	1'-8"	2'-8"	3'-2"	4'-3"	5'-6"	7'-0"	8'-9"	10'-11"
	f'c = 4000	1'-8"	2'-8"	3'-2"	4'-0"	5'-2"	6'-6"	8'-3"	10'-2"
MORE THAN 12"	f'c = 3500	2'-3"	2'-11"	3'-6"	4'-8"	6'-1"	7'-10"	9'-10"	12'-1"
	f'c = 4000	2'-3"	2'-11"	3'-6"	4'-5"	5'-8"	7'-4"	9'-2"	11'-4"

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMENDATIONS. PAY BASED ON BARS AS DETAILED.



TYPICAL SECTION THRU ABUTMENT AT CONSTRUCTION JOINT

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILIAR)



TYPICAL SECTION THRU APPROACH SLAB FOOTING AT CONSTRUCTION JOINT

(SOUTH APPROACH SLAB SHOWN, NORTH APPROACH SLAB SIMILIAR)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-203

DRAWN BY KAM | PLANS CK'D. EAN

BAR SPLICER (COUPLER) DETAILS

SHEET 25 OF 25

8

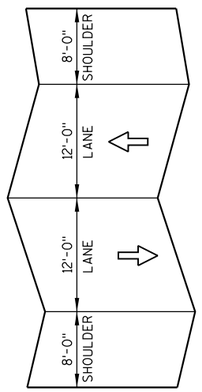
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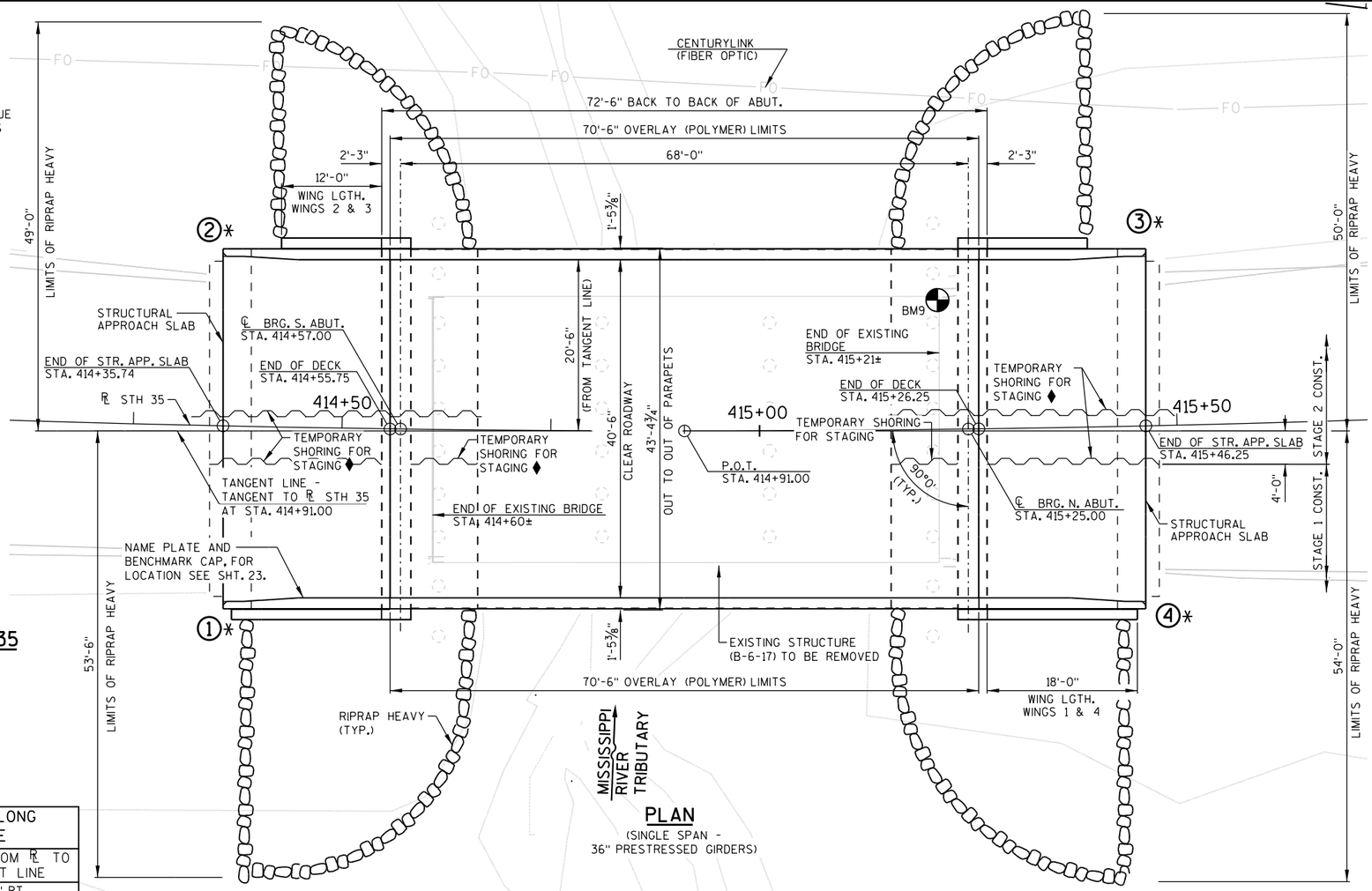
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BATCH PRINT SHEET 1 OF 24

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT.

(X) INDICATES WING NUMBER

♦ TEMPORARY SHORING WILL REQUIRE SPECIAL DESIGN DUE TO SOILS. REFERENCE SOILS REPORT FOR MORE INFORMATION.



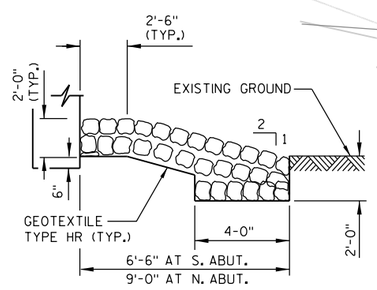


PLAN
(SINGLE SPAN - 36" PRESTRESSED GIRDERS)

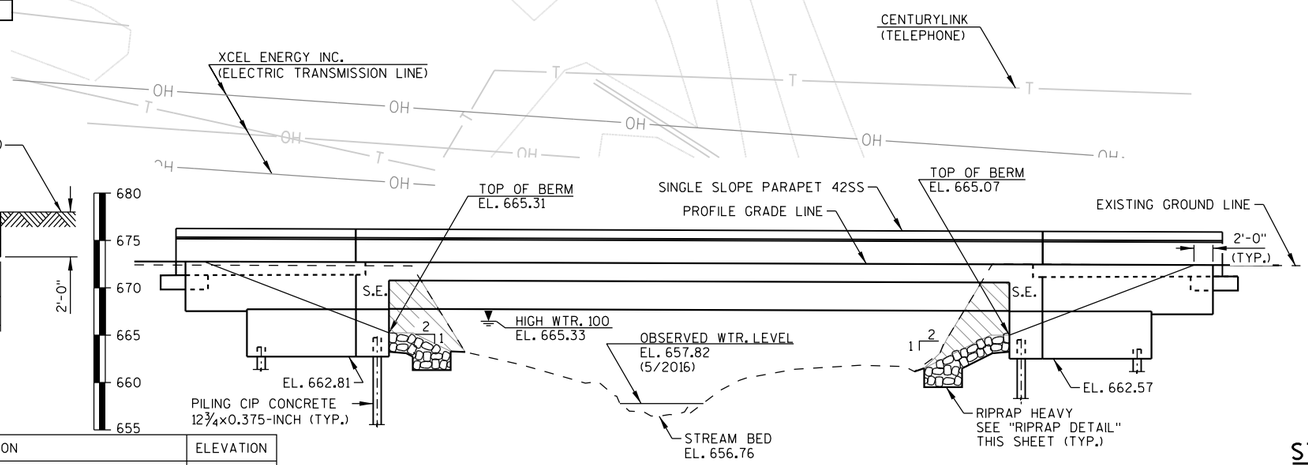
CURVE DATA: STH 35

PI STA = 419+58.27
Y = 231901.922
X = 602109.867
DELTA = 39°20'28"
D = 2°16'00"
T = 903.60'
L = 1735.64'
R = 2527.75'
PC STA = 410+54.66
PT STA = 427+90.30
S.E. = 4.8%

TANGENT OFFSETS ALONG ℄ SUBSTRUCTURE	
SUBSTRUCTURE	OFFSET FROM ℄ TO TANGENT LINE
S. ABUT.	2¾" RT.
N. ABUT.	2¾" RT.



RIPRAP DETAIL



ELEVATION
NORMAL TO MISSISSIPPI RIVER TRIBUTARY

COST FOR EXCAVATION IN THE HATCHED AREA SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-6-205".

BENCH MARK TABLE

NO.	STATION	DESCRIPTION	ELEVATION
BM9	415+21, 15.50'LT.	ALUM. CAP NW CRNR. OF BRIDGE DECK.	672.09
BM10	415+44, 72.85'LT.	SPIKE IN 18-INCH WHITE ASH.	664.49

HORIZ. COORDINATES TIED TO NAD 83 (2011). VERT. TIED TO NAVD 88. COORDINATE SYSTEM WCCS, 9606 ZONE.

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR = 1.10
OPERATING RATING FACTOR = 1.61
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY
- DECK, PARAPET, DIAPHRAGMS, APPROACH SLAB, APPR. SLAB FOOTING — f'c = 4,000 P.S.I.
- ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
(INCLUDES STAINLESS STEEL REINFORCEMENT)

36" PRESTRESSED GIRDER
- CONCRETE MASONRY — f'c = 8,000 P.S.I.
- STRANDS - 0.5" DIA. WITH ULTIMATE TENSILE STRENGTH OF — 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 12¾x0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 70'-0" LONG FOR THE SOUTH ABUTMENT AND 85'-0" LONG FOR THE NORTH ABUTMENT.

** 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 THE MODIFIED GATE DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

STH 35
A.D.T. (2019) = 5400
A.D.T. (2039) = 6100
DESIGN SPEED = 60 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY

Q100	1245 CFS
VELOCITY	8.0 FPS
HIGH WATER ELEVATION	665.33
WATERWAY AREA	156 SQ. FT.
DRAINAGE AREA	2.8 SQ. MI.
ROAD OVERTOPPING	N/A
SCOUR CRITICAL CODE	5

2 YEAR FREQUENCY

Q2	145 CFS
HIGH WATER 2 ELEVATION	661.02

WISCONSIN
MICHELLE A. HOWE
E-43048
MADISON
WI
PROFESSIONAL ENGINEER

07/31/2018

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT:
MICHELLE HOWE (608) 828-8145

AECOM PROJECT NO. 60531793

STATE PROJECT NUMBER

7160-04-70

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/06/18
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-6-205

STH 35 OVER MISSISSIPPI RIVER TRIBUTARY

COUNTY	TOWN/CITY/VILLAGE
BUFFALO	FOUNTAIN CITY

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
KB	MAH	KAM	MAH

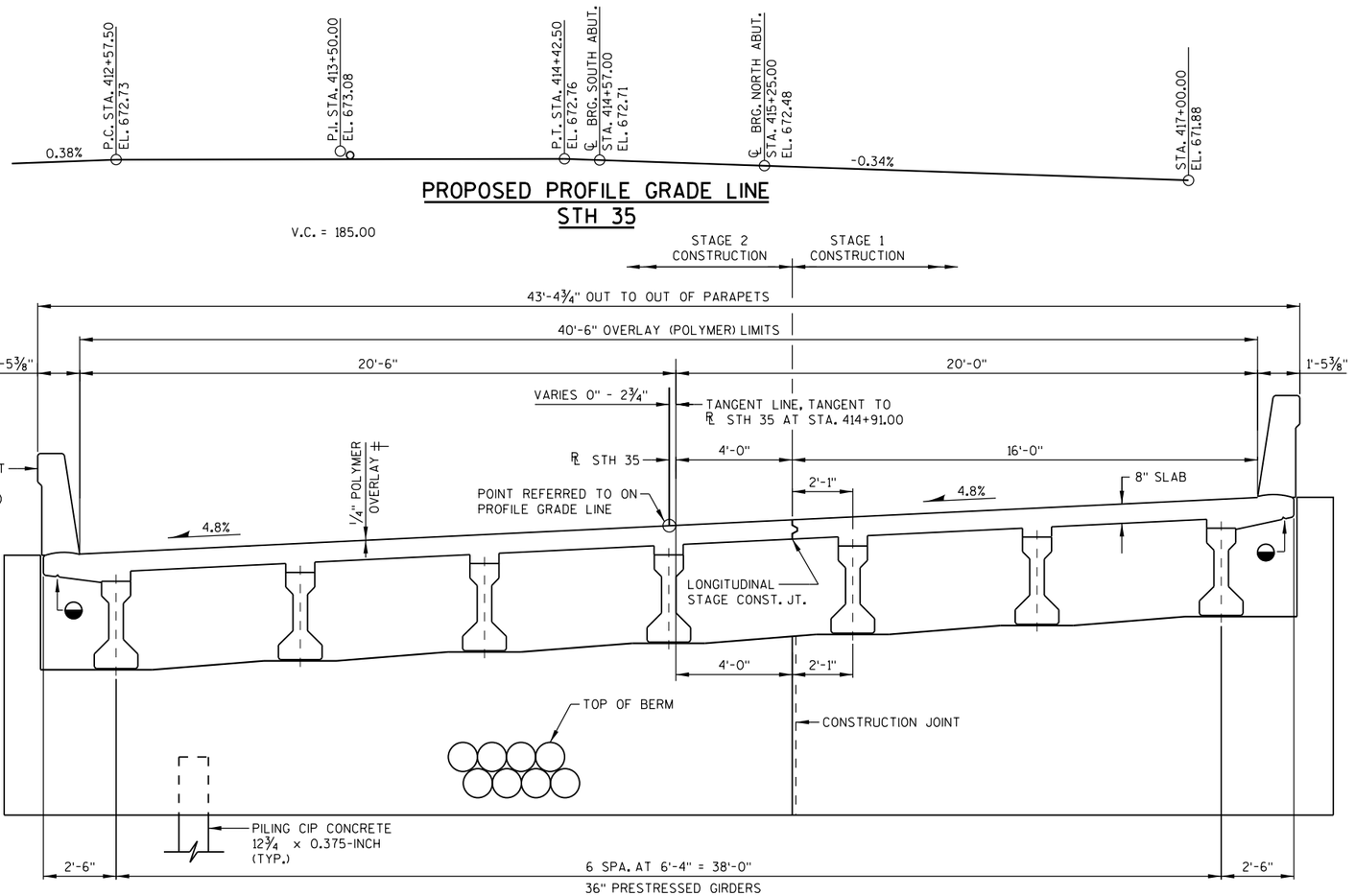
GENERAL PLAN

SHEET 1 OF 24
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PROPOSED PROFILE GRADE LINE
STH 35

V.C. = 185.00

CROSS SECTION THRU ROADWAY
(LOOKING UPSTATION)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH APPROACH	SOUTH ABUTMENT	NORTH ABUTMENT	NORTH APPROACH	SUPER.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 414+91	LS						1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-6-205	LS						1
210.1500	BACKFILL STRUCTURE TYPE A	TON		195	195			390
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	135			135		270
502.0100	CONCRETE MASONRY BRIDGES	CY	61	59	59	61	139	379
502.3200	PROTECTIVE SURFACE TREATMENT	SY	11			11		22
502.3210	PIGMENTED SURFACE SEALER	SY	20			20	70	110
503.0136	PRESTRESSED GIRDER TYPE I 36-INCH	LF					483	483
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB		4,160	4,160			8,320
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	10,100	2,080	2,080	10,100	25,470	47,840
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB					1,510	1,510
505.0905	BAR COUPLERS NO. 5	EACH	42			42		84
505.0908	BAR COUPLERS NO. 8	EACH	12			12		24
505.0910	BAR COUPLERS NO. 10	EACH		7	7			14
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH		7	7			14
506.4000	STEEL DIAPHRAGMS B-6-205	EACH					6	6
509.5100.S	POLYMER OVERLAY	SY					320	320
511.1200	TEMPORARY SHORING B-6-205	SF		515	515			1,030
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY		11	11			22
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF		910	1,105			2,015
606.0300	RIPRAP HEAVY	CY		135	143			278
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF		80	80			160
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2					4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY		50	50			100
645.0120	GEOTEXTILE TYPE HR	SY		190	200			390
	NON-BID ITEMS							
	FILLER	SIZE						1/2"

STATE PROJECT NUMBER

7160-04-70

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE 'HR' WITHIN THE LIMITS SHOWN ON SHEET 1, ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING STRUCTURE (B-6-17) IS A 3 SPAN STEEL DECK GIRDER BRIDGE, 60.7' LONG x 31.9' WIDE, TO BE REMOVED. CONTRACTOR SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE DURING STAGE 1 CONSTRUCTION IN ACCORDANCE WITH 108.7.3 OF THE STANDARD SPECIFICATIONS.

ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 414+91".

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAIL SHEET 16.

EXCAVATION REQUIRED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-6-205" IS NOT USED TO BALANCE THE EARTHWORK.

AT THE BACKFACE OF ABUTMENT, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

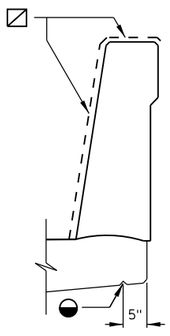
CONCRETE MASONRY REQUIRES A MINIMUM CURE TIME OF 28 DAYS BEFORE PLACING POLYMER OVERLAY.

WISCONSIN
MICHELLE A. HOWE
E-43048
MADISON
WI
PROFESSIONAL ENGINEER

07/31/2018

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. CONSTRUCTION DETAILS
4. SUBSURFACE EXPLORATION - 1
5. SUBSURFACE EXPLORATION - 2
6. CONSTRUCTION STAGING - 1
7. CONSTRUCTION STAGING - 2
8. SOUTH ABUTMENT
9. SOUTH ABUTMENT PILE PLAN AND SECTIONS
10. WINGS 1 AND 2
11. SOUTH ABUTMENT DETAILS
12. NORTH ABUTMENT
13. NORTH ABUTMENT PILE PLAN AND SECTIONS
14. WINGS 3 AND 4
15. NORTH ABUTMENT DETAILS
16. 36" PRESTRESSED GIRDER
17. INTERMEDIATE STEEL DIAPHRAGM
18. SUPERSTRUCTURE CROSS SECTION
19. SUPERSTRUCTURE
20. SUPERSTRUCTURE DETAILS
21. SOUTH STRUCTURAL APPROACH SLAB
22. NORTH STRUCTURAL APPROACH SLAB
23. PARAPET 42SS WITH STR. APPROACH SLAB
24. BAR SPLICER (COUPLER) DETAILS



SURFACE PROTECTION DETAIL

LEGEND

- ⊠ COAT WITH "PIGMENTED SURFACE SEALER" AS PER THE STANDARD SPECIFICATIONS.
- ◒ ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM.
- ‡ DECK SURFACE PREPERATION FOR APPLICATION OF POLYMER OVERLAY IS INCLUDED IN THE BID ITEM "POLYMER OVERLAY".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. MAH

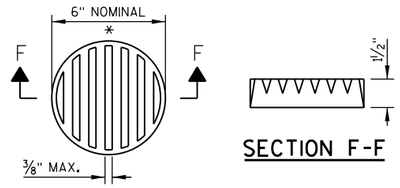
CROSS SECTION & QUANTITIES

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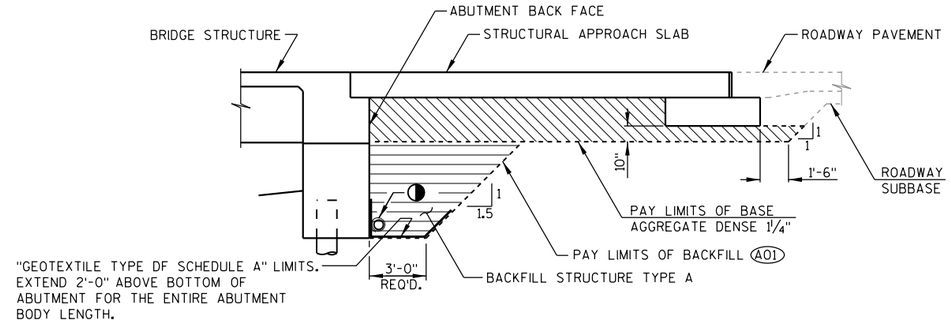


RODENT SHIELD DETAIL

* 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 A 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 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



BACKFILL STRUCTURE LIMITS

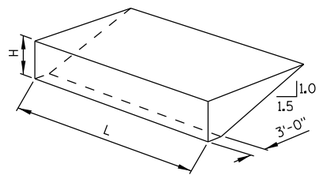
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-6-205" SHALL BE THE EXISTING GROUNDLINE.

(A01) BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE THE BOTTOM OF THE ABUTMENT.

◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



WINGS PARALLEL TO ROADWAY

ABUTMENT BACKFILL DIAGRAM

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS, AND 1.00 FOR TON BID ITEMS)
V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)
V_{CY} = V_{CF} (EF)/27
V_{TON} = V_{CY} (2.0)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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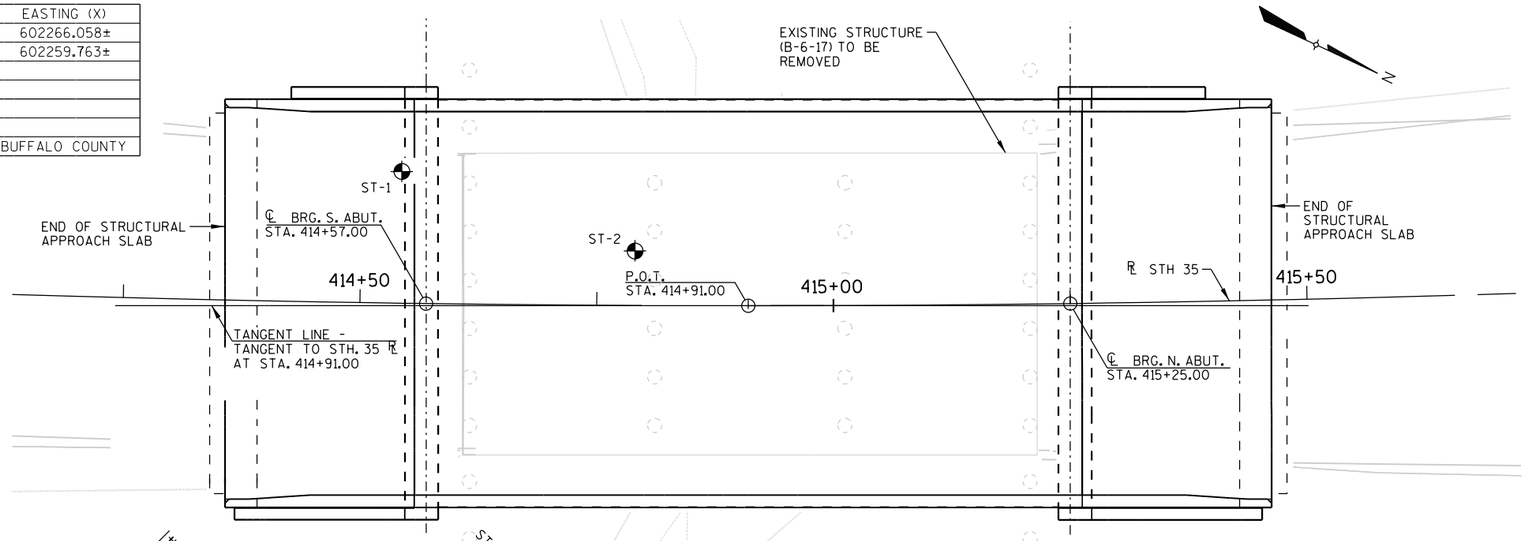
CONSTRUCTION DETAILS

SHEET 3 OF 24
192

8

8

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-1	4/3/2017	231416.525±	602266.058±
ST-2	4/4/2017	231441.759±	602259.763±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			



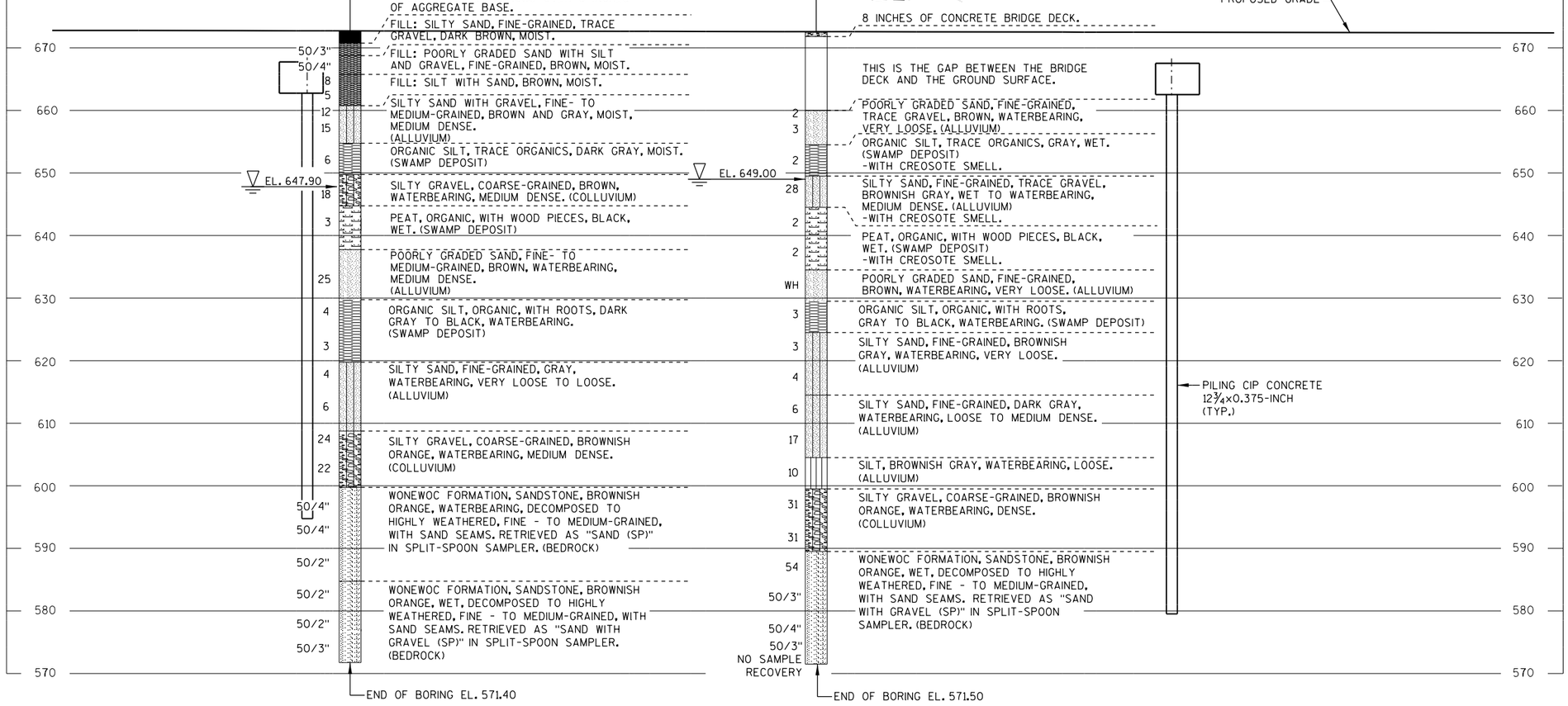
PLAN

LEGEND

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

BENCHMARK (BM):
BORING ELEVATIONS AND SURFACE ELEVATIONS WERE REFERENCED TO THE SOUTHEAST CORNER OF THE EXISTING BRIDGE DECK WHOSE ELEVATIONS WAS REPORTED TO BE 673.0.



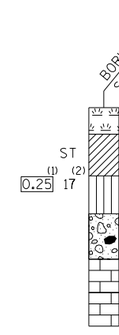
STATE PROJECT NUMBER

7160-04-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

WH - SAMPLER PENETRATED SOIL UNDER WEIGHT OF HAMMER AND RODS ALONE; DRIVING NOT REQ'D.

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. KB

SUBSURFACE EXPLORATION-1

SHEET 4 OF 24
193

8

8

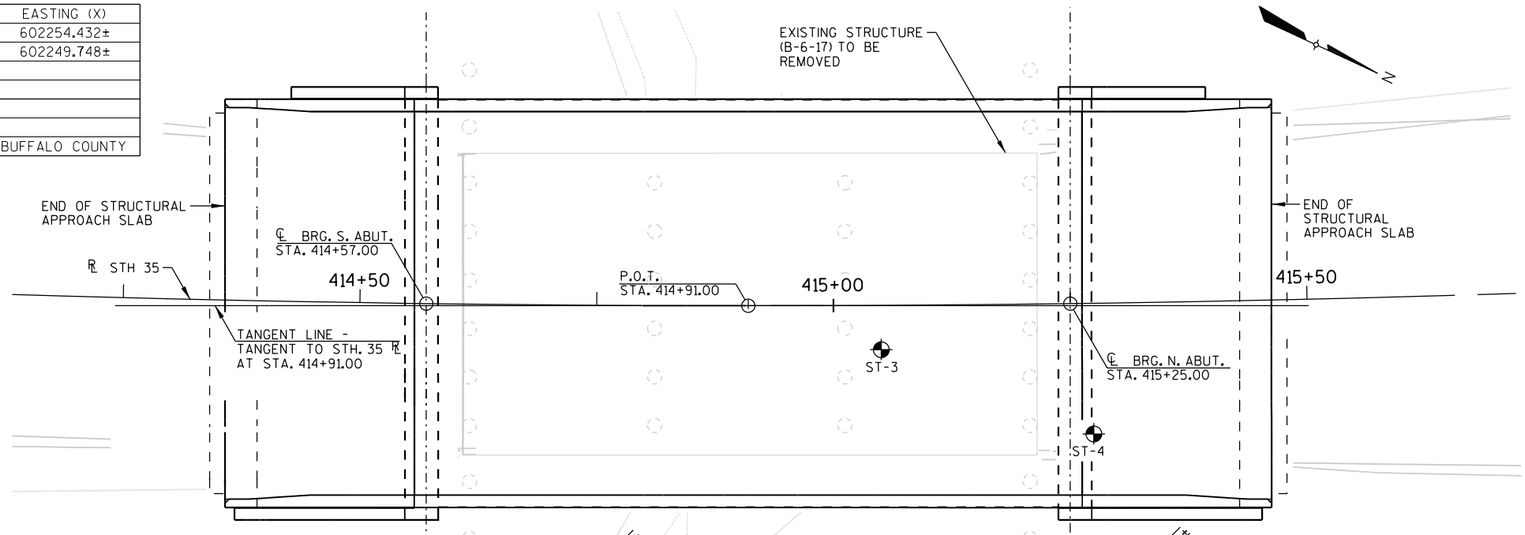
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
ST-3	4/5/2017	231469.256±	602254.432±
ST-4	4/5/2017	231492.947±	602249.748±
BORINGS COMPLETED BY:		BRAUN INTERTEC	
REPORT COMPLETED BY:		BRAUN INTERTEC	
ALL COORDINATES REFERENCED TO WCCS NAD 83(11) BUFFALO COUNTY			

LEGEND

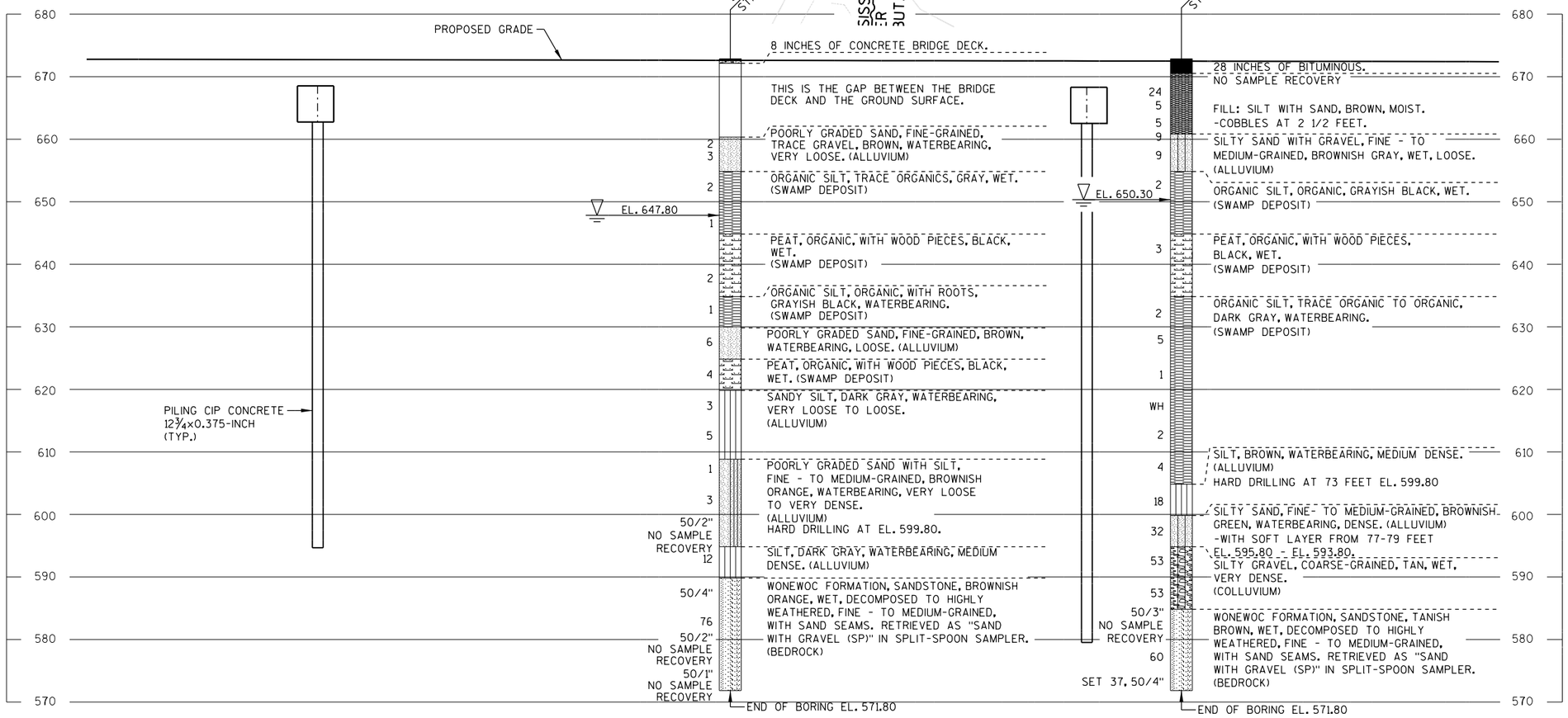
DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING.

NOTE:

BENCHMARK (BM):
BORING ELEVATIONS AND SURFACE ELEVATIONS WERE REFERENCED TO THE SOUTHEAST CORNER OF THE EXISTING BRIDGE DECK WHOSE ELEVATIONS WAS REPORTED TO BE 673.0.



PLAN



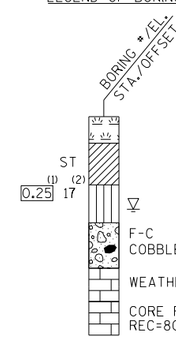
STATE PROJECT NUMBER

7160-04-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

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SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. KB

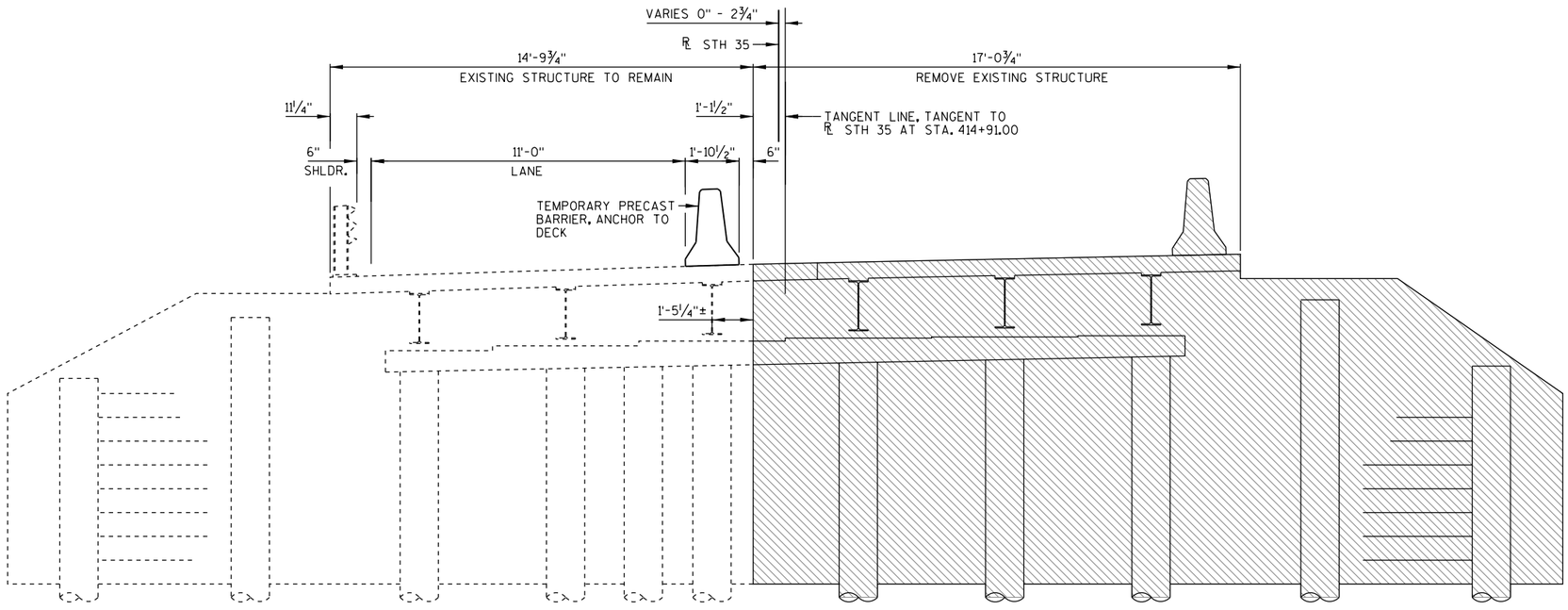
SUBSURFACE EXPLORATION-2

SHEET 5 OF 24
194

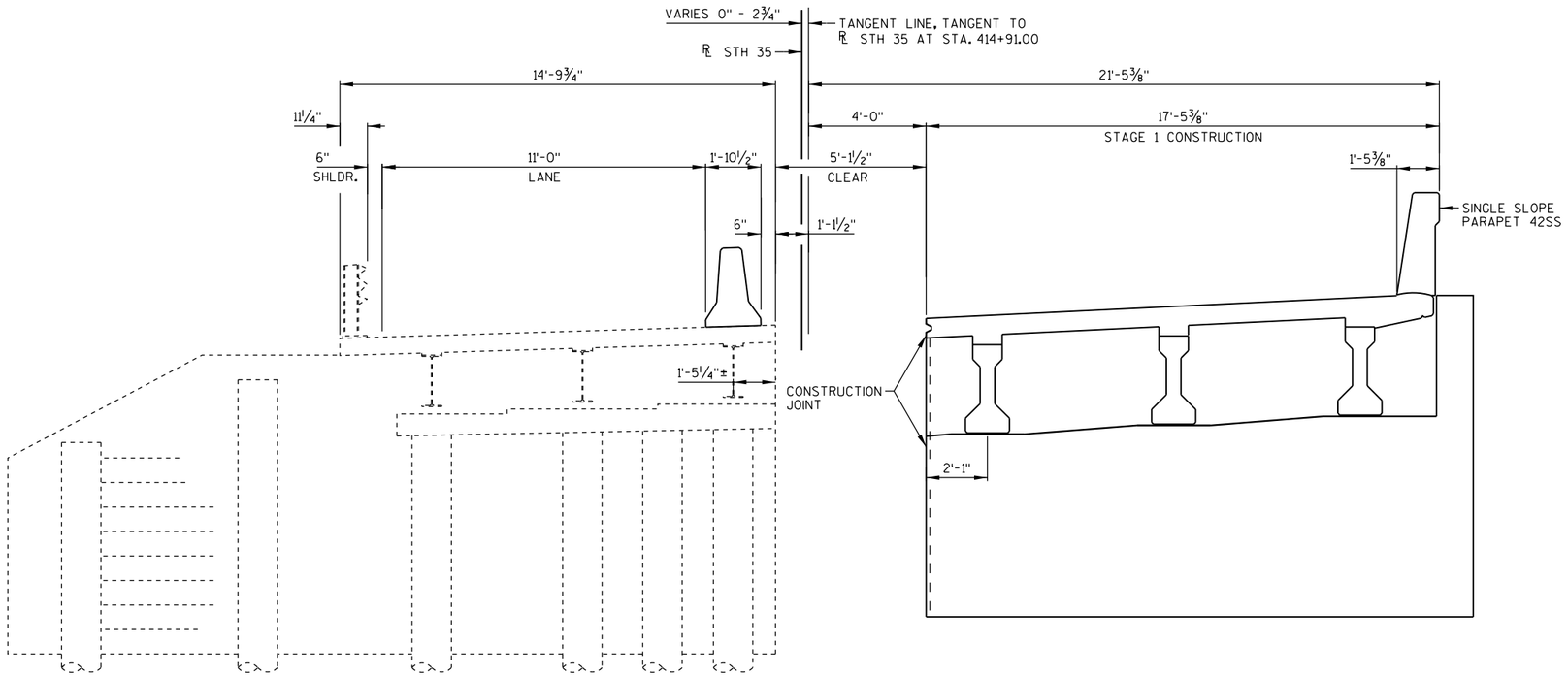
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BATCH PRINT SHEET 6 OF 24



STAGE 1 REMOVAL
LOOKING UPSTATION - (NW)



STAGE 1 CONSTRUCTION
LOOKING UPSTATION - (NW)

8

8

LEGEND

EXISTING STRUCTURE REMOVAL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

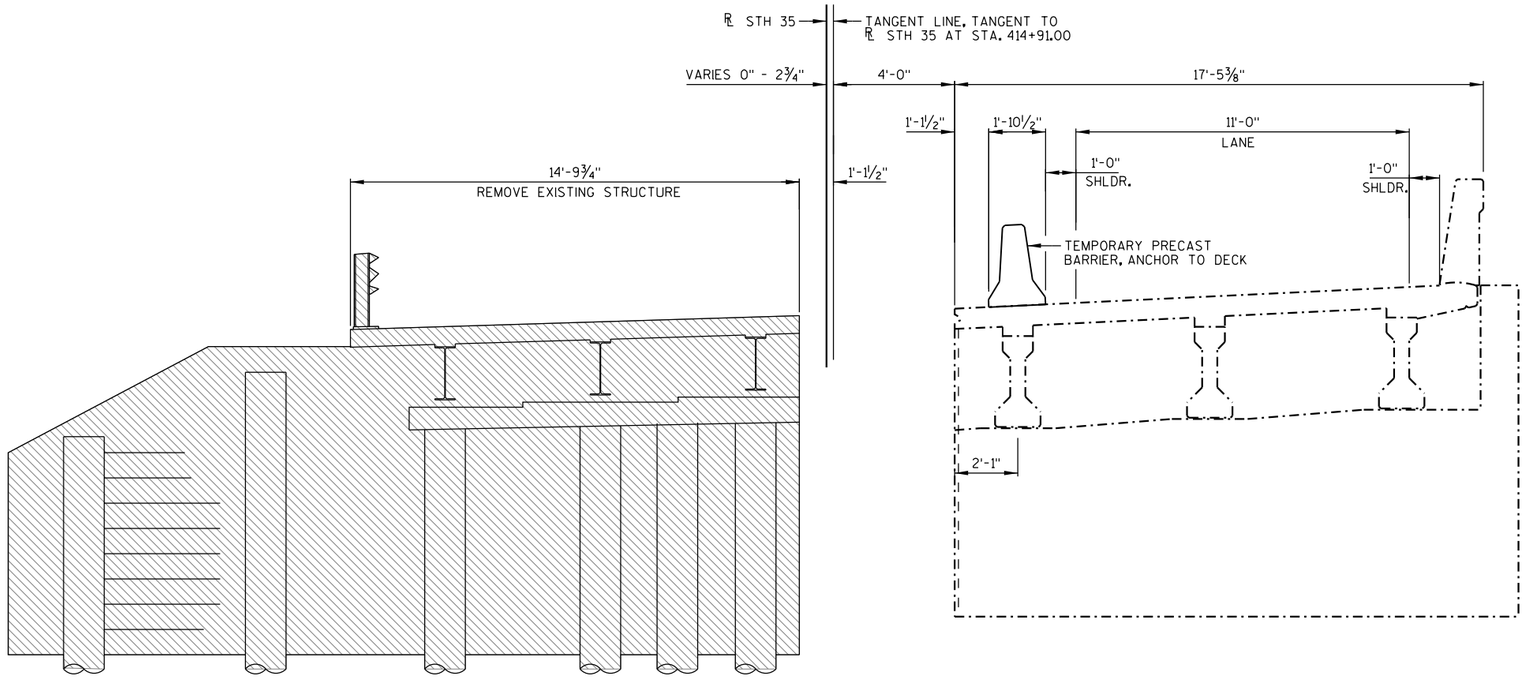
STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. MAH

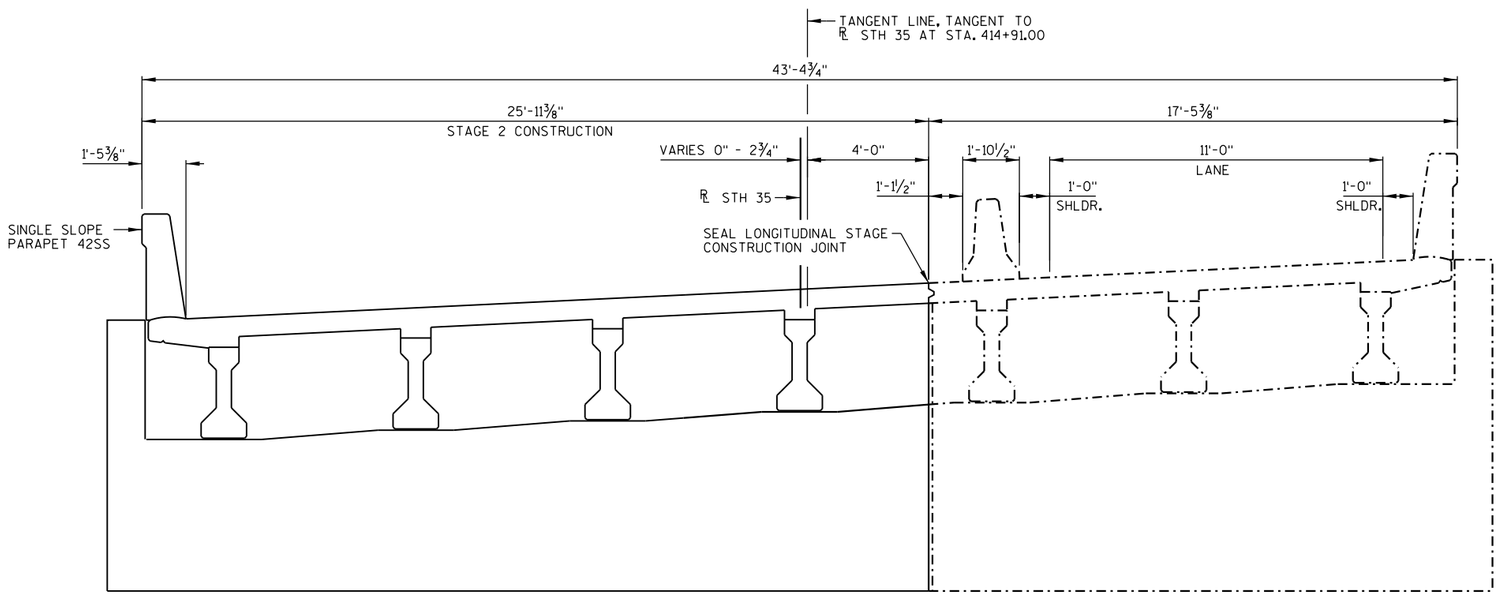
CONSTRUCTION STAGING - 1

SHEET 6 OF 24
195

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BATCH PRINT SHEET 7 OF 24



STAGE 2 REMOVAL
LOOKING UPSTATION - (NW)



STAGE 2 CONSTRUCTION
LOOKING UPSTATION - (NW)

8

LEGEND

EXISTING STRUCTURE REMOVAL

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

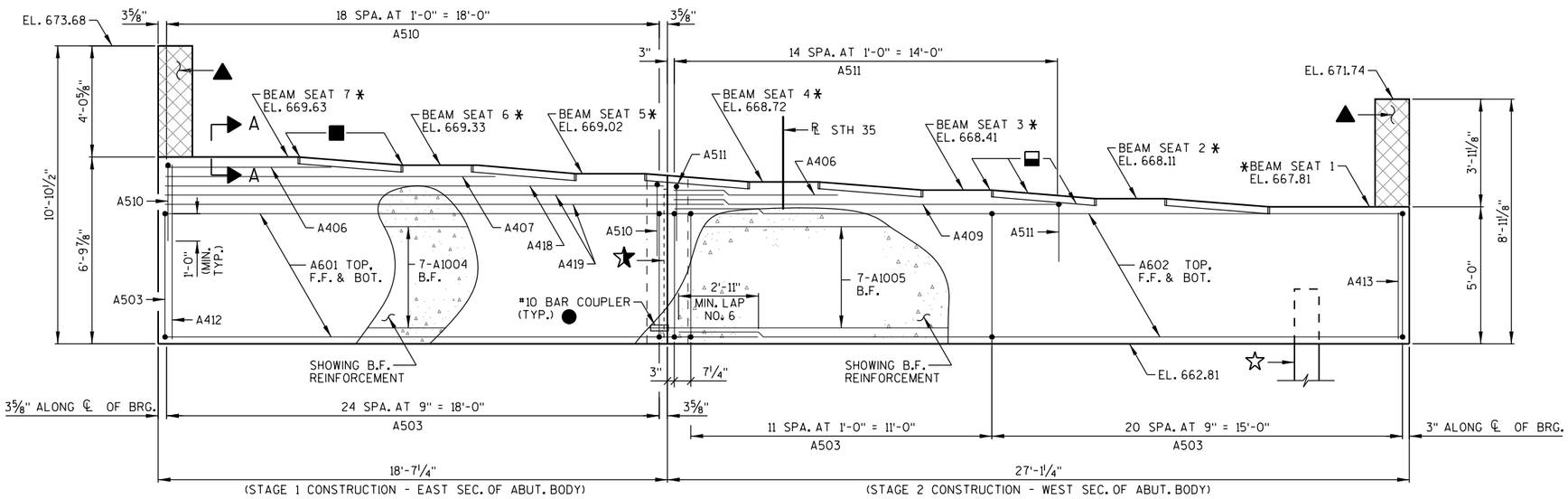
STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. MAH

CONSTRUCTION STAGING - 2

SHEET 7 OF 24
196

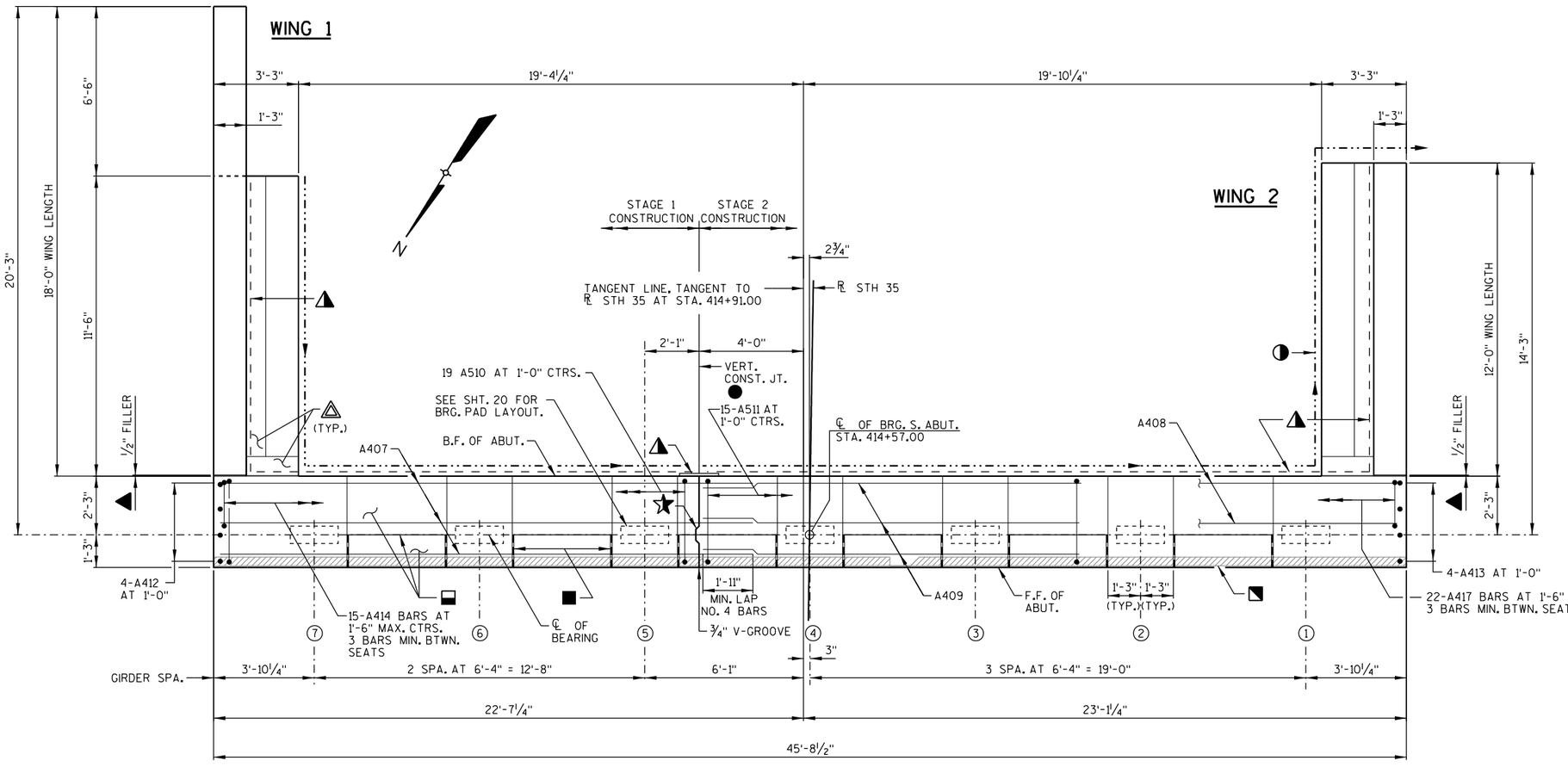
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BATCH PRINT SHEET 8 OF 24



ELEVATION
(LOOKING SOUTH)

NOTE:
SPACE A503 BARS TO MISS PILINGS.

WING 1

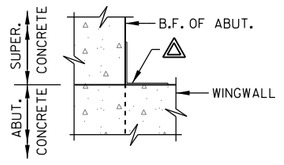


PLAN

NOTE
SEE SHT. 24 FOR BAR COUPLER DETAILS.

LEGEND

- ☆ SUPPORT ABUTMENTS ON PILING CIP CONCRETE 12¾×0.375-INCH. SEE FOUNDATION DATA ON SHEET 9 AND 13. PILE SPLICE DETAIL ON SHEET 11.
- ◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DRAIN BOTH ABUTMENTS TO DOWNSTREAM SIDE OF BRIDGE. ATTACH RODENT SHIELD AT ENDS OF PIPE. SEE SHT. 3.
- ▲ ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. 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.)
- ◭ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ◹ 4"×½" FILLER - TO EXTEND FULL LENGTH OF ABUTMENT BODY.
- □ OPTIONAL CONSTRUCTION JOINT KEYWAY FORMED BY A BEVELED 2"×6", WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE. ¾" BEVEL REQUIRED ON JOINT EDGES ON F.F., B.F. AND END OF WING.
- ⧋ PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING, HORIZONTAL IN THIS AREA.
- ■ ¾" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- ⬓ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING THE BEARING PADS AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".
- ★ VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY BEVELED 2" x 8". RUN BAR STEEL THRU JOINT. ¾" "V" GROOVE AT FRONT FACE. SEAL BACKFACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- Ⓧ INDICATES BEAM NUMBER
- * ELEVATIONS GIVEN ARE AT TOP OF CONCRETE ℄ OF BRG.
- ● USE BAR COUPLERS TO CONTINUE BAR STEEL THRU JOINT. SEE SHT. 24 FOR DETAILS.



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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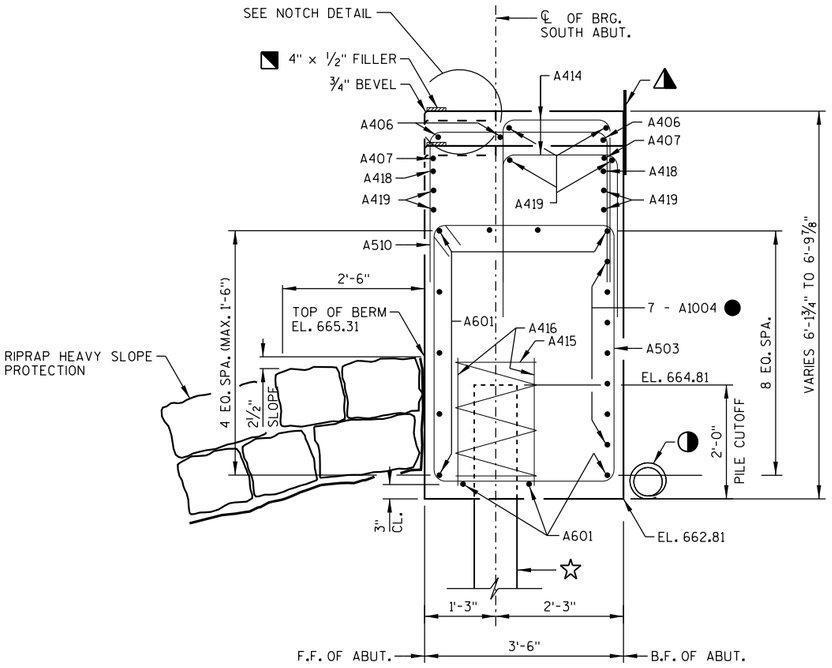
SOUTH ABUTMENT

SHEET 8 OF 24
197

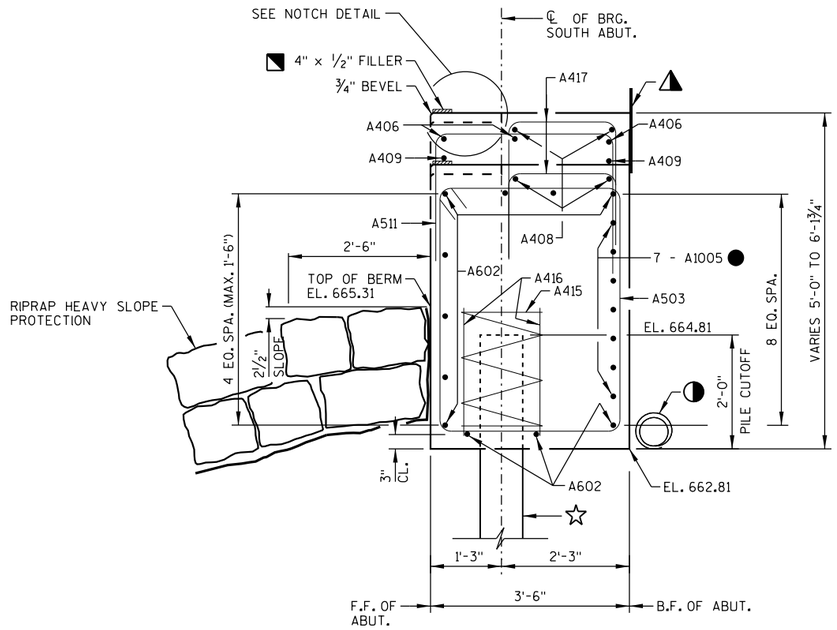
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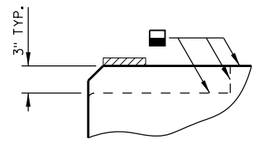
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BATCH PRINT SHEET 9 OF 24



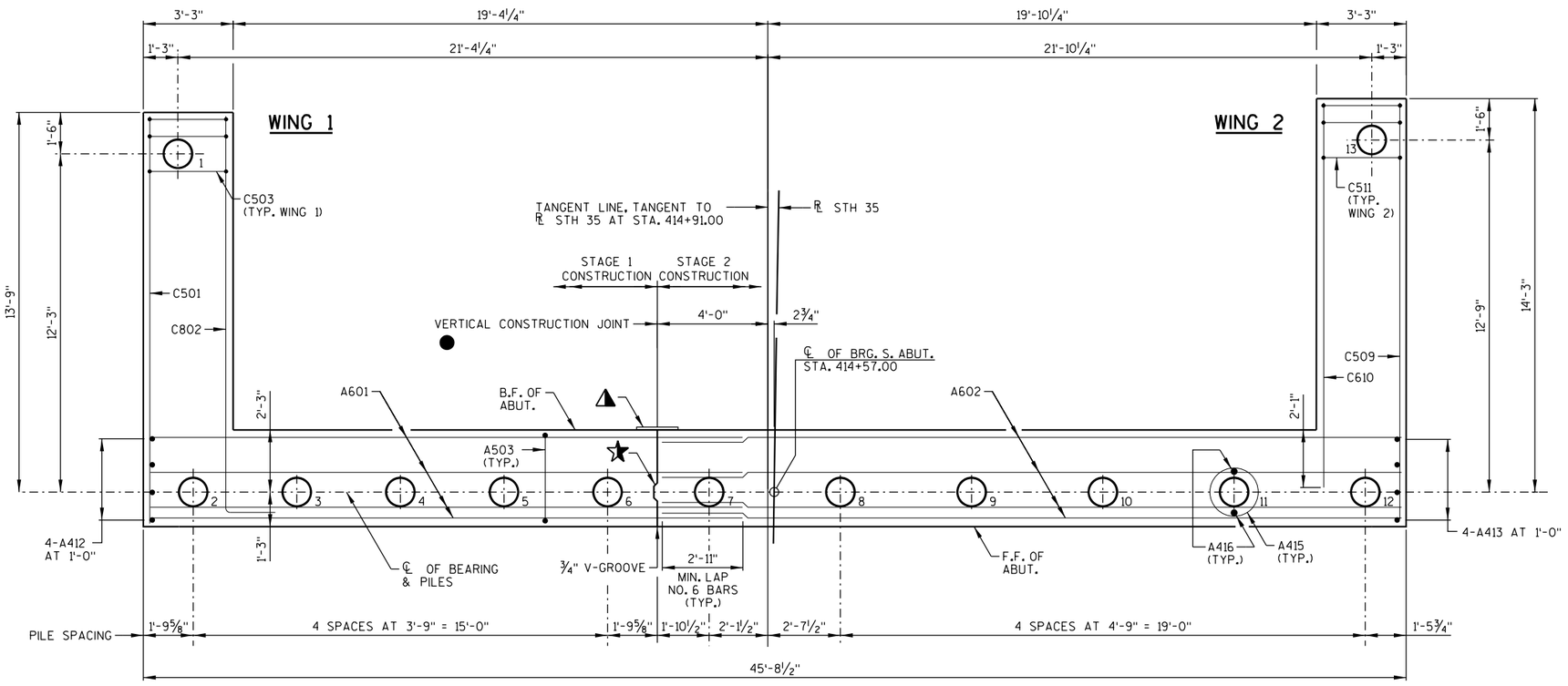
TYP. SECTION THRU BODY - STAGE 1
(LOOKING EAST)



TYP. SECTION THRU BODY - STAGE 2
(LOOKING EAST)



NOTCH DETAIL



PILE PLAN

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 8.

PILE NOTE

SOUTH ABUTMENT TO BE SUPPORTED ON PILING CIP CONCRETE 12¾x0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 70'-0" LONG.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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SOUTH ABUTMENT PILE PLAN AND SECTIONS

SHEET 9 OF 24
198

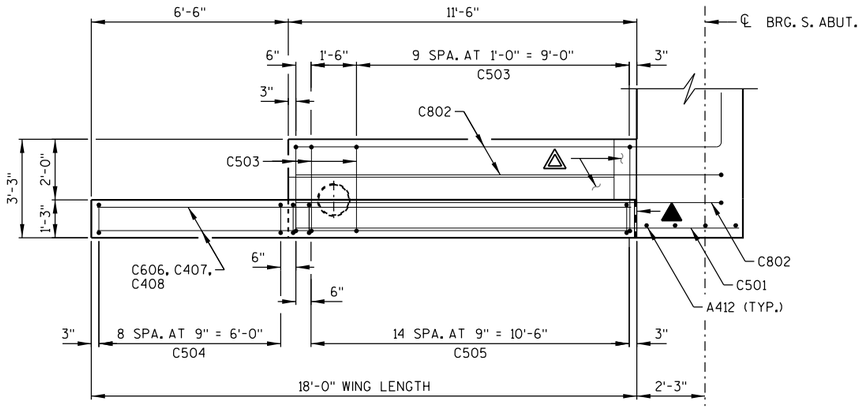
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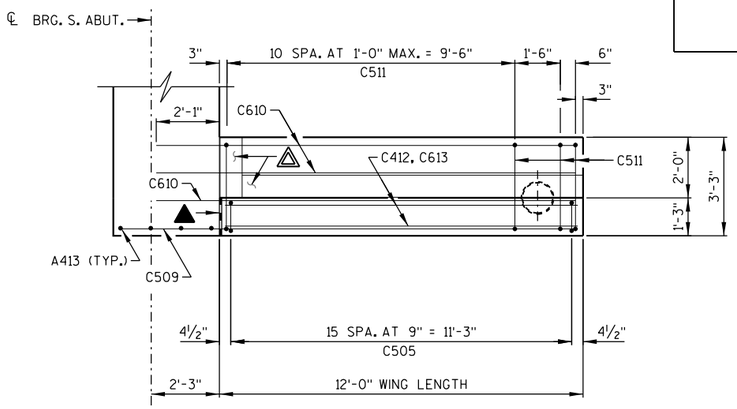
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BATCH PRINT SHEET 10 OF 24

STATE PROJECT NUMBER

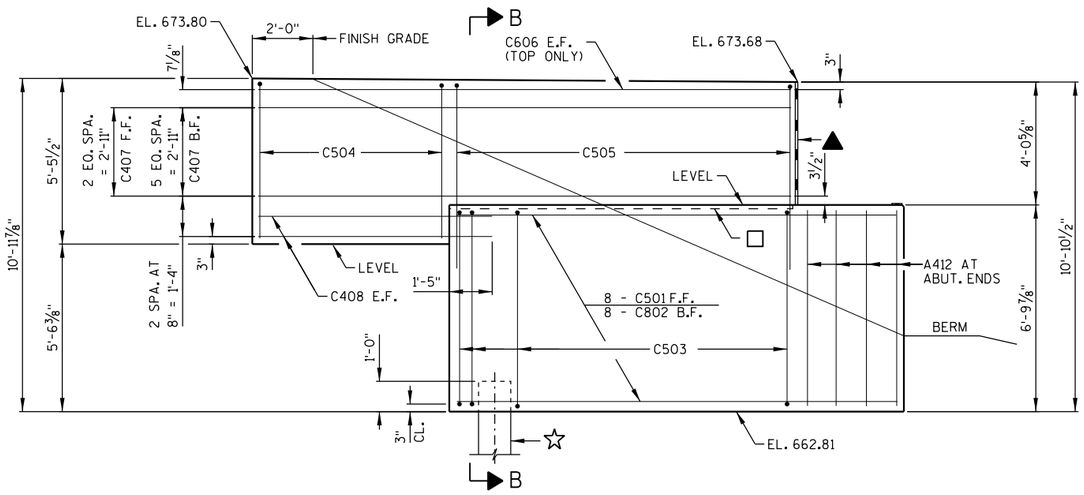
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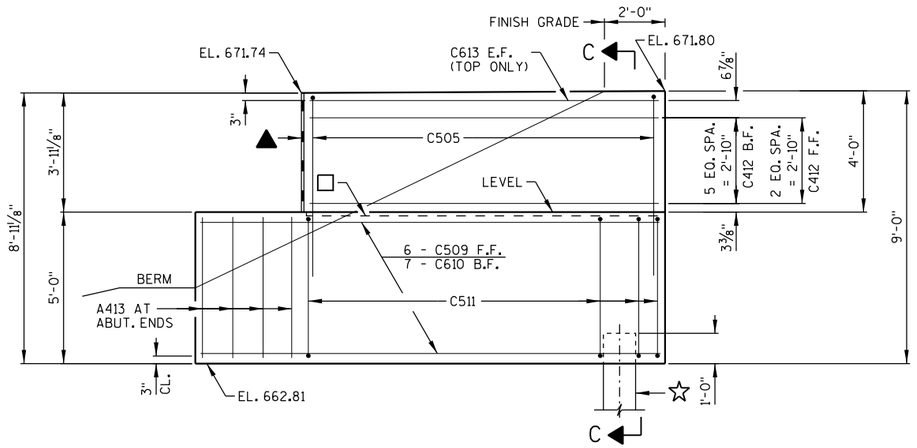
PLAN WING 1



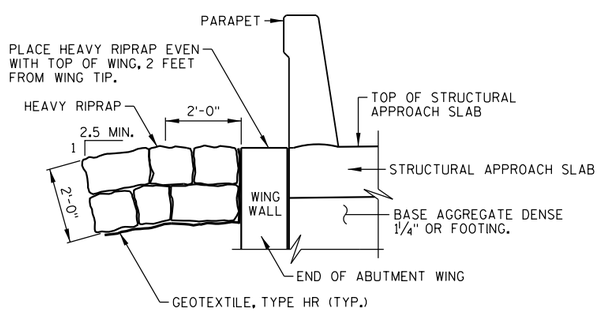
PLAN WING 2



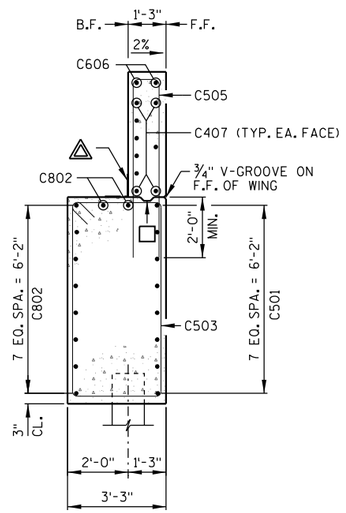
ELEVATION WING 1



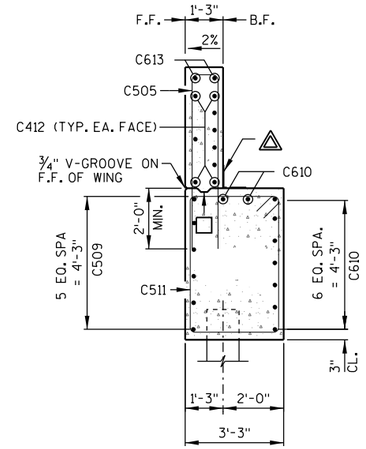
ELEVATION WING 2



TYPICAL FILL SECTION AT WING TIPS



SECTION B-B



SECTION C-C

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 8.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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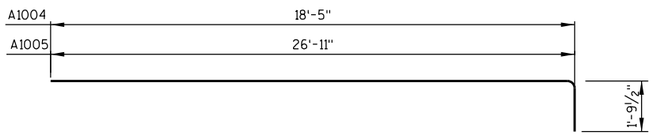
WINGS 1 AND 2

SHEET 10 OF 24
199

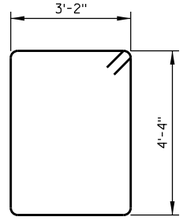
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BATCH PRINT SHEET 11 OF 24

STATE PROJECT NUMBER

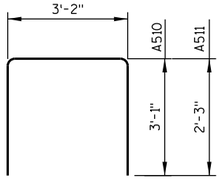
7160-04-70



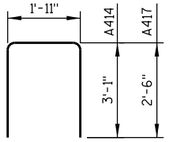
A1004, A1005



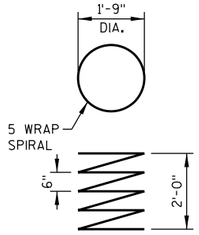
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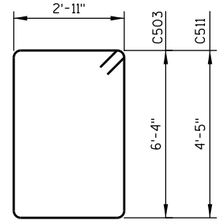
A510, A511



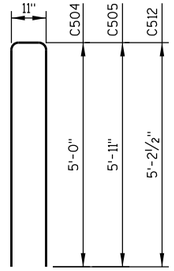
A414, A417



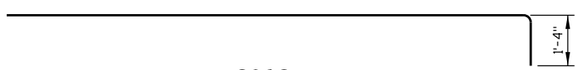
A415



C503, C511



C504, C505, C512

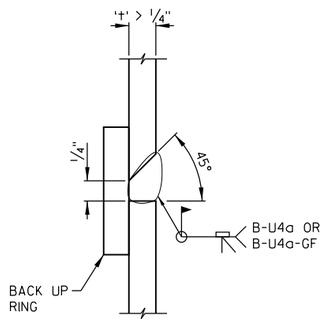


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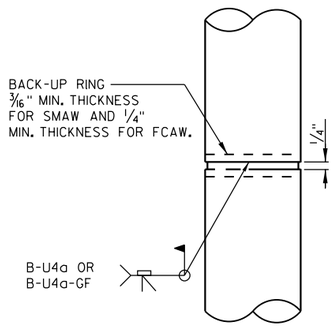
BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS						TOTAL WEIGHT = 4,160 LBS
A601	11	-----	21-7			ABUT. TOP, F.F. & BOT. HORIZ.
A602	-----	11	26-9			ABUT. TOP, F.F. & BOT. HORIZ.
A503	25	33	15-8	X		ABUT. STIRRUP VERT.
A1004	7	-----	19-11	X		ABUT. B.F. HORIZ.
A1005	-----	7	28-5	X		ABUT. B.F. HORIZ.
A406	3	3	6-0			ABUT. TOP HORIZ.
A407	2	-----	12-0			ABUT. TOP HORIZ.
A408	-----	2	26-9			ABUT. TOP HORIZ.
A409	-----	2	14-1			ABUT. TOP HORIZ.
A510	19	-----	9-1	X		ABUT. TOP VERT.
A511	-----	15	7-5	X		ABUT. TOP VERT.
A412	4	-----	6-5			ABUT. - EAST END VERT.
A413	-----	4	4-7			ABUT. - WEST END VERT.
A414	15	-----	7-11	X		ABUT. TOP VERT.
A415	5	6	28-0	X		ABUT. PILES VERT.
A416	10	12	2-3			ABUT. PILES VERT.
A417	-----	22	6-9	X		ABUT. TOP VERT.
A418	2	-----	18-2			ABUT. TOP HORIZ.
A419	6	-----	20-6			ABUT. TOP HORIZ.
COATED BARS						TOTAL WEIGHT = 2,080 LBS
C501	8	-----	14-8			WING 1 F.F. HORIZ.
C802	10	-----	15-5	X		WING 1 B.F. HORIZ.
C503	12	-----	19-2	X		WING 1 STIRRUP VERT.
C504	9	-----	10-8	X		WING 1 TOP VERT.
C505	16	16	12-6	X		WING 1 & 2 TOP VERT.
C606	2	-----	17-6			WING 1 TOP HORIZ.
C407	9	-----	17-6			WING 1 F.F & B.F. HORIZ.
C408	4	-----	7-8			WING 1 F.F. & B.F. HORIZ.
C509	-----	6	15-2			WING 2 F.F. HORIZ.
C610	-----	9	13-11			WING 2 B.F. HORIZ.
C511	-----	13	15-4	X		WING 2 STIRRUP VERT.
C412	-----	9	11-7	X		WING 2 TOP HORIZ.
C613	-----	2	11-6			WING 2 TOP HORIZ.



C.I.P. PILE WELD DETAIL



C.I.P. 'PIPE PILE'

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STRUCTURES (LB)
STAGE 1	29	1,270	1,890
STAGE 2	30	810	2,270

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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SOUTH ABUTMENT DETAILS

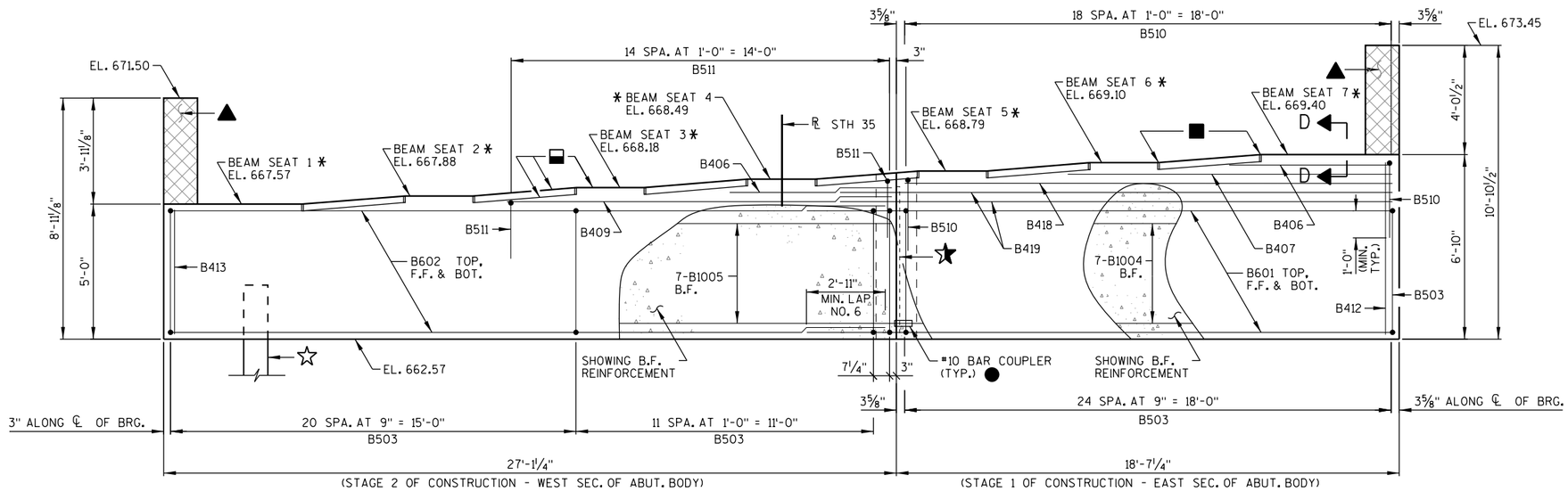
SHEET 11 OF 24
200

8

8

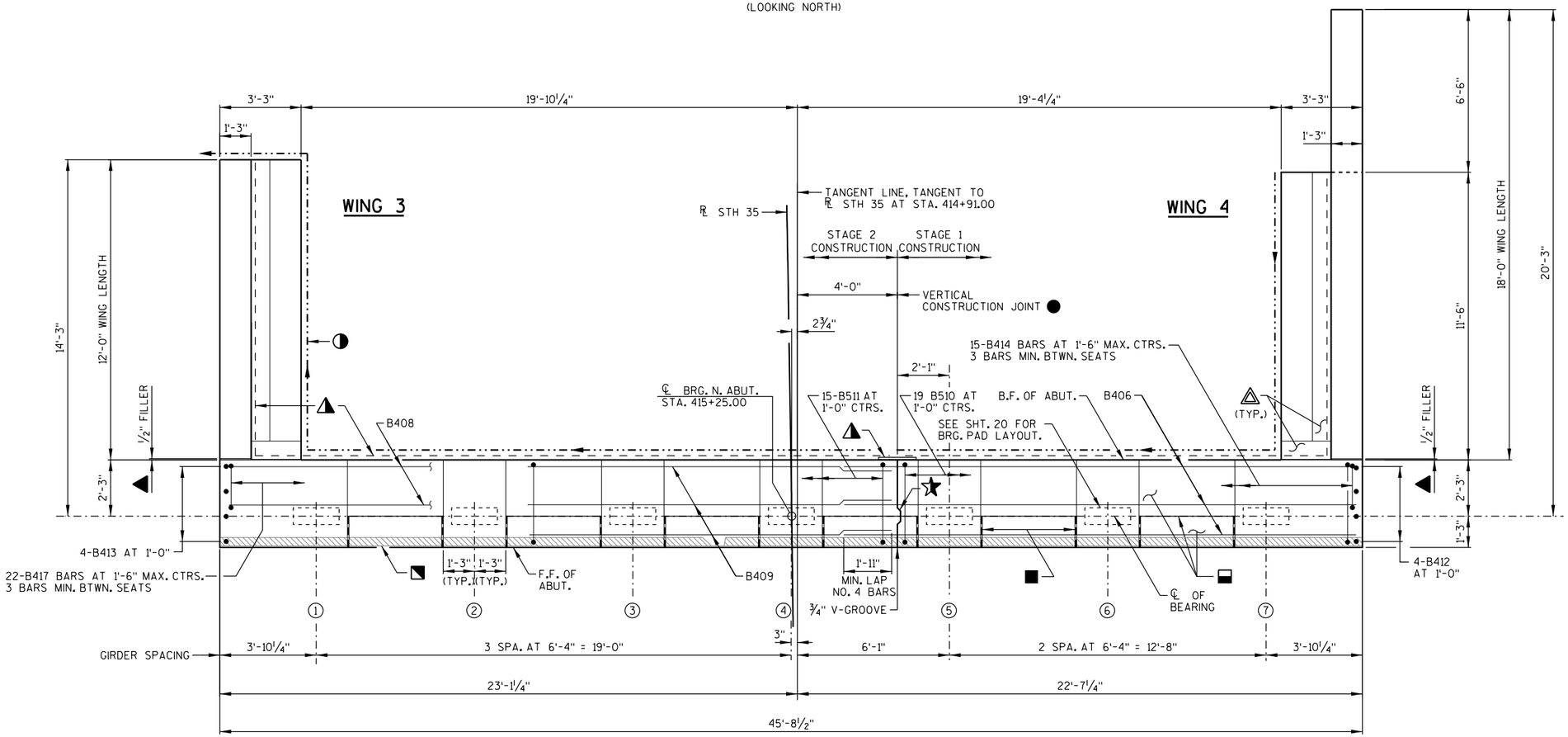
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7160-04-70

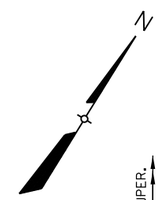


NOTE:
SPACE B503 BARS TO MISS PILINGS.

ELEVATION
(LOOKING NORTH)



PLAN



SECTION D-D

NOTE
SEE SHT. 24 FOR BAR COUPLER DETAILS.

LEGEND
FOR SYMBOL DESCRIPTIONS SEE SHT. 8.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. MAH

NORTH ABUTMENT

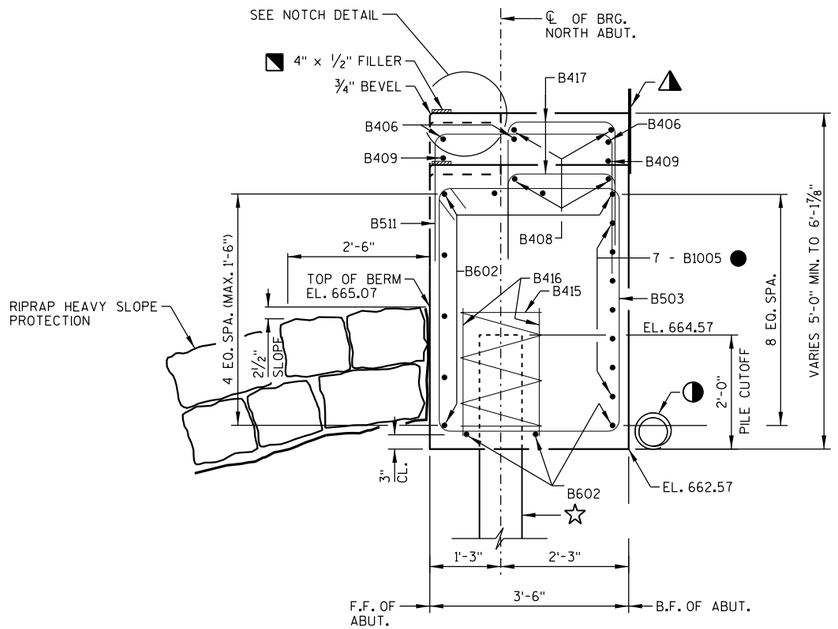
SHEET 12 OF 24
201

8

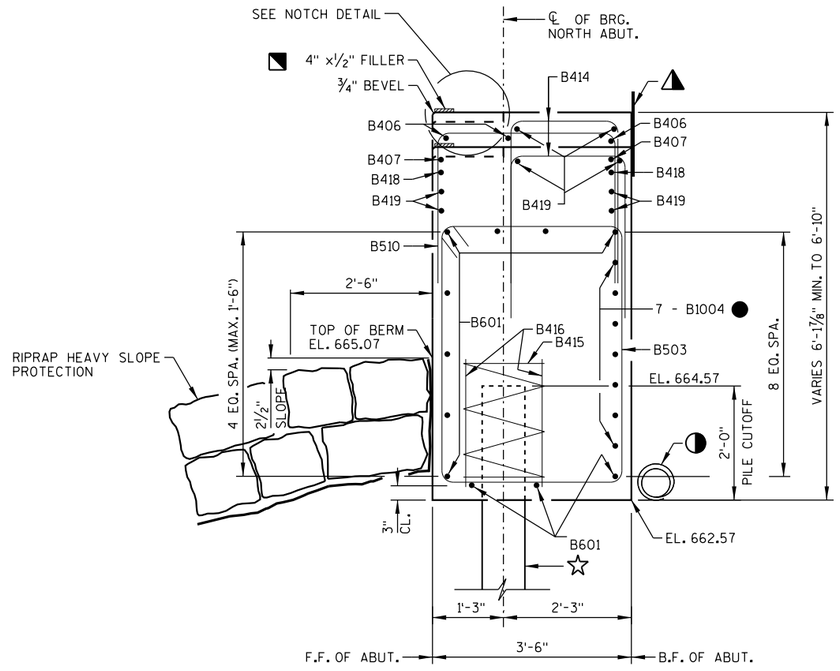
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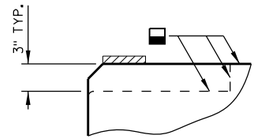
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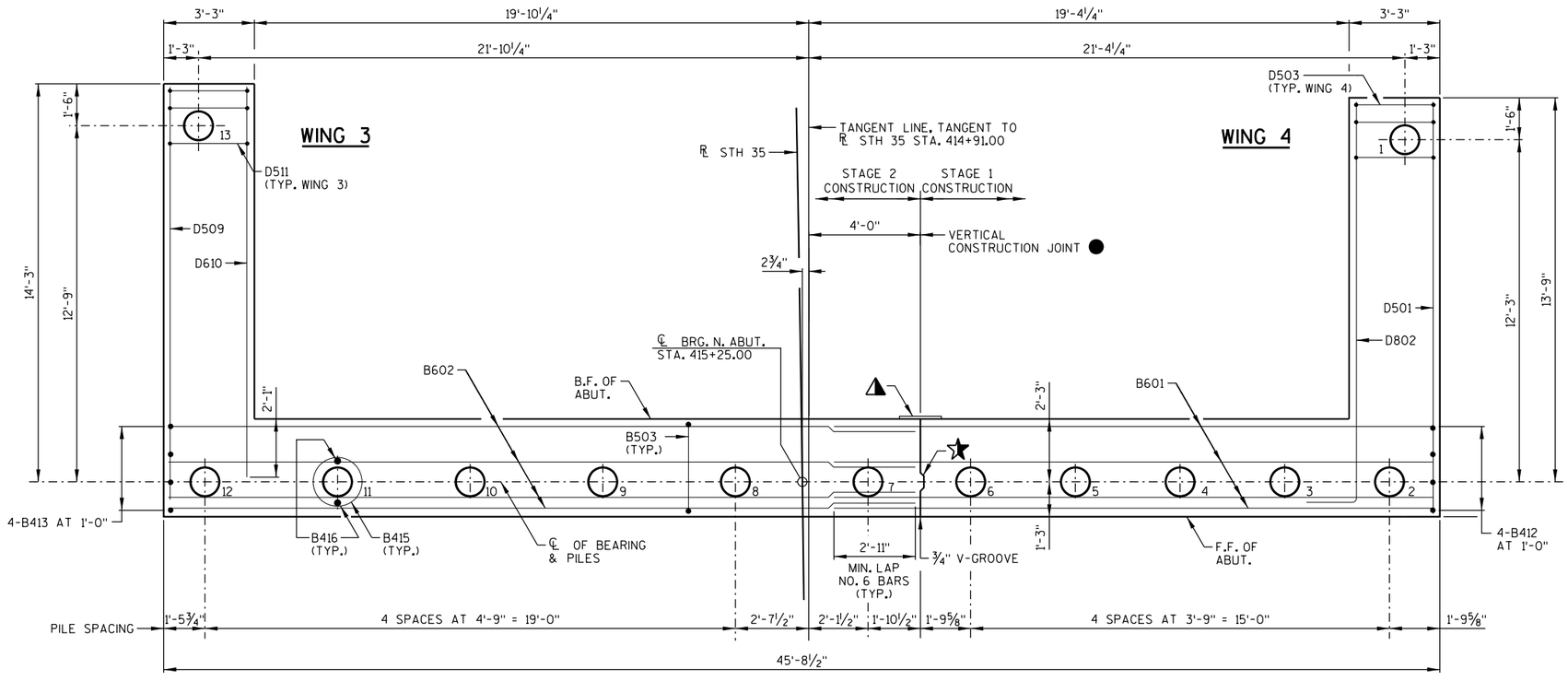
TYP. SECTION THRU BODY - STAGE 2
(LOOKING WEST)



TYP. SECTION THRU BODY - STAGE 1
(LOOKING WEST)



NOTCH DETAIL



PILE PLAN

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 8.

PILE NOTE

NORTH ABUTMENT TO BE SUPPORTED ON PILING CIP CONCRETE 12¾×0.375-INCH. PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 85'-0" LONG.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. MAH

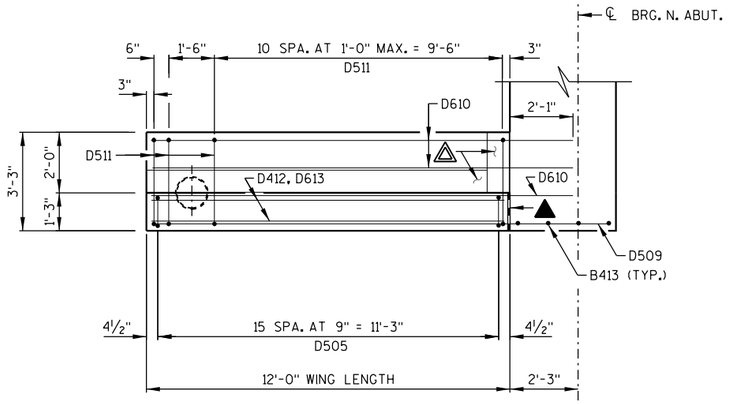
NORTH ABUTMENT PILE PLAN AND SECTIONS

SHEET 13 OF 24
202

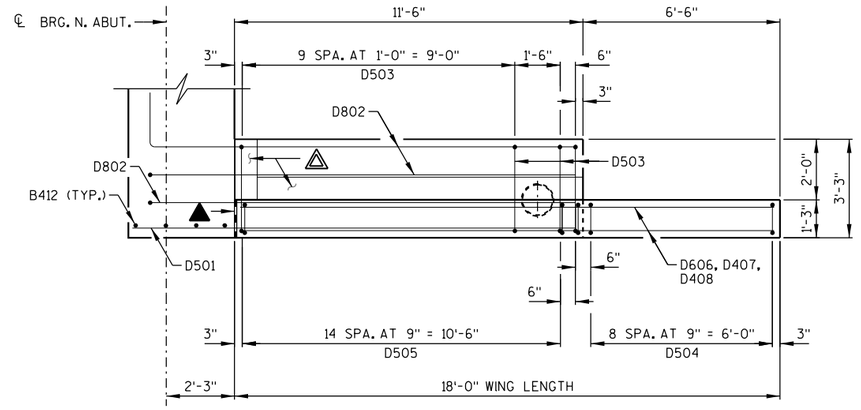
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STATE PROJECT NUMBER

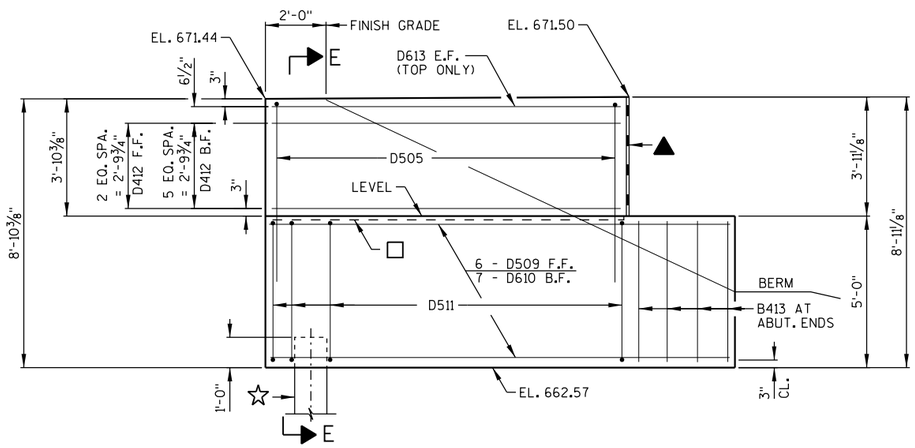
7160-04-70



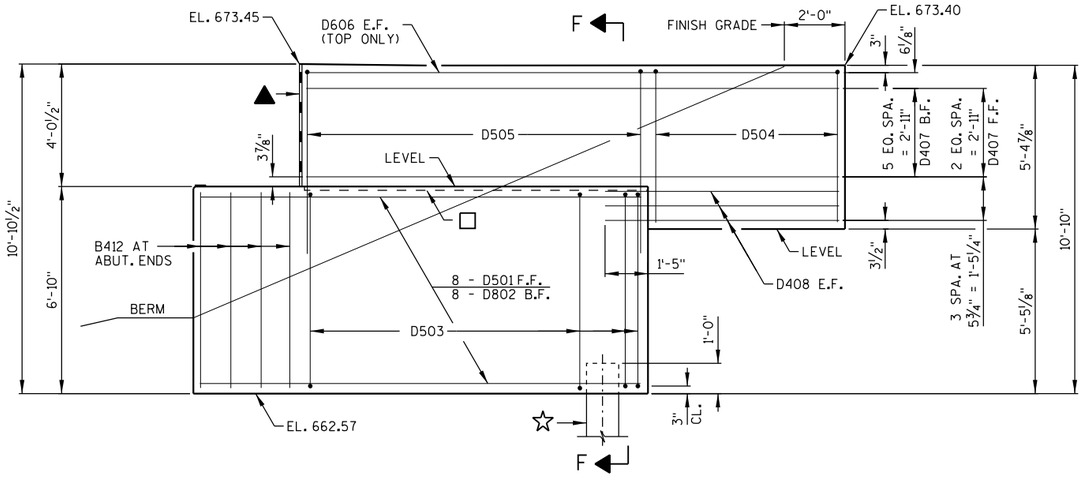
PLAN WING 3



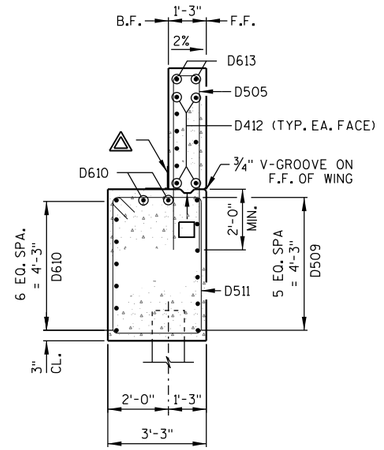
PLAN WING 4



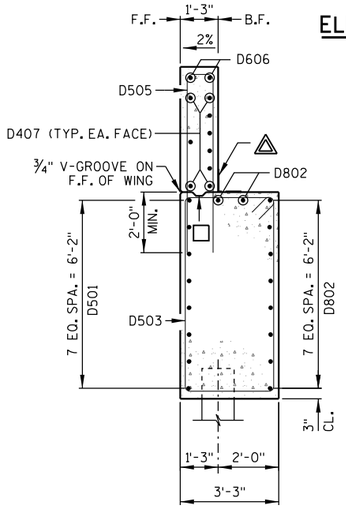
ELEVATION WING 3



ELEVATION WING 4



SECTION E-E



SECTION F-F

NOTE

FOR TYPICAL FILL SECTION AT WING TIPS, SEE DETAIL ON SHEET 10.

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 8.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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WINGS 3 AND 4

SHEET 14 OF 24

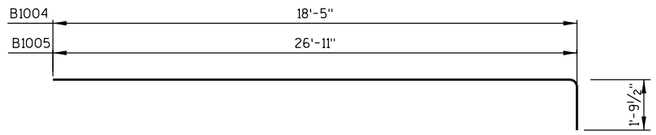
203

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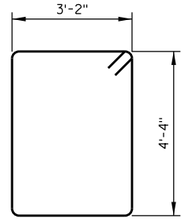
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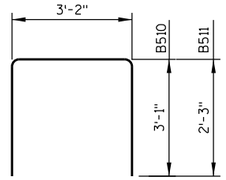
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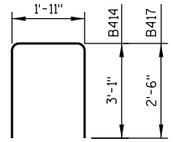
B1004, B1005



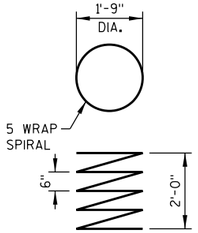
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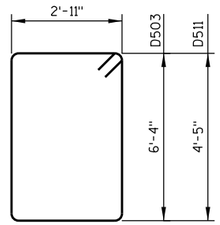
B510, B511



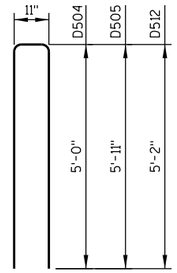
B414, B417



B415



D503, D511



D504, D505, D512



D802

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS						TOTAL WEIGHT = 4,160 LBS
B601	11	-----	21 - 7			ABUT. TOP, F.F. & BOT. HORIZ.
B602	-----	11	26 - 9			ABUT. TOP, F.F. & BOT. HORIZ.
B503	25	33	15 - 8	X		ABUT. STIRRUP VERT.
B1004	7	-----	19 - 11	X		ABUT. B.F. HORIZ.
B1005	-----	7	28 - 5	X		ABUT. B.F. HORIZ.
B406	3	3	6 - 0			ABUT. TOP HORIZ.
B407	2	-----	12 - 0			ABUT. TOP HORIZ.
B408	-----	2	26 - 9			ABUT. TOP HORIZ.
B409	-----	2	14 - 1			ABUT. TOP HORIZ.
B510	19	-----	9 - 1	X		ABUT. TOP VERT.
B511	-----	15	7 - 5	X		ABUT. TOP VERT.
B412	4	-----	6 - 5			ABUT. - EAST END VERT.
B413	-----	4	4 - 7			ABUT. - WEST END VERT.
B414	15	-----	7 - 11	X		ABUT. TOP - EAST SECTION VERT.
B415	5	6	28 - 0	X		ABUT. PILES VERT.
B416	10	12	2 - 3			ABUT. PILES VERT.
B417	-----	22	6 - 9	X		ABUT. TOP - WEST SECTION VERT.
B418	2	-----	18 - 2			ABUT. TOP
B419	6	-----	20 - 6			ABUT. TOP
COATED BARS						TOTAL WEIGHT = 2,090 LBS
D501	8	-----	14 - 8			WING 4 F.F. HORIZ.
D802	10	-----	15 - 5	X		WING 4 B.F. HORIZ.
D503	12	-----	19 - 2	X		WING 4 STIRRUP VERT.
D504	9	-----	10 - 8	X		WING 4 TOP VERT.
D505	16	16	12 - 6	X		WING 3 & 4 TOP VERT.
D606	2	-----	17 - 6			WING 4 TOP HORIZ.
D407	9	-----	17 - 6			WING 4 F.F & B.F. HORIZ.
D408	6	-----	7 - 8			WING 4 F.F. & B.F. HORIZ.
D509	-----	6	15 - 2			WING 3 F.F. HORIZ.
D610	-----	9	13 - 11			WING 3 B.F. HORIZ.
D511	-----	13	15 - 4	X		WING 3 STIRRUP VERT.
D412	-----	9	11 - 7	X		WING 3 TOP HORIZ.
D613	-----	2	11 - 6			WING 3 TOP HORIZ.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STRUCTURES (LB)
STAGE 1	29	1,280	1,890
STAGE 2	30	810	2,270

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

DRAWN BY KAM | PLANS CK'D. MAH

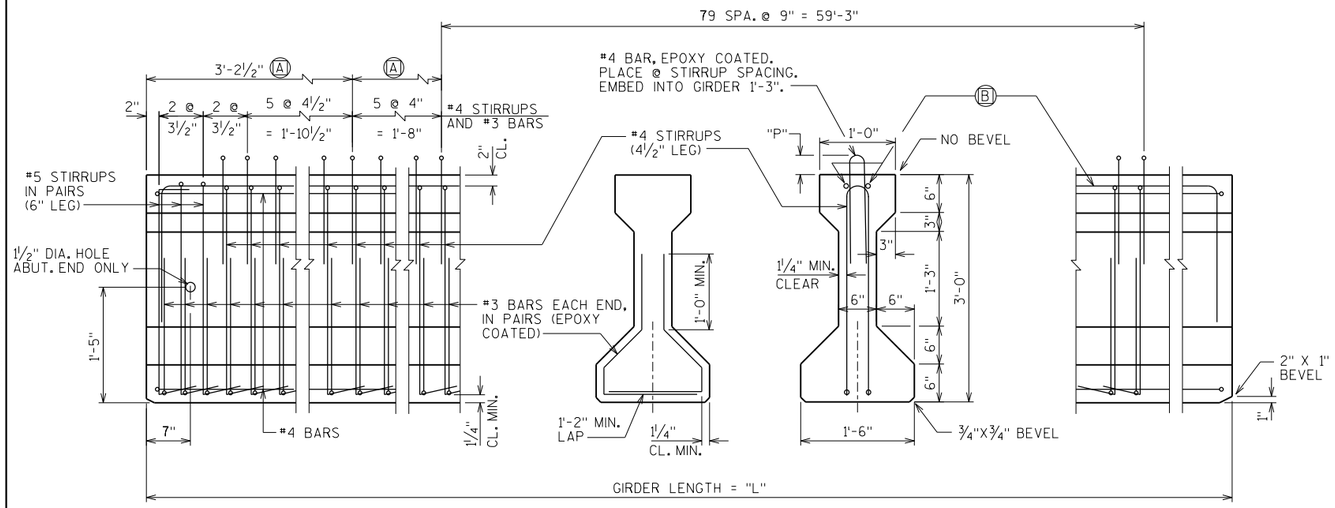
NORTH ABUTMENT DETAILS

SHEET 15 OF 24
204

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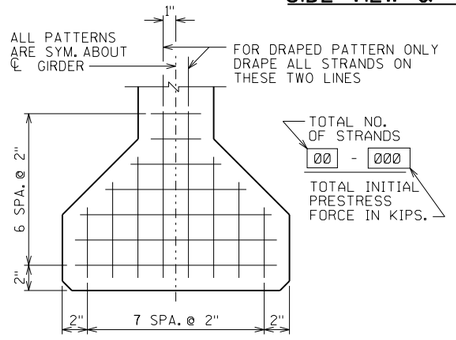
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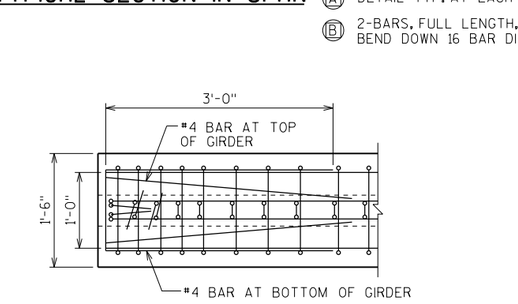
SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

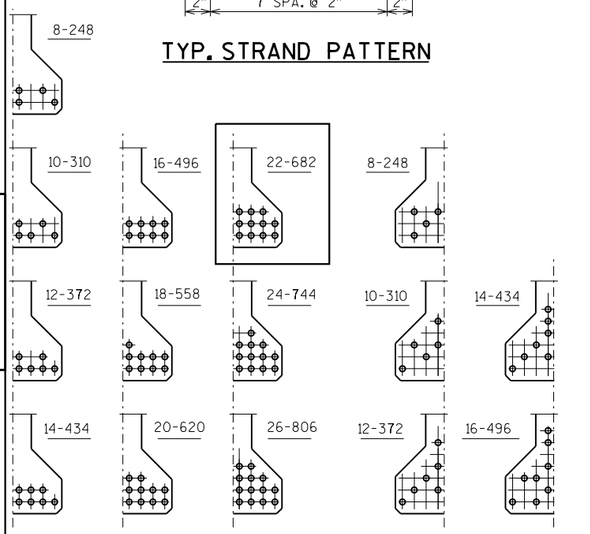
Ⓑ 2-BARS, FULL LENGTH, MIN. LAP 2'-4". BEND DOWN 16 BAR DIA. AT ENDS.



TYP. STRAND PATTERN



TOP VIEW OF GIRDER ENDS

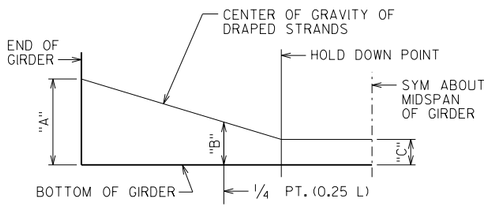


DRAPED PATTERN

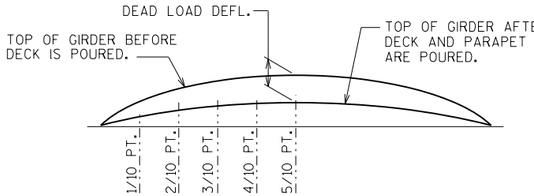
0.5"ϕ STRANDS

UNDRAPED PATTERN

0.5"ϕ STRANDS



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	2.13

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

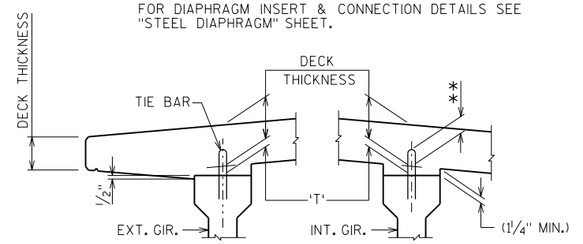
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.5" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



DECK HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FEET)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (P.S.I.)	"P" (IN.) 1ST 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1 - 7	69	0.32	0.63	0.88	1.03	1.08	1.03	0.88	0.63	0.32	8,000	7	6.5	7	0.5	22	6,800	32	11	14	4		

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STRUCTURE B-6-205

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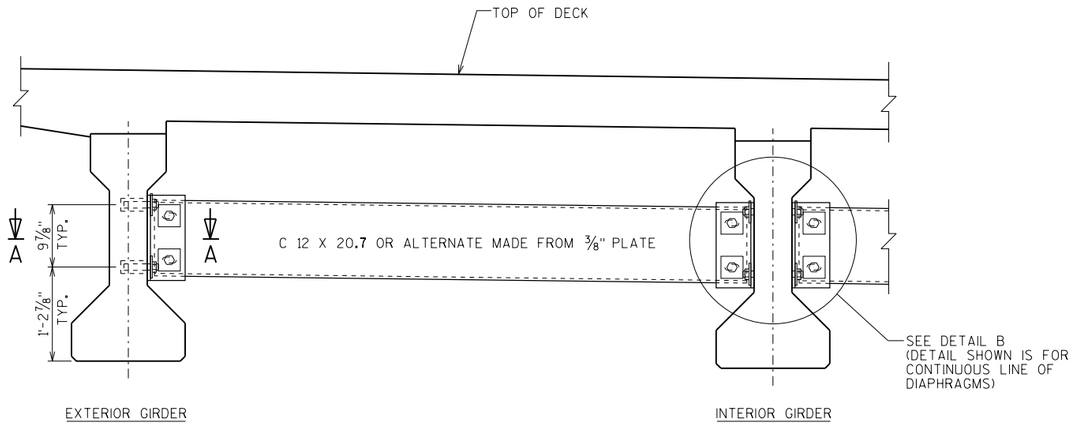
36" PRESTRESSED GIRDER

SHEET 16 OF 24
205

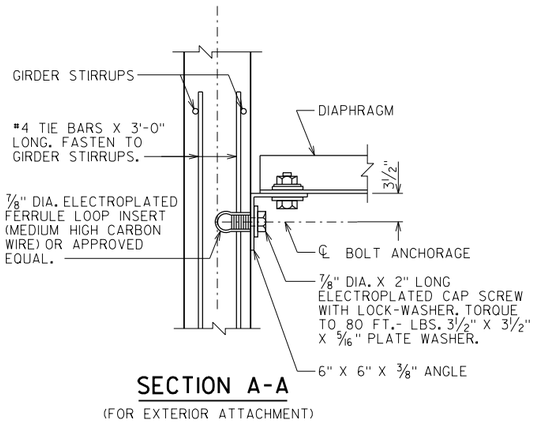
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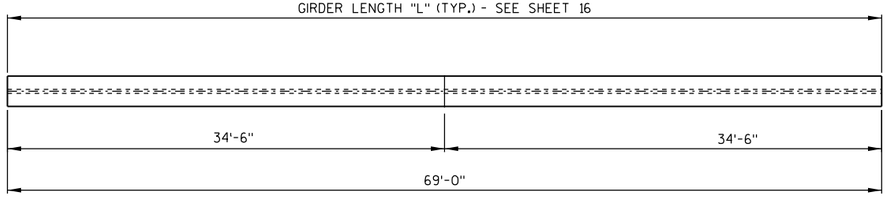


PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



DIAPHRAGM CONNECTION SPACING

NOTES

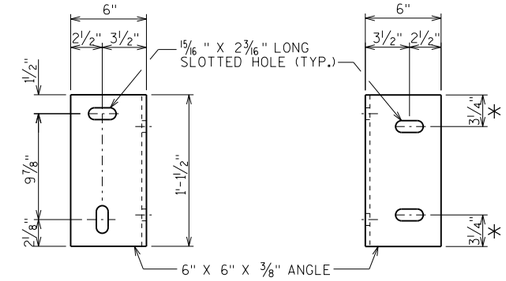
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-6-205", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

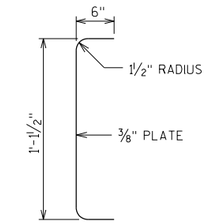
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

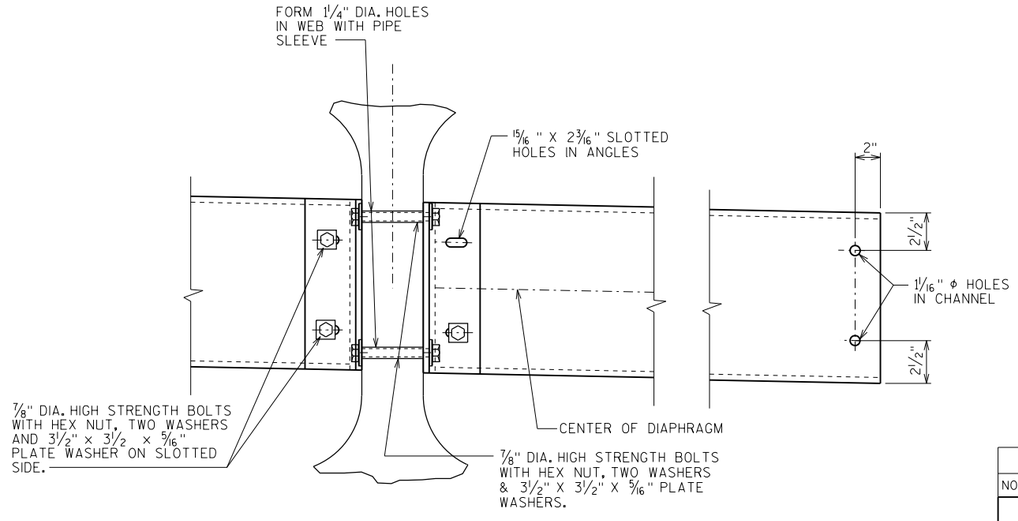


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM



SECTION THRU ALTERNATE DIAPHRAGM



(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

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STRUCTURE B-6-205

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INTERMEDIATE STEEL DIAPHRAGM

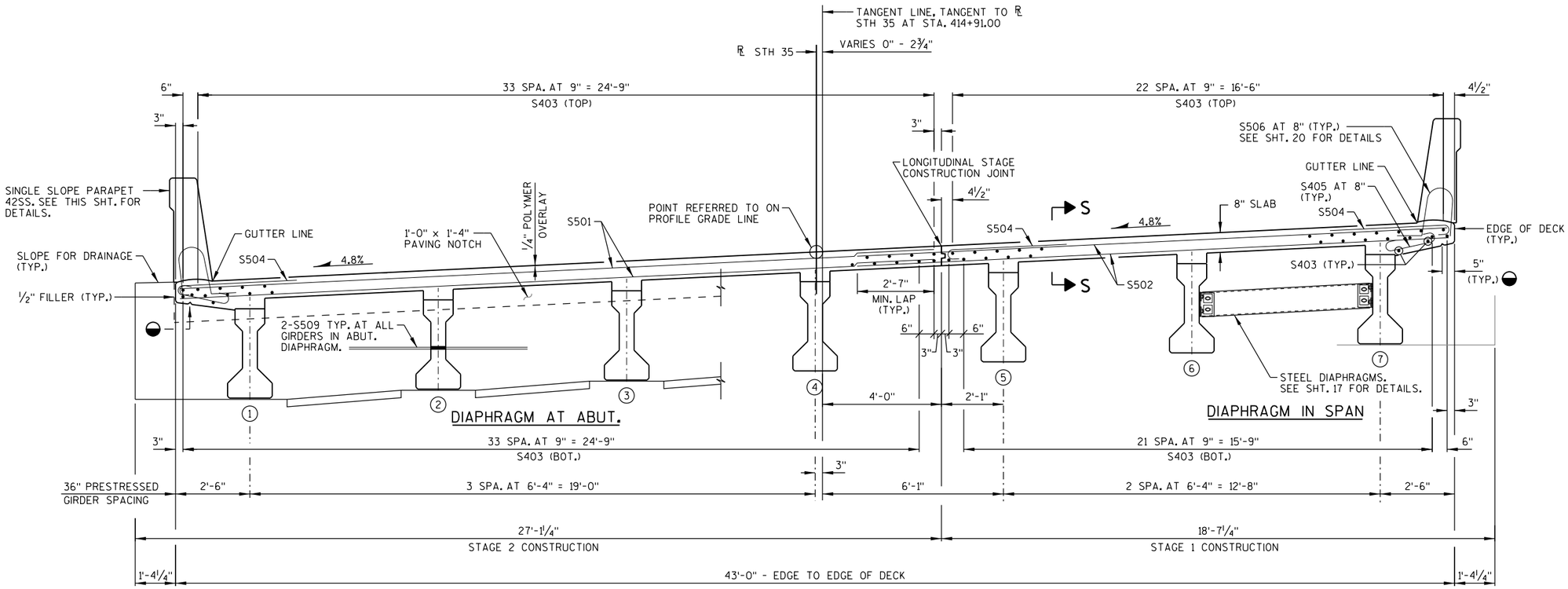
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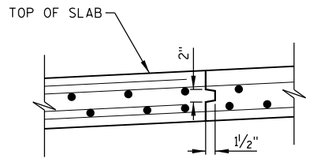
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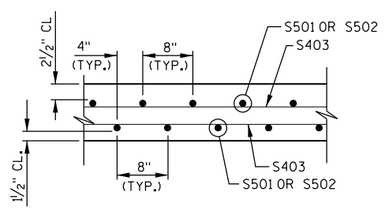


CROSS SECTION THRU ROADWAY

(LOOKING UPSTATION)



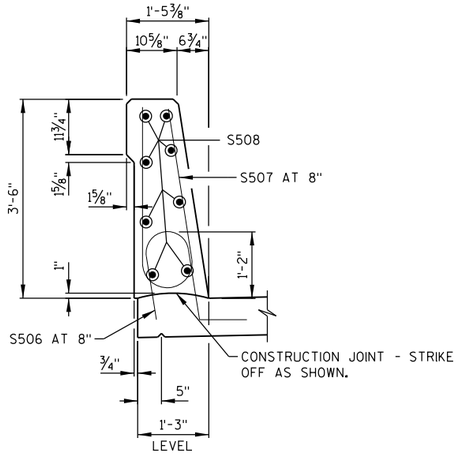
SECTION THRU LONGITUDINAL JOINT



SECTION S-S

TOP OF DECK ELEVATIONS

	CL BRG. S. ABUT.	1/10 PT.	2/10 PT.	3/10 PT.	4/10 PT.	5/10 PT.	6/10 PT.	7/10 PT.	8/10 PT.	9/10 PT.	CL BRG. N. ABUT.
EOD	671.74	671.71	671.68	671.66	671.63	671.61	671.59	671.56	671.54	671.52	671.50
BEAM 1	671.80	671.77	671.74	671.72	671.69	671.67	671.65	671.62	671.60	671.58	671.56
BEAM 2	672.10	672.07	672.05	672.02	672.00	671.97	671.95	671.93	671.91	671.89	671.87
BEAM 3	672.41	672.38	672.35	672.33	672.30	672.28	672.25	672.23	672.21	672.19	672.17
BEAM 4	672.71	672.68	672.66	672.63	672.61	672.58	672.56	672.54	672.52	672.50	672.48
STAGE CONST. JOINT	672.91	672.89	672.86	672.83	672.81	672.79	672.76	672.74	672.72	672.70	672.68
BEAM 5	673.01	672.99	672.96	672.93	672.91	672.89	672.86	672.84	672.82	672.80	672.78
BEAM 6	673.32	673.29	673.26	673.24	673.21	673.19	673.17	673.14	673.12	673.10	673.08
BEAM 7	673.62	673.59	673.57	673.54	673.52	673.49	673.47	673.45	673.43	673.41	673.39
EOD	673.68	673.65	673.63	673.60	673.58	673.57	673.53	673.51	673.49	673.47	673.45



SINGLE SLOPE PARAPET 42SS ON SUPERSTRUCTURE

LEGEND

- ◒ ¾" V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUT. DIAPHRAGM.
- ◭ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- ★ VERTICAL CONSTRUCTION JOINT KEYWAY FORMED BY BEVELED 2" x 8". RUN BAR STEEL THRU JOINT. ¾" "V" GROOVE AT FRONT FACE. SEAL BACKFACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
- Ⓧ INDICATES BEAM NUMBER

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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SUPERSTRUCTURE CROSS SECTION

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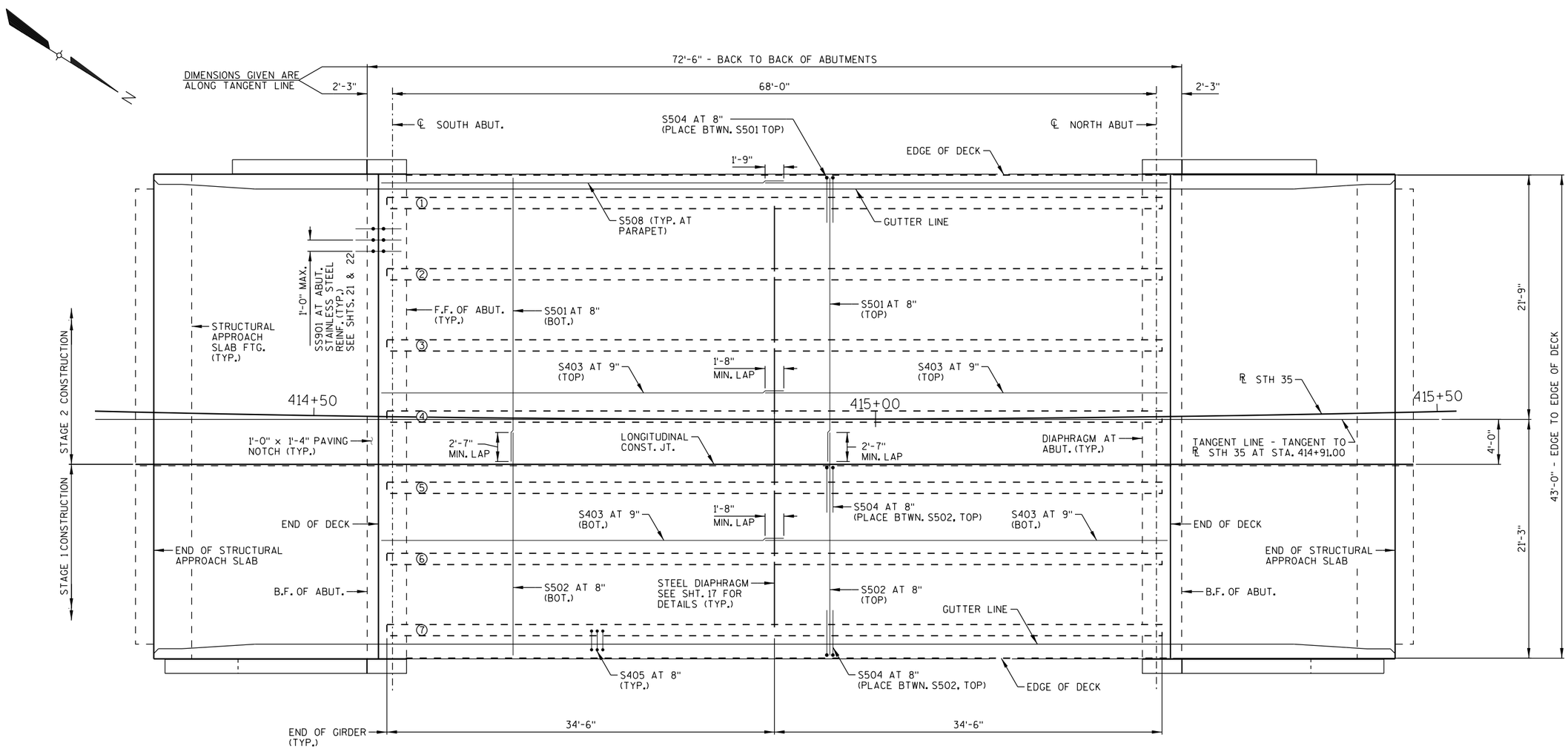
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BATCH PRINT SHEET 19 OF 24

STATE PROJECT NUMBER

7160-04-70



PLAN

NOTES

ALL TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE PLACED PARALLEL TO SUBSTRUCTURE UNITS.

LAP LONGITUDINAL NO. 5 BARS IN PARAPET 1'-9" MIN.

LAP NO. 4 BARS 1'-8" MIN. IN DECK.

LAP NO. 5 BARS 2'-7" MIN. IN DECK.

SEE SHT. 18 'SUPERSTRUCTURE CROSS SECTION' FOR PARAPET REINFORCEMENT DETAIL.

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 18.

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STRUCTURE B-6-205

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SUPERSTRUCTURE

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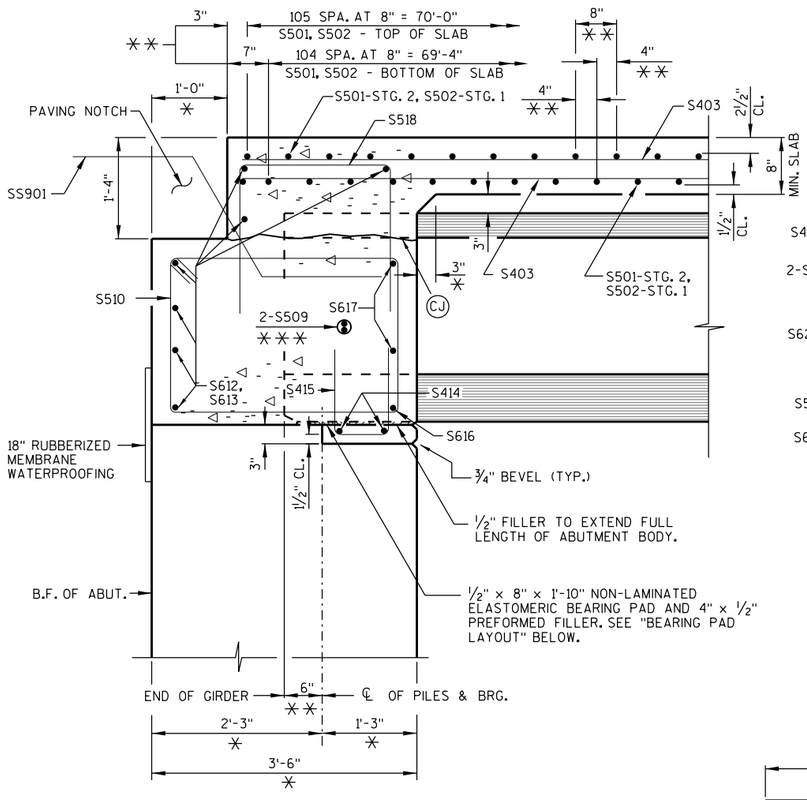
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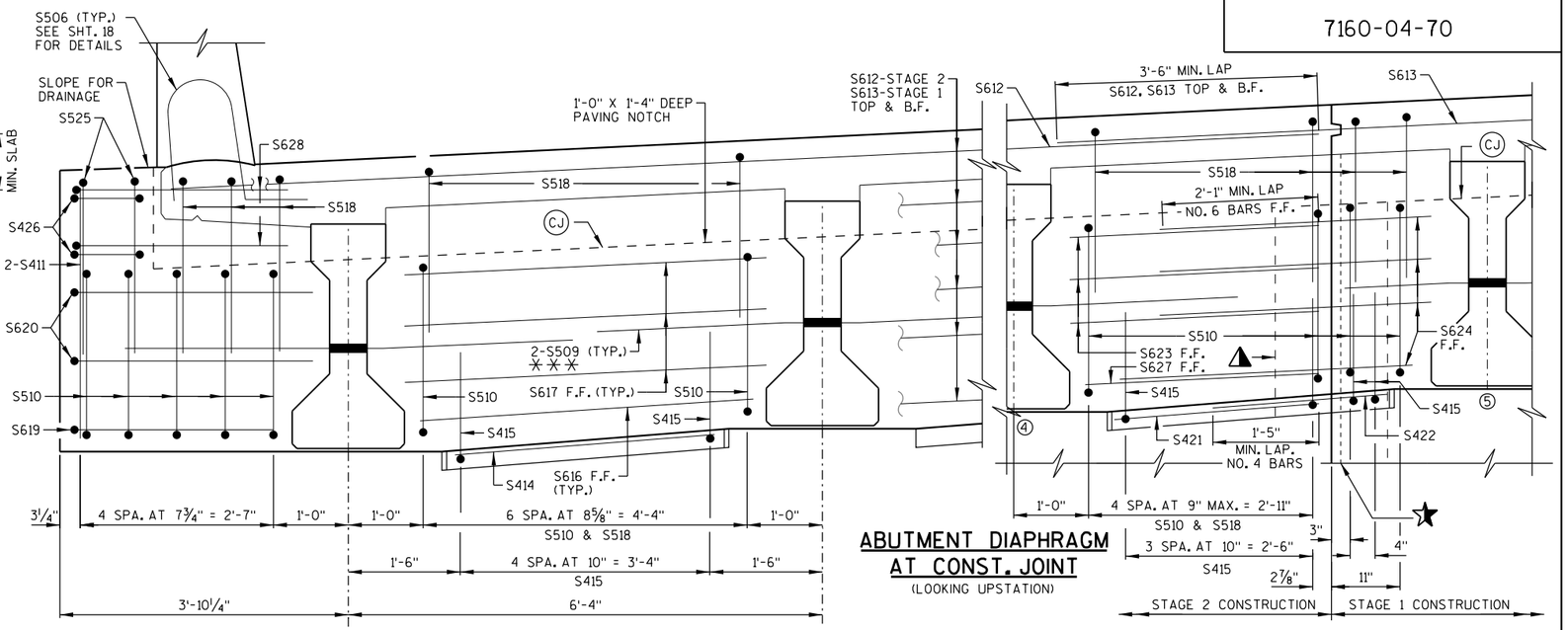
STATE PROJECT NUMBER

7160-04-70



PART LONGITUDINAL SECTION

(AT ABUTMENT)

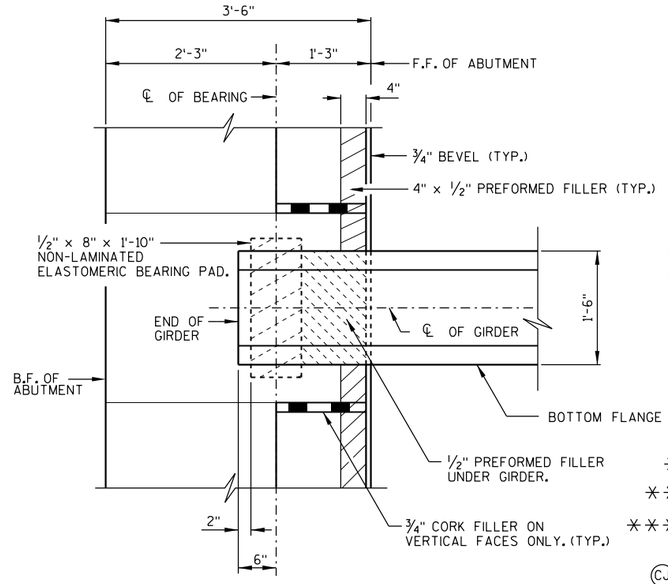


ABUTMENT DIAPHRAGM DETAILS

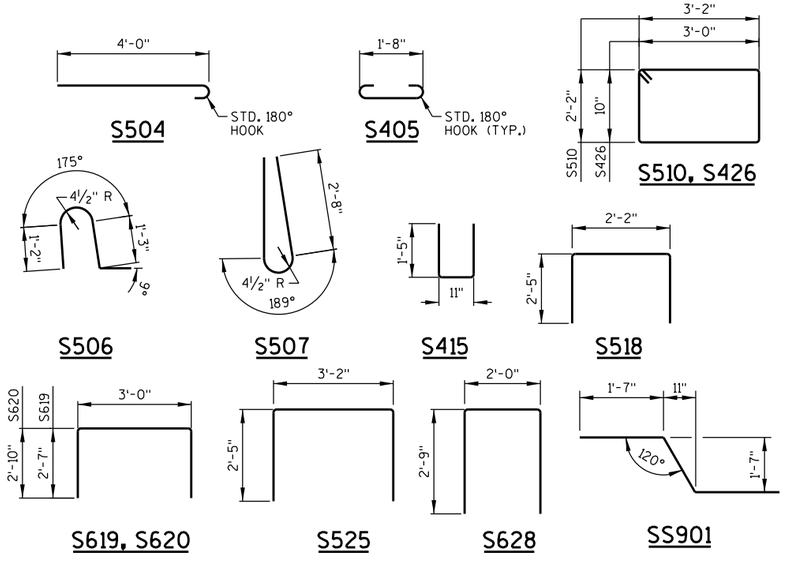
(LOOKING UPSTATION)

ABUTMENT DIAPHRAGM AT CONST. JOINT

(LOOKING UPSTATION)



BEARING PAD LAYOUT



BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	LOCATION	
COATED BARS					TOTAL WEIGHT = 25,470 LBS	
S501	-----	213	25-5		SUPERSTRUCTURE TOP & BOT.	TRANS.
S502	213	-----	19-10		SUPERSTRUCTURE TOP & BOT.	TRANS.
S403	98	144	35-11		SUPERSTRUCTURE TOP & BOT.	LONGIT.
S504	210	105	4-7	X	SUPERSTRUCTURE EDGE OF DECK	TRANS.
S405	106	106	2-8	X	SUPERSTRUCTURE EDGE OF DECK	TRANS.
S506	107	107	4-5	X	SUPERSTRUCTURE - PARAPET	TRANS.
S507	107	107	6-8	X	PARAPET	VERT.
S508	16	16	36-0		PARAPET	LONGIT.
S509	12	16	6-0		DIAPHRAGM - THRU GIRDER WEB	TRANS.
S510	42	62	11-4	X	DIAPHRAGM - STIRRUP	VERT.
S411	4	4	3-6		DIAPHRAGM - ENDS	VERT.
S612	-----	14	26-7		DIAPHRAGM - TOP & B.F.	TRANS.
S613	14	-----	22-2		DIAPHRAGM - TOP & B.F.	TRANS.
S414	8	12	3-4		DIAPHRAGM - F.F. POCKET	TRANS.
S415	24	38	3-7	X	DIAPHRAGM	VERT.
S616	4	6	4-5		DIAPHRAGM - F.F.	TRANS.
S617	12	18	4-8		DIAPHRAGM - F.F.	TRANS.
S518	38	58	6-9	X	DIAPHRAGM	VERT.
S619	2	2	7-10	X	DIAPHRAGM - ENDS	LONGIT.
S620	4	4	8-4	X	DIAPHRAGM - ENDS	LONGIT.
S421	-----	4	2-7		DIAPHRAGM - CONST. JT.	TRANS.
S422	4	-----	2-5		DIAPHRAGM - CONST. JT.	TRANS.
S623	-----	6	3-4		DIAPHRAGM - BTWN. GIRDERS F.F., CONST. JT	TRANS.
S624	8	-----	3-11		DIAPHRAGM - CONST. JT	TRANS.
S525	4	4	7-9	X	DIAPHRAGM ENDS	VERT.
S426	4	4	8-2	X	DIAPHRAGM ENDS - STIRRUP	TRANS.
S627	-----	2	3-1		DIAPHRAGM - CONST. JT.	TRANS.
S628	4	4	7-2	X	DIAPHRAGM - ENDS	TRANS.
STAINLESS STEEL BARS					TOTAL WEIGHT = 1,510 LBS	
SS901	36	52	5-0	X	APPROACH SLAB - ABUTMENT DIAPHRAGM	VERT.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES (LB)
STAGE 1	57	11,520	620
STAGE 2	82	13,950	890

LEGEND

- ✳ DIMENSIONS ARE GIVEN NORMAL TO ℄ OF SUBSTRUCTURE UNITS.
- ✳✳ DIMENSIONS ARE GIVEN PARALLEL TO THE GIRDER ℄.
- ✳✳✳ 1½" DIA. HOLE IN WEB FOR S509 BARS. PLACE TWO S509 BARS SYMMETRICAL ABOUT THE ℄ OF EACH GIRDER.
- (CJ) OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

SEE SHT. 18 FOR ADDITIONAL SYMBOL DESCRIPTIONS.

NOTES

PLACE AND SPACE VERTICAL REINFORCMENT BARS PARALLEL TO THE GIRDER ℄.

LAP S612 & S613 BARS IN ABUTMENT DIAPHRAGM 3'-6" MIN.

MATCH BOTTOM OF PAVING NOTCH WITH SLOPE OF 'TOP OF DECK'.

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STRUCTURE B-6-205

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SUPERSTRUCTURE DETAILS

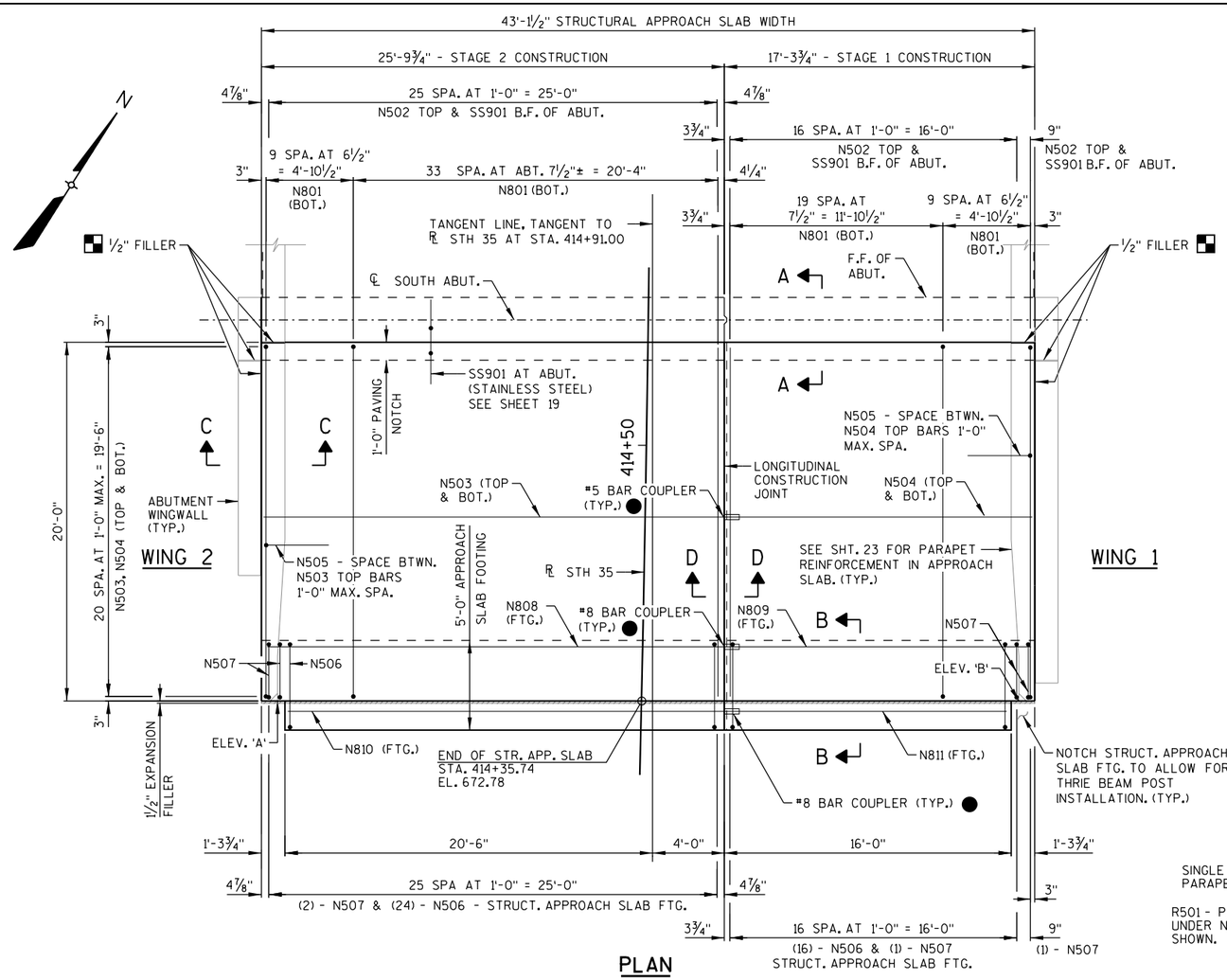
SHEET 20 OF 24

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BATCH PRINT SHEET 21 OF 24



BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

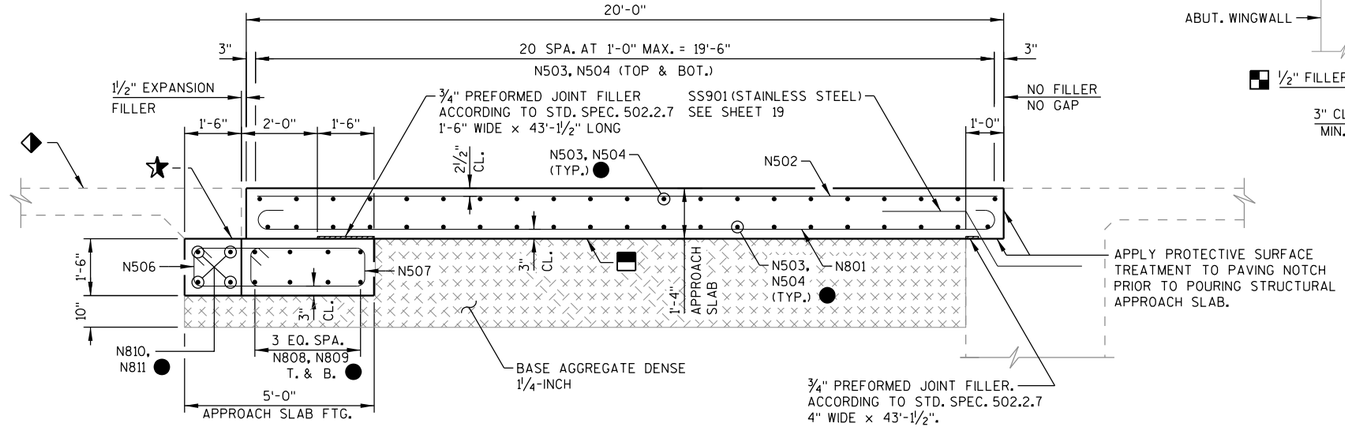
MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
COATED BARS						TOTAL WEIGHT = 8,930 LBS
N801	29	43	21-4	X		APPROACH SLAB - BOTTOM LONGIT.
N502	18	26	19-6			APPROACH SLAB - TOP LONGIT.
N503	-----	42	25-7			APPROACH SLAB - TOP & BOT TRANS.
N504	42	-----	17-1			APPROACH SLAB - TOP & BOT TRANS.
N505	20	20	4-1	X		APPROACH SLAB - TOP TRANS.
N506	16	24	12-2	X		APPROACH SLAB FOOTING LONGIT.
N507	2	2	9-2	X		APPROACH SLAB FOOTING LONGIT.
N808	-----	8	25-7			APPROACH SLAB FOOTING TRANS.
N809	8	-----	17-1			APPROACH SLAB FOOTING TRANS.
N810	-----	4	24-4			APPROACH SLAB FOOTING TRANS.
N811	4	-----	15-10			APPROACH SLAB FOOTING TRANS.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)
STAGE 1	25	3,610
STAGE 2	36	5,320

TOP OF APPROACH SLAB ELEVATIONS

LOCATION	DESCRIPTION	STATION	OFFSET TO ℄ (FEET)	ELEVATION (FEET)
'A'	WEST FLOW LINE AT END OF APPROACH SLAB	414+35.29	20.31 LT.	671.80
'B'	EAST FLOW LINE AT END OF APPROACH SLAB	414+36.20	21.02 RT.	673.79



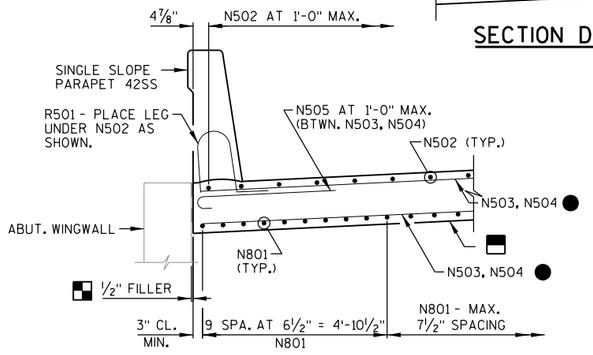
SECTION B - B

SECTION A - A

SECTION THRU APPROACH SLAB

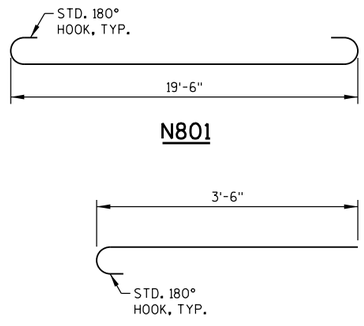


SECTION D-D



SECTION C-C

FOR PARAPET BARS AND DETAILS SEE SHEET 23.



LEGEND

- ★ STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- ▬ PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.
- ▩ SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF AS NOTED FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).
- ◆ SEE ROADWAY PLANS FOR DETAILS.
- ● USE BAR COUPLERS TO CONTINUE BAR STEEL THRU JOINT. SEE SHT. 24 FOR DETAILS.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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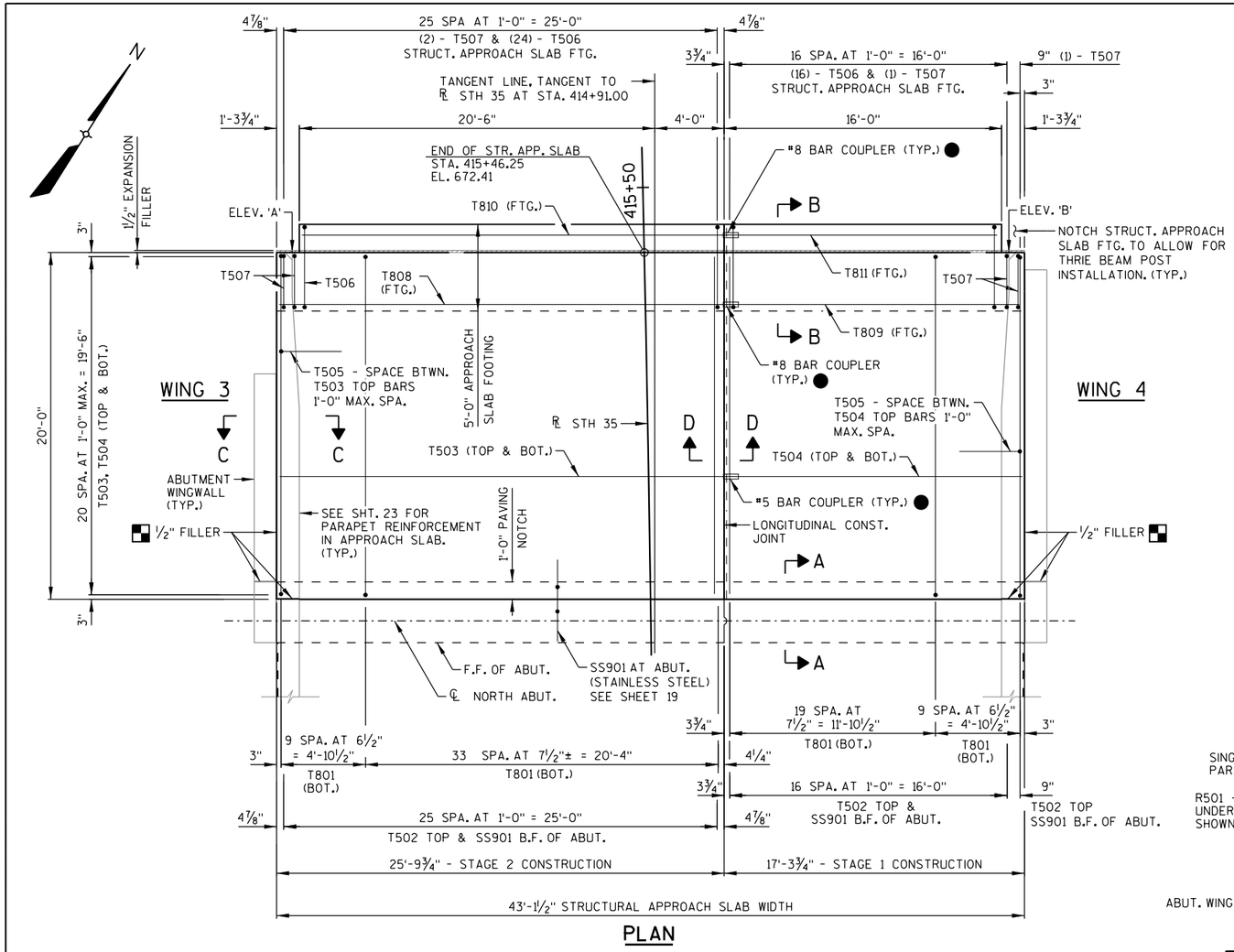
SOUTH STRUCTURAL APPROACH SLAB

SHEET 21 OF 24
210

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BATCH PRINT SHEET 22 OF 24



PLAN

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

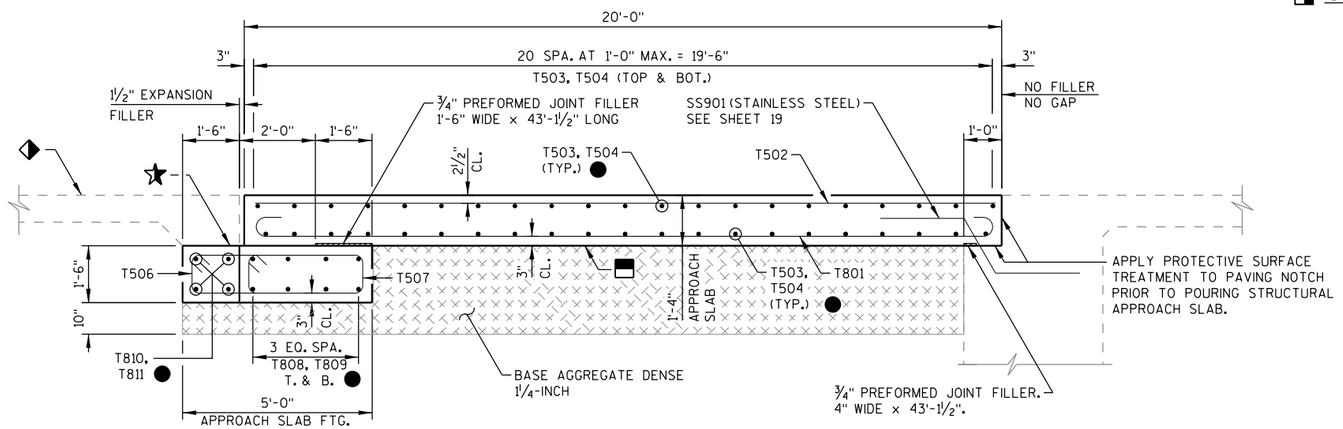
MARK	STAGE 1 NO. REQ'D	STAGE 2 NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
	COATED BARS					TOTAL WEIGHT = 8,930 LBS
T801	29	43	21-4	X		APPROACH SLAB - BOTTOM LONGIT.
T502	18	26	19-6			APPROACH SLAB - TOP LONGIT.
T503	-----	42	25-7			APPROACH SLAB - BOTTOM TRANS.
T504	42	-----	17-1			APPROACH SLAB - BOTTOM TRANS.
T505	20	20	4-1	X		APPROACH SLAB - TOP TRANS.
T506	16	24	12-2	X		APPROACH SLAB FOOTING LONGIT.
T507	2	2	9-2	X		APPROACH SLAB FOOTING LONGIT.
T808	-----	8	25-7			APPROACH SLAB FOOTING TRANS.
T809	8	-----	17-1			APPROACH SLAB FOOTING TRANS.
T810	-----	4	24-4			APPROACH SLAB FOOTING TRANS.
T811	4	-----	15-10			APPROACH SLAB FOOTING TRANS.

ESTIMATED QUANTITIES

	CONCRETE MASONRY BRIDGES (CY)	BAR STEEL REINFORCEMENT HS COATED STRUCTURES (LB)
STAGE 1	25	3,610
STAGE 2	36	5,320

TOP OF APPROACH SLAB ELEVATIONS

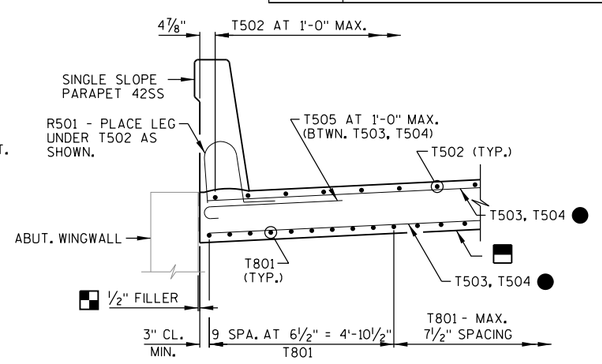
LOCATION	DESCRIPTION	STATION	OFFSET TO ℄ (FEET)	ELEVATION (FEET)
'A'	WEST FLOW LINE AT END OF APPROACH SLAB	415+46.70	20.31 LT.	671.43
'B'	EAST FLOW LINE AT END OF APPROACH SLAB	415+45.79	21.02 RT.	673.42



SECTION B - B

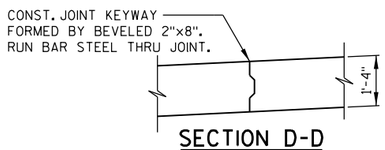
SECTION A - A

SECTION THRU APPROACH SLAB

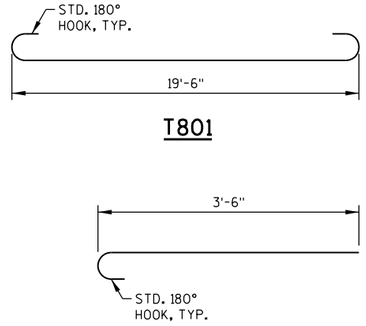


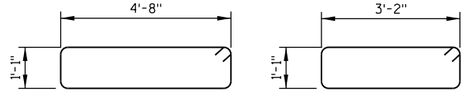
SECTION C-C

FOR PARAPET BARS AND DETAILS SEE SHEET 23.



SECTION D-D





T506 T507

LEGEND

FOR SYMBOL DESCRIPTIONS SEE SHT. 21.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

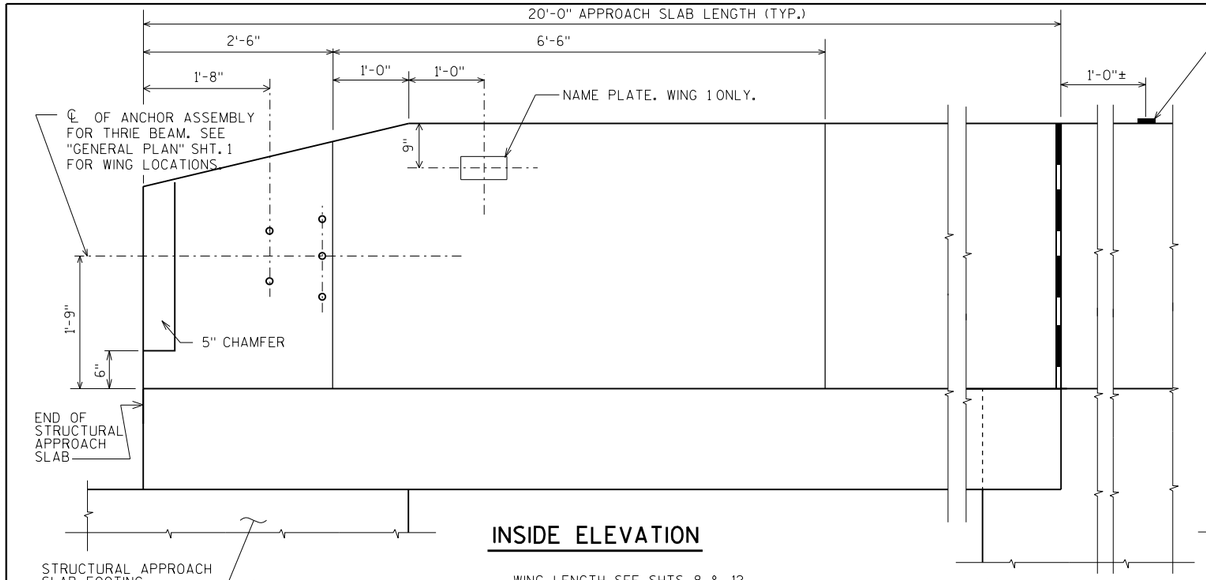
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NORTH STRUCTURAL APPROACH SLAB

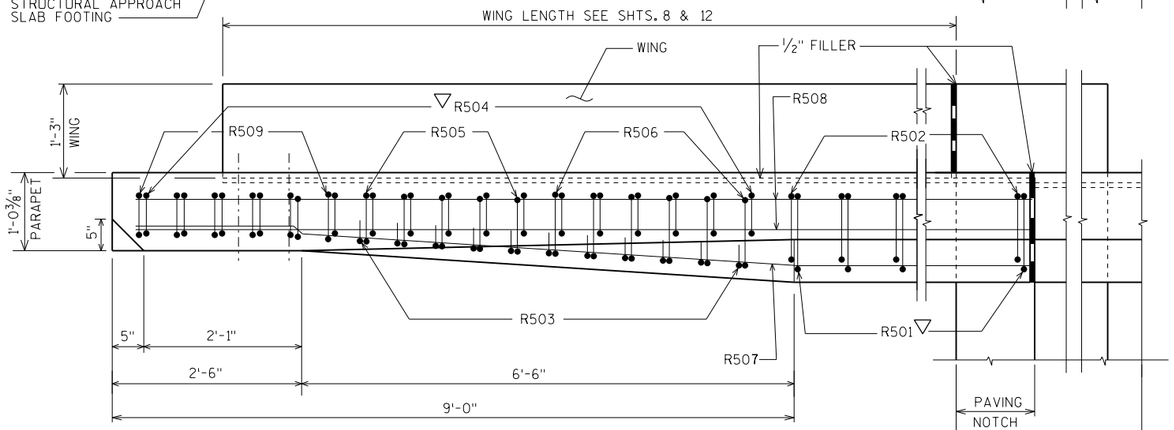
SHEET 22 OF 24
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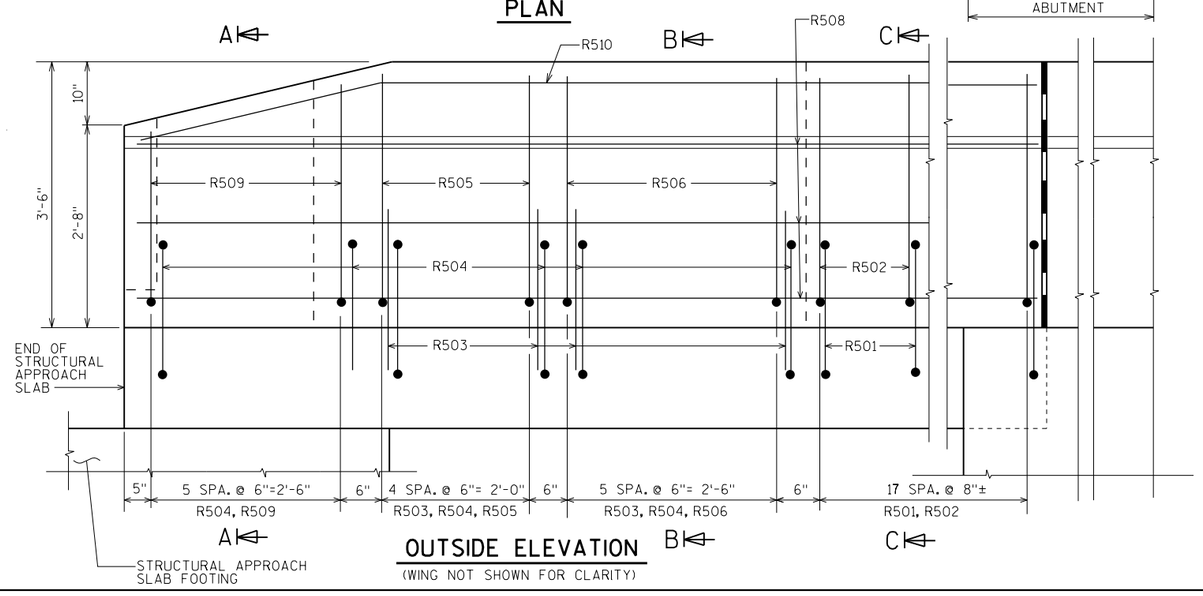
STATE PROJECT NUMBER
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INSIDE ELEVATION

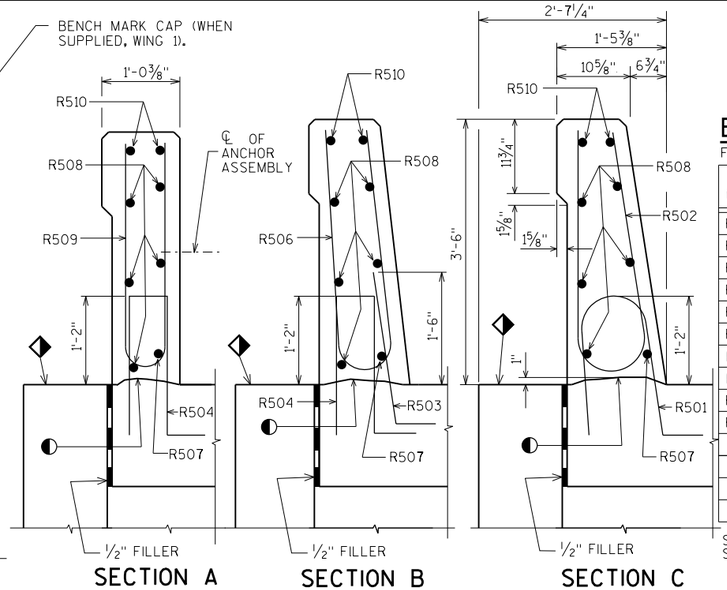


PLAN



OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)



BILL OF BARS

FOR STRUCTURAL APPROACH SLAB PARAPETS

BAR MARK	COAT	STAGE 1	STAGE 2	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	36	36	4-5	X		PARAPET VERT.
R502	X	36	36	6-8	X		PARAPET VERT.
R503	X	22	22	2-9	X		PARAPET VERT.
R504	X	34	34	4-4	X		PARAPET VERT.
R505	X	10	10	6-5	X		PARAPET VERT.
R506	X	12	12	6-6	X		PARAPET VERT.
R507	X	2	2	19'-6"	X		PARAPET HORIZ.
R508	X	10	10	19'-6'			PARAPET HORIZ.
R509	X	12	12	5-5	X	⚠	PARAPET VERT.
R510	X	4	4	19'-6"	X		PARAPET HORIZ

STAGE 1 WT. = 1,170 LBS.
STAGE 2 WT. = 1,170 LBS.

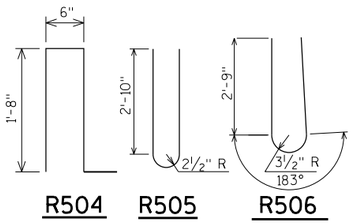
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

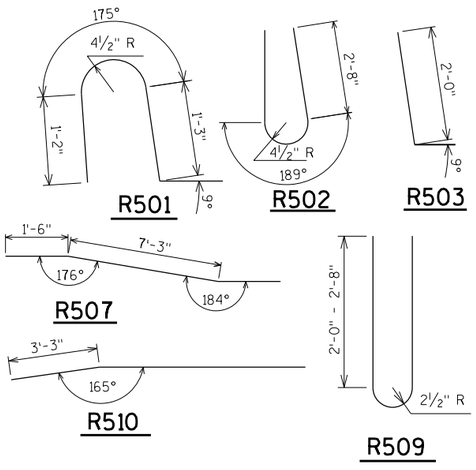
BAR SERIES TABLE

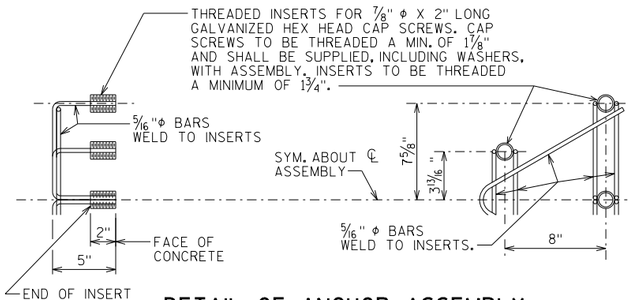
MARK	NO. REQD.	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.







DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

LEGEND

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY

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STRUCTURE B-6-205

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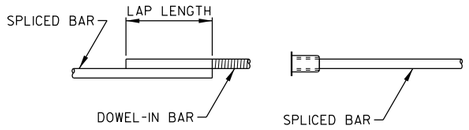
PARAPET 42SS WITH STR. APPROACH SLAB

SHEET 23 OF 24
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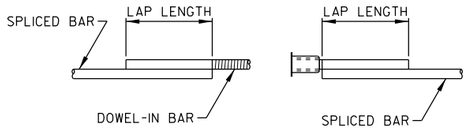
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BATCH PRINT SHEET 24 OF 24



DOWEL BAR SPLICER

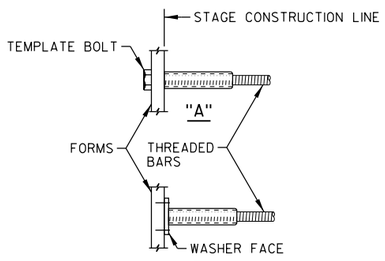


DOWEL BAR SPLICER



ONE PIECE THREADED SPLICER

SPLICER ALTERNATIVES



INSTALLATION AND SETTING METHODS

"A" SET SPLICER BY MEANS OF A TEMPLATE BOLT.
"B" SET SPLICER BY NAILING TO WOOD FORMS OR CEMENTING TO STEEL FORMS.

NOTES

STEEL SPLICE (COUPLER) ASSEMBLY SHALL BE AN APPROVED TYPE AND SHALL DEVELOP IN TENSION AT LEAST 125% OF THE YIELD STRENGTH OF THE SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL BE OF MINIMUM 60 ksi YIELD STRENGTH, AND HAVE TENSILE STRENGTH AREA EQUAL OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

DOWEL BAR SPLICERS SHALL MEET THE DEFORMATION REQUIREMENTS FOR STANDARD ASTM DEFORMED REINFORCING BARS.

FOR DOWEL BAR SPLICERS, ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER BARS.

SPLICER (COUPLER) ASSEMBLY IN THE STRUCTURAL APPROACH SLABS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILIAR DESIGN MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL. APPROVAL SHALL BE BASED ON CERTIFIED TEST RESULTS FROM AN APPROVED TESTING LABORATORY THAT THE PROPOSED SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENT:

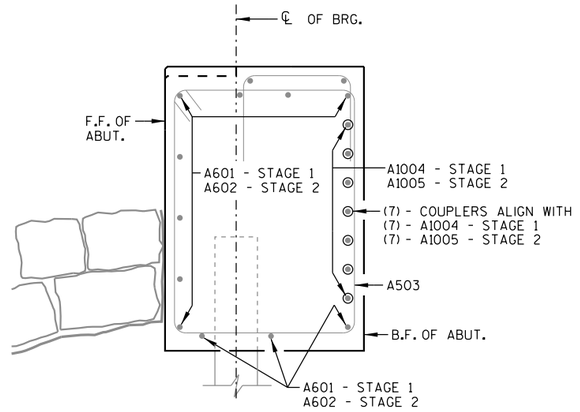
1. - MINIMUM CAPACITY = 1.25 x fy x AREA OF SPLICED REINFORCEMENT BAR.

WHERE fy = YIELD STRENGTH OF SPLICED REINFORCEMENT BARS.

DOWEL BAR SPLICER LAP LENGTHS

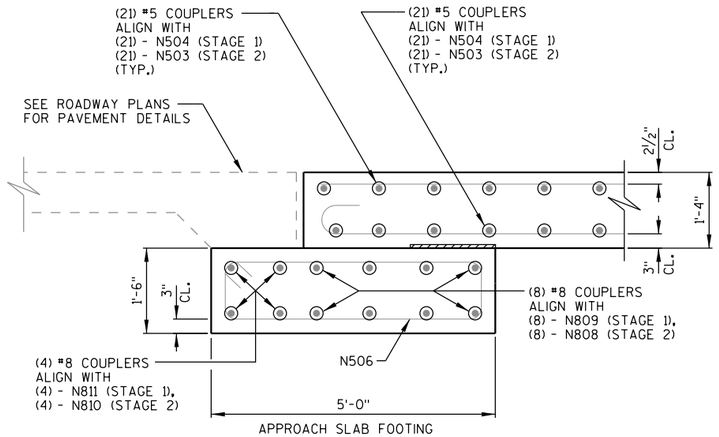
CONCRETE UNDER BAR	BAR SIZE	4	5	6	7	8	9	10	11
12" OR LESS	f'c = 3500	1'-8"	2'-8"	3'-2"	4'-3"	5'-6"	7'-0"	8'-9"	10'-11"
	f'c = 4000	1'-8"	2'-8"	3'-2"	4'-0"	5'-2"	6'-6"	8'-3"	10'-2"
MORE THAN 12"	f'c = 3500	2'-3"	2'-11"	3'-6"	4'-8"	6'-1"	7'-10"	9'-10"	12'-1"
	f'c = 4000	2'-3"	2'-11"	3'-6"	4'-5"	5'-8"	7'-4"	9'-2"	11'-4"

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQ'D. TO BAR COUPLER MANUFACTURER RECOMENDATIONS. PAY BASED ON BARS AS DETAILED.



TYPICAL SECTION THRU ABUTMENT AT CONSTRUCTION JOINT

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILIAR)



TYPICAL SECTION THRU APPROACH SLAB FOOTING AT CONSTRUCTION JOINT

(SOUTH APPROACH SLAB SHOWN, NORTH APPROACH SLAB SIMILIAR)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-6-205

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BAR SPLICER (COUPLER) DETAILS

SHEET 24 OF 24
213

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Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
249+50	24950		21.50	0.00	3.11	0.0	0.0	0.0	0.0	0.0	0
250+00	25000	50	32.78	5.00	10.63	50.3	4.6	12.7	50.3	15.9	30
250+50	25050	50	62.18	20.00	9.61	87.9	23.1	18.7	138.2	39.3	71
251+00	25100	50	92.95	20.00	32.34	143.6	37.0	38.8	281.8	87.9	129
251+50	25150	50	69.27	20.00	67.33	150.2	37.0	92.3	432.0	203.2	127
251+72	25172	22	57.82	20.00	239.89	51.8	16.3	125.2	483.8	359.7	6
				B-6-202 South Approach Totals		484	118	288			

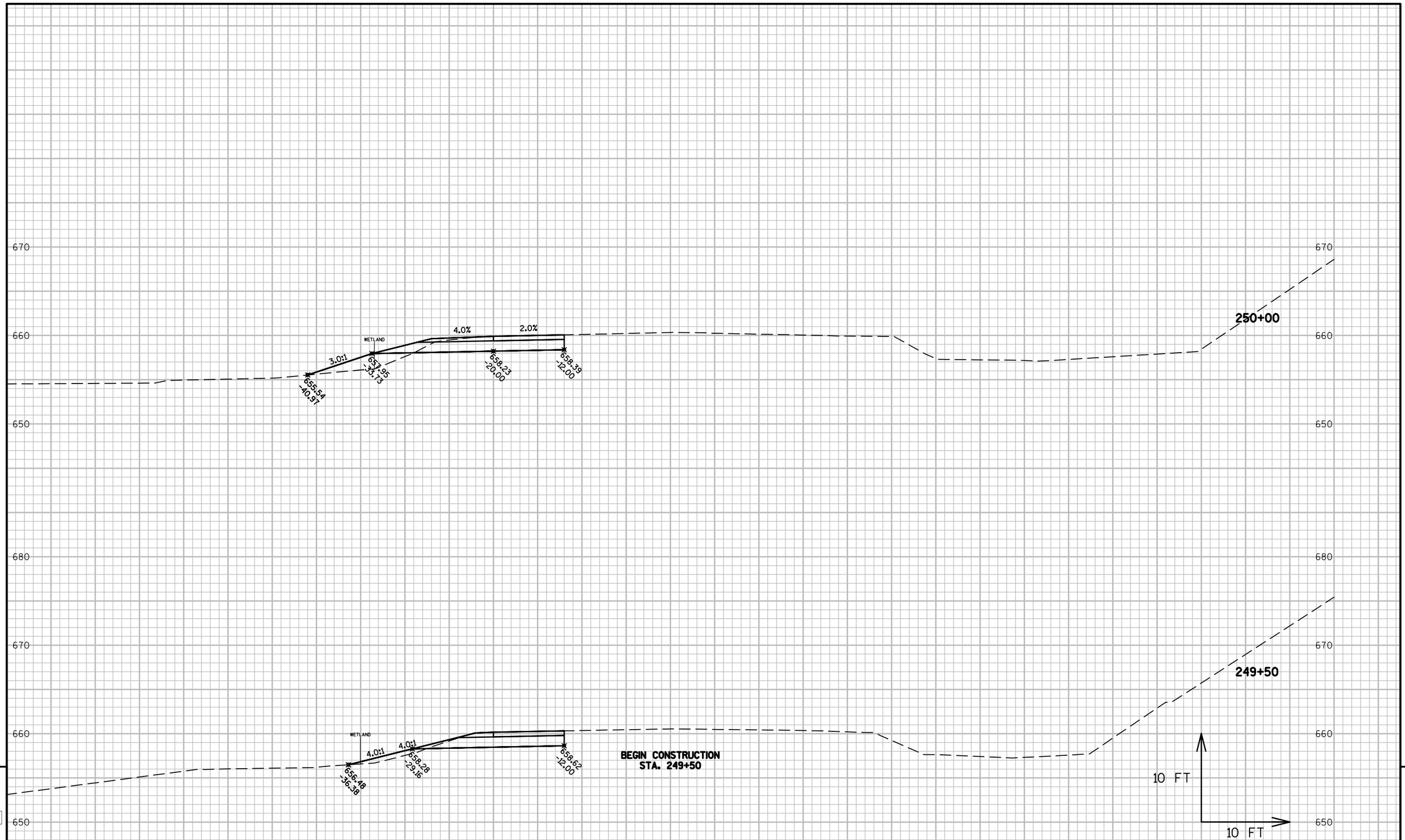
Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
252+42	25242		59.58	20.00	192.73	0.0	0.0	0.0	0.0	0.0	0
252+50	25250	8	69.95	20.00	107.64	19.2	5.9	44.5	19.2	55.6	-42
252+73	25273	23	80.14	20.00	31.61	63.9	17.0	59.3	83.1	129.8	-70
252+82	25282	9	82.36	20.00	43.96	27.1	6.7	12.6	110.2	145.5	-65
253+00	25300	18	0.00	20.00	9.61	27.5	13.3	17.9	137.7	167.8	-73
253+40	25340	40	0.00	20.00	32.34	0.0	29.6	31.1	137.7	206.7	-142
				B-6-202 North Approach Totals		138	73	165			

Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
310+00	31000		0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0
310+50	31050	50	67.81	20.00	37.21	62.8	18.5	34.5	62.8	43.1	1
310+78	31078	28	58.39	20.00	46.37	65.4	20.7	43.3	128.2	97.2	-8
				B-6-203 South Approach Totals		128	39	78			

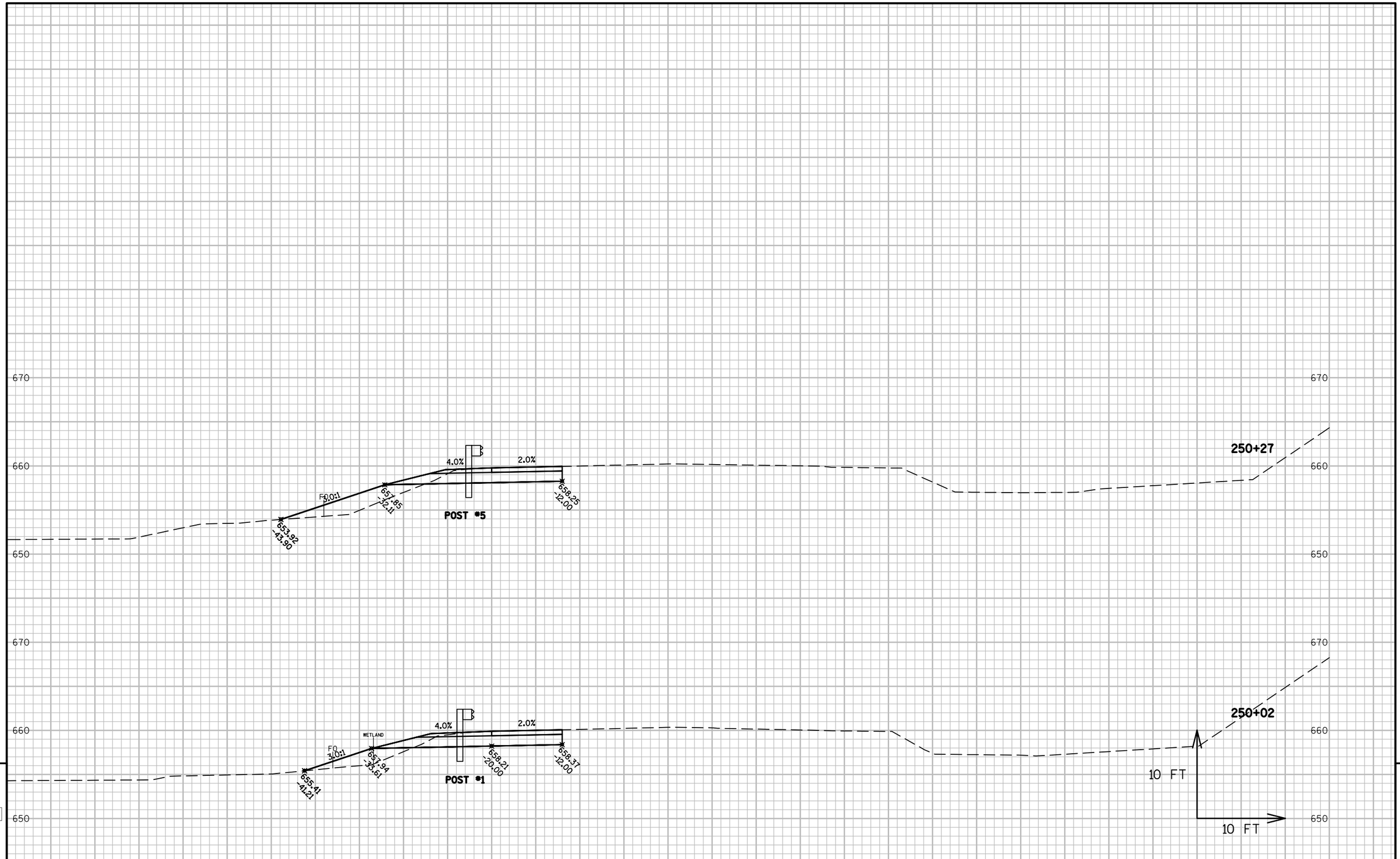
Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
311+87	31187		50.25	0.00	68.61	0.0	0.0	0.0	0.0	0.0	0
312+00	31200	13	50.97	20.00	72.03	24.4	4.8	33.9	24.4	42.3	-23
312+50	31250	50	52.40	20.00	79.69	95.7	37.0	140.5	120.1	217.9	-140
313+00	31300	50	55.80	20.00	93.32	100.2	37.0	160.2	220.3	418.2	-277
313+50	31350	50	63.80	20.00	85.46	110.7	37.0	165.5	331.0	625.1	-410
314+00	31400	50	71.88	20.00	71.60	125.6	37.0	145.4	456.6	806.9	-503
314+35	31435	35	79.00	20.00	74.10	97.8	25.9	94.4	554.4	924.9	-549
				B-6-203 North Approach Totals		554	179	740			

Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
411+50	41150		86.95	0.00	2.28	0.0	0.0	0.0	0.0	0.0	0
412+00	41200	50	71.78	20.00	4.89	147.0	18.5	6.6	147.0	8.3	120
412+50	41250	50	65.51	20.00	6.39	127.1	37.0	10.4	274.1	21.4	197
413+00	41300	50	62.00	20.00	19.75	118.1	37.0	24.2	392.2	51.6	248
413+50	41350	50	58.04	20.00	24.32	111.1	37.0	40.8	503.3	102.6	271
414+00	41400	50	54.43	20.00	75.49	104.1	37.0	92.4	607.4	218.1	223
414+44	41444	44	47.70	20.00	119.86	83.2	32.6	159.2	690.7	417.1	74
				B-6-205 South Approach Totals		691	199	334			

Station	Real Station	Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
			Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	
415+46	41546		61.72	0.00	153.04	0.0	0.0	0.0	0.0	0.0	0
415+50	41550	4	62.00	20.00	153.00	9.2	1.5	22.7	9.2	28.3	-21
416+00	41600	50	66.93	20.00	96.05	119.4	37.0	230.6	128.5	316.6	-227
416+50	41650	50	71.54	20.00	95.36	128.2	37.0	177.2	256.8	538.1	-357
417+00	41700	50	78.71	20.00	67.66	139.1	37.0	150.9	395.9	726.8	-444
				B-6-205 North Approach Totals		396	113	581			



PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-202	SHEET 217	E



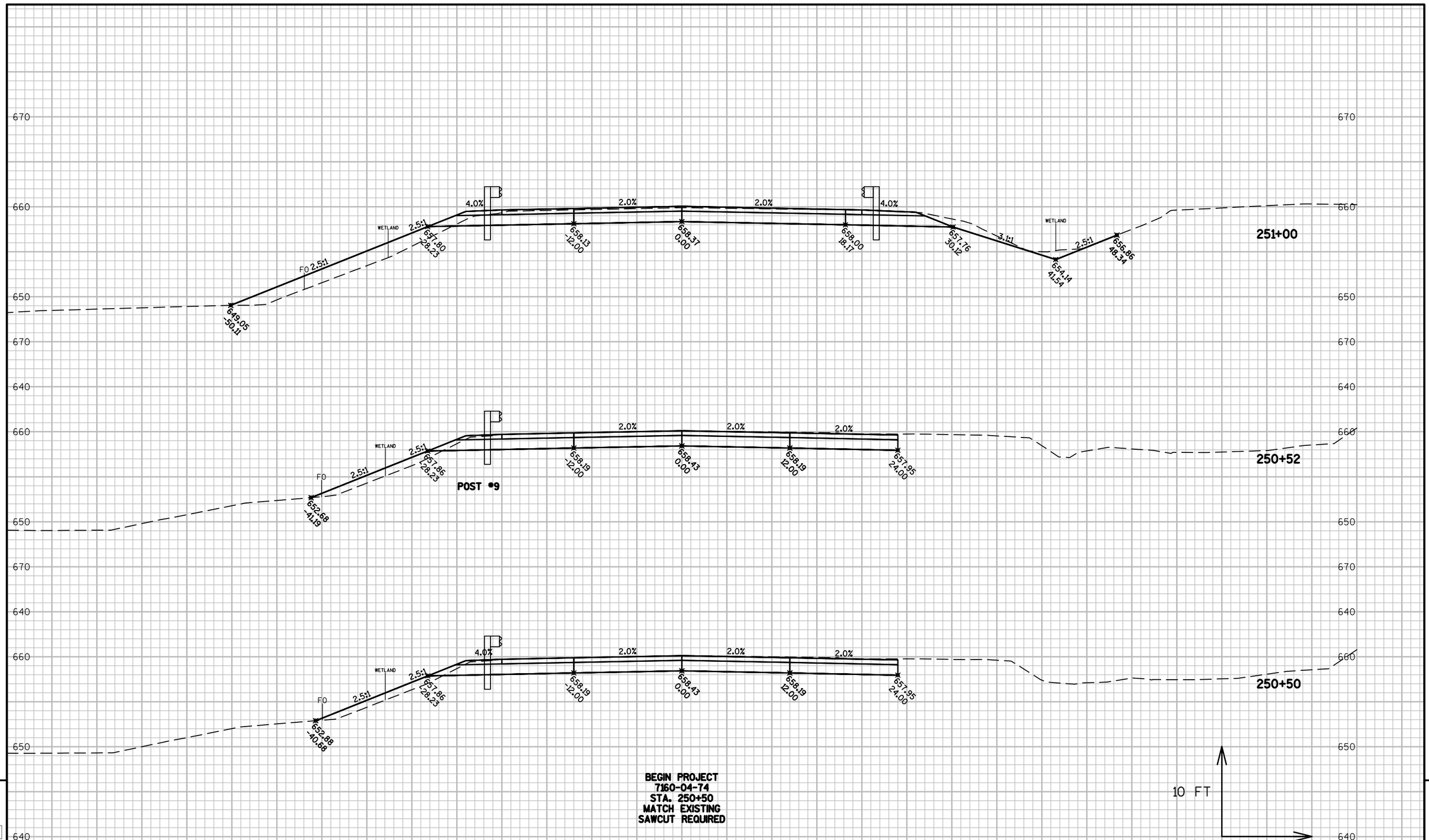
PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-202	SHEET 218	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06202-02

PLOT DATE : 5/31/2018 11:00 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME :

PLOT SCALE : 1 IN:10 FT

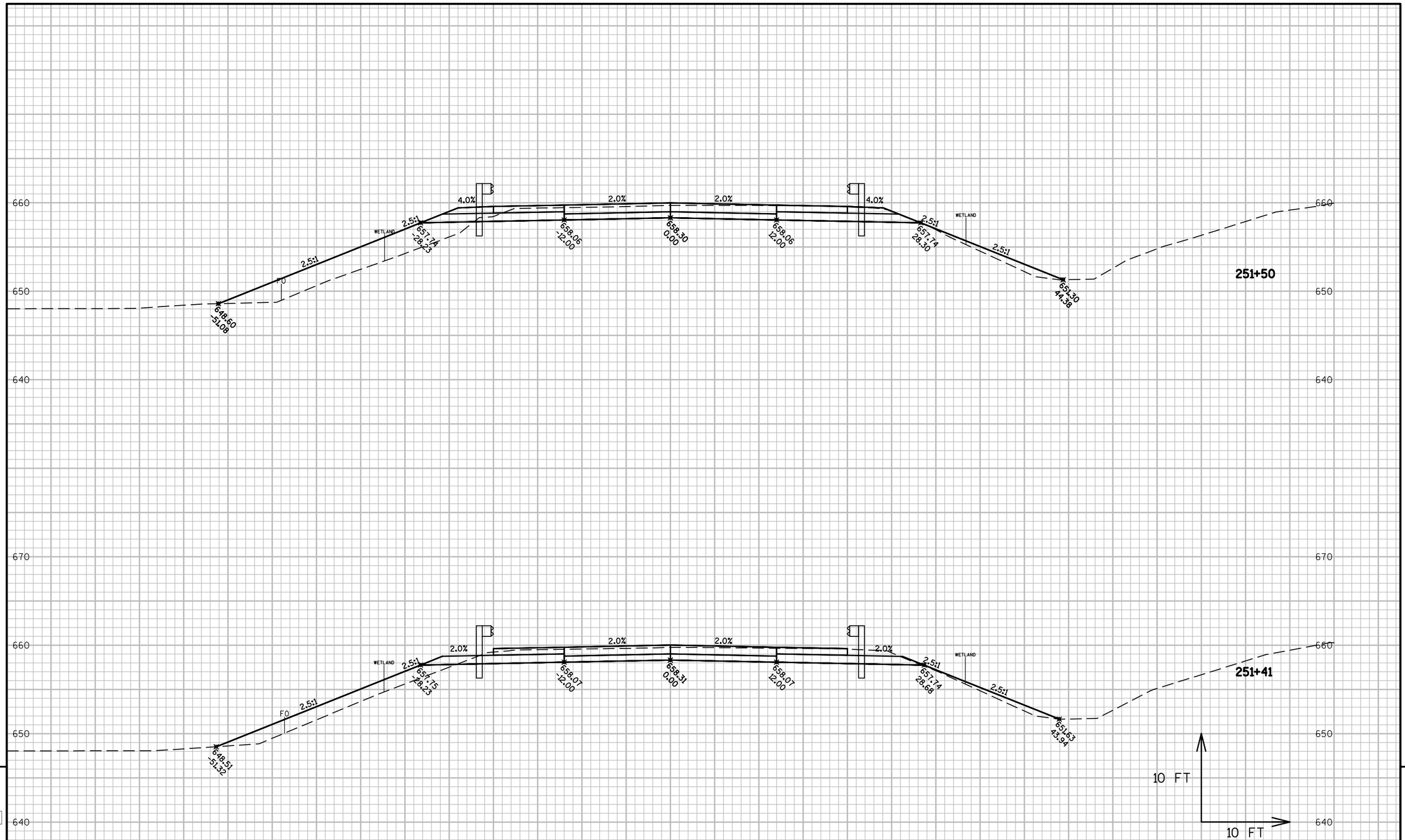
WISDOT/CADDS SHEET 49



PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-202	SHEET 219	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06202-03

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

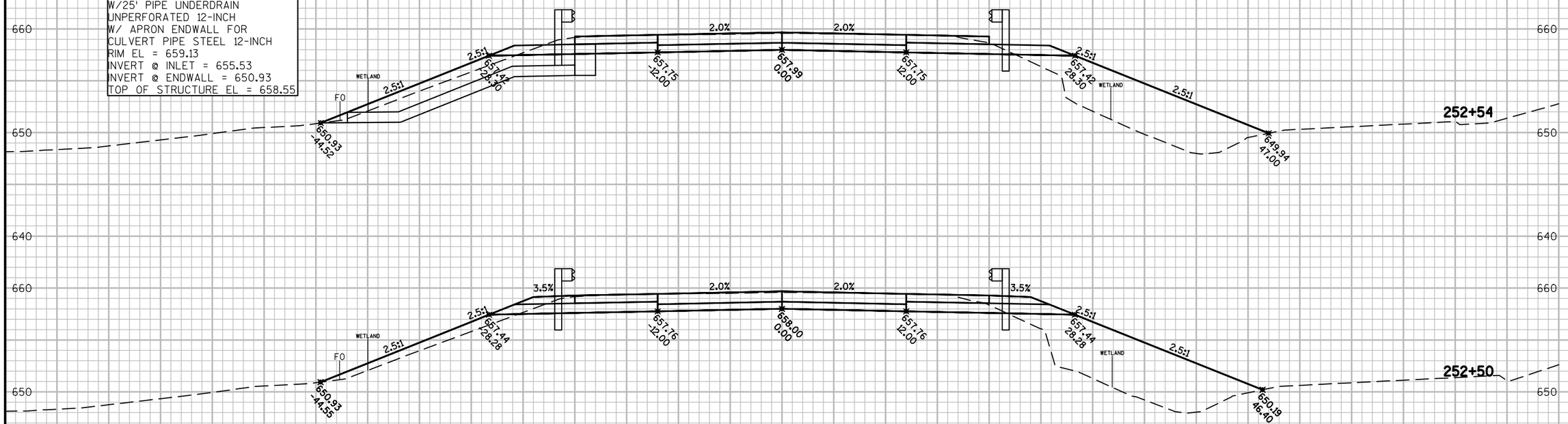


PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-202	SHEET 220	E

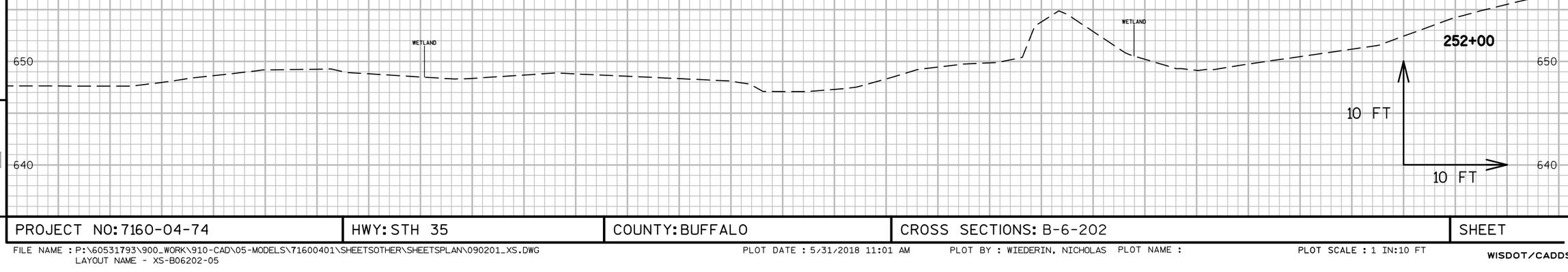
FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06202-04

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

STA. 252+54, 19' LT
INLET 2X2-V
W/25' PIPE UNDERDRAIN
UNPERFORATED 12-INCH
W/ APRON ENDWALL FOR
CULVERT PIPE STEEL 12-INCH
RIM EL = 659.13
INVERT @ INLET = 655.53
INVERT @ ENDWALL = 650.93
TOP OF STRUCTURE EL = 658.55



STA. 252+00
BRIDGE B-6-202



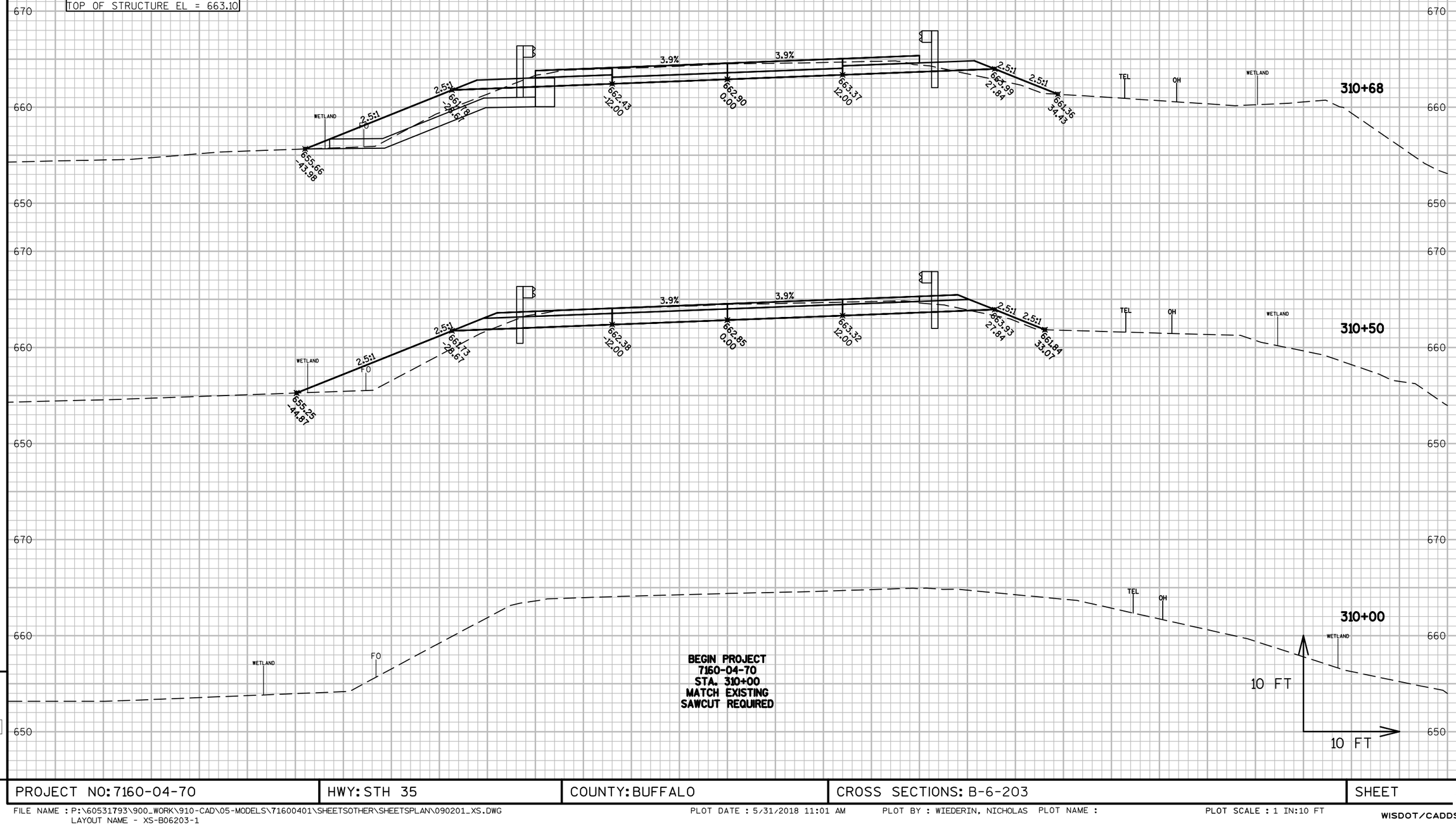
PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-202	SHEET 221	E

END PROJECT
7160-04-74
STA. 252+90
MATCH EXISTING
SAWCUT REQUIRED

STA. 252+82, 19' RT
INLET 2X2-V
W/33' PIPE UNDERDRAIN
UNPERFORATED 12-INCH
W/ APRON ENDWALL FOR
CULVERT PIPE STEEL 12-INCH
RIM EL = 659.04
INVERT @ INLET = 655.90
INVERT @ ENDWALL = 649.16
TOP OF STRUCTURE EL = 658.46

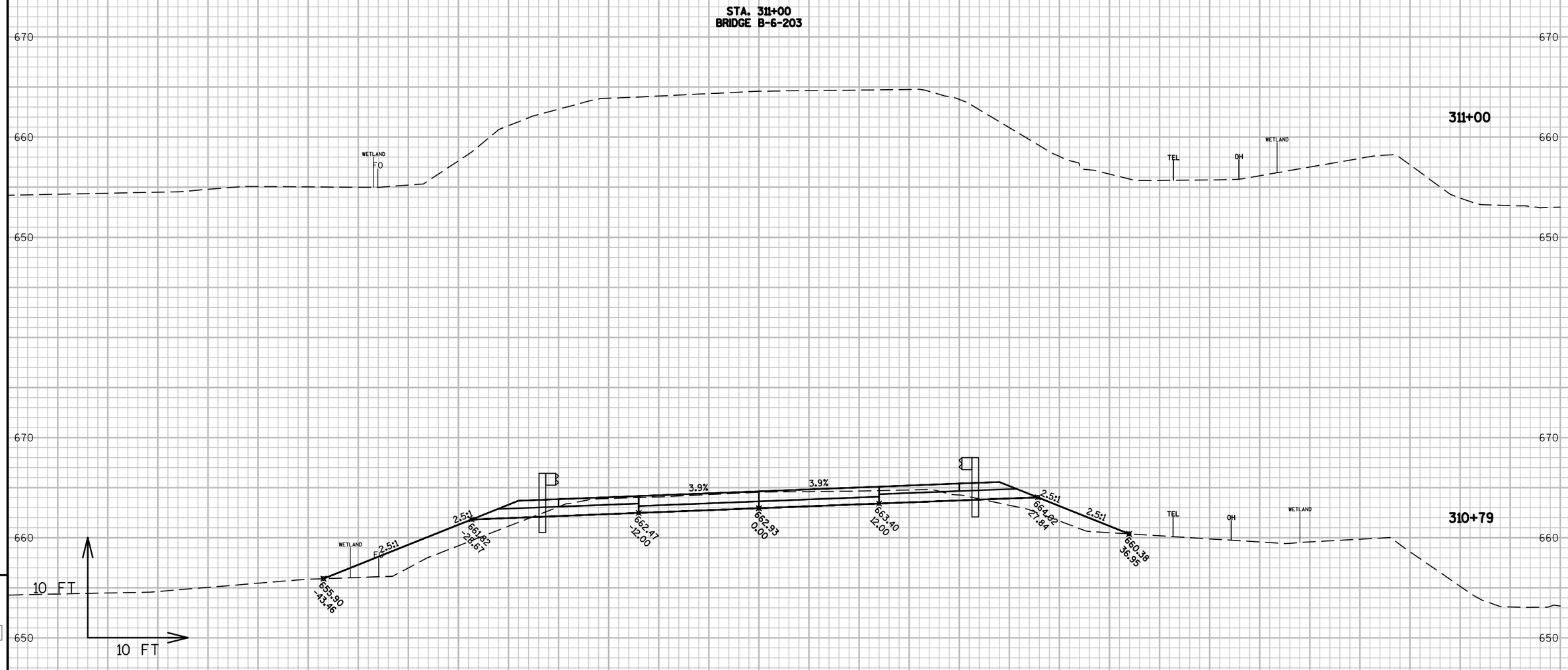
PROJECT NO: 7160-04-74	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-202	SHEET 222	E

STA. 310+68, 19' LT
INLET 2X2-V
W/25' PIPE UNDERDRAIN
UNPERFORATED 12-INCH
W/ APRON ENDWALL FOR
CULVERT PIPE STEEL 12-INCH
RIM EL = 663.68
INVERT @ INLET = 660.06
INVERT @ ENDWALL = 655.66
TOP OF STRUCTURE EL = 663.10



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-203	SHEET 223	E

STA. 311+00
BRIDGE B-6-203

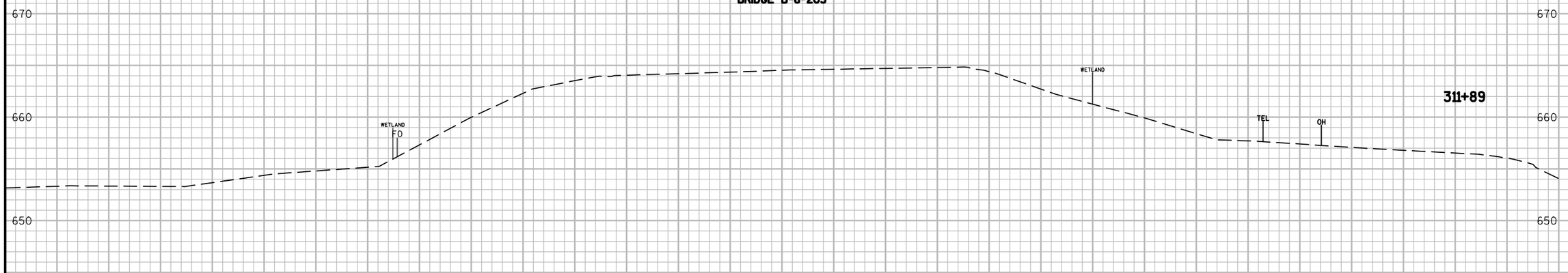


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-203	SHEET 224	E

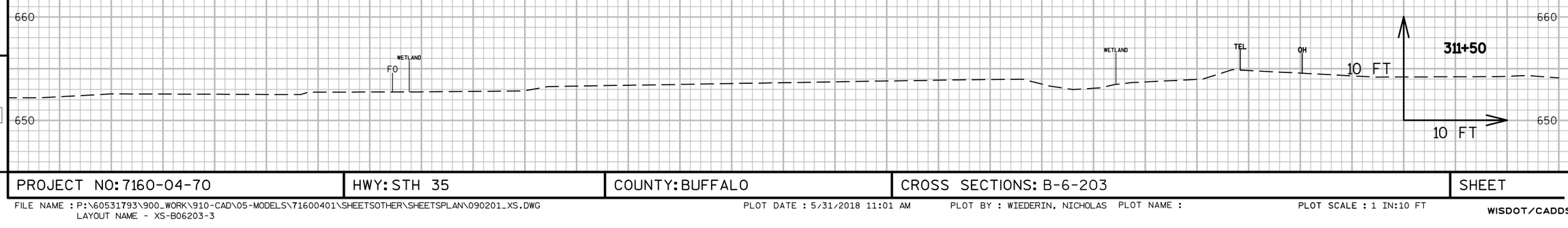
FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06203-2

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

STA. 311+89
BRIDGE B-6-203



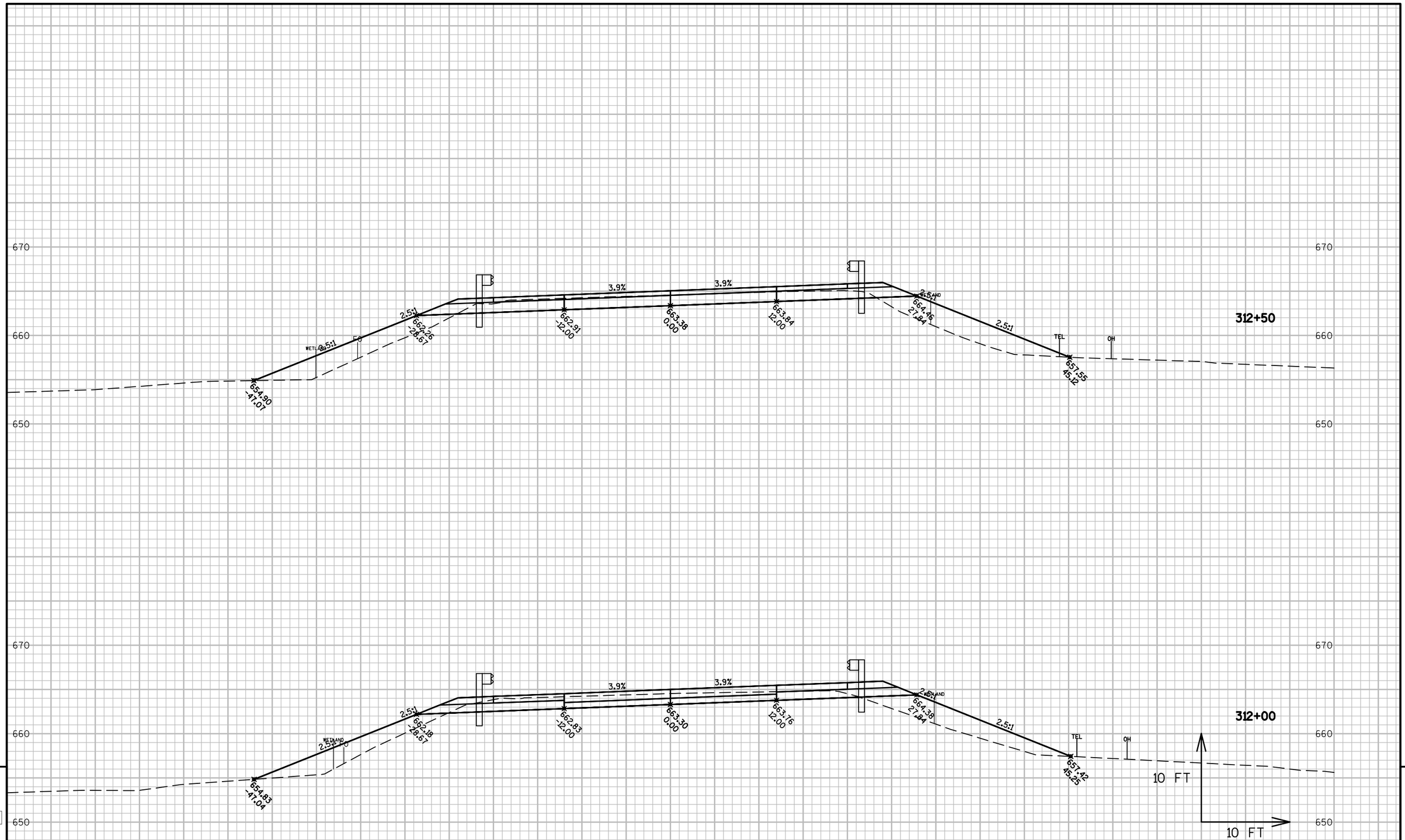
STA. 311+50
BRIDGE B-6-203



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-203	SHEET 225	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06203-3

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

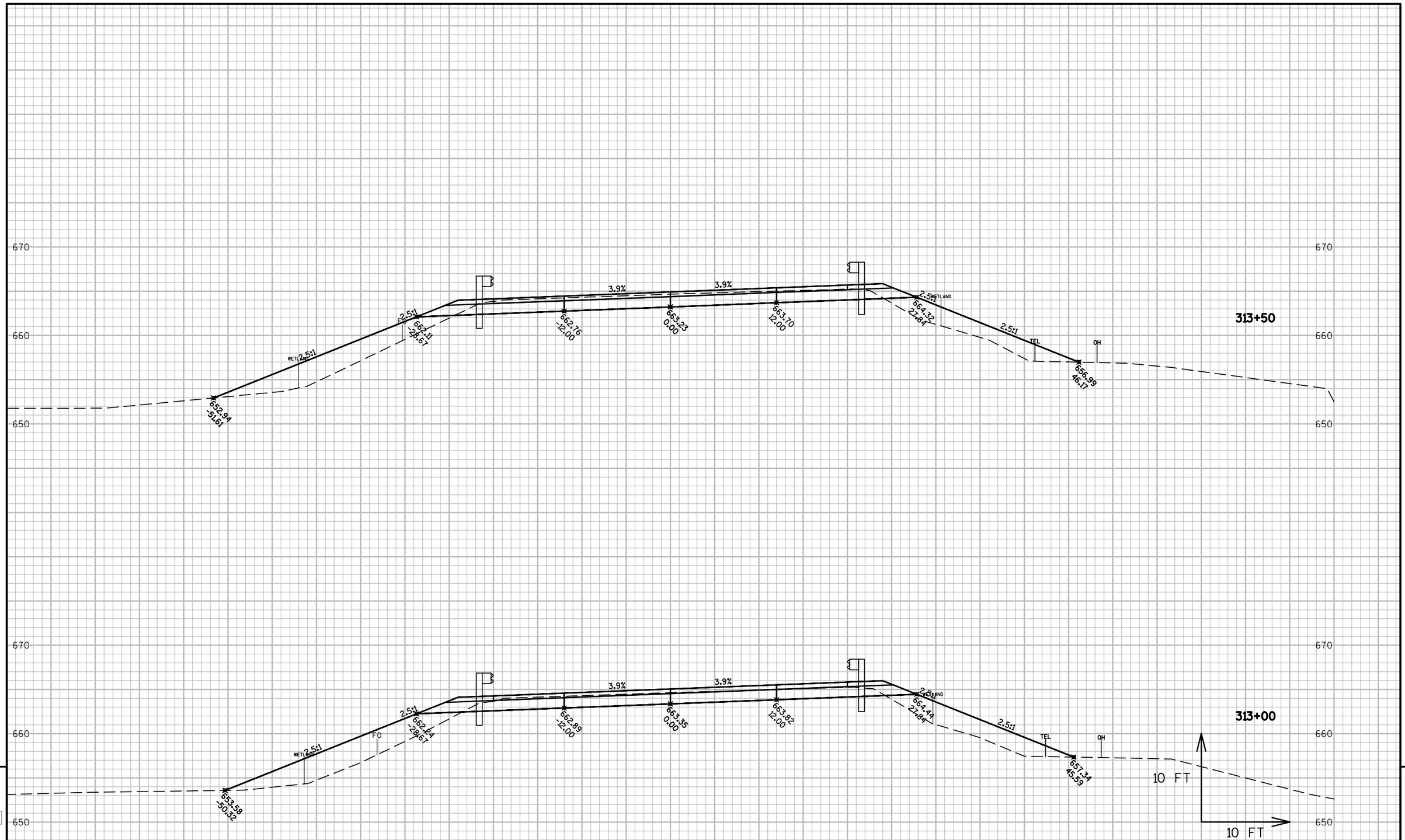


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-203	SHEET 226	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06203-4

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-203	SHEET 227	E

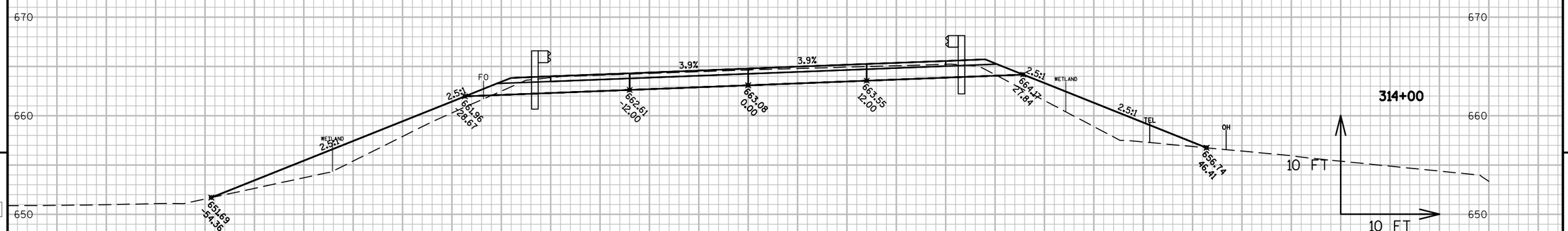
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LAYOUT NAME - XS-B06203-5

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

BEGIN EXCEPTION TO
NET CENTERLINE LENGTH
STA. 314+35
MATCH EXISTING
SAWCUT REQUIRED

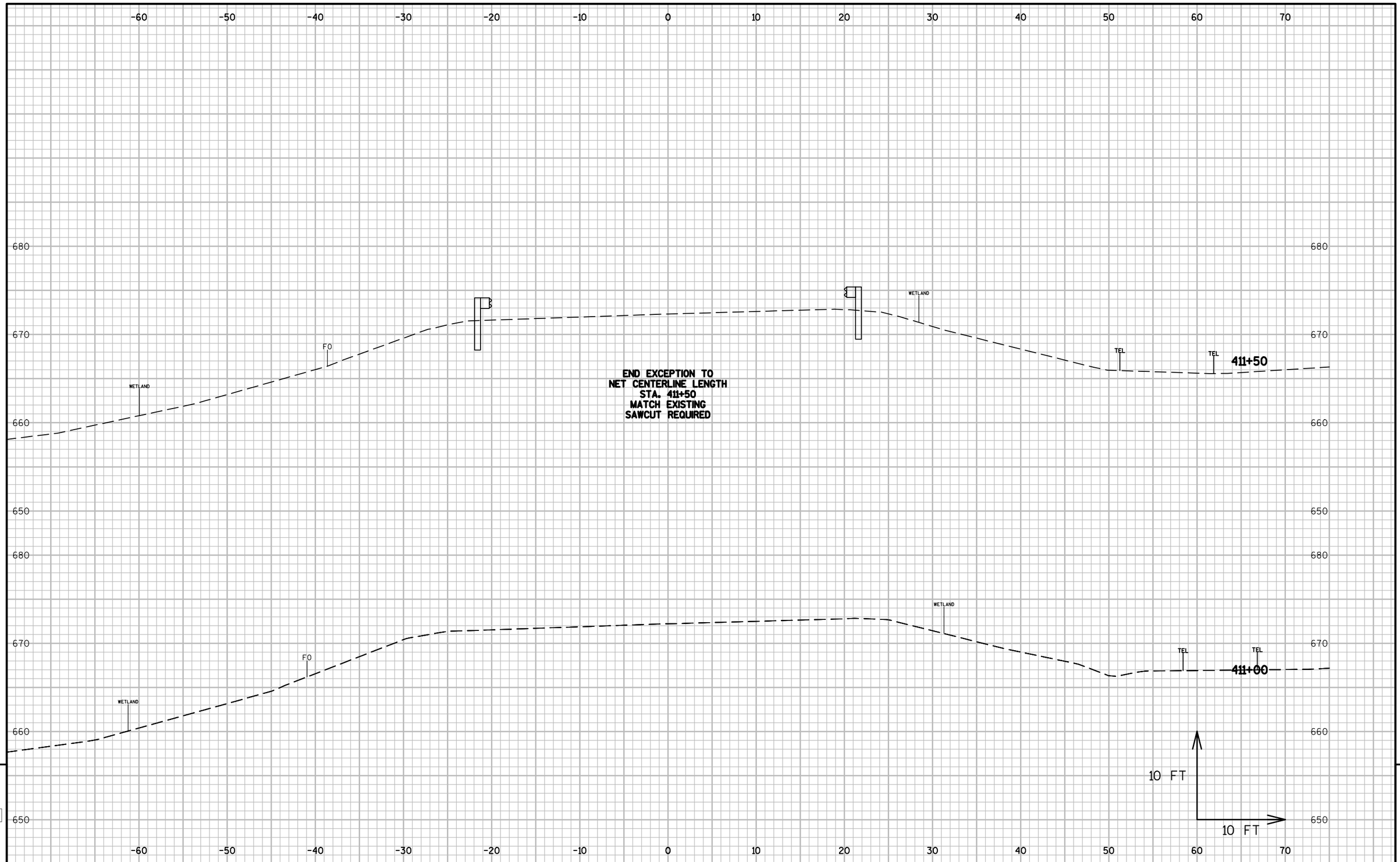




PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-203	SHEET 228	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06203-6

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

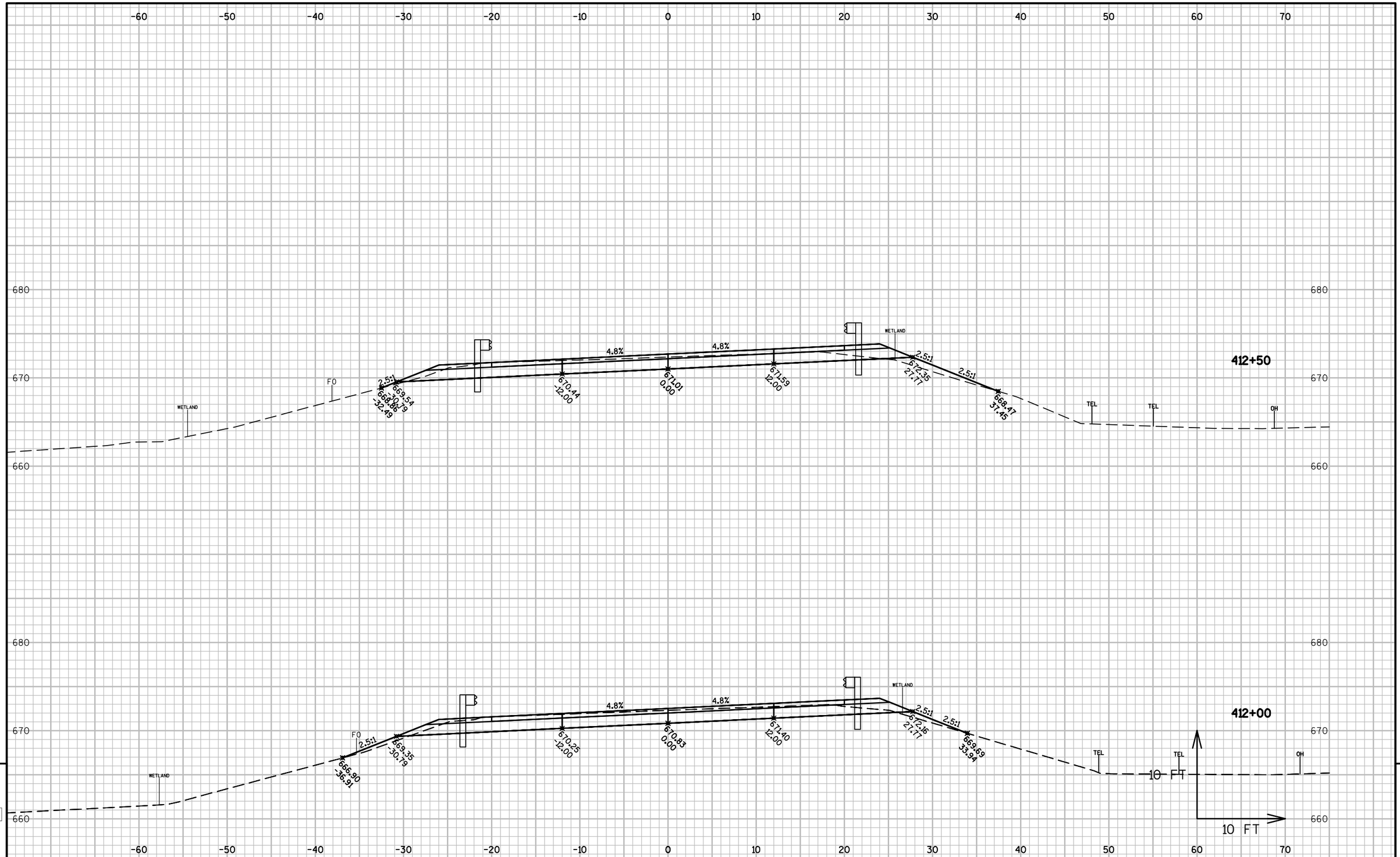


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 229	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-01

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

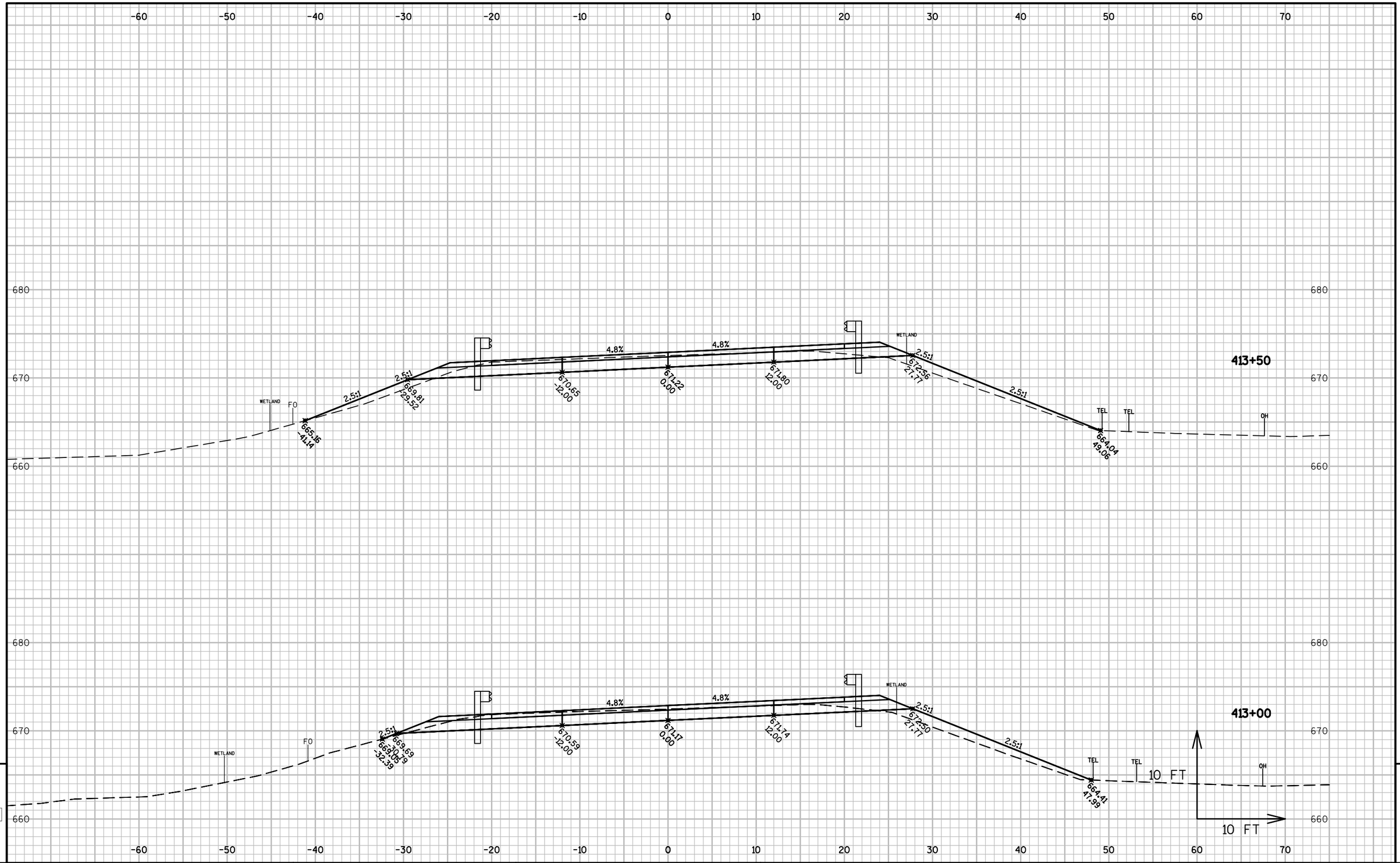
WISDOT/CADDS SHEET 49



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 230	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-02

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

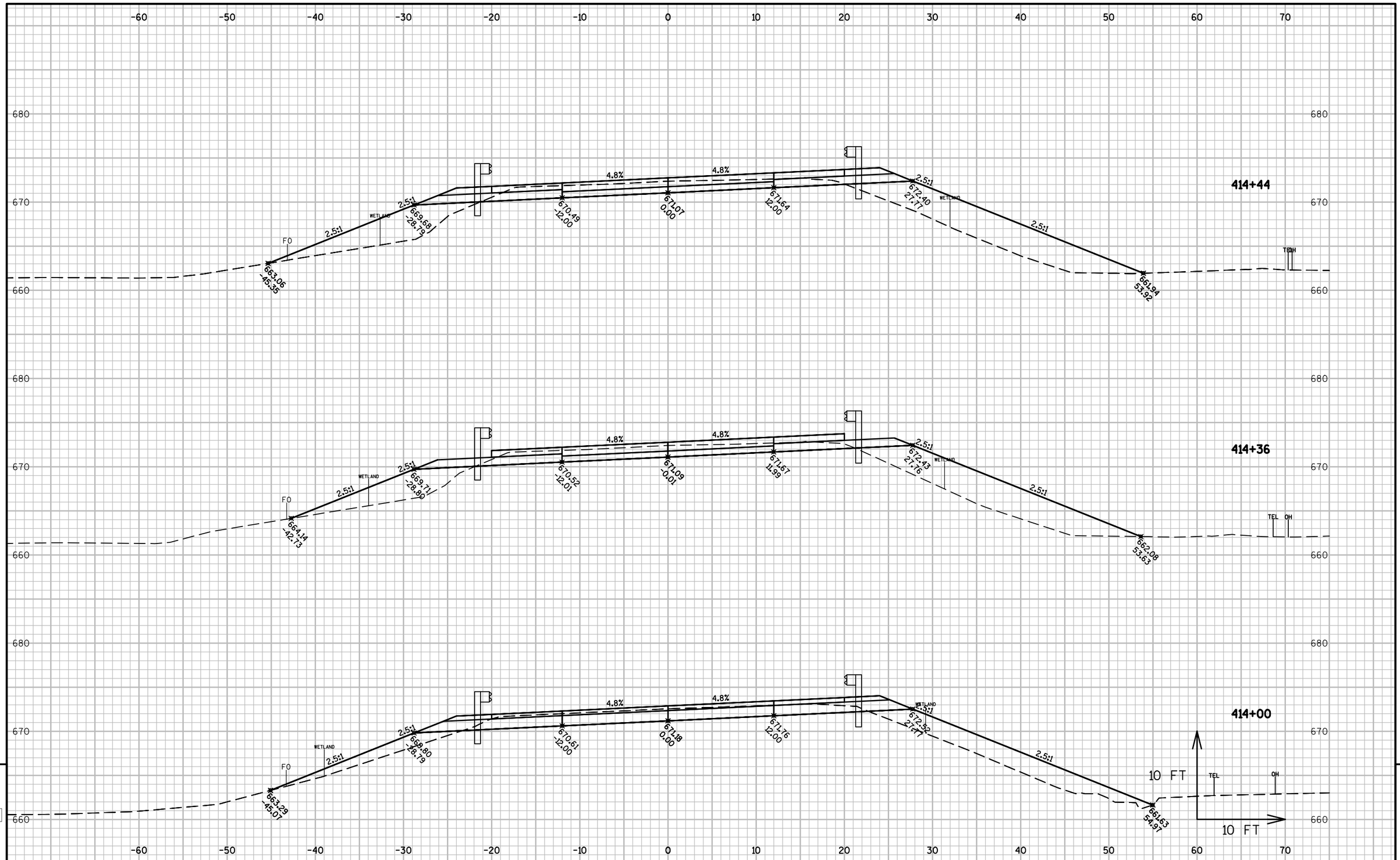


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 231	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-03

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

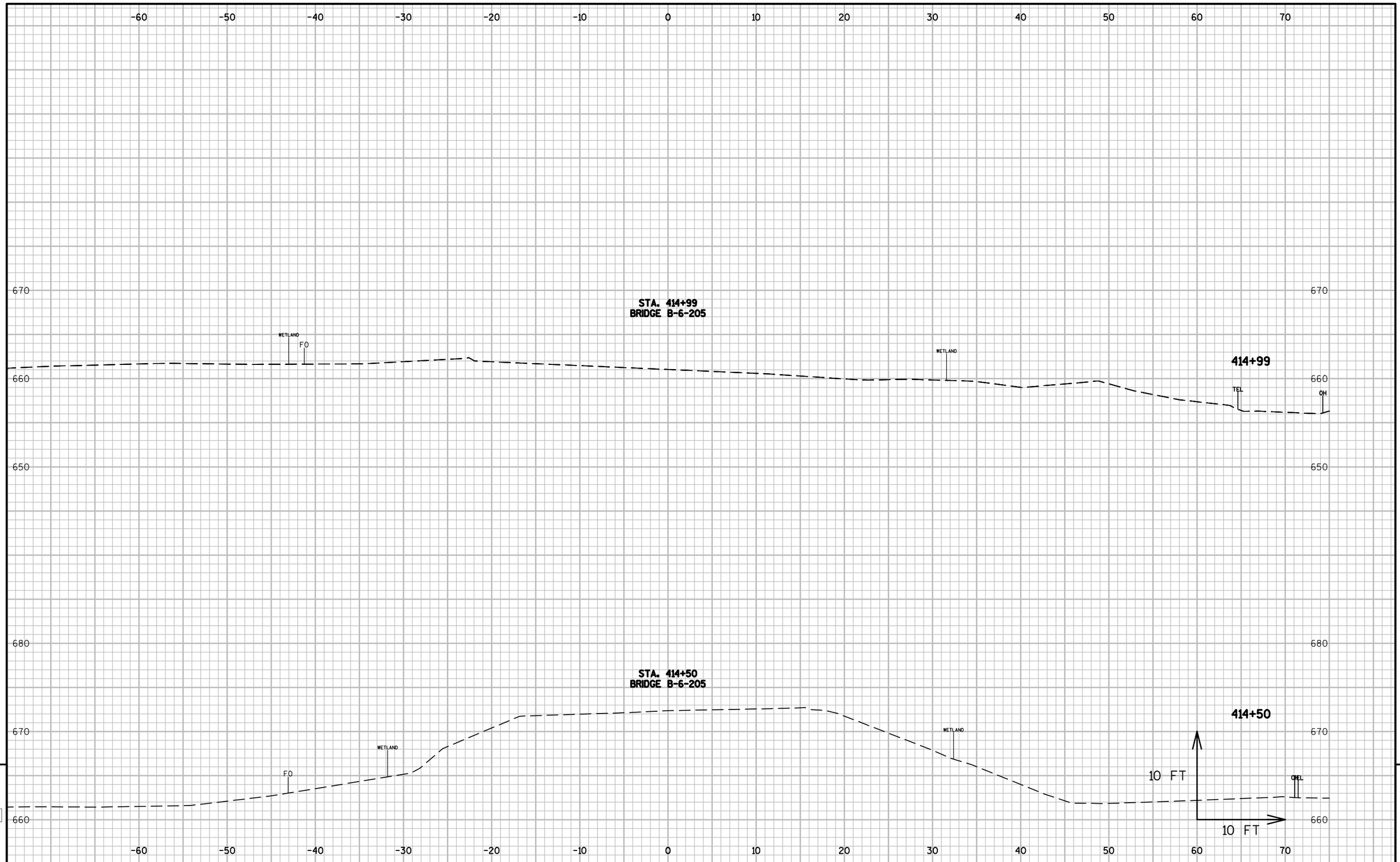


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 232	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-04

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

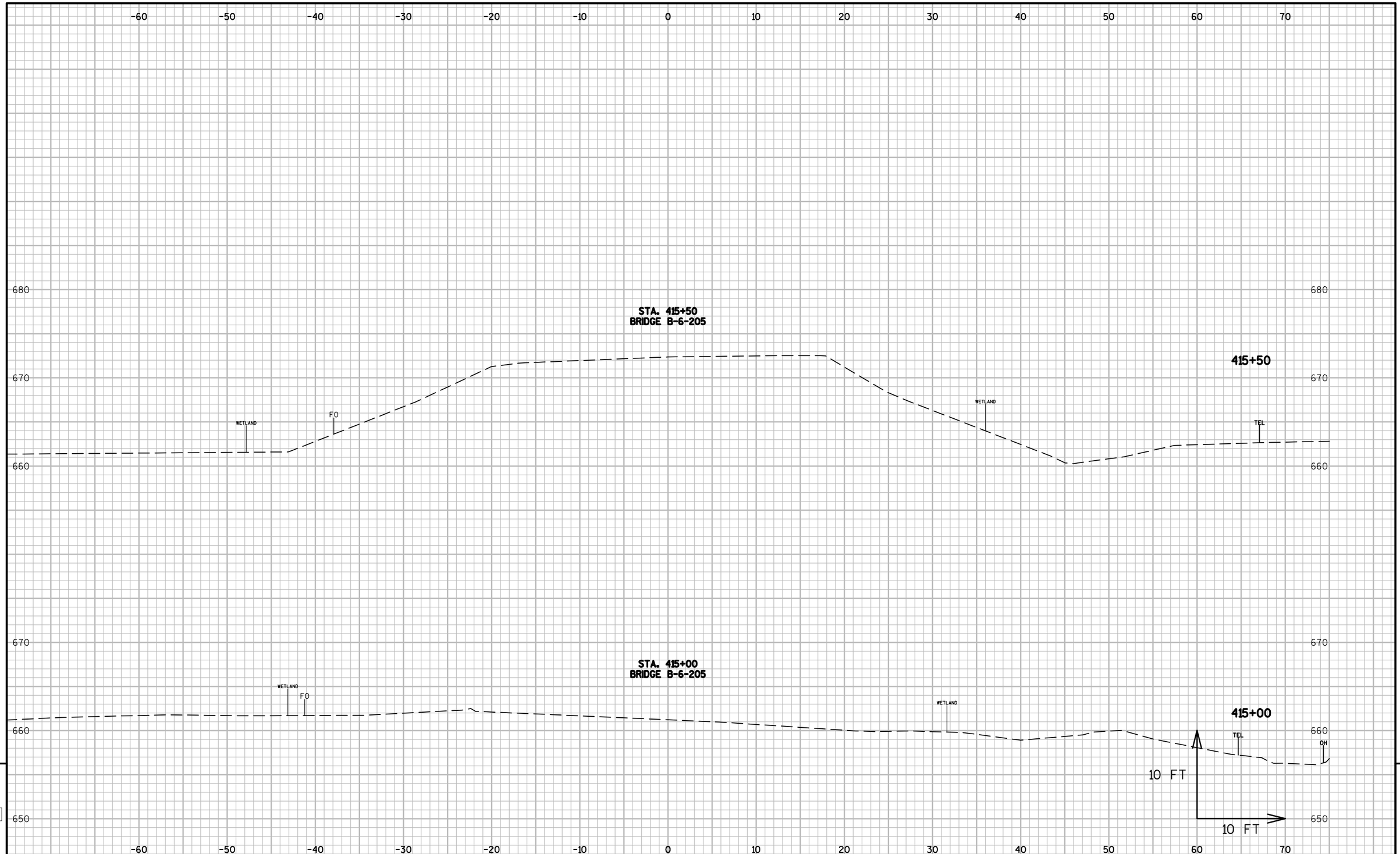


PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 233	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-05

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 234	E

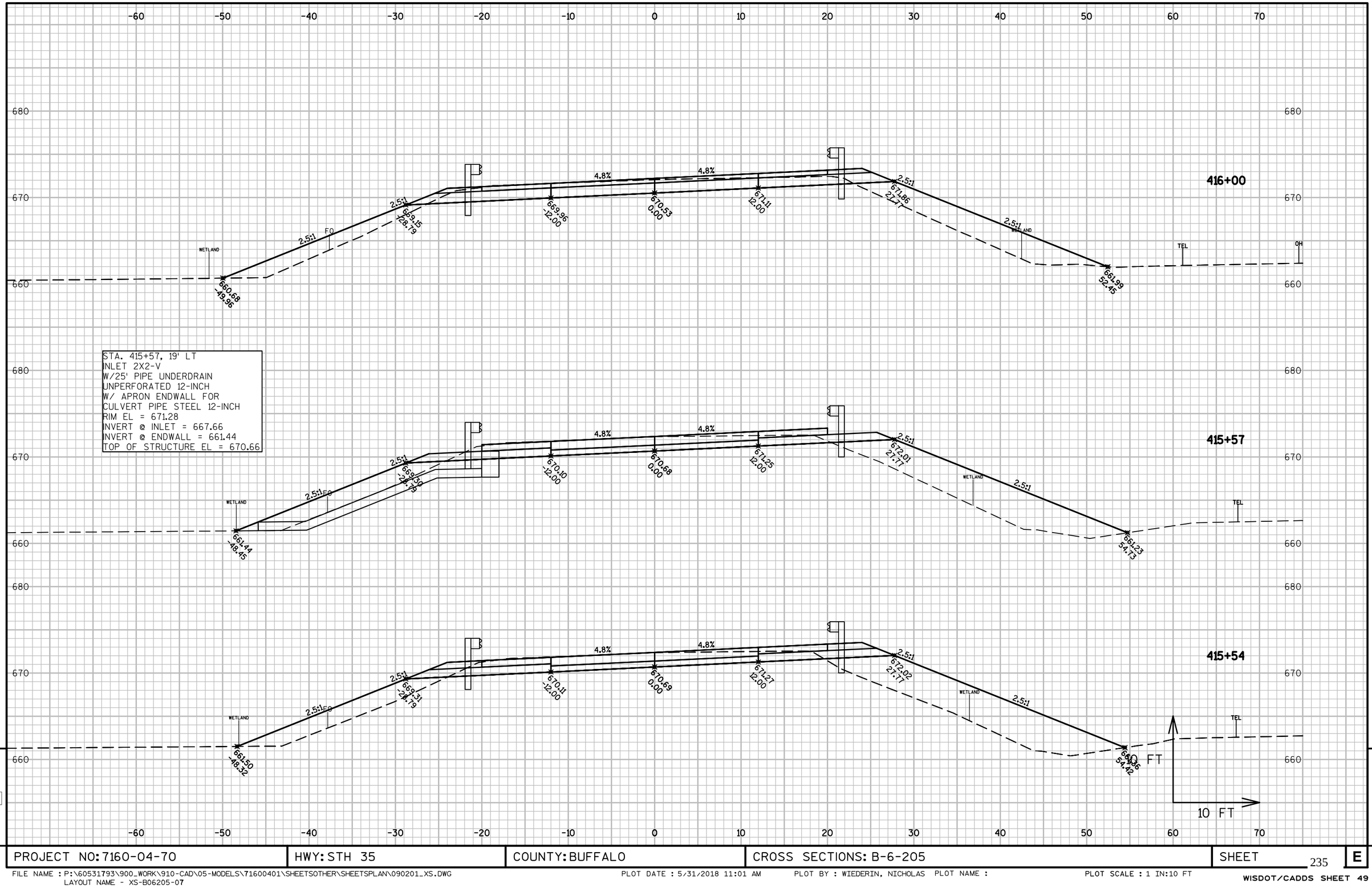
FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-06

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

STA. 415+57, 19' LT
INLET 2X2-V
W/25' PIPE UNDERDRAIN
UNPERFORATED 12-INCH
W/ APRON ENDWALL FOR
CULVERT PIPE STEEL 12-INCH
RIM EL = 671.28
INVERT @ INLET = 667.66
INVERT @ ENDWALL = 661.44
TOP OF STRUCTURE EL = 670.66



PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 235	E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-07

PLOT DATE : 5/31/2018 11:01 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

END PROJECT
7160-04-70
STA. 417+00
MATCH EXISTING
SAWCUT REQUIRED

417+00

416+50

WETLAND
FO
TEL
OH
2.5:1
4.8%
659.84
-51.64
668.98
-28.79
669.78
-12.00
670.35
0.00
670.94
12.00
671.69
27.17
661.86
52.35
10 FT
10 FT

PROJECT NO: 7160-04-70	HWY: STH 35	COUNTY: BUFFALO	CROSS SECTIONS: B-6-205	SHEET 236 E

FILE NAME : P:\60531793\900_WORK\910-CAD\05-MODELS\71600401\SHEETSOTHER\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - XS-B06205-08

PLOT DATE : 5/31/2018 11:02 AM PLOT BY : WIEDERIN, NICHOLAS PLOT NAME : PLOT SCALE : 1 IN:10 FT

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov