RHI

JAN 2016

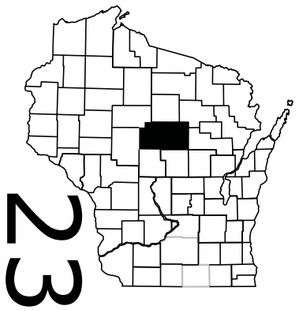
PROJECT ID: 1170-00-74
WITH: N/A

COUNTY: MARATHON

ORDER OF SHEETS

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

TOTAL SHEETS = 366



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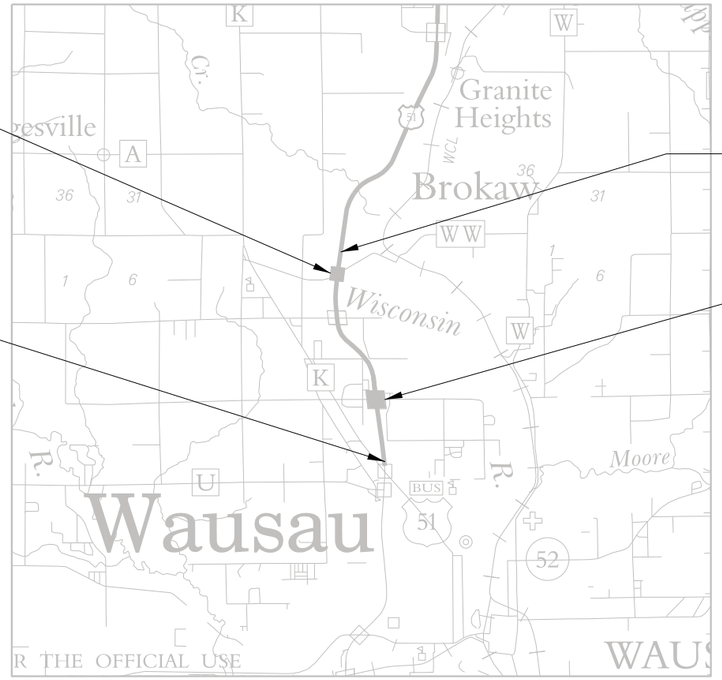
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WAUSAU - MERRILL
B-37-155, 158, 159
USH 51
MARATHON COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1170-00-74	WISC 2016036	1

STATE PROJECT NUMBER
1170-00-74



B-37-158 USH 51 NB
B-37-159 USH 51 SB

END PROJECT
STA 222N+31.00

B-37-155 USH 51 NB

BEGIN PROJECT
STA 102N+00.00

DESIGN DESIGNATION 1170-00-74

A.A.D.T.	(2015)	=	19,000
A.A.D.T.	(2035)	=	24,300
D.H.V.	(2035)	=	3,600
D.D.		=	67/33
T. (DHV)		=	14.7
DESIGN SPEED		=	70 MPH
ESALS		=	9,869,800 (479,975 FOR TEMPORARY ROADWAY)

CONVENTIONAL SYMBOLS

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

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

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

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.254 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MARATHON COUNTY, NAD 83 (2007)

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (91) OF NAVD 88 (91).

ORIGINAL PLANS PREPARED BY
BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity

WISCONSIN PROFESSIONAL ENGINEER
CHAD R. EVEN
E-40861
Greenville, Wisconsin

11/6/15 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	
Designer	BLOOM COMPANIES, LLC
Project Manager	MICHAEL GRAGE
Regional Examiner	CHERYL SIMON
Regional Supervisor	ROBIN STAFFORD
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 11/06/15 (Signature)

E

GENERAL NOTES

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

NO TREES OR SHRUBS ARE TO BE REMOVED WITH PRIOR APPROVAL OF THE ENGINEER.

CONCRETE RISER BID ITEM INCLUDES REMOVAL OF STRUCTURE WHEN REMOVING THE TEMPORARY ROADS.

ALL TYPES OF HMA PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYERS AND GRADATIONS:

TOTAL LAYER PAVEMENT THICKNESS	LAYERS	NOMINAL MAXIMUM SIZE GRADATION
2”	2” UPPER LAYER	12.5 mm
6.25”	2.25" UPPER LAYER	12.5 mm
	4" LOWER LAYER	19.0 mm
7"	2" UPPER LAYER	12.5 mm
	2 1/2" UPPER/LOWER LAYER	12.5 mm
	2 1/2" LOWER LAYER	19.0 mm

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

UTILITY CONTACTS

WISCONSIN PUBLIC SERVICE CORPORATION – GAS PETROLEUM
MICHAEL ALLEN BOSI
1700 SHERMAN STREET
WAUSAU, WI 54402
PHONE: (715) 848-7471
MABosi@wisconsinpublicservice.com

WISCONSIN PUBLIC SERVICE CORPORATION – ELECTRICITY
CLAYTON VIRCKS
PO BOX 1166
WAUSAU, WI 54402
PHONE: (715) 848-73173
chvircks@wisconsinpublicservice.com

BROKAW WATER UTILITY
CHARLES BLAREK
PO BOX 108
BROKAW, WI 54417
PHONE: (715) 675-1601
BrokawWT@airnetisp.com

CHARTER COMMUNICATIONS
SCOTT OLSON
853 MCINTOSH STREET
WAUSAU, WI 54402
PHONE: (715) 302-1348
Scott.olson@charter.com

OTHER AGENCIES

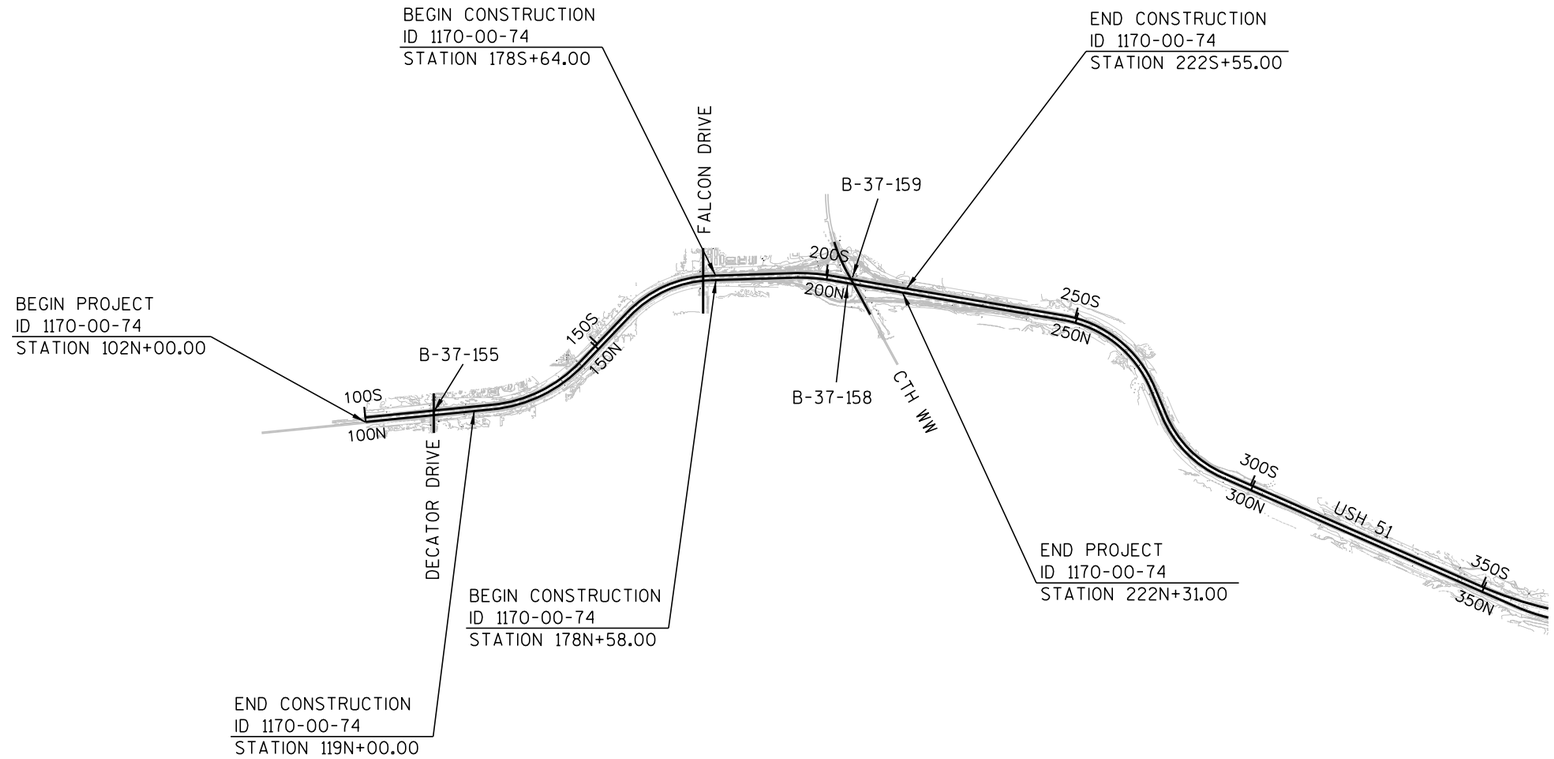
WISCONSIN DNR
MR. MARC HERSHFIELD
WDNR EA LIASION
473 GRIFFITH DRIVE
WISCONSIN RAPIDS, WI 54494
PHONE: (715) 421-7867
marc.hershfield@wisconsin.gov

SECTION 2 ORDER OF SHEETS

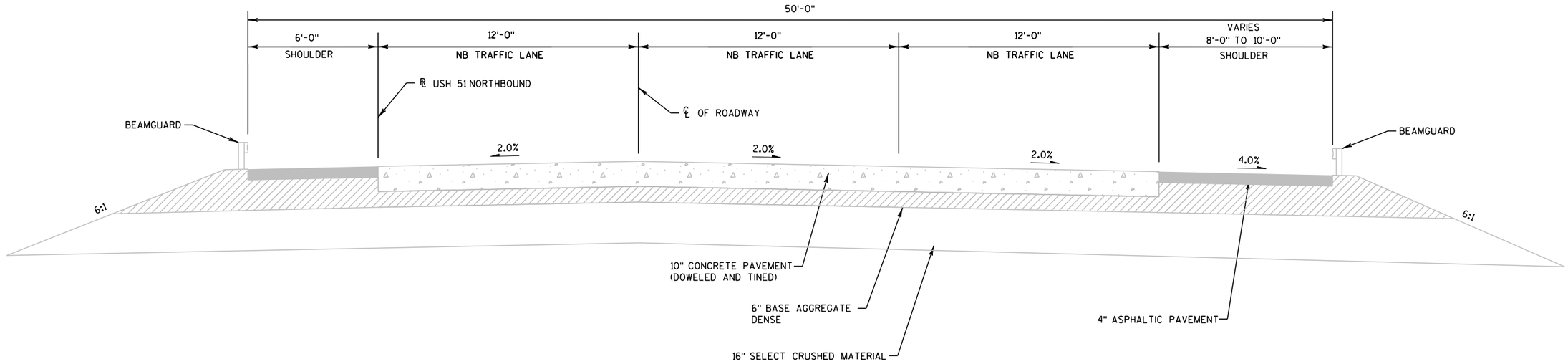
GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSTION CONTROL/DRAINAGE
PAVEMENT MARKINGS/SIGNING
TRAFFIC CONTROL
ALIGNMENT PLAN

2

N



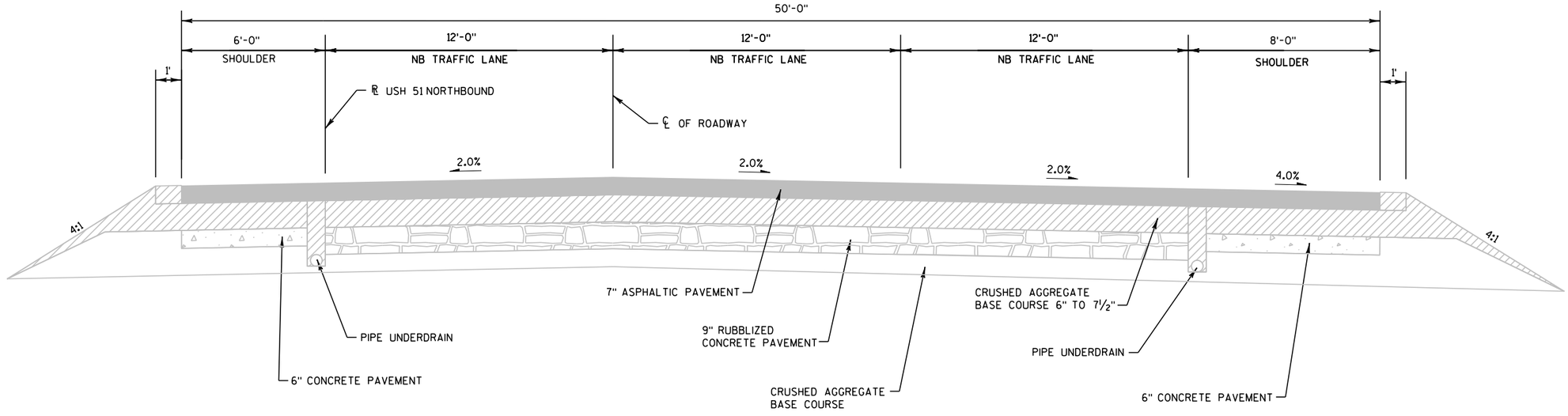
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PROJECT OVERVIEW	SHEET 3	E



EXISTING TYPICAL SECTION

USH 51 NORTHBOUND
B-37-155 APPROACHES

STA 102N+00 TO STA 112N+90



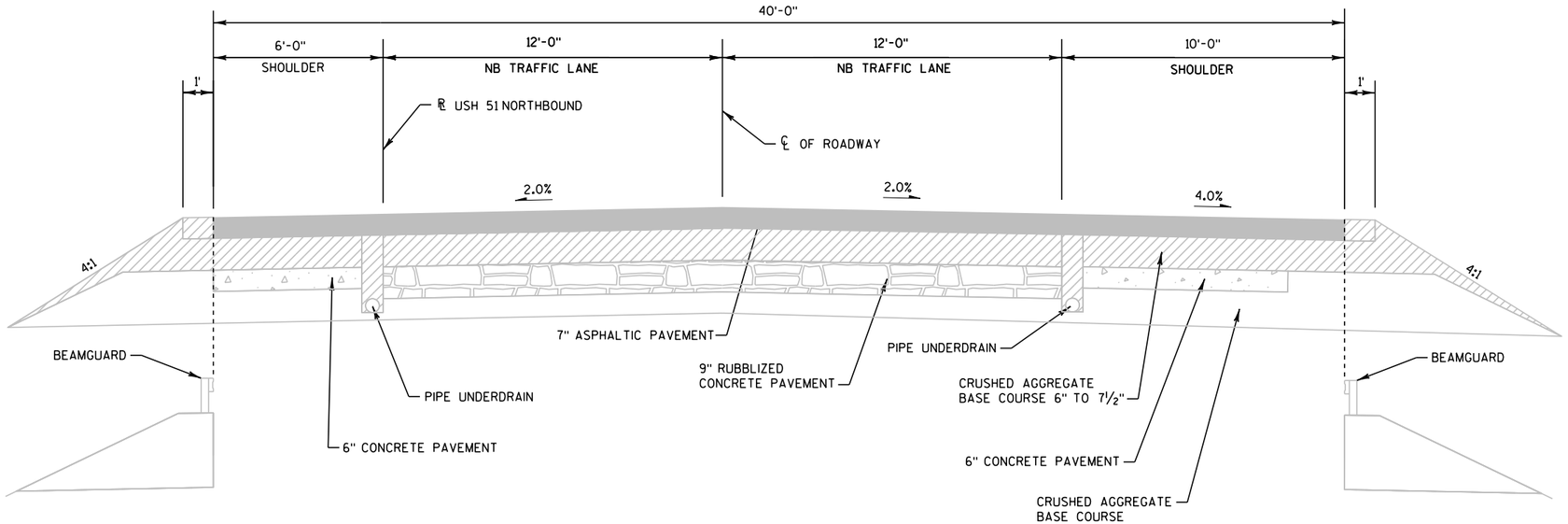
EXISTING TYPICAL SECTION

USH 51 NORTHBOUND
B-37-155 APPROACHES

STA 114N+30 TO STA 119N+00

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 4	E

2



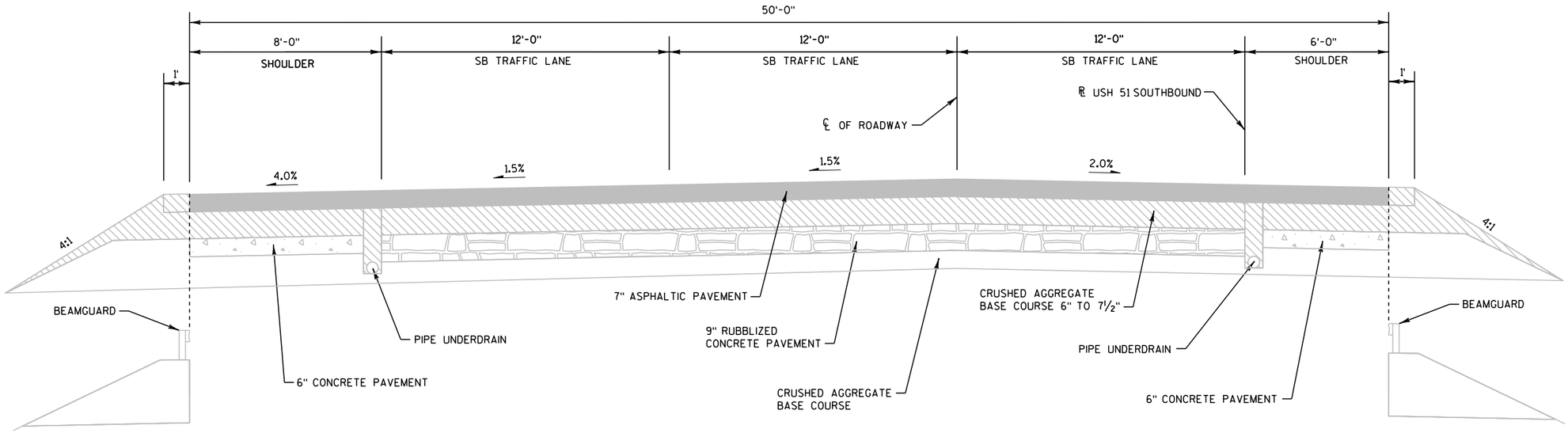
EXISTING TYPICAL SECTION

USH 51 NORTHBOUND
B-37-158 APPROACHES

STA 178N+58 TO STA 222N+31

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 5	E

2

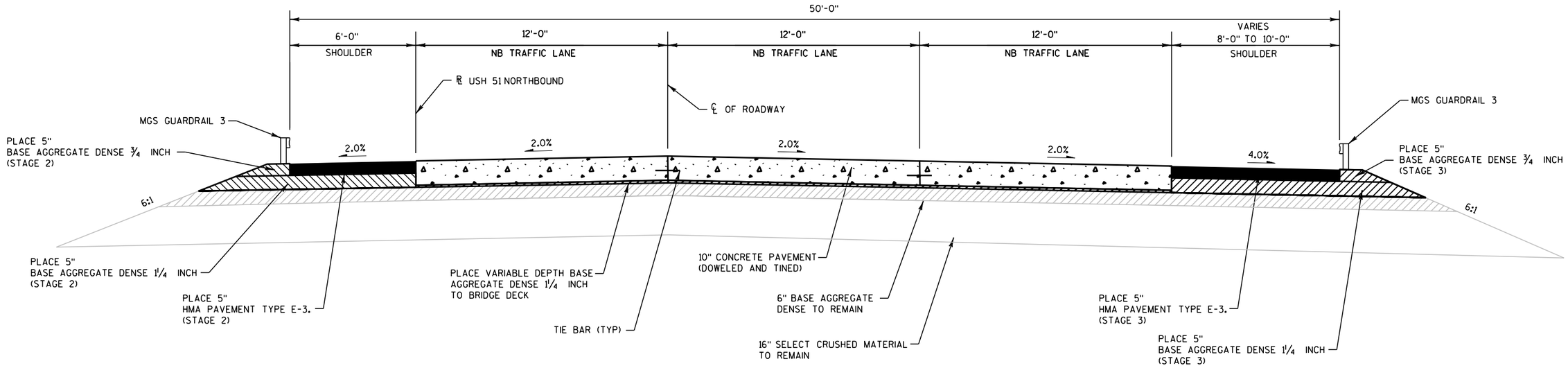


EXISTING TYPICAL SECTION

USH 51 SOUTHBOUND
B-37-159 APPROACHES

STA 178S+64 TO STA 222S+55

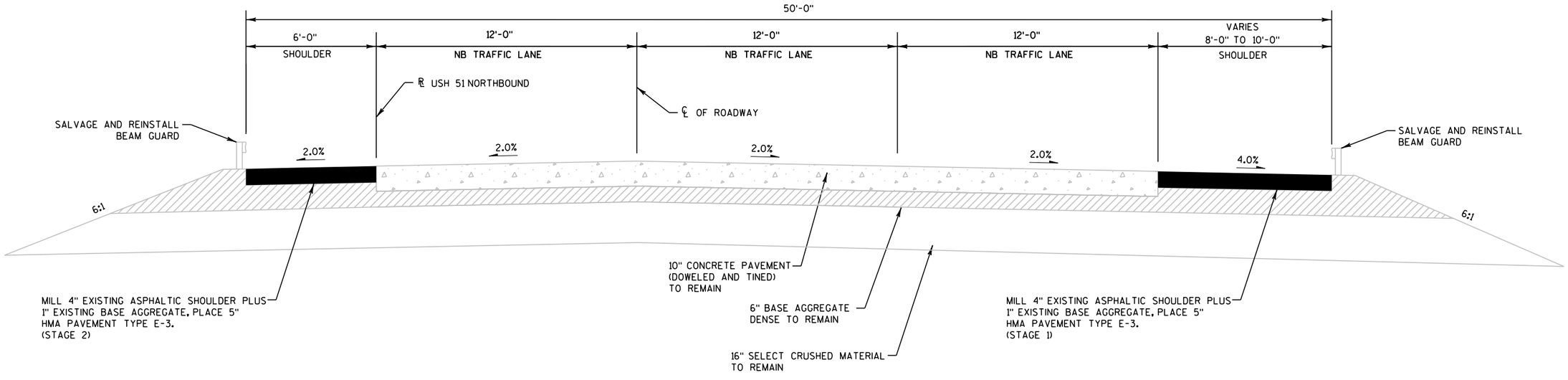
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 6	E



PROPOSED TYPICAL SECTION

USH 51 NORTHBOUND
B-37-155 APPROACHES

STA 111N+00 TO STA 112N+90

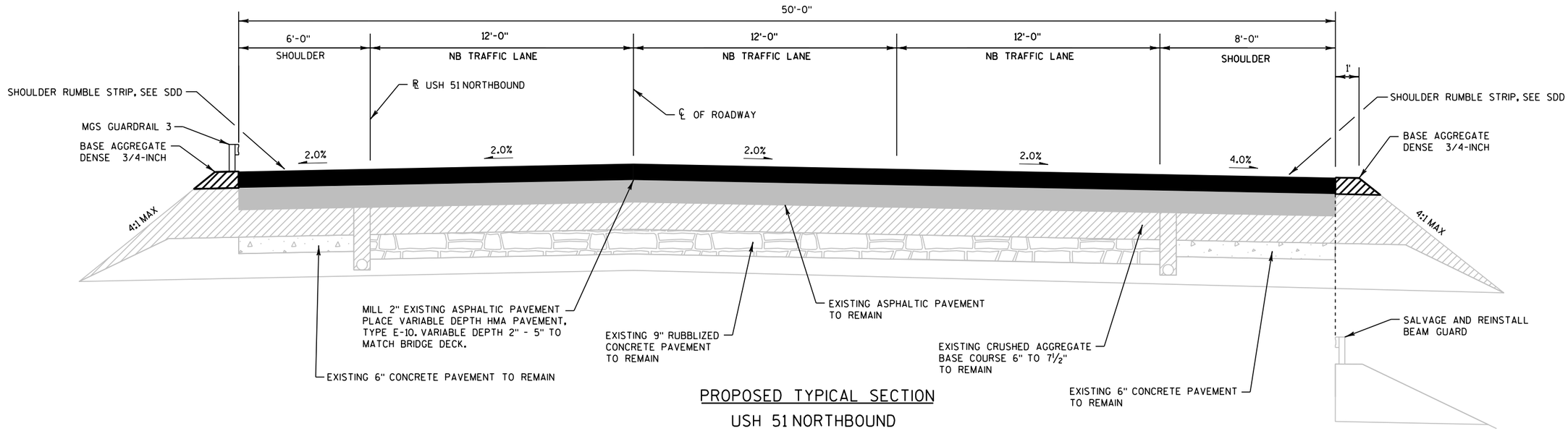


PROPOSED TYPICAL SECTION

USH 51 NORTHBOUND
B-37-155 APPROACHES

STA 102N+00 TO STA 111N+00 (STAGE 2)
STA 103N+56 TO STA 112N+90 (STAGE 1)

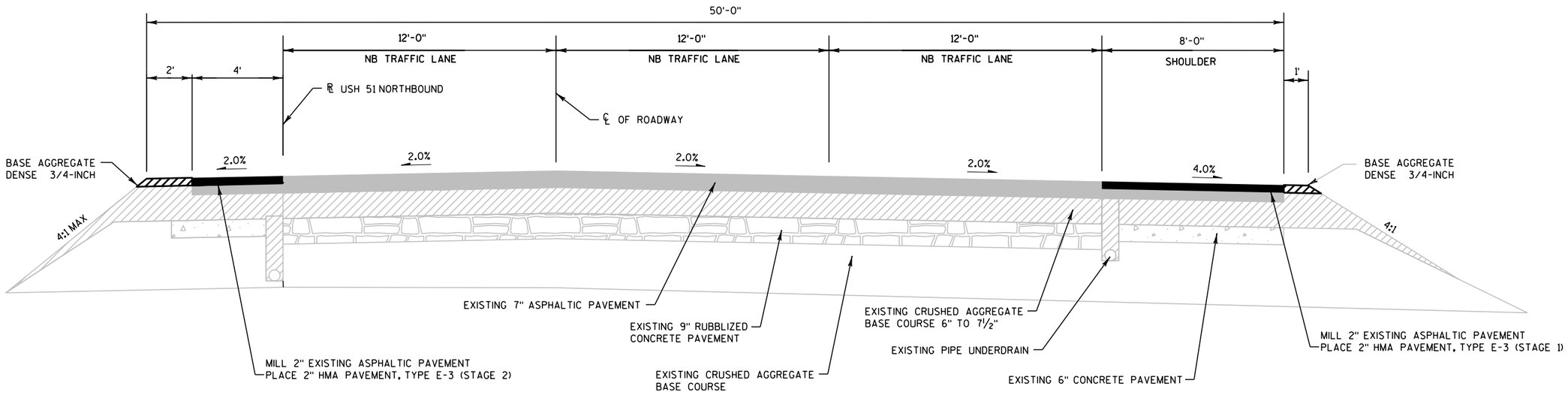
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 7	E



PROPOSED TYPICAL SECTION

USH 51 NORTHBOUND
B-37-155 APPROACHES

STA 114N+66 TO STA 116N+29

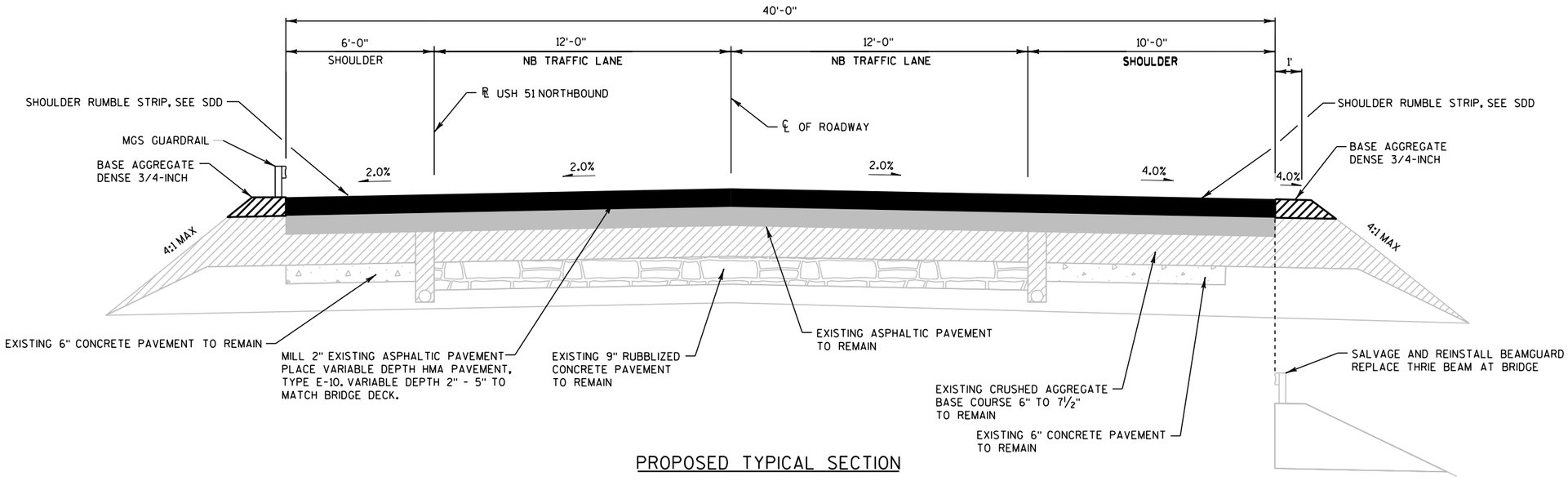


PROPOSED TYPICAL SECTION

USH 51 NORTHBOUND
B-37-155 APPROACHES

STA 116N+29 TO STA 119N+00

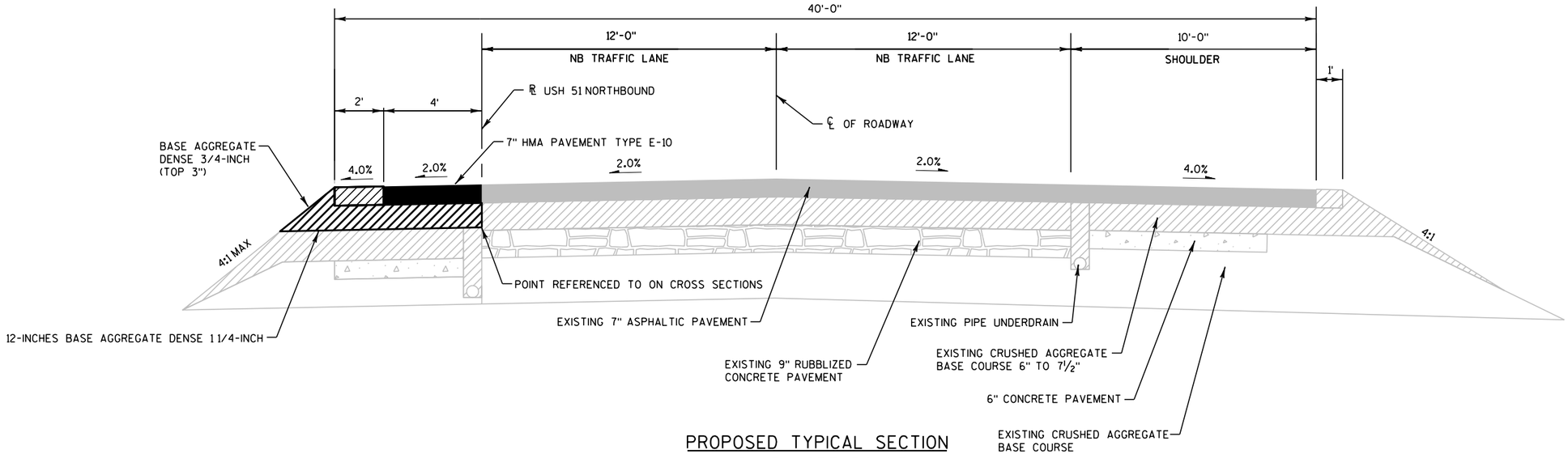
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 8	E



PROPOSED TYPICAL SECTION

USH 51 NORTHBOUND
B-37-158 APPROACHES

STA 200N+62 TO STA 203N+89
STA 207N+33 TO STA 208N+68

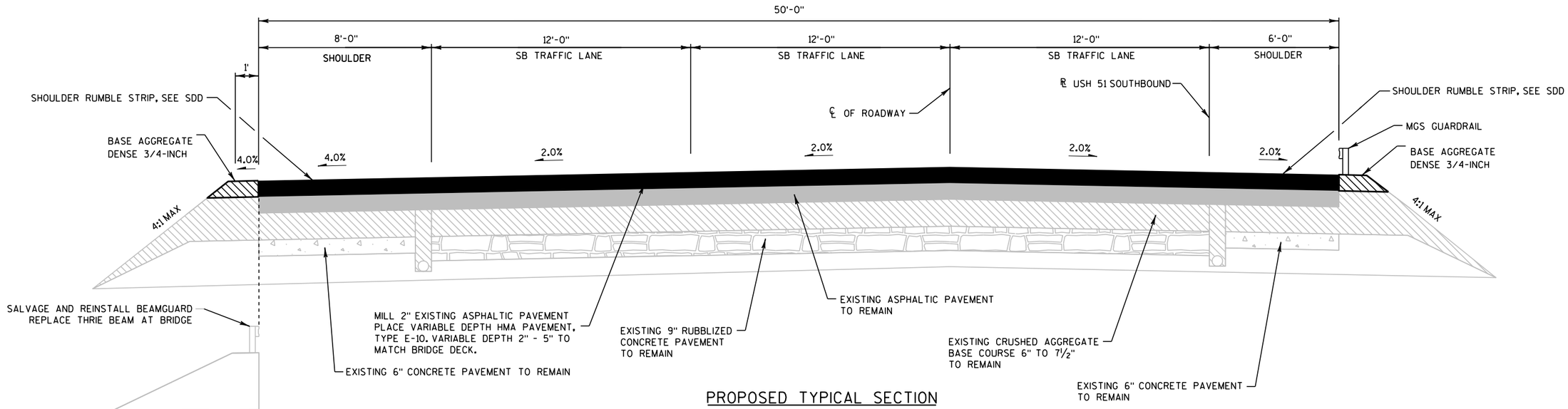


PROPOSED TYPICAL SECTION

USH 51 NORTHBOUND
B-37-158 APPROACHES

STA 178N+58 TO STA 188N+00
STA 208N+68 TO STA 222N+31

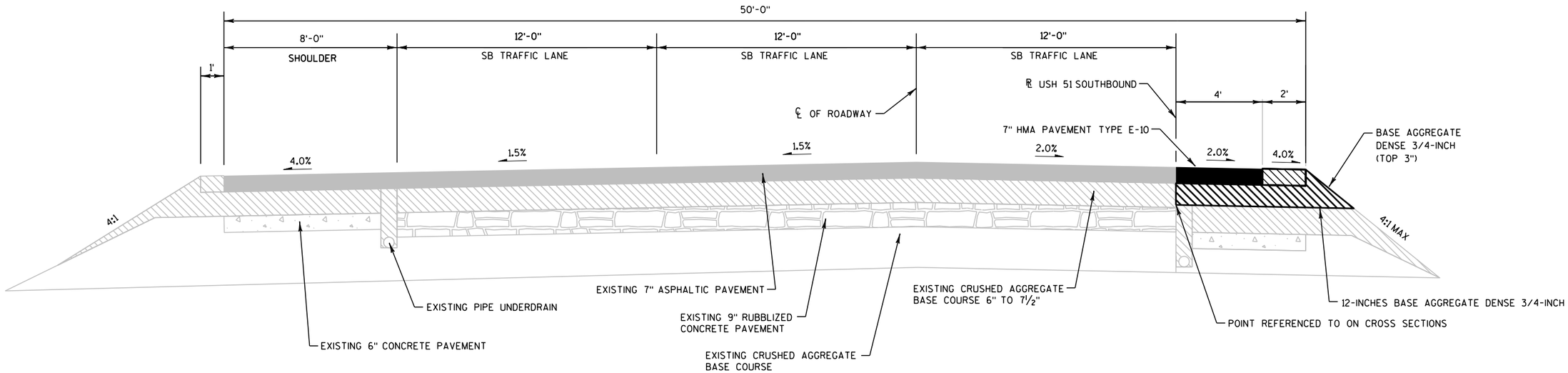
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 9	E



PROPOSED TYPICAL SECTION

USH 51 SOUTHBOUND
B-37-159 APPROACHES

STA 200S+78 TO STA 203S+08
STA 206S+70 TO STA 210S+47



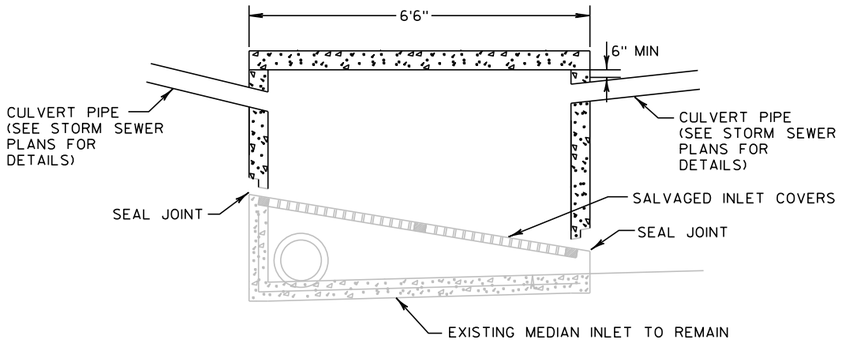
PROPOSED TYPICAL SECTION

USH 51 SOUTHBOUND
B-37-159 APPROACHES

STA 178S+64 TO STA 189S+50
STA 210S+47 TO STA 222S+55

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TYPICAL SECTIONS	SHEET 10	E

2

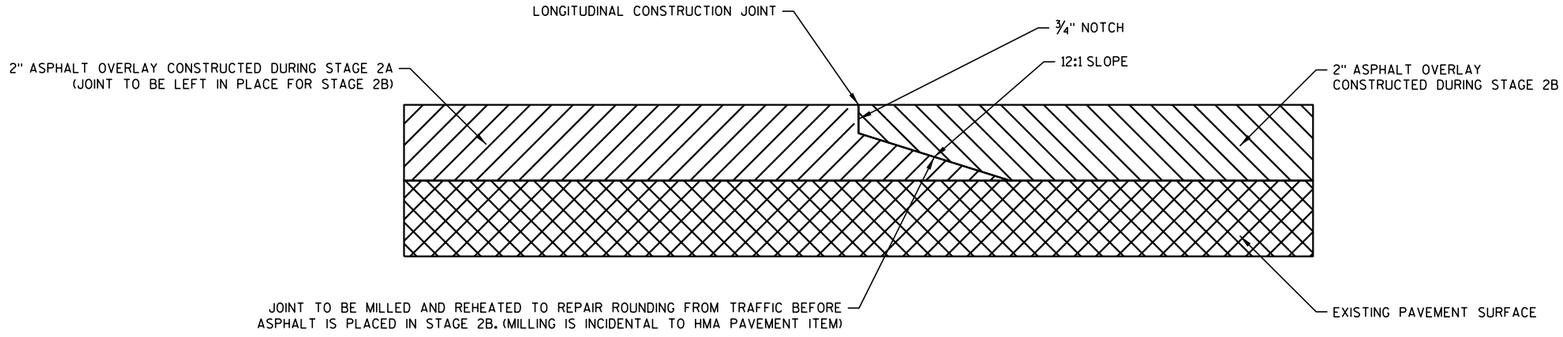


CONCRETE RISER FOR MEDIAN INLET

CAST IN PLACE OR PRECAST

35TNW+88 14' RT

43TNW+05 14'RT



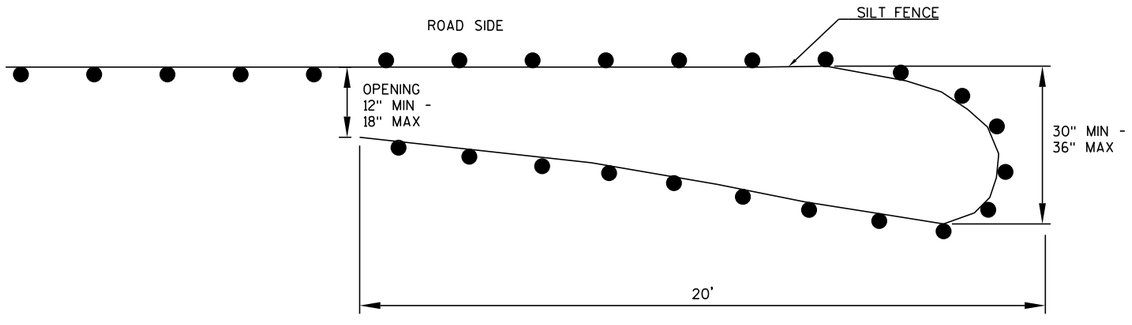
ASPHALT LONGITUDINAL CONSTRUCTION JOINT DETAIL

STA 111N+00 - STA 112N+50
STA 114N+66 - STA 116N+29
STA 200N+62 - STA 203N+89
STA 207N+33 - STA 208N+68
STA 200S+78 - STA 203S+08
STA 206S+70 - STA 210S+47

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

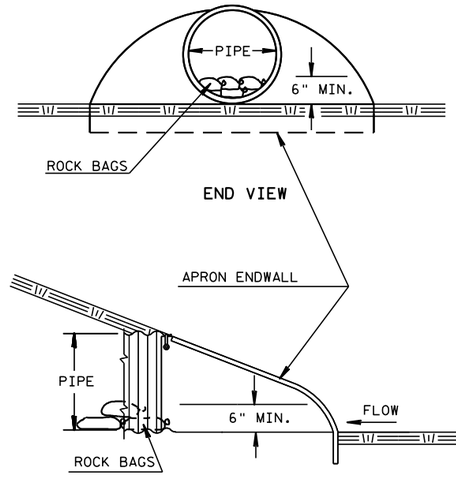


PLAN VIEW

GENERAL NOTES:

SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS

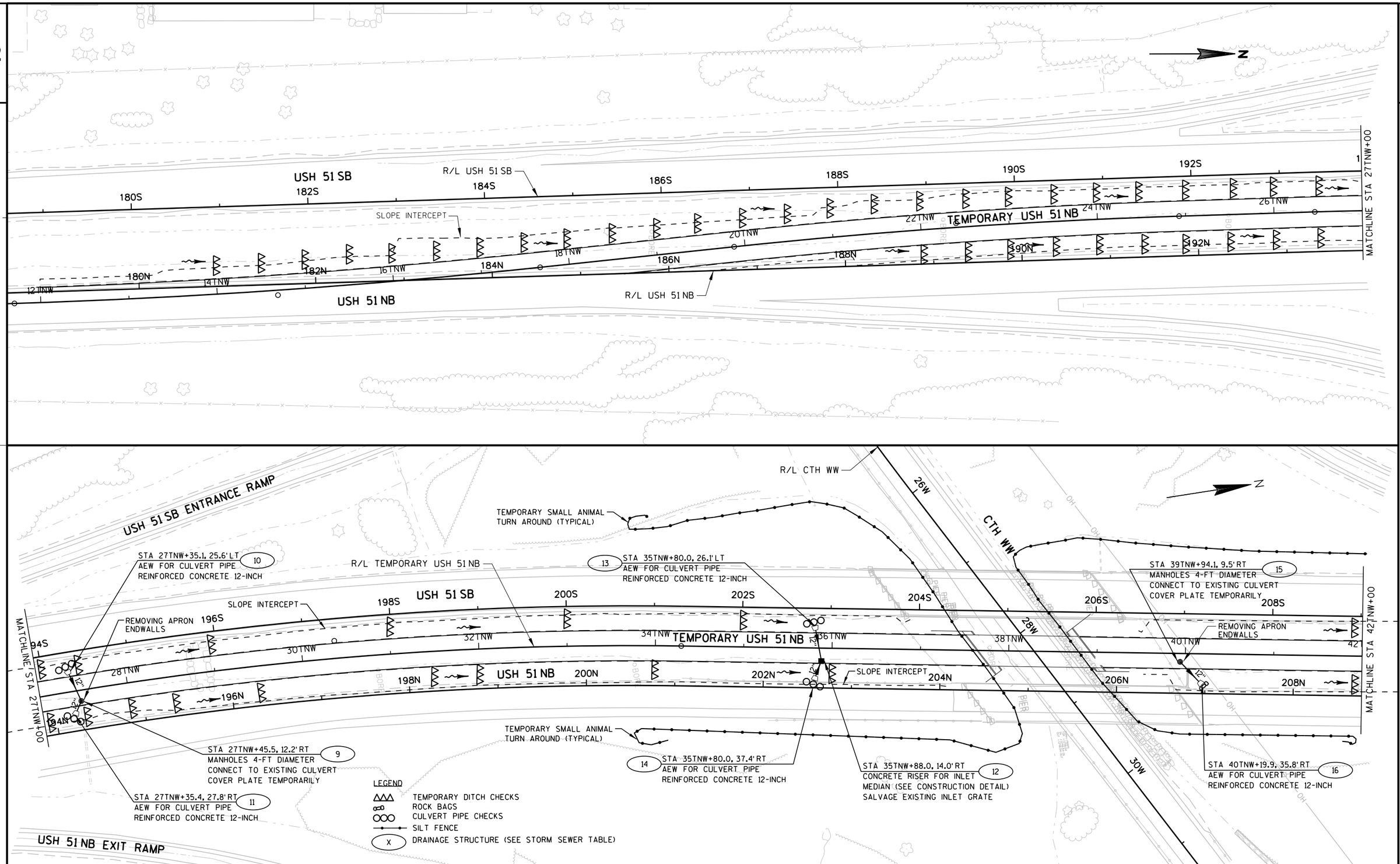
TEMPORARY SMALL ANIMAL TURN-AROUND



SIDE VIEW

CULVERT PIPE CHECKS

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 1	SHEET 13 E

2

N

TEMPORARY SMALL ANIMAL
TURN AROUND (TYPICAL)

USH 51 SB EXIT RAMP

STA 43TNW+05.1, 14.2' RT
CONCRETE RISER FOR MEDIAN INLET
(SEE CONSTRUCTION DETAIL)
SALVAGE EXISTING INLET GRATE
19

MATCHLINE STA 42TNW+00

210S 212S 214S 216S 218S 220S 222S 224S

R/L USH 51 SB

USH 51 SB

SLOPE INTERCEPT

NW 441TNW 461TNW 481TNW 501TNW 521TNW 541TNW 561TNW

TEMPORARY USH 51 NB

12 210N 212N 214N 216N 218N 220N 222N 224N

USH 51 NB

STA 43TNW+06.0, 34.8' RT
INLETS MEDIAN 1 GRATE MS
INLET PROTECTION
TYPE A REQ'D
20

R/L USH 51 NB

R/L TEMPORARY USH 51 NB

USH 51 NB ENTRANCE RAMP

OH

SIGN

34W

LEGEND

- TEMPORARY DITCH CHECKS
- SILT FENCE
- X — DRAINAGE STRUCTURE (SEE STORM SEWER TABLE)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 1	SHEET 14	E

2

N

DECATOR DRIVE

12D

14D

16D

R/L USH 51 SB

USH 51 SB

102S 104S 106S 108S 110S 112S 114S 116S

102N 104N 106N 108N 110N 112N 114N 116N

USH 51 NB

R/L USH 51 NB

MATCHLINE STA 117N+00

TEMPORARY SMALL ANIMAL
TURN AROUND (TYPICAL)

SILT FENCE

R/L DECATOR DRIVE

P.BORE

N

MATCHLINE STA 117N+00

R/L USH 51 SB

USH 51 SB

118S 120S 122S 124S 126S 128S 130S 132S

118N 120N 122N 124N 126N 128N 130N 132N

R/L USH 51 NB

USH 51 NB

LEGEND

TEMPORARY DITCH CHECKS

SILT FENCE

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 2	SHEET 15	E

2

N

DECATOR DRIVE

12D

14D

16D

R/L USH 51 SB

USH 51 SB

102S 104S 106S 108S 110S 112S 114S 116S

102N 104N 106N 108N 110N 112N 114N 116N

USH 51 NB

R/L USH 51 NB

MATCHLINE STA 117N+00

TEMPORARY SMALL ANIMAL TURN AROUND (TYPICAL)

SILT FENCE

R/L DECATOR DRIVE

P.BORE

MATCHLINE STA 117N+00

N

118S 120S 122S 124S 126S 128S 130S 132S

118N 120N 122N 124N 126N 128N 130N 132N

R/L USH 51 SB

USH 51 SB

R/L USH 51 NB

USH 51 NB

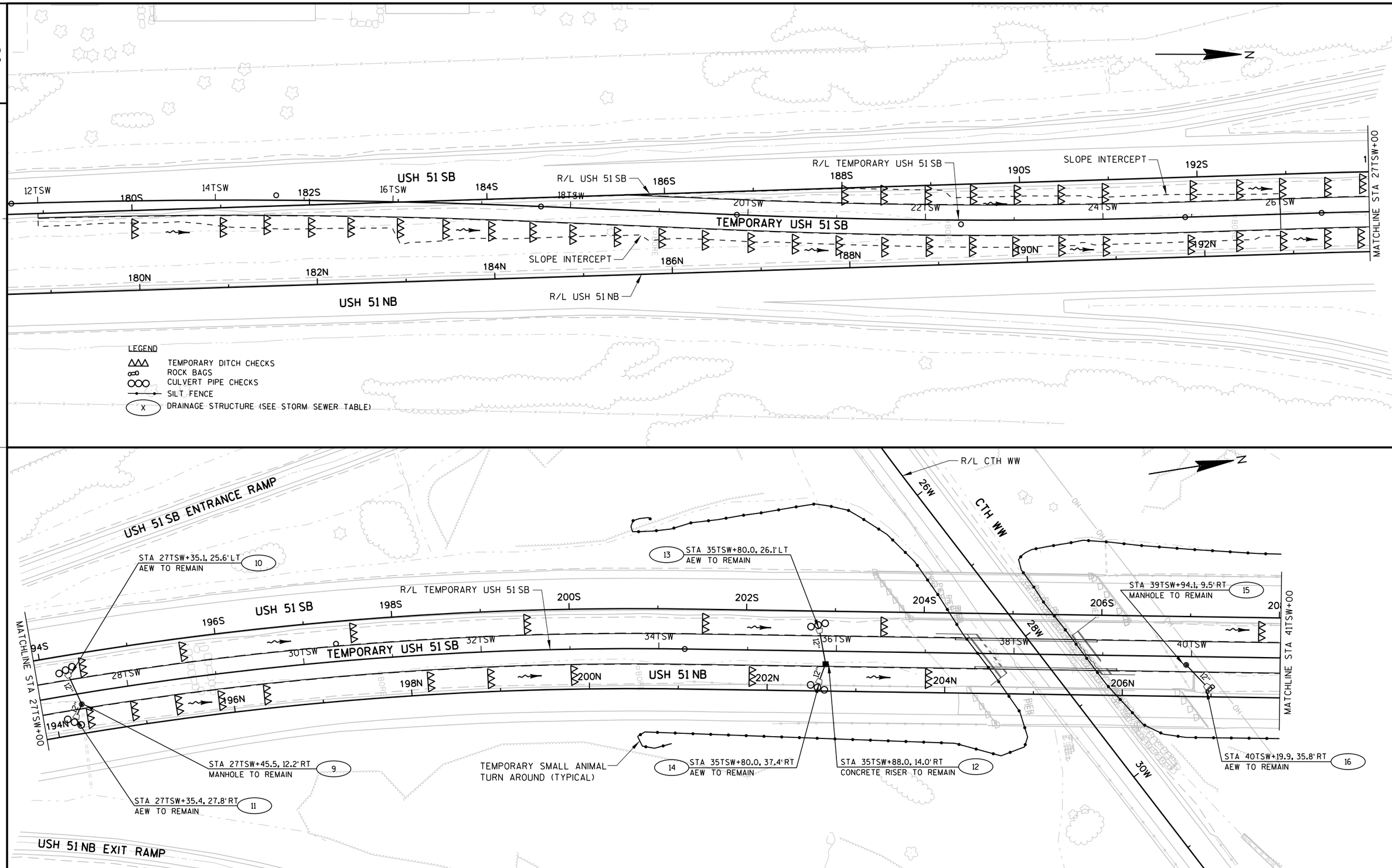
LEGEND

TEMPORARY DITCH CHECKS

SILT FENCE

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 3	SHEET 16	E

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 3	SHEET 17	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\022302_ec_Stg3.dgn PLOT DATE : 04-NOV-2015 16:41 PLOT BY : smccarty PLOT NAME : PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

2

N

USH 51 SB EXIT RAMP

STA 42TSW+00.2, 25.8'LT
INLETS MEDIAN 1 GRATE MS
17

STA 43TSW+05.1, 14.2'RT
CONCRETE RISER TO REMAIN
19

R/L TEMPORARY USH 51 SB

MATCHLINE STA 41TSW+00

BS 210S 212S 214S 216S 218S 220S 222S

R/L USH 51 SB

42TSW 44TSW 46TSW 48TSW 50TSW 52TSW 54TSW 56TSW

USH 51 SB

TEMPORARY USH 51 SB

SLOPE INTERCEPT

12"

12"

208N ROCK BAGS 210N 212N 214N 216N 218N 220N 222N

TEMPORARY INLET PROTECTION TYPE A

USH 51 NB

R/L USH 51 NB

STA 43TSW+06.0, 34.8'RT
INLET TO REMAIN
20

STA 41TSW+99.8, 31.4'RT
AEW FOR CULVERT PIPE
REINFORCED CONCRETE 12-INCH
18

TEMPORARY SMALL ANIMAL
TURN AROUND (TYPICAL)

OH

USH 51 NB ENTRANCE RAMP

SIGN

34W CTH WW

LEGEND

- TEMPORARY DITCH CHECKS
- ROCK BAGS
- CULVERT PIPE CHECKS
- SILT FENCE
- (X) DRAINAGE STRUCTURE (SEE STORM SEWER TABLE)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 3	SHEET 18	E

2

N

180S 182S 184S 186S USH 51 SB 188S 190S 192S

MATCHLINE STA 27TNW+00

12TNW 14TNW 16TNW 18TNW 20TNW 22TNW 24TNW 26TNW

180N 182N 184N 186N 188N 190N 192N

BORE

BORE

BORE

R/L TEMPORARY USH 51 NB

USH 51 NB

LEGEND

- TEMPORARY DITCH CHECKS
- ROCK BAGS
- CULVERT PIPE CHECKS
- SILT FENCE
- (X) DRAINAGE STRUCTURE (SEE STORM SEWER TABLE)

N

USH 51 SB ENTRANCE RAMP

26W

CTH WW

28W

30W

STA 27TNW+35.1, 25.6' LT
REMOVING AEW
10

REMOVING STORM SEWER (12")

CULVERT PIPE CHECK
STA 194N+31.0, 31.7' LT

R/L USH 51 SB

198S USH 51 SB 200S 202S 204S 206S

R/L TEMPORARY USH 51 NB

MATCHLINE STA 27TNW+00

194S 196S

30TNW 32TNW 34TNW 36TNW 38TNW 40TNW

28TNW

198N USH 51 NB 200N 202N 204N 206N

196N

194N

R/L USH 51 NB

STA 27TNW+45.5, 12.2' RT
REMOVING MANHOLE
9

STA 194S+38.5 58.1' RT
AEW FOR CULVERT PIPE
REINFORCED CONCRETE 24-INCH
CONCRETE COLLAR REQUIRED

REMOVING STORM SEWER (12")

STA 27TNW+35.4, 27.8' RT
REMOVING AEW
11

USH 51 NB EXIT RAMP

TEMPORARY SMALL ANIMAL
TURN AROUND (TYPICAL)

13 STA 35TNW+80.0, 26.1' LT
REMOVING AEW

REMOVING STORM SEWER (12")

14 STA 35TNW+80.0, 37.4' RT
REMOVING AEW

STA 35TNW+88.0, 14.0' RT
REMOVING CONCRETE RISER
RE-INSTALL SALVAGED GRATE
12

INLET PROTECTION TYPE A FOR
EXISTING INLET 35TSW+90, 13.6' RT

STA 39TNW+94.1, 9.5' RT
REMOVING MANHOLE
15

REMOVING STORM SEWER (12")

MATCHLINE STA 41TNW+00

STA 40TNW+19.9, 35.8' RT
REMOVING AEW
16

STA 206S+95.7, 54.5' RT
AEW FOR CULVERT PIPE
STEEL 12-INCH
22

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 5	SHEET 19	E

2

N

USH 51 SB EXIT RAMP

STA 42TSW+00.2, 25.8' LT
REMOVING INLET
17

STA 43TNW+05.1, 14.2' RT
REMOVING CONRETE RISER
RE-INSTALL SALVAGED GRATE
19

MATCHLINE STA 41TNW+00

BS 210S 212S 214S 216S 218S 220S 222S

R/L USH 51 SB

USH 51 SB

REMOVE STORM SEWER (12")

REMOVING STORM SEWER (12")

42TNW 44TNW 46TNW 48TNW 50TNW 52TNW 54TNW 56TNW

12" 12"

208N 210N 212N 214N 216N 218N 220N 222N

USH 51 NB

TEMPORARY INLET PROTECTION TYPE A
FOR EXISTING INLET 43+05 TSW 16' RT

R/L USH 51 NB

R/L TEMPORARY USH 51 NB

STA 43TNW+06.0, 34.8' RT
REMOVING INLET
20

STA 41TSW+99.8, 31.4' RT
REMOVING AEW
18

TEMPORARY SMALL ANIMAL
TURN AROUND (TYPICAL)

OH

SAN

SIGN

34W

USH 51 NB ENTRANCE RAMP

LEGEND

- TEMPORARY DITCH CHECKS
- ROCK BAGS
- CULVERT PIPE CHECKS
- SILT FENCE
- (X) DRAINAGE STRUCTURE (SEE STORM SEWER TABLE)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	EROSION CONTROL AND DRAINAGE PLAN - STAGE 5	SHEET 20	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\022502_ec_Stg5.dgn PLOT DATE : 04-NOV-2015 16:41 PLOT BY : smccarty PLOT NAME : PLOT SCALE : 100:1

2

N

R/L USH 51 SB

102S 104S USH 51 SB 106S 108S 110S 11

MATCHLINE STA 112N+00

R/L USH 51 NB

BEGIN +70 102N 104N 106N 108N 110N 11

USH 51 NB

BEGIN +00 BEGIN +00 +00 BEGIN +00

12' 12' 12'

LEGEND

- (A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
- (B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)
- (C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (F) PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PAVEMENT MARKING AND SIGNING PLAN	SHEET 21	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\024501_pm.dgn PLOT DATE : 06-NOV-2015 13:40 PLOT BY : ceven PLOT NAME : 024501_pm PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

2

N

DECATOR DRIVE

12D

14D

16D

MATCHLINE STA 112N+00

R/L USH 51 SB

R/L USH 51 NB

USH 51 SB

USH 51 NB

2S 114S 116S 118S 120S 122S 124S 126S

N 114N 116N 118N 120N 122N 124N 126N

END 00+

A B C F

12 12 12

DO NOT DAMAGE A POLYMER OVERLAY BY GRINDING OR BLASTING FOR CONTRAST TAPE. USE ONLY EPOXY PAVEMENT MARKINGS ON BRIDGE SURFACE.

LEGEND

- (A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
- (B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)
- (C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (F) PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PAVEMENT MARKING AND SIGNING PLAN	SHEET 22	E

2

2

N

BEGIN +00

F

B

USH 51 SB

END +00

USH 51 SB EXTRANCE RAMP

BEGIN +00

178S 180S 182S 184S 186S 188S 190S 192S

12' 12'

A

R/L USH 51 SB

A

178N 180N 182N 184N 186N 188N 190N 192N

R/L USH 51 NB

MATCHLINE STA 192N+00

12' 12' 12'

F

USH 51 NB

B

USH 51 NB EXIT RAMP

BEGIN +00

END +00

BEGIN +50

LEGEND

(A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)

(B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)

(C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

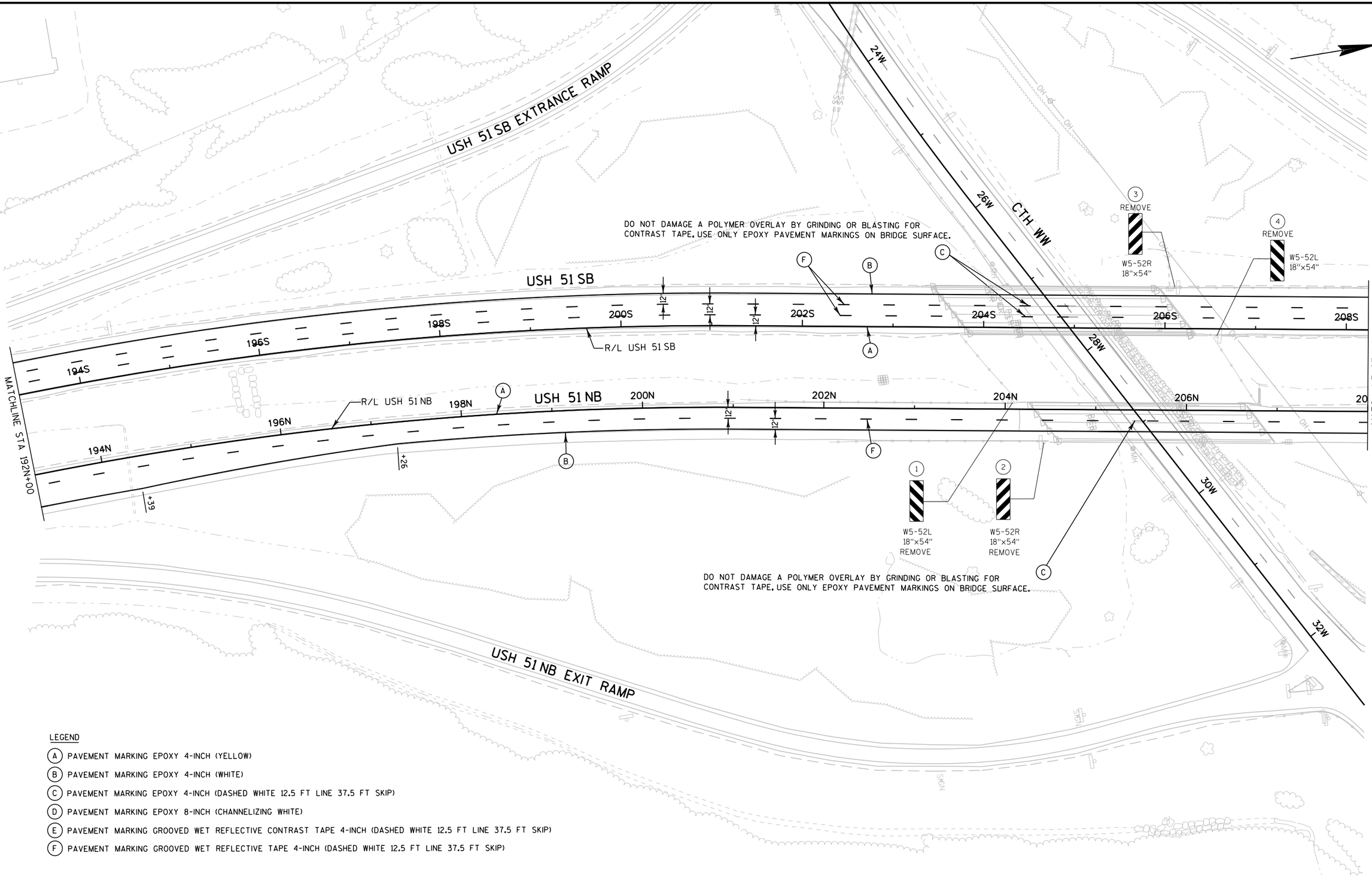
(D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)

(E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

(F) PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PAVEMENT MARKING AND SIGNING PLAN	SHEET 23	E

2



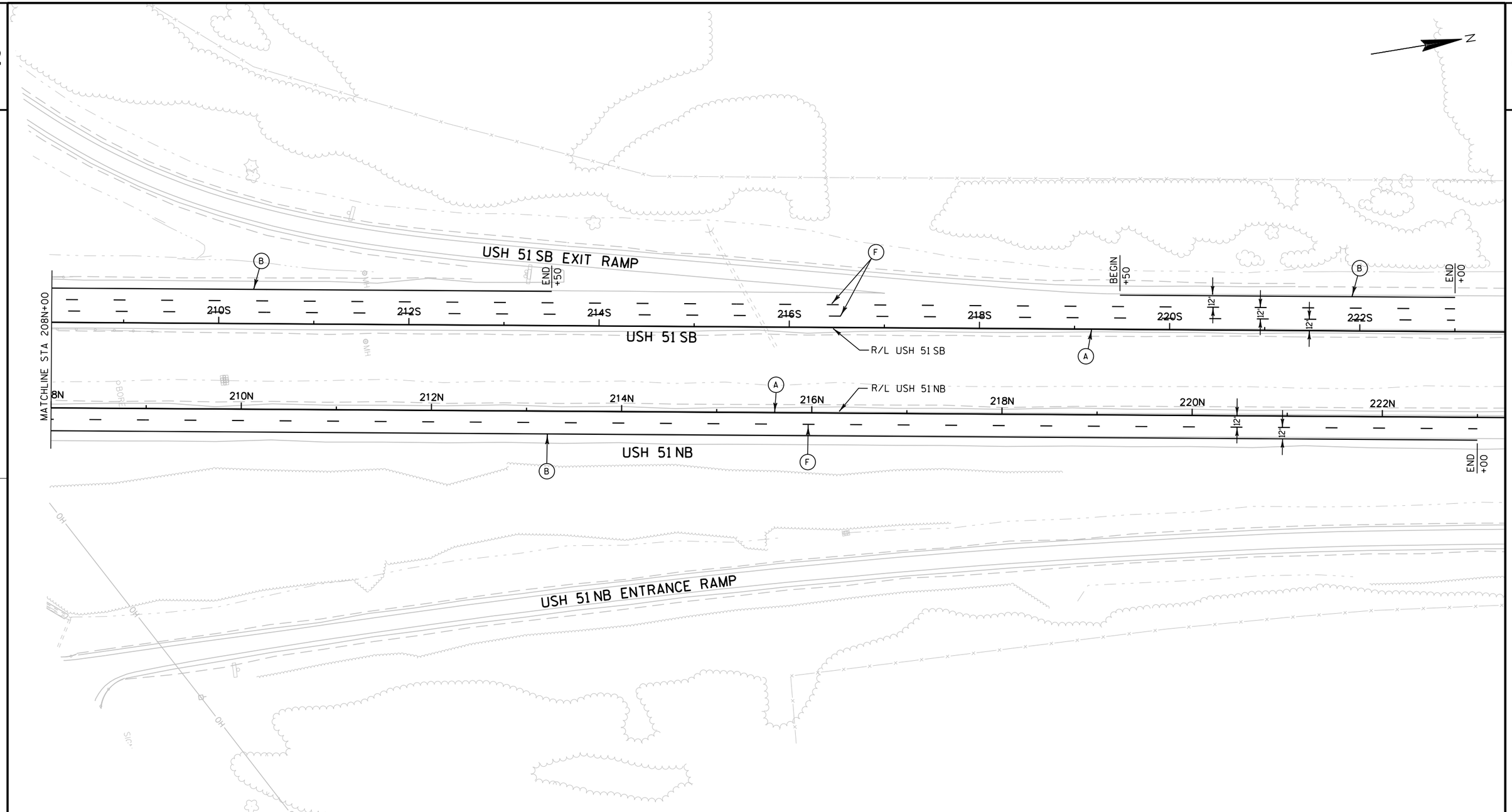
DO NOT DAMAGE A POLYMER OVERLAY BY GRINDING OR BLASTING FOR CONTRAST TAPE, USE ONLY EPOXY PAVEMENT MARKINGS ON BRIDGE SURFACE.

LEGEND

- (A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
- (B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)
- (C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (F) PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PAVEMENT MARKING AND SIGNING PLAN	SHEET 24	E

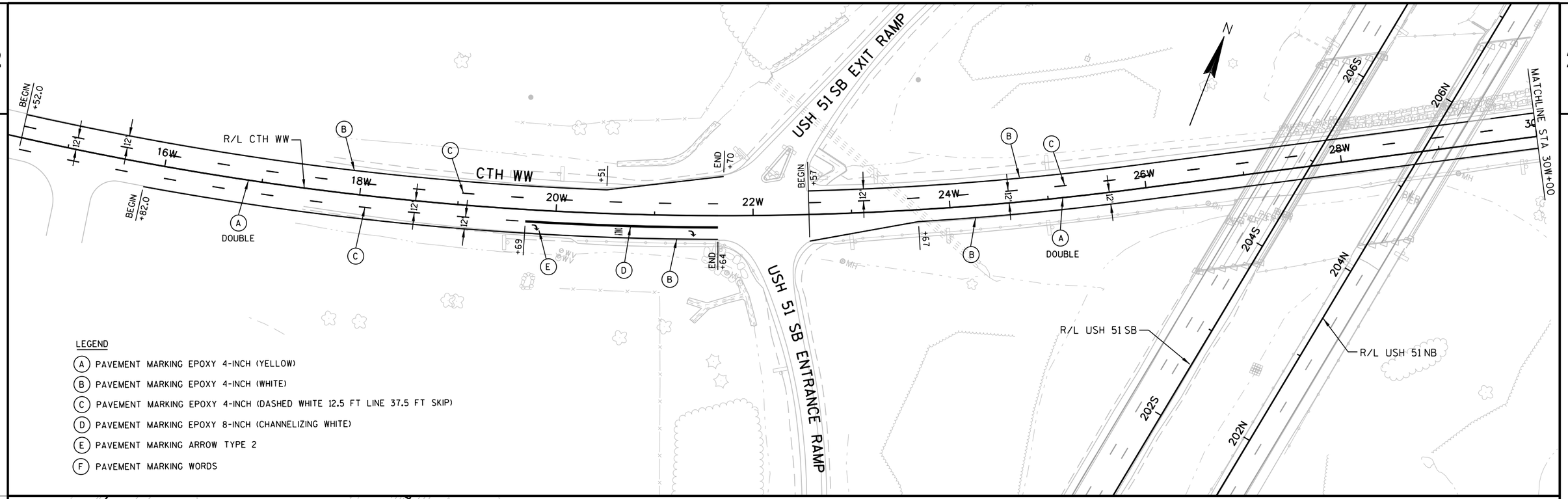
2



LEGEND

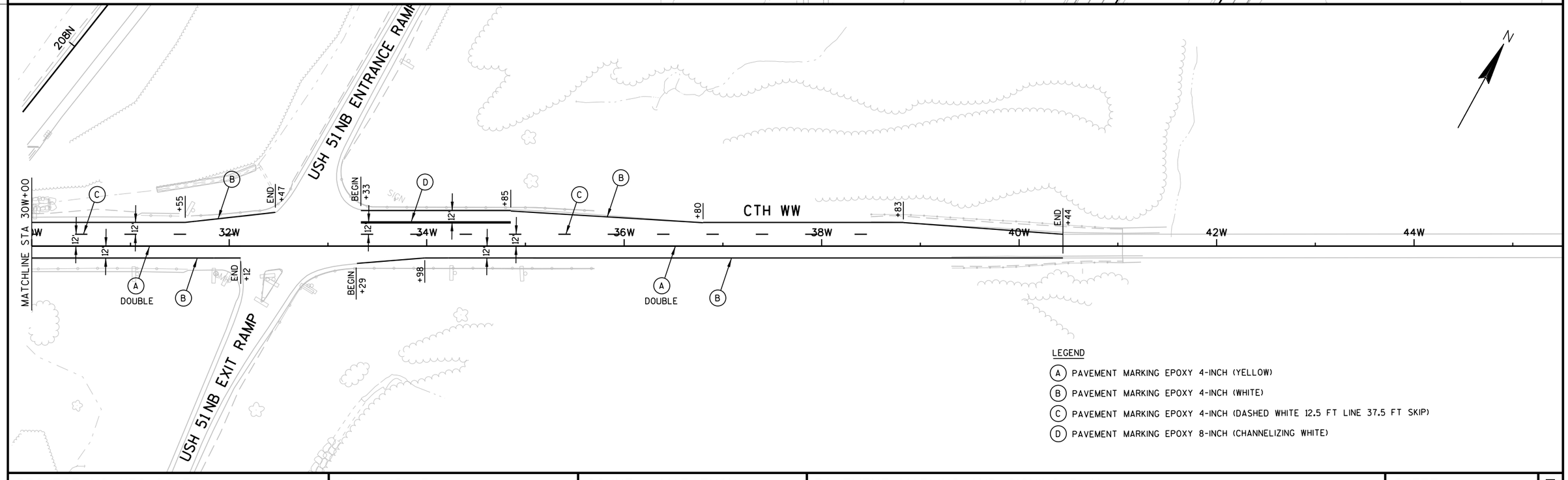
- (A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
- (B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)
- (C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)
- (E) PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (F) PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PAVEMENT MARKING AND SIGNING PLAN	SHEET 25	E



LEGEND

- (A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
- (B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)
- (C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)
- (E) PAVEMENT MARKING ARROW TYPE 2
- (F) PAVEMENT MARKING WORDS



LEGEND

- (A) PAVEMENT MARKING EPOXY 4-INCH (YELLOW)
- (B) PAVEMENT MARKING EPOXY 4-INCH (WHITE)
- (C) PAVEMENT MARKING EPOXY 4-INCH (DASHED WHITE 12.5 FT LINE 37.5 FT SKIP)
- (D) PAVEMENT MARKING EPOXY 8-INCH (CHANNELIZING WHITE)

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PAVEMENT MARKING AND SIGNING PLAN	SHEET 26	E

2

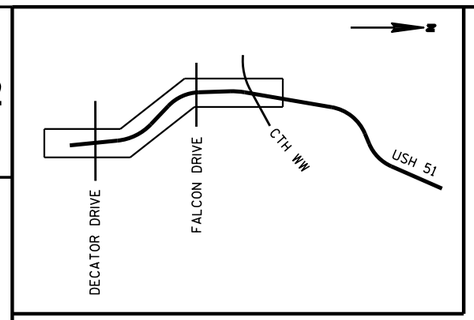
LEGEND

- TYPE III BARRICADE WITH WARNING LIGHTS TYPE A
- TYPE III BARRICADE WTH WARNING LIGHTS TYPE A AND ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TEMPORARY PRECAST CONCRETE BARRIER
- CC — CRASH CUSION TEMPORARY
- WORK AREA
- DIRECTION OF TRAFFIC
- CMS — TRAFFIC CONTROL SIGNS PCMS
- TEMPORARY PAVEMENT WIDENING (ASPHALTIC SURFACE TEMPORARY)
- TEMPORARY WIDENING (BASE AGGREGATE DENSE 1 1/4-INCH)
- Y — CONTINUOUS YELLOW, 4-INCH
- W — CONTINUOUS WHITE, 4-INCH
- B — 4-INCH BLACK
- WD — DASHED WHITE, 4-INCH (37.5' SKIP 12.5' DASH)
- W8 — CONTINUOUS WHITE, 8-INCH
- TPM — TEMPORARY PAVEMENT MARKING
- TPMRT — TEMPORARY PAVEMENT MARKING REMOVABLE TAPE

GENERAL NOTES FOR CONSTRUCTION STAGING AND TRAFFIC CONTROL

1. ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.
2. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.
3. TRAFFIC CONTROL DRUMS IN TAPERS, SHALL BE EQUIPPED WITH TRAFFIC CONTROL WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY, UNLESS OTHERWISE SHOWN, DRUMS SHALL BE SPACED AT 50-FT OC IN TAPERS AND 100-FT OC ON TANGENTS OR AS OTHERWISE SHOWN.
4. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
5. ALL SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED AS NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
6. ALL EXISTING CONFLICTING PAVEMENT MARKING SHALL BE REMOVED.
7. CONTRACTOR SHALL INSTALL PERMANENT PAVEMENT MARKING WHEN APPROPRIATE DURING CONSTRUCTION STAGING AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER
8. BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.
9. ALL SUBSEQUENT MOVING SIGNS AFTER INITIAL INSTALLATION, INCLUDING ALL ASSOCIATED LABOR AND MATERIALS, SHALL BE INCLUDED IN THE COST OF THE "TRAFFIC CONTROL (1170-00-74)" ITEM.

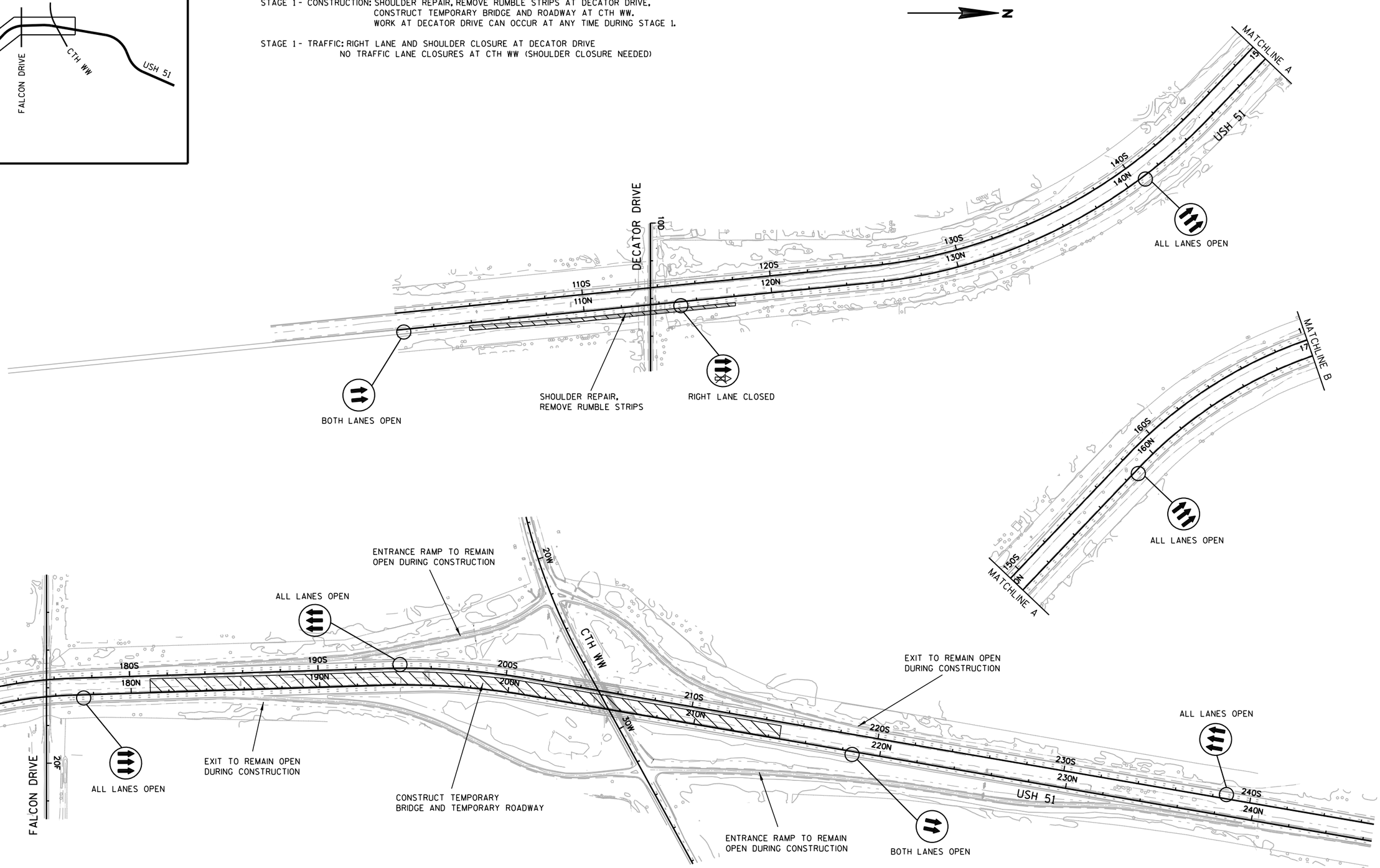
2



CONSTRUCTION STAGE 1

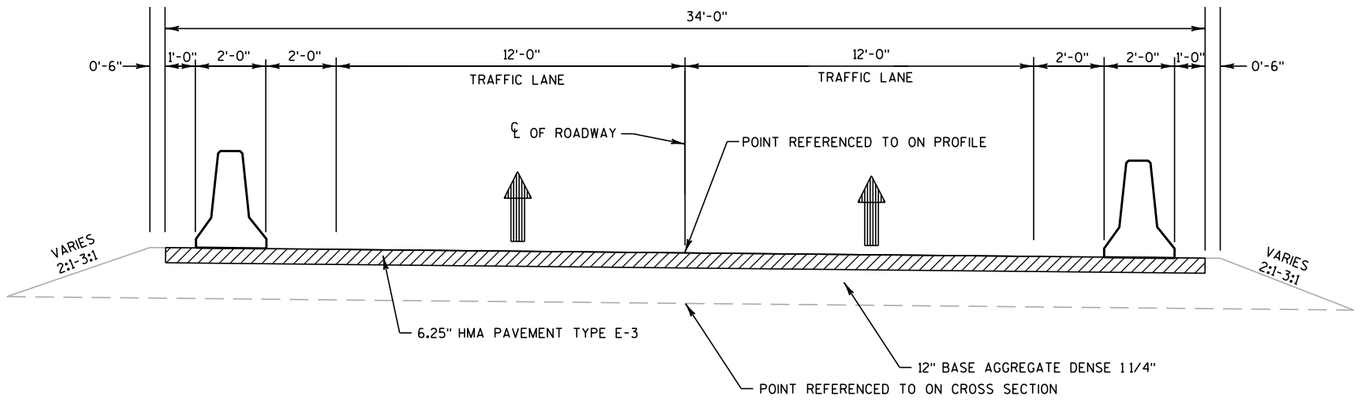
STAGE 1 - CONSTRUCTION: SHOULDER REPAIR, REMOVE RUMBLE STRIPS AT DECATOR DRIVE,
CONSTRUCT TEMPORARY BRIDGE AND ROADWAY AT CTH WW.
WORK AT DECATOR DRIVE CAN OCCUR AT ANY TIME DURING STAGE 1.

STAGE 1 - TRAFFIC: RIGHT LANE AND SHOULDER CLOSURE AT DECATOR DRIVE
NO TRAFFIC LANE CLOSURES AT CTH WW (SHOULDER CLOSURE NEEDED)



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 1	SHEET 28 E

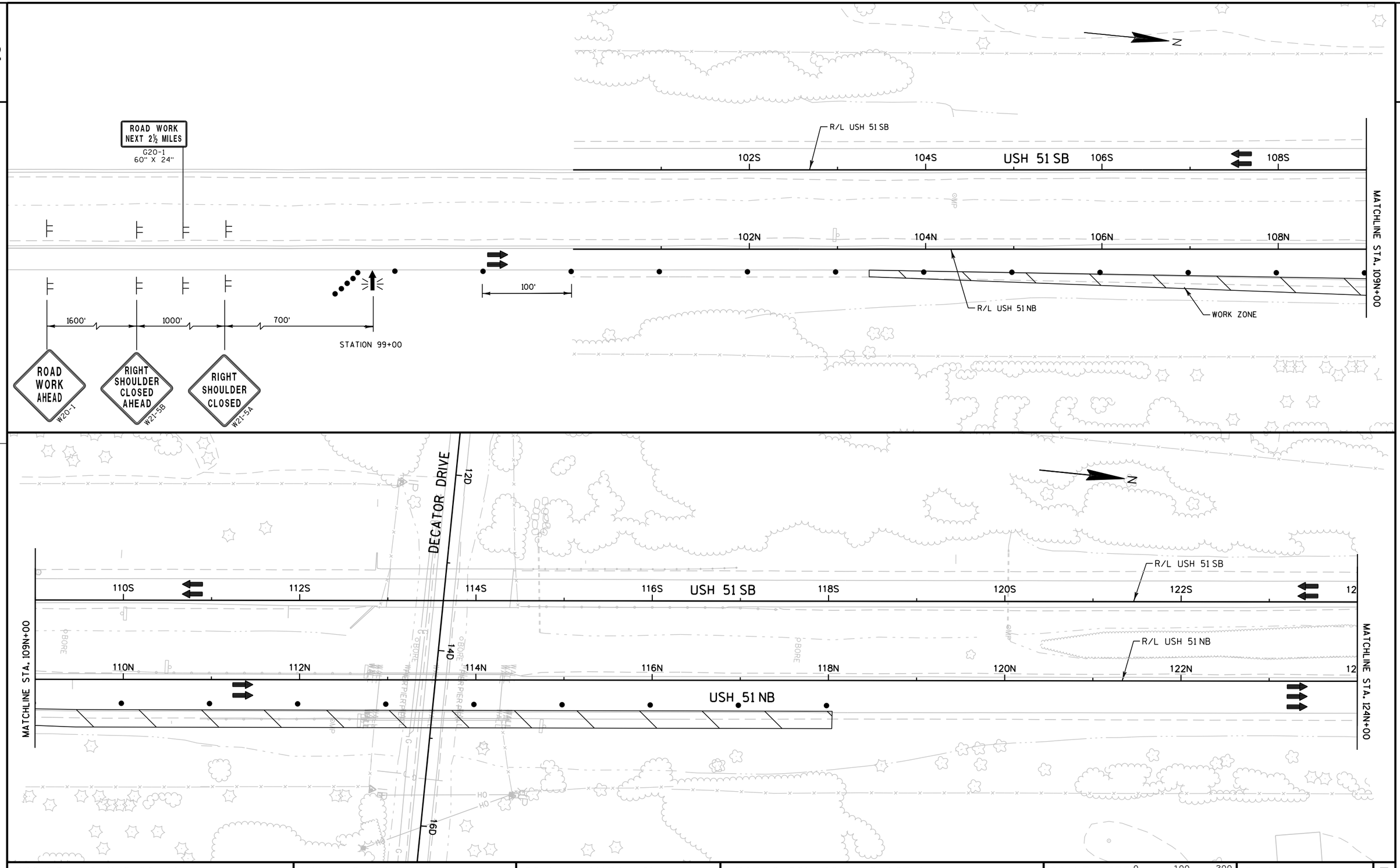
2



TYPICAL SECTION - TEMPORARY ROAD

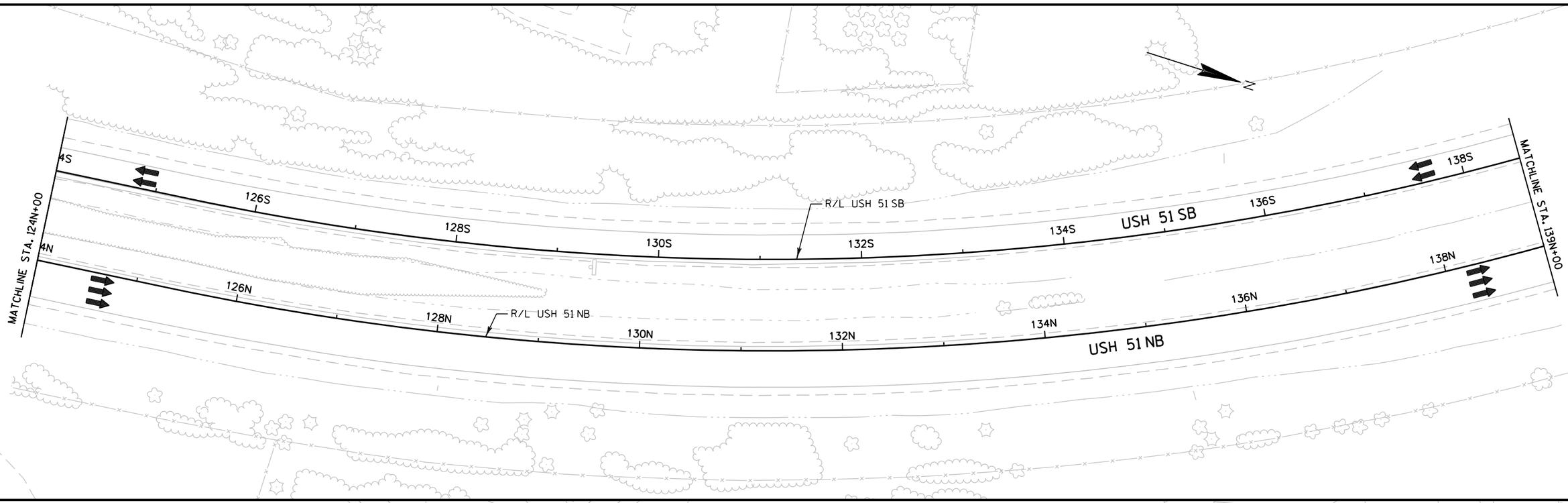
STA 12TNW+00 TO STA 55TNW+50
STA 12TSW+70 TO STA 55TSW+50

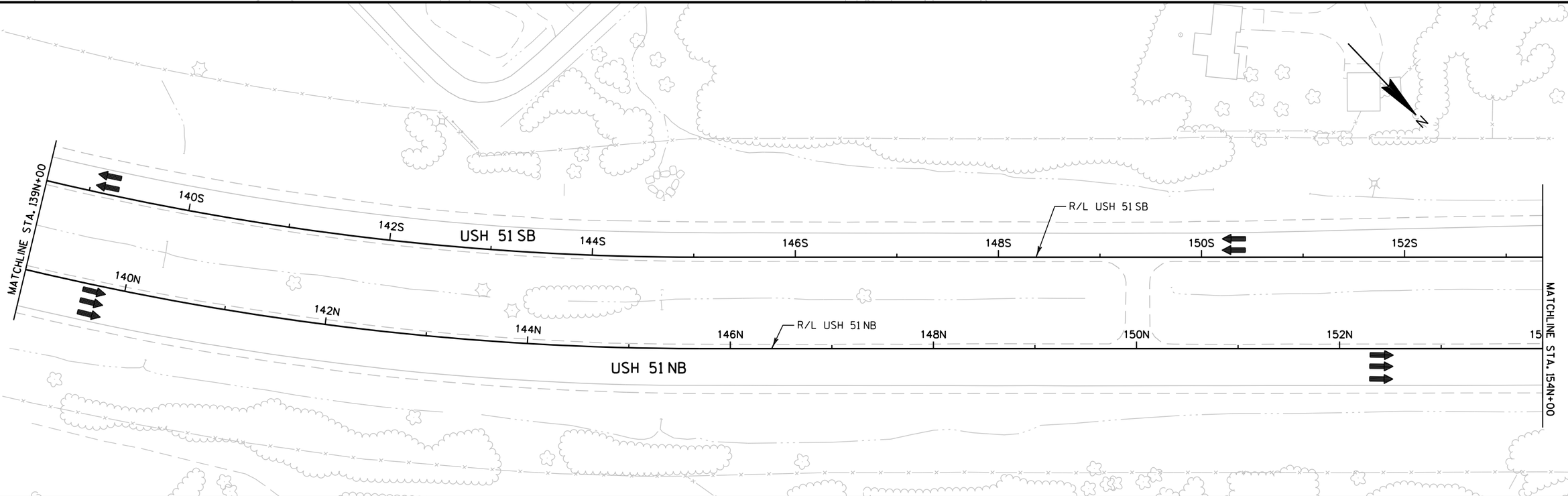
2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 1	SCALE, FEET 0 100 200	SHEET 30	E

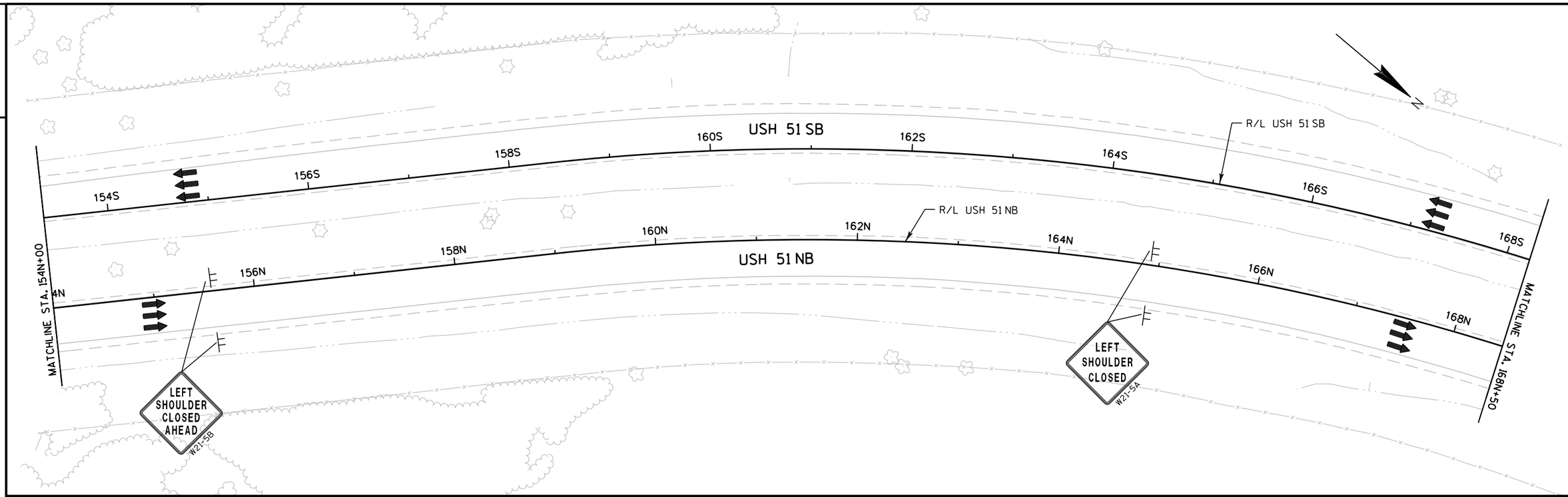
2





PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 1	SCALE, FEET 0 100 200	SHEET 31	E

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 1	SCALE, FEET 0 100 200	SHEET 32	E

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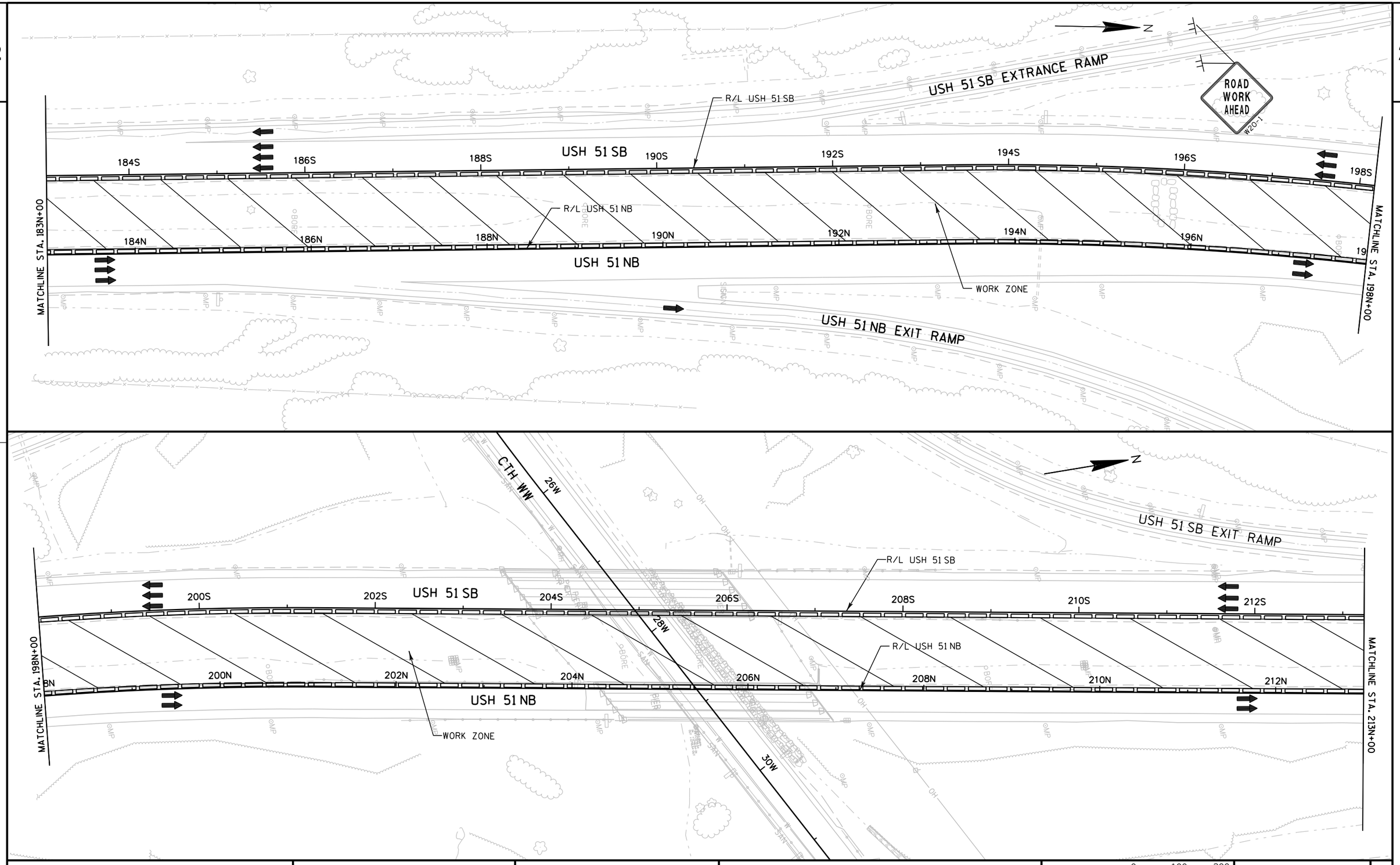

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 1	SCALE, FEET 0 100 200	SHEET 33	E

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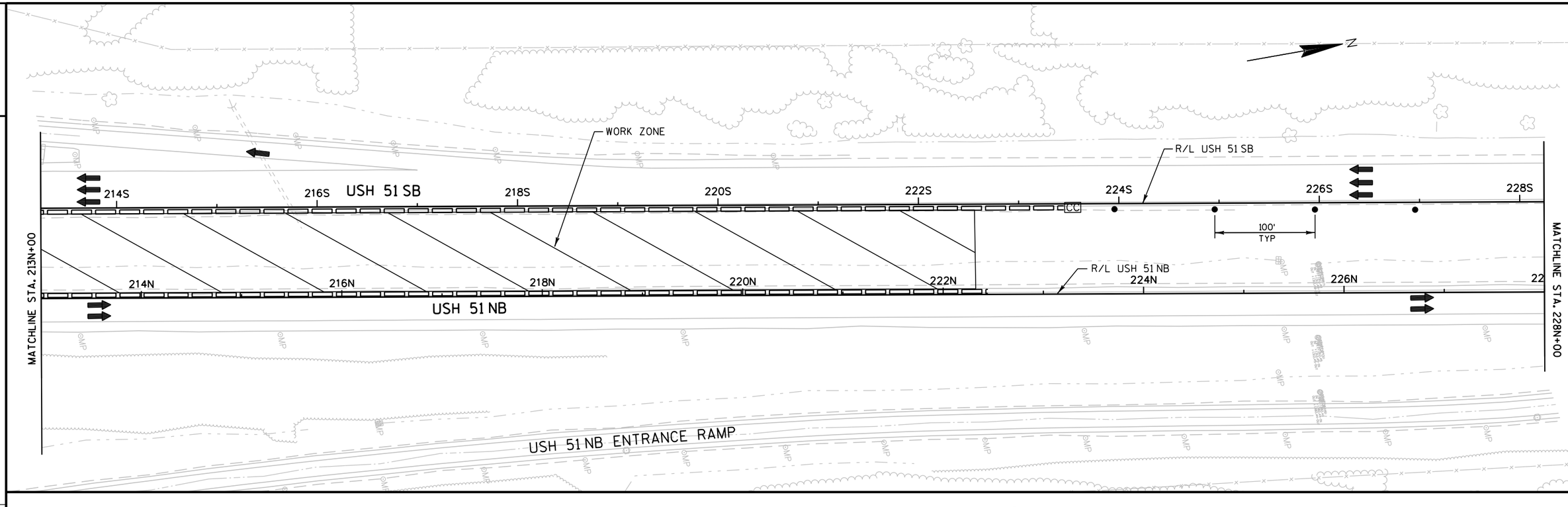

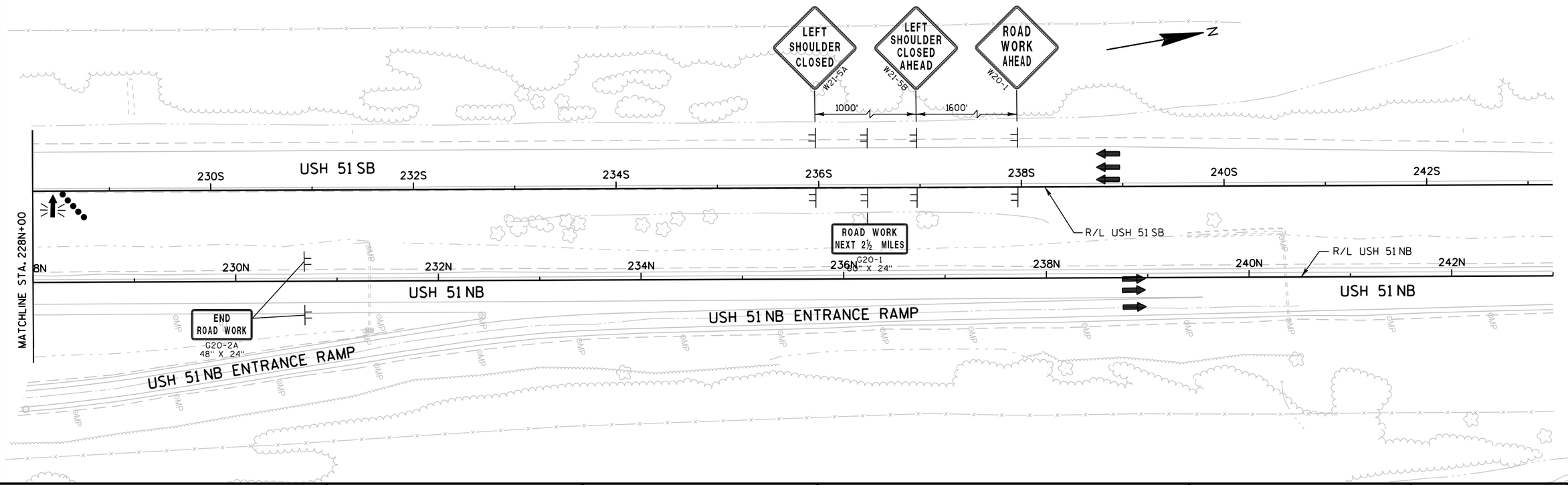

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 1	SCALE, FEET 0 100 200	SHEET 34	E

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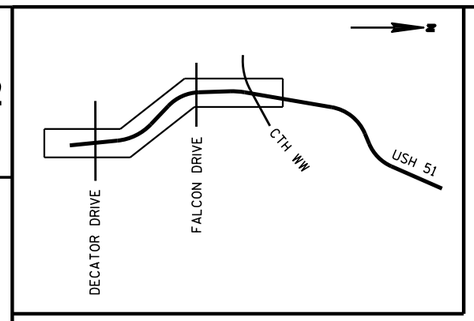
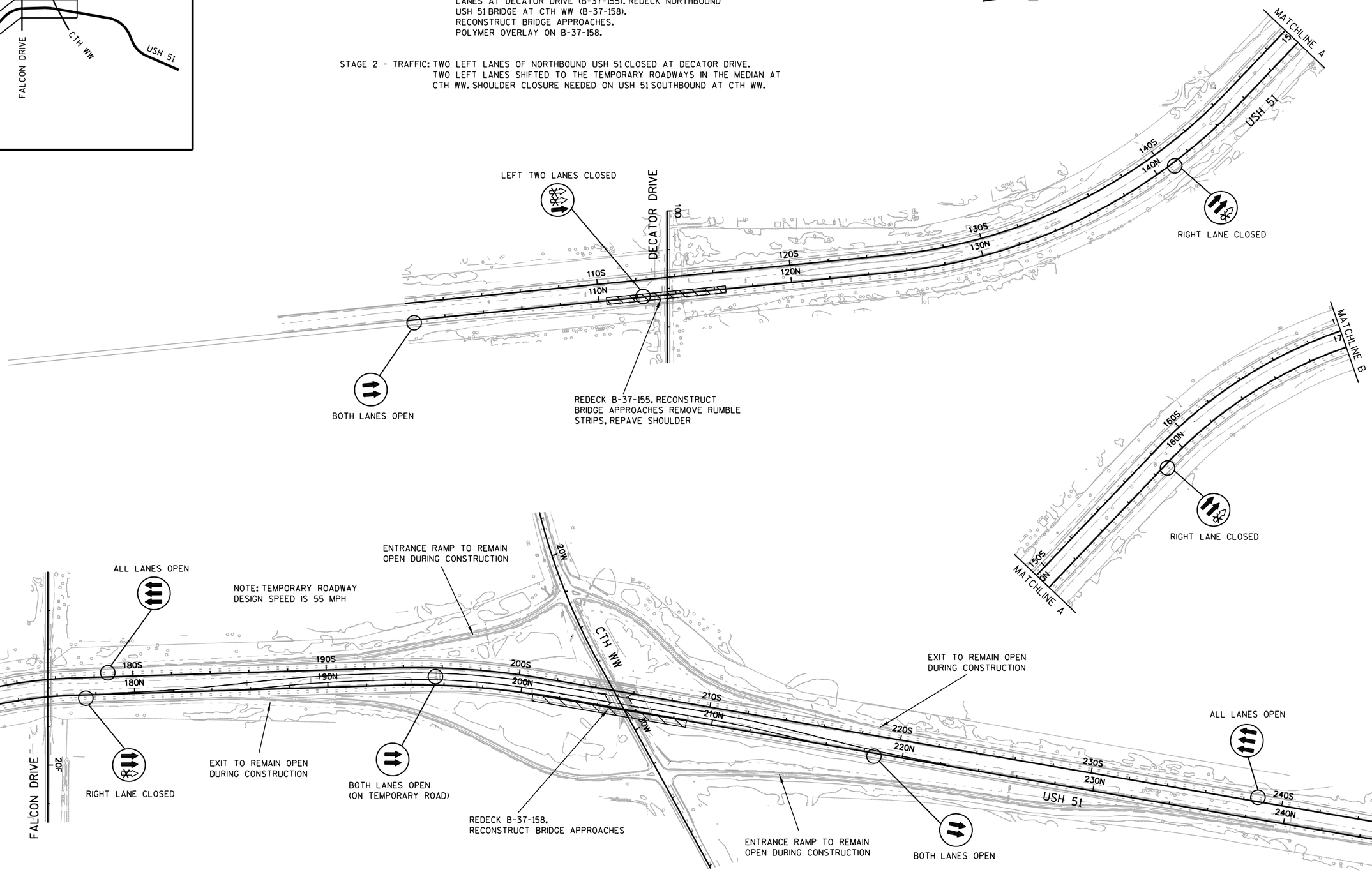


CONSTRUCTION STAGE 2

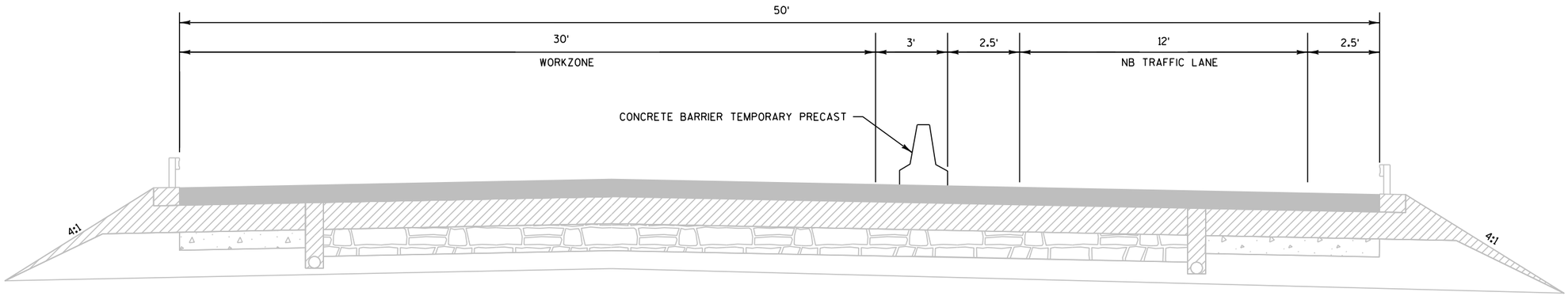
STAGE 2 - CONSTRUCTION: REDECK NORTHBOUND USH 51 INSIDE AND CENTER LANES AT DECATOR DRIVE (B-37-155). REDECK NORTHBOUND USH 51 BRIDGE AT CTH WW (B-37-158). RECONSTRUCT BRIDGE APPROACHES. POLYMER OVERLAY ON B-37-158.

STAGE 2 - TRAFFIC: TWO LEFT LANES OF NORTHBOUND USH 51 CLOSED AT DECATOR DRIVE. TWO LEFT LANES SHIFTED TO THE TEMPORARY ROADWAYS IN THE MEDIAN AT CTH WW. SHOULDER CLOSURE NEEDED ON USH 51 SOUTHBOUND AT CTH WW.



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 2	SHEET 35 E

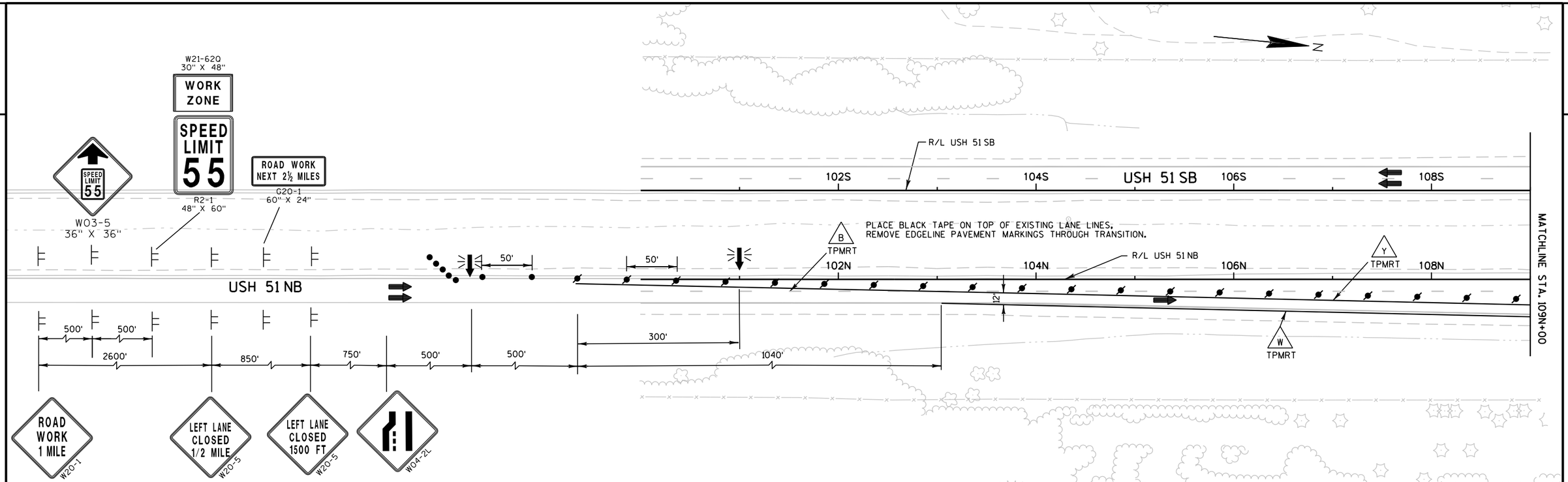
2



CONSTRUCTION STAGE 2

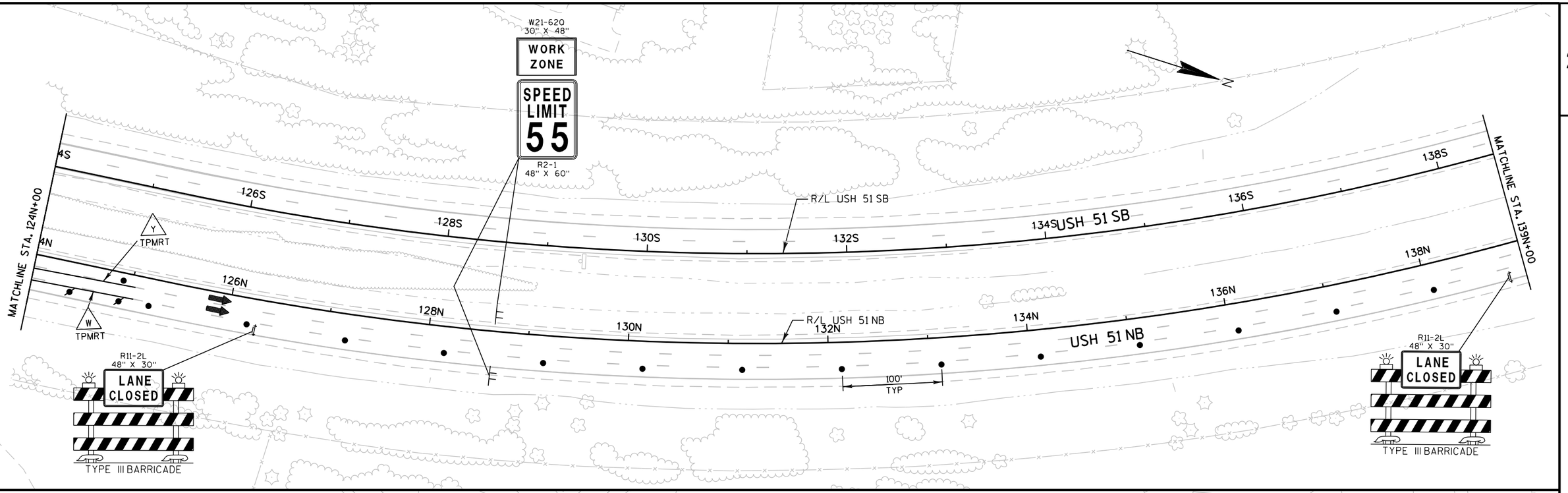
USH 51 NORTHBOUND
B-37-155 APPROACHES

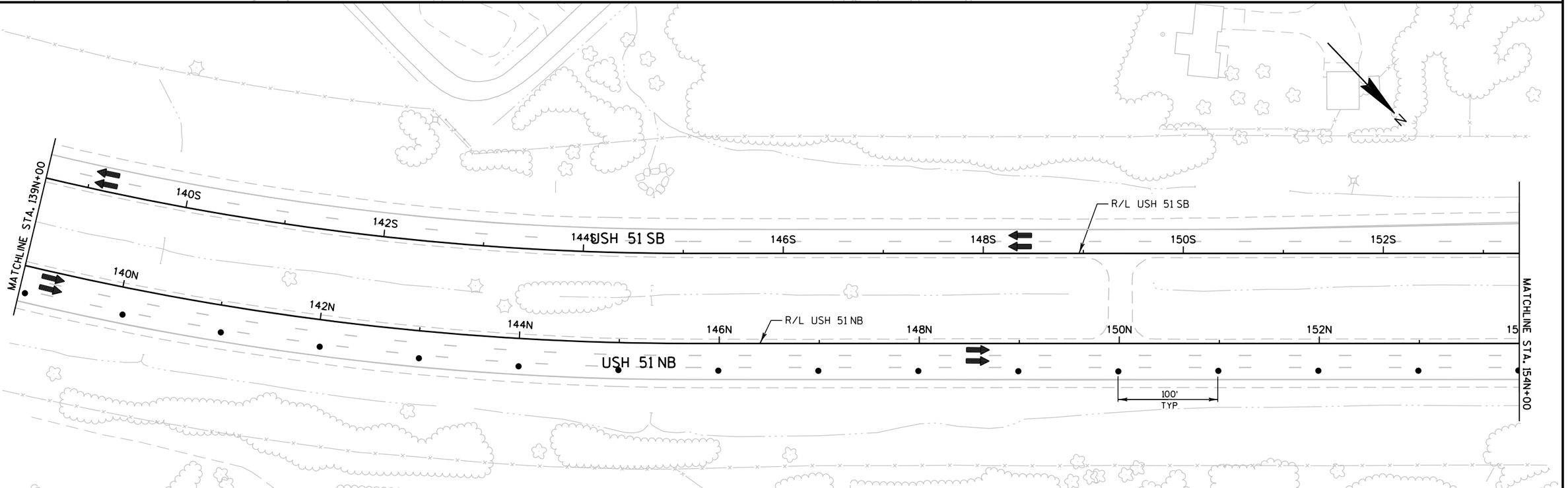
STA 102N+00 TO STA 119N+00



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 2	SCALE, FEET 0 100 200	SHEET 37	E

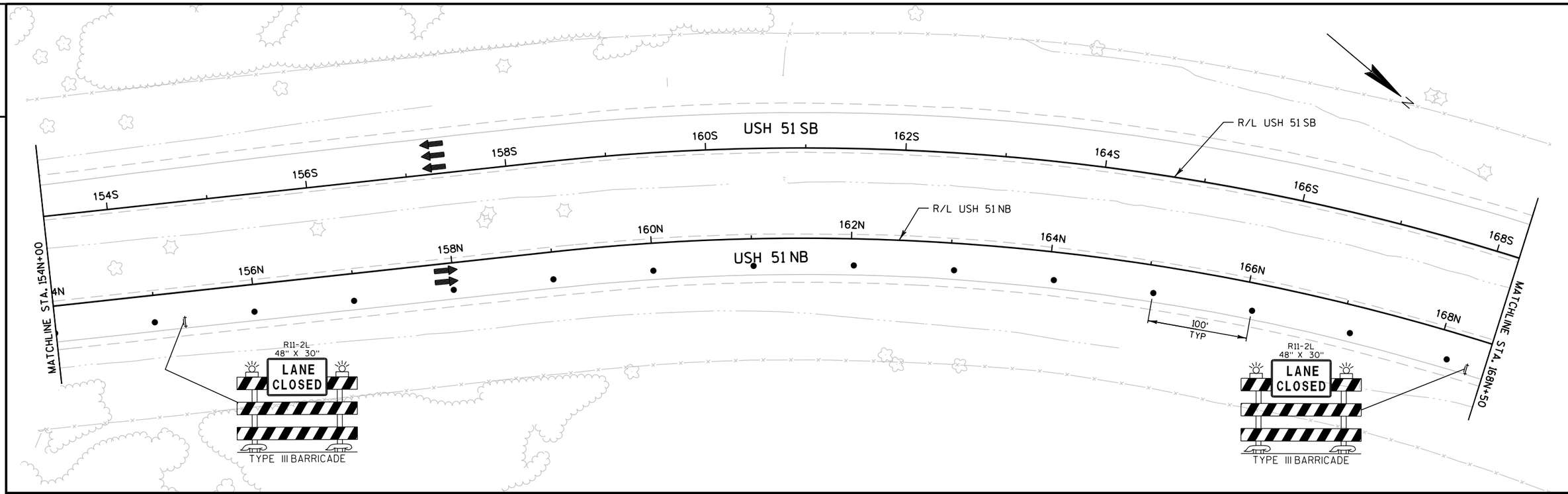
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\026201_t2_74_tc.dgn PLOT DATE : 06-NOV-2015 14:09 PLOT BY : ceven PLOT NAME : 026201_t2_74_tc PLOT SCALE : 100:1





PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 2	SCALE, FEET 0 100 200	SHEET 38	E

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 2	SCALE, FEET 0 100 200	SHEET 39	E

2

N

USH 51 SB EXTRANCE RAMP

ROAD WORK AHEAD W20-1

R/L USH 51 SB

Y TPM

USH 51 SB

184S 186S 188S 190S 192S 194S 196S 198S

REMOVE PAVEMENT MARKINGS

MATCHLINE STA. 183N+00

184N 186N 188N 190N 192N 194N 196N

W TPM

WD TPM

USH 51 NB

COVER EXISTING SIGN

R11-2B 48" X 30"

BRIDGE OUT

TYPE III BARRICADE

MATCHLINE STA. 198N+00

W8 TPMRT

R/L USH 51 NB

USH 51 NB EXIT RAMP

N

CTH WW

26W

USH 51 SB EXIT RAMP

Y TPM

WD TPM

USH 51 SB

200S 202S 204S 206S 208S 210S 212S

R/L USH 51 SB

28W

MATCHLINE STA. 198N+00

200N 202N 204N 206N 208N 210N 212N

W TPM

USH 51 NB

W TPM

MATCHLINE STA. 213N+00

R/L USH 51 NB

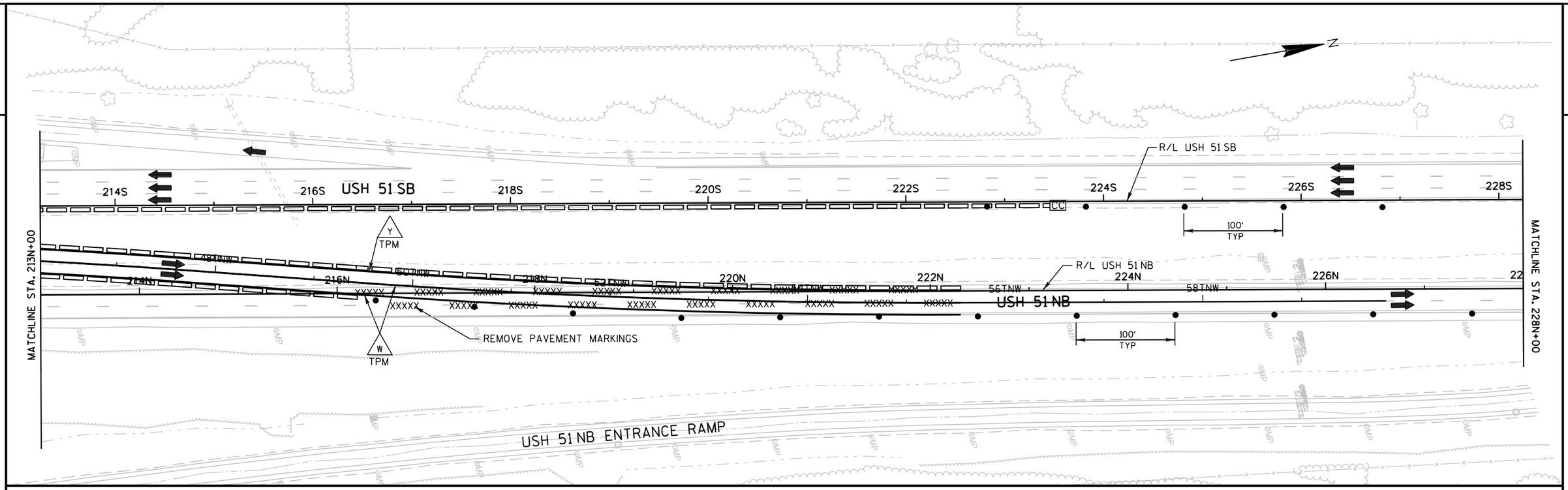
30W

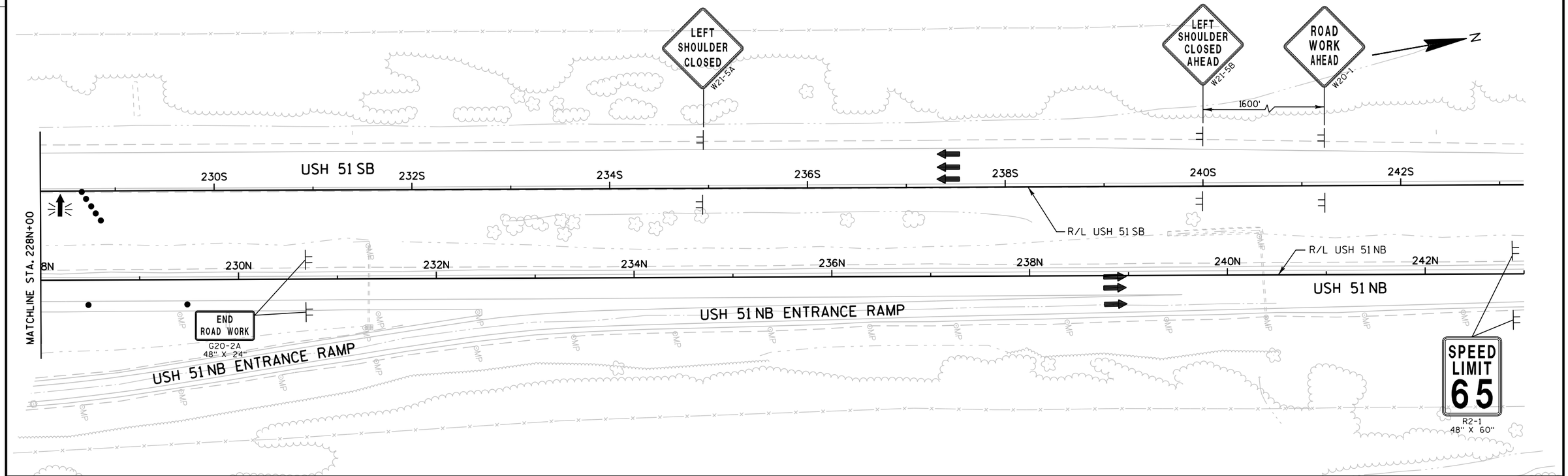
WORK ZONE

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 2	SCALE, FEET 0 100 200	SHEET 40	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\026204_t2_74_tc.dgn PLOT DATE : 05-NOV-2015 11:05 PLOT BY : ceven PLOT NAME : 026204_t2_74_tc PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

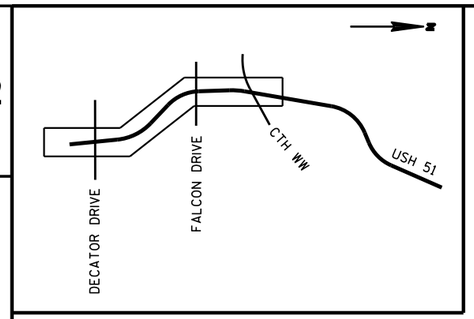
2





PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 2	SCALE, FEET 0 100 200	SHEET 41	E

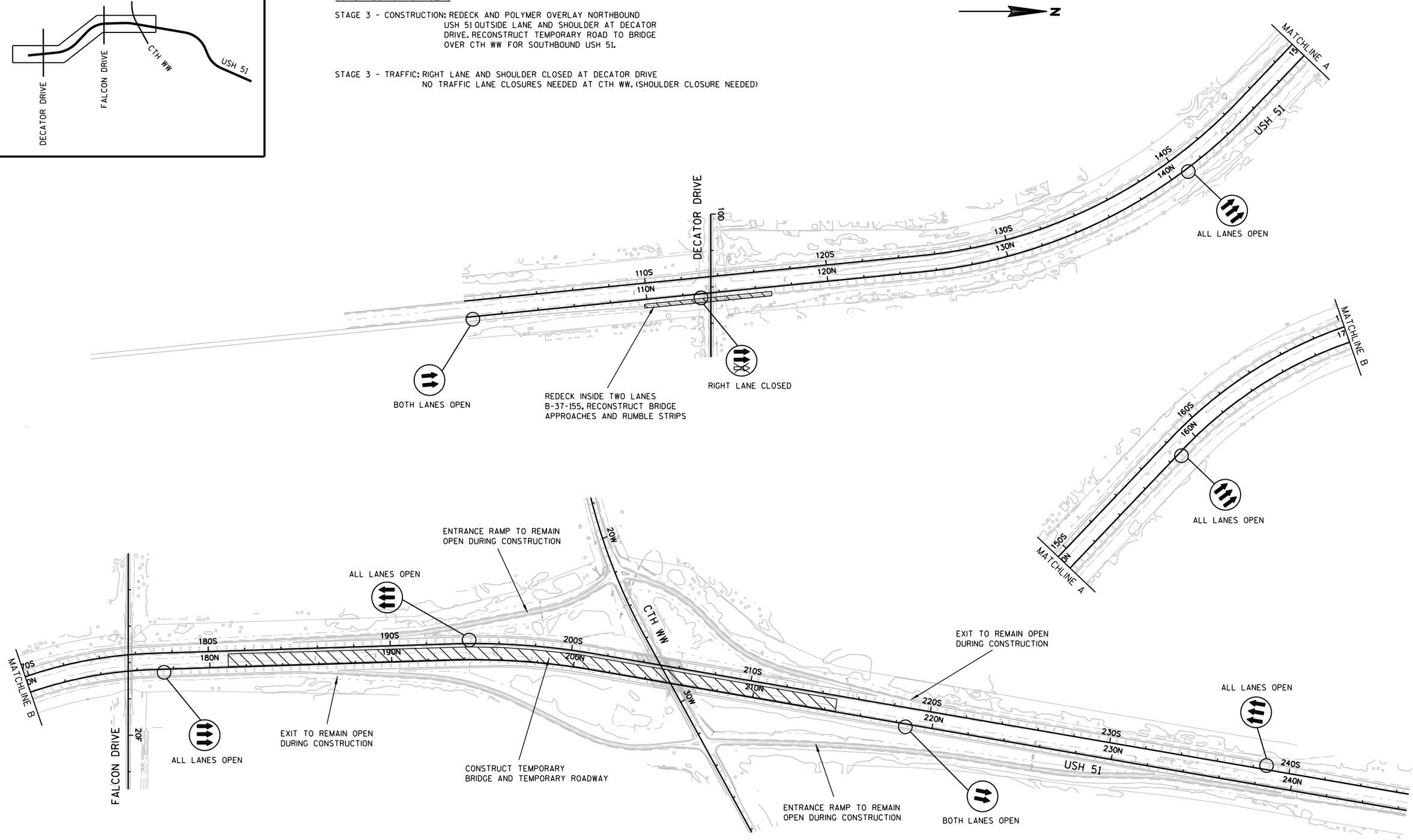
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\026205_t2_74_tc.dgn PLOT DATE : 05-NOV-2015 11:05 PLOT BY : ceven PLOT NAME : 026205_t2_74_tc PLOT SCALE : 100:1



CONSTRUCTION STAGE 3

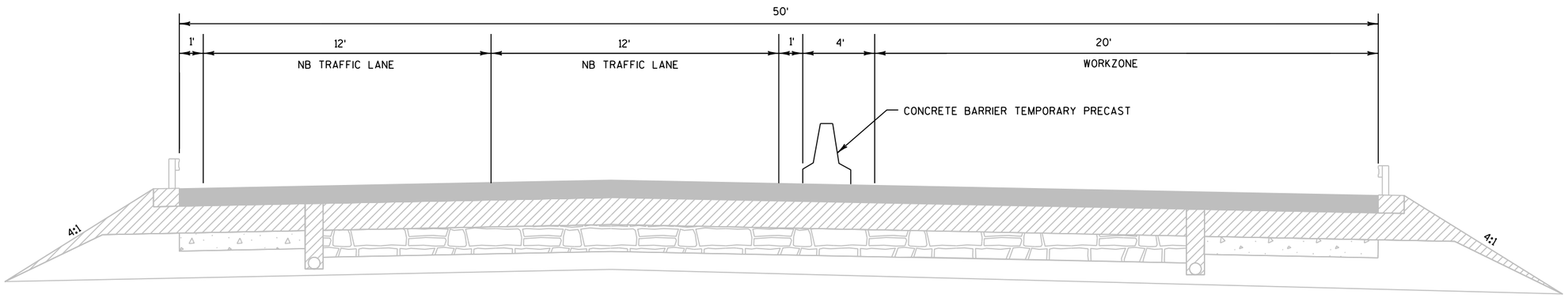
STAGE 3 - CONSTRUCTION: REDECK AND POLYMER OVERLAY NORTHBOUND USH 51 OUTSIDE LANE AND SHOULDER AT DECATOR DRIVE. RECONSTRUCT TEMPORARY ROAD TO BRIDGE OVER CTH WW FOR SOUTHBOUND USH 51.

STAGE 3 - TRAFFIC: RIGHT LANE AND SHOULDER CLOSED AT DECATOR DRIVE
NO TRAFFIC LANE CLOSURES NEEDED AT CTH WW. (SHOULDER CLOSURE NEEDED)



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 3	SHEET 42	E

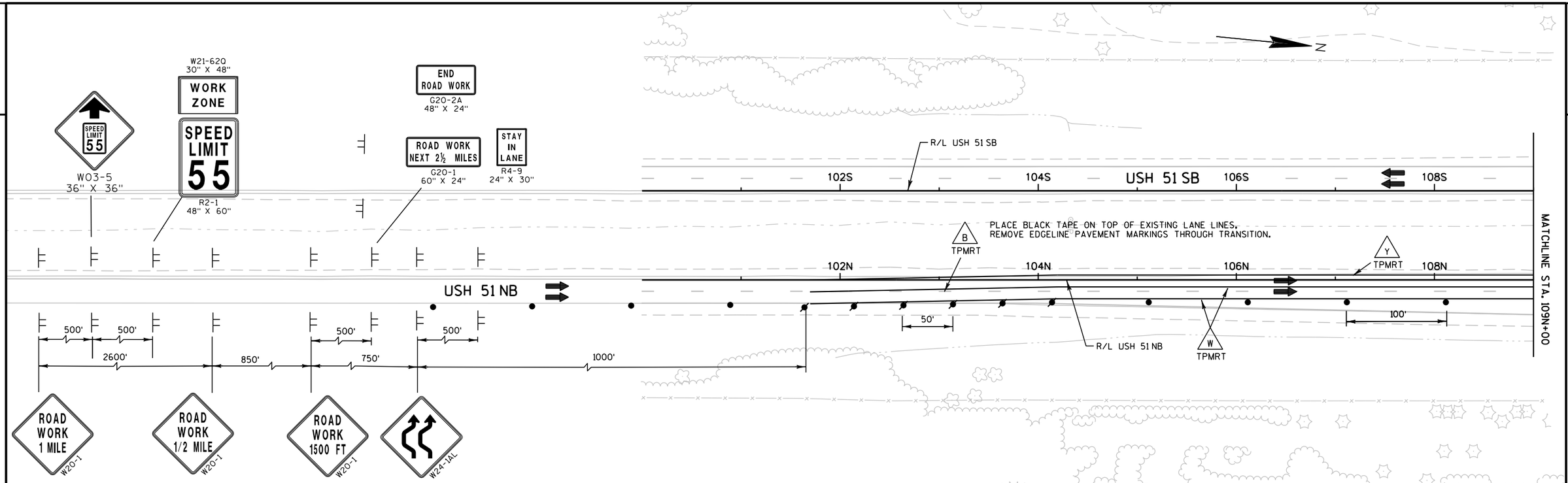
2

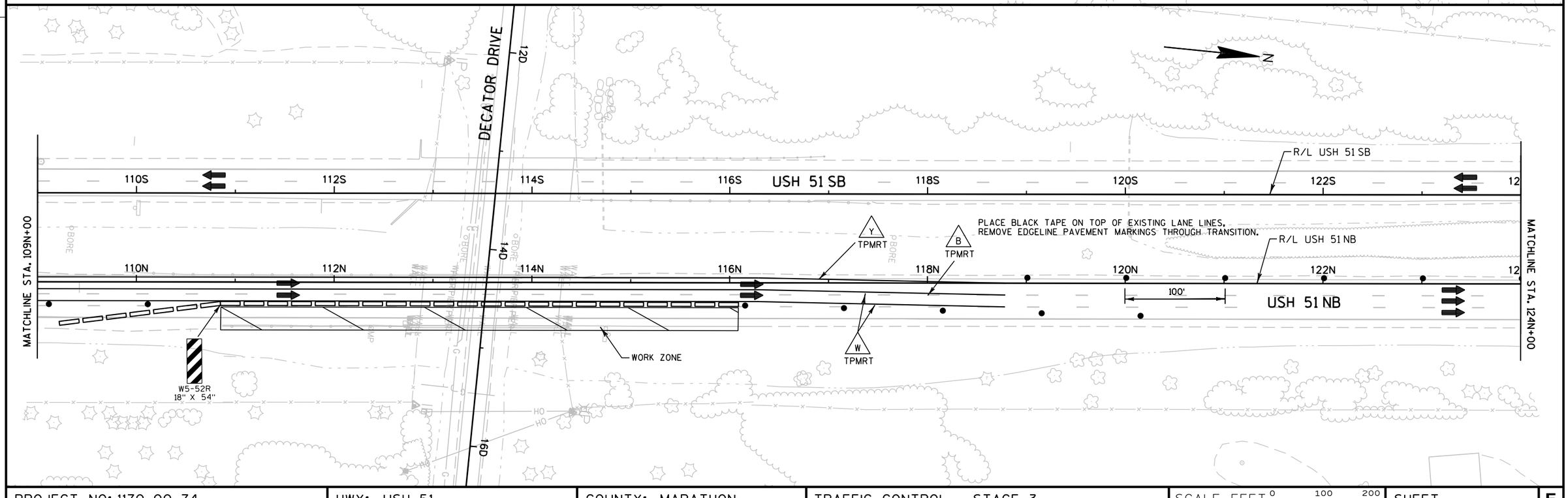


CONSTRUCTION STAGE 3

USH 51 NORTHBOUND
B-37-155 APPROACHES

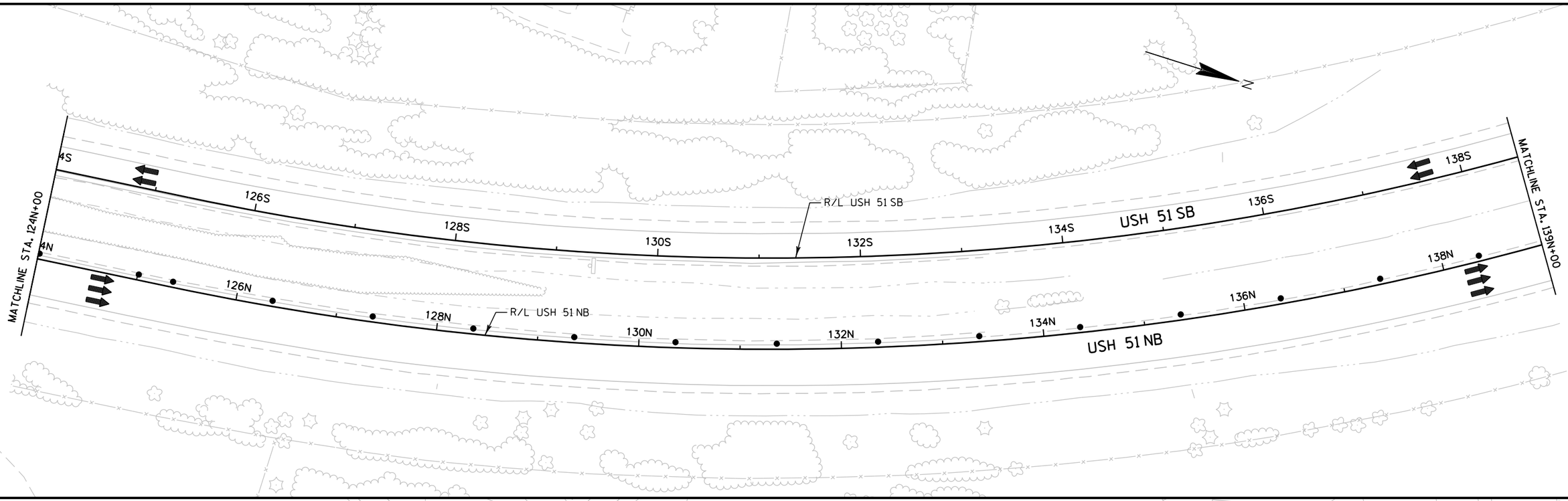
STA 102N+00 TO STA 119N+00

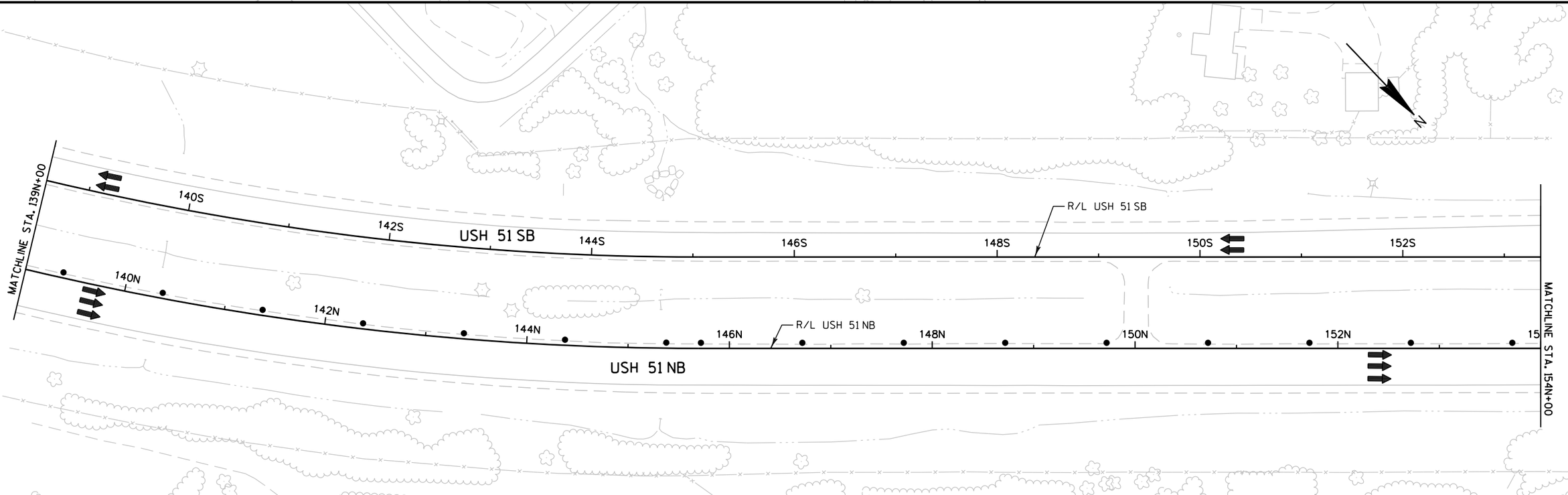




PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 3	SCALE, FEET 0 100 200	SHEET 44	E

2





PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 3	SCALE, FEET 0 100 200	SHEET 45	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\026302_t3_74_tc.dgn PLOT DATE : 05-NOV-2015 11:06 PLOT BY : ceven PLOT NAME : 026302_t3_74_tc PLOT SCALE : 100:1

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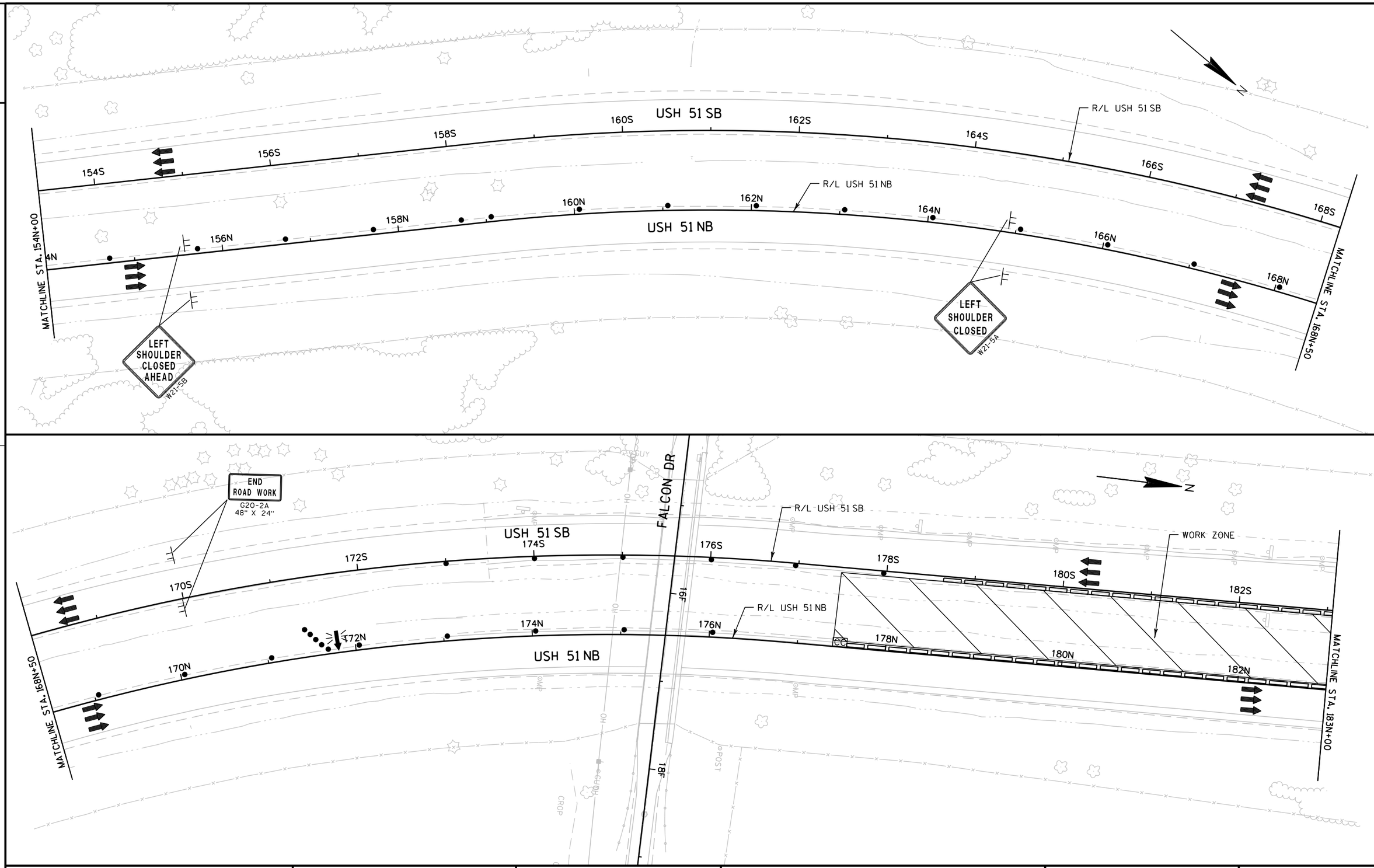
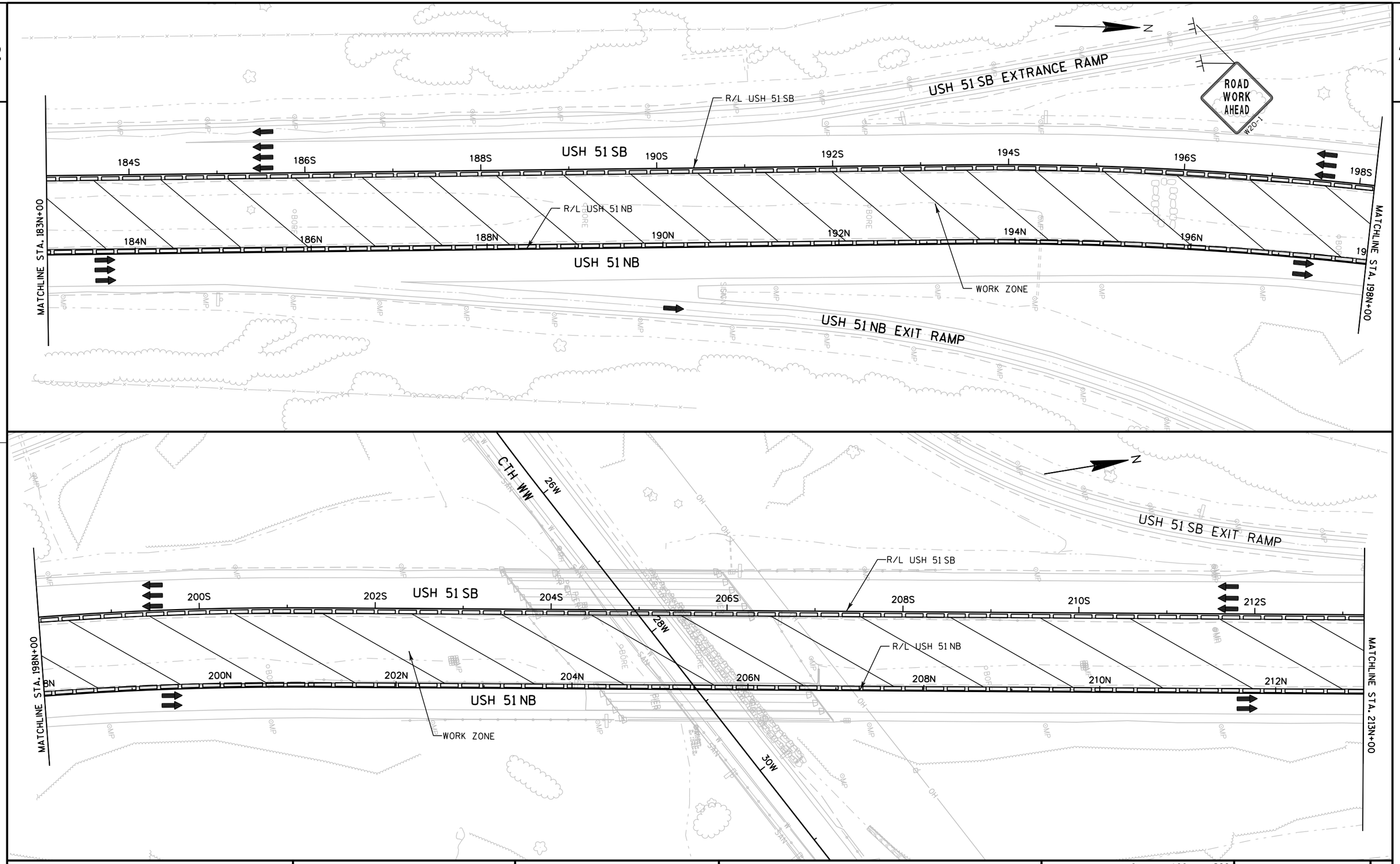


PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 3	SCALE, FEET 0 100 200	SHEET 46	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\026303_t3_74_tc.dgn PLOT DATE : 05-NOV-2015 11:06 PLOT BY : ceven PLOT NAME : 026303_t3_74_tc PLOT SCALE : 100:1

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 3	SCALE, FEET 0 100 200	SHEET 47	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\026304_t3_74_tc.dgn PLOT DATE : 05-NOV-2015 11:06 PLOT BY : ceven PLOT NAME : 026304_t3_74_tc PLOT SCALE : 100:1

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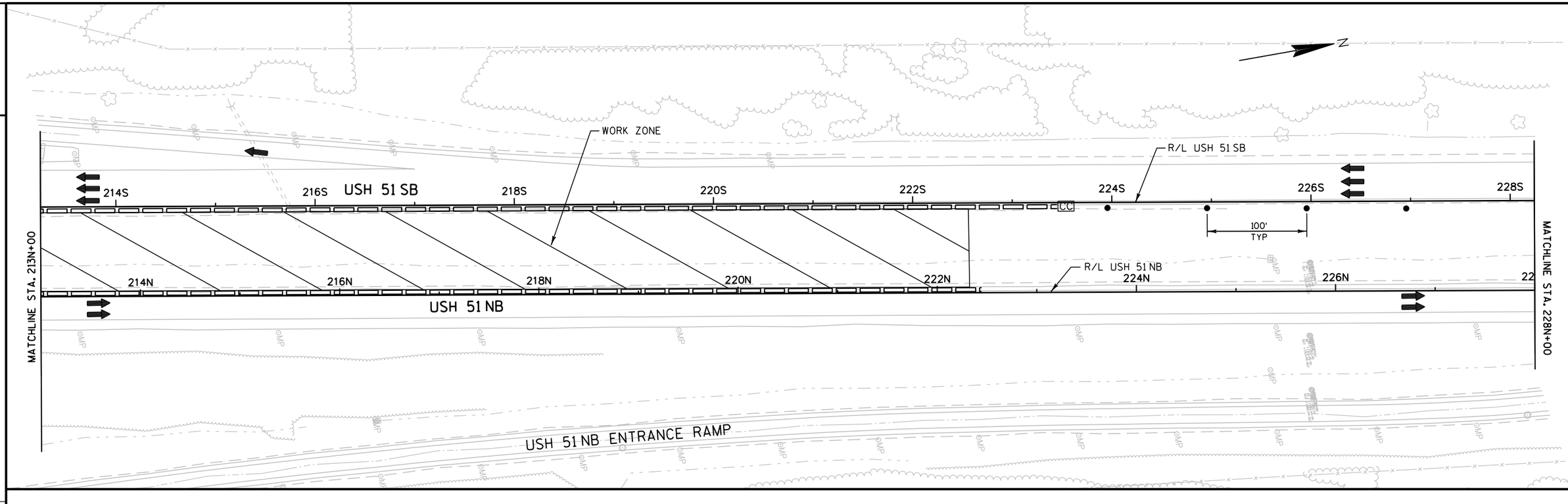
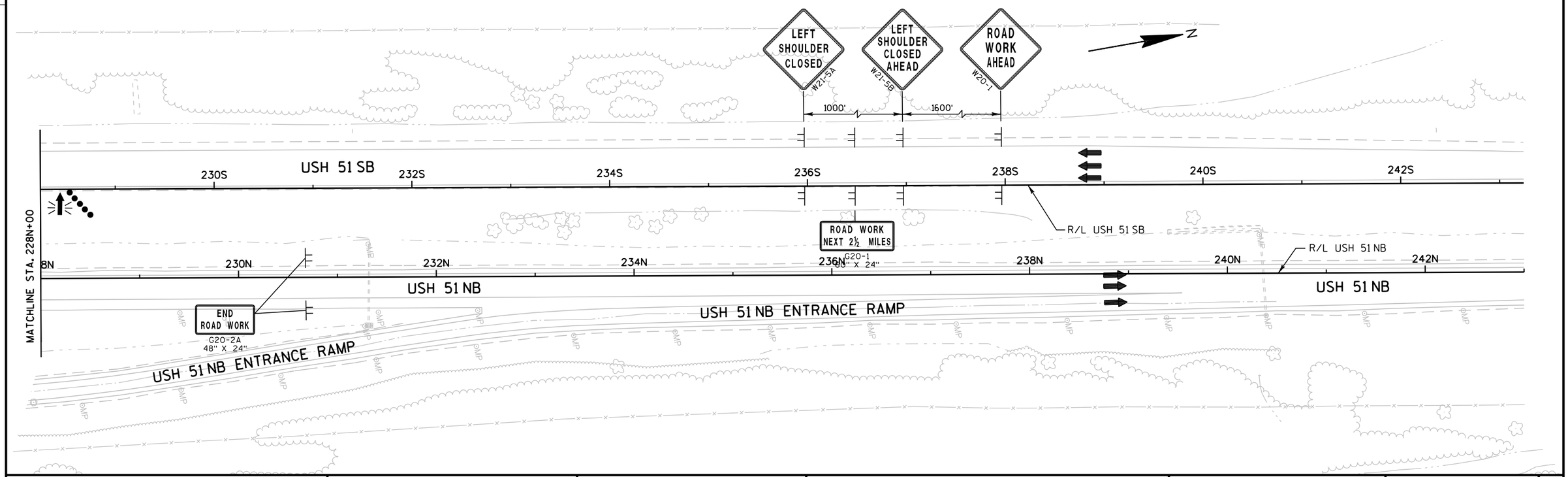
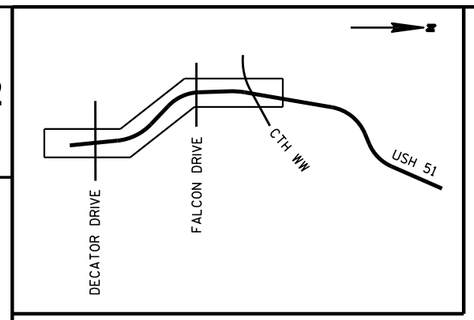




PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 3	SCALE, FEET 0 100 200	SHEET 48	E

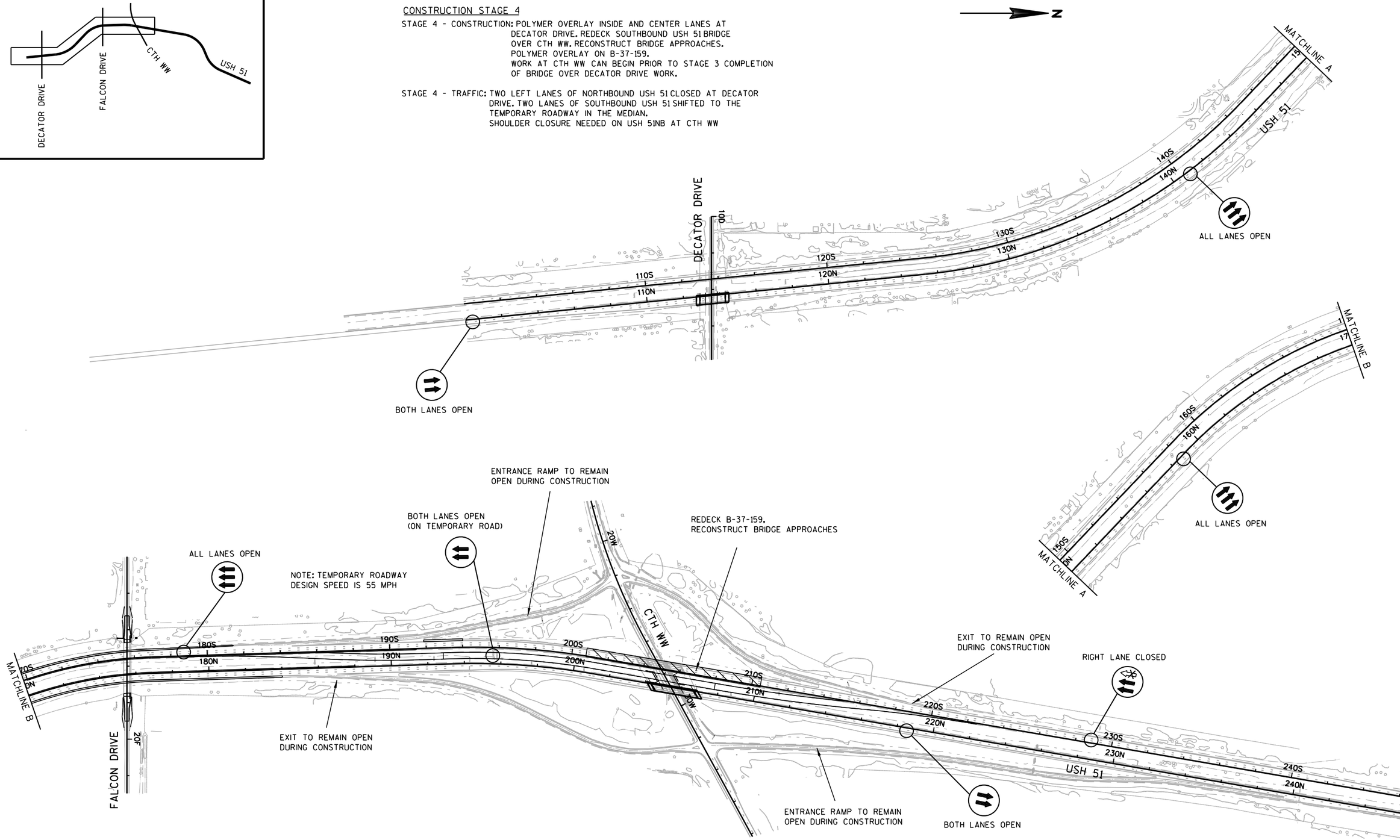
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\026305_t3_74_tc.dgn PLOT DATE : 05-NOV-2015 11:06 PLOT BY : ceven PLOT NAME : 026305_t3_74_tc PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42



CONSTRUCTION STAGE 4

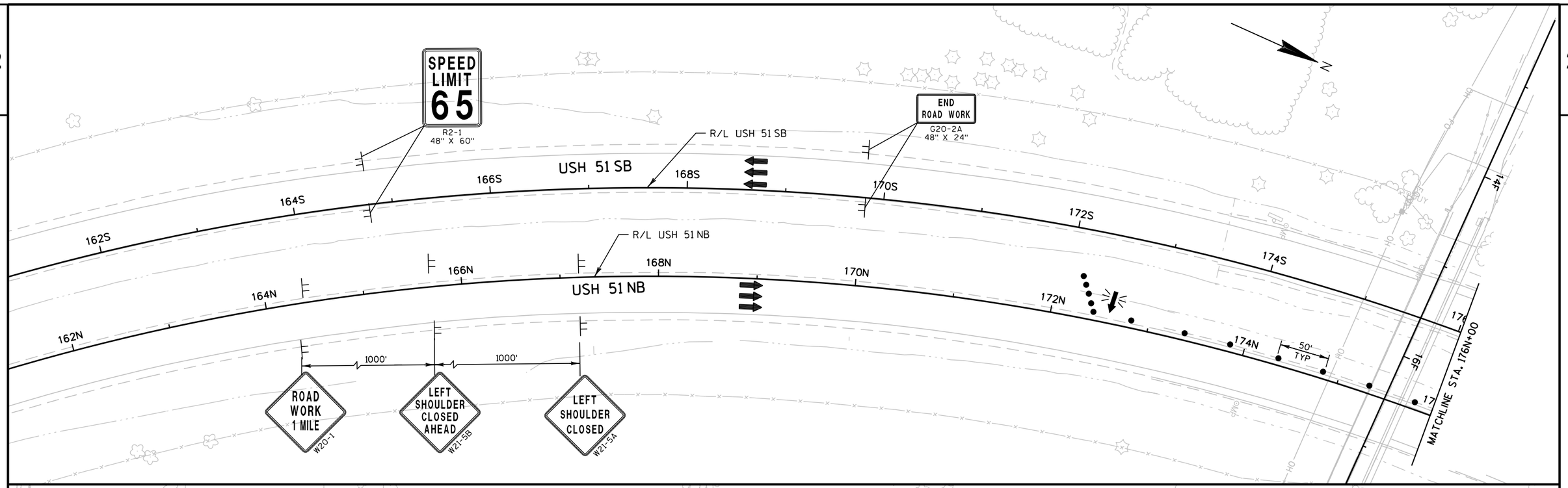
STAGE 4 - CONSTRUCTION: POLYMER OVERLAY INSIDE AND CENTER LANES AT DECATOR DRIVE. REDECK SOUTHBOUND USH 51 BRIDGE OVER CTH WW. RECONSTRUCT BRIDGE APPROACHES. POLYMER OVERLAY ON B-37-159. WORK AT CTH WW CAN BEGIN PRIOR TO STAGE 3 COMPLETION OF BRIDGE OVER DECATOR DRIVE WORK.

STAGE 4 - TRAFFIC: TWO LEFT LANES OF NORTHBOUND USH 51 CLOSED AT DECATOR DRIVE. TWO LANES OF SOUTHBOUND USH 51 SHIFTED TO THE TEMPORARY ROADWAY IN THE MEDIAN. SHOULDER CLOSURE NEEDED ON USH 51NB AT CTH WW



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 4	SHEET 49 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\USH51_tc_4.dgn PLOT DATE : 09-NOV-2015 13:10 PLOT BY : ceven PLOT NAME : PLOT SCALE : 500:1



2

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 4	SCALE, FEET 0 100 200	SHEET 50	E

2

N

ROAD WORK AHEAD
W20-1

USH 51 SB EXTRANCE RAMP

WORK ZONE

R/L USH 51 SB

26W

28W

MATCHLINE STA. 191N+00

192S 194S 196S 198S 200S 202S 204S

W TPM

WD TPM

USH 51 SB

30TSW 32TSW 34TSW

MATCHLINE STA. 205N+75

192N 194N 196N 198N 200N 202N 204N

USH 51 NB

Y TPM

R/L USH 51 NB

USH 51 NB EXIT RAMP

END ROAD WORK
C20-2A
48" X 24"

N

WORK ZONE

R/L USH 51 SB

USH 51 SB EXIT RAMP

25' TYP

W8 TPMRT

EXIT
E5-1
60" X 48"

REMOVING PAVEMENT MARKINGS

MATCHLINE STA. 205N+75

206S 208S 210S 212S 214S 216S 218S 220S

W TPM

W TPMRT

40TSW 42TSW 44TSW 46TSW 48TSW 50TSW

USH 51 SB

MATCHLINE STA. 220N+75

206N 208N 210N 212N 214N 216N 218N 220N

USH 51 NB

Y TPM

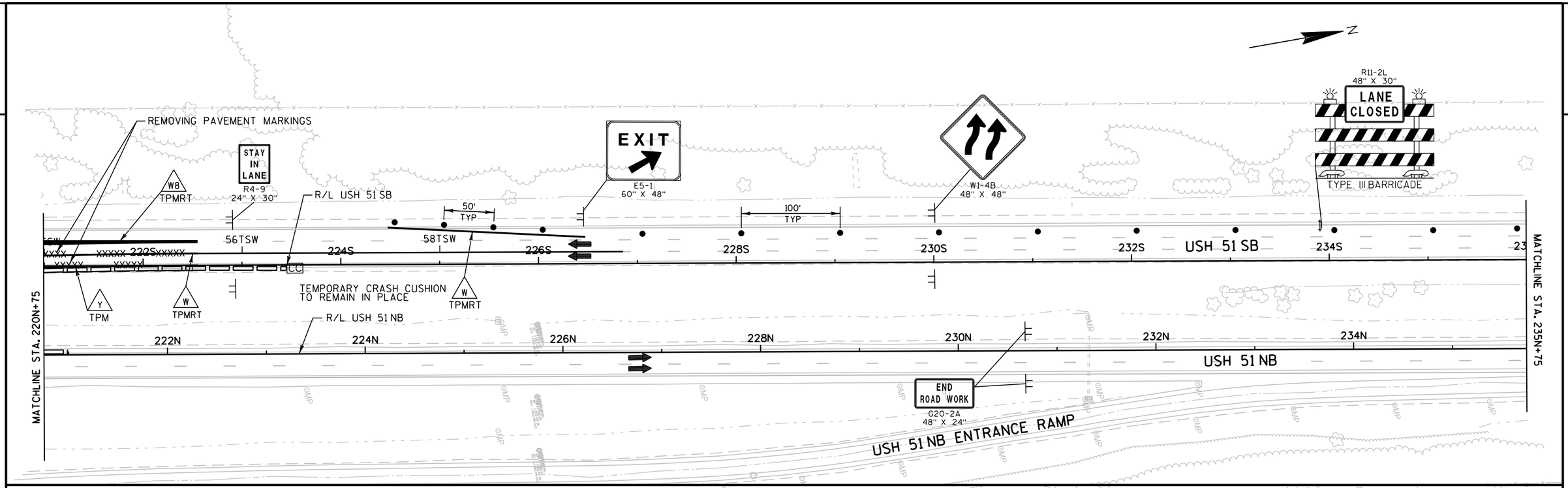
WD TPM

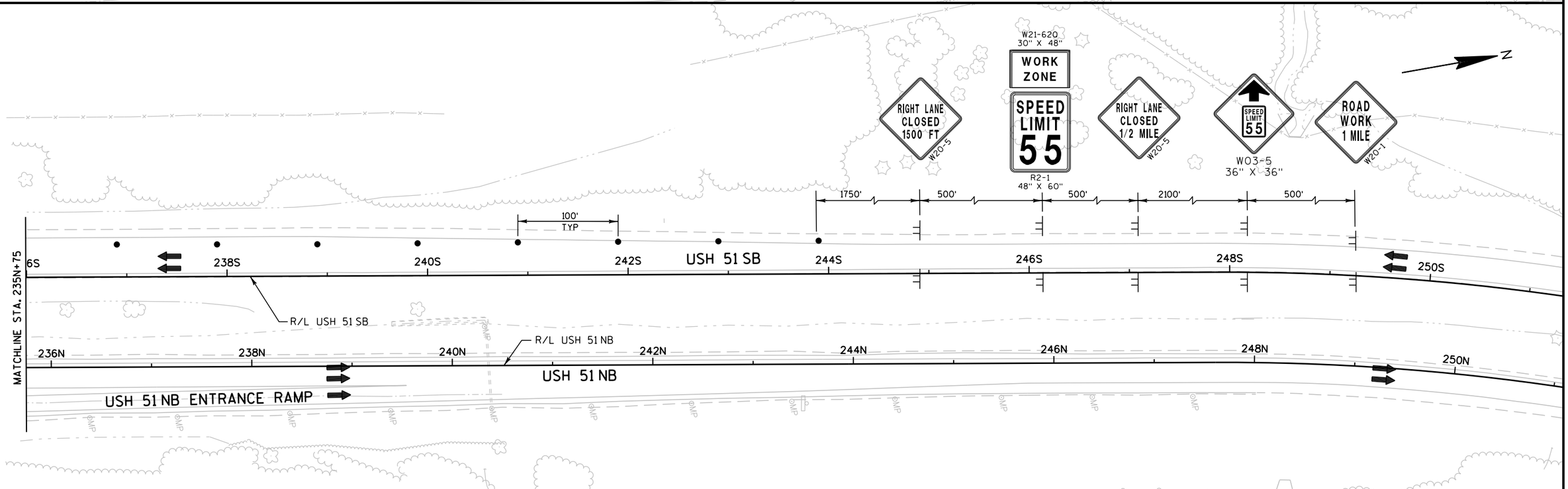
R/L USH 51 NB

30W

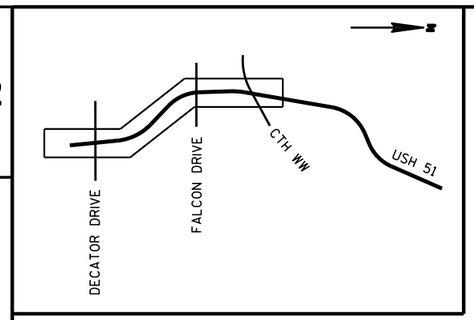
USH 51 NB ENTRANCE RAMP

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 4	SCALE, FEET 0 100 200	SHEET 51	E





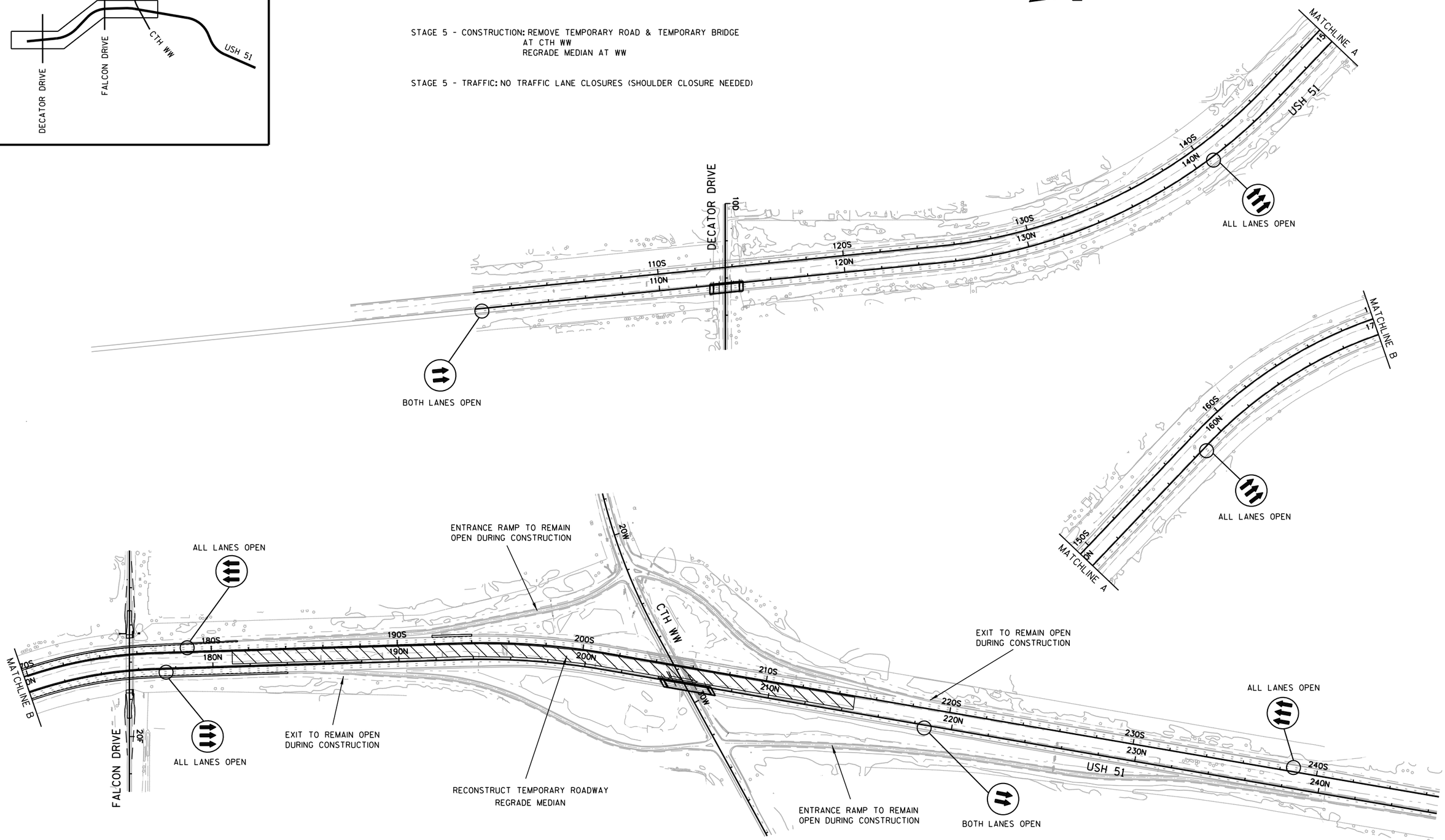
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 4	SCALE, FEET 0 100 200	SHEET 52	E



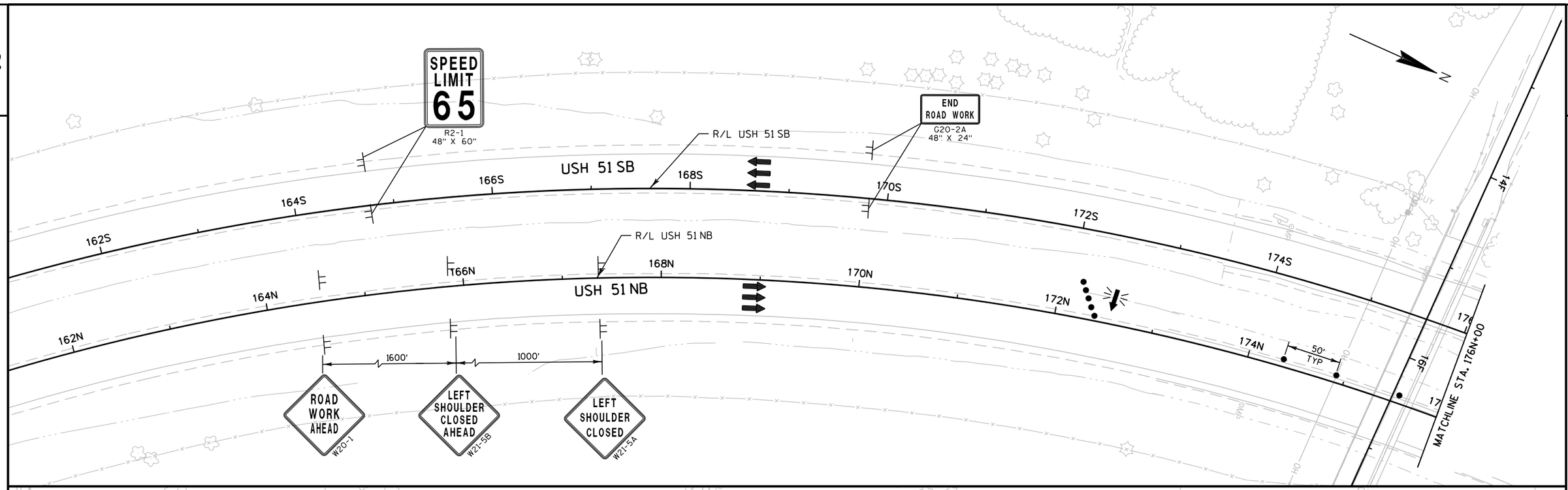
CONSTRUCTION STAGE 5

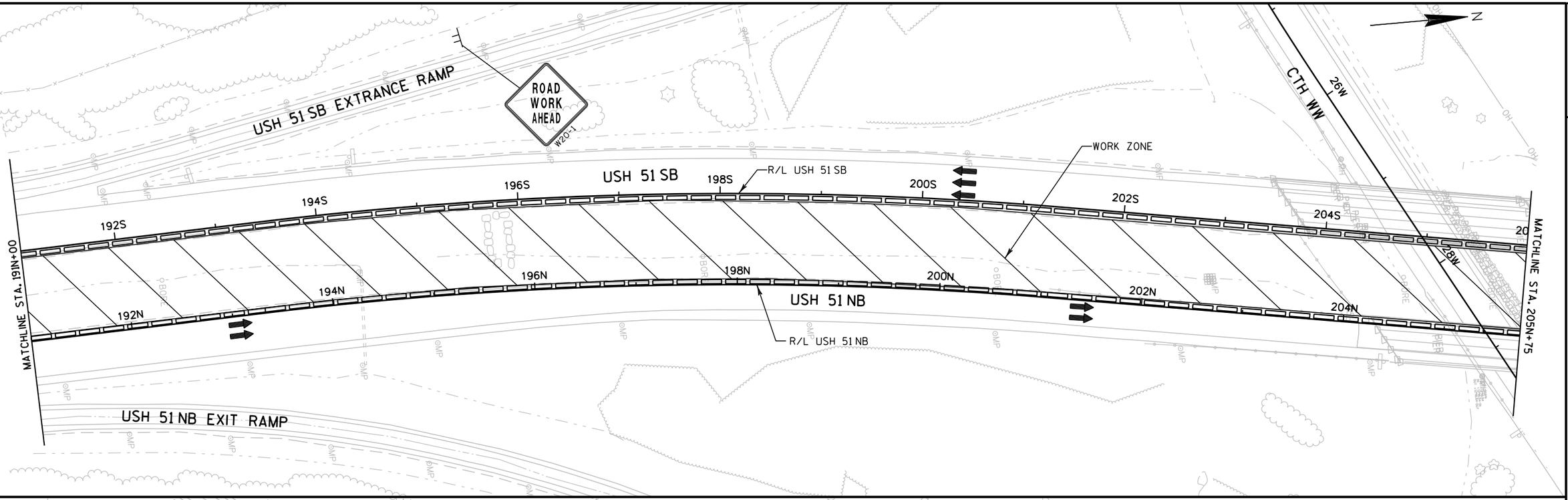
STAGE 5 - CONSTRUCTION: REMOVE TEMPORARY ROAD & TEMPORARY BRIDGE
AT CTH WW
REGRADE MEDIAN AT WW

STAGE 5 - TRAFFIC: NO TRAFFIC LANE CLOSURES (SHOULDER CLOSURE NEEDED)



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 5	SHEET 53 E


SPEED LIMIT 65
R2-1
48" X 60"
R/L USH 51 SB
USH 51 SB
END ROAD WORK
G20-2A
48" X 24"
162S
164S
166S
168S
170S
172S
174S
R/L USH 51 NB
USH 51 NB
162N
164N
166N
168N
170N
172N
174N
50' TYP
1600'
1000'
ROAD WORK AHEAD
W20-1
LEFT SHOULDER CLOSED AHEAD
W21-5B
LEFT SHOULDER CLOSED
W21-5A
MATCHLINE STA. 176N+00
N
WORK ZONE
R/L USH 51 SB
USH 51 SB EXTRANCE RAMP
178S
180S
182S
184S
186S
188S
190S
MATCHLINE STA. 176N+00
MATCHLINE STA. 191N+00
178N
180N
182N
184N
186N
188N
190N
USH 51 NB
R/L USH 51 NB
USH 51 NB EXIT RAMP

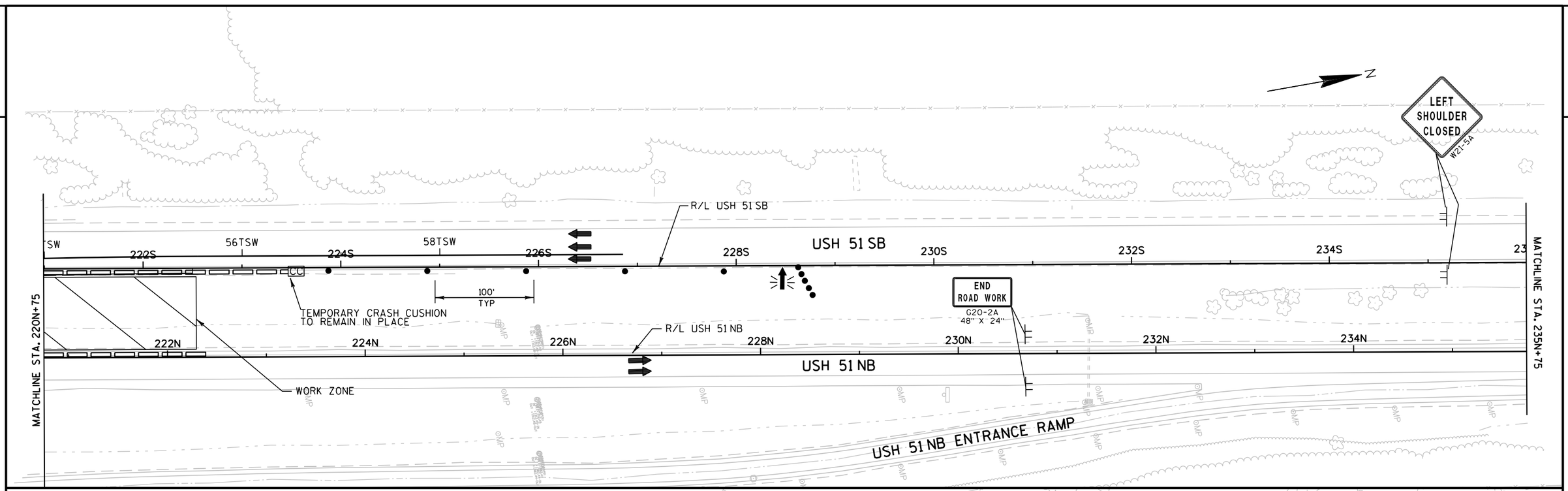


2

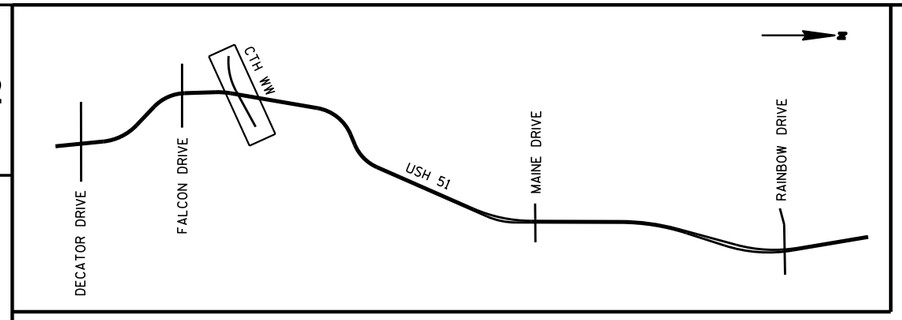
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 5	SCALE, FEET 0 100 200	SHEET 55	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\026502_t5_74_tc.dgn
PLOT DATE : 01-MAY-2014 12:19
PLOT BY : cfranzen
PLOT NAME : 026502_t5_74_tc
PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 5	SCALE, FEET 0 100 200	SHEET 56	E



CONSTRUCTION STAGE 6A

STAGE 6A - CONSTRUCTION: PAINT USH 51 OVERPASS OVER EASTBOUND CTH WW LANES

STAGE 6A - TRAFFIC: TRAFFIC SHIFTED TO WESTBOUND LANES

N

2

TRAFFIC IN EXISTING LANES

ENTRANCE TO REMAIN OPEN DURING CONSTRUCTION

ALL TRAFFIC SHIFTED TO WESTBOUND LANES

ALL LANES OPEN

EXIT TO REMAIN OPEN DURING CONSTRUCTION

ALL LANES OPEN

EXIT TO REMAIN OPEN DURING CONSTRUCTION

ALL LANES OPEN

180S
180N
190S
190N
200S
200N
210S
210N
220S
220N
230S
230N
240S
240N
20W
30W
40W
USH 51
CTH WW

SECTION OF US 51 BRIDGES (OVER CTH WW EASTBOUND LANES) TO HAVE GIRDERS PAINTED

ALL TRAFFIC SHIFTED TO WESTBOUND LANES

ENTRANCE TO REMAIN OPEN DURING CONSTRUCTION

ALL LANES OPEN

TRAFFIC IN EXISTING LANES

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 6A	SHEET 57	E

2

ROAD WORK AHEAD
W20-1

USH 51 SB EXIT RAMP

MATCHLINE STA. 28W+00

W TPMRT

Y TPMRT

REMOVE PAVEMENT MARKINGS

TUBULAR MARKERS (TYP)

14W

1000'

16W

18W

20W

22W

24W

26W

28W

CTH WW

ROAD WORK AHEAD
W20-1

RIGHT LANE CLOSED AHEAD
W20-5

BEGIN RIGHT TURN LANE
R3-20R
24" X 36"

W01-6
48" X 24"

R11-2 (MOD)
48" X 30"
LANE CLOSED

TYPE III BARRICADE

TYPE III BARRICADE

USH 51 SB ENTRANCE RAMP

USH 51 SB

204S

204N

MATCHLINE STA. 28W+00

USH 51 NB

206S

206N

208N

USH 51 NB ENTRANCE RAMP

Y TPMRT

REMOVE PAVEMENT MARKINGS

30W

32W

34W

36W

38W

40W

42W

CTH WW

BEGIN RIGHT TURN LANE
R3-20R
24" X 36"

W TPMRT

Y TPMRT

W04-2L

LEFT LANE CLOSED AHEAD
W20-5

ROAD WORK AHEAD
W20-1

1500'

1000'

W01-6
48" X 24"

R11-2 (MOD)
48" X 30"
LANE CLOSED

TYPE III BARRICADE

TYPE III BARRICADE

END ROAD WORK
G20-2A
48" X 24"

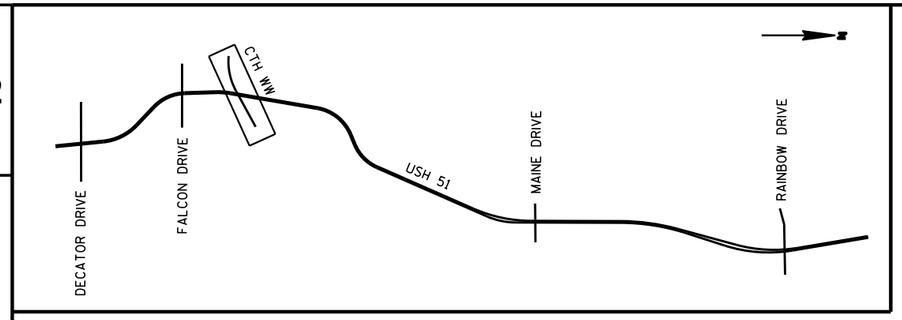
USH 51 NB EXIT RAMP

ROAD WORK AHEAD
W20-1

PLACE 500' UP RAMP

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 6A	SCALE, FEET 0 100 200	SHEET 58	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\026601_t6A_74_tc.dgn PLOT DATE : 01-MAY-2014 12:19 PLOT BY : cfranzen PLOT NAME : 026601_t6A_74_tc PLOT SCALE : 100:1



CONSTRUCTION STAGE 6B

STAGE 6B - CONSTRUCTION: PAINT USH 51 OVERPASS OVER WESTBOUND CTH WW LANES

STAGE 6B - TRAFFIC: TRAFFIC SHIFTED TO EASTBOUND LANES

N

2

TRAFFIC IN EXISTING LANES

ENTRANCE TO REMAIN OPEN DURING CONSTRUCTION

ALL TRAFFIC SHIFTED TO EASTBOUND LANES

ALL LANES OPEN

EXIT TO REMAIN OPEN DURING CONSTRUCTION

ALL LANES OPEN

EXIT TO REMAIN OPEN DURING CONSTRUCTION

ALL LANES OPEN

180S
180N
190S
190N
200S
200N
210S
210N
220S
220N
230S
230N
240S
240N
20W
30W
40W
USH 51
CTH WW

SECTION OF US 51 BRIDGES (OVER CTH WW EASTBOUND LANES) TO HAVE GIRDERS PAINTED

ALL TRAFFIC SHIFTED TO EASTBOUND LANES

ENTRANCE TO REMAIN OPEN DURING CONSTRUCTION

ALL LANES OPEN

TRAFFIC IN EXISTING LANES

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL OVERVIEW - STAGE 6B	SHEET	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\USH51_tc_6B.dgn PLOT DATE : 01-MAY-2014 12:19 PLOT BY : cfranzen PLOT NAME : PLOT SCALE : 500:1

2

ROAD WORK AHEAD
W20-1

N

MATCHLINE STA. 117N+00

W01-6
48" X 24"

R11-2 (MOD)
48" X 30"
LANE CLOSED

TYPE III BARRICADE

TYPE III BARRICADE

USH 51 SB EXIT RAMP

100'
TYP

W
TPMRT

Y
TPMRT

REMOVE PAVEMENT MARKINGS
TUBULAR MARKERS (TYP)

14W

16W

18W

20W

22W

24W

26W

28

XXXXX

50'
TYP

1000'

1000'

500'

CTH WW

11'

11'

REMOVE TRAFFIC ARROW

USH 51 SB
EXTRANCE RAMP

USH 51 SB

204S

204N

ROAD WORK AHEAD
W20-1

LEFT LANE CLOSED 1500 FT
W20-5

W04-2L

MATCHLINE STA. 117N+00

208N

USH 51 NB

206S

206N

USH 51 NB ENTRANCE RAMP

W01-6
48" X 24"

R11-2 (MOD)
48" X 30"
LANE CLOSED

TYPE III BARRICADE

TYPE III BARRICADE

BEGIN RIGHT TURN LANE
R3-20R
24" X 36"

REMOVE PAVEMENT MARKING

RIGHT LANE CLOSED AHEAD
W20-5

ROAD WORK AHEAD
W20-1

1500'

1000'

30W

32W

34W

36W

38W

40W

42W

CTH WW

END ROAD WORK
G20-2A
48" X 24"

W01-6
48" X 24"

R11-2 (MOD)
48" X 30"
LANE CLOSED

TYPE III BARRICADE

TYPE III BARRICADE

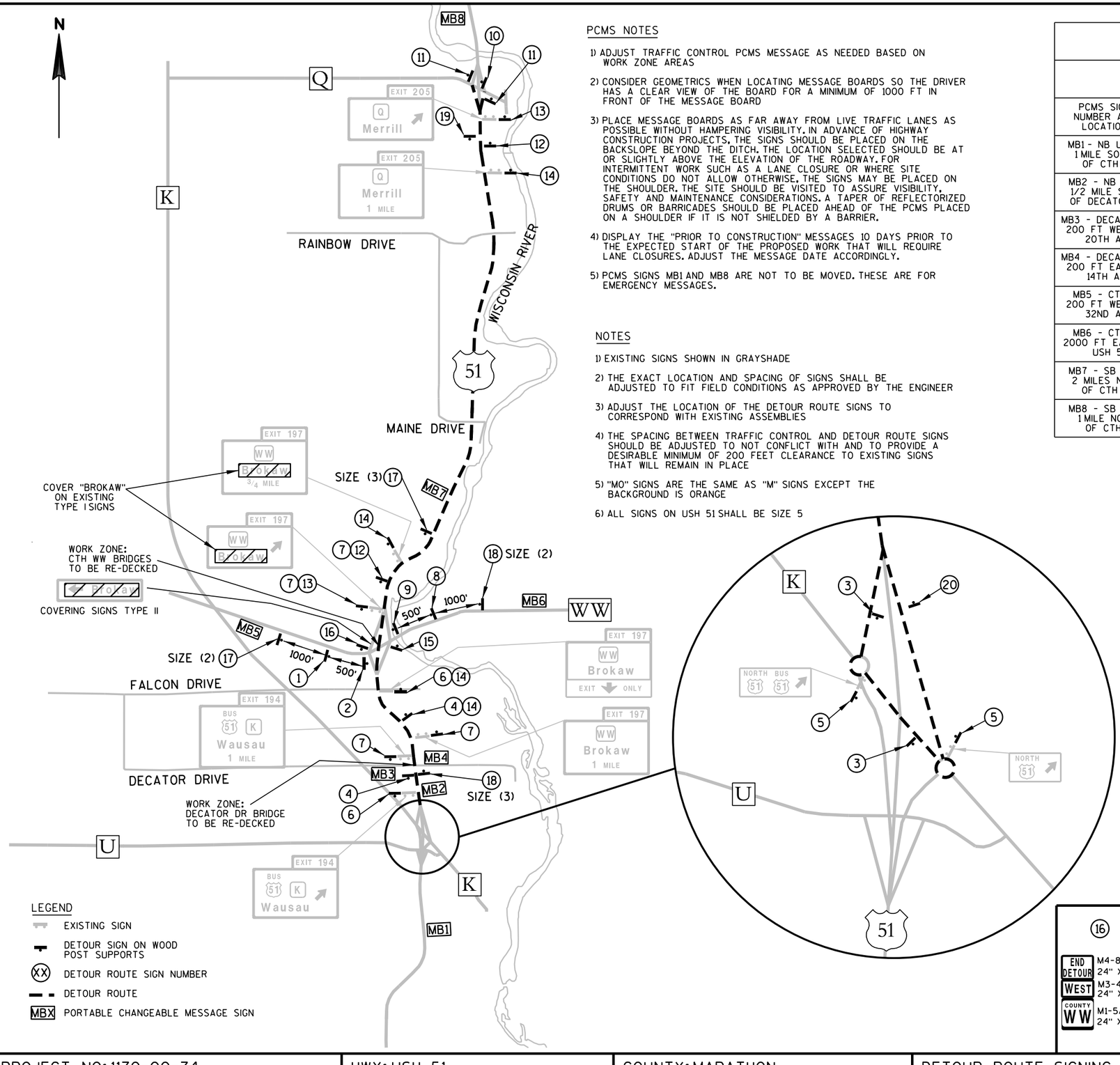
USH 51 NB EXIT RAMP

ROAD WORK AHEAD
W20-1

PLACE 500' UP RAMP

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	TRAFFIC CONTROL - STAGE 6B	SCALE, FEET 0 100 200	SHEET 60	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\roads\cds\1170-00-04\026602_t6B_74_tc.dgn PLOT DATE : 01-MAY-2014 12:19 PLOT BY : cfranzen PLOT NAME : 026602_t6B_74_tc PLOT SCALE : 100:1



PCMS NOTES

1) ADJUST TRAFFIC CONTROL PCMS MESSAGE AS NEEDED BASED ON WORK ZONE AREAS

2) CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE BOARD FOR A MINIMUM OF 1000 FT IN FRONT OF THE MESSAGE BOARD

3) PLACE MESSAGE BOARDS AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. IN ADVANCE OF HIGHWAY CONSTRUCTION PROJECTS, THE SIGNS SHOULD BE PLACED ON THE BACKSLOPE BEYOND THE DITCH. THE LOCATION SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. FOR INTERMITTENT WORK SUCH AS A LANE CLOSURE OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER. THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY AND MAINTENANCE CONSIDERATIONS. A TAPER OF REFLECTORIZED DRUMS OR BARRICADES SHOULD BE PLACED AHEAD OF THE PCMS PLACED ON A SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.

4) DISPLAY THE "PRIOR TO CONSTRUCTION" MESSAGES 10 DAYS PRIOR TO THE EXPECTED START OF THE PROPOSED WORK THAT WILL REQUIRE LANE CLOSURES. ADJUST THE MESSAGE DATE ACCORDINGLY.

5) PCMS SIGNS MB1 AND MB8 ARE NOT TO BE MOVED. THESE ARE FOR EMERGENCY MESSAGES.

NOTES

1) EXISTING SIGNS SHOWN IN GRAYSHADE

2) THE EXACT LOCATION AND SPACING OF SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER

3) ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH EXISTING ASSEMBLIES

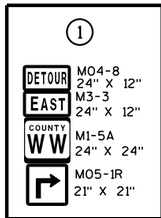
4) THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR ROUTE SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

5) "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE

6) ALL SIGNS ON USH 51 SHALL BE SIZE 5

TRAFFIC CONTROL SIGNS PCMS MESSAGES

PCMS SIGN NUMBER AND LOCATION	PRIOR TO CONSTRUCTION		DURING INSIDE LANE CLOSURE		DURING TRAFFIC SHIFT TO TEMP ROAD		DURING NIGHT CLOSURE		EMERGENCY MESSAGE	
	PHASE 1 (3 SEC)	PHASE 2 (3 SEC)	PHASE 1 (3 SEC)	PHASE 2 (3 SEC)	PHASE 1 (3 SEC)	PHASE 2 (3 SEC)	PHASE 1 (3 SEC)	PHASE 2 (3 SEC)	PHASE 1 (3 SEC)	PHASE 2 (3 SEC)
MB1 - NB US 51 1 MILE SOUTH OF CTH K	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TRAFFIC STOPPED AHEAD	ALT ROUTE K TO Q
MB2 - NB US 51 1/2 MILE SOUTH OF DECATOR DR	BRIDGE WORK STARTS	DATE	LEFT LANE CLOSED	1/2 MILE MERGE RIGHT	TRAFFIC SHIFT AHEAD	1/2 MILE SHIFT LEFT	HWY WW WEST CLOSED	FOLLOW DETOUR ROUTE	N/A	N/A
MB3 - DECATOR DR 200 FT WEST OF 20TH AVE	BRIDGE WORK STARTS	DATE	N/A	N/A	N/A	N/A	BRIDGE CLOSED AHEAD	USE ALT ROUTE	N/A	N/A
MB4 - DECATOR DR 200 FT EAST OF 14TH AVE	BRIDGE WORK STARTS	DATE	N/A	N/A	N/A	N/A	BRIDGE CLOSED AHEAD	USE ALT ROUTE	N/A	N/A
MB5 - CTH WW 200 FT WEST OF 32ND AVE	BRIDGE WORK STARTS	DATE	N/A	N/A	N/A	N/A	BRIDGE CLOSED AHEAD	FOLLOW ALT ROUTE	N/A	N/A
MB6 - CTH WW 2000 FT EAST OF USH 51	BRIDGE WORK STARTS	DATE	N/A	N/A	N/A	N/A	BRIDGE CLOSED AHEAD	FOLLOW ALT ROUTE	N/A	N/A
MB7 - SB US 51 2 MILES NORTH OF CTH WW	BRIDGE WORK STARTS	DATE	LEFT LANE CLOSED	1/2 MILE MERGE RIGHT	TRAFFIC SHIFT AHEAD	1/2 MILE SHIFT LEFT	HWY WW EAST CLOSED	FOLLOW DETOUR ROUTE	N/A	N/A
MB8 - SB US 51 1 MILE NORTH OF CTH Q	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TRAFFIC STOPPED AHEAD	ALT ROUTE Q TO K

(1)


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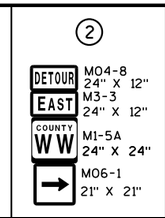

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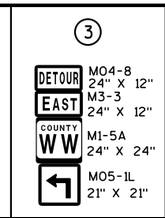

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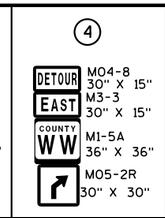

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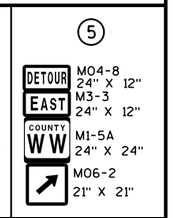

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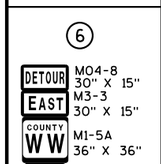

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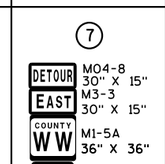

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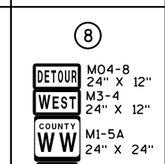

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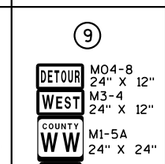

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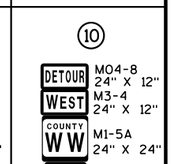

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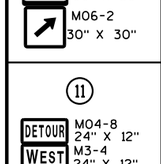

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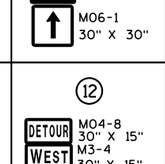

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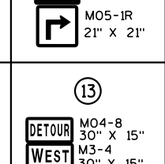

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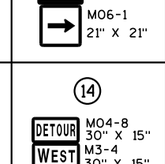

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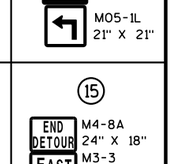

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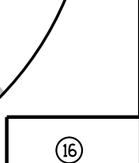

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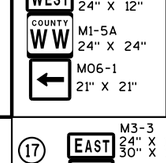

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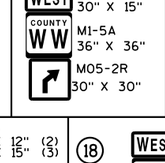

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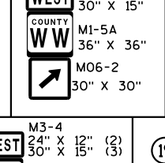

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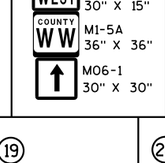


PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	DETOUR ROUTE SIGNING PLAN	SHEET 61	E

2

N

R/L DECATOR DRIVE

STA 113S+62.96
R/L USH 51 SB=
STA 13D+43.17
R/L DECATOR DR

R/L USH 51 SB

105S USH 51 SB 110S 115S 120S 125S

105N 110N 115N 120N 125N

USH 51 NB

R/L USH 51 NB

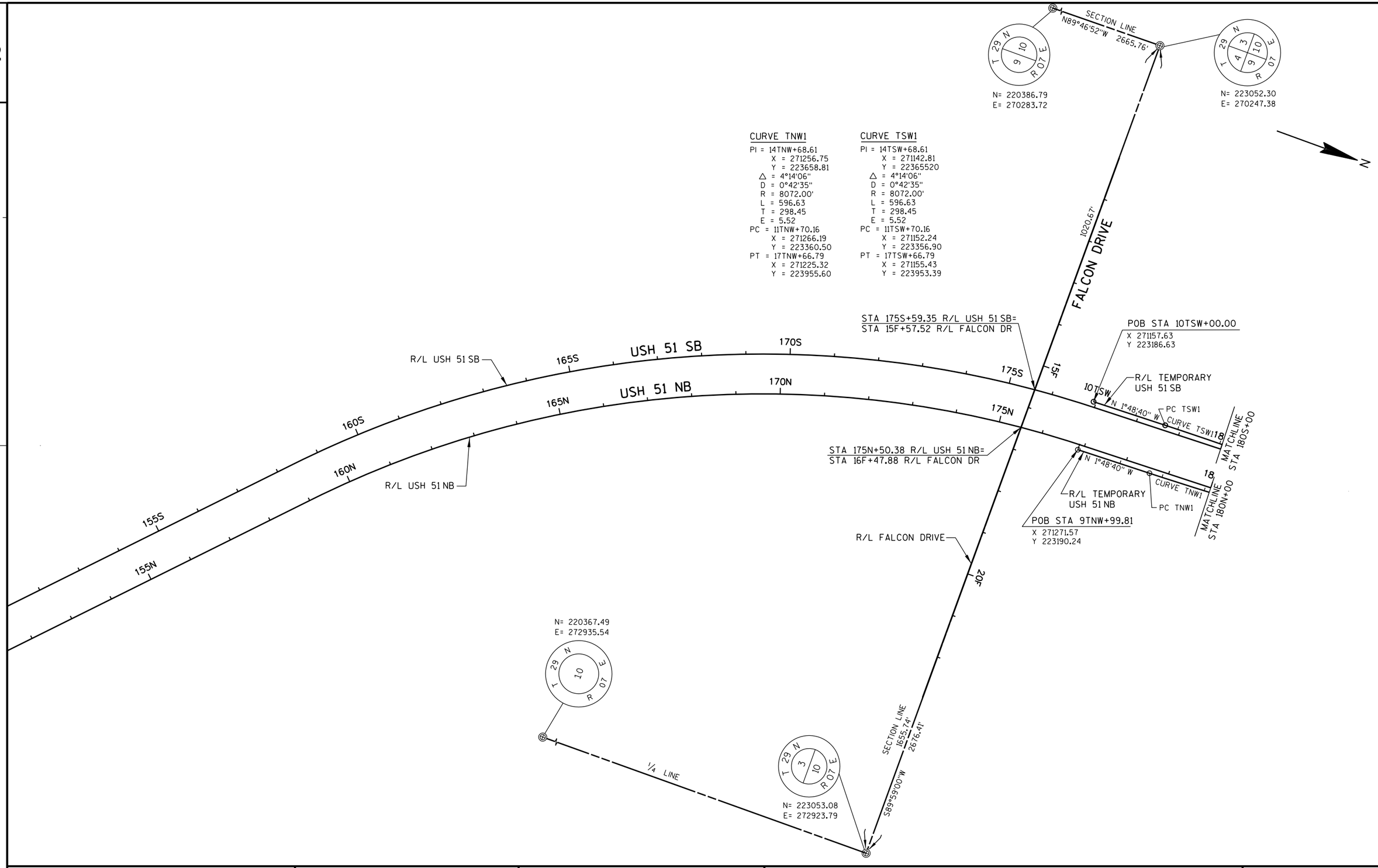
STA 113N+54.12
R/L USH 51 NB=
STA 14D+33.61
R/L DECATOR DR

150

DECATOR DRIVE

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	ALIGNMENT PLAN	SHEET 62	E

2



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	ALIGNMENT PLAN	SHEET 63	E

2

N

R/L CTH WW

20W

CTH WW

25W

STA 183S+04.36 R/L USH 51 SB=
STA 16TSW+10.36 R/L TEMPORARY USH 51 SB

R/L TEMPORARY USH 51 SB

R/L USH 51 SB

MATCHLINE STA 180S+00

PI TSW1

15TSW

CURVE TSW1

185S

PC TSW2

20TSW

PT TSW1

N 2°25'26" E

PI TNW2/TSW2

CURVE TSW2

190S

PC TNW3/TSW3

25TSW

CURVE TSW3

CURVE TNW3

195S

PI TNW3/TSW3

30TSW

USH 51 SB

200S

STA 204S+94.78 R/L USH 51 SB=
STA 27W+68.33 R/L CTH WW

205S

PT TNW3/TSW3

35TSW

N 9°47'45" E

PC TSW4

40TSW

21

MATCHLINE STA 210N+00

0N

MATCHLINE STA 180N+00

PT TNW1

185N

N 6°02'46" W

CURVE TNW1

PI TNW1

CURVE TNW2

PC TNW2

190N

PT TNW2/TSW2

R/L TEMPORARY USH 51 NB

R/L USH 51 SB

195N

USH 51 NB

200N

205N

STA 38TNW/TSW+28.73
R/L TEMPORARY USH 51 NB/SB=
STA 28W+25.76 R/L CTH WW

PC TNW4

21

MATCHLINE STA 210N+00

STA 182N+98.30 R/L USH 51 NB=
STA 16TNW+10.36 R/L TEMPORARY USH 51 NB

STA 205N+41.83 R/L USH 51 NB=
STA 28W+83.18 R/L CTH WW

30W

35W

CURVE TNW1
PI = 14TNW+68.61
X = 271256.75
Y = 223658.81
△ = 4°14'06"
D = 0°42'35"
R = 8072.00'
L = 596.63
T = 298.45
E = 5.52
PC = 11TNW+70.16
X = 271266.19
Y = 223360.50
PT = 17TNW+66.79
X = 271225.32
Y = 223955.60

CURVE TNW2
PI = 22TNW+40.21
X = 271175.45
Y = 224426.38
△ = 4°14'06"
D = 0°50'19"
R = 6832.00'
L = 504.98
T = 252.60
E = 4.67
PC = 19TNW+87.61
X = 271202.06
Y = 224175.18
PT = 24TNW+92.59
X = 271167.47
Y = 224678.86

CURVE TNW3
PI = 30TNW+39.10
X = 271150.20
Y = 225225.10
△ = 11°36'25"
D = 1°28'57"
R = 3864.72'
L = 782.91
T = 392.80
E = 19.91
PC = 26TNW+46.30
X = 271162.61
Y = 224832.50
PT = 34TNW+29.21
X = 271217.03
Y = 225612.17

CURVE TNW4
PI = 44TNW+97.72
X = 271398.82
Y = 226665.10
△ = 4°21'07"
D = 0°50'19"
R = 6832.00'
L = 518.92
T = 259.59
E = 4.93
PC = 42TNW+38.13
X = 271354.65
Y = 226409.30
PT = 47TNW+57.05
X = 271462.26
Y = 226916.81

CURVE TSW1
PI = 14TSW+68.81
X = 271142.81
Y = 22365520
△ = 4°14'06"
D = 0°42'35"
R = 8072.00'
L = 596.63
T = 298.45
E = 5.52
PC = 11TSW+70.16
X = 271152.24
Y = 223356.90
PT = 17TSW+66.79
X = 271155.43
Y = 223953.39

CURVE TSW2
PI = 22TSW40.21
X = 271175.45
Y = 224426.38
△ = 4°14'06"
D = 0°50'19"
R = 6832.00'
L = 504.98
T = 252.60
E = 4.67
PC = 19TSW+87.61
X = 271164.77
Y = 224174.01
PT = 24TSW+92.59
X = 271167.47
Y = 224678.86

CURVE TSW3
PI = 30TSW+39.10
X = 271150.20
Y = 225225.10
△ = 11°36'25"
D = 1°28'57"
R = 3864.72'
L = 782.91
T = 392.80
E = 19.91
PC = 26TSW+46.30
X = 271162.61
Y = 224832.50
PT = 34TSW+29.21
X = 271217.03
Y = 225612.17

CURVE TSW4
PI = 30TSW+39.10
X = 271150.20
Y = 225225.10
△ = 11°36'25"
D = 1°28'57"
R = 3864.72'
L = 782.91
T = 392.80
E = 19.91
PC = 26TSW+46.30
X = 271162.61
Y = 224832.50
PT = 34TSW+29.21
X = 271217.03
Y = 225612.17

CURVE TSW4
PI = 44TSW+97.72
X = 271398.82
Y = 226665.10
△ = 4°21'07"
D = 0°36'29"
R = 9422.00'
L = 715.64
T = 357.99
E = 6.80
PC = 41TSW+39.72
X = 271337.91
Y = 226312.32
PT = 48TSW+55.37
X = 271432.78
Y = 227021.48

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	ALIGNMENT PLAN	SHEET 64	E

2

N

MATCHLINE STA 210N+00

R/L TEMPORARY USH 51 SB

PC TSW5
N 05°26'38" E

45TSW
45TNW

PI TNW4

PT TSW4

50TSW

PI TSW5

220S

CURVE TSW5

55TSW

N 9°47'45" E

225S

POE STA 59TNW+85.38
X 271595.49
Y 228139.27

230S

R/L USH 51 SB

235S

240S

215S

PT TNW4

CURVE TNW4

215N

N 14°08'51" E

50TNW

220N

55TNW

225N

230N

235N

240N

MATCHLINE STA 210N+00

R/L TEMPORARY USH 51 NB

PC TNW5

PI TNW5

CURVE TNW5

PT TNW5

N 9°47'45" E

POE STA 59TNW+85.48
X 271707.83
Y 228119.88

R/L USH 51 NB

CURVE TNW4
PI = 44TNW+97.72
X = 271398.82
Y = 226665.10
△ = 4°21'07"
D = 0°50'19"
R = 6832.00'
L = 518.92
T = 259.59
E = 4.93
PC = 42TNW+38.13
X = 271354.65
Y = 226409.30
PT = 47TNW+57.05
X = 271462.26
Y = 226916.81

CURVE TNW5
PI = 52TNW+48.64
X = 271582.42
Y = 227393.49
△ = 4°21'07"
D = 0°42'35"
R = 8072.00"
L = 613.11
T = 306.70
E = 5.82
PC = 49TNW+41.94
X = 227096.09
Y = 271507.45
PT = 55TNW+55.04
X = 271634.60
Y = 227695.71

CURVE TSW4
PI = 44TSW+97.72
X = 271398.82
Y = 226665.10
△ = 4°21'07"
D = 0°36'29"
R = 9422.00'
L = 715.64
T = 357.99
E = 6.80
PC = 41TSW+39.72
X = 271337.91
Y = 226312.32
PT = 48TSW+55.37
X = 271432.78
Y = 227021.48

CURVE TSW5
PI = 52TSW+48.54
X = 271470.08
Y = 227412.88
△ = 4°21'07"
D = 0°42'35"
R = 8072.00'
L = 613.11
T = 306.70
E = 5.82
PC = 49TSW+41.84
X = 271440.92
Y = 227107.56
PT = 55TSW+54.95
X = 271522.26
Y = 227715.11

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	ALIGNMENT PLAN	SHEET 65	E

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NB TEMPORARY ROAD AT CTH WW

SUPERELEVATION DESCRIPTION	STATION	SLOPE LT	SLOPE RT
MATCH US 51 NB	12+00	-2.00%	2.00%
BEGIN TRANSITION	19+05	-2.00%	2.00%
SLOPE RIGHT	20+05	2.00%	-2.00%
BEGIN TRANSITION	26+35	2.00%	-2.00%
BEGIN SUPERELEVATION	26+80	3.70%	-3.70%
END SUPERELEVATION	33+95	3.70%	-3.70%
SLOPE RIGHT	34+40	2.00%	-2.00%
BEGIN TRANSITION	47+40	2.00%	-2.00%
MATCH US 51 NB	48+40	-2.00%	2.00%

SB TEMPORARY ROAD AT CTH WW

SUPERELEVATION DESCRIPTION	STATION	SLOPE LT	SLOPE RT
MATCH US 51 SB	12+00	2.00%	-2.00%
BEGIN TRANSITION	19+05	2.00%	-2.00%
SLOPE LEFT	20+05	-2.00%	2.00%
BEGIN TRANSITION	24+75	-2.00%	2.00%
SLOPE RIGHT	25+80	2.00%	-2.00%
BEGIN TRANSITION	26+30	2.00%	-2.00%
BEGIN SUPERELEVATION	26+80	3.70%	-3.70%
END SUPERELEVATION	33+95	3.70%	-3.70%
SLOPE RIGHT/MATCH US 51 SB	34+40	2.00%	2.00%

DATE 17NOV15 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-00-74 QUANTITY
0010	201.0120	Clearing	ID	90.000	90.000
0020	201.0220	Grubbing	ID	90.000	90.000
0030	203.0200	Removing Old Structure (station) 01. 113N+60	LS	1.000	1.000
0040	203.0200	Removing Old Structure (station) 02. 205N+50	LS	1.000	1.000
0050	203.0200	Removing Old Structure (station) 03. 205s+00	LS	1.000	1.000
0060	203.0225.S	Debris Containment (structure) 01. B-37-155	LS	1.000	1.000
0070	203.0225.S	Debris Containment (structure) 02. B-37-158	LS	1.000	1.000
0080	203.0225.S	Debris Containment (structure) 03. B-37-159	LS	1.000	1.000
0090	204.0100	Removing Pavement	SY	760.000	760.000
0100	204.0115	Removing Asphaltic Surface Butt Joints	SY	51.000	51.000
0110	204.0120	Removing Asphaltic Surface Milling	SY	16,640.000	16,640.000
0120	204.0165	Removing Guardrail	LF	1,065.000	1,065.000
0130	204.0190	Removing Surface Drains	EACH	1.000	1.000
0140	204.0210	Removing Manholes	EACH	2.000	2.000
0150	204.0220	Removing Inlets	EACH	6.000	6.000
0160	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	266.800	266.800
0170	204.9060.S	Removing (item description) 01. Apron Endwalls	EACH	8.000	8.000
0180	205.0100	Excavation Common	CY	37,233.000	37,233.000
0190	205.0200	Excavation Rock	CY	1,950.000	1,950.000
0200	206.1000	Excavation for Structures Bridges (structure) 01. B-37-155	LS	1.000	1.000
0210	206.1000	Excavation for Structures Bridges (structure) 02. B-37-158	LS	1.000	1.000
0220	206.1000	Excavation for Structures Bridges (structure) 03. B-37-159	LS	1.000	1.000
0230	208.0100	Borrow	CY	20,307.000	20,307.000
0240	210.0100	Backfill Structure	CY	192.000	192.000
0250	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	19.000	19.000
0260	213.0100	Finishing Roadway (project) 01. 1170-00-74	EACH	1.000	1.000
0270	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,405.000	1,405.000
0280	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	28,500.000	28,500.000
0290	415.0100	Concrete Pavement 10-Inch	SY	760.000	760.000
0300	415.0410	Concrete Pavement Approach Slab	SY	842.000	842.000
0310	416.1010	Concrete Surface Drains	CY	5.000	5.000
0320	455.0105	Asphaltic Material PG58-28	TON	560.000	560.000
0330	455.0605	Tack Coat	GAL	3,640.000	3,640.000
0340	460.1103	HMA Pavement Type E-3	TON	8,155.000	8,155.000
0350	460.1110	HMA Pavement Type E-10	TON	1,270.000	1,270.000
0360	460.2000	Incentive Density HMA Pavement	DOL	580.000	580.000
0370	460.4000	HMA Cold Weather Paving	TON	840.000	840.000
0380	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	4,100.000	4,100.000
0390	465.0400	Asphaltic Shoulder Rumble Strips	LF	9,820.000	9,820.000
0400	502.0100	Concrete Masonry Bridges	CY	1,534.000	1,534.000
0410	502.3100	Expansion Device (structure) 01. B-37-158	LS	1.000	1.000

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DATE 17NOV15 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-00-74 QUANTITY
0420	502.3100	Expansion Device (structure) 02. B-37-159	LS	1.000	1.000
0430	502.3200	Protective Surface Treatment	SY	87.000	87.000
0440	502.3210	Pigmented Surface Sealer	SY	621.000	621.000
0450	502.5002	Masonry Anchors Type L No. 4 Bars	EACH	27.000	27.000
0460	502.5005	Masonry Anchors Type L No. 5 Bars	EACH	390.000	390.000
0470	502.6110	Masonry Anchors Type S 3/4-Inch	EACH	11.000	11.000
0480	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	325,770.000	325,770.000
0490	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	4,720.000	4,720.000
0500	505.0904	Bar Couplers No. 4	EACH	16.000	16.000
0510	505.0905	Bar Couplers No. 5	EACH	531.000	531.000
0520	505.0906	Bar Couplers No. 6	EACH	24.000	24.000
0530	505.0908	Bar Couplers No. 8	EACH	24.000	24.000
0540	506.4000	Steel Diaphragms (structure) 01. B-37-155	EACH	14.000	14.000
0550	509.5100.S	Polymer Overlay	SY	3,867.000	3,867.000
0560	516.0500	Rubberized Membrane Waterproofing	SY	58.000	58.000
0570	517.0900.S	Preparation and Coating of Top Flanges (structure) 01. B-37-158	LS	1.000	1.000
0580	517.0900.S	Preparation and Coating of Top Flanges (structure) 02. B-37-159	LS	1.000	1.000
0590	517.1800.S	Structure Repainting Recycled Abrasive (structure) 01. B-37-158	LS	1.000	1.000
0600	517.1800.S	Structure Repainting Recycled Abrasive (structure) 02. B-37-159	LS	1.000	1.000
0610	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 01. B-37-158	LS	1.000	1.000
0620	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 02. B-37-159	LS	1.000	1.000
0630	517.6001.S	Portable Decontamination Facility	EACH	2.000	2.000
0640	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0650	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	1.000	1.000
0660	522.0312	Culvert Pipe Reinforced Concrete Class IV 12-Inch	LF	236.800	236.800
0670	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	7.000	7.000
0680	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	1.000	1.000
0690	603.8000	Concrete Barrier Temporary Precast Delivered	LF	13,625.000	13,625.000
0700	603.8125	Concrete Barrier Temporary Precast Installed	LF	35,695.000	35,695.000
0710	604.9015.S	Reseal Crushed Aggregate Slope Paving	SY	2,303.000	2,303.000
0720	606.0200	Riprap Medium	CY	3.000	3.000
0730	611.0600	Inlet Covers Type A	EACH	1.000	1.000
0740	611.0642	Inlet Covers Type MS	EACH	2.000	2.000
0750	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0760	611.3220	Inlets 2x2-FT	EACH	1.000	1.000
0770	611.3901	Inlets Median 1 Grate	EACH	2.000	2.000
0780	611.8115	Adjusting Inlet Covers	EACH	2.000	2.000
0790	611.8120.S	Cover Plates Temporary	EACH	2.000	2.000
0800	611.9710	Salvaged Inlet Covers	EACH	2.000	2.000

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DATE 17NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-00-74 QUANTITY
0810	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	6.000	6.000
0820	614.0905	Crash Cushions Temporary	EACH	5.000	5.000
0830	614.2300	MGS Guardrail 3	LF	665.000	665.000
0840	614.2500	MGS Thrie Beam Transition	LF	234.000	234.000
0850	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0860	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1170-00-74	EACH	1.000	1.000
0870	619.1000	Mobilization	EACH	1.000	1.000
0880	624.0100	Water	MGAL	990.000	990.000
0890	625.0100	Topsoil	SY	46,500.000	46,500.000
0900	627.0200	Mulching	SY	46,500.000	46,500.000
0910	628.1504	Silt Fence	LF	5,680.000	5,680.000
0920	628.1520	Silt Fence Maintenance	LF	5,680.000	5,680.000
0930	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0940	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0950	628.7005	Inlet Protection Type A	EACH	6.000	6.000
0960	628.7504	Temporary Ditch Checks	LF	2,890.000	2,890.000
0970	628.7555	Culvert Pipe Checks	EACH	55.000	55.000
0980	628.7570	Rock Bags	EACH	15.000	15.000
0990	629.0210	Fertilizer Type B	CWT	41.000	41.000
1000	630.0130	Seeding Mixture No. 30	LB	1,155.000	1,155.000
1010	633.0100	Delineator Posts Steel	EACH	8.000	8.000
1020	633.0500	Delineator Reflectors	EACH	8.000	8.000
1030	633.5200	Markers Culvert End	EACH	2.000	2.000
1040	638.2602	Removing Signs Type II	EACH	4.000	4.000
1050	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
1060	642.5001	Field Office Type B	EACH	1.000	1.000
1070	643.0100	Traffic Control (project) 01. 1170-00-74	EACH	1.000	1.000
1080	643.0300	Traffic Control Drums	DAY	56,365.000	56,365.000
1090	643.0420	Traffic Control Barricades Type III	DAY	4,545.000	4,545.000
1100	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	100.000	100.000
1110	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	100.000	100.000
1120	643.0705	Traffic Control Warning Lights Type A	DAY	9,090.000	9,090.000
1130	643.0715	Traffic Control Warning Lights Type C	DAY	5,130.000	5,130.000
1140	643.0800	Traffic Control Arrow Boards	DAY	425.000	425.000
1150	643.0900	Traffic Control Signs	DAY	11,360.000	11,360.000
1160	643.0910	Traffic Control Covering Signs Type I	EACH	2.000	2.000
1170	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000
1180	643.1050	Traffic Control Signs PCMS	DAY	460.000	460.000
1190	643.2000	Traffic Control Detour (project) 01. 1170-00-74	EACH	1.000	1.000
1200	643.3000	Traffic Control Detour Signs	DAY	4,366.000	4,366.000
1210	645.0120	Geotextile Fabric Type HR	SY	28.000	28.000
1220	646.0106	Pavement Marking Epoxy 4-Inch	LF	32,430.000	32,430.000
1230	646.0126	Pavement Marking Epoxy 8-Inch	LF	350.000	350.000
1240	646.0600	Removing Pavement Markings	LF	9,890.000	9,890.000
1250	646.0841.S	Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch	LF	425.000	425.000
1260	646.0881.S	Pavement Marking Grooved Wet Reflective Tape 4-Inch	LF	3,590.000	3,590.000
1270	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	2.000	2.000

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DATE 17NOV15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1170-00-74 QUANTITY
1280	647.0356	Pavement Marking Words Epoxy	EACH	1.000	1.000
1290	647.0955	Removing Pavement Markings Arrows	EACH	1.000	1.000
1300	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	34,715.000	34,715.000
1310	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	22,400.000	22,400.000
1320	649.0801	Temporary Pavement Marking Removable Tape 8-Inch	LF	2,220.000	2,220.000
1330	650.4000	Construction Staking Storm Sewer	EACH	16.000	16.000
1340	650.4500	Construction Staking Subgrade	LF	7,143.000	7,143.000
1350	650.5000	Construction Staking Base	LF	11,544.000	11,544.000
1360	650.6500	Construction Staking Structure Layout (structure) 01. B-37-155	LS	1.000	1.000
1370	650.6500	Construction Staking Structure Layout (structure) 02. B-37-158	LS	1.000	1.000
1380	650.6500	Construction Staking Structure Layout (structure) 03. B-37-159	LS	1.000	1.000
1390	650.7000	Construction Staking Concrete Pavement	LF	320.000	320.000
1400	650.8000	Construction Staking Resurfacing Reference	LF	1,330.000	1,330.000
1410	650.9910	Construction Staking Supplemental Control (project) 01. 1170-00-74	LS	1.000	1.000
1420	650.9920	Construction Staking Slope Stakes	LF	7,143.000	7,143.000
1430	690.0150	Sawing Asphalt	LF	7,300.000	7,300.000
1440	690.0250	Sawing Concrete	LF	52.000	52.000
1450	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1460	715.0502	Incentive Strength Concrete Structures	DOL	9,204.000	9,204.000
1470	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,400.000	2,400.000
1480	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	2,760.000	2,760.000
1490	SPV.0045	Special 01. Portable Changeable Message Sign (Pcms) Cellular Communications	DAY	460.000	460.000
1500	SPV.0060	Special 01. Concrete Riser For Inlet Median	EACH	2.000	2.000
1510	SPV.0060	Special 04. Abutment End Repair	EACH	3.000	3.000
1520	SPV.0060	Special 05. Cleaning And Painting Bearings	EACH	44.000	44.000
1530	SPV.0090	Special 01. Salvage and Reinstall Beamguard	LF	805.000	805.000
1540	SPV.0105	Special 02.Temporary Structure Station 38TNW+00	LS	1.000	1.000

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CLEARING AND GRUBBING

CATEGORY	STAGE	LOCATION	STATION		STATION	201.0120 CLEARING ID	201.0220 GRUBBING ID
0010	1						
		CTH WW NB TEMP ROAD	15TNW+00	-	45TNW+00 LT	90	90
			TOTALS			90	90

REMOVING GUARDRAIL

CATEGORY	STAGE	LOCATION	STA	TO	STA	LOCATION	204.0165 LF
0010		USH 51 & DECATOR DR					
	2		111N+00	-	112N+81	LT	180
	3		111N+00	-	112N+76	RT	175
		USH 51 & CTH WW					
	2		201N+08	-	204N+13	LT	310
	2		203N+98	-	204N+48	RT	50
	4		206S+03	-	206S+54	LT	50
	4		206S+47	-	209S+40	RT	300
		TOTAL					1,065

REMOVING ASPHALTIC SURFACE BUTT JOINTS

CATEGORY	STAGE	LOCATION	204.0115 SY
0010		B-37-155	
	2	116N+29	11
		B-37-158	
	2	200N+62	9
	2	208N+68	9
		B-37-159	
	4	200S+77	11
	4	210S+47	11
		TOTAL	51

REMOVING SURFACE DRAINS

CATEGORY	STAGE	LOCATION	204.0190 EACH
0010	1	B-37-158	
			1
		TOTAL	1

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STAGE	LOCATION	STA	TO	STA	204.0120 SY
0010		USH 51 & DECATOR DR				
	1		103N+56	-	112N+52	1,000
	1		114N+66	-	119N+00	650
	2		102N+00	-	112N+52	560
	2		114N+66	-	119N+00	690
	3		111N+00	-	112N+52	165
	3		114N+66	-	116N+29	145
		USH 51 & CTH WW				
	2		200N+63	-	203N+90	1,490
	2		207N+33	-	208N+68	580
	3		11TNW+70	-	26TNW+00	3,910
	3		41TNW+00	-	55TNW+55	4,020
	4		200S+78	-	203S+08	1,280
	4		206S+70	-	210S+47	2,150
		TOTAL				16,640

REMOVING PAVEMENT

CATEGORY	STAGE	LOCATION	STA	TO	STA	LOCATION	204.0100 SY
0010		USH 51 & DECATOR DR					
	2		111N+00	-	112N+90	LT	507
	3		111N+00	-	112N+90	RT	253
		TOTAL					760

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

CATEGORY	STAGE	LOCATION	STA	TO	STA	211.0400 STA
0010		USH 51 & DECATOR DR				
	1		103N+56	-	112N+90	10
	2		102N+00	-	111N+00	9
		TOTAL				19

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EARTHWORK

Stage	From / To Station	Location	Excavation Common (1) Cut (CY)	Rock Excavation (2) (CY)	Expanded Rock (3) (CY) Factor 1.10	Unexpanded Fill (CY)	Expanded Fill (4) (CY) Factor 1.25	Mass Ordinate + / - (5) (CY)	Waste (CY)	Borrow (6) (CY)
CATEGORY - 0010			Item #205.0100	Item 205.0200	*	*	*	*	*	Item #208.0100
1	12TNW+00 - 37TNW+50	NB Temp Road at CTH WW	2,329	1,250	1,375	12,238	13,578	-11,249	0	11,249
1	39TNW+50 - 55TNW+50	NB Temp Road at CTH WW	3,095	0	0	4,548	5,686	-2,591	0	2,591
	Stage 1 Subtotal		5,424	1,250		16,786	19,264	-13,840	0	13,840
3	12TSW+00 - 26TSW+00	SB Temp Road at CTH WW	1,194	700	770	539	674	1,483	1,483	0
3	41TSW+00 - 55TSW+50	SB Temp Road at CTH WW	543	0	0	6,794	8,492	-7,949	0	6,467
	Stage 3 Subtotal		1,737	700		7,333	9,166	-6,467	1,483	6,467
5	179S+00 - 204S+50	Final Grading at CTH WW	17,812	0	0	1,114	1,448	16,364	16,364	0
5	206S+50 - 222S+50	Final Grading at CTH WW	12,260	0	0	718	933	11,327	11,327	0
	Stage 5 Subtotal		30,072	0	0	1,831	2,381	27,691	27,691	0
	Grand Total (CY)		37,233	1,950	2,145	25,950	30,811	7,385	29,174	20,307

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Rock Excavation item number 205.0200
3) Expanded Rock - Factor = 1.1.
4) Expanded Fill. Factor = 1.25 Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
6) Borrow Excavation item number 208.0100. 20,774 CY of Borrow is needed during stage 1. Move material from Decator Drive to CTH WW during Stage 3. Excess material is waste

BASE AGGREGATE DENSE

CATEGORY	STAGE	LOCATION	STA	TO	STA	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
0010		USH 51 & DECATOR DR					
	1		114N+65	-	119N+00	15	--
	2		111N+00	-	112N+90	15	125
	2		114N+51	-	116N+29	10	--
	2		116N+29	-	119N+00	10	--
	3		111N+00	-	112N+90	25	110
	3		114N+51	-	116N+29	10	--
		USH 51 & CTH WW					
	1		11TNW+70	-	37TNW+64	--	7,500
	1		38TNW+94	-	55TNW+55	--	4,350
	2		200N+62	-	203N+89	30	--
	2		207N+33	-	208N+68	15	--
	3		11TSW+70	-	26TSW+00	--	3,550
	3		41TSW+00	-	55TSW+55	--	3,650
	4		200S+78	-	203S+08	20	--
	4		206S+70	-	210S+47	35	--
	5		178N+58	-	188N+00	190	720
	5		208N+68	-	222N+31	280	1,040
	5		178S+64	-	189S+50	220	830
	5		210S+47	-	222S+55	250	925
		UNDISTRIBUTED				280	5,700
		TOTAL				1,405	28,500

CONCRETE PAVEMENT APPROACH SLAB

CATEGORY	STAGE	ROADWAY	LOCATION	415.0410 SY
0010		USH 51		
	2		B-37-155 NB	183
	2		B-37-158 NB	267
	4		B-37-159 SB	392
			TOTAL	842

CONCRETE PAVEMENT

CATEGORY	STAGE	LOCATION	STA	TO	STA	LOCATION	415.0100 10-INCH SY
0010		USH 51 & DECATOR DR					
	2		111N+00	-	112N+90	LT	510
	3		111N+00	-	112N+90	RT	250
		TOTAL					760

CONCRETE SURFACE DRAINS

CATEGORY	STAGE	ROADWAY	LOCATION	416.1010 CY
0010		USH 51		
	5		206S+61.4 7.0' RT	2.9
	5		206N+90 4.0' LT	0.8
	5		207N+20 34.0' RT	1.1
			TOTAL	5

ASPHALT PAVEMENT ITEMS

CATEGORY	STAGE	LOCATION	STA	TO	STA	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1103 HMA PAVEMENT TYPE E-3 TON	460.1110 HMA PAVEMENT TYPE E-10 TON	460.4000 HMA COLD WEATHER PAVING TON
0010		USH 51 & DECATOR DR								
	1		103N+56	-	112N+52	16	60	290	--	--
	1		114N+65	-	119N+00	2	20	45	--	--
	2		102N+00	-	112N+52	9	30	160	--	--
	2		114N+65	-	116N+29	6	60	--	100	--
	2		116N+29	-	119N+00	1	10	15	--	--
	3		111N+00	-	112N+52	2	10	45	--	--
	3		114N+65	-	116N+29	4	40	--	75	--
		USH 51 & CTH WW								
	1		11TNW+70	-	37TNW+64	165	1000	3000	--	--
	1		38TNW+94	-	55TNW+55	96	580	1750	--	--
	2		200N+62	-	203N+89	16	170	--	290	--
	2		207N+33	-	208N+68	7	70	--	120	--
	3		11TSW+70	-	26TSW+00	77	470	1400	--	--
	3		41TSW+00	-	55TSW+55	80	480	1450	--	--
	4		200S+78	-	203S+08	14	150	--	260	--
	4		206S+70	-	210S+47	23	250	--	420	--
	5		178N+58	-	188N+00	9	50	--	--	170
	5		208N+68	-	222N+31	14	70	--	--	250
	5		178S+64	-	189S+50	11	60	--	--	200
	5		210S+47	-	222S+55	12	60	--	--	215
		TOTAL				560	3,640	8,155	1,270	840

3

3

STORM SEWER ITEMS

CATEGORY	ROADWAY	STAGE	STRUCTURE NUMBER	STATION	OFFSET	RIM OR FLANGE ELEV	STR DEPTH FEET	204.0210 REMOVING MANHOLES EACH	204.0220 REMOVING INLETS EACH	611.0600 INLET COVERS TYPE A EACH	611.0642 INLET COVERS TYPE MS EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.3220 INLETS 2X2-FT EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.8120.S COVER PLATES TEMPORARY EACH	SPV.0060.01 CONCRETE RISER FOR INLET MEDIAN EACH
0010	USH 51	STAGE 1														
			9	27TNW+45.5	12.2' RT	1336.00	4.71	--	--	--	--	1	--	--	1	--
			10	27TNW+35.1	25.6' LT	--	--	--	--	--	--	--	--	--	--	--
			11	27TNW+35.4	27.8' RT	--	--	--	--	--	--	--	--	--	--	--
			12	35TNW+88.0	14.0' RT	1329.28	8.60	--	--	--	--	--	--	--	--	1
			13	35TNW+80.0	26.1' LT	--	--	--	--	--	--	--	--	--	--	--
			14	35TNW+80.0	37.4' RT	--	--	--	--	--	--	--	--	--	--	--
			15	39TNW+94.1	9.5' RT	1326.41	3.72	--	--	--	--	1	--	--	1	--
			16	40TNW+19.9	35.8' RT	--	--	--	--	--	--	--	--	--	--	--
			19	43TNW+05.1	14.2' RT	1323.07	3.24	--	--	--	--	--	--	--	--	1
			20	43TNW+06.0	34.8' RT	1322.49	2.05	--	--	--	1	--	--	1	--	--
		STAGE 1 SUBTOTALS						0	0	0	1	2	0	1	2	2
	USH 51	STAGE 2														
			24	207N+13.0	33.9' RT	--	--	--	1	--	--	--	--	--	--	--
		STAGE 2 SUBTOTALS						0	1	0	0	0	0	0	0	0
0010	USH 51	STAGE 3														
			17	42TSW+00.2	25.8' LT	1328.53	2.16	--	--	--	1	--	--	1	--	--
			18	41TSW+99.8	31.4' RT	--	--	--	--	--	--	--	--	--	--	--
		STAGE 3 SUBTOTALS						0	0	0	1	0	0	1	0	0

CONTINUED ON NEXT PAGE

3

3

STORM SEWER ITEMS

CATEGORY	ROADWAY	STAGE	STRUCTURE NUMBER	STATION	OFFSET	RIM OR FLANGE ELEV	STR DEPTH FEET	204.0210 REMOVING MANHOLES EACH	204.0220 REMOVING INLETS EACH	611.0600 INLET COVERS TYPE A EACH	611.0642 INLET COVERS TYPE MS EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.3220 INLETS 2X2-FT EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	611.8120.S COVER PLATES TEMPORARY EACH	SPV.0060.01 CONCRETE RISER FOR INLET MEDIAN EACH
	USH 51	STAGE 4														
			25	206S+06.9	43.1' LT	1334.93	4.35	--	1	1	--	--	1	--	--	--
			27	206S+06.0	84.1' LT	--	--	--	--	--	--	--	--	--	--	--
		STAGE 4 SUBTOTALS						0	1	1	0	0	1	0	0	0
	USH 51	STAGE 5														
			9	27TNW+45.5	12.2' RT	1336.00	4.71	1	--	--	--	--	--	--	--	--
			10	27TNW+35.1	25.6' LT	--	--	--	--	--	--	--	--	--	--	--
			11	27TNW+35.4	27.8' RT	--	--	--	--	--	--	--	--	--	--	--
			12	35TNW+88.0	14.0' RT	1329.28	8.60	--	1	--	--	--	--	--	--	--
			13	35TNW+80.0	26.1' LT	--	--	--	--	--	--	--	--	--	--	--
			14	35TNW+80.0	37.4' RT	--	--	--	--	--	--	--	--	--	--	--
			15	39TNW+94.1	9.5' RT	1326.41	3.72	1	--	--	--	--	--	--	--	--
			16	40TNW+19.9	35.8' RT	--	--	--	--	--	--	--	--	--	--	--
			17	42TSW+00.2	25.8' LT	--	--	--	1	--	--	--	--	--	--	--
			18	41TSW+99.8	31.4' RT	--	--	--	--	--	--	--	--	--	--	--
			19	43TNW+05.1	14.2' RT	1323.07	3.24	--	1	--	--	--	--	--	--	--
			20	43TNW+06.0	34.8' RT	1322.49	2.05	--	1	--	--	--	--	--	--	--
			21	194S+38.5	58.1' RT	--	--	--	--	--	--	--	--	--	--	--
			22	206S+95.7	54.5' RT	--	--	--	--	--	--	--	--	--	--	--
		STAGE 5 SUBTOTALS						2	4	0	0	0	0	0	0	0
		TOTALS						2	6	1	2	2	1	2	2	2

3

STORM SEWER ITEMS

CATEGORY	ROADWAY	STAGE	FROM STRUCTURE	TO STRUCTURE	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE	204.0245.01 REMOVING STORM SEWER 12-INCH LF	204.9060.S REMOVING APRON ENDWALLS EACH	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	522.0312 CULVERT PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH EACH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	520.8000 CONCRETE COLLARS FOR PIPE EACH	* 611.9710 SALVAGE INLET COVERS EACH	** JOINT TIES
0010	USH 51	STAGE 1														
			10	9	1336.65	1333.67	8.00%	--	--	--	33.2	--	--	--	--	--
			10	OUTLET	1336.65	--	--	--	--	--	--	1	--	--	--	6
			11	9	1334.49	1333.66	5.00%	--	--	--	12.5	--	--	--	--	--
			11	OUTLET	1334.49	--	--	--	--	--	--	1	--	--	--	6
			9	EXISTING	1331.46	--	--	--	1	--	--	--	--	--	--	--
			13	12	1330.66	1326.76	10.00%	--	--	--	34.9	--	--	--	--	--
			13	OUTLET	1330.66	--	--	--	--	--	--	1	--	--	--	6
			14	12	1324.03	1323.57	2.00%	--	--	--	18.7	--	--	--	--	--
			14	OUTLET	1324.03	--	--	--	--	--	--	1	--	--	--	6
			12	EXISTING	--	--	--	--	--	--	--	--	--	--	1	--
			15	16	1323.91	1323.21	2.00%	--	--	--	30.8	--	--	--	--	--
			16	OUTLET	1323.21	--	--	--	--	--	--	1	--	--	--	6
			15	EXISTING	1322.86	--	--	--	1	--	--	--	--	--	--	--
			20	19	1320.61	1320.11	2.00%	--	--	--	20.7	--	--	--	--	--
			19	EXISTING	--	--	--	--	--	--	--	--	--	--	1	--
		STAGE 1 SUBTOTALS						0.0	2	0	150.8	5	0	0	2	30
	USH 51	STAGE 2														
			24	207N+13.5 59.1' RT	1320.51	--	--	25.0	--	--	--	--	--	--	--	--
		STAGE 2 SUBTOTALS						25.0	0	0	0.0	0	0	0	0	0
0010	USH 51	STAGE 3														
			17	18	1326.54	1325.44	2.00%	--	--	--	51.0	--	--	--	--	--
			18	OUTLET	1325.44	--	--	--	--	--	--	1	--	--	--	6
		STAGE 3 SUBTOTALS						0.0	0	0	51.0	1	0	0	0	6

CONTINUED ON NEXT PAGE

1. JOINT TIES FOR CONCRETE PIPE SHALL BE PROVIDED AT ALL REINFORCED CONCRETE APRON ENDWALL LOCATIONS. APRON ENDWALLS SHALL BE TIED FOR THE LAST TWO JOINTS AT PIPE ENDS.

* TO BE REMOVED IN STAGE 1 AND REPLACED IN STAGE 5

** FOR INFORMATION ONLY

3

3

STORM SEWER ITEMS

CATEGORY	ROADWAY	STAGE	FROM STRUCTURE	TO STRUCTURE	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE	204.0245.01 REMOVING STORM SEWER 12-INCH LF	204.9060.S REMOVING APRON ENDWALLS EACH	521.1012 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH EACH	522.0312 CULVERT PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH EACH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	520.8000 CONCRETE COLLARS FOR PIPE EACH	* 611.9710 SALVAGE INLET COVERS EACH	** JOINT TIES
	USH 51	STAGE 4														
			25	27	1329.66	1325.86	10.90%	40.0	--	--	35.0	--	--	--	--	--
			27	OUTFALL	1325.86	--	--	--	--	--	--	1	--	--	--	6
			STAGE 4 SUBTOTALS					40.0	0	0	35.0	1	0	0	0	6
	USH 51	STAGE 5														
			10	9	1336.65	1333.67	8.00%	33.2	--	--	--	--	--	--	--	--
			11	9	1334.49	1333.66	5.00%	12.5	--	--	--	--	--	--	--	--
			10	OUTLET	1336.65	--	--	--	1	--	--	--	--	--	--	--
			11	OUTLET	1334.49	--	--	--	1	--	--	--	--	--	--	--
			13	12	1330.66	1326.76	10.00%	34.9	--	--	--	--	--	--	--	--
			14	12	1324.03	1323.57	2.00%	18.7	--	--	--	--	--	--	--	--
			13	OUTLET	1330.66	--	--	--	1	--	--	--	--	--	--	--
			14	OUTLET	1324.03	--	--	--	1	--	--	--	--	--	--	--
			15	16	1323.91	1323.21	2.00%	30.8	--	--	--	--	--	--	--	--
			16	OUTLET	1323.21	--	--	--	1	--	--	--	--	--	--	--
			18	OUTLET	1325.44	--	--	--	1	--	--	--	--	--	--	--
			20	19	1320.61	1320.11	2.00%	20.7	--	--	--	--	--	--	--	--
			17	18	1326.54	1325.44	2.00%	51.0	--	--	--	--	--	--	--	--
			21	EXISTING	1332.03	--	--	--	--	--	--	--	1	1	--	--
			22	EXISTING	1322.74	--	--	--	--	1	--	--	--	--	--	--
			STAGE 5 SUBTOTALS					201.8	6	1	0.0	0	1	1	0	0
			TOTALS					266.8	8	1	236.8	7	1	1	2	42

1. JOINT TIES FOR CONCRETE PIPE SHALL BE PROVIDED AT ALL REINFORCED CONCRETE APRON ENDWALL LOCATIONS. APRON ENDWALLS SHALL BE TIED FOR THE LAST TWO JOINTS AT PIPE ENDS.

* TO BE REMOVED IN STAGE 1 AND REPLACED IN STAGE 5

** FOR INFORMATION ONLY

REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

CATEGORY	STAGE	ROADWAY	STA	TO	STA	460.4110.S LF
0010		USH 51 & DECATOR DR				
	2		114N+65	-	116N+29	490
		USH 51 & CTH WW				
	2		200N+62	-	204N+10	1045
	2		206N+91	-	208N+66	525
	4		200S+78	-	203S+58	845
	4		206S+49	-	210S+47	1195
		TOTAL				4100

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	ROADWAY	618.0100.01 EACH
0010	PROJECT	
	1170-00-74	1
	TOTAL	1

MARKERS CULVERT END

CATEGORY	STAGE	ROADWAY	STATION	OFFSET	633.5200 EACH
0010		USH 51			
	5		194S+38.6	54.2 RT	1
	5		206S+96	54.5' RT	1
		TOTAL			2

RIPRAP MEDIUM AND GEOTEXTILE FABRIC TYPE HR

CATEGORY	STAGE	ROADWAY	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY
0010		USH 51			
	5		206N+89.4 29.6' LT	1.6	14.3
	5		207S+12.3 55.1' RT	0.9	2.8
	5		207N+20 52.9' RT	1.0	10.4
			TOTAL	3	28

ASPHALTIC SHOULDER RUMBLE STRIP

CATEGORY	STAGE	LOCATION	STA	TO	STA	465.0400 LF
0010		USH 51 & DECATOR DR				
	3		103N+56	-	112N+52	895
	3		114N+65	-	119N+00	435
	4		102N+00	-	112N+52	1,050
	4		114N+65	-	119N+00	435
		USH 51 & CTH WW				
	5		178N+58	-	188N+00	941
	5		178S+64	-	189S+50	1,090
	5		200N+63	-	204N+10	715
	5		200S+78	-	203S+58	530
	5		206S+21	-	222S+55	2,030
	5		206N+91	-	222N+31	1,700
		TOTAL				9,820

ADJUSTING INLET COVERS

CATEGORY	STAGE	ROADWAY	LOCATION	611.8115 EACH
0010	2	USH 51	112N+65 43' RT	1
	3		112N+70 5' LT	1
			TOTAL	2

WATER

CATEGORY	STAGE	LOCATION	624.0100 WATER MGAL
0010			
	1	CTH WW NB TEMP ROAD	281
	3	CTH WW SB TEMP ROAD	119
	5	CTH WW MEDIAN	588
		TOTAL	990

RESTORATION ITEMS

CATEGORY	STAGE	LOCATION	STATION		STATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO 30. LB
0010									
	1	CTH WW NB TEMP ROAD	12TNW+00	-	55TNW+25	9,260	9,260	9.0	245
	3	CTH WW SB TEMP ROAD	12TSW+00	-	55TSW+50	3,970	3,970	4.0	115
	5	CTH WW FINAL GRADING	179N+00	-	221N+00	23,970	23,970	20.0	565
		UNDISTRIBUTED				9,300	9,300	8.0	230
		TOTALS				46,500	46,500	41	1,155

MOBILIZATION EROSION CONTROL

CATEGORY	LOCATION	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL EACH
0010	PROJECT		
	1170-00-74	6	6
	TOTAL	6	6

DELINEATOR POSTS AND REFLECTORS

CATEGORY	STAGE	LOCATION	STA	TO	STA	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS EACH
0010		USH 51 & DECATOR DR					
	3		110N+90	-	116N+30	2	2
		USH 51 & CTH WW					
	2		200N+63	-	208N+68	3	3
	3		200S+77	-	210S+47	3	3
TOTALS						8	8

FLEXIBLE TUBULAR MARKER POSTS & BASES

CATEGORY	ROADWAY	STAGE	643.0500 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER POSTS EACH	643.0600 TRAFFIC CONTROL FLEXIBLE TUBULAR MARKER BASES EACH
0010	USH 51	6A	50	50
		6B	50	50
TOTALS			100	100

EROSION CONTROL ITEMS

CATEGORY	ROADWAY	STAGE	LOCATION	STATION	TO	STATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENCANCE LF	628.7005 INLET PROTECTION TYPE A EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	628.7570 ROCK BAGS EACH
0010	USH 51	1										
			USH 51 & CTH WW	200N+50	-	205N+00	1100	1100	--	--	--	--
				206N+00	-	209N+00	1100	1100	--	--	--	--
			CTH WW NB TEMP ROAD	12TNW+00	-	55TNW+25	--	--	1	695	20	3
		2	USH 51 & DECATOR RD	110N+50	-	113N+25	630	315	--	30	--	--
				114N+00	-	116N+50	650	325	--	30	--	--
		3	USH 51 & DECATOR RD	110N+50	-	113N+25	--	315	--	30	--	--
				114N+00	-	116N+50	--	325	--	30	--	--
			USH 51 & CTH WW	200S+50	-	204S+75	1100	1100	--	--	--	--
				205S+50	-	211S+00	1100	1100	--	--	--	--
			CTH WW SB TEMP ROAD	110N+00	-	125N+20	--	--	2	905	20	6
		5	CTH WW FINAL GRADING	179N+00	-	221N+00	--	--	2	590	5	3
		UNDISTRIBUTED					--	--	1	580	10	3
		TOTAL					5680	5680	6	2890	55	15

PERMANENT SIGNING

CATEGORY	ROADWAY	SIGN #	SIGN CODE	SIGN SIZE	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	USH 51	1	W5-52L	18X54	1	1	BRIDGE HASH MARKS
		2	W5-52R	18X54	1	1	BRIDGE HASH MARKS
		3	W5-52R	18X54	1	1	BRIDGE HASH MARKS
		4	W5-52L	18X54	1	1	BRIDGE HASH MARKS
	TOTAL				4	4	

3

TRAFFIC CONTROL

CATEGORY	LOCATION	* STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH*	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH*	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH*	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH*	643.0800 TRAFFIC CONTROL ARROW BOARDS DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH*	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH*	643.0900 TRAFFIC CONTROL SIGNS DAYS	** 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH*	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	SPV.0045.01 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS EACH*	SPV.0045.01 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS DAY
0010																			
	STAGE 1 AT DECATOR DRIVE	5																	
	USH 51 NB, Sta. 60N+00 - 126N+00		26	130	--	--	--	--	1	5	--	--	8	40	--	1	14	1	14
	USH 51 SB, Sta. 80S+00 - 126S+00		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	STAGE 1 AT CTH WW	40																	
	USH 51 NB, Sta. 126N+00 - 176N+00		10	400	--	--	10	400	1	40	--	--	4	160	--	--	--	--	--
	USH 51 NB, Sta. 176N+00 - 232N+00		--	--	--	--	--	--	--	--	--	--	2	80	--	--	--	--	--
	USH 51 SB, Sta. 126S+00 - 176S+00		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	USH 51 SB, Sta. 176S+00 - 243S+00		4	20	--	--	--	--	1	40	--	--	8	320	--	1	14	1	14
	CTH WW EB, Sta. 0W+00 - 67W+00		61	305	4	160	8	320	--	--	--	--	7	280	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		66	330	6	240	12	480	--	--	--	--	10	400	--	1	14	1	14
	DECATOR DR EB, Sta. 0D+00 - 67D+00		60	300	4	160	8	320	--	--	--	--	7	280	--	1	14	1	14
	DECATOR DR WB, Sta. 0D+00 - 67D+00		65	325	6	240	12	480	--	--	--	--	10	400	--	1	14	1	14
	STAGE 1 SUBTOTAL			1,810		800		2,000		85		0		1,960	0		84		84
	STAGE 2 AT DECATOR DRIVE	40																	
	USH 51 NB, Sta. 60N+00 - 126N+00		79	3,160	--	--	--	--	2	80	55	2,200	13	520	--	1	14	1	14
	USH 51 SB, Sta. 80S+00 - 126S+00		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	STAGE 2 AT CTH WW	50																	
	USH 51 NB, Sta. 126N+00 - 176N+00		46	2,300	4	200	8	400	--	--	7	350	10	500	--	--	--	--	--
	USH 51 NB, Sta. 176N+00 - 232N+00		14	700	11	550	14	700	--	--	--	--	10	500	1	--	--	--	--
	USH 51 SB, Sta. 126S+00 - 176S+00		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	USH 51 SB, Sta. 176S+00 - 243S+00		13	650	--	--	--	--	1	50	--	--	7	350	--	1	14	1	14
	CTH WW EB, Sta. 0W+00 - 67W+00		61	3,050	4	200	8	400	--	--	--	--	7	350	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		66	3,300	6	300	12	600	--	--	--	--	10	500	--	1	14	1	14
	DECATOR DR EB, Sta. 0D+00 - 67D+00		60	3,000	4	200	8	400	--	--	--	--	7	350	--	1	14	1	14
	DECATOR DR WB, Sta. 0D+00 - 67D+00		65	3,250	6	300	12	600	--	--	--	--	10	500	--	1	14	1	14
	STAGE 2 SUBTOTAL			19,410		1,750		3,100		130		2,550		3,570	1		84		84
	STAGE 3 AT DECATOR DRIVE	30																	
	USH 51 NB, Sta. 60N+00 - 126N+00		35	1,050	--	--	--	--	--	--	6	180	16	480	--	1	14	1	14
	USH 51 SB, Sta. 80S+00 - 126S+00		4	120	--	--	--	--	--	--	--	--	2	60	--	--	--	--	--
	STAGE 3 AT CTH WW	20																	
	USH 51 NB, Sta. 126N+00 - 176N+00		57	1,140	--	--	--	--	1	20	--	--	4	80	--	--	--	--	--
	USH 51 NB, Sta. 176N+00 - 232N+00		--	--	--	--	--	--	--	--	--	--	2	40	--	--	--	--	--
	USH 51 SB, Sta. 126S+00 - 176S+00		57	1,140	--	--	--	--	1	20	--	--	--	--	--	--	--	--	--
	USH 51 SB, Sta. 176S+00 - 243S+00		13	260	--	--	--	--	1	20	--	--	8	160	--	1	14	1	14
	CTH WW EB, Sta. 0W+00 - 67W+00		61	1,220	4	80	8	160	--	--	--	--	7	140	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		66	1,320	6	120	12	240	--	--	--	--	10	200	--	1	14	1	14
	DECATOR DR EB, Sta. 0D+00 - 67D+00		60	1,200	4	80	8	160	--	--	--	--	7	140	--	1	14	1	14
	DECATOR DR WB, Sta. 0D+00 - 67D+00		65	1,300	6	120	12	240	--	--	--	--	10	200	--	1	14	1	14
	STAGE 3 SUBTOTAL			8,750		400		800		60		180		1,500	0		84		84

* FOR INFORMATION ONLY

3

TRAFFIC CONTROL

CATEGORY	LOCATION	* STAGE DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH*	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH*	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH*	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0800 TRAFFIC CONTROL ARROW BOARDS EACH*	643.0800 TRAFFIC CONTROL ARROW BOARDS DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH*	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH*	643.0900 TRAFFIC CONTROL SIGNS DAYS	** 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.1050 TRAFFIC CONTROL SIGNS PCMS EACH*	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	SPV.0045.01 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS EACH*	SPV.0045.01 PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) CELLULAR COMMUNICATIONS DAY
0010	STAGE 4 AT DECATOR DRIVE	5																	
	USH 51 NB, Sta. 60N+00 - 126N+00		35	175	--	--	--	--	1	5	6	30	16	80	--	1	14	1	14
	STAGE 4 AT CTH WW	52																	
	USH 51 NB, Sta. 126N+00 - 176N+00		57	2,965	--	--	--	--	1	50	--	--	6	310	--	--	--	--	--
	USH 51 NB, Sta. 176N+00 - 232N+00		4	210	--	--	--	--	--	--	--	--	2	105	--	--	--	--	--
	USH 51 SB, Sta. 80S+00 - 126S+00		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	USH 51 SB, Sta. 126S+00 - 176S+00		--	--	--	--	--	--	--	--	--	--	4	210	--	--	--	--	--
	USH 51 SB, Sta. 176S+00 - 243S+00		78	4,055	6	310	12	625	--	--	34	1,770	7	365	1	1	14	1	14
	CTH WW EB, Sta. 0W+00 - 67W+00		61	3,170	4	210	8	415	--	--	--	--	7	365	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		66	3,430	6	310	12	625	--	--	--	--	10	520	--	1	14	1	14
	STAGE 4 SUBTOTAL			14,005		830		1,665		55		1,800		1,955	1		56		56
	STAGE 5	20																	
	USH 51 NB, Sta. 60N+00 - 126N+00		10	200	--	--	--	--	1	20	--	--	6	120	--	1	14	1	14
	USH 51 NB, Sta. 126N+00 - 176N+00		54	1,080	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	USH 51 NB, Sta. 176N+00 - 232N+00		--	--	--	--	--	--	--	--	--	--	2	40	--	--	--	--	--
	USH 51 SB, Sta. 80S+00 - 126S+00		4	80	--	--	--	--	--	--	--	--	2	40	--	--	--	--	--
	USH 51 SB, Sta. 126S+00 - 176S+00		54	1,080	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	USH 51 SB, Sta. 176S+00 - 243S+00		10	200	--	--	--	--	1	20	--	--	7	140	--	1	14	1	14
	CTH WW EB, Sta. 0W+00 - 67W+00		61	1,220	4	80	8	160	--	--	--	--	7	140	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		66	1,320	6	120	12	240	--	--	--	--	10	200	--	1	14	1	14
	STAGE 5 SUBTOTAL			5,180		200		400		40		0		680	0		56		56
	STAGE 6A	15																	
	USH 51 NB, Sta. N+00 - N+00		--	--	--	--	--	--	--	--	--	--	4	60	--	--	--	--	--
	USH 51 SB, Sta. S+00 - S+00		--	--	--	--	--	--	--	--	--	--	4	60	--	--	--	--	--
	CTH WW EB, Sta. 0W+00 - 67W+00		61	915	4	60	8	120	--	--	9	135	8	120	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		12	180	--	--	--	--	1	15	--	--	5	75	--	1	14	1	14
	STAGE 6A SUBTOTAL			1,095		60		120		15		135		315	0		28		28
	STAGE 6B	15																	
	USH 51 NB, Sta. N+00 - N+00		--	--	--	--	--	--	--	--	--	--	4	60	--	--	--	--	--
	USH 51 SB, Sta. S+00 - S+00		--	--	--	--	--	--	--	--	--	--	4	60	--	--	--	--	--
	CTH WW EB, Sta. 0W+00 - 67W+00		--	--	--	--	--	--	--	--	--	--	5	75	--	1	14	1	14
	CTH WW WB, Sta. 0W+00 - 67W+00		66	990	6	90	12	180	--	--	--	--	10	150	--	1	14	1	14
	STAGE 6B SUBTOTAL			990		90		180		0		0		345	0		28		28
	UNDISTRIBUTED		--	5,125	--	415	--	825	--	40	--	465	--	1,035	--	--	40	--	40
	TOTALS			56,365		4,545		9,090		425		5,130		11,360	2		460		460

* FOR INFORMATION ONLY

** ADDITIONAL QUANTITIES LISTED ELSEWHERE

SEE SDD "LANE CLOSURE SPEEDS GREATER THAN 40MPH" FOR PLACEMENT OF TRAFFIC CONTROL DEVICES

TRAFFIC CONTROL ITEMS

CATEGORY	STAGE	PROJECT	643.0100.01 TRAFFIC CONTROL ID 1170-00-74 EACH
0010	1	1170-00-74	1
	TOTALS		1

TRAFFIC CONTROL DETOUR 1170-00-74

CATEGORY	LOCATION	643.2000 EACH
0010	CTH WW	1
		1

TEMPORARY PAVEMENT MARKINGS

CATEGORY	ROADWAY	STAGE	646.0600 REMOVING PAVEMENT MARKINGS LF	647.0955 REMOVING PAVEMENT MARKINGS ARROWS EACH	649.0402 TEMPORARY PAVEMENT MARKING PAINT 4-INCH YELLOW LF	649.0402 WHITE LF	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH YELLOW LF	649.0400 WHITE LF	649.0400 BLACK LF	649.0801 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH WHITE LF
0010	USH 51	1	--	--	--	--	--	--	--	--
		2	2,300	--	4,350	8,350	3,240	4,400	900	650
		3	1,700	--	--	--	1,700	3,400	425	--
		4	1,440	--	4,450	5,250	--	1950	--	1570
		5	--	--	--	--	--	--	--	--
		6A	2,480	--	--	--	4,700	4,400	--	--
		6B	1,970	1	--	--	4,700	4,900	--	--
TOTALS			9,890	1	22,400		34,715			2,220

PAVEMENT MARKING ITEMS

CATEGORY	STAGE	LOCATION	STA	TO	STA	646.0106 EPOXY 4-INCH YELLOW LF	646.0106 EPOXY 4-INCH WHITE LF	646.0126 EPOXY 8-INCH WHITE LF	646.0841.S GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH DASHED WHITE LF	646.0881.S GROOVED WET REFLECTIVE TAPE 4-INCH DASHED WHITE LF	647.0166 ARROWS EPOXY TYPE 2 EACH	647.0356 WORDS EPOXY EACH
0010		USH 51 & DECATOR DR										
	3		100N+00	-	126N+00	2,430	2,375	--	425	575	--	--
		USH 51 & CTH WW										
	2		178N+00	-	223N+00	4,500	4,560	--	--	1,290	--	--
	3		178S+00	-	223S+00	4,500	4,625	--	--	1,000	--	--
		CTH WW										
	6B		14W+52	-	21W+64	1,430	1,300	195	--	325	--	--
			19W+89	RT TURN LANE		--	--	--	--	--	2	1
			22W+57	-	32W+12	1,910	1,950	--	--	250	--	--
			33W+29	-	40W+44	1,420	1,430	155	--	150	--	--
TOTALS						32,430		350	425	3,590	2	1

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TRAFFIC CONTROL DETOUR ITEMS

CATEGORY	LOCATION	STAGE DURATION DAYS	643.0910 ** TRAFFIC CONTROL COVERING SIGNS TYPE I EACH	643.0920 ** TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS DAYS
0010	CTH WW					
	STAGE 1	40	1	1	74	2960
	STAGE 5	19	1	1	74	1406
	TOTALS		2	2		4,366

** ADDITIONAL QUANTITIES LISTED ELSEWHERE

SAWING CONCRETE

CATEGORY	STAGE	LOCATION	STA	TO	STA	690.0250 LF
0010		USH 51 & DECATOR DR				
	2		111N+00	-	111N+00	30
	3		111N+00	-	111N+00	22
		TOTAL				52

SAWING ASPHALT

CATEGORY	STAGE	LOCATION	STA	TO	STA	690.0150 LF
0010		USH 51 & DECATOR DR				
	2		116N+29	-	116N+29	28
	3		116N+29	-	116N+29	20
		USH 51 & CTH WW				
	1		178N+00	-	200N+00	2,250
	2		178S+00	-	200S+00	2,269
	4		200S+00	-	214S+00	403
	2		200N+00	-	214N+00	572
	2		214S+00	-	223S+00	861
	1		214N+00	-	223N+00	837
		USH 51 & CTH WW TEMP ROAD				
	3		26TSW+00			34
	3		41TDW+00			34
		TOTAL				7,300

MGS GUARDRAIL ITEMS

CATEGORY	STAGE	LOCATION	STA	TO	STA	LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	SPV.0090.01 SALVAGE AND REINSTALL BEAM GUARD LF
0010		USH 51 & DECATOR DR								
	1		109N+92	-	112N+75	RT	--	--	--	280
	2		109N+64	-	111N+00	LT	--	--	--	135
	2		111N+00	-	112N+34	LT	135	--	--	--
	2		112N+34	-	112N+74	LT	--	39	--	--
	3		111N+00	-	112N+30	RT	130	--	--	--
	3		112N+30	-	112N+69	RT	--	39	--	--
		USH 51 & CTH WW								
	3		201N+18	-	201N+71	LT	--	--	1	--
	3		201N+71	-	203N+69	LT	200	--	--	--
	3		203N+69	-	204N+08	LT	--	39	--	--
	3		202N+06	-	204N+01	RT	--	--	--	195
	3		204N+01	-	204N+40	RT	--	39	--	--
	5		206S+12	-	206S+51	LT	--	39	--	--
	5		206S+51	-	208S+47	LT	--	--	--	195
	5		206S+52	-	206S+91	RT	--	39	--	--
	5		206S+91	-	208S+88	RT	200	--	--	--
	5		208S+88	-	209S+41	RT	--	--	1	--
		TOTAL					665	234	2	805

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CONCRETE BARRIER & CRASH CUSHIONS TEMPORARY

CATEGORY	STAGE	ROADWAY	STA - STA	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	614.0905 CRASH CUSHIONS TEMPORARY EACH	* BACK WIDTH	* OBJECT MARKING PATTERN	* CRASH TEST LEVEL	* TRAFFIC DIRECTION	* TRAFFIC LOCATION	* CRASH CUSHION SHIELDS
0010												
	1	USH 51	177N+50	--	--	1	4	OM-3L	TL-3	UNIDIRECTIONAL	R	TEMPORARY CONC. BARRIER
	1	USH 51	177N+50 - 222N+50	4,500	4,500	--	--	--	--	--	--	--
	1	USH 51	178S+50 - 223S+50	4,500	4,500	--	--	--	--	--	--	--
	1	USH 51	223S+50	--	--	1	4	OM-3L	TL-3	UNIDIRECTIONAL	R	TEMPORARY CONC. BARRIER
	2	USH 51	109N+50 - 116N+00	650	620	--	--	--	--	--	--	--
	2	USH 51	10TNW+50 - 55TNW+50	50	4,550	1	4	OM-3R	TL-3	UNIDIRECTIONAL	L	TEMPORARY CONC. BARRIER
	2	USH 51	15TNW+65 - 49TNW+50	3,400	3,400	--	--	--	--	--	--	--
	2	USH 51	15TNW+65	--	--	1	4	OM-3C	TL3	UNIDIRECTIONAL	L&R	TEMPORARY CONC. BARRIER
	2	USH 51	182N+75 - 188N+00	525	525	--	--	--	--	--	--	--
	3	USH 51	109N+50 - 116N+00	--	650	--	--	--	--	--	--	--
	3	USH 51	177N+50 - 222N+50	--	4,500	--	--	--	--	--	--	--
	4	USH 51	11TSW+50 - 56TSW+60	--	4500	--	--	--	--	--	--	--
	4	USH 51	17TSW+50 - 52TSW+00	--	3450	--	--	--	--	--	--	--
	4	USH 51	52TSW+00	--	--	1	4	OM-3C	TL-3	UNIDIRECTIONAL	L&R	TEMPORARY CONC. BARRIER
	5	USH 51	178S+50 - 223S+50	--	4,500	--	--	--	--	--	--	--
TOTALS				13,625	35,695	5						

* FOR INFORMATION ONLY

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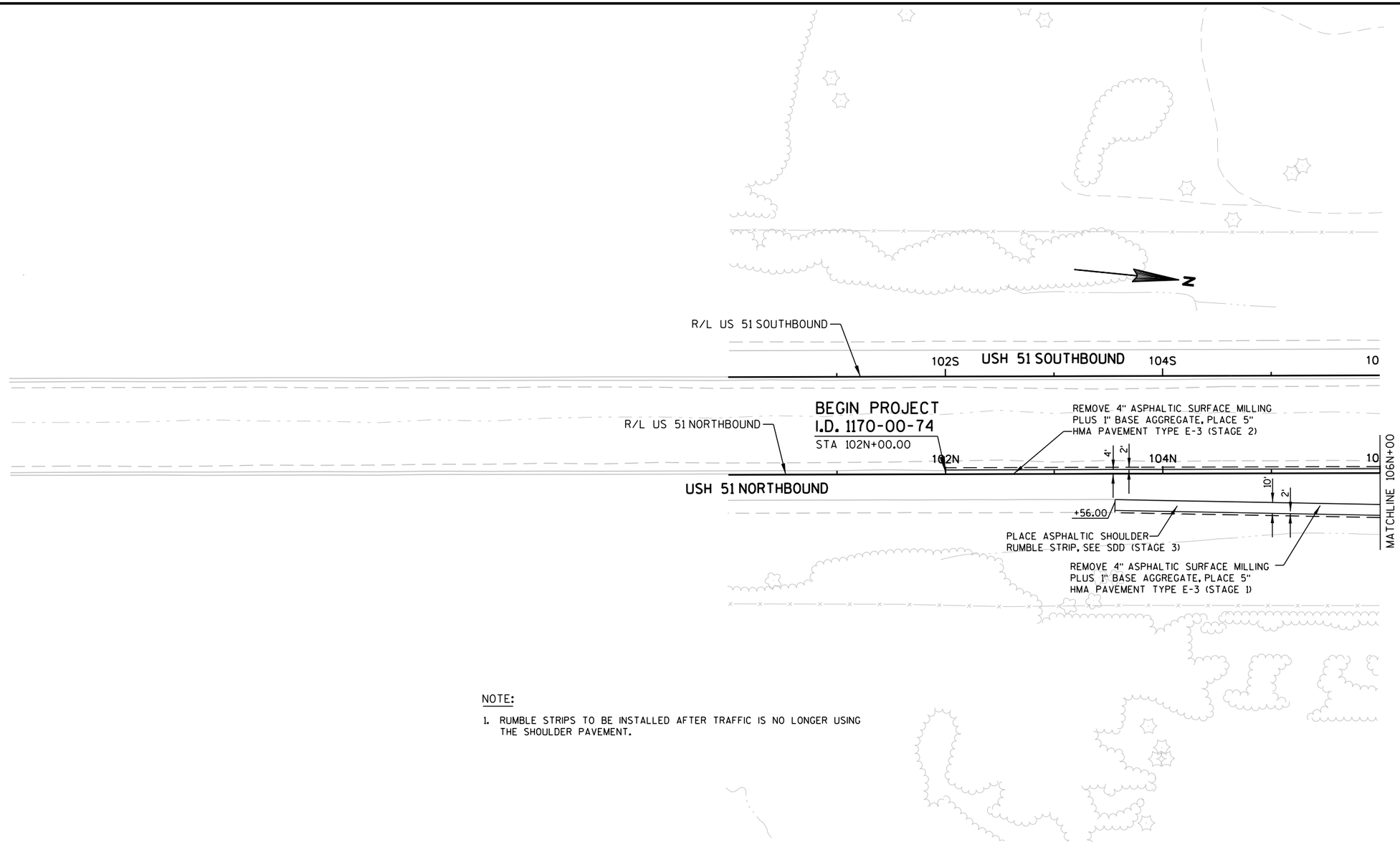
CONSTRUCTION STAKING

CATEGORY	STAGE	LOCATION	STA	TO	STA	650.4000 STORM SEWER EACH	650.4500 SUBGRADE LF	650.5000 BASE LF	650.6500.01 STRUCTURE LAYOUT B-37-155 LS	650.6500.02 STRUCTURE LAYOUT B-37-158 LS	650.6500.03 STRUCTURE LAYOUT B-37-159 LS	650.7000 CONCRETE PAVEMENT LF	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL 1170-00-74 LS	650.9920 SLOPE STAKES LF
0010		PROJECT 1170-00-74	--	-	--	--	--	--	--	--	--	--	--	1	--
		USH 51 & DECATOR DR							--	--	--				
	2		110N+91	-	112N+90	--	--	--	--	--	--	171	--	--	--
			114N+30	-	116N+29	--	--	--	--	--	--	15	179	--	--
	3		102N+00	-	111N+00	--	--	900	--	--	--	--	--	--	--
			116N+29	-	119N+00	--	--	271	--	--	--	--	--	--	--
		USH 51 & CTH WW							--	--	--				
	1		11TNW+70	-	37TNW+65	7	2,595	2,595	--	--	--	--	--	--	2,595
			38TNW+94	-	55TNW+55	3	1,661	1,661	--	--	--	--	--	--	1,661
	2		200N+61	-	204N+30	--	--	--	--	--	--	20	349	--	--
			206N+71	-	208N+68	--	--	--	--	--	--	42	155	--	--
	3		11TSW+69	-	26TSW+00	--	1,431	1,431	--	--	--	--	--	--	1,431
			41TSW+00	-	55TSW+56	2	1,456	1,456	--	--	--	--	--	--	1,456
			178N+58	-	188N+00	--	--	942	--	--	--	--	--	--	--
			212N+00	-	215N+22	--	--	322	--	--	--	--	--	--	--
	4		200S+77	-	203S+78	--	--	--	--	--	--	50	251	--	--
			206S+29	-	210S+47	2	--	--	--	--	--	20	398	--	--
	5		178S+64	-	188S+00	2	--	936	--	--	--	--	--	--	--
			212S+00	-	222S+30	--	--	1,030	--	--	--	--	--	--	--
		CATEGORY 0010 SUBTOTAL				16	7,143	11,544	--	--	--	320	1,330	1	7,143
0020		USH 51 & DECATOR DR													
	2	B-37-155				--	--	--	1	--	--	--	--	--	--
0030		USH 51 & CTH WW													
	2	B-37-158				--	--	--	--	1	--	--	--	--	--
0040		USH 51 & CTH WW													
	4	B-37-159				--	--	--	--	--	1	--	--	--	--
		CATEGORIES 0020, 0030, 0040 SUBTOTALS				--	--	--	1	1	1	--	--	--	--
		PROJECT TOTALS				16	7,143	11,544	1	1	1	320	1,330	1	7,143

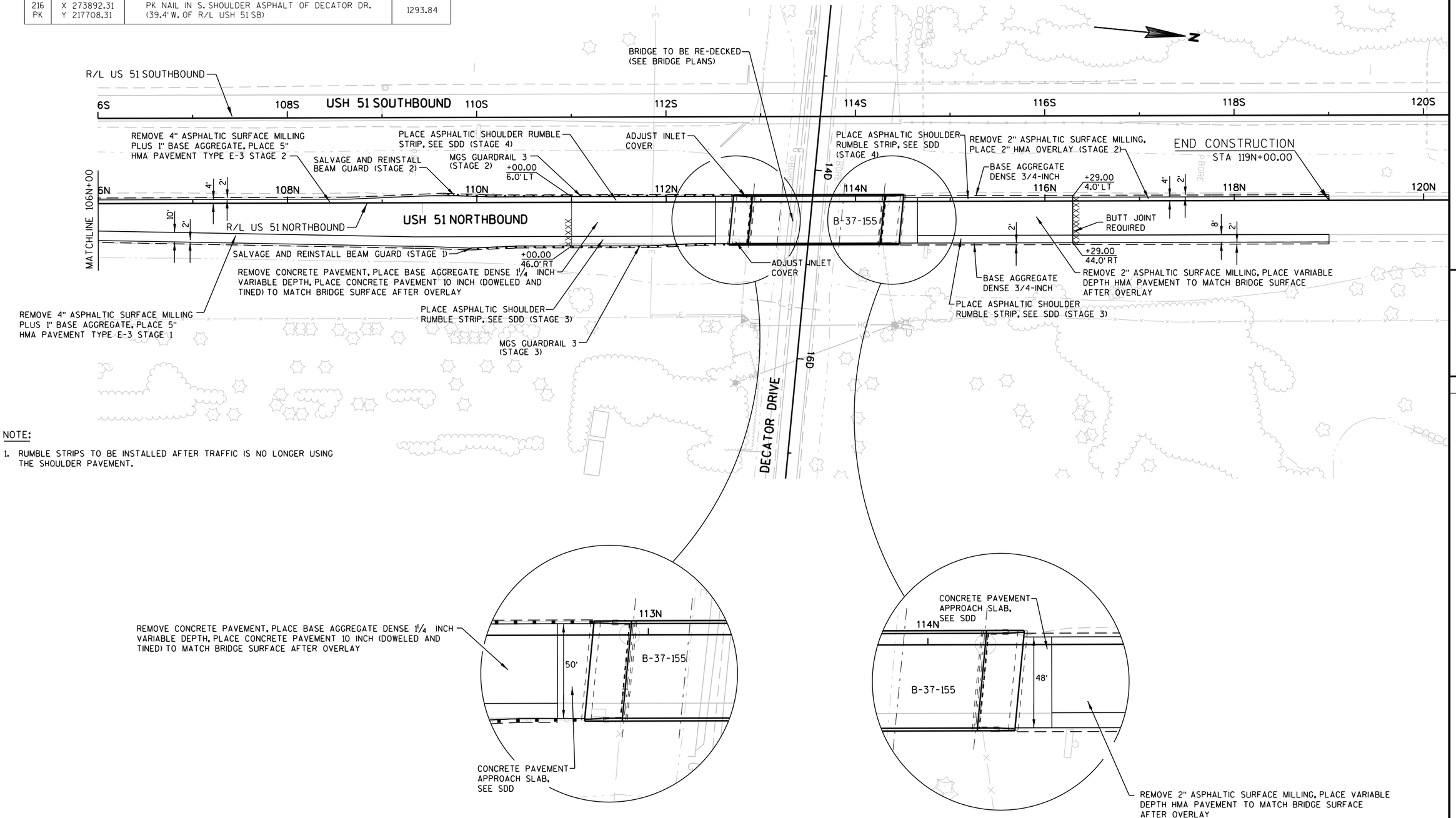


NOTE:

1. RUMBLE STRIPS TO BE INSTALLED AFTER TRAFFIC IS NO LONGER USING THE SHOULDER PAVEMENT.

BENCHMARK

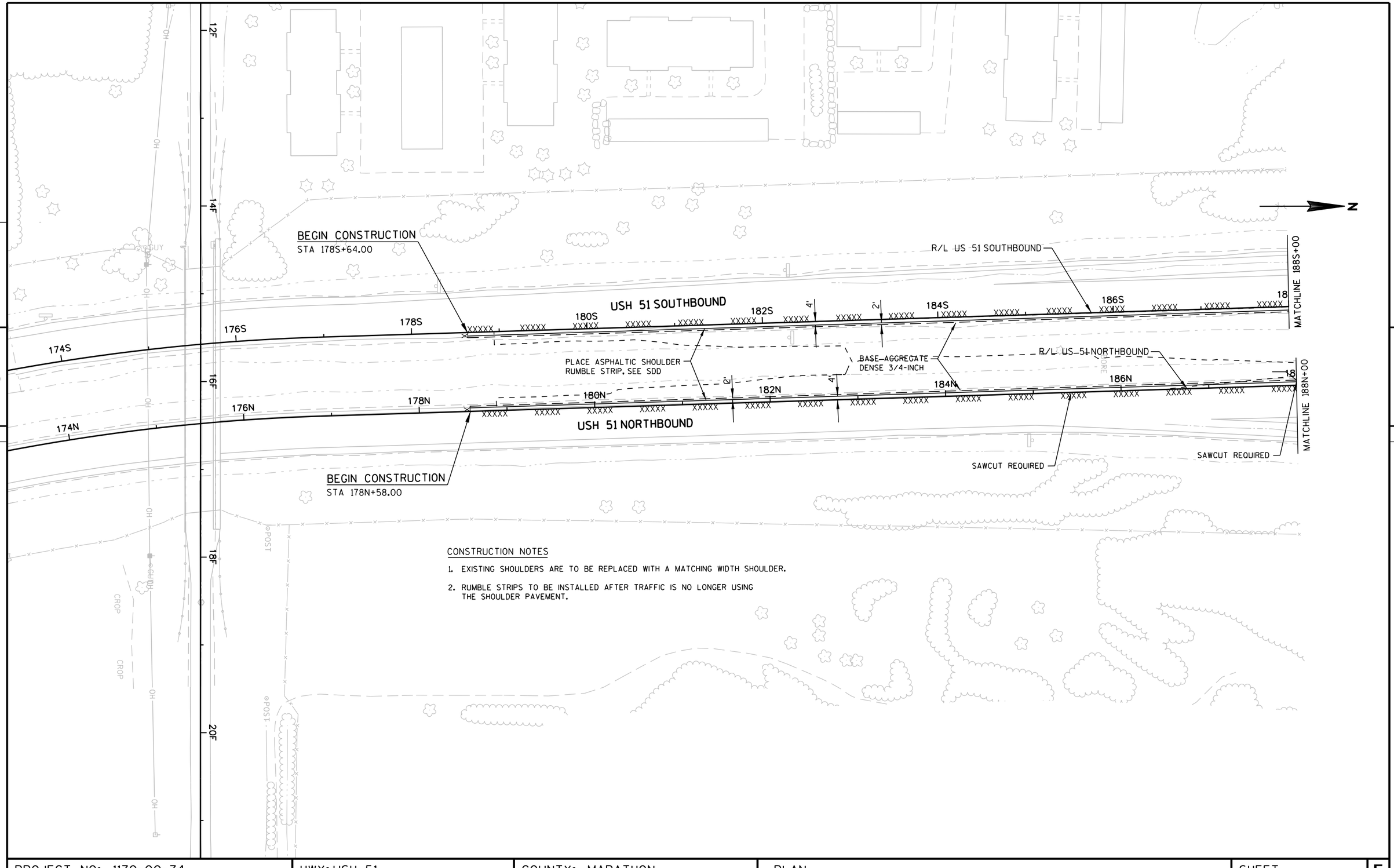
NO.	COORDINATES	DESCRIPTION	ELEVATION
236	X 273981.43 Y 217656.04	BM DOT DISK ON TOP OF SE PARAPET B-37-155	1315.75
216 PK	X 273892.31 Y 217708.31	PK NAIL IN S. SHOULDER ASPHALT OF DECATOR DR. (39.4' W. OF R/L USH 51 SB)	1293.84



NOTE:

1. RUMBLE STRIPS TO BE INSTALLED AFTER TRAFFIC IS NO LONGER USING THE SHOULDER PAVEMENT.

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN	SHEET 87 E



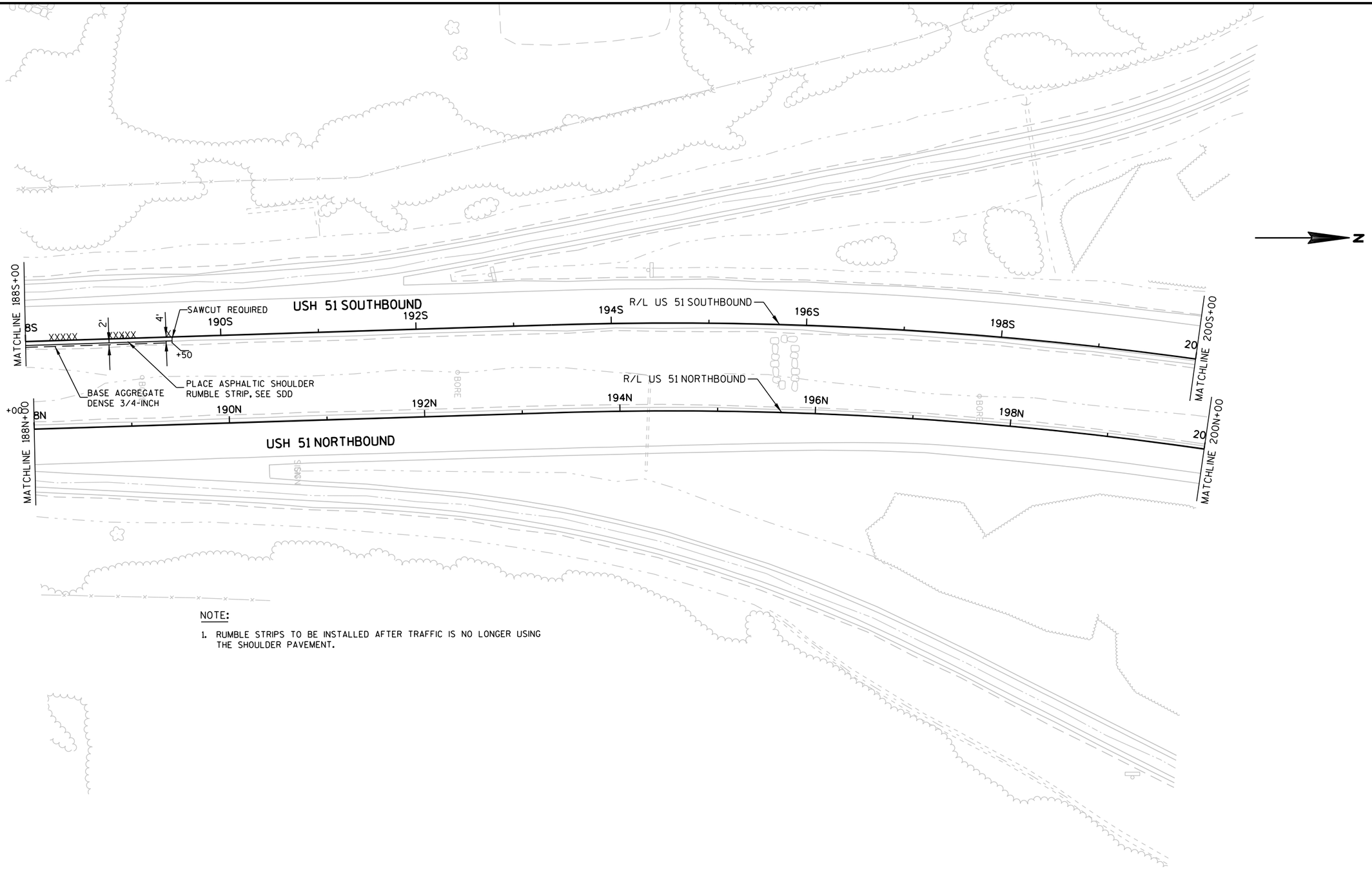
CONSTRUCTION NOTES

1. EXISTING SHOULDERS ARE TO BE REPLACED WITH A MATCHING WIDTH SHOULDER.
2. RUMBLE STRIPS TO BE INSTALLED AFTER TRAFFIC IS NO LONGER USING THE SHOULDER PAVEMENT.

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN	SHEET 88	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\050104_pp.dgn PLOT DATE : 01-MAY-2014 12:05 PLOT BY : cfranzen PLOT NAME : PLOT SCALE : 100:1

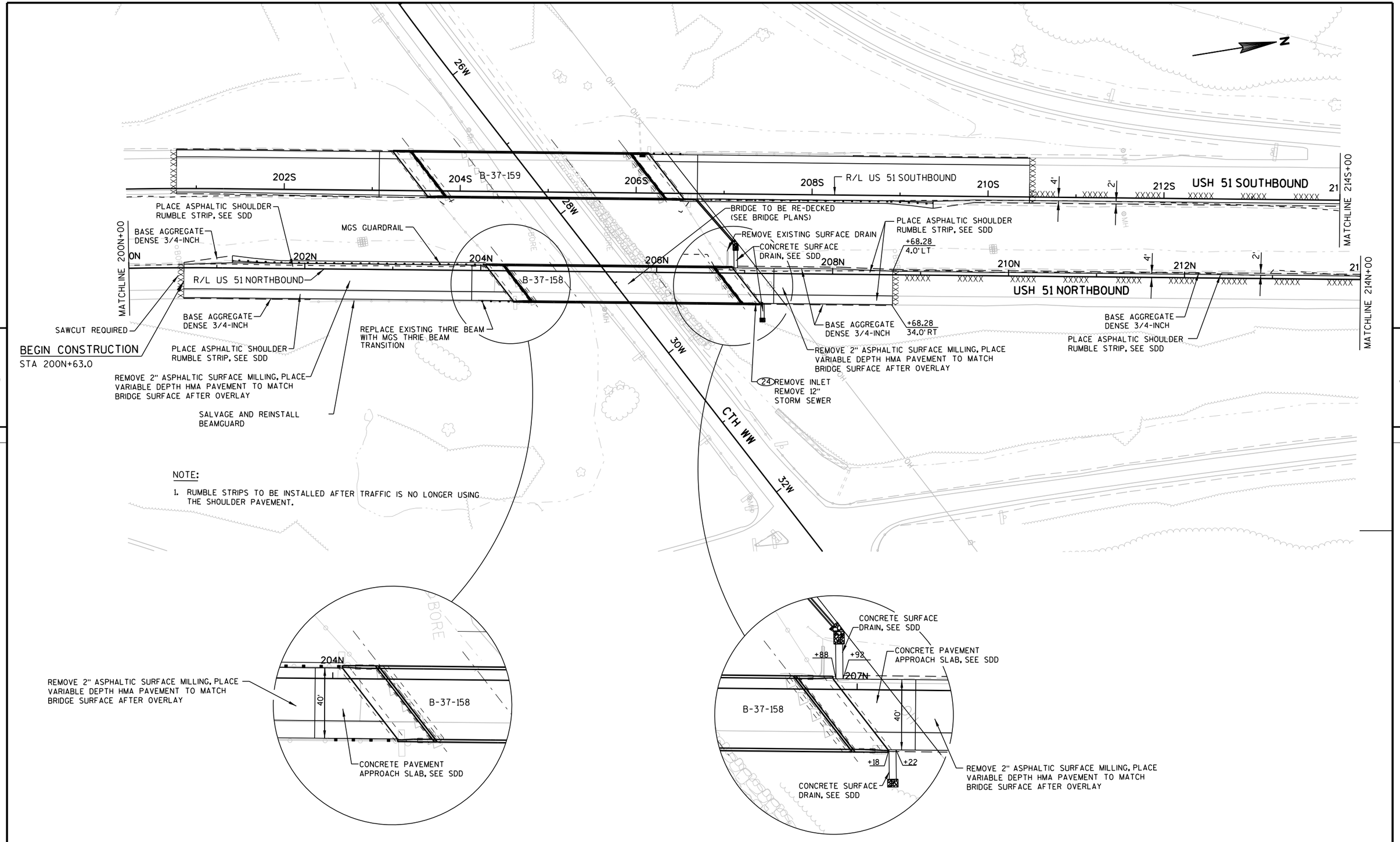
WISDOT/CADDS SHEET 40



NOTE:

1. RUMBLE STRIPS TO BE INSTALLED AFTER TRAFFIC IS NO LONGER USING THE SHOULDER PAVEMENT.

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN	SHEET 89	E

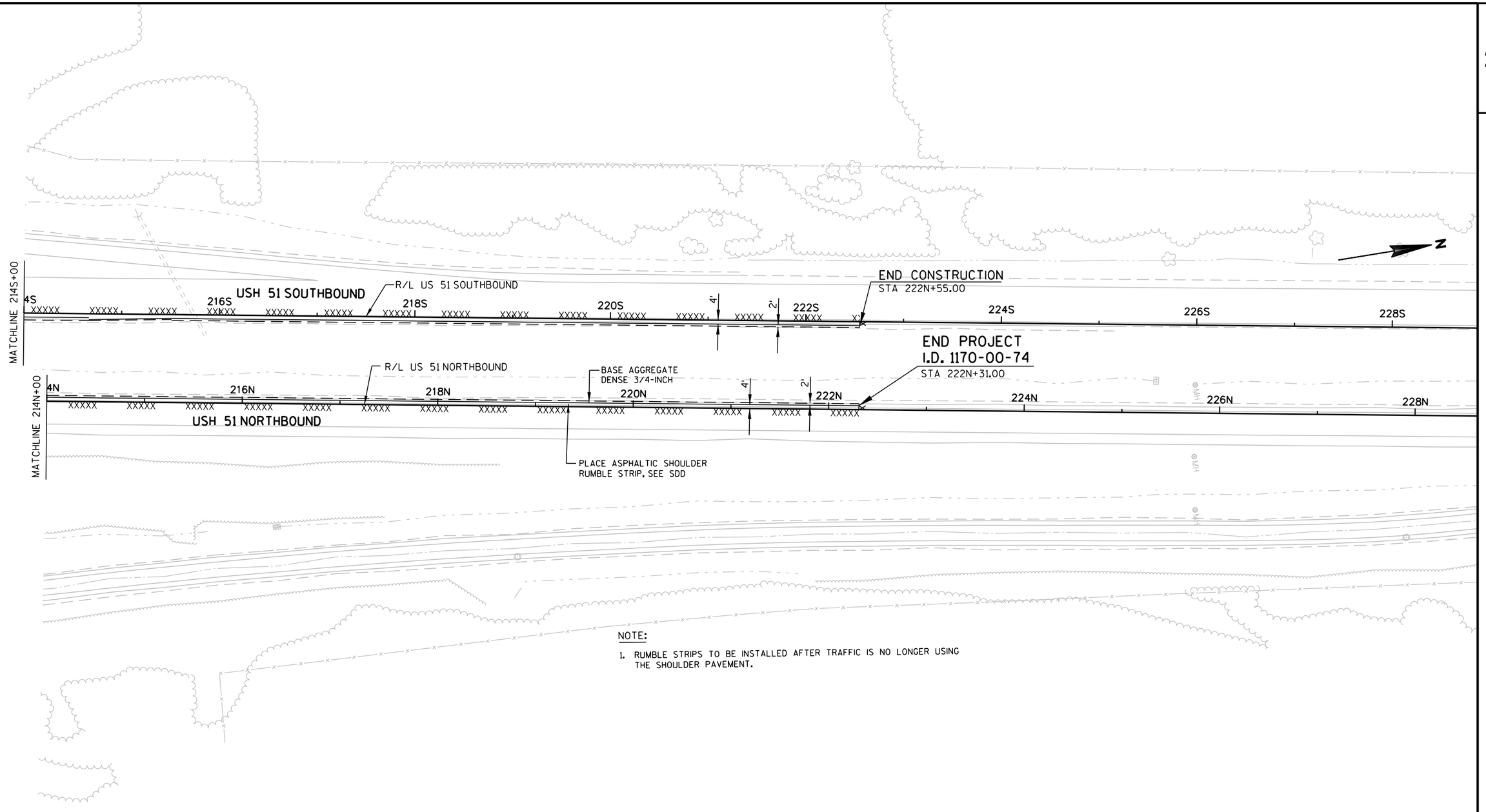


PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN AND PROFILE: USH 51 NORTHBOUND (B-37-158)	SHEET 90	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\050106_pp.dgn PLOT DATE : 06-NOV-2015 13:55 PLOT BY : ceven PLOT NAME : PLOT SCALE : 100:1

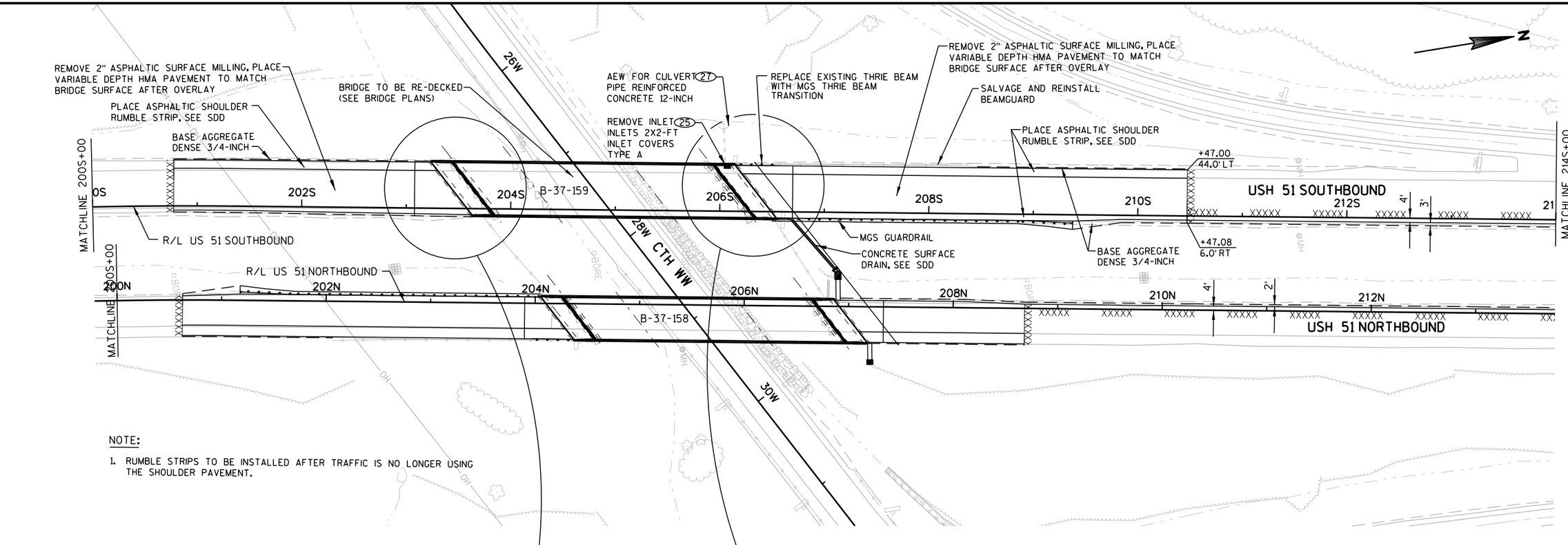
WISDOT/CADDS SHEET 40

2



NOTE:

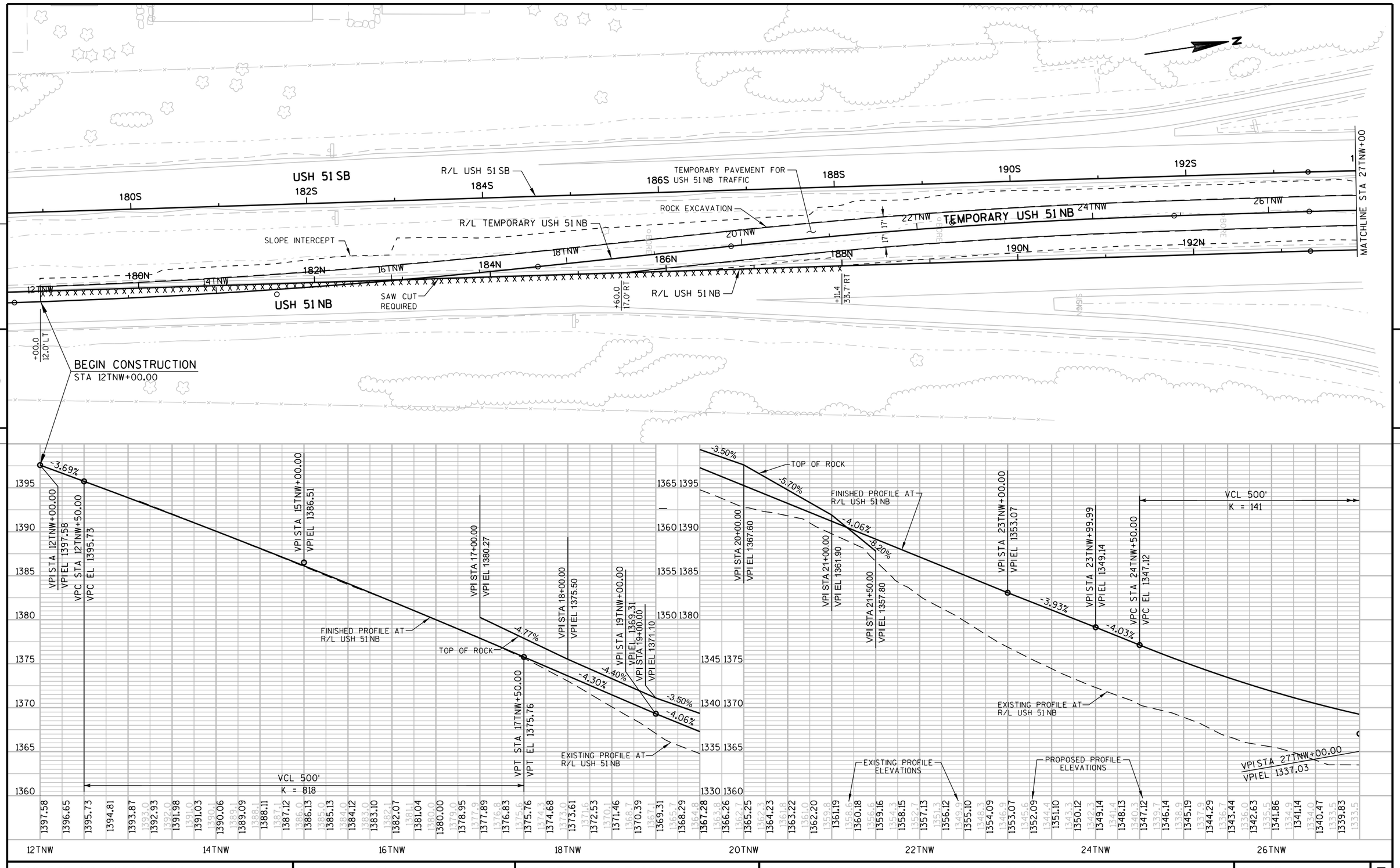
1. RUMBLE STRIPS TO BE INSTALLED AFTER TRAFFIC IS NO LONGER USING THE SHOULDER PAVEMENT.



NOTE:

1. RUMBLE STRIPS TO BE INSTALLED AFTER TRAFFIC IS NO LONGER USING THE SHOULDER PAVEMENT.

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN	SHEET 92	E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN & PROFILE: TEMPORARY USH 51 NB	SHEET 93 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\050111_pp.dgn PLOT DATE : 25-SEP-2015 13:43 PLOT BY : ceven PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40a

BENCHMARK

NO.	COORDINATES	DESCRIPTION	ELEVATION
219 PK	X 271281.99 Y 225997.13	PK NAIL IN S. SHOULDER OF CTH WW BETWEEN NB AND SB USH 51 BRIDGES	1305.09

USH 51 SB ENTRANCE RAMP

R/L CTH WW

26W

CTH WW

30W

28W

TEMPORARY PAVEMENT FOR USH 51 NB TRAFFIC

TEMPORARY STRUCTURE STA 38TNW+00

B-37-159

REMOVE GUARDRAIL

R/L USH 51 SB

R/L TEMPORARY USH 51 NB

USH 51 SB

94S 196S 198S 200S 202S 204S 206S 208S

MATCHLINE STA 27TNW+00

28TNW 30TNW 32TNW 34TNW 36TNW 38TNW 40TNW

MATCHLINE STA 42TNW+00

TEMPORARY USH 51 NB

17'

17'

REMOVE GUARDRAIL

194N 196N 198N 200N 202N 204N 206N 208N

USH 51 NB

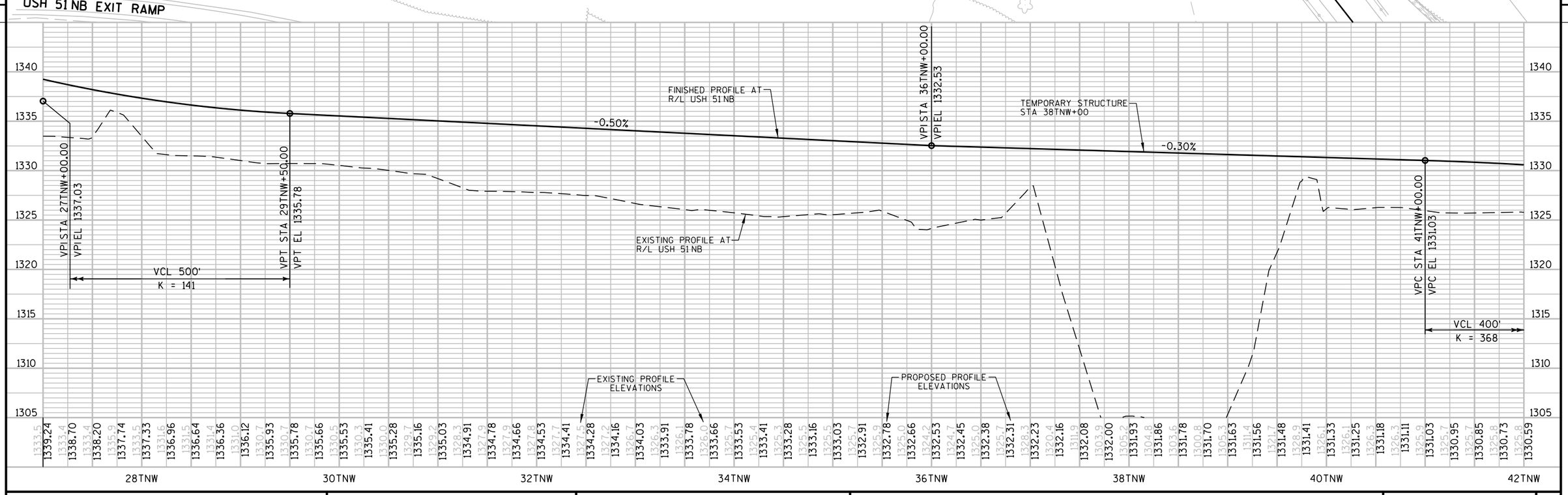
R/L USH 51 NB

B-37-158

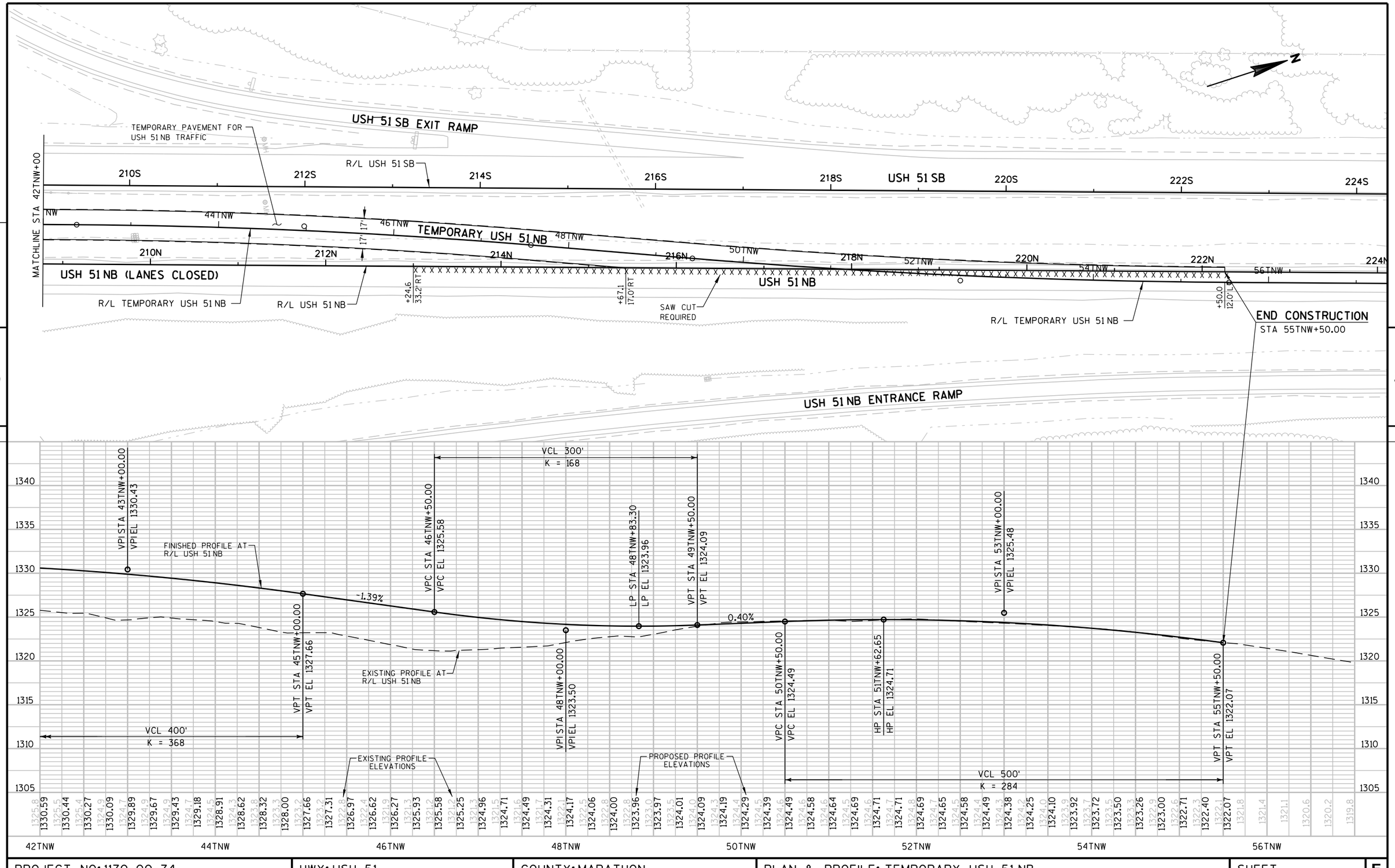
5

5

USH 51 NB EXIT RAMP



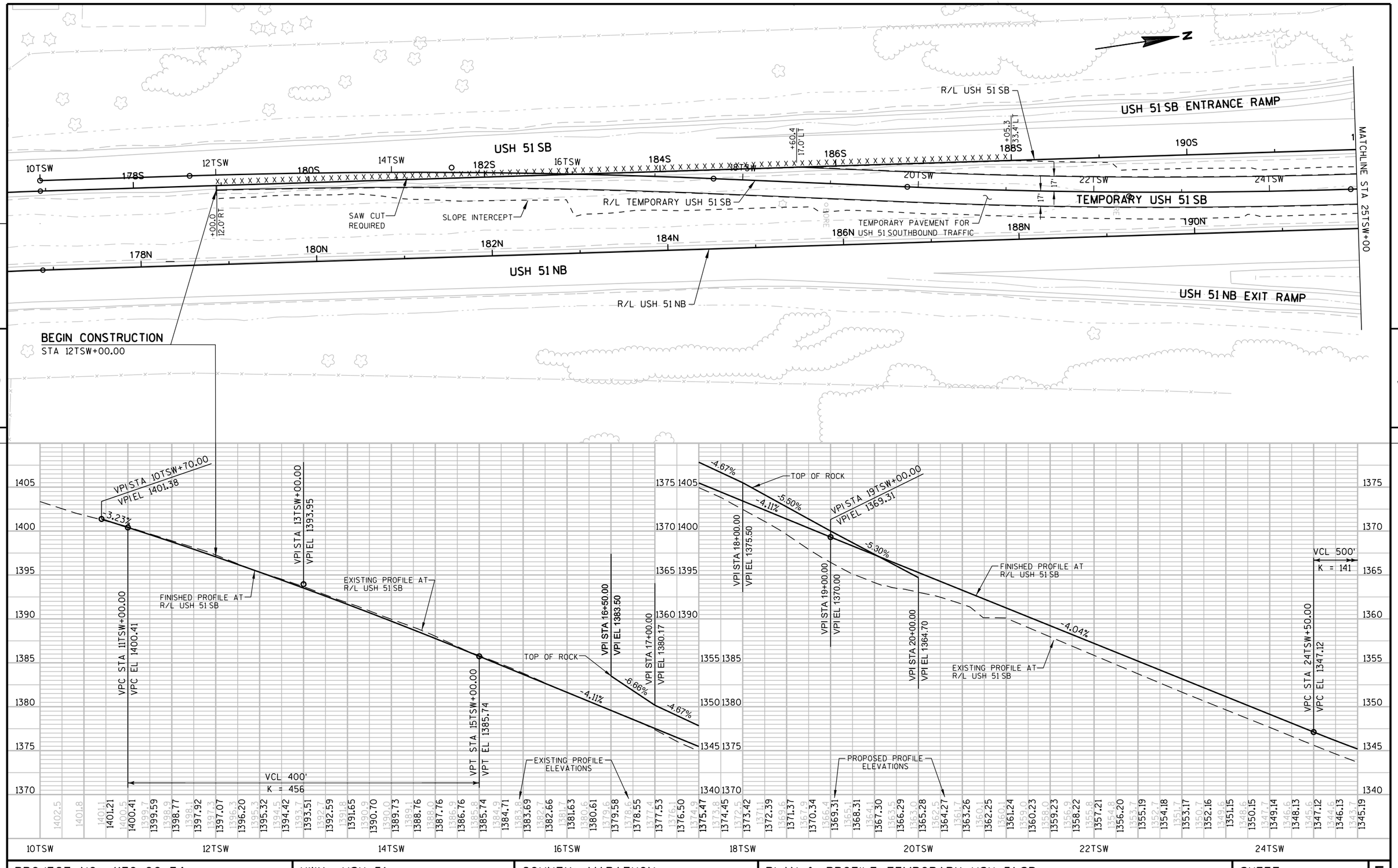
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN & PROFILE: TEMPORARY USH 51 NB	SHEET 94 E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN & PROFILE: TEMPORARY USH 51 NB	SHEET 95 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\050113_pp.dgn PLOT DATE : 01-MAY-2014 12:06 PLOT BY : cfranzen PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40



5

5

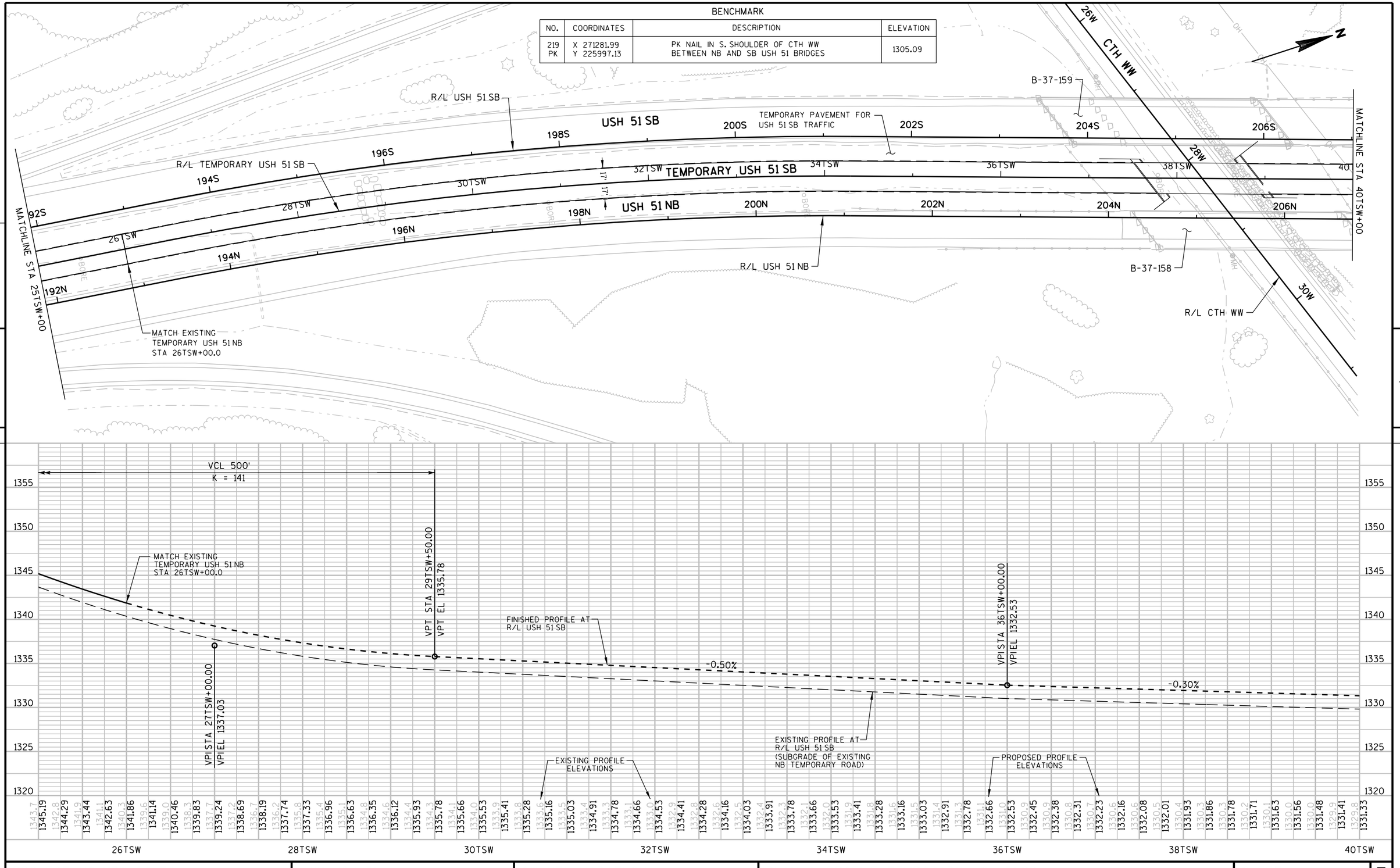
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN & PROFILE: TEMPORARY USH 51 SB	SHEET 96	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\050114_pp.dgn PLOT DATE : 25-SEP-2015 13:55 PLOT BY : ceven PLOT NAME : PLOT SCALE : 100:1

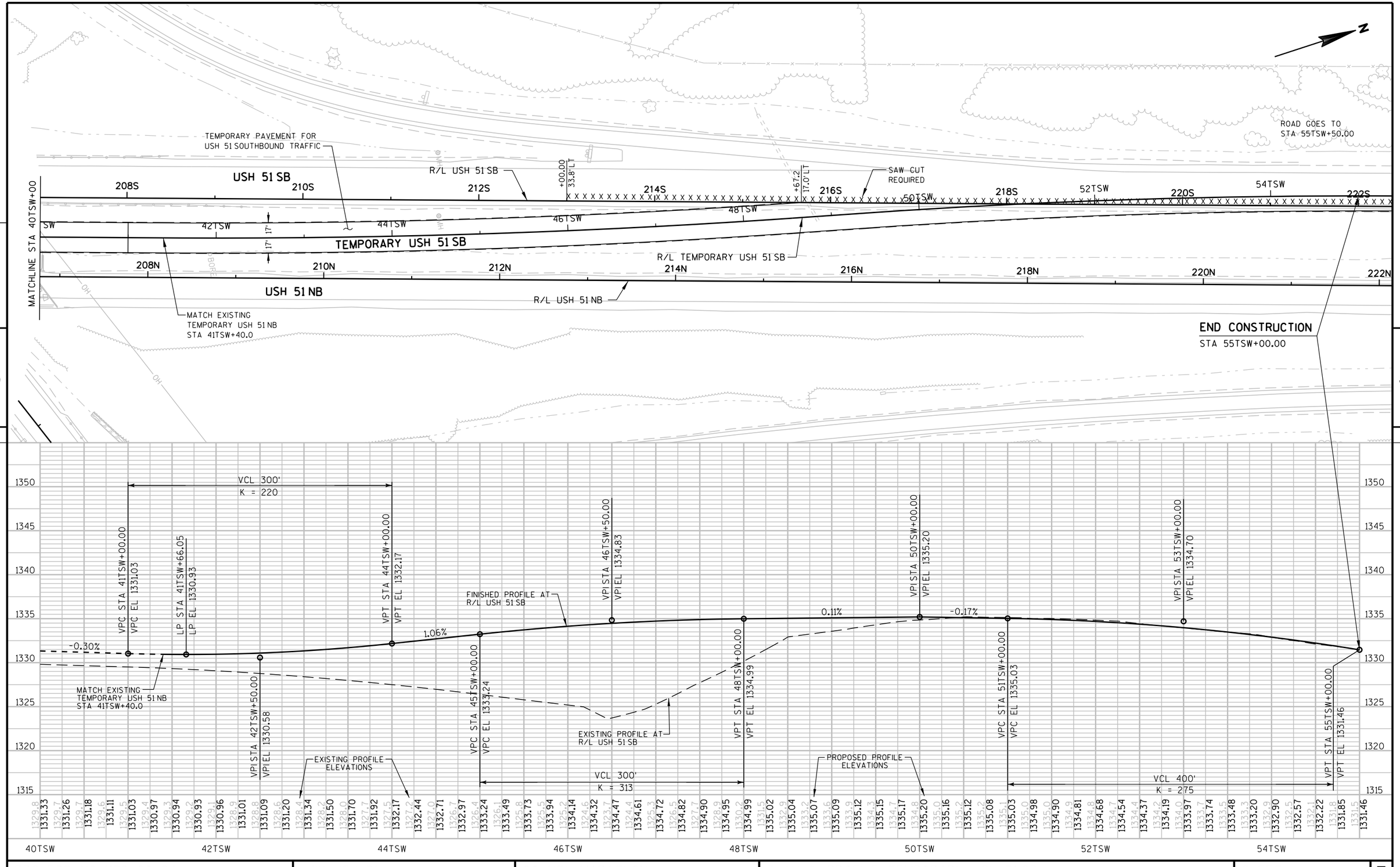
WISDOT/CADDS SHEET 40a

BENCHMARK

NO.	COORDINATES	DESCRIPTION	ELEVATION
219 PK	X 271281.99 Y 225997.13	PK NAIL IN S. SHOULDER OF CTH WW BETWEEN NB AND SB USH 51 BRIDGES	1305.09



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN & PROFILE: TEMPORARY USH 51 SB	SHEET 97 E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	PLAN & PROFILE: TEMPORARY USH 51 SB	SHEET 98 E

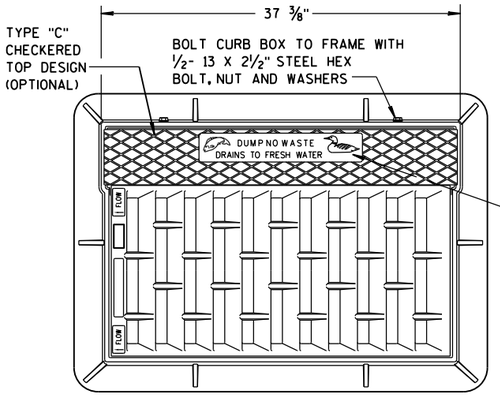
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\050116_pp.dgn PLOT DATE : 22-SEP-2015 17:08 PLOT BY : ceven PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40

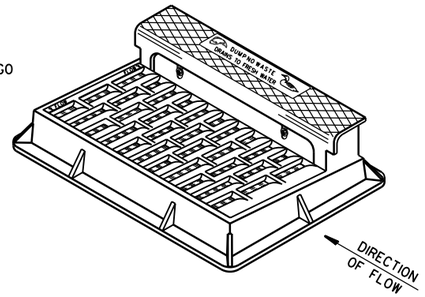
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A06-02	DELINEATOR LAYOUT
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C11-05	FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES
15C19-02C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15D03-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D12-05A	TRAFFIC CONTROL, LANE CLOSURE
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D23-03	TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

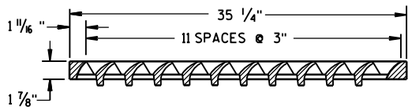
6

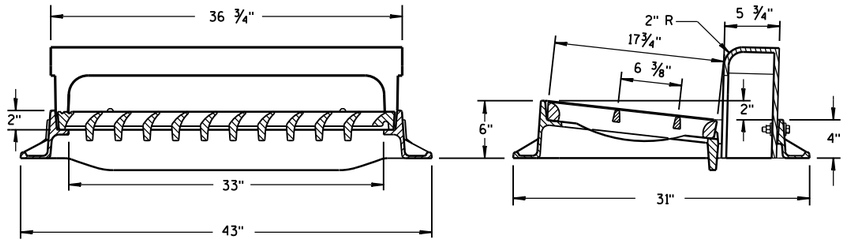


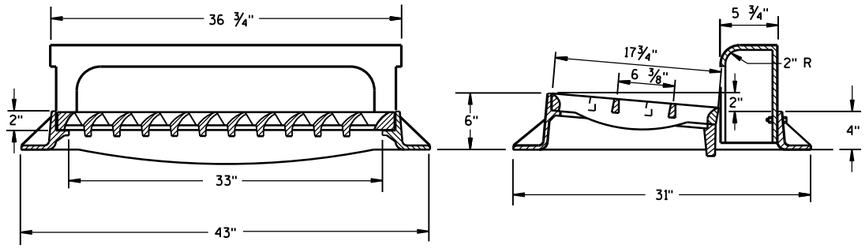
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

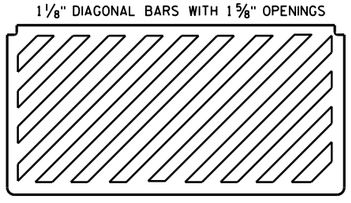






TYPE "H"

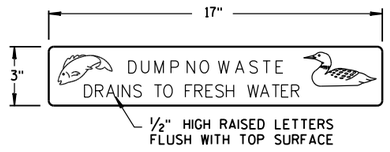
NOTE: EITHER CASTING IS ACCEPTABLE



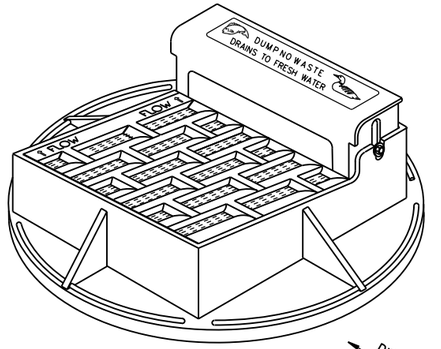
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

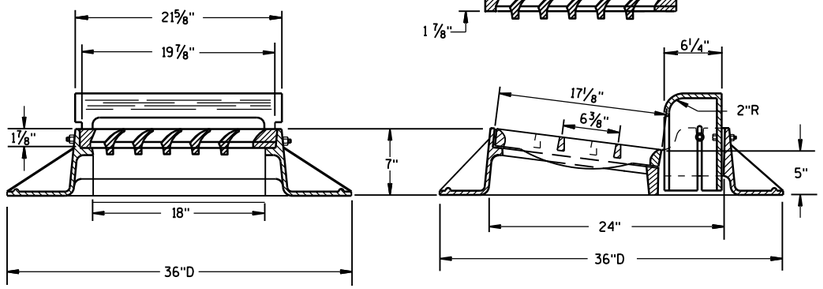


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



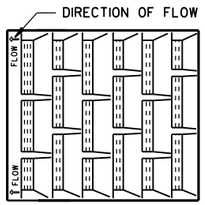
TYPE "A"

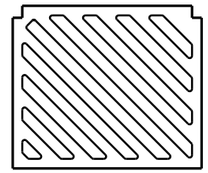
GENERAL NOTES

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.

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

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

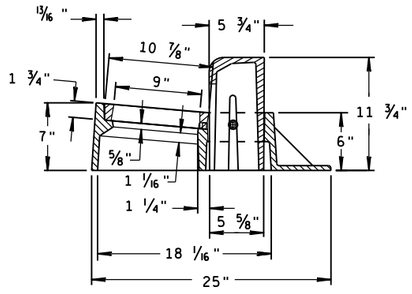


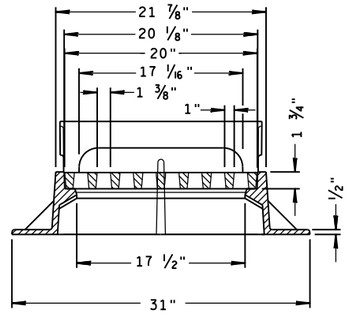


SPECIAL GRATE FOR TYPE "A" COVER

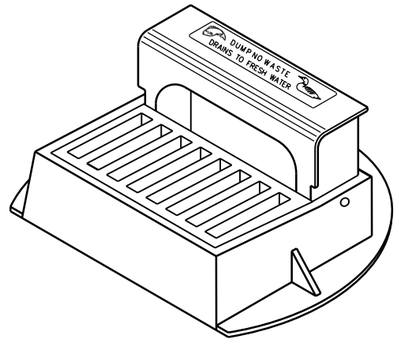
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"



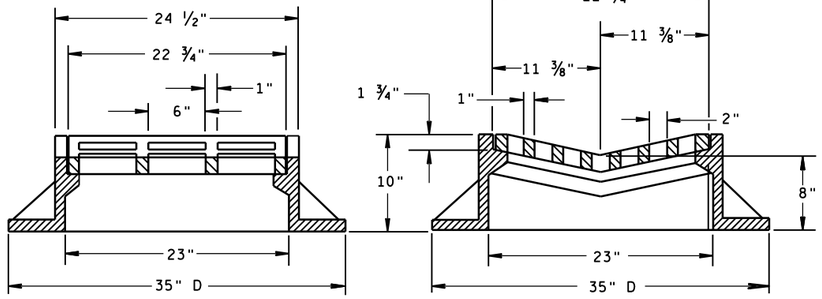
INLET COVERS
TYPE A, H, A-S, H-S & Z

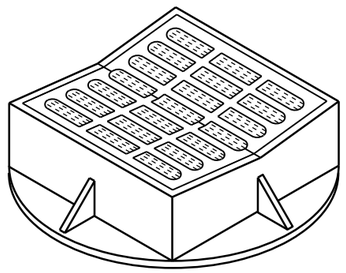
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

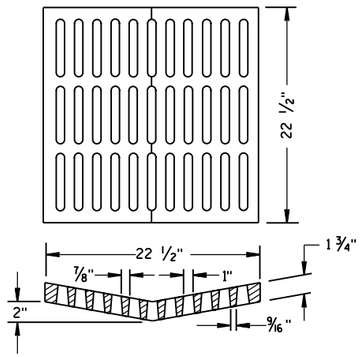
6

S.D.D. 8 A 5-19a



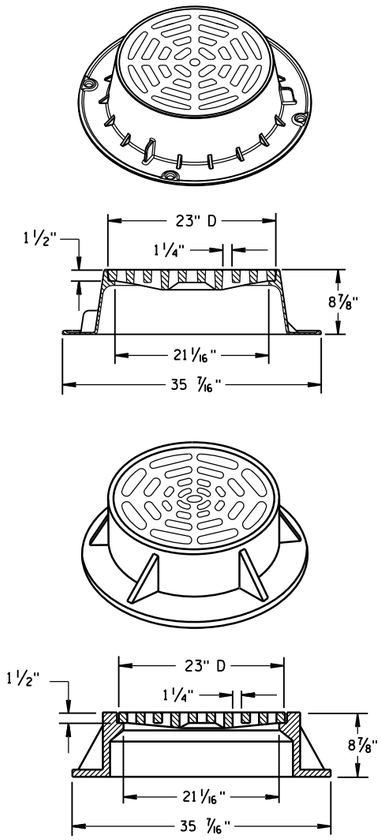


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

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



TYPE "C"

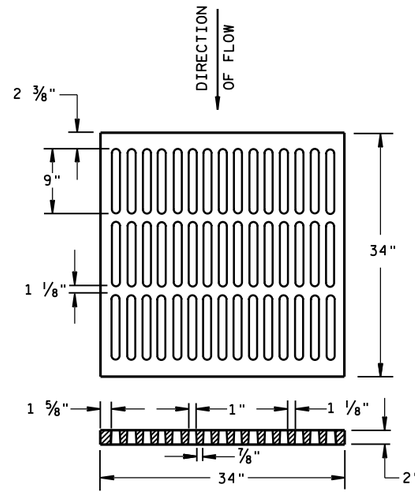
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

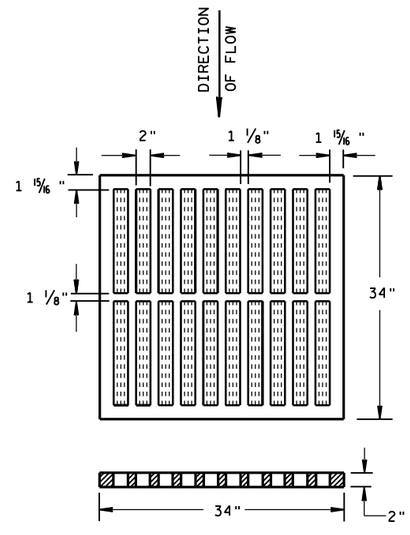
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



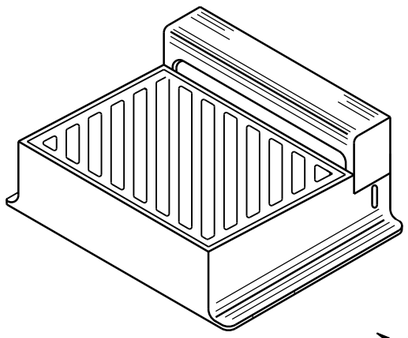
ALTERNATIVE TYPE "MS"

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

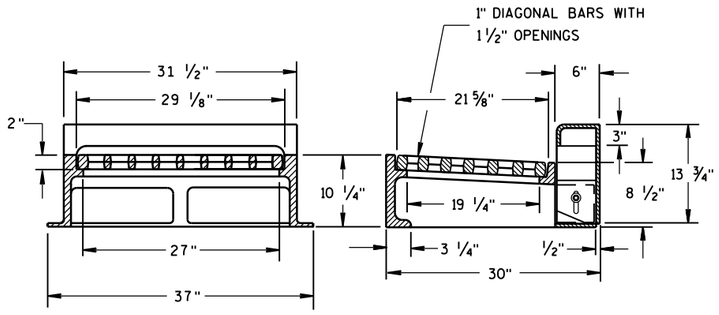


TYPE "MS"

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



DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

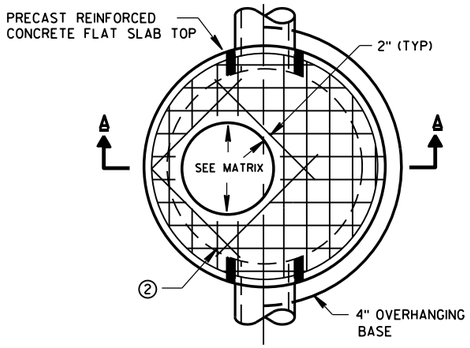
INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

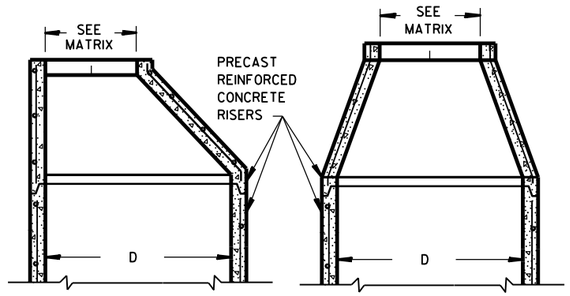
APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 A 5-19b

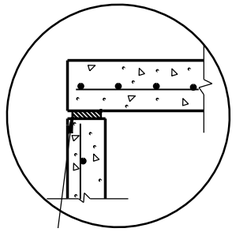


PLAN VIEW CIRCULAR OPENING

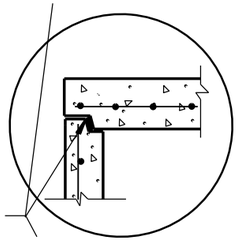


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

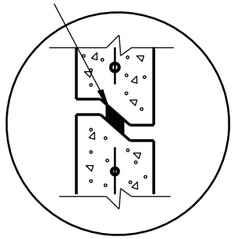


TOP WITH PLAIN END JOINT



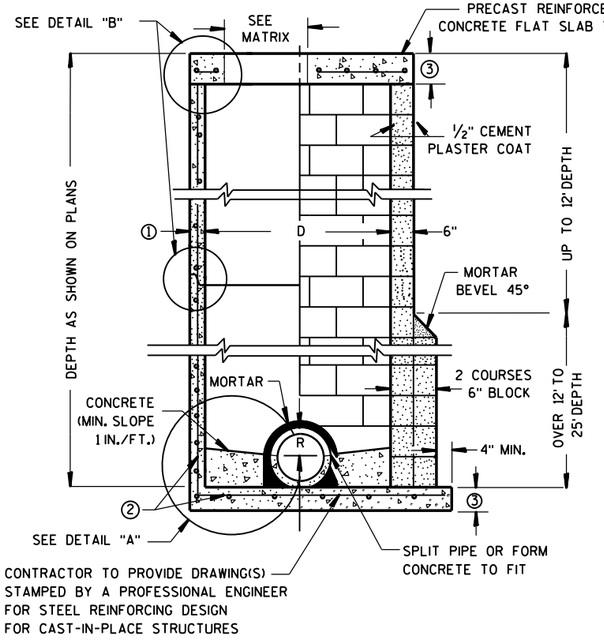
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



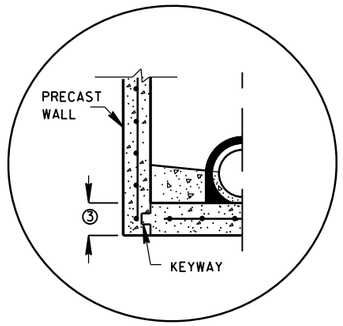
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

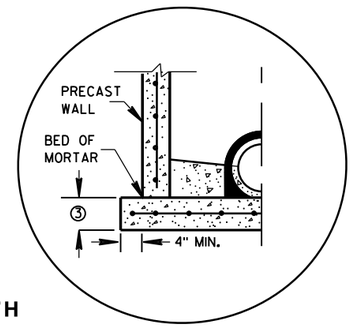


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

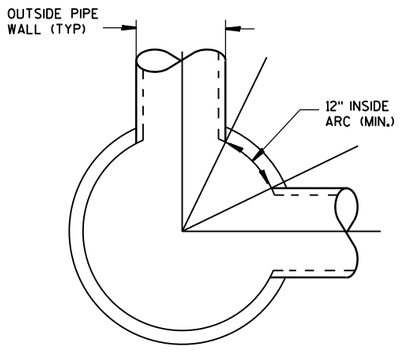


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "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.

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

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

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

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL 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.

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

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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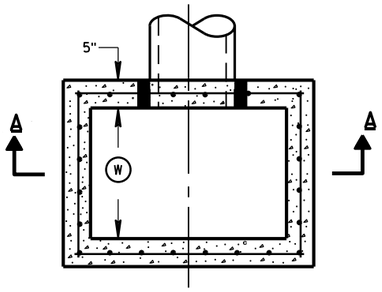
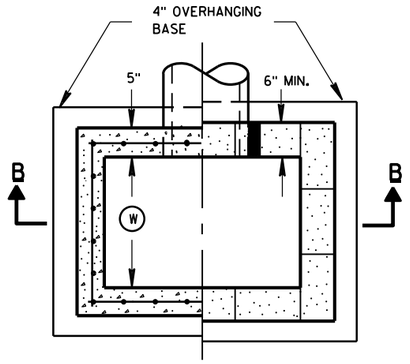
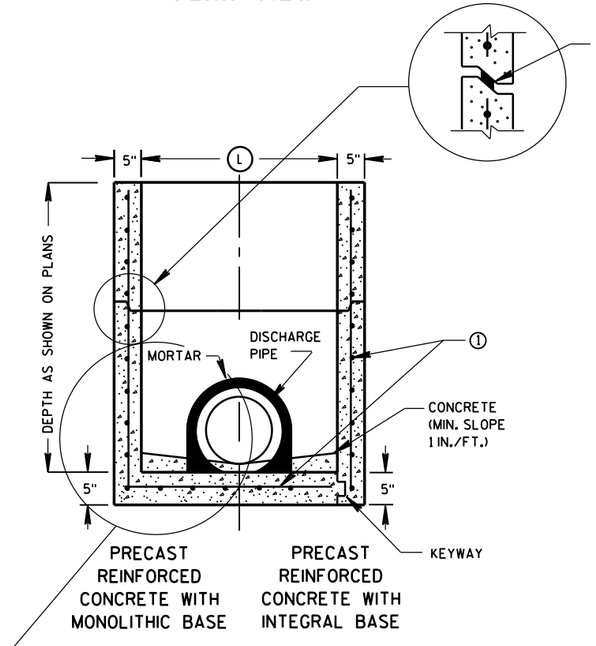
S.D.D. 8 B 9-1



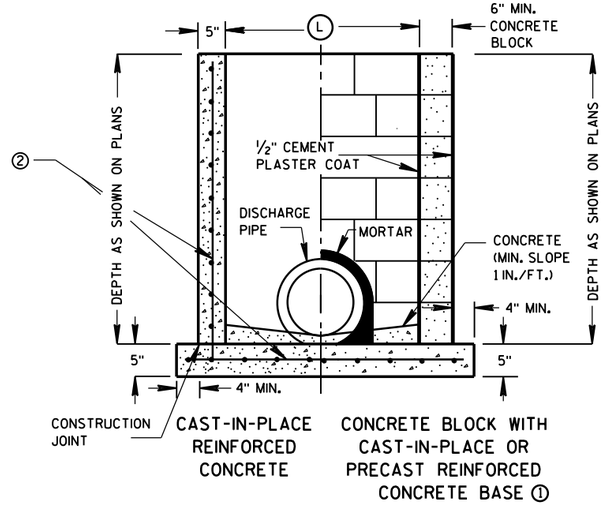
PLAN VIEW



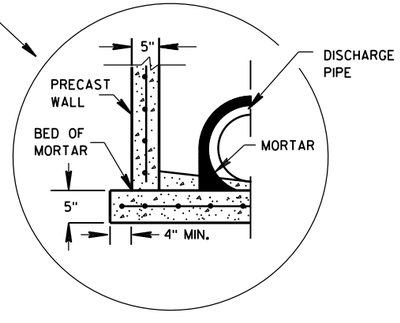
PLAN VIEW



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 GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

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.

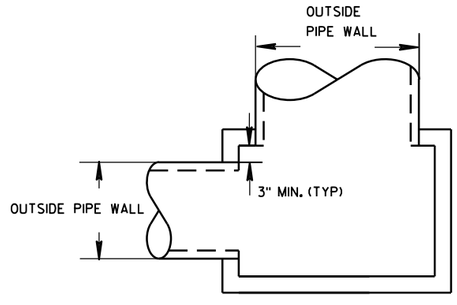
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (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
6/5/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DE ENGINEER
FHWA

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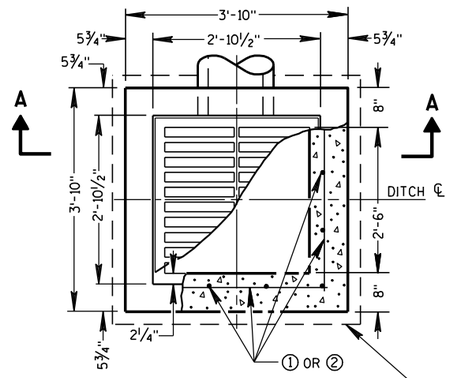
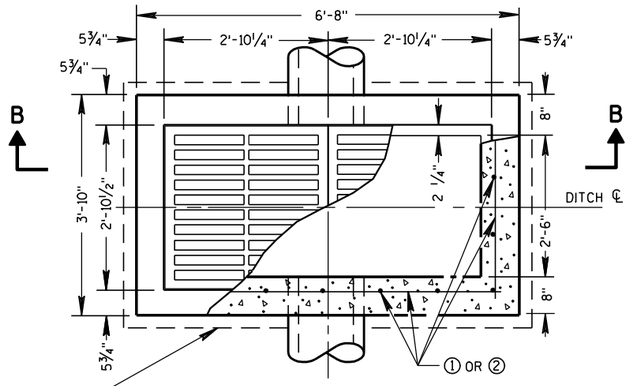
S.D.D. 8 C 7-1

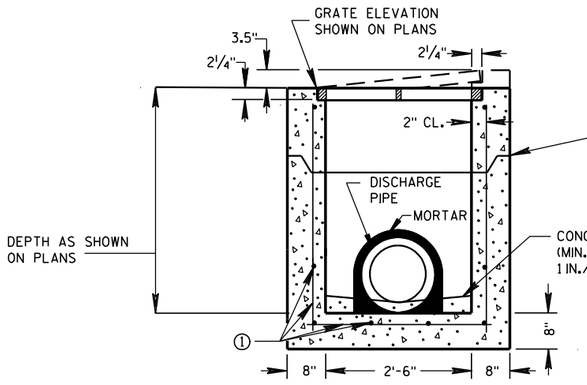


PLAN VIEW

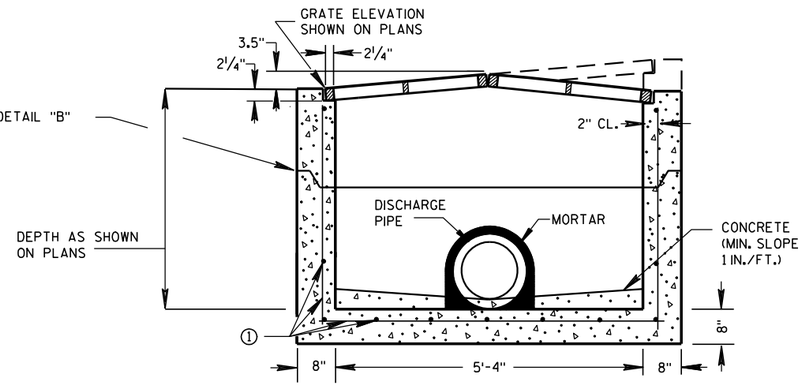


PLAN VIEW

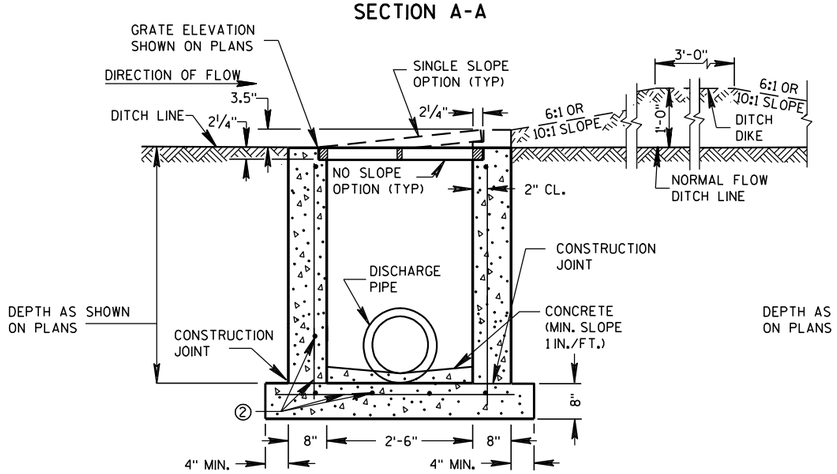
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



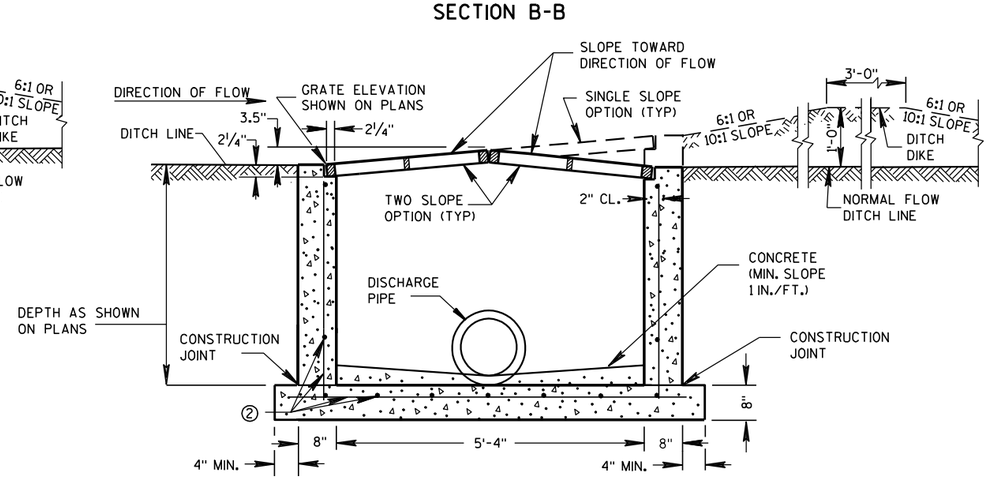
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

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 INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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.

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

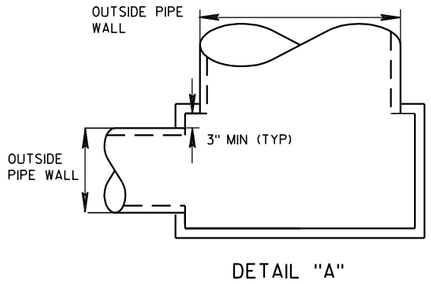
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

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.

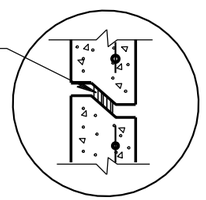
PIPE MATRIX

	MAXIMUM INSIDE PIPE DIAMETER	
INLET SIZE	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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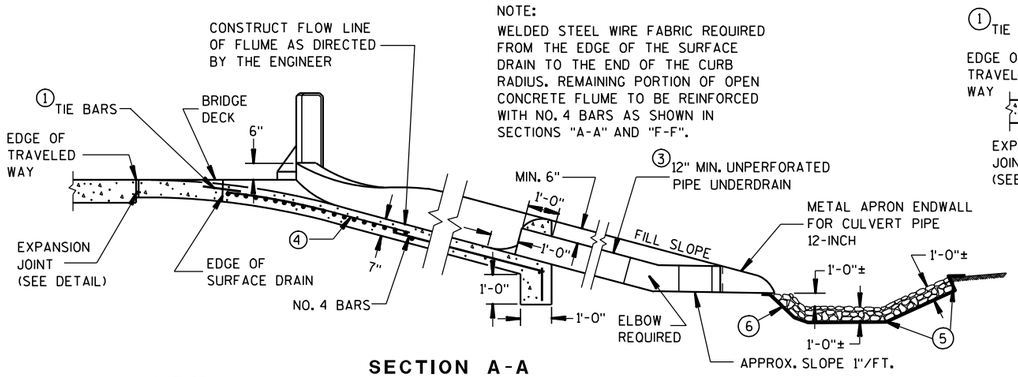
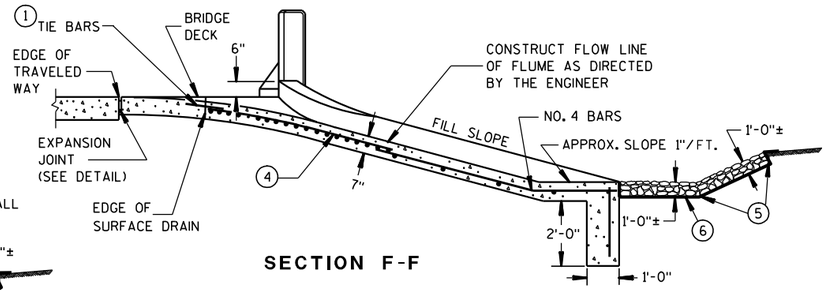
S.D.D. 8 C 8-1



SECTION A-A



SECTION F-F

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

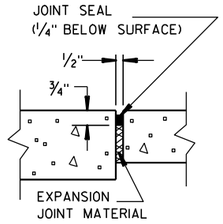
(4) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.

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

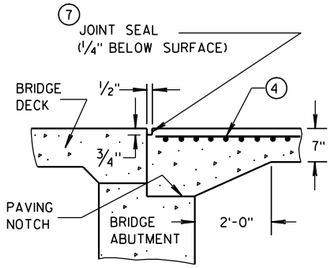
(6) GEOTEXTILE FABRIC, TYPE 'R"

(7) HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.

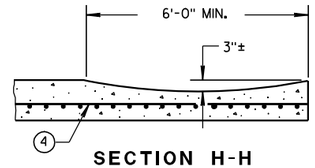
(8) THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1½".



EXPANSION JOINT DETAIL



SECTION D-D



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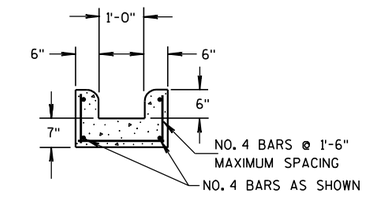

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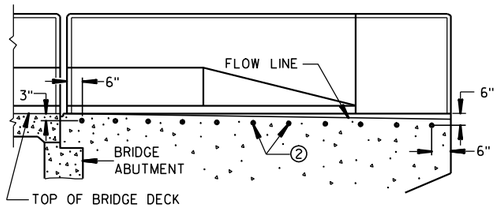
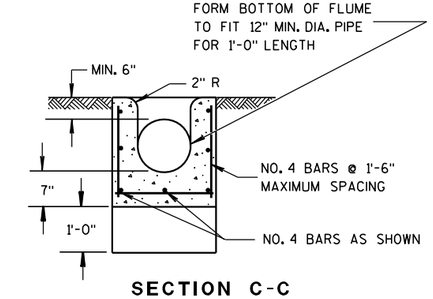
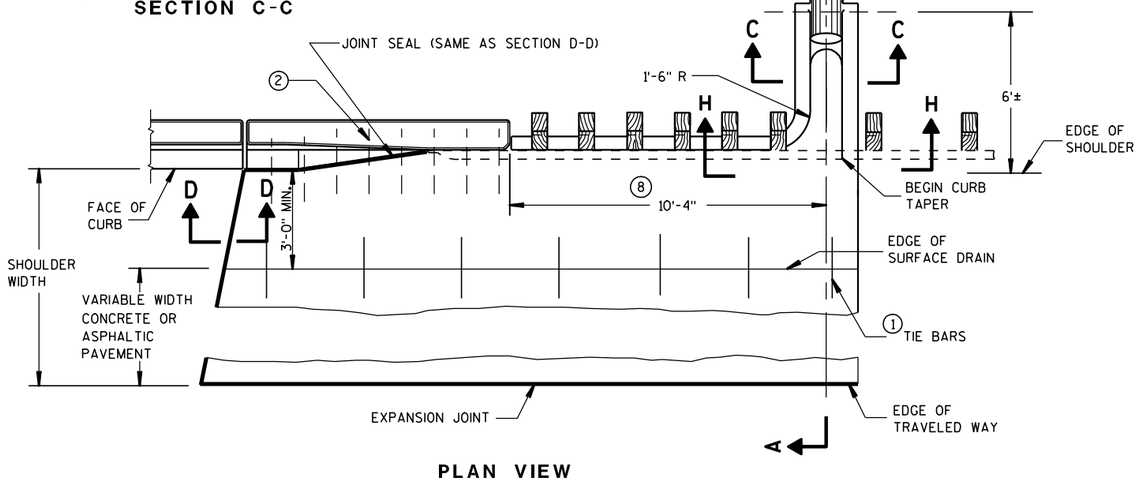


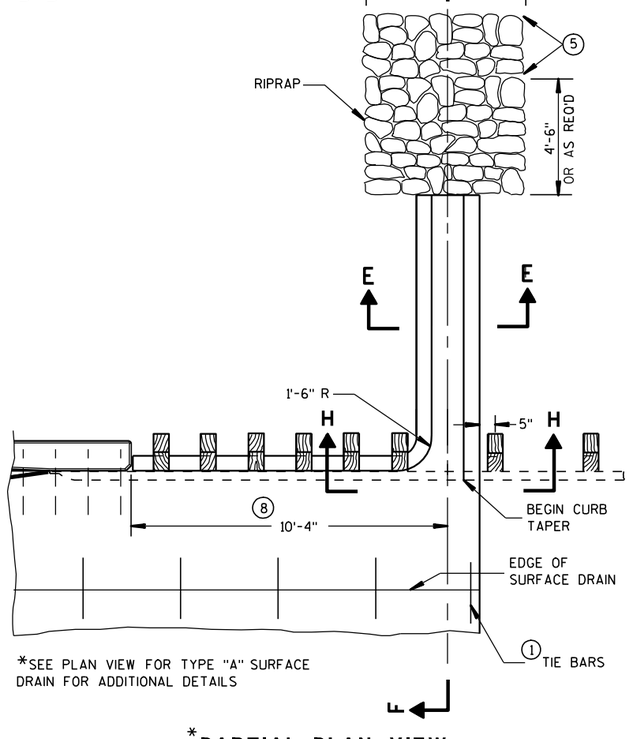
LOCATION OF TIE BARS IN WINGWALL



SECTION C-C



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE DRAIN FOR ADDITIONAL DETAILS

*PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

CONCRETE SURFACE DRAINS
FLUME TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 D 2-6

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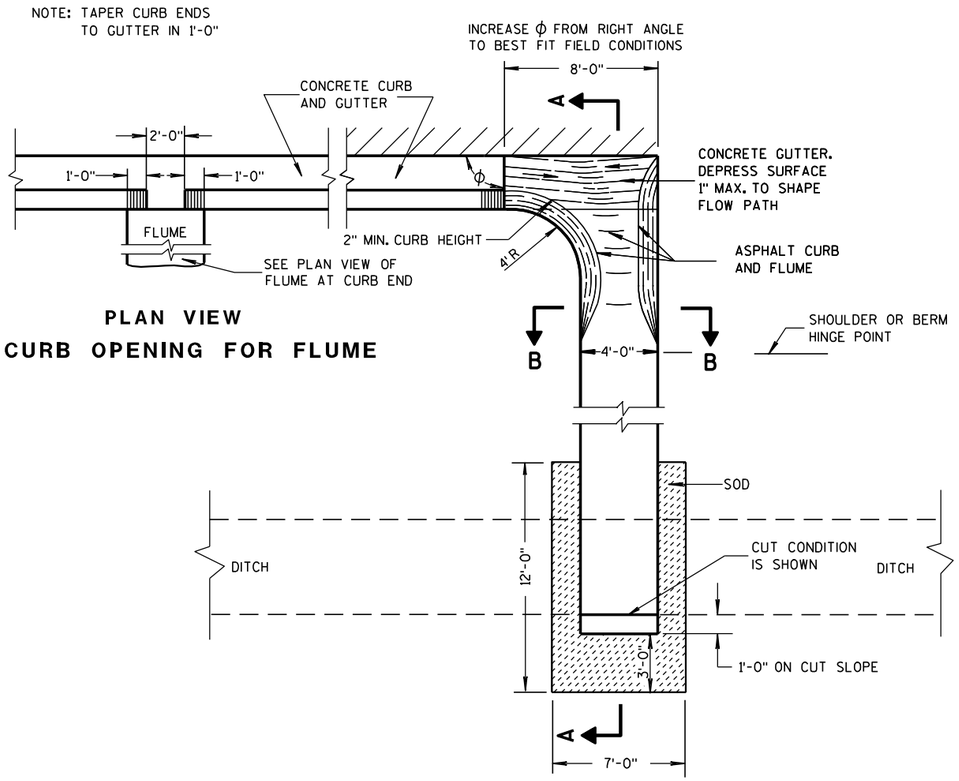
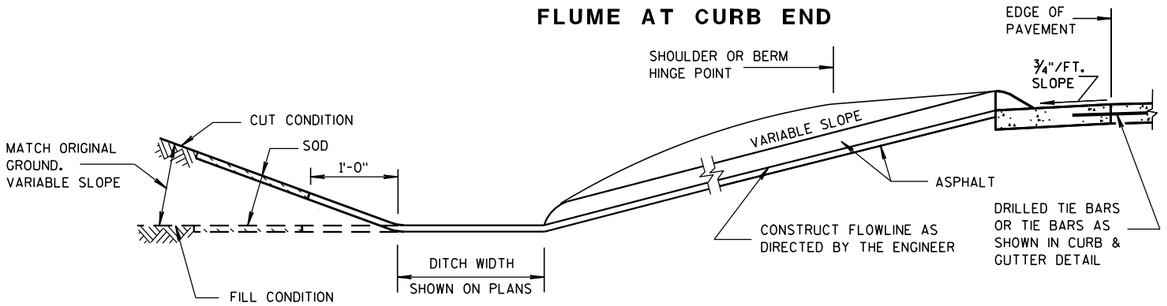
S.D.D. 8 D 2-6

ASPHALTIC FLUME

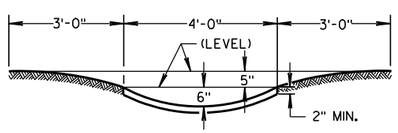


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

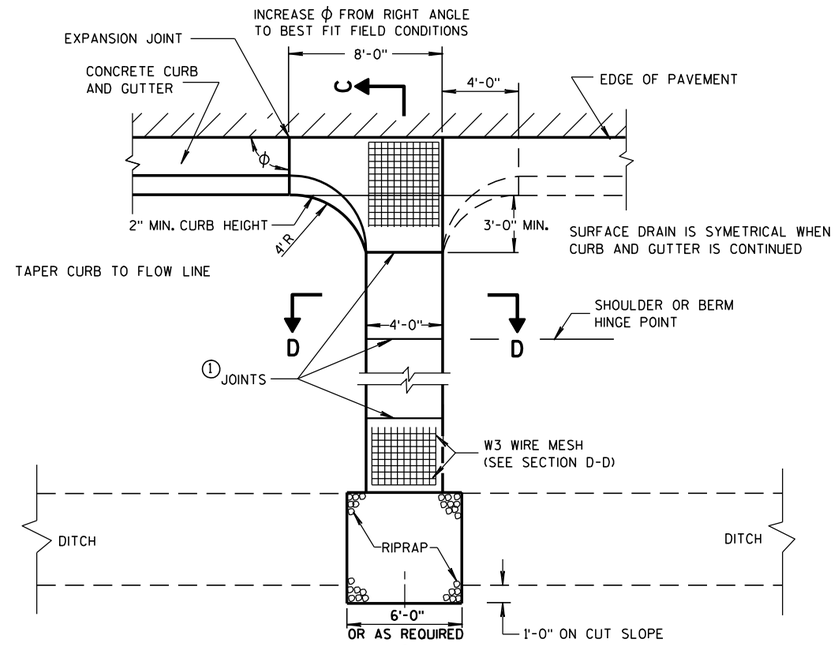
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

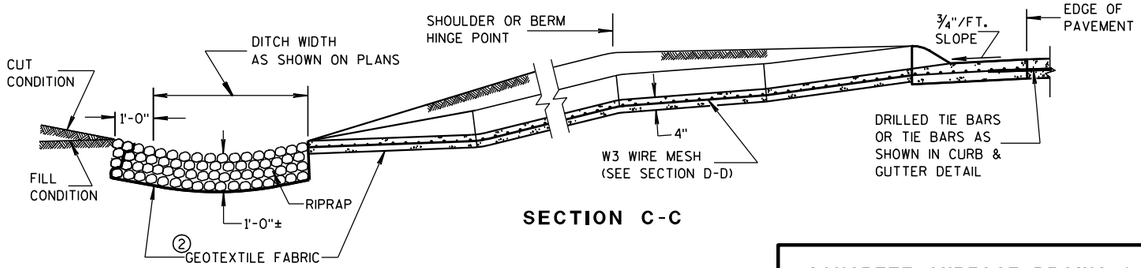
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

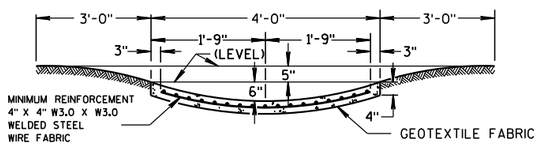
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg ROADWAY STANDARDS ENGINEER
MENT
FHWA

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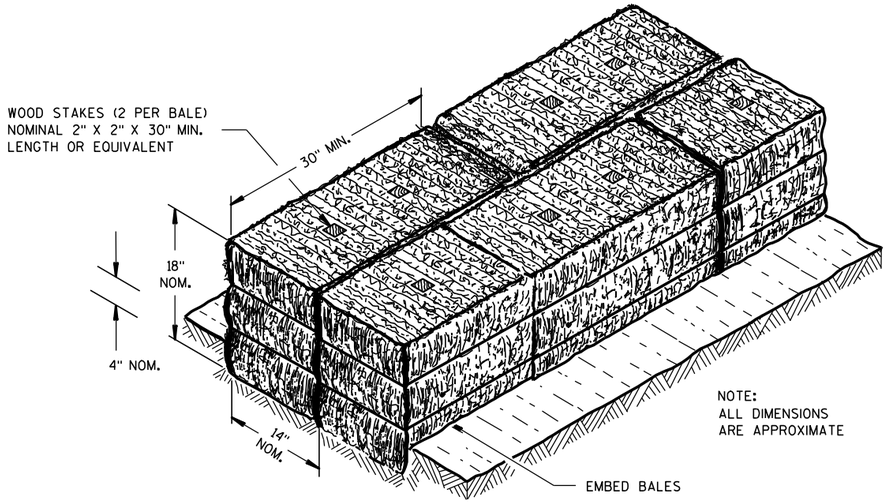
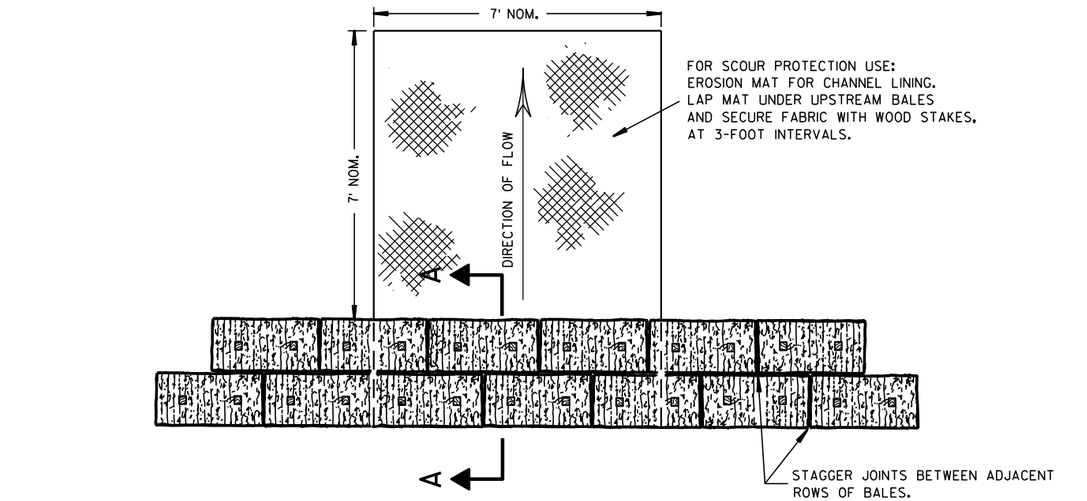
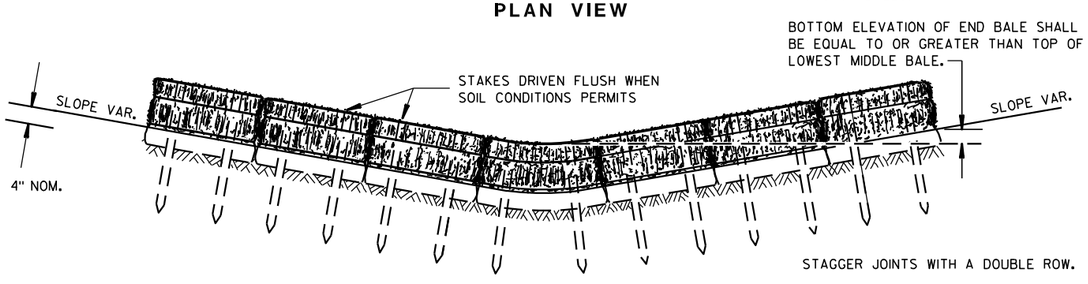


SECTION A-A



PLAN VIEW



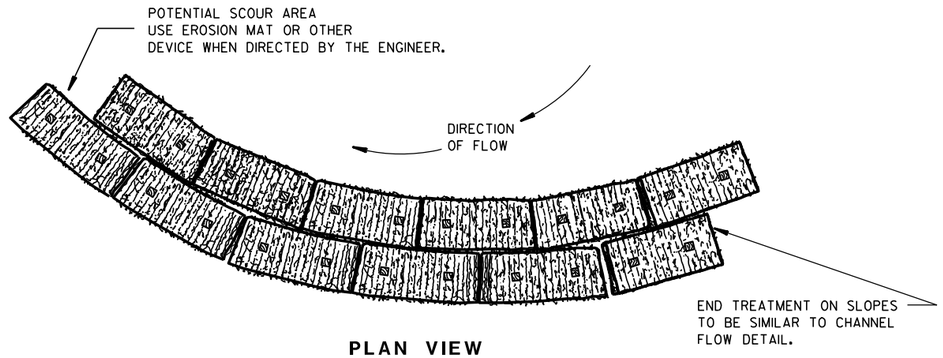
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

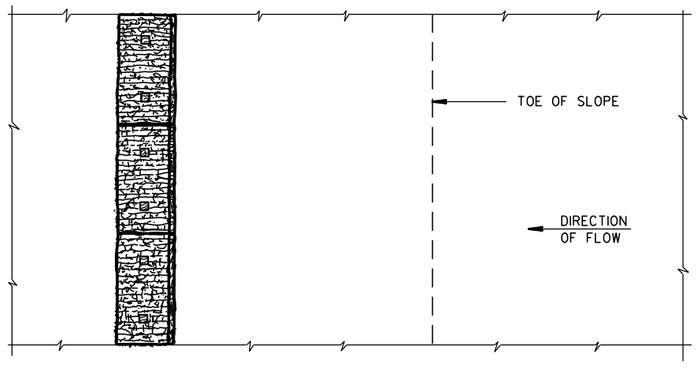
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

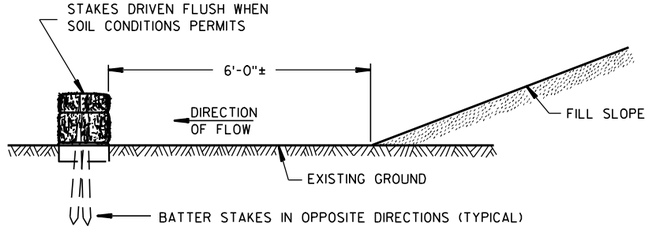


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

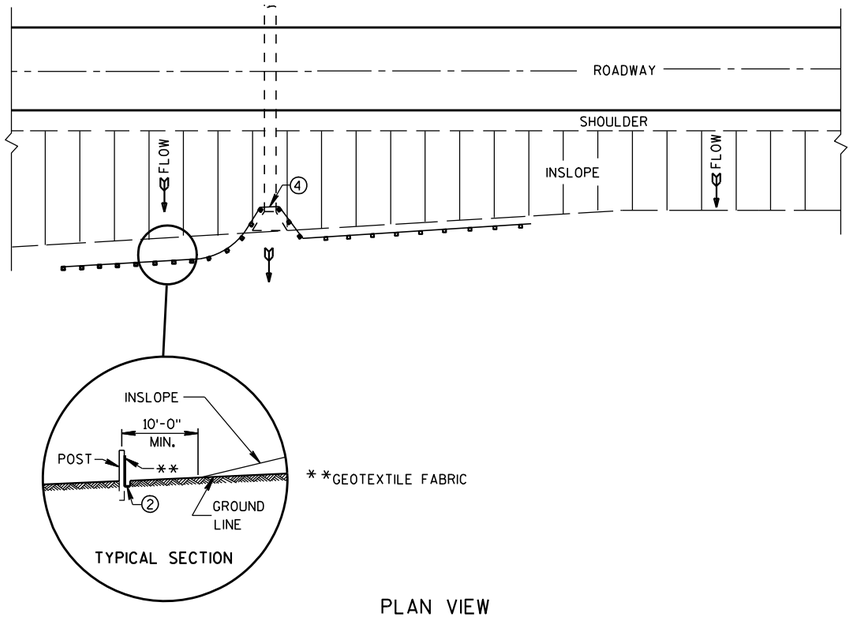
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

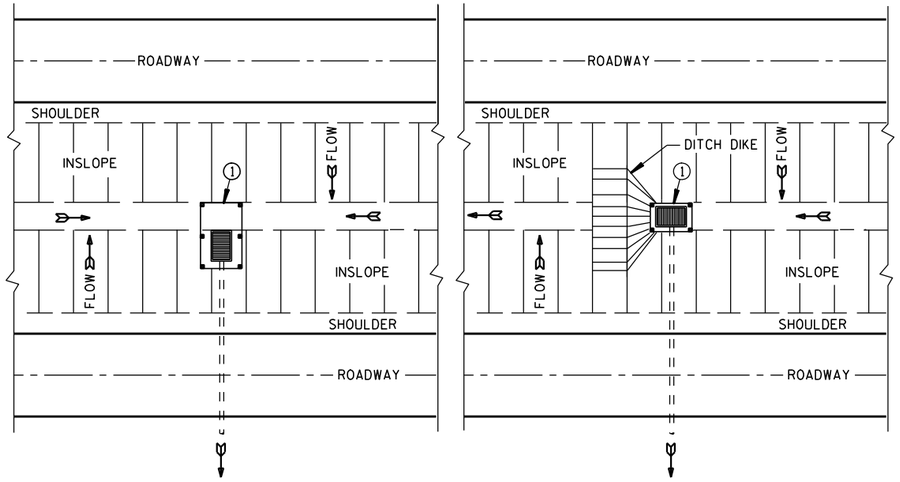
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6
S.D.D. 8 E 8-3



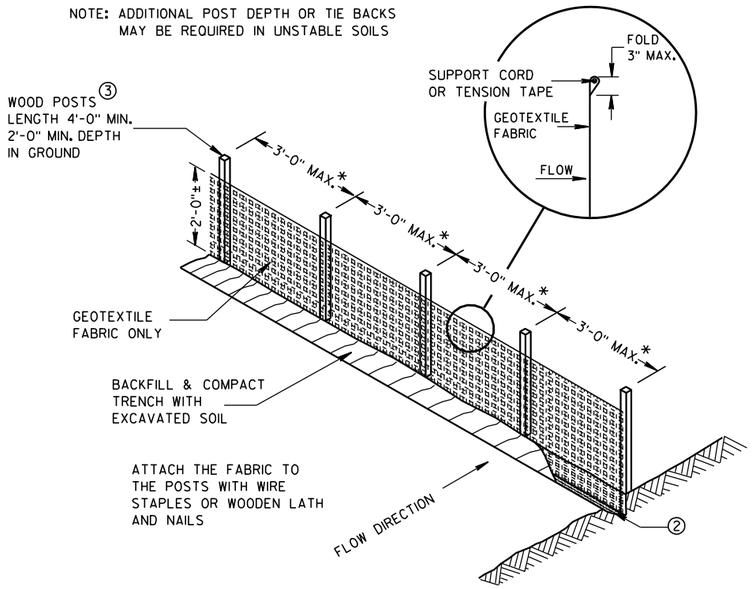
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE

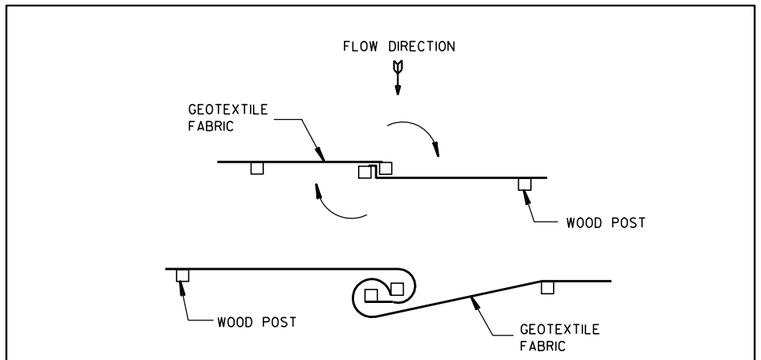


PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



SILT FENCE

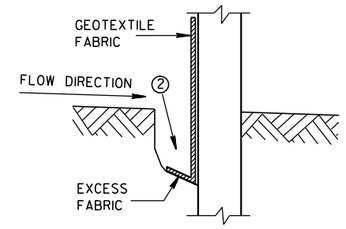


JOINING TWO LENGTHS OF SILT FENCE 5

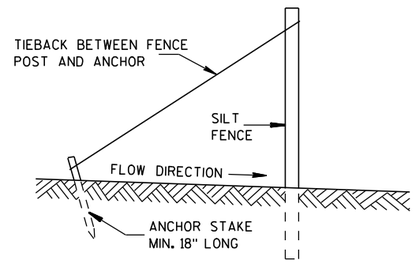
GENERAL NOTES

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

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



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 8 E 9-6

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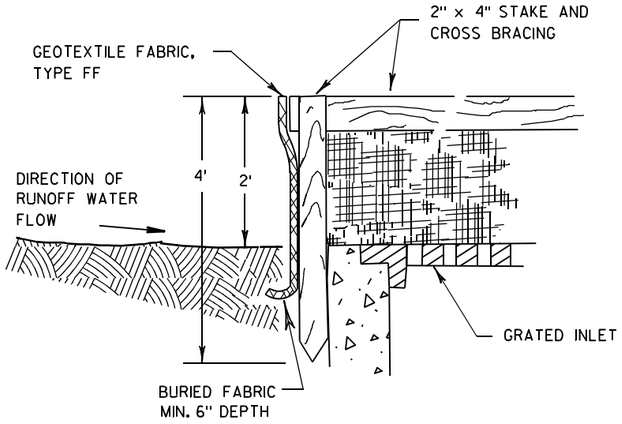
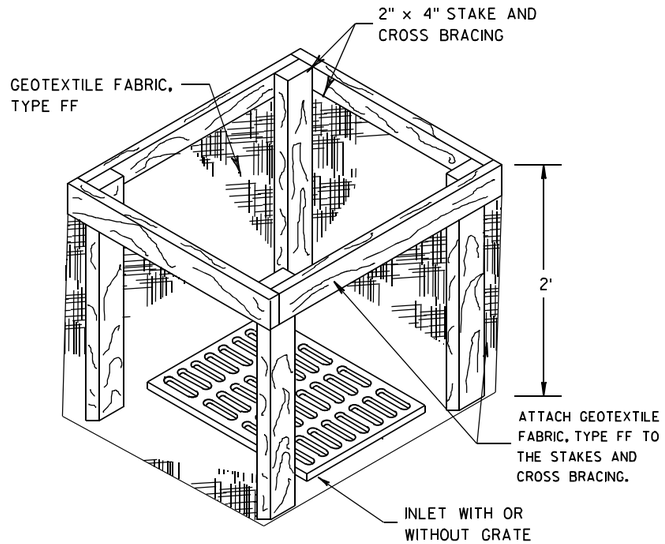
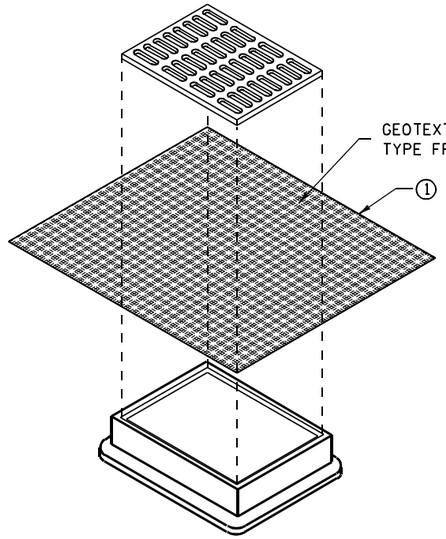
S.D.D. 8 E 9-6



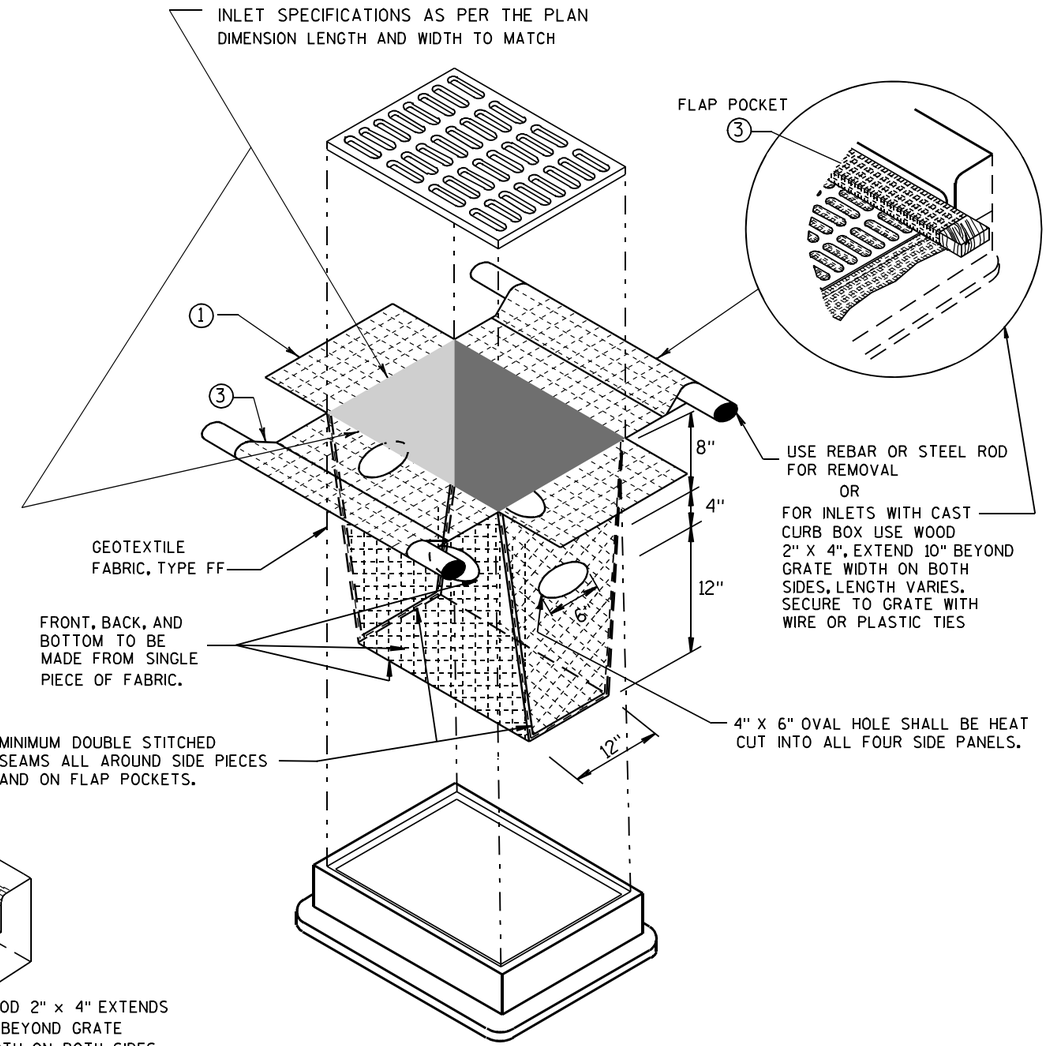


INLET PROTECTION, TYPE A



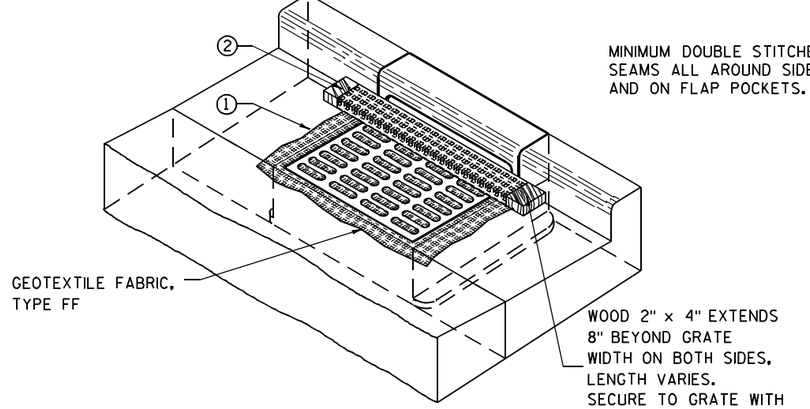
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE D

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

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

6
S.D.D. 8 E 10-2

METAL APRON ENDWALLS

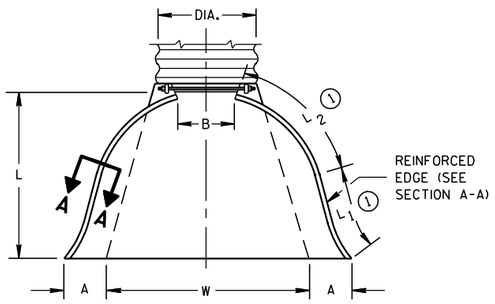
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

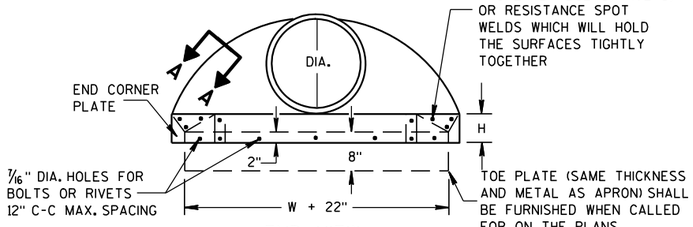
REINFORCED CONCRETE APRON ENDWALLS

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

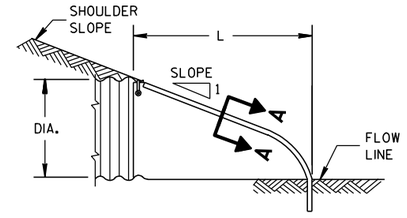
*MINIMUM
**MAXIMUM



PLAN VIEW

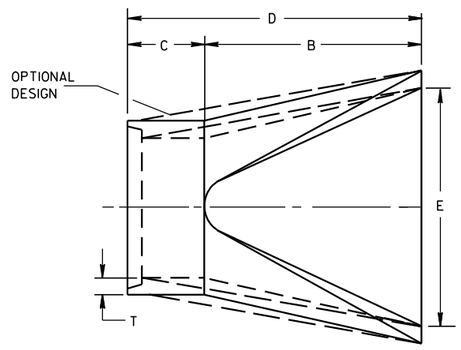


END VIEW

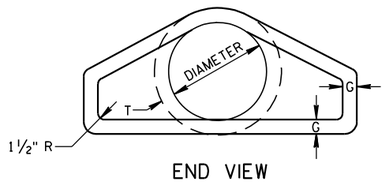


SIDE ELEVATION

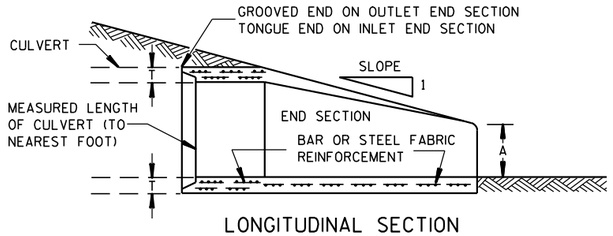
METAL ENDWALLS



PLAN

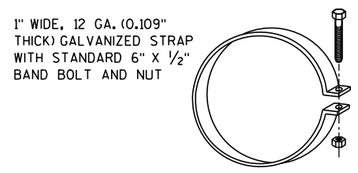


END VIEW



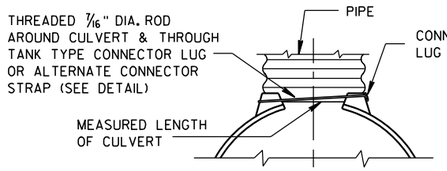
LONGITUDINAL SECTION

CONCRETE ENDWALLS

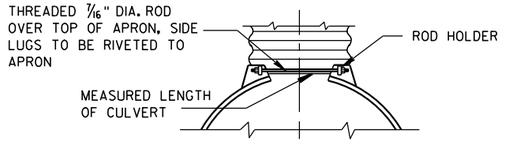


ALTERNATE FOR TYPE 1 CONNECTION

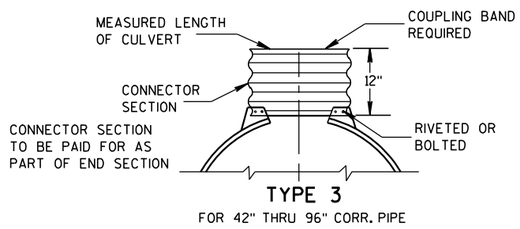
END SECTION CONNECTOR STRAP



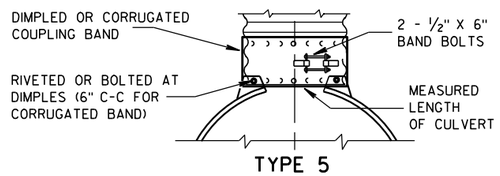
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

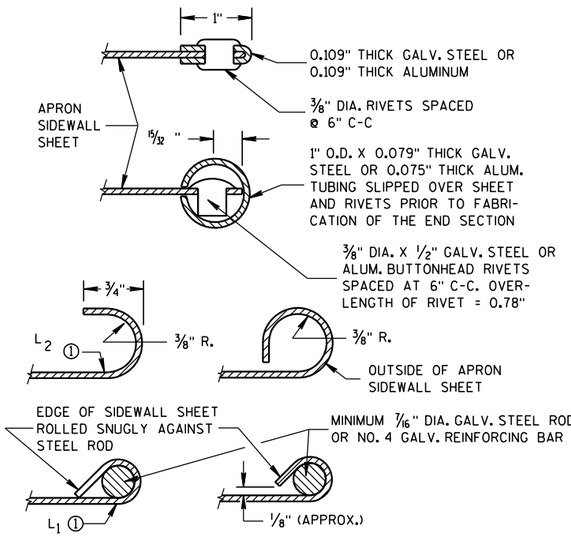
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

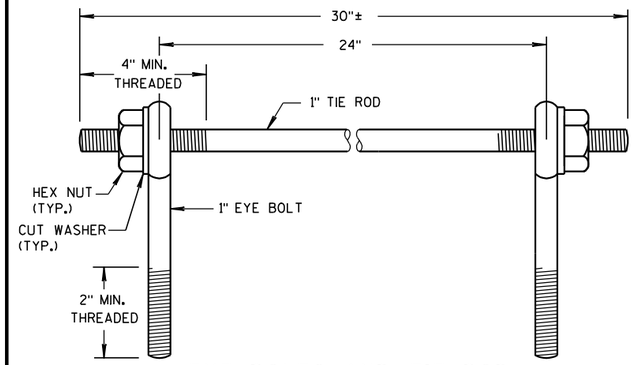
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

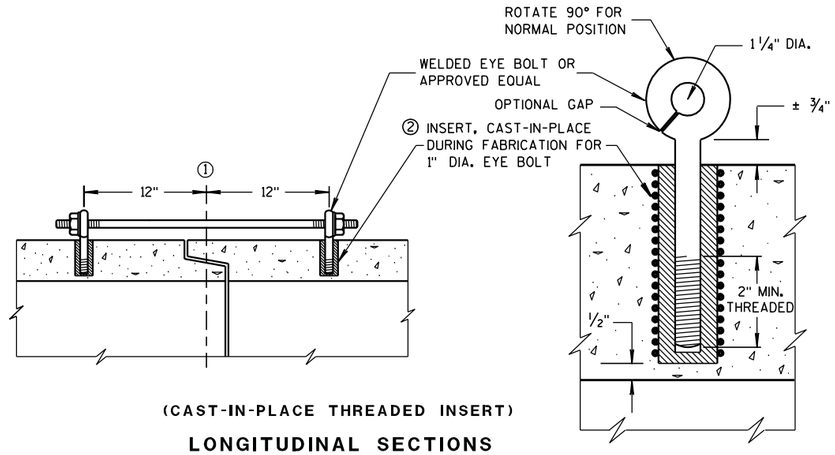
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

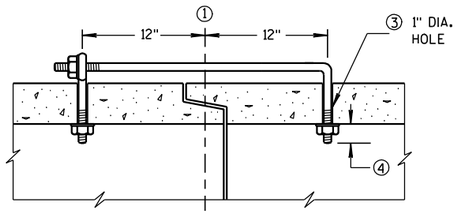
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

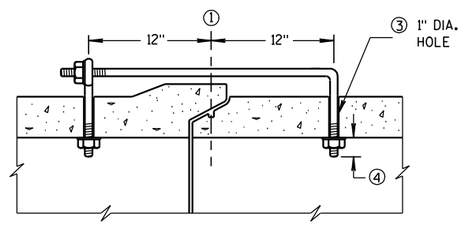
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

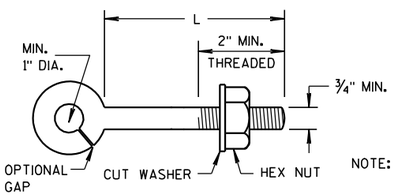


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

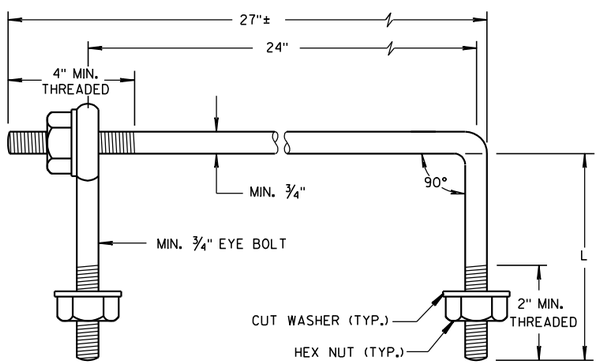
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

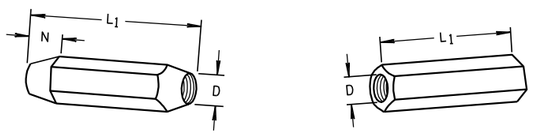
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

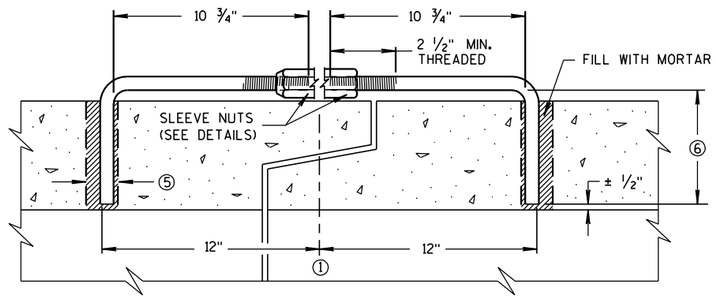
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

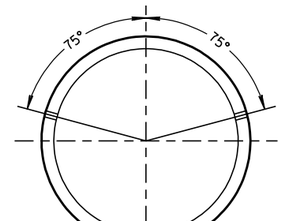
SLEEVE NUTS



LONGITUDINAL SECTION

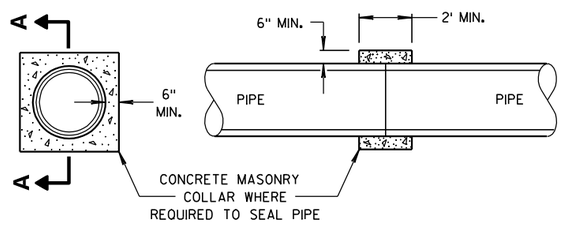
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
111
FHWA

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S.D.D. 8 F 4-7

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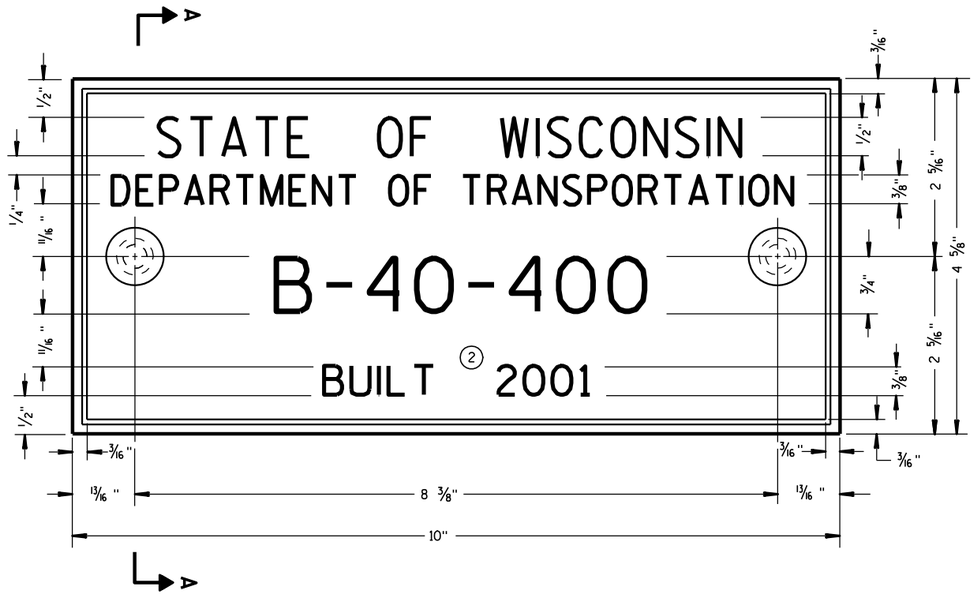
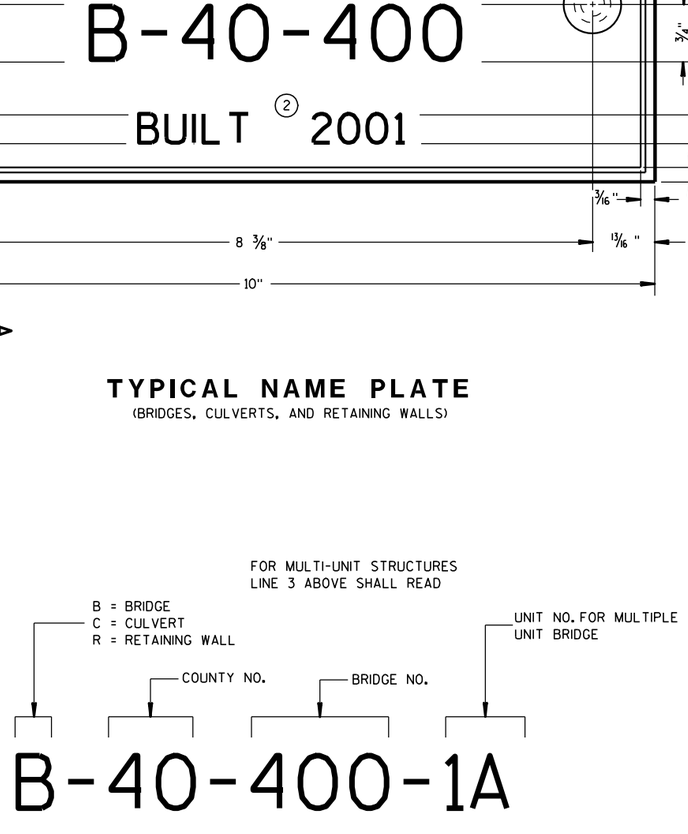
S.D.D. 8 F 4-7



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

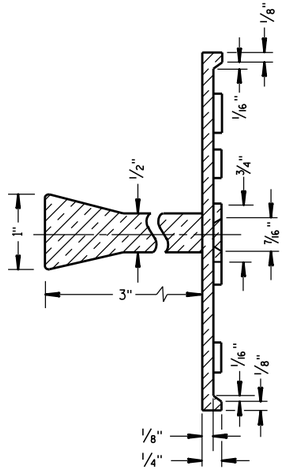
GENERAL NOTES

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

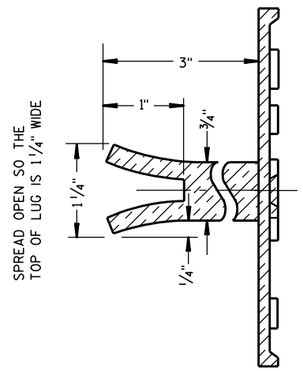
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

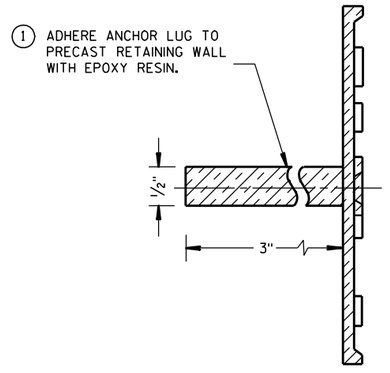
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

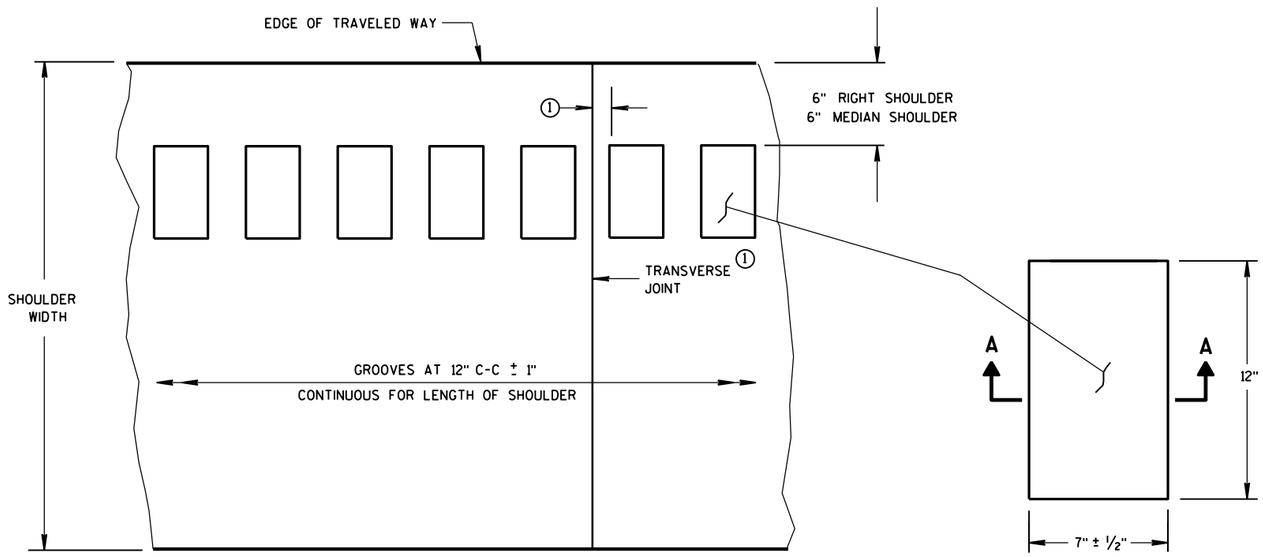
APPROVED

3/26/10 DATE — /S/ Scot Beck — CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 12 A 3-10



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

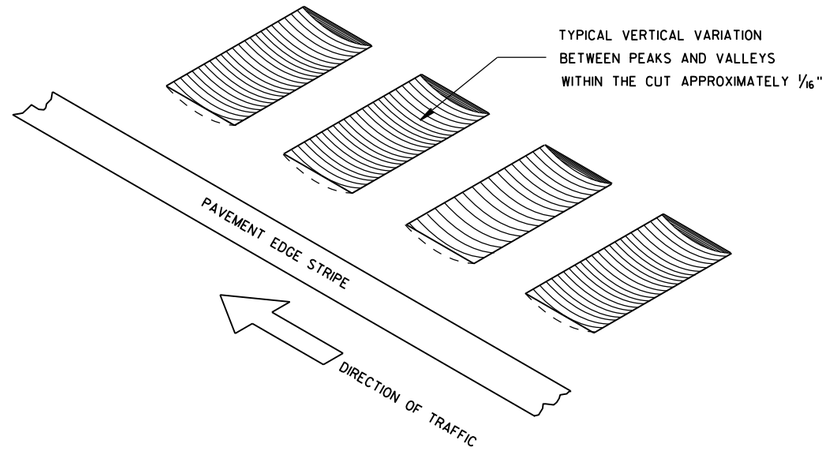
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



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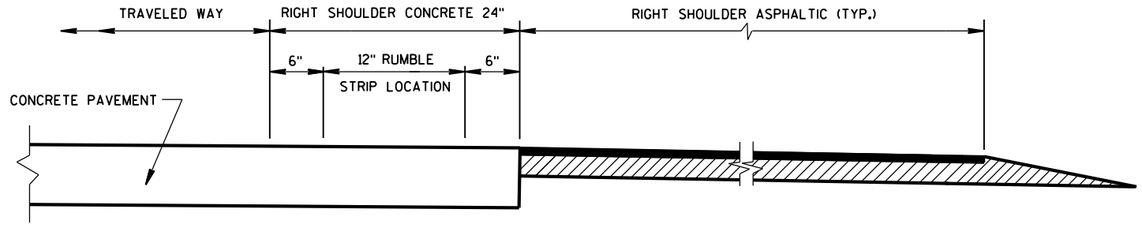
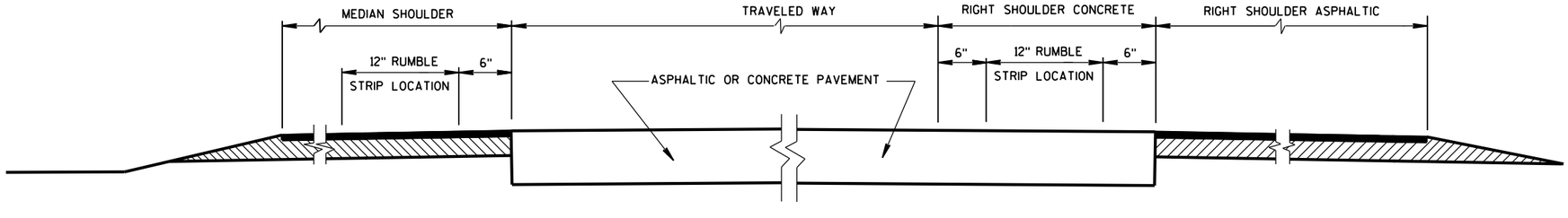


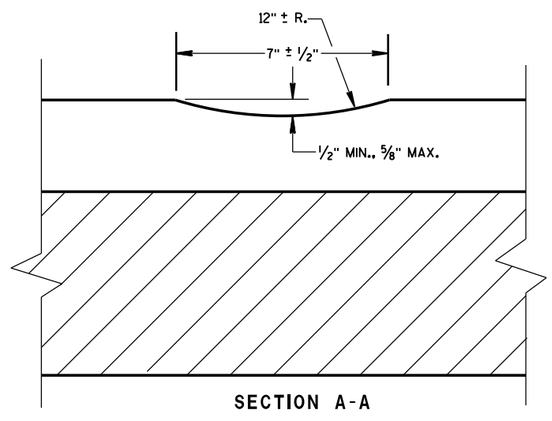
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 13 A 5-5a

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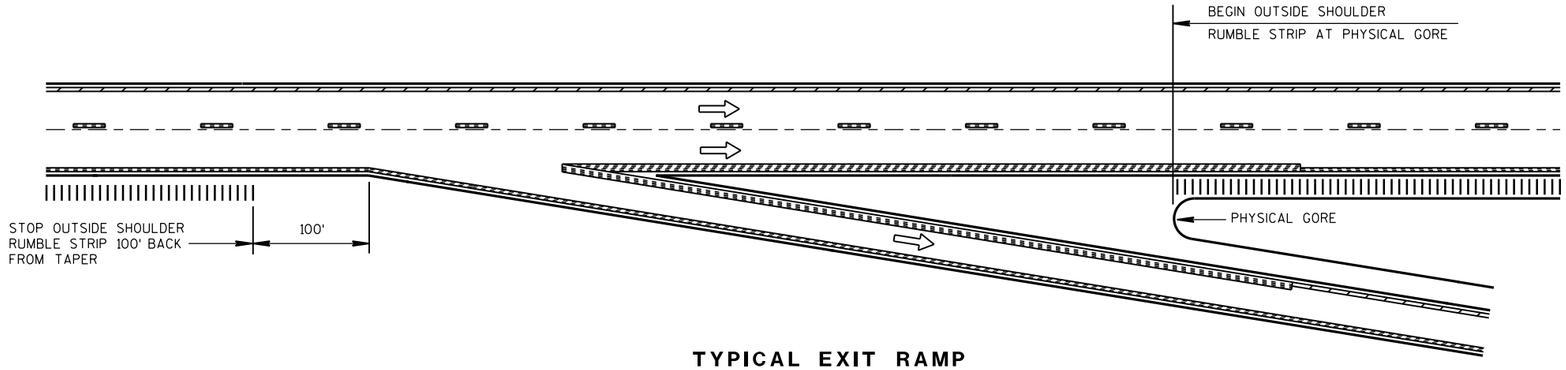
S.D.D. 13 A 5-5a



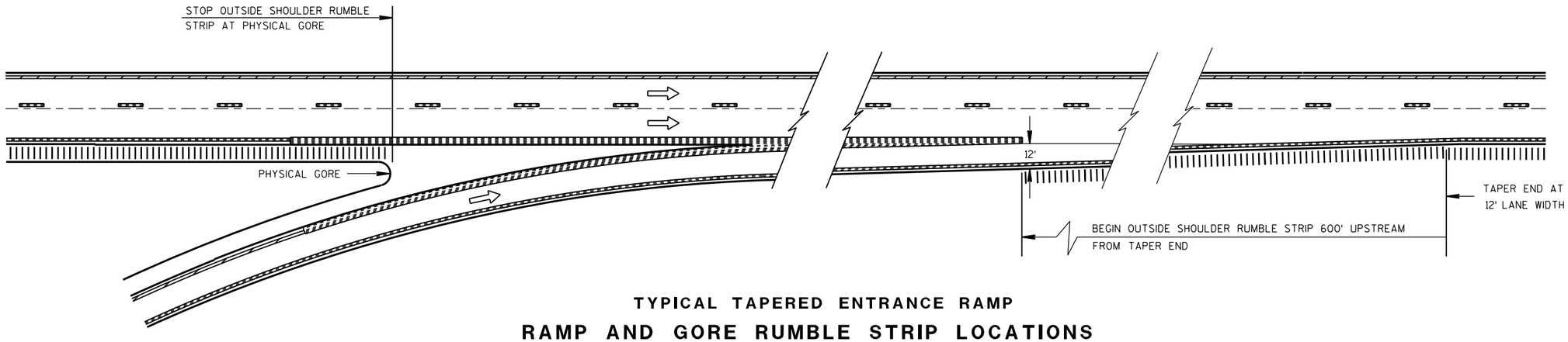
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

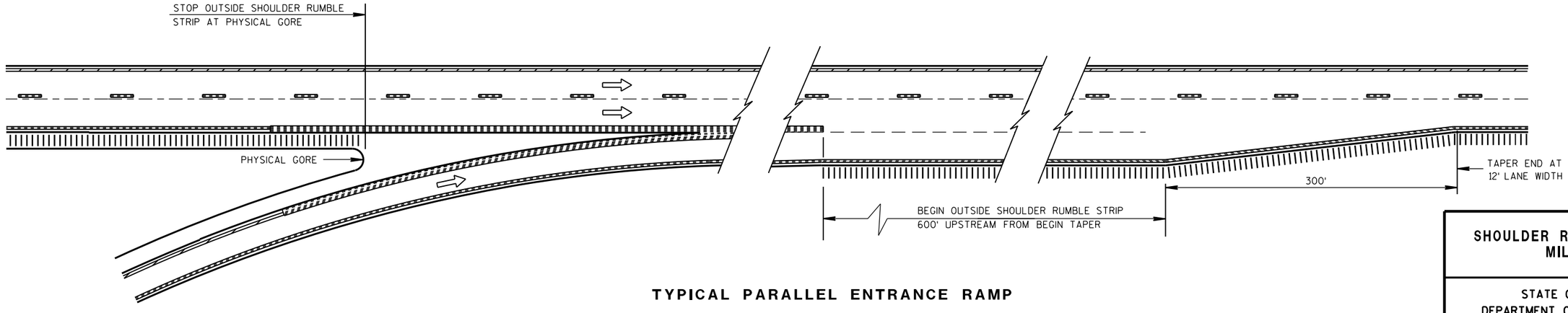
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

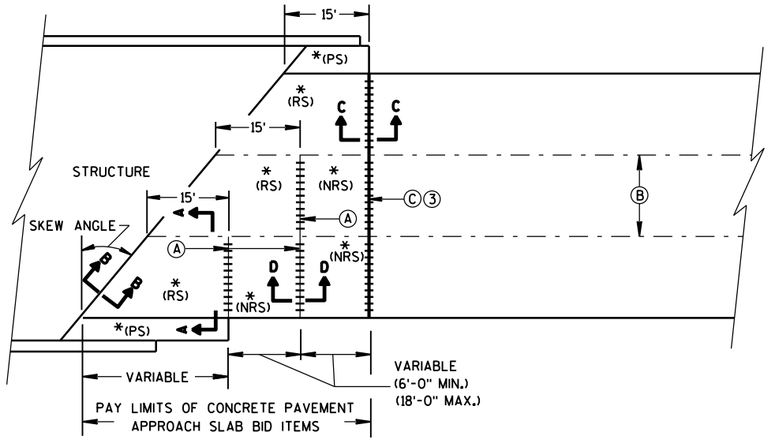
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

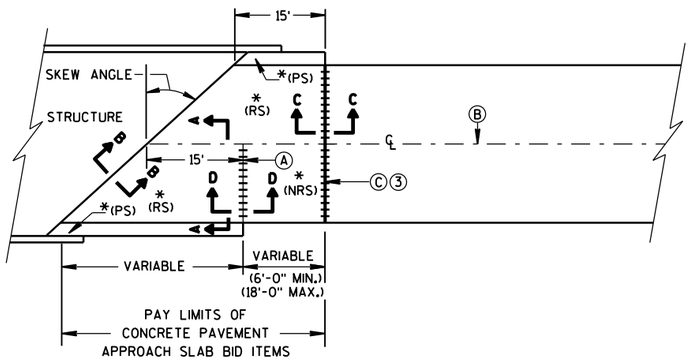
APPROVED
12/17/2012 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS ENGINEER
FHWA

6

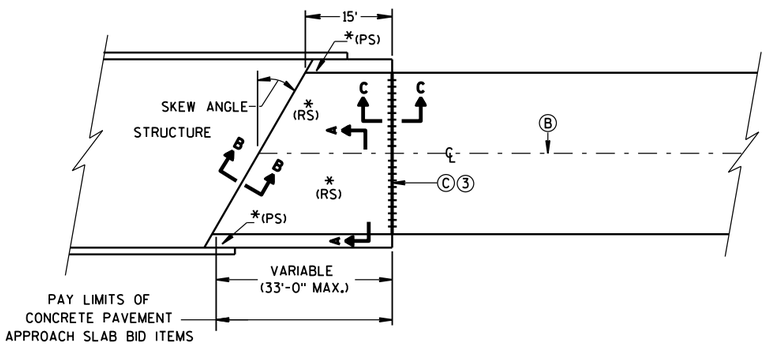
S.D.D. 13 A 5-5b



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

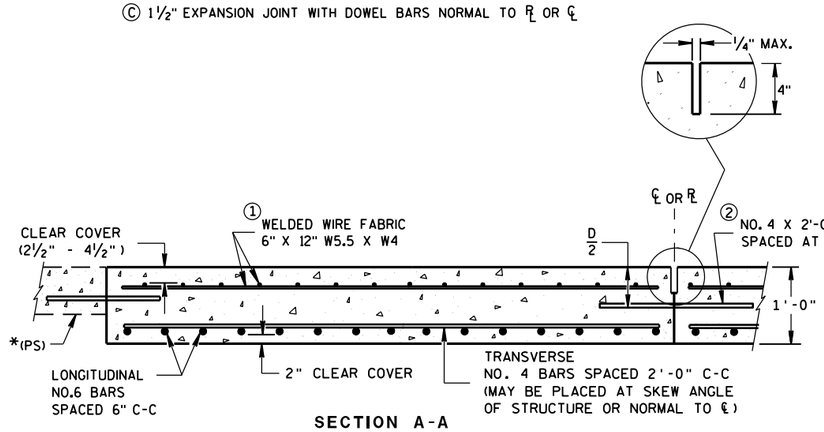
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

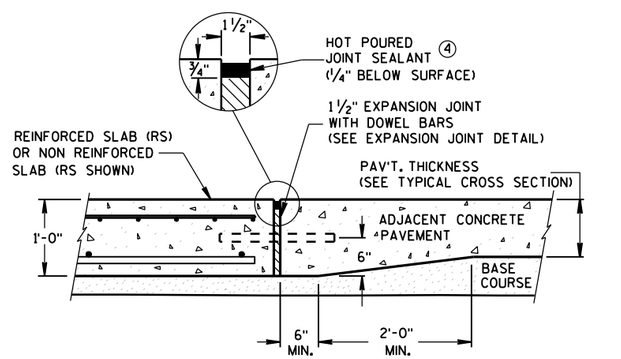
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

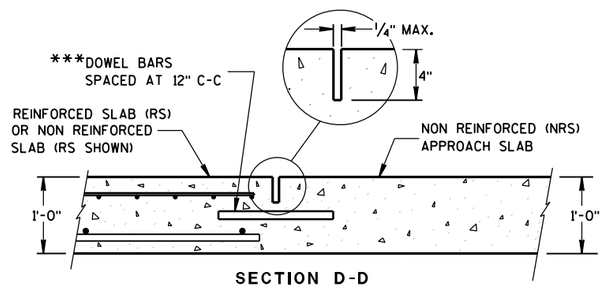
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



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.

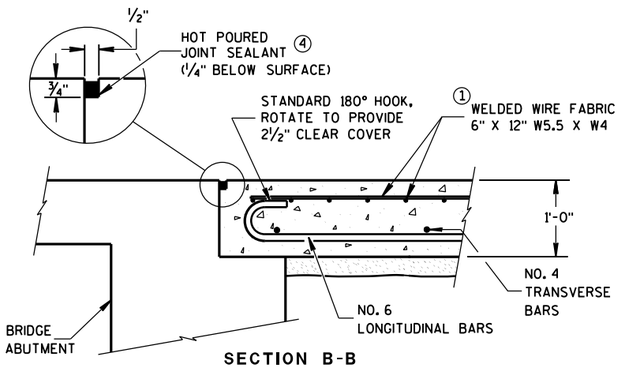
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

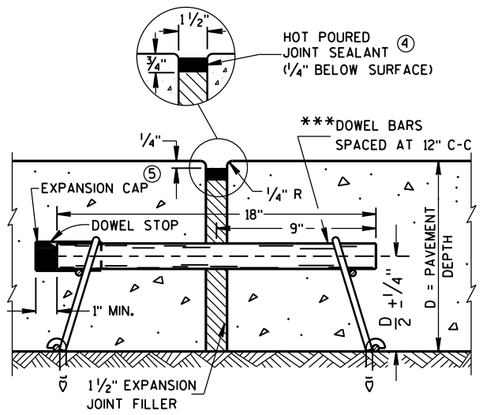
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

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

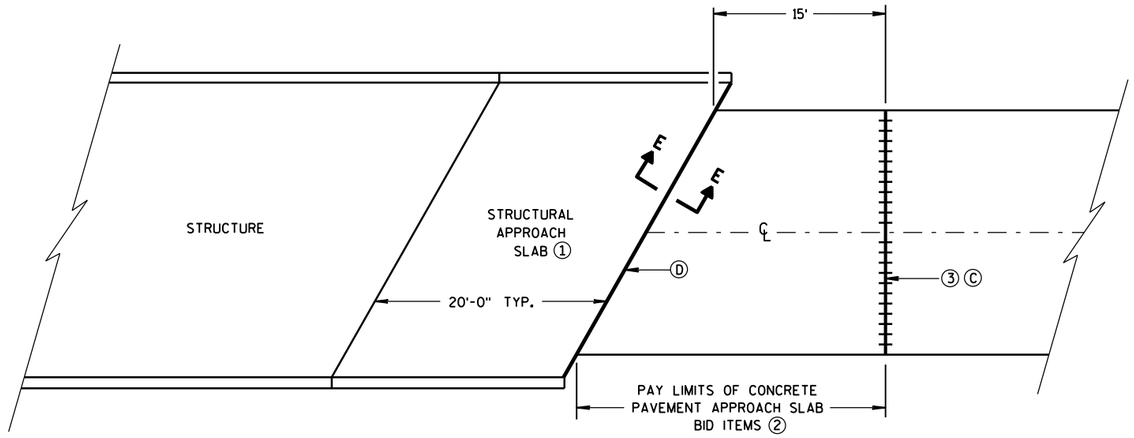
APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

6

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

6

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



GENERAL NOTES

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

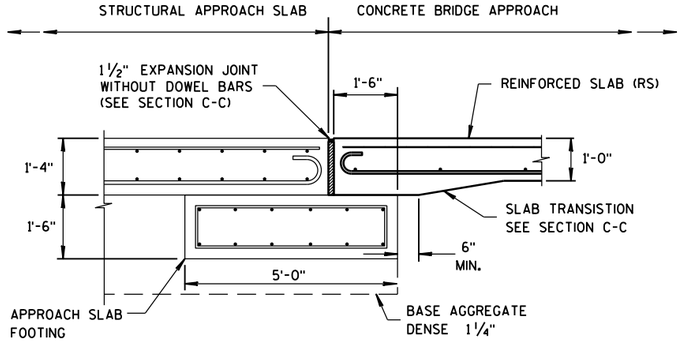
① SEE BRIDGE PLAN.

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

FHWA

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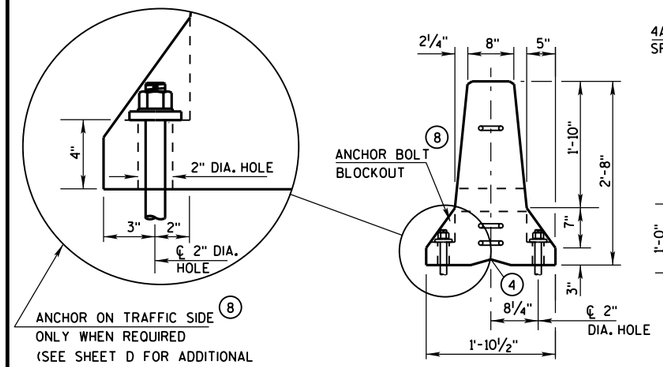
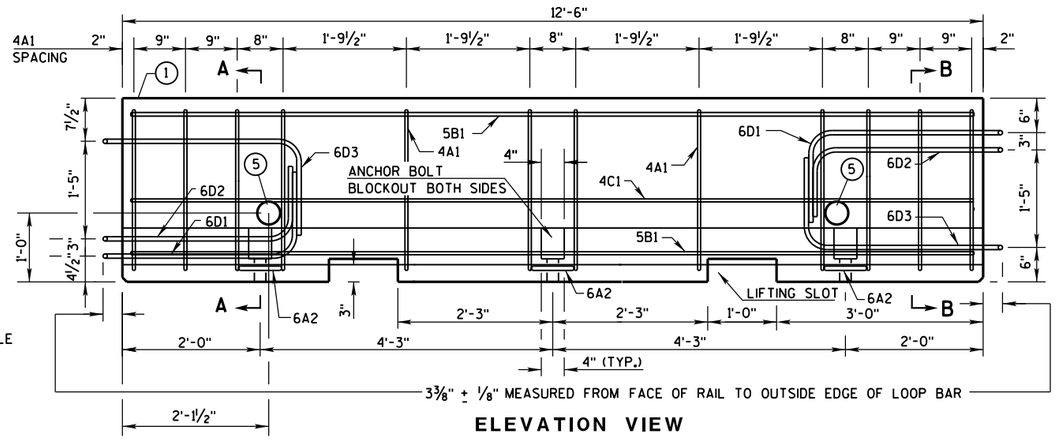
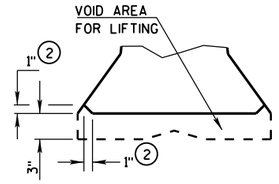
S.D.D. 13 B 2-8b



END VIEW



ELEVATION VIEW



DETAIL "B"
LIFTING SLOT DETAIL

GENERAL NOTES

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

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.

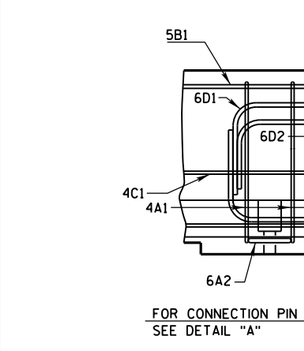
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

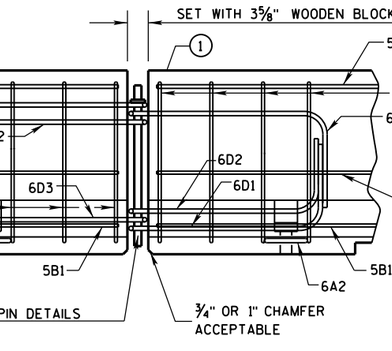
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED 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 ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.



SECTION A-A
(STIRRUP PLACEMENT)

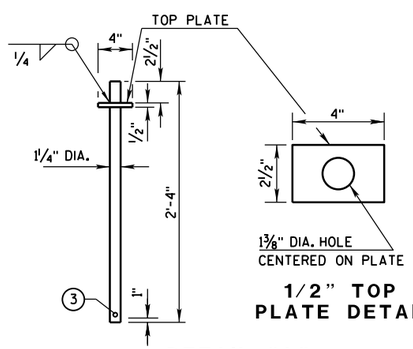


SECTION B-B
(STIRRUP PLACEMENT)

PLAN VIEW

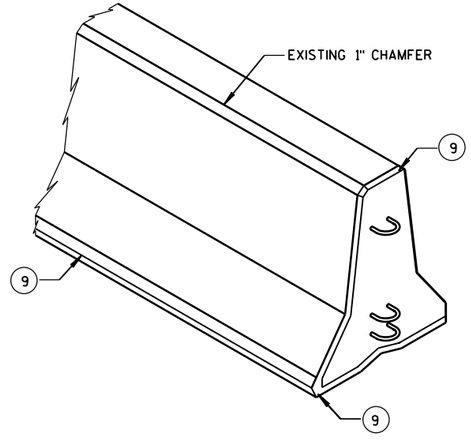
DETAILS OF BARRIER SECTION

DETAILS OF BARRIER CONNECTION



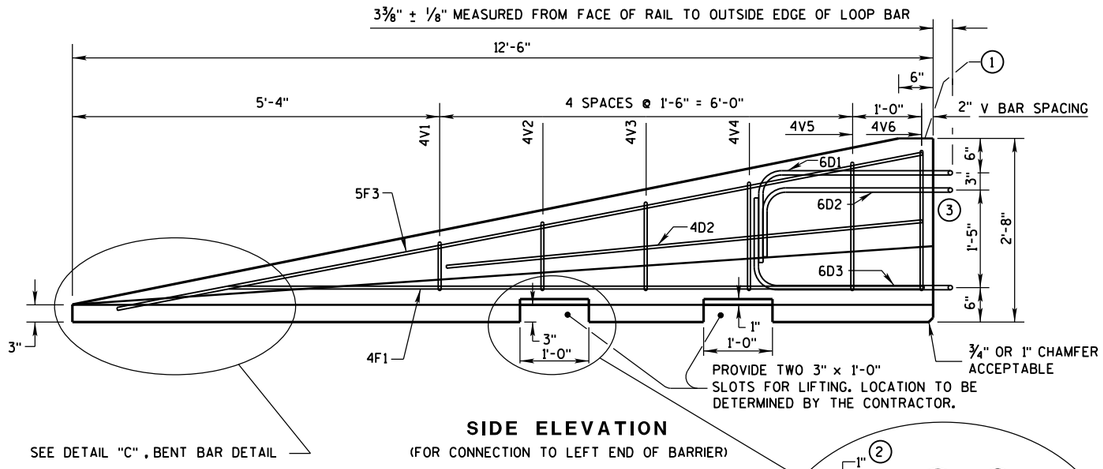
1/2" TOP
PLATE DETAIL

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

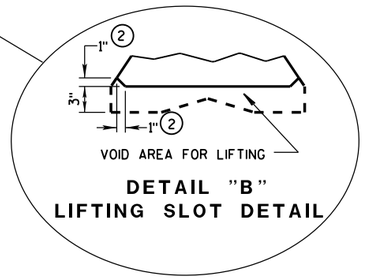


CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

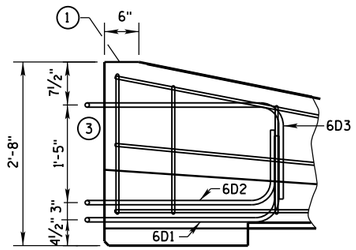
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



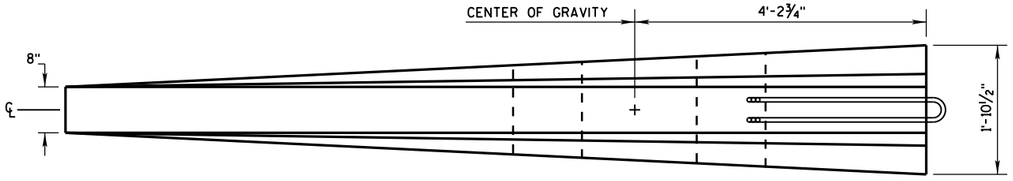
DETAIL "B"
LIFTING SLOT DETAIL



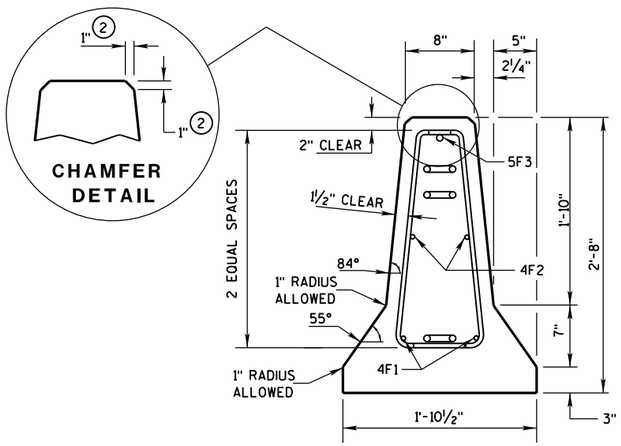
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

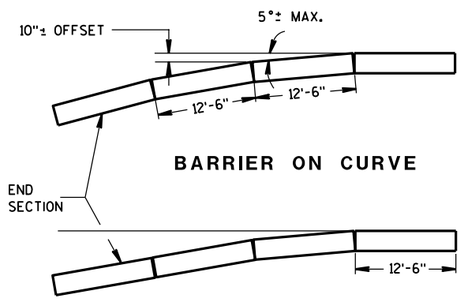
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



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 TRANSPOI

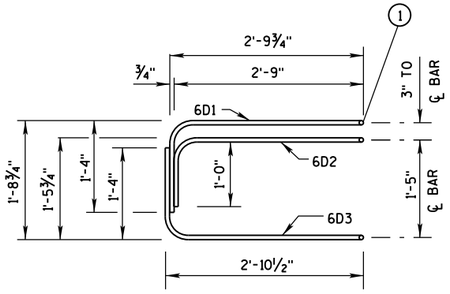
6

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

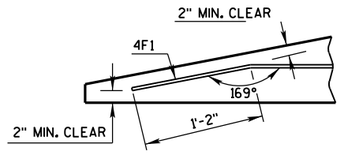
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

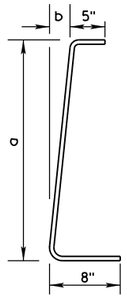
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

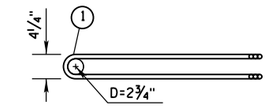
GENERAL NOTES

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

BARRIER SECTION BILL OF MATERIALS

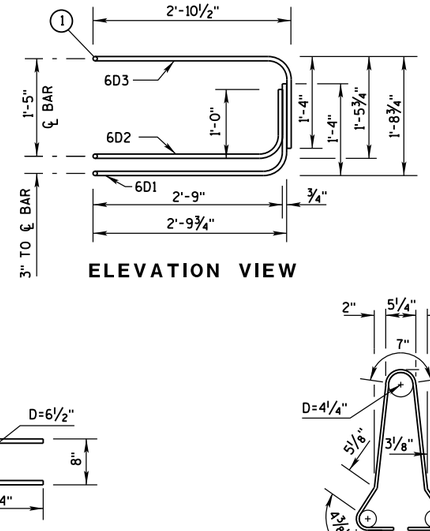
(PER 12'-6" BARRIER SECTION)

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"

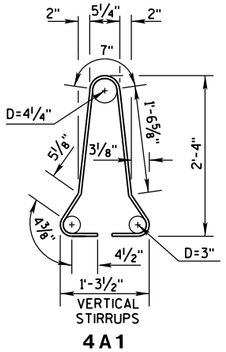


PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)

6A2



ELEVATION VIEW



4A1

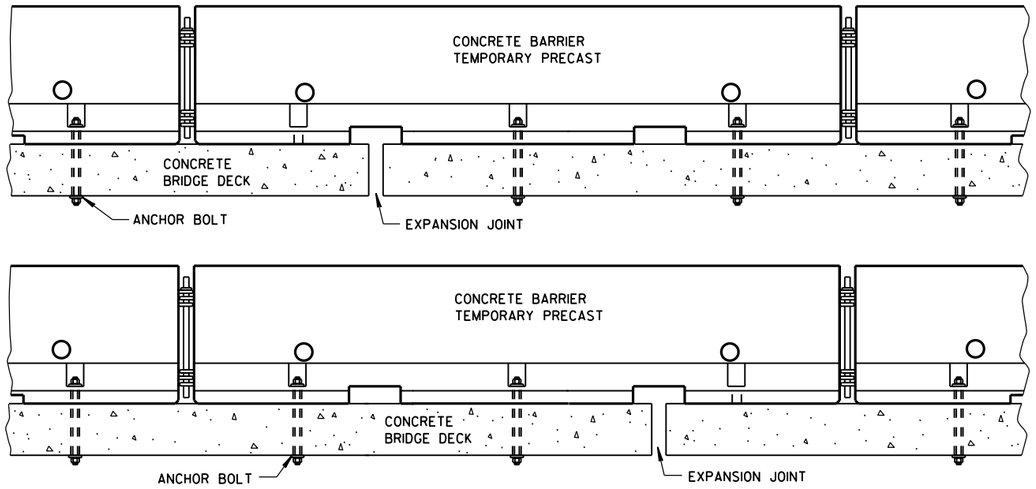
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

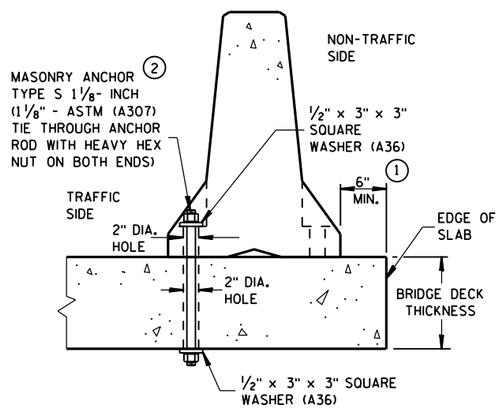
6

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



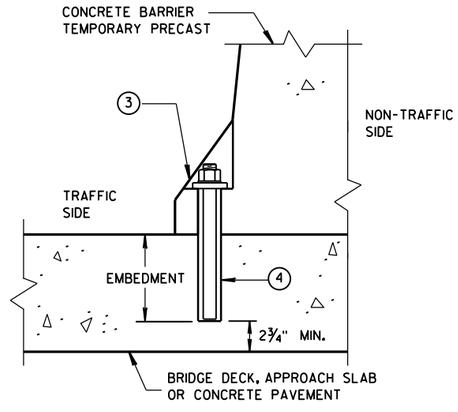
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT ②

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

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

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

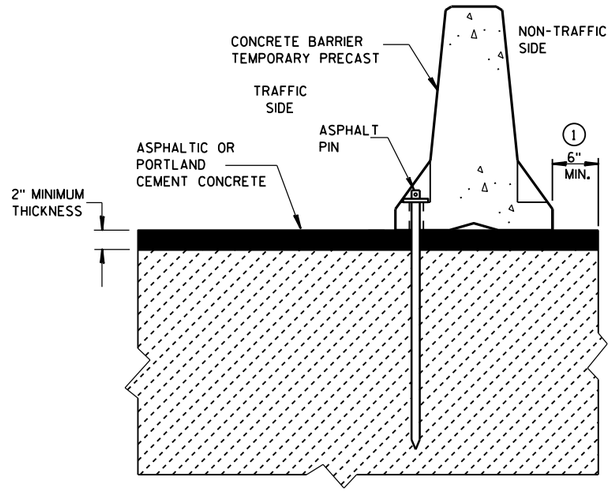
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

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

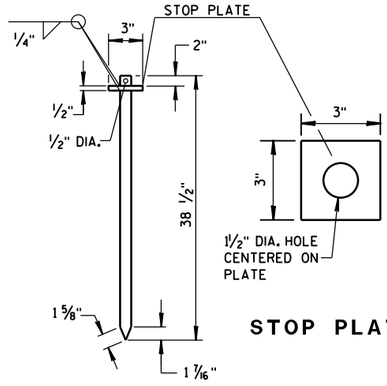
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ 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.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

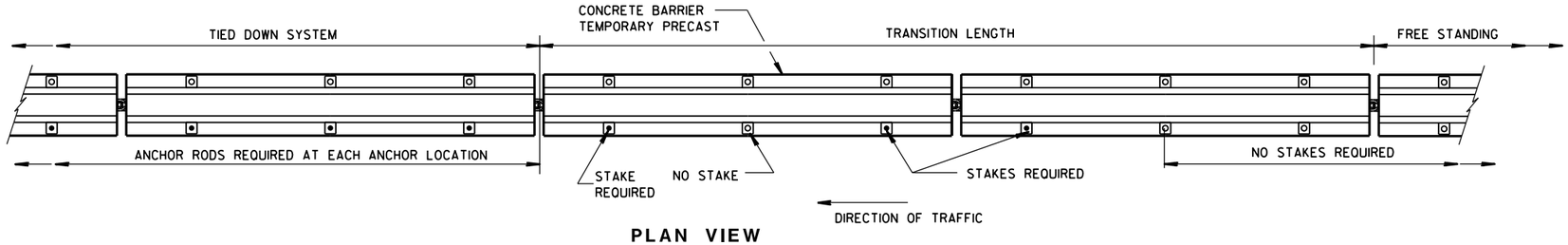
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT 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

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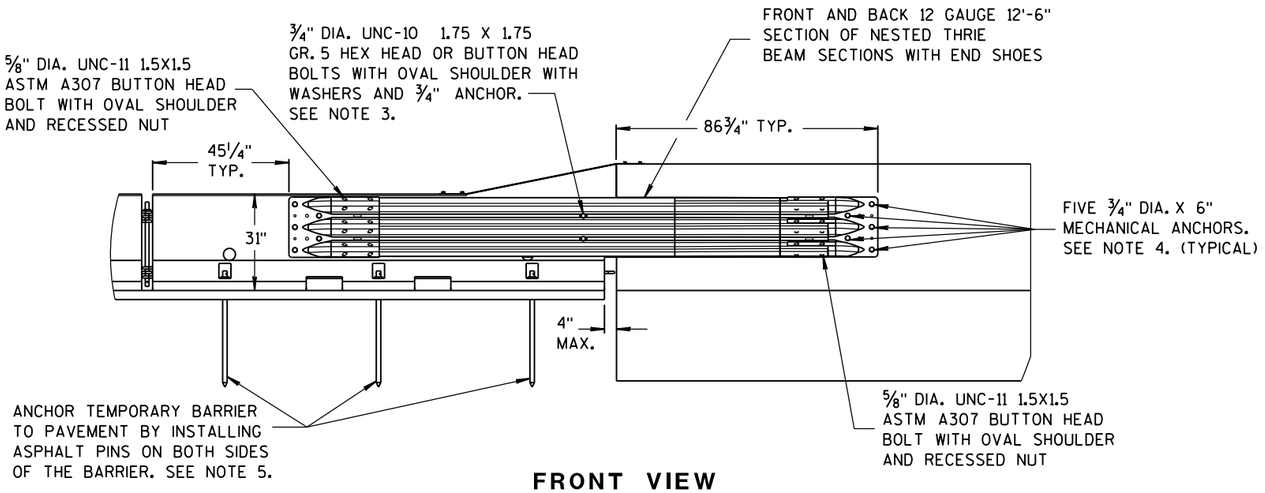
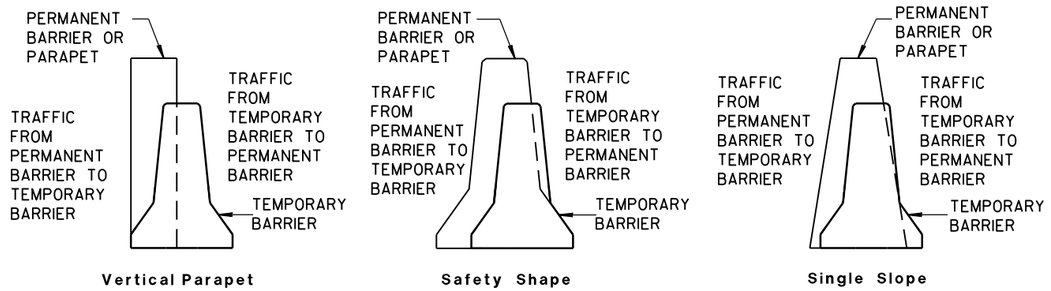
S.D.D. 14 B 7-14d



FRONT VIEW



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

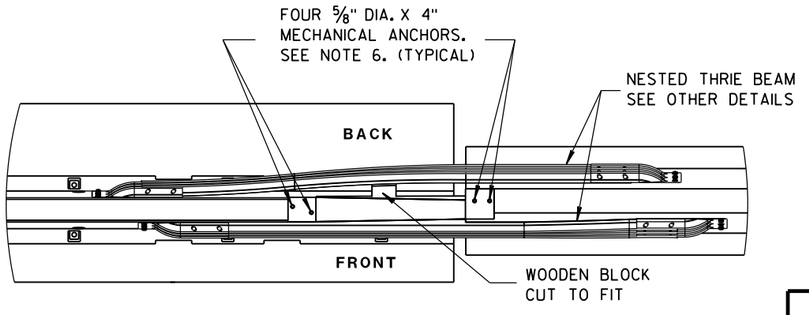
NOTES

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

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

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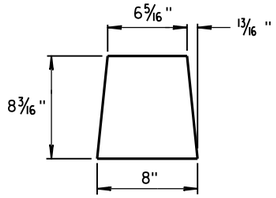
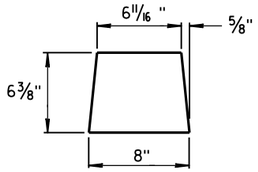
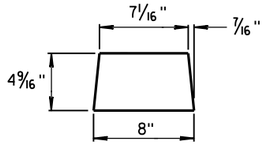
S.D.D. 14 B 7-14e



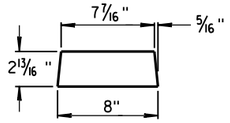
GUSSET 1



GUSSET 2

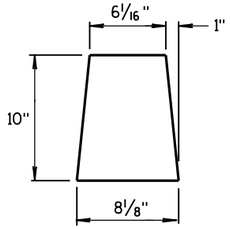


GUSSET 3

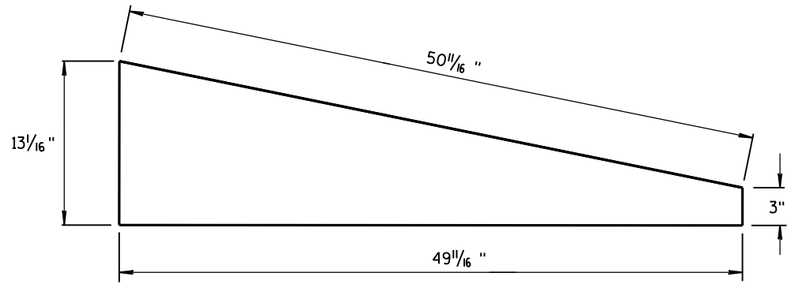


GUSSET 4

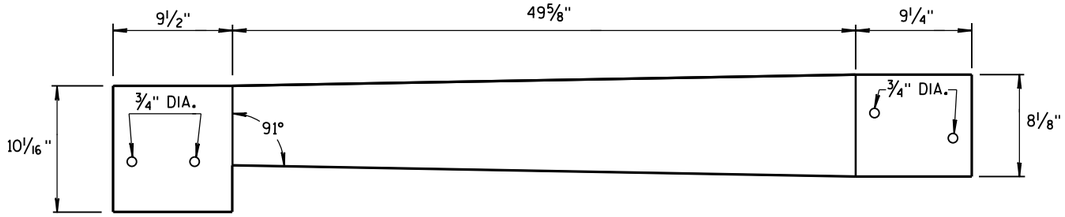
GUSSETS

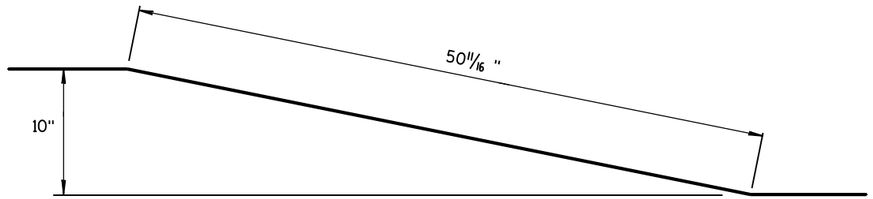


END PLATE



SIDE PLATE

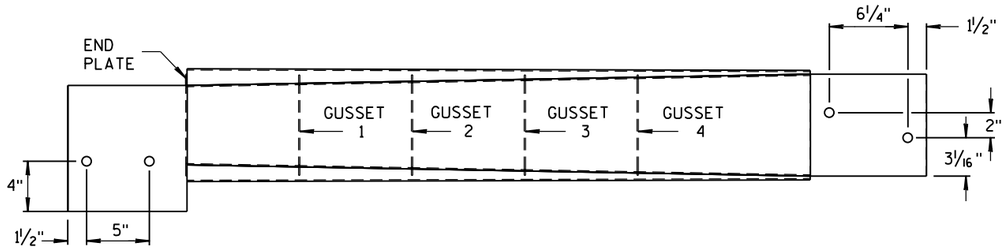


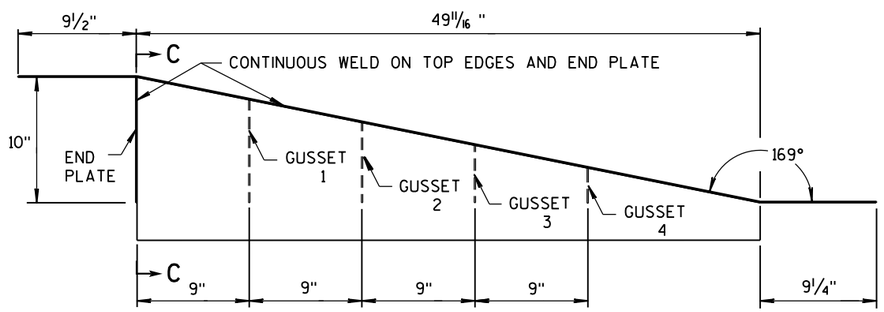


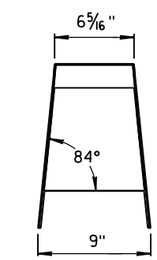
TOP PLATE

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

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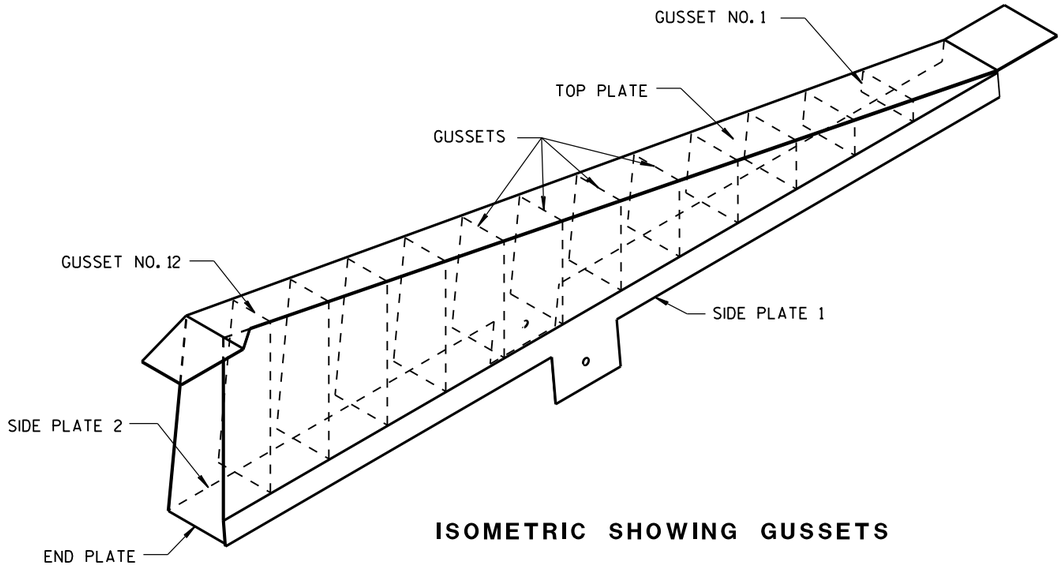
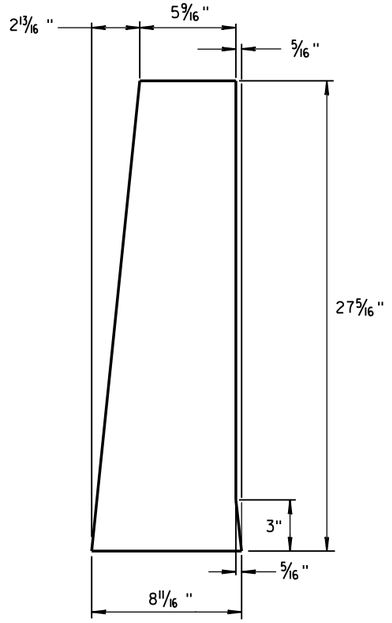
S.D.D. 14 B 7-14f

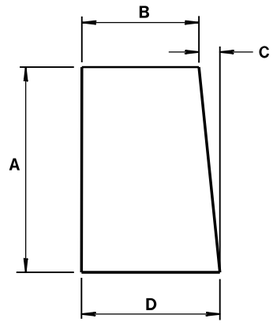


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



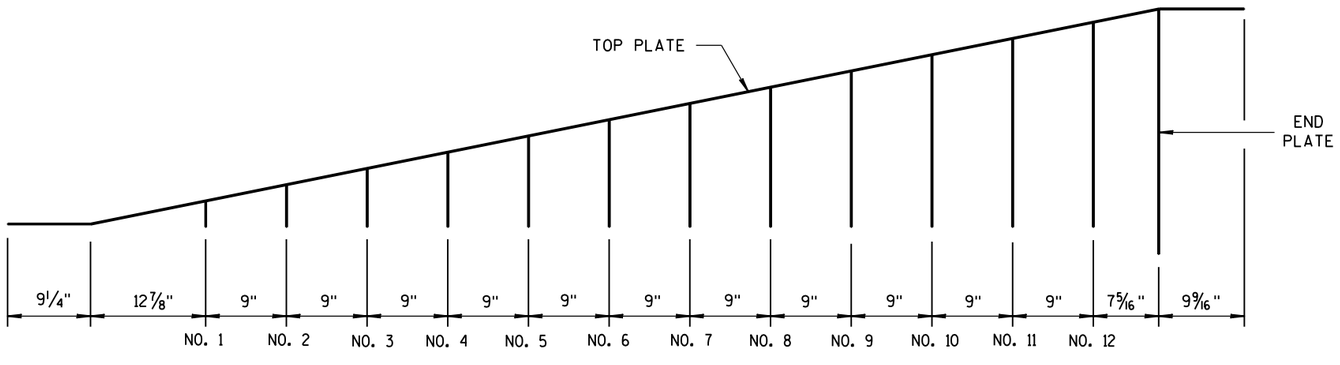
GUSSETS 1 - 12

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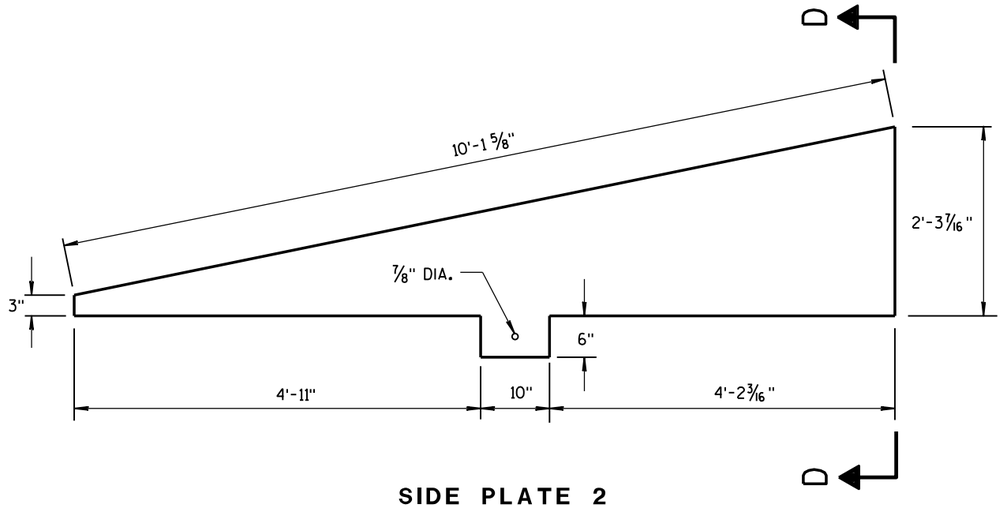
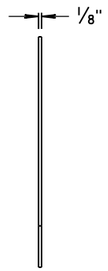
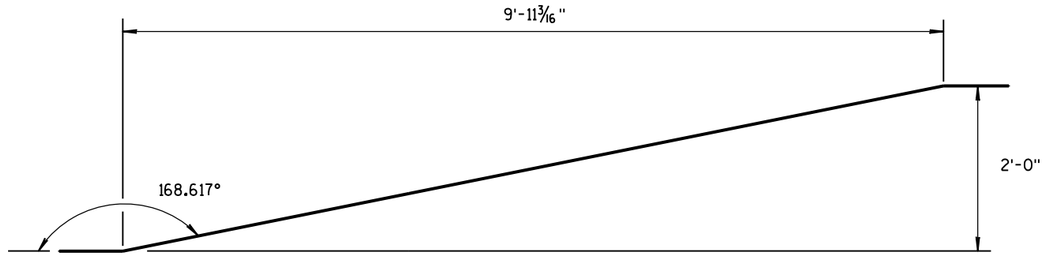
S.D.D. 14 B 7-14g



SIDE PLATE 2

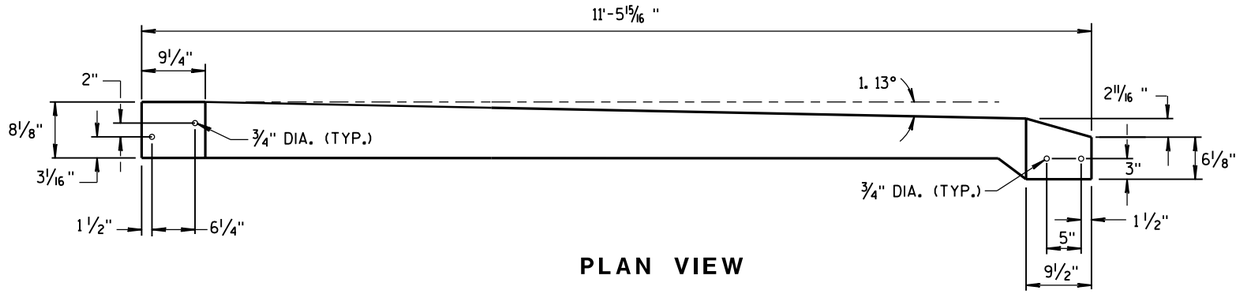


END VIEW



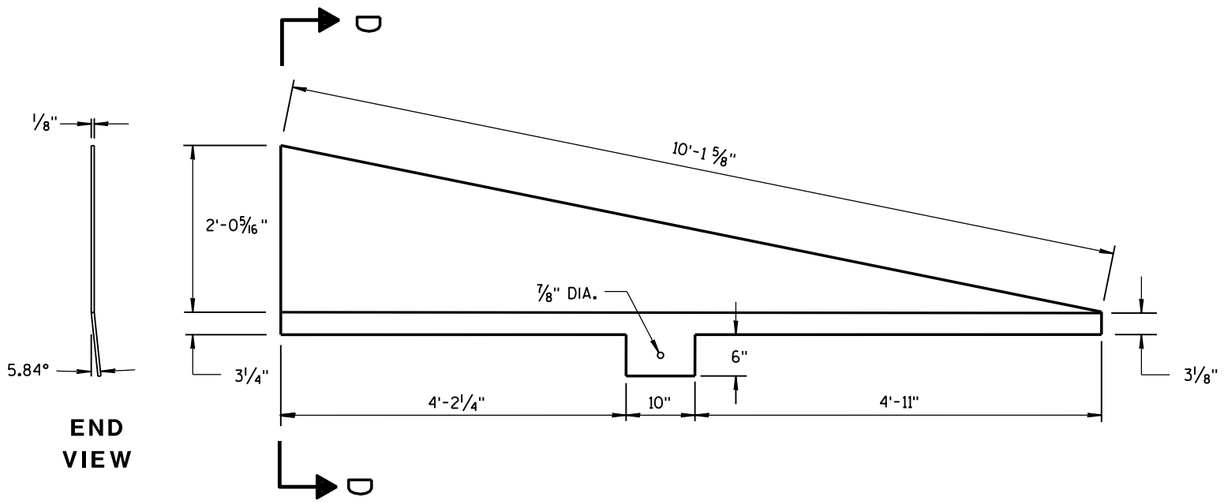
SIDE VIEW

TOP PLATE



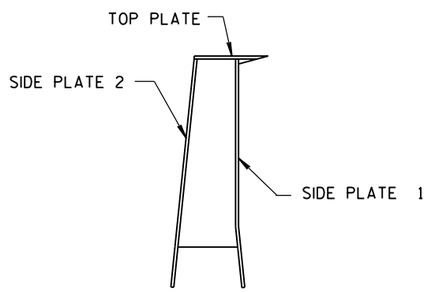
PLAN VIEW

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 2014 — DATE
/S/ Jerry H. Zoaa — ROADWAY STANDARD ENGINEER
FHWA

6

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

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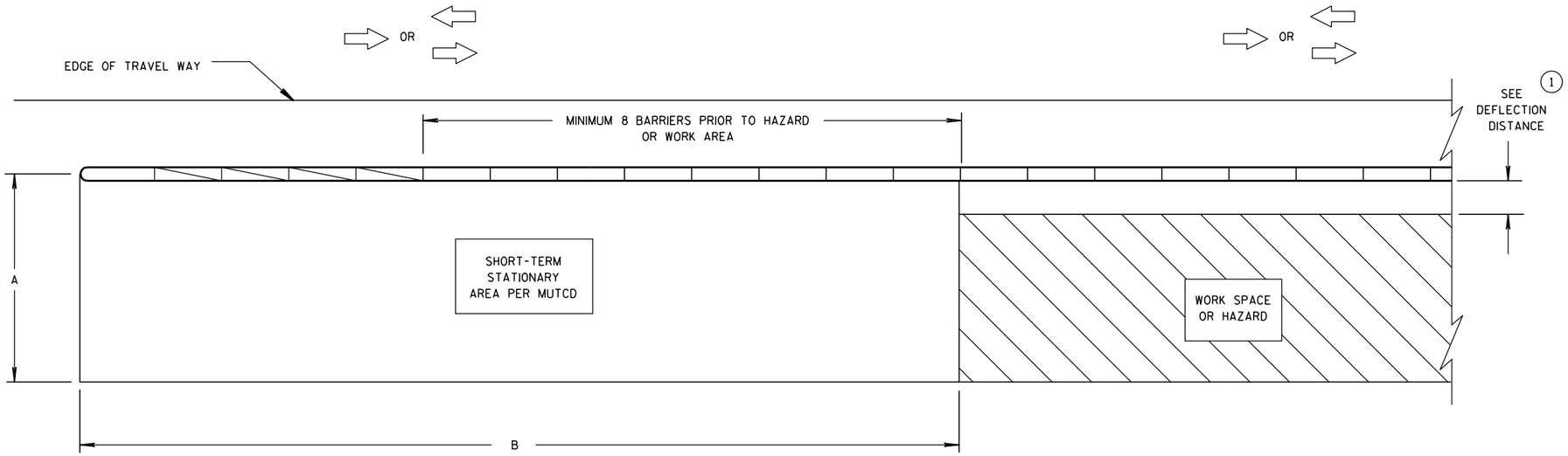
S.D.D. 14 B 7-14h



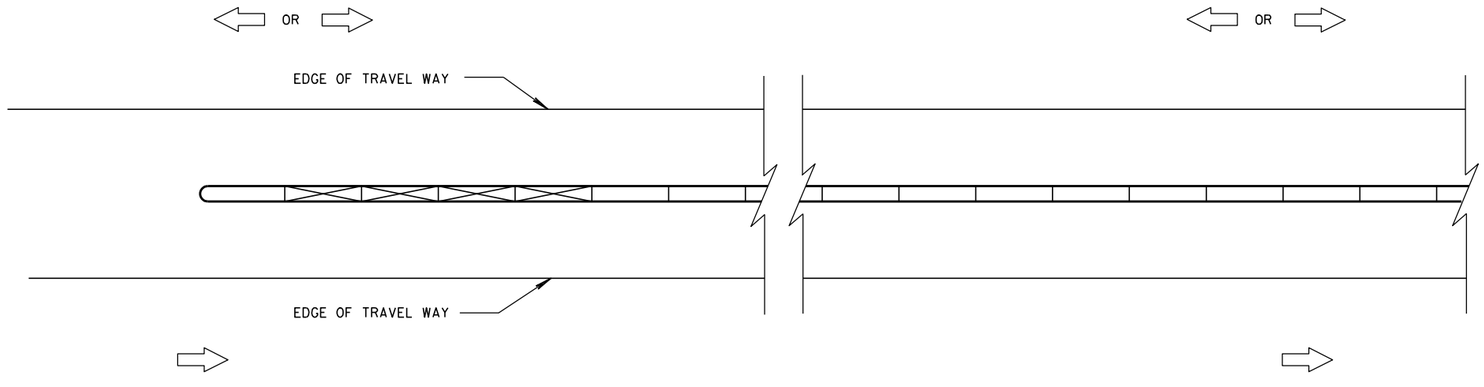
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

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

DIMENSION B TABLE (2)

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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

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

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

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

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

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

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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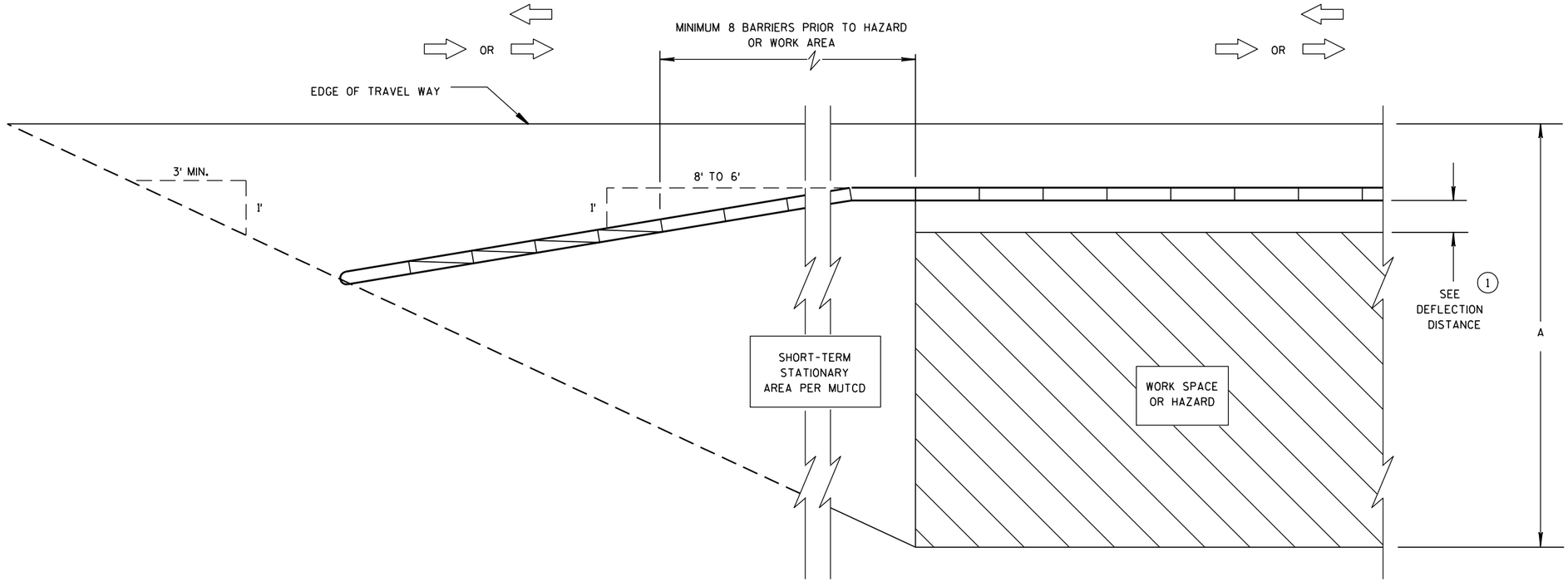
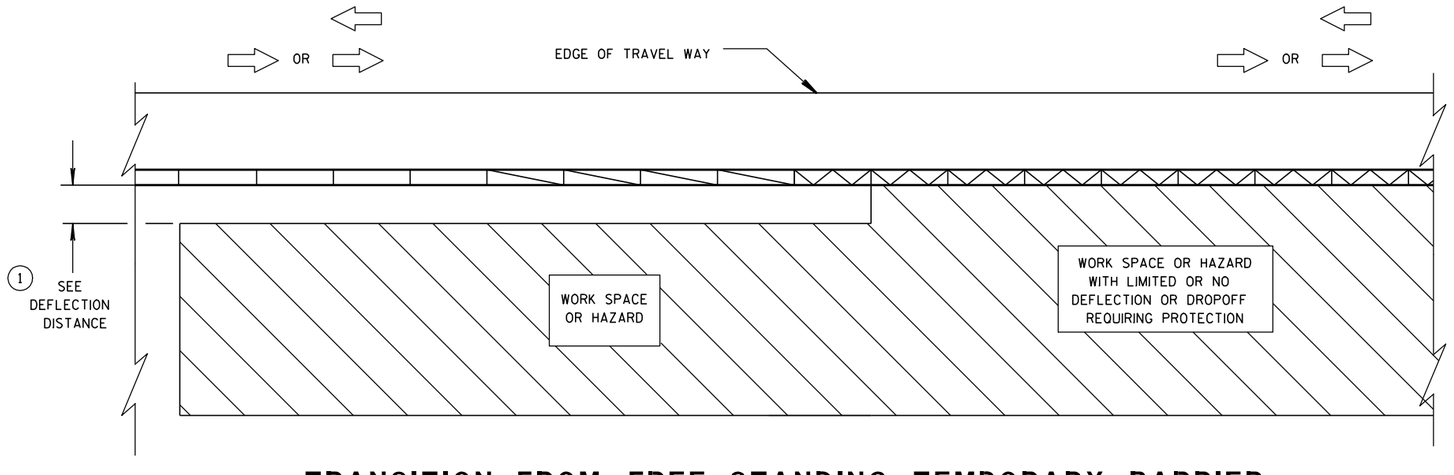
S.D.D. 14 B 8-1a



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



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

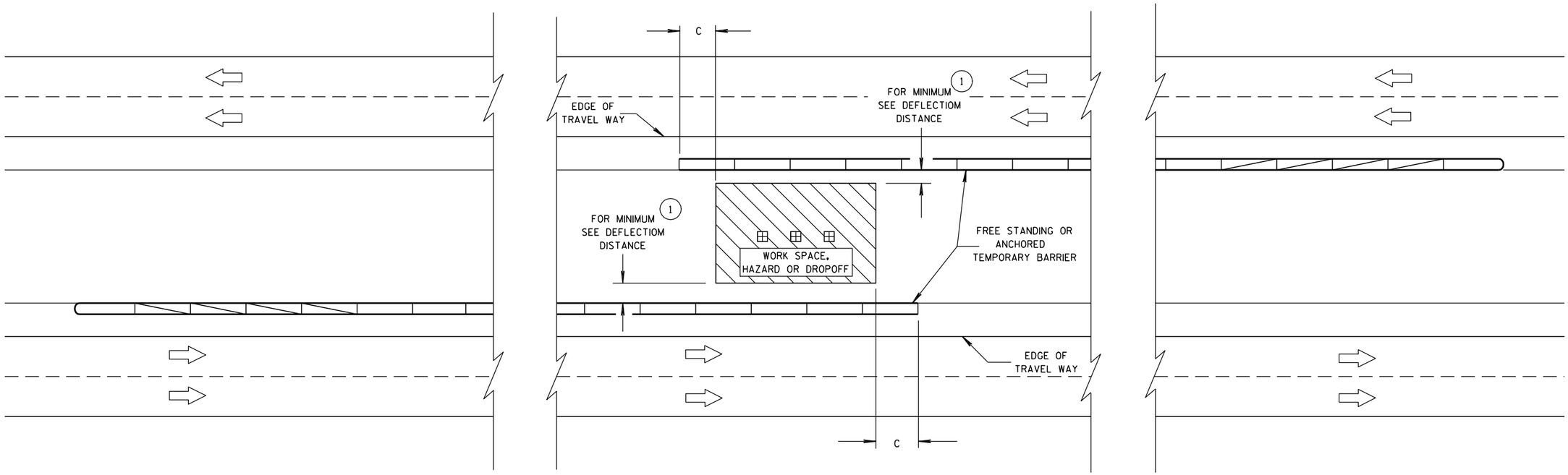
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

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



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

FHWA

6

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

GENERAL NOTES

(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.

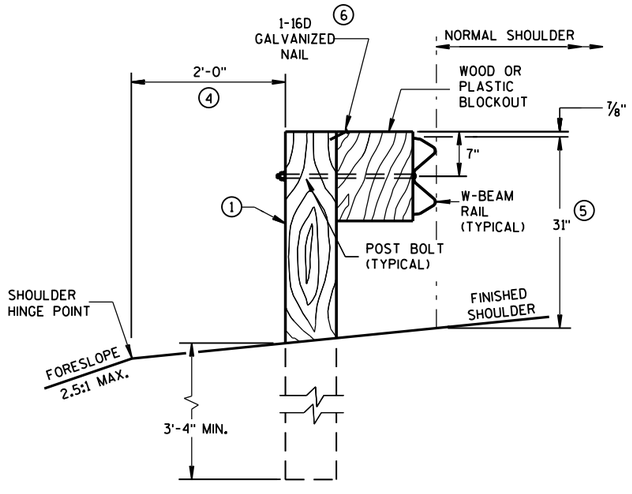
(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ 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).

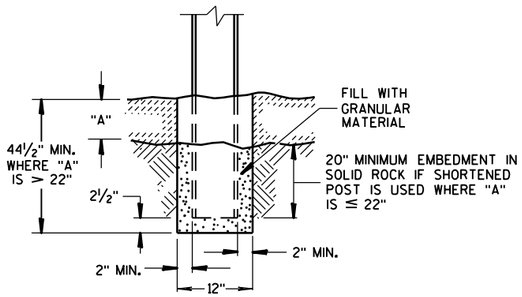
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

(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.



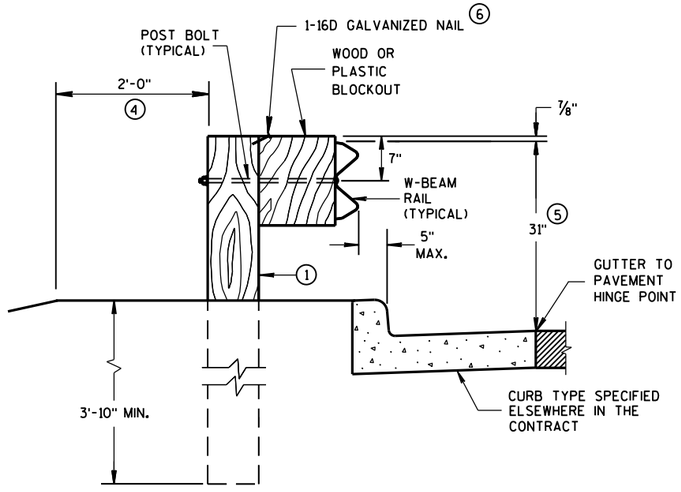
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



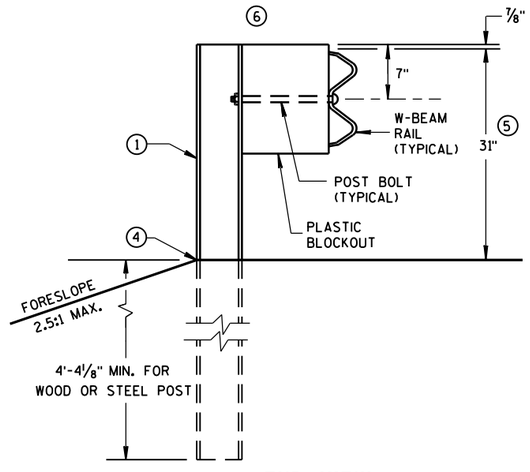
END VIEW

SETTING STEEL OR WOOD POST IN ROCK (3)



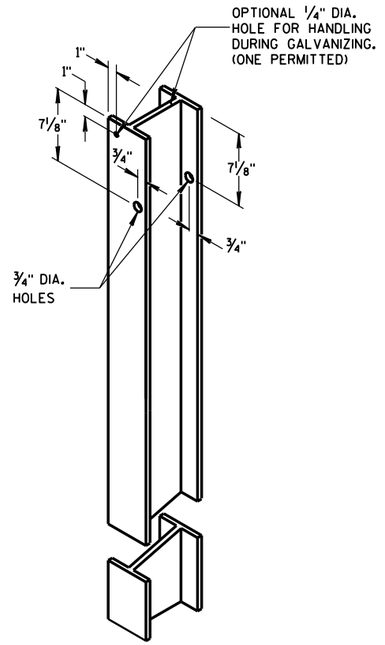
END VIEW

LOCATED ALONG A CURBED ROADWAY

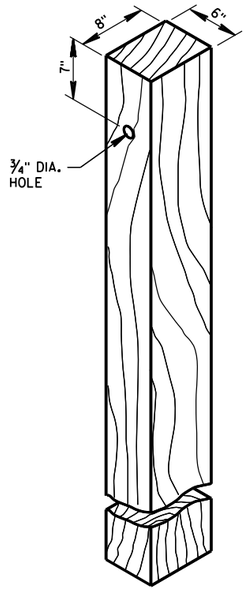


END VIEW

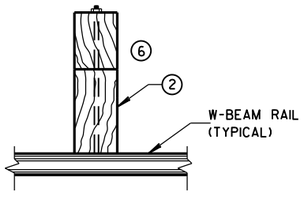
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



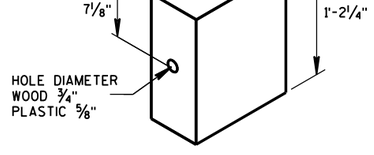
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



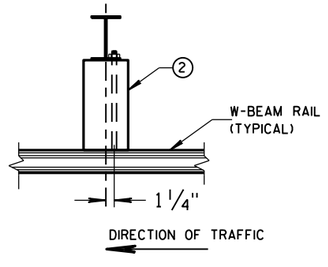
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
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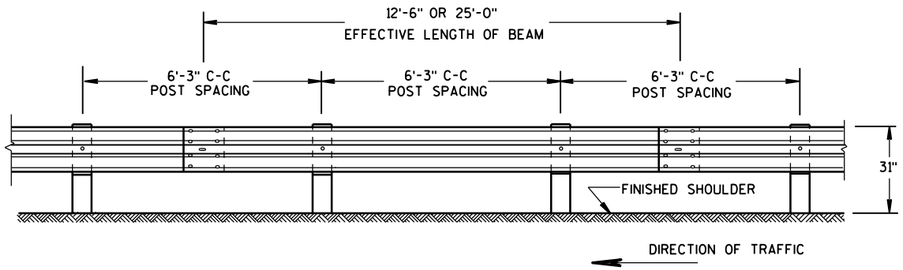
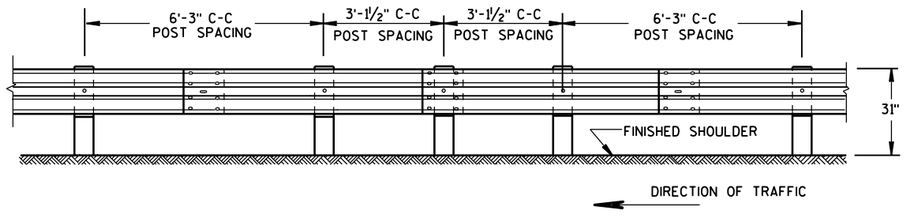


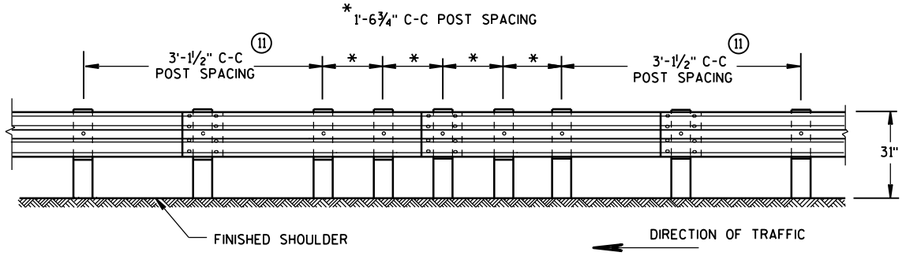
FRONT VIEW

POST SPACING STANDARD INSTALLATION



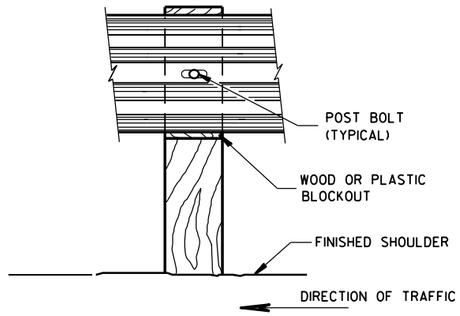
FRONT VIEW

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

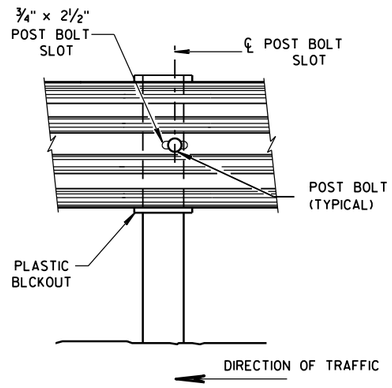


FRONT VIEW

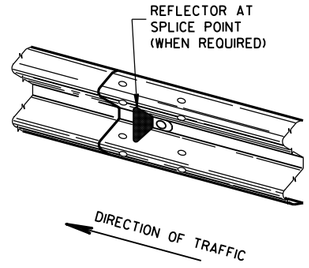
QUARTER POST SPACING (QS)

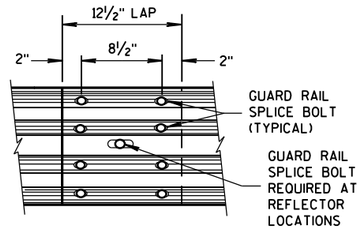


FRONT VIEW AT WOOD POST



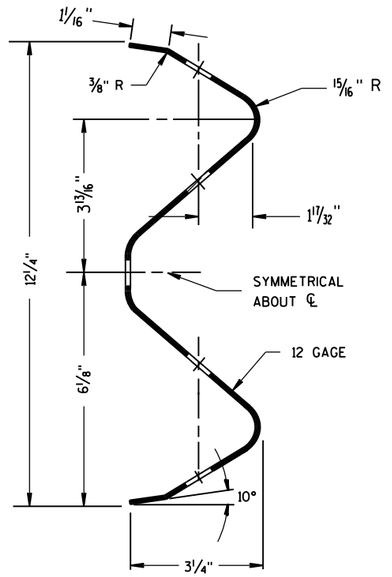
FRONT VIEW AT STEEL POST



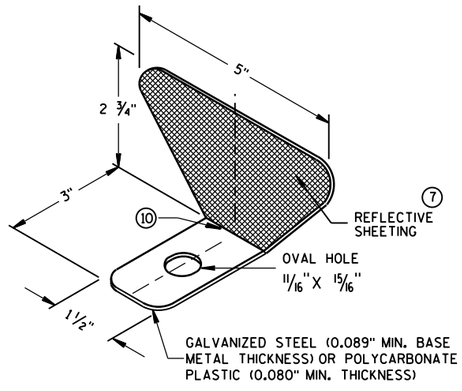


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

GENERAL NOTES

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

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 REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" 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.

REFLECTOR SPACING ⑧

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ⑩	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

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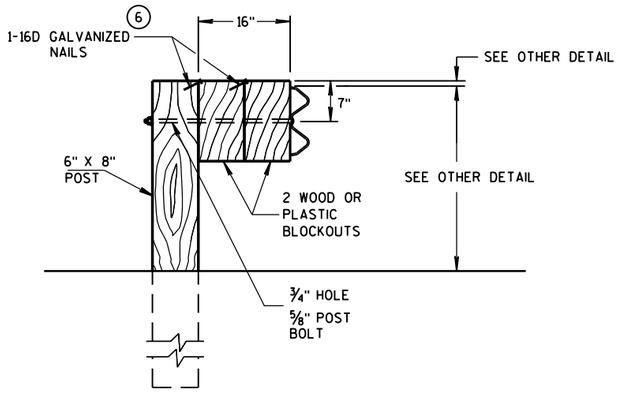
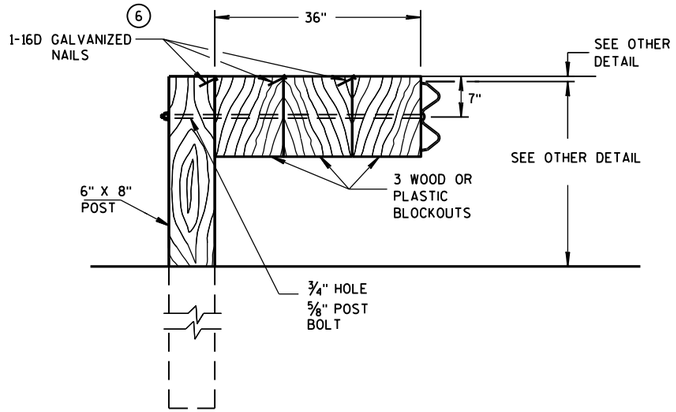


DETAIL FOR 16" BLOCKOUT DEPTH

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.

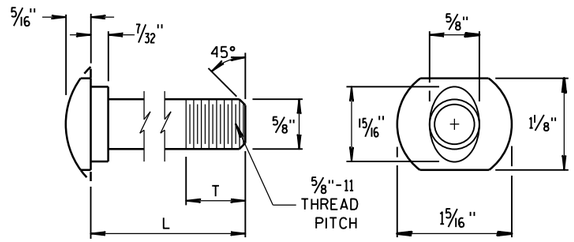


DETAIL FOR 36" BLOCKOUT DEPTH

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.

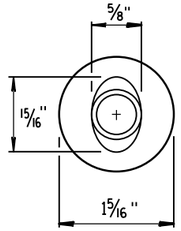
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

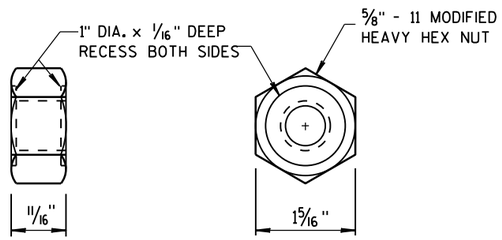


POST BOLT TABLE

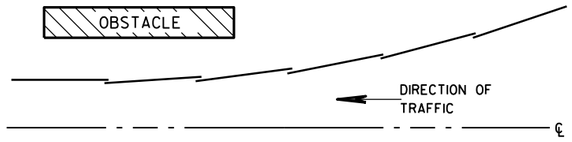
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

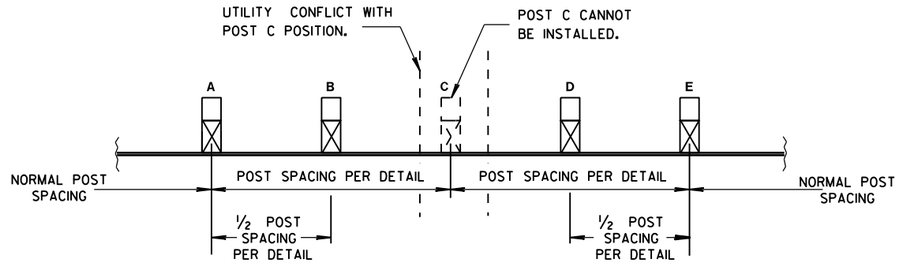


POST BOLT AND RECESS NUT

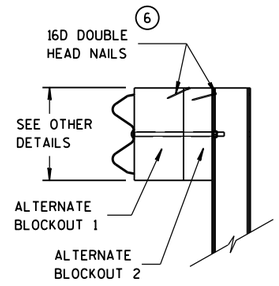


PLAN VIEW

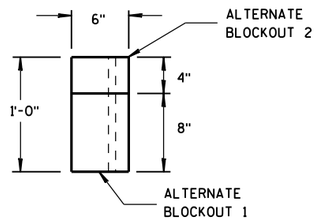
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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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 MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

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

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

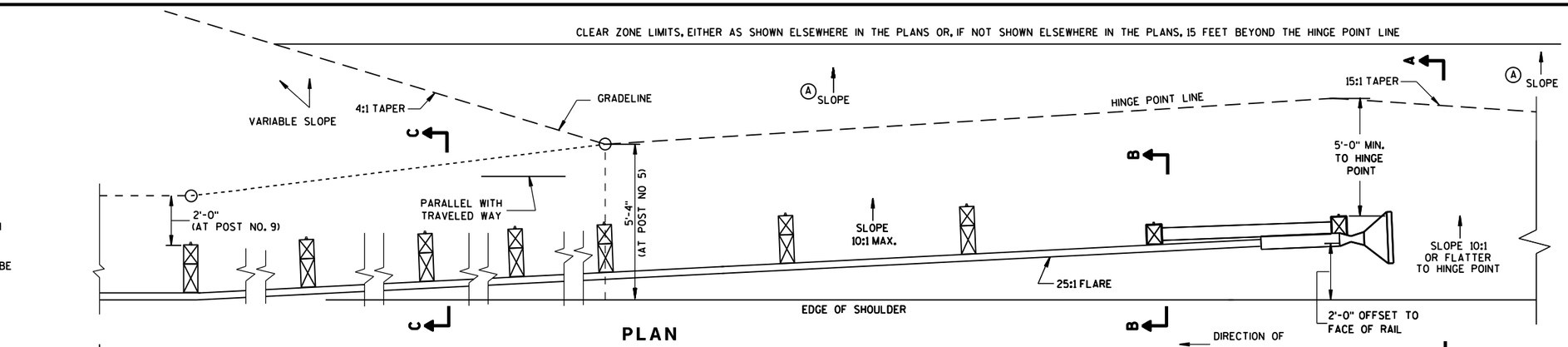
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

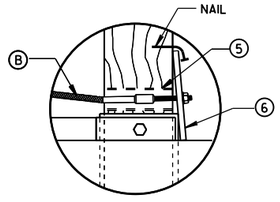
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

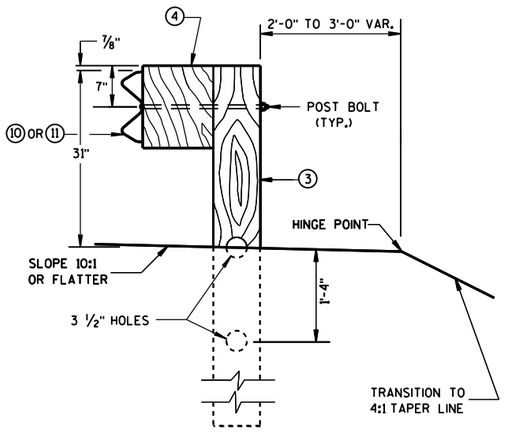
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" 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.

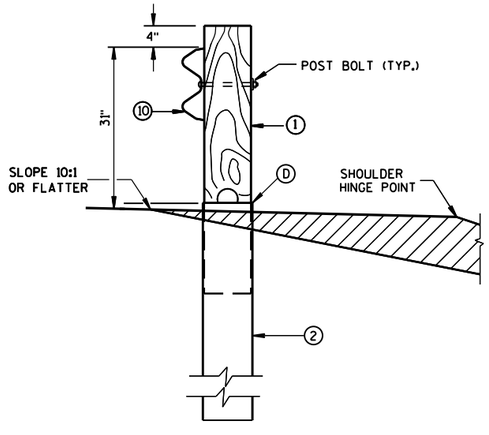


ELEVATION

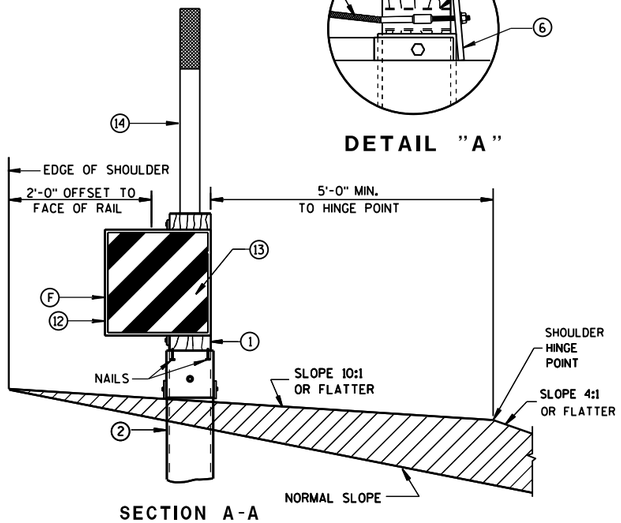




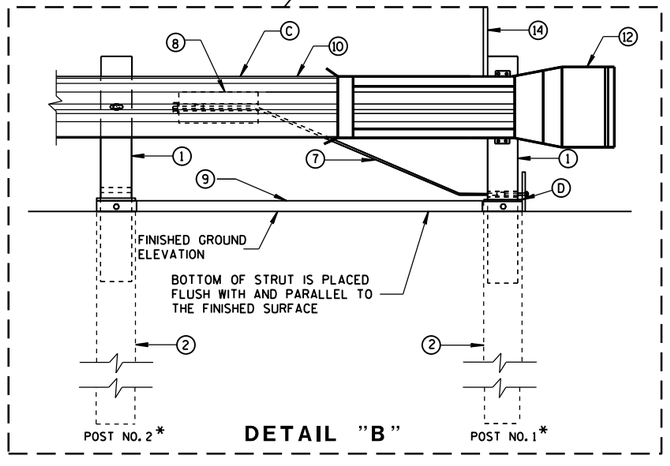
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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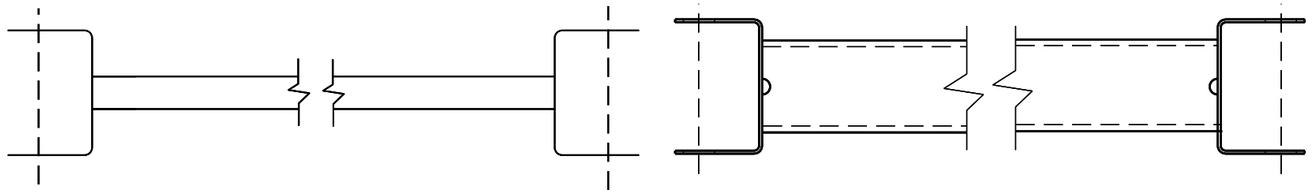
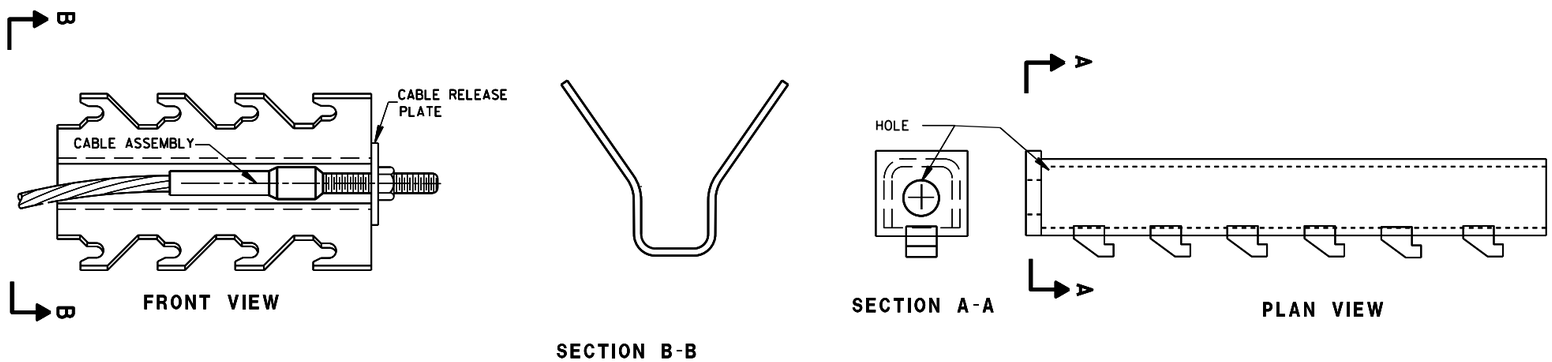


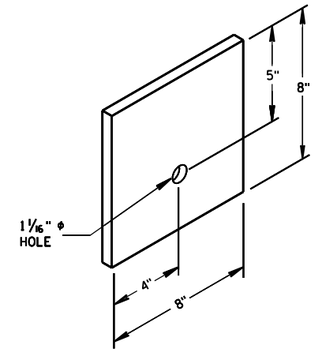
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(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)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



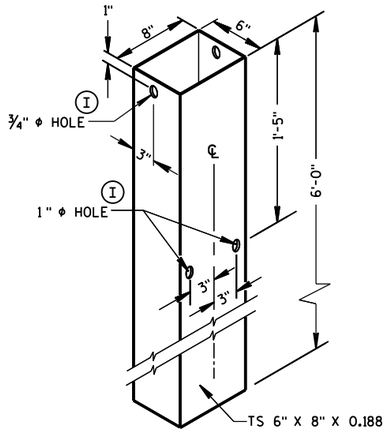
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

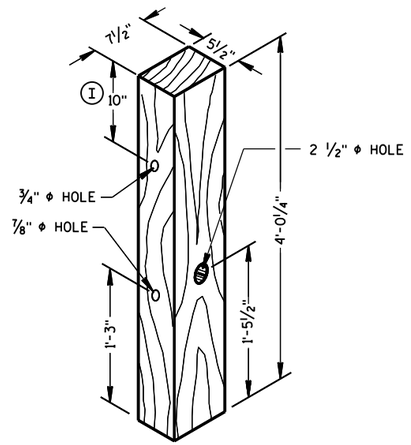
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

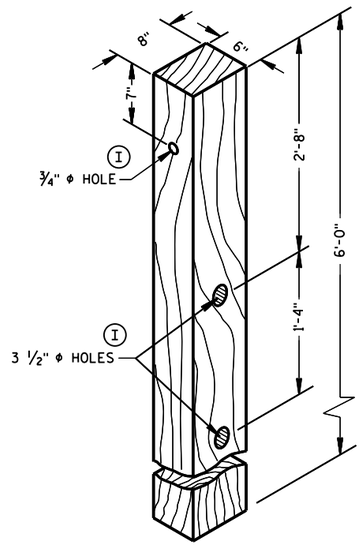


FOUNDATION TUBE (2)



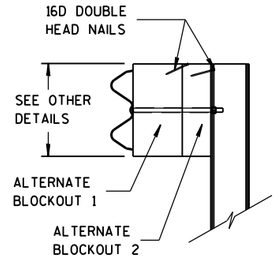
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

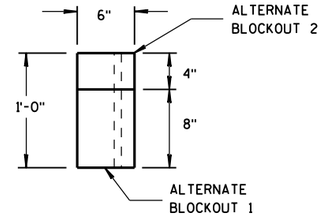


POSTS NUMBER 3-9

WOOD CRT POST (3)

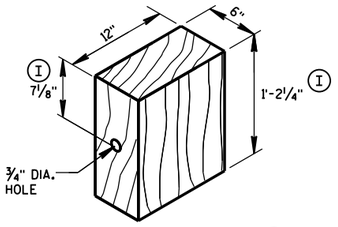


SIDE VIEW



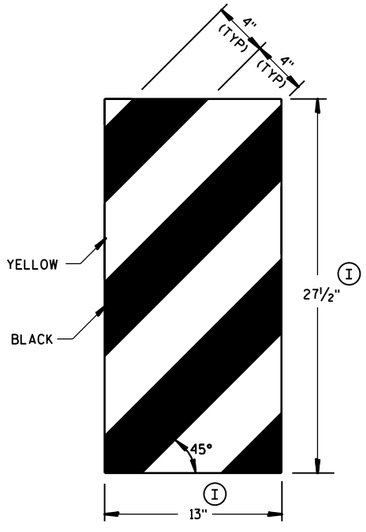
TOP VIEW

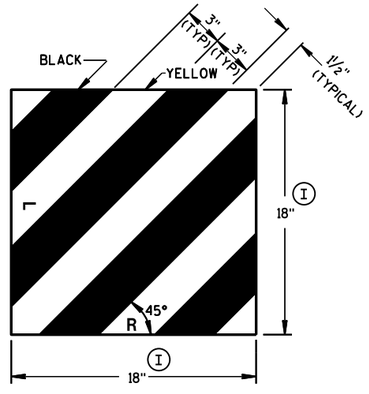
ALTERNATE WOOD BLOCKOUT DETAIL



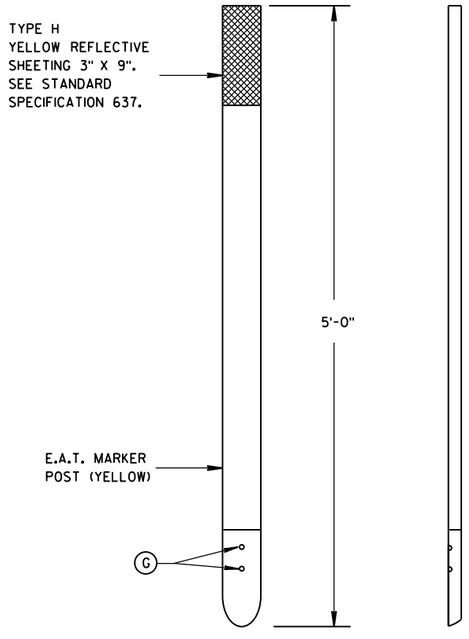
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





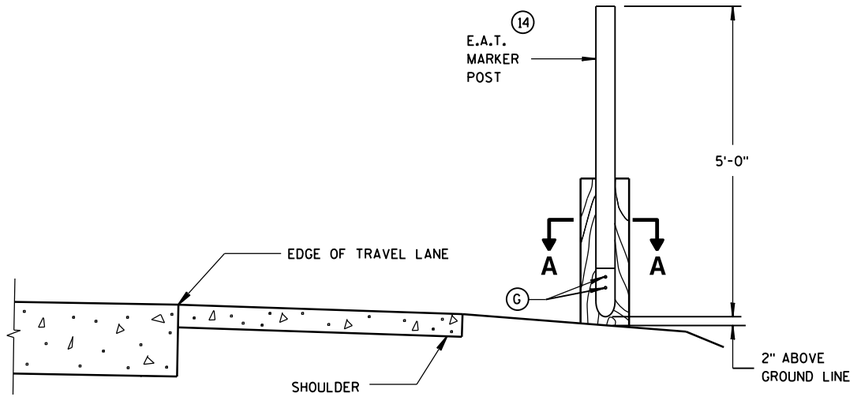
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

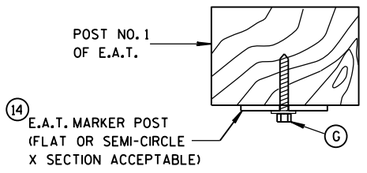
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

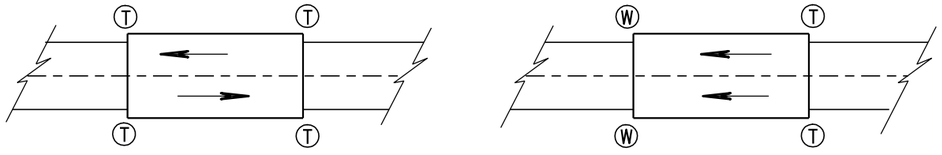
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

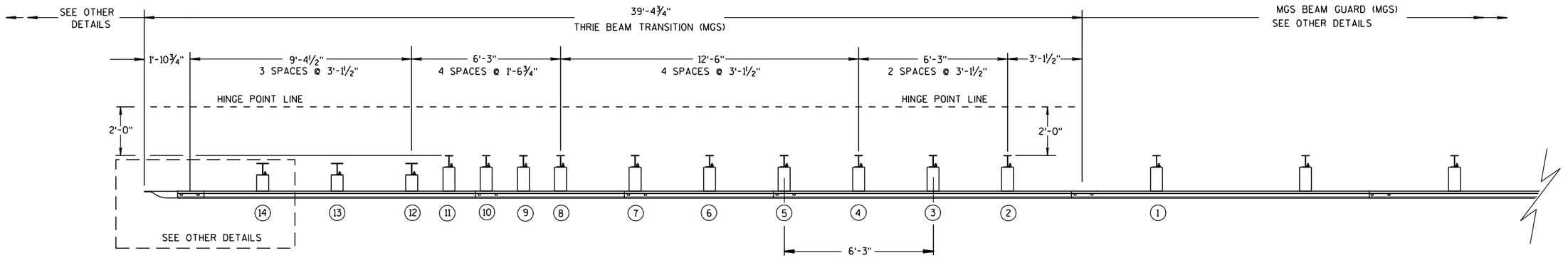
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

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

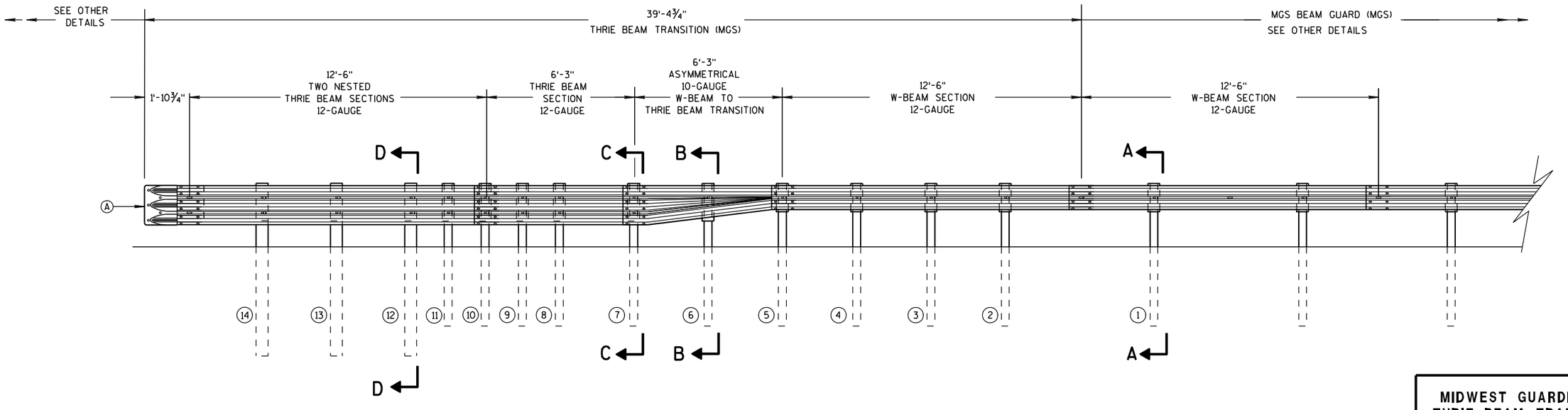
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

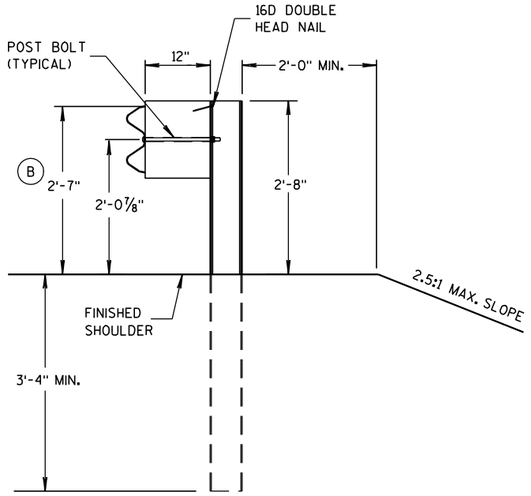
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

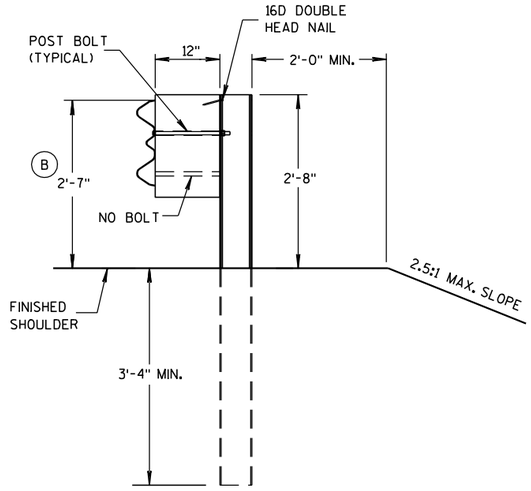
GENERAL NOTES

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



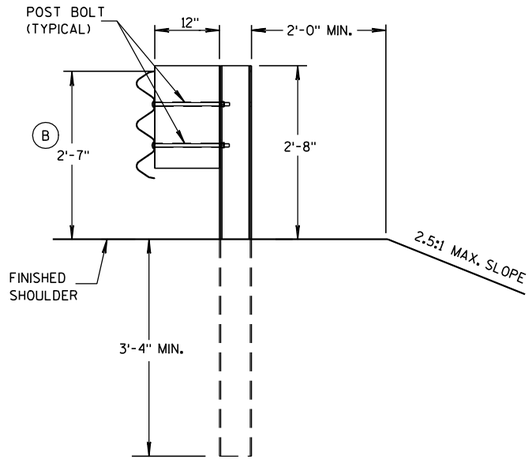
SECTION A-A

POSTS 1-5



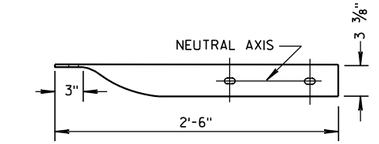
SECTION B-B

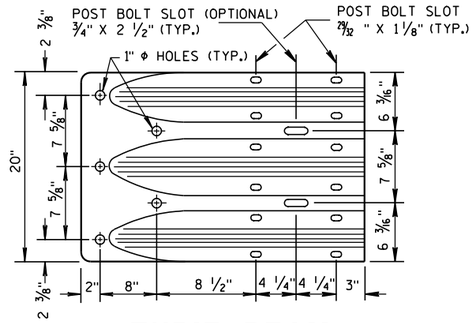
POST 6



SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR

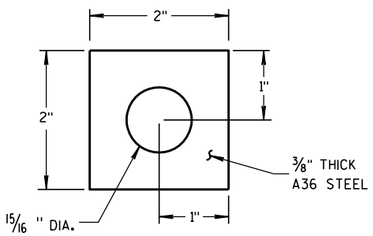
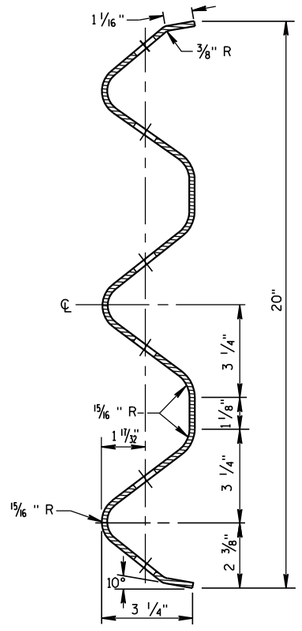
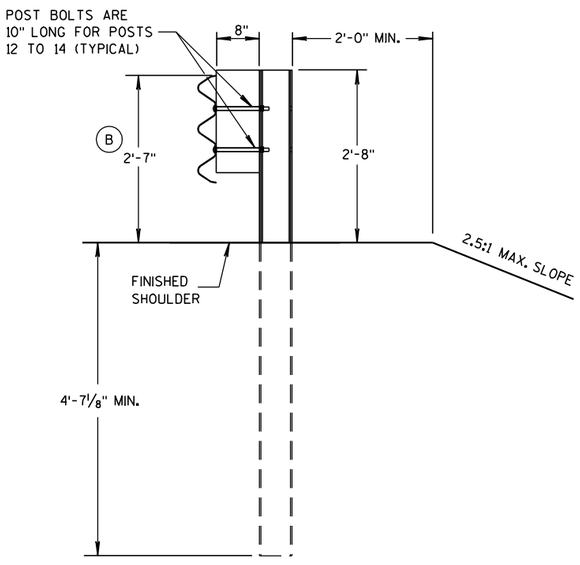


PLATE WASHER DETAIL

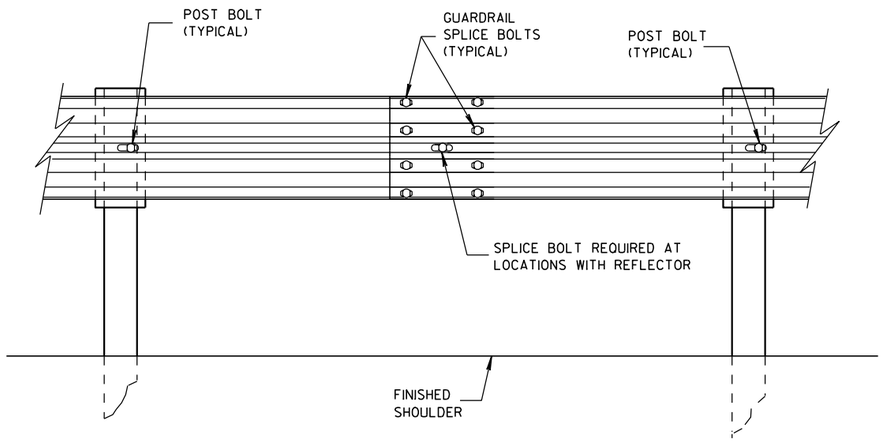


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-14



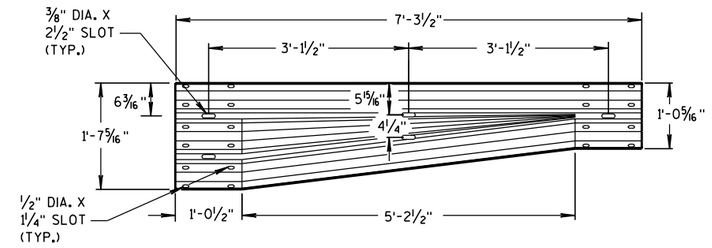
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

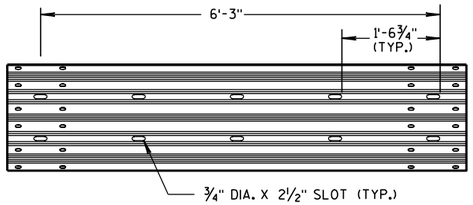
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

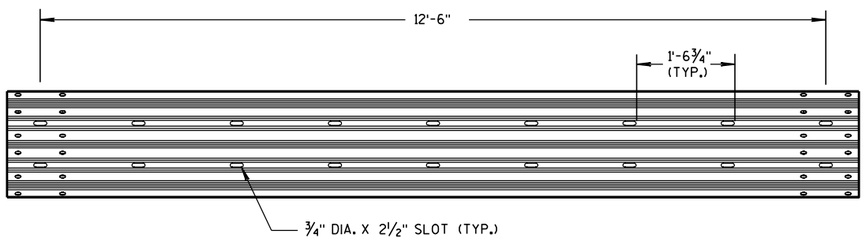
S.D.D. 14 B 45-3b



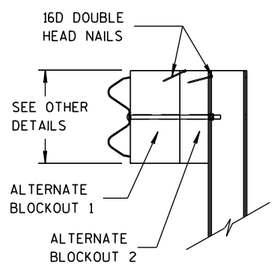
W-BEAM TO THRIE BEAM TRANSITION SECTION



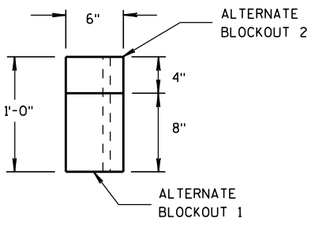
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

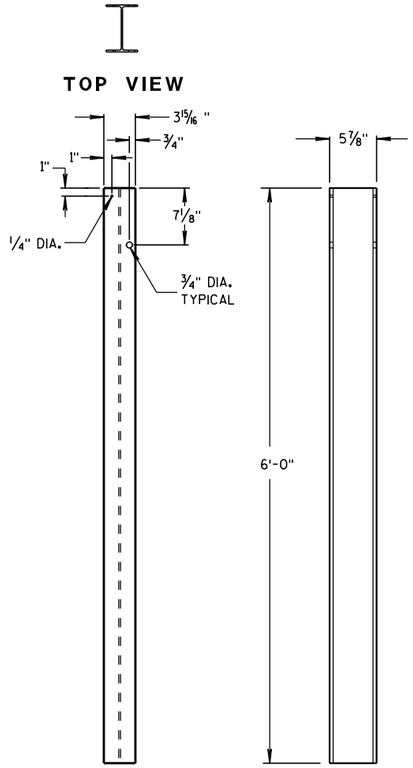


SIDE VIEW

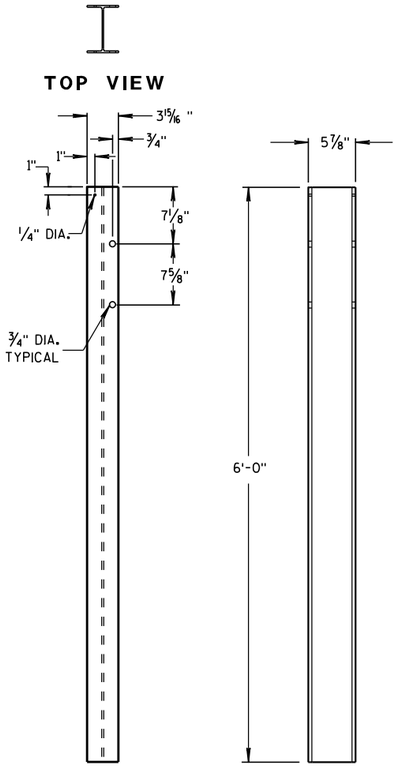


TOP VIEW

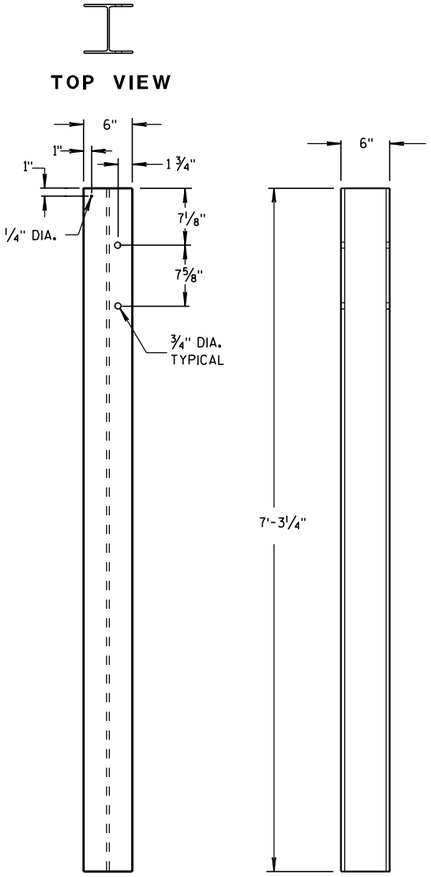
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

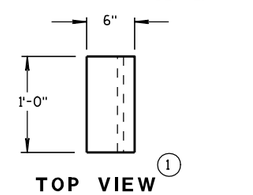


STEEL POSTS 6-11

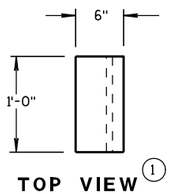


STEEL POSTS 12-14

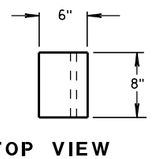
① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



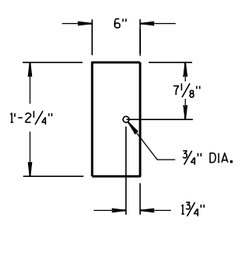
TOP VIEW ①



TOP VIEW ①

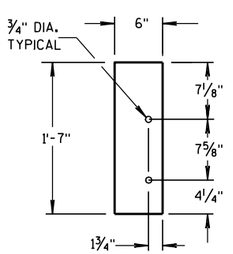


TOP VIEW



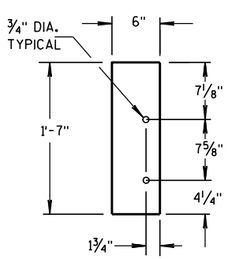
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

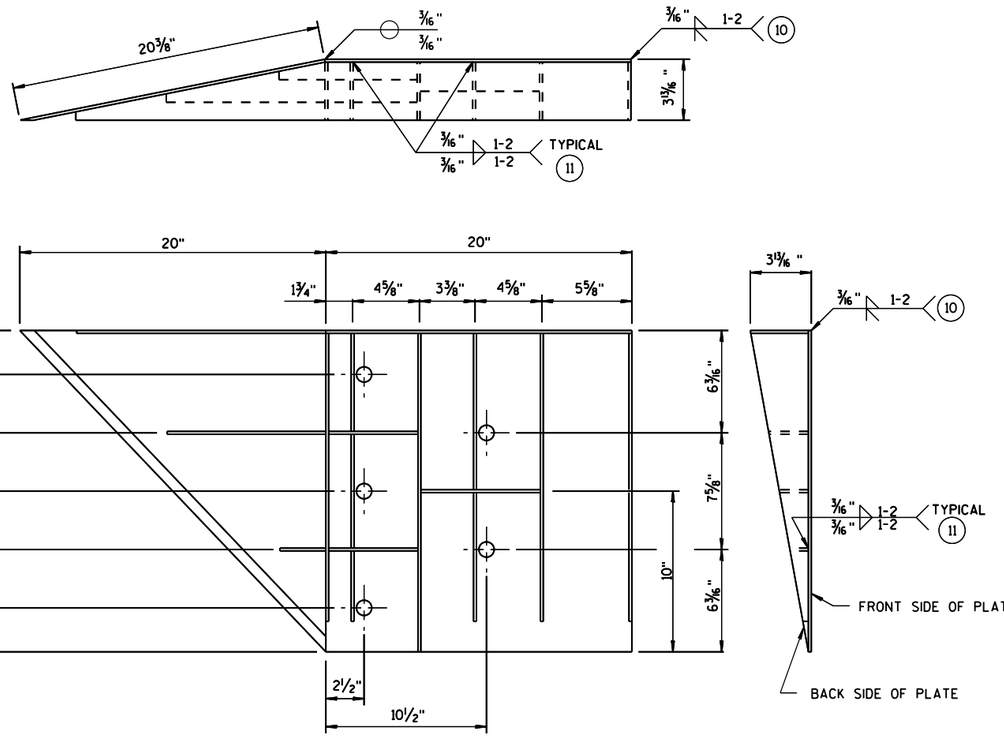
POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-3c



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

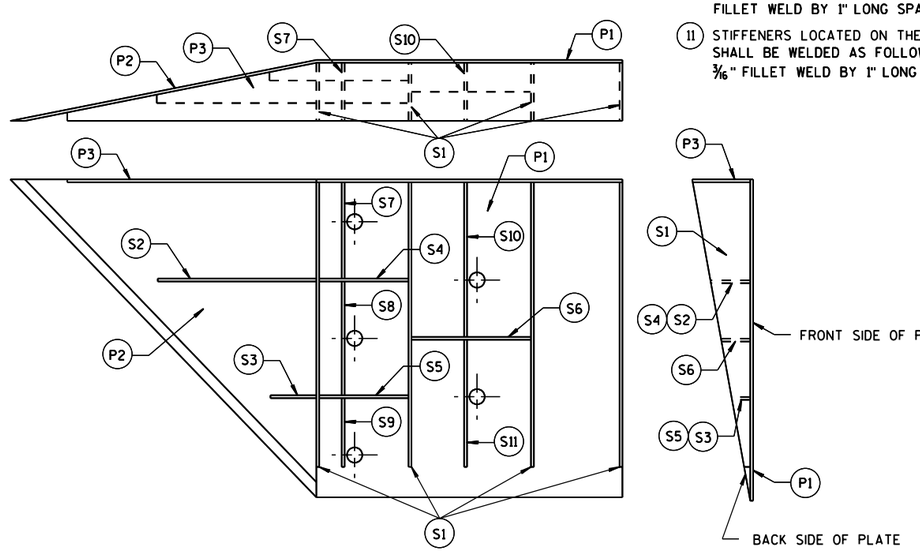


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

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.

(10) 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.

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

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 3/8" 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 1/32"	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"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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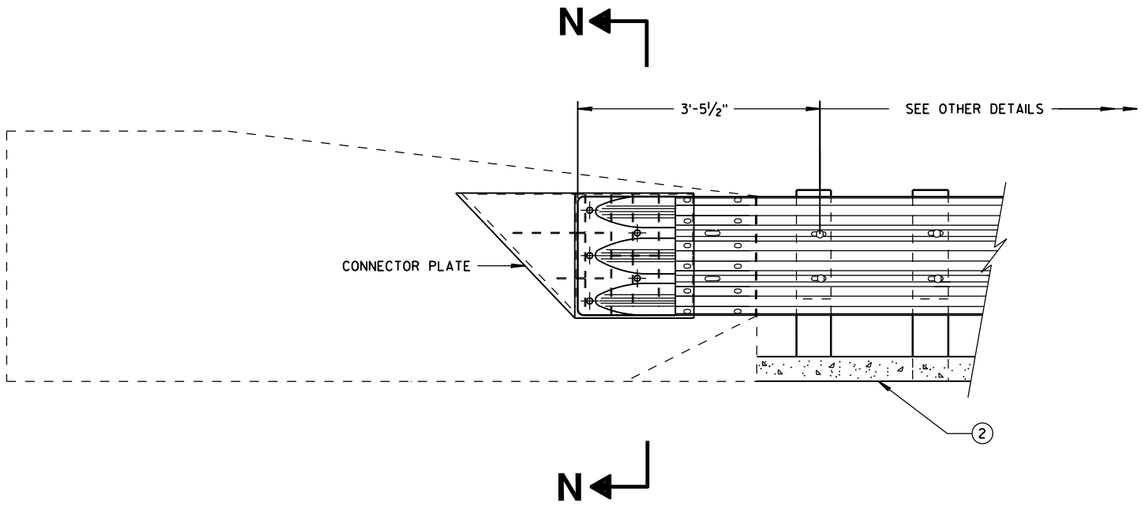
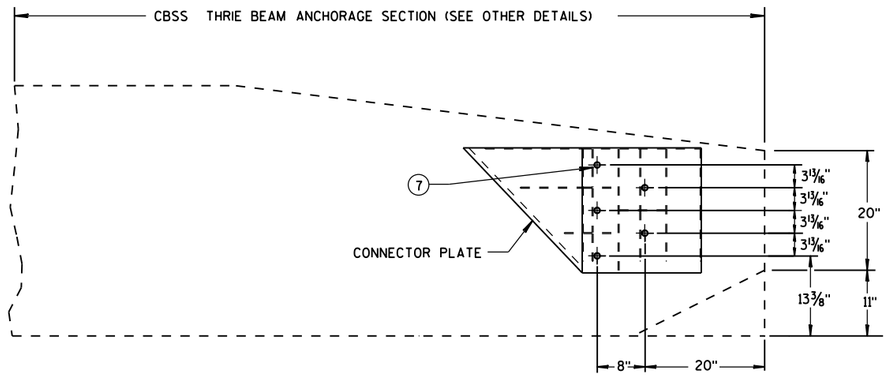
S.D.D. 14 B 45-4i

6

S.D.D. 14 B 45-4i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



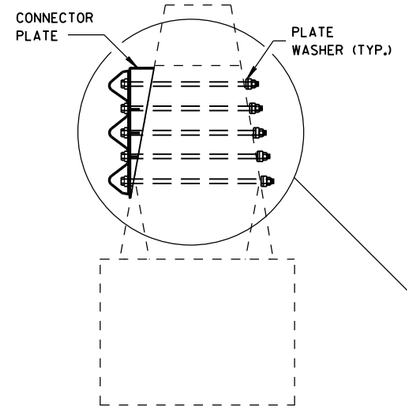
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

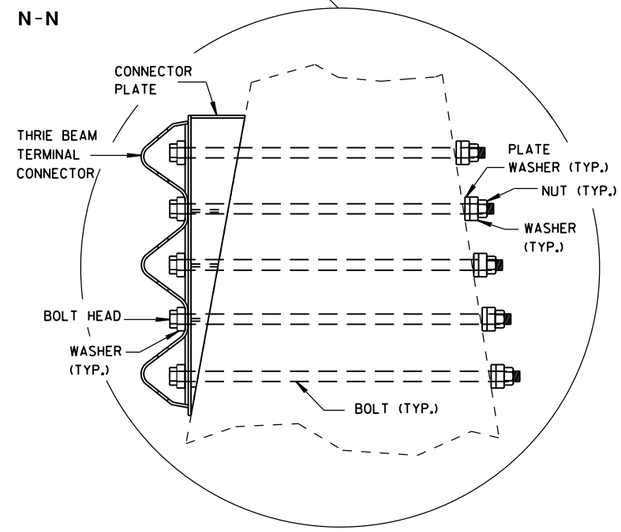
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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S.D.D. 14 B 45-4j

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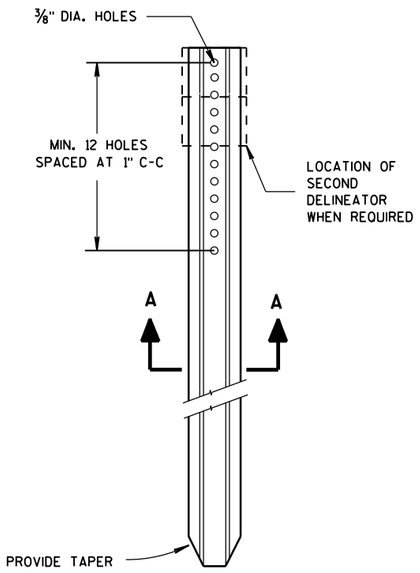
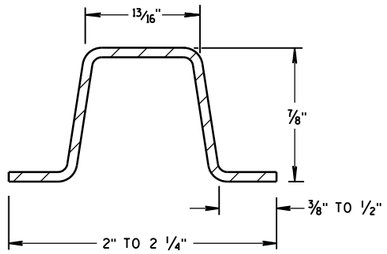
S.D.D. 14 B 45-4j

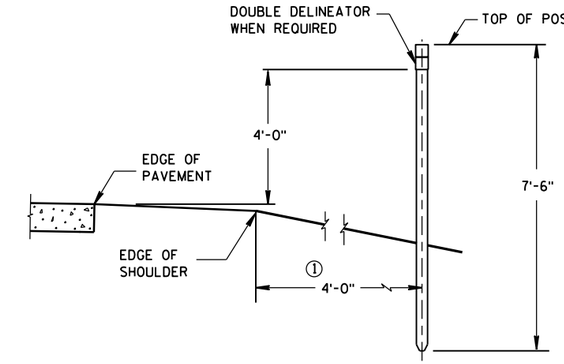


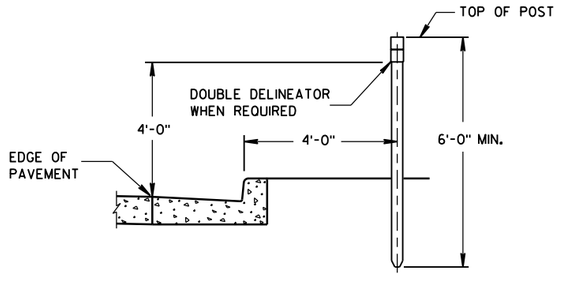
DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.



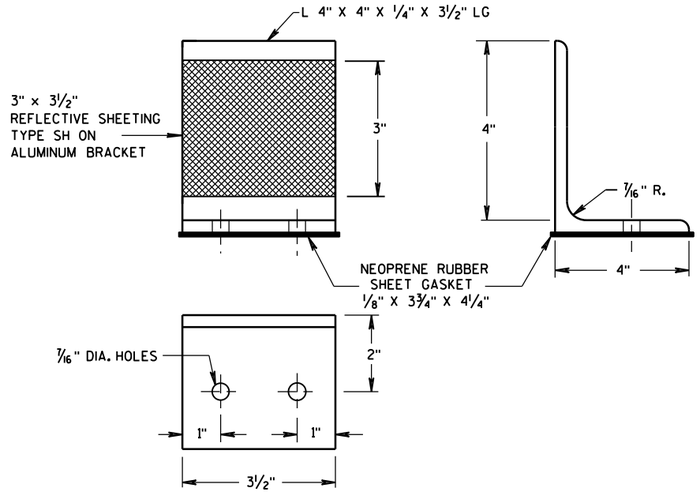


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

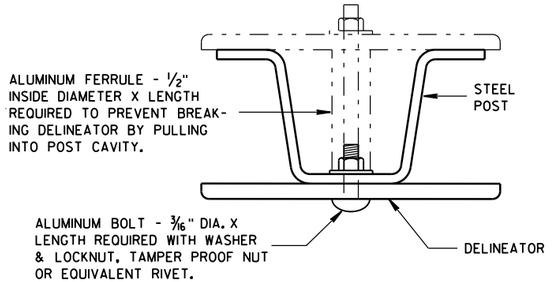
GENERAL NOTES

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

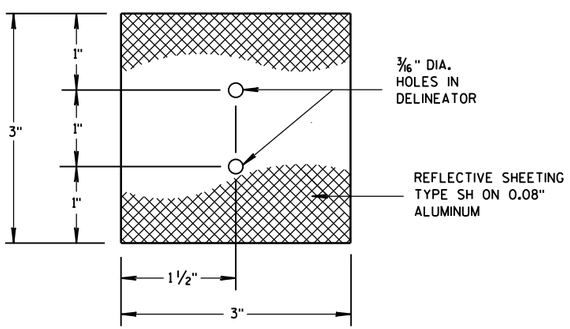
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



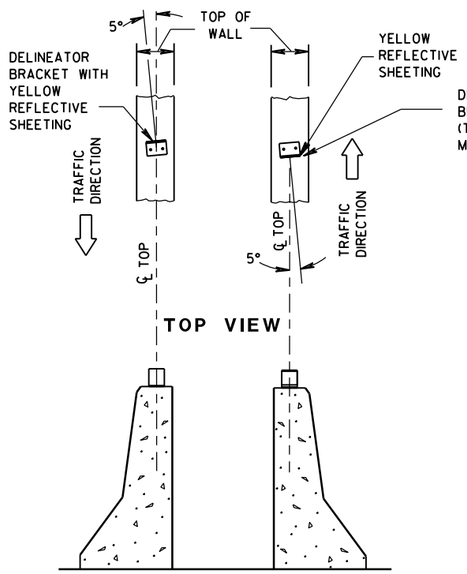
DELINEATOR BRACKET



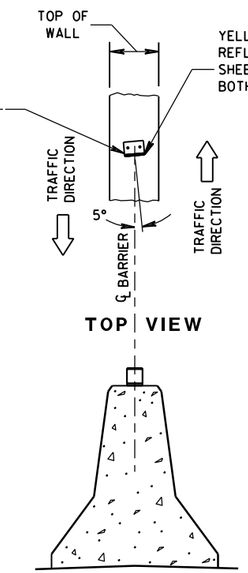
MOUNTING DETAIL FOR DELINEATOR



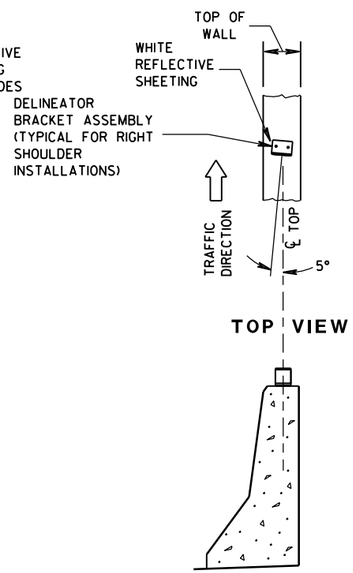
3"x 3" DELINEATOR



DOUBLE BARRIERS IN MEDIAN

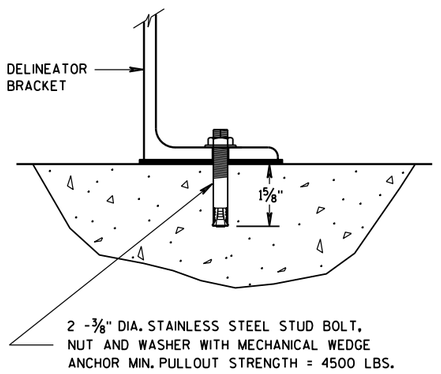


MEDIAN BARRIER



BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC E
FHWA

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S.D.D. 15 A 2-8

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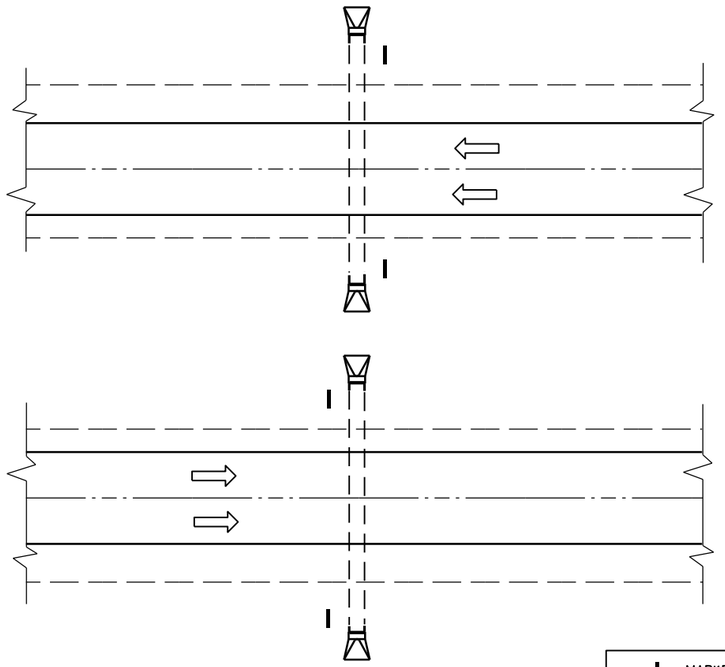
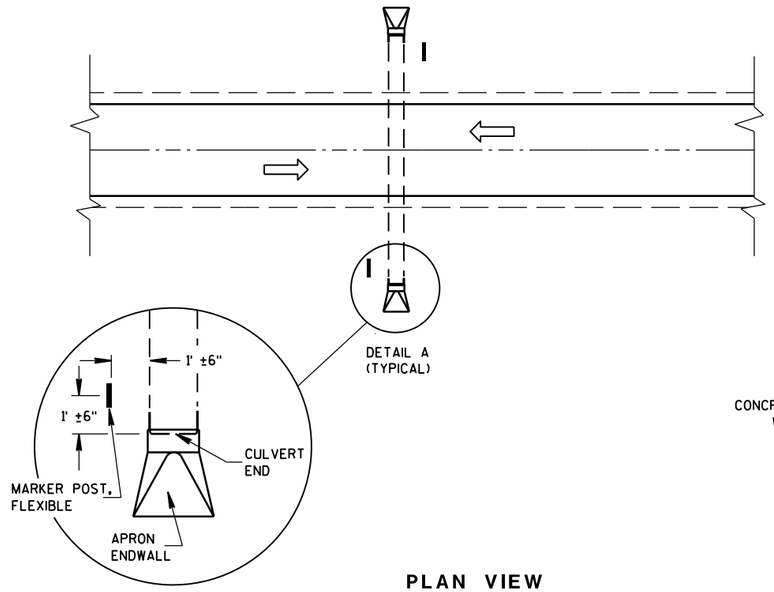
S.D.D. 15 A 2-8



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

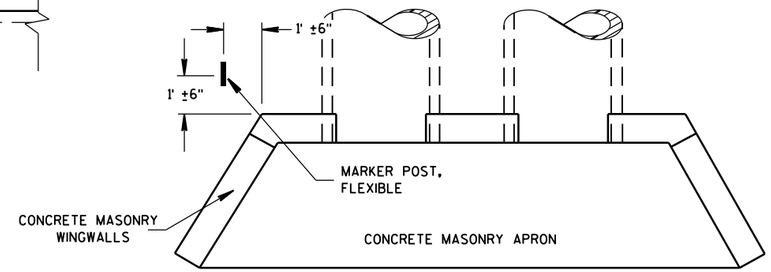
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

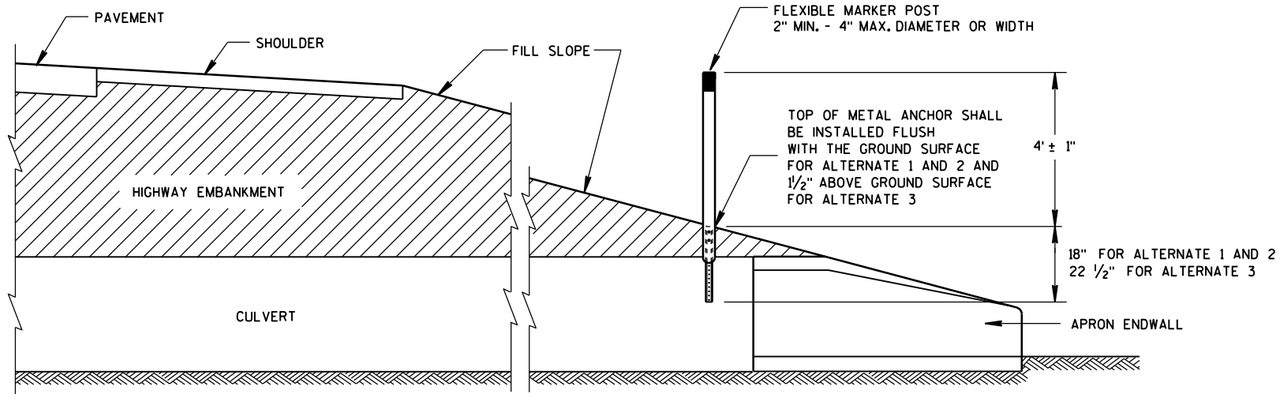
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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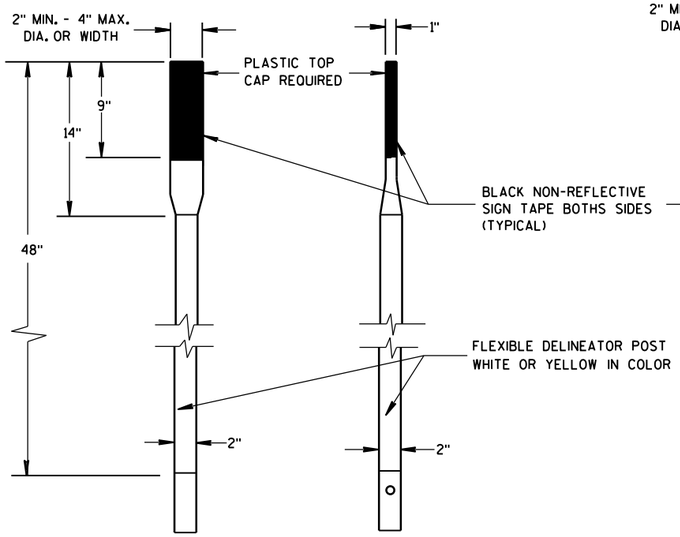
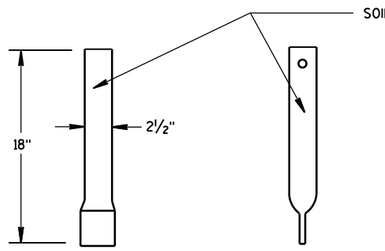
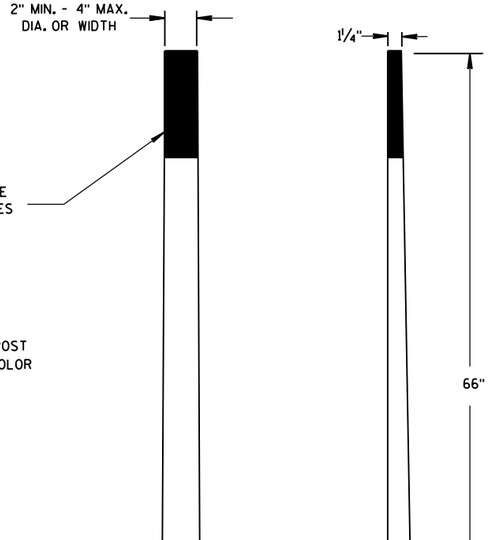
S.D.D. 15 A 3-2a





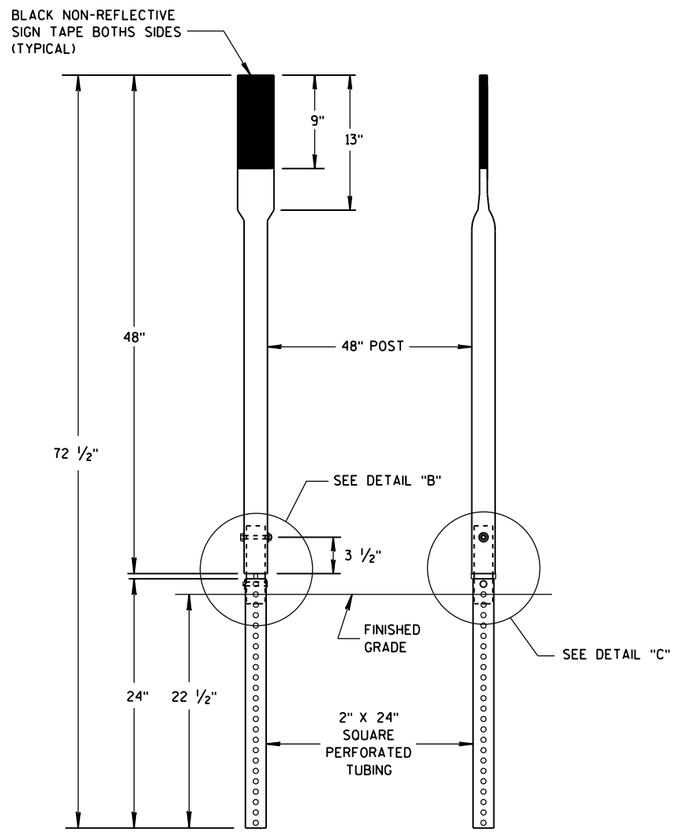
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

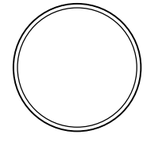
ALTERNATE 2



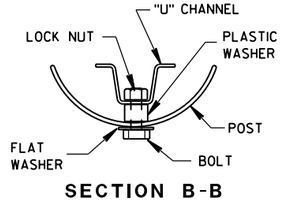
FRONT VIEW SIDE VIEW

ALTERNATE 3

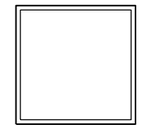
FLEXIBLE MARKER POSTS



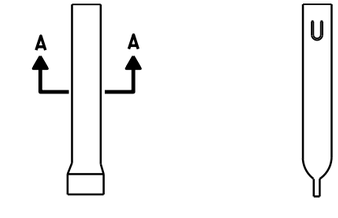
SECTION A-A



SECTION B-B

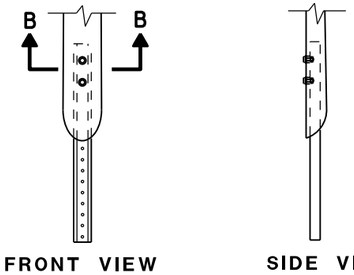


SECTION C-C



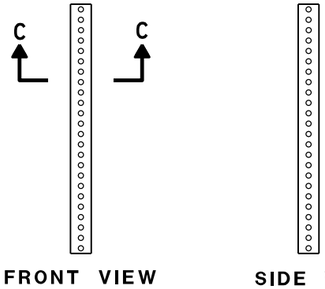
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

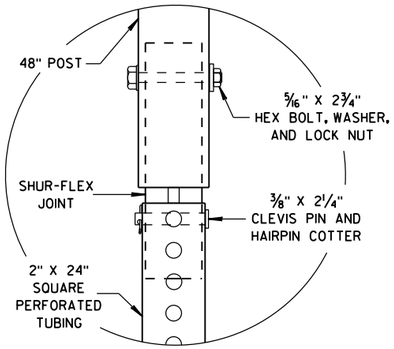
ALTERNATE 2



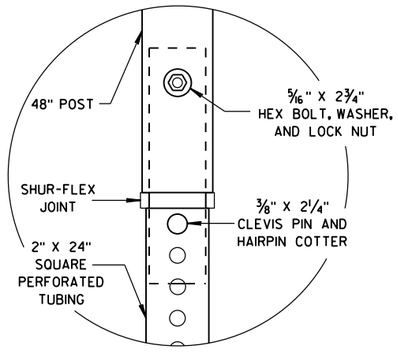
FRONT VIEW SIDE VIEW

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
IGN
FHWA

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

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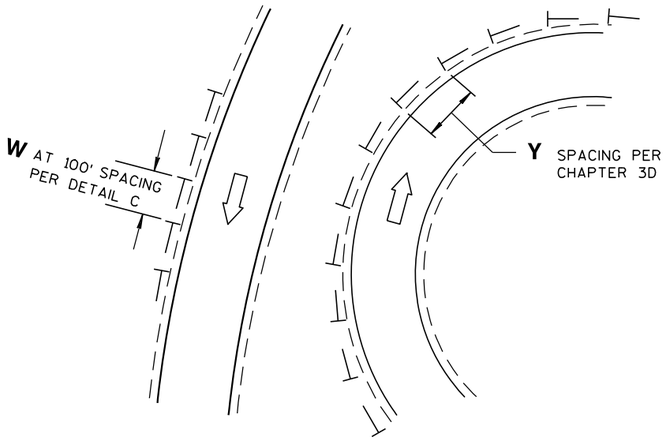
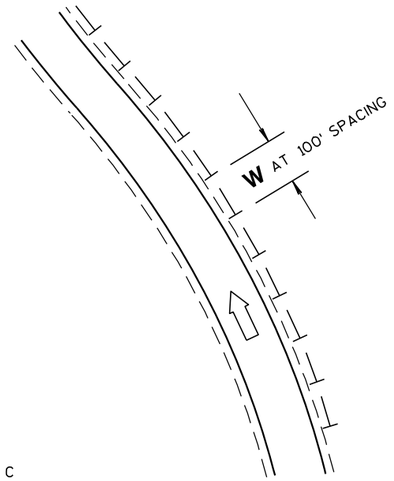
S.D.D. 15 A 3-2b

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS. USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.



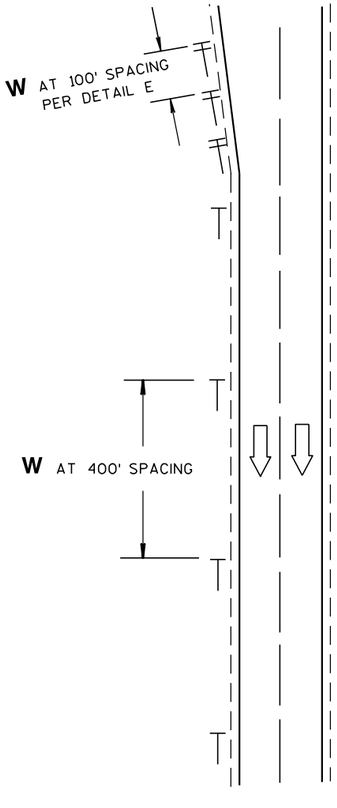
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



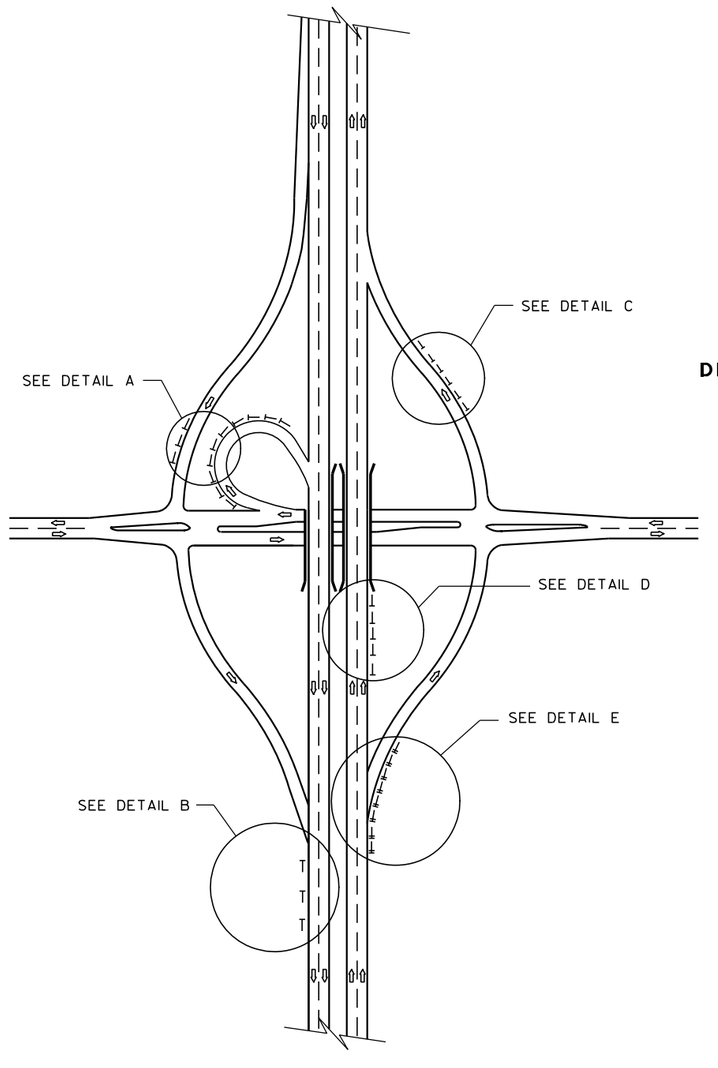
DETAIL C
DELINEATOR LAYOUT ALONG RAMP

LEGEND

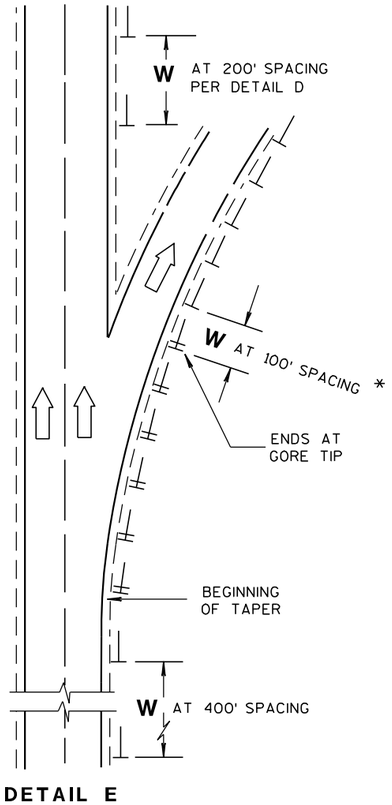
- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W — WHITE
- Y — YELLOW



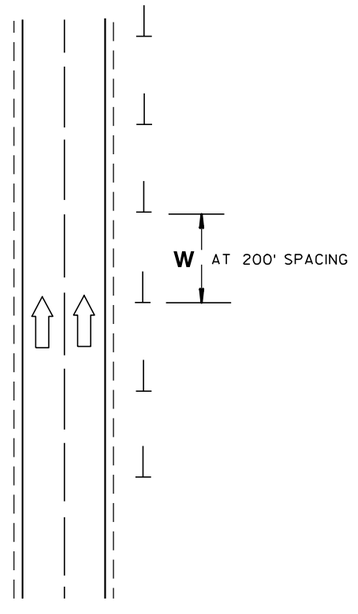
DETAIL B
DELINEATOR LAYOUT ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION - DECELERATION LANES AND TAPERS AT RAMPS



DETAIL D
DELINEATOR LAYOUT BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/5/09 DATE
/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 6-2

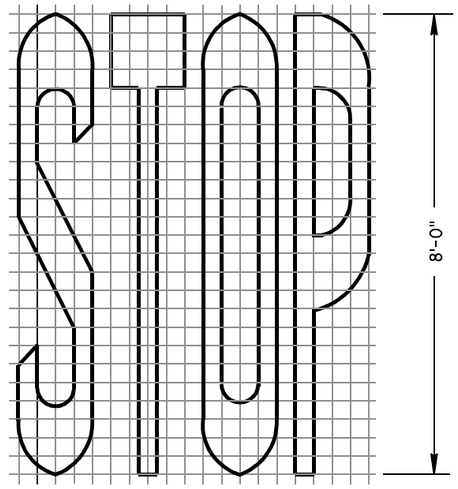
6

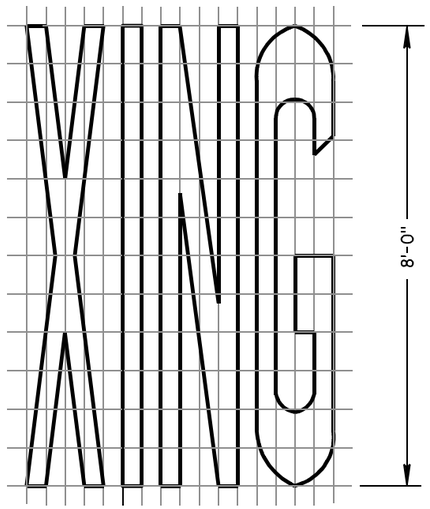
S.D.D. 15 A 6-2

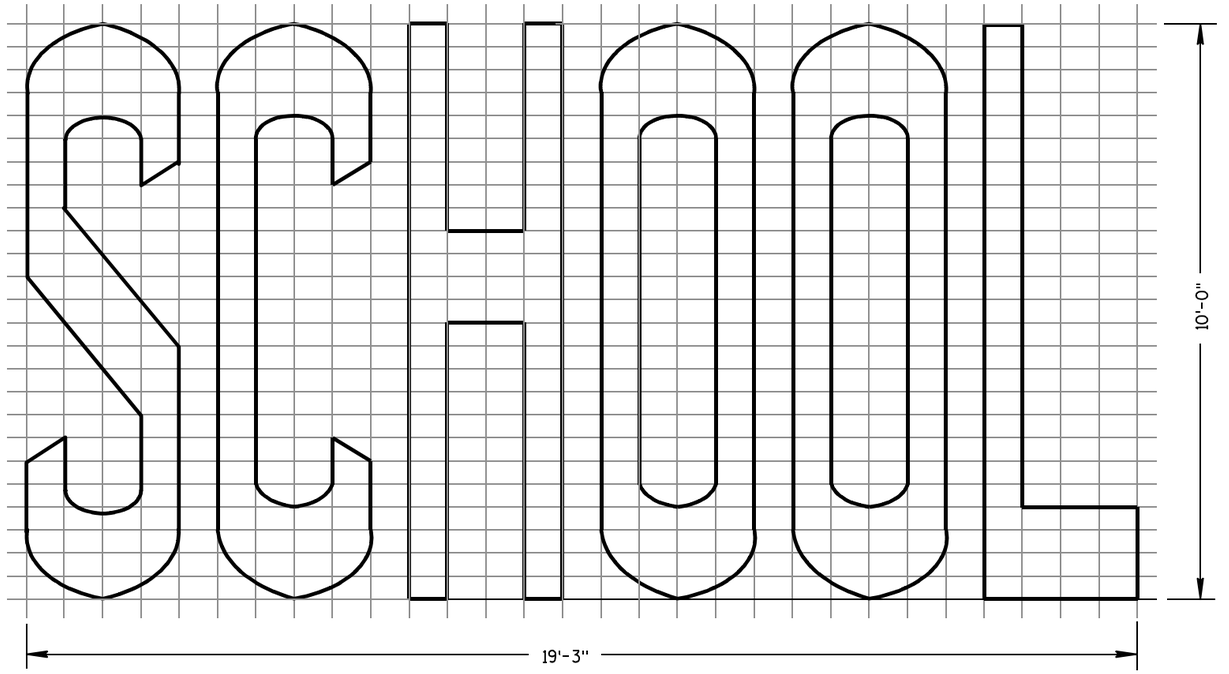
GENERAL NOTES

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

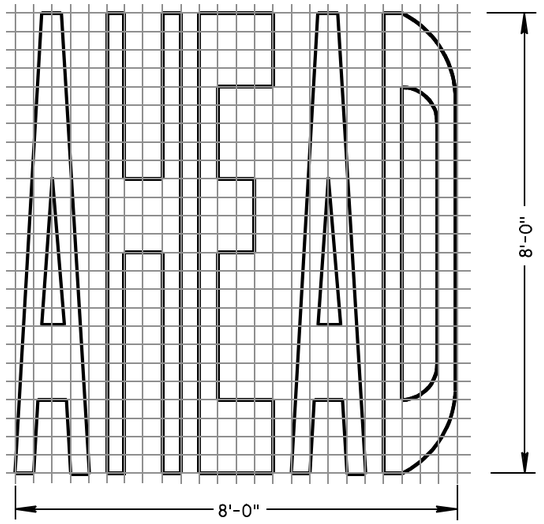
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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

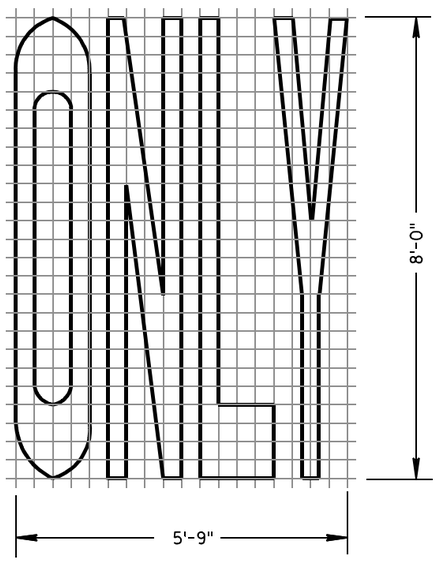


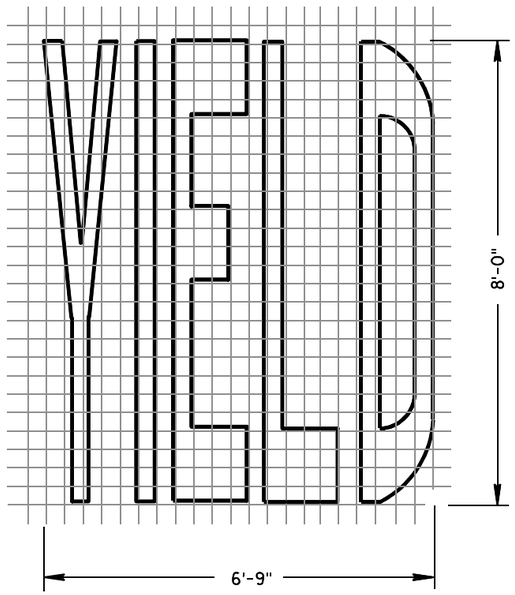


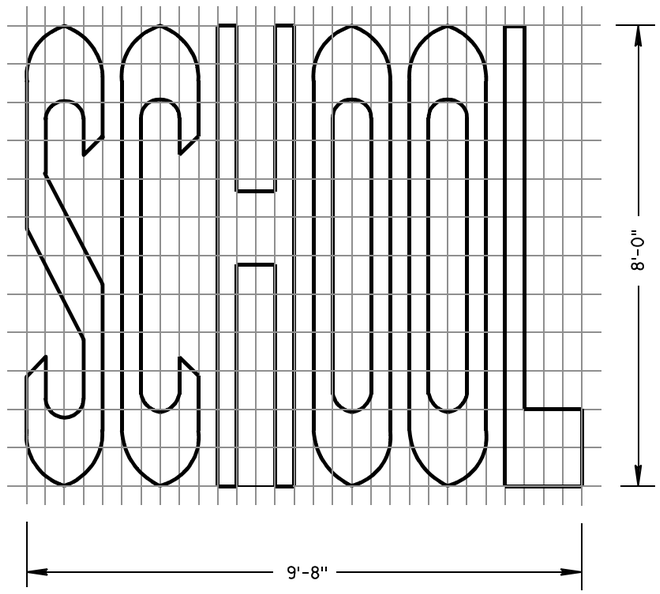


TWO-LANE









SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7-1-11 — DATE

/S/ Thomas N. Nothohm — STATE TRAFFIC ENGINEER

FHWA

IGN

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S.D.D. 15 C 7-12b

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S.D.D. 15 C 7-12b

GENERAL NOTES

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

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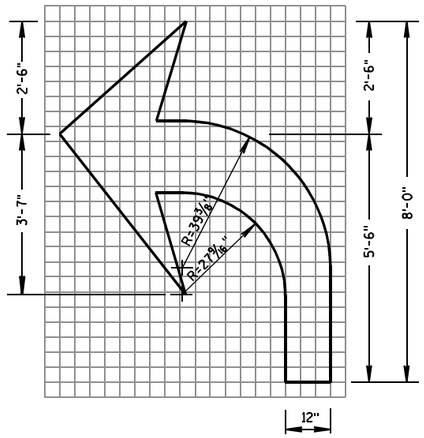
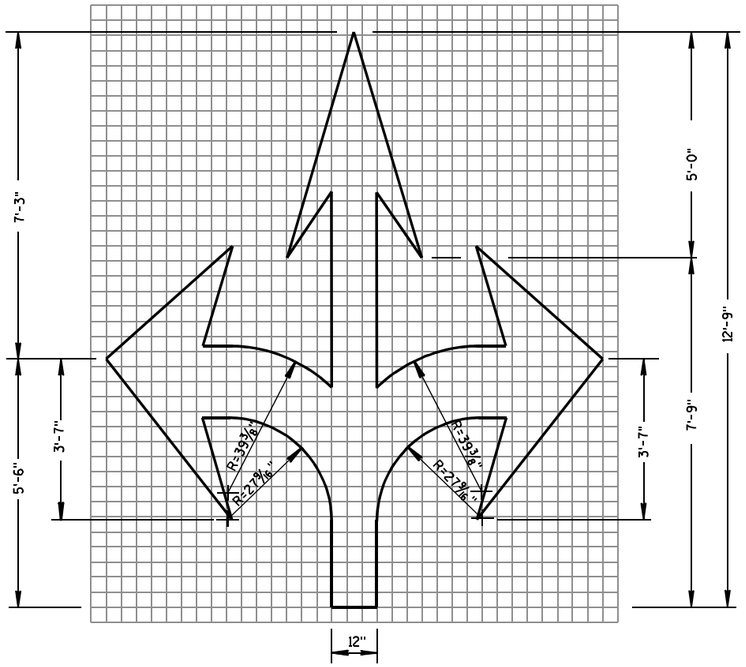


TYPE 2



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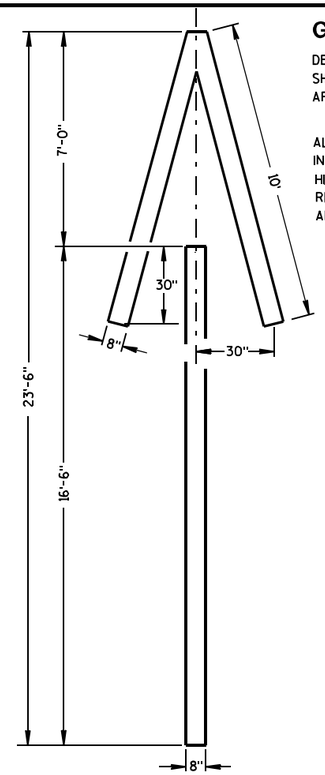

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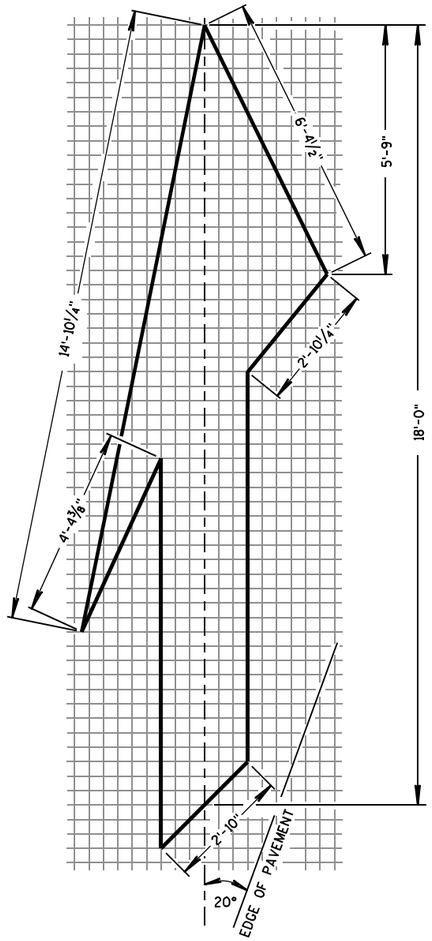
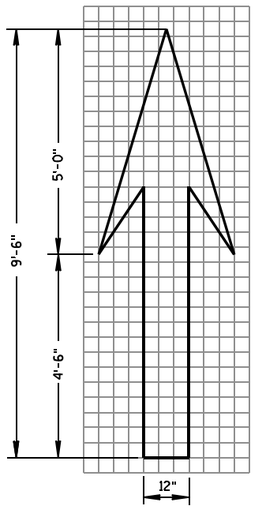
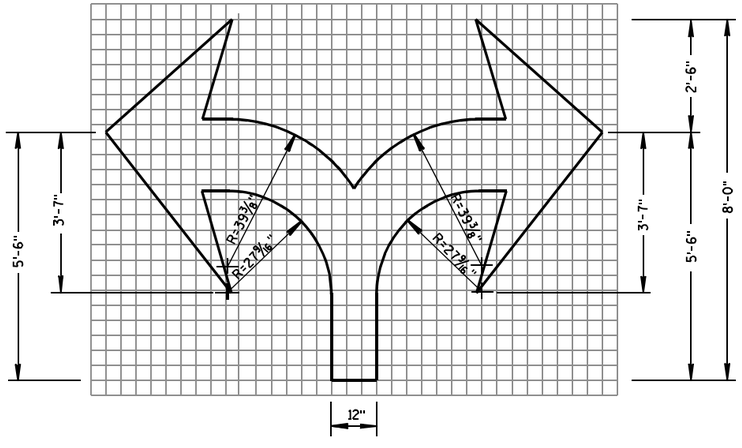


TYPE 5 LANE DROP ARROW



TYPE 1



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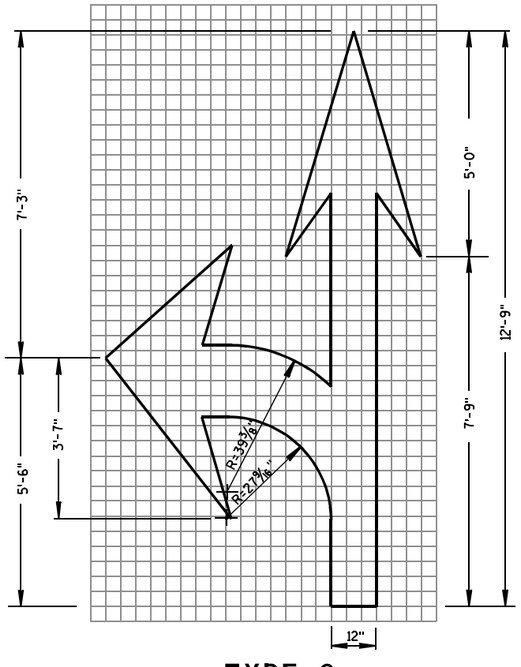

TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/1/11 — DATE

/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

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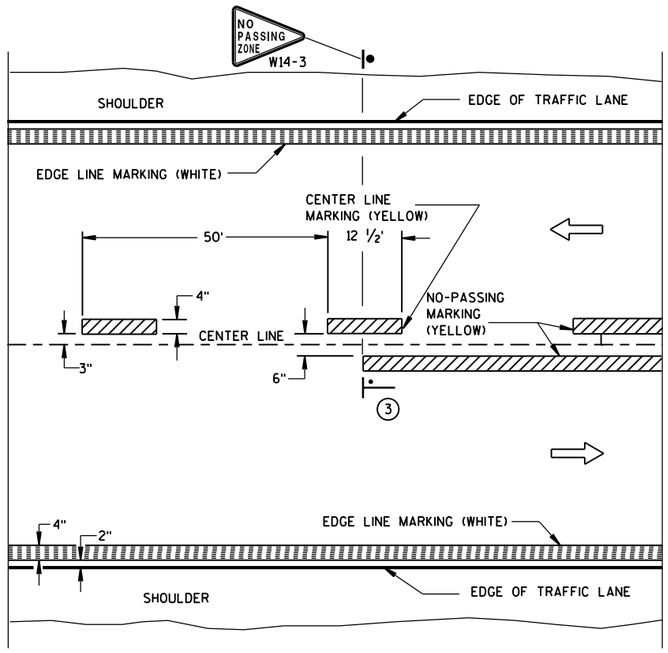
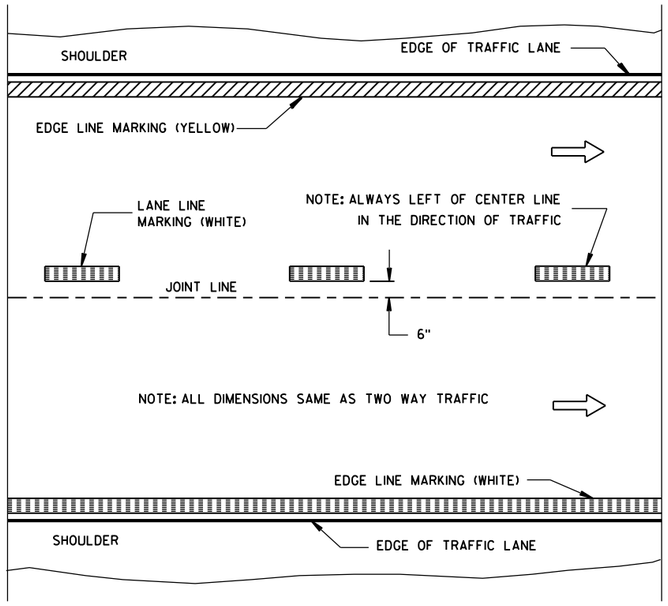
S.D.D. 15 C 7-12c

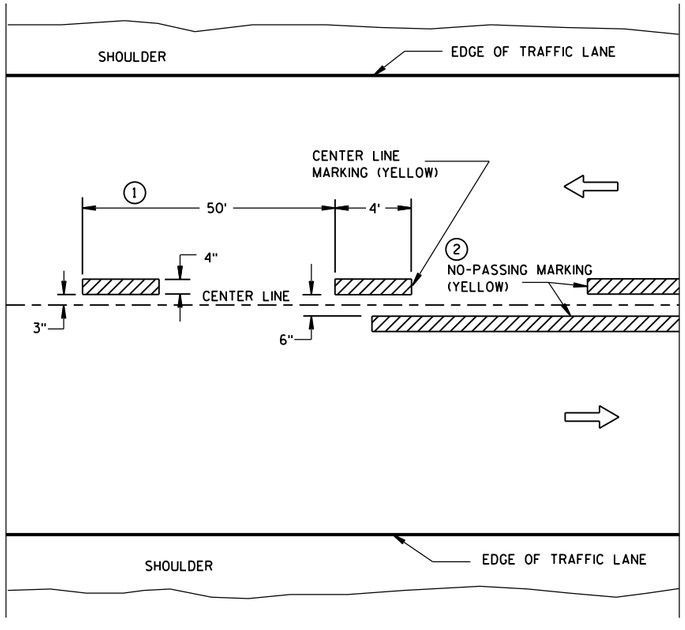


TWO WAY TRAFFIC

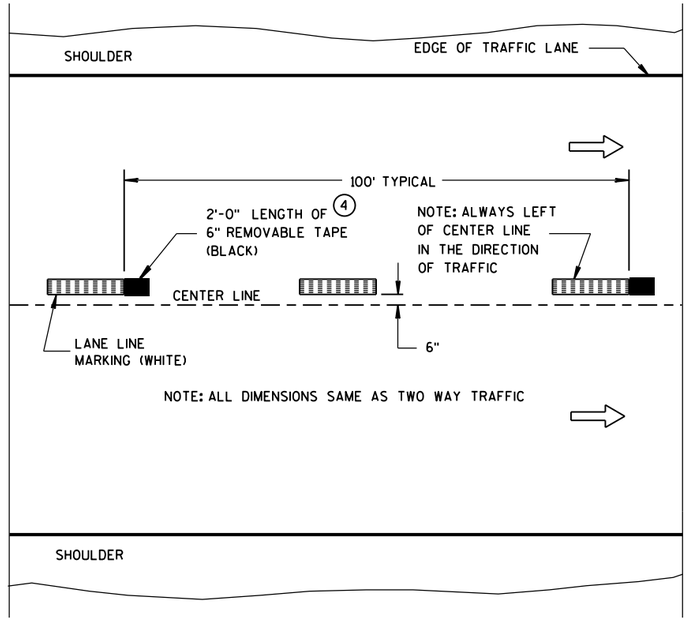


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

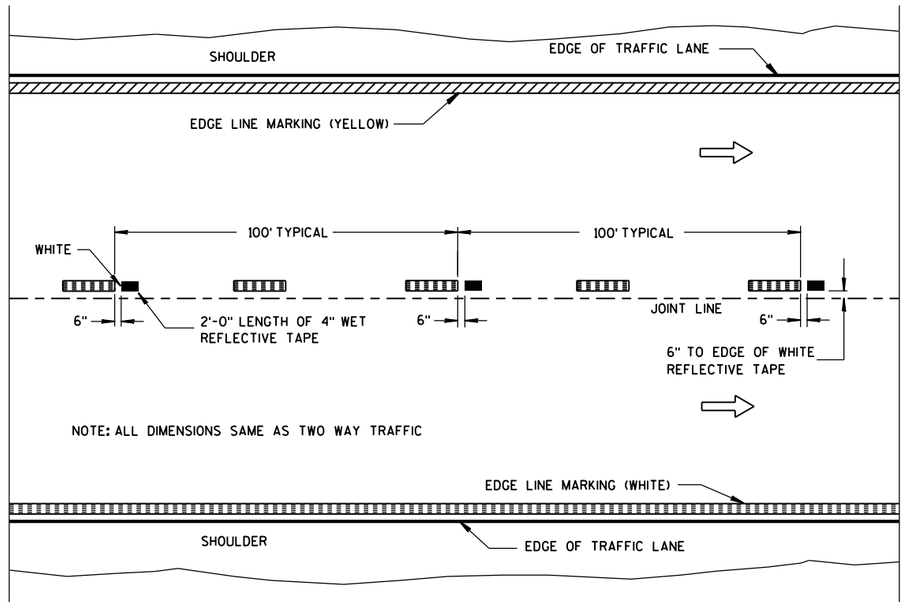
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

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S.D.D. 15 C 8-16a

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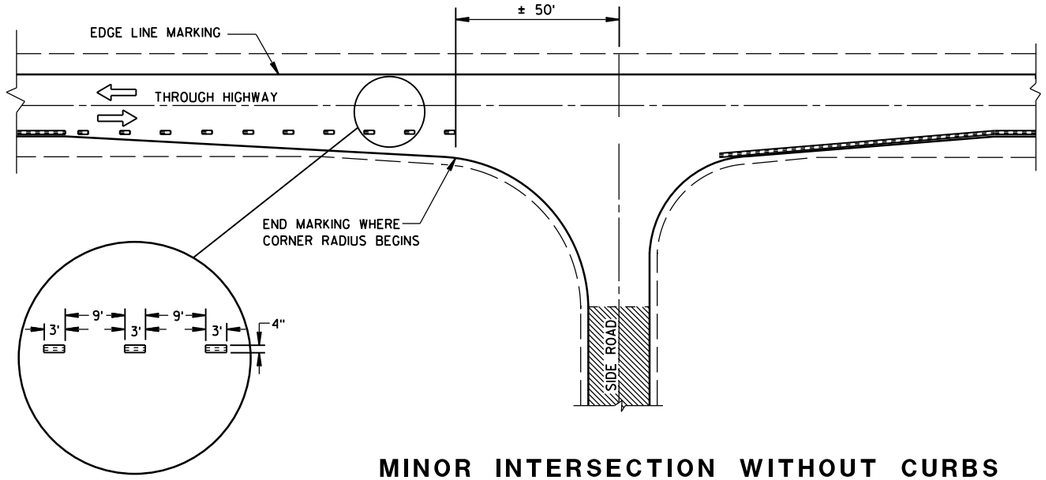
S.D.D. 15 C 8-16a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

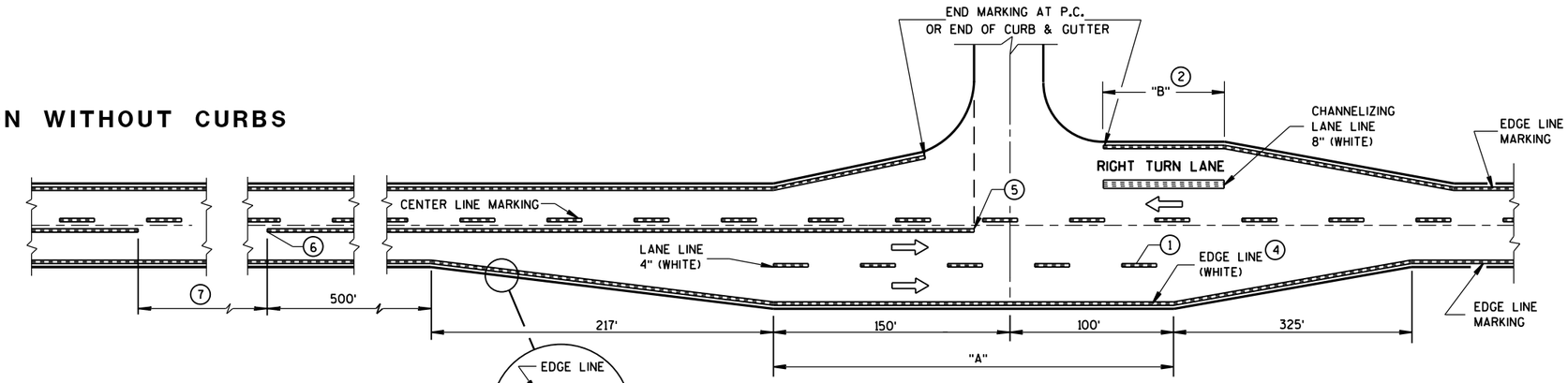
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

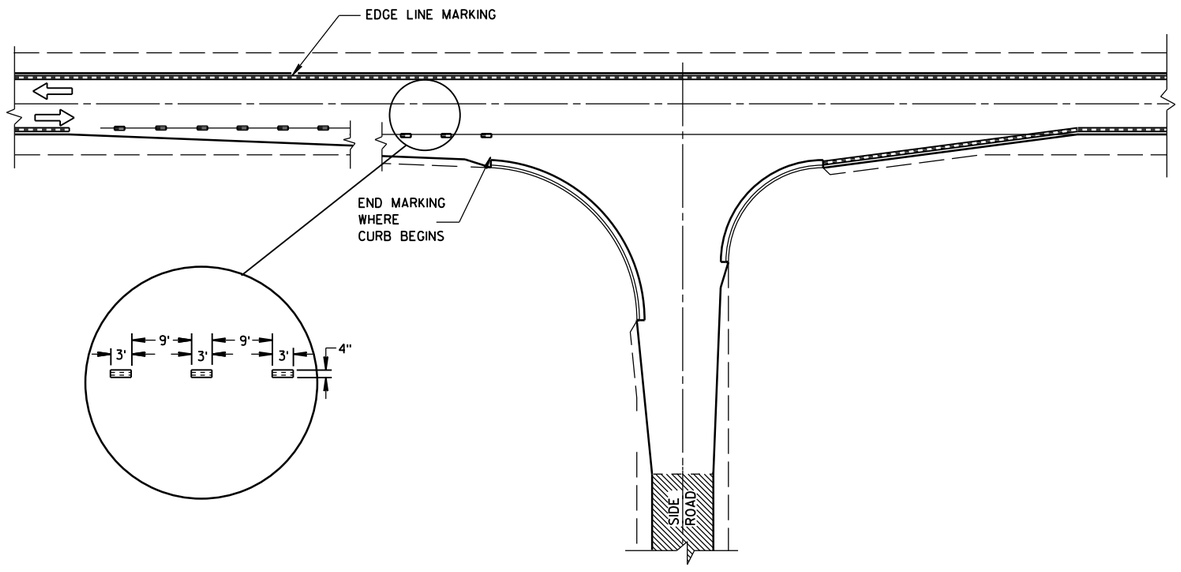
(7)

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



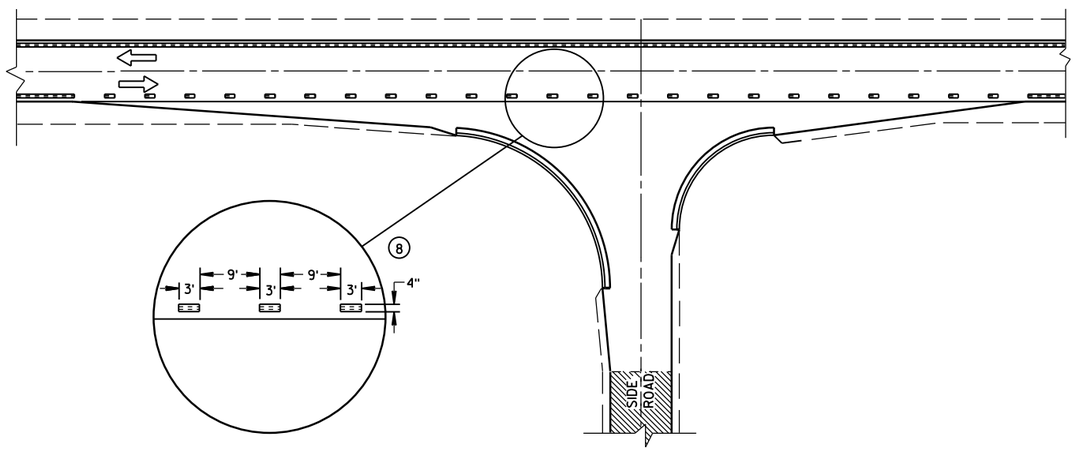
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 15 C 8-16b

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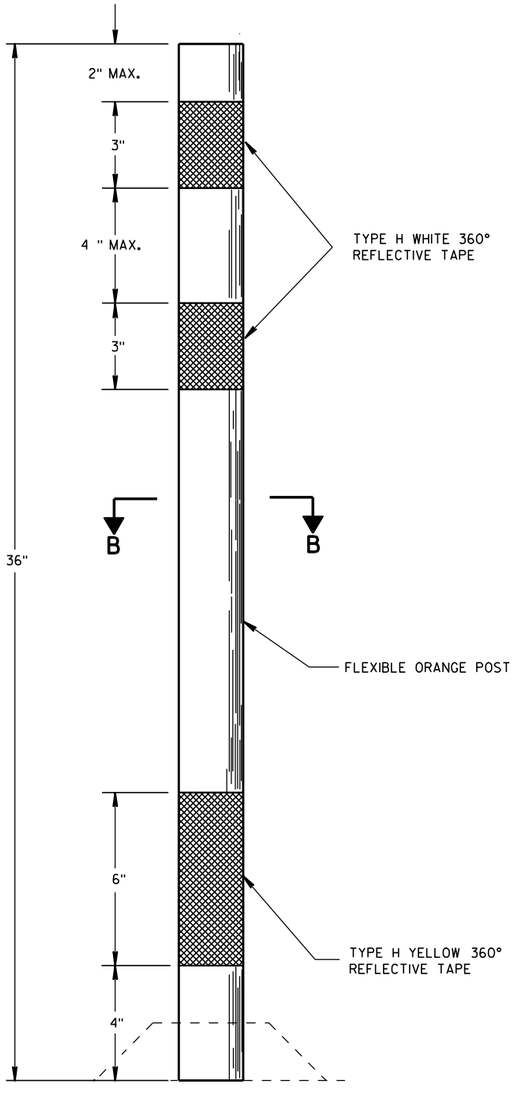
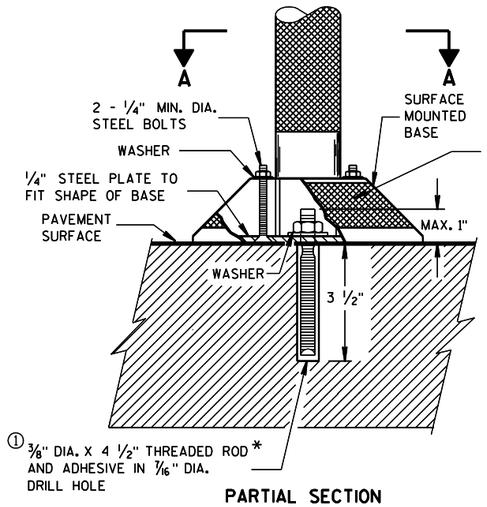
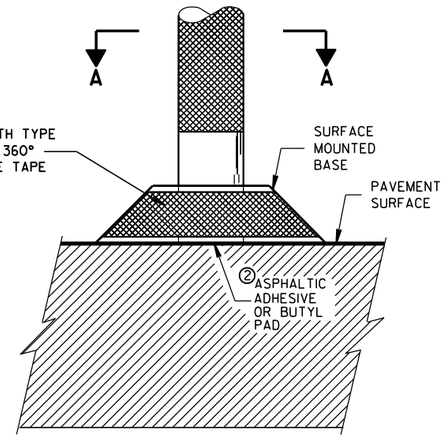
S.D.D. 15 C 8-16b



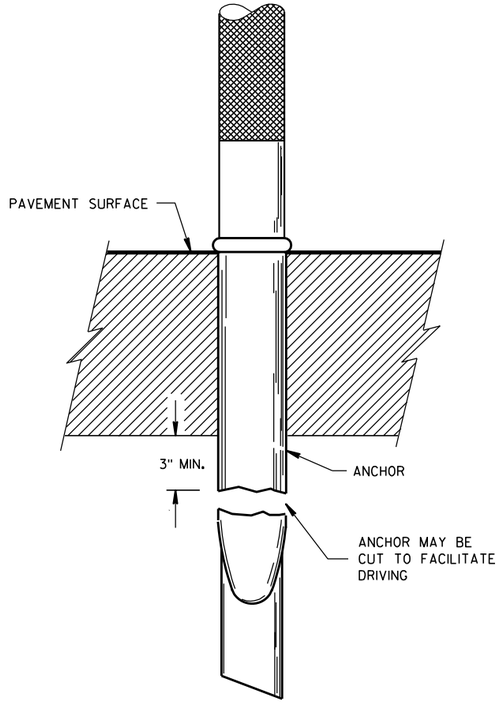
FLEXIBLE TUBULAR MARKER POST

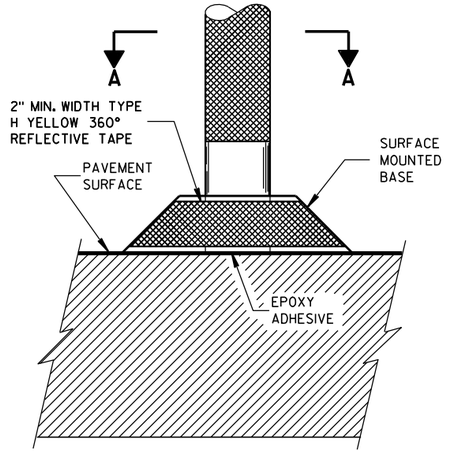


PARTIAL SECTION TO SHOW BOLTS



POST BASES ON NEW OR EXISTING PAVEMENT





POST ANCHOR AND BASE ON PAVEMENT WHICH WILL BE REMOVED

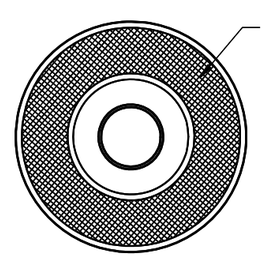
GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

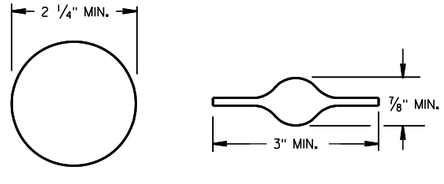
① THREADED ROD SHALL BE MACHINED DOWN TO 0.280 INCH DIA. 1 1/4 INCHES FROM THE TOP.

② THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.



SECTION A-A

SURFACE MOUNTED BASE



SECTION B-B

ALTERNATIVE SHAPES

FLEXIBLE TUBULAR MARKER POST, ANCHOR & BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2/17/94 DATE

/S/ Chester J. [illegible] DIRECTOR, OFFICE O

FHWA

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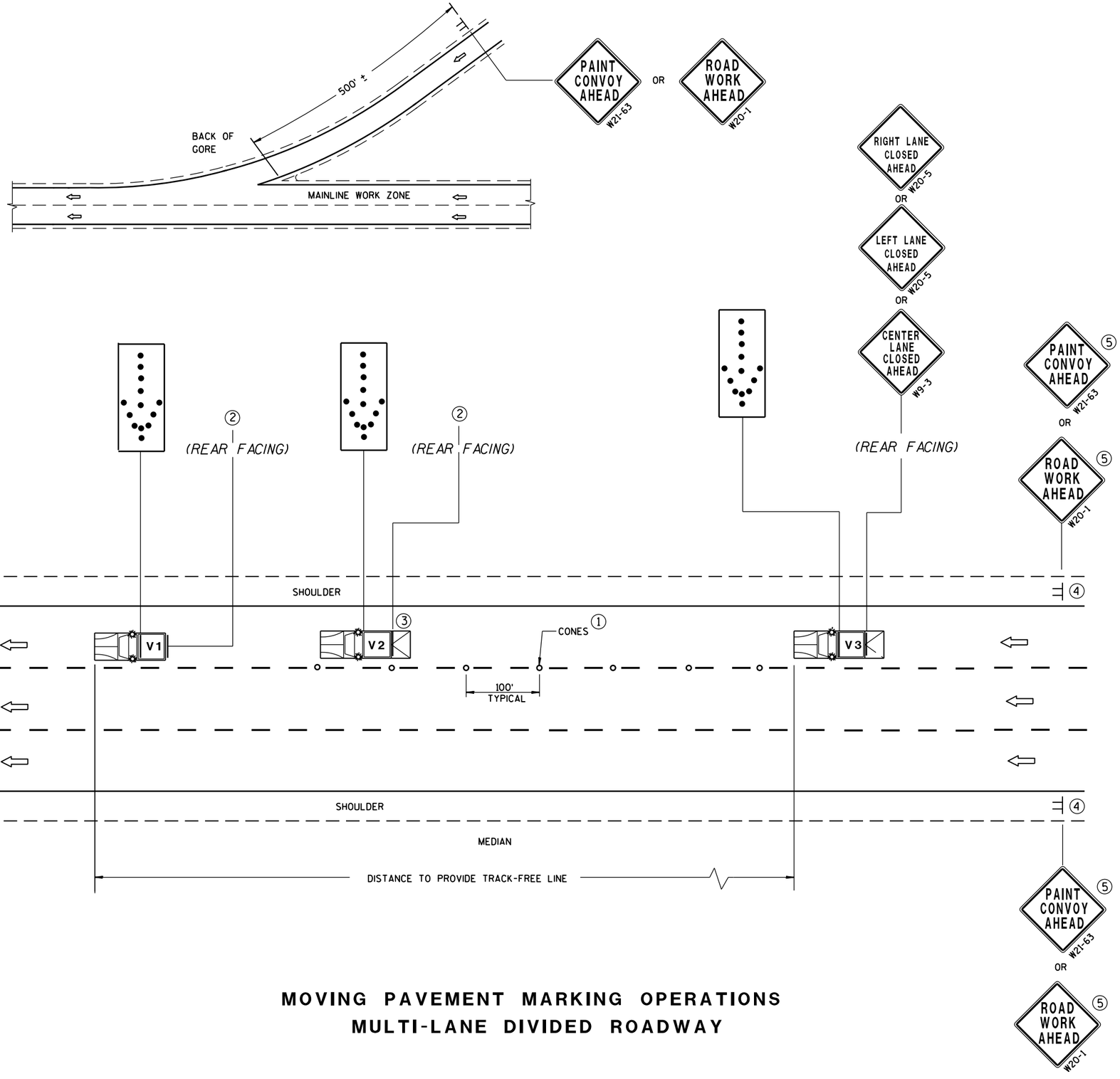
S.D.D. 15 C 11-5



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.

⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

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

MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/3/2013 DATE

/S/ Travis Feltes STATE TRAFFIC EN

FHWA

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S.D.D. 15 C 19-2c

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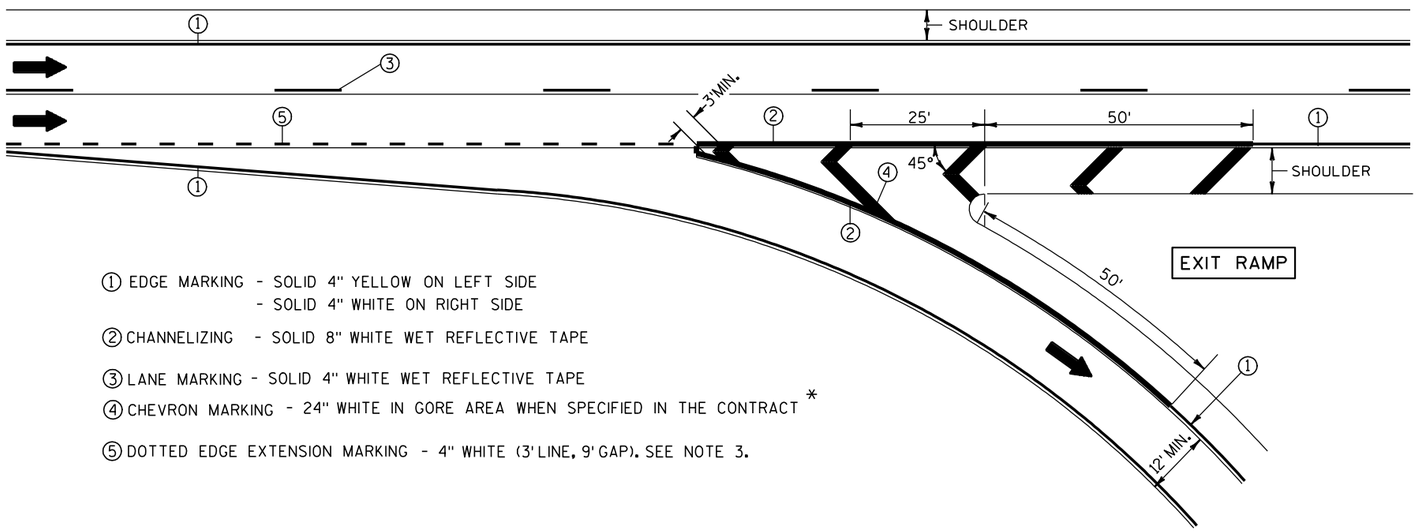
S.D.D. 15 C 19-2c



① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE

② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE

③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE

④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *

⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

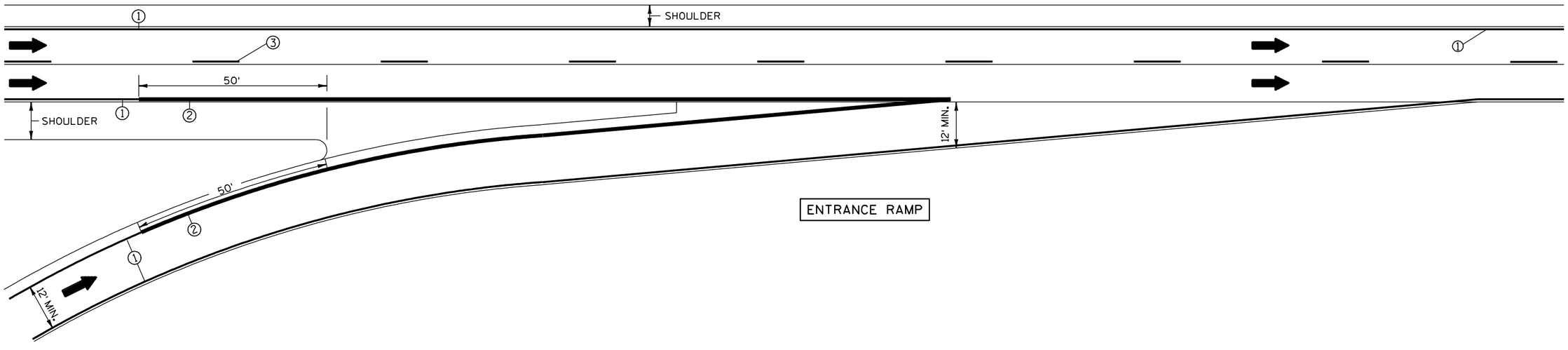
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



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S.D.D. 15 C 31-1a

PAVEMENT MARKING (RAMPS AND GORES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 15 C 31-1a

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

W057-52
36"x24"

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).

LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

R2-1
48"x60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

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

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

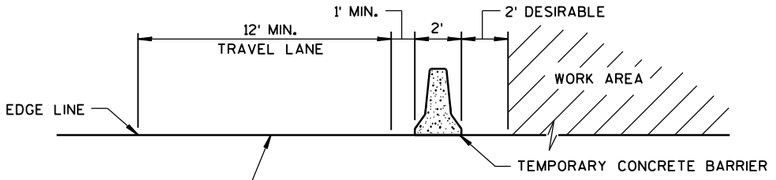
(1) CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

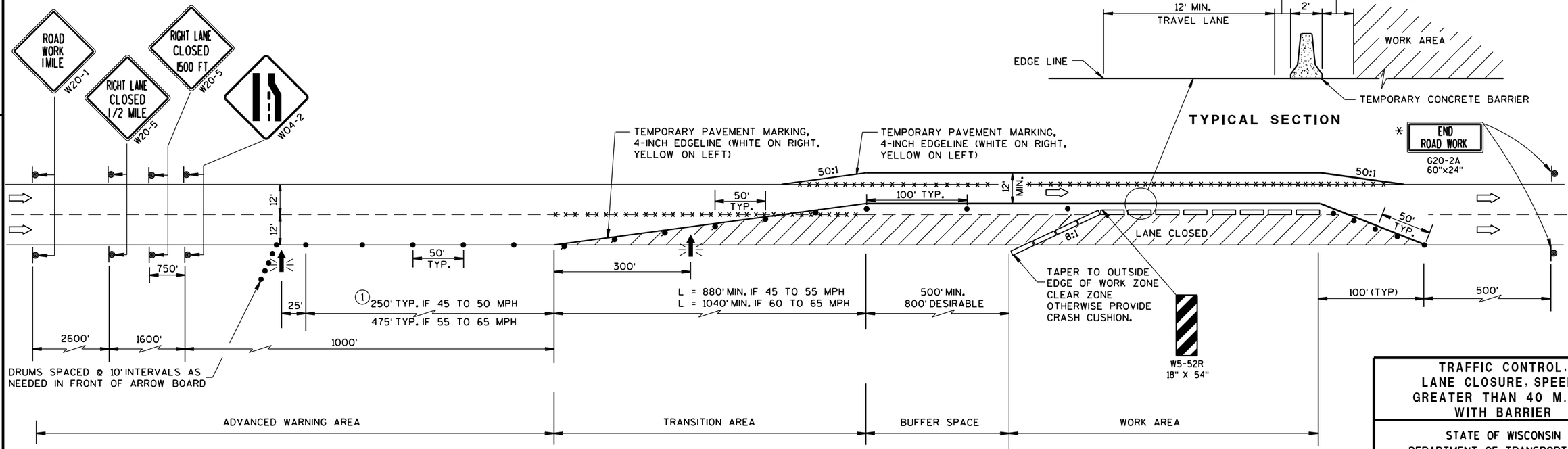
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.



TYPICAL SECTION



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER — SIGN

FHWA

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S.D.D. 15 D 3-2

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

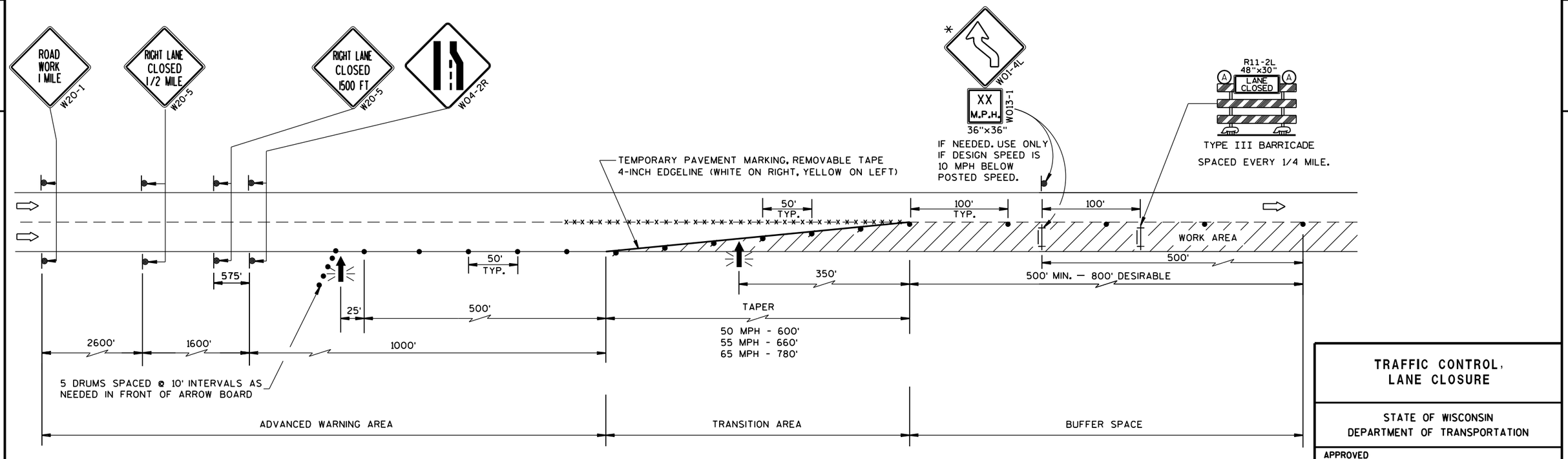
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 D 12-5a

S.D.D. 15 D 12-5a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

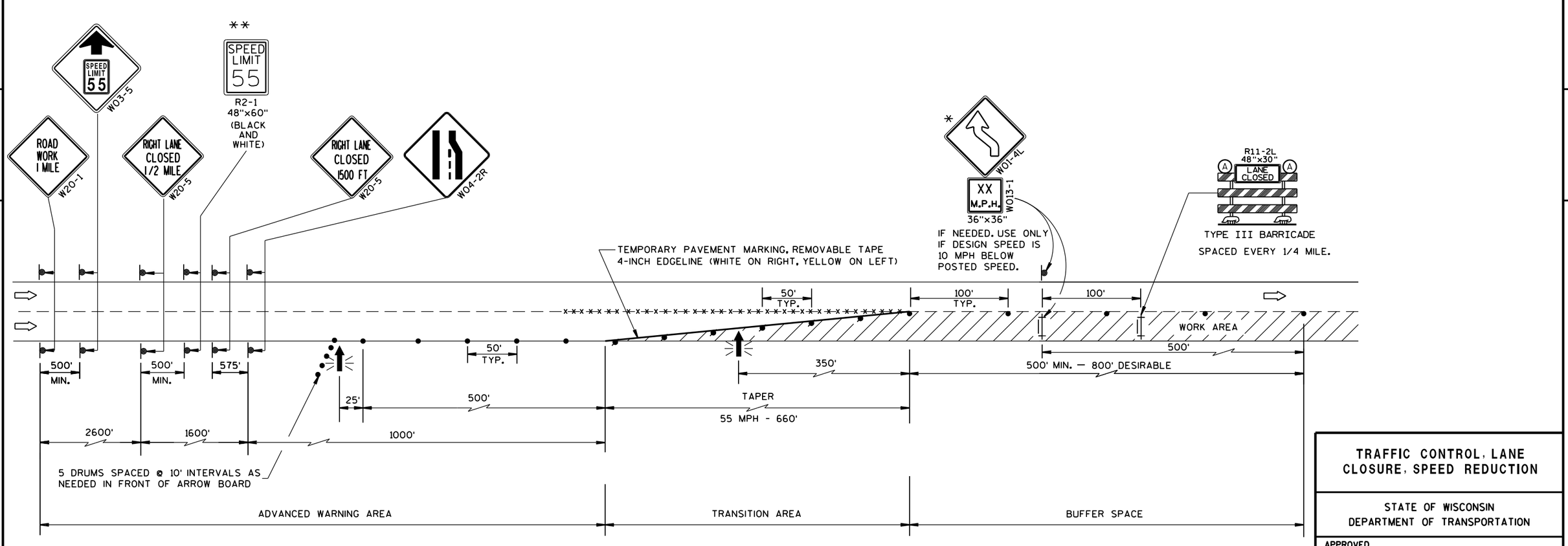
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A 65 MPH RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



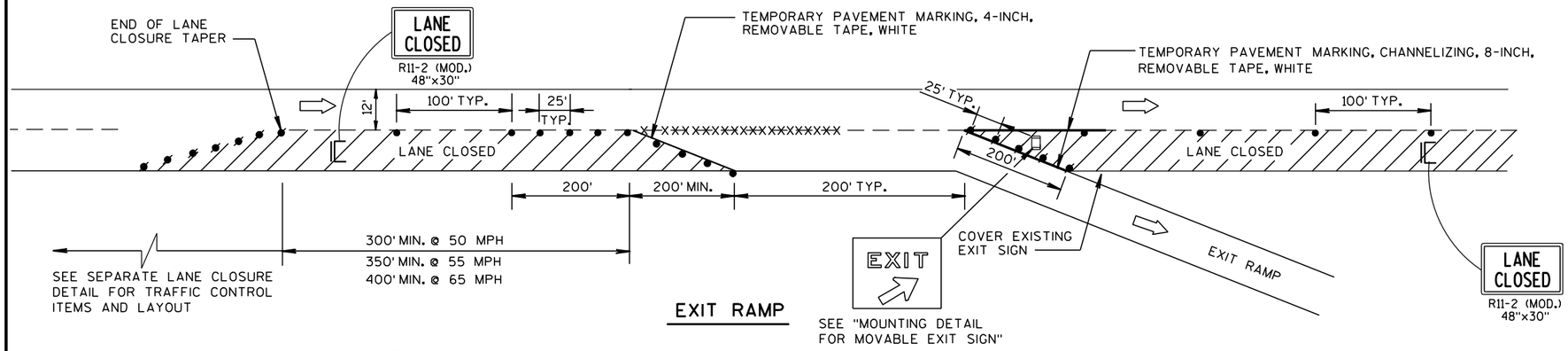
TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

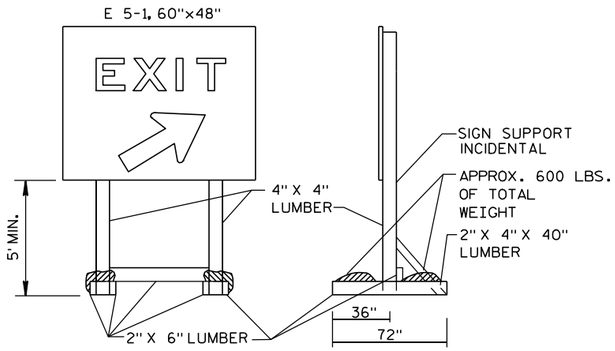
APPROVED
Feb. 2015 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

S.D.D. 15 D 12-5b

S.D.D. 15 D 12-5b

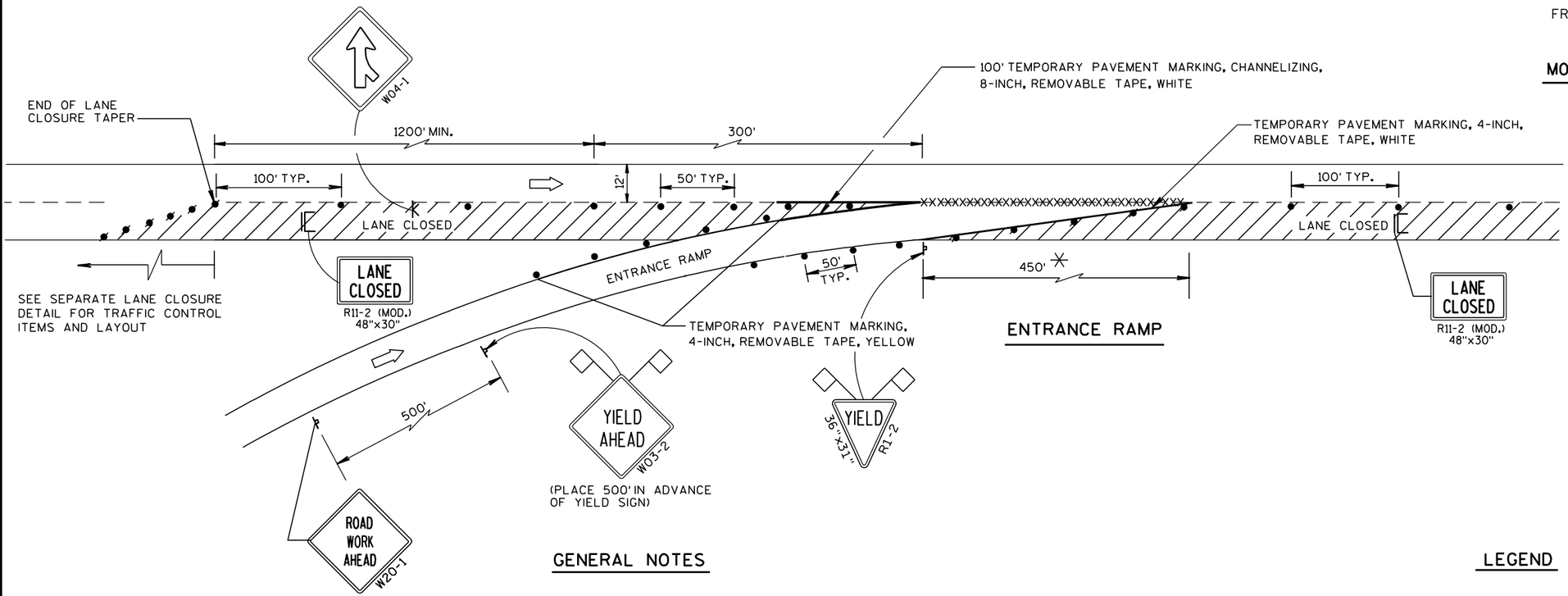


EXIT RAMP



NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL

MOUNTING DETAIL FOR MOVABLE EXIT SIGN



ENTRANCE RAMP

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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.

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

✳ LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

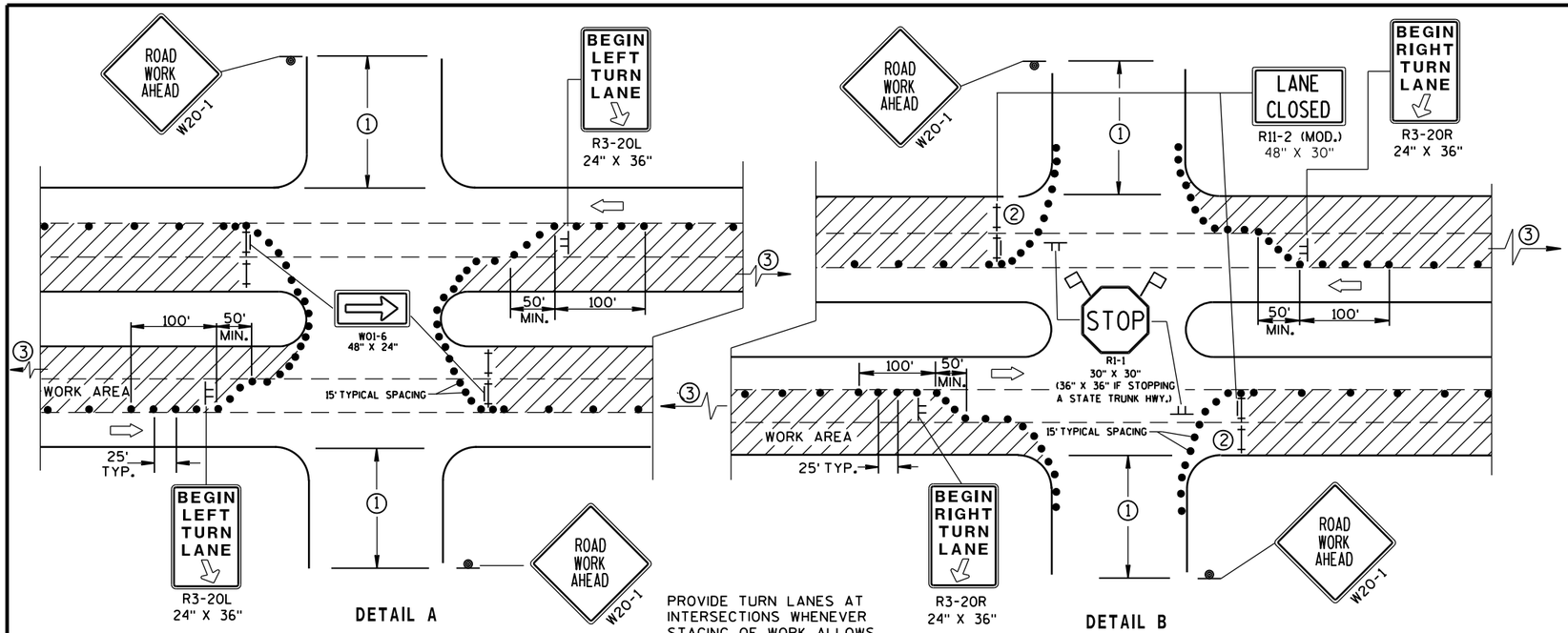
- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000
DATE
/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

6
S.D.D. 15 D 15-1



DETAIL A

FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

DETAIL B

FOR RIGHT TWO LANES CLOSED AT INTERSECTION

GENERAL NOTES

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

THE SPACING BETWEEN 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.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

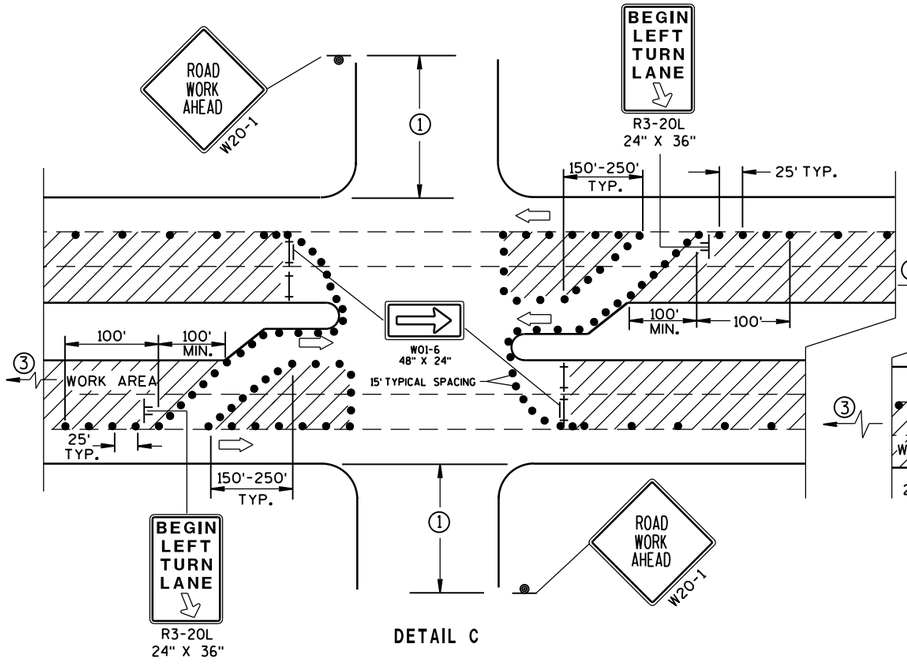
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE 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.

① 500 FEET TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350 FEET IF 35-40 MPH.
200 FEET IF 25-30 MPH.

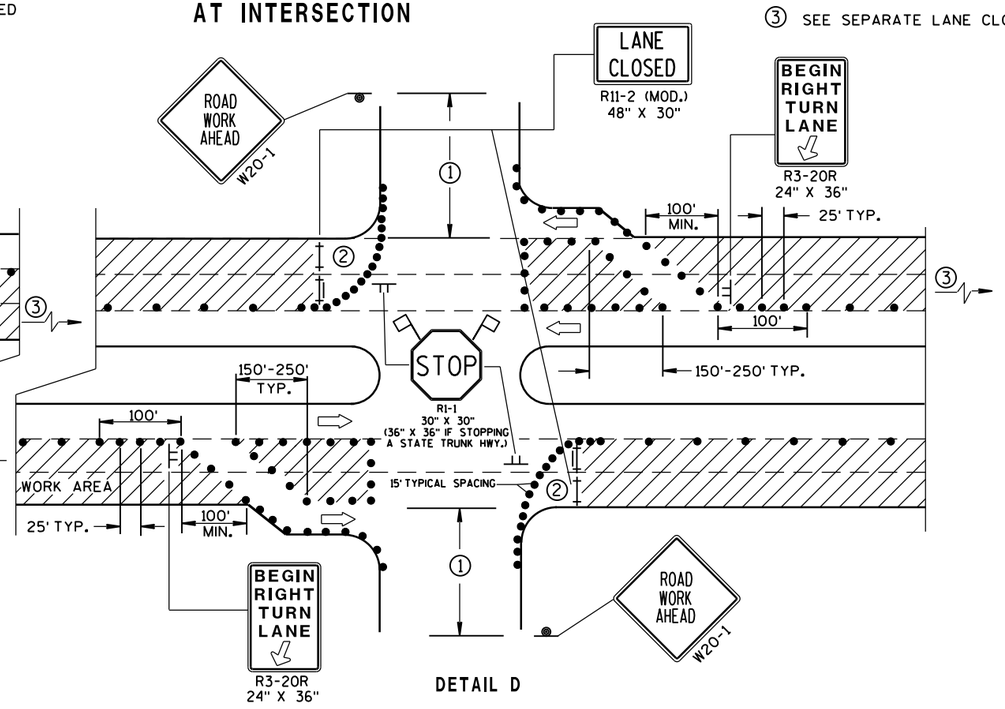
② ALSO USE BARRICADES AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

FOR LEFT TWO LANES CLOSED AT INTERSECTION OR MEDIAN BREAK (WITH LEFT TURN BAY OPEN)



DETAIL D

FOR RIGHT TWO LANES CLOSED AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 D 23-3

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

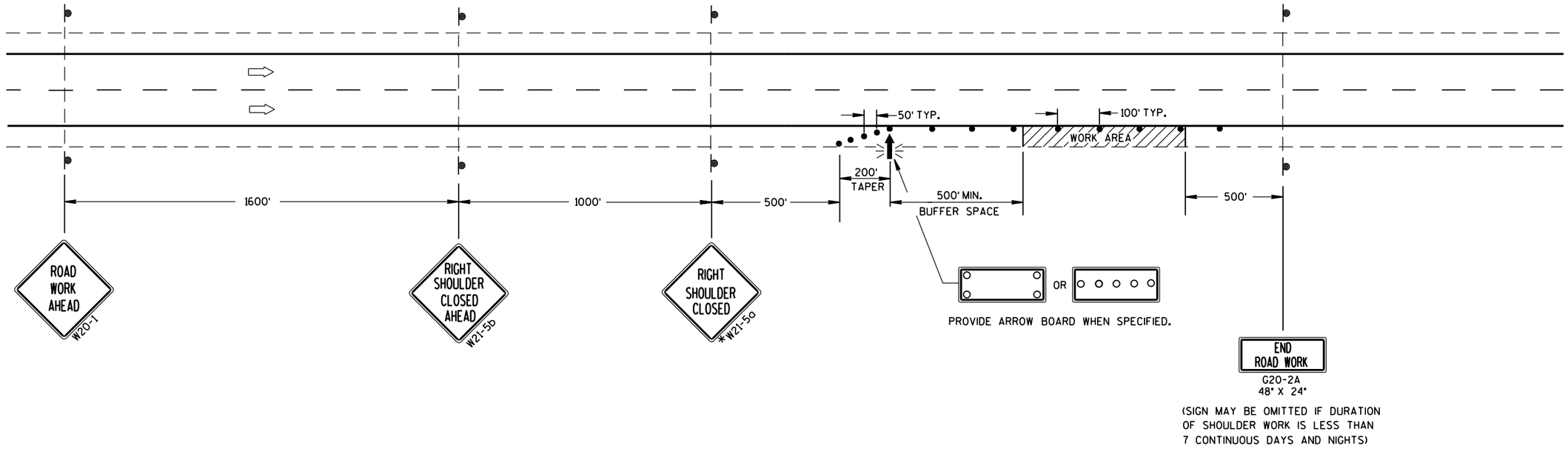
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

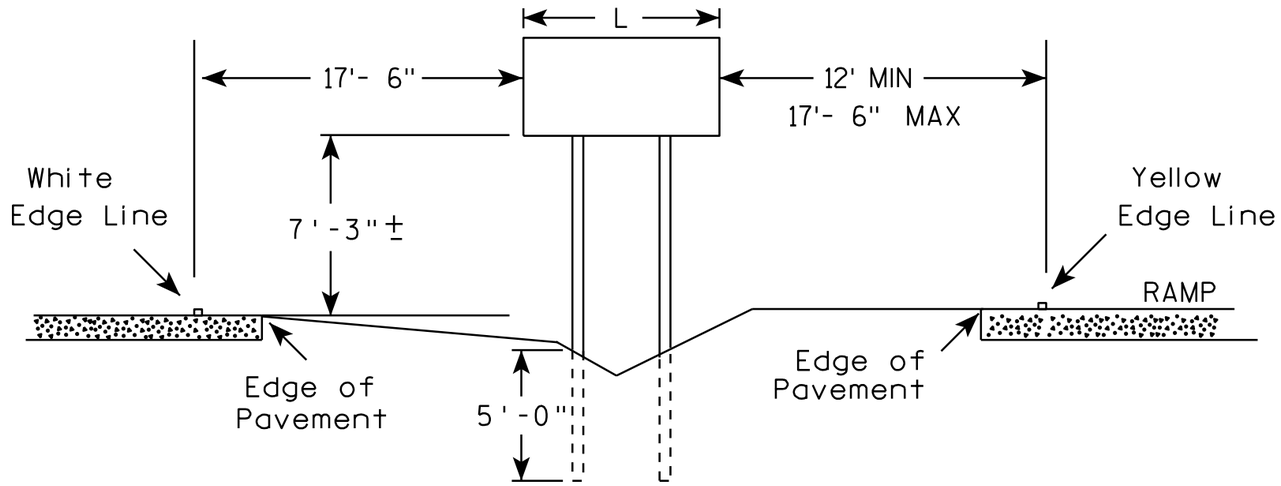
8/2013 — DATE

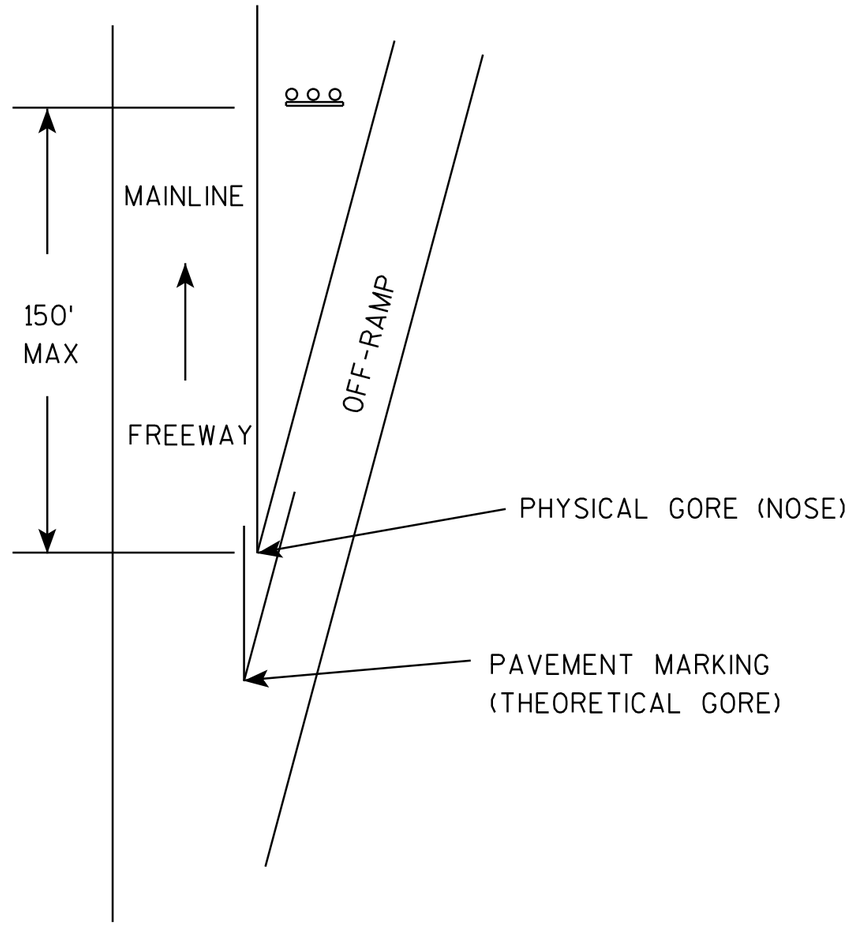
/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

6

S.D.D. 15 D 27-2





GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The (∓) tolerance for the mounting height is 3 inches.

TYPICAL INSTALLATION OF TYPE II SIGNS ON WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PLATE A4-2.3

7

7

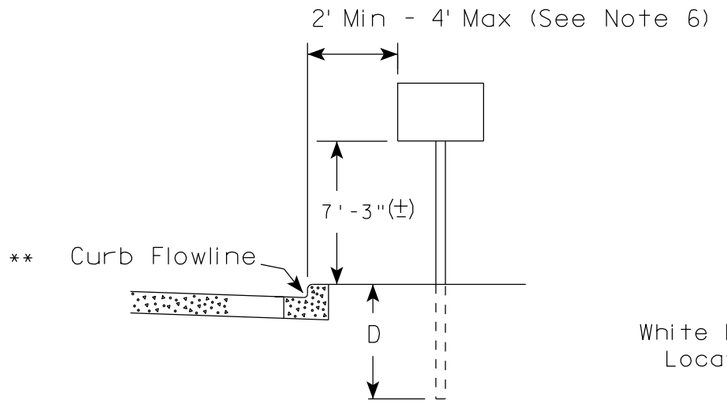
PROJECT NO:

SHEET NO: E

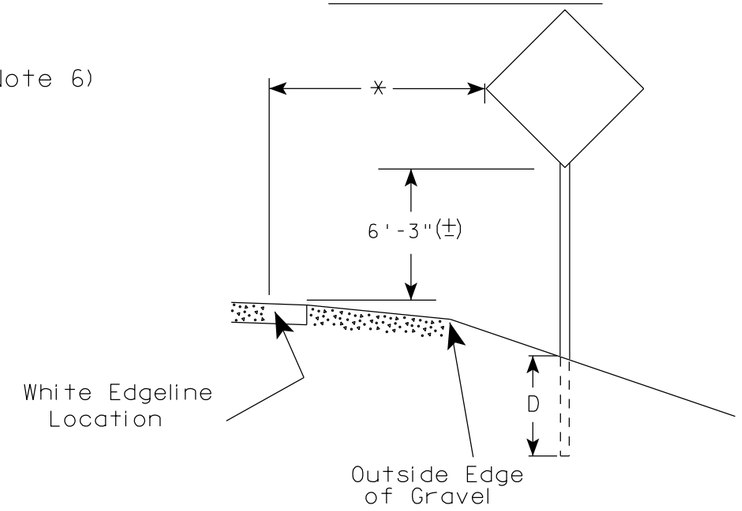
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A42.DGN PLOT DATE : 06-FEB-2014 12:36 PLOT BY : mscsja

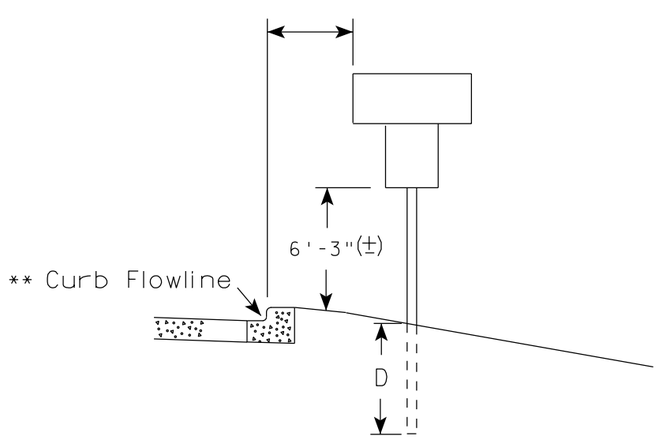
WISDOT/CADDS SHEET 42

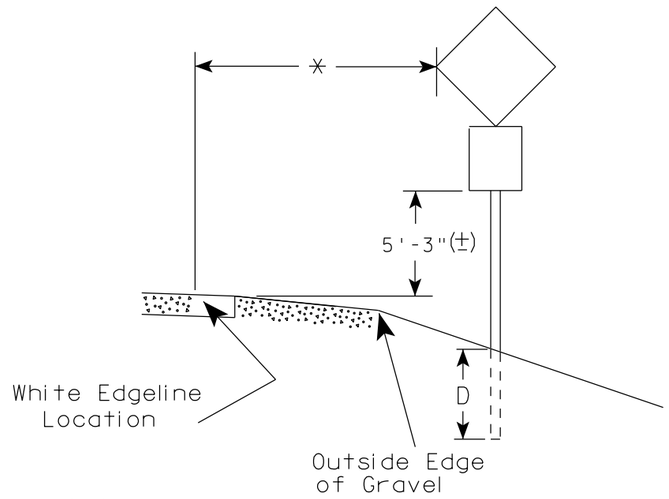
URBAN AREA



RURAL AREA (See Note 2)







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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding 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'

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

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

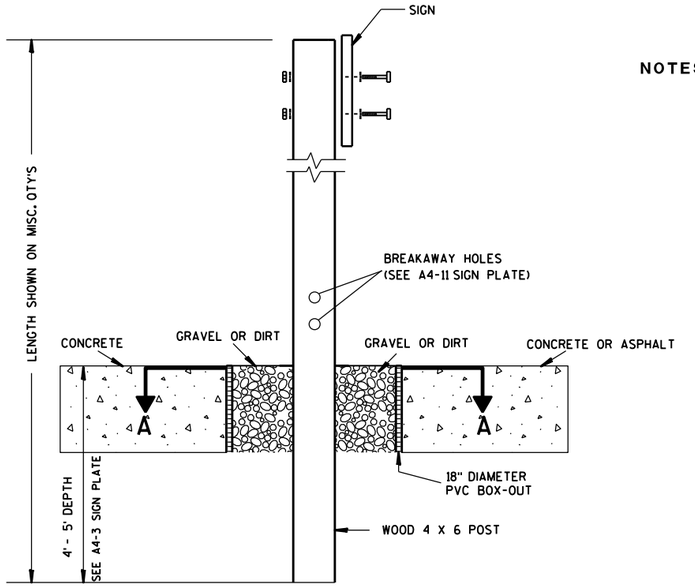
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

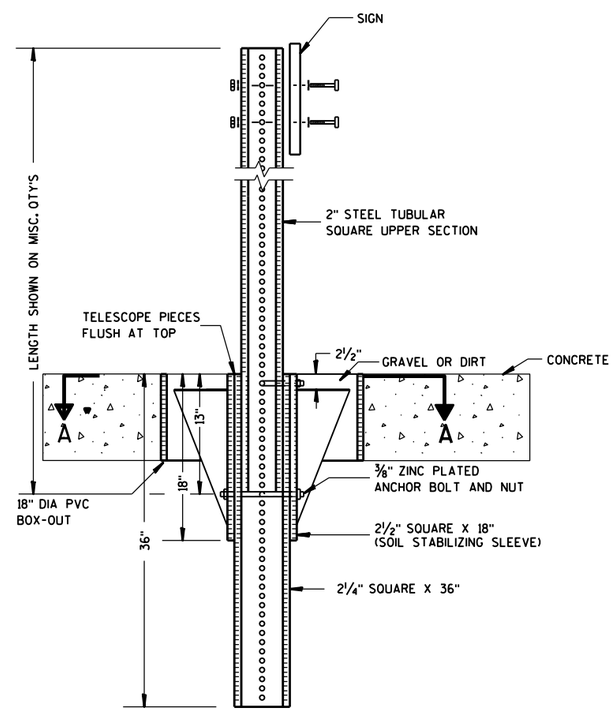
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

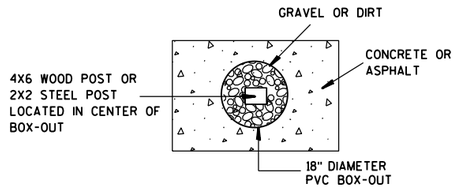
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

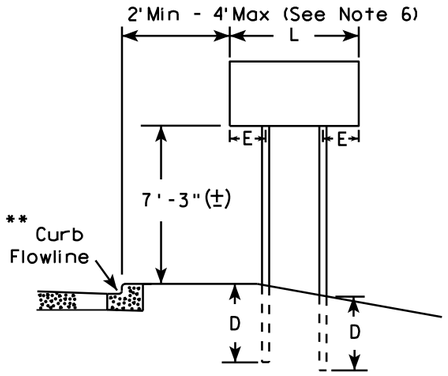
APPROVED Matthew R Rauch
for State Traffic Engineer

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

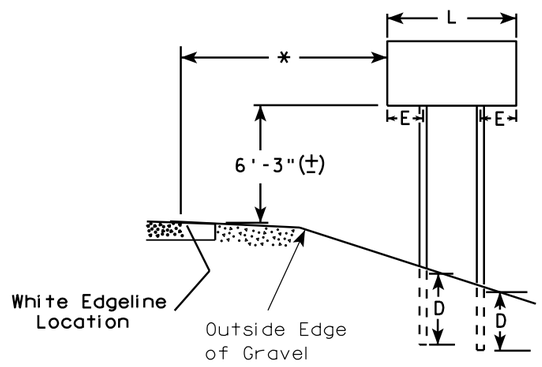
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

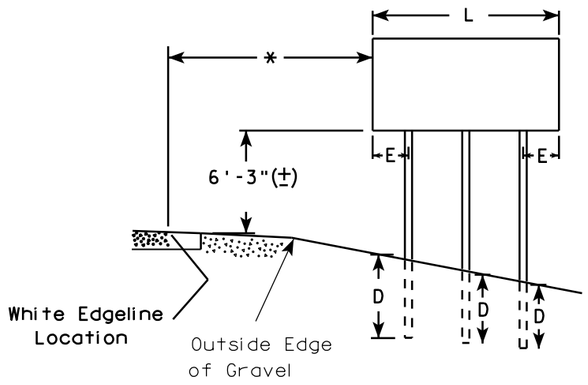
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

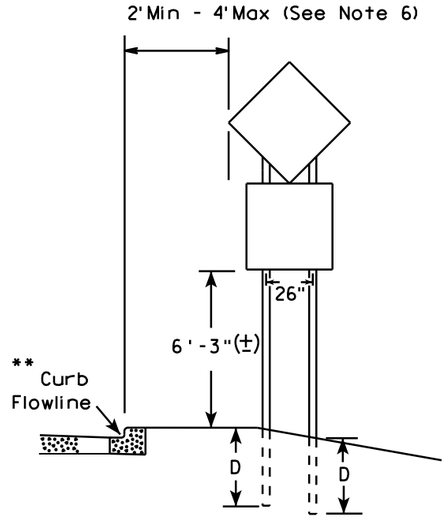
URBAN AREA



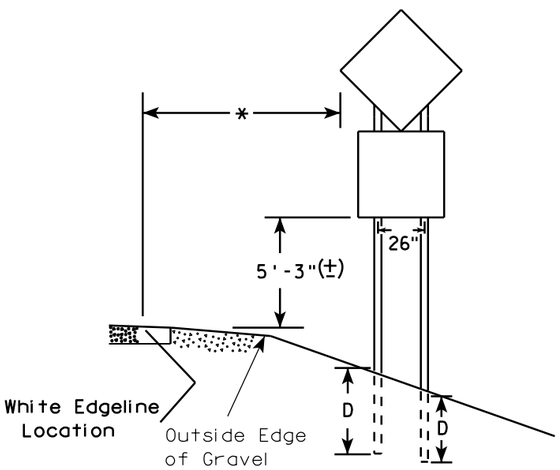
RURAL AREA (See Note 3)







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 120"	L/5

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

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

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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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

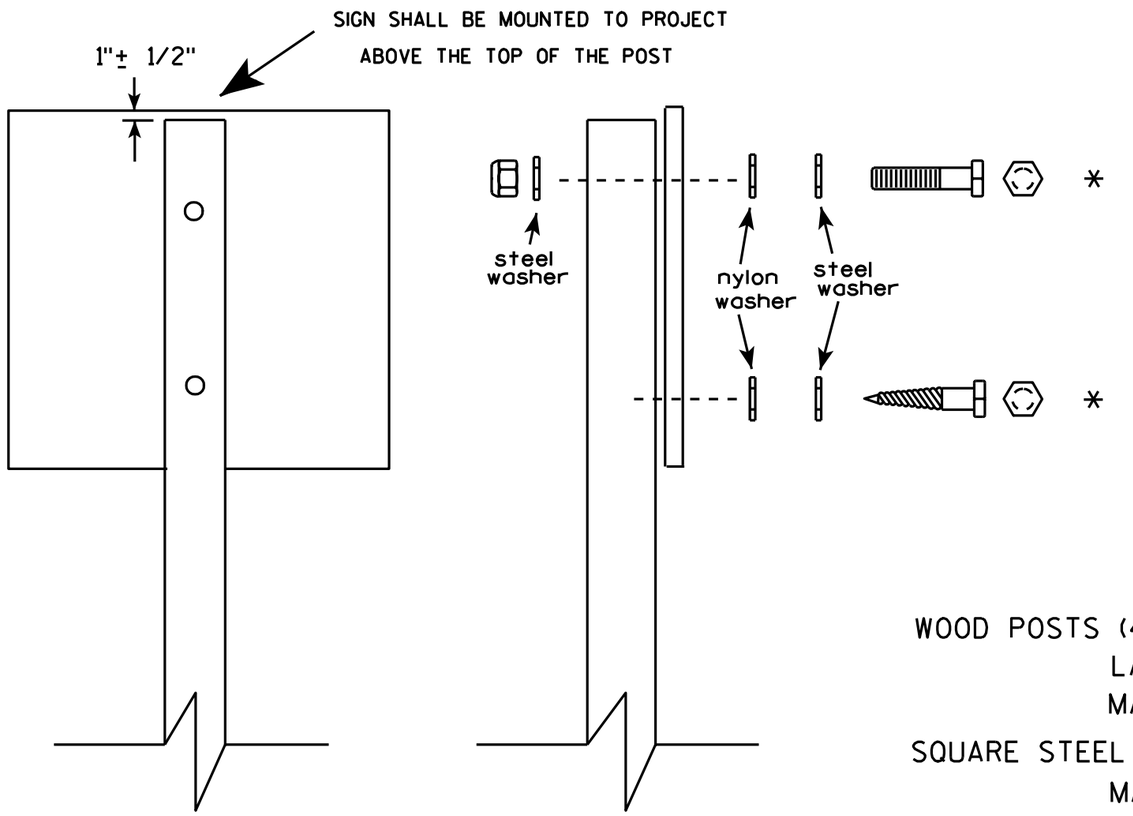
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A44.DGN PLOT DATE : 23-JUL-2015 15:23 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 107.021305:1.000000 WISDOT/CADDS SHEET 42



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

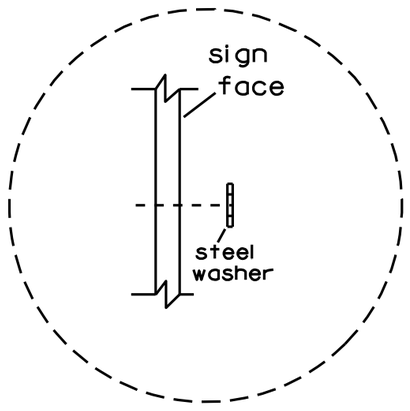
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

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



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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

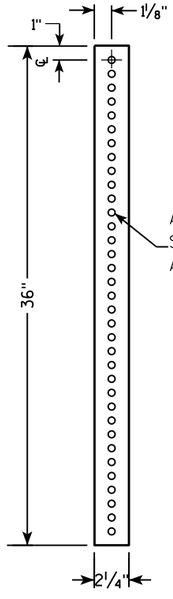
7

PROJECT NO:

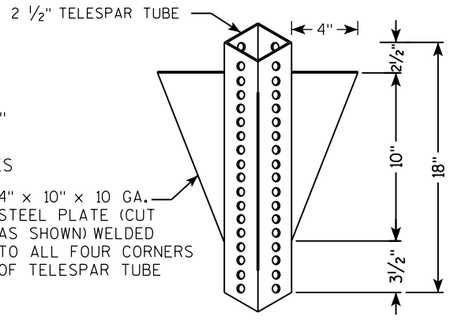
SHEET NO: 160 E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

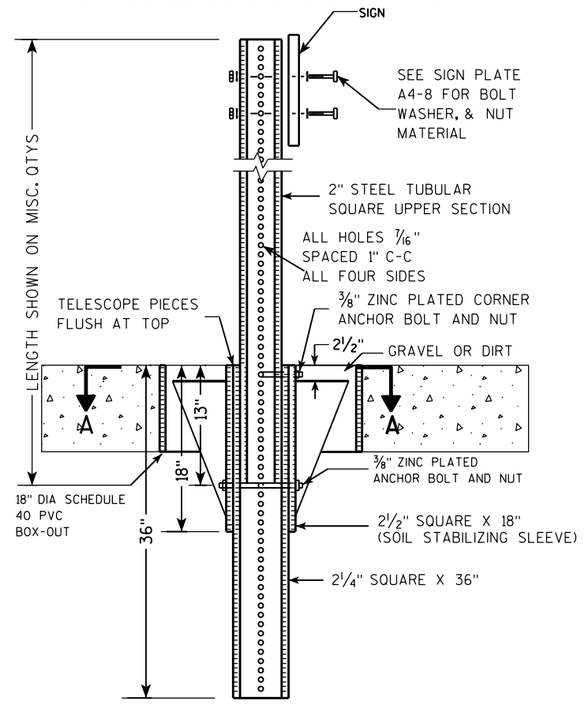
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



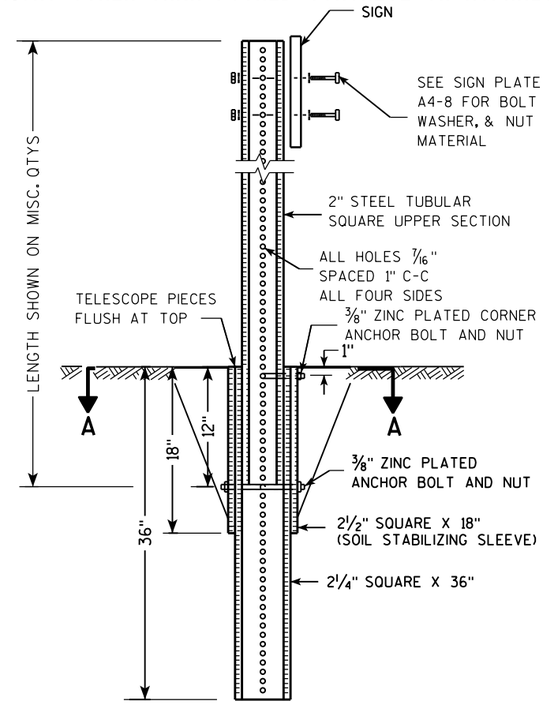
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

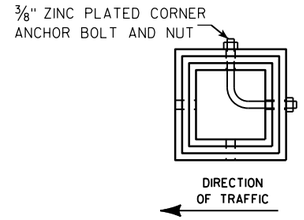


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

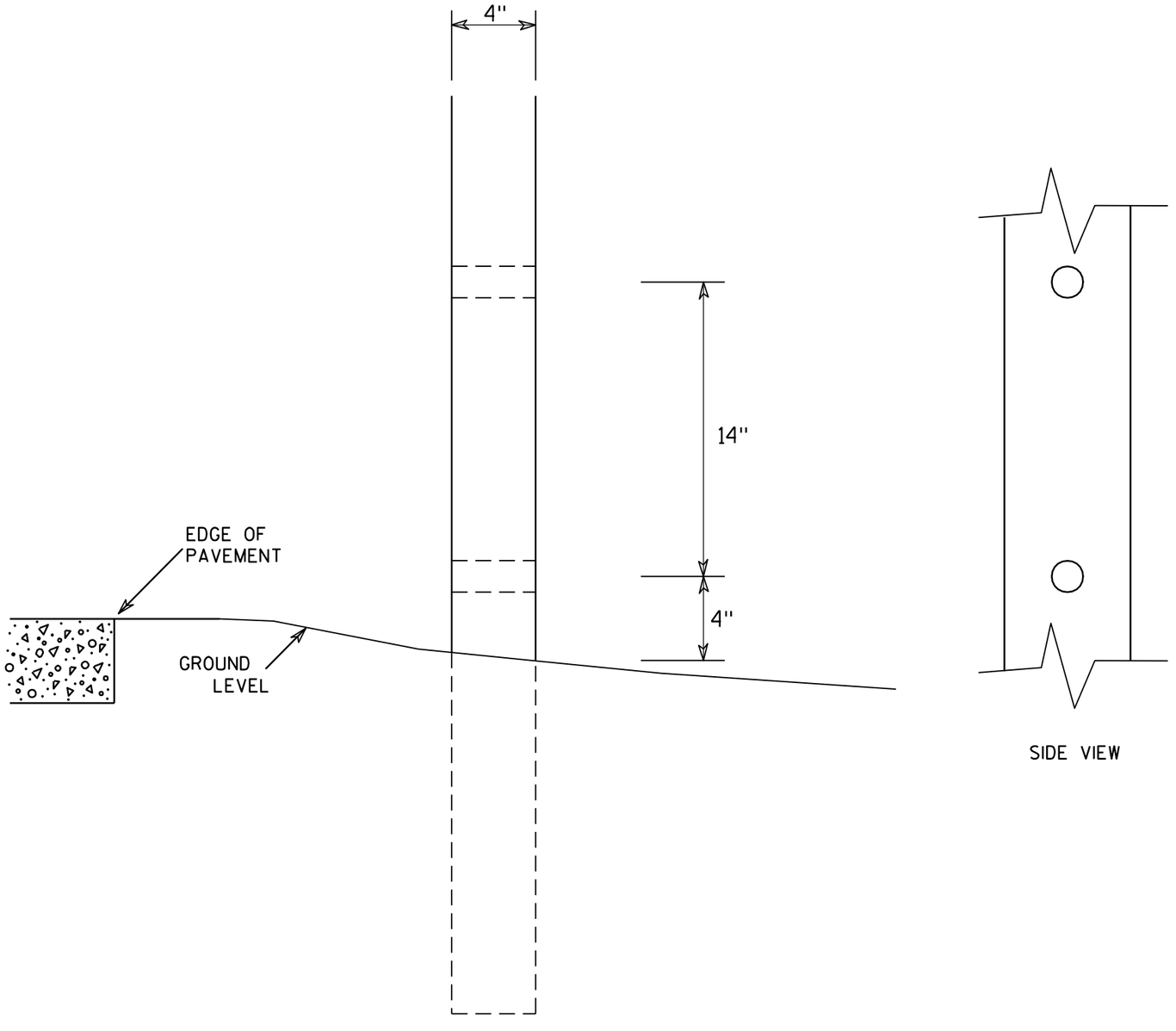
WISCONSIN DEPT OF TRANSPORTATION

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.

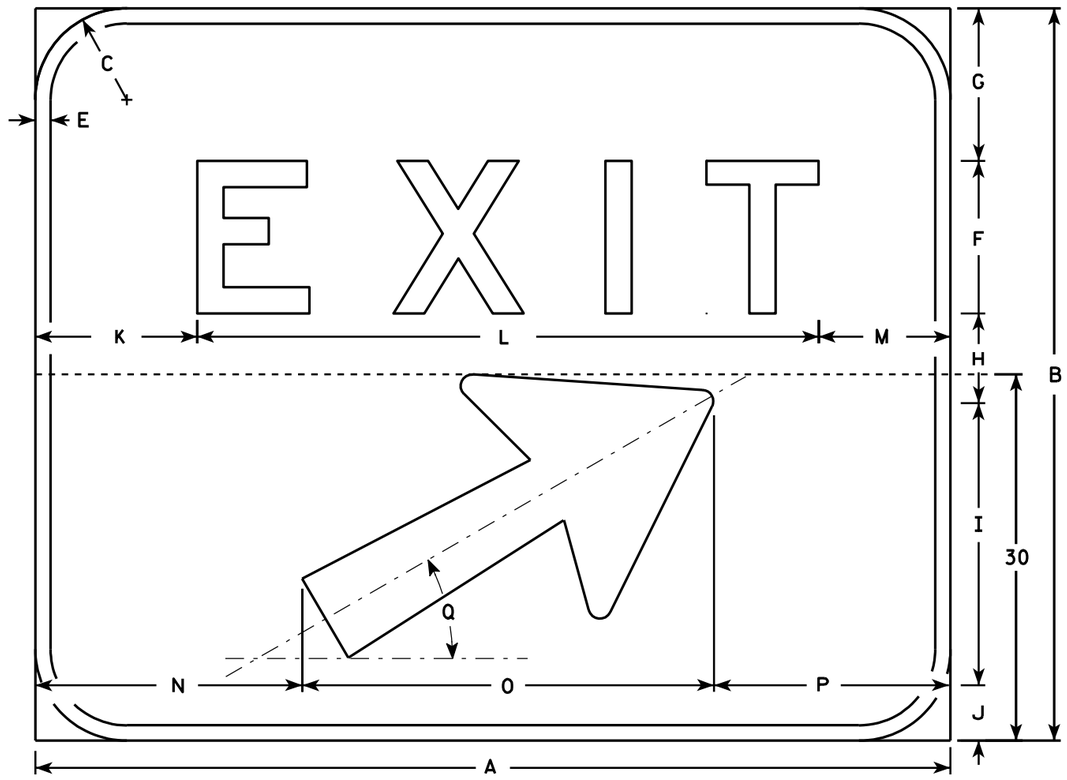
4 X 6 WOOD POST MODIFICATIONS

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: 162	E



E5-1

NOTES

1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Green
   Message - White (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but borders shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (----------).
6. Arrow is Type "A" from sign plate A1-1.
7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent for this sign is:

SIZE	
1	
2	
3	
4	1500 mm X 1200 mm
5	1800 mm X 1500 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																												
2																												
3																												
4	60	48	6		1	10	10	5 7/8	18 1/2	3 5/8	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°										20.0	1.80
5	72	60	6		1	12	12	10	18 1/2	7 1/2	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°										30.0	2.70

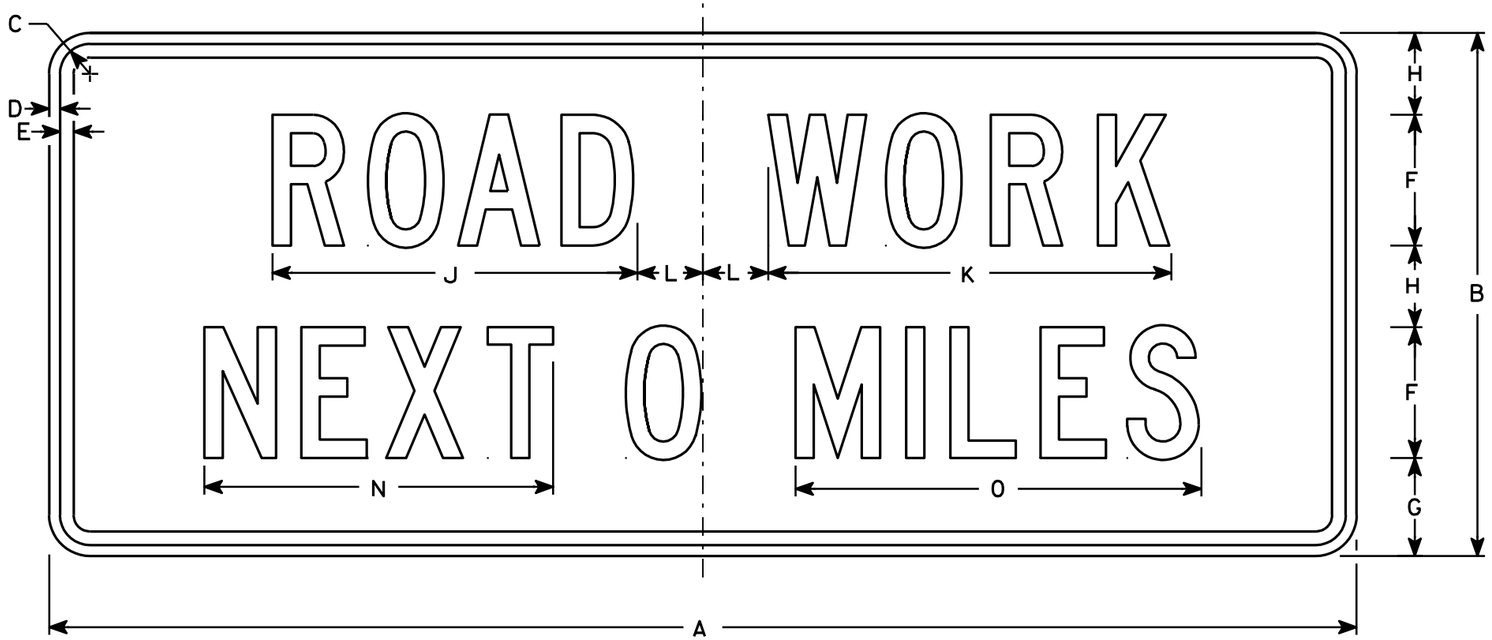
STANDARD SIGN
E5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 6/22/00 PLATE NO. E5-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 163	E



G20-1

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.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

Metric equivalent for this sign is:

SIZE	
1	
2	1500 mm X 600 mm
3	
4	1500 mm X 600 mm
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.	Area m2
1																												
2	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10	.90
3																												
4	60	24	1 3/8	1/2	5/8	6	4 1/2	3 3/4		16 3/4	18 1/2	3		16	18 5/8												10	.90
5																												

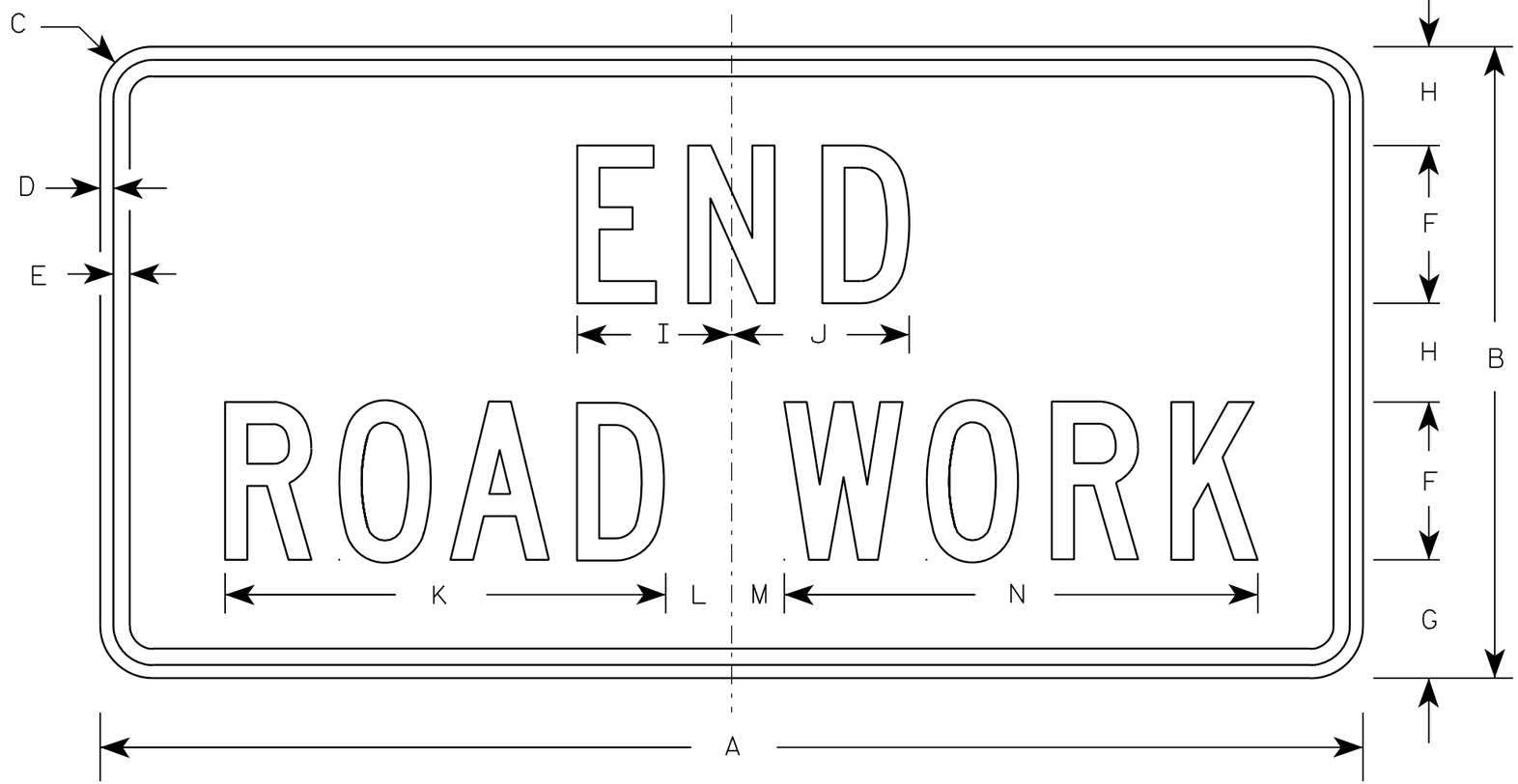
STANDARD SIGN
G20-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spray for State Traffic Engineer

DATE 4/8/97 PLATE NO. G20-1.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 164	E



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

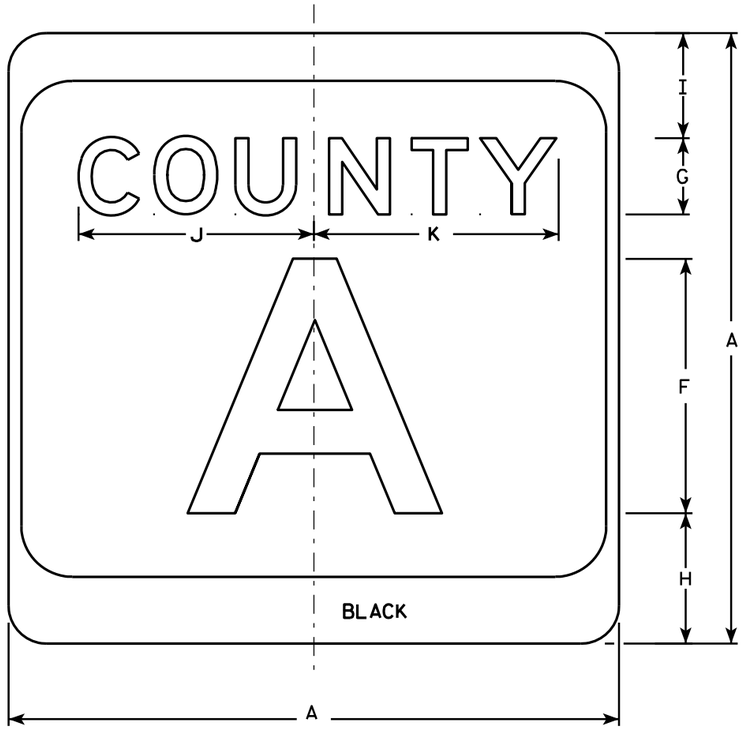
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

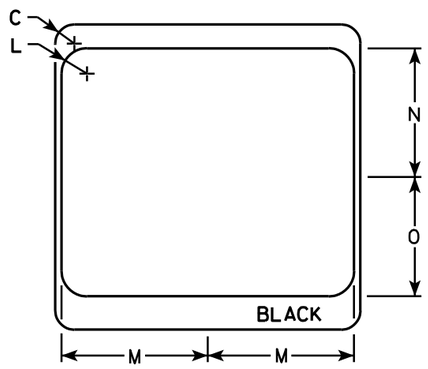
APPROVED Matthew R Rauch
for State Traffic Engineer

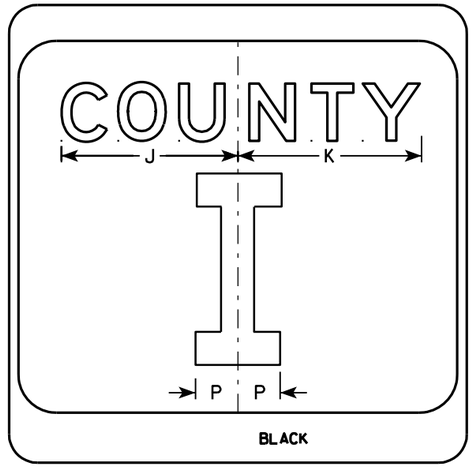
DATE 9/30/09 PLATE NO. G20-2A.8

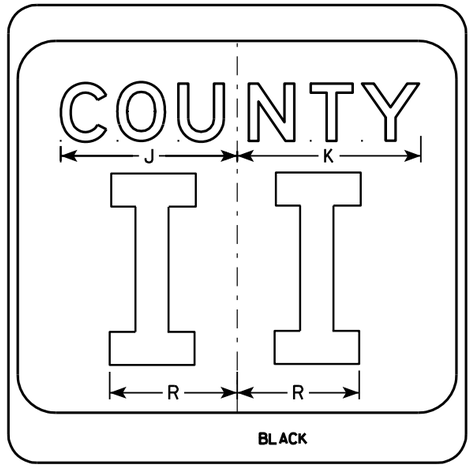
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 165	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   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. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

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			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

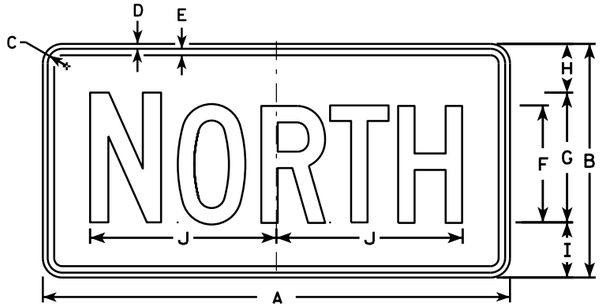
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

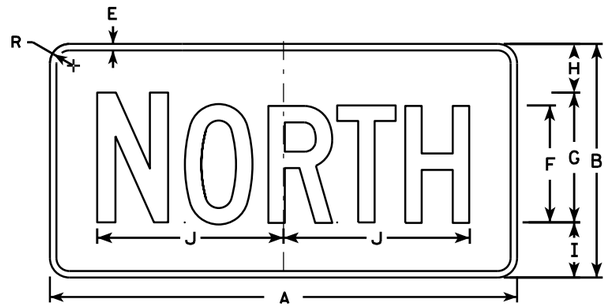
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 166	E

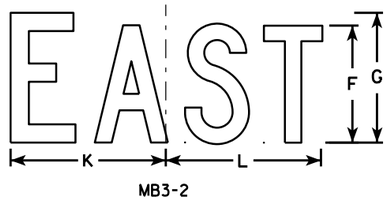


M3-1
MK3-1
MM3-1
MN3-1

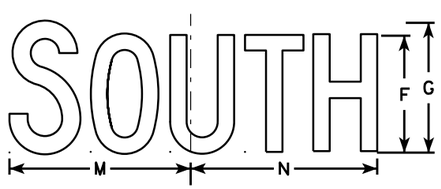


MB3-1

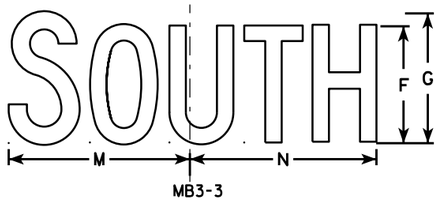
M3-2
MK3-2
MM3-2
MN3-2



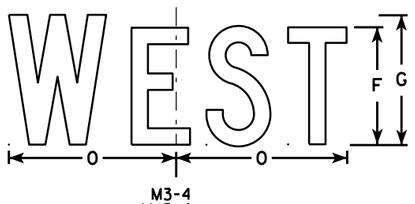
MB3-2



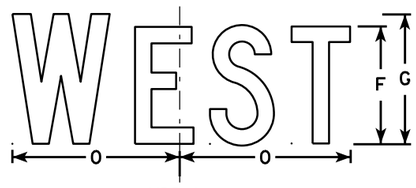
M3-3
MK3-3
MM3-3
MN3-3



MB3-3



M3-4
MK3-4
MM3-4
MN3-4



MB3-4

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
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

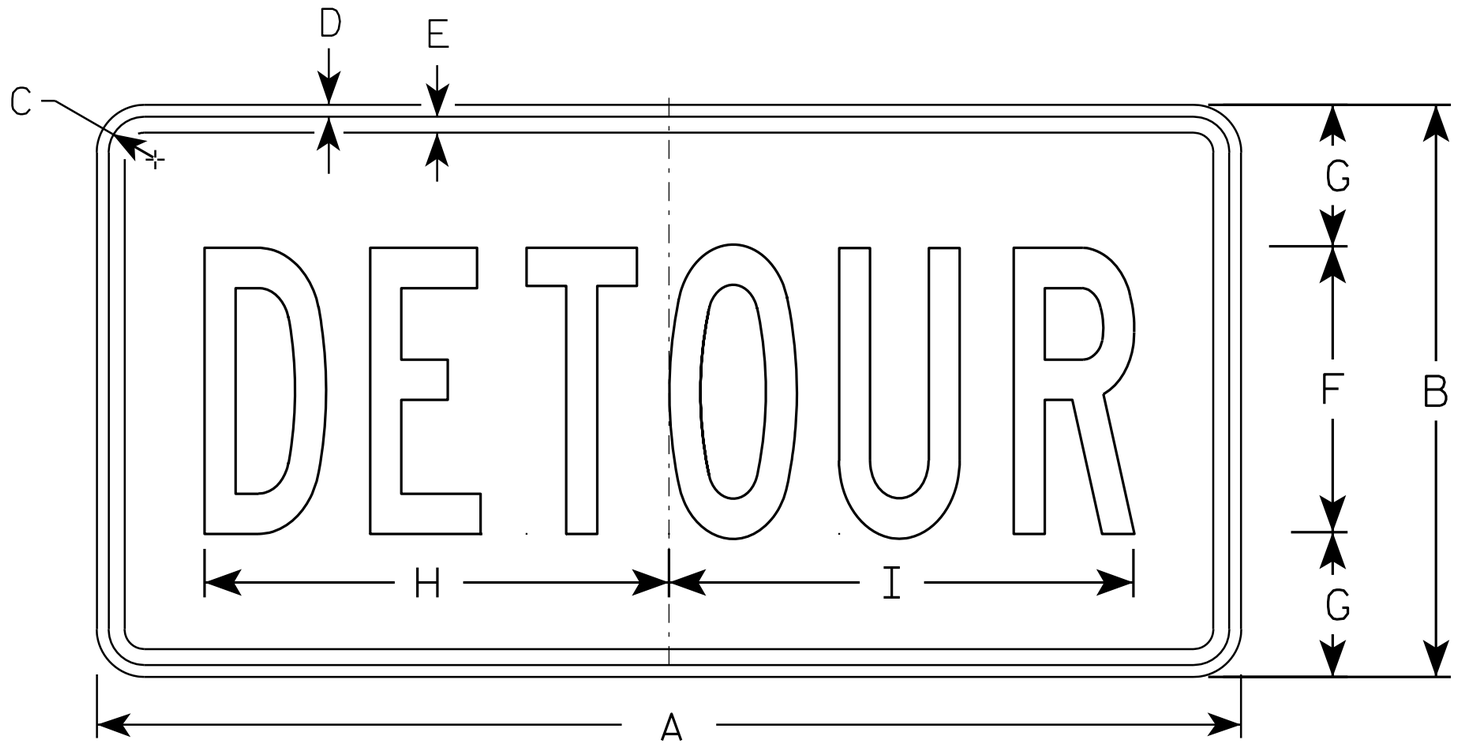
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/30/14 PLATE NO M3-1.13

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



M4-8

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 - B
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	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

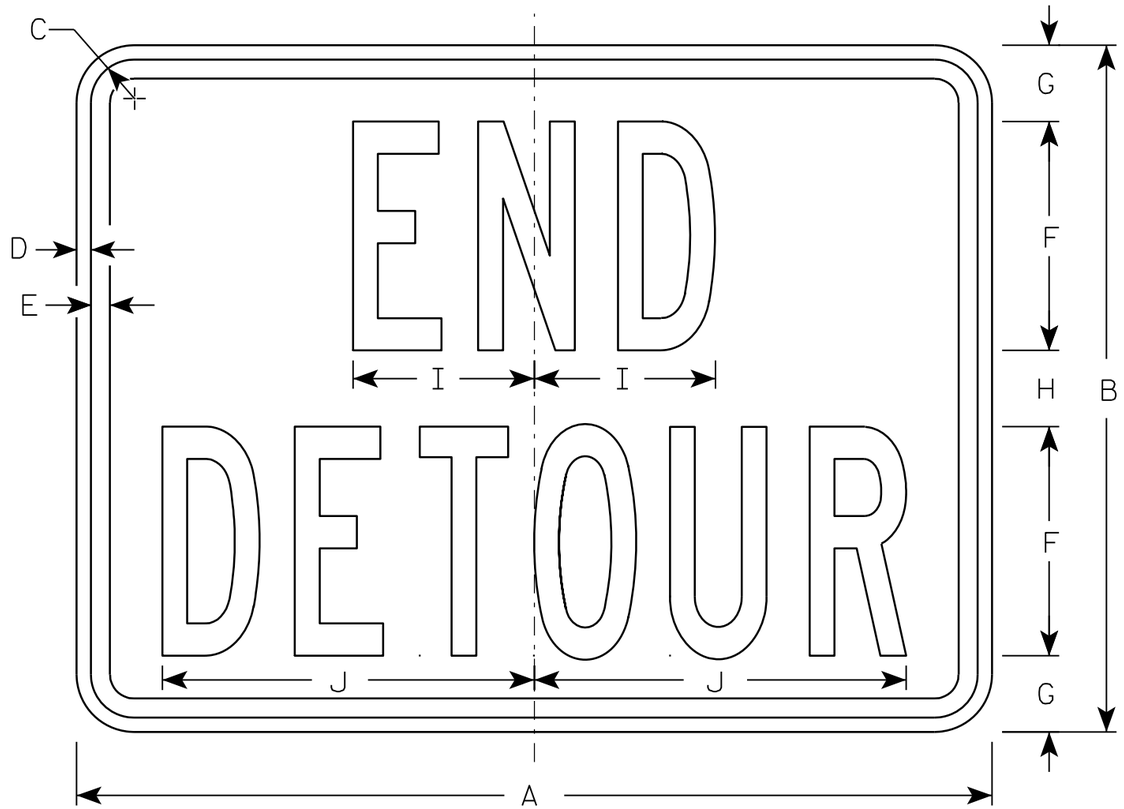
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 168	E



M4-8A

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 - B
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	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

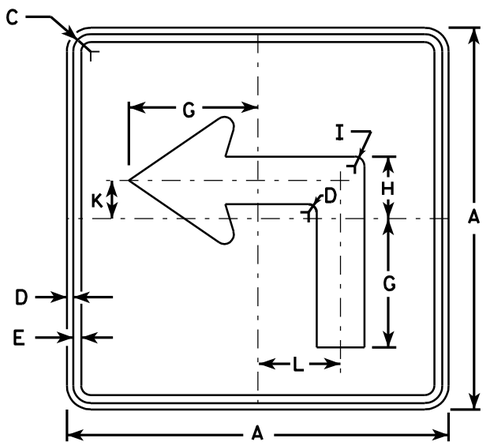
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

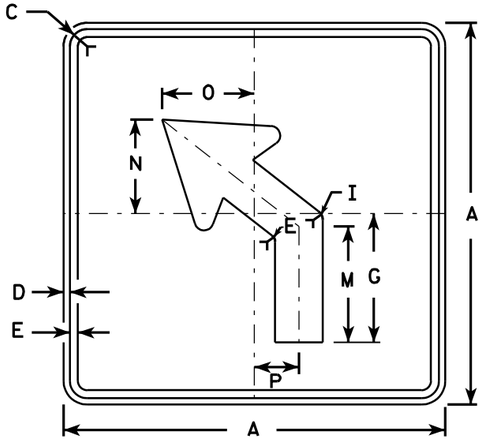
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

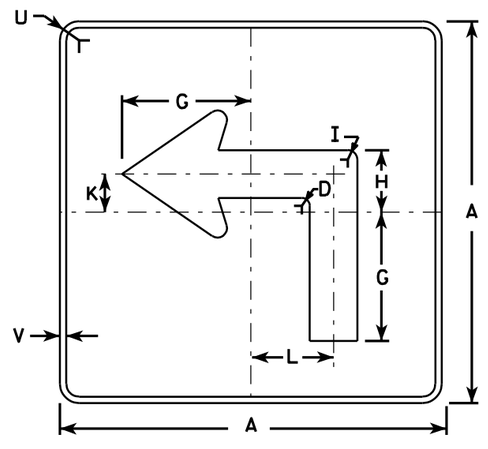
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 169	E



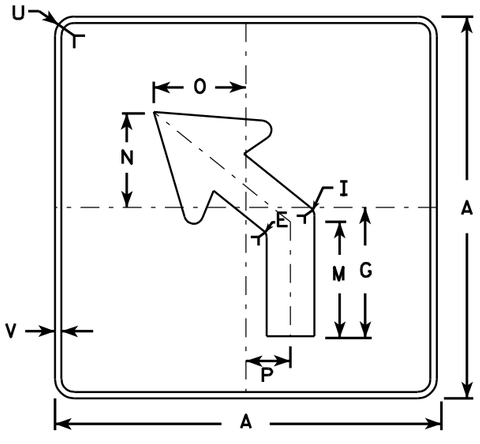
M5-1L
MK5-1L
MM5-1L
MO5-1L
MP5-1L
MR5-1L



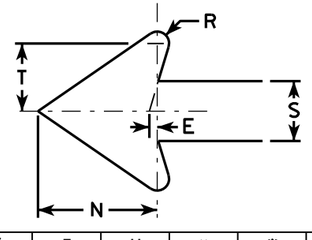
M5-2L
MK5-2L
MM5-2L
MO5-2L
MP5-2L
MR5-2L



MB5-1L
MG5-1L
MN5-1L



MB5-2L
MG5-2L
MN5-2L



NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   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. M5-1 and M5-2 Background - White - Type H Reflective
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White - Type H Reflective
   MG5-1 and MG5-2 Background - Green
   Message - White - Type H Reflective
   MK5-1 and MK5-2 Background - Green
   Message - White Type H Reflective
   MM5-1 and MM5-2 Background - White - Type H Reflective
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White - Type H Reflective
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow - Type H Reflective
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 1/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

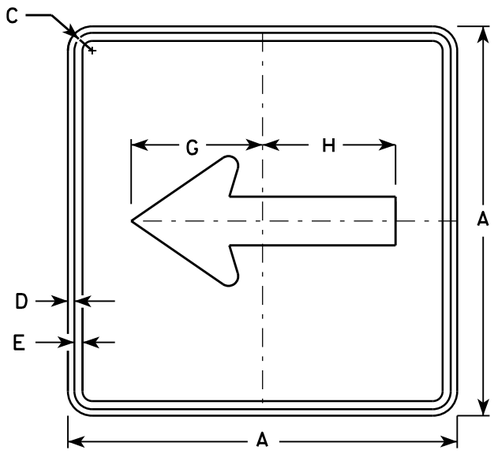
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

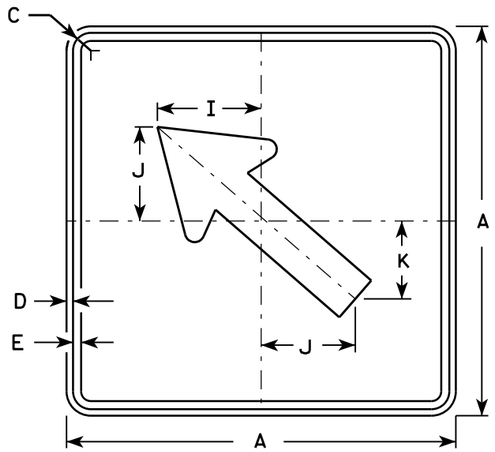
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M5-1.12

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 170 | E



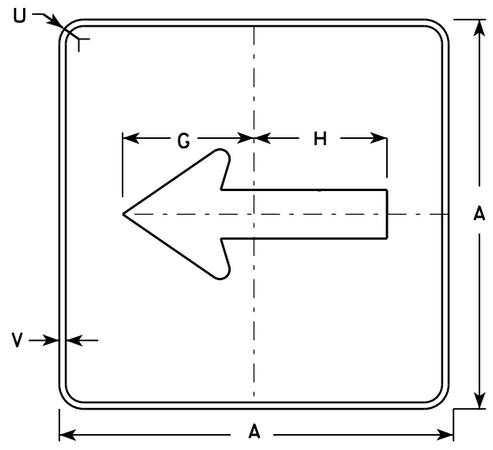
M6-1
MK6-1
MM6-1
MN6-1
MO6-1
MP6-1
MR6-1



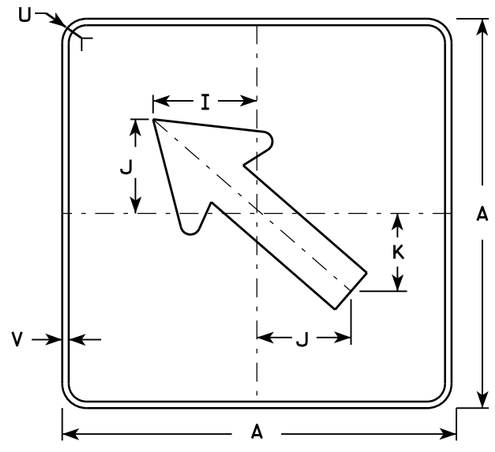
M6-2
MK6-2
MM6-2
MN6-2
MO6-2
MP6-2
MR6-2

NOTES

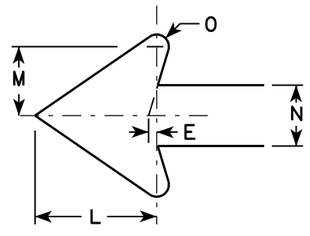
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MG6-1 and MG6-2 Background - Green
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1



MB6-2



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	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2						3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2						6.25

STANDARD SIGN M6-1 & M6-2 SERIES

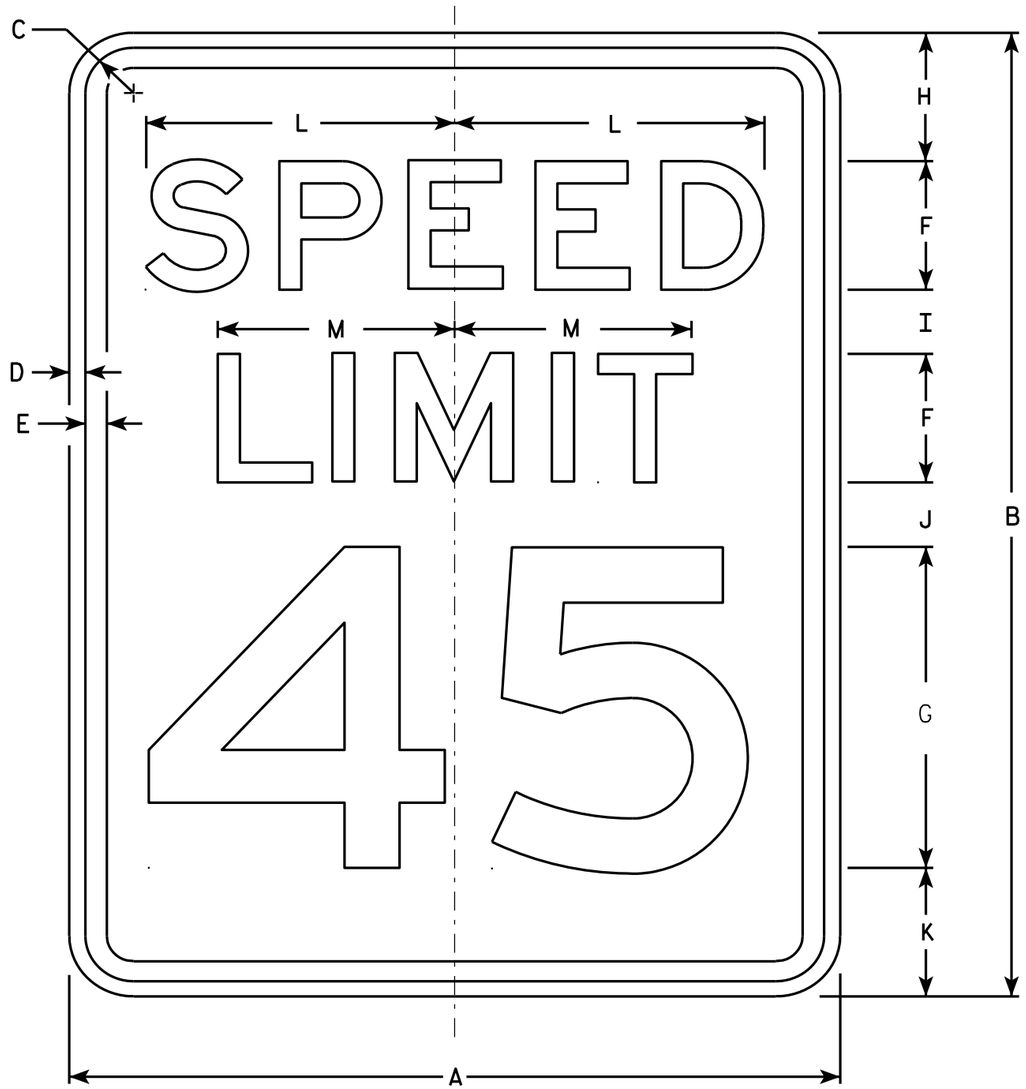
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/03/14 PLATE 171 M6-1.14

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 03-JUL-2014 14:28 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 11.675051:1.000000
WISDOT/CADDS SHEET 42



R2-1

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 - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

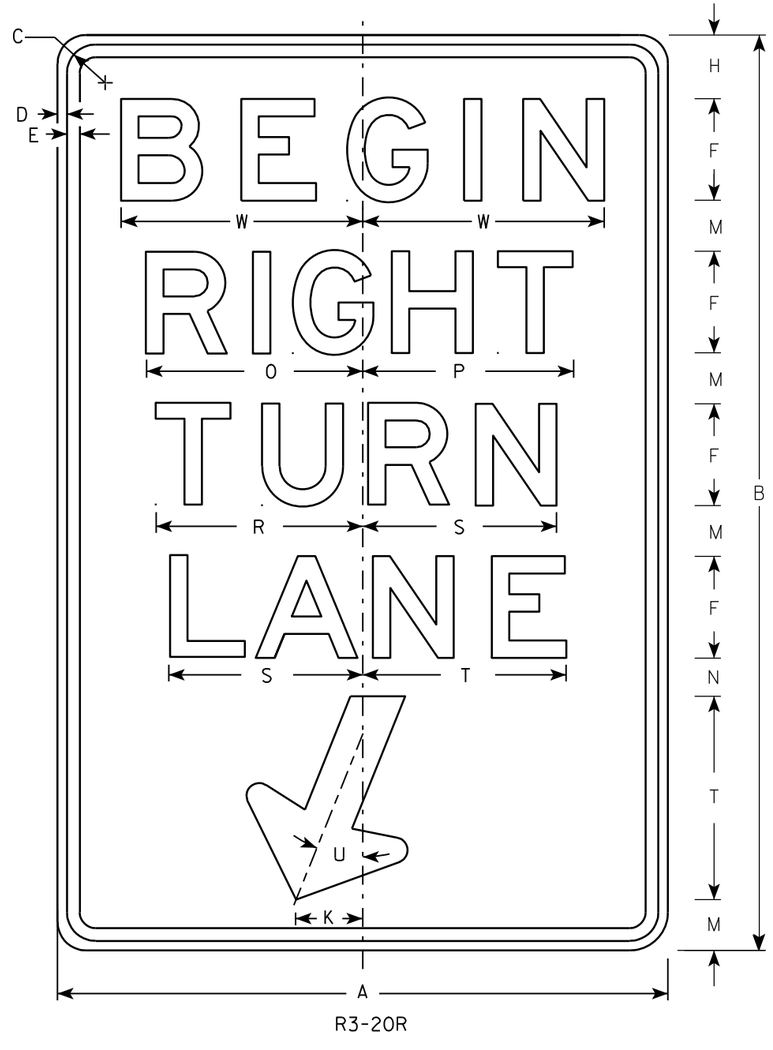
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 172 | E

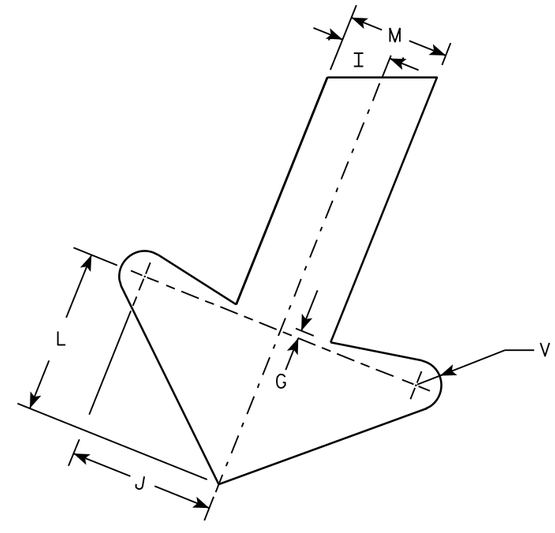
FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000
WISDOT/CADDS SHEET 42



R3-20R

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



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	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

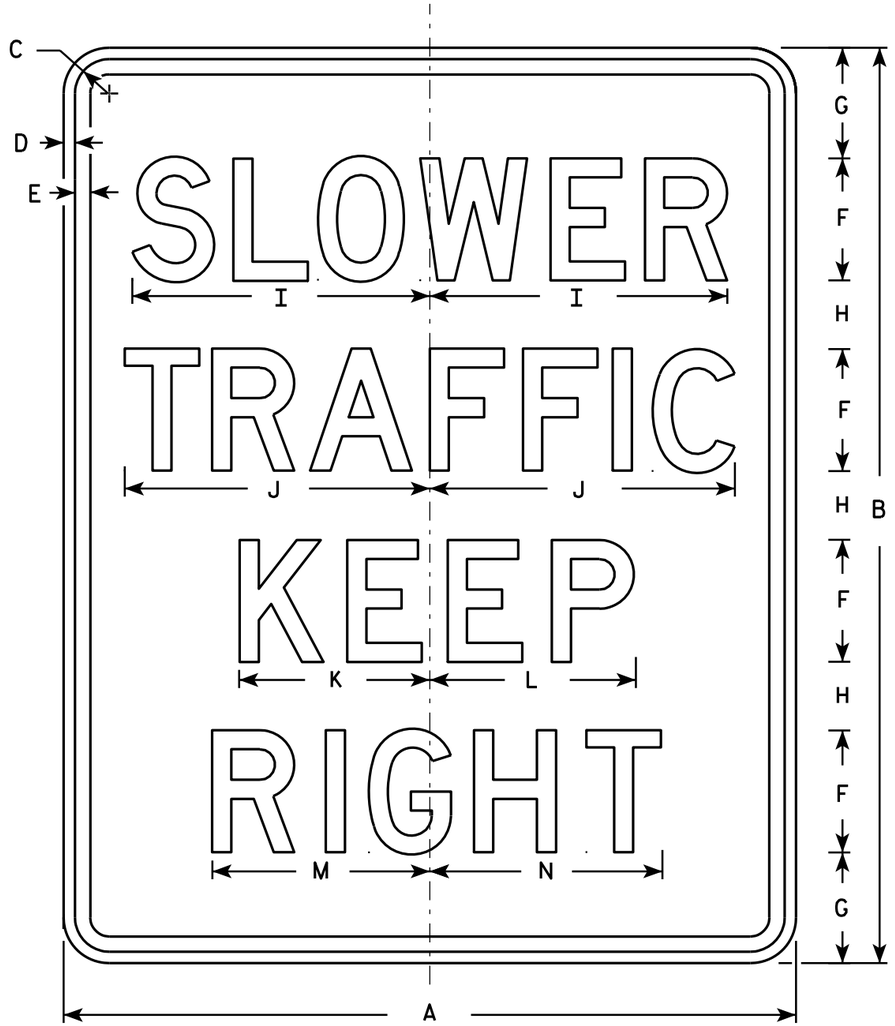
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 173 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R320R.DGN PLOT DATE : 15-OCT-2010 14:59 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

WISDOT/CADDS SHEET 42



R4-3

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.

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	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
3	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
4	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/2	20	12 1/2	13 1/2	14 1/4	15 1/4													20.0

STANDARD SIGN
R4-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-3.8

PROJECT NO:

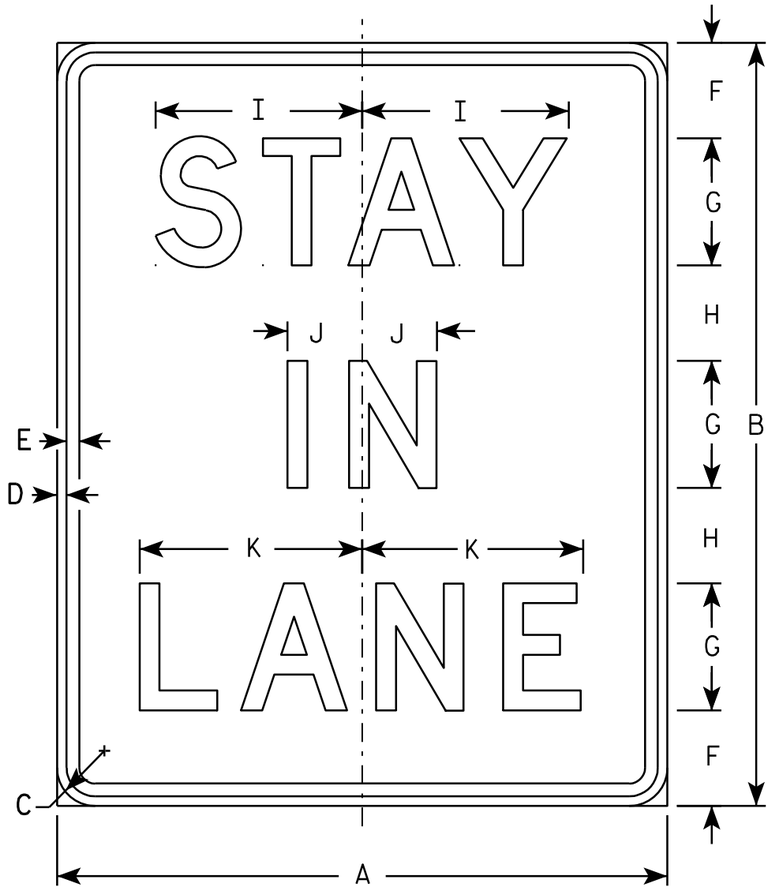
SHEET NO: 174 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R43.DGN PLOT DATE : 25-MAR-2011 13:40 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

7

7



R4-9

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.

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	18	24	1 1/8	3/8	3/8	3	4	3	6 1/2	2 3/8	7																3.0
2S	24	30	1 1/8	3/8	1/2	3 5/8	5	3 7/8	8 1/8	3	8 3/4																5.0
2M	24	30	1 1/8	3/8	1/2	3 5/8	5	3 7/8	8 1/8	3	8 3/4																5.0
3	36	48	1 3/8	1/2	5/8	8 1/4	7	5 1/4	11 3/8	4 1/8	12 1/4																12.0
4	36	48	1 3/8	1/2	5/8	8 1/4	7	5 1/4	11 3/8	4 1/8	12 1/4																12.0
5	48	60	2 1/4	3/4	1	7 1/2	10	7 1/2	16 1/4	5 7/8	17 1/2																20.0

STANDARD SIGN
R4-9

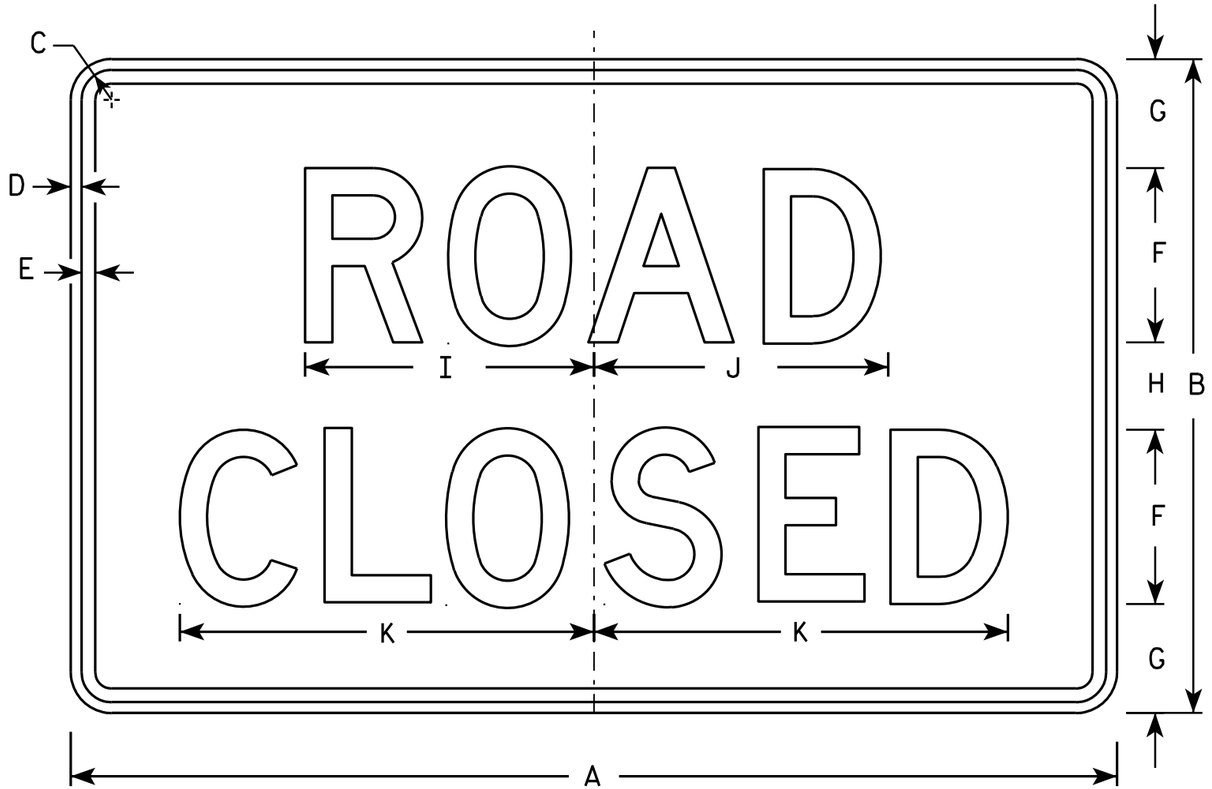
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-9.2

PROJECT NO:

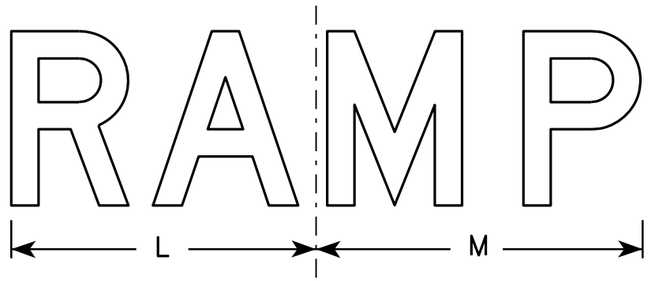
SHEET NO: 175 E



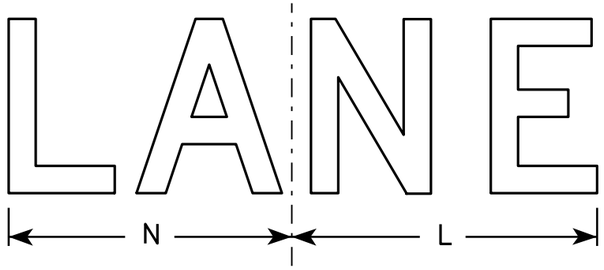
R11-2

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

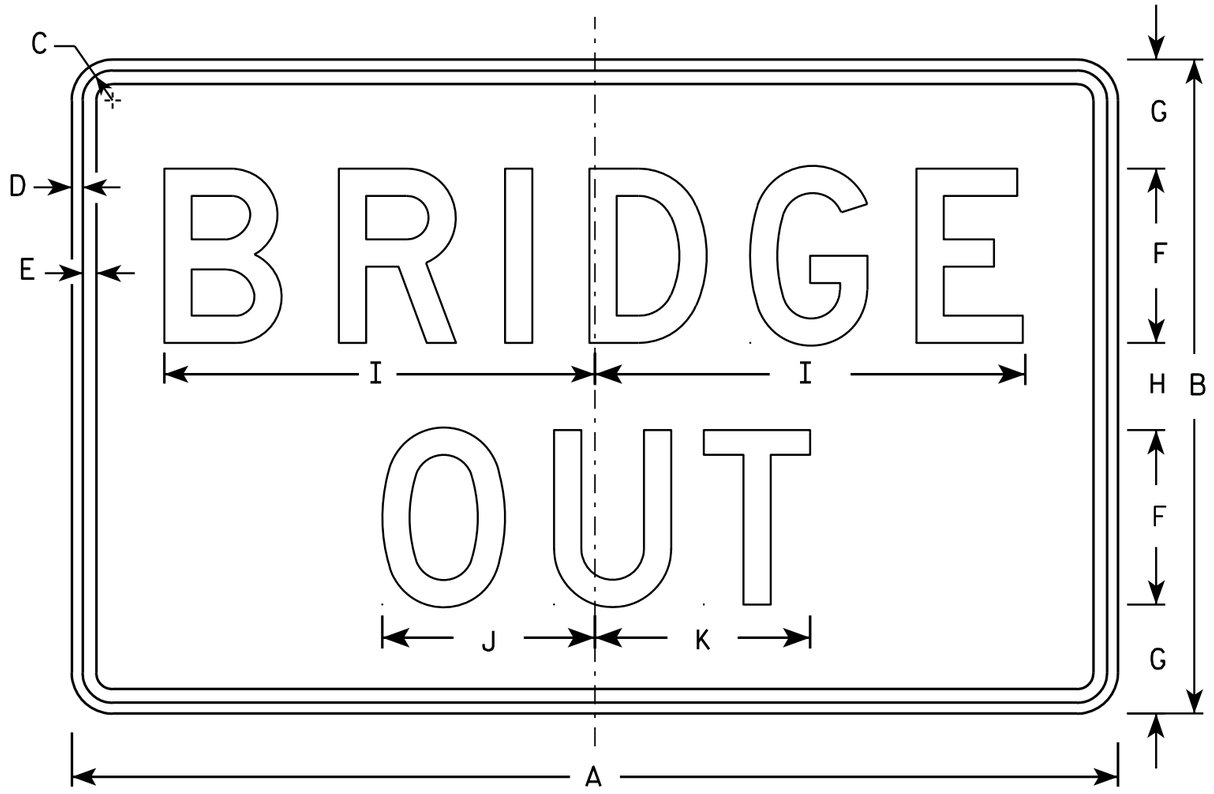
STANDARD SIGN
R11-2

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: 176 | E



R11-2B

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.

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	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

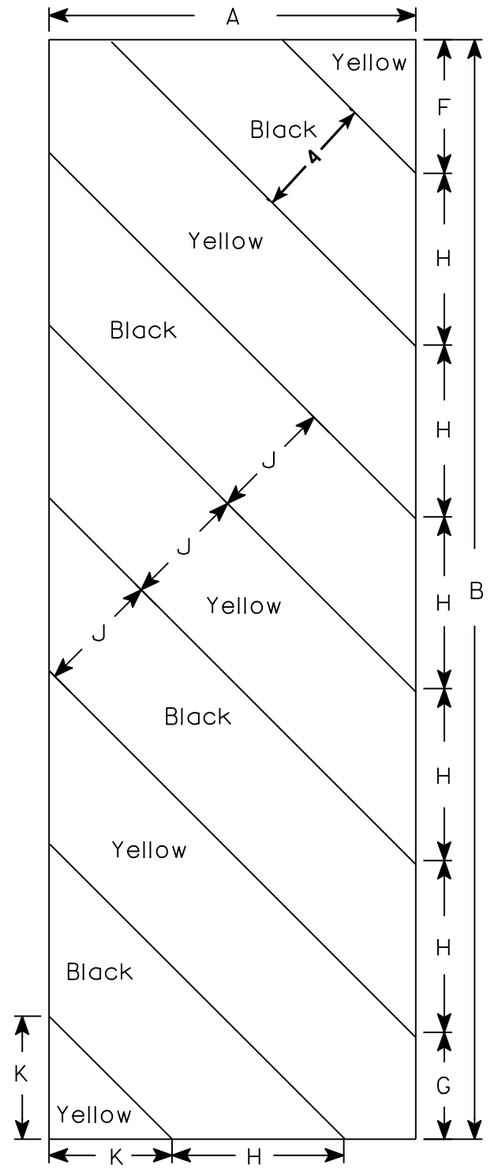
DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO:

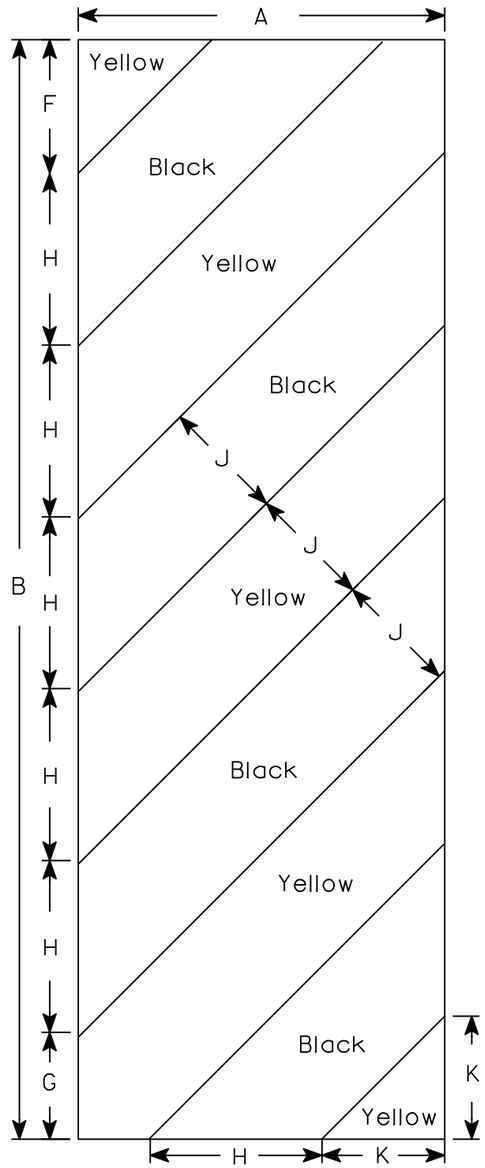
SHEET NO: 177 E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R112B.DGN PLOT DATE : 01-APR-2011 14:23 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42



W5-52L



W5-52R

NOTES

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

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

STANDARD SIGN

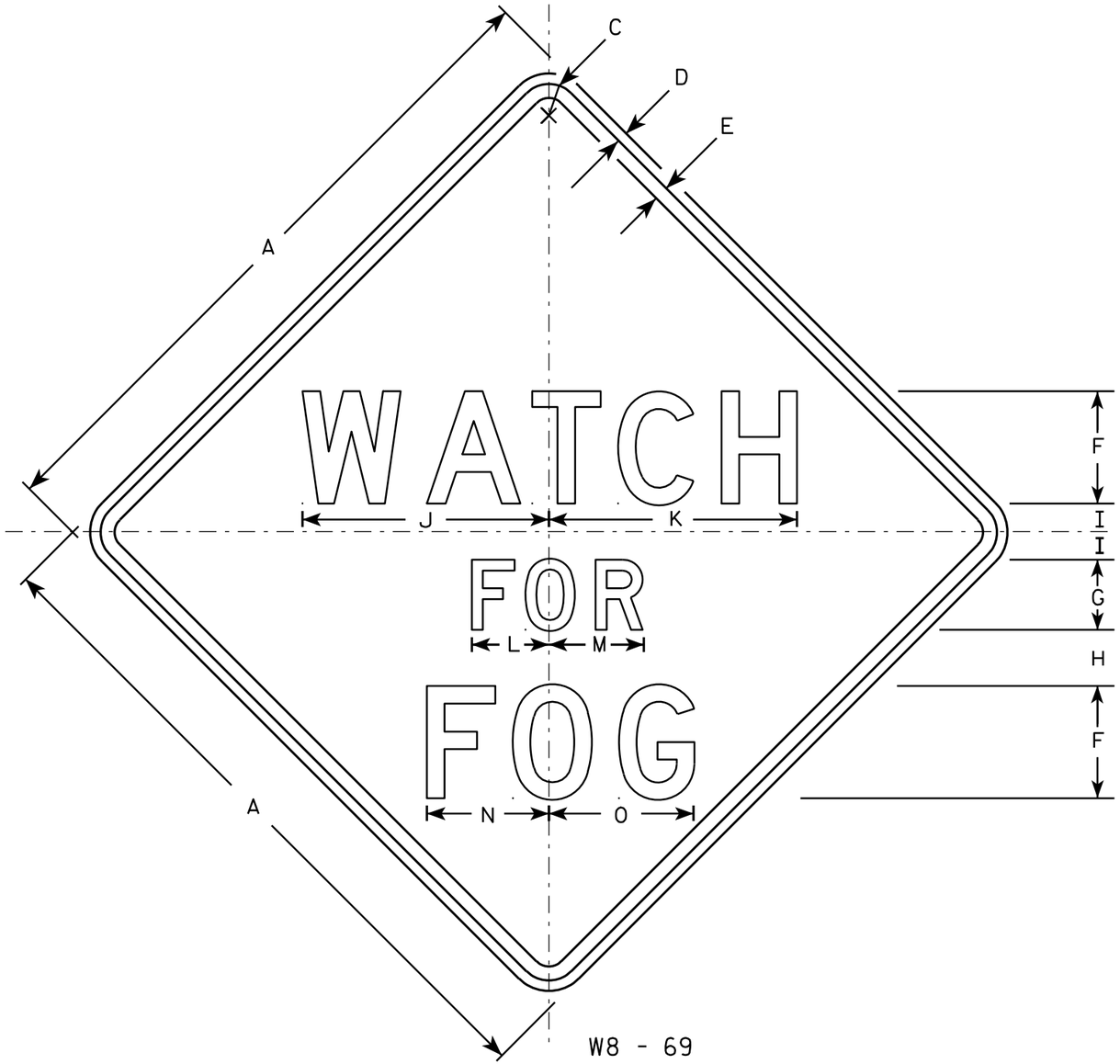
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 178 | E



NOTES

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

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

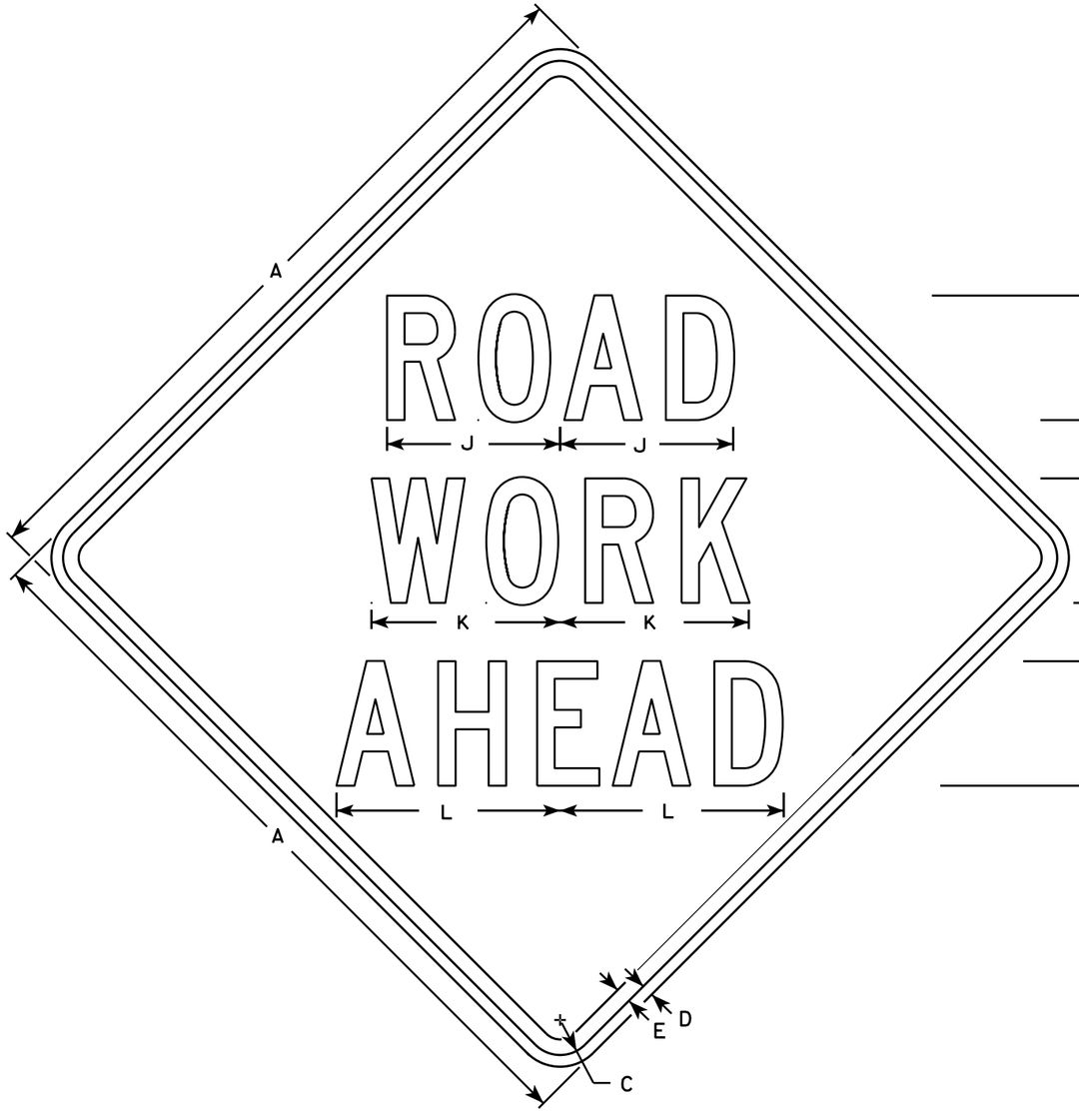
STANDARD SIGN
W8-69

WISCONSIN DEPT OF TRANSPORTATION

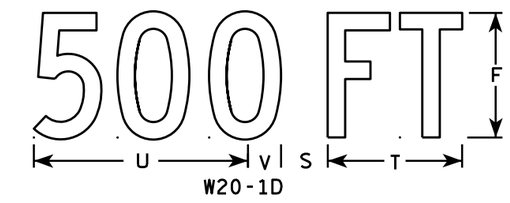
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/18/13 PLATE NO. W8-69.4

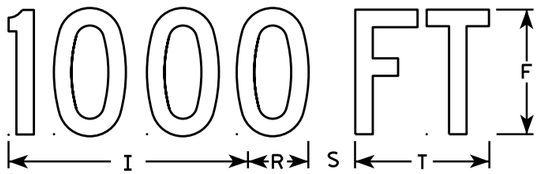
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 179	E



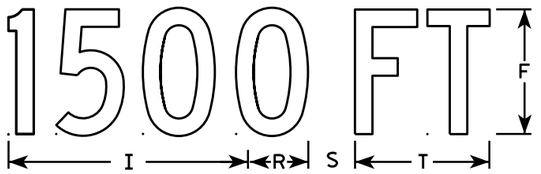
W20-1A



W20-1D



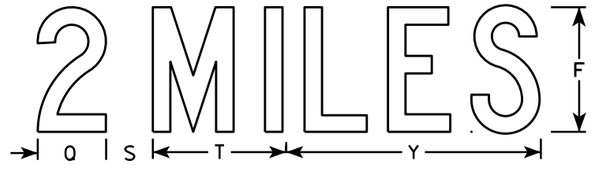
W20-1C



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

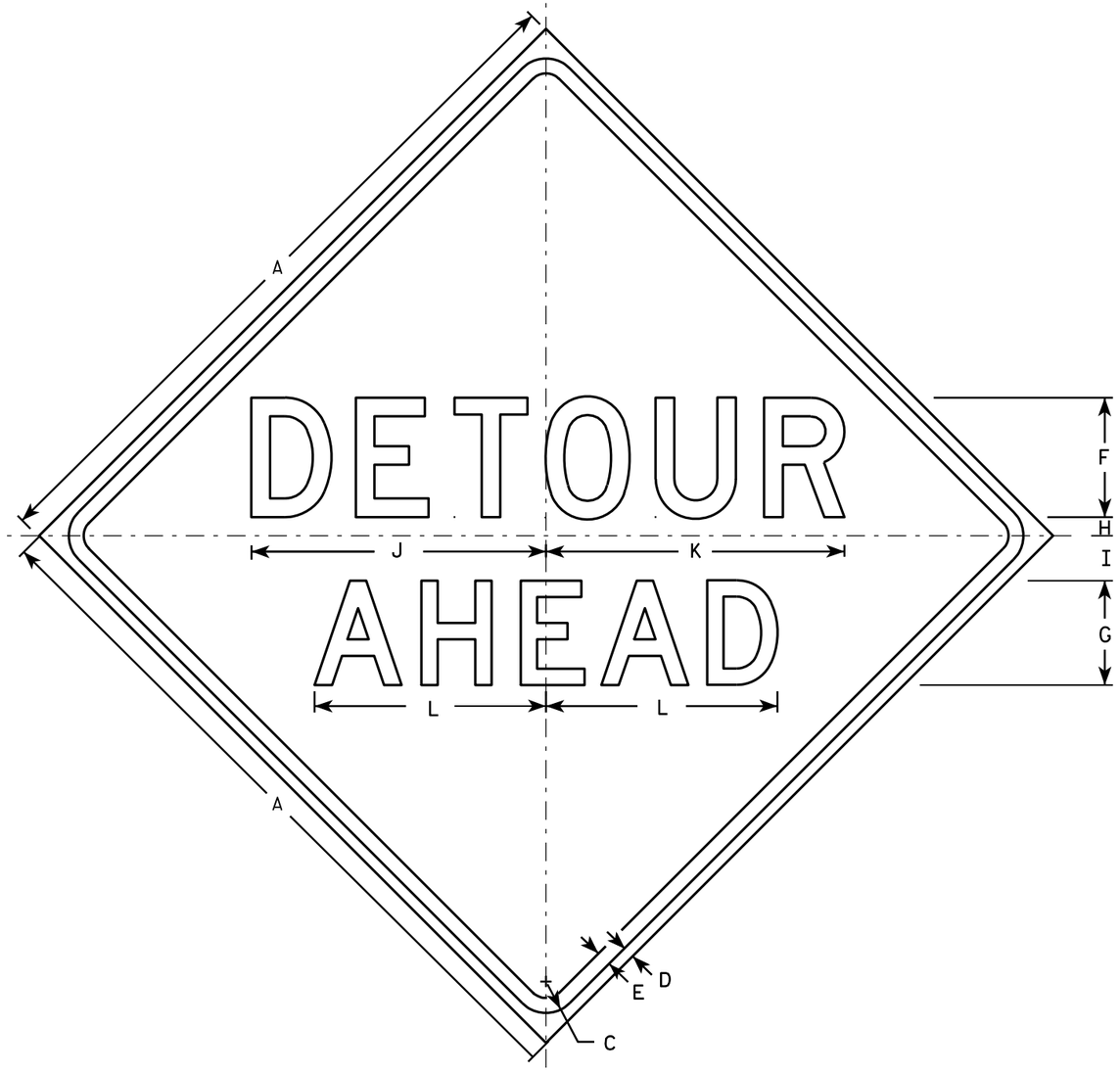
State Traffic Engineer

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

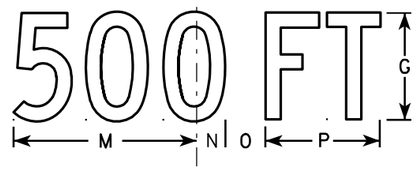
PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W201.dgn PLOT DATE : 27-MAY-2015 15:58 PLOT BY : mscsja

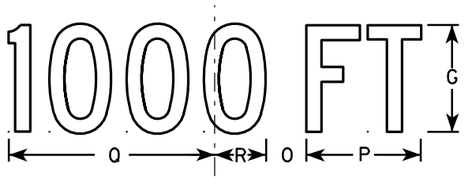
WISDOT/CADDS SHEET 42



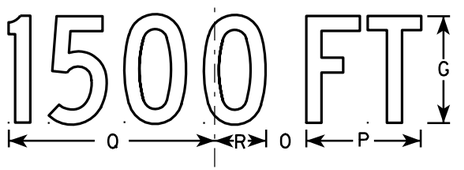
W20-2A



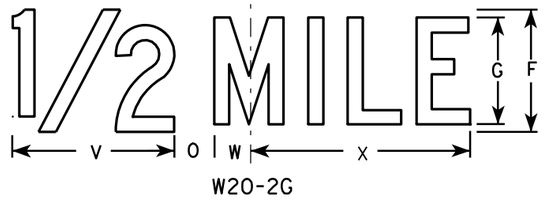
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

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. Line 1 is Series D.
   Line 2 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	6	5	1	2 1/4	14 3/4	15	11 5/8	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	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

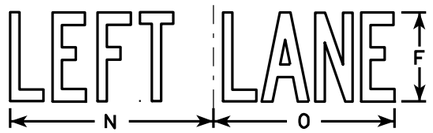
DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 181 | E

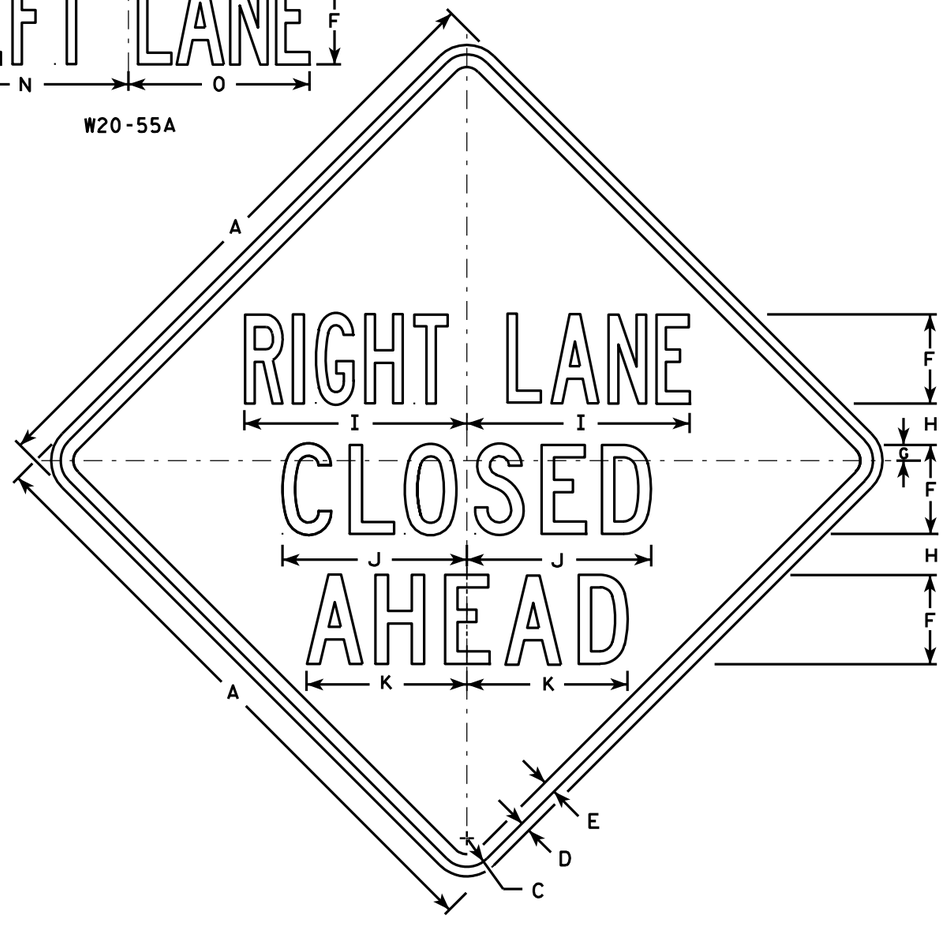
7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W202.DGN PLOT DATE : 18-MAR-2011 10:00 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000
WISDOT/CADDS SHEET 42

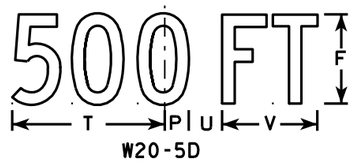
W20-56A



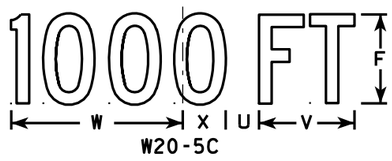
W20-55A



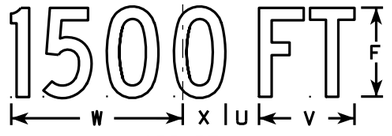
W20-5A



W20-5D



W20-5C



W20-5B

W20-5G

W20-5F

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. " _____ LANE" is Series B.
   All other copy is 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	36	6	1 5/8	5/8	3/4	5	1/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 1/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

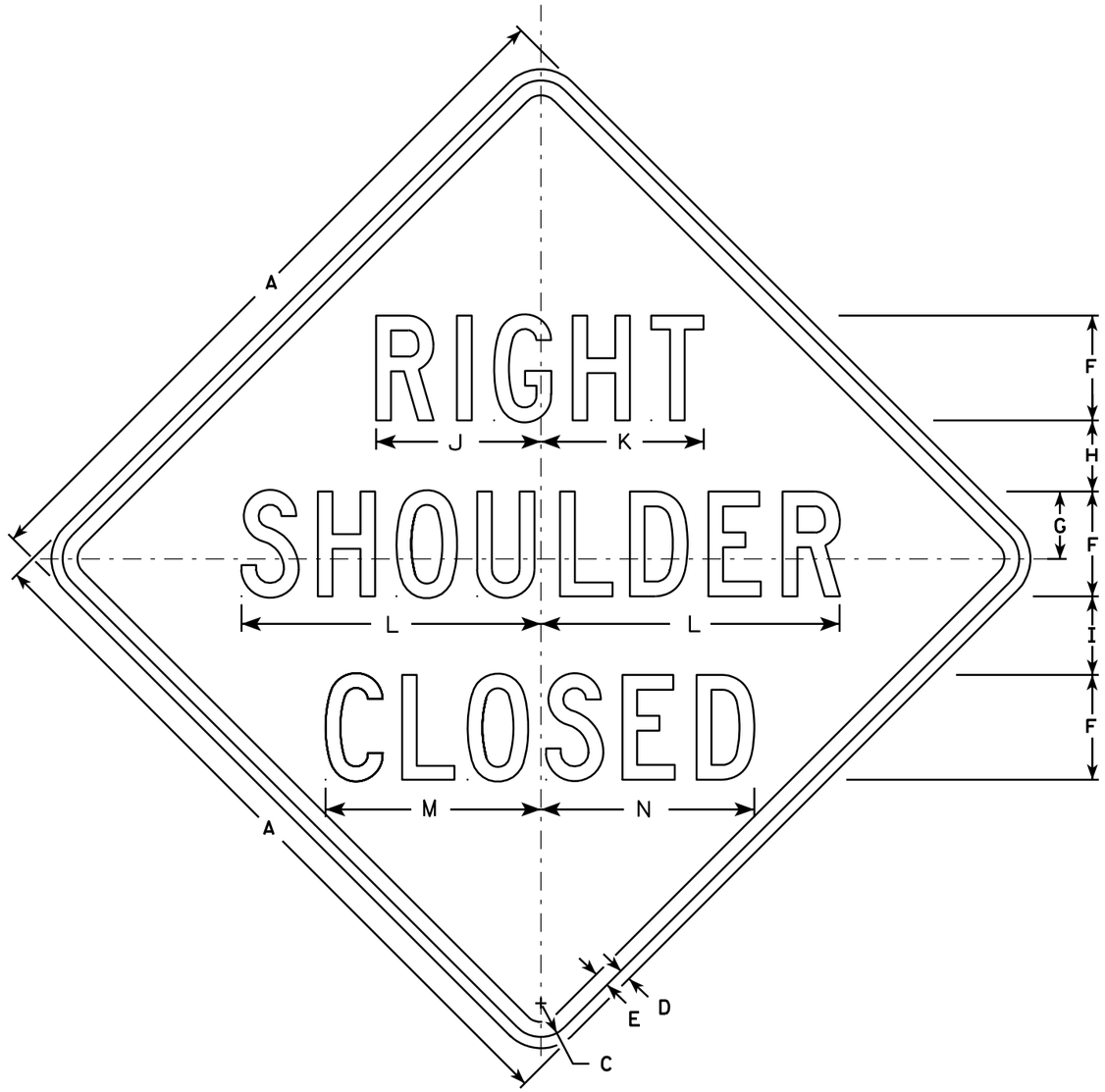
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 182 | E

7

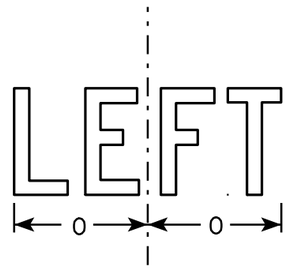
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W205.DGN PLOT DATE : 18-MAR-2011 12:15 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.918087:1.000000
WISDOT/CADDS SHEET 42



W21-5A

NOTES

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



W21-5AL

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	4	7 7/8	7 3/4	14 1/4	10 1/4	10 1/8	6 1/4												9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0

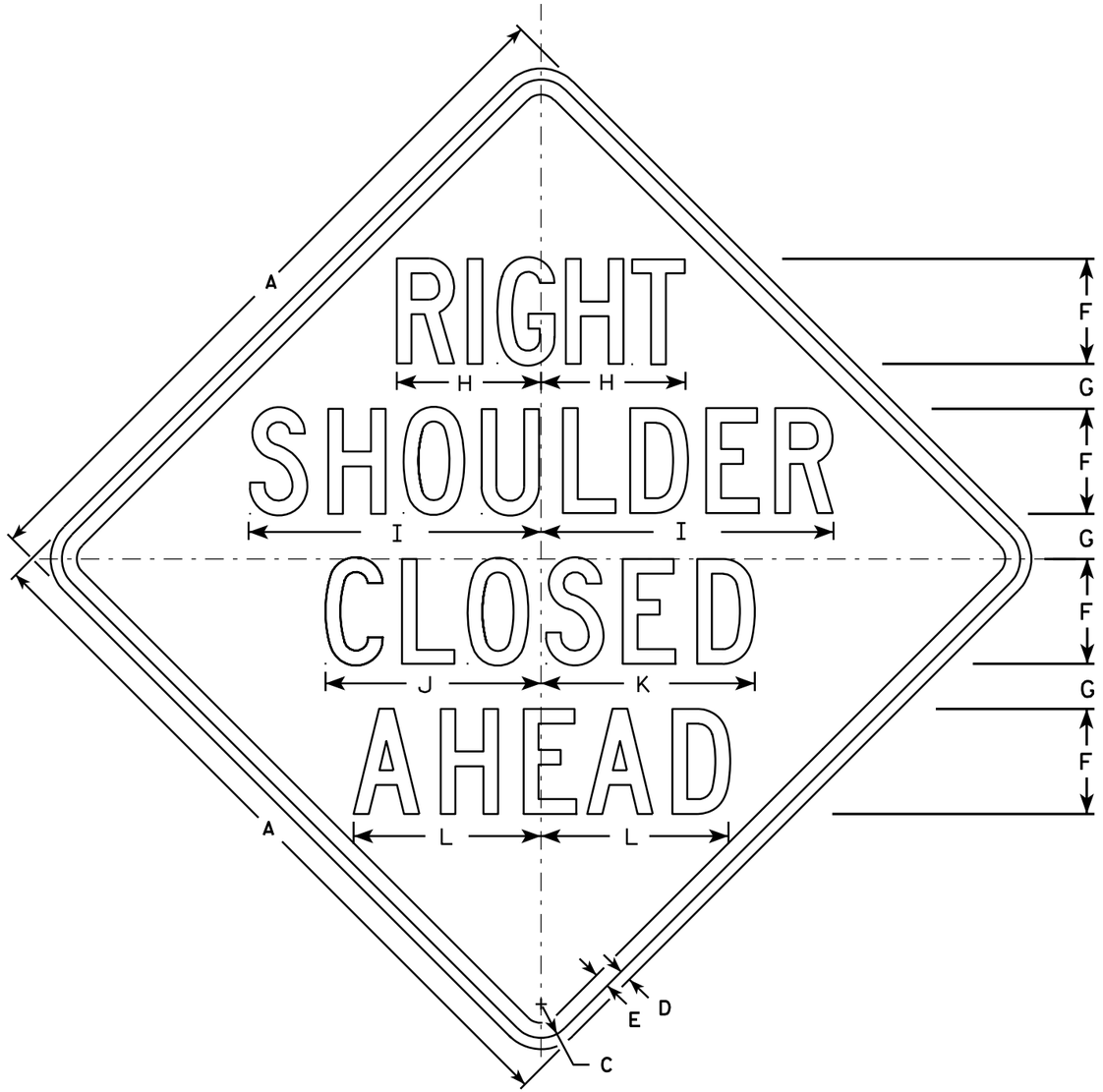
STANDARD SIGN
W21-5A

WISCONSIN DEPT OF TRANSPORTATION

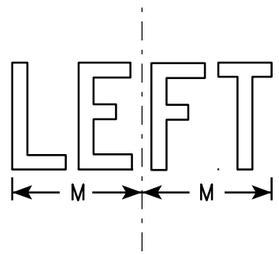
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5A.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 183 | E



W21-5B



W21-5BL

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 1/4	7 3/8	14 1/4	10 1/4	10 1/8	8 7/8	6 1/4														9.0
2S	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
2M	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
3	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
4	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
5	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0

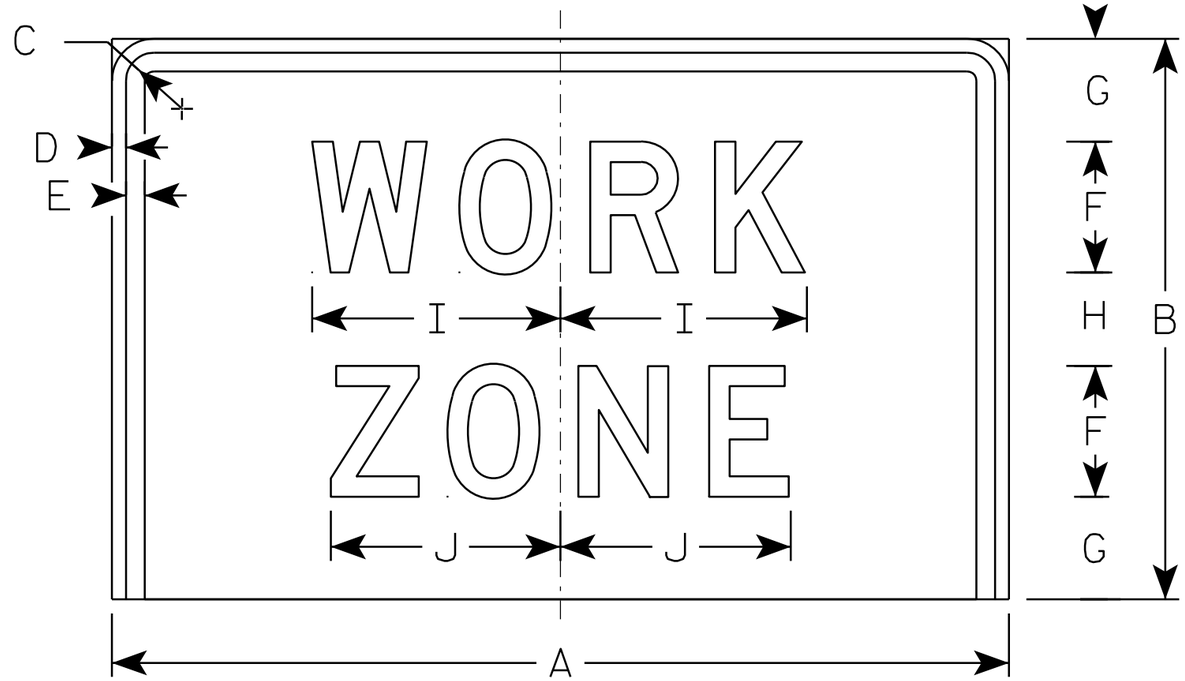
STANDARD SIGN
W21-5B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5B.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 184	E



W21-62Q

NOTES

1. Sign is Type II - Type F - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D

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	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
2M	48	30	2 1/4	3/4	1	7	5 1/2	5	13 1/4	12 1/4																	10.0
3																											
4																											
5																											

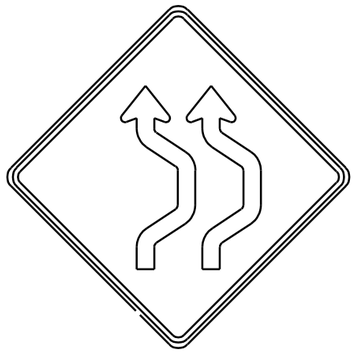
STANDARD SIGN
W21-62Q

WISCONSIN DEPT OF TRANSPORTATION

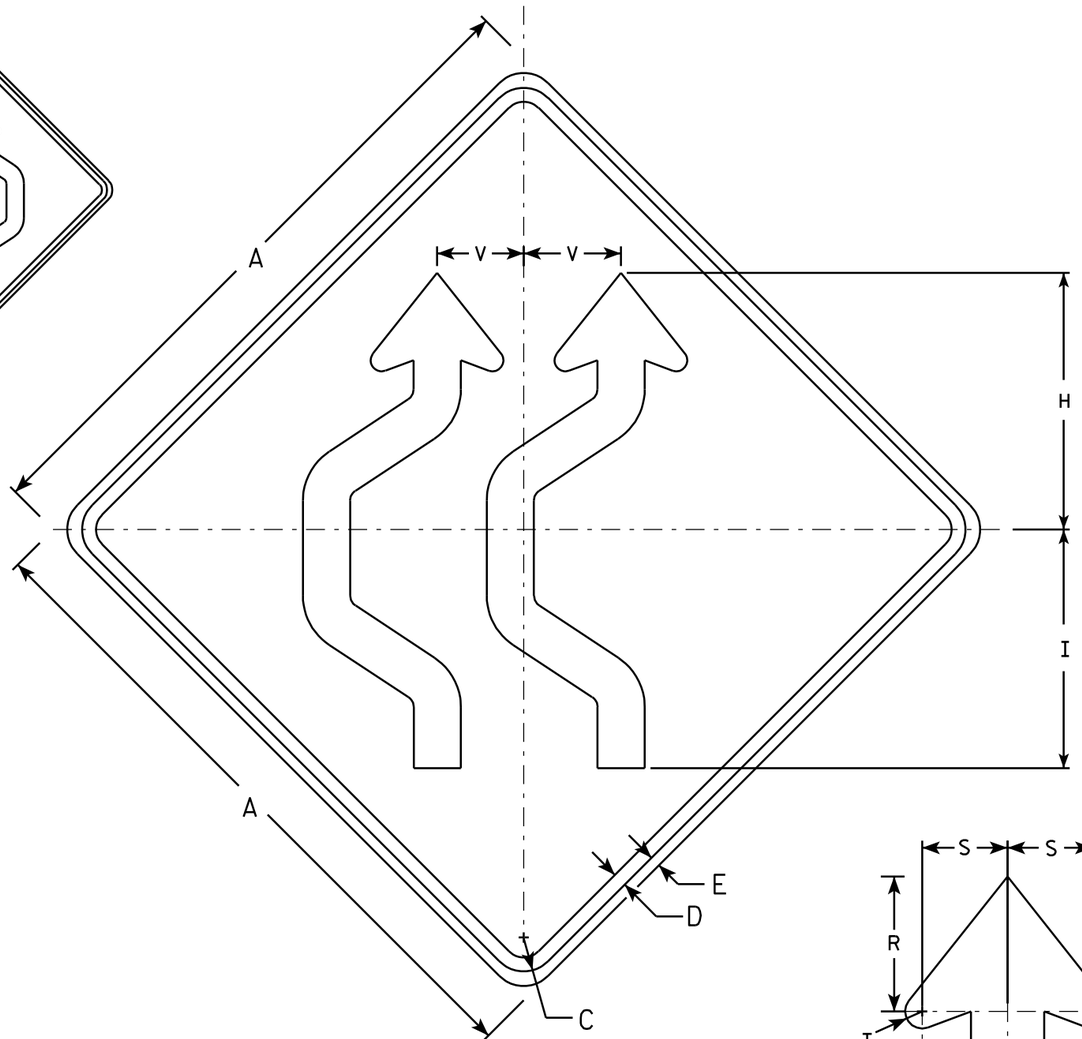
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-620.2

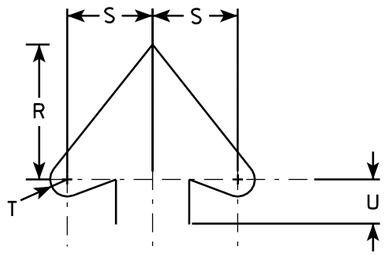
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 185	E



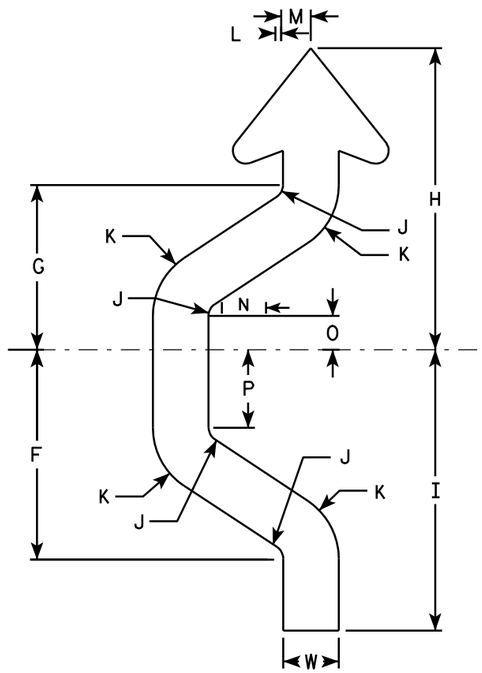
W24-1AR



W24-1AL



Arrowhead Detail



Arrow Detail

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. W24-1R is the same as W24-1L except reversed along the vertical centerline.

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	5/8	1/2	9 1/2	7 1/2	13 3/4	12 3/4	5/8	3 1/8	3/8	1 5/8	2 3/8	1 1/2	3 1/2		4 5/8	3	5/8	1 1/2	4 3/4	2 1/2				9
2S	48		2 1/4	1	3/4	12 7/8	10 1/8	18 1/2	17 1/4	7/8	4 1/4	3/8	2 1/8	3 1/4	2	4 3/4		6 1/4	4	3/4	2 1/8	6 1/4	3 3/8				16
2M	48		2 1/4	1	3/4	12 7/8	10 1/8	18 1/2	17 1/4	7/8	4 1/4	3/8	2 1/8	3 1/4	2	4 3/4		6 1/4	4	3/4	2 1/8	6 1/4	3 3/8				16
3	48		2 1/4	1	3/4	12 7/8	10 1/8	18 1/2	17 1/4	7/8	4 1/4	3/8	2 1/8	3 1/4	2	4 3/4		6 1/4	4	3/4	2 1/8	6 1/4	3 3/8				16
4	48		2 1/4	1	3/4	12 7/8	10 1/8	18 1/2	17 1/4	7/8	4 1/4	3/8	2 1/8	3 1/4	2	4 3/4		6 1/4	4	3/4	2 1/8	6 1/4	3 3/8				16
5	48		2 1/4	1	3/4	12 7/8	10 1/8	18 1/2	17 1/4	7/8	4 1/4	3/8	2 1/8	3 1/4	2	4 3/4		6 1/4	4	3/4	2 1/8	6 1/4	3 3/8				16

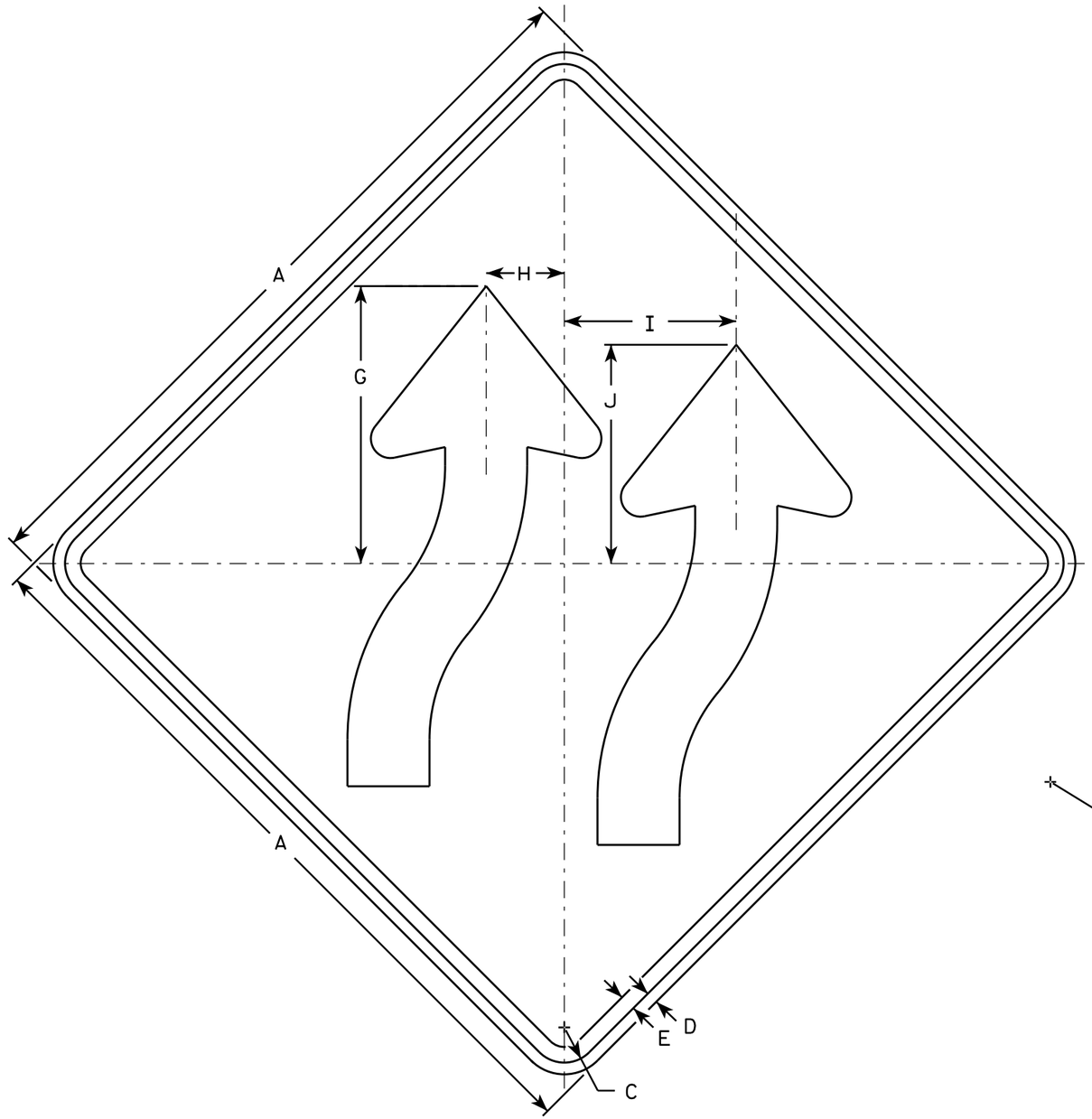
STANDARD SIGN
W24-1AL

WISCONSIN DEPT OF TRANSPORTATION

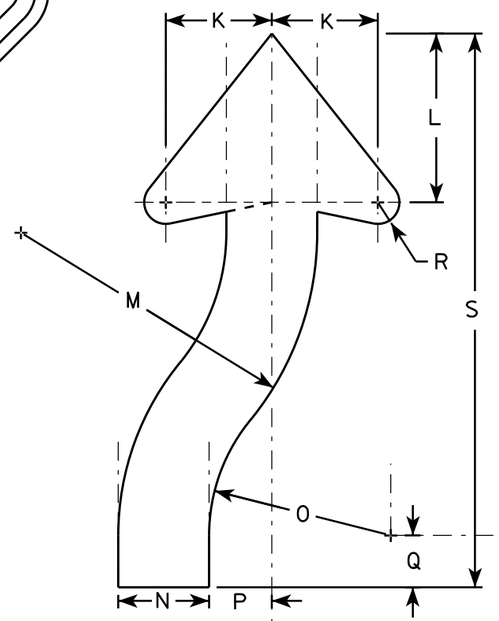
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W24-1AL.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 186 | E



W01-4bR



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. W01-4bL is the same as W014-bR exept arrows are reversed along the vertical centerline

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		13 3/8	3 3/4	8 1/4	10 1/2	4 5/8	7 3/8	12 7/8	3 7/8	7 7/8	2 3/4	2 1/4	7/8	24								9.0
2S	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
2M	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
3	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
4	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0
5	48		2 1/4	3/4	1		17 3/4	5	11	14	6 1/8	9 3/4	17 1/8	5 1/4	10 1/2	3 5/8	3	1 1/4	32								16.0

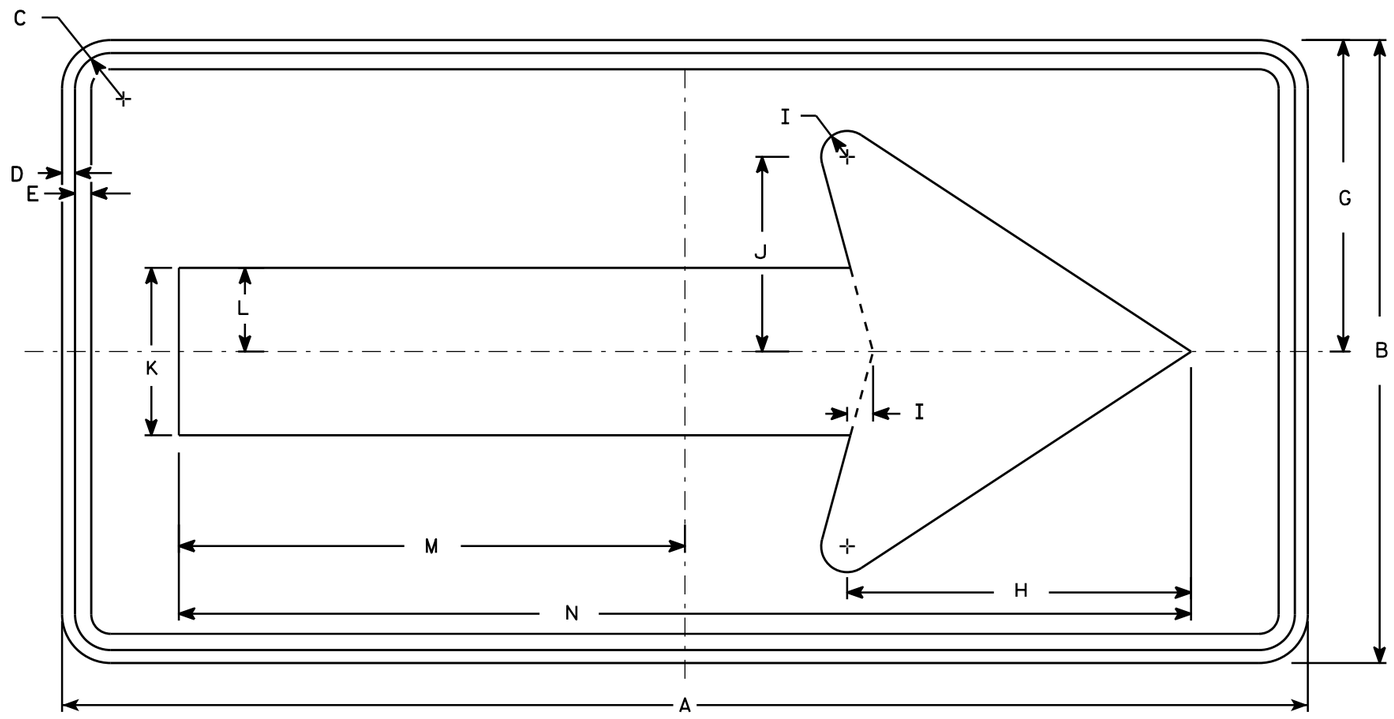
STANDARD SIGN
W01-4b

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4b.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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

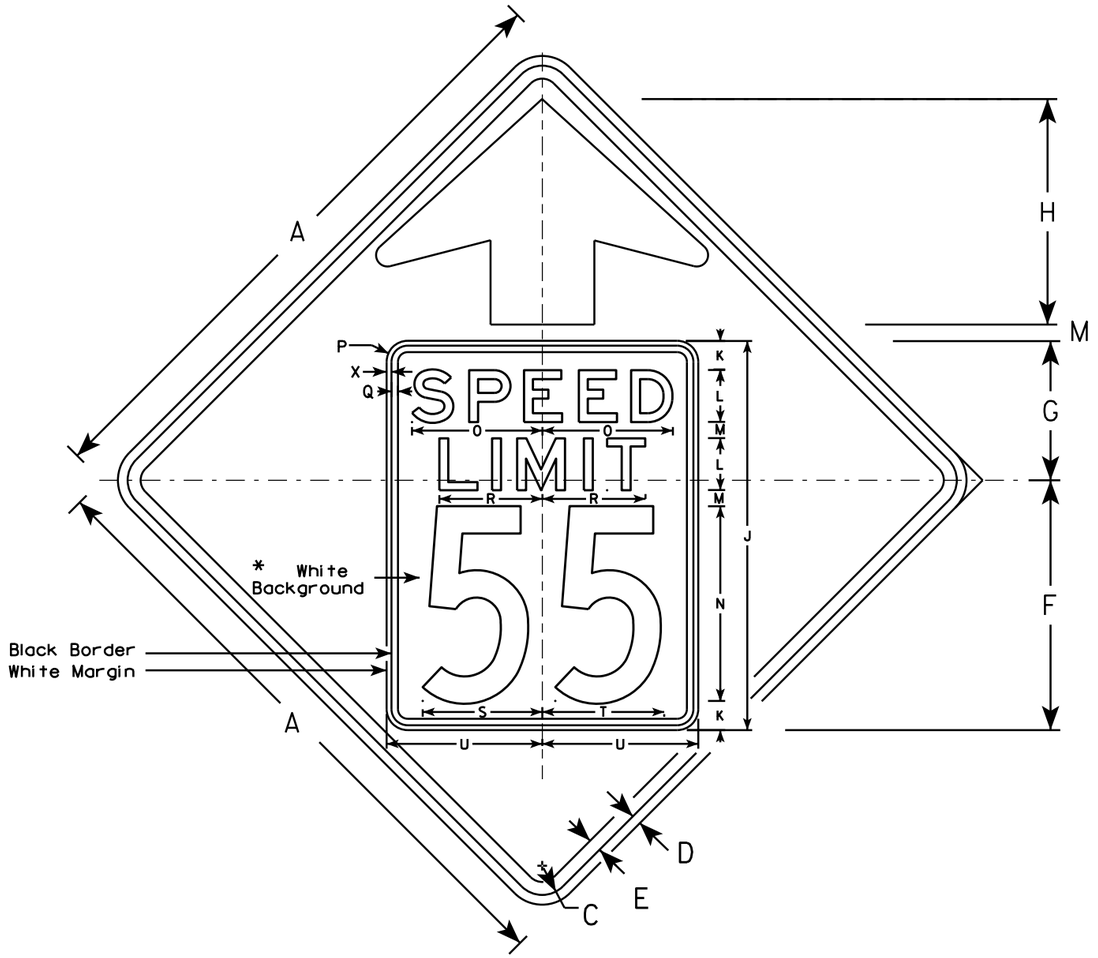
WISCONSIN DEPT OF TRANSPORTATION

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

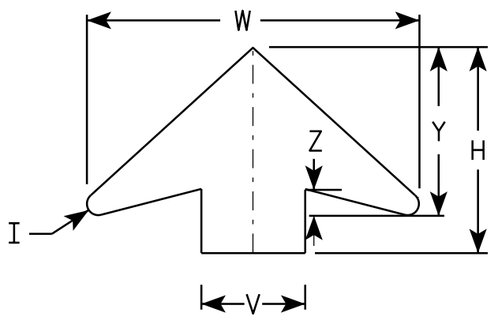


W03-5

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 for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



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	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
2M	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
3	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

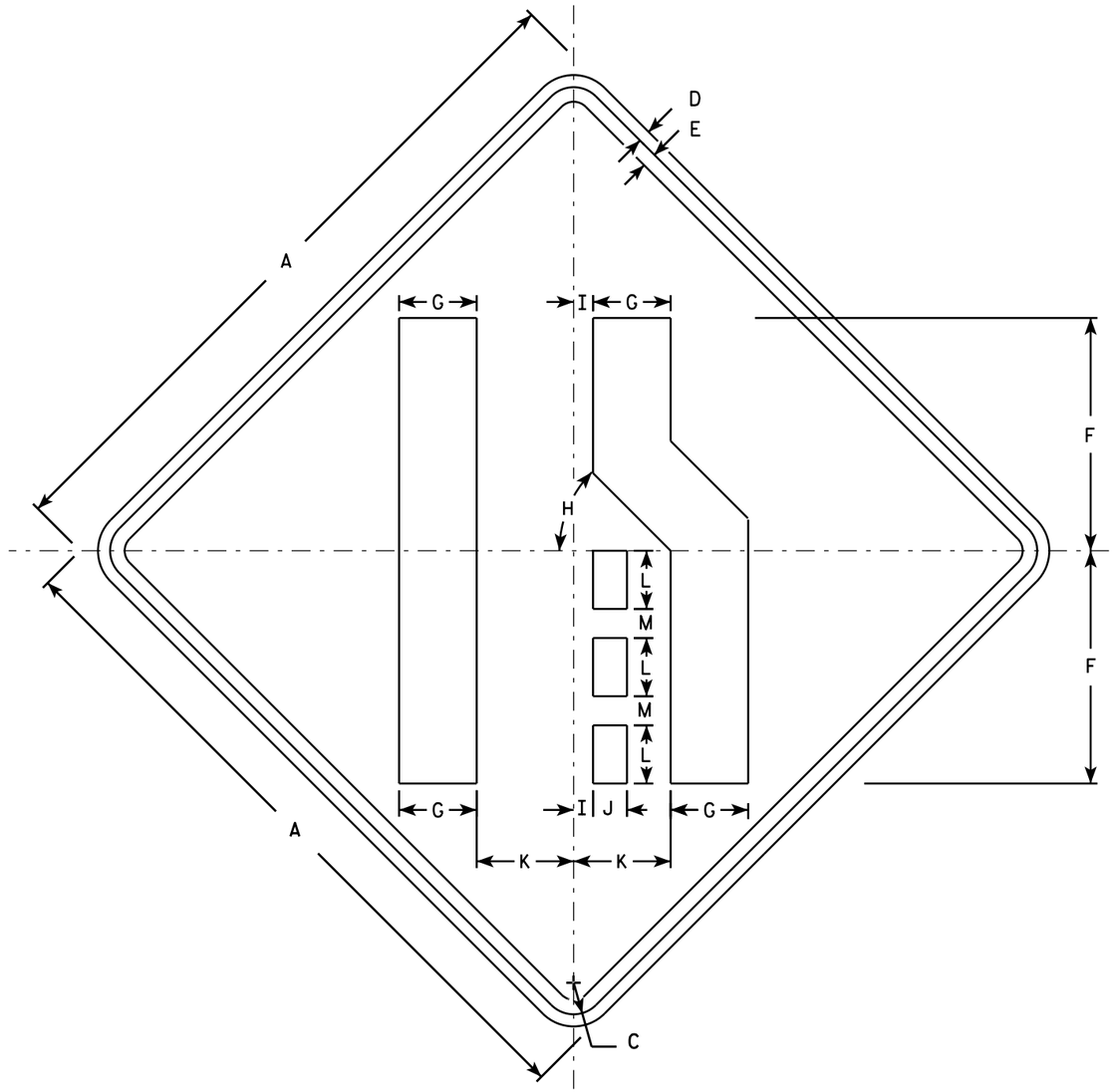
STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E



W04-2R

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. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

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	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN
W04-2

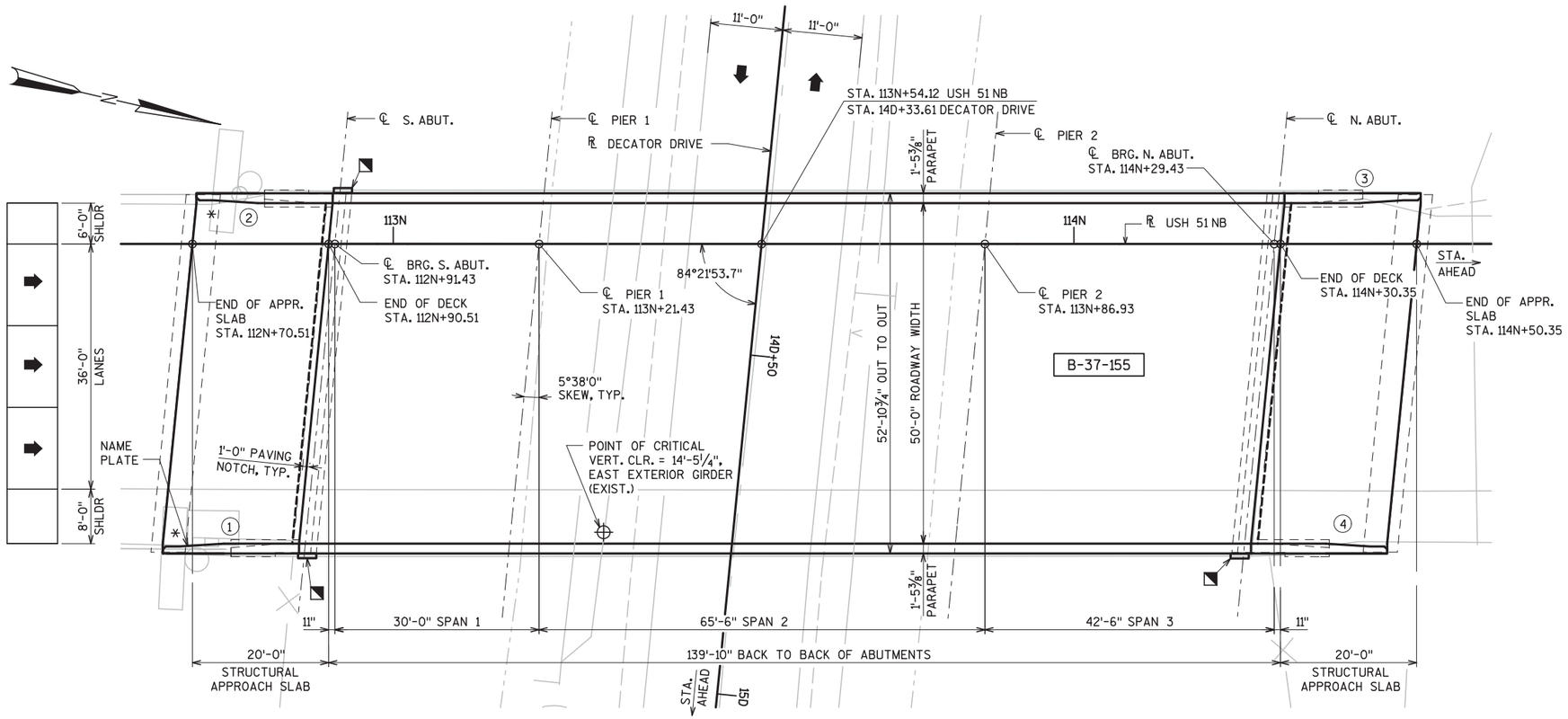
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 190 W04-2.1

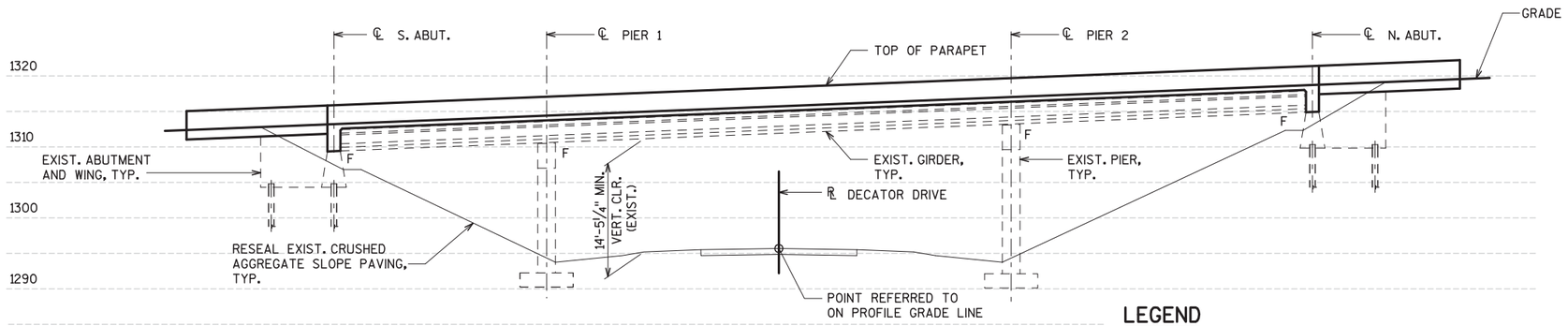
PROJECT NO: | SHEET NO: E

STATE PROJECT NUMBER
1170-00-74



PLAN

(3 SPAN 36" PRESTRESSED CONCRETE GIRDER BRIDGE)



ELEVATION

(LOOKING WEST - NORMAL TO DECATOR DRIVE)

BENCHMARK

POINT ID: BM 236
DESCRIPTION: BM DOT DISK ON TOP OF SE PARAPET B-37-155
(USH 51 NB OVER DECATOR DRIVE)
X: 273981.43
Y: 217656.04
EL. = 1315.75

POINT ID: 216 PK
DESCRIPTION: PK NAIL IN S. SHOULDER ASPHALT OF DECATOR DR.
(39.4' W. OF R/L USH 51 NB)
X: 273892.31
Y: 217708.31
EL. = 1293.84

LEGEND

- ABUTMENT END REPAIR. SEE SHEET 15.
- * PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT
- ◯ WINGWALL NUMBER.

LIST OF DRAWINGS

1. GENERAL PLAN AND ELEVATION
2. TYPICAL SECTION
3. GENERAL NOTES AND QUANTITIES
4. WINGWALL REMOVAL
5. CONSTRUCTION STAGING
6. SUPERSTRUCTURE PLAN
7. SUPERSTRUCTURE DETAILS (1 OF 3)
8. SUPERSTRUCTURE DETAILS (2 OF 3)
9. SUPERSTRUCTURE DETAILS (3 OF 3)
10. DECK ELEVATIONS
11. STEEL DIAPHRAGM
12. STRUCTURAL APPROACH SLAB
13. STRUCTURAL APPROACH SLAB DETAILS
14. SINGLE SLOPE PARAPET 32SS
15. MISCELLANEOUS DETAILS
16. BAR COUPLERS

DESIGN DATA

LIVE LOAD

DESIGN LOAD: HS-20
INVENTORY RATING: HS-19
OPERATIONAL RATING: HS-26
WISCONSIN STANDARD PERMIT VEHICLE LOAD (WIS-SPV): ..... 220 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY
SUPERSTRUCTURE ..... f'c = 4,000 psi
APPROACH SLAB ..... f'c = 4,000 psi
OTHER ..... f'c = 3,500 psi

HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 ..... fy = 60,000 psi

TRAFFIC DATA

USH 51

A.D.T. = 19,000 (2015)
A.D.T. = 24,300 (2035)
R.D.S. = 70 MPH

DECATOR DRIVE

A.D.T. = 380 (2010)
R.D.S. = 40 MPH

STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES CONTACT:
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(414) 292-4599

WISCONSIN
BABU D. THENGANAKUNNEL
E-35905
MILWAUKEE, WI
PROFESSIONAL ENGINEER
11/10/2015

NO.	DATE	REVISION	BY

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3390 Fax: (414) 771-4490

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 11/12/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-37-155

USH 51 NB OVER DECATOR DRIVE

COUNTY	TOWN
MARATHON	MAINE

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JRS	BDT	TB	JRS/BDT

GENERAL PLAN AND ELEVATION

SHEET 1 OF 16
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I.D. 1170-00-04 NOVEMBER 2015

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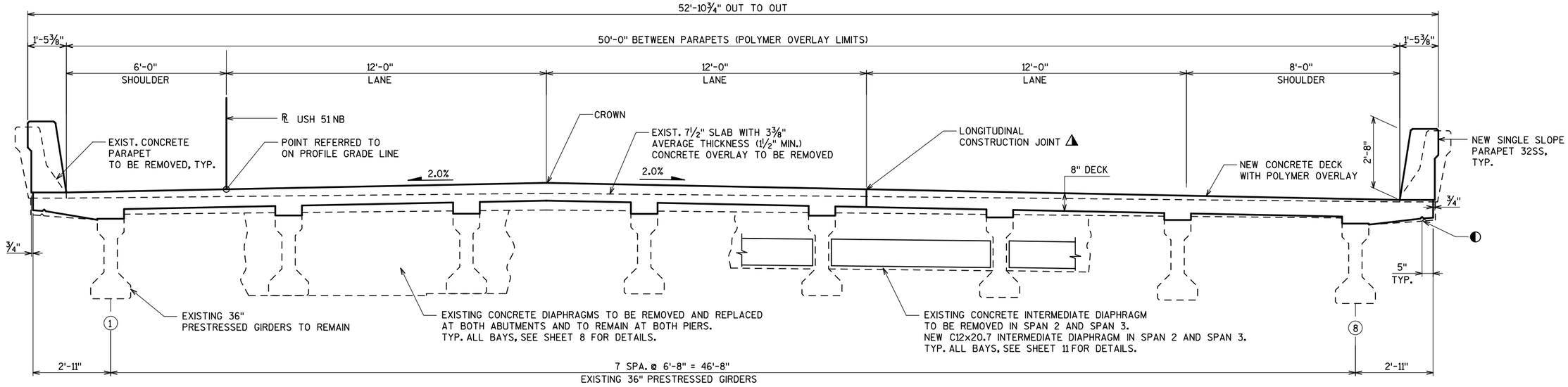
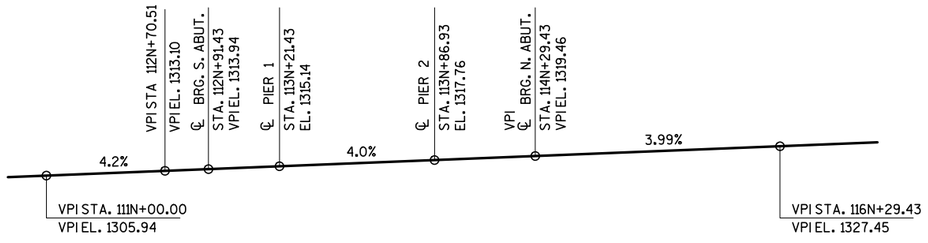
STATE PROJECT NUMBER
1170-00-74



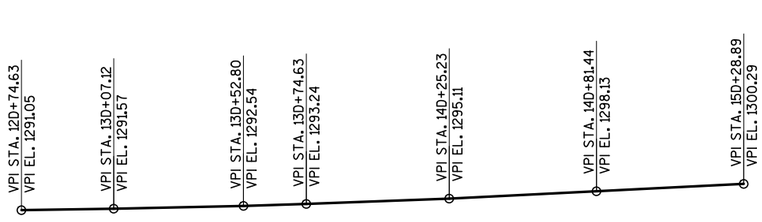
TYPICAL SECTION

(LOOKING NORTH)

◐ ¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM, V-GROOVES ARE REQUIRED



PROFILE GRADE LINE - USH 51 NB



PROFILE GRADE LINE - DECATOR DRIVE

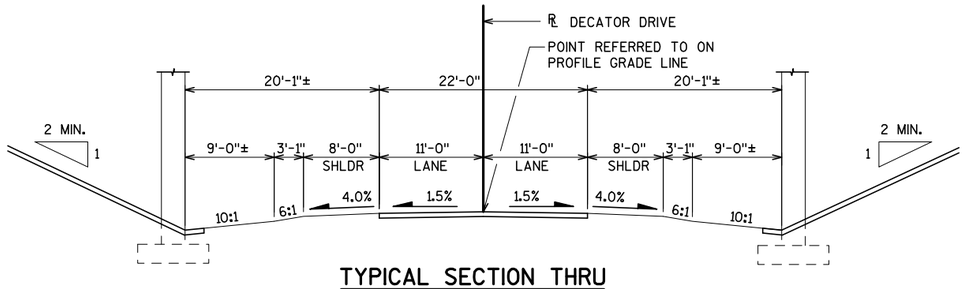
(BASED ON FIELD SURVEY)

LEGEND

◭ SEAL LONGIT. CONST. JT. WITH CRACK SEALER PER SECTION 502.3.13 OF STANDARD SPECIFICATIONS. SEE DETAIL ON THIS SHEET. COST INCLUDED IN BID ITEM " CONCRETE MASONRY BRIDGES".

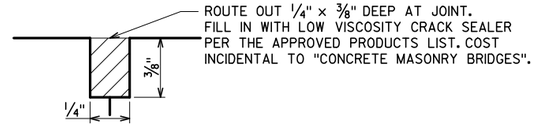
NOTE

DECK IS REPLACED IN STAGES 2 AND 3, AND POLYMER OVERLAY IS APPLIED IN STAGE 4. SEE SHEET 5 FOR DETAILS.



TYPICAL SECTION THRU DECATOR DRIVE

(LOOKING EAST)
NORMAL TO DECATOR DRIVE



LONGITUDINAL CONSTRUCTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

TYPICAL SECTION

SHEET 2 OF 16
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STATE PROJECT NUMBER
1170-00-74

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	PIER 1	PIER 2	SUPER.	APPR. SLAB SOUTH	APPR. SLAB NORTH	TOTAL
203.0200.01	REMOVING OLD STRUCTURE STATION 113N+60	LS	-	-	-	-	-	-	-	1
203.0225.S.01	DEBRIS CONTAINMENT STRUCTURE B-37-155	LS	-	-	-	-	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-37-155	LS	-	-	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	31	31	-	-	-	-	-	62
502.0100	CONCRETE MASONRY BRIDGES	CY	1	1	-	-	278	71	71	422
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	26	-	-	26
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	-	116	17	17	150
502.5002	MASONRY ANCHORS TYPE L NO. 4 BARS	EACH	18	9	-	-	-	-	-	27
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	-	-	-	-	154	-	-	154
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	70	40	-	-	68450	12545	12545	93650
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	-	-	-	-	-	900	900	1800
505.0904	BAR COUPLERS NO. 4	EACH	-	-	-	-	16	-	-	16
505.0905	BAR COUPLERS NO. 5	EACH	-	-	-	-	447	42	42	531
505.0906	BAR COUPLERS NO. 6	EACH	-	-	-	-	24	-	-	24
505.0908	BAR COUPLERS NO. 8	EACH	-	-	-	-	-	12	12	24
506.4000	STEEL DIAPHRAGMS B-37-155	EACH	-	-	-	-	14	-	-	14
509.5100.S	POLYMER OVERLAY	SY	-	-	-	-	777	111	111	999
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	-	-	-	-	-	18
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	225	319	-	-	-	-	-	544
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	-	-	-	2	-	2
SPV.0060.04	ABUTMENT END REPAIR	EACH	2	1	-	-	-	-	-	3
	NON-BID ITEMS									
	FILLER	SIZE	-	-	-	-	-	-	-	½", ¾", 1½"
	NAME PLATE	EACH	-	-	-	-	-	-	-	1"
	EXPANDED POLYSTYRENE	SIZE	-	-	-	-	-	-	-	1"

ALL ITEMS ARE CATEGORY 0020

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

ELEVATIONS ARE REFERENCED TO THE NAVD 88 (1991) DATUM.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

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

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

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT THE BACK FACE OF ABUTMENT AND WINGS ALL SPACES NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK. EXISTING BARS SHALL BE CLEANED AND STRAIGHTENED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ALL CONCRETE REMOVAL LIMITS SHALL BE DEFINED BY A 1" DEEP SAWCUT.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. THE NEW NAME PLATE SHALL SHOW THE ORIGINAL CONSTRUCTION YEAR. ORIGINAL CONSTRUCTION YEAR IS 1975.

STRICTLY CONFORM TO THE APPROVED DEBRIS CONTAINMENT PLAN.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON SHEET 10.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF PAVING NOTCH.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF PARAPETS ON THE DECK, WINGS, AND STRCUTURAL APPROACH SLABS.

POLYMER OVERLAY SHALL BE APPLIED TO DECK AND STRUCTURAL APPROACH SLABS. SEE SPECIAL PROVISIONS FOR REQUIRED CONCRETE CURE TIME PRIOR TO APPLYING POLYMER OVERLAY.

PROFILE GRADE LINE ELEVATIONS ARE AT THE TOP OF THE ¼" POLYMER OVERLAY. POLYMER OVERLAY IS NOT SHOWN AND IS NOT INCLUDED IN THE 8" DECK THICKNESS.

MONITOR SAW CUTTING OF EXISTING BRIDGE DECK AND BLADE DEPTH SO THAT EXISTING UNDERLYING GIRDERS ARE NOT DAMAGED. EXERCISE CARE NOT TO DAMAGE THE TOP FLANGES WITH JACK HAMMER OR OTHER TOOLS. DO NOT DAMAGE EXISTING GIRDER STIRRUPS WITHIN THE DECK.

RESEAL CRUSHED AGGREGATE SLOPE PAVING AT BOTH ABUTMENTS.

REMOVAL NOTES

THE EXISTING DECK, CONCRETE OVERLAY, PARAPETS AND PART OF WING WALLS AND DIAPHRAGMS SHALL BE REMOVED AND REPLACED IN THIS CONTRACT. EXISTING GIRDERS AND SUBSTRUCTURE UNITS SHALL REMAIN IN PLACE.

PLANS OF THE EXISTING BRIDGE ARE ON FILE AND ARE AVAILABLE FOR INSPECTION AT THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTH CENTRAL REGION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY TB | PLANS CK'D. JRS/BDT

GENERAL NOTES AND QUANTITIES

SHEET 3 OF 16

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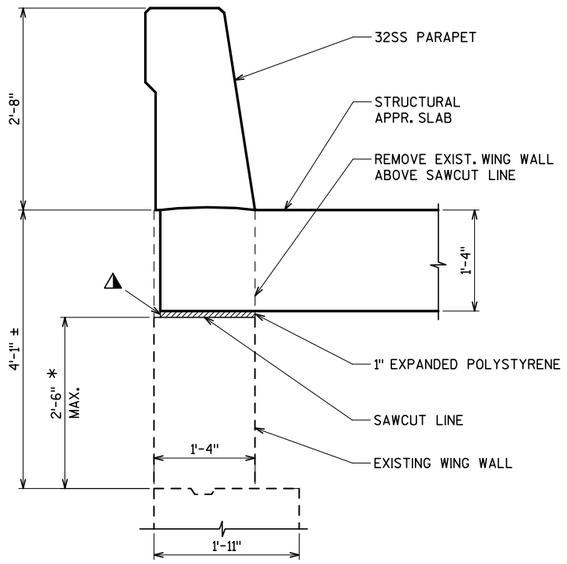
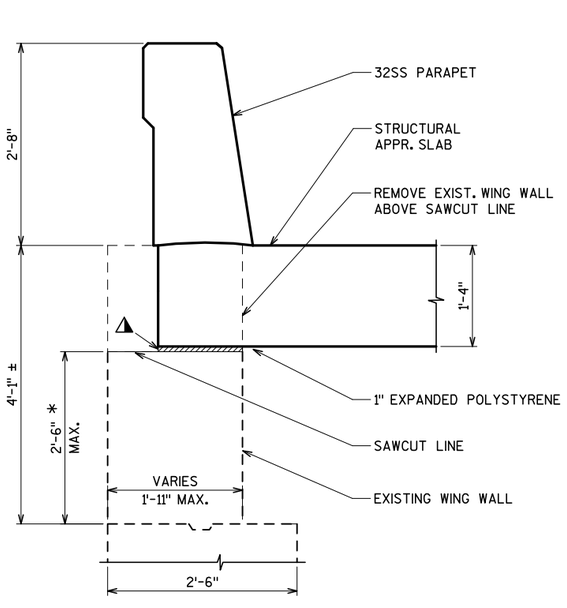


SECTION A-A



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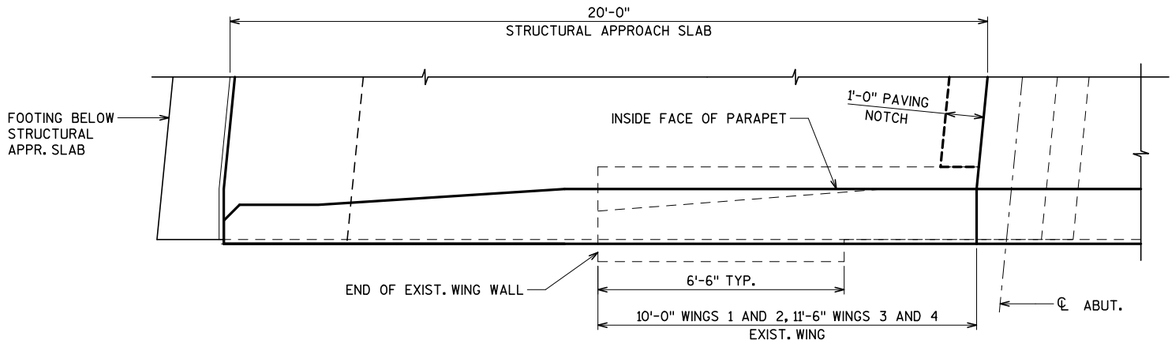
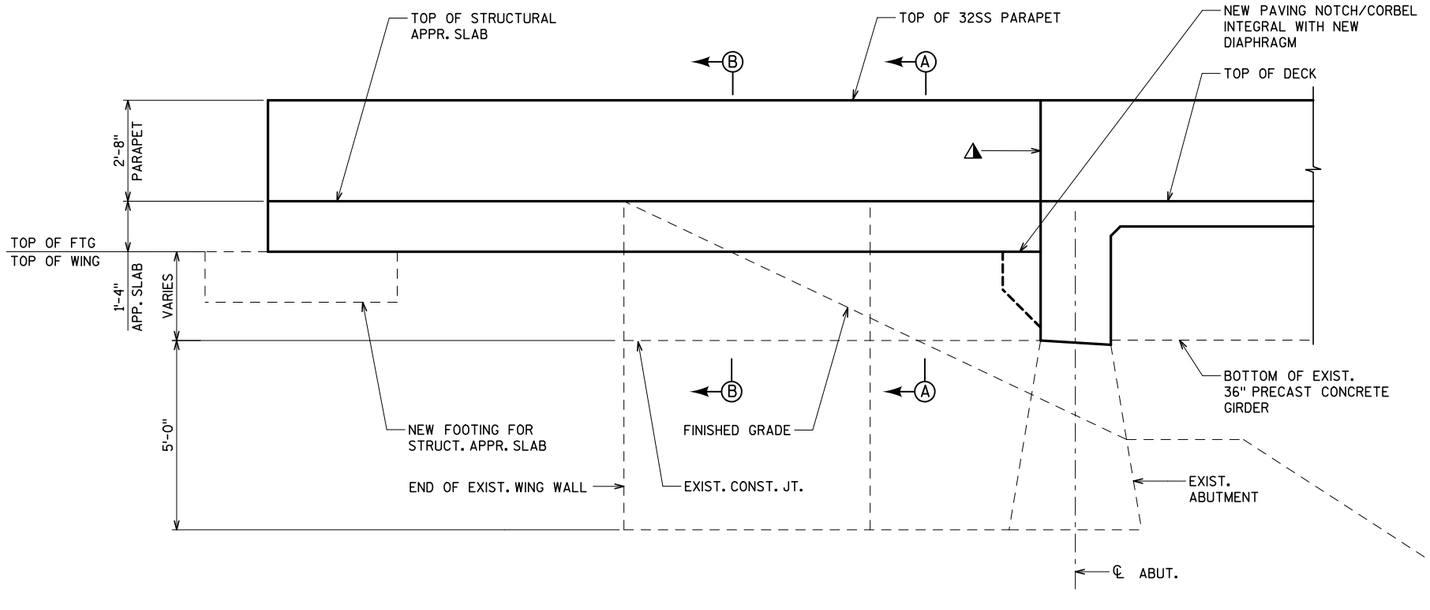


TYPICAL PLAN AT WING

(WING 1 SHOWN, OTHER WINGS SIMILAR)



TYPICAL OUTSIDE ELEVATION AT WING

LEGEND

⚠ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL EDGES OF ½" FILLER AND 1" EXPANDED POLYSTYRENE W/ NON-STAINING NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE OF PARAPET.

* SEE "STRUCTURAL APPROACH SLAB" SHEET FOR TOP OF APPROACH SLAB ELEVATIONS.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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WINGWALL REMOVAL

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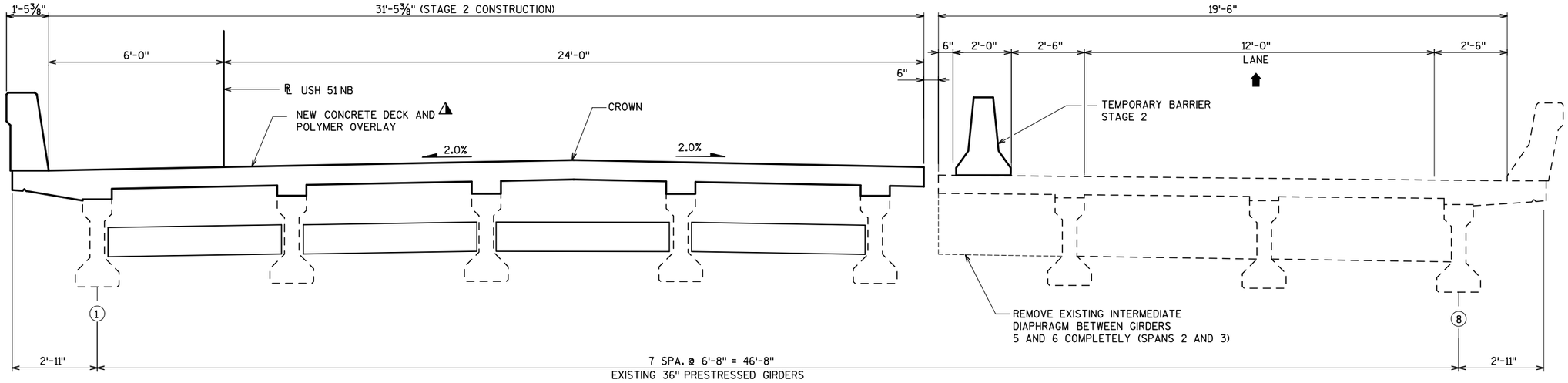
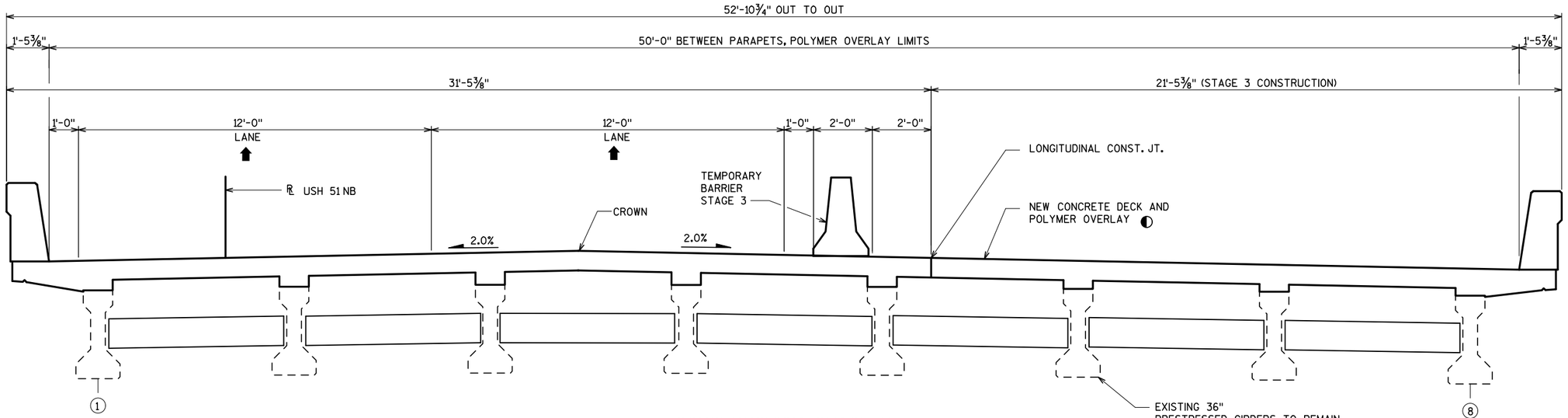


CONSTRUCTION STAGE 2

(LOOKING NORTH)



CONSTRUCTION STAGE 3

(LOOKING NORTH)

NOTE

ANCHOR TEMPORARY BARRIER TO THE DECK IN CONSTRUCTION STAGES 2 AND 3.

LEGEND

⚠ DECK IS CONSTRUCTED IN STAGE 2 AND POLYMER OVERLAY IS APPLIED IN STAGE 4. TEMPORARY BARRIER PLACEMENT AND TRAFFIC PATTERN FOR STAGE 4 ARE IDENTICAL TO STAGE 2.

◐ DECK CONSTRUCTION AND POLYMER OVERLAY ARE COMPLETED IN STAGE 3

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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CONSTRUCTION STAGING

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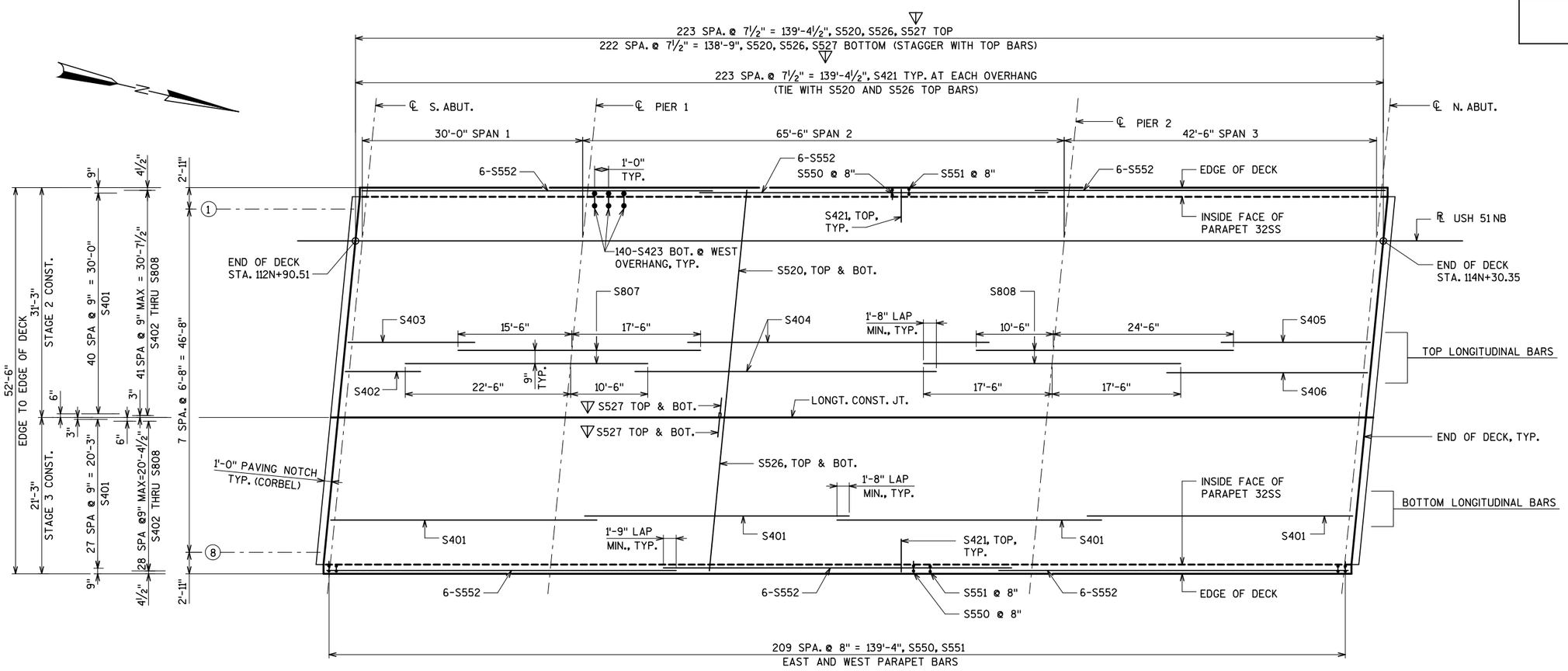

PLAN

LEGEND

▽ BAR COUPLERS USED WITH THESE BARS. SEE BILL OF BARS FOR COMPLETE LIST OF BARS USED WITH BAR COUPLERS. BAR LENGTH COMPUTED TO ℄ OF LONGIT. JOINT AND SHALL BE MODIFIED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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SUPERSTRUCTURE PLAN

SHEET 6 OF 16
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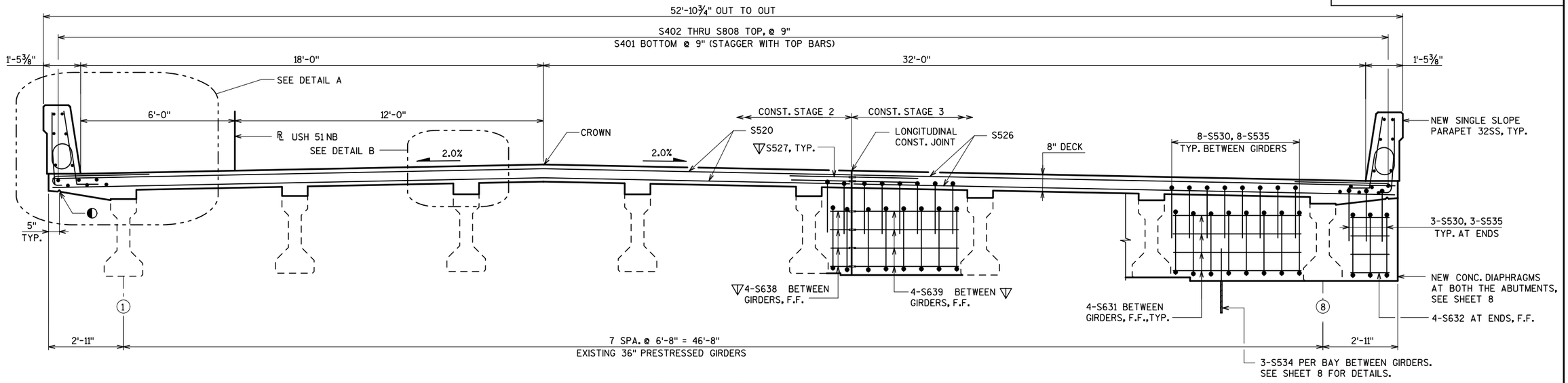
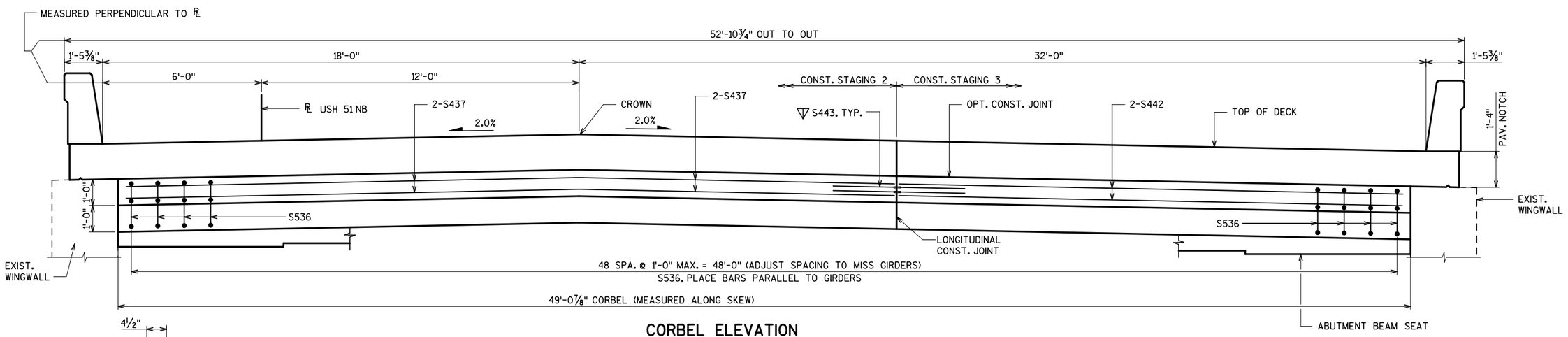


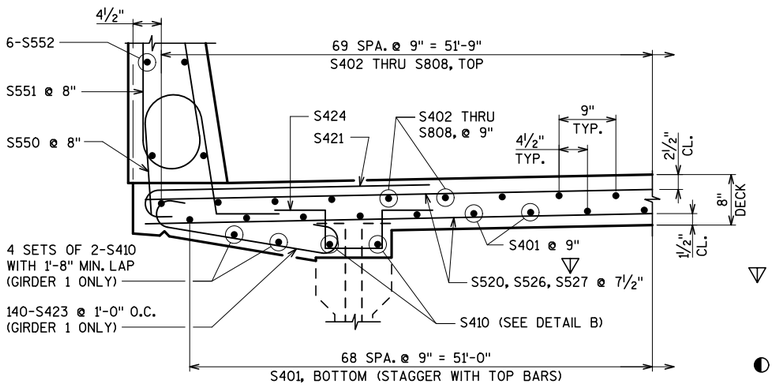
DECK REINFORCING SECTION

(LOOKING NORTH)



CORBEL ELEVATION

(LOOKING NORTH AT SOUTH ABUTMENT)
NORTH ABUTMENT SIMILAR

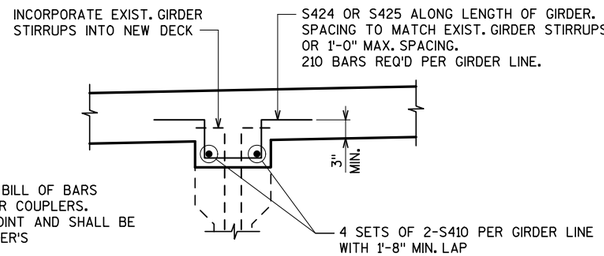


DETAIL A

LEGEND

▽ BAR COUPLERS USED WITH THESE BARS. SEE BILL OF BARS FOR COMPLETE LIST OF BARS USED WITH BAR COUPLERS. BAR LENGTH COMPUTED TO ℄ OF LONGIT. JOINT AND SHALL BE MODIFIED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS.

◐ ¾" V-GROOVE, EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM, V-GROOVES ARE REQUIRED



DETAIL B

DETAIL IS REQUIRED AT ALL GIRDER LINES
USE S424 BARS AT GIRDERS 1, 6, 7 AND 8
USE S425 BARS AT GIRDERS 2, 3, 4 AND 5

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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SUPERSTRUCTURE DETAILS (1 OF 3)

SHEET 7 OF 16
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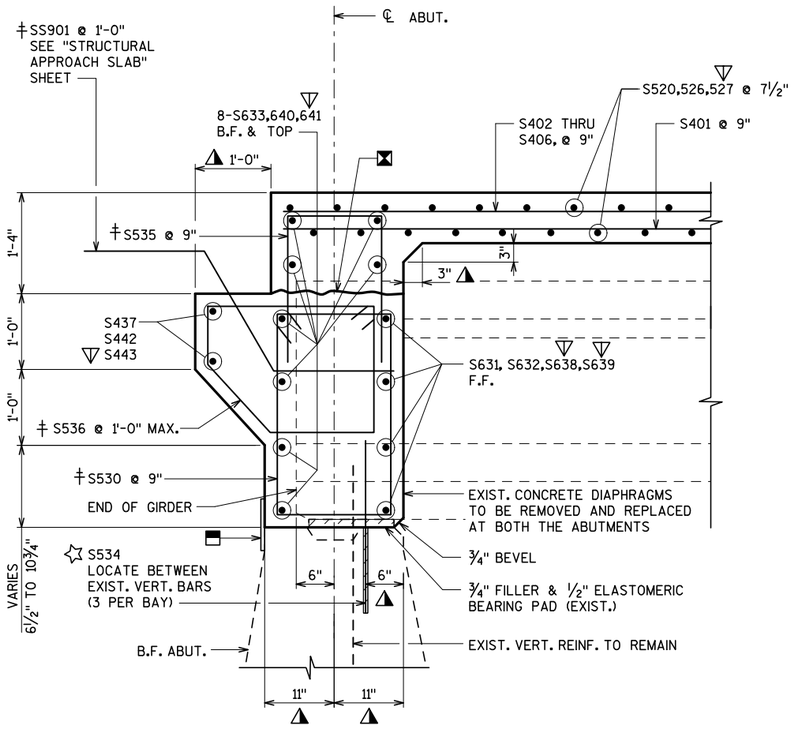
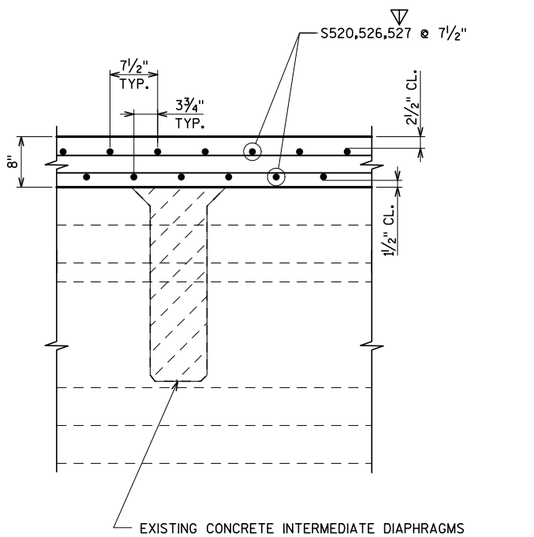
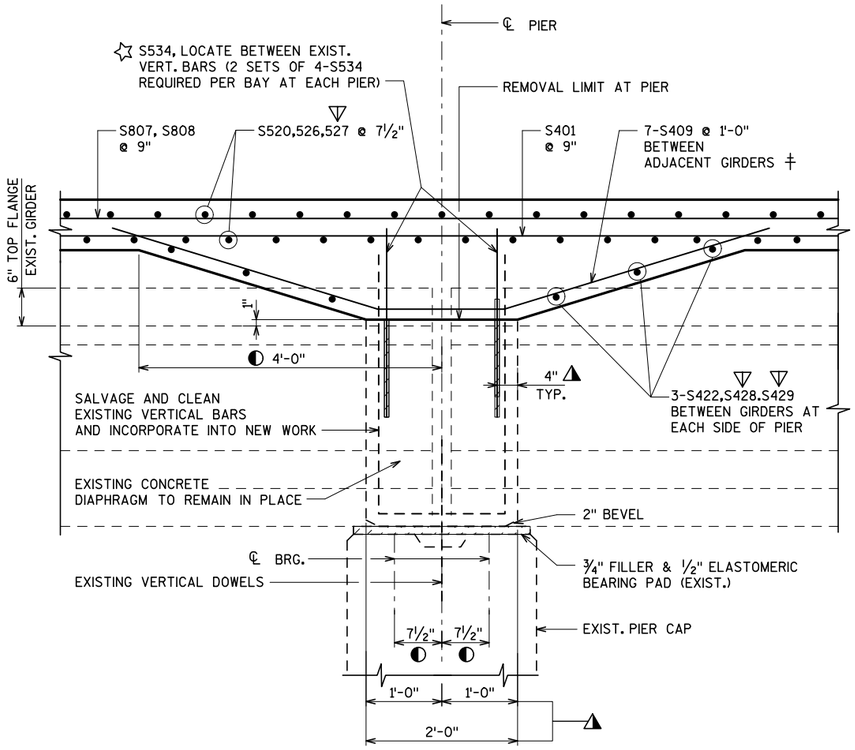


ABUTMENTS

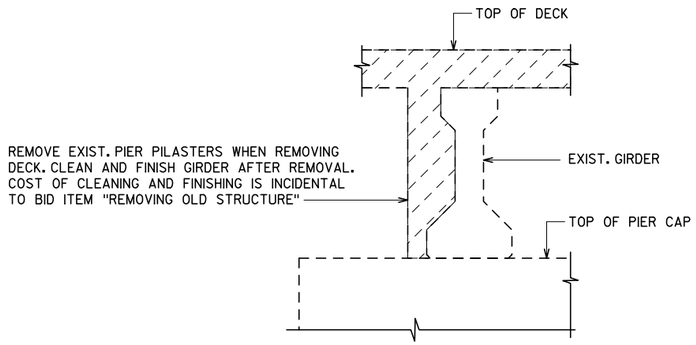


MID-SPAN



PIERS

PART LONGITUDINAL SECTION



PILASTER REMOVAL

LEGEND

- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- OPTIONAL CONSTRUCTION JOINT. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.
- DIMENSION MEASURED NORMAL TO ℄ OF SUBSTRUCTURE.
- DIMENSION MEASURED ALONG ℄ OF GIRDER.
- ‡ PLACE BARS PARALLEL TO GIRDERS
- MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-6" IN CONCRETE. EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH MASONRY ANCHORS SHOWN. EXISTING BARS SPACED AT APPROX. 1'-0" O.C.
- BAR COUPLERS USED WITH THESE BARS. SEE BILL OF BARS FOR COMPLETE LIST OF BARS USED WITH BAR COUPLERS. BAR LENGTH COMPUTED TO ℄ OF LONGIT. JOINT AND SHALL BE MODIFIED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY TB | PLANS CK'D. JRS/BDT

SUPERSTRUCTURE DETAILS (2 OF 3)

STATE PROJECT NUMBER
1170-00-74

BILL OF BARS

	BAR MARK	COAT	NO. STAGE 2	NO. STAGE 3	NO. TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
	S401	X	164	112	276	36'-3"	-	-	DECK LONGITUDINAL BOTTOM
	S402	X	21	14	35	10'-0"	-	-	DECK LONGITUDINAL TOP SPAN 1
	S403	X	21	14	35	17'-0"	-	-	DECK LONGITUDINAL TOP SPAN 1
	S404	X	42	28	70	41'-0"	-	-	DECK LONGITUDINAL TOP SPAN 2
	S405	X	21	14	35	20'-6"	-	-	DECK LONGITUDINAL TOP SPAN 3
	S406	X	21	14	35	27'-6"	-	-	DECK LONGITUDINAL TOP SPAN 3
	S807	X	42	28	70	33'-0"	-	-	DECK LONGITUDINAL TOP PIER 1
	S808	X	42	28	70	35'-0"	-	-	DECK LONGITUDINAL TOP PIER 2
	S409	X	60	38	98	8'-2"	X	-	DECK LONGITUDINAL BOTTOM AT PIERS
	S410	X	48	24	72	36'-2"	-	-	DECK LONGITUDINAL HAUNCHES AND G1 OVERHANG
	S520	X	447	-	447	31'-2"	-	-	DECK TRANSVERSE TOP & BOTTOM
	S421	X	224	224	448	4'-3"	X	-	DECK TRANSVERSE TOP AT OVERHANGS
	S422	X	48	24	72	5'-0"	-	-	DECK TRANSVERSE BOTTOM AT PIERS
	S423	X	140	-	140	3'-4"	X	-	DECK TRANSVERSE OVERHANG AT GIRDER 1
	S424	X	210	630	840	2'-9"	X	-	HAUNCH BARS (GIRDERS 1, 6 THRU 8)
	S425	X	840	-	840	3'-2"	X	-	HAUNCH BARS (GIRDERS 2 THRU 5)
	S526	X	-	447	447	21'-1"	-	-	DECK TRANSVERSE TOP & BOTTOM
▽	S527	X	447	447	894	2'-8"	-	-	DECK TRANSVERSE TOP & BOT. AT CONST. JT.
▽	S428	X	12		12	1'-0"	-	-	DECK TRANSVERSE BOTTOM AT PIERS AT CONST. JT.
▽	S429	X	-	12	12	4'-4"	-	-	DECK TRANSVERSE BOTTOM AT PIERS AT CONST. JT.
	S530	X	74	50	124	8'-0"	X	-	ABUTMENT DIAPHRAGMS VERTICAL
	S631	X	32	16	48	4'-10"	-	-	ABUTMENT DIAPHRAGMS HORIZ. F.F.
	S632	X	8	8	16	1'-10"	-	-	ABUTMENT DIAPHRAGMS HORIZ. F.F. AT ENDS
	S633	X	16	-	16	31'-1"	-	-	ABUTMENT DIAPHRAGMS HORIZ. B.F.
☆	S534	X	94	60	154	2'-6"	-	-	ABUTMENT & PIER DIAPHRAGMS VERTICAL DOWELS
	S535	X	74	50	124	6'-2"	X	-	ABUTMENT DIAPHRAGM VERTICAL TOP
	S536	X	64	42	106	8'-3"	X	-	ABUTMENT DIAPHRAGM CORBEL VERTICAL
	S437	X	4	-	4	29'-11"	-	-	ABUTMENT DIAPHRAGM CORBEL HORIZ.
▽	S638	X	8	-	8	0'-10"	-	-	ABUTMENT DIAPHR. HORIZ. F.F. BETWN G5 AND G6
▽	S639	X	-	8	8	4'-2"	-	-	ABUTMENT DIAPHR. HORIZ. F.F. BETWN G5 AND G6
	S640	X	-	16	16	21'-1"	-	-	ABUTMENT DIAPHRAGMS HORIZ. B.F.
▽	S641	X	16	16	32	3'-2"	-	-	ABUTMENT DIAPHRAGMS AT CONST. JT.
	S442	X	-	4	4	19'-11"	-	-	ABUTMENT DIAPHRAGM CORBEL HORIZ.
▽	S443	X	4	4	8	1'-8"	-	-	ABUTMENT DIAPHRAGM CORBEL HORIZ. AT CONST. JT.
◐	S550	X	210	210	420	4'-5"	X	-	PARAPET VERTICAL
	S551	X	210	210	420	5'-0"	X	-	PARAPET VERTICAL
	S552	X	18	18	36	47'-8"	-	-	PARAPET LONGITUDINAL

☆ CONCRETE MASONRY ANCHOR TYPE L. SEE SHEET 8 FOR DETAILS.

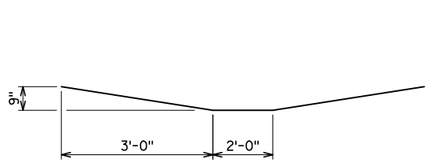
▽ USE THESE BARS WITH BAR COUPLERS. BAR LENGTH COMPUTED TO ℄ OF LONGITUDINAL JOINT AND SHALL BE MODIFIED PER BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. SEE "BAR COUPLERS" SHEET FOR ADDITIONAL INFORMATION.

◐ S550 BARS TO BE TIED TO DECK STEEL BEFORE DECK IS POURED.

BILL OF BAR COUPLERS

NO.	COUPLED BARS STAGE 2	COUPLED BARS STAGE 3
447	S527	S527
12	S428	S429
8	S638	S639
16	S641	S641
4	S443	S443

BENDING DIAGRAMS



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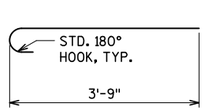

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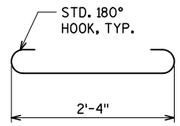

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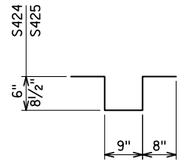

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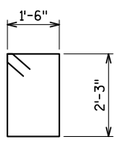

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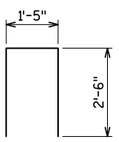

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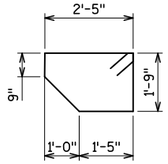

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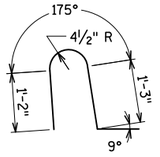

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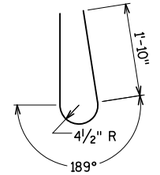

S551

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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SUPERSTRUCTURE DETAILS (3 OF 3)

SHEET 9 OF 16

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8

STATE PROJECT NUMBER
1170-00-74

TOP OF DECK ELEVATIONS - SPAN 1

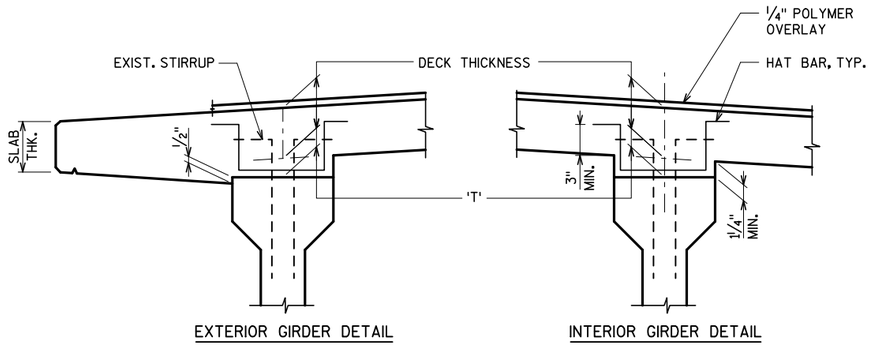
GIRDER/ LOCATION	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1
WEST EDGE	1313.85	1313.97	1314.09	1314.21	1314.33	1314.45	1314.57	1314.69	1314.81	1314.93	1315.05
1	1313.87	1313.99	1314.11	1314.23	1314.35	1314.47	1314.59	1314.71	1314.83	1314.95	1315.07
PGL	1313.94	1314.06	1314.18	1314.30	1314.42	1314.54	1314.66	1314.78	1314.90	1315.02	1315.14
2	1313.98	1314.10	1314.22	1314.34	1314.46	1314.58	1314.70	1314.82	1314.94	1315.06	1315.18
3	1314.08	1314.20	1314.32	1314.44	1314.56	1314.68	1314.80	1314.92	1315.04	1315.16	1315.28
CROWN	1314.13	1314.25	1314.37	1314.49	1314.61	1314.73	1314.85	1314.97	1315.09	1315.21	1315.33
4	1314.04	1314.16	1314.28	1314.40	1314.52	1314.64	1314.76	1314.88	1315.00	1315.12	1315.24
5	1313.88	1314.01	1314.13	1314.25	1314.37	1314.49	1314.61	1314.73	1314.85	1314.97	1315.09
LONGIT. CONST. JT.	1313.84	1313.97	1314.09	1314.21	1314.33	1314.45	1314.57	1314.69	1314.81	1314.93	1315.05
6	1313.72	1313.85	1313.97	1314.09	1314.21	1314.33	1314.45	1314.57	1314.69	1314.81	1314.93
7	1313.56	1313.69	1313.81	1313.93	1314.05	1314.17	1314.29	1314.41	1314.53	1314.65	1314.77
8	1313.40	1313.53	1313.65	1313.77	1313.89	1314.01	1314.13	1314.25	1314.37	1314.49	1314.61
EAST EDGE	1313.36	1313.48	1313.60	1313.72	1313.84	1313.96	1314.08	1314.20	1314.32	1314.44	1314.56
DEAD LOAD DEFLECTION (IN.)	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"	0"

TOP OF DECK ELEVATIONS - SPAN 2

GIRDER/ LOCATION	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 2
WEST EDGE	1315.05	1315.31	1315.57	1315.83	1316.10	1316.36	1316.62	1316.88	1317.14	1317.41	1317.67
1	1315.07	1315.33	1315.59	1315.86	1316.12	1316.38	1316.64	1316.90	1317.17	1317.43	1317.69
PGL	1315.14	1315.40	1315.66	1315.93	1316.19	1316.45	1316.71	1316.97	1317.24	1317.50	1317.76
2	1315.18	1315.44	1315.70	1315.96	1316.23	1316.49	1316.75	1317.01	1317.27	1317.54	1317.80
3	1315.28	1315.55	1315.81	1316.07	1316.33	1316.59	1316.86	1317.12	1317.38	1317.64	1317.90
CROWN	1315.33	1315.59	1315.86	1316.12	1316.38	1316.64	1316.90	1317.17	1317.43	1317.69	1317.95
4	1315.24	1315.51	1315.77	1316.03	1316.29	1316.55	1316.82	1317.08	1317.34	1317.60	1317.86
5	1315.09	1315.35	1315.61	1315.87	1316.13	1316.40	1316.66	1316.92	1317.18	1317.44	1317.71
LONGIT. CONST. JT.	1315.05	1315.31	1315.57	1315.83	1316.09	1316.36	1316.62	1316.88	1317.14	1317.40	1317.67
6	1314.93	1315.19	1315.45	1315.71	1315.97	1316.24	1316.50	1316.76	1317.02	1317.28	1317.55
7	1314.77	1315.03	1315.29	1315.55	1315.81	1316.08	1316.34	1316.60	1316.86	1317.12	1317.39
8	1314.61	1314.87	1315.13	1315.39	1315.65	1315.92	1316.18	1316.44	1316.70	1316.96	1317.23
EAST EDGE	1314.56	1314.82	1315.09	1315.35	1315.61	1315.87	1316.13	1316.40	1316.66	1316.92	1317.18
DEAD LOAD DEFLECTION (IN.)	0"	1/4"	1/2"	3/4"	7/8"	1"	7/8"	3/4"	1/2"	1/4"	0"

TOP OF DECK ELEVATIONS - SPAN 3

GIRDER/ LOCATION	PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
WEST EDGE	1317.67	1317.84	1318.01	1318.18	1318.35	1318.52	1318.69	1318.86	1319.03	1319.20	1319.37
1	1317.69	1317.86	1318.03	1318.20	1318.37	1318.54	1318.71	1318.88	1319.05	1319.22	1319.39
PGL	1317.76	1317.93	1318.10	1318.27	1318.44	1318.61	1318.78	1318.95	1319.12	1319.29	1319.46
2	1317.80	1317.97	1318.14	1318.31	1318.48	1318.65	1318.82	1318.99	1319.16	1319.33	1319.50
3	1317.90	1318.07	1318.24	1318.41	1318.58	1318.75	1318.92	1319.09	1319.26	1319.43	1319.60
CROWN	1317.95	1318.12	1318.29	1318.46	1318.63	1318.80	1318.97	1319.14	1319.31	1319.48	1319.65
4	1317.86	1318.03	1318.20	1318.37	1318.54	1318.71	1318.88	1319.05	1319.22	1319.39	1319.56
5	1317.71	1317.88	1318.05	1318.22	1318.39	1318.56	1318.73	1318.90	1319.07	1319.24	1319.41
LONGIT. CONST. JT.	1317.67	1317.84	1318.01	1318.18	1318.35	1318.52	1318.69	1318.86	1319.03	1319.20	1319.37
6	1317.55	1317.72	1317.89	1318.06	1318.23	1318.40	1318.57	1318.74	1318.91	1319.08	1319.25
7	1317.39	1317.56	1317.73	1317.90	1318.07	1318.24	1318.41	1318.58	1318.75	1318.92	1319.09
8	1317.23	1317.40	1317.57	1317.74	1317.91	1318.08	1318.25	1318.42	1318.59	1318.76	1318.93
EAST EDGE	1317.18	1317.35	1317.52	1317.69	1317.86	1318.03	1318.20	1318.37	1318.54	1318.71	1318.88
DEAD LOAD DEFLECTION (IN.)	0"	0"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	0"	0"



EXTERIOR GIRDER DETAIL

INTERIOR GIRDER DETAIL

SLAB HAUNCH DETAIL

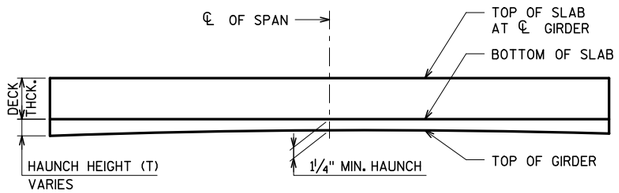
IF 1 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/4".

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:

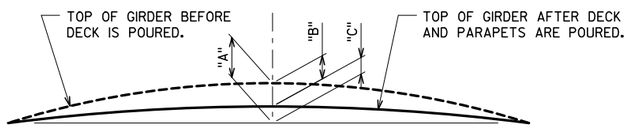
TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
- 1/4" POLYMER OVERLAY THICKNESS

= HAUNCH HEIGHT 'T'

NOTE:
AN AVERAGE HAUNCH 'T' OF 4.5"
WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES"



ELEVATION



CAMBER & DEFLECTION DIAGRAM

* "A" = PRESTRESS CAMBER
* "B" = DEAD LOAD DEFLECTION
* "C" = RESIDUAL CAMBER
* ROUND OFF TO NEAREST 1/8"

NOTES

FOR SUPERSTRUCTURE PLAN SEE SHEET 6.

FOR SUPERSTRUCTURE DETAILS, BILL OF BARS AND BENDING DIAGRAMS SEE SHEETS 7 THRU 9.

TOP OF DECK ELEVATIONS SHOWN ARE ELEVATIONS OF THE TOP OF 1/4" POLYMER OVERLAY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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DECK ELEVATIONS

SHEET 10 OF 16
200

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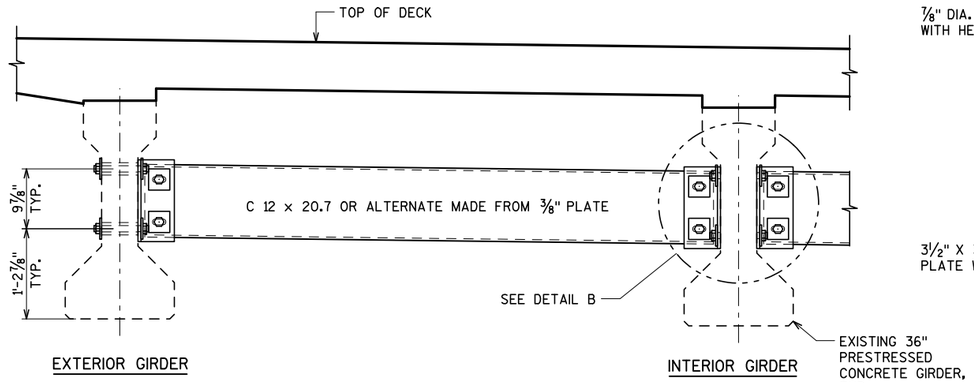
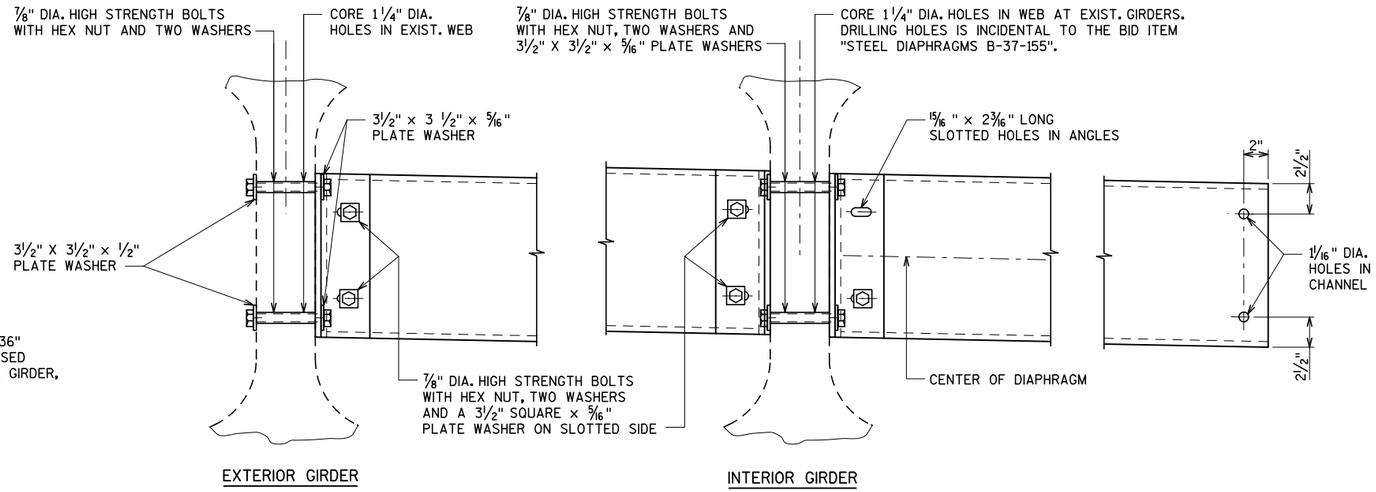
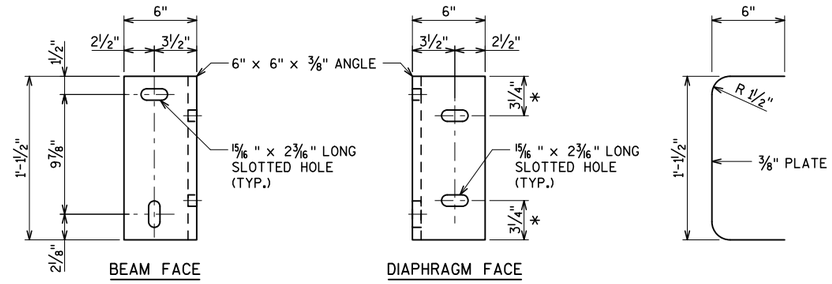
STATE PROJECT NUMBER
1170-00-74



PART TRANSVERSE SECTION AT DIAPHRAGM



DETAIL B



DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM

SECTION THRU ALTERNATE DIAPHRAGM

NOTES

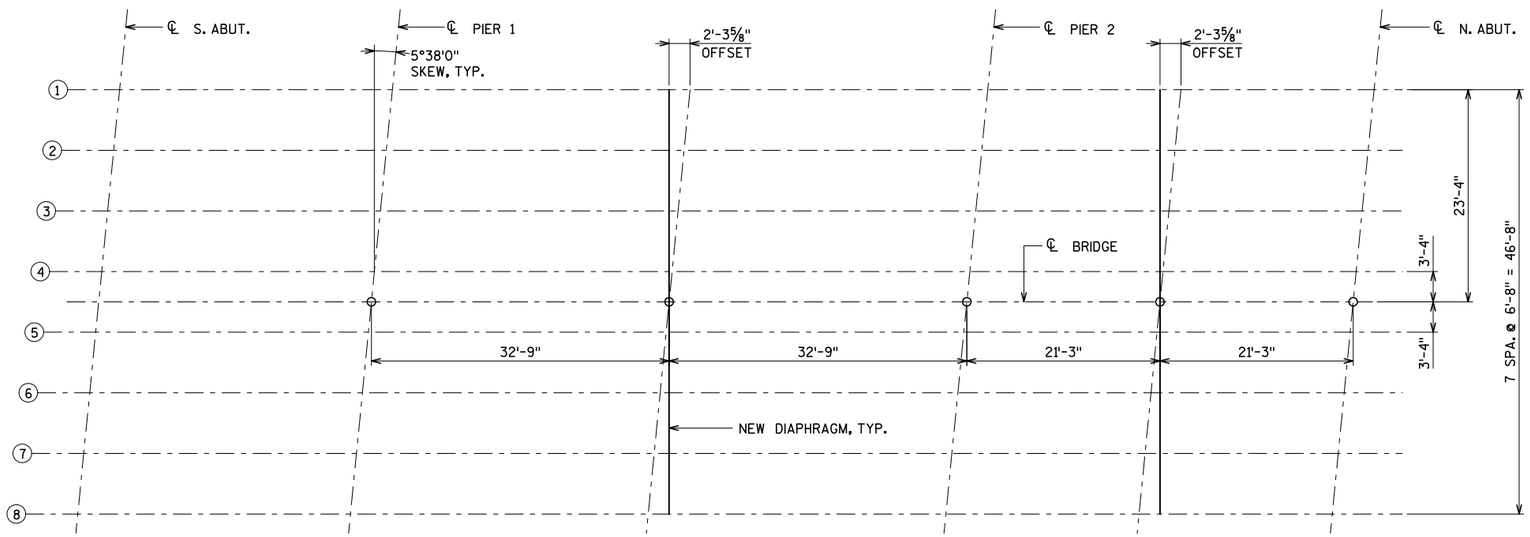
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-37-155", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

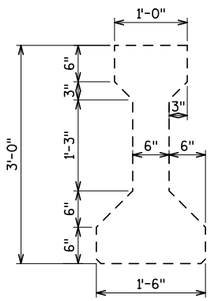
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

NEW STEEL DIAPHRAGMS ARE REQUIRED IN SPANS 2 AND 3 ONLY.



PLAN



EXISTING GIRDER

(SHOWING DIMENSIONS)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

STEEL DIAPHRAGM

SHEET 11 OF 16

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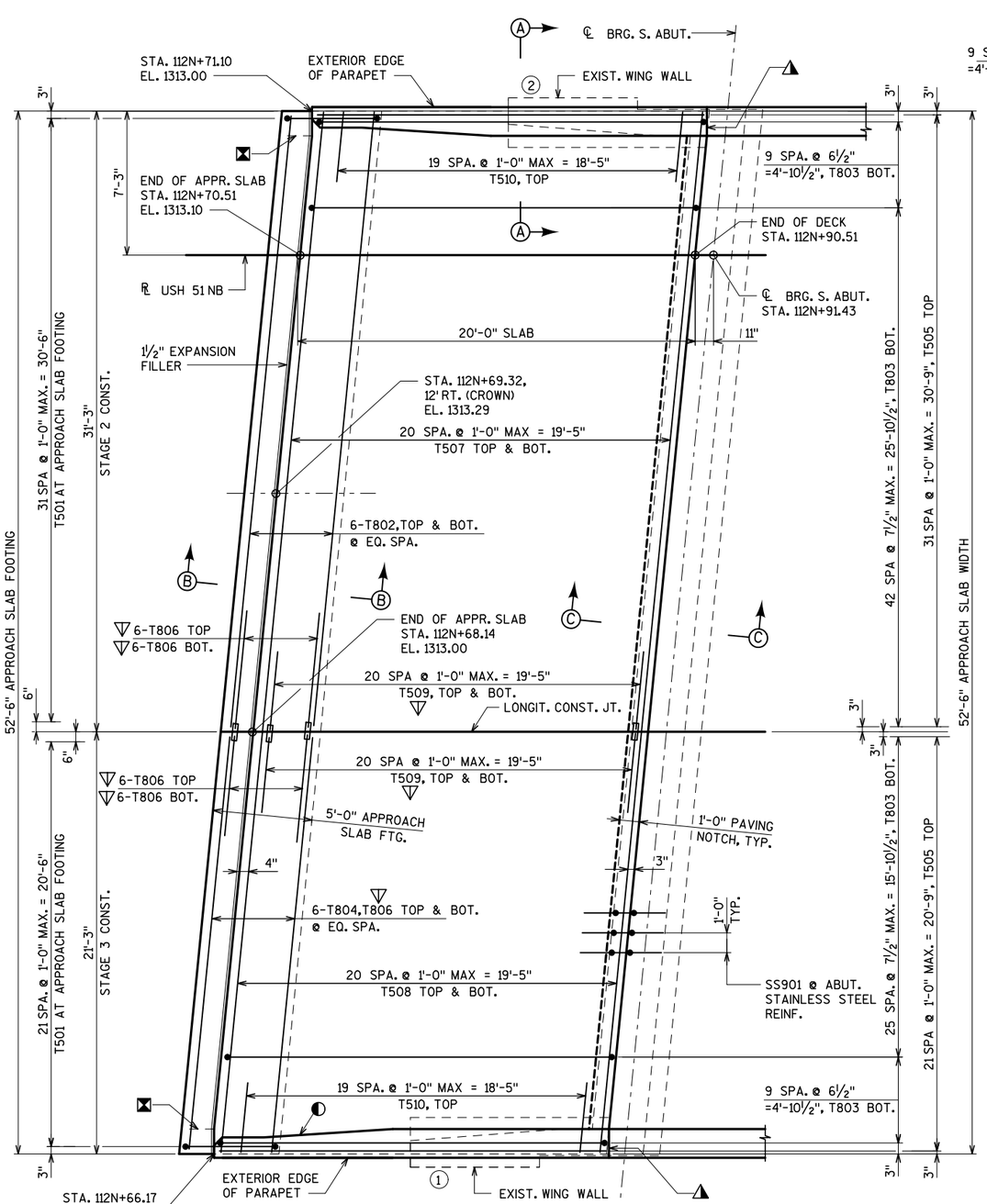
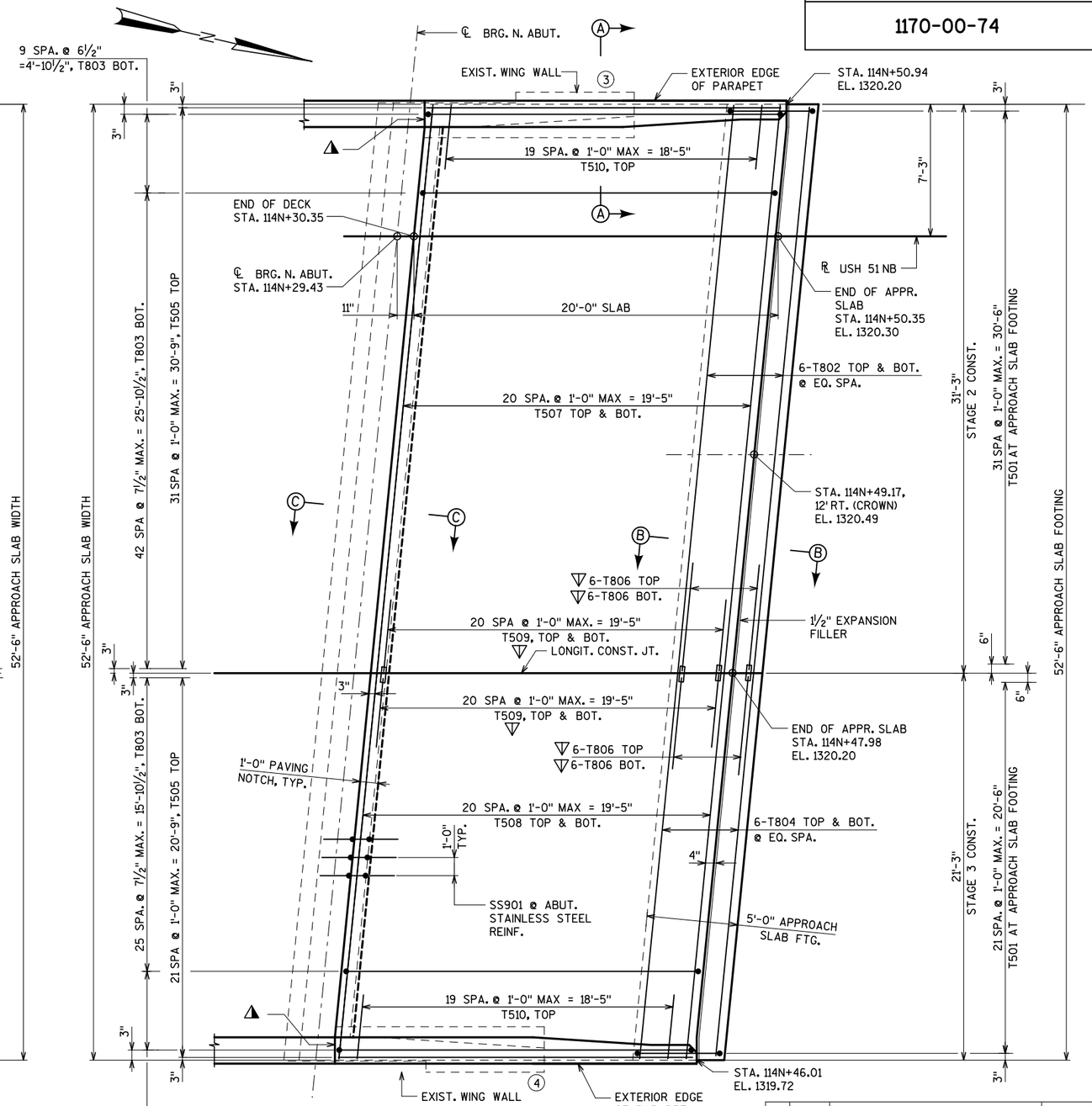


PLAN
SOUTH APPROACH SLAB



PLAN
NORTH APPROACH SLAB

LEGEND

- ⚠ 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). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- ◐ SEE "SINGLE SLOPE PARAPET 32SS" SHEET FOR LOCATION OF NAME PLATE AND BENCH MARK.
- ⊠ NOTCH APPROACH SLAB FOOTING FOR THRIE BEAM POST INSTALLATION.
- ▽ BAR COUPLERS USED WITH THESE BARS. SEE BILL OF BARS FOR COMPLETE LIST OF BARS USED WITH BAR COUPLERS. BAR LENGTH COMPUTED TO ℄ OF LONGIT. JOINT AND SHALL BE MODIFIED TO THE BAR COUPLER MANUFACTURER'S RECOMMENDATIONS.

NOTE

SEE SHEET 13 FOR SECTIONS A-A THRU C-C.

ELEVATIONS SHOWN ARE TO THE TOP OF THE ¼" POLYMER OVERLAY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

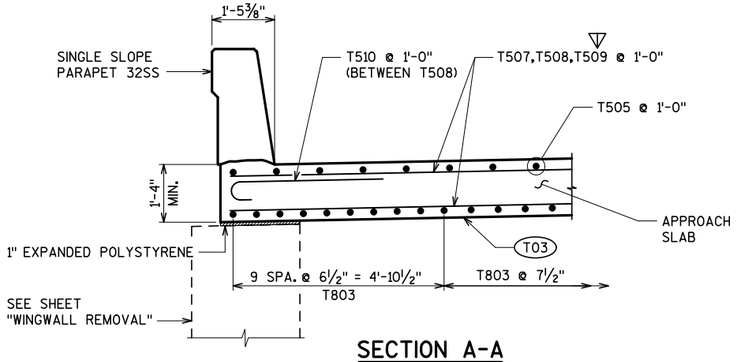
STRUCTURE B-37-155

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

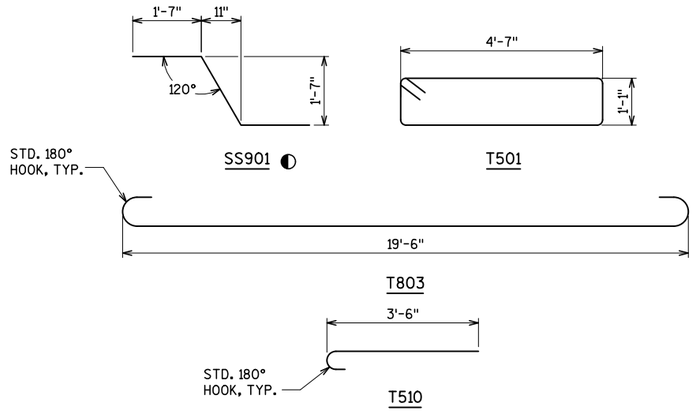
STRUCTURAL APPROACH SLAB

SHEET 12 OF 16

8



SECTION A-A



BENDING DIAGRAMS

BILL OF BARS

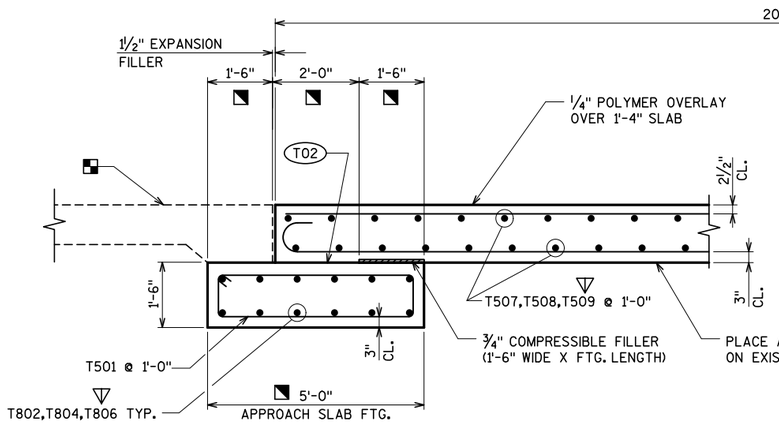
	BAR MARK	COAT	NO. REQ'D STAGE 2*	NO. REQ'D STAGE 3*	NO. REQ'D TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
◐	SS901		64	42	106	5'-0"	X		CONC. ABUT. DIAPH. TO APPROACH SLAB

	BAR MARK	COAT	NO. REQ'D STAGE 2*	NO. REQ'D STAGE 3*	NO. REQ'D TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
	T501	X	64	44	108	11'-10"	X	-	APPROACH SLAB FTG. - STIRRUP
	T802	X	24	-	24	31'-2"	-	-	APPROACH SLAB FTG. - TRANS
	T803	X	104	70	174	21'-9"	X	-	APPROACH SLAB - LONG. - BOTTOM
	T804	X	-	24	24	21'-1"	-	-	APPROACH SLAB FTG. - TRANS
	T505	X	64	44	108	19'-6"	-	-	APPROACH SLAB LONG. TOP
▽	T806	X	24	24	48	5'-9"	-	-	APPR. SLAB FTG. TRANS. AT CONST. JT.
	T507	X	84	-	84	31'-2"	-	-	APPROACH SLAB TRANS. TOP & BOT.
	T508	X	-	84	84	21'-1"	-	-	APPROACH SLAB TRANS. TOP & BOT.
▽	T509	X	84	84	168	2'-11"	-	-	APPR. SLAB TRANS. TOP & BOT. AT CONST. JT.
	T510	X	40	40	80	4'-1"	X	-	APPROACH SLAB TRANS TOP

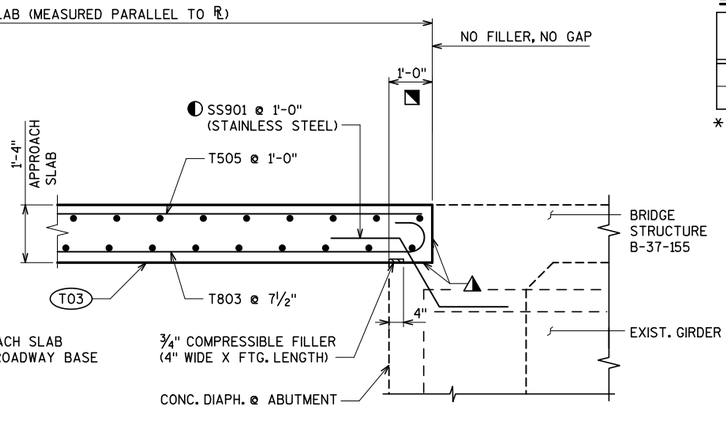
BILL OF BAR COUPLERS

NO.	COUPLED BARS STAGE 2*	COUPLED BARS STAGE 3*
24	T806	T806
84	T509	T509

* QUANTITIES ARE FOR NORTH AND SOUTH APPROACH SLABS, DIVIDED EQUALLY.



SECTION B-B



SECTION C-C

SECTION THRU APPROACH SLAB

DESIGN DATA

CONCRETE STRENGTH f'c:	4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60, fy:	60,000 P.S.I.
ALLOWABLE SOIL BEARING PRESSURE:	2,000 P.S.F.

LEGEND

▲ APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH PRIOR TO POURING STRUCTURAL APPROACH SLAB

◥ MEASURED NORMAL TO ℄ ABUTMENT/FOOTING

◐ THE BID ITEM FOR SS901 BARS SHALL BE "BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES". SPACE BARS TO MISS GIRDERS.

(T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.

◪ ROADWAY APPROACH PAVEMENT.

▽ - USE THESE BARS WITH BAR COUPLERS. BAR LENGTH COMPUTED TO ℄ OF LONGITUDINAL JOINT AND SHALL BE MODIFIED PER BAR COUPLER MANUFACTURER'S RECOMMENDATIONS. SEE "BAR COUPLERS" SHEET FOR ADDITIONAL INFORMATION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY TB | PLANS CK'D. JRS/BDT

STRUCTURAL APPROACH SLAB DETAILS

SHEET 13 OF 16
203

8

8

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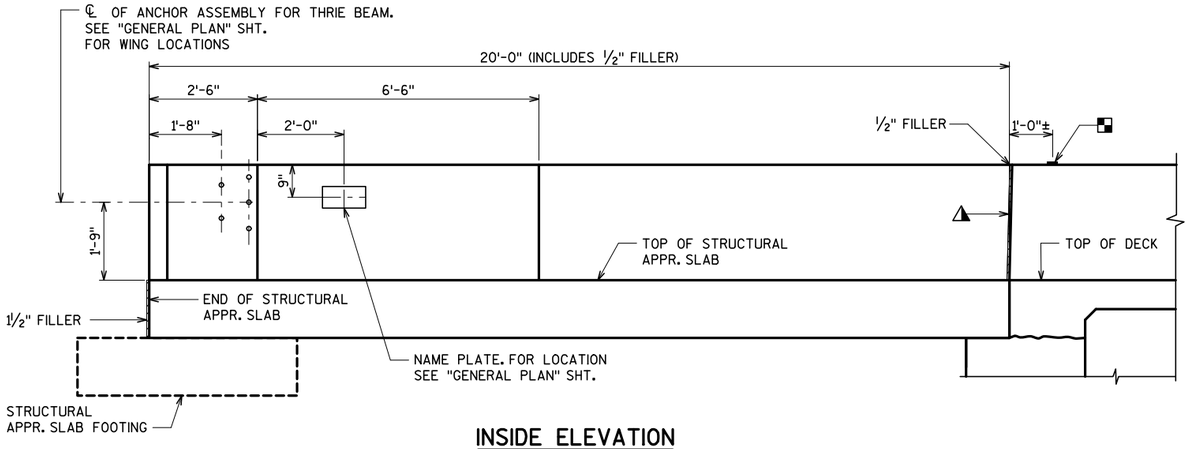
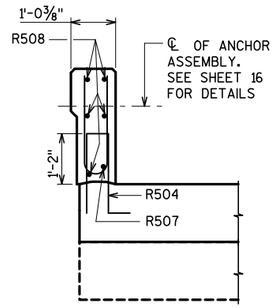
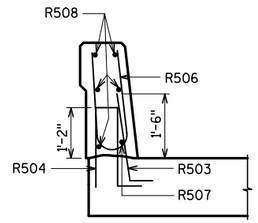
STATE PROJECT NUMBER
1170-00-74



INSIDE ELEVATION



SECTION A-A



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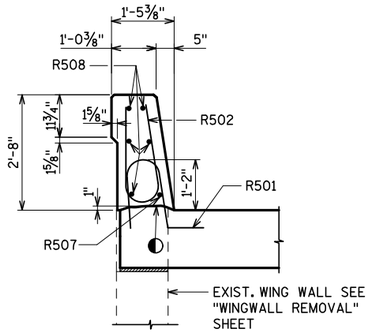
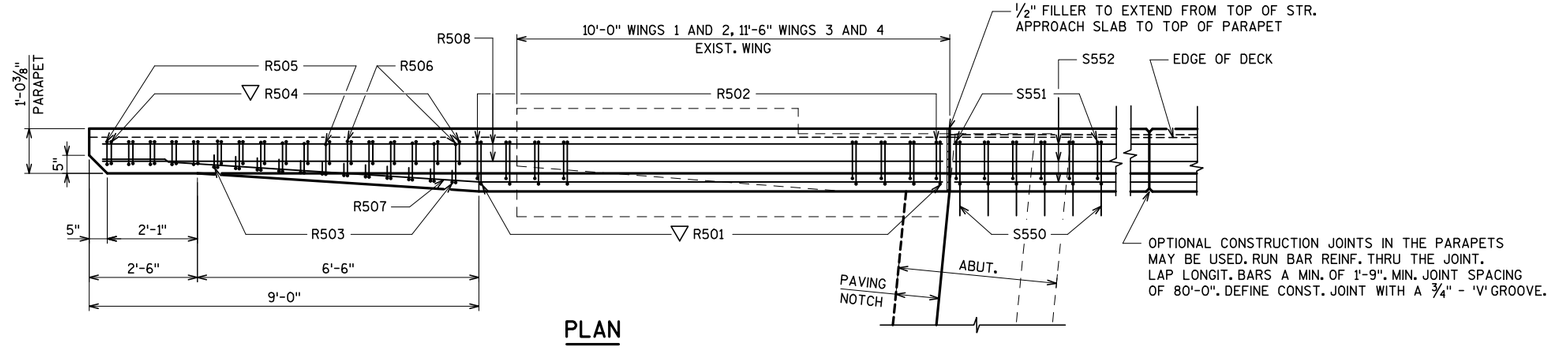


SECTION C-C

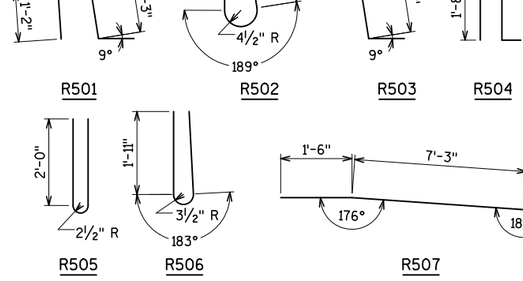


PLAN

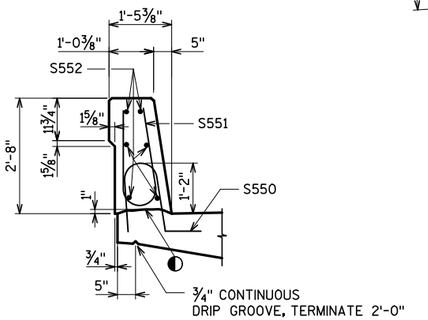
BILL OF BARS

BAR MARK	COAT	NO. REQ'D * STAGE 2	NO. REQ'D * STAGE 3	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	4'-5"	X	-	PARAPET VERT.
R502	X	34	34	5'-0"	X	-	PARAPET VERT.
R503	X	24	24	2'-9"	X	-	PARAPET VERT.
R504	X	34	34	4'-4"	X	-	PARAPET VERT.
R505	X	22	22	4'-9"	X	-	PARAPET VERT.
R506	X	12	12	4'-10"	X	-	PARAPET VERT.
R507	X	2	2	19'-6"	X	-	PARAPET HORIZ.
R508	X	10	10	19'-6"	-	-	PARAPET HORIZ.

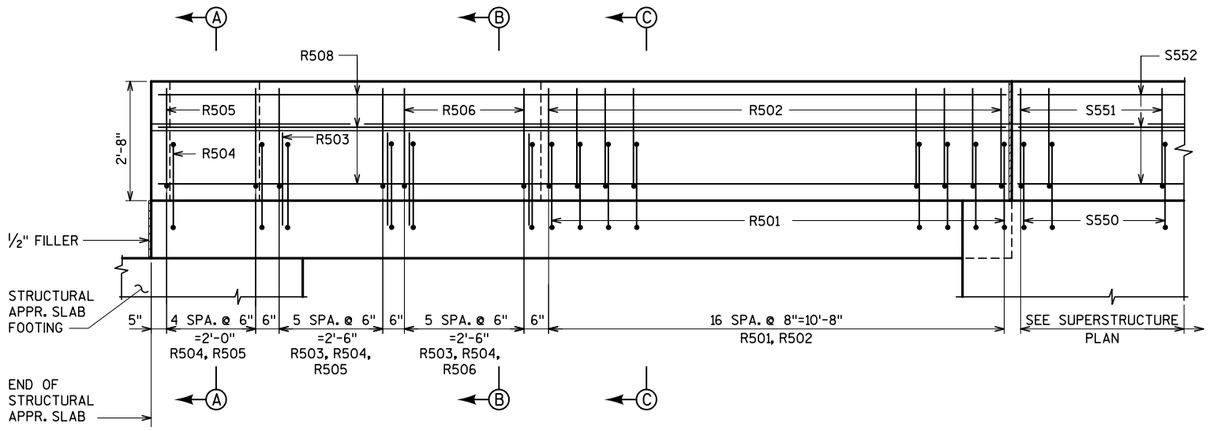
* QUANTITIES ARE FOR NORTH & SOUTH APPROACH SLABS. DIVIDE EQUALLY.



BENDING DIAGRAMS



SECTION THRU PARAPET ON BRIDGE



OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)

LEGEND

- ◪ BENCH MARK CAP (WHEN SUPPLIED).
- ◐ CONST. JOINT - STRIKE OFF AS SHOWN.
- ▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.
- ◭ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER W/ NON-STAINING NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY	TB	PLANS CK'D. JRS/BDT

SINGLE SLOPE PARAPET 32SS

SHEET 14 OF 16
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8

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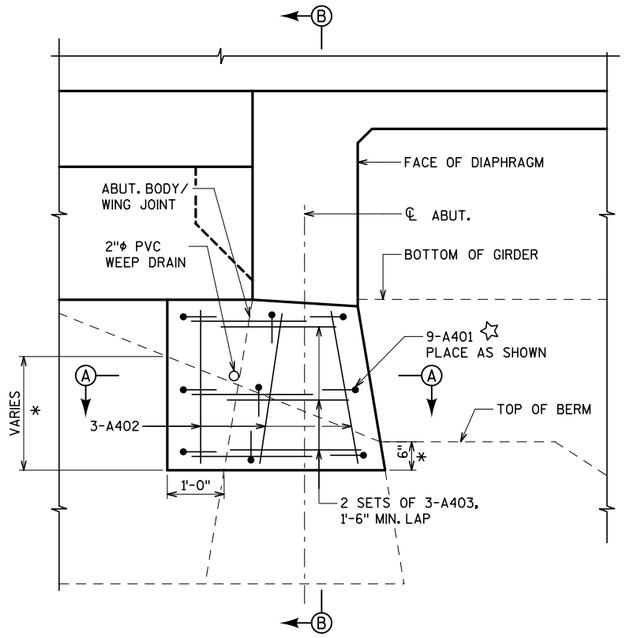
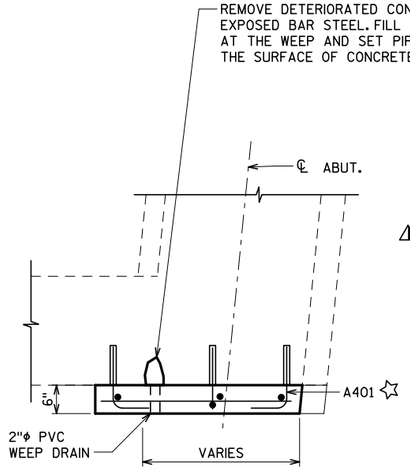
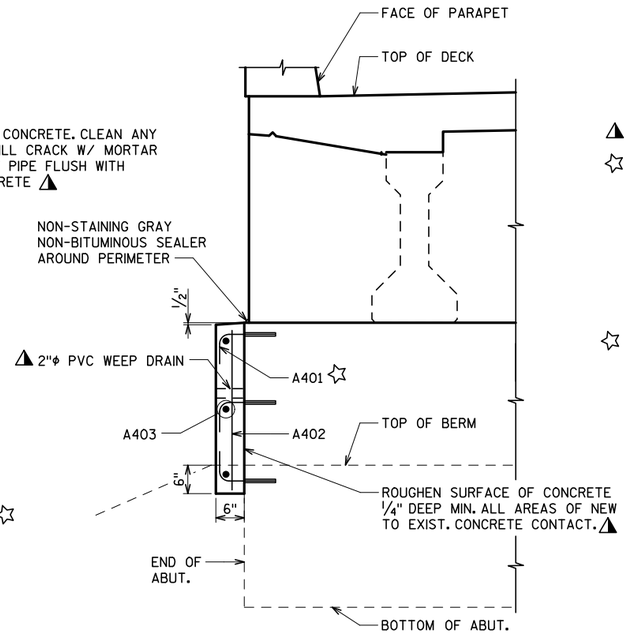
1170-00-74



ABUTMENT END ELEVATION



SECTION A-A



SECTION B-B

* COST OF EXCAVATION, BACKFILL AND WEEP DRAIN IS INCLUDED IN THE BID ITEM "ABUTMENT END REPAIR".

COST OF CONCRETE AND REINFORCEMENT WILL BE PAID FOR SEPERATELY UNDER RESPECTIVE BID ITEMS.

ABUTMENT END REPAIR DETAILS

LEGEND

⚠ COST INCLUDED IN THE BID ITEM "ABUTMENT END REPAIR".

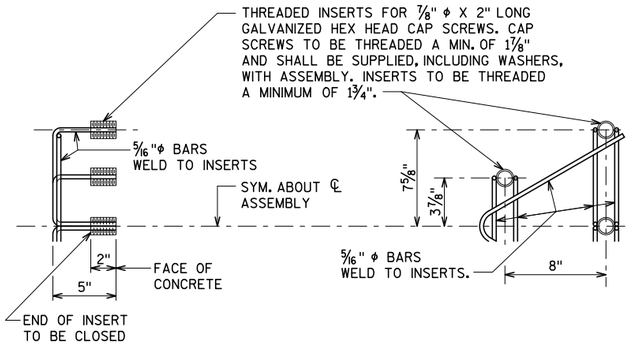
☆ CONCRETE MASONRY ANCHOR, TYPE L, NO. 4 BARS. EMBED 8" IN CONCRETE.

BILL OF BARS

	BAR MARK	COAT	NO. REQ'D S. ABUT.	NO. REQ'D N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
☆	A401	X	18	9	1'-8"	X	-	ABUT. END REPAIR DOWELS
	A402	X	6	3	2'-6"	-	-	ABUT. END REPAIR VERTICAL
	A403	X	12	6	4'-0"	-	-	ABUT. END REPAIR HORIZ.

☆ A401

BENDING DIAGRAM



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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

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MISCELLANEOUS DETAILS

SHEET 15 OF 16
205

8

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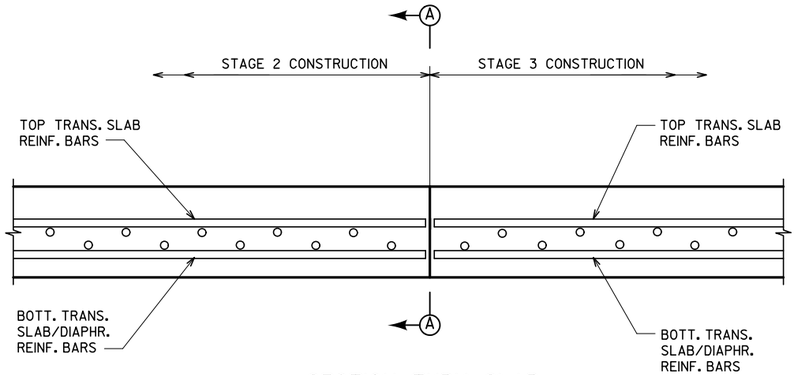
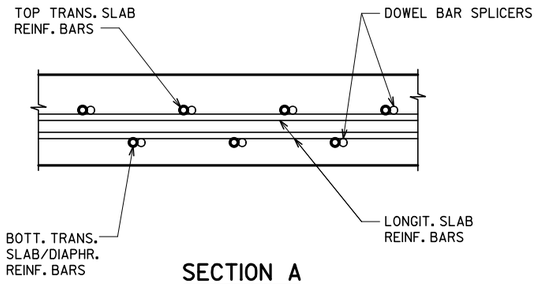
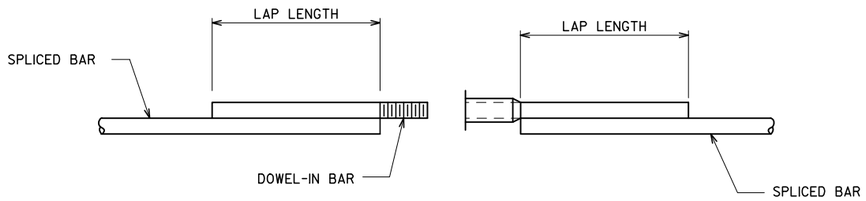


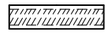
SECTION THRU SLAB



SECTION A

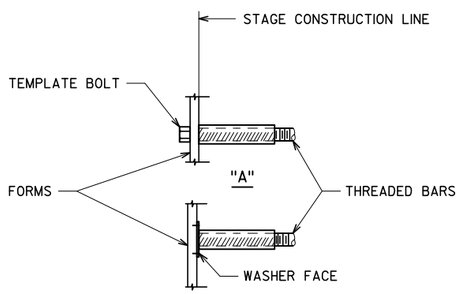


DOWEL BAR SPLICER



ONE PIECE THREADED SPLICER

SPLICER ALTERNATIVES



"A"

"B"

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 SPLICE BARS.

SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH THE REQUIREMENTS FOR REINFORCEMENT BARS.

OTHER SYSTEMS OF SIMILAR 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

BAR LENGTH COMPUTED TO ℄ LONGIT. JOINT AND SHALL BE MODIFIED IF REQUIRED TO BAR COUPLER MANUFACTURER RECOMMENDATIONS. PAY BASED ON BARS AS DETAILED.

SEE "BILL OF BARS" SHEET FOR LOCATION, STAGING, SIZE, AND QUANTITY OF COUPLERS REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-155

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

BAR COUPLERS

SHEET 16 OF 16

8

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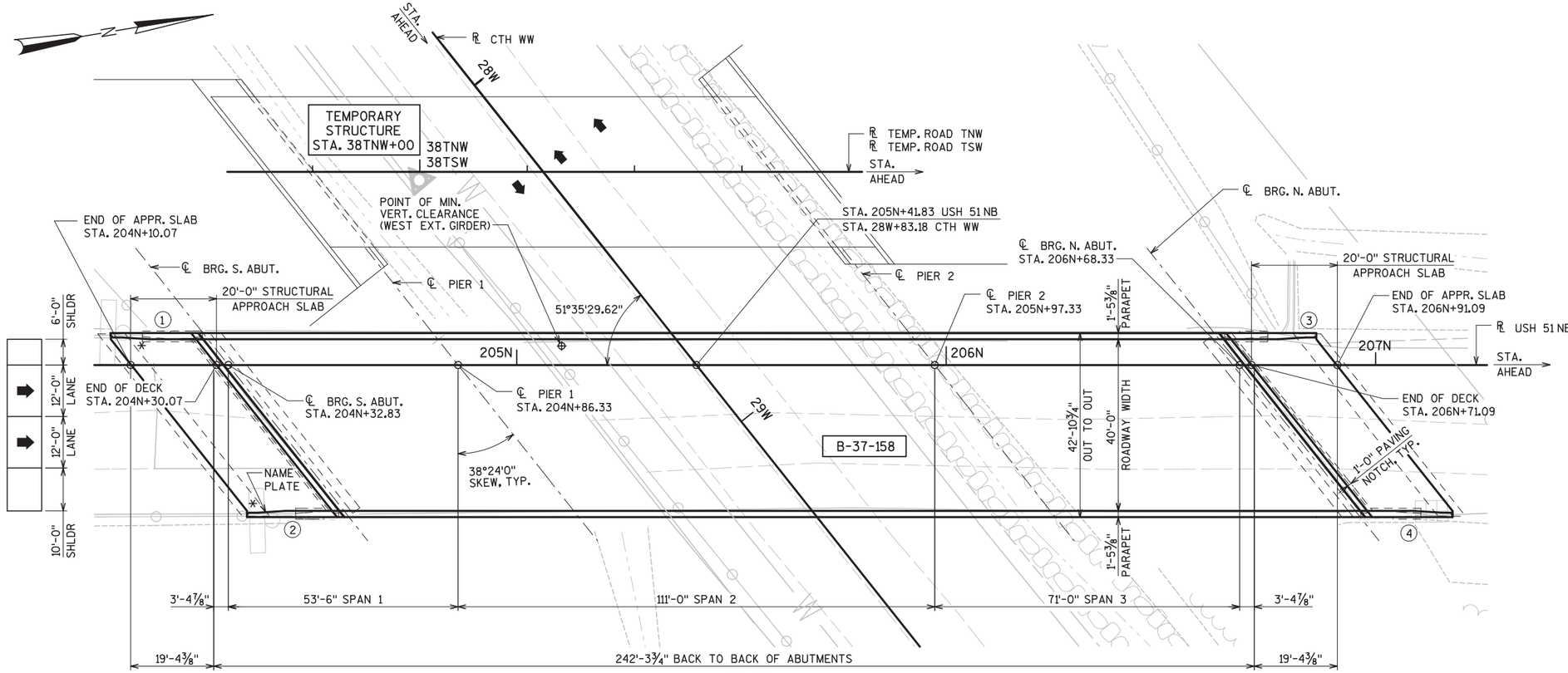
STATE PROJECT NUMBER

1170-00-74

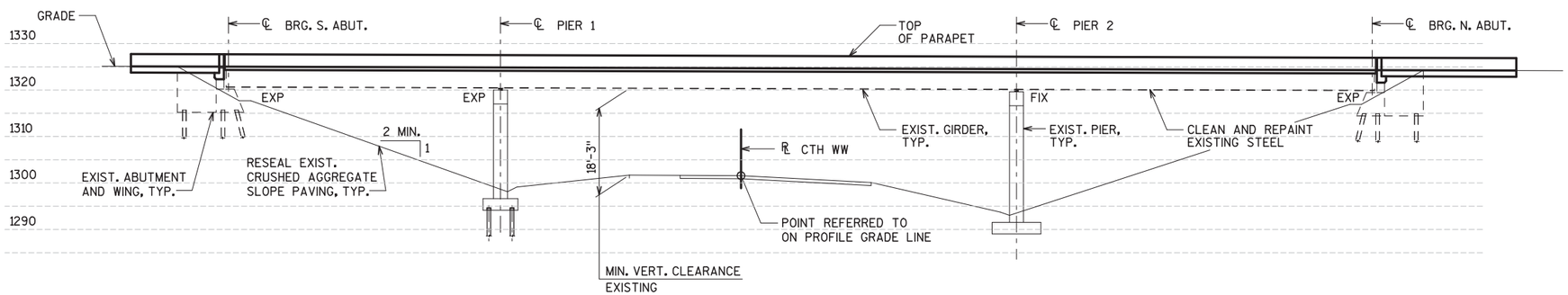
LIST OF DRAWINGS

1. GENERAL PLAN AND ELEVATION
2. TYPICAL SECTION
3. GENERAL NOTES AND QUANTITIES
4. WINGWALL REMOVAL
5. TEMPORARY STRUCTURE
6. SUBSURFACE EXPLORATION
7. SUPERSTRUCTURE PLAN
8. SUPERSTRUCTURE DETAILS
9. BILL OF BARS
10. DECK ELEVATIONS
11. EXPANSION JOINT DETAILS (1 OF 2)
12. EXPANSION JOINT DETAILS (2 OF 2)
13. STRUCTURAL APPROACH SLAB
14. STRUCTURAL APPROACH SLAB DETAILS
15. PAVING BLOCK
16. SINGLE SLOPE PARAPET 32SS



PLAN

(3 SPAN STEEL GIRDER BRIDGE)



ELEVATION

(LOOKING WEST - NORMAL TO CTH WW)

DESIGN DATA

LIVE LOAD

DESIGN LOAD: HS-20
INVENTORY RATING: HS-18
OPERATIONAL RATING: HS-31
WISCONSIN STANDARD PERMIT VEHICLE LOAD (WIS-SPV): ..... 230 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY
SUPERSTRUCTURE ..... f'c = 4,000 psi
APPROACH SLAB ..... f'c = 4,000 psi
OTHER ..... f'c = 3,500 psi

HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 ..... fy = 60,000 psi

TRAFFIC DATA

USH 51
A.D.T. = 19,000 (2015)
A.D.T. = 24,300 (2035)
R.D.S. = 70 MPH

CTH WW
A.D.T. = 2,400 (2010)
R.D.S. = 50 MPH

BENCHMARK

POINT ID: 219 PK
DESCRIPTION: PK NAIL IN S. SHOULDER OF CTH WW BETWEEN NB AND SB USH 51 BRIDGES
X: 271281.99
Y: 225997.13
EL. = 1305.09

LEGEND

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT

◯ WINGWALL NUMBER.

STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER
(608) 266-8489

CONSULTANT CONTACT:
YAN NENAYDYKH
(414) 292-4599

BABU D. THENGANAKUNNEL E-35905 MILWAUKEE, WI PROFESSIONAL ENGINEER
4-28-2015

NO.	DATE	REVISION	BY

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3390 Fax: (414) 771-4490

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 09/28/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-37-158

USH 51 NB OVER CTH WW

COUNTY	TOWN
MARATHON	MAINE

DESIGN SPEC. REHABILITATION N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JRS	BDT	TB	JRS/BDT

GENERAL PLAN AND ELEVATION

SHEET 1 OF 16
207

I.D. 1170-00-04 SEPTEMBER 2015

8

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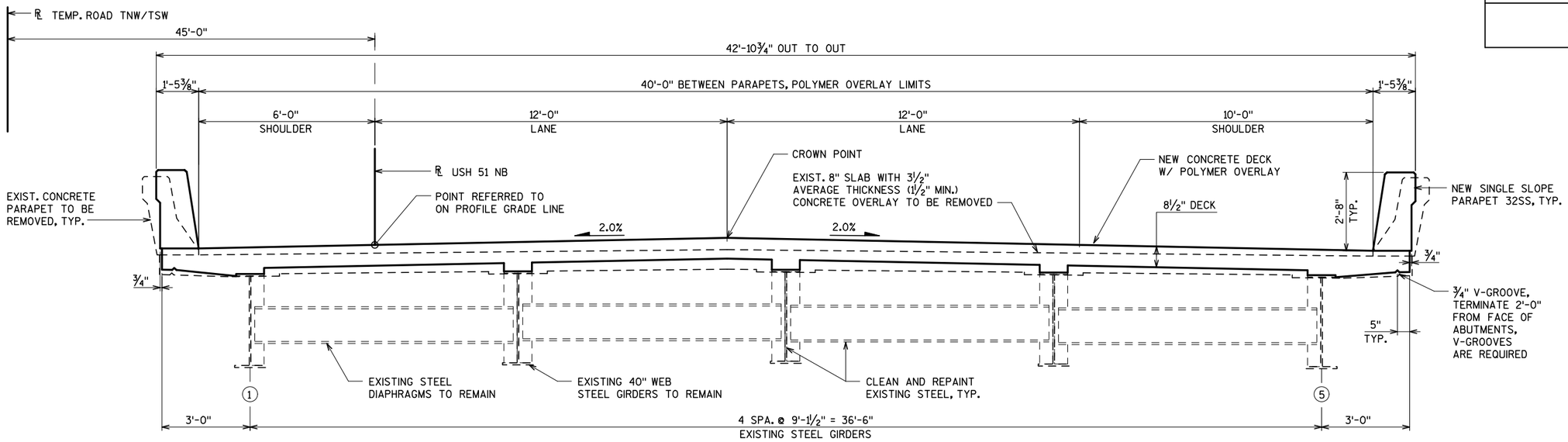
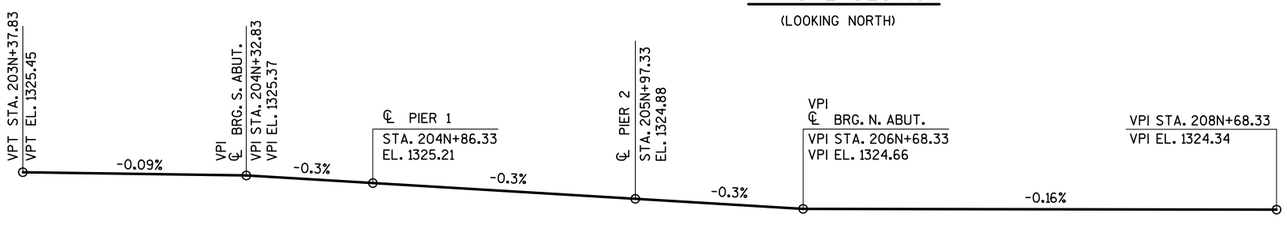
STATE PROJECT NUMBER
1170-00-74

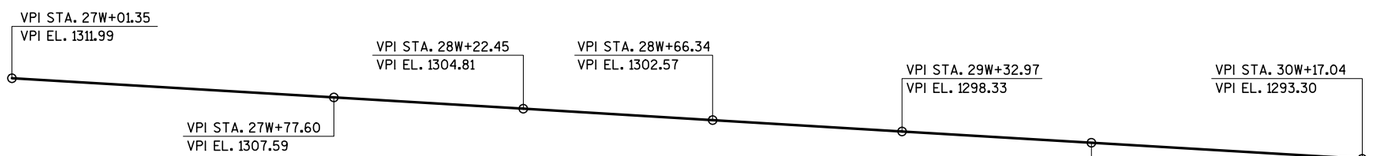


TYPICAL SECTION

(LOOKING NORTH)

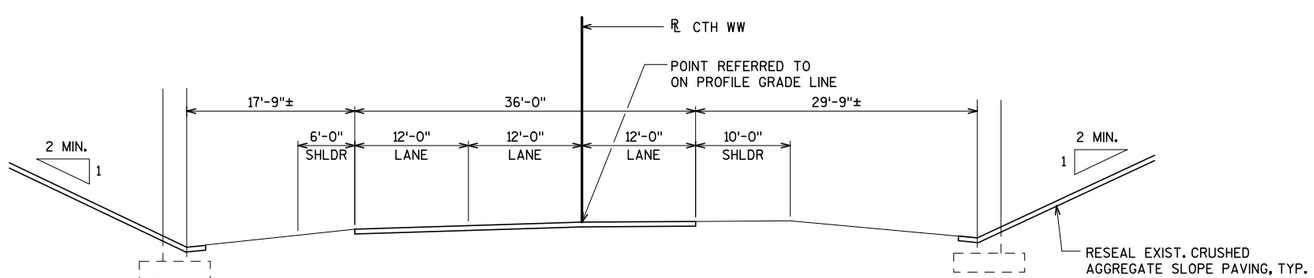


PROFILE GRADE LINE - USH 51 NB



PROFILE GRADE LINE - CTH WW

(BASED ON FIELD SURVEY)



TYPICAL SECTION THRU CTH WW

(LOOKING EAST)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY TB | PLANS CK'D. JRS/BDT

TYPICAL SECTION

SHEET 2 OF 16

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8

STATE PROJECT NUMBER
1170-00-74

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	PIER 1	PIER 2	SUPER.	APPROACH SLAB		TOTAL
								SOUTH	NORTH	
203.0200.02	REMOVING OLD STRUCTURE STATION 205N+50	LS	-	-	-	-	-	-	-	1
203.0225.S.02	DEBRIS CONTAINMENT STRUCTURE B-37-158	LS	-	-	-	-	-	-	-	1
206.1000.02	EXCAVATION FOR STRUCTURES BRIDGES B-37-158	LS	-	-	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	30	30	-	-	-	-	-	60
502.0100	CONCRETE MASONRY BRIDGES	CY	10	10	-	-	352	62	62	496
502.3100	EXPANSION DEVICE B-37-158	LS	-	-	-	-	-	-	-	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	28	-	-	28
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	-	197	17	17	231
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	53	53	-	-	-	-	-	106
502.6110	MASONRY ANCHORS TYPE S 3/4-INCH	EACH	5	-	-	-	-	-	-	5
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,210	1,210	-	-	78,800	10,780	10,780	102,780
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	-	-	-	-	-	650	650	1,300
509.5100.S	POLYMER OVERLAY	SY	-	-	-	-	1,071	89	89	1,249
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	9	-	-	-	-	-	18
517.0900.S.01	PREPARATION AND COATING OF TOP FLANGES B-37-158	LS	-	-	-	-	-	-	-	1
517.1800.S.01	STRUCTURE REPAINTING RECYCLED ABRASIVE B-37-158	LS	-	-	-	-	-	-	-	1
517.4500.S.01	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-37-158	LS	-	-	-	-	-	-	-	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	-	-	-	-	-	-	-	1
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	333	422	-	-	-	-	-	755
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	-	-	-	2	-	2
SPV.0060.05	CLEANING AND PAINTING BEARINGS	EACH	5	5	5	5	-	-	-	20
SPV.0105.02	TEMPORARY STRUCTURE STATION 38TNW+00	LS	-	-	-	-	-	-	-	1
	NON-BID ITEMS									
	PREFORMED JOINT FILLER	SIZE	-	-	-	-	-	-	-	1/2", 3/4", 1 1/2"
	BRIDGE SEAT PROTECTION	LS	-	-	-	-	-	-	-	1
	NAME PLATE	EACH	-	-	-	-	-	-	-	1
	EXPANDED POLYSTYRENE	SIZE	-	-	-	-	-	-	-	1"

ALL ITEMS ARE CATEGORY 0030

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

ELEVATIONS ARE REFERENCED TO THE NAVD 88 (1991) DATUM.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

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

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

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT ABUTMENTS ALL SPACES NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACK FILLED WITH BACKFILL STRUCTURE.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ALL CONCRETE REMOVAL LIMITS SHALL BE DEFINED BY A 1" DEEP SAWCUT.

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. THE NEW NAME PLATE SHALL SHOW THE ORIGINAL CONSTRUCTION YEAR. ORIGINAL CONSTRUCTION YEAR IS 1974.

STRICTLY CONFORM TO THE APPROVED DEBRIS CONTAINMENT PLAN.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON SHEET 10.

THE FINISH COLOR FOR STRUCTURE REPAINTING SHALL BE GRAY(LIGHT GRAY), FEDERAL COLOR NUMBER 26293.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF PAVING NOTCH.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF PARAPETS ON THE DECK, WINGS, AND APPROACH SLABS.

POLYMER OVERLAY SHALL BE APPLIED TO DECK AND APPROACH SLABS. SEE SPECIAL PROVISIONS FOR REQUIRED CONCRETE CURE TIME PRIOR TO APPLYING POLYMER OVERLAY.

PROFILE GRADE LINE ELEVATIONS ARE AT THE TOP OF THE 1/4" POLYMER OVERLAY. POLYMER OVERLAY IS NOT SHOWN AND IS NOT INCLUDED IN THE 8 1/2" DECK THICKNESS.

MONITOR SAW CUTTING OF EXISTING BRIDGE DECK AND BLADE DEPTH SO THAT EXISTING UNDERLYING GIRDERS ARE NOT DAMAGED. EXERCISE CARE NOT TO DAMAGE THE TOP FLANGES WITH JACK HAMMER OR OTHER TOOLS. DO NOT DAMAGE EXISTING SHEAR CONNECTORS WITHIN THE DECK.

REMOVAL NOTES

THE EXISTING DECK, PARAPETS AND PART OF WING WALLS SHALL BE REMOVED AND REPLACED IN THIS CONTRACT. EXISTING GIRDERS AND SUBSTRUCTURE UNITS SHALL REMAIN IN PLACE.

PLANS OF THE EXISTING BRIDGE ARE ON FILE AND ARE AVAILABLE FOR INSPECTION AT THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTH CENTRAL REGION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

GENERAL NOTES AND QUANTITIES

SHEET 3 OF 16

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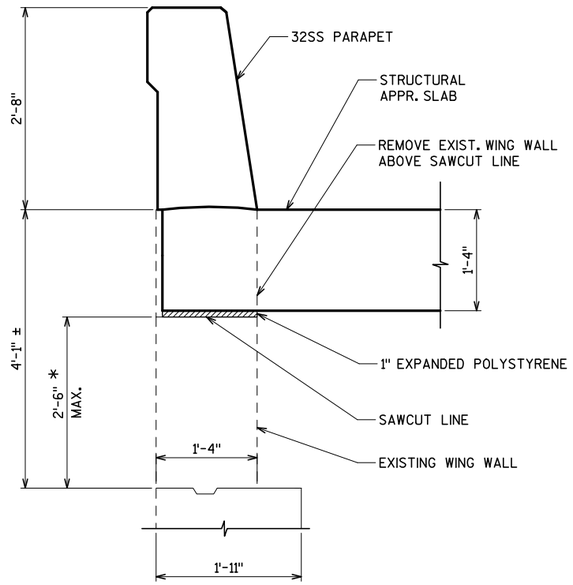
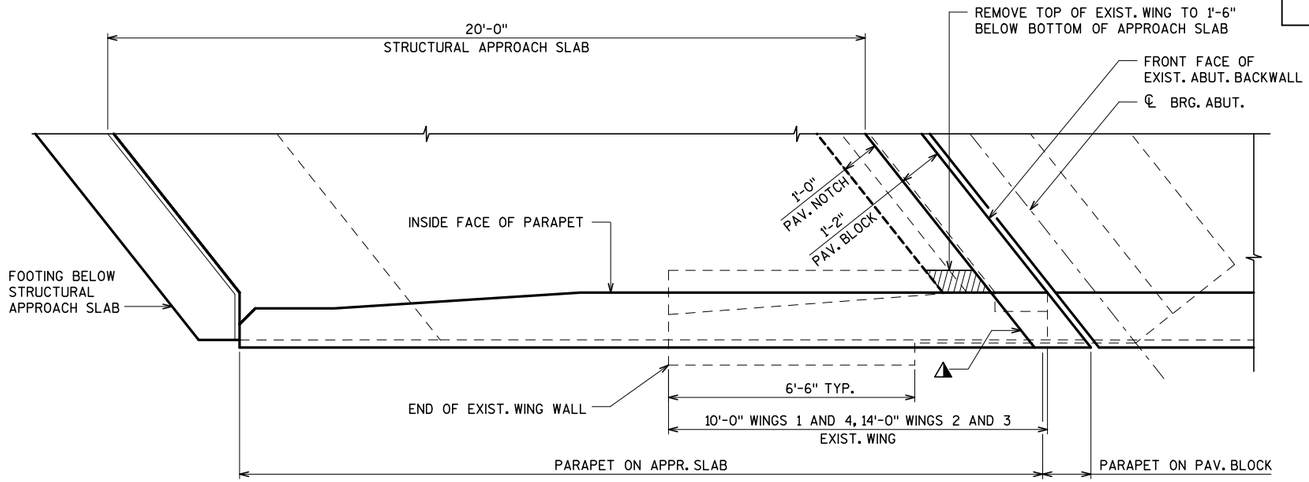
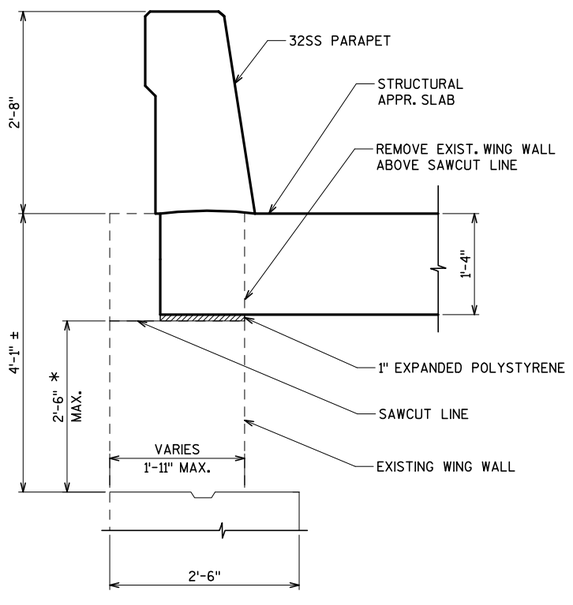
STATE PROJECT NUMBER
1170-00-74



SECTION A-A



TYPICAL PLAN AT WING REMOVAL



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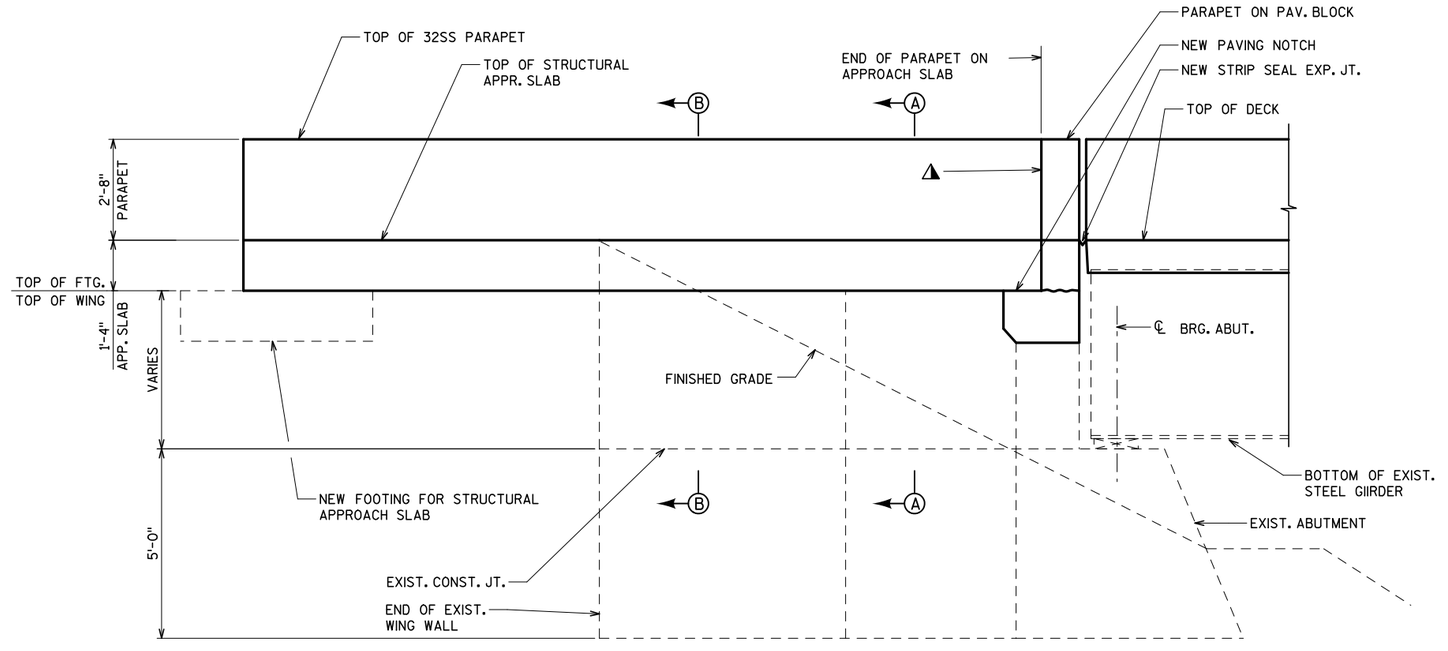

TYPICAL OUTSIDE ELEVATION AT WING REMOVAL

LEGEND

⚠ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER W/ NON-STAINING JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

* SEE "STRUCTURAL APPROACH SLAB" SHEET FOR TOP OF APPROACH SLAB ELEVATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

WINGWALL REMOVAL

SHEET 4 OF 16

8

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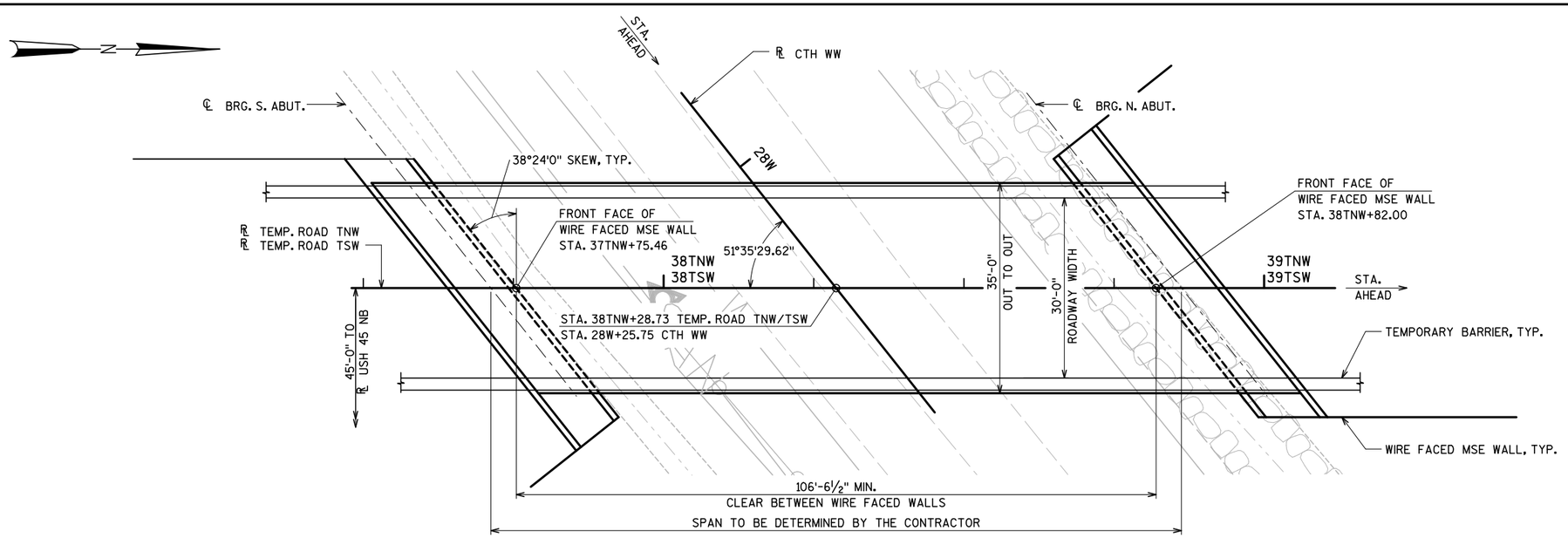
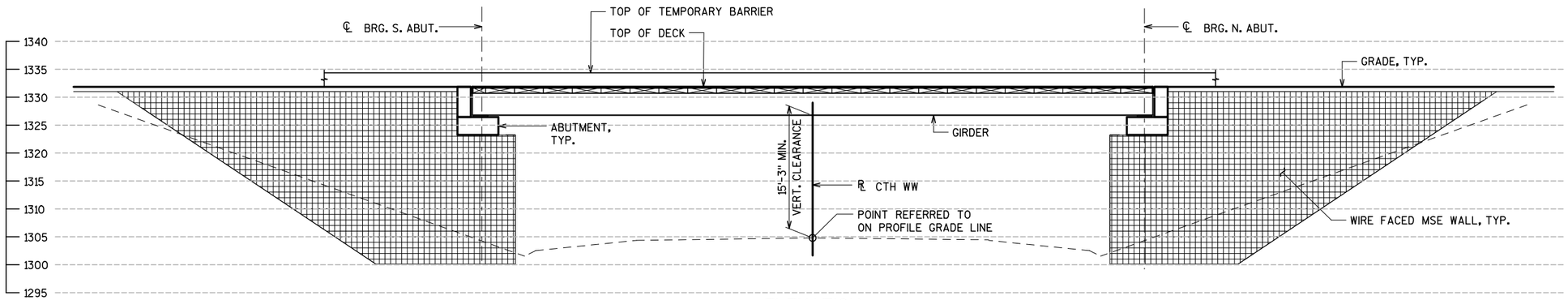


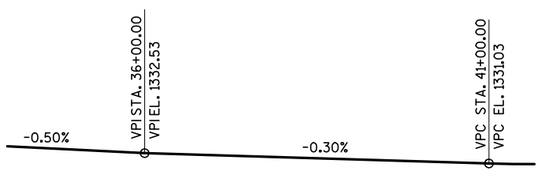
PLAN

(SINGLE SPAN TEMPORARY BRIDGE)

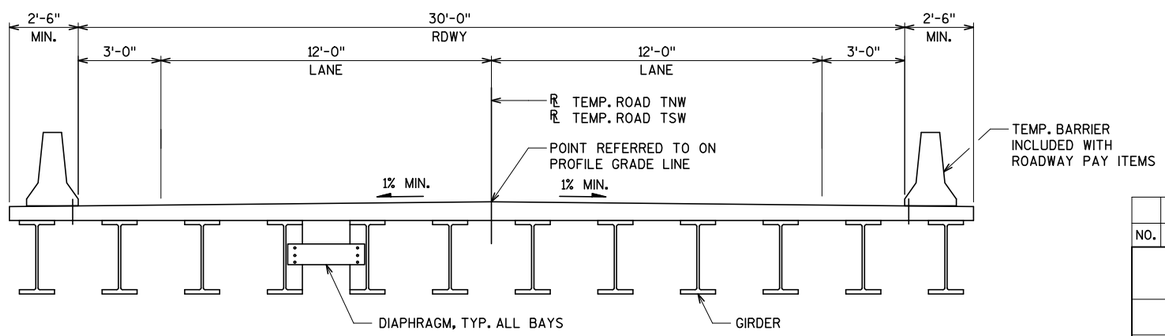


ELEVATION

(LOOKING WEST)



PROFILE GRADE LINE TEMPORARY ROAD TNW/TSW



CROSS SECTION THRU TEMPORARY BRIDGE

(LOOKING NORTH)

STATE PROJECT NUMBER

1170-00-74

DESIGN DATA

DESIGN LOAD: HL93
INVENTORY RATING FACTOR: ..... 1.0 MIN.
OPERATING RATING FACTOR: ..... 1.30 MIN.
WISCONSIN STANDARD PERMIT
VEHICLE LOAD (WIS-SPV): ..... 190 KIPS MIN.
DESIGN SPEED: ..... 55 MPH

NOTES

DESIGN THE TEMPORARY STRUCTURE IN ACCORDANCE WITH AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, ARTICLE 3.5.

SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS OF THE TEMPORARY STRUCTURE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WISCONSIN.

THE TEMPORARY STRUCTURE SHOWN ON THE PLANS IS INTENDED ONLY TO SHOW THE MINIMUM GEOMETRIC REQUIREMENTS. THE CONTRACTOR MAY PROPOSE A DIFFERENT TYPE OF STRUCTURE MEETING THE GEOMETRIC REQUIREMENTS SHOWN ON THE PLANS.

THE RIDING SURFACE ON THE TEMPORARY STRUCTURE SHALL BE SMOOTH AND WITHOUT JOINTS.

FOR GEOTECHNICAL INFORMATION, REFER TO EXISTING PLANS OF BRIDGE B-37-158 AND B-37-159, WHICH ARE AVAILABLE WITH THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTH CENTRAL REGION. NEW SOIL BORINGS ARE PROVIDED ON SHEET 6 OF THIS PLAN.

THE COST OF WIRE FACED MSE WALL IS INCLUDED IN THE BID ITEM "TEMPORARY STRUCTURE STATION 38TNW+00".

TEMPORARY BRIDGE IS REQUIRED TO MAINTAIN TWO LANES OF TRAFFIC WHILE BRIDGE B-37-158 AND B-37-159 ARE BEING CONSTRUCTED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY | PLANS CK'D. JRS/BDT

TEMPORARY STRUCTURE

SHEET 5 OF 16

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8

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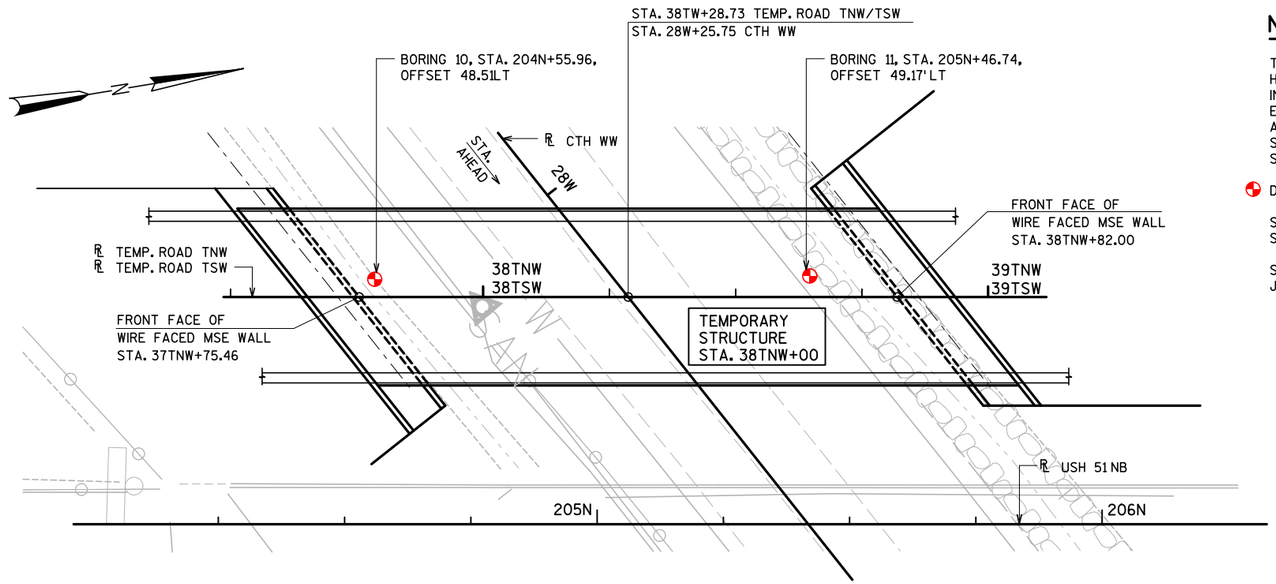


PLAN

(SINGLE SPAN TEMPORARY BRIDGE)

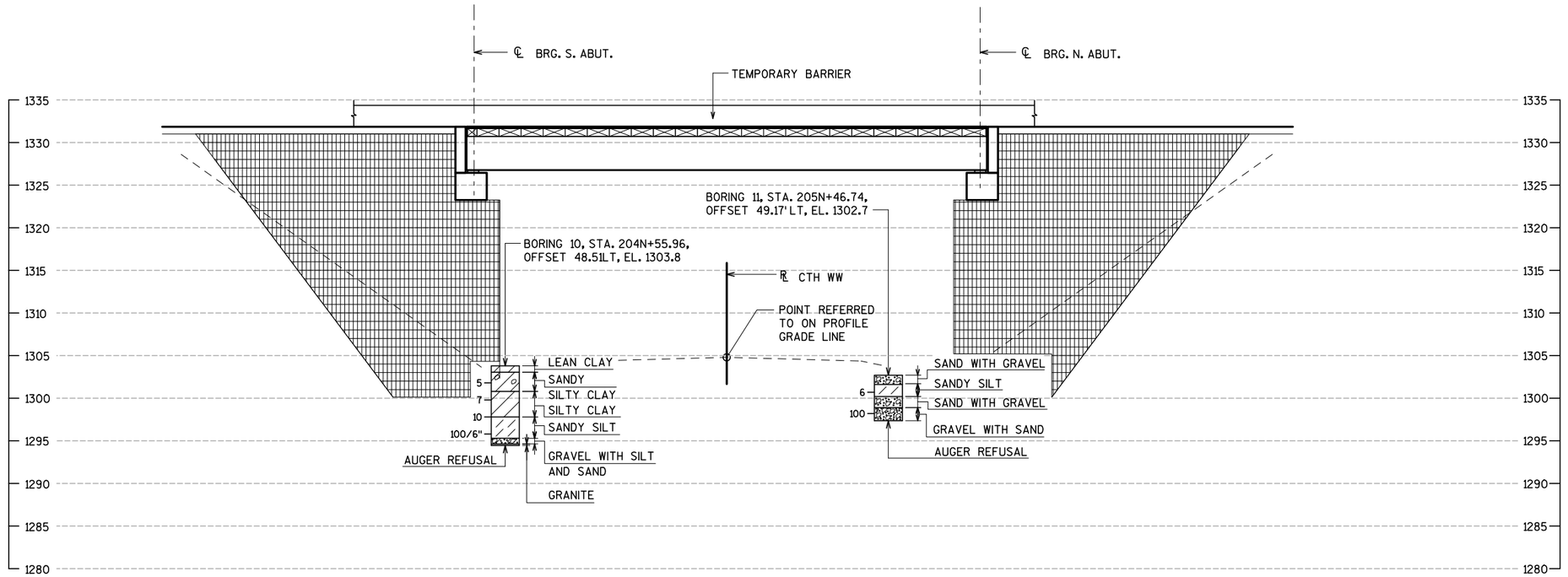
NOTES

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
SOILS AND ENGINEERING SERVICES, INC.

SOIL BORINGS TAKEN:
JULY 1 AND JULY 2, 2013



ELEVATION

(LOOKING WEST)

STATE PROJECT NUMBER

1170-00-74

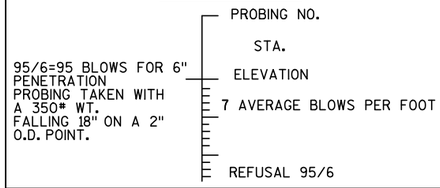
ABBREVIATIONS

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

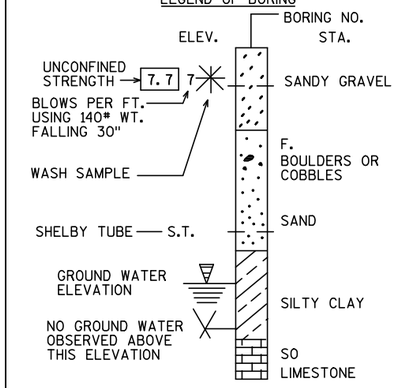
MATERIAL SYMBOLS

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

LEGEND OF PROBING



LEGEND OF BORING



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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY TB | PLANS CK'D. JRS/BDT

SUBSURFACE EXPLORATION

SHEET 6 OF 16
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8

8

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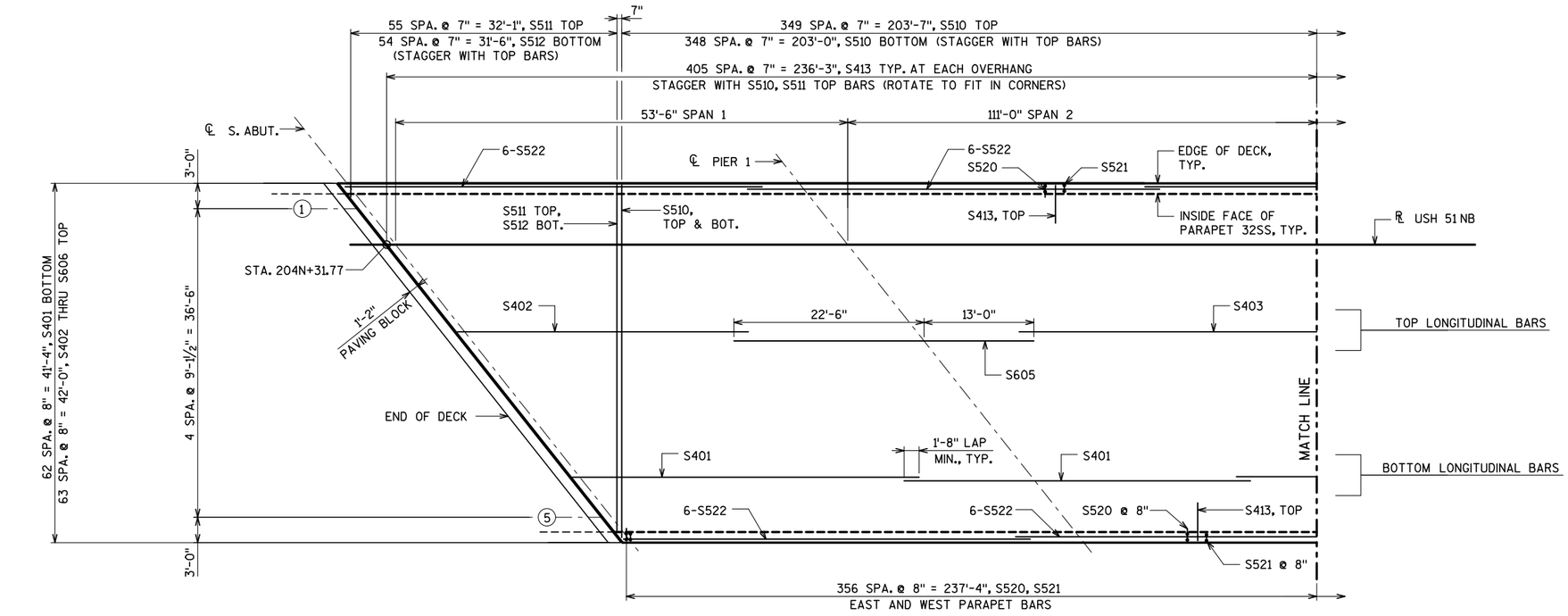
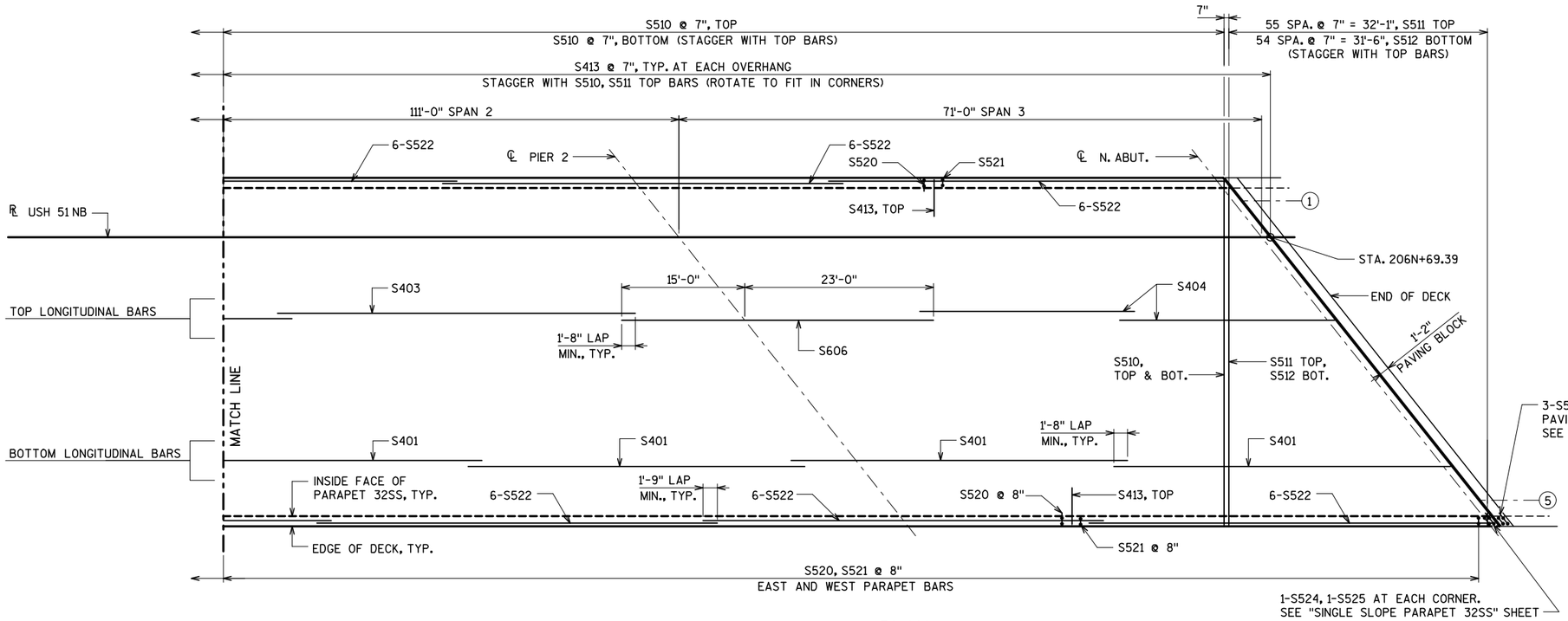


PLAN



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY | PLANS CK'D. JRS/BDT

SUPERSTRUCTURE PLAN

SHEET 7 OF 16
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8

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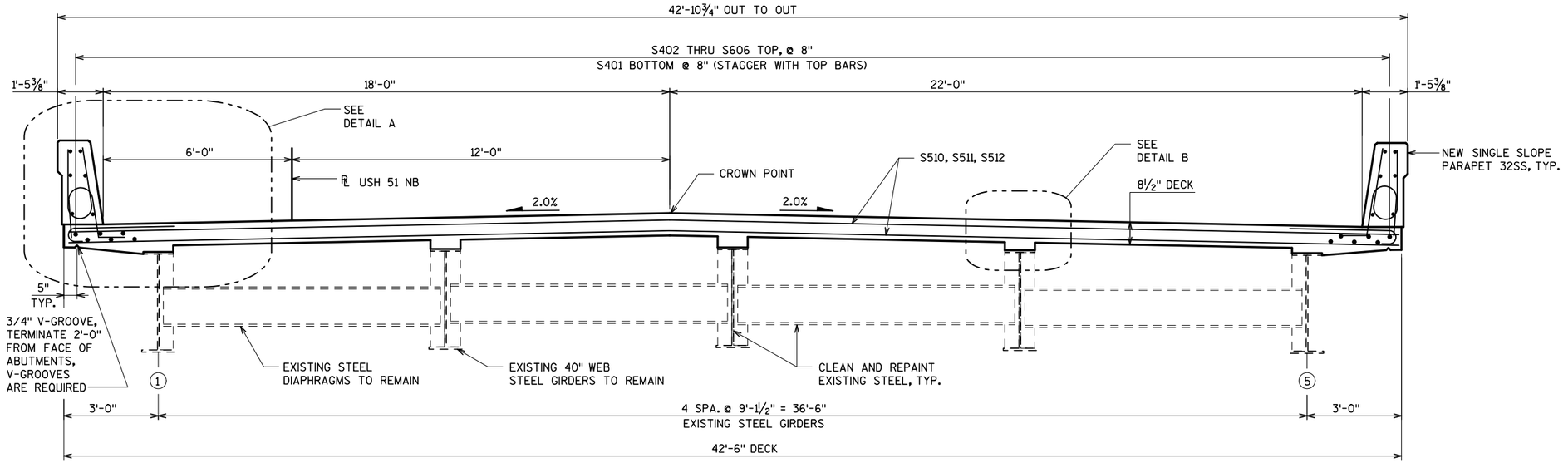

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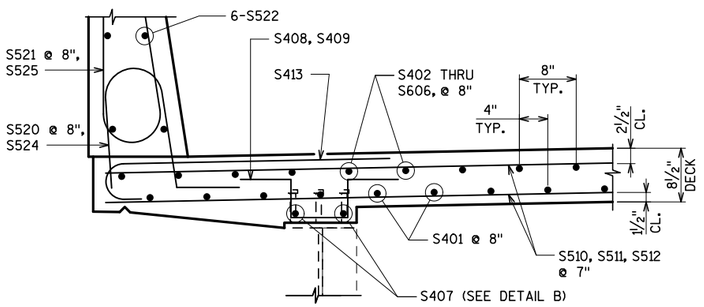
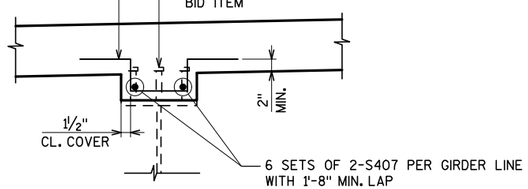
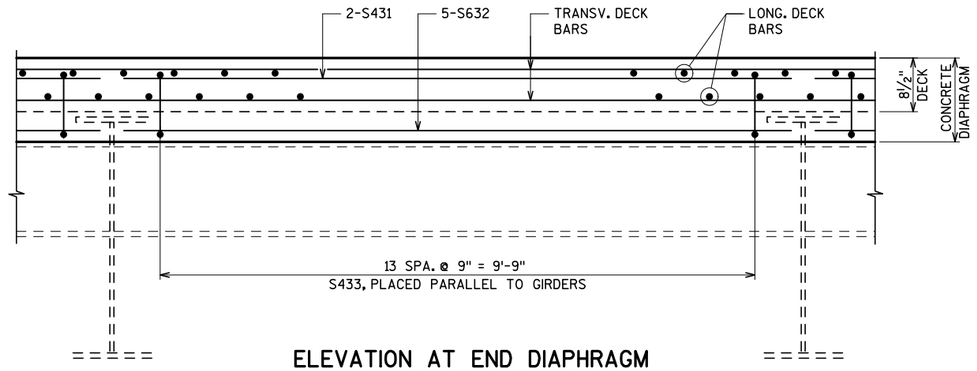


DETAIL A



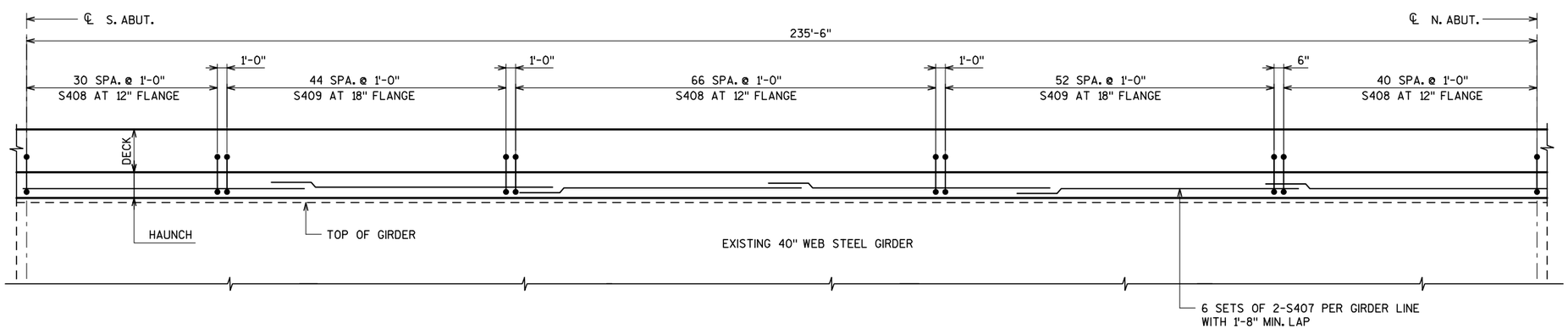
DETAIL B

DETAIL IS REQUIRED AT ALL GIRDER LINES



ELEVATION AT END DIAPHRAGM

TYPICAL FOR ALL BAYS
BAR S430 NOT SHOWN
CONC. DIAPH. TO EXTEND BETWEEN INSIDE FACES OF EXTERIOR GIRDERS. SEE SHEET 11 FOR SECTION.



HAUNCH REINFORCEMENT ELEVATION

TYPICAL AT ALL GIRDER LINES

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY	PLANS CK'D. JRS/BDT

SUPERSTRUCTURE DETAILS

SHEET 8 OF 16
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8

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STATE PROJECT NUMBER
1170-00-74

BILL OF BARS

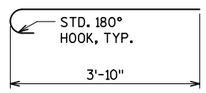
BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	378	41'-3"	-	-	DECK LONGITUDINAL BOTTOM
S402	X	64	34'-0"	-	-	DECK LONGITUDINAL TOP SPAN 1
S403	X	128	44'-0"	-	-	DECK LONGITUDINAL TOP SPAN 2
S404	X	128	26'-3"	-	-	DECK LONGITUDINAL TOP SPAN 3
S605	X	64	35'-6"	-	-	DECK LONGITUDINAL TOP PIER 1
S606	X	64	38'-0"	-	-	DECK LONGITUDINAL TOP PIER 2
S407	X	60	41'-3"	-	-	DECK LONGITUDINAL HAUNCHES
S408	X	695	2'-11"	X	-	DECK VERTICAL HAUNCHES
S409	X	490	3'-5"	X	-	DECK VERTICAL HAUNCHES
S510	X	699	42'-1"	-	-	DECK TRANSVERSE TOP AND BOTTOM
S511	X	112	21'-8"	-	⚠	DECK TRANSVERSE TOP AT ENDS
S512	X	110	21'-8"	-	⚠	DECK TRANSVERSE BOTTOM AT ENDS
S413	X	812	4'-4"	X	-	DECK TRANSVERSE TOP OVERHANGS
S520	X	714	4'-5"	X	-	PARAPET VERTICAL
S521	X	726	5'-0"	X	-	PARAPET VERTICAL
S522	X	60	49'-0"	-	-	PARAPET LONGITUDINAL
S523	X	24	1'-0"	-	-	PARAPET LONGITUDINAL ON PAVING BLOCK
S524	X	16	4'-9"	X	-	PARAPET VERTICAL AT CORNERS
S525	X	16	5'-4"	X	-	PARAPET VERTICAL AT CORNERS
S430	X	16	11'-2"	-	-	DECK HORIZ. AT STRIP SEAL JOINTS
S431	X	16	11'-2"	-	-	END DIAPHRAGM HORIZ. BETWEEN GIRDERS
S632	X	40	11'-2"	-	-	END DIAPHRAGM HORIZ. BETWEEN GIRDERS
S433	X	112	5'-8"	X	-	END DIAPHRAGM VERT. BETWEEN GIRDERS

⚠ 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

BAR MARK	NO. REQ'D	LENGTH
S511	2 SERIES OF 56	1'-5" TO 41'-11"
S512	2 SERIES OF 55	1'-9" TO 41'-6"

BUNDLE AND TAG EACH SERIES SEPARATELY



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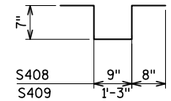
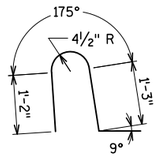


S408, S409



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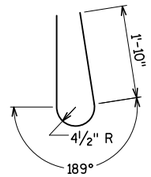

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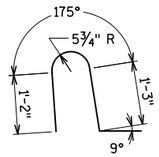

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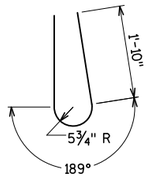

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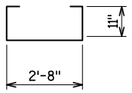
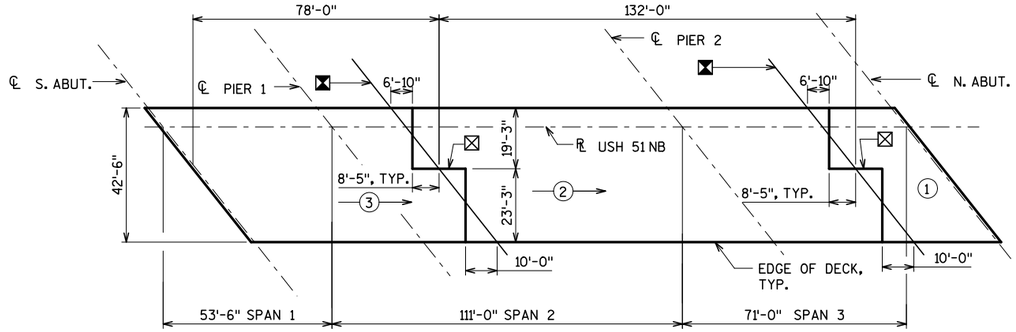


S433

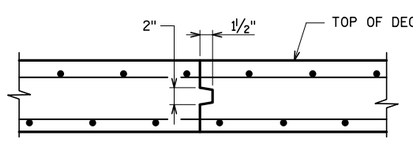
BENDING DIAGRAMS



POURING SEQUENCE PLAN

LEGEND

- ←(2)— INDICATES POUR NUMBER AND DIRECTION OF POUR
- ☒ THEORETICAL POUR LINE
- ☒ PLACE LONGITUDINAL PORTION OF CONSTRUCTION JOINT IN LINE WITH EDGE OF TRAFFIC LANE



SECTION THRU TRANSVERSE OR LONGITUDINAL JOINT

POURING SEQUENCE NOTES

THE RATE OF PLACING CONCRETE SHALL EQUAL OR EXCEED ½ SPAN LENGTH PER HOUR BUT NEED NOT EXCEED 100 CU. YDS. PER HOUR.

TWO OR MORE ALTERNATE POURS MAY BE PLACED ON THE SAME DAY.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY TB | PLANS CK'D. JRS/BDT

BILL OF BARS

SHEET 9 OF 16

8

8

FILE NAME: F:\BMI-3202 USH 51 Marathon Co Structures\structures\Final Plans\B-37-158\09B37T58.Bill of Bars.dgn
DATE: 9/22/2015 4:30:32 PM Plotted by: tlegear PEN TABLE: V8_STRUCTURAL_REV.TBL

STATE PROJECT NUMBER
1170-00-74

TOP OF DECK ELEVATIONS - SPAN 1

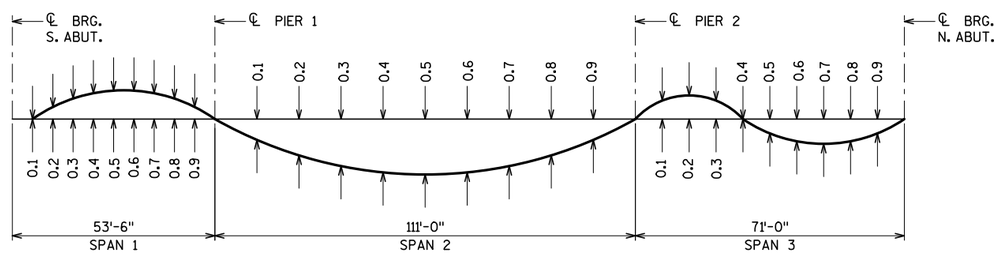
GIRDER/ LOCATION	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1
WEST EDGE	1325.26	1325.25	1325.24	1325.22	1325.20	1325.19	1325.17	1325.15	1325.14	1325.12	1325.11
1	1325.29	1325.28	1325.26	1325.25	1325.23	1325.21	1325.20	1325.18	1325.17	1325.15	1325.13
PGL	1325.37	1325.35	1325.34	1325.32	1325.31	1325.29	1325.27	1325.26	1325.24	1325.23	1325.21
2	1325.46	1325.44	1325.42	1325.41	1325.39	1325.38	1325.36	1325.34	1325.33	1325.31	1325.30
CROWN	1325.58	1325.57	1325.55	1325.53	1325.52	1325.50	1325.49	1325.47	1325.45	1325.44	1325.42
3	1325.54	1325.52	1325.50	1325.49	1325.47	1325.46	1325.44	1325.42	1325.41	1325.39	1325.38
4	1325.33	1325.32	1325.30	1325.28	1325.27	1325.25	1325.24	1325.22	1325.20	1325.19	1325.17
5	1325.13	1325.11	1325.10	1325.08	1325.06	1325.05	1325.03	1325.02	1325.00	1324.98	1324.97
EAST EDGE	1325.09	1325.07	1325.05	1325.04	1325.02	1325.01	1324.99	1324.97	1324.96	1324.94	1324.93
DEAD LOAD DEFLECTION (IN.) *	0	0	-1/8	-1/8	-1/8	-1/4	-1/4	-1/4	-1/4	-1/8	0

TOP OF DECK ELEVATIONS - SPAN 2

GIRDER/ LOCATION	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 2
WEST EDGE	1325.11	1325.07	1325.04	1325.01	1324.97	1324.94	1324.91	1324.87	1324.84	1324.81	1324.77
1	1325.13	1325.10	1325.07	1325.03	1325.00	1324.97	1324.93	1324.90	1324.87	1324.83	1324.80
PGL	1325.21	1325.18	1325.14	1325.11	1325.08	1325.04	1325.01	1324.98	1324.94	1324.91	1324.87
2	1325.30	1325.26	1325.23	1325.20	1325.16	1325.13	1325.10	1325.06	1325.03	1325.00	1324.96
CROWN	1325.42	1325.39	1325.35	1325.32	1325.29	1325.25	1325.22	1325.19	1325.15	1325.12	1325.08
3	1325.38	1325.34	1325.31	1325.28	1325.24	1325.21	1325.18	1325.14	1325.11	1325.08	1325.04
4	1325.17	1325.14	1325.11	1325.07	1325.04	1325.01	1324.97	1324.94	1324.91	1324.87	1324.84
5	1324.97	1324.93	1324.90	1324.87	1324.83	1324.80	1324.77	1324.73	1324.70	1324.67	1324.63
EAST EDGE	1324.93	1324.89	1324.86	1324.83	1324.79	1324.76	1324.73	1324.69	1324.66	1324.63	1324.59
DEAD LOAD DEFLECTION (IN.) *	0	1/2	1 1/8	1 3/4	2 1/8	2 1/4	2 1/8	1 5/8	1	3/8	0

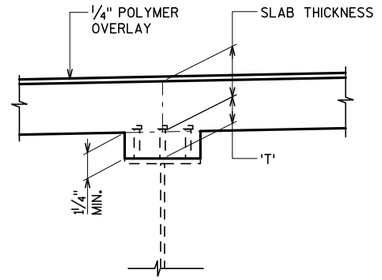
TOP OF DECK ELEVATIONS - SPAN 3

GIRDER/ LOCATION	PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
WEST EDGE	1324.77	1324.75	1324.73	1324.71	1324.69	1324.66	1324.64	1324.62	1324.60	1324.58	1324.56
1	1324.80	1324.78	1324.76	1324.73	1324.71	1324.69	1324.67	1324.65	1324.63	1324.61	1324.59
PGL	1324.87	1324.85	1324.83	1324.81	1324.79	1324.77	1324.75	1324.72	1324.70	1324.68	1324.66
2	1324.96	1324.94	1324.92	1324.90	1324.87	1324.85	1324.83	1324.81	1324.79	1324.77	1324.75
CROWN	1325.08	1325.06	1325.04	1325.02	1325.00	1324.98	1324.96	1324.94	1324.91	1324.90	1324.88
3	1325.04	1325.02	1325.00	1324.98	1324.95	1324.93	1324.91	1324.89	1324.87	1324.85	1324.84
4	1324.84	1324.81	1324.79	1324.77	1324.75	1324.73	1324.71	1324.69	1324.67	1324.66	1324.65
5	1324.63	1324.61	1324.59	1324.57	1324.55	1324.52	1324.50	1324.49	1324.48	1324.47	1324.45
EAST EDGE	1324.59	1324.57	1324.55	1324.53	1324.50	1324.48	1324.46	1324.45	1324.44	1324.43	1324.42
DEAD LOAD DEFLECTION (IN.) *	0	-1/8	-1/8	-1/8	0	1/8	1/4	1/4	1/4	1/8	0



DEFLECTION DIAGRAM

SEE TABLE FOR DEAD LOAD DEFLECTION AT 0.1 POINT



HAUNCH DETAIL

TO DETERMINE 'T', ELEV. OF THE TOP FLANGES, TOP OF SPLICE PLATE, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT ℄ OF BRGS. AND AT TENTH POINTS OF EACH SPAN, THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF STEEL ELEVATION
+ DEAD LOAD DEFLECTION (CONCRETE)
- SLAB THICKNESS
- 1/4" POLYMER OVERLAY THICKNESS

= HAUNCH HEIGHT 'T'

NOTE:
AN AVERAGE HAUNCH 'T' OF 4 1/2"
WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES"

NOTES

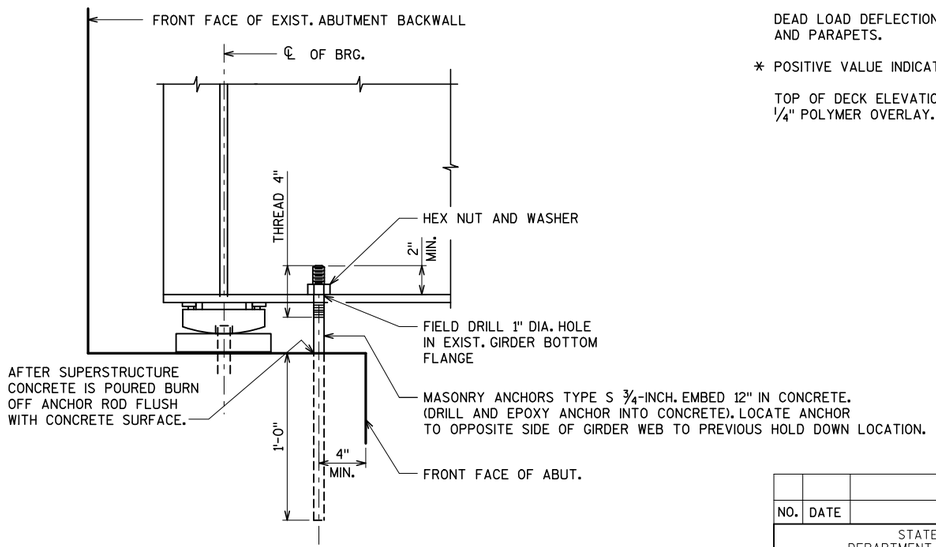
FOR SUPERSTRUCTURE PLAN SEE SHEET 7.

FOR SUPERSTRUCTURE DETAILS, BILL OF BARS AND BENDING DIAGRAMS SEE SHEETS 8 AND 9.

DEAD LOAD DEFLECTIONS INCLUDE CONCRETE DECK AND PARAPETS.

* POSITIVE VALUE INDICATES DOWNWARD DEFLECTION.

TOP OF DECK ELEVATIONS ARE THE TOP OF THE 1/4" POLYMER OVERLAY.



TEMPORARY HOLD DOWN DEVICE

PLACE ONE ANCHOR PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 4" (NORMAL) OFF ℄ OF GIRDER. ANCHOR ROD, NUT, WASHER, AND DRILLED HOLE IN GIRDER FLANGE SHALL BE PAID UNDER THE BID ITEM "CONCRETE MASONRY ANCHORS TYPE S 3/4-INCH". EMBED 12" IN CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

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DECK ELEVATIONS

SHEET 10 OF 16

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FILE NAME: F:\BMI-3202 USH 51 Marathon Co Structures\structuresFinal_Plans\B-37-158\10837158_TOD Elev.dgn
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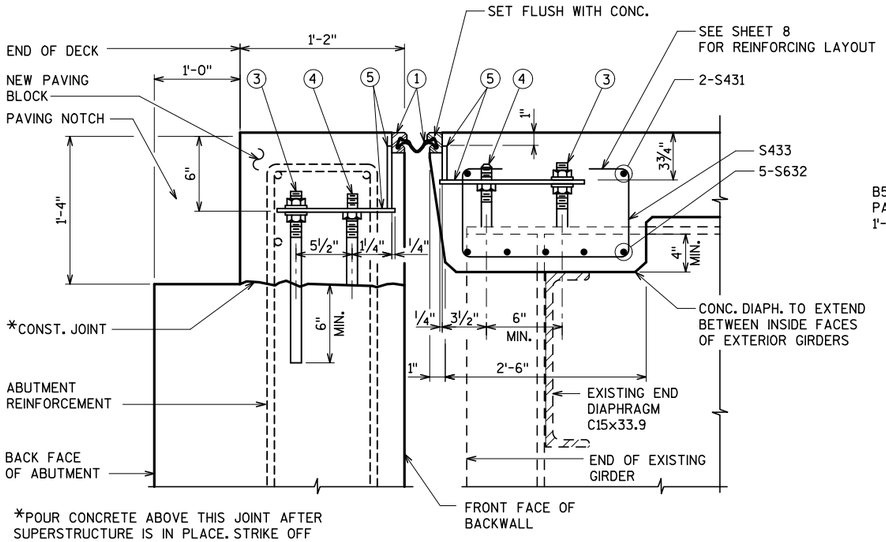
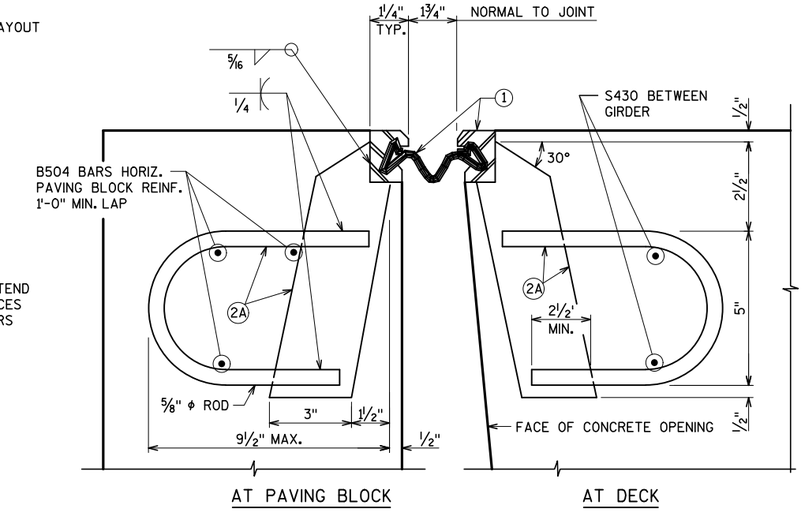


*POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE. STRIKE OFF AND LEAVE ROUGH.

SECTION THRU JOINT AT ABUTMENT

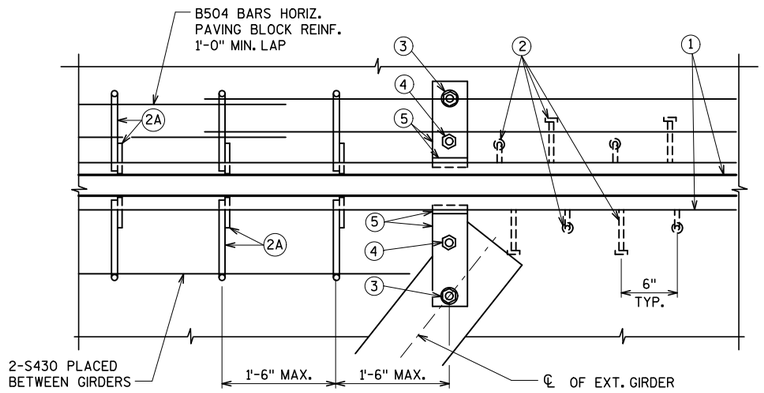
NORMAL TO ℄ SUBSTRUCTURE



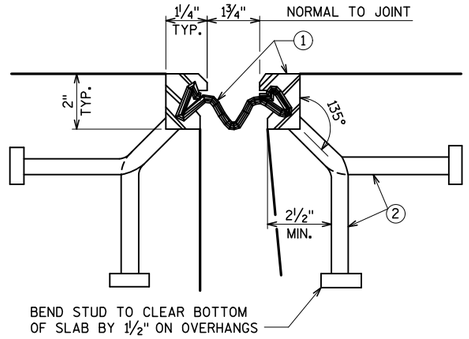
AT PAVING BLOCK AT DECK

SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS

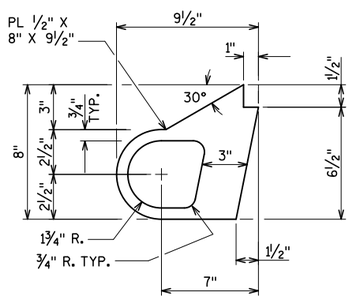


PART PLAN



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB AND AT PARAPETS



ALTERNATE STRIP SEAL ANCHOR

LEGEND

1. NEOPRENE STRIP SEAL (4 INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".
2. STUDS ⅝" ϕ X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.

2A. ½" THICK ANCHOR PLATE WITH ⅝" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.

3. ¾" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾"ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 AND 1" ϕ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" × 10½" × 2'-2" WITH HOLES FOR NO. 7. BEND AS SHOWN.
7. ¾" ϕ × 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" ϕ × 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" ϕ × 2 ¼" GALVANIZED THREADED COUPLING.
11. 1" × 5" SLOTTED CSK. HOLE FOR NO. 7 SLOT PARALLEL TO DIRECTION OF MOVEMENT.

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-37-158".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

EXPANSION JOINT DETAILS (1 OF 2)

SHEET 11 OF 16

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FILE NAME: F:\BMI-3212 USH 51 Marathon Co Structures\structures\Final Plans\B-37-158+IB37158.dgn
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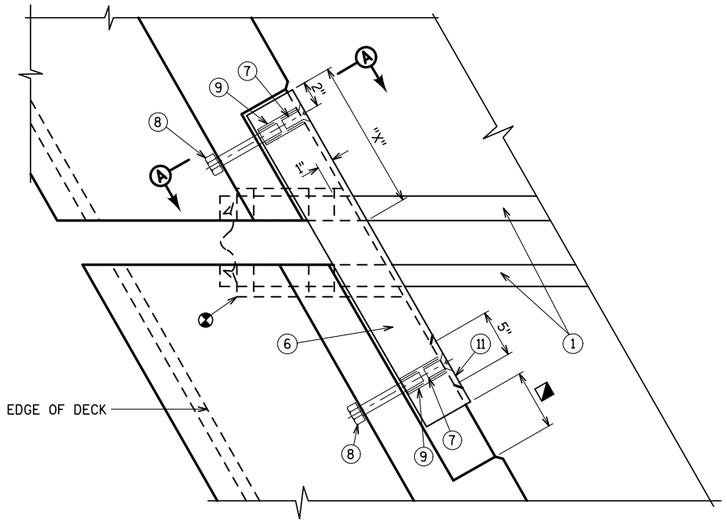
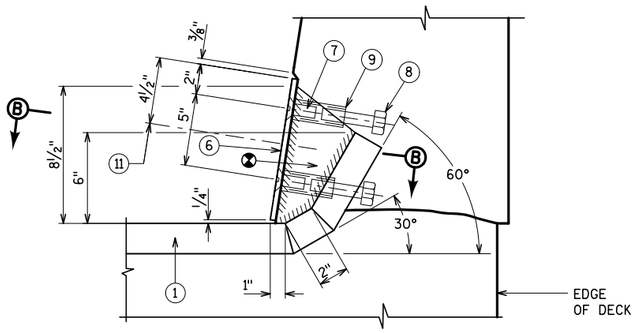
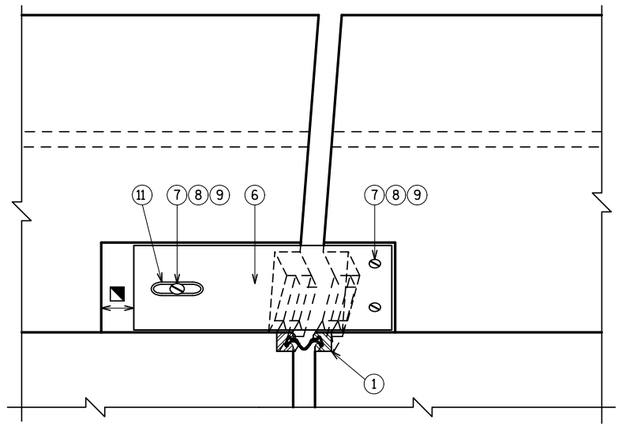


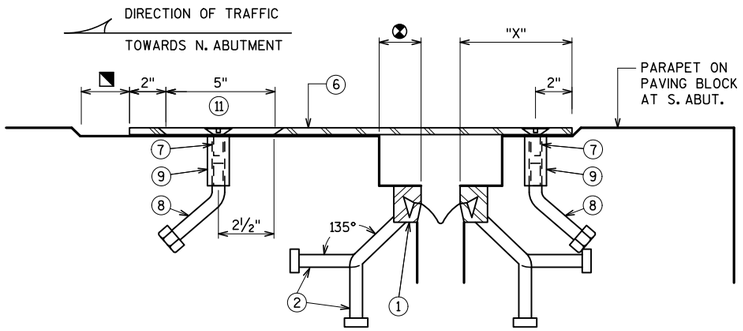
PLAN AT PARAPET
SINGLE SLOPE PARAPET



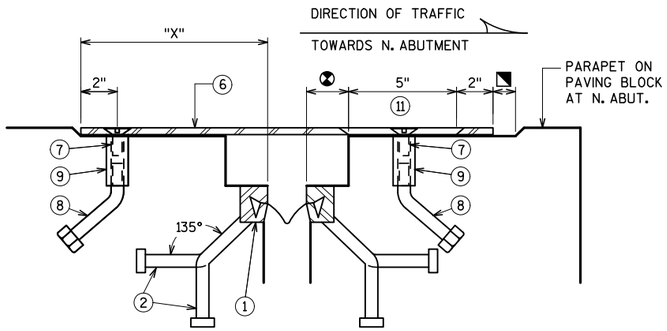
SECTION A-A
SINGLE SLOPE PARAPET



VIEW OF PARAPET PLATES FROM ROADWAY
SINGLE SLOPE PARAPET



SECTION B-B
APPLIES AT SOUTH ABUTMENT



SECTION B-B
APPLIES AT NORTH ABUTMENT

"X" - VALUES IN INCHES	
SKEW	35°-40°
RHF	6½"

NOTES

SEE SHEET 11 FOR EXPANSION JOINT NOTES AND LEGEND.

BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.

JOINT OPENING DIM. ALONG SKEW PLUS ½".

ORIENT COVER PLATES WITH RESPECT TO TRAFFIC DIRECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY TB | PLANS CK'D. JRS/BDT

EXPANSION JOINT DETAILS (2 OF 2)

SHEET 12 OF 16
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FILE NAME: F:\BMI-3212 USH 51\Marathon Co Structures\structures\Final Plans\B-37-158\B2837158.exp 11.2.dgn
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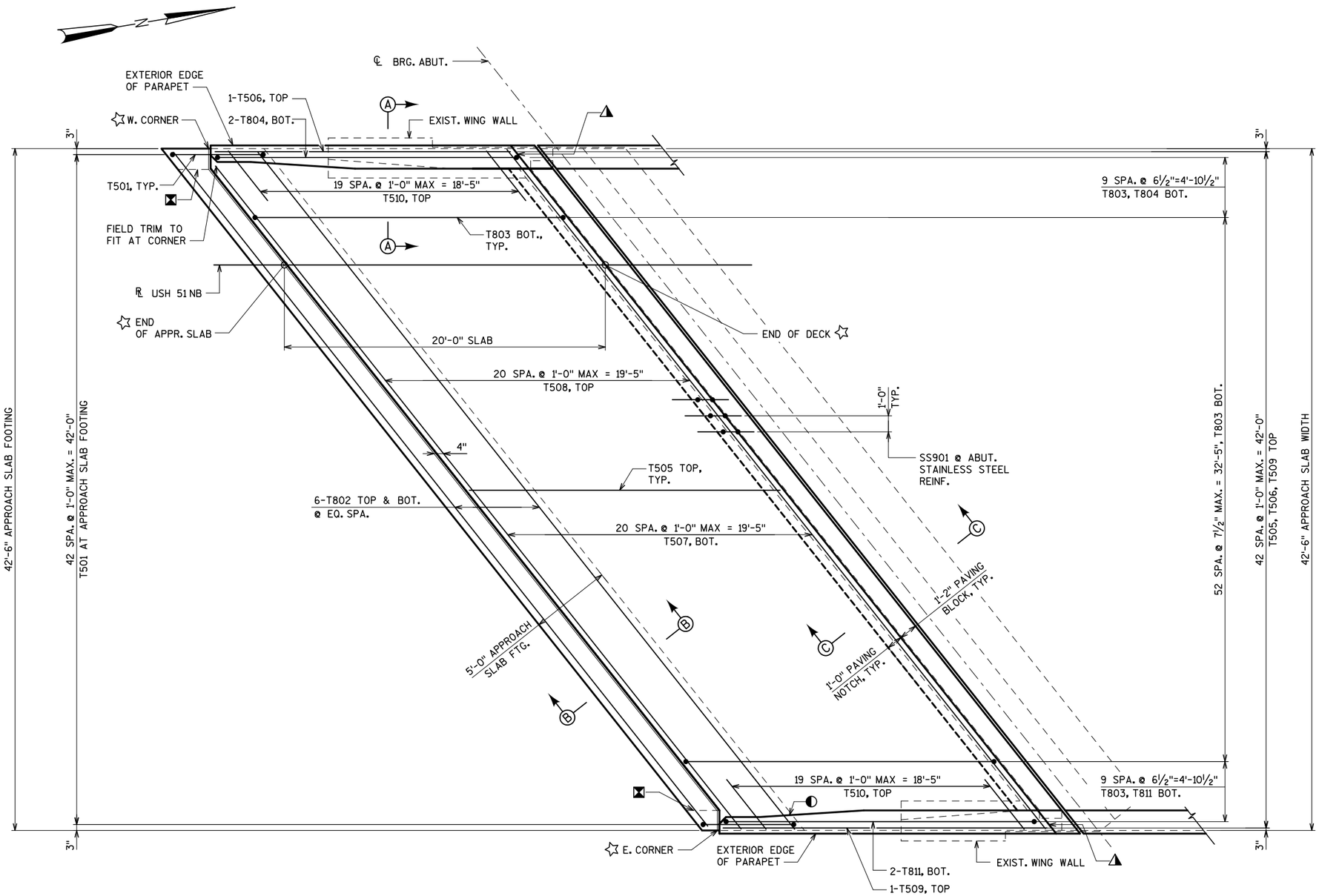
STATE PROJECT NUMBER
1170-00-74



☆ STA./ELEV. TABLE - N. APPROACH

LOCATION	STA. / ELEV.
END OF DECK	STA. 206N+71.09 / EL. 1324.66
END OF APPR. SLAB	STA. 206N+91.09 / EL. 1324.62
W. CORNER OF APPR. SLAB	STA. 206N+86.30 / EL. 1324.51
E. CORNER OF APPR. SLAB	STA. 207N+18.00 / EL. 1324.38

☆ STA./ELEV. TABLE - S. APPROACH

LOCATION	STA. / ELEV.
END OF DECK	STA. 204N+30.07 / EL. 1325.37
END OF APPR. SLAB	STA. 204N+10.07 / EL. 1325.39
W. CORNER OF APPR. SLAB	STA. 204N+05.35 / EL. 1325.27
E. CORNER OF APPR. SLAB	STA. 204N+37.06 / EL. 1325.16

PLAN

SOUTH APPROACH SHOWN, NORTH APPROACH SIMILAR

LEGEND

⚠ 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). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

◐ SEE "SINGLE SLOPE PARAPET 32SS" SHEET FOR LOCATION OF NAME PLATE AND BENCH MARK.

⧓ NOTCH APPROACH SLAB FOOTING FOR THRIE BEAM POST INSTALLATION, WHERE REQUIRED.

NOTE

SEE SHEET 14 FOR SECTIONS A-A THRU C-C.

SEE SHEET 15 FOR PAVING BLOCK REINFORCEMENT.

ELEVATIONS ARE TO TOP OF THE ¼" POLYMER OVERLAY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

DRAWN BY	PLANS CK'D. JRS/BDT

STRUCTURAL APPROACH SLAB

SHEET 13 OF 16
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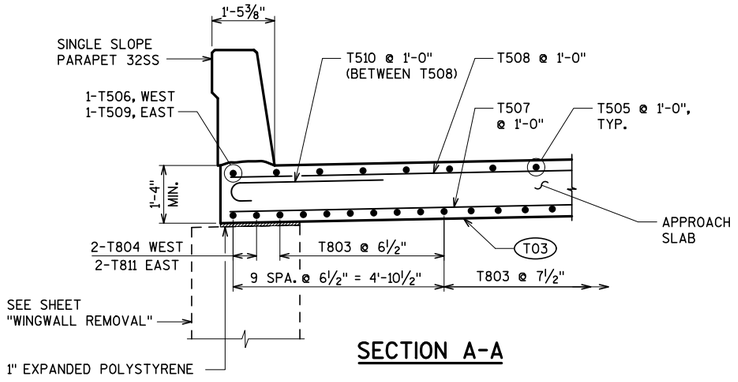
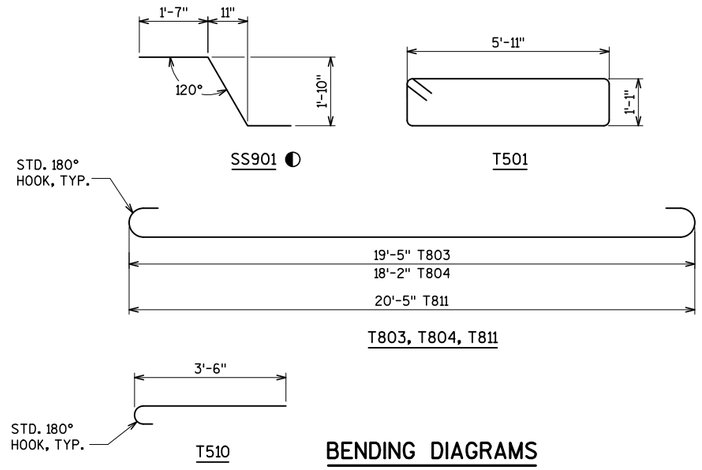


SECTION A-A



BENDING DIAGRAMS

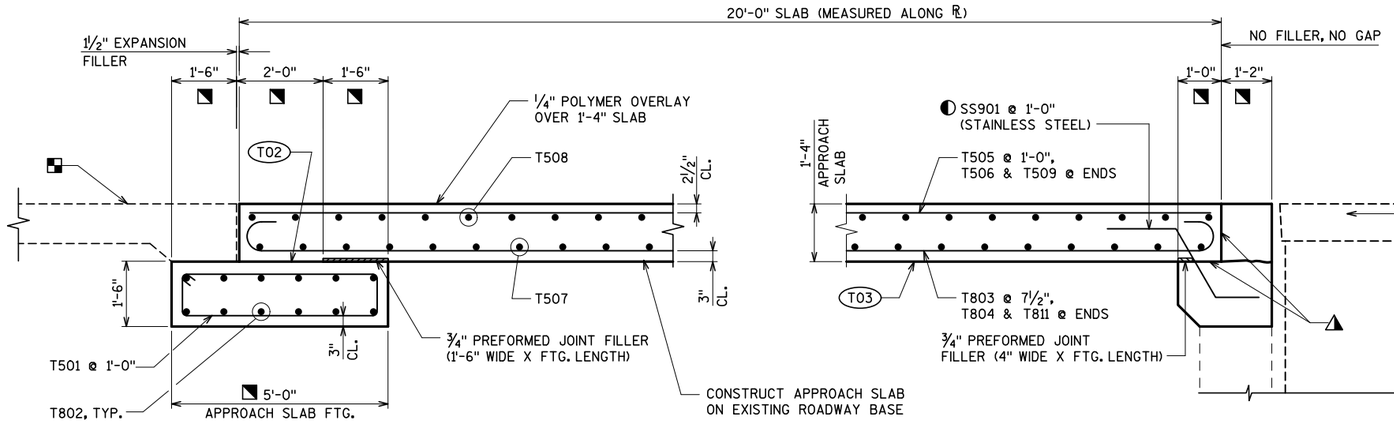
BILL OF BARS

	BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
◐	SS901		82	4'-8"	X		CONC. ABUT. TO APPROACH SLAB

BAR MARK	COAT	NO. REQ'D		LENGTH	BENT	BAR SERIES	LOCATION
		S. APPR.	N. APPR.				
T501	X	43	43	14'-6"	X		APPROACH SLAB FTG. - STIRRUP
T802	X	12	12	53'-9"	-		APPROACH SLAB FTG. - TRANS.
T803	X	67	67	21'-4"	X		APPROACH SLAB - LONG. - BOTTOM
T804	X	2	2	20'-0"	X		APP. SLAB - LONG. - BOT., WEST PARAPET
T505	X	41	41	19'-5"	-		APPROACH SLAB - LONG. - TOP
T506	X	1	1	18'-2"	-		APP. SLAB - LONG. - TOP, WEST PARAPET
T507	X	21	21	53'-9"	-		APPROACH SLAB - TRANS. - BOTTOM
T508	X	21	21	53'-9"	-		APPROACH SLAB - TRANS. - TOP
T509	X	1	1	20'-5"	-		APP. SLAB - LONG. - TOP, EAST PARAPET
T510	X	40	40	4'-1"	X		APPROACH SLAB - TRANS. - TOP
T811	X	2	2	22'-3"	X		APP. SLAB - LONG. - BOT., EAST PARAPET

DESIGN DATA

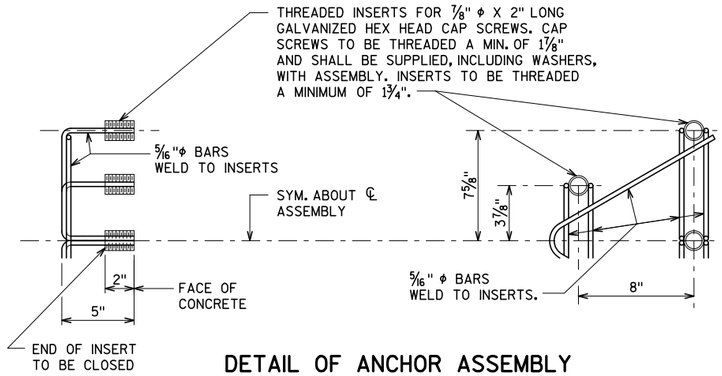
CONCRETE STRENGTH f'c:	4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60, fy:	60,000 P.S.I.
ALLOWABLE SOIL BEARING PRESSURE:	2,000 P.S.F.



SECTION B-B

SECTION C-C

SECTION THRU APPROACH SLAB



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

- ◭ APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH PRIOR TO POURING STRUCTURAL APPROACH SLAB
- ◥ MEASURED NORMAL TO ABUTMENT
- ◐ THE BID ITEM FOR SS901 BARS SHALL BE "BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES".
- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.
- ◩ ROADWAY APPROACH PAVEMENT.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

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STRUCTURAL APPROACH SLAB DETAILS

SHEET 14 OF 16
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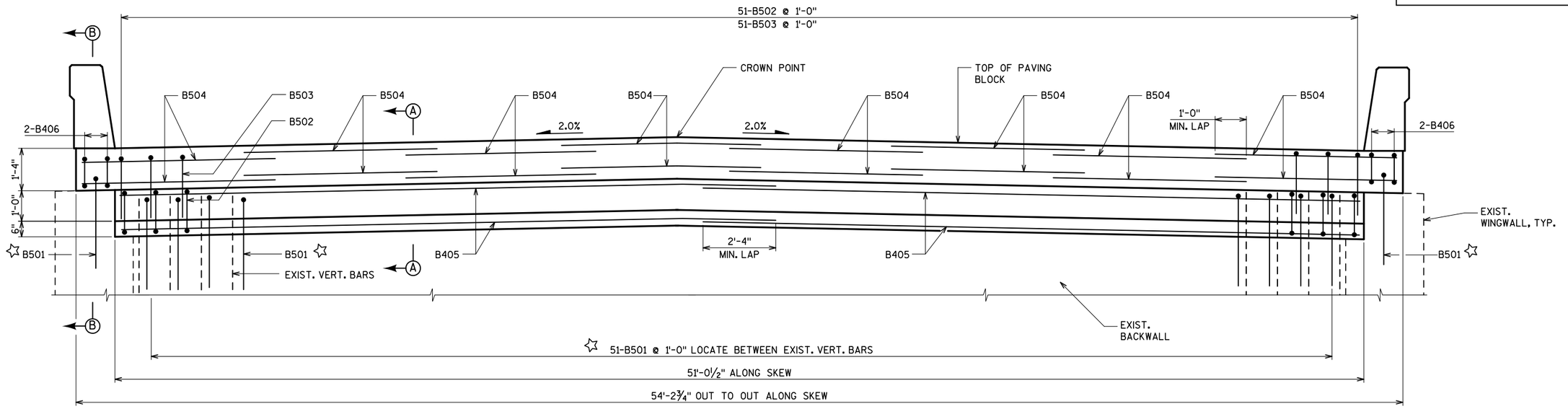
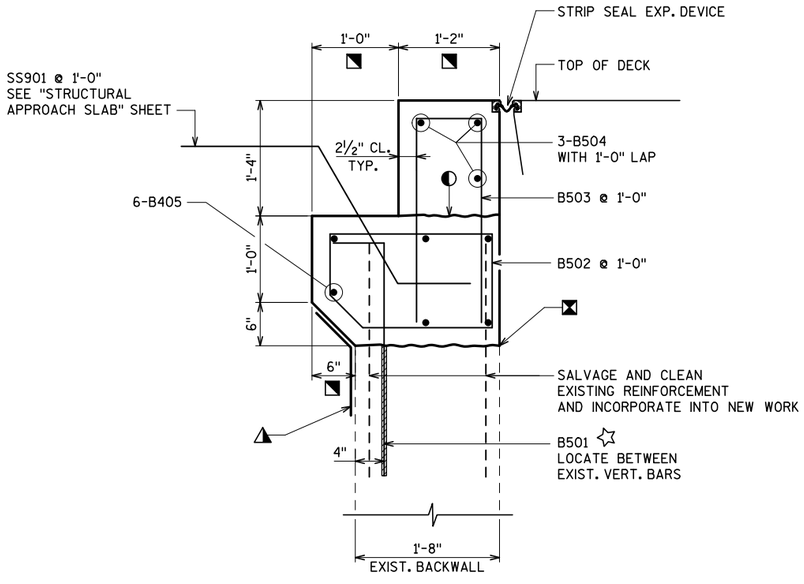
STATE PROJECT NUMBER
1170-00-74

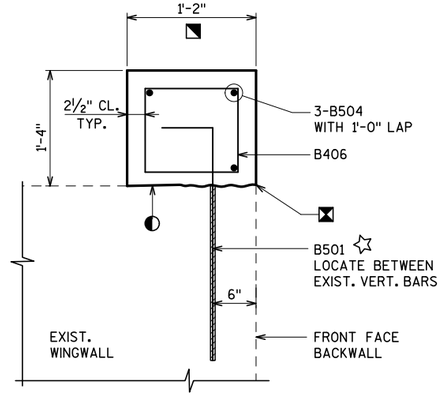


PAVING BLOCK ELEVATION

LOOKING NORTH AT SOUTH ABUTMENT PAVING BLOCK
(NORTH ABUTMENT SIMILAR)



SECTION A-A



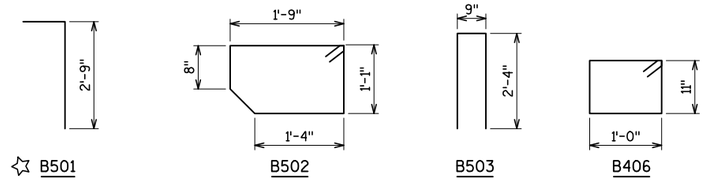
SECTION B-B

PARAPET NOT SHOWN

BILL OF BARS

BAR MARK	COAT	*NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
☆ B501	X	106	3'-6"	X	-	BACKWALL - VERT. - DOWELS
B502	X	102	6'-0"	X	-	BACKWALL - VERT.
B503	X	102	5'-2"	X	-	BACKWALL - VERT. - TOP
B504	X	48	7'-9"	-	-	BACKWALL - HORIZ. - TOP AND B.F.
B405	X	24	26'-9"	-	-	BACKWALL - HORIZ.
B406	X	8	4'-4"	X	-	VERT. AT ENDS

* QUANTITIES ARE FOR NORTH AND SOUTH ABUTMENTS DIVIDED EQUALLY



☆ B501 B502 B503 B406

BENDING DIAGRAMS

LEGEND

- MEASURED NORMAL TO ABUTMENT
- ☆ EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE MASONRY ANCHORS TYPE L NO. 5 MIN. PULLOUT CAPACITY OF 19 KIPS, EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0".
- ◐ CONSTRUCTION JOINT.
- ⧓ REMOVE TOP OF EXIST. BACKWALL AND PAVING BLOCK TO ACCOMODATE NEW WORK.
- ◭ 18" RUBBERIZED MEMBRANE WATERPROOFING.

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STRUCTURE B-37-158

DRAWN BY	PLANS CK'D. JRS/BDT

PAVING BLOCK

SHEET 15 OF 16
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STATE PROJECT NUMBER
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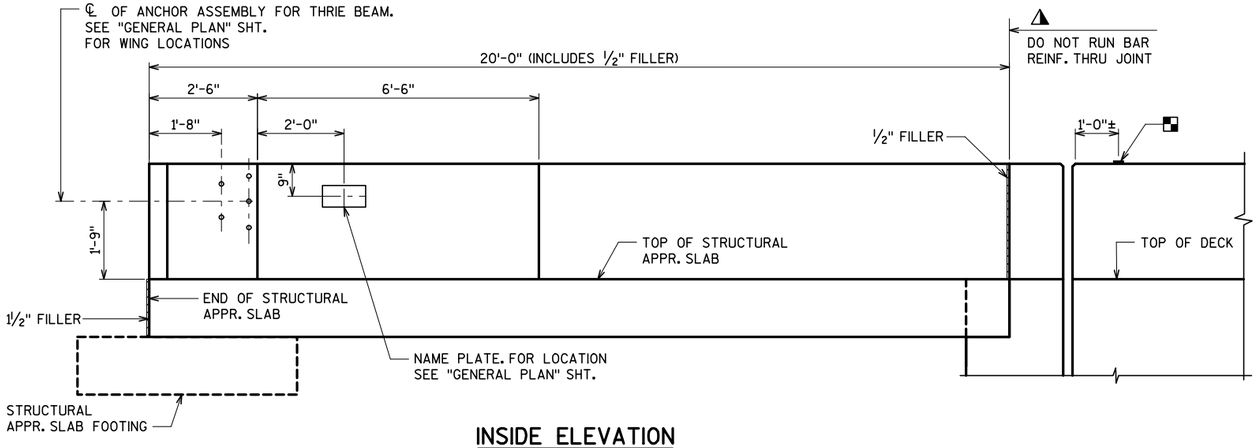
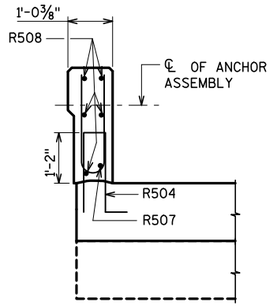


INSIDE ELEVATION



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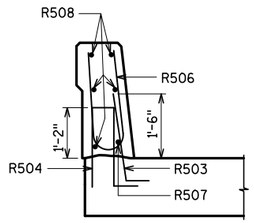
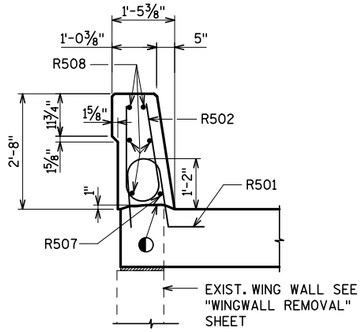
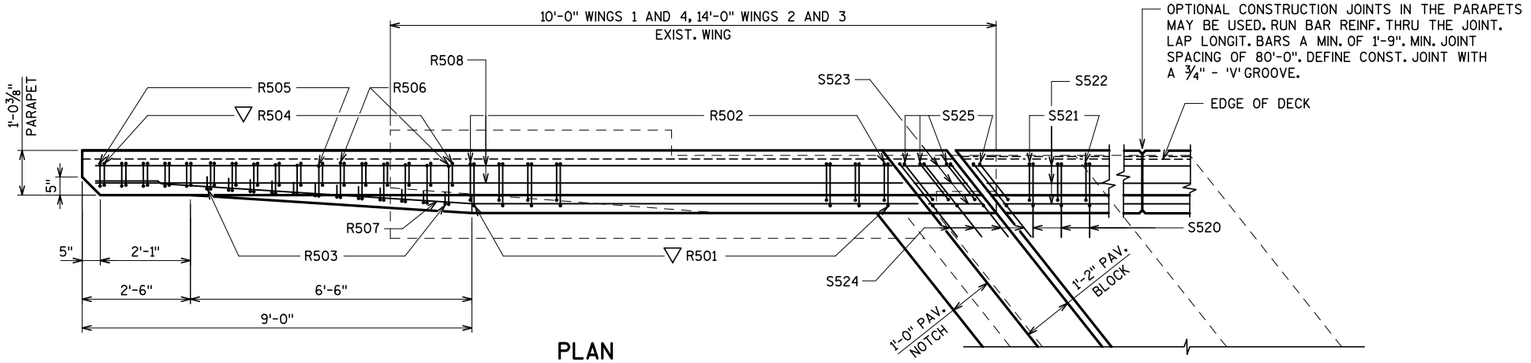


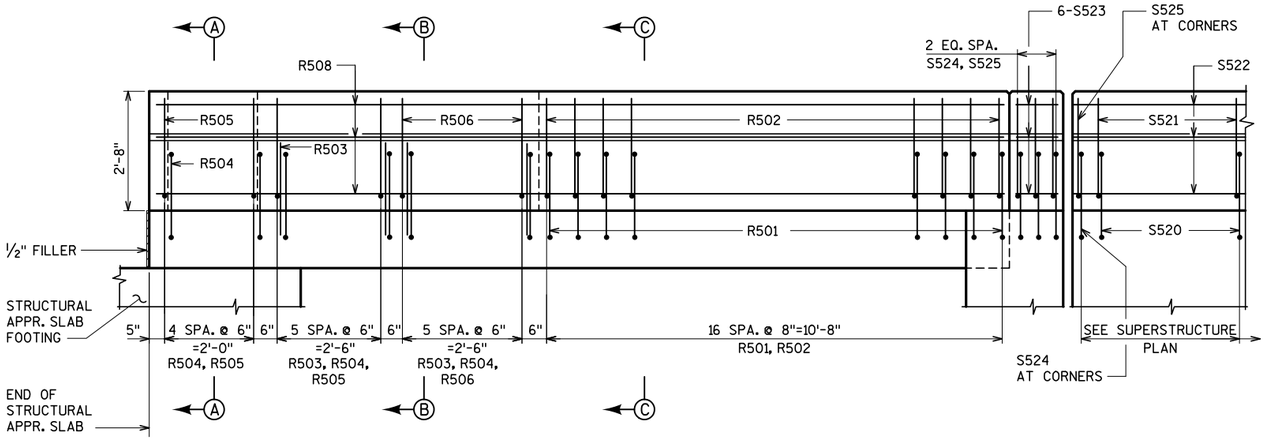
SECTION B-B



SECTION C-C



PLAN

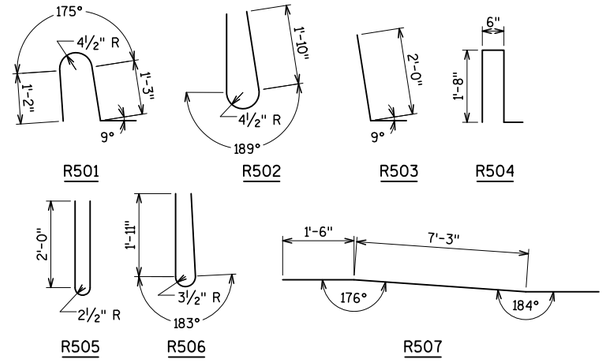


OUTSIDE ELEVATION

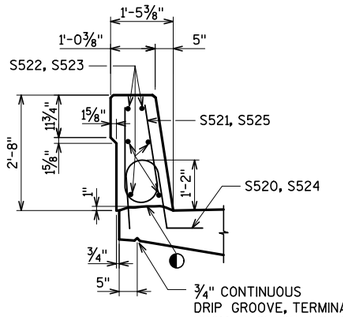
(WING NOT SHOWN FOR CLARITY)

BILL OF BARS

BAR MARK	COAT	NO. REQ'D S. APPR.	NO. REQ'D N. APPR.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	4'-5"	X	-	PARAPET VERT.
R502	X	34	34	5'-0"	X	-	PARAPET VERT.
R503	X	24	24	2'-9"	X	-	PARAPET VERT.
R504	X	34	34	4'-4"	X	-	PARAPET VERT.
R505	X	22	22	4'-9"	X	-	PARAPET VERT.
R506	X	12	12	4'-10"	X	-	PARAPET VERT.
R507	X	2	2	19'-5"	X	-	PARAPET HORIZ.
R508	X	10	10	19'-5"	-	-	PARAPET HORIZ.



BENDING DIAGRAMS



SECTION THRU PARAPET ON BRIDGE

LEGEND

- ■ BENCH MARK CAP (WHEN SUPPLIED).
- ◐ CONST. JOINT - STRIKE OFF AS SHOWN.
- ▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.
- ⚠ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-158

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SINGLE SLOPE PARAPET 32SS

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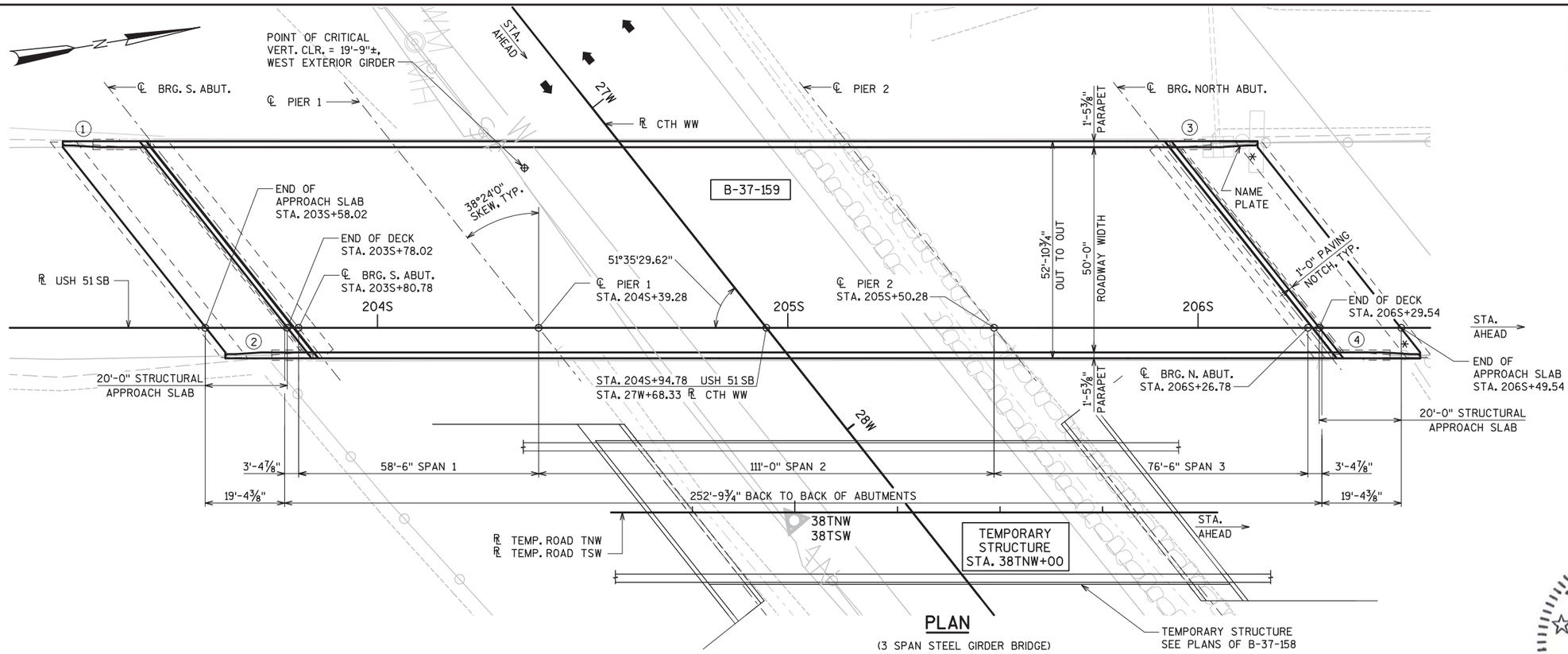
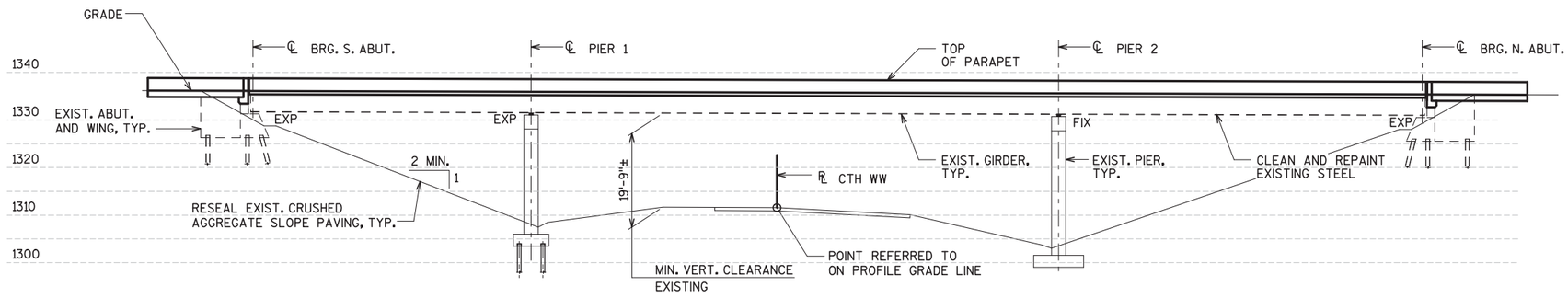


PLAN

(3 SPAN STEEL GIRDER BRIDGE)



ELEVATION

(LOOKING WEST - NORMAL TO CTH WW)

DESIGN DATA

LIVE LOAD

DESIGN LOAD: HS-20
INVENTORY RATING: HS-23
OPERATIONAL RATING: HS-39
WISCONSIN STANDARD PERMIT
VEHICLE LOAD (WIS-SPV): ..... 250 KIPS

MATERIAL PROPERTIES

CONCRETE MASONRY
SUPERSTRUCTURE ..... f'c = 4,000 psi
APPROACH SLAB ..... f'c = 4,000 psi
OTHER ..... f'c = 3,500 psi

HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 ..... fy = 60,000 psi

TRAFFIC DATA

USH 51
A.D.T. = 19,000 (2015)
A.D.T. = 24,300 (2035)
R.D.S. = 70 MPH

CTH WW
A.D.T. = 2,400 (2010)
R.D.S. = 50 MPH

BENCHMARK

POINT ID: 219 PK
DESCRIPTION: PK NAIL IN S. SHOULDER OF CTH WW BETWEEN NB AND SB USH 51 BRIDGES
X: 271281.99
Y: 225997.13
EL. = 1305.09

LEGEND

* PROVIDE FOR THRIE BEAM GUARDRAIL ATTACHMENT

◯ WINGWALL NUMBER.

LIST OF DRAWINGS

1. GENERAL PLAN AND ELEVATION
2. TYPICAL SECTION
3. GENERAL NOTES AND QUANTITIES
4. WINGWALL REMOVAL
5. SUPERSTRUCTURE PLAN
6. SUPERSTRUCTURE DETAILS
7. BILL OF BARS
8. DECK ELEVATIONS
9. EXPANSION JOINT DETAILS (1 OF 2)
10. EXPANSION JOINT DETAILS (2 OF 2)
11. STRUCTURAL APPROACH SLAB
12. STRUCTURAL APPROACH SLAB DETAILS
13. PAVING BLOCK
14. SINGLE SLOPE PARAPET 32SS

STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER
(608) 266-8489

CONSULTANT CONTACT:
YAN NENAYDYKH
(414) 292-4599

NO.	DATE	REVISION	BY

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity
10501 W. Research Drive • Milwaukee, WI 53226
Phone: (414) 771-3390 Fax: (414) 771-4490

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 09/28/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-37-159

USH 51 SB OVER CTH WW

COUNTY	TOWN
MARATHON	MAINE

DESIGN SPEC.	
REHABILITATION	N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
BDT	JRS	TB	JRS/BDT

GENERAL PLAN AND ELEVATION

SHEET 1 OF 14
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I.D. 1170-00-04

SEPTEMBER 2015

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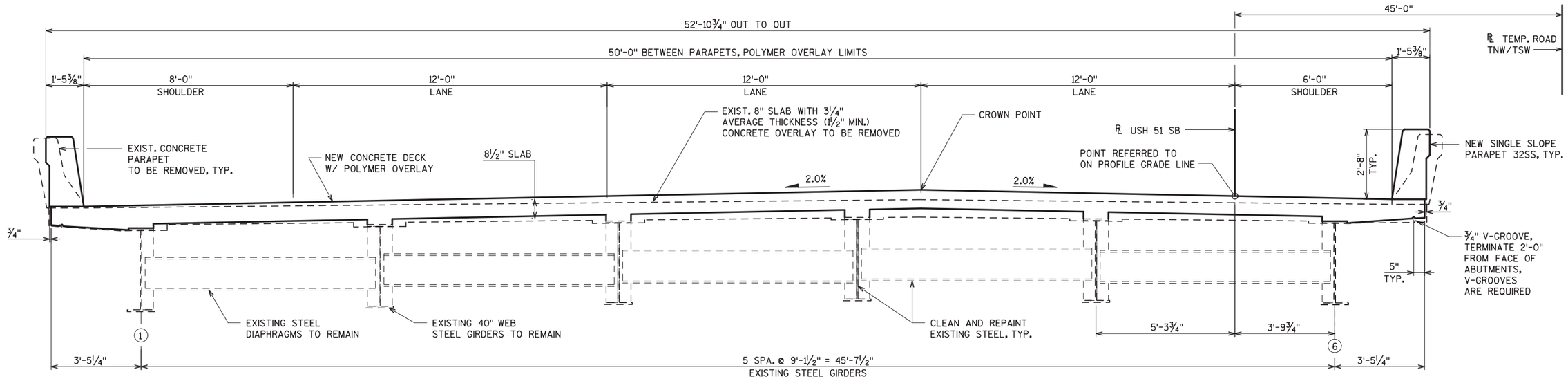
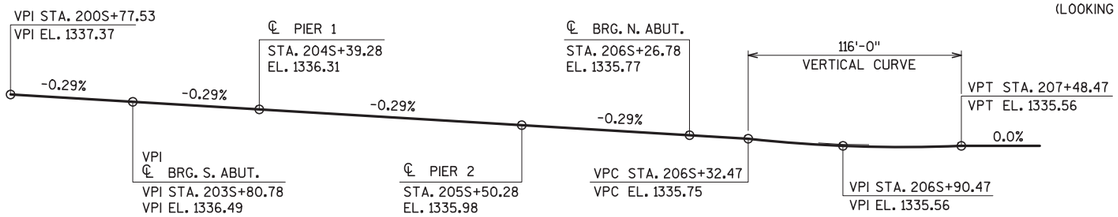
STATE PROJECT NUMBER
1170-00-74

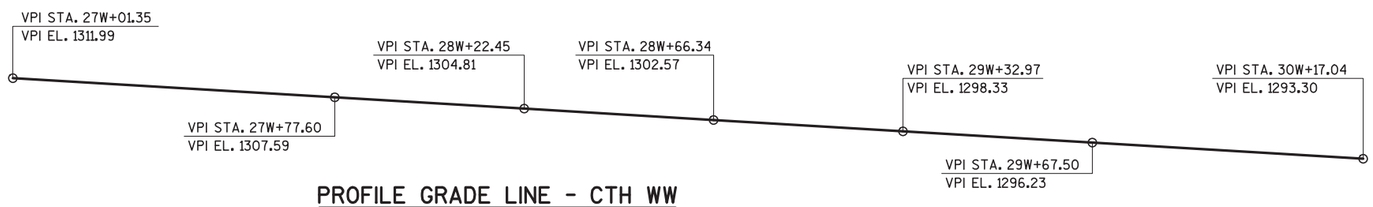


TYPICAL SECTION

(LOOKING NORTH)

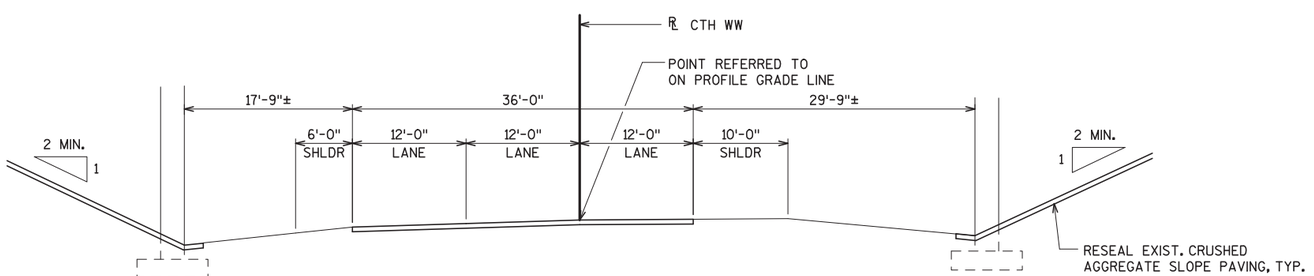


PROFILE GRADE LINE - USH 51 SB



PROFILE GRADE LINE - CTH WW

(BASED ON FIELD SURVEY)



TYPICAL SECTION THRU CTH WW

(LOOKING EAST)

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

DRAWN BY	TB	PLANS CK'D. JRS/BDT

TYPICAL SECTION

SHEET 2 OF 14
224

STATE PROJECT NUMBER

1170-00-74

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT.	NORTH ABUT.	PIER 1	PIER 2	SUPER.	APPROACH SLAB		TOTAL
								SOUTH	NORTH	
203.02.03	REMOVING OLD STRUCTURE STA. 205S+00	LS	-	-	-	-	-	-	-	1
203.0225.S.03	DEBRIS CONTAINMENT STRUCTURE B-37-159	LS	-	-	-	-	-	-	-	1
206.1000.03	EXCAVATION FOR STRUCTURES BRIDGES B-37-159	LS	-	-	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	35	35	-	-	-	-	-	70
502.0100	CONCRETE MASONRY BRIDGES	CY	12	12	-	-	442	75	75	616
502.3100	EXPANSION DEVICE B-37-159	LS	-	-	-	-	-	-	-	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	33	-	-	33
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	-	206	17	17	240
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	65	65	-	-	-	-	-	130
502.6110	MASONRY ANCHORS TYPE S 3/4-INCH	EACH	6	-	-	-	-	-	-	6
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,490	1,490	-	-	99,700	13,330	13,330	129,340
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	-	-	-	-	-	810	810	1,620
509.5100.S	POLYMER OVERLAY	SY	-	-	-	-	1397	111	111	1,619
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	11	-	-	-	-	-	22
517.0900.S.02	PREPARATION AND COATING OF TOP FLANGES B-37-159	LS	-	-	-	-	-	-	-	1
517.1800.S.02	STRUCTURE REPAINTING RECYCLED ABRASIVE B-37-159	LS	-	-	-	-	-	-	-	1
517.4500.S.02	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-37-159	LS	-	-	-	-	-	-	-	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	-	-	-	-	-	-	-	1
604.9015.S	RESEAL CRUSHED AGGREGATE SLOPE PAVING	SY	433	571	-	-	-	-	-	1,004
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	-	-	-	-	2	2
SPV.0060.05	CLEANING AND PAINTING BEARINGS	EACH	6	6	6	6	-	-	-	24
	NON-BID ITEMS									
	PREFORMED JOINT FILLER	SIZE	-	-	-	-	-	-	-	1/2", 3/4", 1 1/2"
	BRIDGE SEAT PROTECTION	LS	-	-	-	-	-	-	-	1
	NAME PLATE	EACH	-	-	-	-	-	-	-	1
	EXPANDED POLYSTYRENE	SIZE	-	-	-	-	-	-	-	1"

ALL ITEMS ARE CATEGORY 0040

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

ELEVATIONS ARE REFERENCED TO THE NAVD 88 (1991) DATUM.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

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

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

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT ABUTMENTS ALL SPACES NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACK FILLED WITH BACKFILL STRUCTURE.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

ALL CONCRETE REMOVAL LIMITS SHALL BE DEFINED BY A 1" DEEP SAWCUT.

VARIATIONS TO THE NEW GRADE LINE OVER 1/4" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE STRUCTURES DESIGN SECTION FOR REVIEW.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. THE NEW NAME PLATE SHALL SHOW THE ORIGINAL CONSTRUCTION YEAR. ORIGINAL CONSTRUCTION YEAR IS 1974.

STRICTLY CONFORM TO THE APPROVED DEBRIS CONTAINMENT PLAN.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON SHEET 8.

THE FINISH COLOR FOR STRUCTURE REPAINTING SHALL BE GRAY (LIGHT GRAY), FEDERAL COLOR NUMBER 26293.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND SIDES OF PAVING NOTCH.

PIGMENTED SURFACE SEALER SHALL BE APPLIED TO THE TOP AND INSIDE FACES OF PARAPETS ON THE DECK, WINGS, AND APPROACH SLABS.

POLYMER OVERLAY SHALL BE APPLIED TO DECK AND APPROACH SLABS. SEE SPECIAL PROVISIONS FOR REQUIRED CONCRETE CURE TIME PRIOR TO APPLYING POLYMER OVERLAY.

PROFILE GRADE LINE ELEVATIONS ARE AT THE TOP OF THE 1/4" POLYMER OVERLAY. POLYMER OVERLAY IS NOT SHOWN AND IS NOT INCLUDED IN THE 8 1/2" DECK THICKNESS.

SEE B-37-158 PLANS FOR TEMPORARY STRUCTURE BID ITEM AND REQUIREMENTS.

MONITOR SAW CUTTING OF EXISTING BRIDGE DECK AND BLADE DEPTH SO THAT EXISTING UNDERLYING GIRDERS ARE NOT DAMAGED. EXERCISE CARE NOT TO DAMAGE THE TOP FLANGES WITH JACK HAMMER OR OTHER TOOLS. DO NOT DAMAGE EXISTING SHEAR CONNECTORS WITHIN THE DECK.

REMOVAL NOTES

THE EXISTING DECK, PARAPETS AND PART OF WING WALLS SHALL BE REMOVED AND REPLACED IN THIS CONTRACT. EXISTING GIRDERS AND SUBSTRUCTURE UNITS SHALL REMAIN IN PLACE.

PLANS OF THE EXISTING BRIDGE ARE ON FILE AND ARE AVAILABLE FOR INSPECTION AT THE WISCONSIN DEPARTMENT OF TRANSPORTATION, NORTH CENTRAL REGION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

DRAWN BY TB | PLANS CK'D. JRS/BDT

GENERAL NOTES AND QUANTITIES

SHEET 3 OF 14

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8

8

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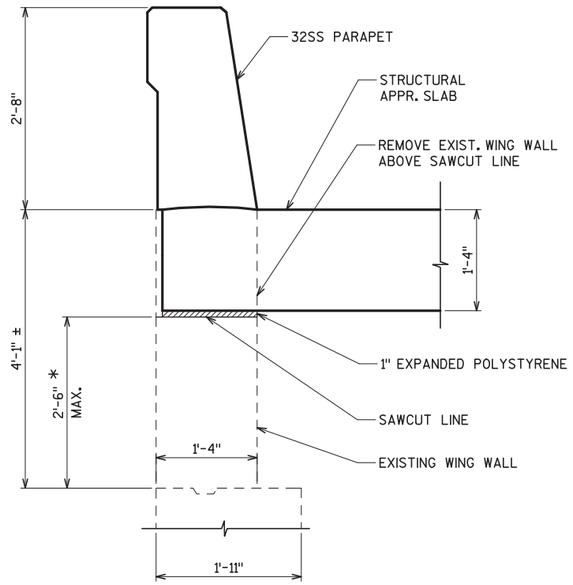
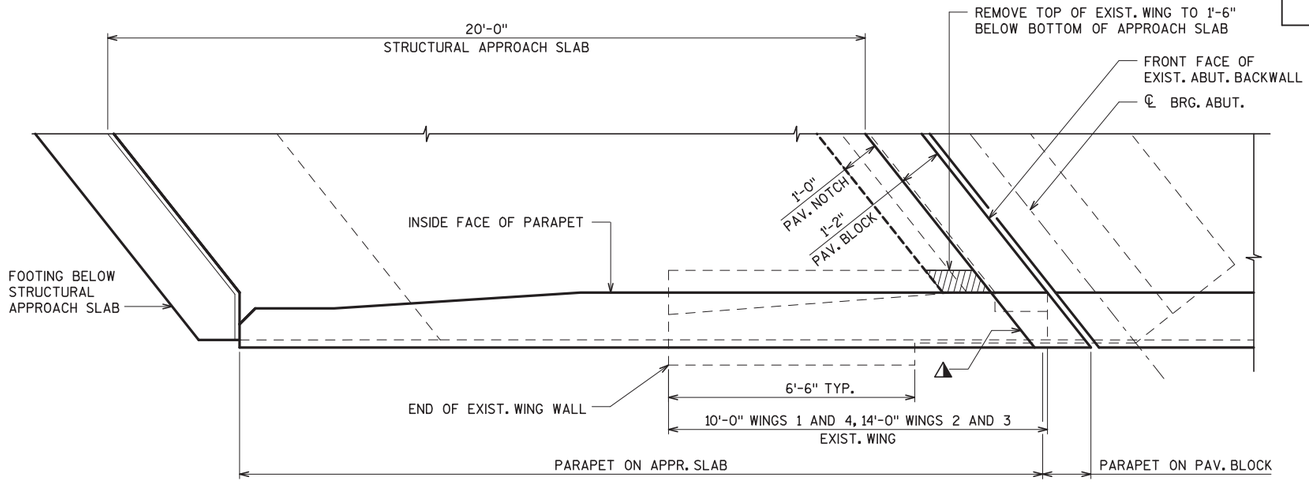
STATE PROJECT NUMBER

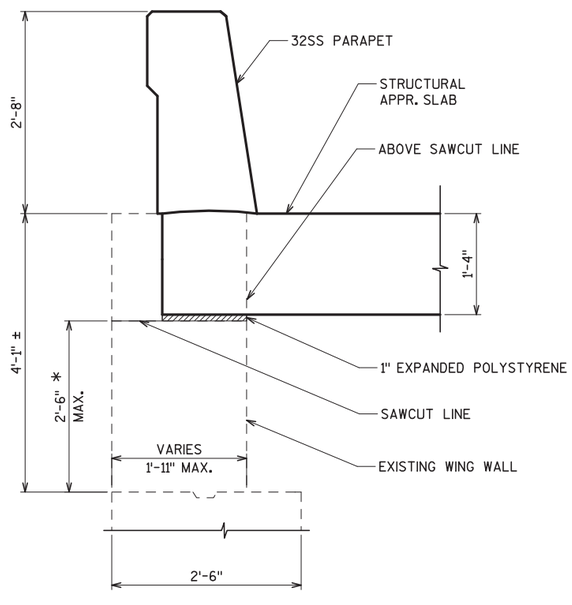
1170-00-74



SECTION A-A



TYPICAL PLAN AT WING REMOVAL



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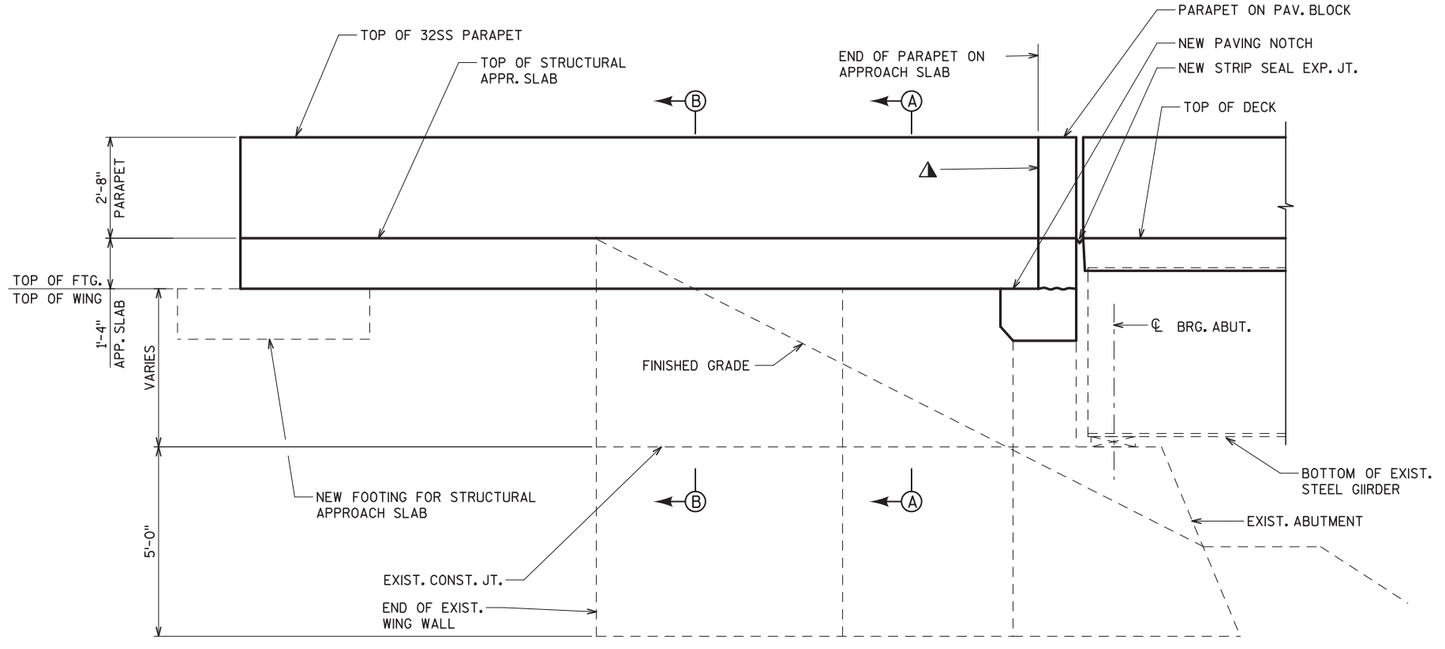

TYPICAL OUTSIDE ELEVATION AT WING REMOVAL

LEGEND

⚠ SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER W/ NON-STAINING JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

* SEE "STRUCTURAL APPROACH SLAB" SHEET FOR TOP OF APPROACH SLAB ELEVATIONS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

DRAWN BY TB | PLANS CK'D. JRS/BDT

WINGWALL REMOVAL

SHEET 4 OF 14

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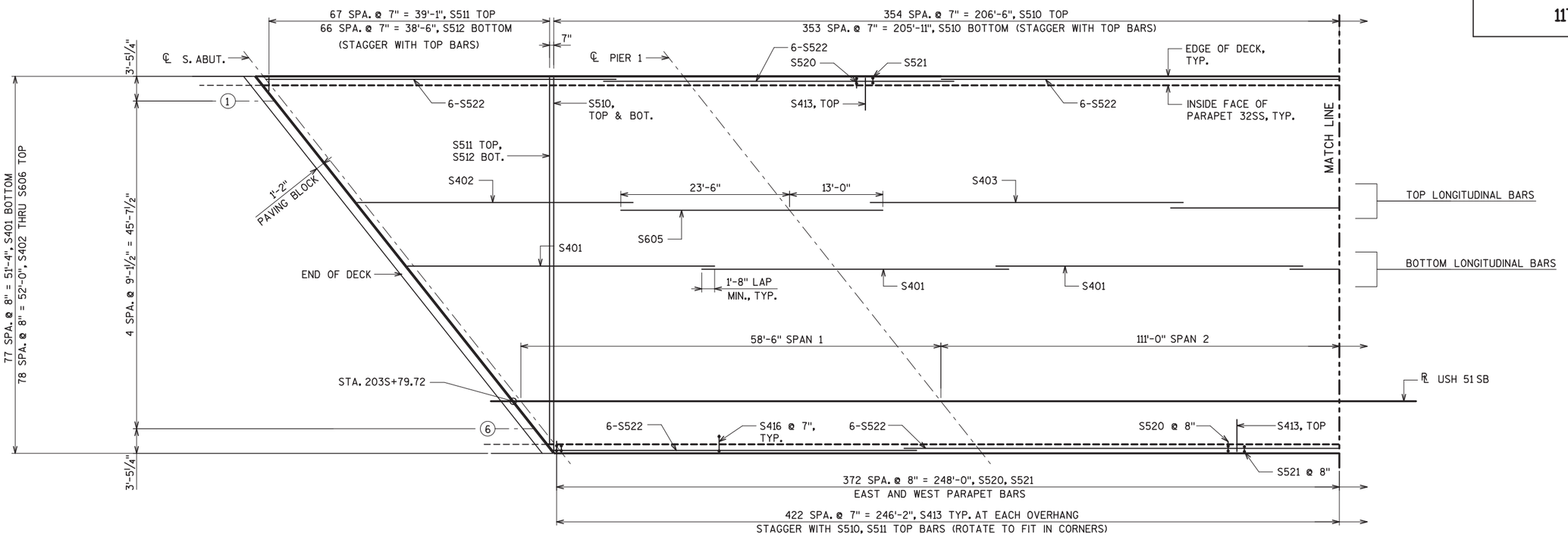
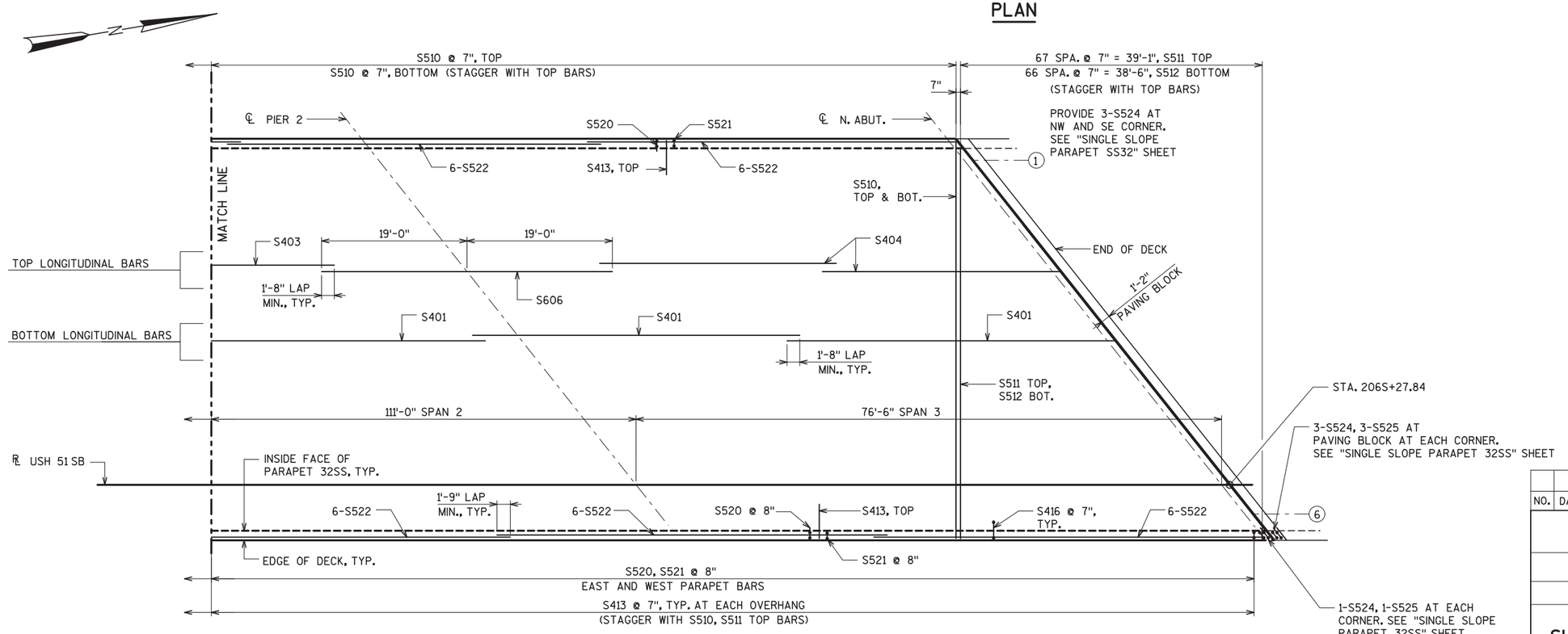
STATE PROJECT NUMBER
1170-00-74



PLAN



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

DRAWN BY	TB	PLANS CK'D.	JRS/BDT

SUPERSTRUCTURE PLAN

SHEET 5 OF 14
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8

8

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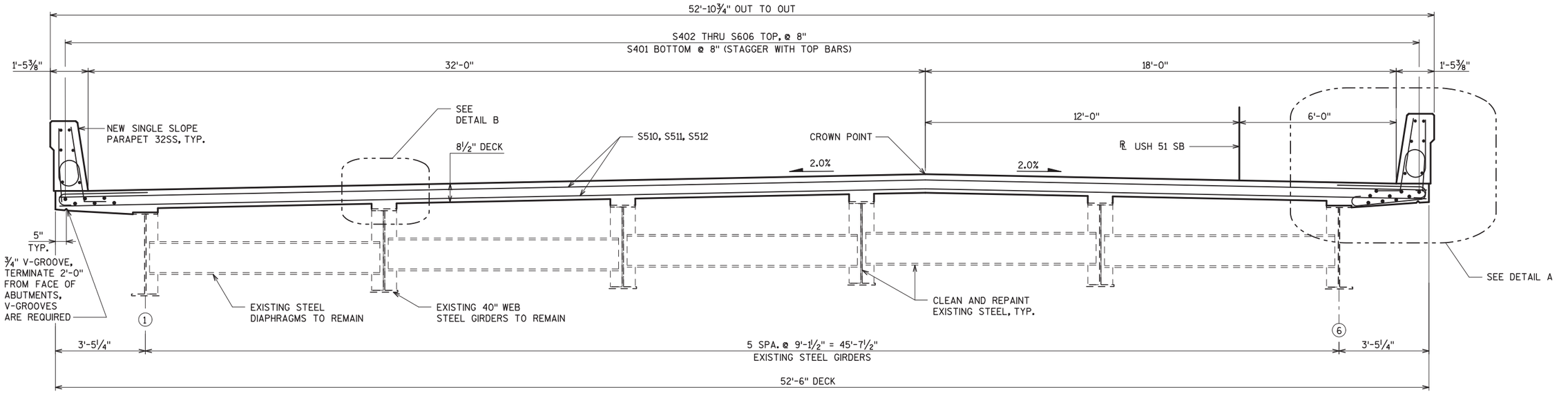
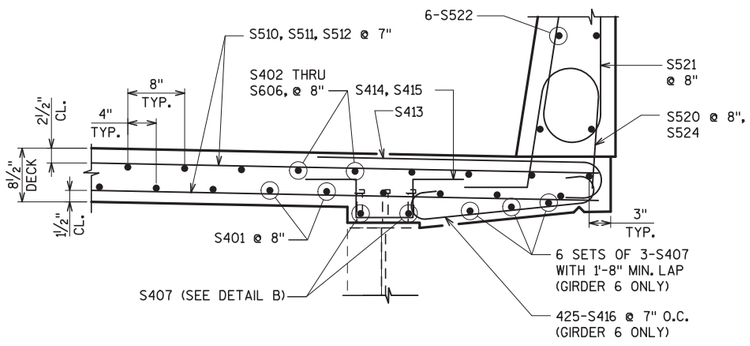
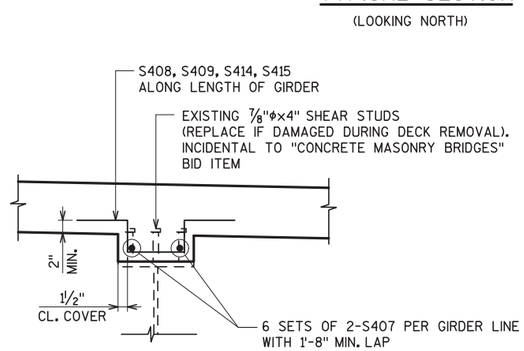


TYPICAL SECTION

(LOOKING NORTH)

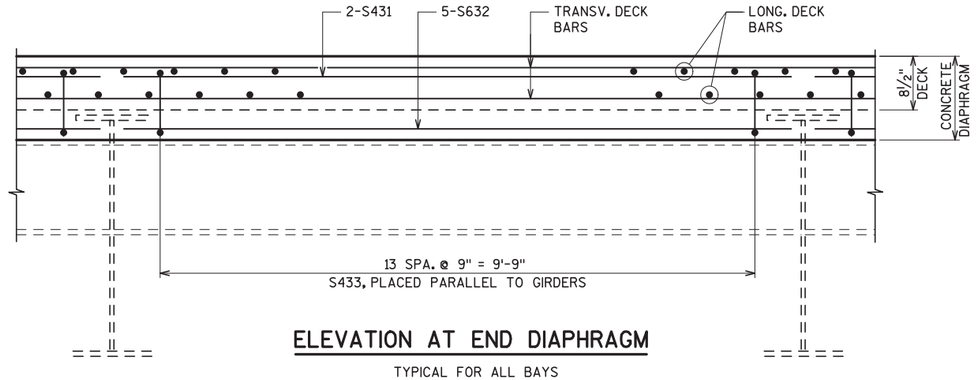


DETAIL A



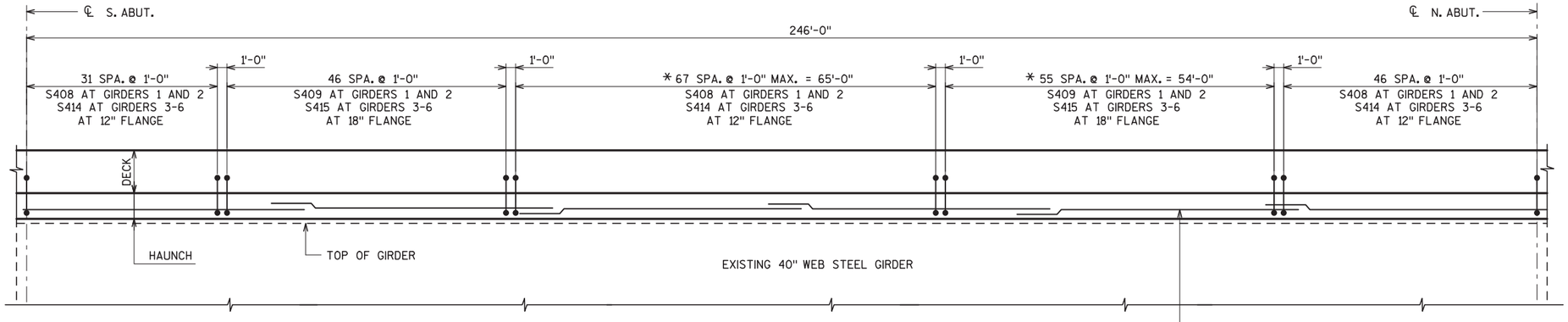
DETAIL B

DETAIL IS REQUIRED AT ALL GIRDER LINES



ELEVATION AT END DIAPHRAGM

TYPICAL FOR ALL BAYS
BAR S430 NOT SHOWN
CONC. DIAPH. TO EXTEND BETWEEN INSIDE FACES OF EXTERIOR GIRDERS. SEE SHEET 9 FOR SECTION.



HAUNCH REINFORCEMENT ELEVATION

TYPICAL AT ALL GIRDER LINES

LEGEND

* BAR SPACING SHOWN IS MAXIMUM SPACING. ADJUST TO MATCH SHEAR STUD SPACING OR 1'-0" MAXIMUM.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

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SUPERSTRUCTURE DETAILS

SHEET 6 OF 14
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STATE PROJECT NUMBER
1170-00-74

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	468	42'-9"	-	-	DECK LONGITUDINAL BOTTOM
S402	X	78	38'-0"	-	-	DECK LONGITUDINAL TOP SPAN 1
S403	X	156	42'-0"	-	-	DECK LONGITUDINAL TOP SPAN 2
S404	X	156	31'-0"	-	-	DECK LONGITUDINAL TOP SPAN 3
S605	X	78	36'-6"	-	-	DECK LONGITUDINAL TOP PIER 1
S606	X	78	38'-0"	-	-	DECK LONGITUDINAL TOP PIER 2
S407	X	90	42'-9"	-	-	DECK LONGITUDINAL HAUNCHES & GIRD. 6 OVERHANG
S408	X	294	2'-9"	X	-	DECK VERTICAL HAUNCHES GIRD. 1& 2
S409	X	206	3'-3"	X	-	DECK VERTICAL HAUNCHES GIRD. 1& 2
S510	X	709	52'-1"	-	-	DECK TRANSVERSE TOP AND BOTTOM
S511	X	136	26'-8"	-	⚠	DECK TRANSVERSE TOP AT ENDS
S512	X	134	26'-8"	-	⚠	DECK TRANSVERSE BOTTOM AT ENDS
S413	X	846	4'-9"	X	-	DECK TRANSVERSE TOP OVERHANGS
S414	X	588	3'-3"	X	-	DECK VERTICAL HAUNCHES GIRD. 3-6
S415	X	412	3'-9"	X	-	DECK VERTICAL HAUNCHES GIRD. 3-6
S416	X	425	3'-4"	X	-	DECK TRANSVERSE AT GIRD. 6 OVERHANG
S520	X	746	4'-5"	X	-	PARAPET VERTICAL
S521	X	758	5'-0"	X	-	PARAPET VERTICAL
S522	X	60	51'-2"	-	-	PARAPET LONGITUDINAL
S523	X	24	1'-0"	-	-	PARAPET LONGITUDINAL ON PAVING BLOCK
S524	X	16	4'-9"	X	-	PARAPET VERTICAL AT CORNERS
S525	X	16	5'-4"	X	-	PARAPET VERTICAL AT CORNERS
S430	X	20	11'-2"	-	-	DECK HORIZ. AT STRIP SEAL JOINTS
S431	X	20	11'-2"	-	-	END DIAPHRAGM HORIZ. BETWEEN GIRDERS
S632	X	50	11'-2"	-	-	END DIAPHRAGM HORIZ. BETWEEN GIRDERS
S433	X	140	5'-8"	X	-	END DIAPHRAGM VERT. BETWEEN GIRDERS

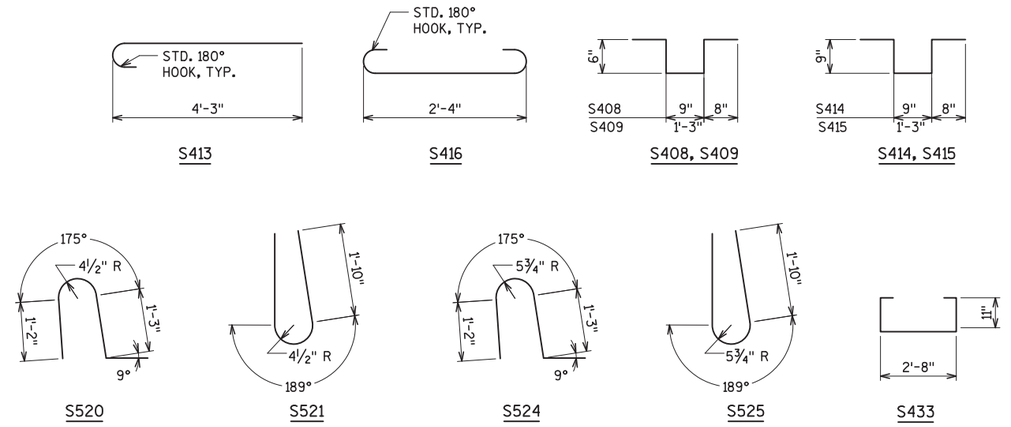
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

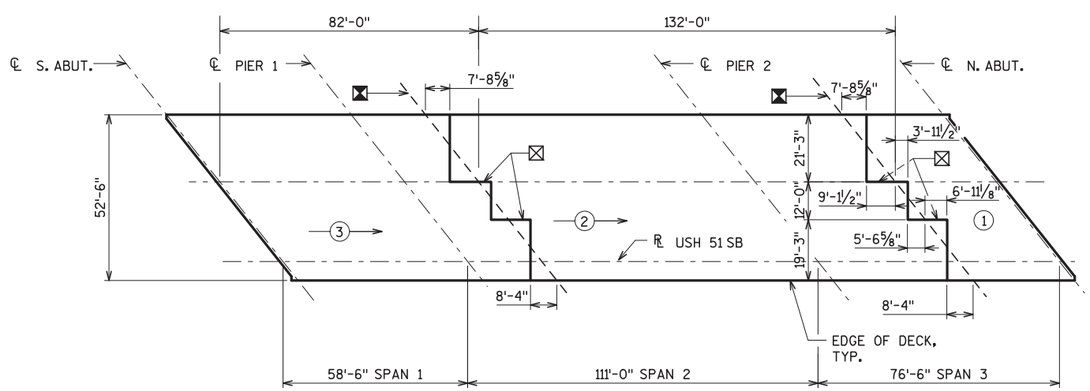
BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
S511	2 SERIES OF 68	2'-0" TO 51'-4"
S512	2 SERIES OF 67	2'-4" TO 50'-11"

BUNDLE AND TAG EACH SERIES SEPARATELY

BENDING DIAGRAMS

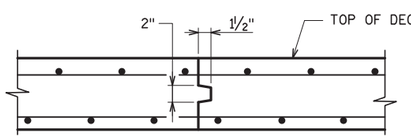




POURING SEQUENCE PLAN

LEGEND

- ←(2)— INDICATES POUR NUMBER AND DIRECTION OF POUR
- ⊠ THEORETICAL POUR LINE
- ⊠ PLACE LONGITUDINAL PORTION OF CONSTRUCTION JOINT IN LINE WITH EDGE OF TRAFFIC LANE



SECTION THRU TRANSVERSE OR LONGITUDINAL JOINT

POURING SEQUENCE NOTES

THE RATE OF PLACING CONCRETE SHALL EQUAL OR EXCEED ½ SPAN LENGTH PER HOUR BUT NEED NOT EXCEED 100 CU. YDS. PER HOUR.

TWO OR MORE ALTERNATE POURS MAY BE PLACED ON THE SAME DAY.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

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BILL OF BARS

SHEET 7 OF 14
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8

8

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TOP OF DECK ELEVATIONS - SPAN 1

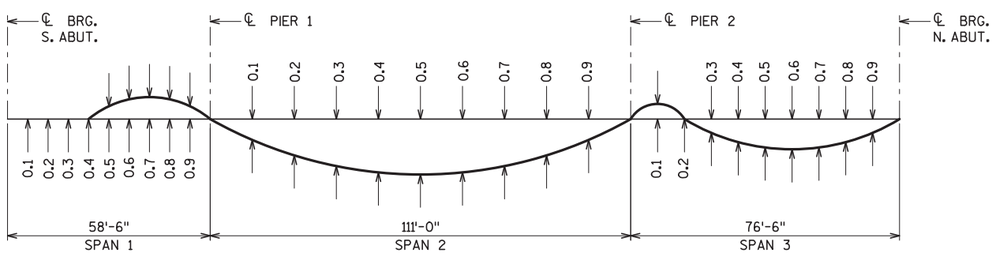
GIRDER/ LOCATION	S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1
WEST EDGE	1336.18	1336.17	1336.15	1336.13	1336.12	1336.10	1336.08	1336.07	1336.05	1336.03	1336.01
1	1336.22	1336.20	1336.19	1336.17	1336.15	1336.13	1336.12	1336.10	1336.08	1336.07	1336.05
2	1336.38	1336.36	1336.35	1336.33	1336.31	1336.30	1336.28	1336.26	1336.25	1336.23	1336.21
3	1336.54	1336.53	1336.51	1336.49	1336.47	1336.46	1336.44	1336.42	1336.41	1336.39	1336.37
4	1336.70	1336.69	1336.67	1336.65	1336.64	1336.62	1336.60	1336.59	1336.57	1336.55	1336.53
CROWN	1336.75	1336.73	1336.71	1336.70	1336.68	1336.66	1336.65	1336.63	1336.61	1336.59	1336.58
5	1336.60	1336.58	1336.56	1336.55	1336.53	1336.51	1336.50	1336.48	1336.46	1336.45	1336.43
PGL	1336.48	1336.46	1336.45	1336.43	1336.41	1336.40	1336.38	1336.36	1336.34	1336.33	1336.31
6	1336.39	1336.38	1336.36	1336.34	1336.33	1336.31	1336.29	1336.28	1336.26	1336.24	1336.23
EAST EDGE	1336.34	1336.33	1336.31	1336.29	1336.28	1336.26	1336.24	1336.22	1336.21	1336.19	1336.17
DEAD LOAD DEFLECTION (IN.) *	0	0	0	0	0	-1/8	-1/8	-1/8	-1/8	-1/8	0

TOP OF DECK ELEVATIONS - SPAN 2

GIRDER/ LOCATION	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 2
WEST EDGE	1336.01	1335.98	1335.95	1335.92	1335.89	1335.85	1335.82	1335.79	1335.76	1335.72	1335.69
1	1336.05	1336.02	1335.99	1335.95	1335.92	1335.89	1335.86	1335.82	1335.79	1335.76	1335.73
2	1336.21	1336.18	1336.15	1336.12	1336.08	1336.05	1336.02	1335.99	1335.95	1335.92	1335.89
3	1336.37	1336.34	1336.31	1336.28	1336.24	1336.21	1336.18	1336.15	1336.12	1336.08	1336.05
4	1336.53	1336.50	1336.47	1336.44	1336.41	1336.37	1336.34	1336.31	1336.28	1336.24	1336.21
CROWN	1336.58	1336.55	1336.51	1336.48	1336.45	1336.42	1336.38	1336.35	1336.32	1336.29	1336.26
5	1336.43	1336.40	1336.36	1336.33	1336.30	1336.27	1336.24	1336.20	1336.17	1336.14	1336.11
PGL	1336.31	1336.28	1336.25	1336.21	1336.18	1336.15	1336.12	1336.08	1336.05	1336.02	1335.99
6	1336.23	1336.19	1336.16	1336.13	1336.10	1336.06	1336.03	1336.00	1335.97	1335.94	1335.90
EAST EDGE	1336.17	1336.14	1336.11	1336.08	1336.04	1336.01	1335.98	1335.95	1335.92	1335.88	1335.85
DEAD LOAD DEFLECTION (IN.) *	0	1/2	1	1 5/8	2	2 1/8	1 7/8	1 1/2	7/8	3/8	0

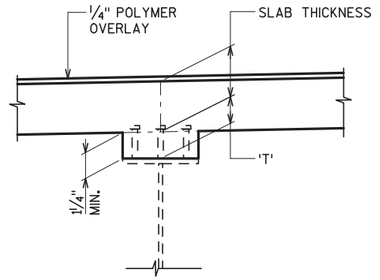
TOP OF DECK ELEVATIONS - SPAN 3

GIRDER/ LOCATION	PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	N. ABUT.
WEST EDGE	1335.69	1335.67	1335.65	1335.63	1335.60	1335.58	1335.56	1335.54	1335.51	1335.49	1335.47
1	1335.73	1335.71	1335.68	1335.66	1335.64	1335.62	1335.60	1335.57	1335.55	1335.53	1335.51
2	1335.89	1335.87	1335.85	1335.82	1335.80	1335.78	1335.76	1335.73	1335.71	1335.69	1335.67
3	1336.05	1336.03	1336.01	1335.98	1335.96	1335.94	1335.92	1335.90	1335.87	1335.85	1335.83
4	1336.21	1336.19	1336.17	1336.15	1336.12	1336.10	1336.08	1336.06	1336.04	1336.01	1335.99
CROWN	1336.26	1336.23	1336.21	1336.19	1336.17	1336.15	1336.12	1336.10	1336.08	1336.06	1336.03
5	1336.11	1336.08	1336.06	1336.04	1336.02	1336.00	1335.97	1335.95	1335.93	1335.91	1335.88
PGL	1335.99	1335.97	1335.94	1335.92	1335.90	1335.88	1335.86	1335.83	1335.81	1335.79	1335.77
6	1335.90	1335.88	1335.86	1335.84	1335.81	1335.79	1335.77	1335.75	1335.73	1335.70	1335.68
EAST EDGE	1335.85	1335.83	1335.81	1335.79	1335.76	1335.74	1335.72	1335.70	1335.67	1335.65	1335.63
DEAD LOAD DEFLECTION (IN.) *	0	-1/8	0	1/8	1/4	3/8	1/2	1/2	3/8	1/4	0



DEFLECTION DIAGRAM

SEE TABLE FOR DEAD LOAD DEFLECTION AT 0.1 POINT



HAUNCH DETAIL

TO DETERMINE 'T', ELEV. OF THE TOP FLANGES, TOP OF SPLICE PLATE, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT ℄ OF BRGS. AND AT TENTH POINTS OF EACH SPAN, THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF STEEL ELEVATION
+ DEAD LOAD DEFLECTION (CONCRETE)
- SLAB THICKNESS
- 1/4" POLYMER OVERLAY THICKNESS

= HAUNCH HEIGHT 'T'

NOTE:
AN AVERAGE HAUNCH 'T' OF 5"
WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES"

NOTES

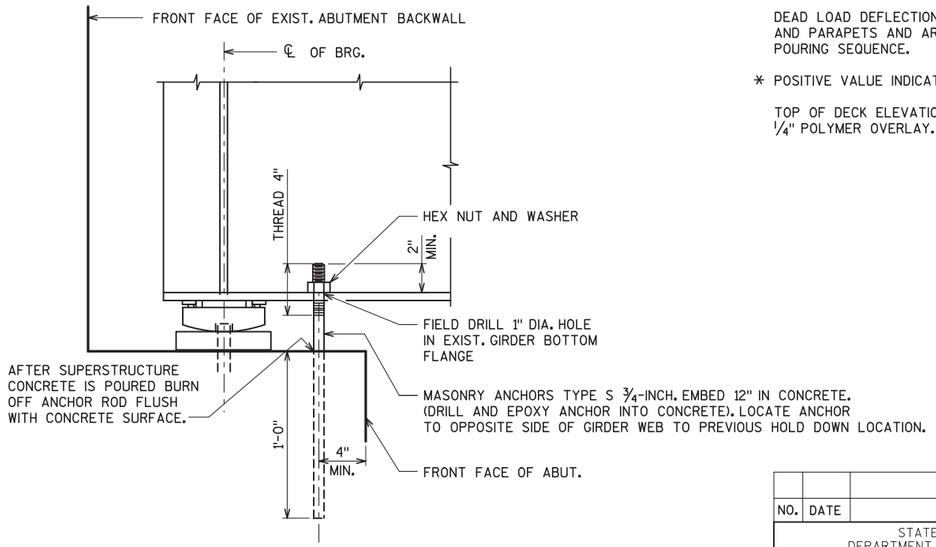
FOR SUPERSTRUCTURE PLAN SEE SHEET 5.

FOR SUPERSTRUCTURE DETAILS, BILL OF BARS AND BENDING DIAGRAMS SEE SHEETS 6 AND 7.

DEAD LOAD DEFLECTIONS INCLUDE CONCRETE DECK AND PARAPETS AND ARE BASED ON THE PROPOSED POURING SEQUENCE.

* POSITIVE VALUE INDICATES DOWNWARD DEFLECTION.

TOP OF DECK ELEVATIONS ARE THE TOP OF THE 1/4" POLYMER OVERLAY.



TEMPORARY HOLD DOWN DEVICE

PLACE ONE ANCHOR PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 4" (NORMAL) OFF ℄ OF GIRDER. ANCHOR ROD, NUT, WASHER, AND DRILLED HOLE IN GIRDER FLANGE SHALL BE PAID UNDER THE BID ITEM "CONCRETE MASONRY ANCHORS TYPE S 3/4-INCH". EMBED 12" IN CONCRETE.

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STRUCTURE B-37-159

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DECK ELEVATIONS

8

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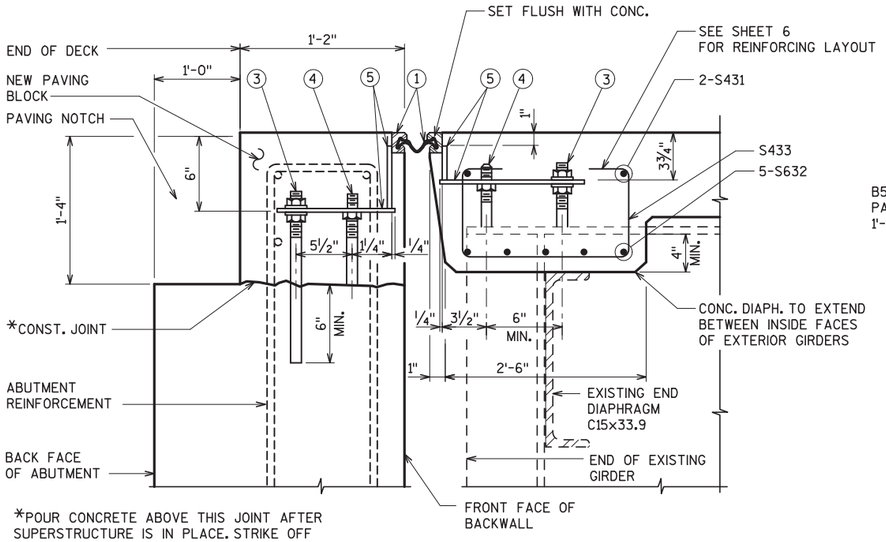
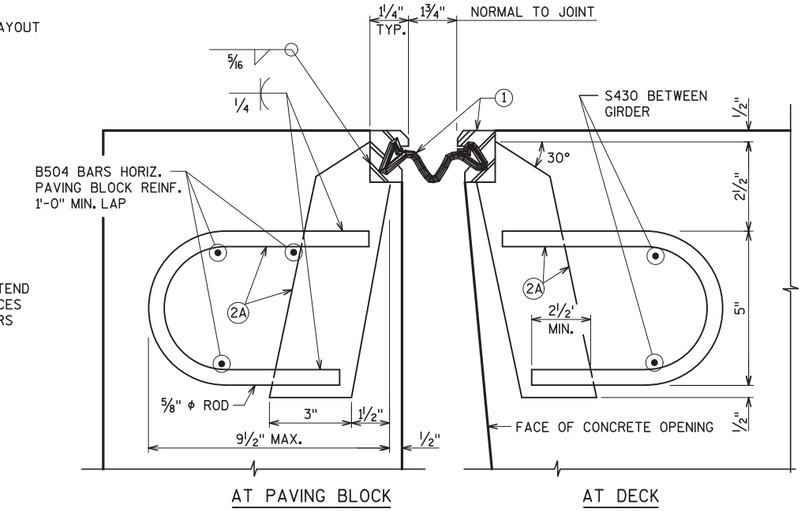


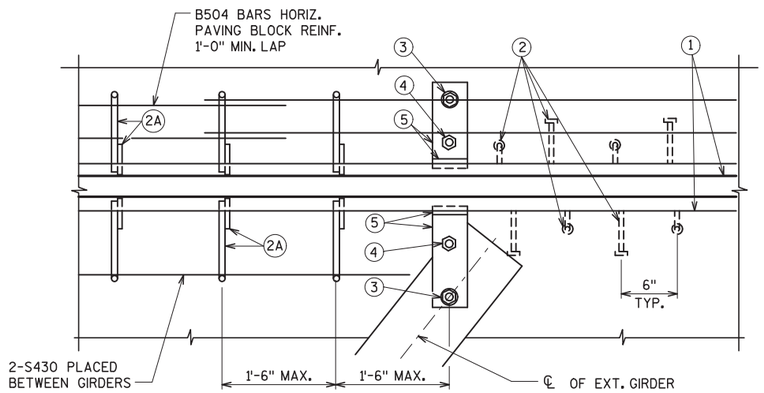
SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

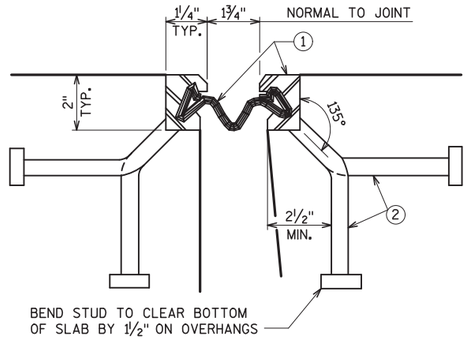


SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS

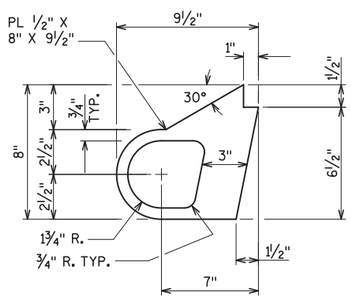


PART PLAN



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB AND AT PARAPETS



ALTERNATE STRIP SEAL ANCHOR

LEGEND

1. NEOPRENE STRIP SEAL (4 INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾".
2. STUDS ⅝" ϕ X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.

2A. ½" THICK ANCHOR PLATE WITH ⅝" ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.

3. ¾" ϕ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾"ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" ϕ HOLE FOR NO. 3 AND 1" ϕ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" × 10½" × 2'-2" WITH HOLES FOR NO. 7. BEND AS SHOWN.
7. ¾" ϕ × 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾" ϕ × 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾" ϕ × 2 ¼" GALVANIZED THREADED COUPLING.
11. 1" × 5" SLOTTED CSK. HOLE FOR NO. 7 SLOT PARALLEL TO DIRECTION OF MOVEMENT.

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN AND SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM NO. 8 AND NO. 9 SHALL CONFORM TO ASTM A307 AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C AND D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-37-159".

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STRUCTURE B-37-159

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EXPANSION JOINT DETAILS (1 OF 2)

SHEET 9 OF 14
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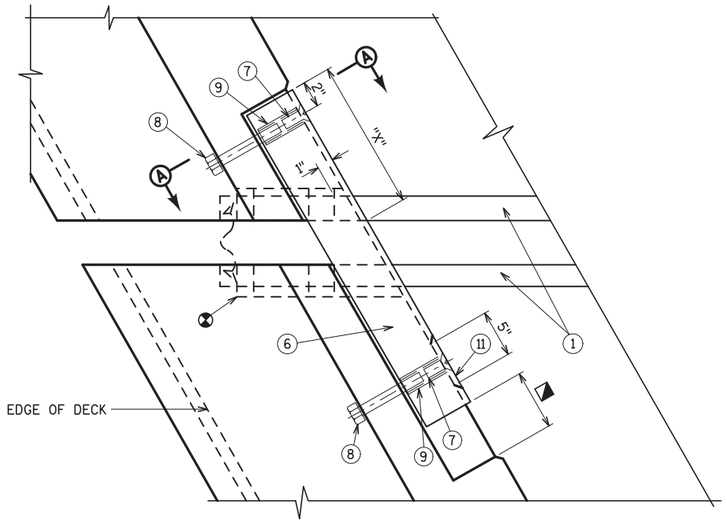
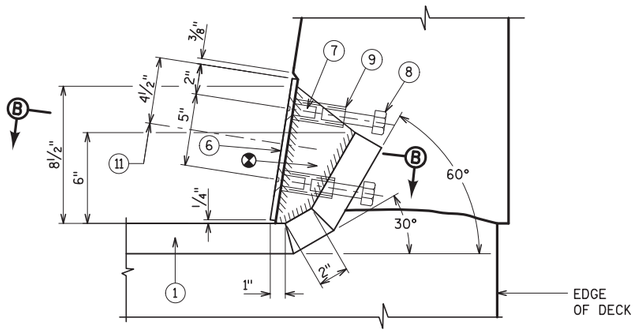
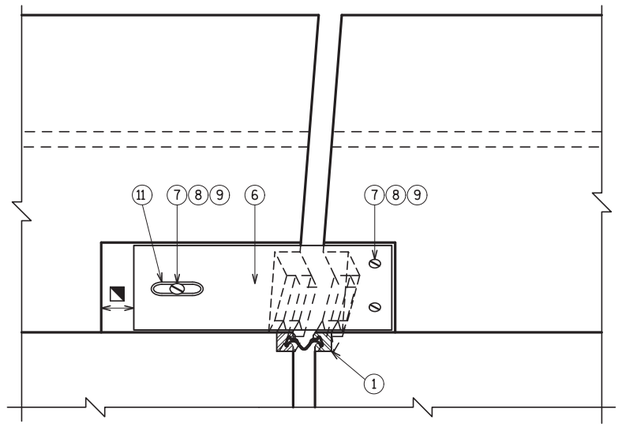


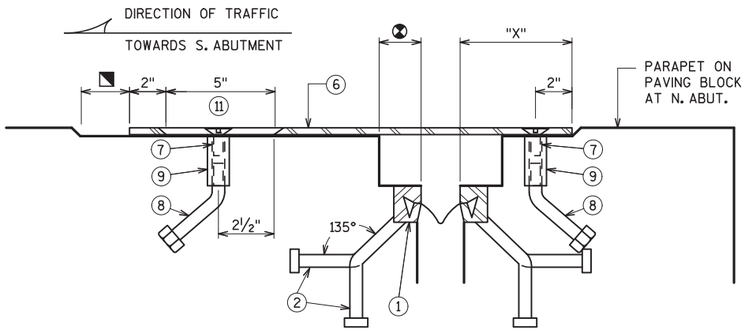
PLAN AT PARAPET
SINGLE SLOPE PARAPET



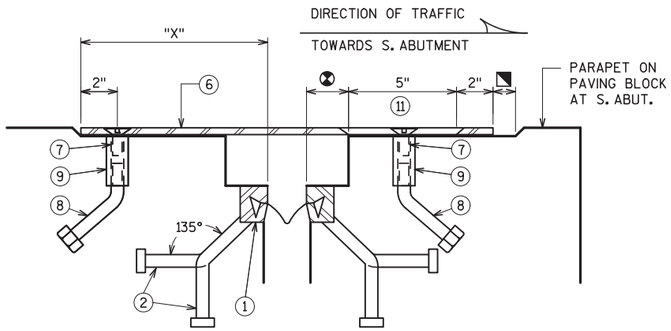
SECTION A-A
SINGLE SLOPE PARAPET



VIEW OF PARAPET PLATES FROM ROADWAY
SINGLE SLOPE PARAPET



SECTION B-B
APPLIES AT NORTH ABUTMENT



SECTION B-B
APPLIES AT SOUTH ABUTMENT

"X" - VALUES IN INCHES	
SKEW	35°-40°
RHF	6½"

NOTES

SEE SHEET 9 FOR EXPANSION JOINT NOTES AND LEGEND.

⊠ BLOCK OUT CONCRETE 2" EACH SIDE FOR JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS ½".

ORIENT COVER PLATES WITH RESPECT TO TRAFFIC DIRECTION.

8

8

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STRUCTURE B-37-159

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EXPANSION JOINT DETAILS (2 OF 2)

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STATE PROJECT NUMBER
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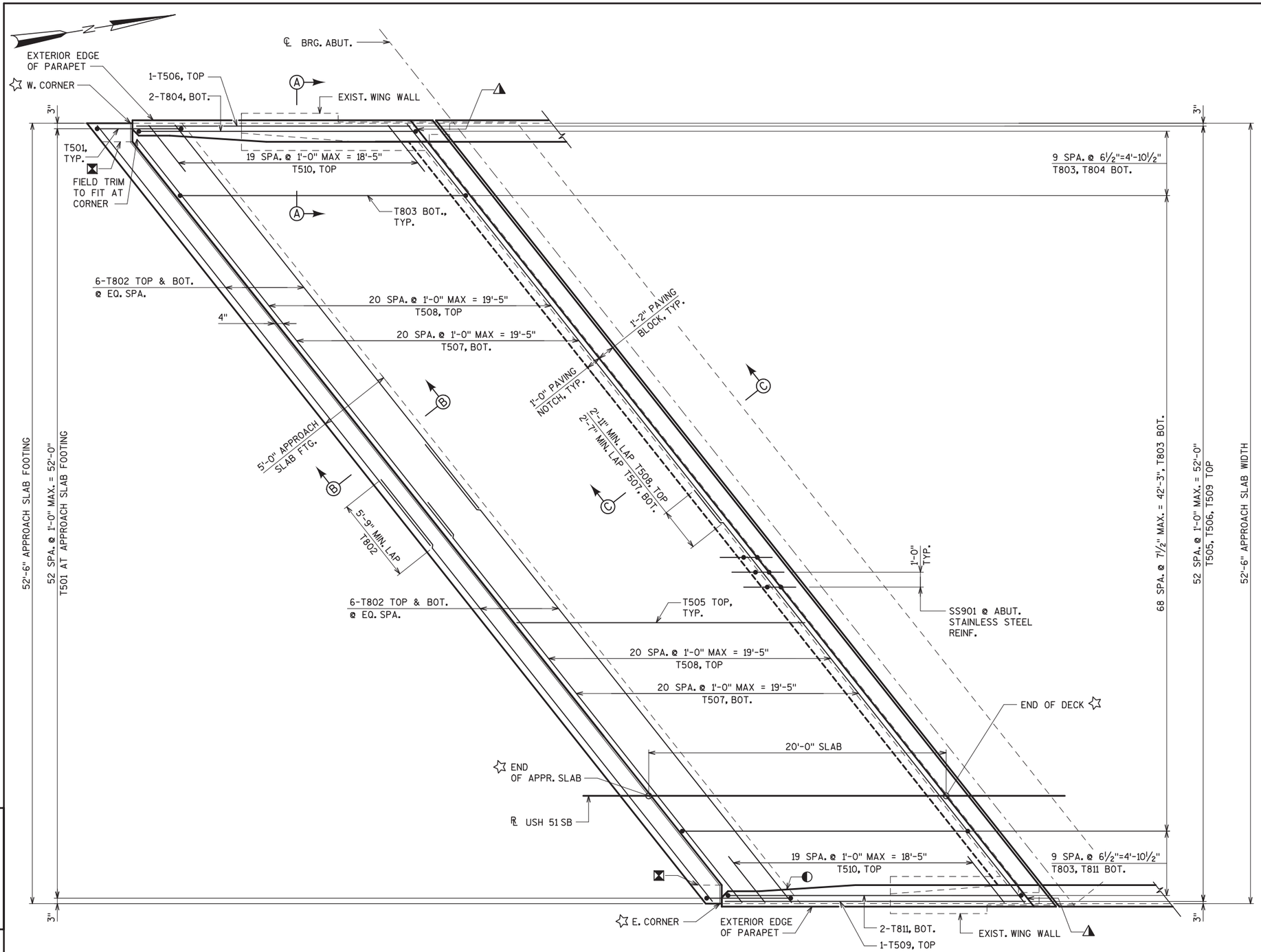

PLAN

SOUTH APPROACH SHOWN, NORTH APPROACH SIMILAR

☆ STA./ELEV. TABLE - N. APPROACH

	STA. / ELEV.
END OF DECK	STA. 206S+29.54 / EL. 1335.77
END OF APPR. SLAB	STA. 206S+49.54 / EL. 1335.71
W. CORNER OF APPR. SLAB	STA. 206S+14.64 / EL. 1335.41
E. CORNER OF APPR. SLAB	STA. 206S+54.26 / EL. 1335.58

☆ STA./ELEV. TABLE - S. APPROACH

	STA. / ELEV.
END OF DECK	STA. 203S+78.02 / EL. 1336.50
END OF APPR. SLAB	STA. 203S+58.02 / EL. 1336.56
W. CORNER OF APPR. SLAB	STA. 203S+23.18 / EL. 1336.26
E. CORNER OF APPR. SLAB	STA. 203S+62.81 / EL. 1336.42

LEGEND

- ◭ 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). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- ◐ SEE "SINGLE SLOPE PARAPET 32SS" SHEET FOR LOCATION OF NAME PLATE AND BENCH MARK.
- ⊠ NOTCH APPROACH SLAB FOOTING FOR THRIE BEAM POST INSTALLATION, WHERE REQUIRED.

NOTE

SEE SHEET 12 FOR SECTIONS A-A THRU C-C.

SEE SHEET 13 FOR PAVING BLOCK REINFORCEMENT.

ELEVATIONS ARE TO TOP OF THE ¼" POLYMER OVERLAY.

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STRUCTURAL APPROACH SLAB

SHEET 11 OF 14
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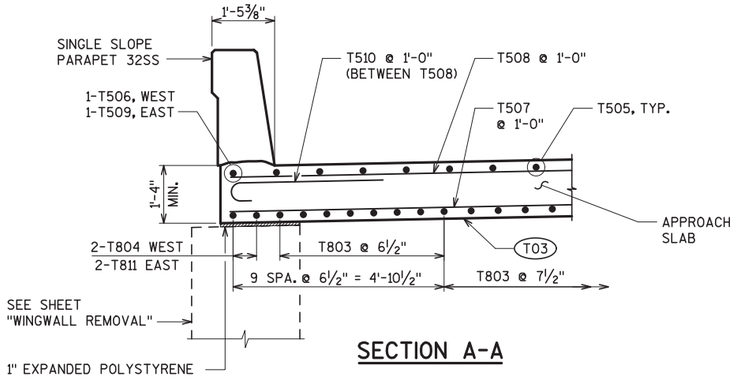
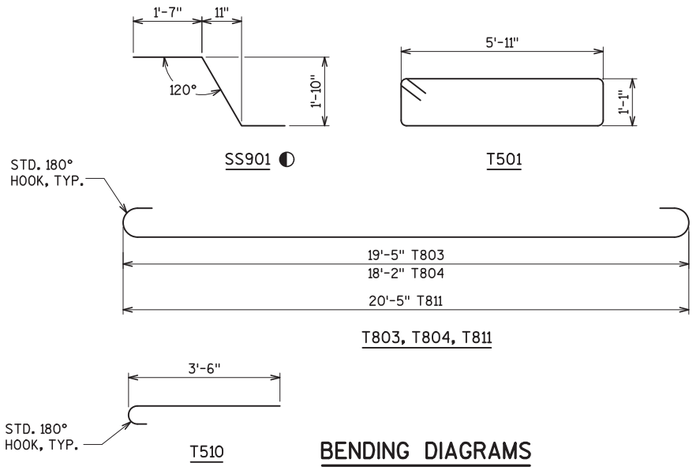


SECTION A-A



BENDING DIAGRAMS

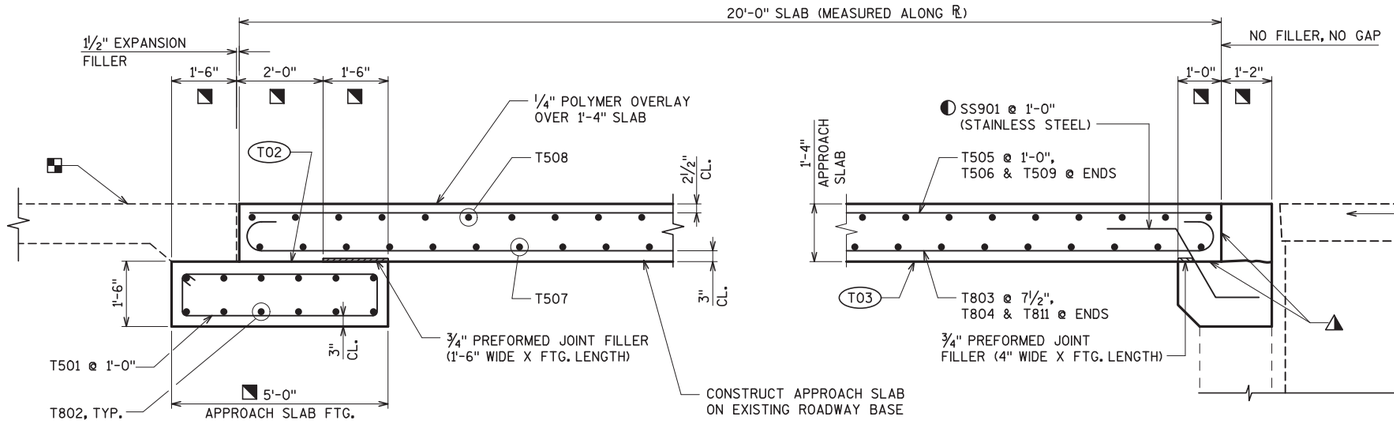
BILL OF BARS

	BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
◐	SS901		102	4'-8"	X		CONC. ABUT. TO APPROACH SLAB

BAR MARK	COAT	NO. REQ'D		LENGTH	BENT	BAR SERIES	LOCATION
		S. APPR.	N. APPR.				
T501	X	53	53	14'-6"	X		APPROACH SLAB FTG. - STIRRUP
T802	X	24	24	36'-2"	-		APPROACH SLAB FTG. - TRANS.
T803	X	83	83	21'-4"	X		APPROACH SLAB - LONG. - BOTTOM
T804	X	2	2	20'-0"	X		APP. SLAB - LONG. - BOT., WEST PARAPET
T505	X	51	51	19'-5"	-		APPROACH SLAB - LONG. - TOP
T506	X	1	1	18'-2"	-		APP. SLAB - LONG. - TOP, WEST PARAPET
T507	X	42	42	34'-7"	-		APPROACH SLAB - TRANS. - BOTTOM
T508	X	42	42	34'-9"	-		APPROACH SLAB - TRANS. - TOP
T509	X	1	1	20'-5"	-		APP. SLAB - LONG. - TOP, EAST PARAPET
T510	X	40	40	4'-1"	X		APPROACH SLAB - TRANS. - TOP
T811	X	2	2	22'-3"	X		APP. SLAB - LONG. - BOT., EAST PARAPET

DESIGN DATA

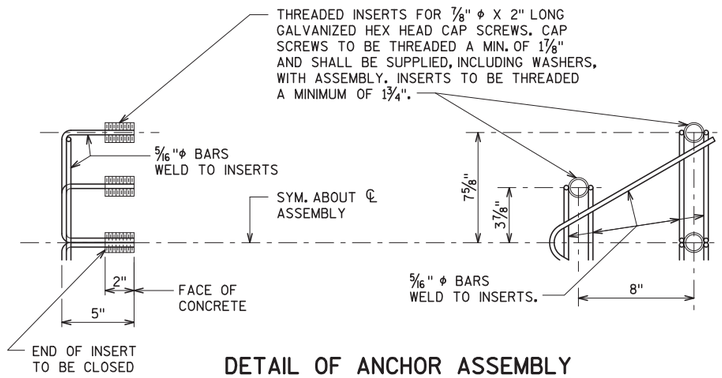
CONCRETE STRENGTH f'c:	4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60, fy:	60,000 P.S.I.
ALLOWABLE SOIL BEARING PRESSURE:	2,000 P.S.F.



SECTION B-B

SECTION C-C

SECTION THRU APPROACH SLAB



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

- ◭ APPLY PROTECTIVE SURFACE TREATMENT TO PAVING NOTCH PRIOR TO POURING STRUCTURAL APPROACH SLAB
- ◹ MEASURED NORMAL TO ABUTMENT
- ◐ THE BID ITEM FOR SS901 BARS SHALL BE "BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES".
- (T02) STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF FOOTING.
- (T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.
- ◪ ROADWAY APPROACH PAVEMENT.

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STRUCTURAL APPROACH SLAB DETAILS

SHEET 12 OF 14
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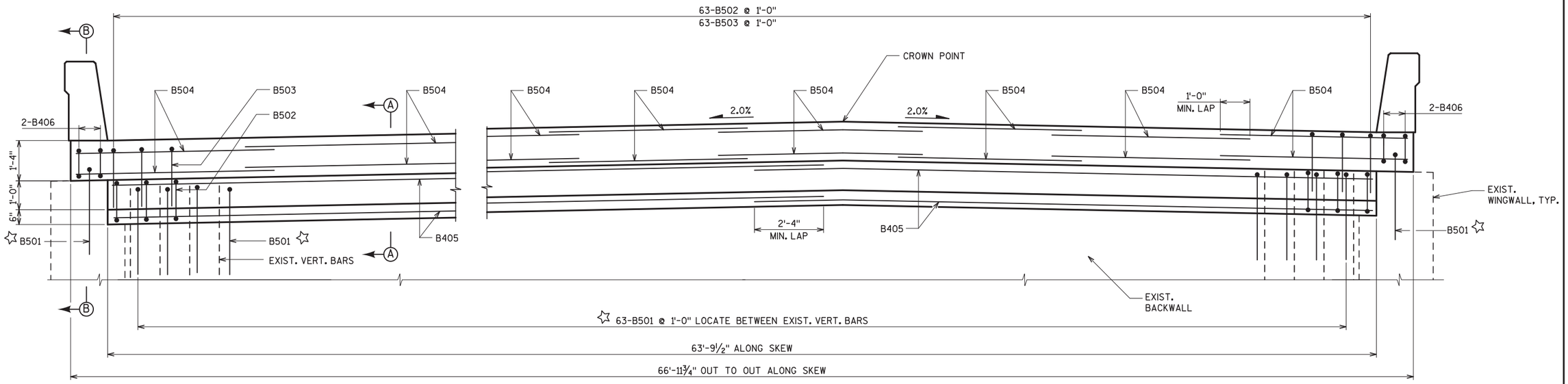
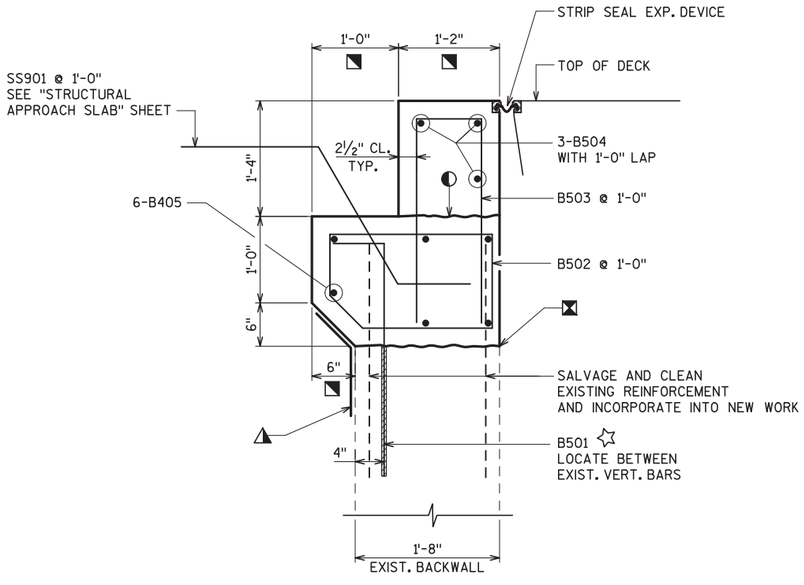
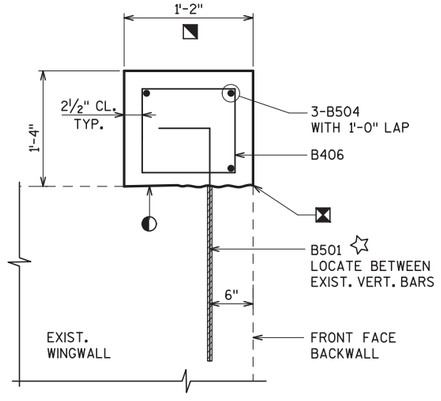


PAVING BLOCK ELEVATION

LOOKING NORTH AT SOUTH ABUTMENT PAVING BLOCK
(NORTH ABUTMENT SIMILAR)



SECTION A-A



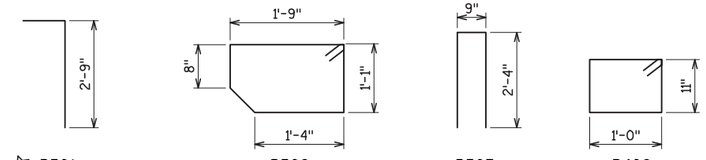
SECTION B-B

PARAPET NOT SHOWN

BILL OF BARS

BAR MARK	COAT	*NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
☆ B501	X	130	3'-6"	X	-	BACKWALL - VERT. - DOWELS
B502	X	126	6'-0"	X	-	BACKWALL - VERT.
B503	X	126	5'-2"	X	-	BACKWALL - VERT. - TOP
B504	X	54	8'-4"	-	-	BACKWALL - HORIZ. - TOP AND B.F.
B405	X	24	33'-0"	-	-	BACKWALL - HORIZ.
B406	X	8	4'-4"	X	-	VERT. AT ENDS

* QUANTITIES ARE FOR NORTH AND SOUTH ABUTMENTS DIVIDED EQUALLY



☆ B501 B502 B503 B406

BENDING DIAGRAMS

LEGEND

- ◥ MEASURED NORMAL TO ABUTMENT
- ☆ EXISTING BARS ARE LIKELY TO BE CORRODED AND/OR DAMAGED DURING CONCRETE REMOVAL. PRESERVE AND INCORPORATE AS MUCH REBAR AS PRACTICAL. SUPPLEMENT WITH THE MASONRY ANCHORS TYPE L NO. 5 MIN. PULLOUT CAPACITY OF 19 KIPS, EMBED A MINIMUM OF 1'-6" INTO CONCRETE. SPACE AT 1'-0".
- ◐ CONSTRUCTION JOINT.
- ◪ REMOVE TOP OF EXIST. BACKWALL AND PAVING BLOCK TO ACCOMODATE NEW WORK.
- ◭ 18" RUBBERIZED MEMBRANE WATERPROOFING.

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STRUCTURE B-37-159

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PAVING BLOCK

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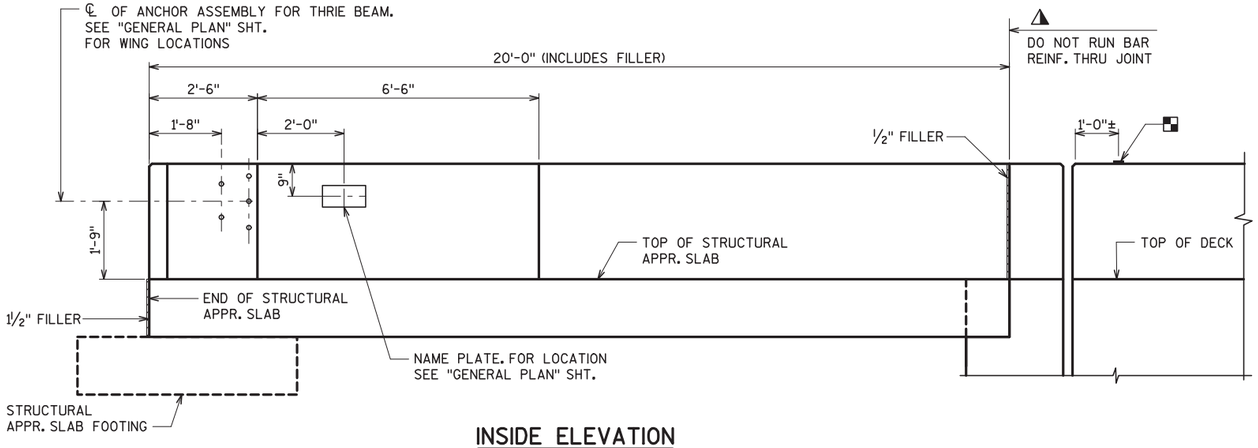
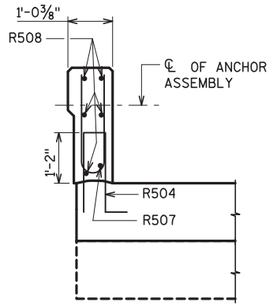
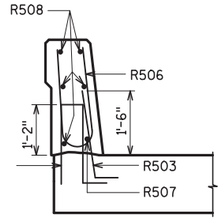


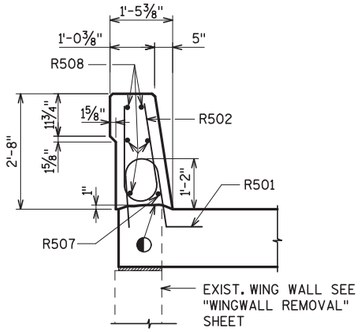
INSIDE ELEVATION



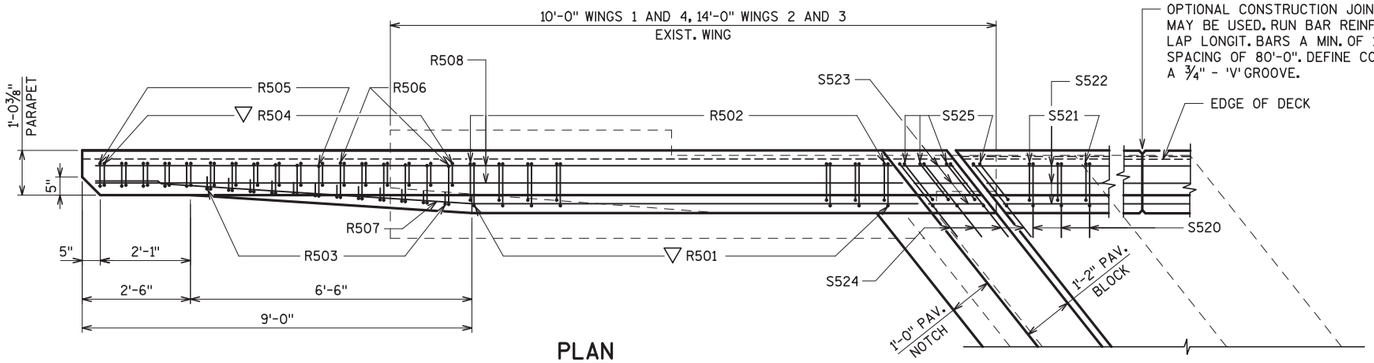
SECTION A-A



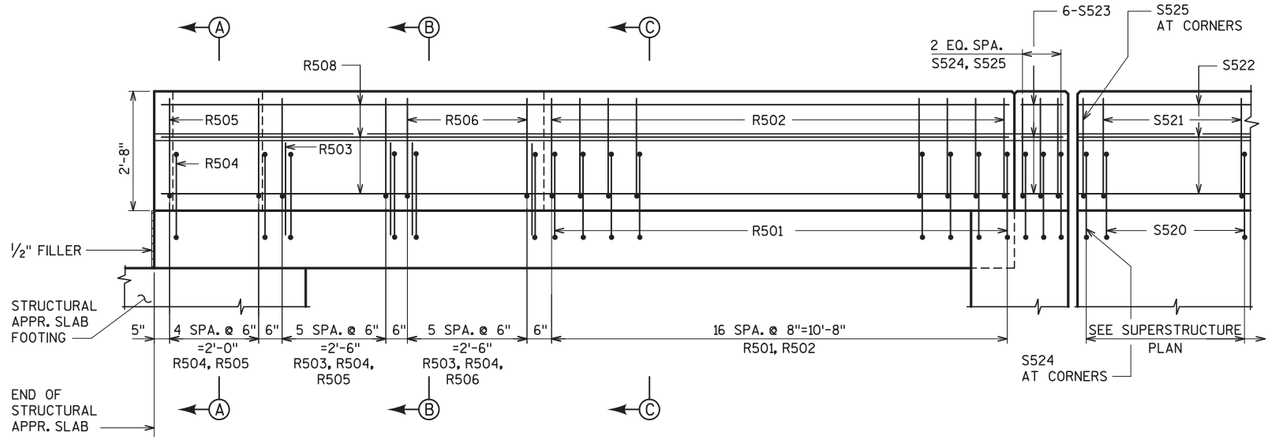
SECTION B-B



SECTION C-C



PLAN

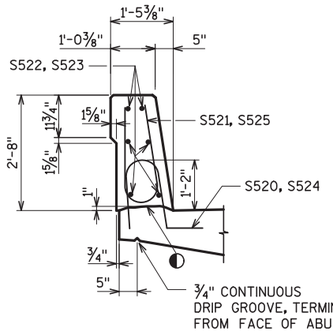


OUTSIDE ELEVATION

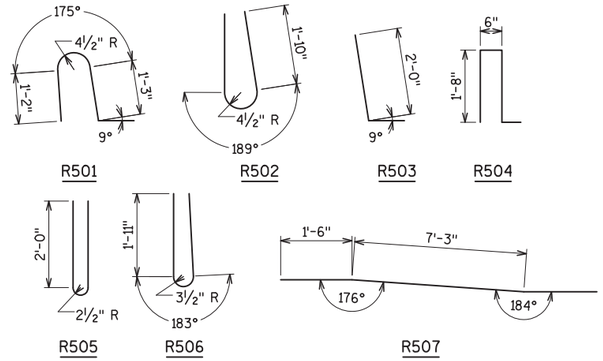
(WING NOT SHOWN FOR CLARITY)

BILL OF BARS

BAR MARK	COAT	NO. REQ'D S. APPR.	NO. REQ'D N. APPR.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	4'-5"	X	-	PARAPET VERT.
R502	X	34	34	5'-0"	X	-	PARAPET VERT.
R503	X	24	24	2'-9"	X	-	PARAPET VERT.
R504	X	34	34	4'-4"	X	-	PARAPET VERT.
R505	X	22	22	4'-9"	X	-	PARAPET VERT.
R506	X	12	12	4'-10"	X	-	PARAPET VERT.
R507	X	2	2	19'-5"	X	-	PARAPET HORIZ.
R508	X	10	10	19'-5"	-	-	PARAPET HORIZ.



SECTION THRU PARAPET ON BRIDGE



BENDING DIAGRAMS

LEGEND

- ■ BENCH MARK CAP (WHEN SUPPLIED).
- ◐ CONST. JOINT - STRIKE OFF AS SHOWN.
- ▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.
- ⚠ 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). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-37-159

DRAWN BY TB | PLANS CK'D. JRS/BDT

SINGLE SLOPE PARAPET 32SS

SHEET 14 OF 14

236

8

8

FILE NAME: F:\BDM-3212 USH 51\Marathon Co Structures\structuresfinal_Plans\B-37-159\dt837159_Parapet ss32.dgn
DATE: 9/22/2015 4:43:28 PM Plotted by: tlegear PEN TABLE: V8_STRUCTURAL_REV.TBL

TEMPORARY ROAD AT CTH WW NB

STATION	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
	Cut	Fill	Rock Exc	Cut	Fill	Rock Exc	Cut 1.00	Expanded Fill 1.25	Expanded Rock 1.10	CY
12+00	12	0	0	0.00	0.00	0	0	0	0	0
12+50	15	0	0	24.94	0.00	0	25	0	0	25
13+00	16	0	0	28.68	0.00	0	54	0	0	54
13+50	15	0	0	28.76	0.00	0	82	0	0	82
14+00	14	5	0	27.20	4.73	0	110	6	0	104
14+50	14	6	0	26.34	9.88	0	136	18	0	118
15+00	14	9	0	25.81	13.15	0	162	35	0	127
15+50	13	15	0	25.19	22.34	0	187	63	0	124
16+00	17	10	0	27.99	23.99	0	215	93	0	122
16+50	25	0	0	38.96	9.65	0	254	105	0	149
17+00	39	13	41	59.56	11.87	38	313	67	42	246
17+50	42	13	42	74.71	24.20	77	388	-8	126	396
18+00	51	14	59	85.70	25.12	94	474	-105	229	579
18+50	59	13	70	101.54	25.26	119	575	-238	361	813
19+00	67	13	84	116.10	24.93	143	691	-403	517	1094
19+50	70	12	87	126.53	23.36	158	818	-591	692	1409
20+00	81	7	136	139.63	17.44	206	958	-853	919	1811
20+50	67	6	113	136.63	11.70	231	1094	-1156	1172	2250
21+00	28	14	43	88.09	17.71	144	1182	-1332	1331	2515
21+50	7	43	0	32.62	52.73	40	1215	-1321	1375	2536
22+00	24	99	0	28.49	131.92	0	1243	-1156	1375	2400
22+50	15	144	0	36.40	225.11	0	1280	-875	1375	2155
23+00	11	164	0	24.19	285.33	0	1304	-518	1375	1822
23+50	8	151	0	17.67	291.39	0	1322	-154	1375	1476
24+00	7	146	0	14.68	274.49	0	1336	189	1375	1147
24+50	15	154	0	20.54	278.03	0	1357	537	1375	820
25+00	15	139	0	27.91	271.64	0	1385	876	1375	509
25+50	16	139	0	29.06	257.57	0	1414	1198	1375	216
26+00	17	143	0	30.17	260.91	0	1444	1524	1375	-80
26+50	17	138	0	30.82	260.19	0	1475	1850	1375	-375
27+00	15	120	0	28.89	239.71	0	1504	2149	1375	-645
27+50	20	104	0	32.24	207.42	0	1536	2408	1375	-872
28+00	20	82	0	37.63	171.82	0	1574	2623	1375	-1050
28+50	21	137	0	37.97	202.57	0	1612	2876	1375	-1265
29+00	23	158	0	40.88	272.69	0	1653	3217	1375	-1565
29+50	21	169	0	41.61	302.78	0	1694	3596	1375	-1902
30+00	23	180	0	40.98	323.22	0	1735	4000	1375	-2265
30+50	24	196	0	43.37	347.65	0	1778	4434	1375	-2656
31+00	22	224	0	42.31	388.36	0	1821	4920	1375	-3099
31+50	18	262	0	36.74	450.07	0	1858	5482	1375	-3625
32+00	18	260	0	32.98	483.52	0	1891	6087	1375	-4196
32+50	19	266	0	33.44	486.49	0	1924	6695	1375	-4771
33+00	17	286	0	33.31	510.29	0	1957	7333	1375	-5376
33+50	19	302	0	33.31	543.92	0	1991	8013	1375	-6022
34+00	22	296	0	37.28	553.82	0	2028	8705	1375	-6677
34+50	28	302	0	45.76	554.16	0	2074	9398	1375	-7324
35+00	27	291	0	50.55	549.49	0	2124	10085	1375	-7960
35+50	31	283	0	53.74	531.85	0	2178	10749	1375	-8571
36+00	33	335	0	59.06	572.38	0	2237	11465	1375	-9228
36+50	30	271	0	58.37	560.69	0	2295	12166	1375	-9870
37+00	3	241	0	31.03	473.85	0	2326	12758	1375	-10432
37+50	0	467	0	2.89	656.24	0	2329	13578	1375	-11249
TOTALS				2,329	12,238	1,250				

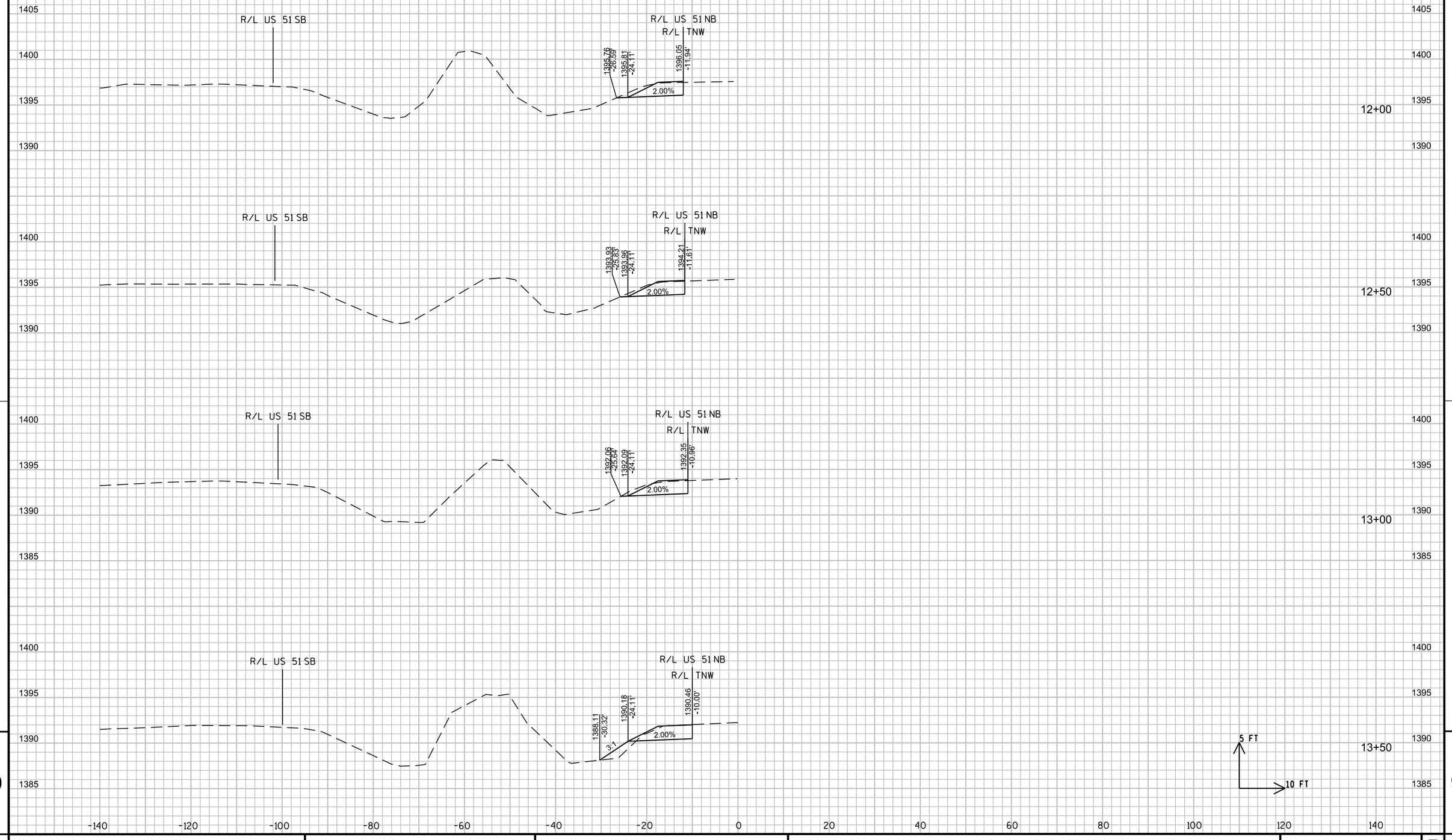
TEMPORARY ROAD AT CTH WW NB										
	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			
STATION	Cut	Fill	Rock Exc	Cut	Fill	Rock Exc	Cut	Expanded Fill 1.25	Expanded Rock 1.10	Mass Ordinate CY
39+50	0	100		0.00	0.00		0	0		0.00
40+00	49	208		45.26	285.26		45	357		-311
40+50	45	209		86.62	385.69		132	839		-707
41+00	50	213		87.84	390.69		220	1327		-1107
41+50	58	213		100.19	394.75		320	1820		-1501
42+00	65	201		114.28	383.11		434	2299		-1865
42+50	78	196		132.64	367.66		567	2759		-2192
43+00	84	205		149.41	371.71		716	3224		-2507
43+50	84	174		155.06	350.73		871	3662		-2791
44+00	86	156		157.75	305.73		1029	4044		-3015
44+50	109	137		180.74	271.53		1210	4384		-3174
45+00	113	111		205.43	229.20		1415	4670		-3255
45+50	116	85		211.80	181.44		1627	4897		-3270
46+00	120	67		218.42	140.54		1845	5073		-3227
46+50	111	50		213.94	107.72		2059	5207		-3148
47+00	100	36		194.86	79.33		2254	5306		-3052
47+50	78	27		164.32	58.03		2419	5379		-2960
48+00	41	23		110.11	45.93		2529	5436		-2908
48+50	20	17		56.40	36.94		2585	5483		-2897
49+00	25	20		41.72	33.94		2627	5525		-2898
49+50	21	24		43.19	40.17		2670	5575		-2905
50+00	22	17		40.24	37.56		2710	5622		-2912
50+50	21	9		39.90	24.26		2750	5652		-2902
51+00	19	7		37.48	14.98		2788	5671		-2884
51+50	20	3		36.34	8.79		2824	5682		-2858
52+00	22	0		38.67	2.59		2863	5685		-2823
52+50	18	0		37.40	0.09		2900	5685		-2785
53+00	18	0		33.30	0.04		2933	5686		-2752
53+50	19	0		33.36	0.00		2967	5686		-2719
54+00	18	0		33.69	0.00		3000	5686		-2685
54+50	17	0		32.19	0.00		3033	5686		-2653
55+00	18	0		31.91	0.00		3064	5686		-2621
55+50	15	0		30.17	0.00		3095	5686		-2591
TOTALS				3,095	4,548					

TEMPORARY ROAD AT CTH WW SB										
	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			
STATION	Cut	Fill	Rock Exc	Cut	Fill	Rock Exc	Cut	Expanded Fill 1.25	Expanded Rock 1.10	Mass Ordinate CY
12+00	16	0	0	0.00	0.00	0	0	0	0	0.00
12+50	15	0	0	28.03	0.00	0	28	0	0	28
13+00	15	0	0	27.02	0.00	0	55	0	0	55
13+50	16	0	0	28.19	0.00	0	83	0	0	83
14+00	14	1	0	27.80	1.30	0	111	2	0	109
14+50	14	6	0	26.36	7.08	0	137	10	0	127
15+00	15	10	0	27.35	14.70	0	165	29	0	136
15+50	16	13	0	28.69	20.50	0	193	54	0	139
16+00	16	15	0	29.15	25.06	0	223	86	0	137
16+50	50	13	68	60.87	25.61	63	283	118	69	252
17+00	39	9	44	82.94	20.20	104	366	143	183	452
17+50	52	6	71	84.97	13.40	106	451	160	300	667
18+00	59	6	72	102.74	10.86	132	554	173	446	938
18+50	48	9	66	98.84	14.19	128	653	191	587	1195
19+00	39	15	37	80.28	22.54	95	733	219	692	1378
19+50	29	17	15	62.24	29.25	48	795	256	745	1470
20+00	28	16	5	52.40	29.83	19	848	293	765	1511
20+50	34	17	0	57.43	30.04	5	905	331	770	1537
21+00	28	22	0	57.32	35.80	0	963	375	770	1550
21+50	26	18	0	50.16	37.07	0	1013	422	770	1553
22+00	22	15	0	44.46	30.32	0	1057	460	770	1560
22+50	8	19	0	27.55	30.60	0	1085	498	770	1549
23+00	9	17	0	15.74	32.46	0	1101	539	770	1524
23+50	10	13	0	17.67	27.03	0	1118	572	770	1508
24+00	11	11	0	19.86	22.10	0	1138	600	770	1501
24+50	12	13	0	21.65	22.23	0	1160	628	770	1494
25+00	9	10	0	19.70	20.85	0	1179	654	770	1488
25+50	3	4	0	11.60	12.55	0	1191	669	770	1484
26+00	0	0	0	3.05	3.52	0	1194	674	770	1483
TOTALS				1,194	539	700				

TEMPORARY ROAD AT CTH WW SB										
	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			
STATION	Cut	Fill	Rock Exc	Cut	Fill	Rock Exc	Cut	Expanded Fill 1.25	Expanded Rock 1.10	Mass Ordinate CY
41+00	0	0	0	0.00	0.00	0	0	0	0	0.00
41+50	0	5	0	0.00	5.04	0	0	6	0	-6
42+00	0	21	0	0.00	24.77	0	0	37	0	-37
42+50	0	47	0	0.00	63.13	0	0	116	0	-116
43+00	0	81	0	0.00	118.54	0	0	264	0	-264
43+50	0	123	0	0.00	188.75	0	0	500	0	-500
44+00	0	172	0	0.00	272.69	0	0	841	0	-841
44+50	0	222	0	0.00	364.47	0	0	1297	0	-1297
45+00	0	279	0	0.00	463.79	0	0	1876	0	-1876
45+50	0	332	0	0.00	565.82	0	0	2584	0	-2584
46+00	9	375	0	7.92	654.51	0	8	3402	0	-3394
46+50	17	369	0	23.39	688.56	0	31	4263	0	-4231
47+00	20	361	0	33.90	675.69	0	65	5107	0	-5042
47+50	15	330	0	32.51	639.48	0	98	5907	0	-5809
48+00	15	292	0	28.11	575.39	0	126	6626	0	-6500
48+50	16	249	0	28.52	500.59	0	154	7252	0	-7097
49+00	15	177	0	28.06	394.45	0	182	7745	0	-7562
49+50	15	121	0	27.75	276.32	0	210	8090	0	-7880
50+00	16	67	0	28.56	174.55	0	239	8308	0	-8069
50+50	16	28	0	29.47	88.36	0	268	8419	0	-8150
51+00	17	12	0	31.04	37.06	0	299	8465	0	-8166
51+50	18	4	0	32.19	14.39	0	331	8483	0	-8152
52+00	18	1	0	32.66	4.53	0	364	8489	0	-8125
52+50	15	1	0	30.63	1.72	0	395	8491	0	-8096
53+00	13	0	0	26.68	0.99	0	421	8492	0	-8071
53+50	14	0	0	25.82	0.31	0	447	8492	0	-8045
54+00	17	0	0	29.34	0.00	0	477	8492	0	-8016
54+50	12	0	0	27.09	0.00	0	504	8492	0	-7989
55+00	10	0	0	20.55	0.00	0	524	8492	0	-7968
55+50	10	0	0	18.85	0.00	0	543	8492	0	-7949
TOTALS				543	6,794	0				

FINAL GRADING							
	AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		
STATION	Cut	Fill	Cut	Fill	Cut	Expanded Fill 1.30	Mass Ordinate CY
179+00	24	7	0.00	0.00	0	0	0.00
179+50	27	10	47.44	15.06	47	20	28
180+00	24	10	47.74	18.39	95	43	52
180+50	27	13	47.21	21.18	142	71	71
181+00	36	9	57.85	19.90	200	97	103
181+50	36	0	66.26	8.25	267	108	159
182+00	50	0	79.32	0.00	346	108	238
182+50	58	0	99.79	0.00	446	108	338
183+00	88	0	134.96	0.00	581	108	473
183+50	81	0	156.62	0.00	737	108	630
184+00	90	0	158.23	0.00	895	108	788
184+50	100	0	175.41	0.00	1071	108	963
185+00	120	0	203.15	0.00	1274	108	1166
185+50	124	0	225.17	0.01	1499	108	1392
186+00	137	0	241.01	0.01	1740	108	1633
186+50	132	0	249.17	0.00	1989	108	1882
187+00	140	0	252.26	0.28	2242	108	2134
187+50	132	1	251.56	0.88	2493	109	2384
188+00	124	3	237.05	3.37	2730	114	2617
188+50	130	10	235.56	11.73	2966	129	2837
189+00	179	22	286.40	29.11	3252	167	3086
189+50	221	16	370.86	35.36	3623	213	3410
190+00	226	18	414.10	31.87	4037	254	3783
190+50	228	15	420.19	30.56	4457	294	4164
191+00	233	12	426.79	24.73	4884	326	4558
191+50	221	17	420.90	26.15	5305	360	4945
192+00	213	16	402.25	30.47	5707	399	5308
192+50	216	19	397.46	32.68	6105	442	5663
193+00	200	26	385.12	41.40	6490	496	5994
193+50	198	25	367.97	47.03	6858	557	6301
194+00	186	22	355.24	43.81	7213	614	6599
194+50	97	24	261.82	42.44	7475	669	6806
195+00	174	22	250.75	41.97	7726	724	7002
195+50	207	24	352.62	42.64	8078	779	7299
196+00	227	21	401.39	42.12	8480	834	7646
196+50	232	18	424.69	36.65	8904	881	8023
197+00	254	16	449.83	31.71	9354	923	8431
197+50	278	17	492.56	30.07	9847	962	8885
198+00	298	16	533.76	29.71	10380	1000	9380
198+50	318	15	570.22	28.00	10951	1037	9914
199+00	327	14	596.83	26.87	11548	1072	10476
199+50	342	13	619.25	25.28	12167	1105	11062
200+00	357	13	647.36	24.13	12814	1136	11678
200+50	361	11	665.33	22.19	13479	1165	12315
201+00	355	15	662.88	23.75	14142	1196	12947
201+50	364	18	665.36	30.74	14808	1236	13572
202+00	380	18	688.32	34.12	15496	1280	14216
202+50	400	18	721.42	34.15	16217	1324	14893
203+00	367	20	710.30	35.24	16928	1370	15558
203+50	294	22	612.29	38.94	17540	1421	16119
204+00	0	0	272.02	20.80	17812	1448	16364
204+50	0	0	0.00	0.00	17812	1448	16364
TOTALS			17,812	1,114			

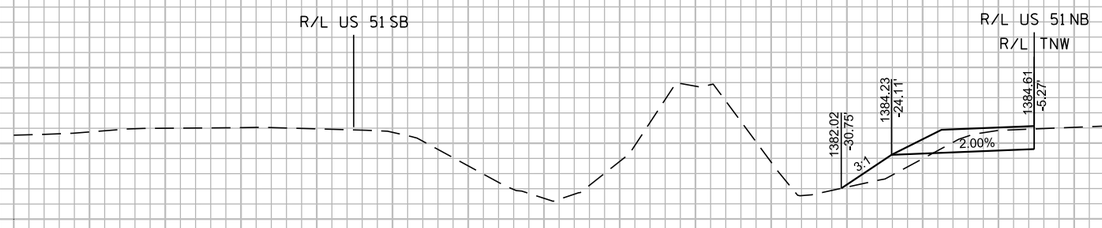
FINAL GRADING							
	AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		
STATION	Cut	Fill	Cut	Fill	Cut	Expanded Fill 1.30	Mass Ordinate CY
206+50	41	34	0.00	0.00	0	0	0.00
207+00	265	35	282.97	63.89	283	83	200
207+50	261	36	486.69	66.24	770	169	600
208+00	270	39	492.04	69.62	1262	260	1002
208+50	283	41	512.57	74.28	1774	356	1418
209+00	299	44	539.27	79.44	2314	460	1854
209+50	314	43	567.39	80.88	2881	565	2316
210+00	323	39	589.03	76.28	3470	664	2806
210+50	326	33	600.88	66.93	4071	751	3320
211+00	337	24	614.28	52.92	4685	820	3866
211+50	365	15	650.52	36.69	5336	867	4468
212+00	366	8	677.39	21.64	6013	895	5118
212+50	366	2	678.05	9.55	6691	908	5783
213+00	371	0	682.47	2.39	7374	911	6463
213+50	365	0	681.22	0.24	8055	911	7144
214+00	346	0	658.28	0.00	8713	911	7802
214+50	330	0	626.37	0.00	9339	911	8428
215+00	316	0	598.06	0.00	9937	911	9026
215+50	253	0	526.48	0.00	10464	911	9553
216+00	221	0	439.19	0.00	10903	911	9992
216+50	148	0	342.01	0.00	11245	911	10334
217+00	102	6	231.42	5.69	11477	919	10558
217+50	81	2	169.28	7.87	11646	929	10717
218+00	55	0	125.99	2.57	11772	932	10840
218+50	49	0	96.06	0.40	11868	933	10935
219+00	45	0	87.06	0.00	11955	933	11022
219+50	35	0	74.61	0.00	12030	933	11097
220+00	33	0	63.40	0.00	12093	933	11160
220+50	38	0	66.00	0.00	12159	933	11226
221+00	36	0	68.11	0.04	12227	933	11294
221+50	0	0	32.92	0.04	12260	933	11327
222+00	0	0	0.00	0.00	12260	933	11327
222+50	0	0	0.00	0.00	12260	933	11327
TOTALS			12,260	718			

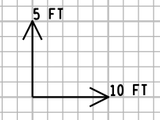


PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 243	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090201_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21





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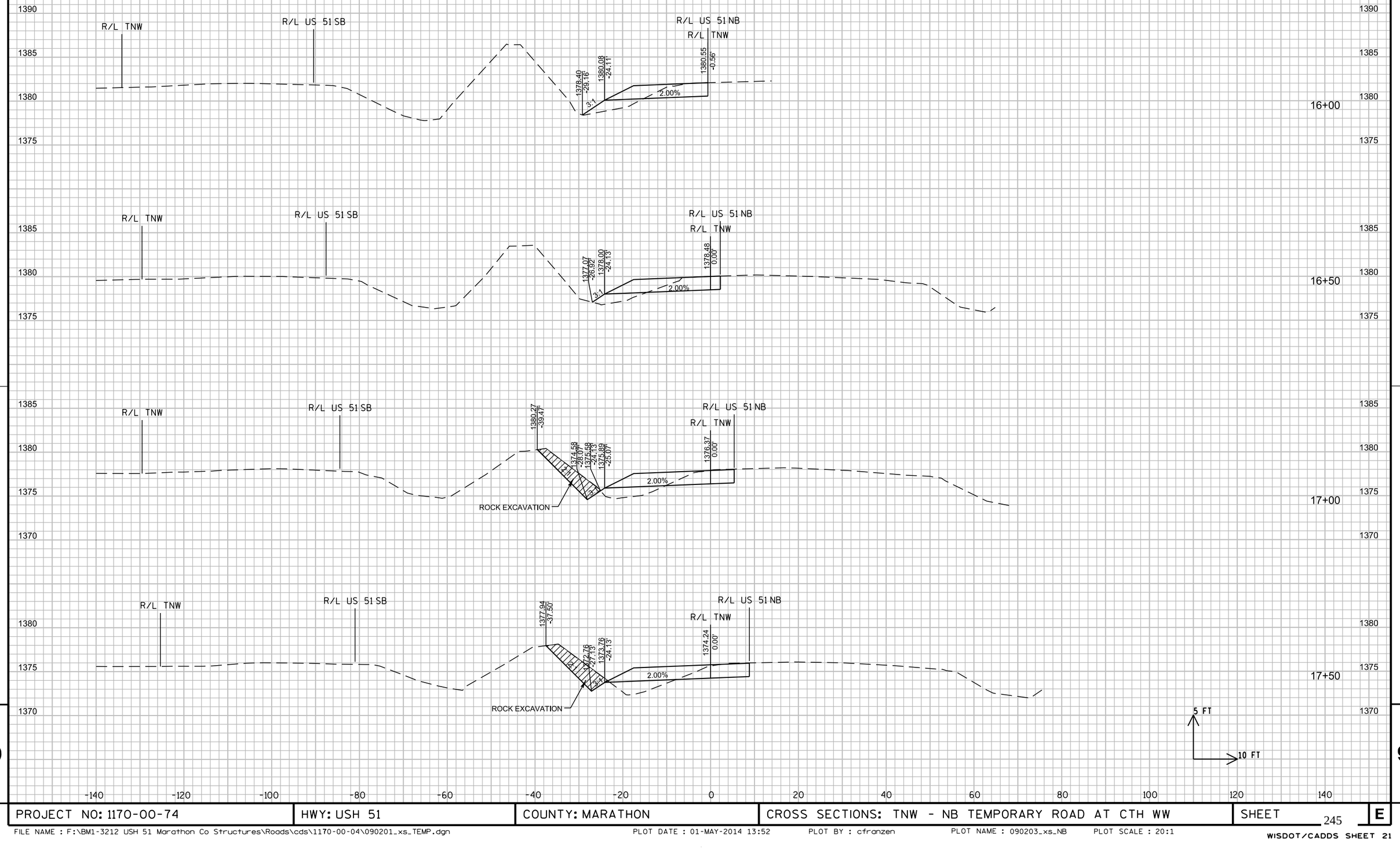
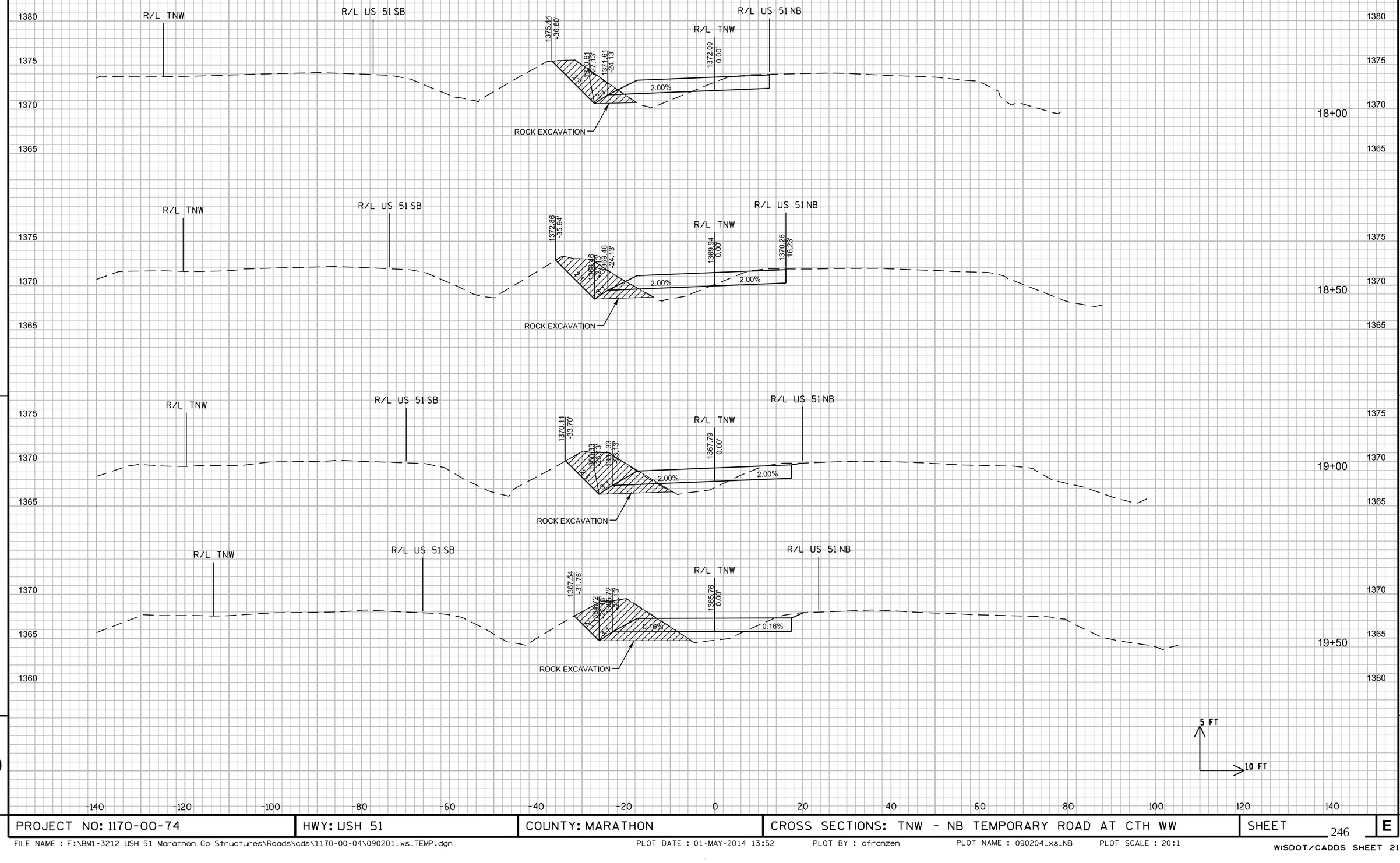
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 244	E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 245	E

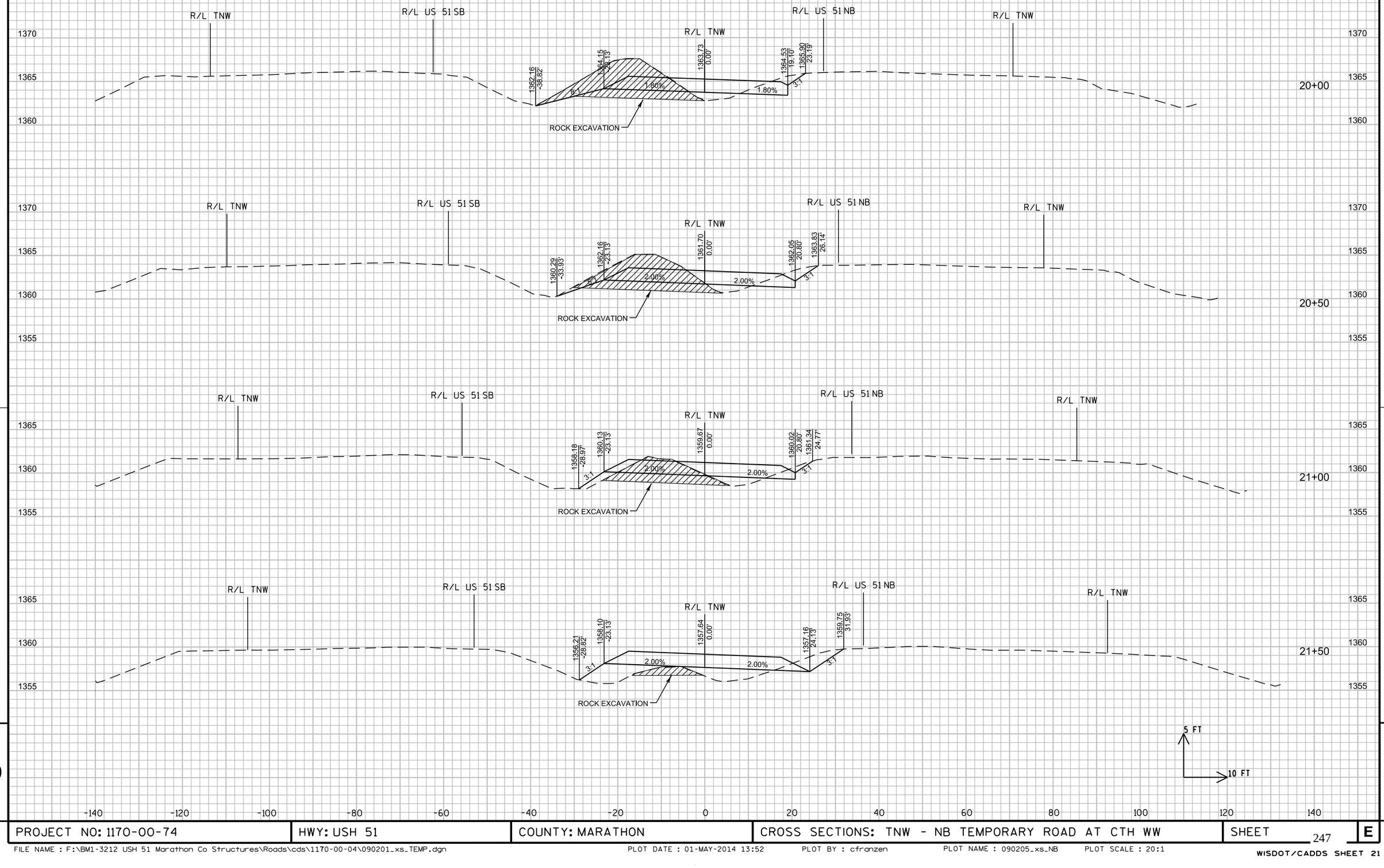
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090203_xs_NB PLOT SCALE : 20:1



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 246 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090204_xs_NB PLOT SCALE : 20:1

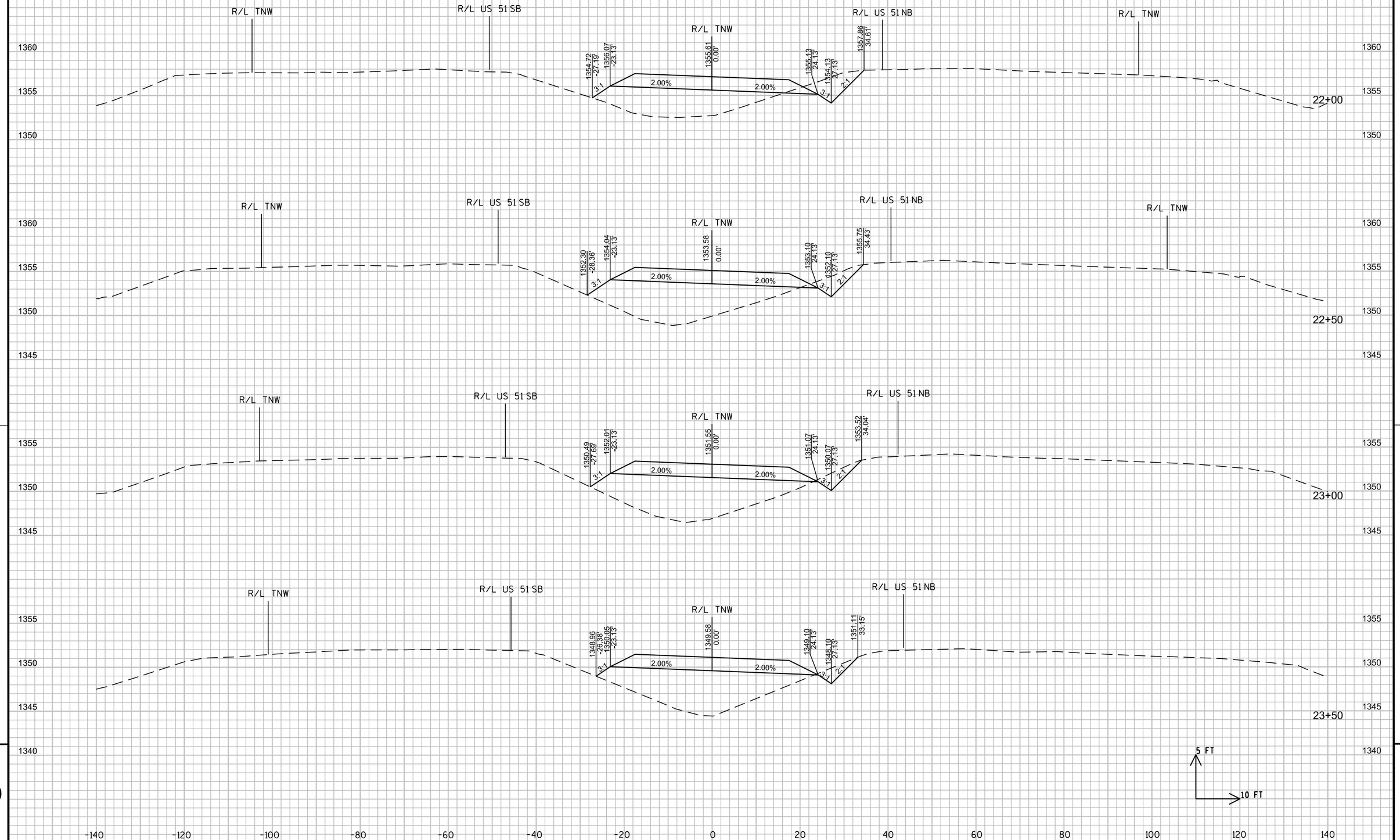
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 247 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090205_xs_NB PLOT SCALE : 20:1

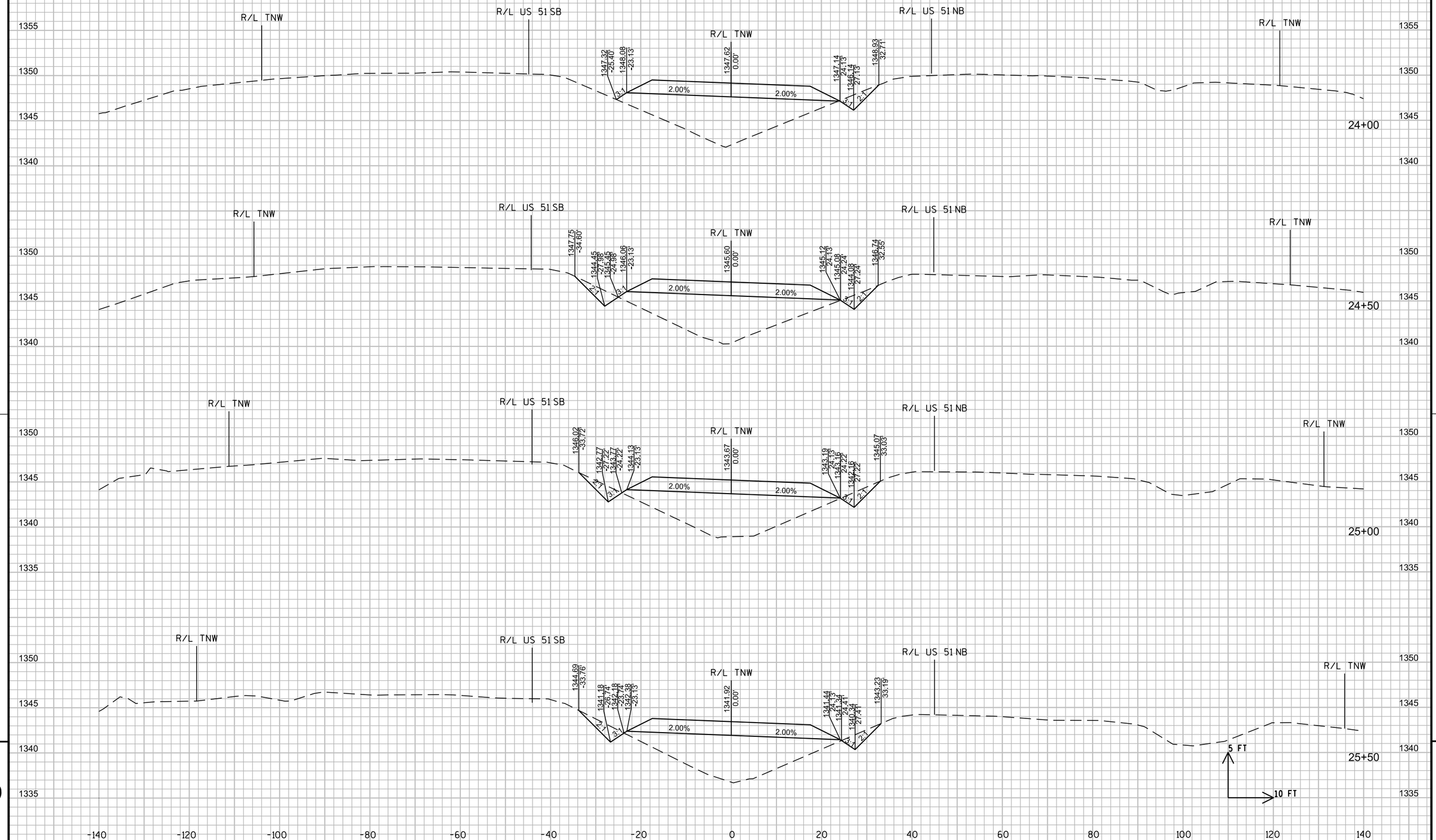
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 248	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090206_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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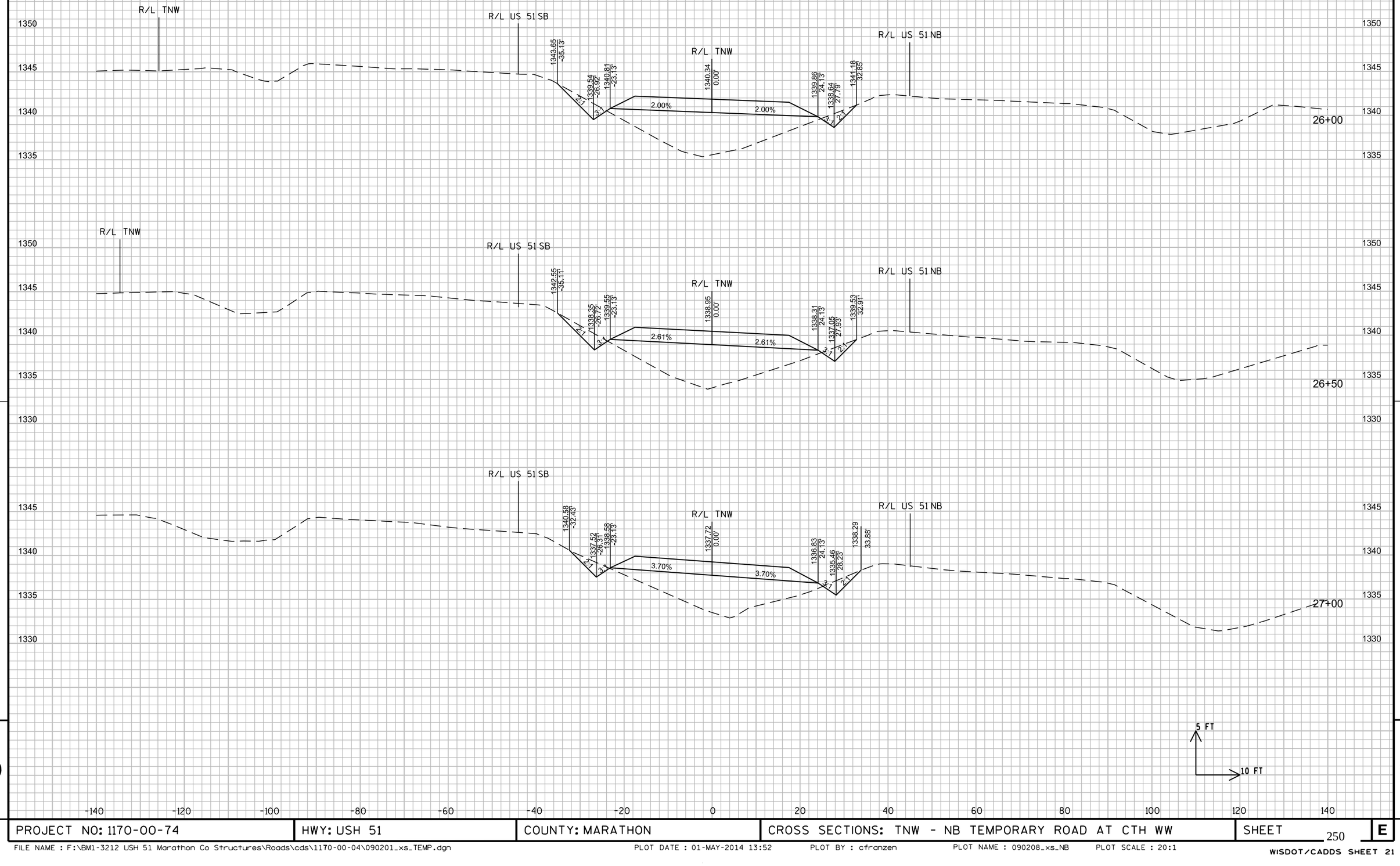
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 249	E

9

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090207_xs_NB PLOT SCALE : 20:1

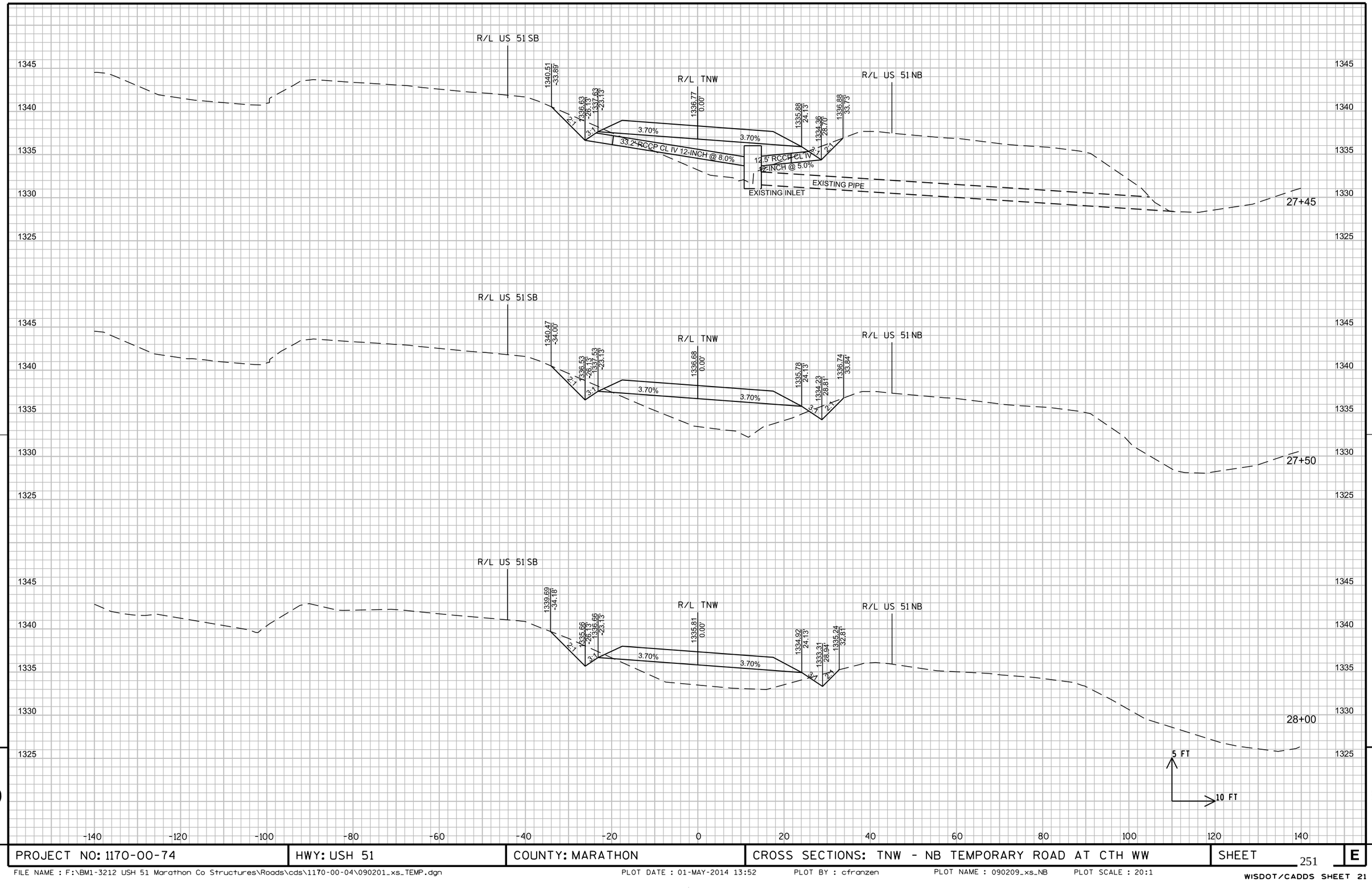
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 250 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090208_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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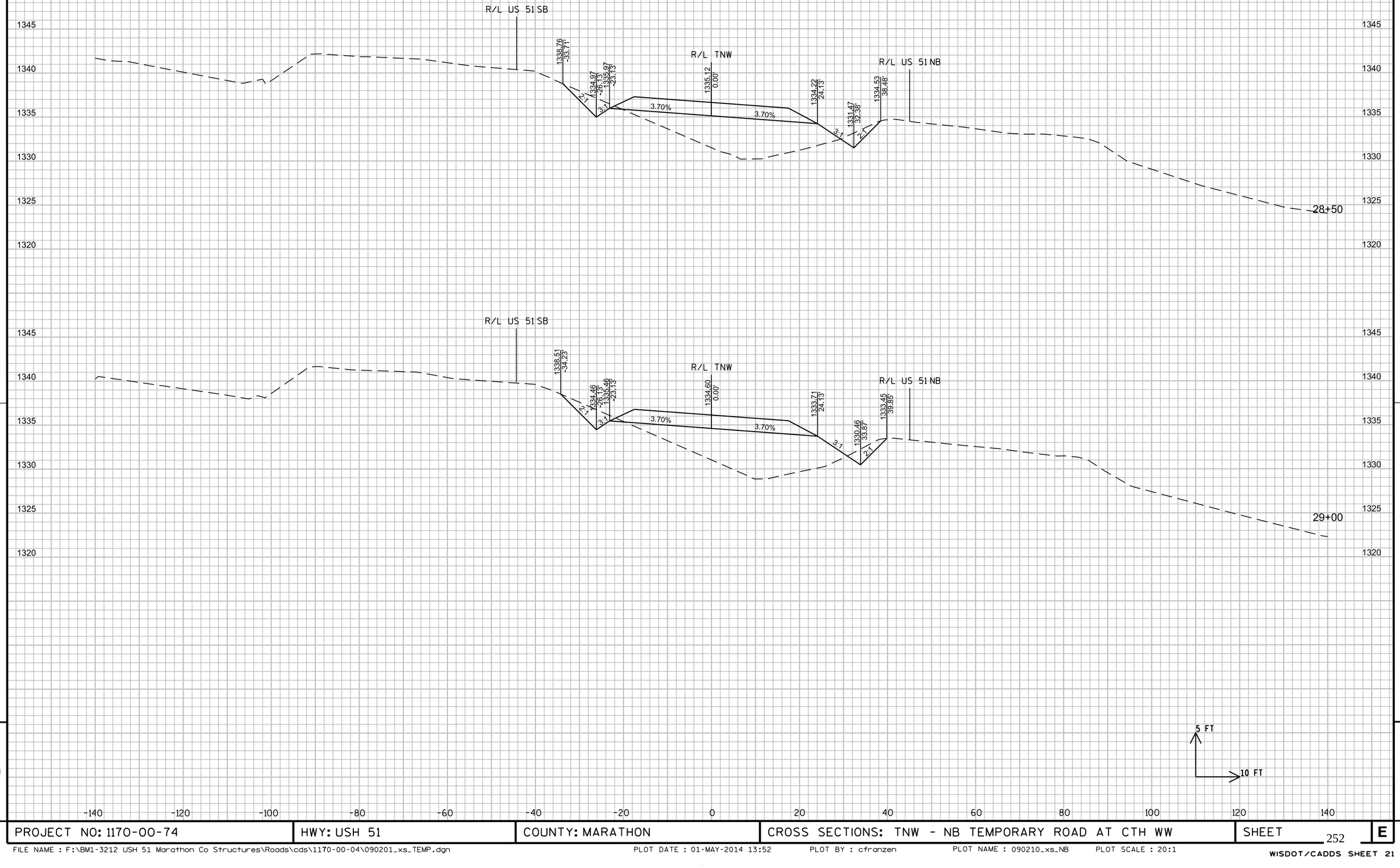
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 251	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090209_xs_NB PLOT SCALE : 20:1

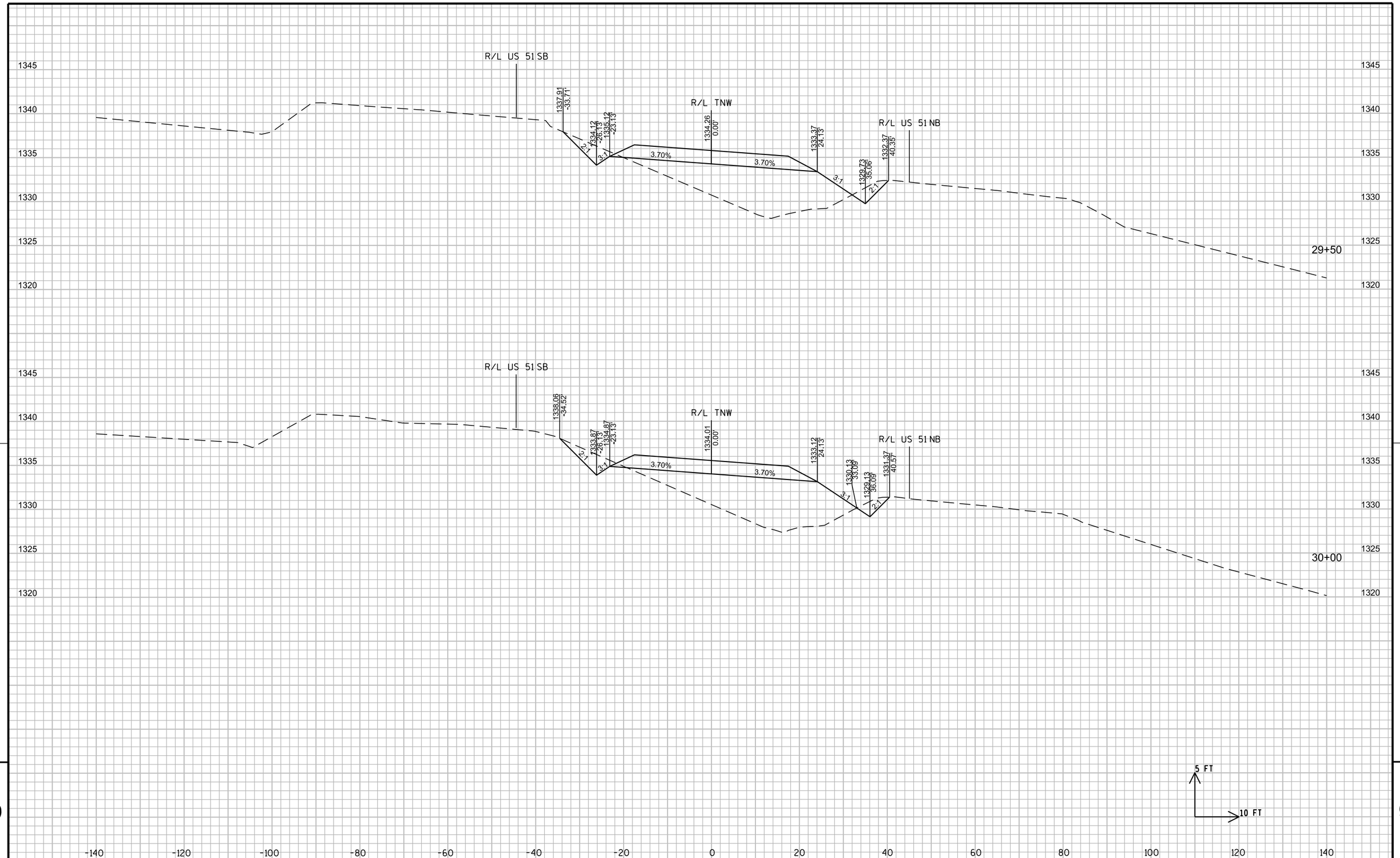
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 252 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090210_xs_NB PLOT SCALE : 20:1

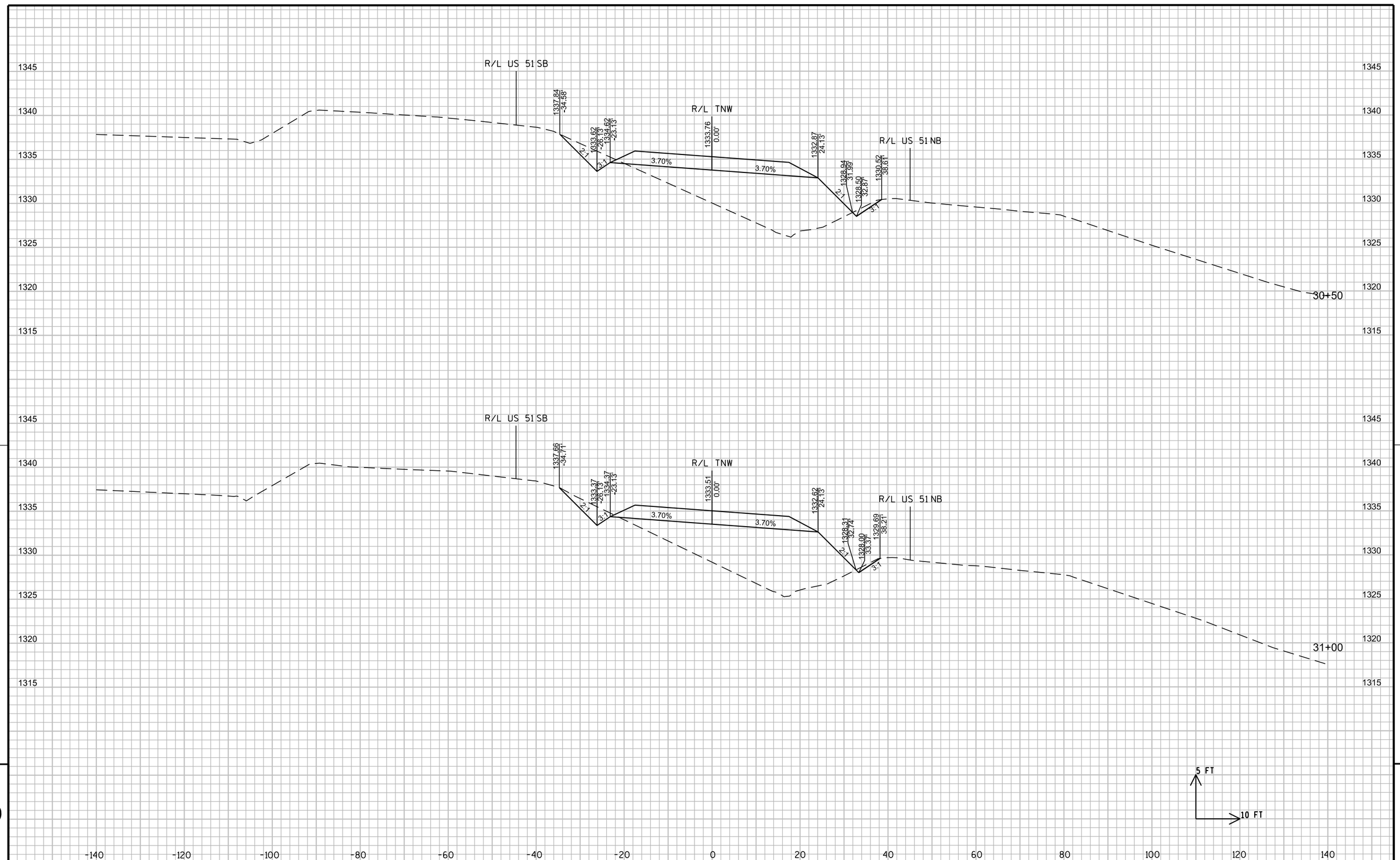
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 253 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090211_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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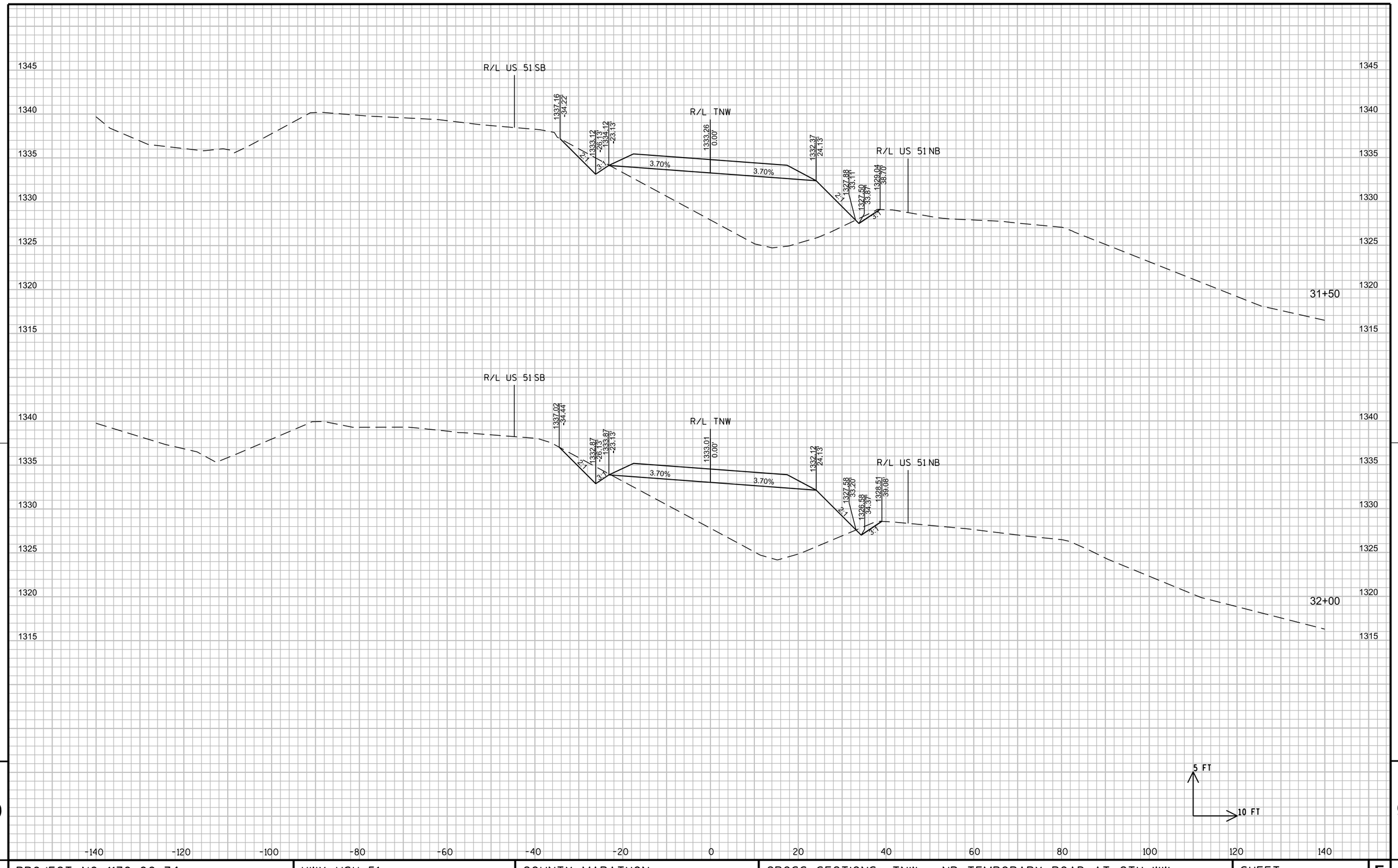
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 254	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090212_xs_NB PLOT SCALE : 20:1

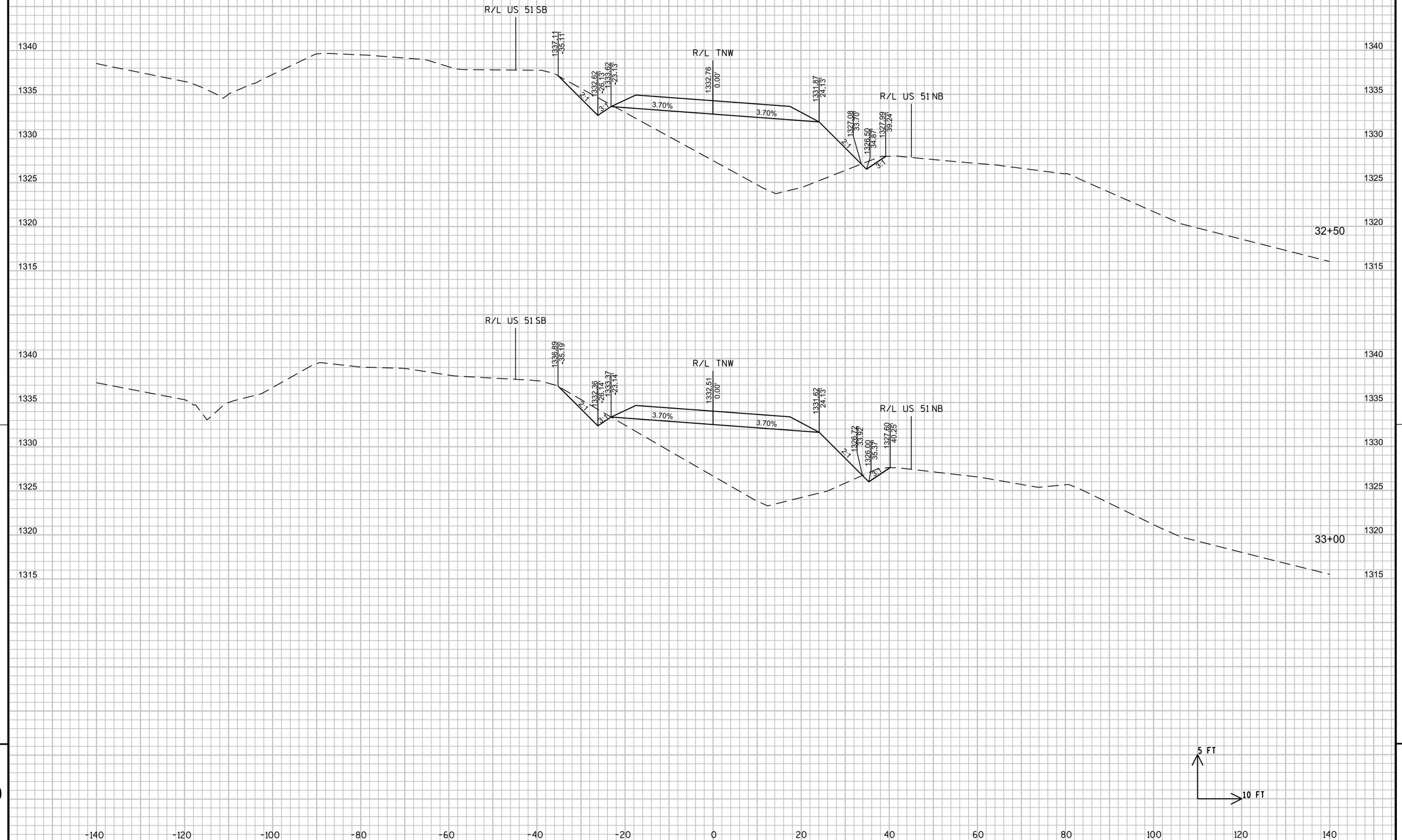
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 255 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090213_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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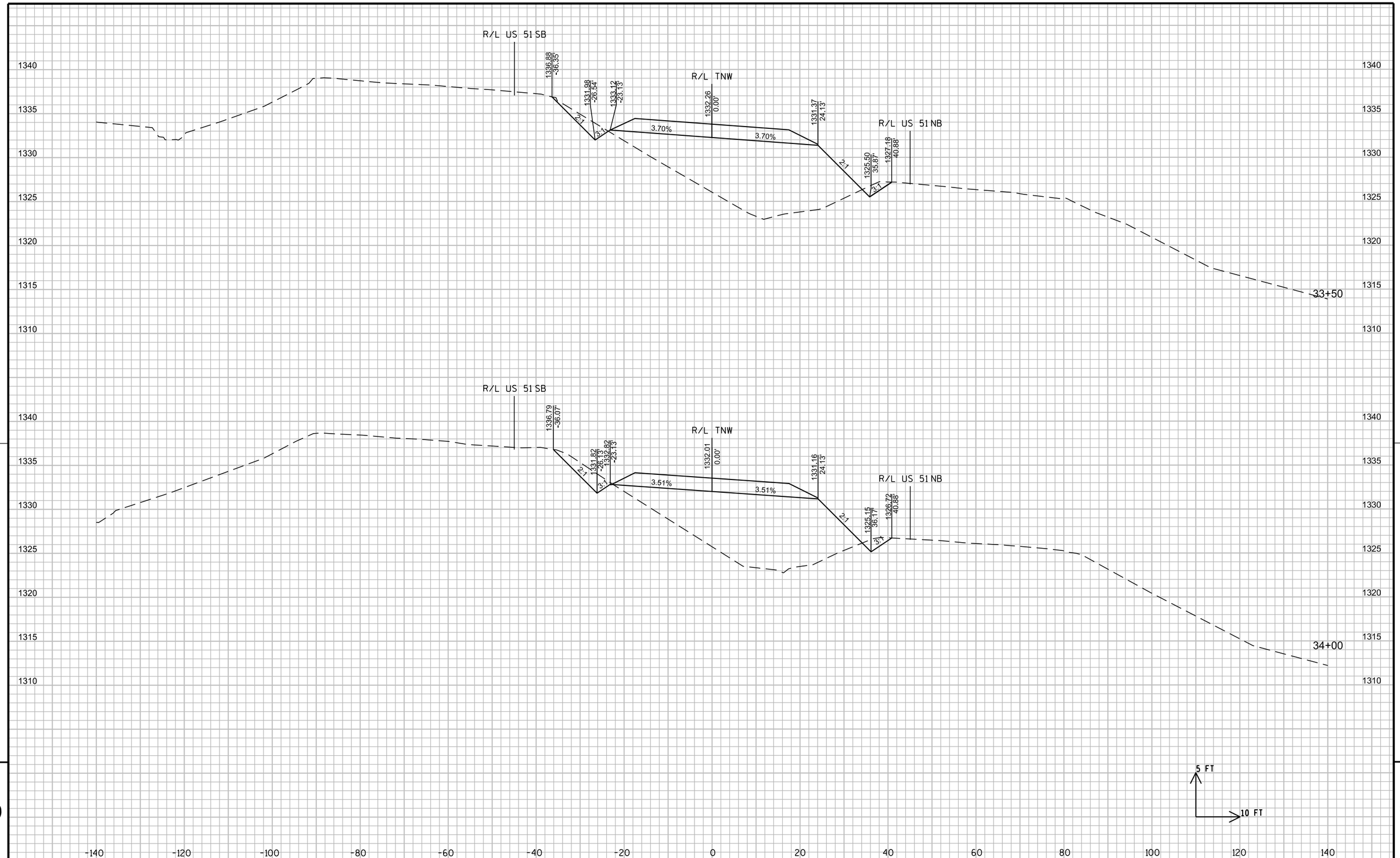
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 256	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090214_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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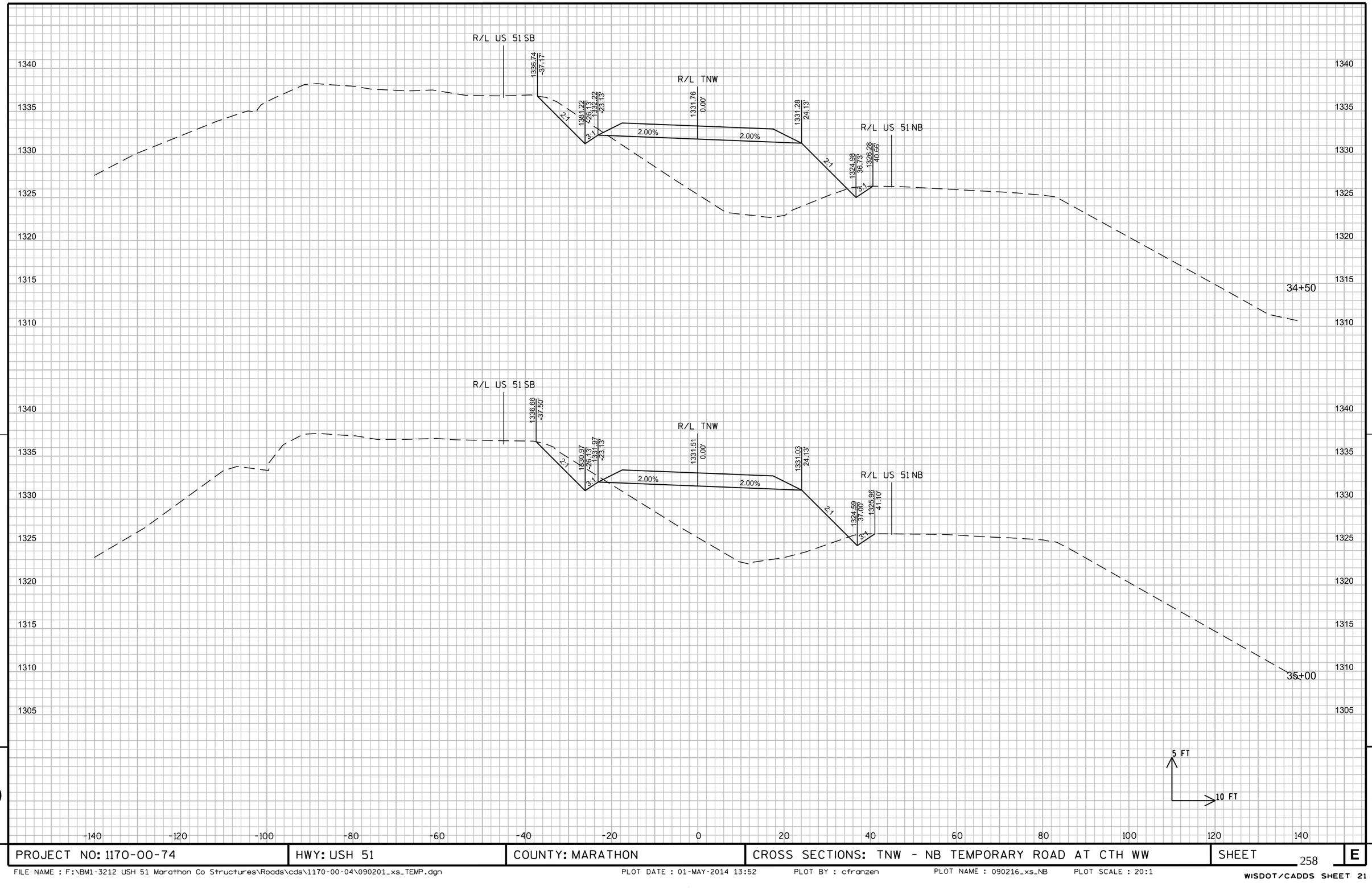
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 257	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090215_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

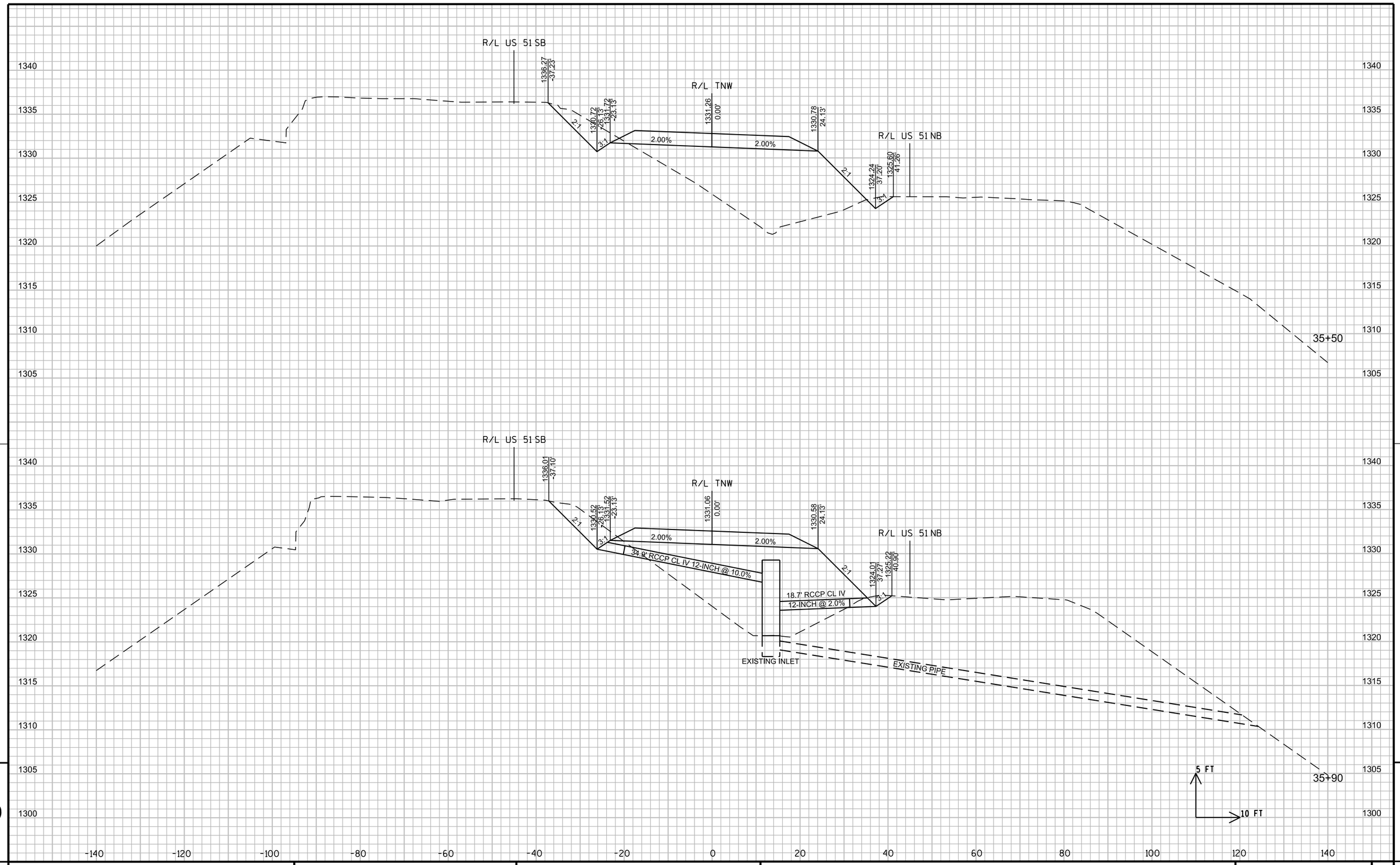


9

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 258 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090216_xs_NB PLOT SCALE : 20:1

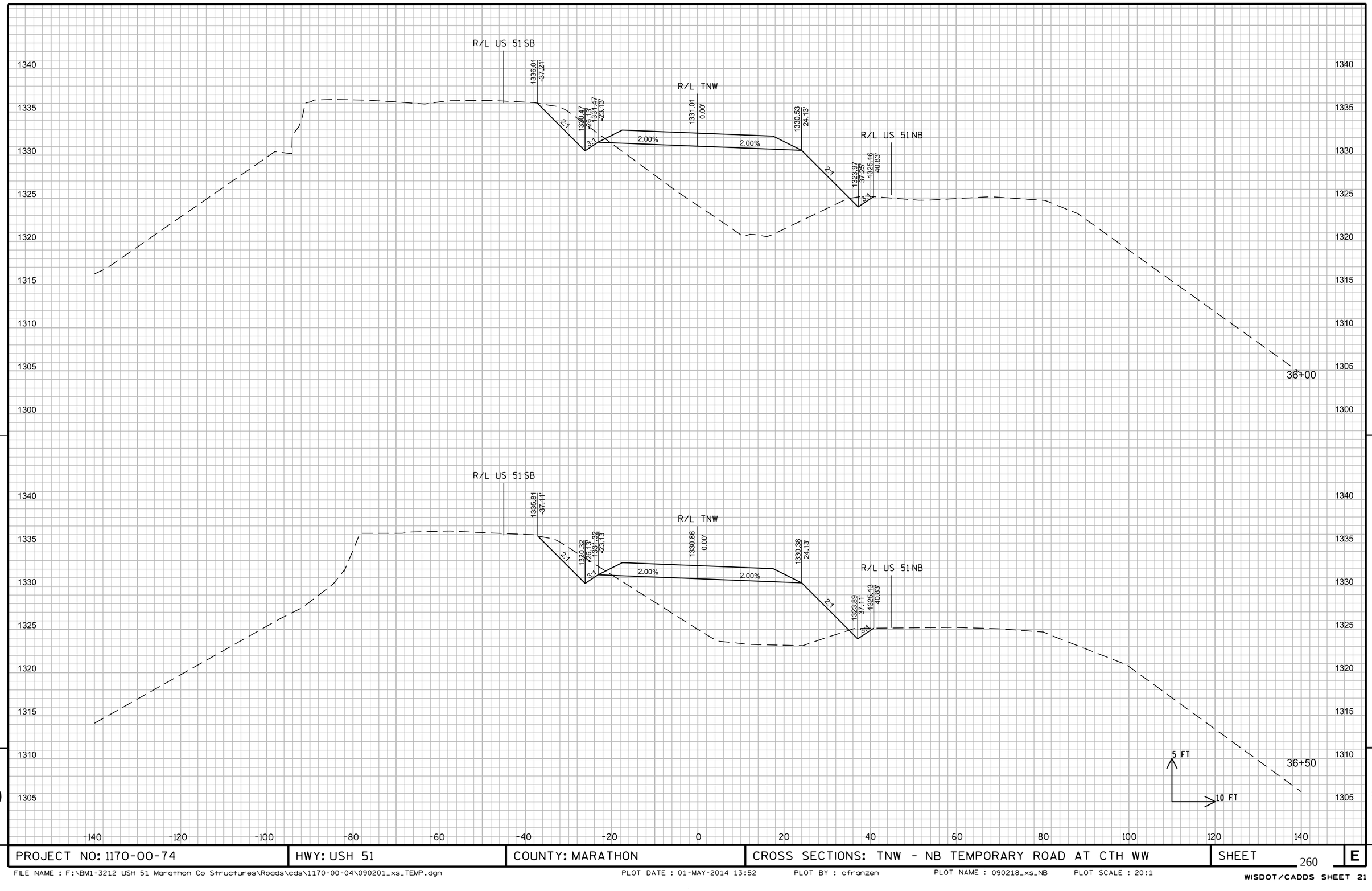
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 259 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090217_xs_NB PLOT SCALE : 20:1

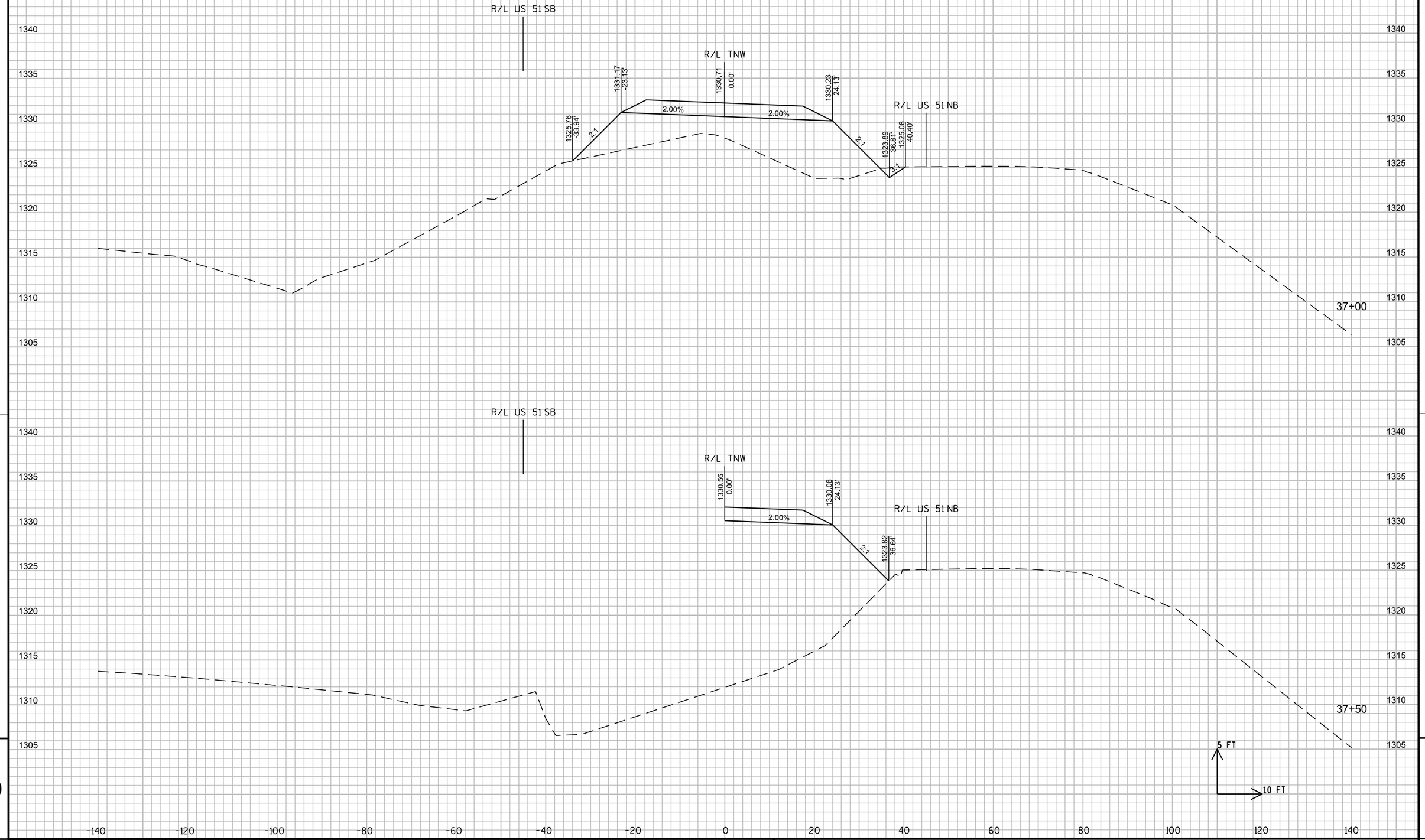
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 260 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090218_xs_NB PLOT SCALE : 20:1

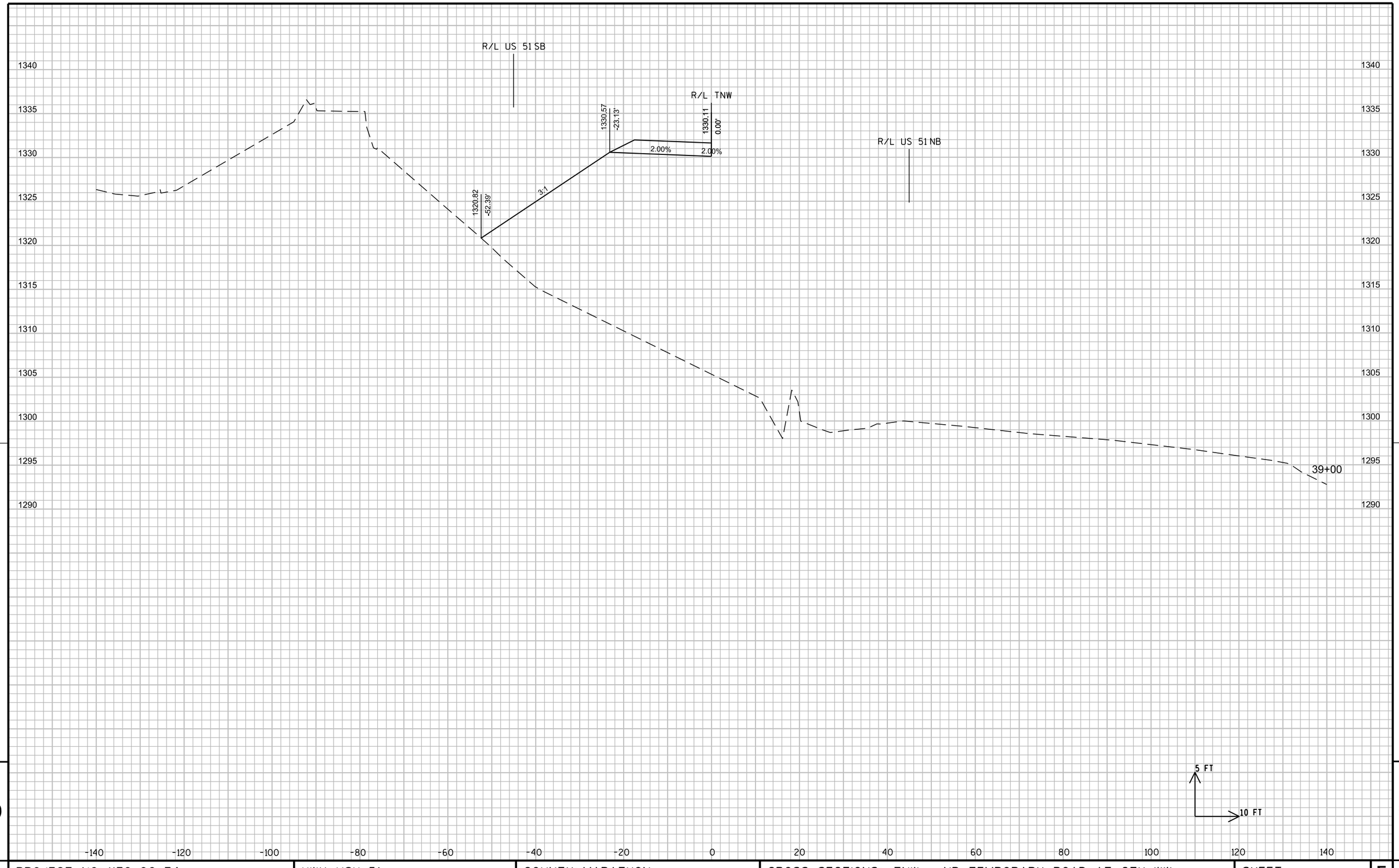
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090219_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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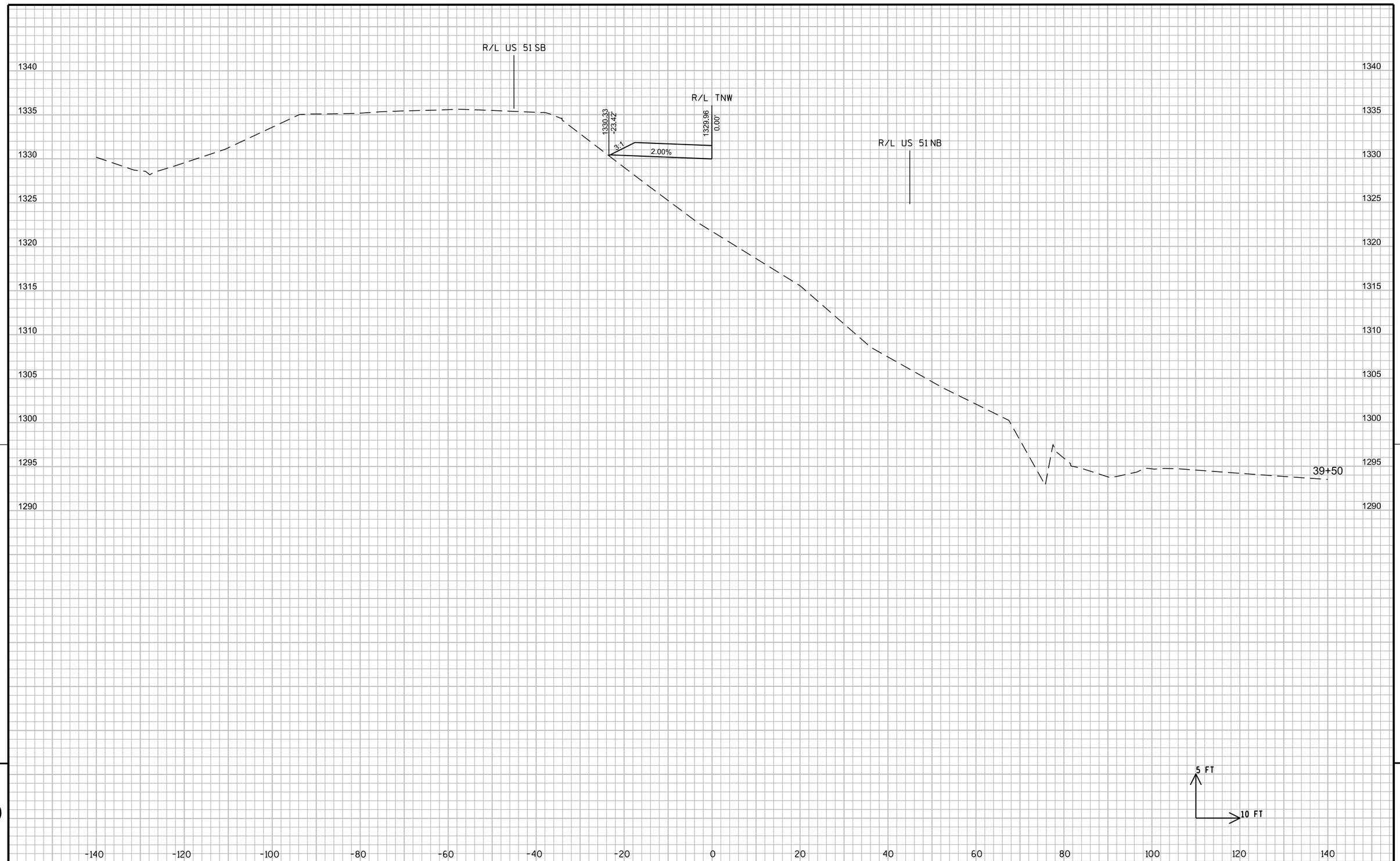
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 262	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090222_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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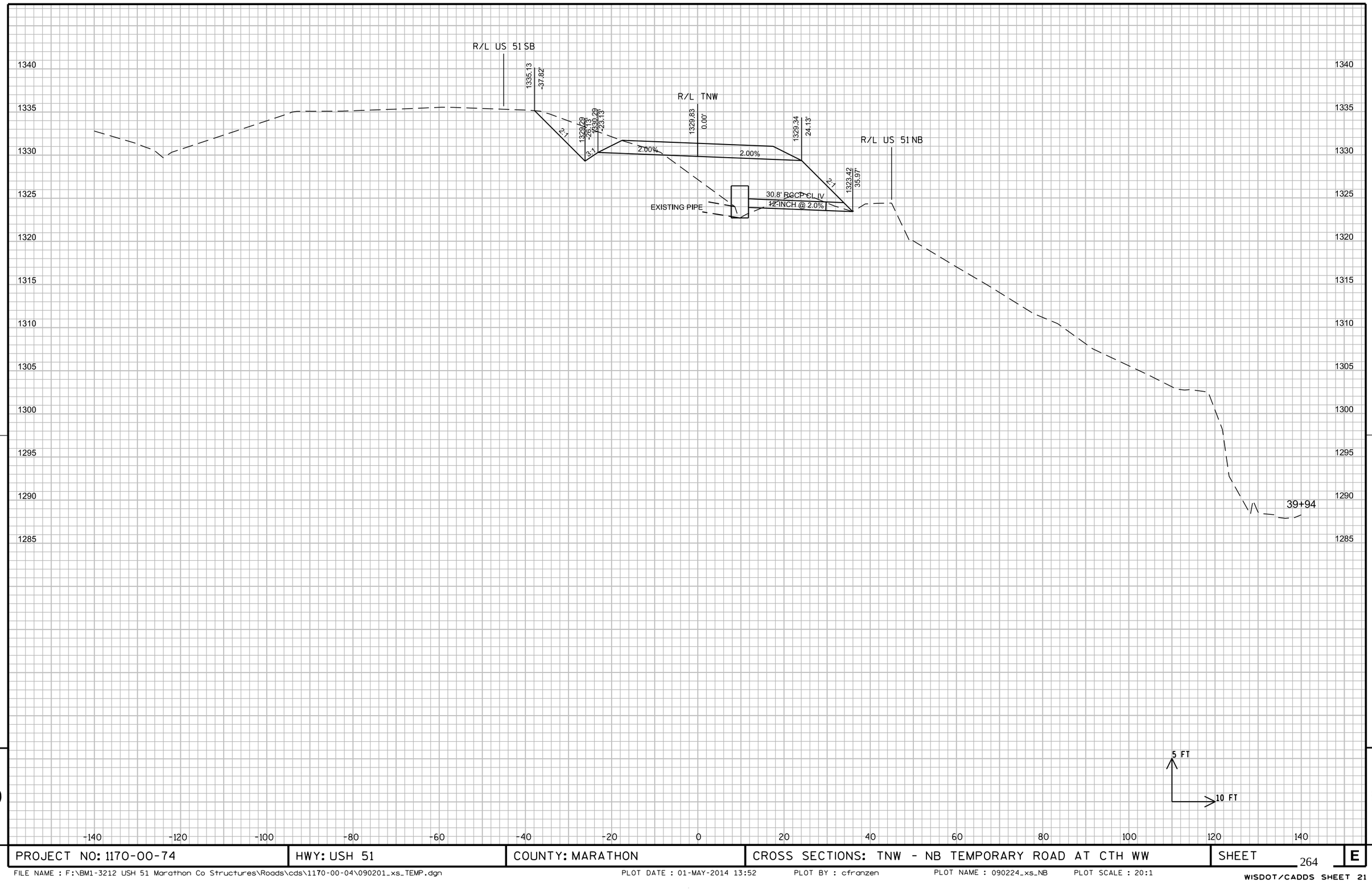
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 263	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090223_xs_NB PLOT SCALE : 20:1

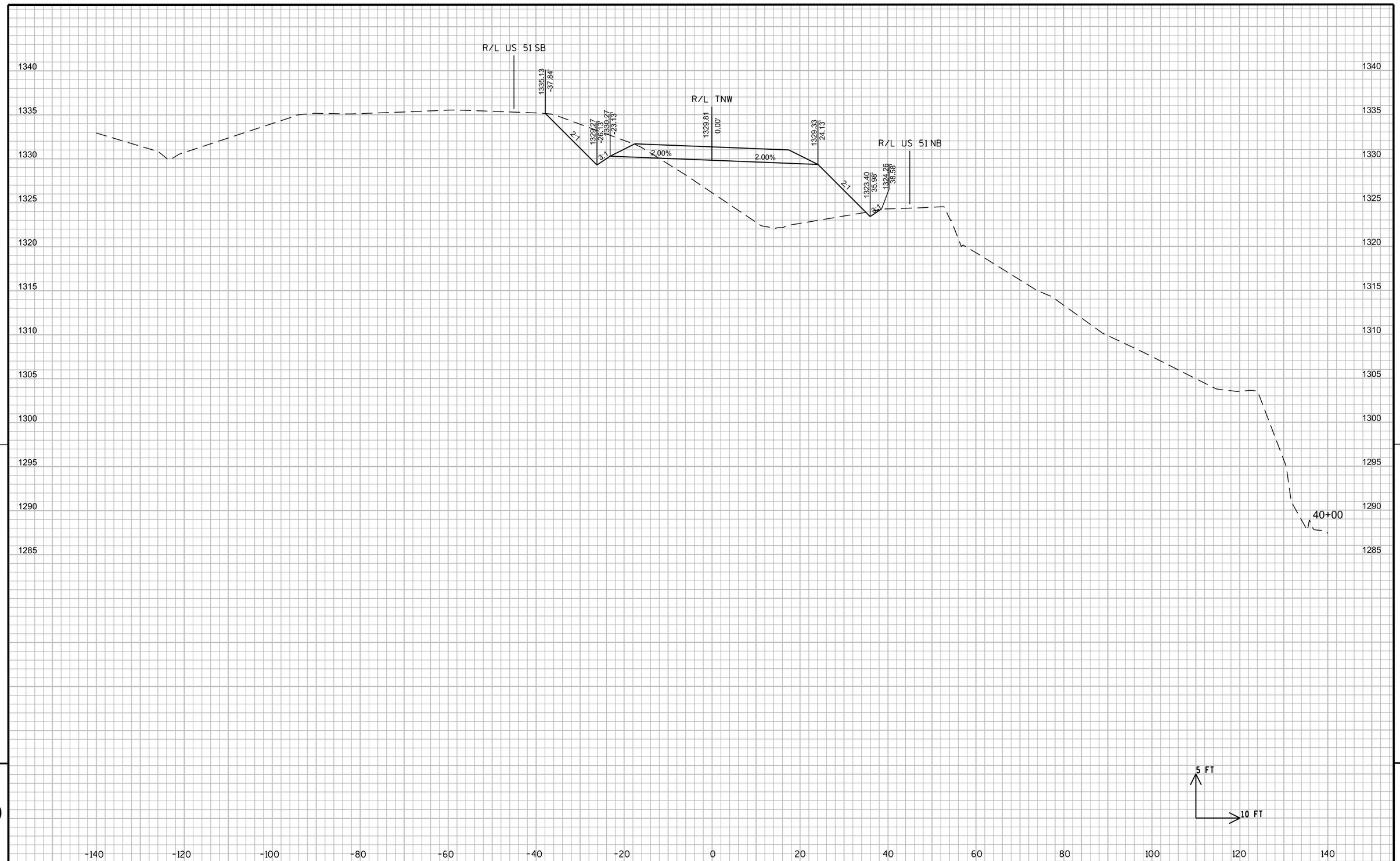
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 264	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090224_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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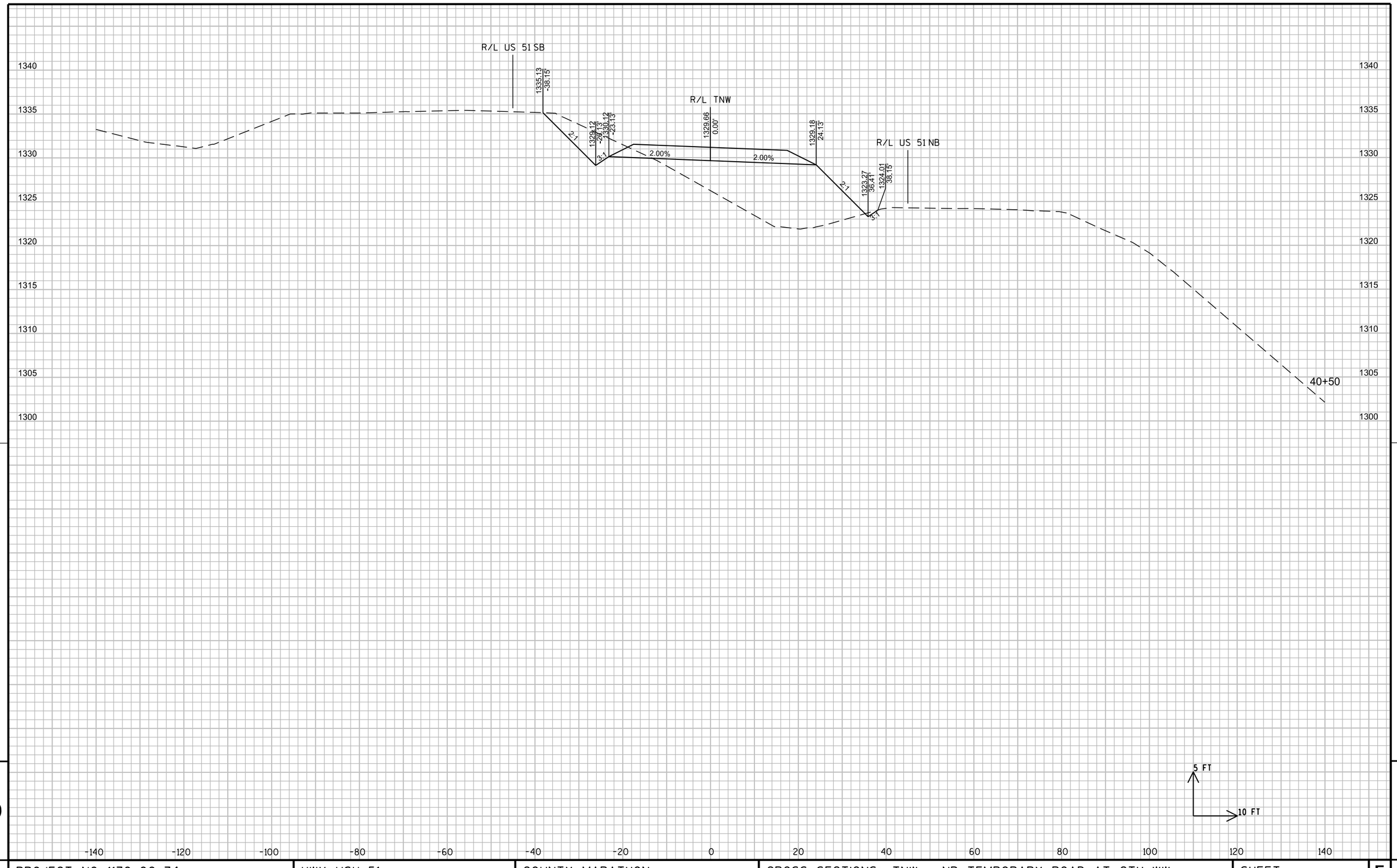
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 265	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090225_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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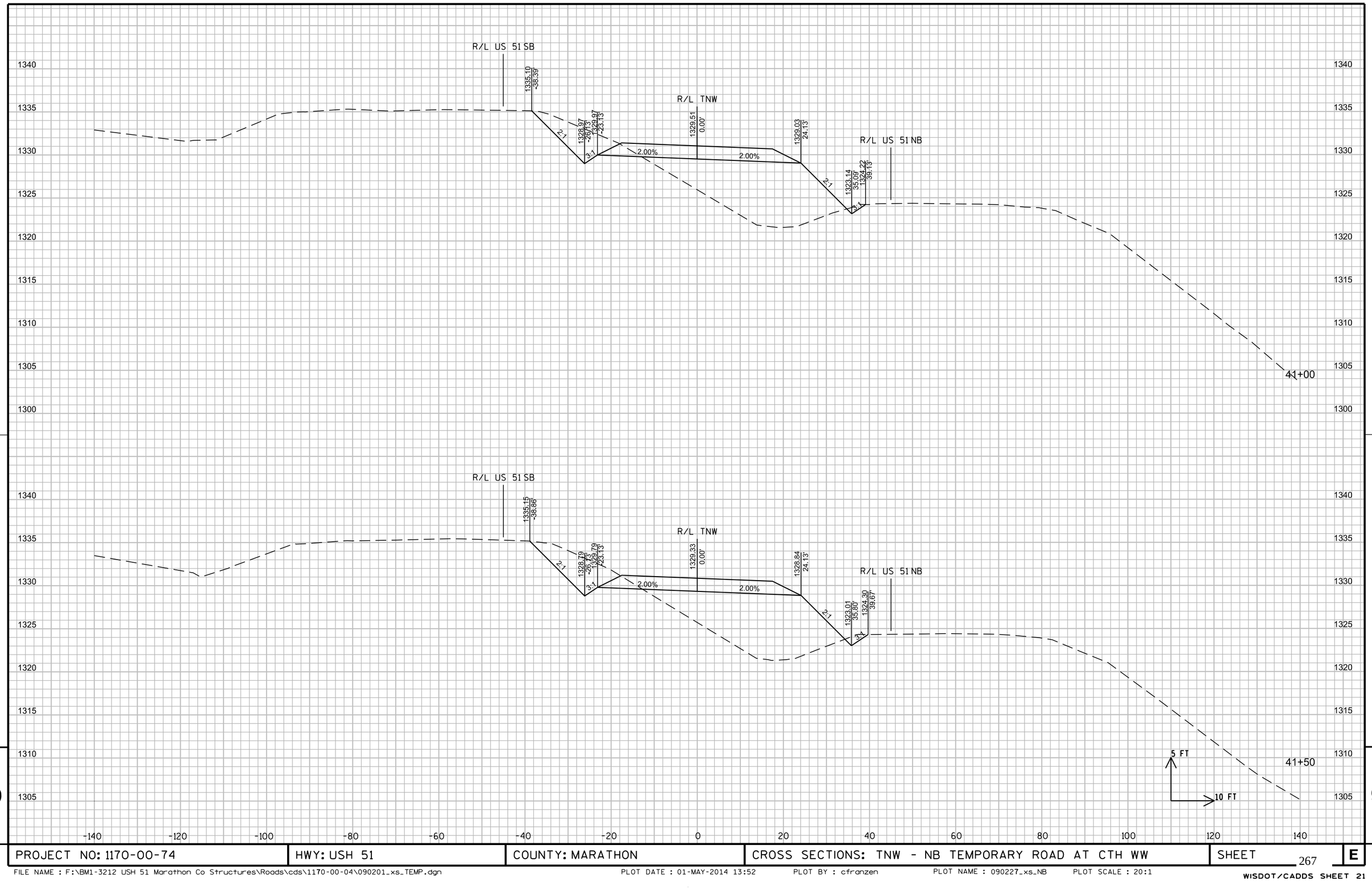
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 266	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090226_xs_NB PLOT SCALE : 20:1

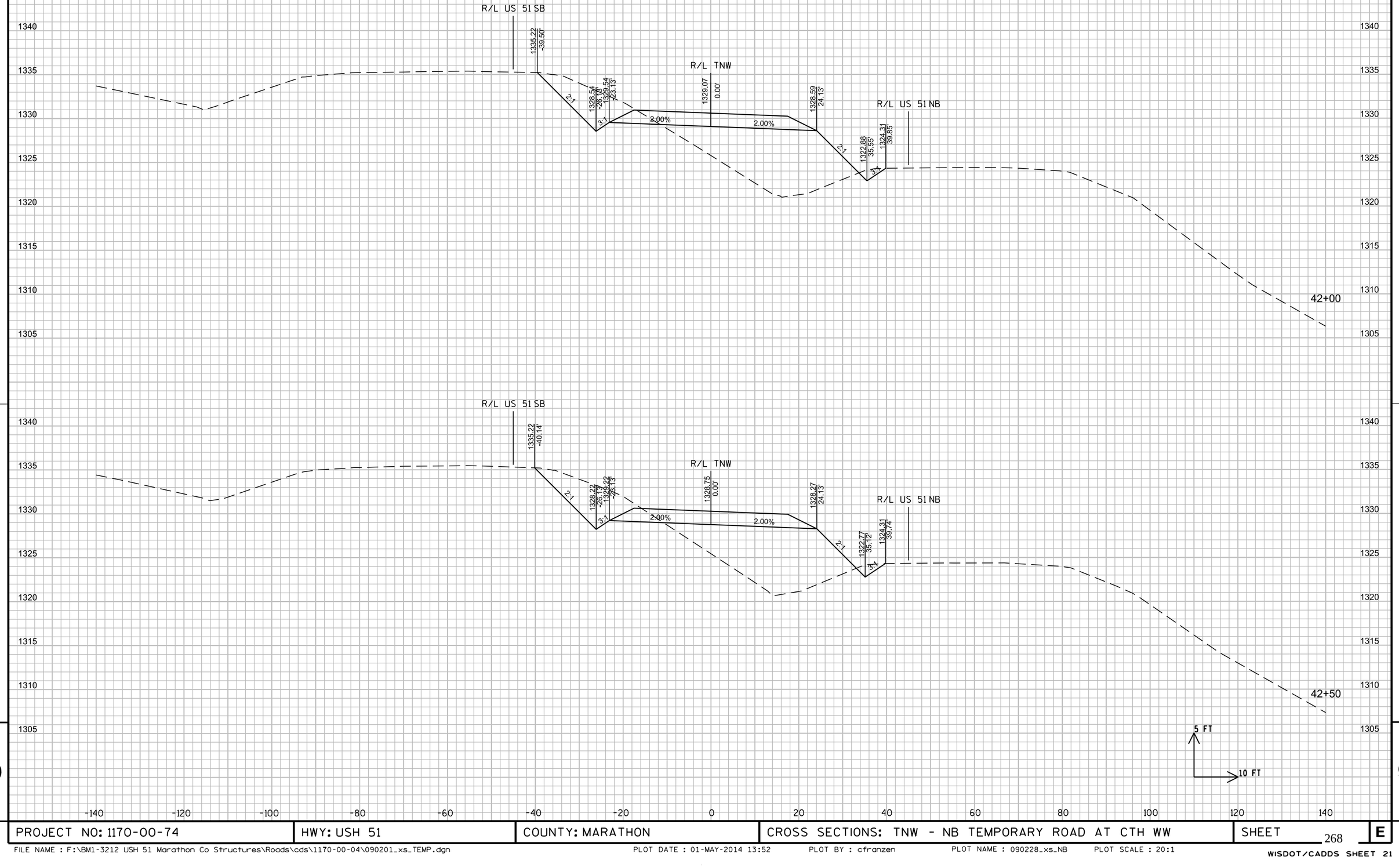
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090227_xs_NB PLOT SCALE : 20:1

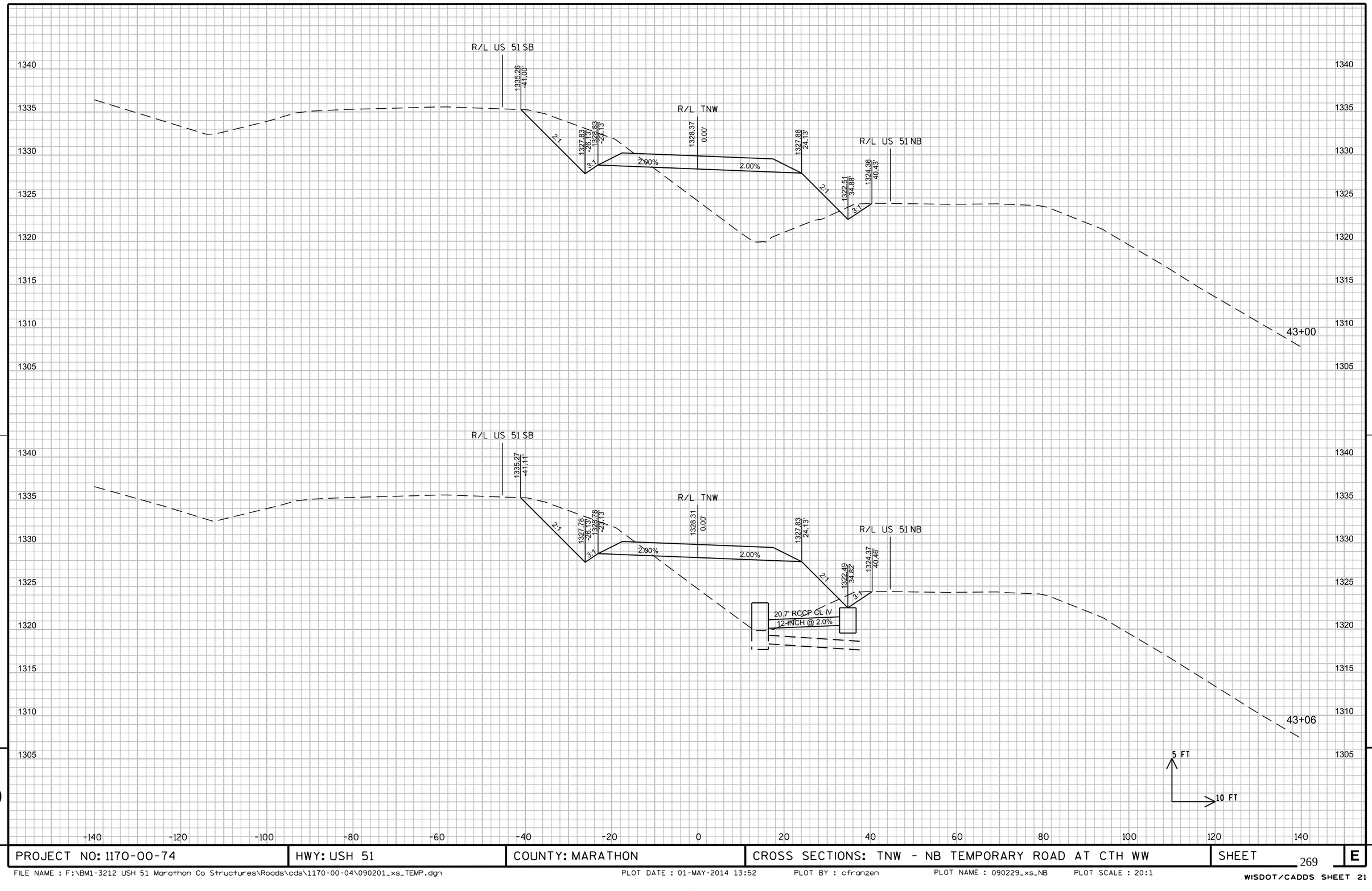
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 268	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090228_xs_NB PLOT SCALE : 20:1

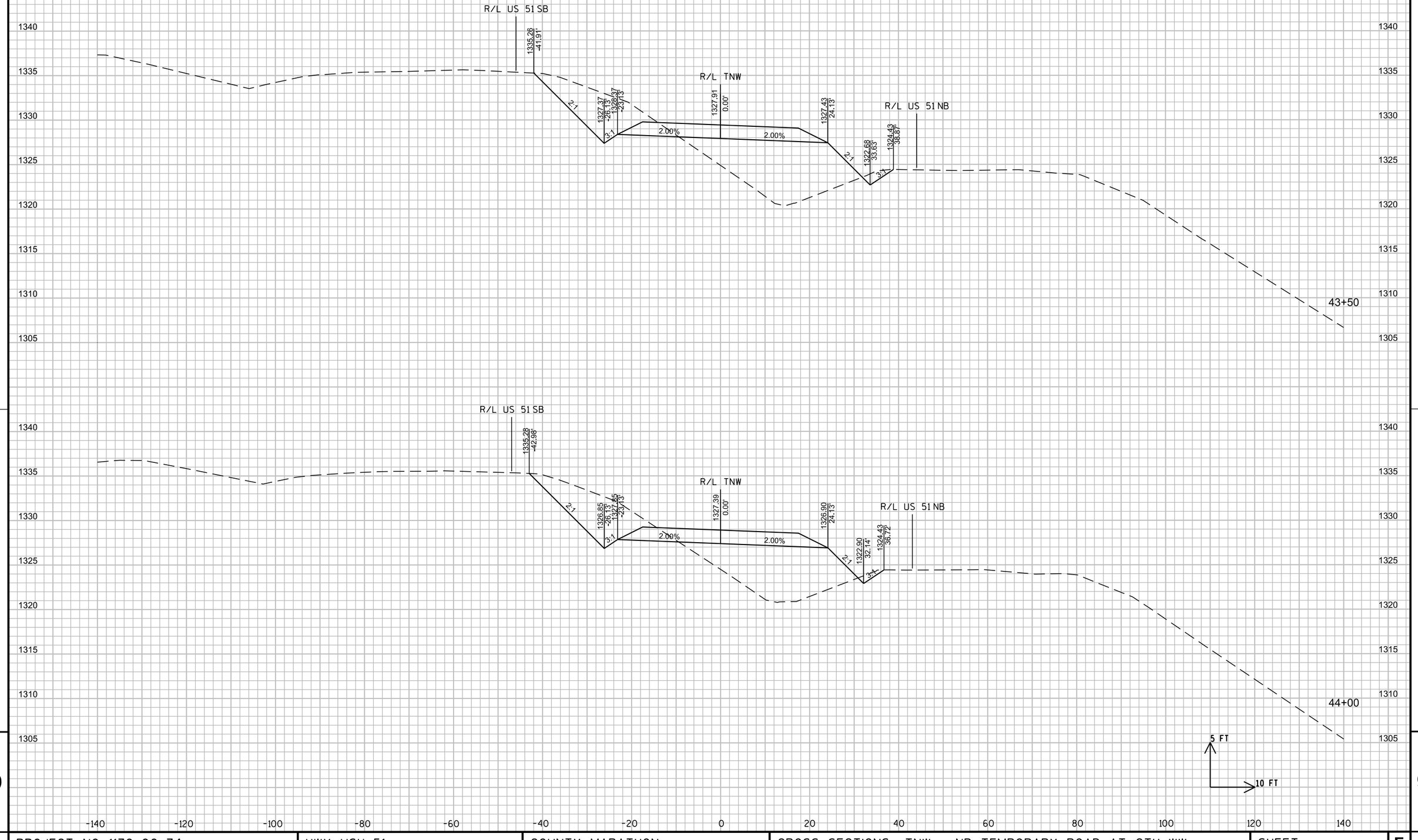
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 269 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:52 PLOT BY : cfranzen PLOT NAME : 090229_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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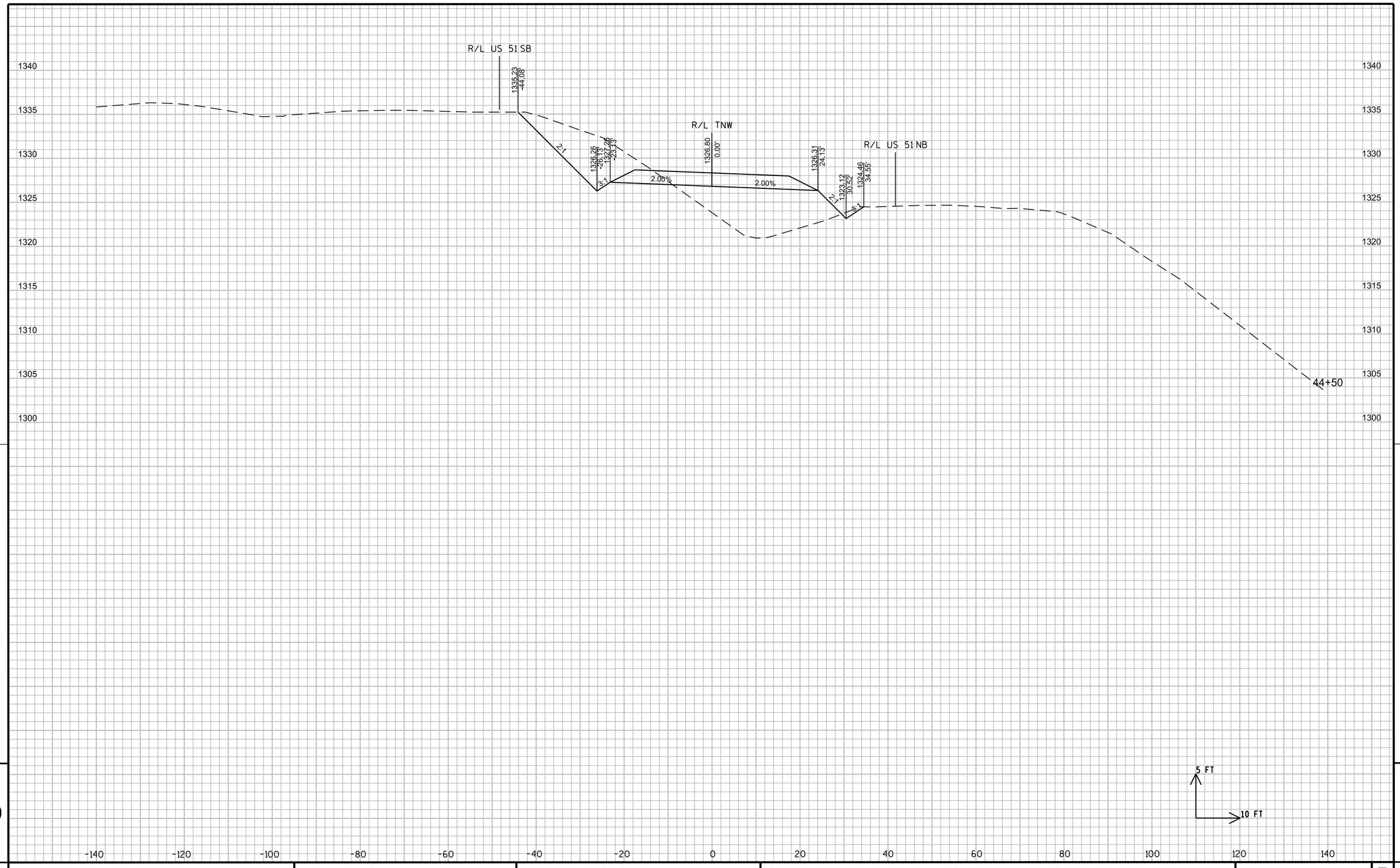
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 270	E



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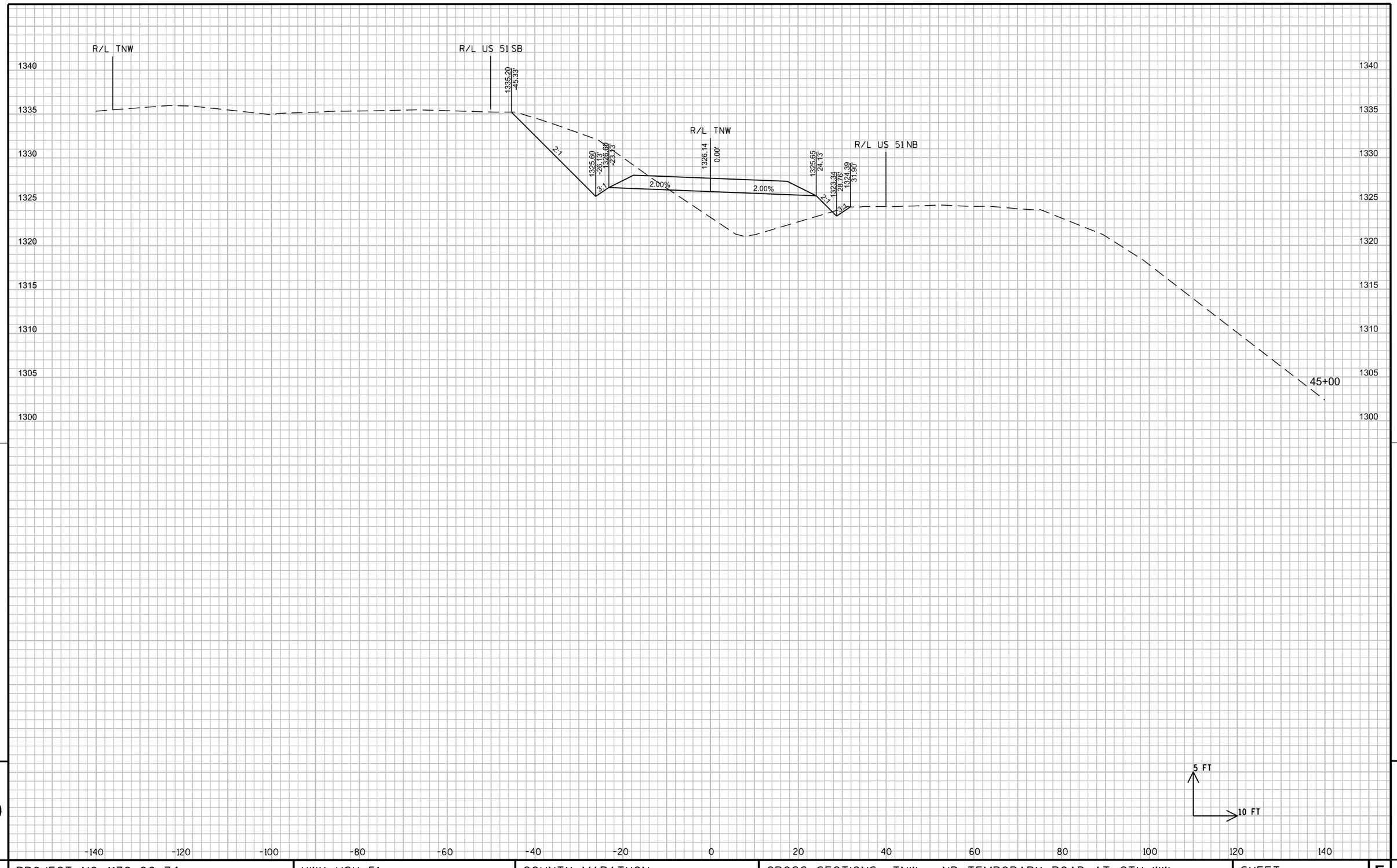
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 271	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090231_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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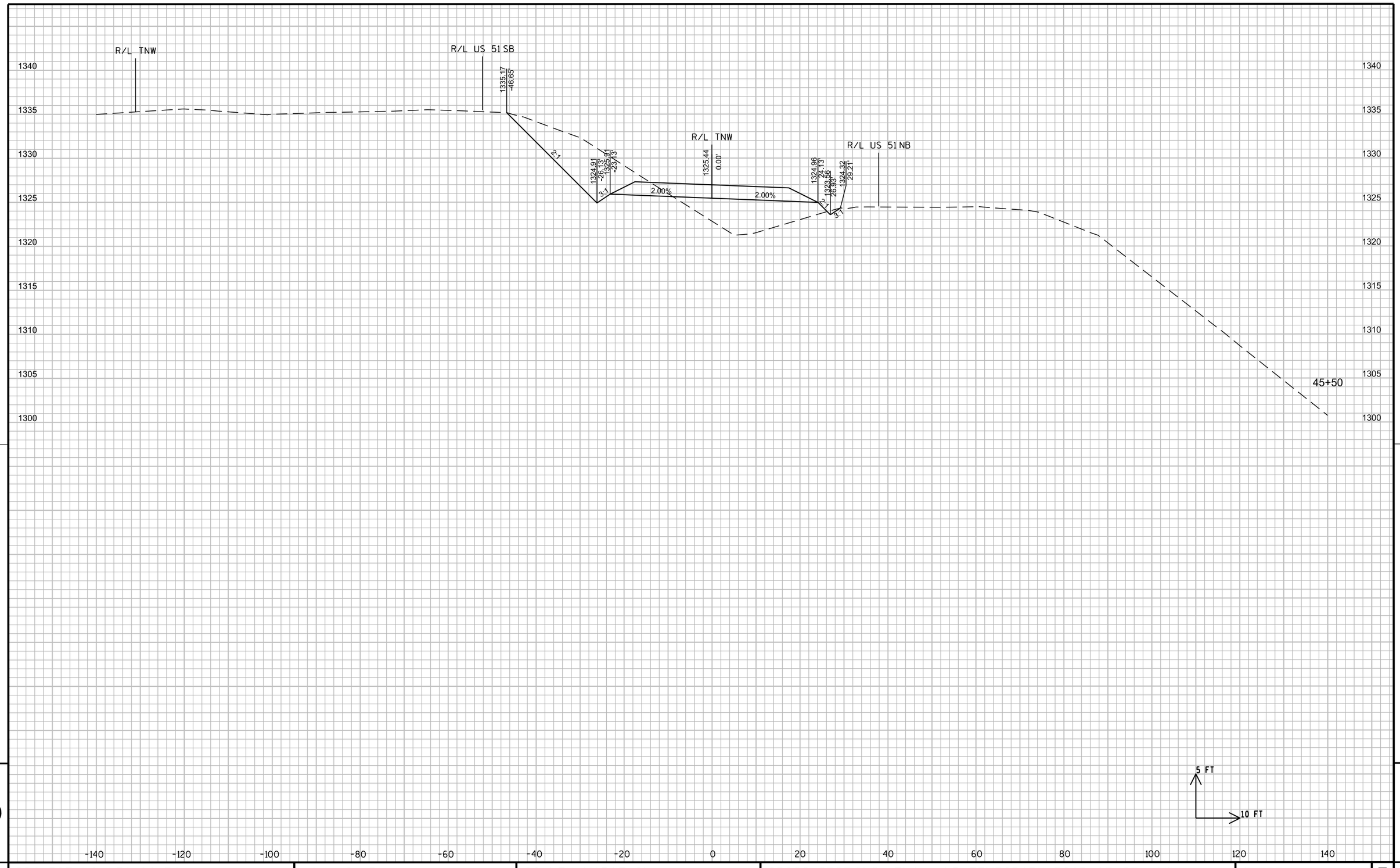
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 272	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090232_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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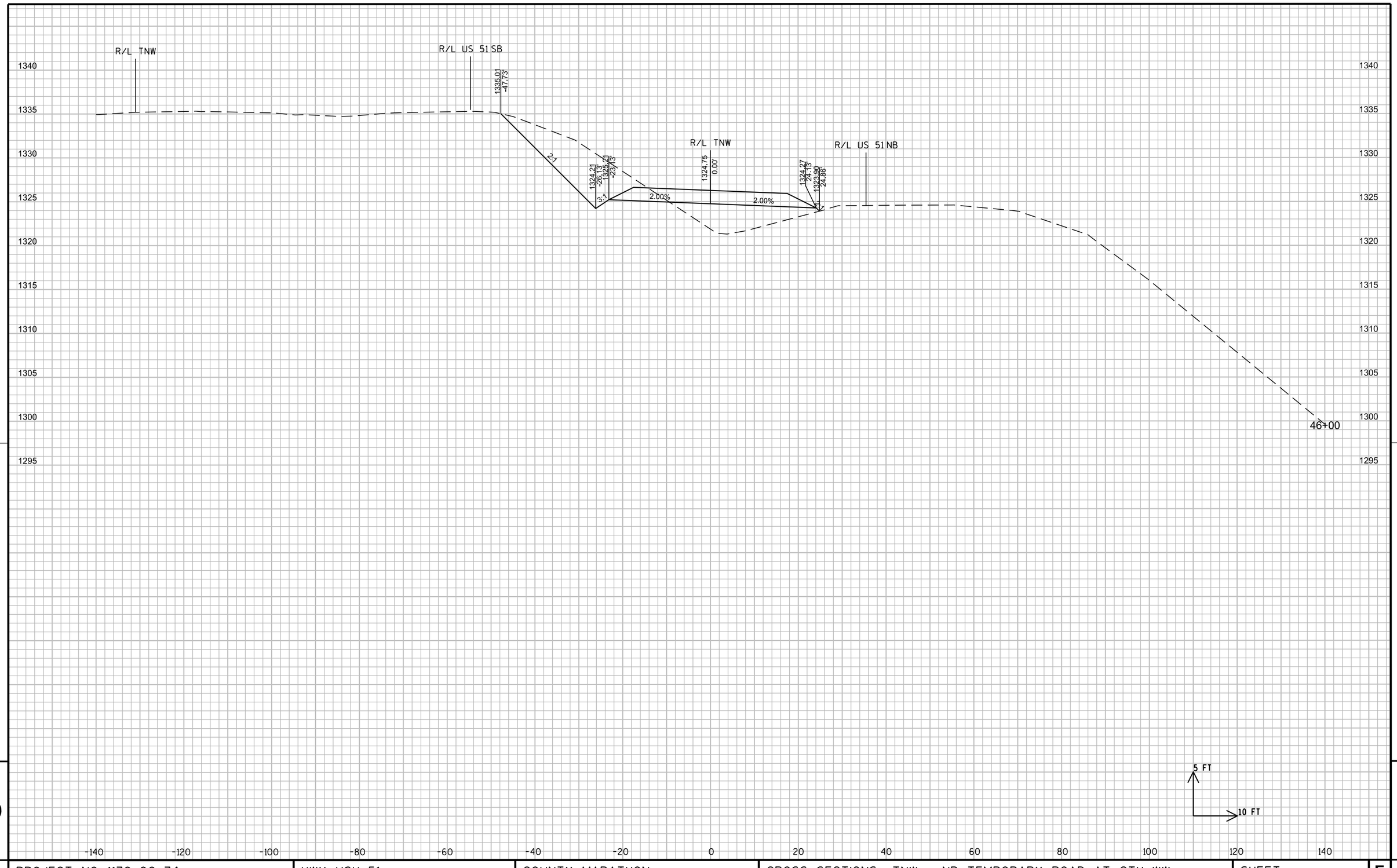
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 273	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090233_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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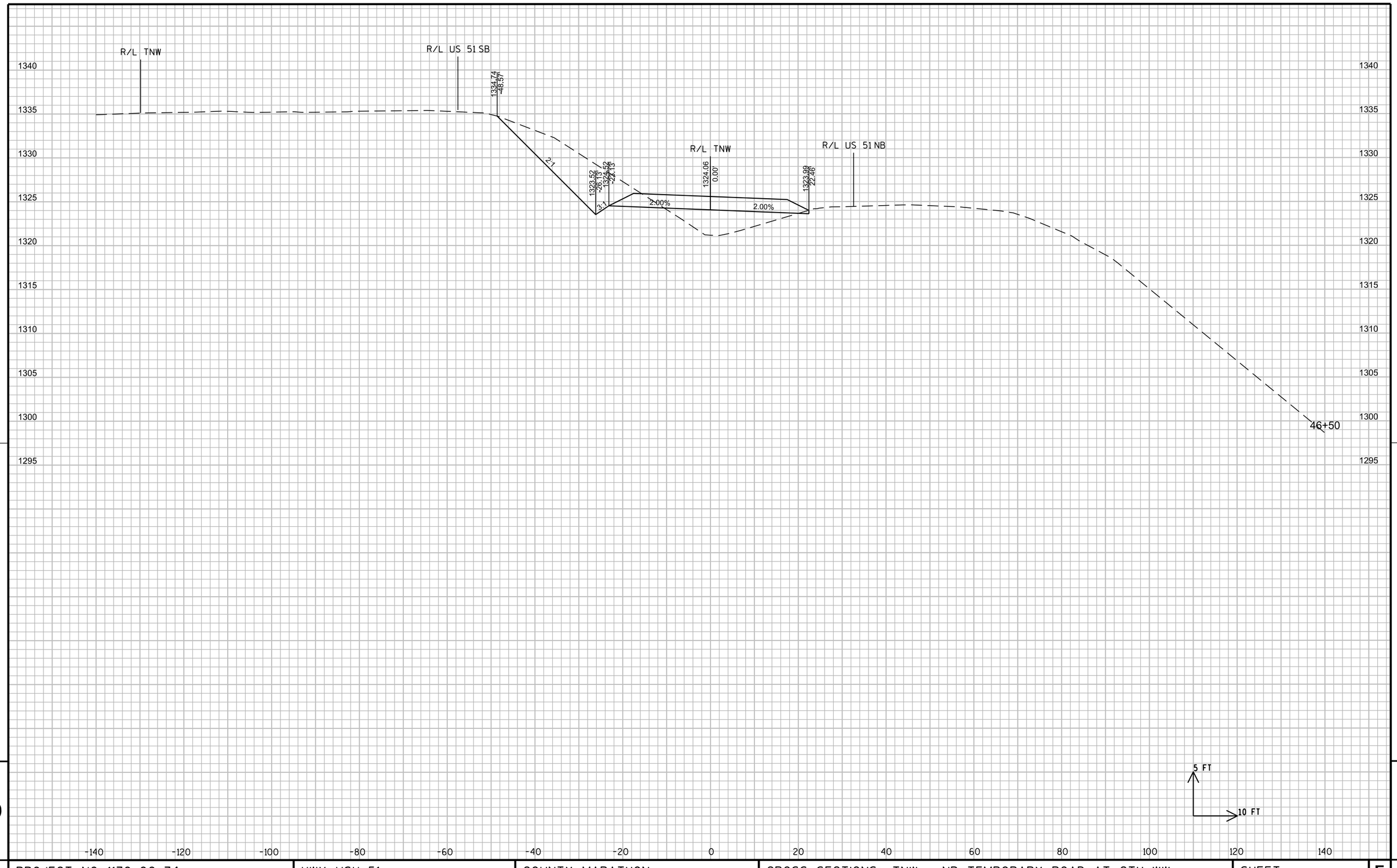
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 274	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090234_xs_NB PLOT SCALE : 20:1

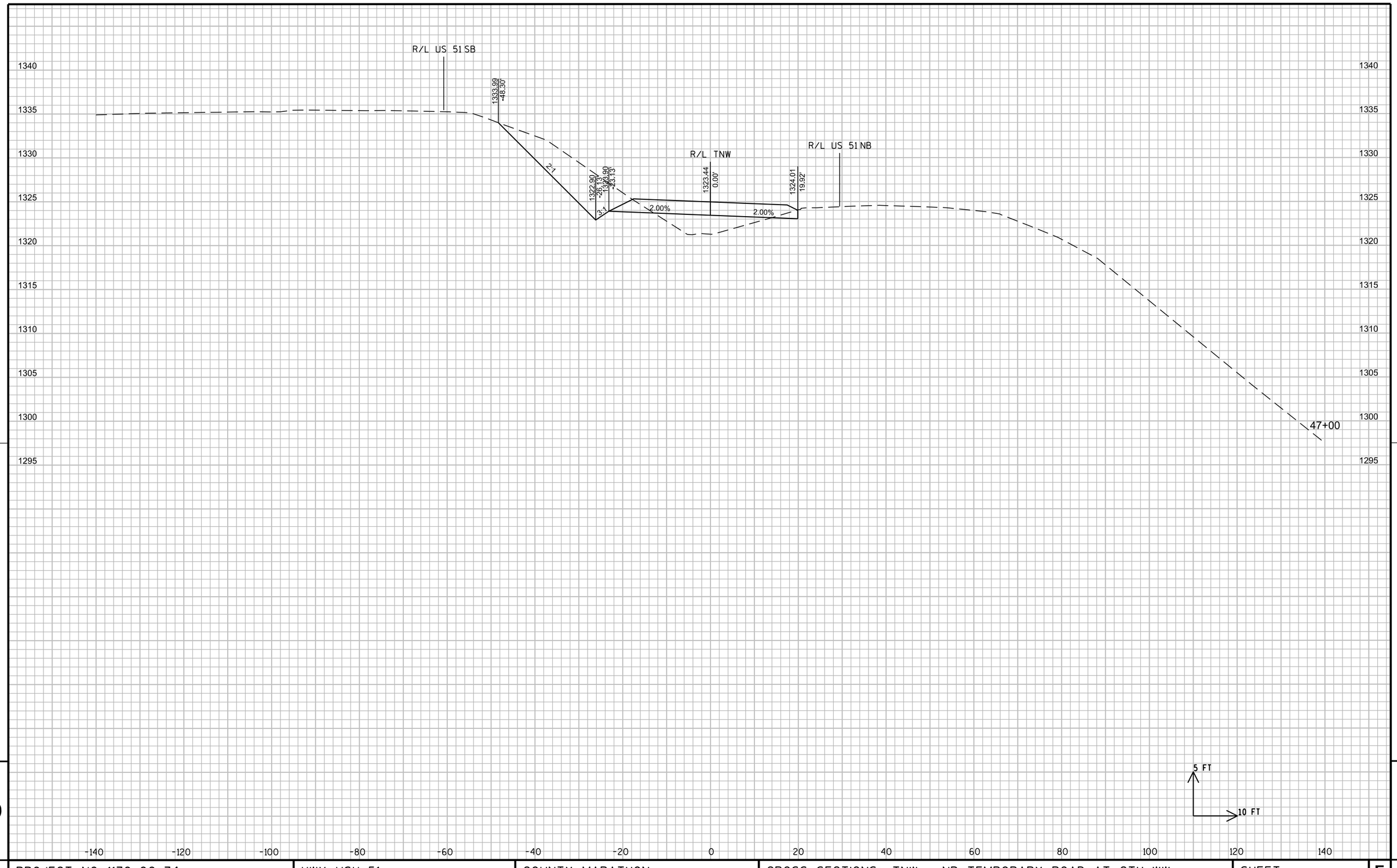
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 275	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090235_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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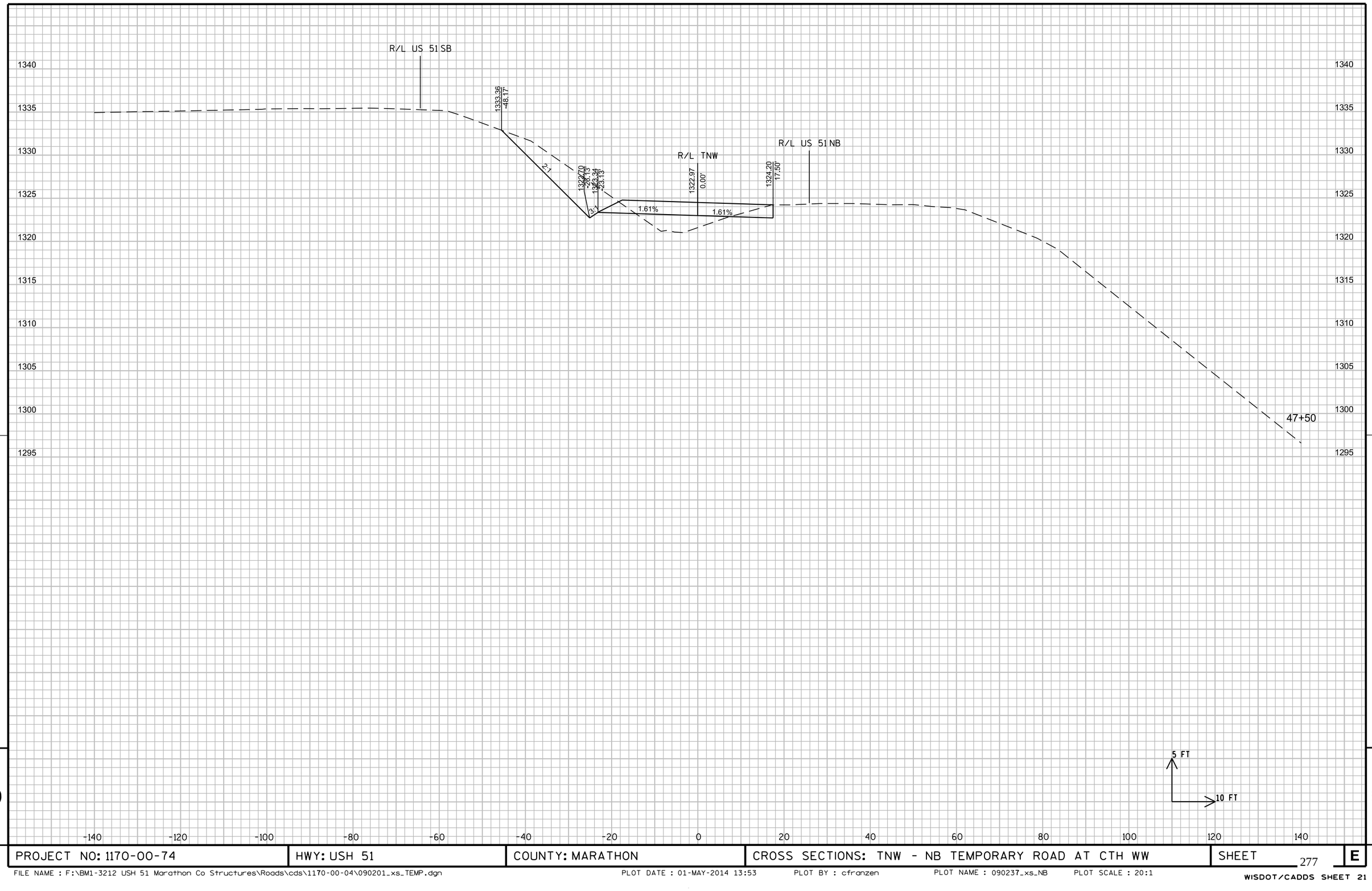
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 276	E

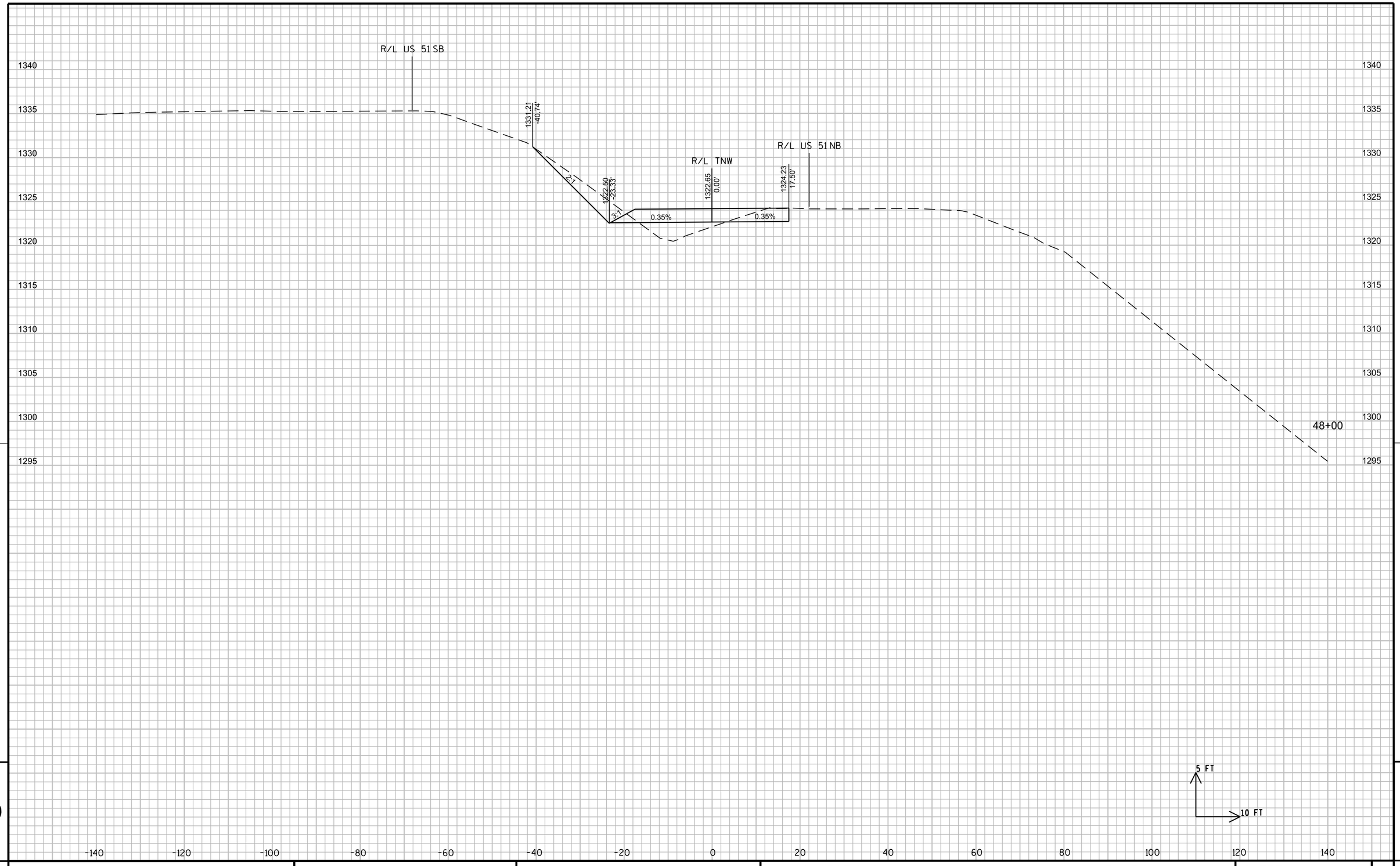
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090236_xs_NB PLOT SCALE : 20:1



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 277 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090237_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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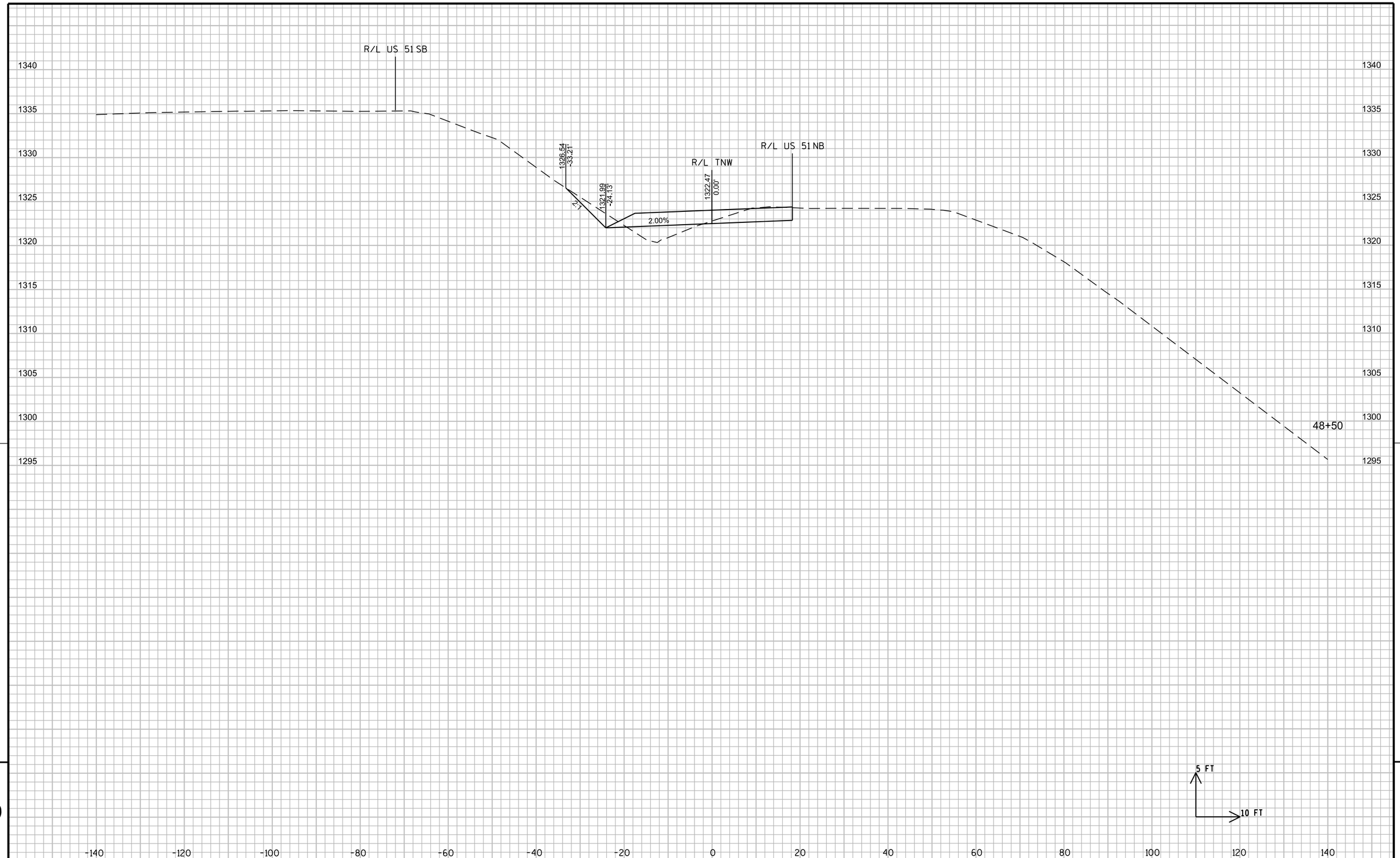
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 278	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090238_xs_NB PLOT SCALE : 20:1

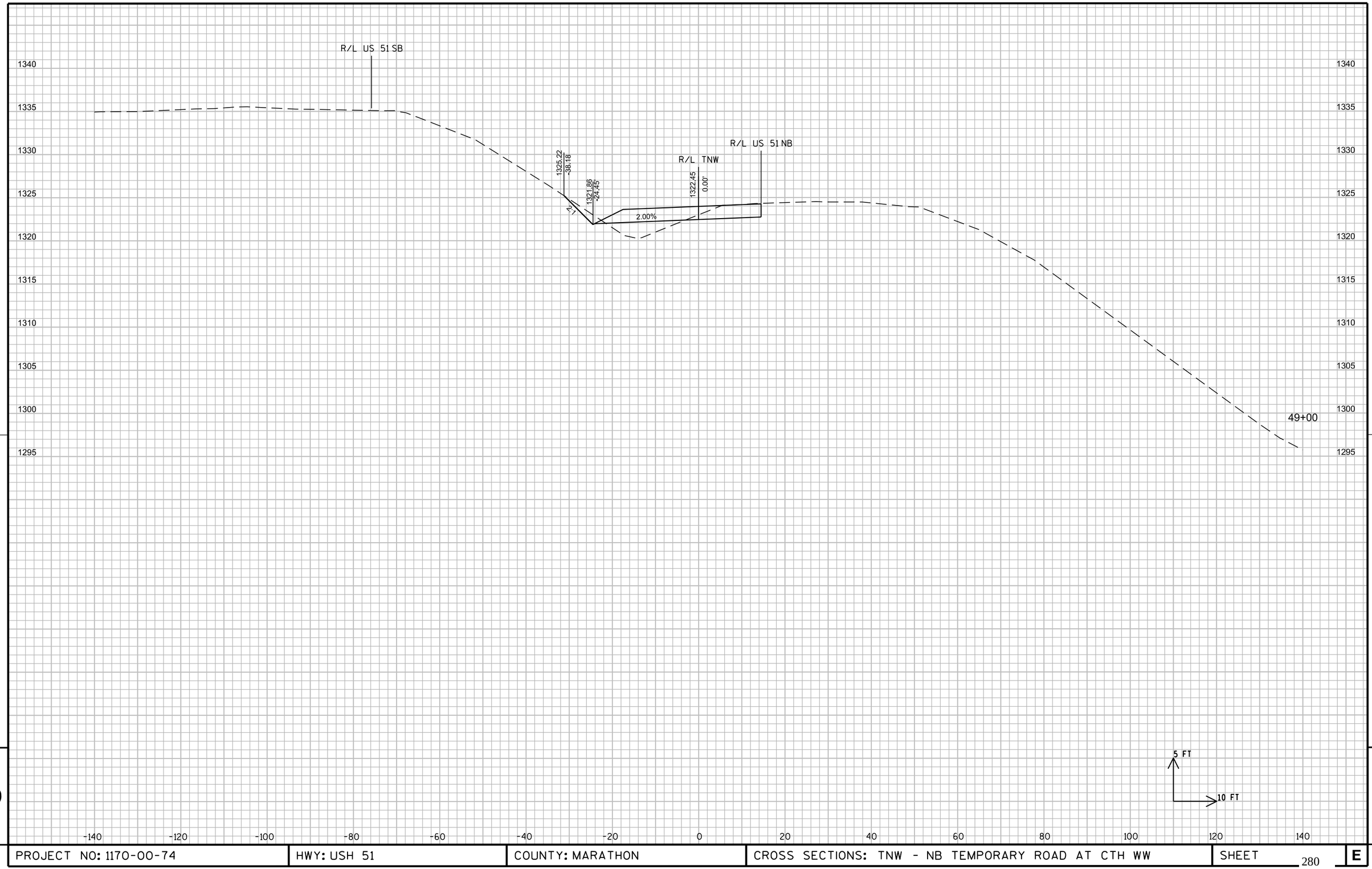
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 279	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090239_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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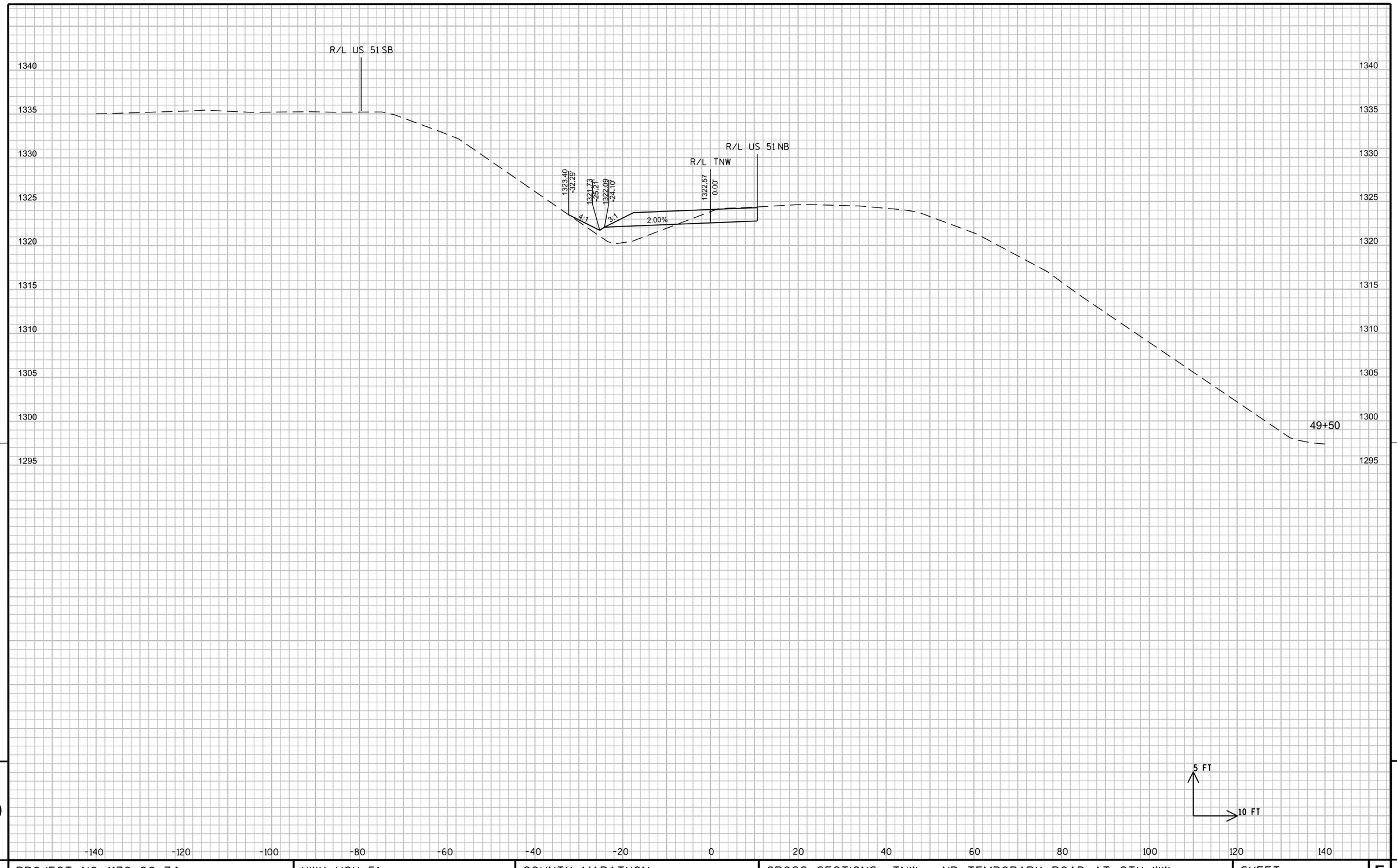
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 280	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090240_xs_NB PLOT SCALE : 20:1

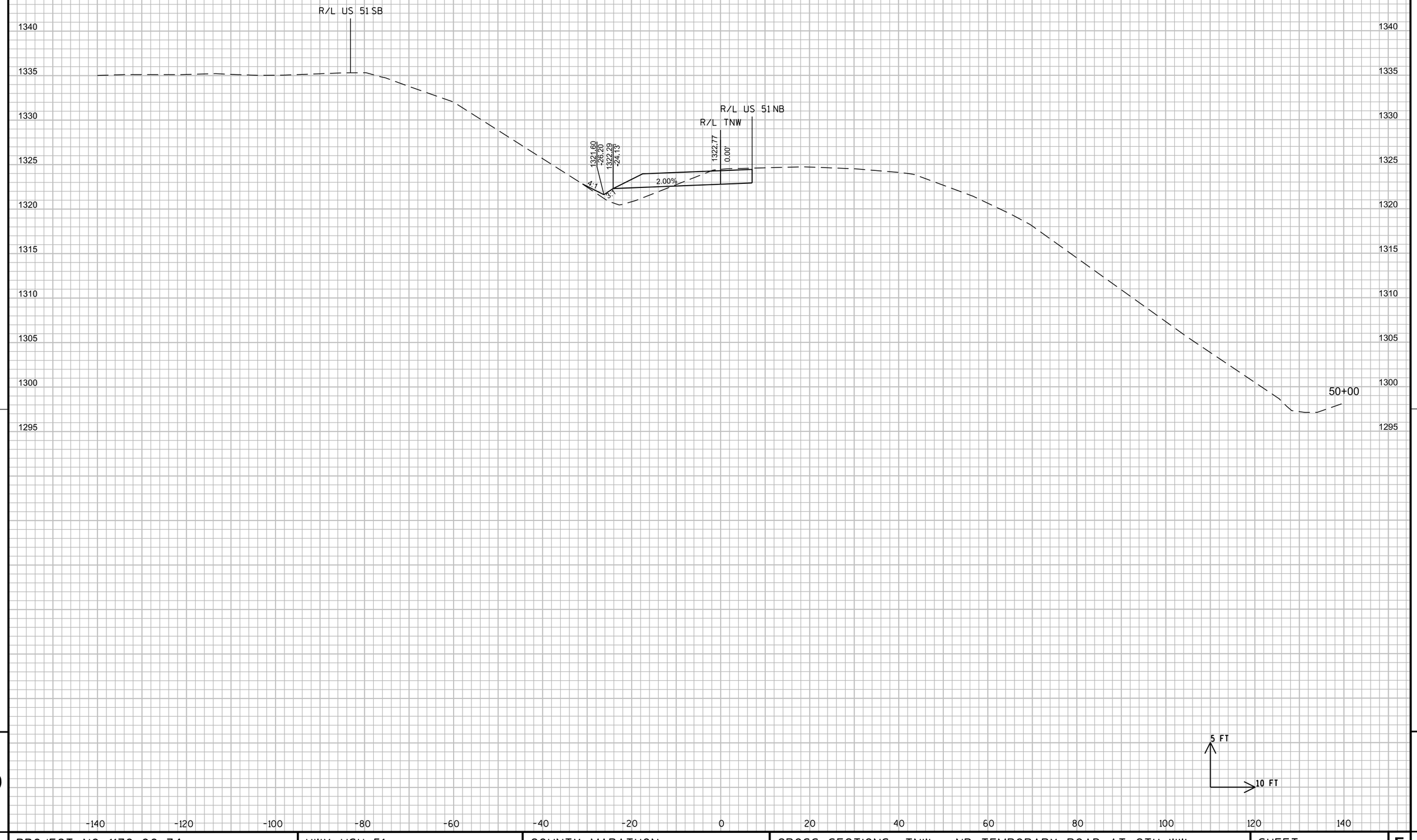
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 281 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090241_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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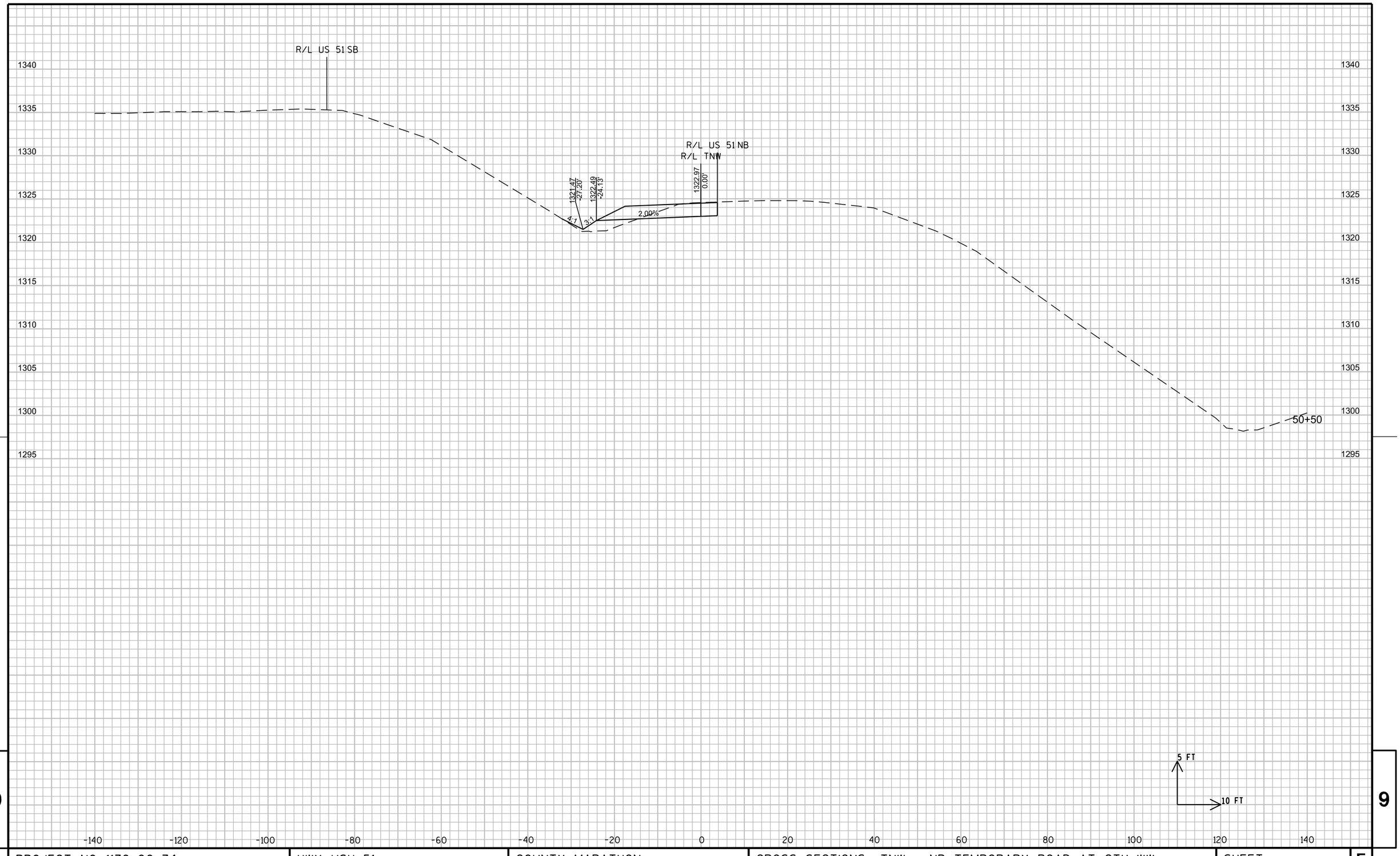
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 282	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090242_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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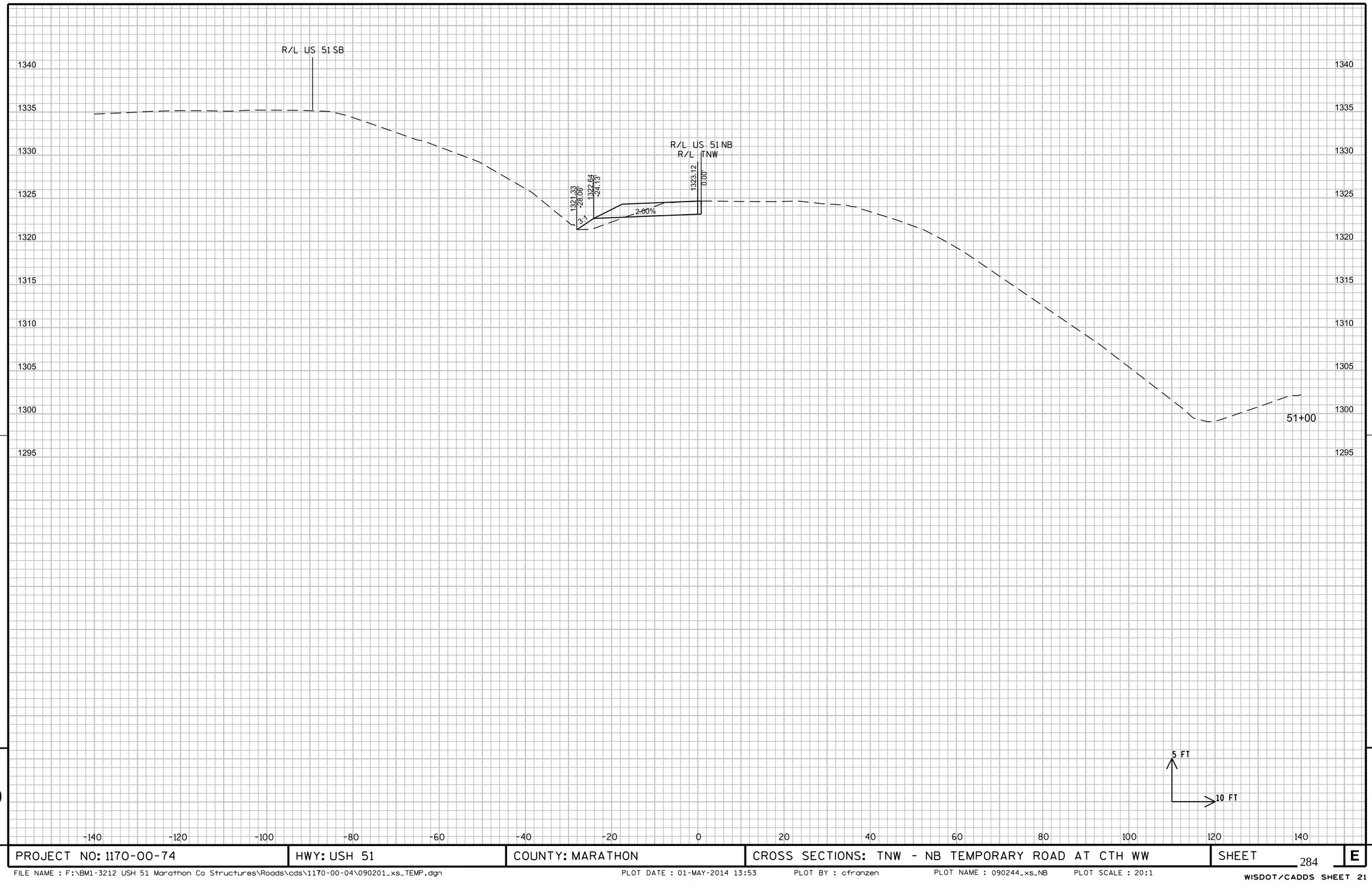
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 283	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090243_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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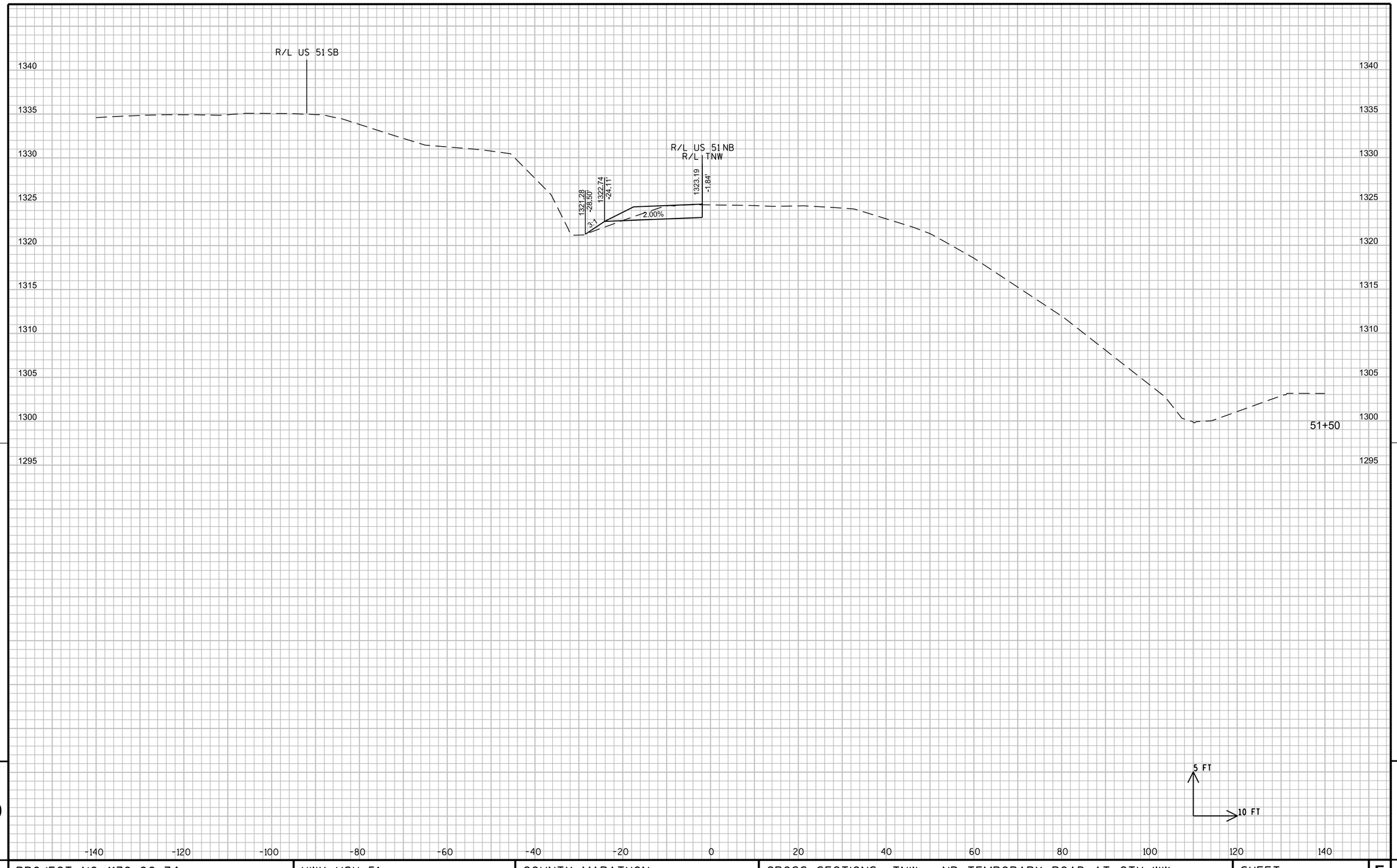
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 284	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090244_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 285 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090245_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

R/L US 51 SB

R/L US 51 NB
R/L TNW

1322.57
-24.72'

1322.77
-24.11'

1323.17
-4.20'

3:1

2.00%

52+00

R/L US 51 SB

R/L US 51 NB
R/L TNW

1322.55
-24.88'

1322.70
-24.11'

1323.06
-6.24'

3:1

2.00%

R/L TNW

52+50

5 FT

10 FT

1335
1330
1325
1320
1315
1310
1305
1300

-140 -120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120 140

9

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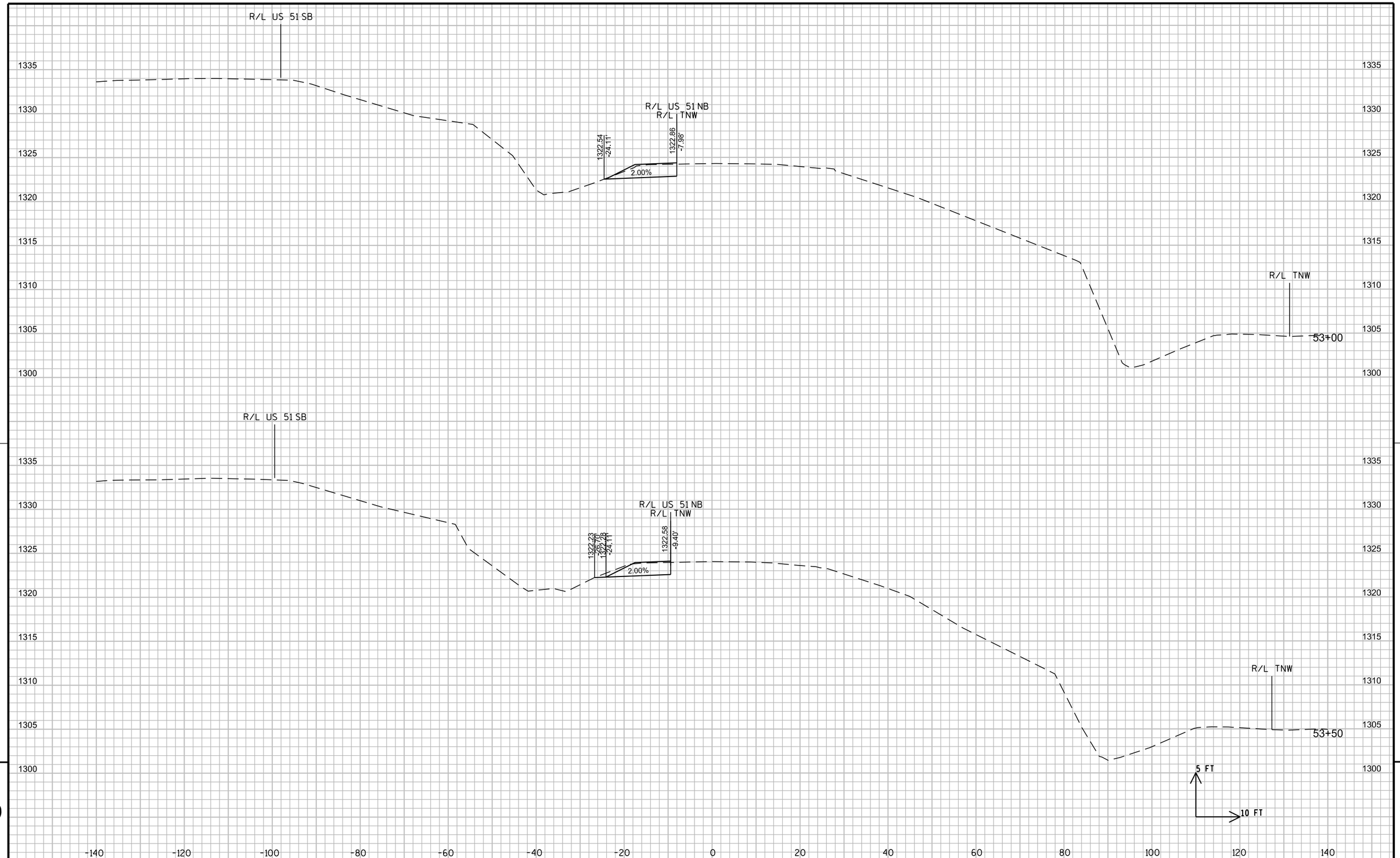
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090246_xs_NB PLOT SCALE : 20:1

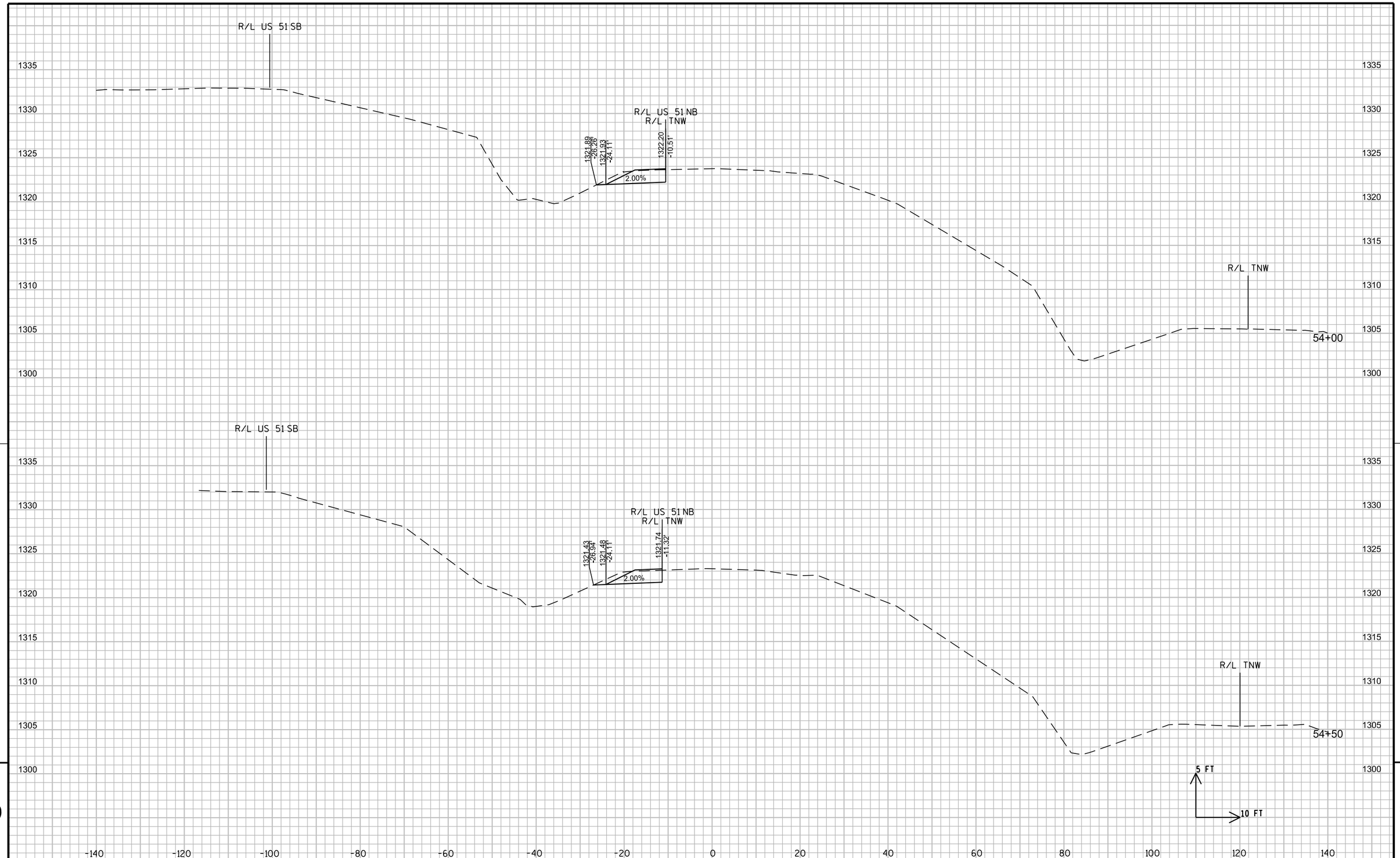
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 287 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090247_xs_NB PLOT SCALE : 20:1

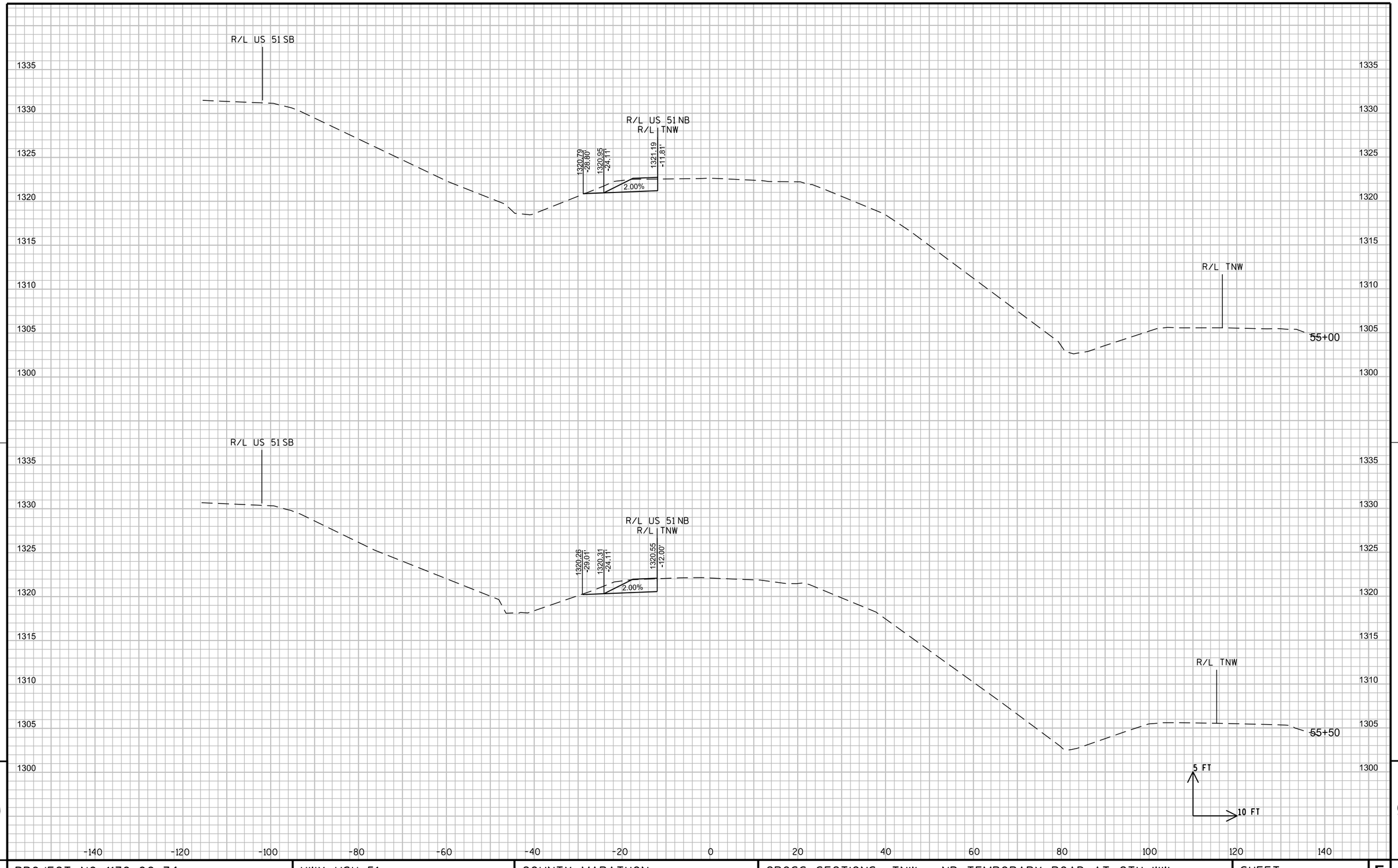
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 288	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090248_xs_NB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TNW - NB TEMPORARY ROAD AT CTH WW	SHEET 289 E

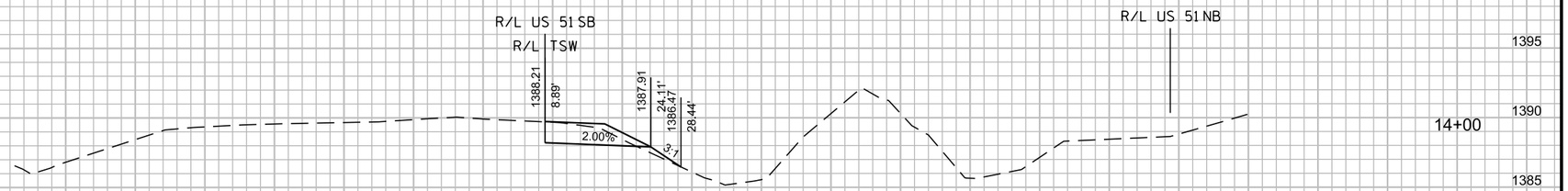
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090249_xs_NB PLOT SCALE : 20:1

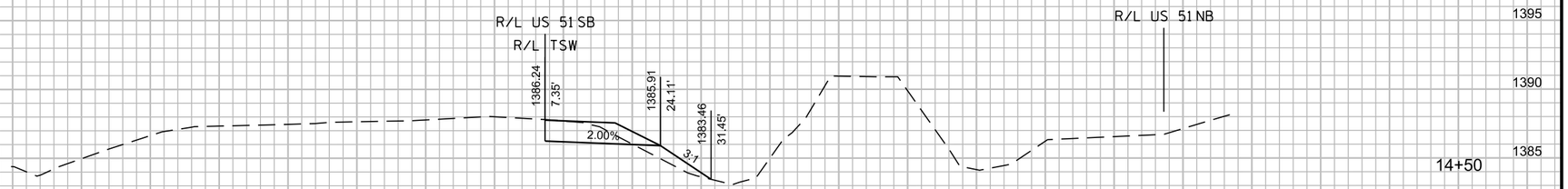
WISDOT/CADDS SHEET 21

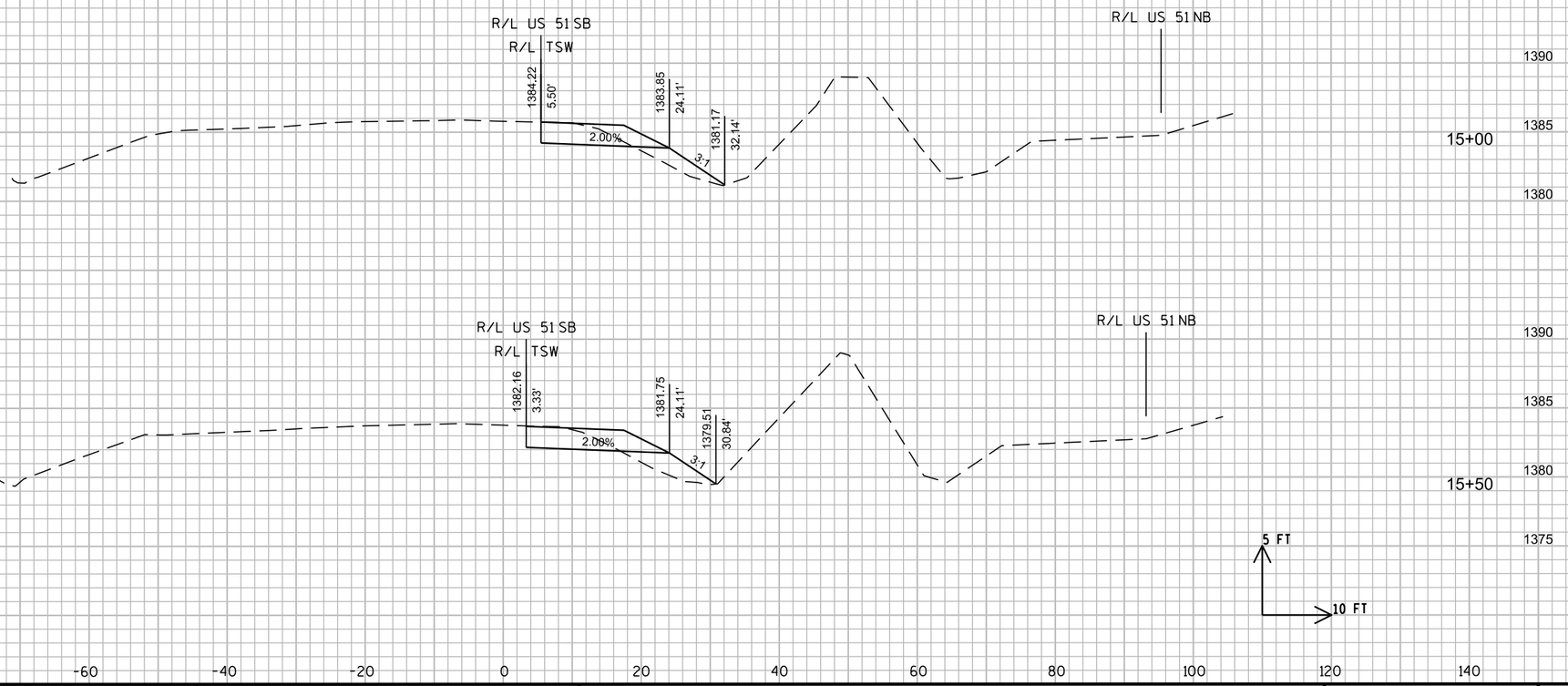
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 290	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



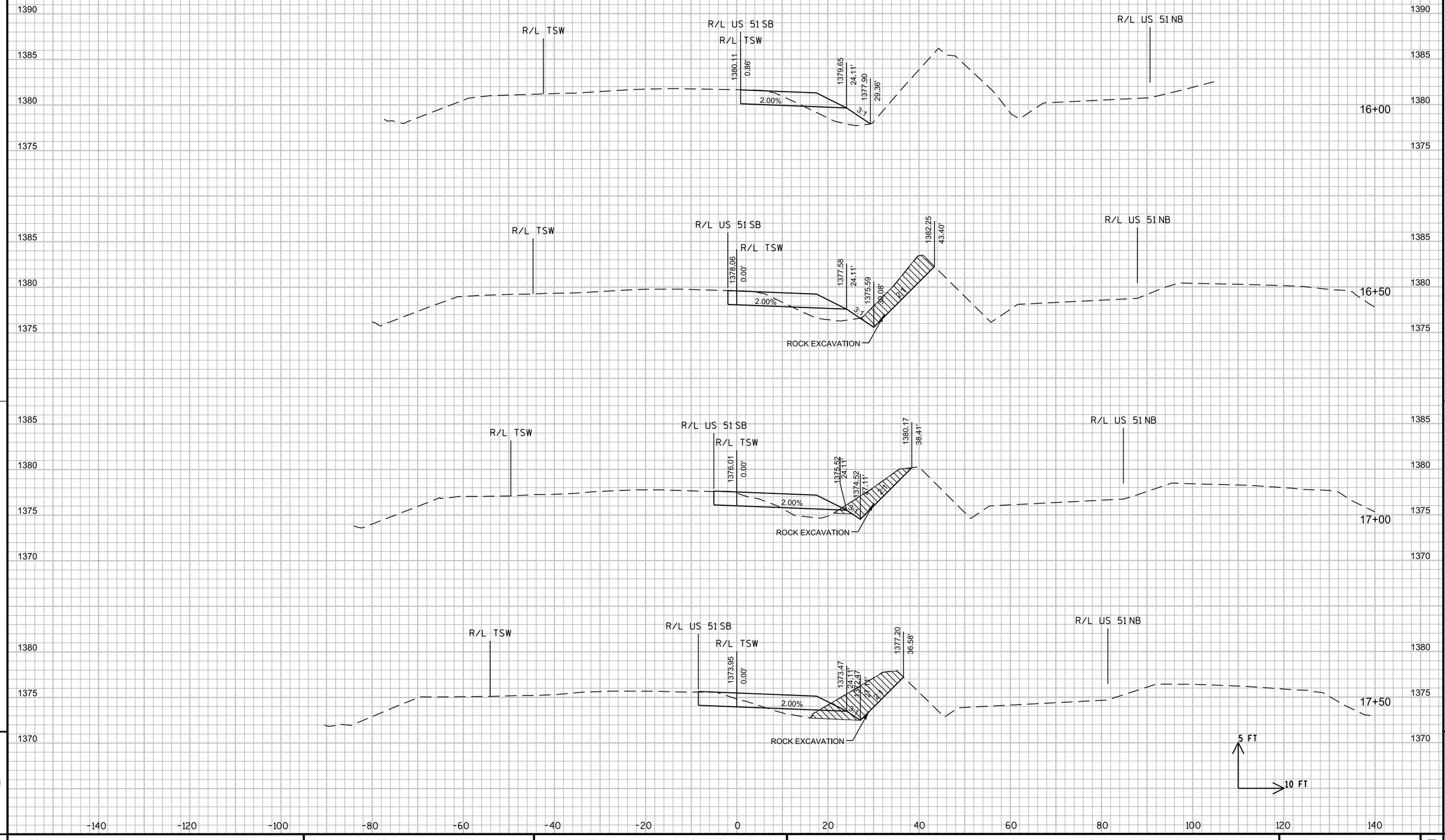




PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 291 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090202_xs_SB PLOT SCALE : 20:1

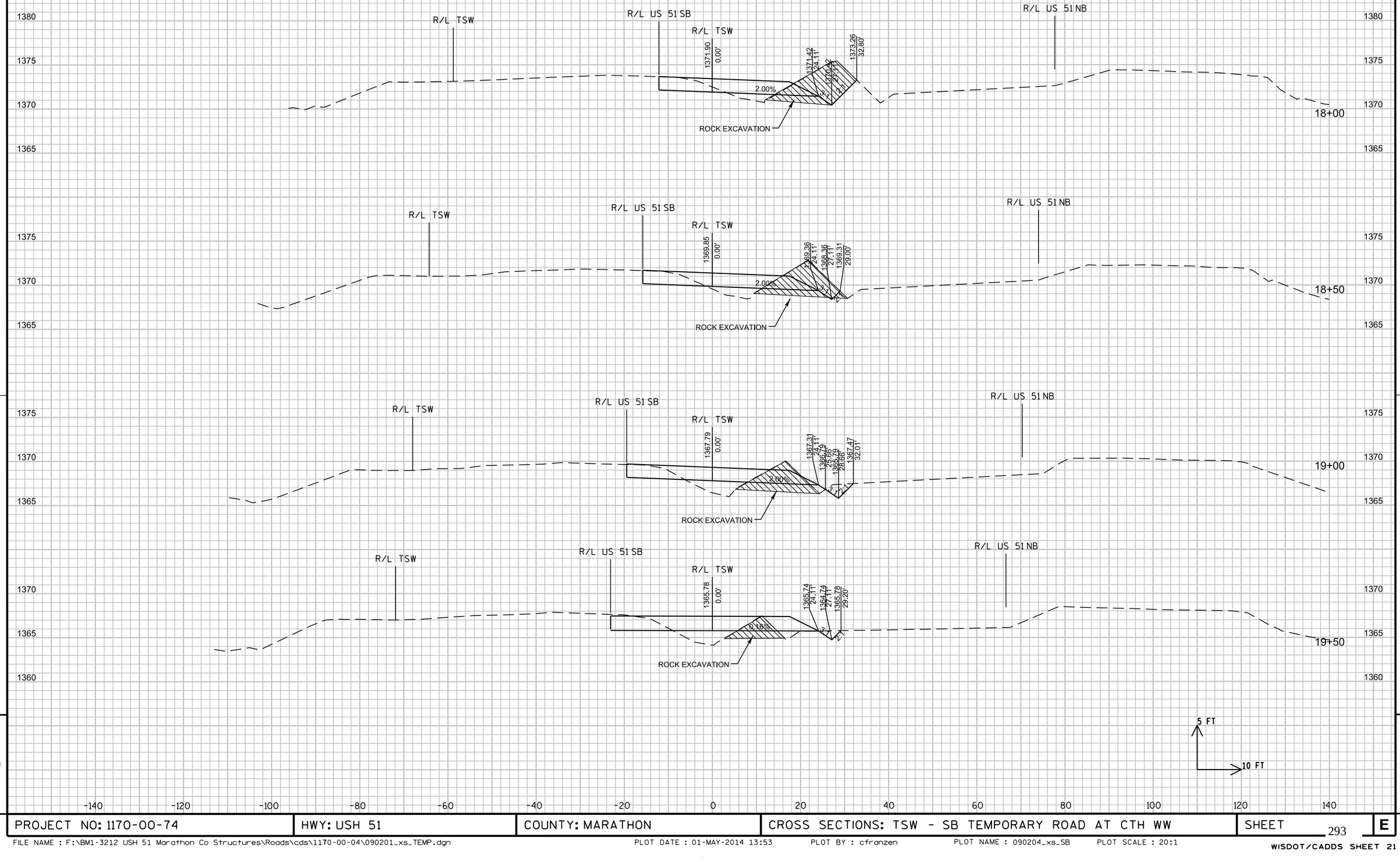
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 292 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090203_xs_SB PLOT SCALE : 20:1

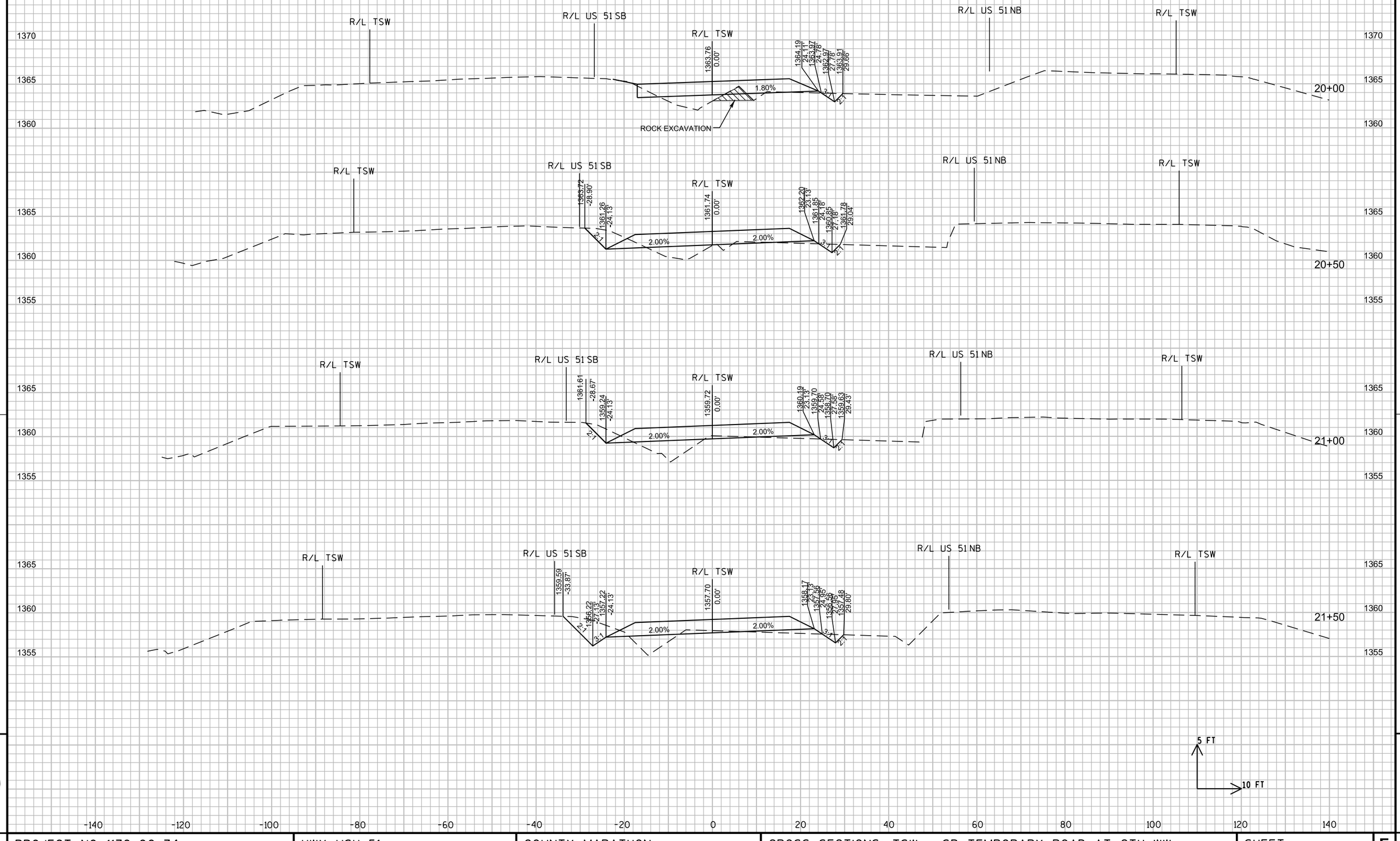
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 293 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090204_xs_SB PLOT SCALE : 20:1

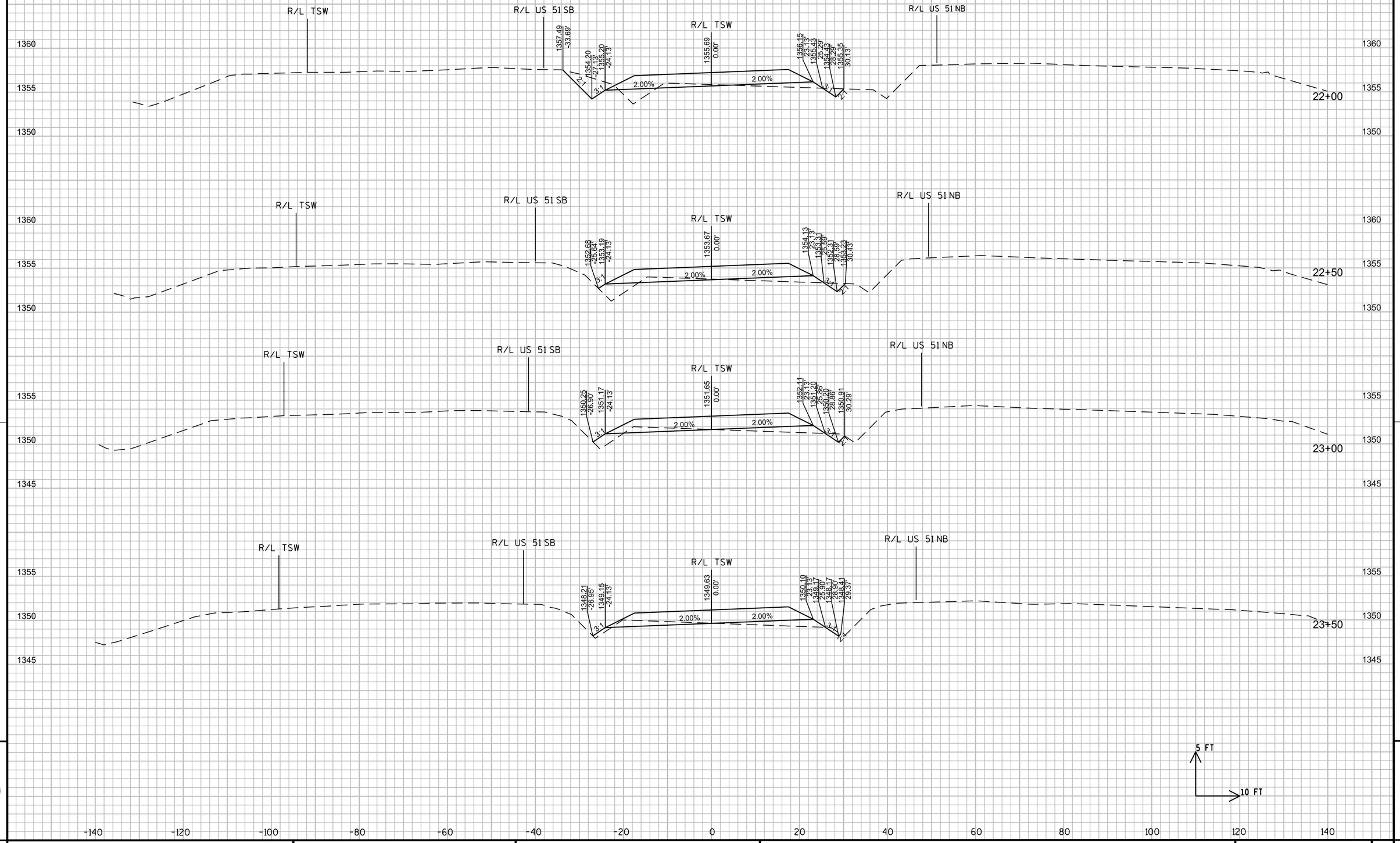
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 294 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090205_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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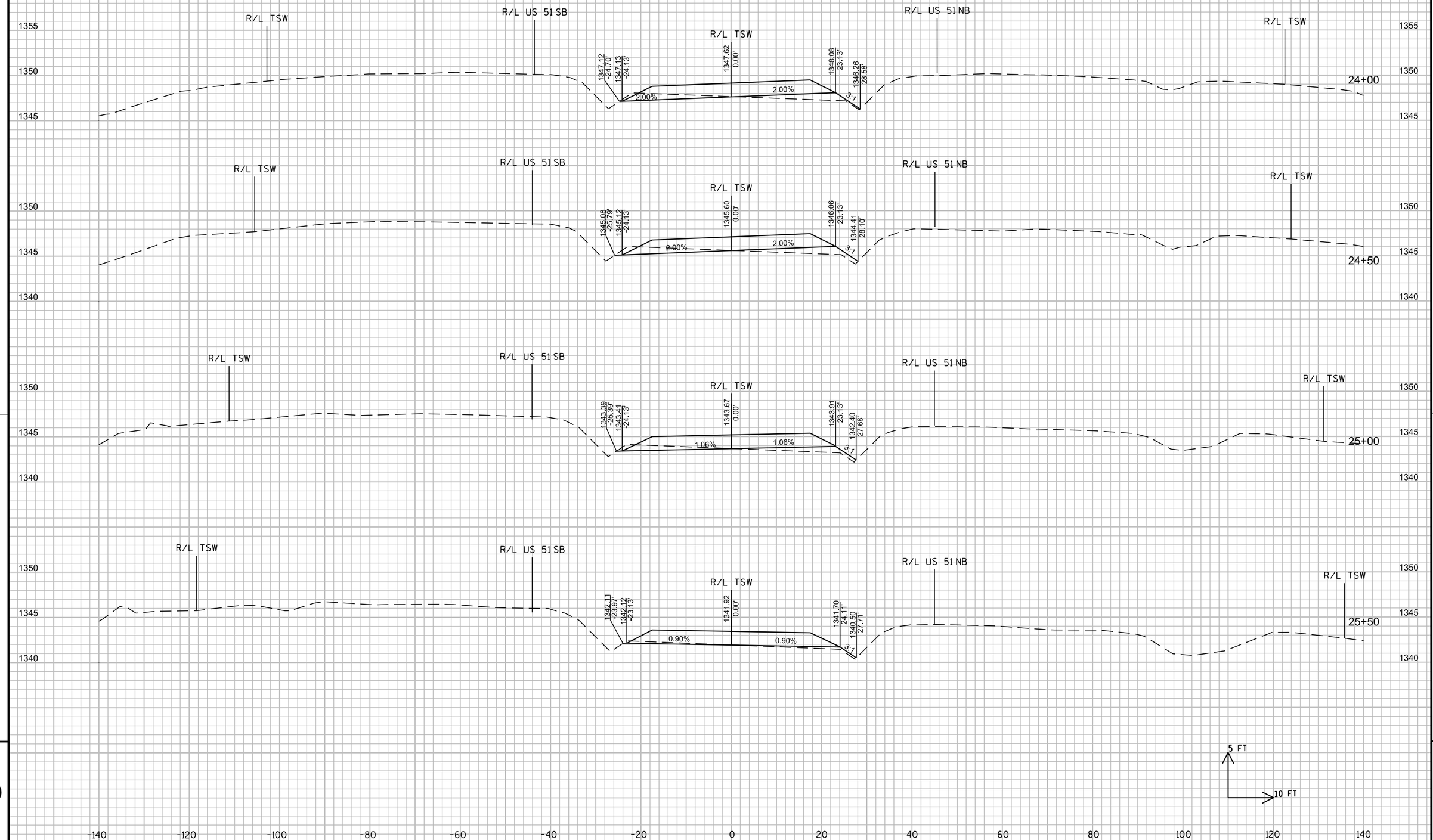
9

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 295	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090206_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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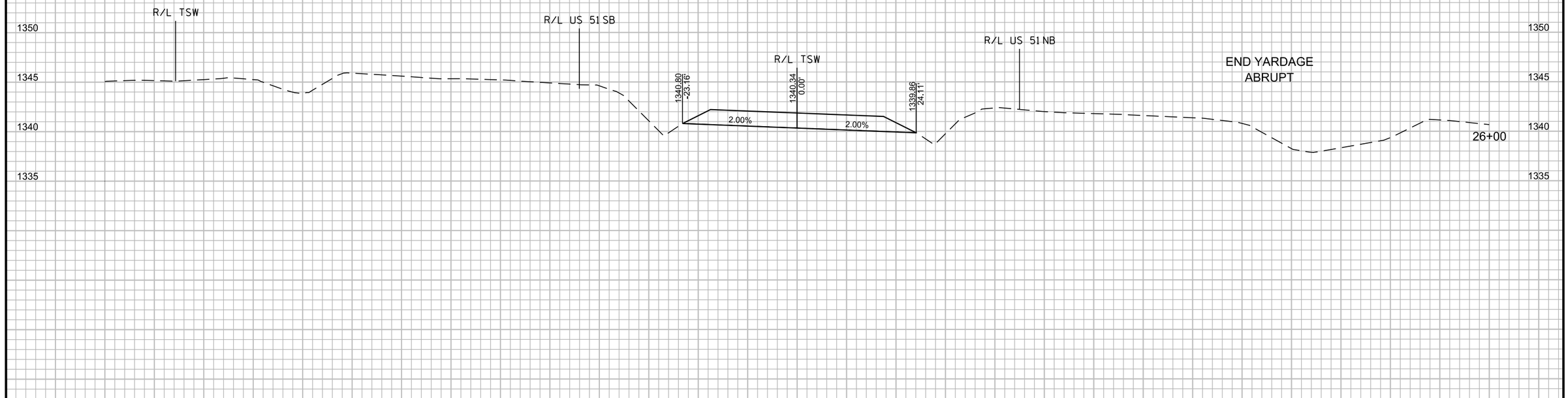
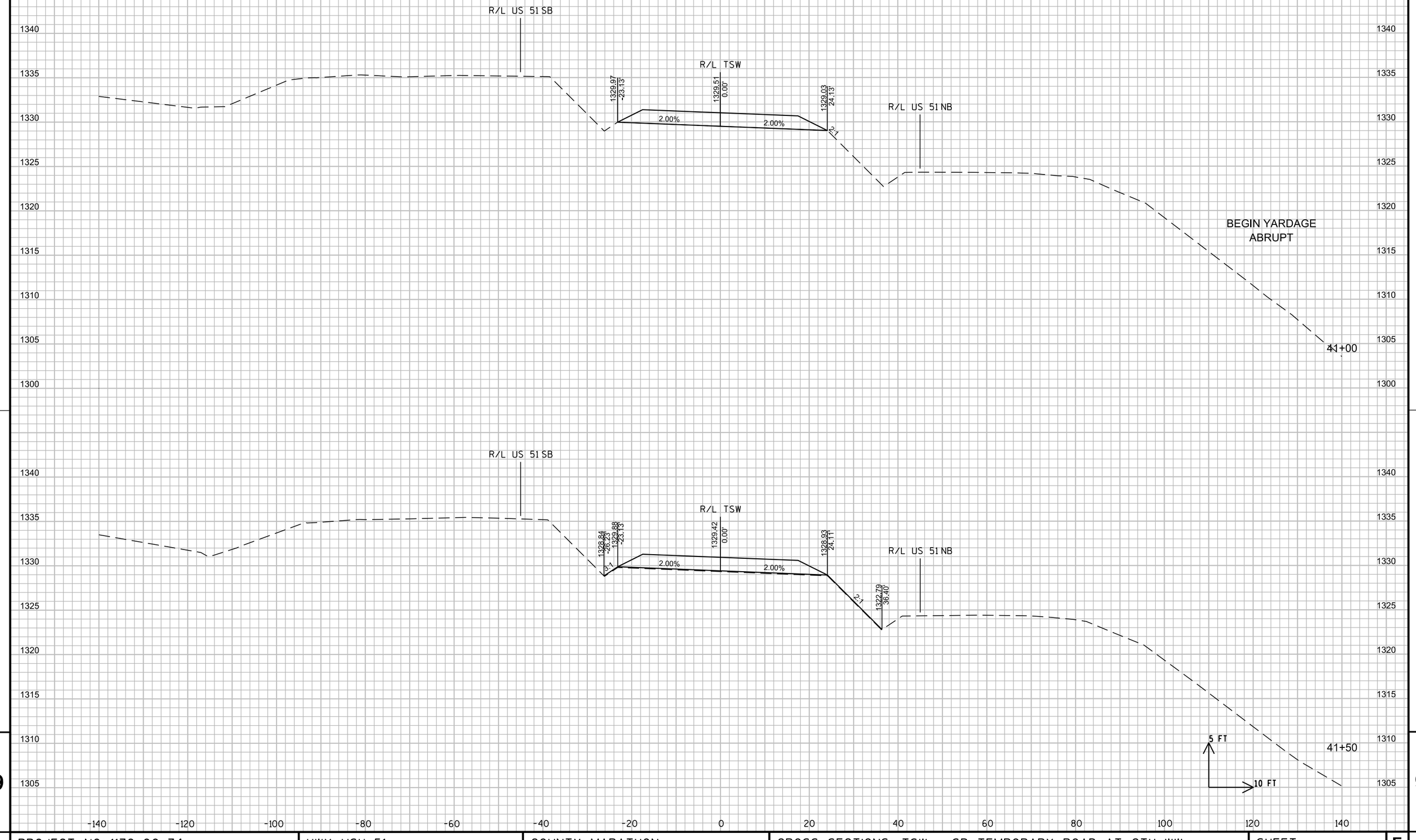
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 296	E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 297	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090208_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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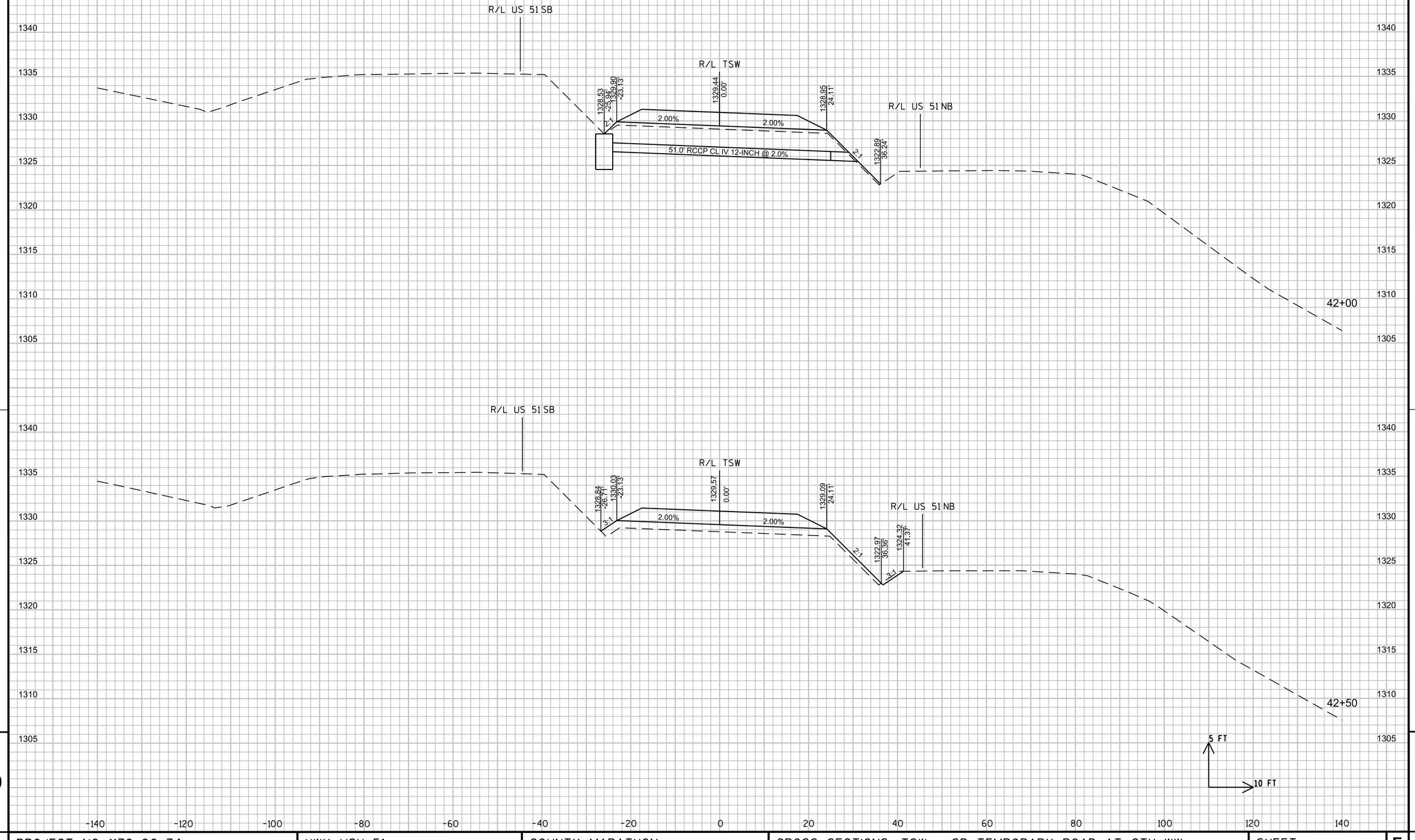
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET	E

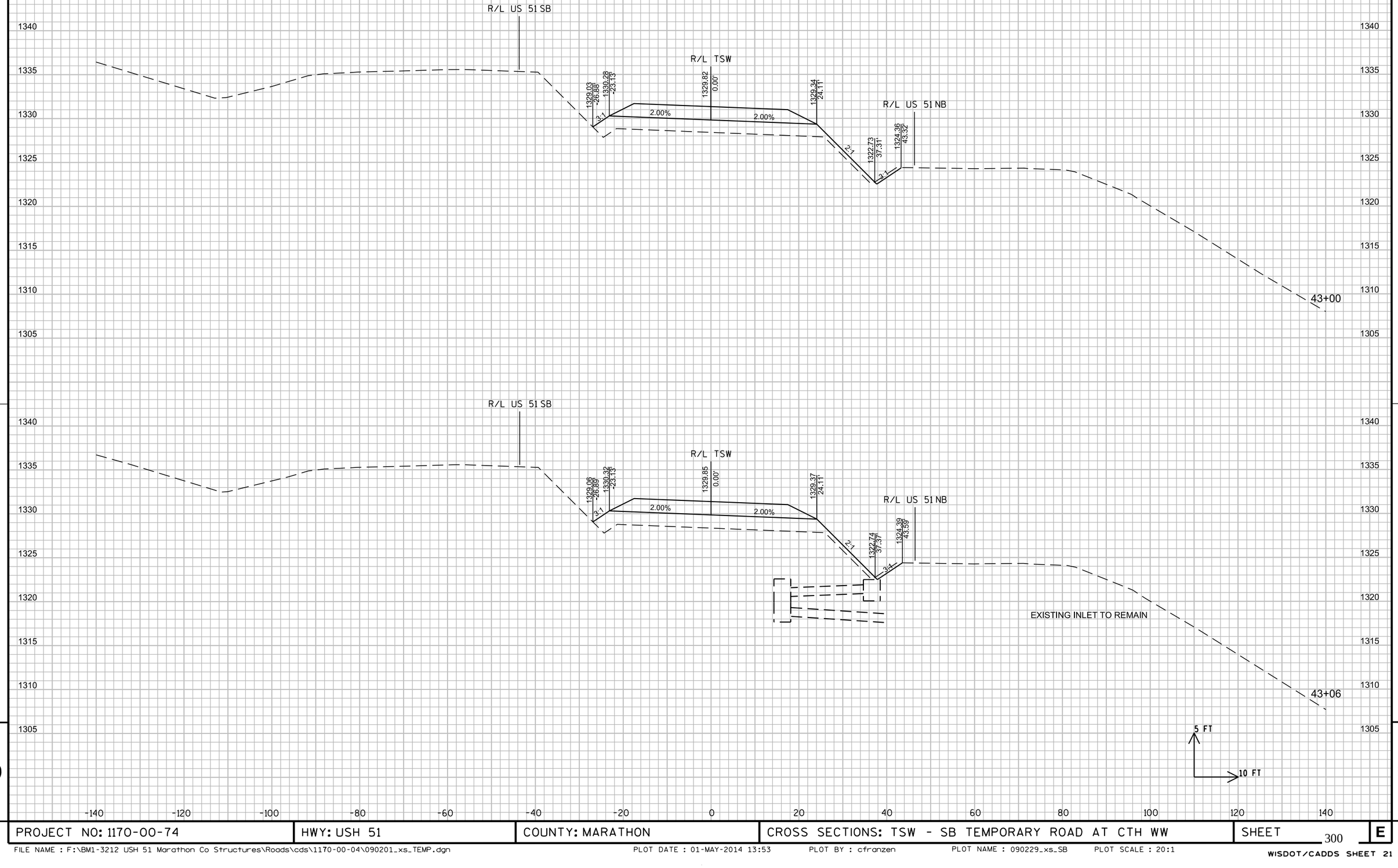
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090227_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET	E

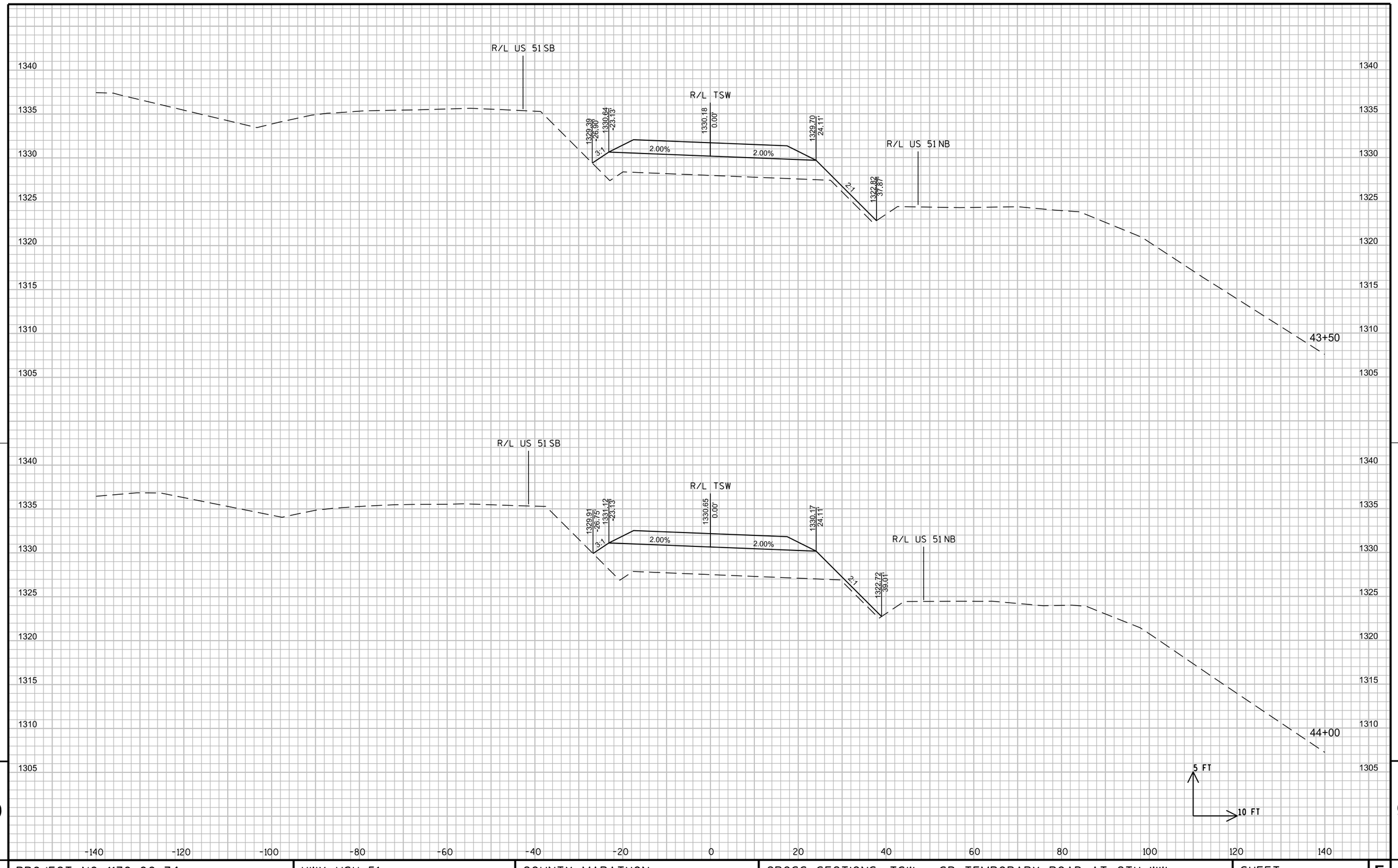
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090228_xs_SB PLOT SCALE : 20:1



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 300 E

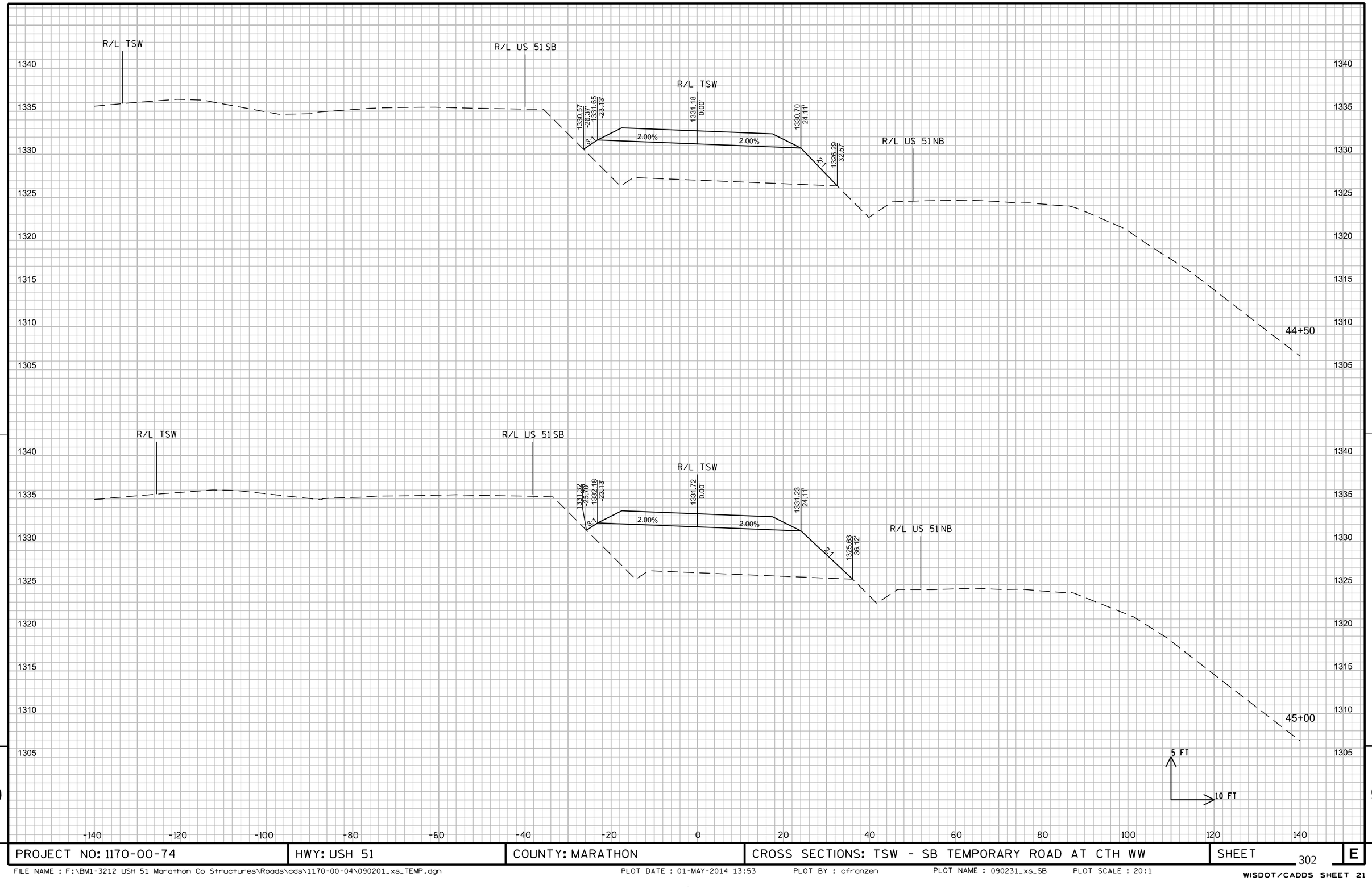
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090229_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090230_xs_SB PLOT SCALE : 20:1



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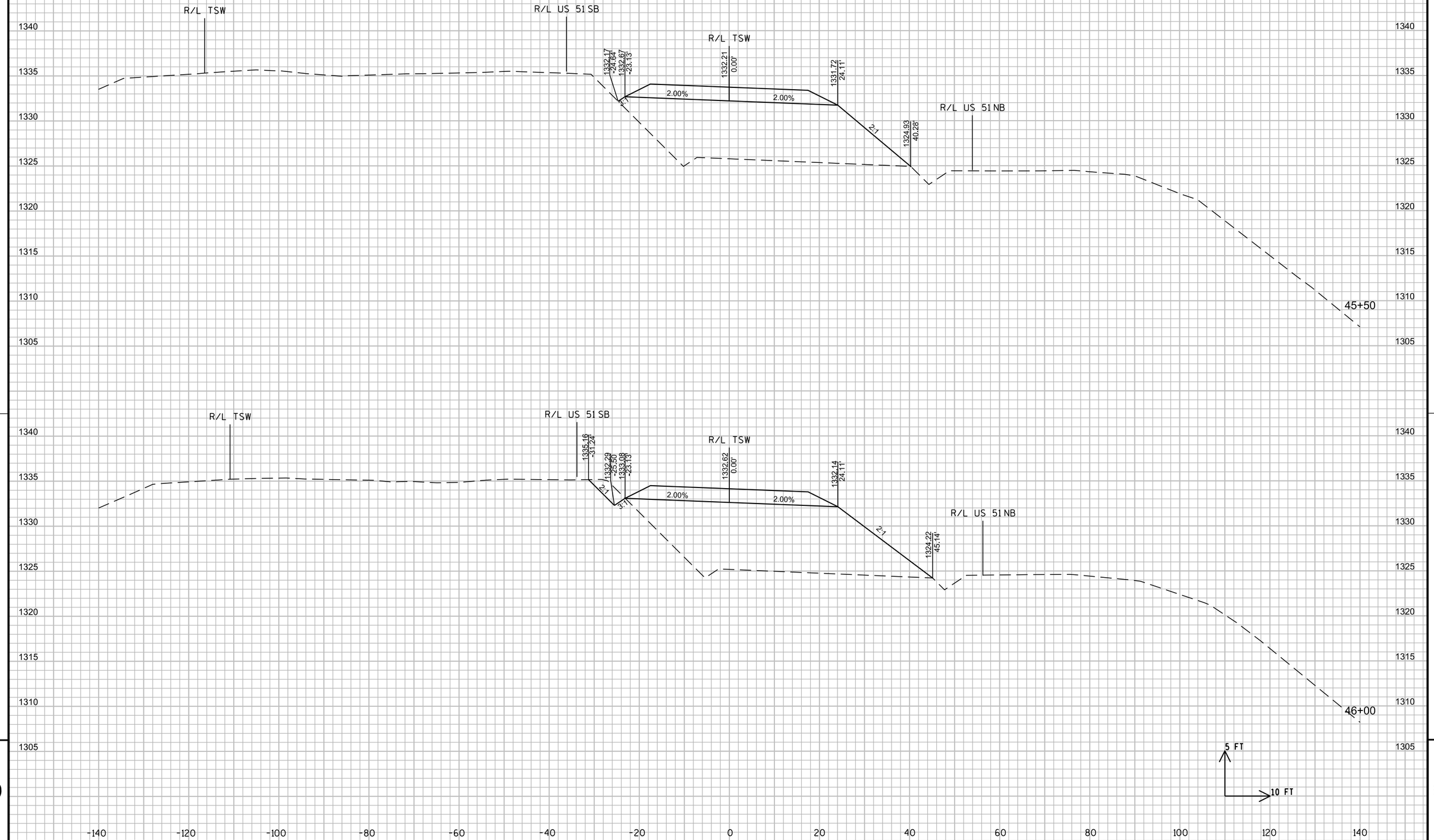
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 302 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090231_xs_SB PLOT SCALE : 20:1

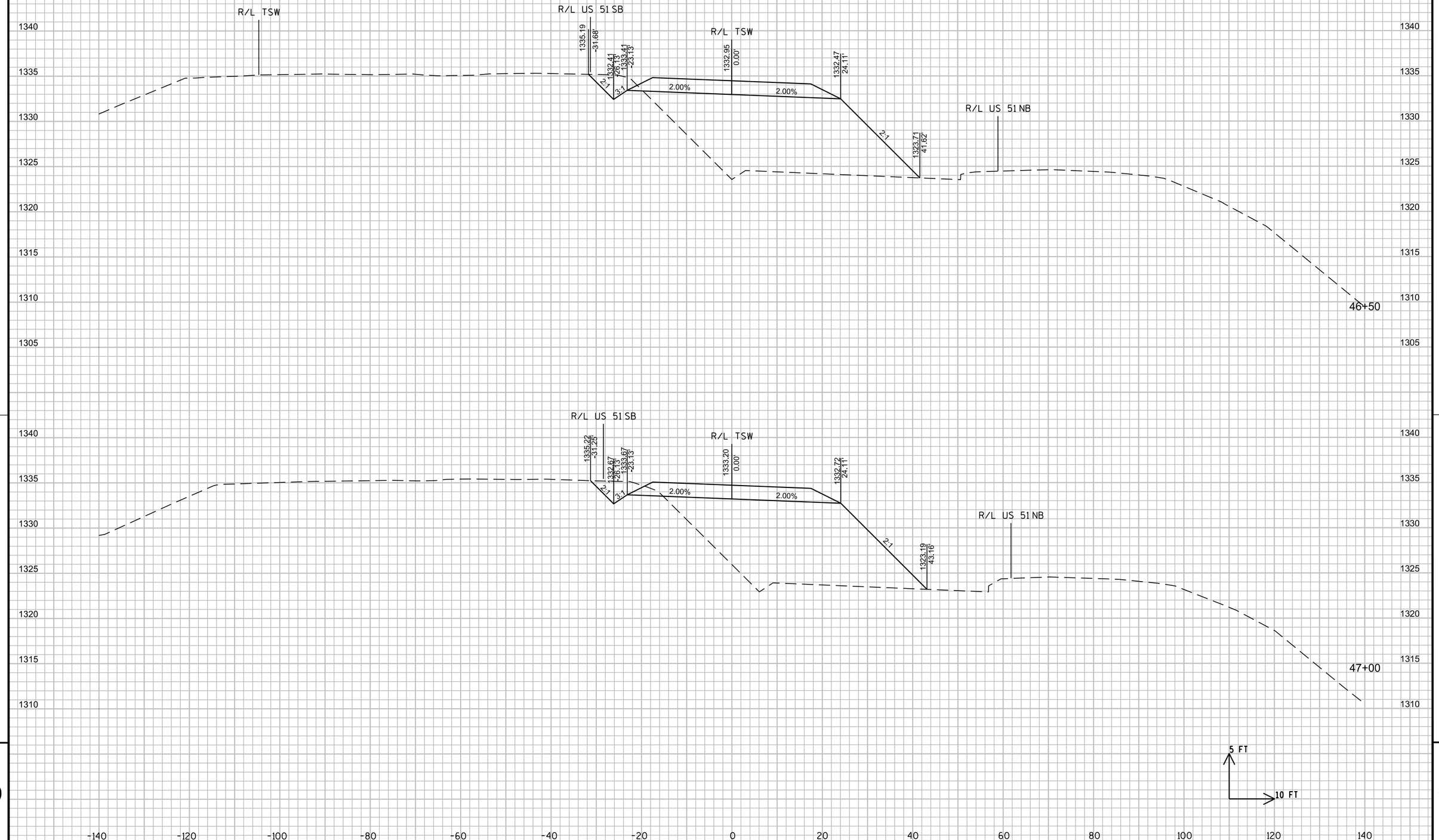
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090232_xs_SB PLOT SCALE : 20:1

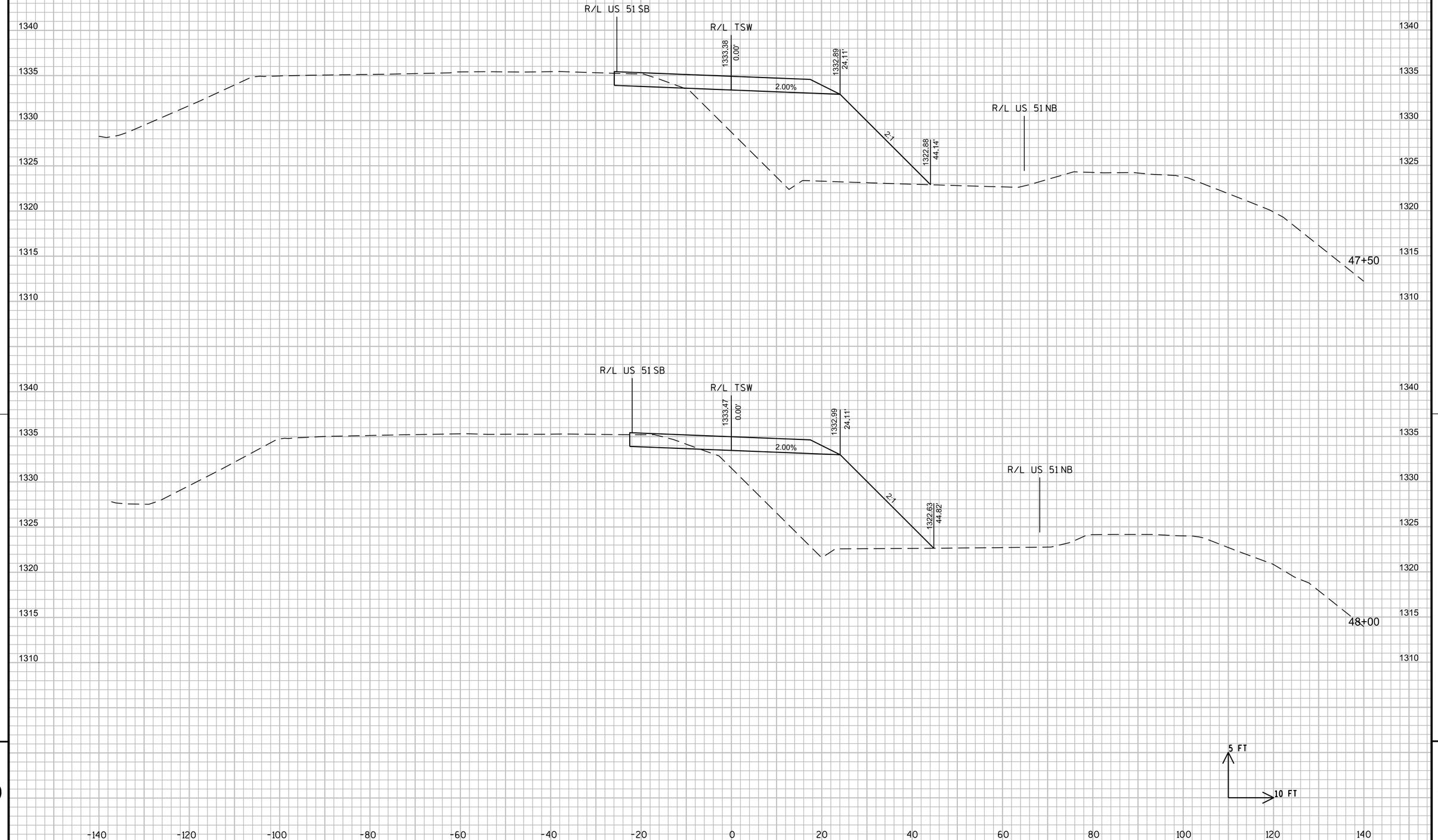
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 304 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090233_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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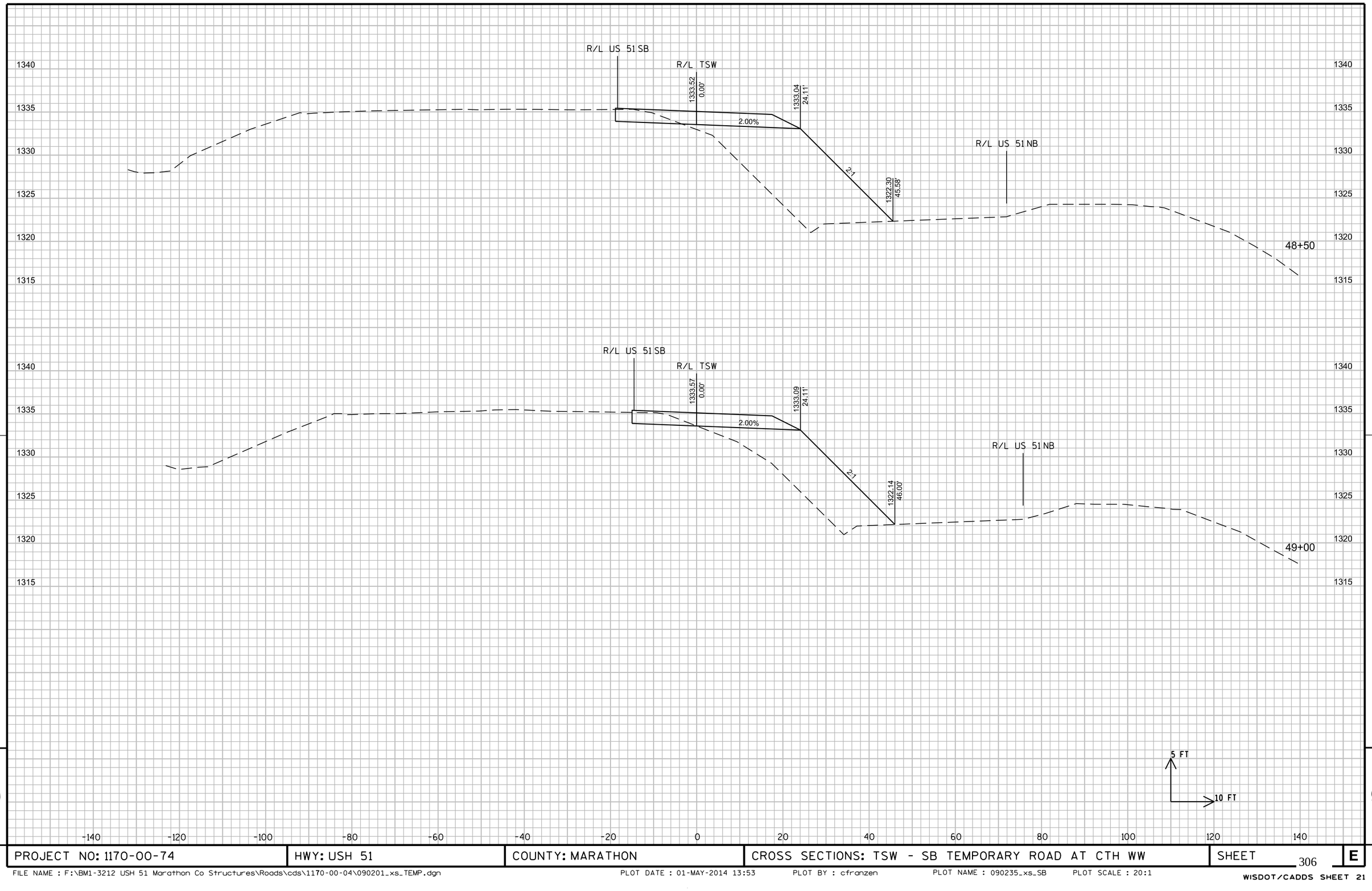
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090234_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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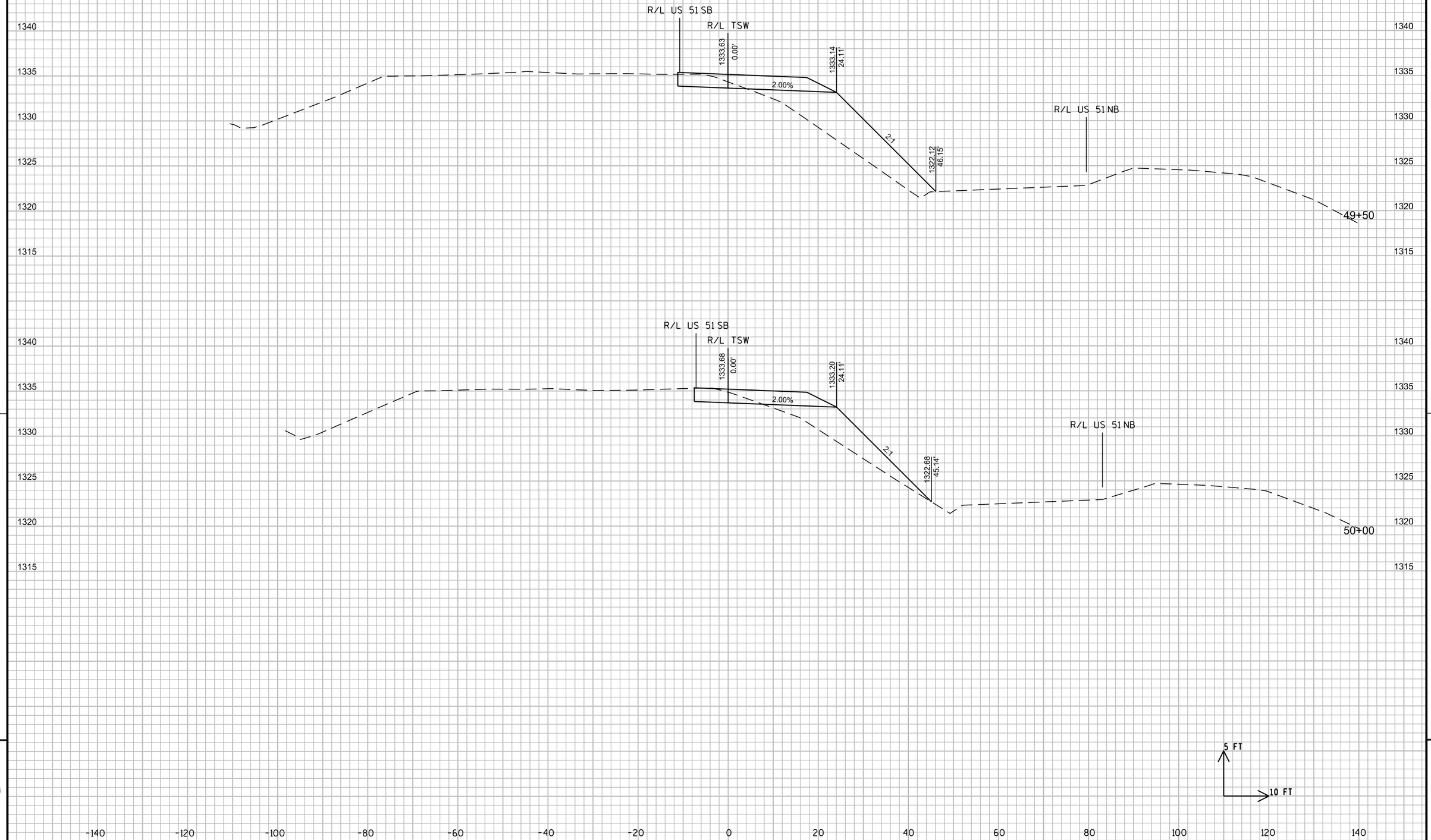
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 306	E

9

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090235_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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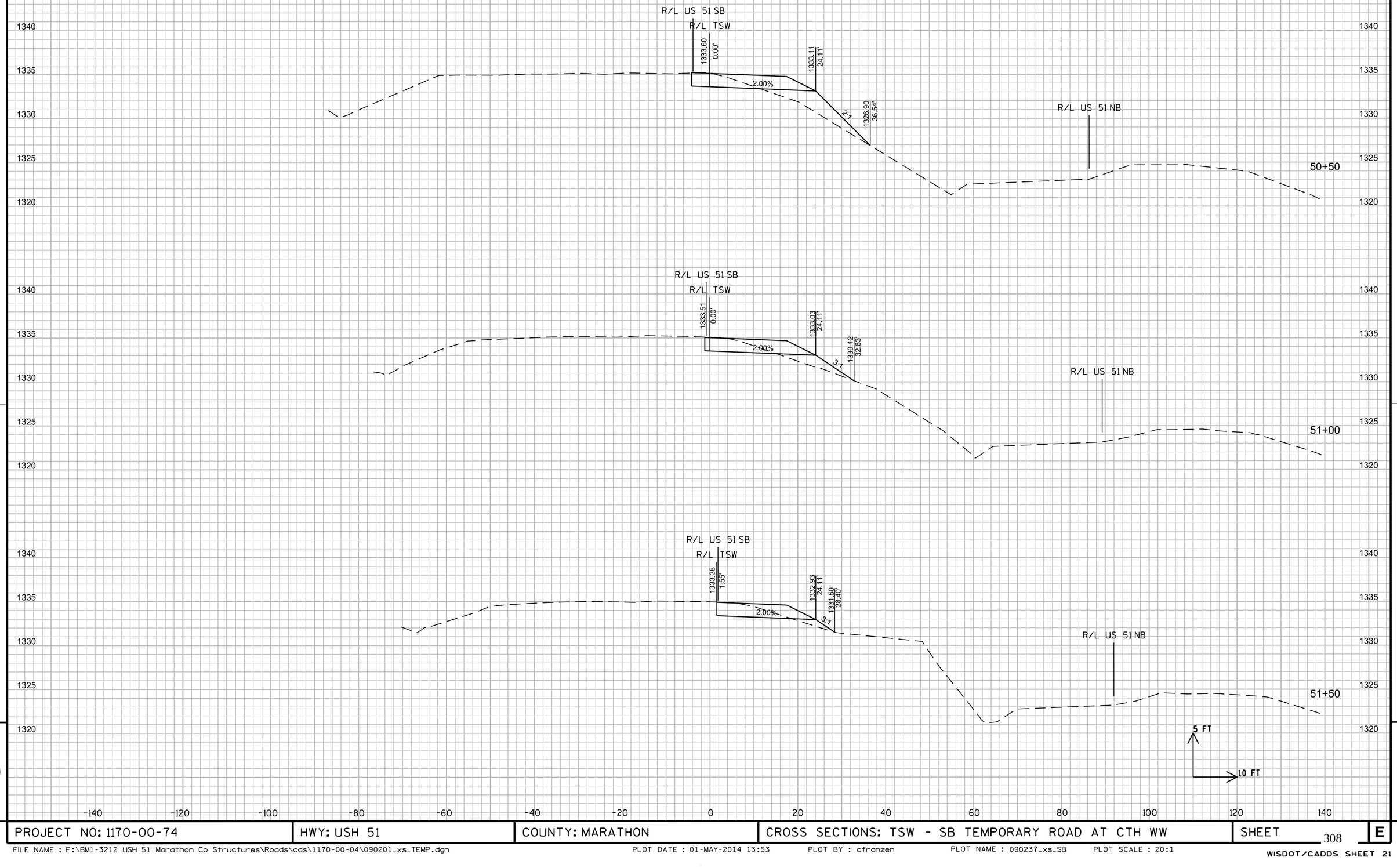
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 307 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090236_xs_SB PLOT SCALE : 20:1

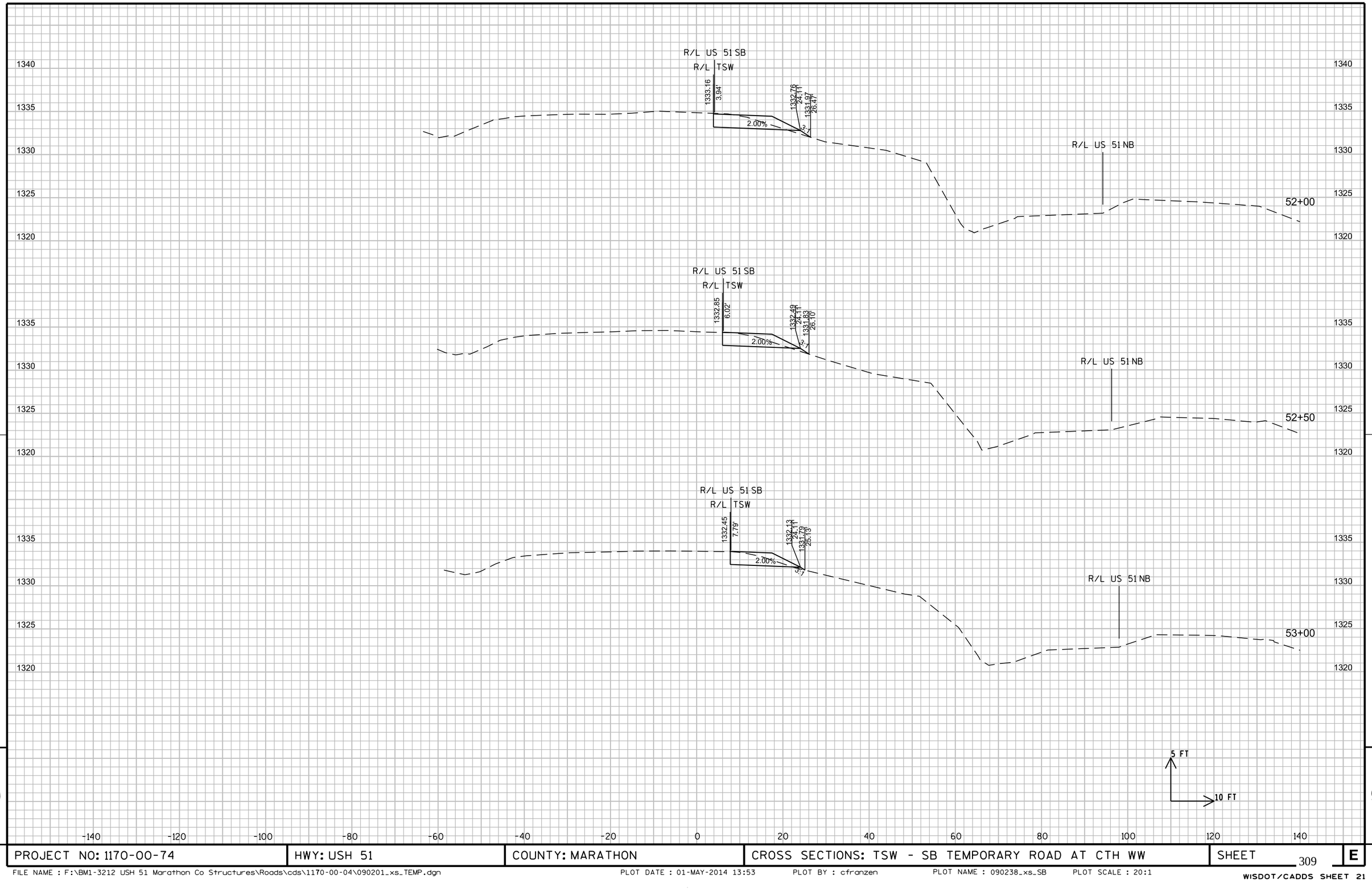
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 308	E

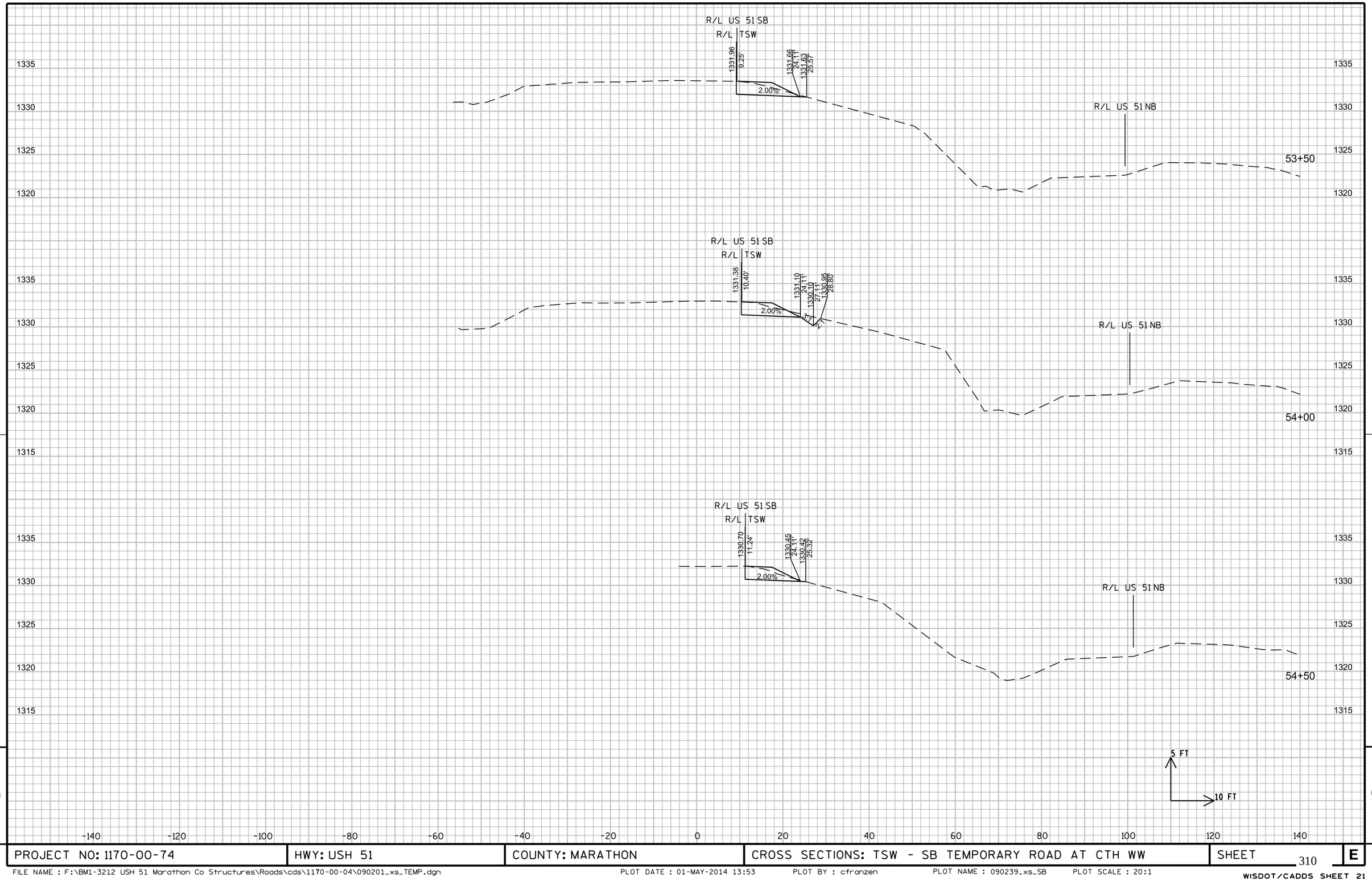
FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090237_xs_SB PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090238_xs_SB PLOT SCALE : 20:1



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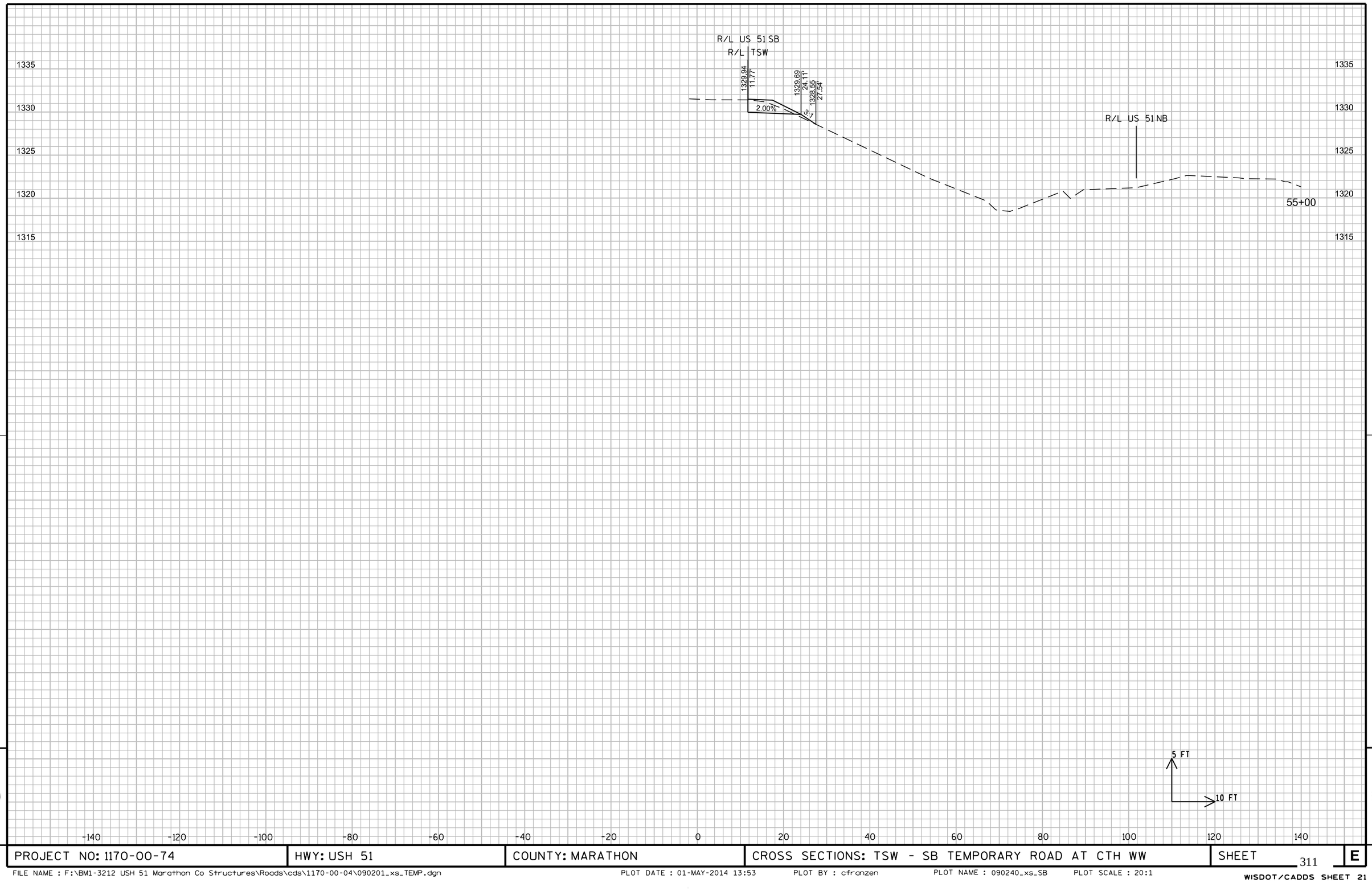
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 310	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090239_xs_SB PLOT SCALE : 20:1

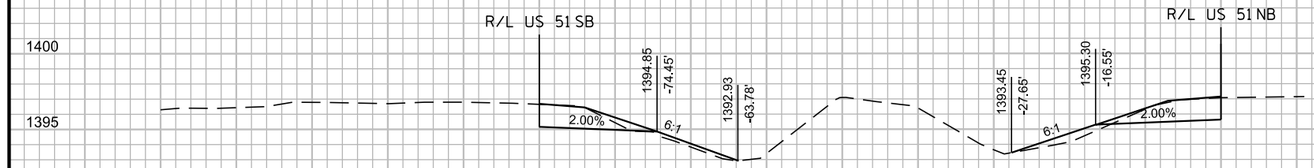
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: TSW - SB TEMPORARY ROAD AT CTH WW	SHEET 311	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_TEMP.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090240_xs_SB PLOT SCALE : 20:1

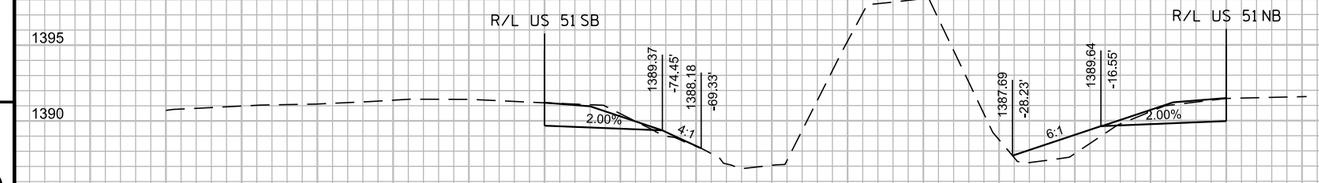
WISDOT/CADDS SHEET 21



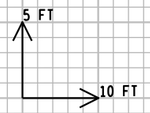
179+00

179+50

180+00



180+50



1400 1395 1390 1385

-140 -120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120 140

9

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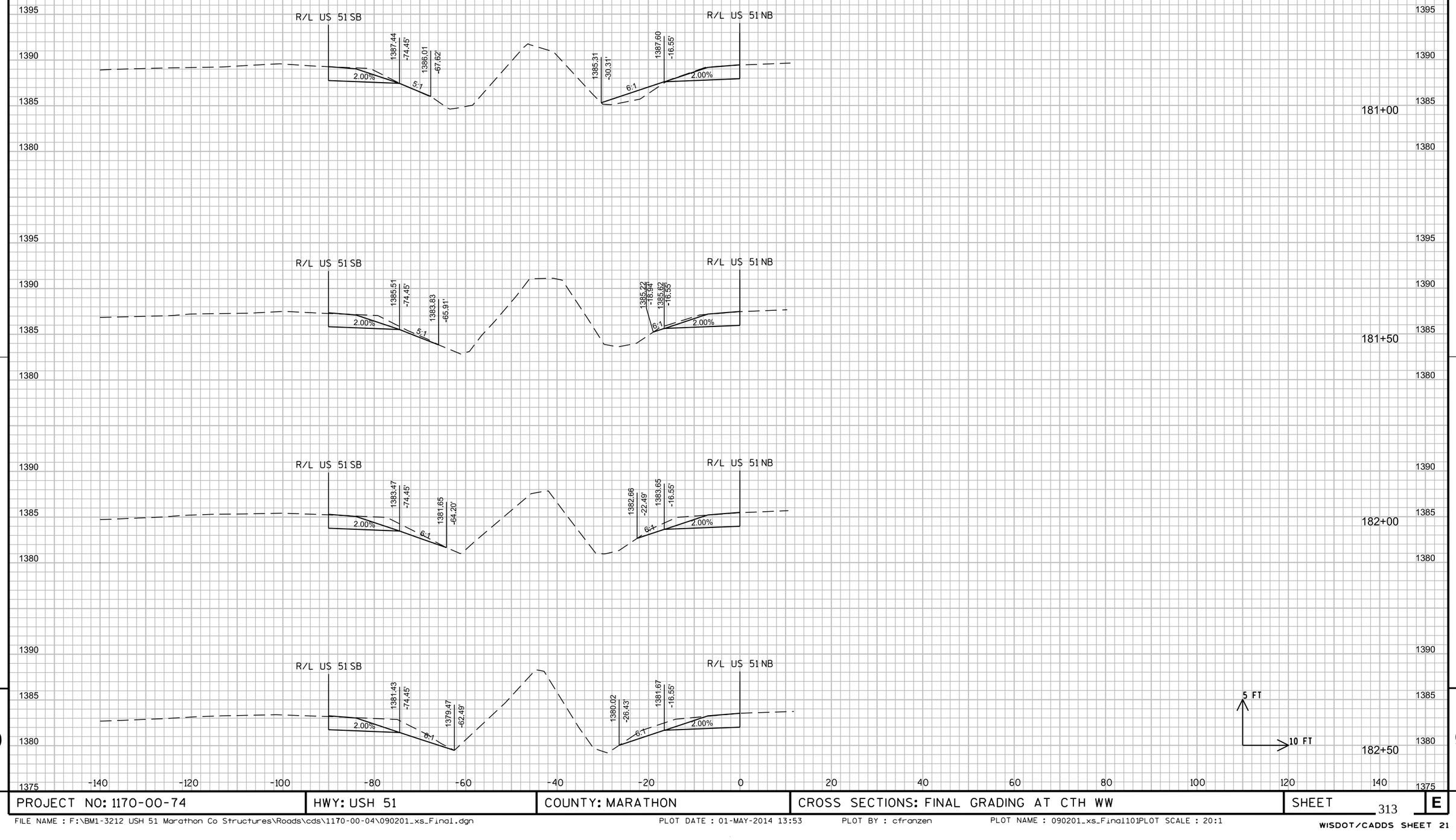
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 312	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final100 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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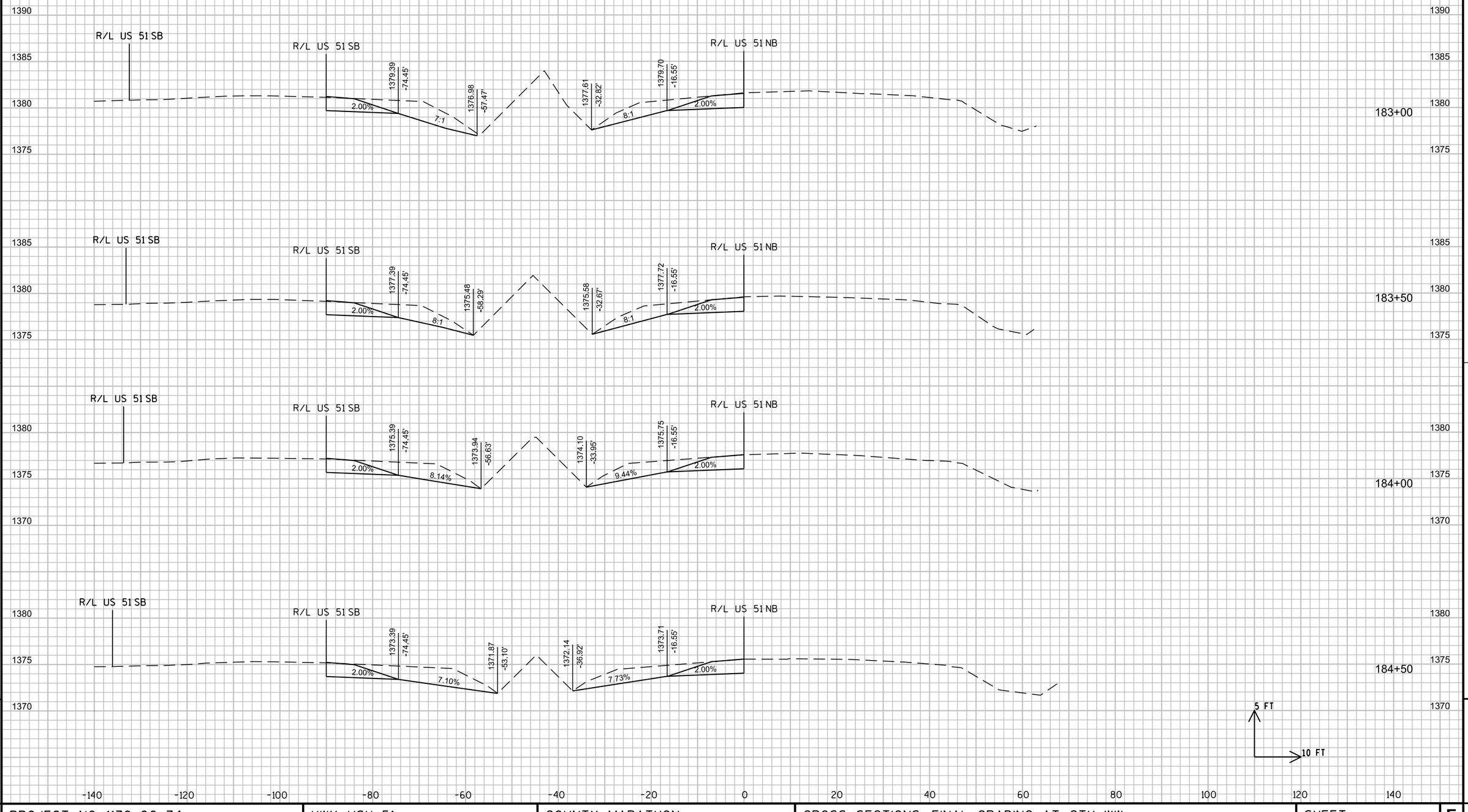
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 313	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final101 PLOT SCALE : 20:1

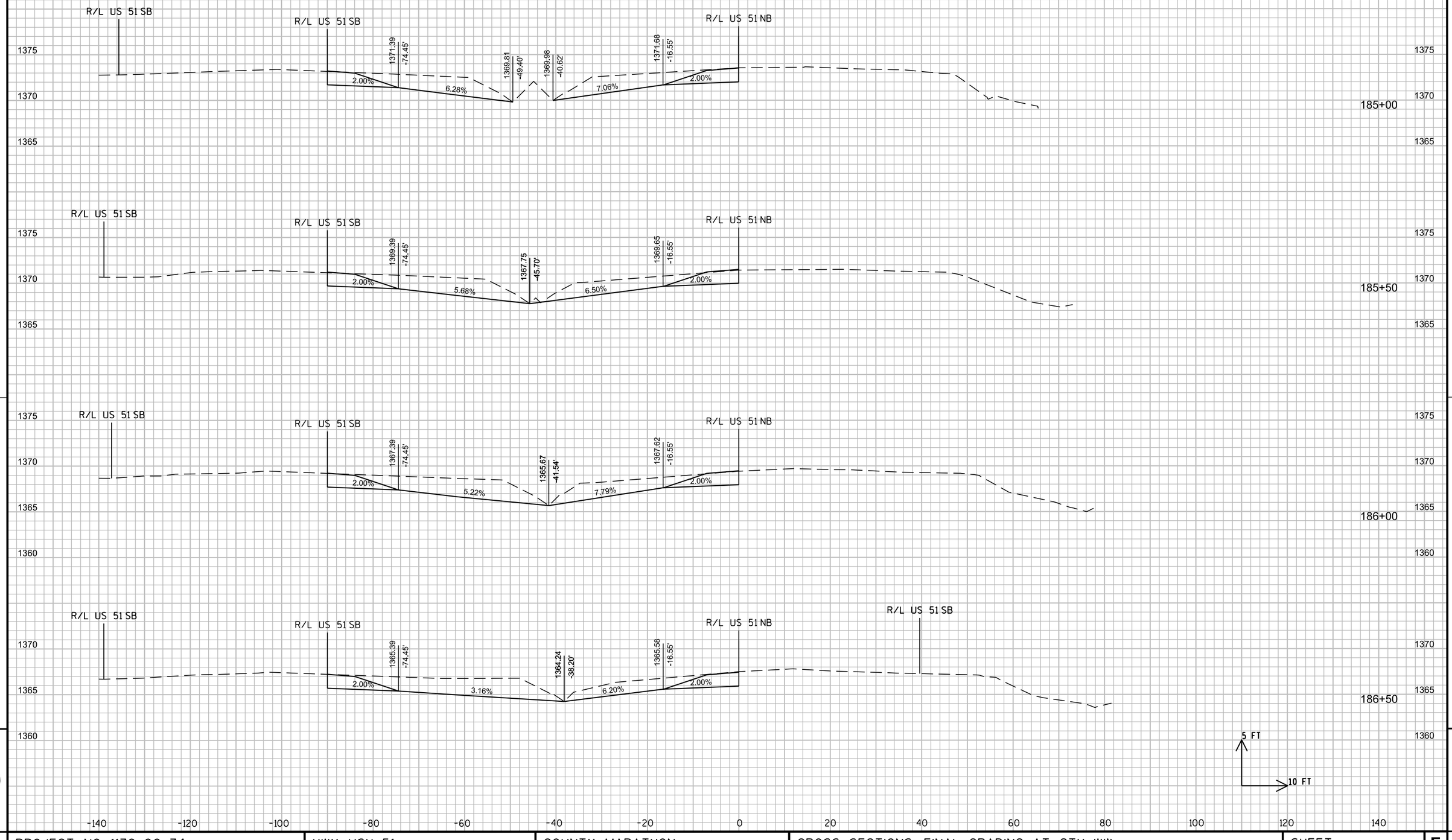
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 314	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final102PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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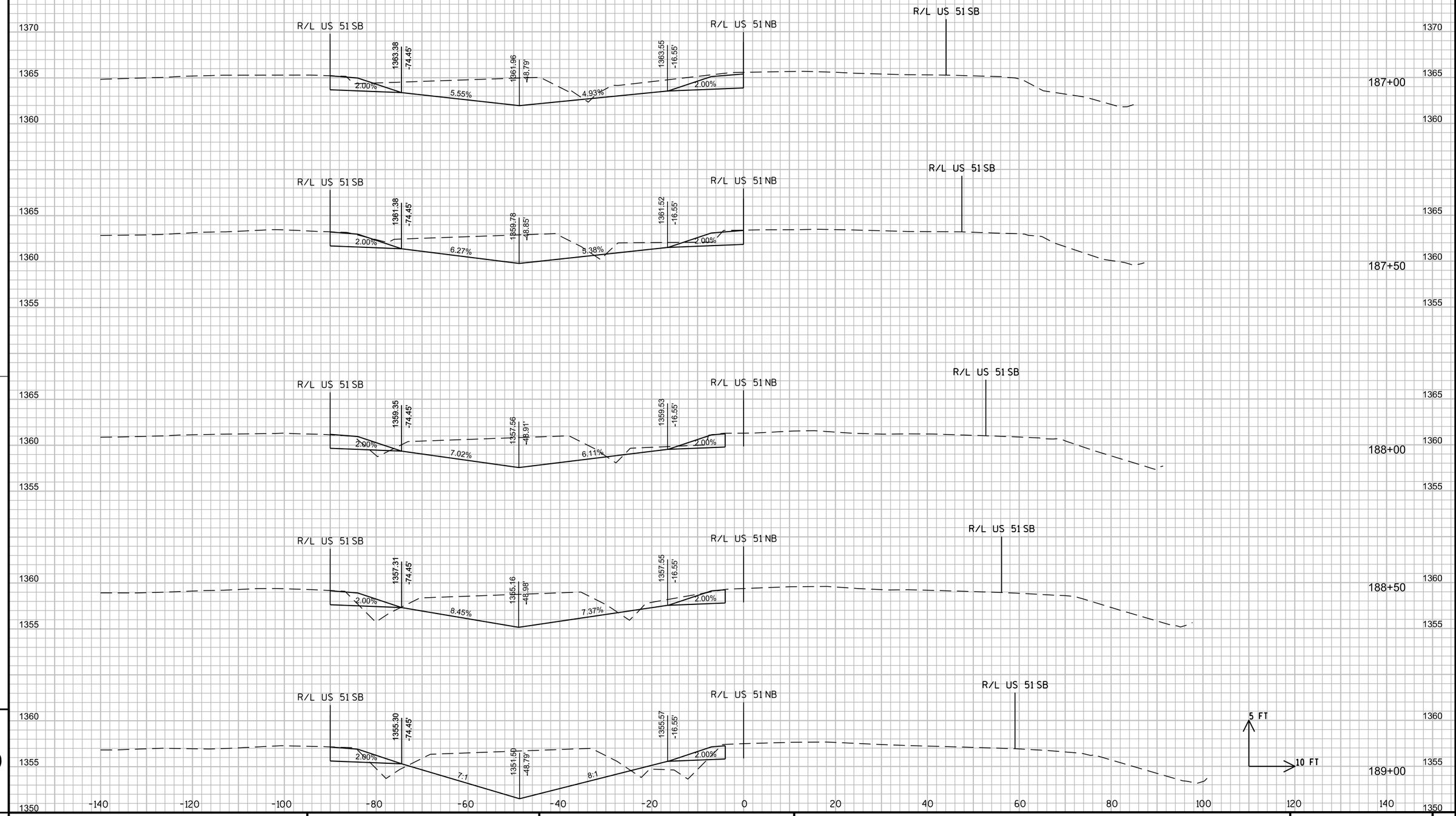
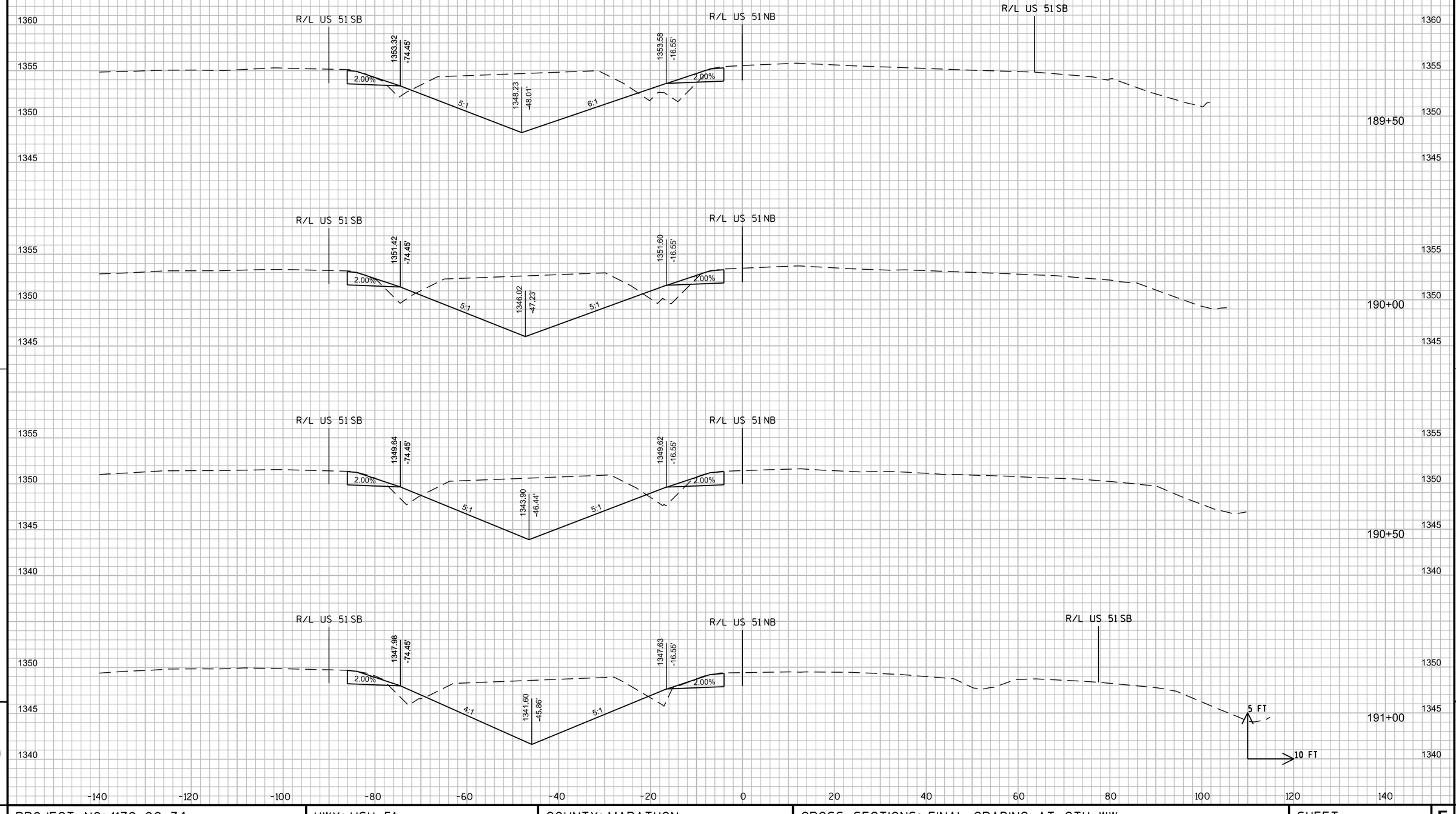
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 315	E



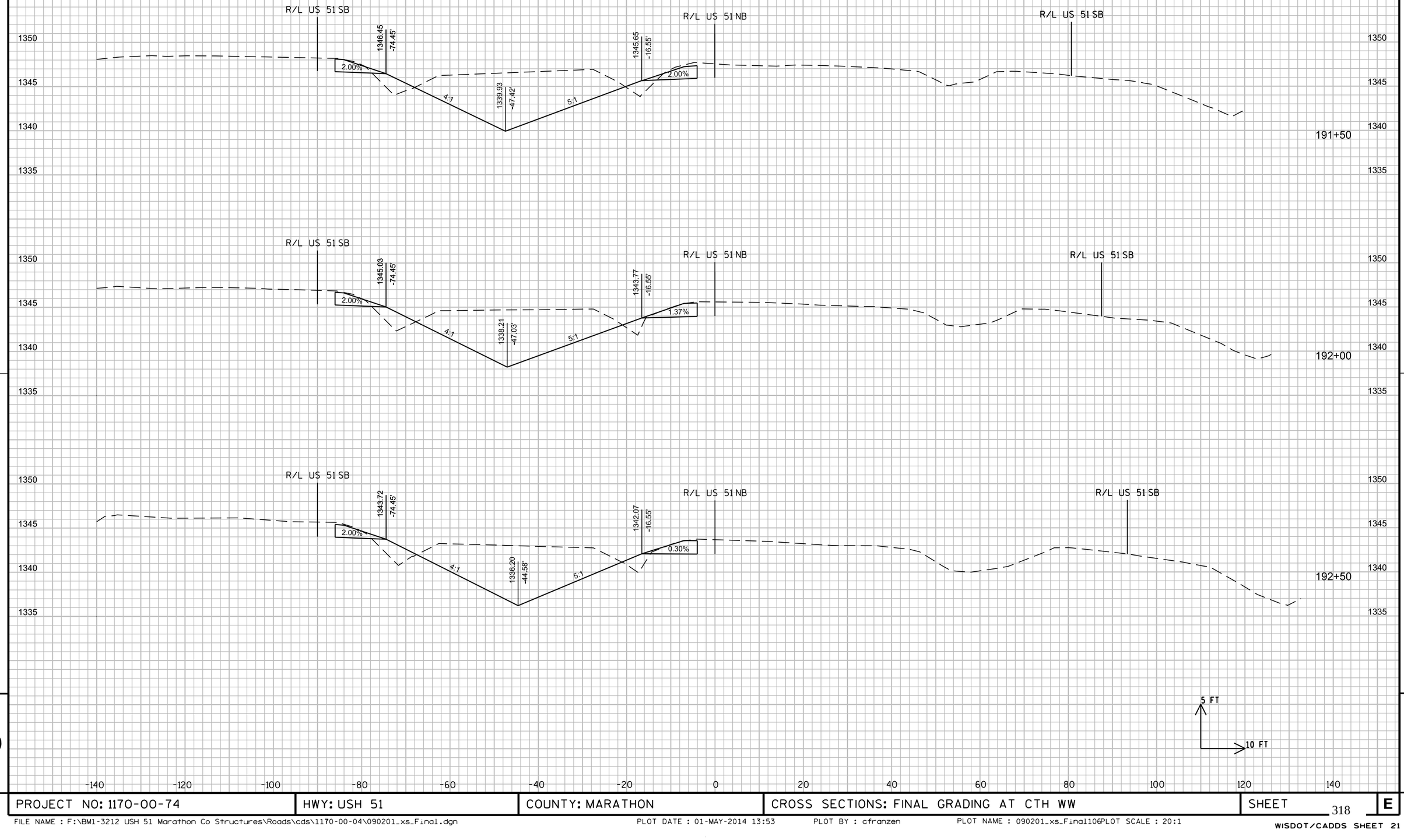
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 316 E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 317	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final105 PLOT SCALE : 20:1

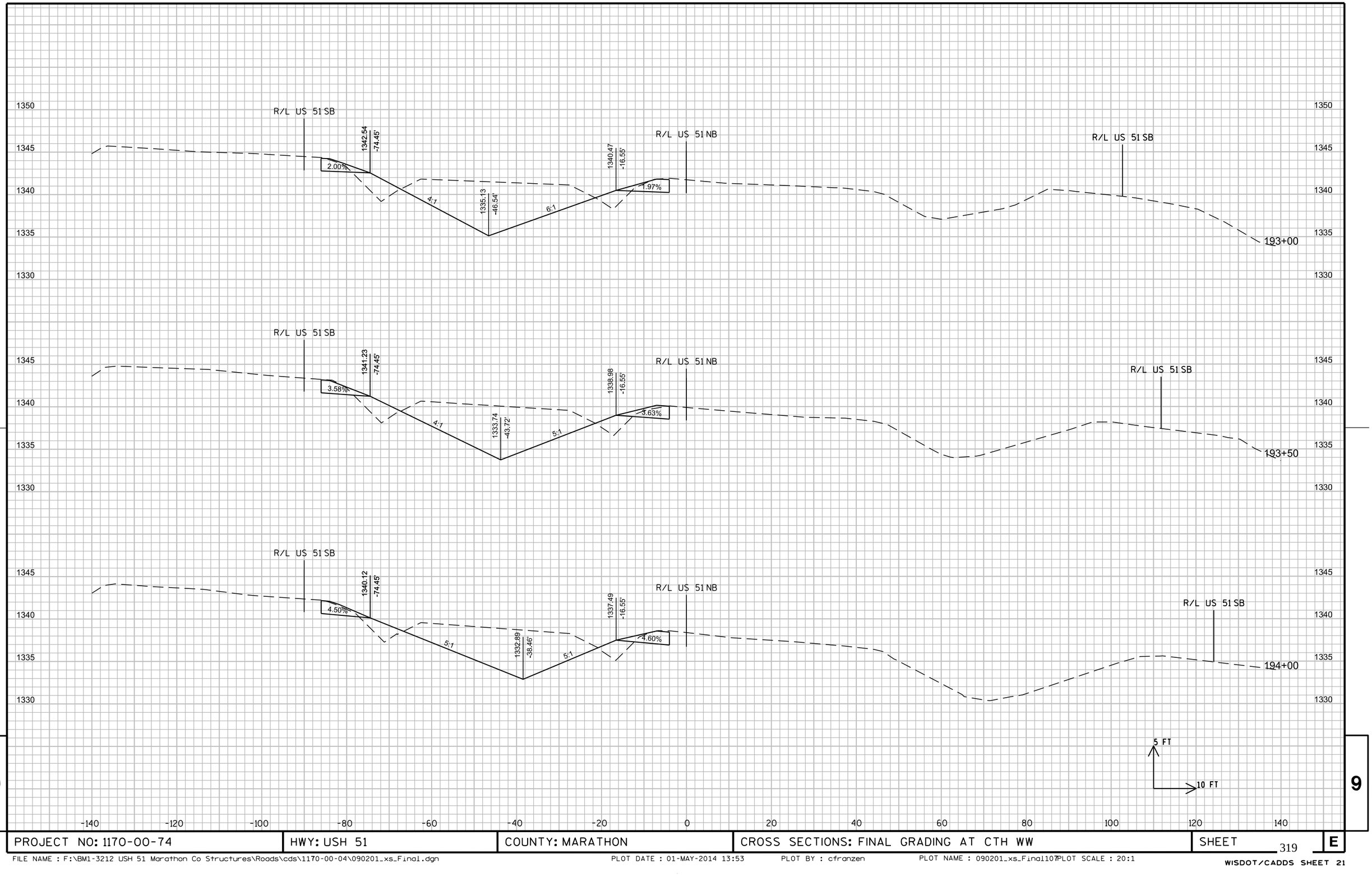
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 318	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final106 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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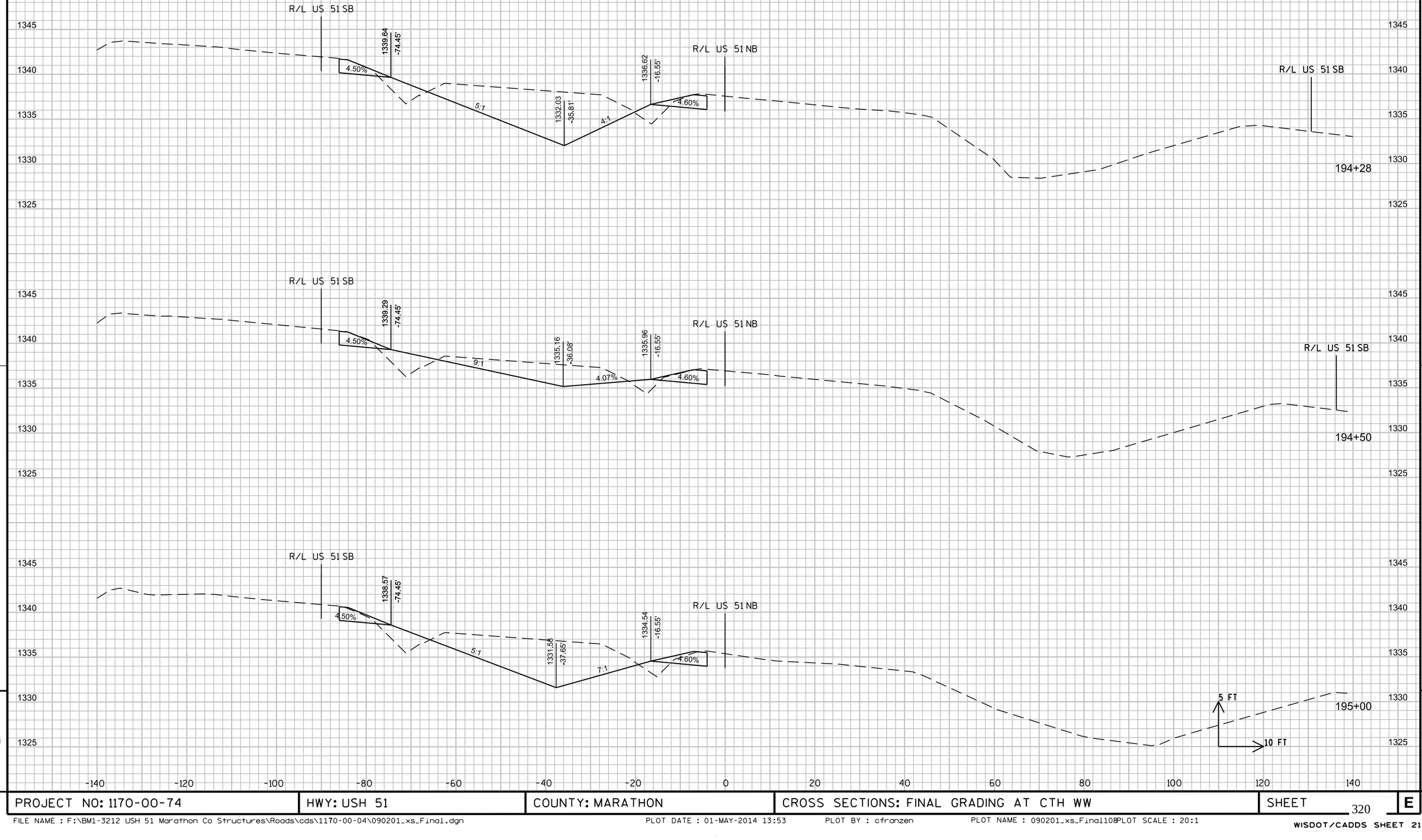
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 319	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final107 PLOT SCALE : 20:1

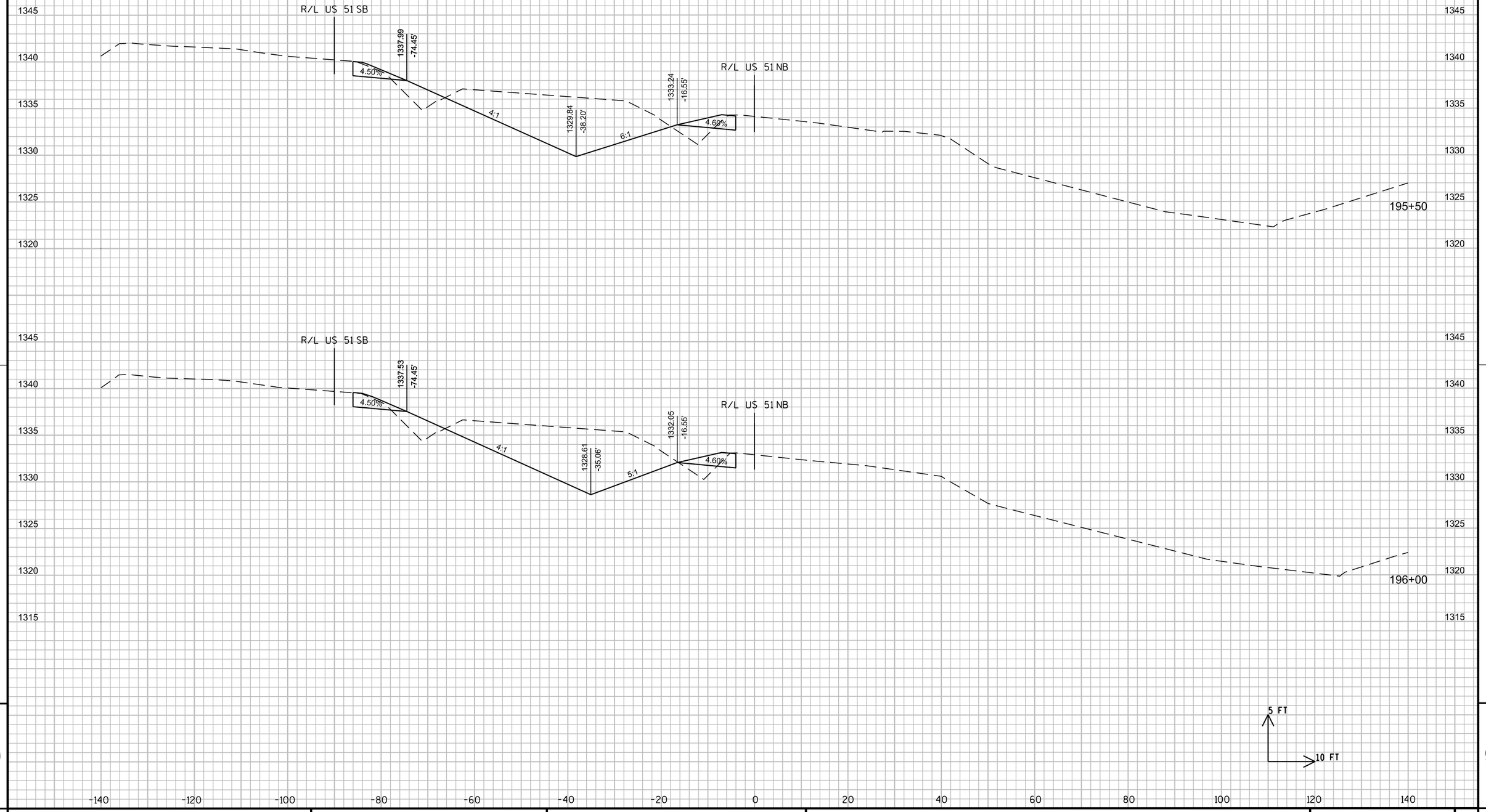
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 320 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final108 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

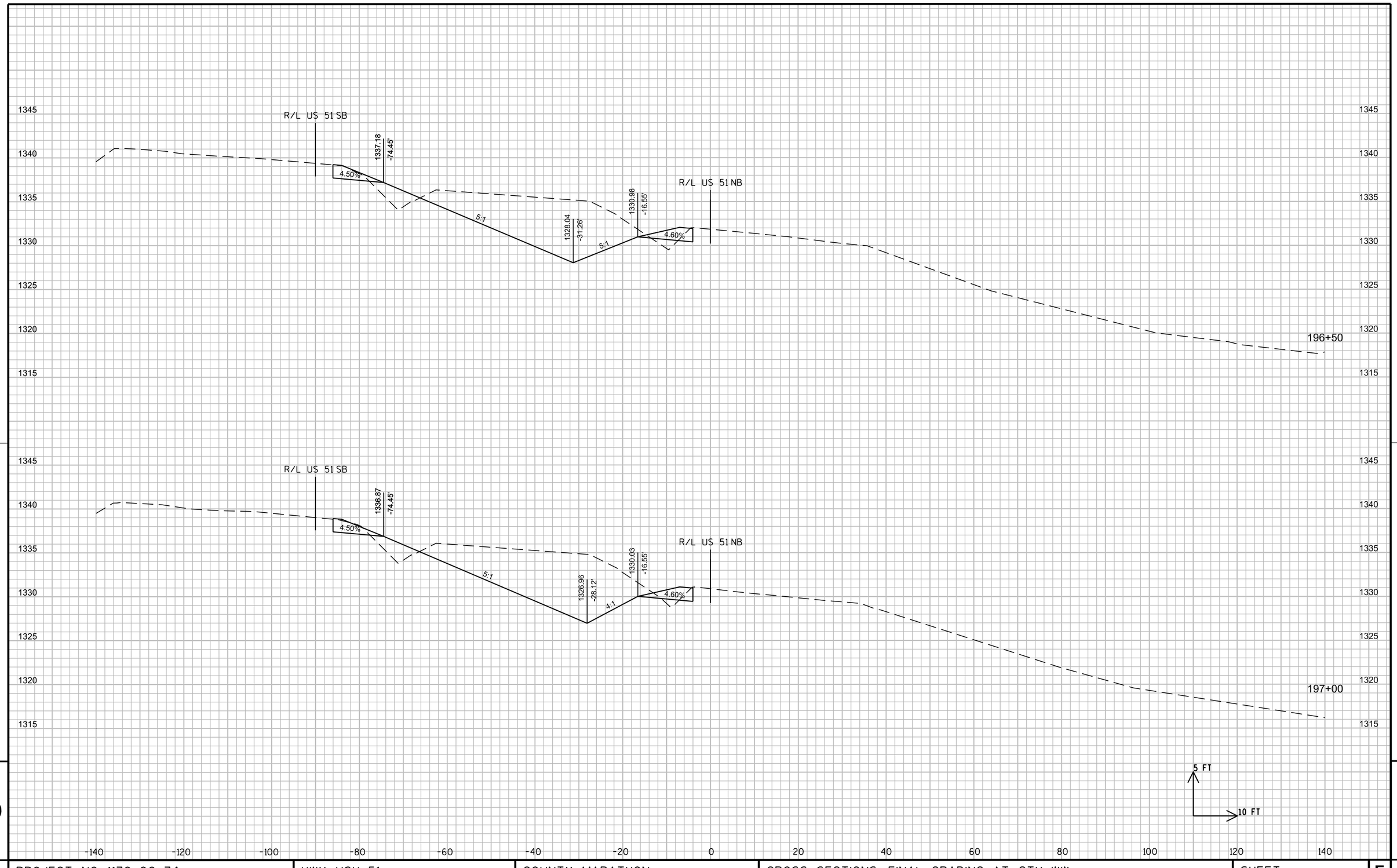


9

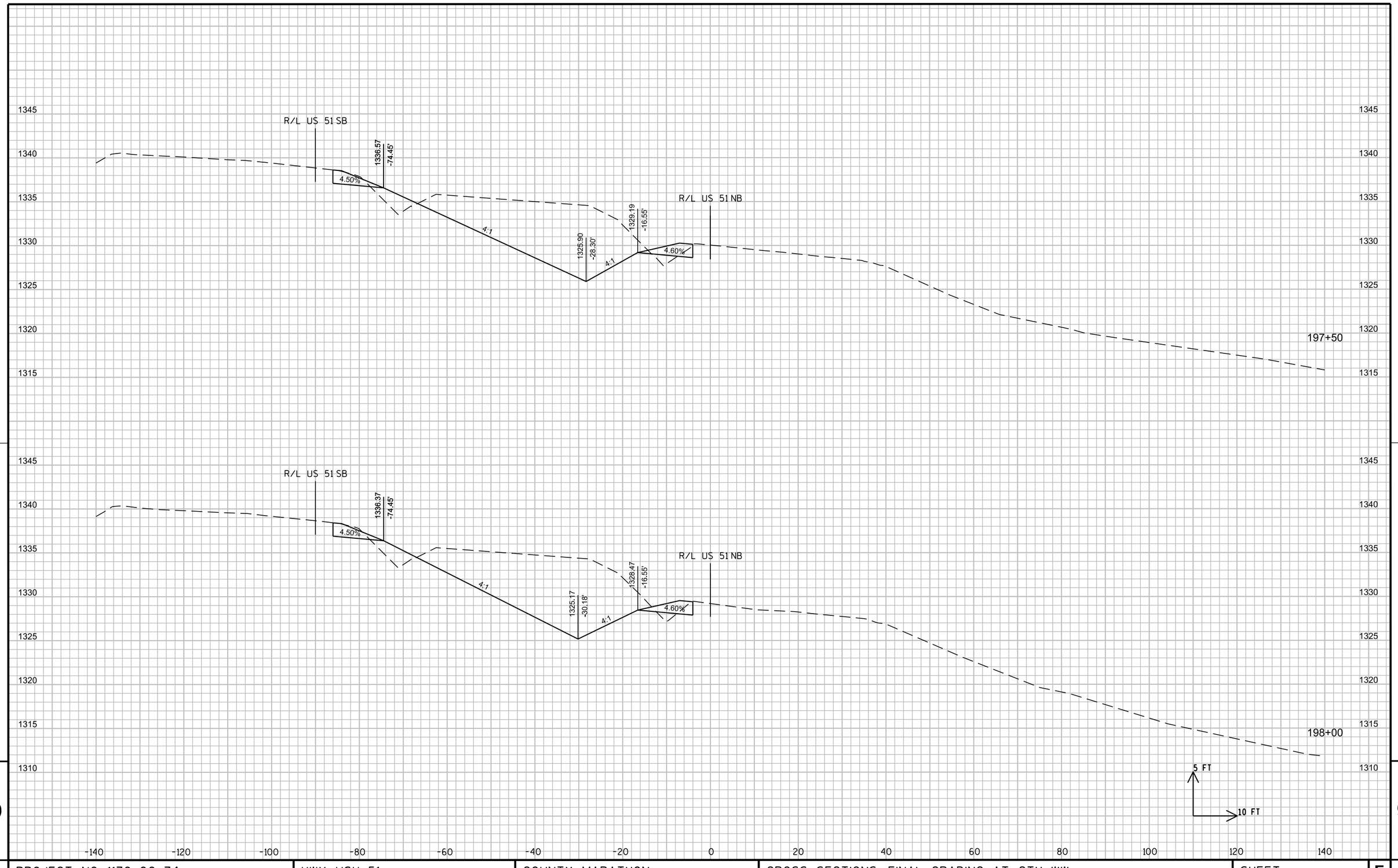
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 321	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final109 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



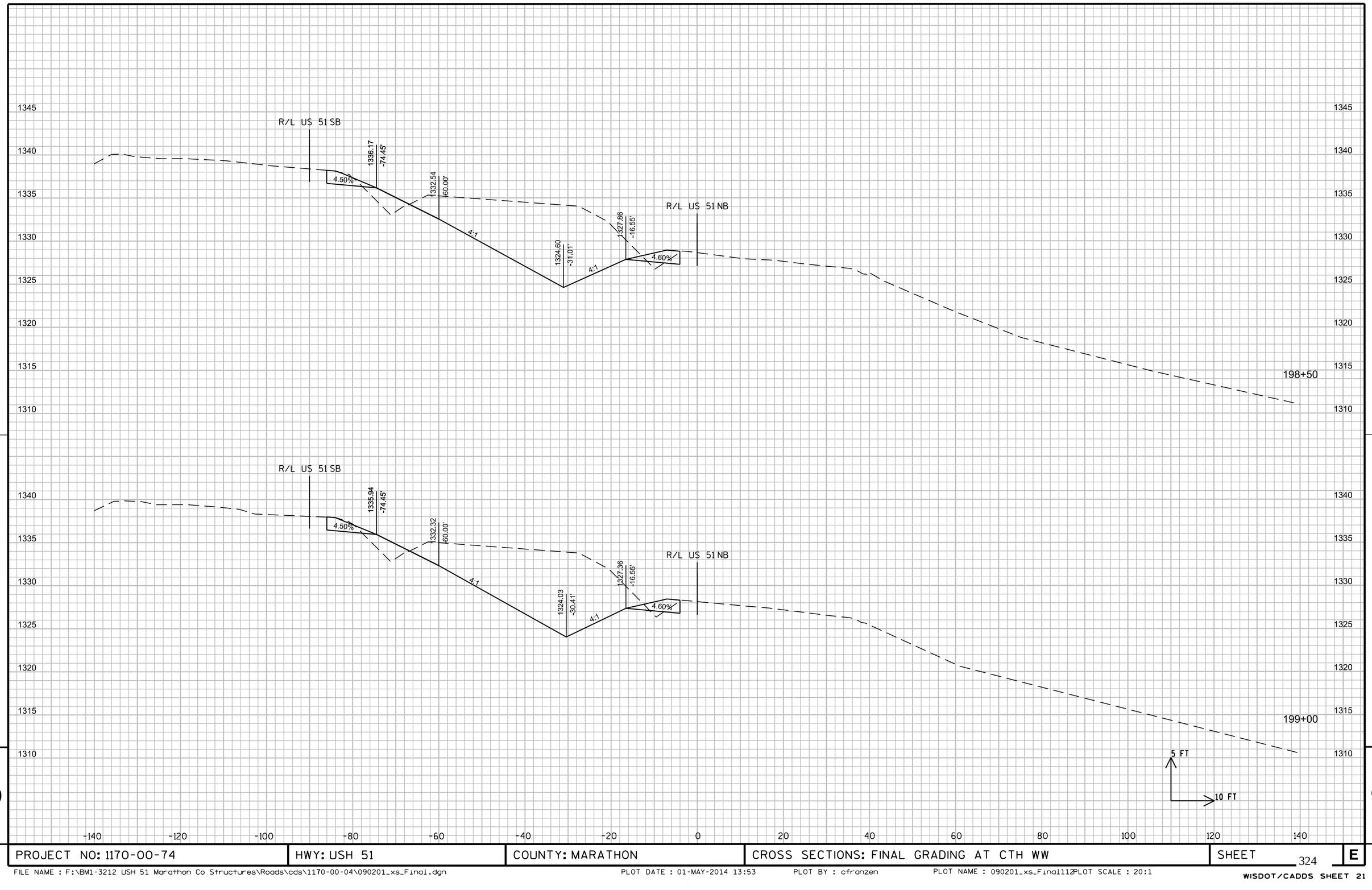
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 322 E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 323	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final111PLOT SCALE : 20:1

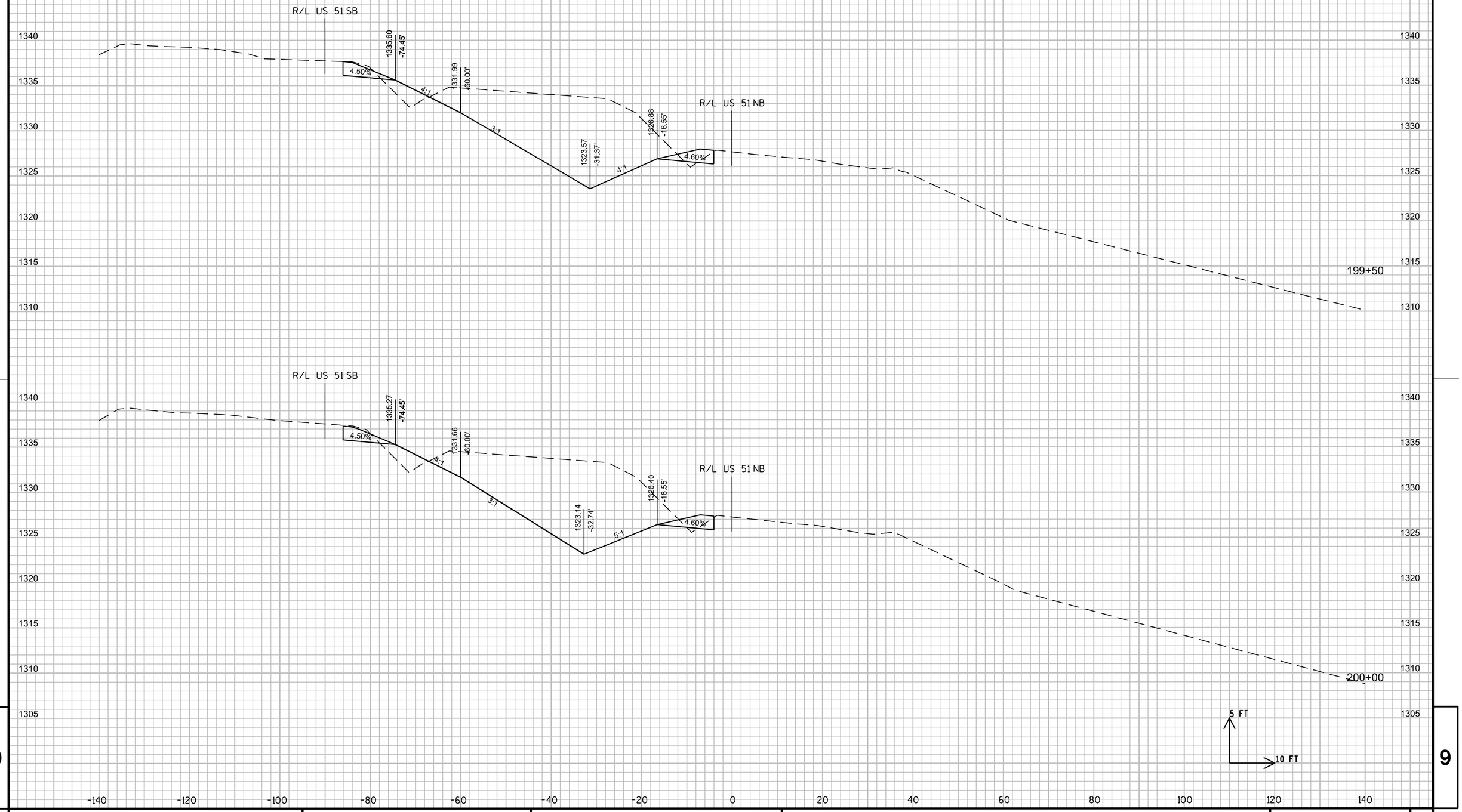
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 324	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final112 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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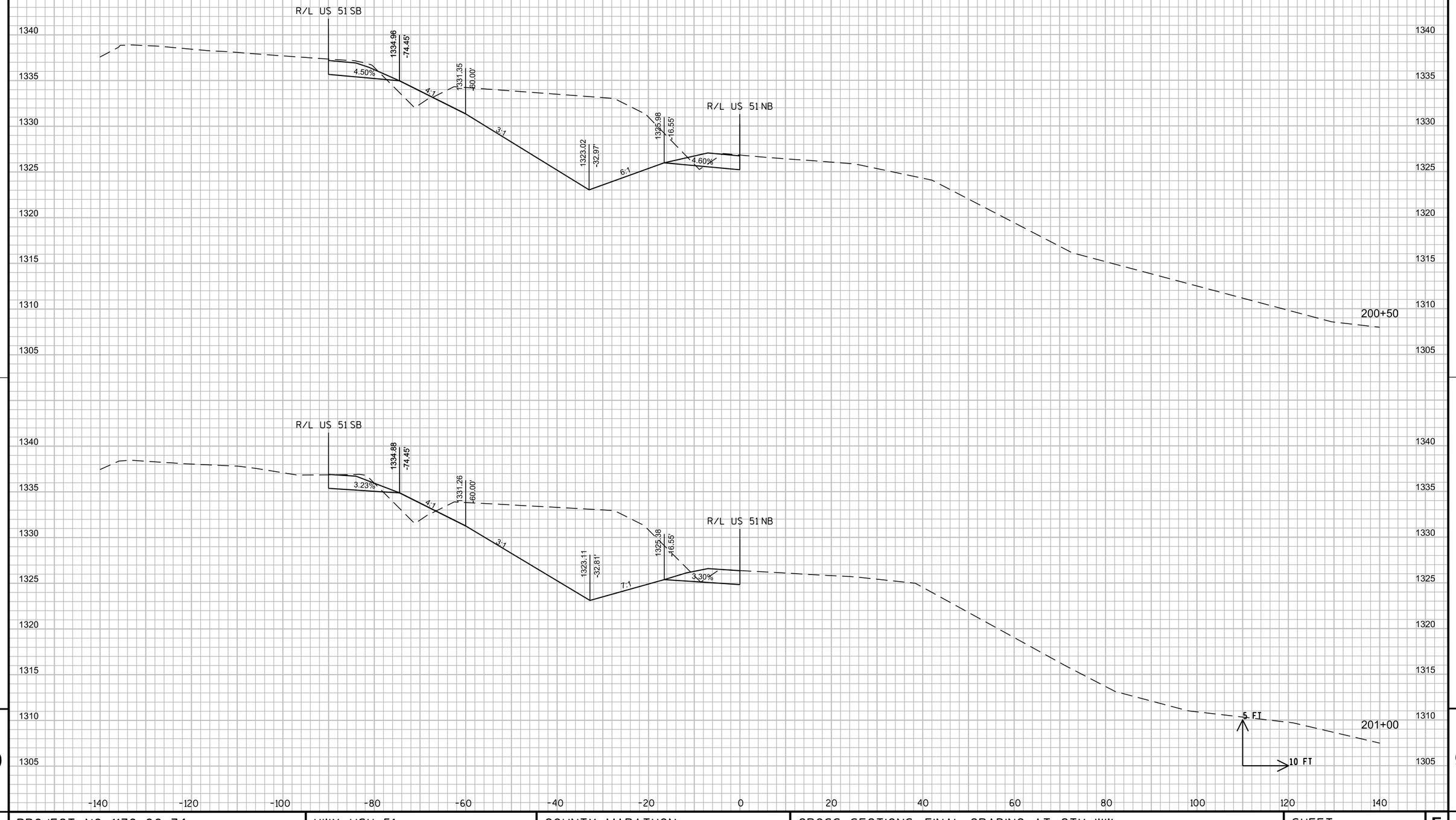
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 325	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final113 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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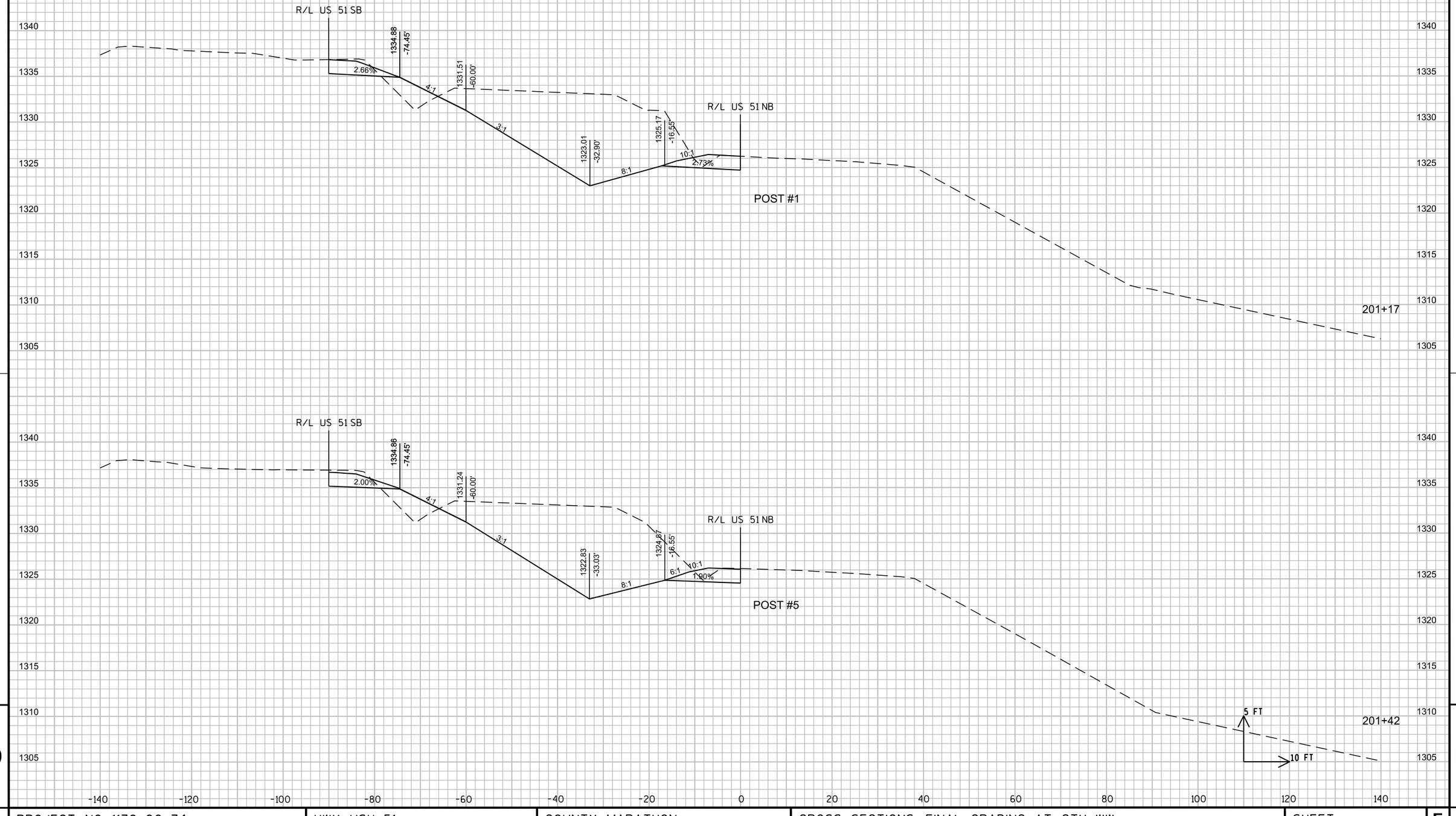
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final114 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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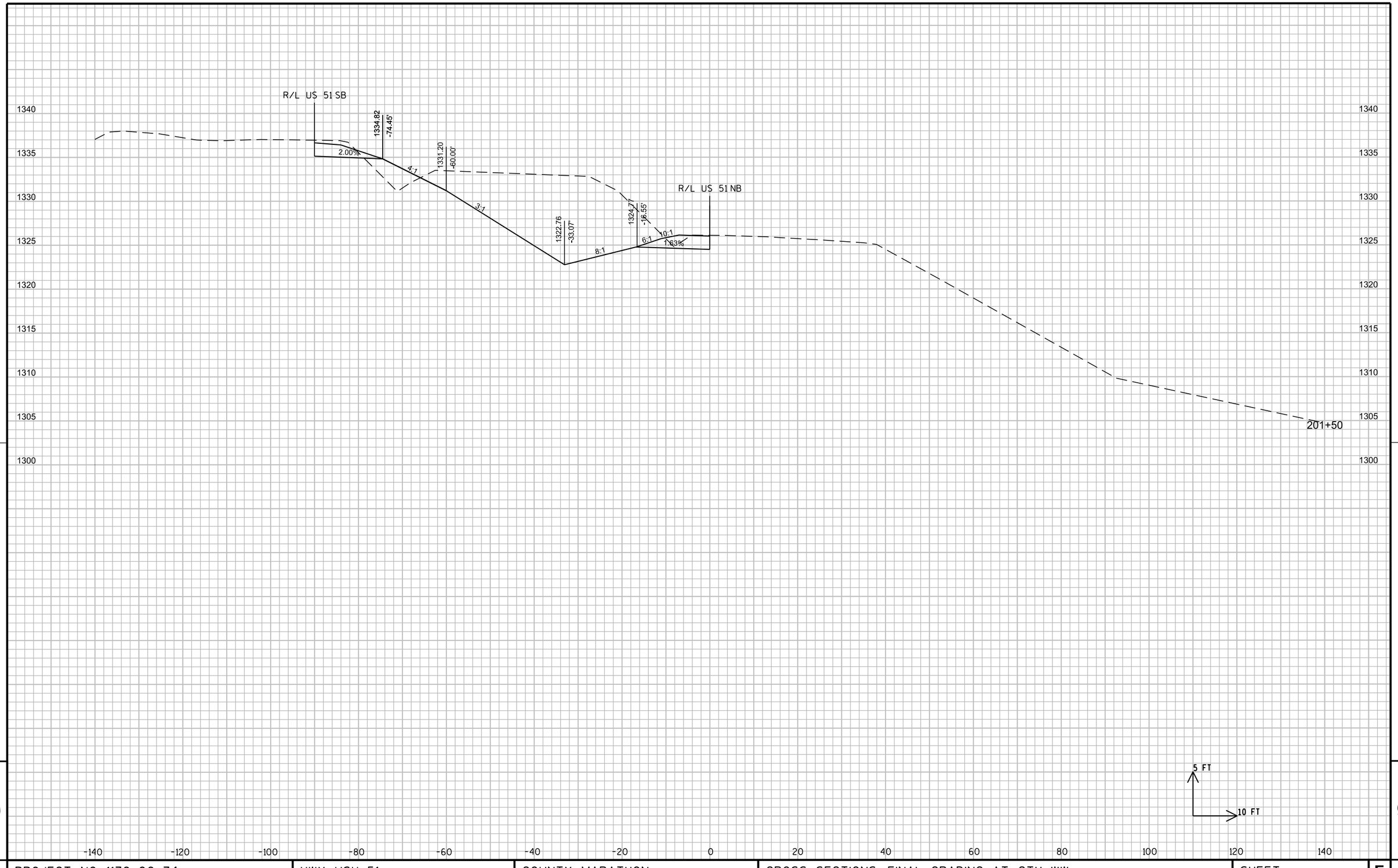
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 327	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:53 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final115 PLOT SCALE : 20:1

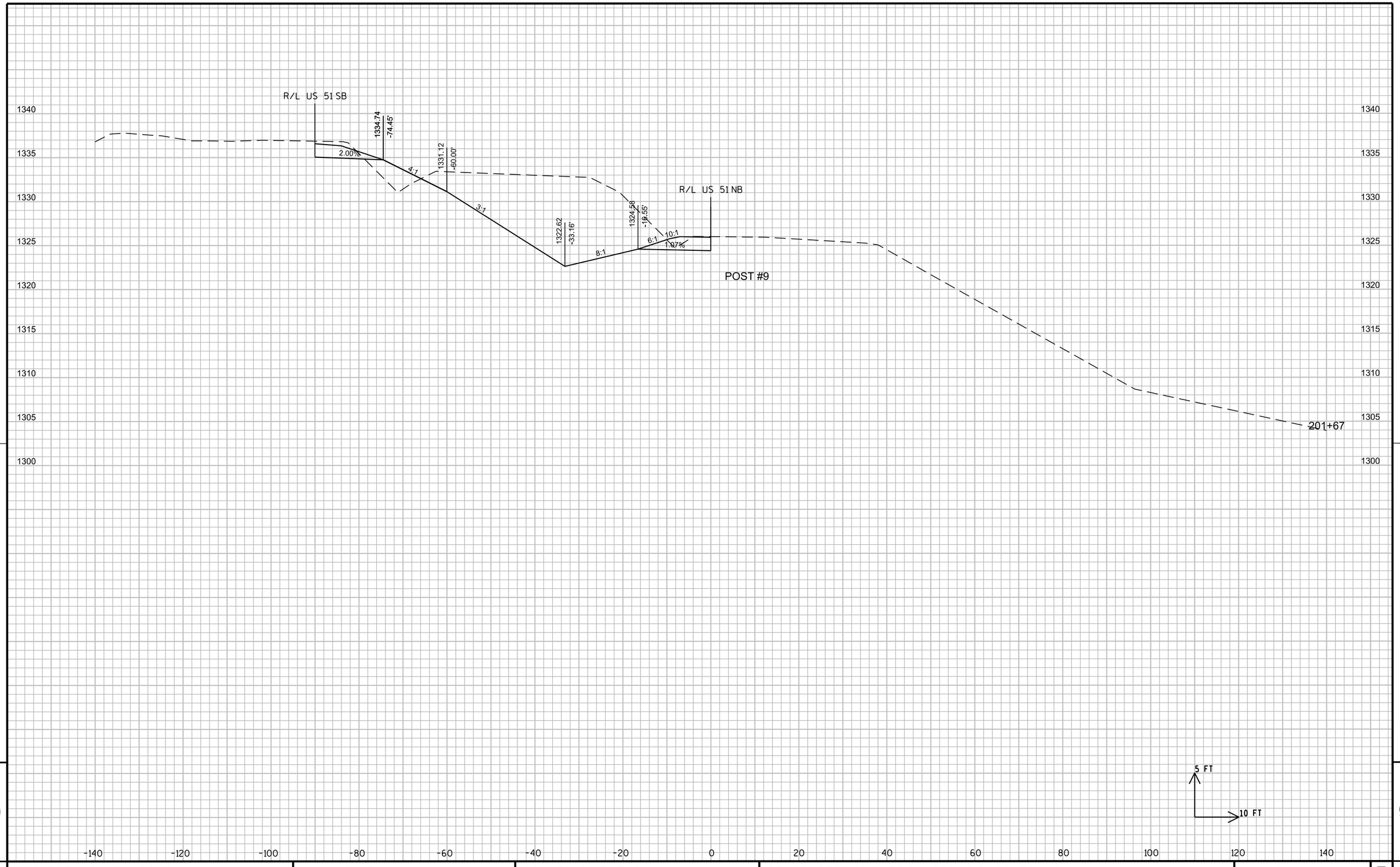
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 328	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final116 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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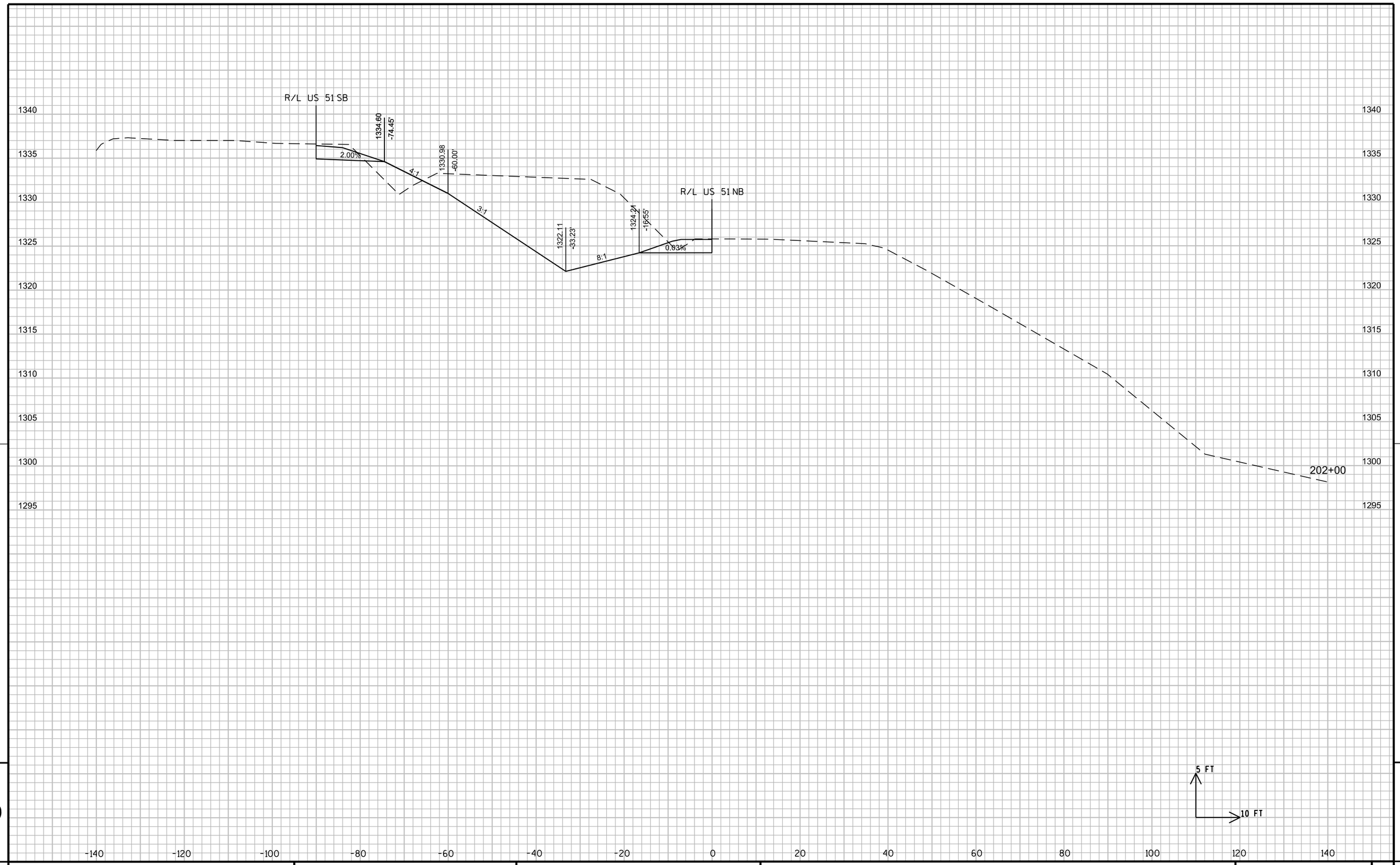
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 329	E



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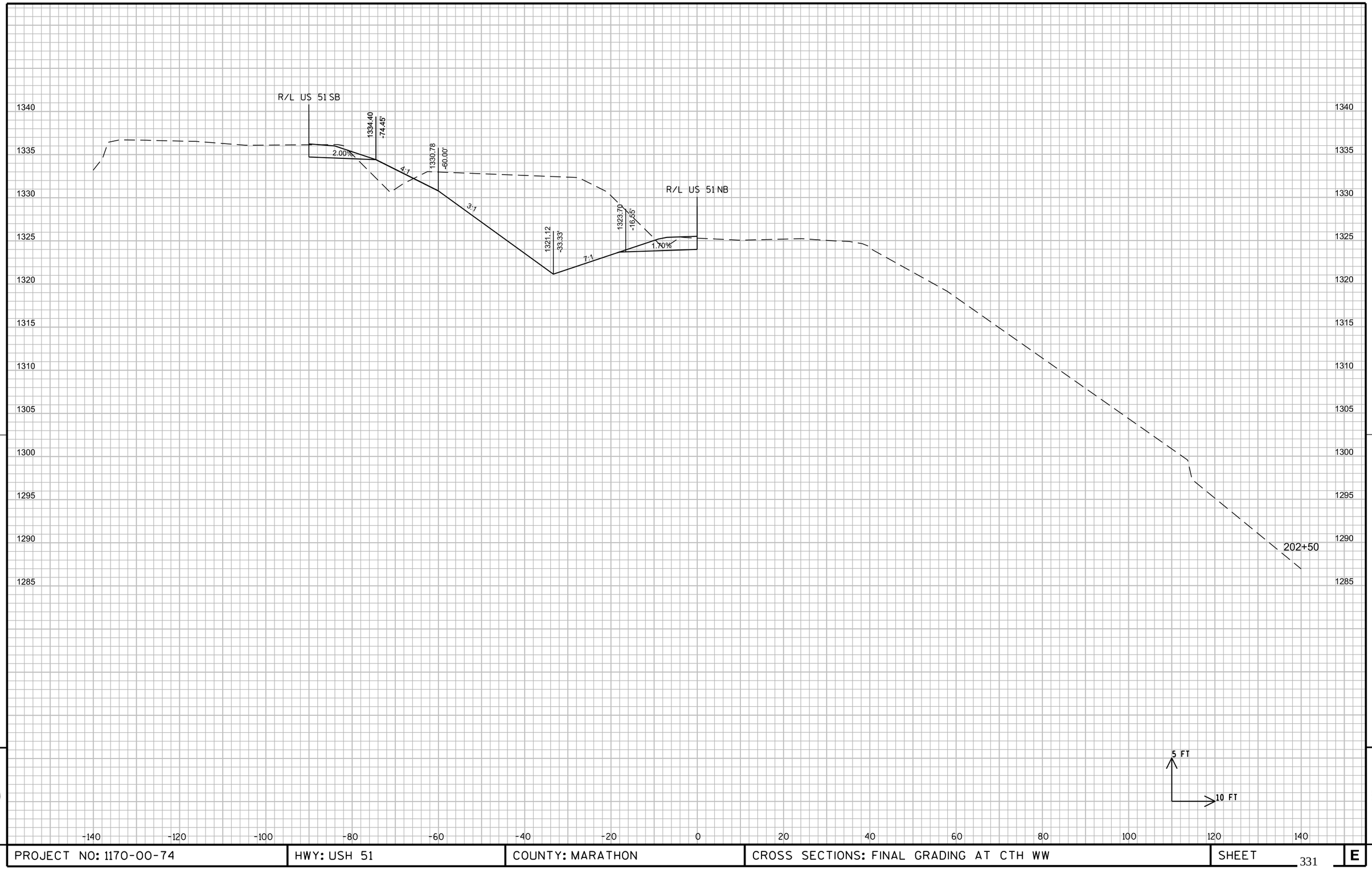
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 330	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final118 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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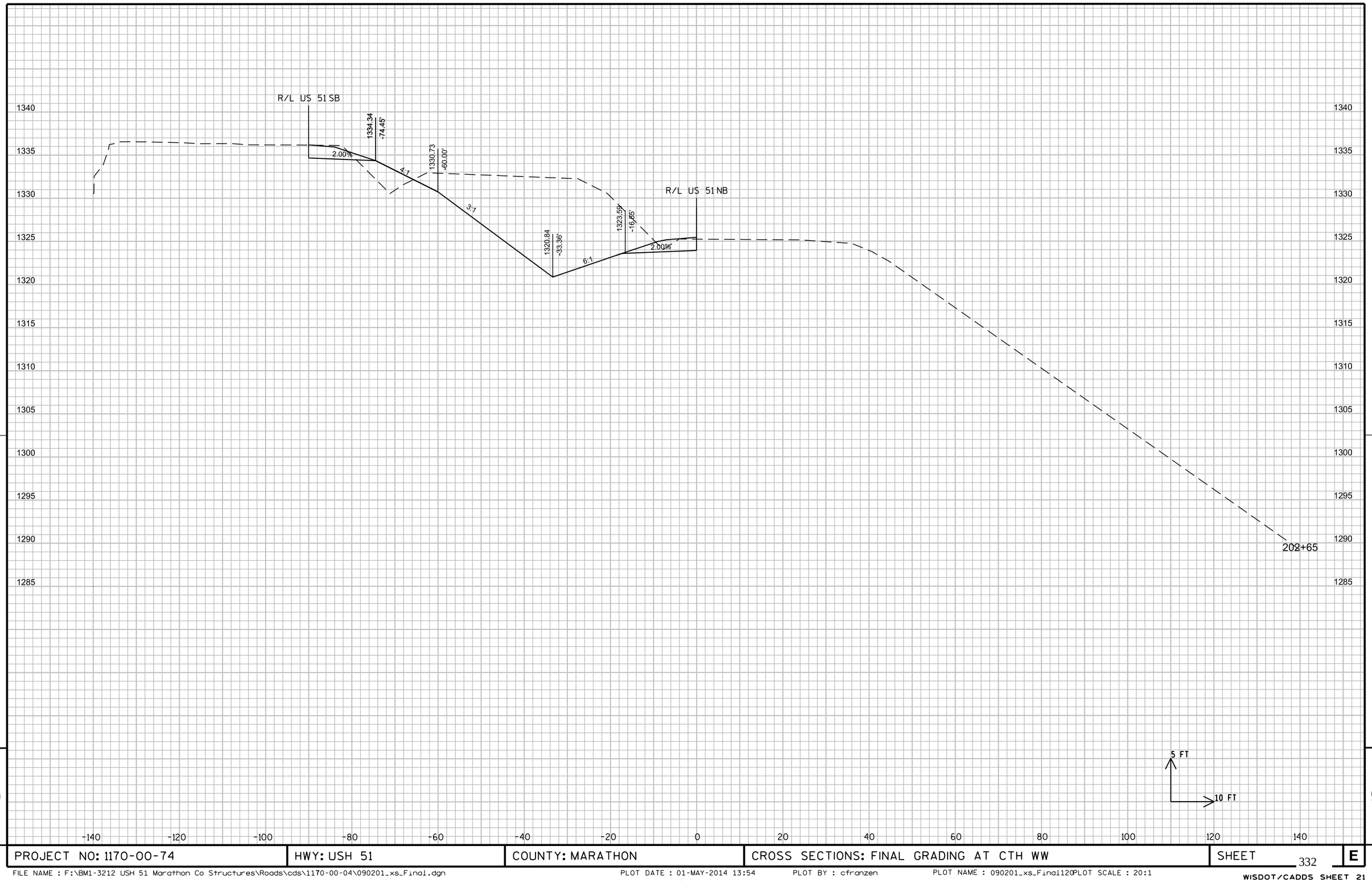
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 331	E

9

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final119 PLOT SCALE : 20:1

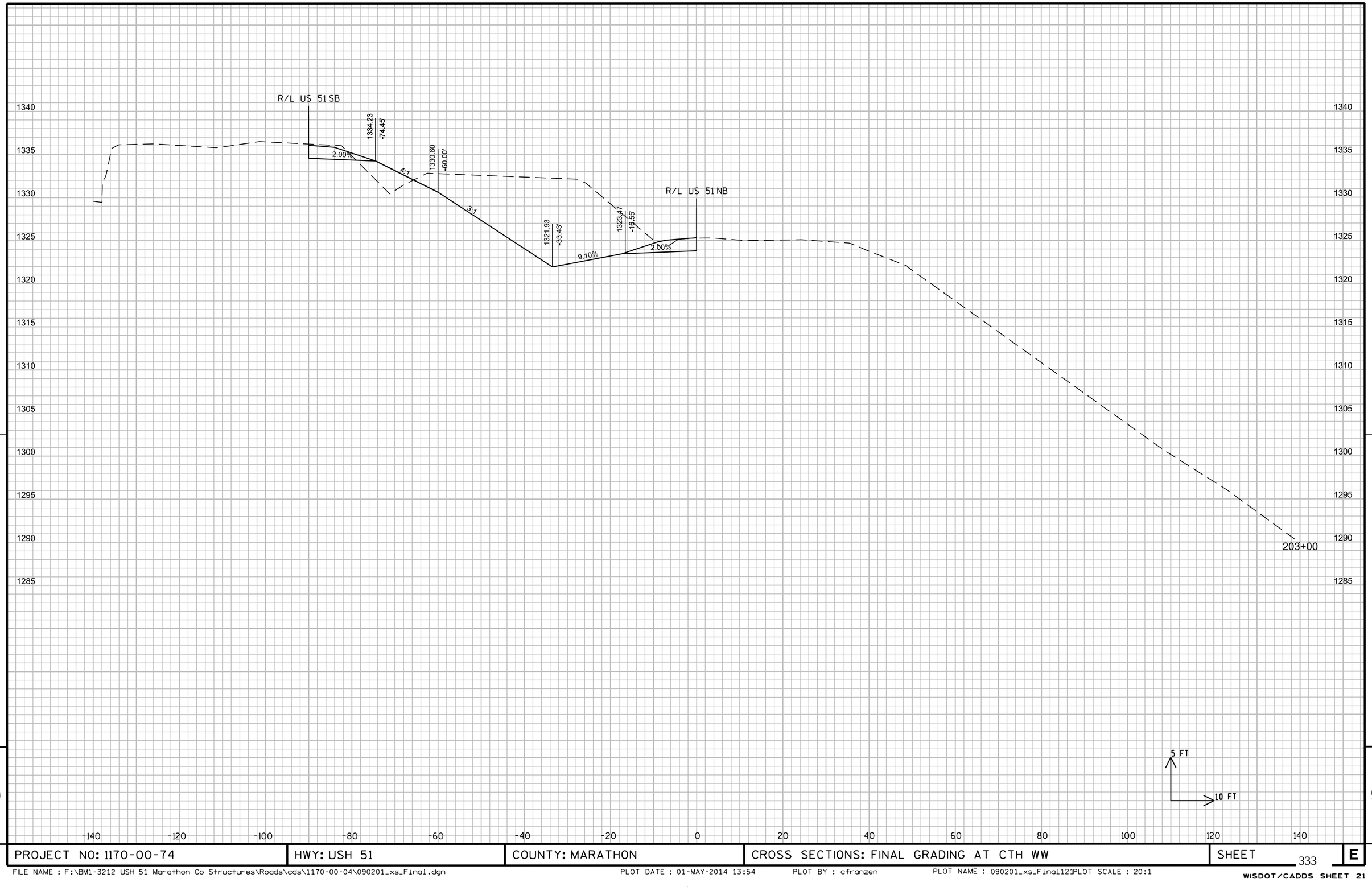
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 332	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final120PLOT SCALE : 20:1

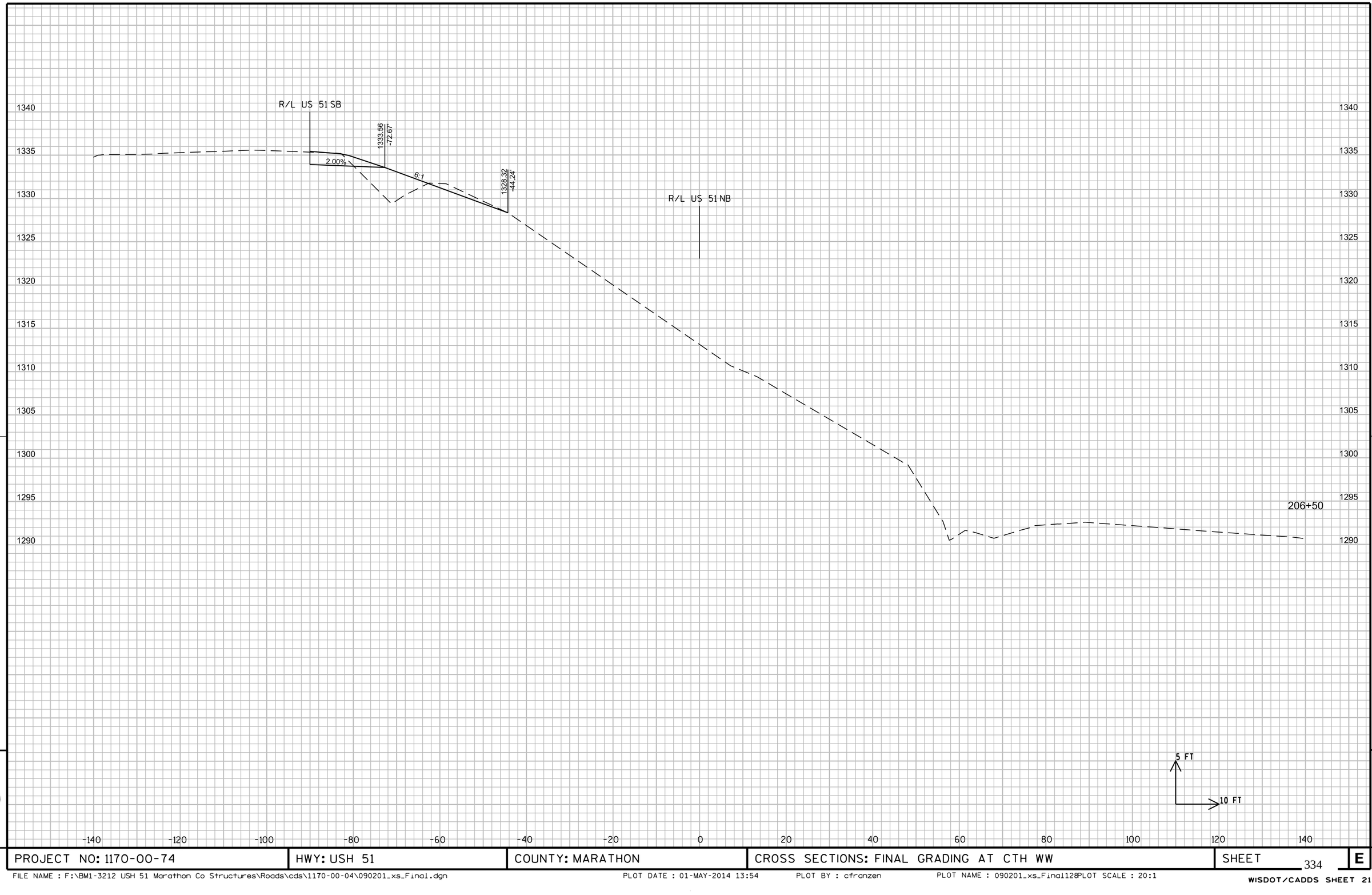
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 333	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final121PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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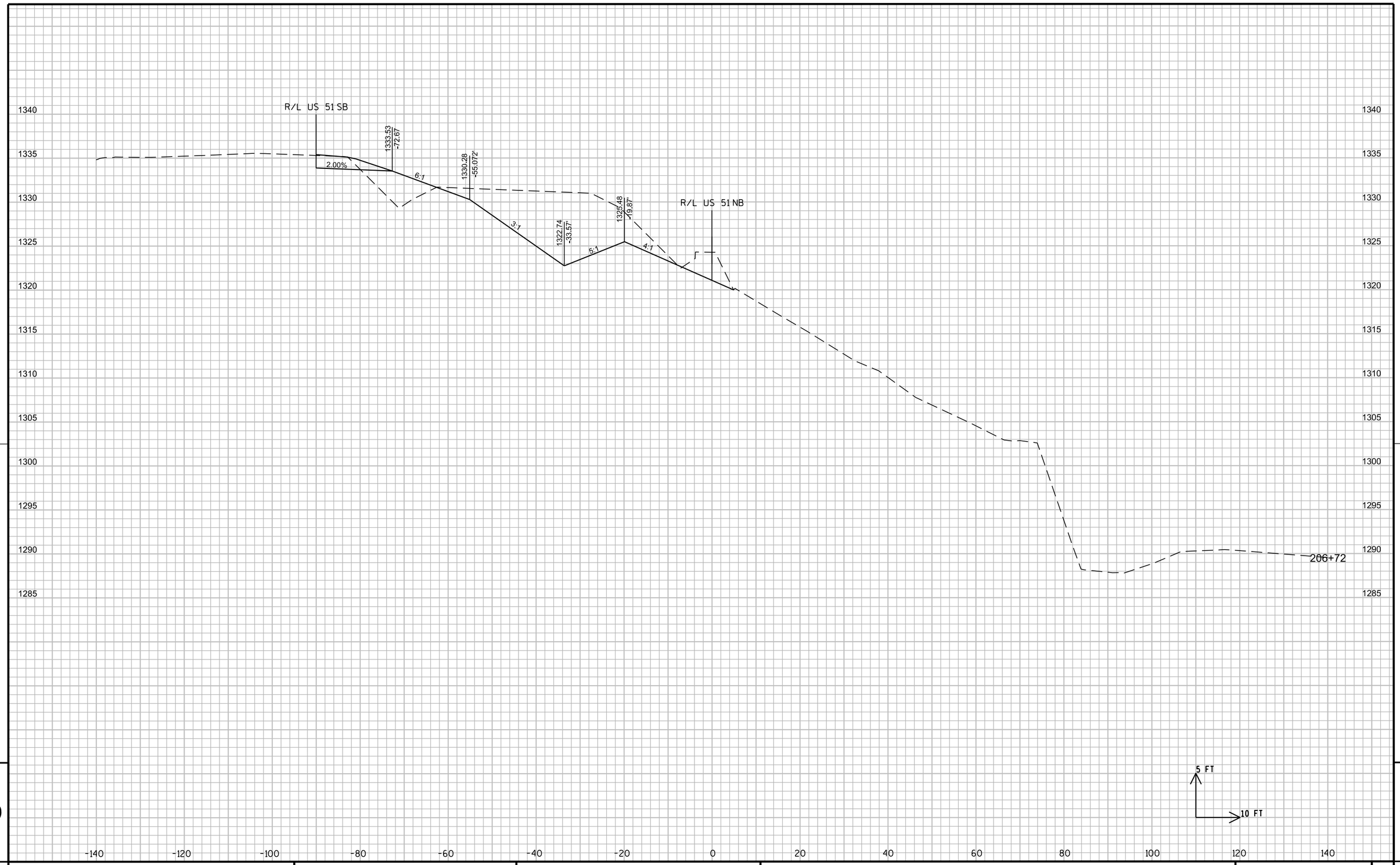
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 334	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final128 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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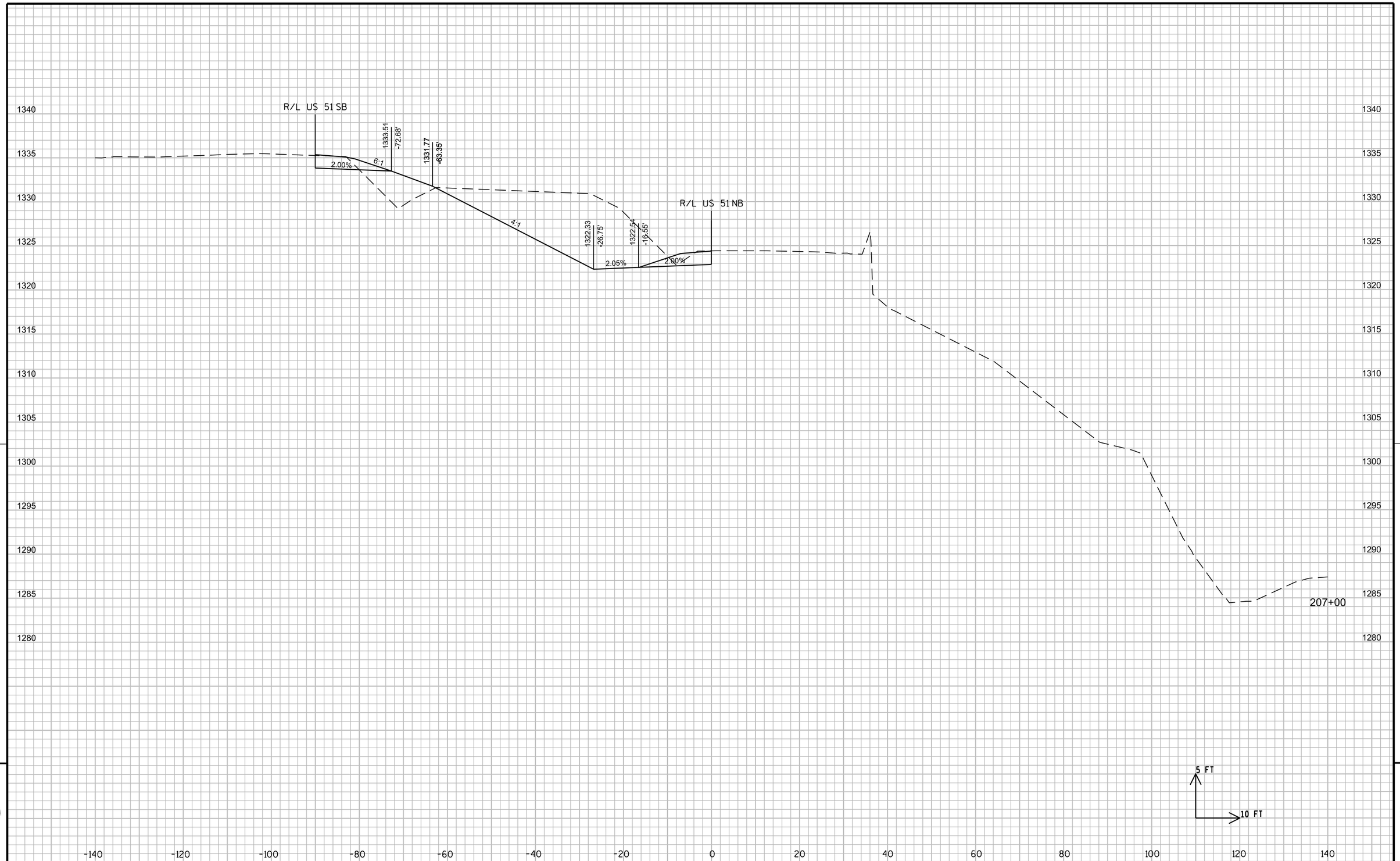
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 335 E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final129 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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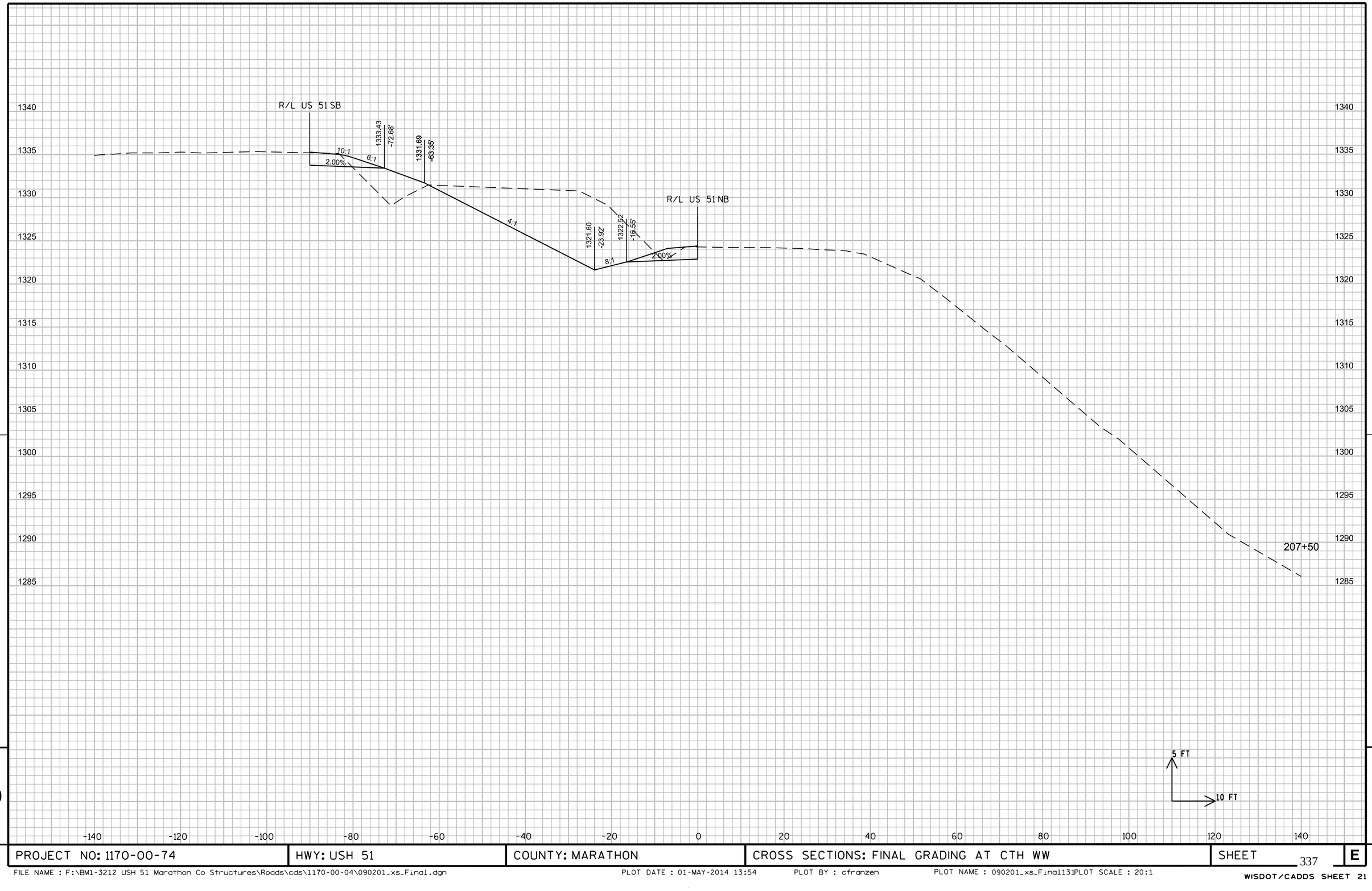
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 336	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final130 PLOT SCALE : 20:1

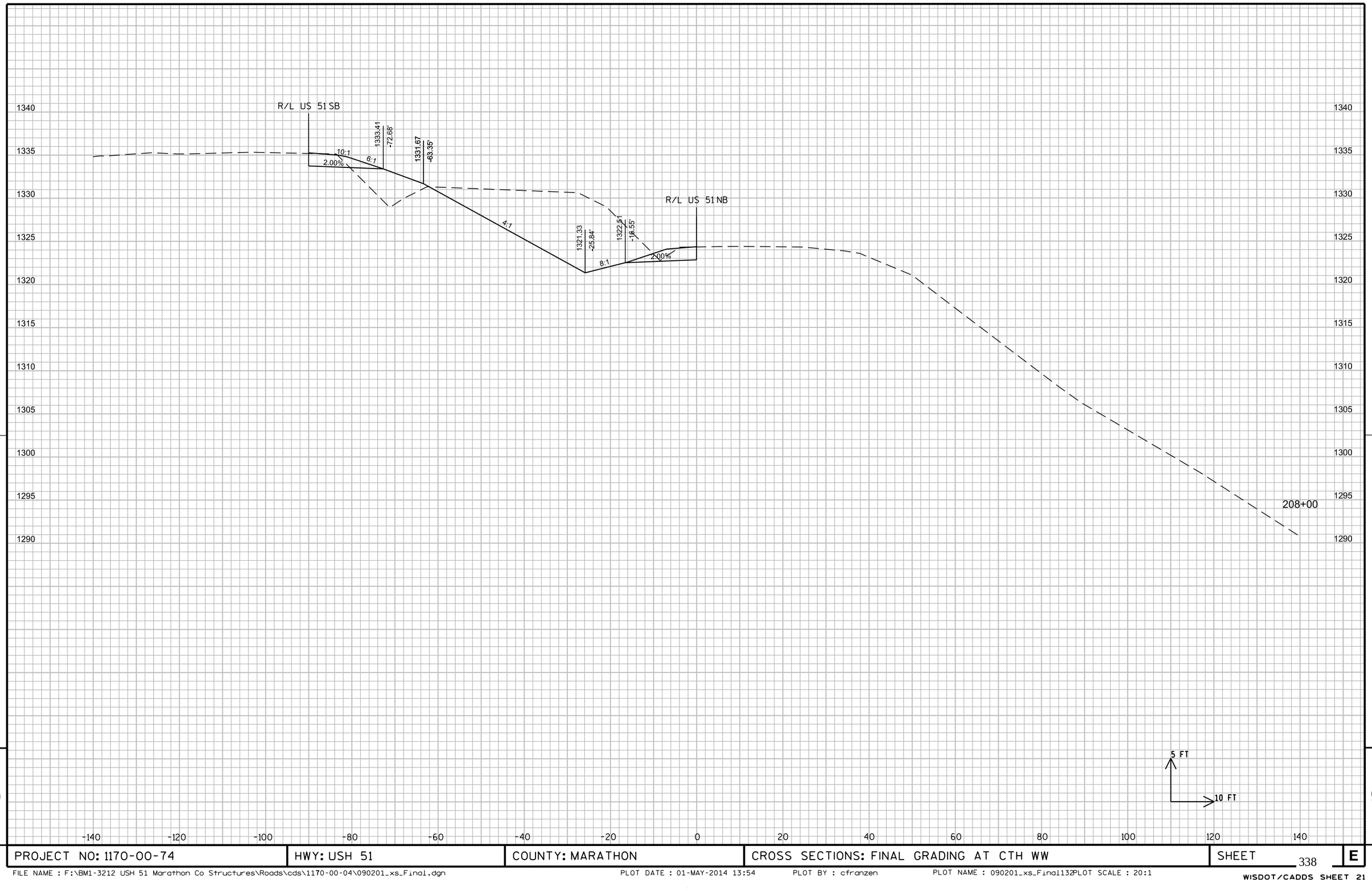
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 337	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final131PLOT SCALE : 20:1

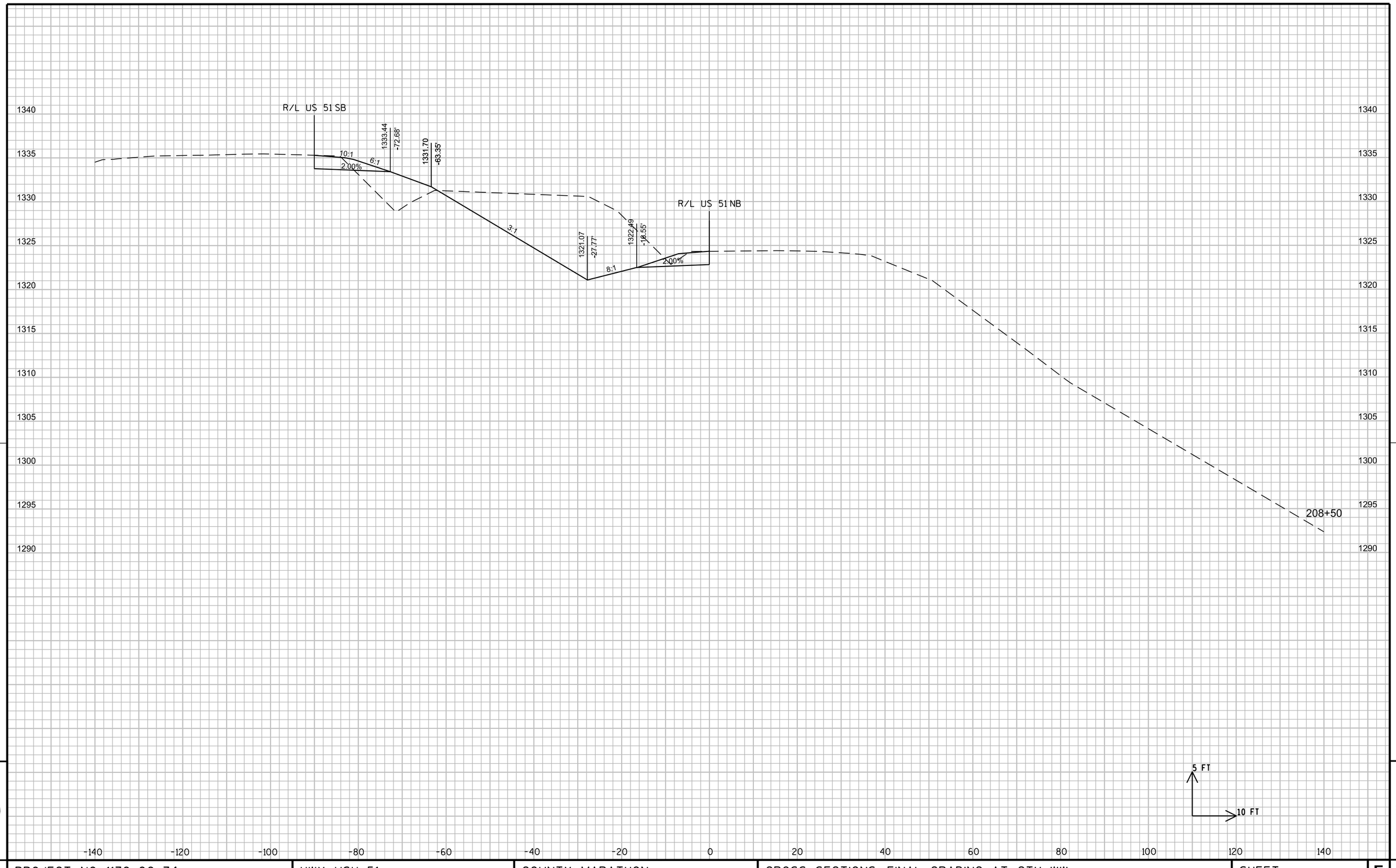
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 338	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final132 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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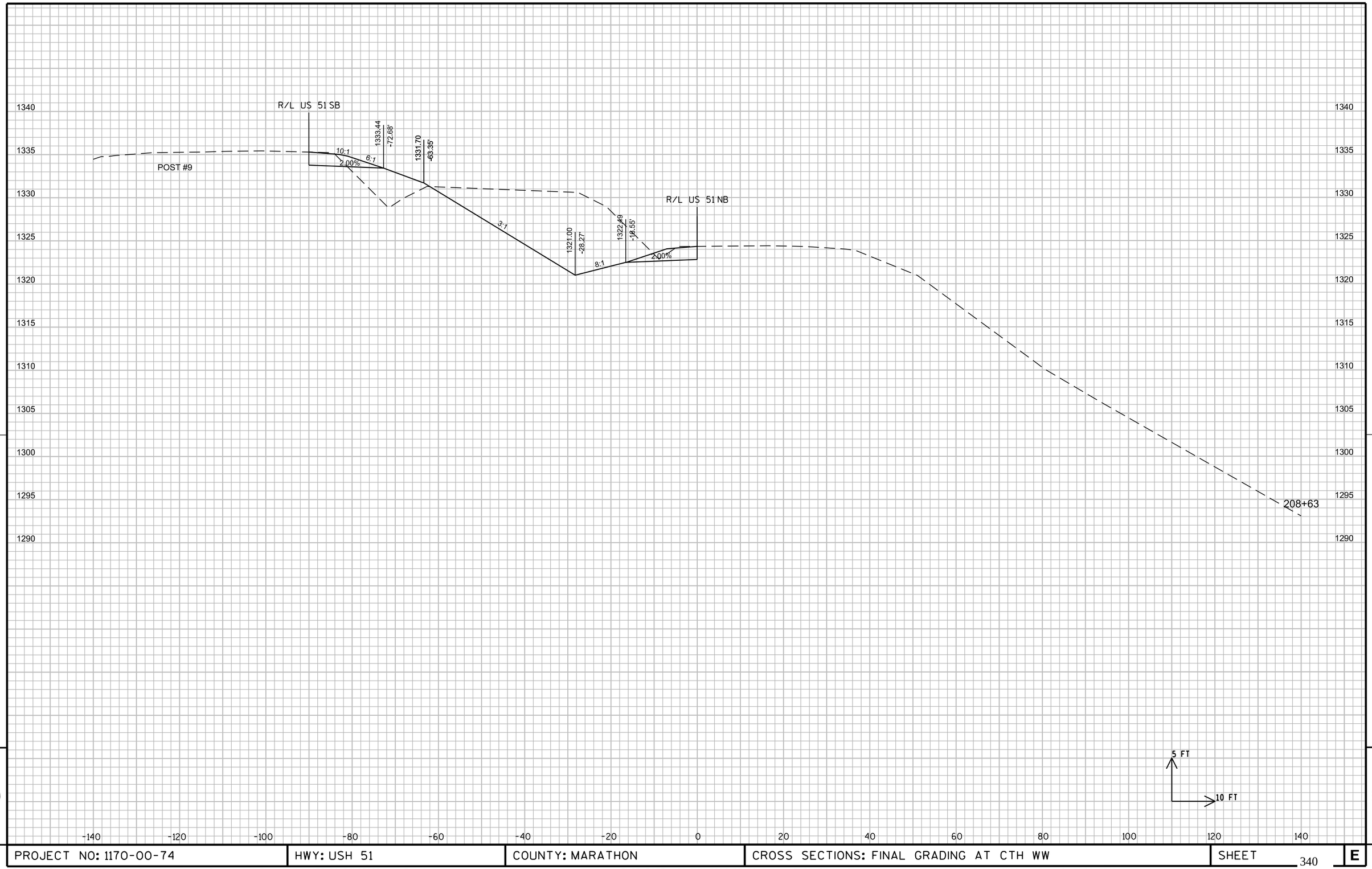
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 339	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final133 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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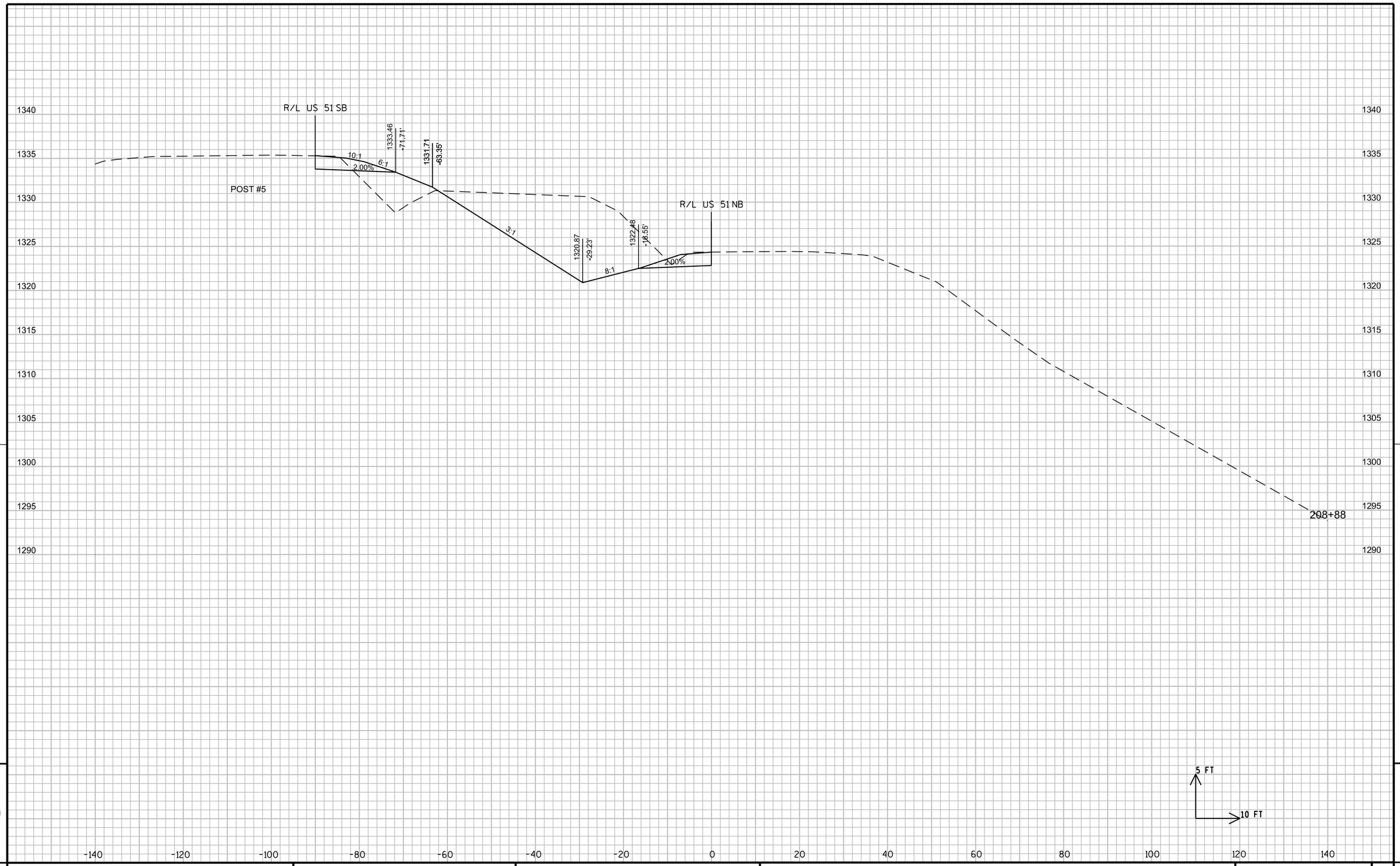
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 340	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final134 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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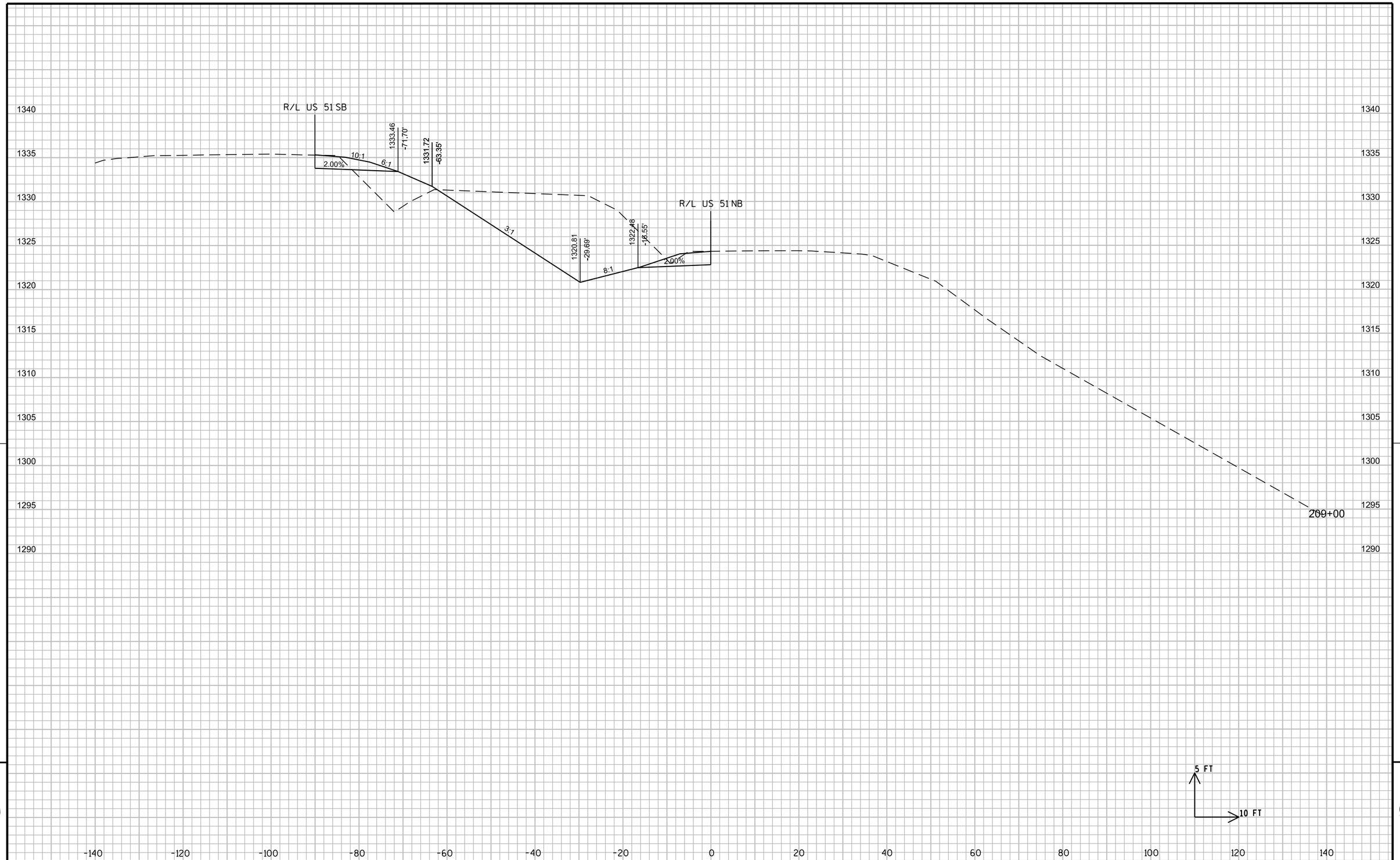
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 341	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final135 PLOT SCALE : 20:1

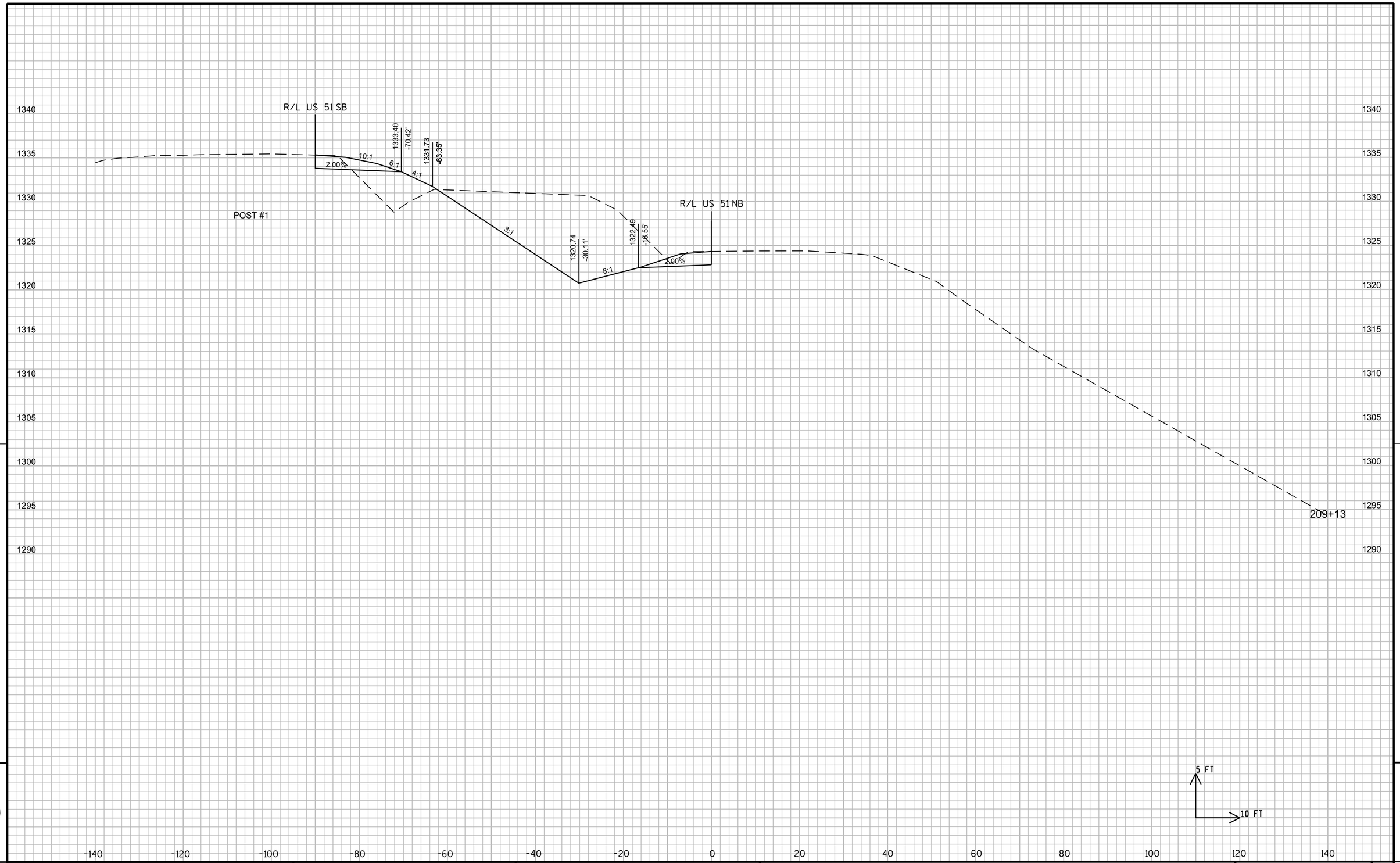
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 342	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final136 PLOT SCALE : 20:1

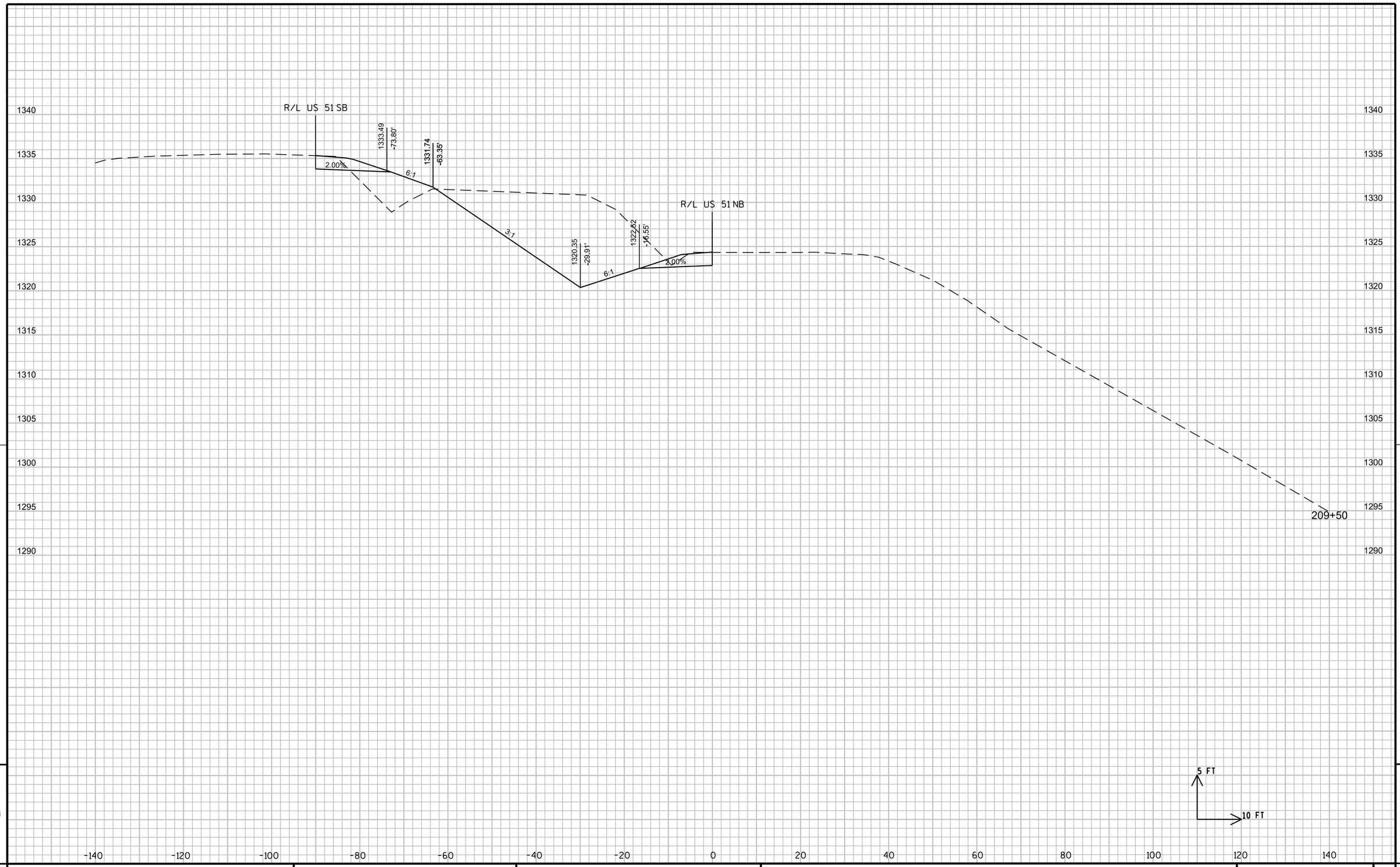
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 343	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final137 PLOT SCALE : 20:1

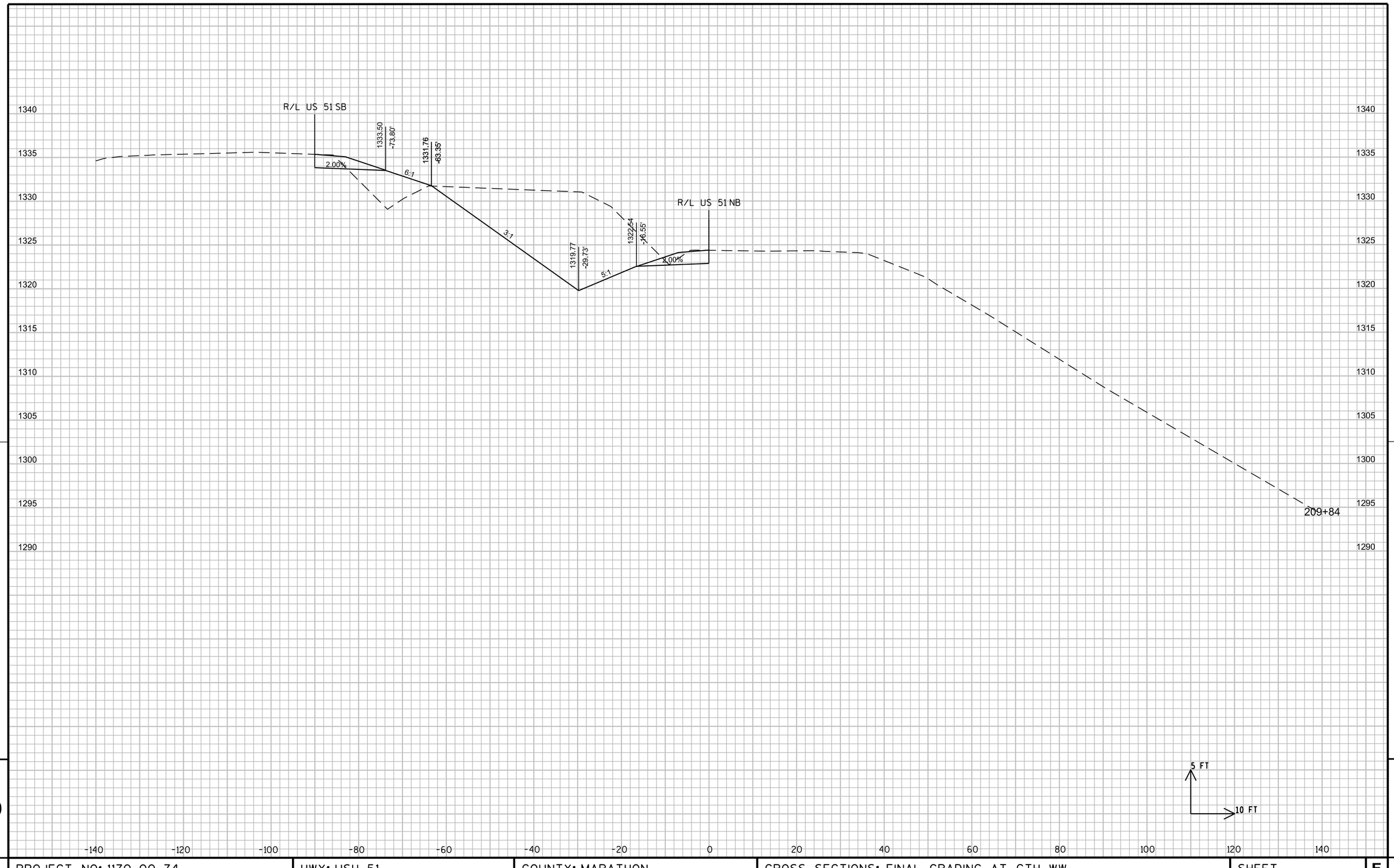
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 344	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final138 PLOT SCALE : 20:1

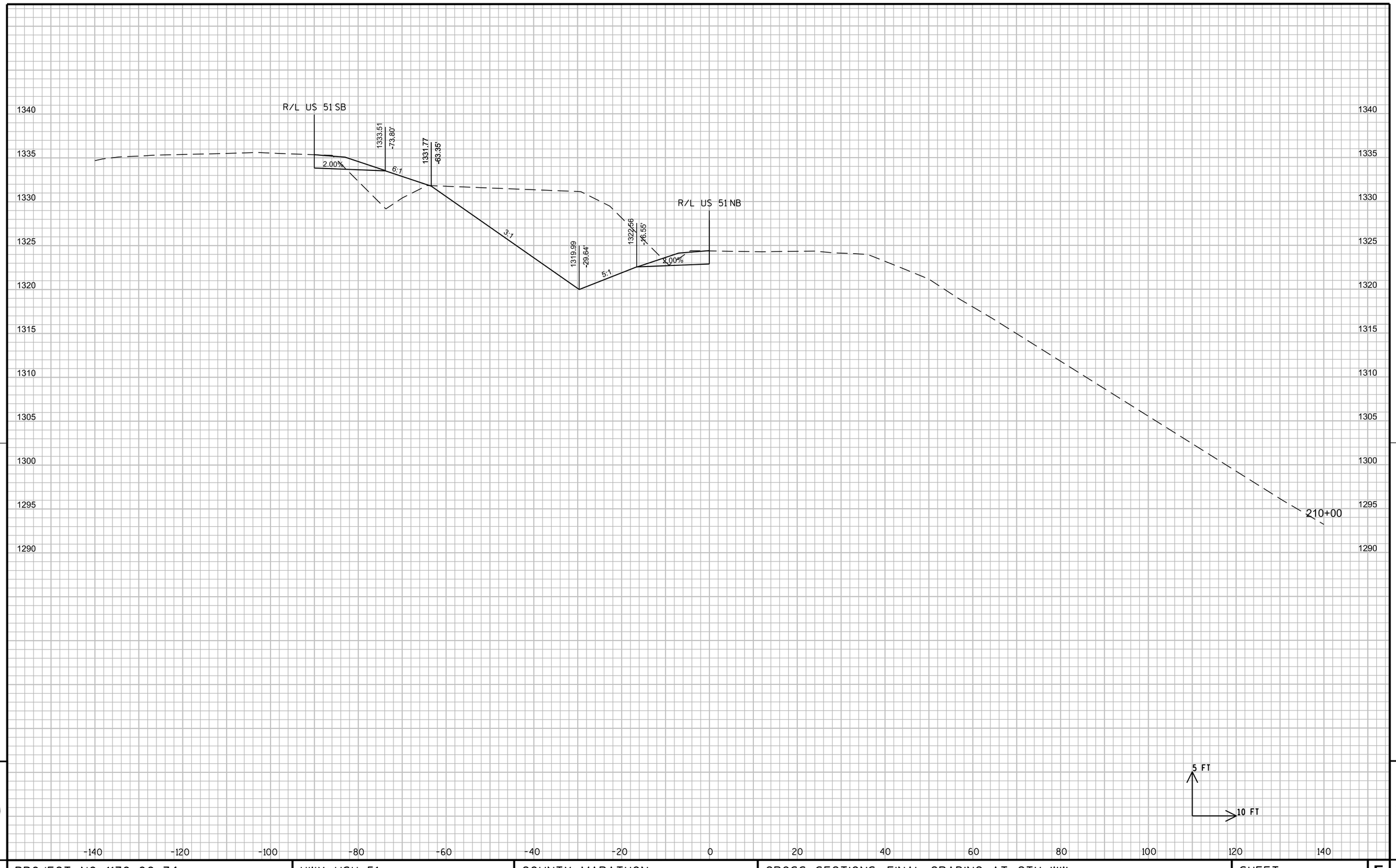
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 345	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final139 PLOT SCALE : 20:1

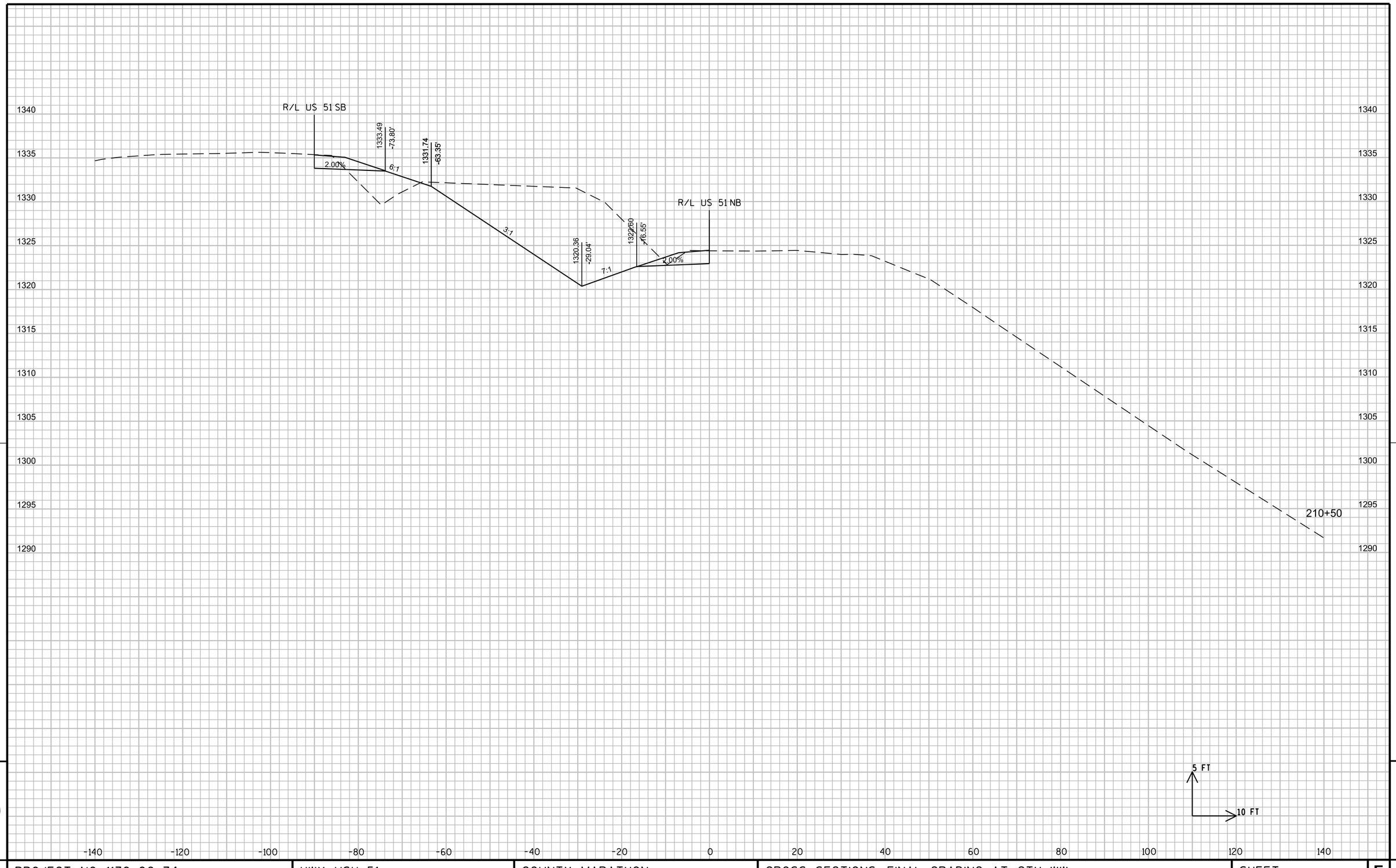
WISDOT/CADDS SHEET 21



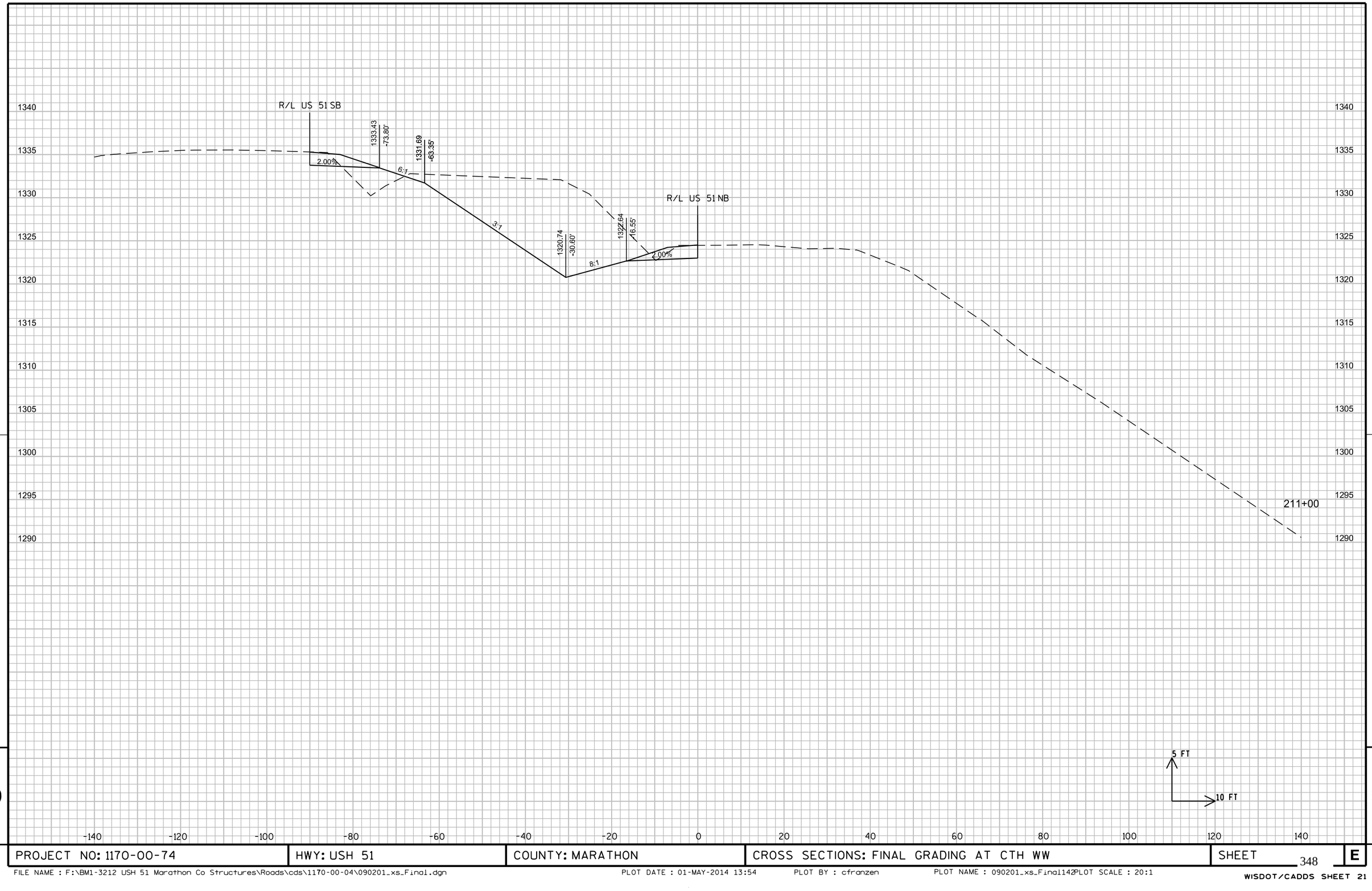
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 346	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final140PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



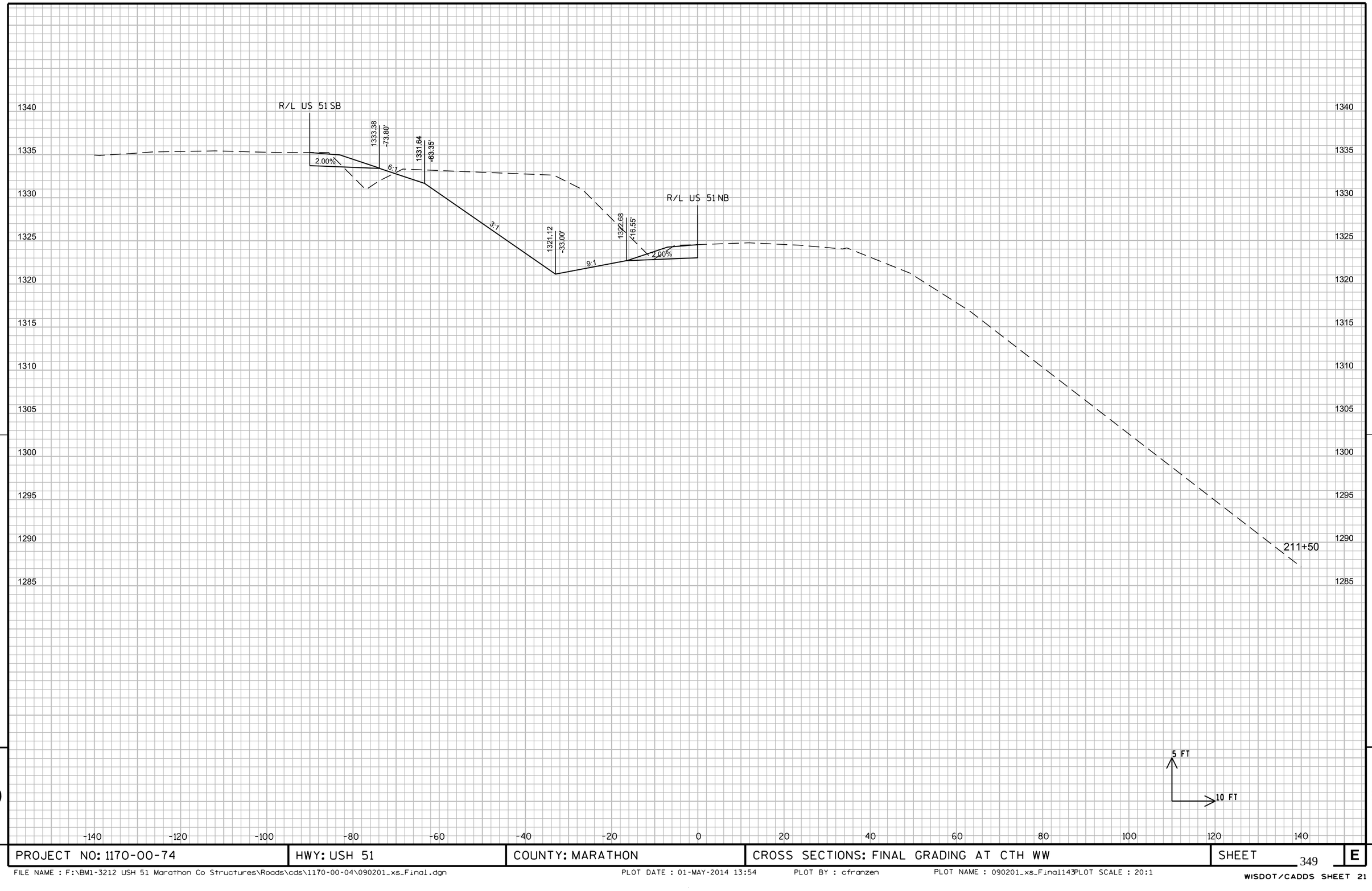
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 347	E



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 348	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final142PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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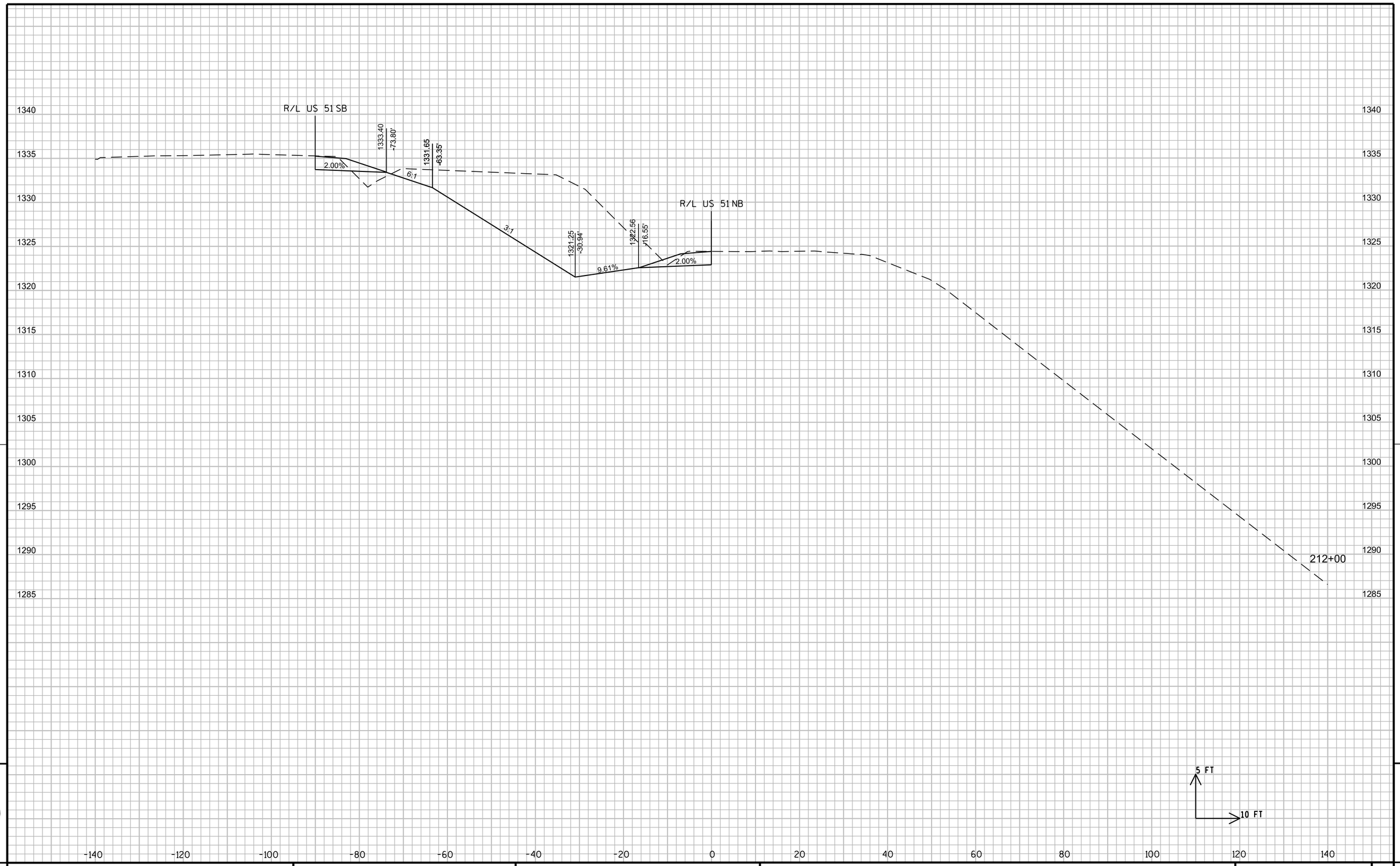
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 349	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final143 PLOT SCALE : 20:1

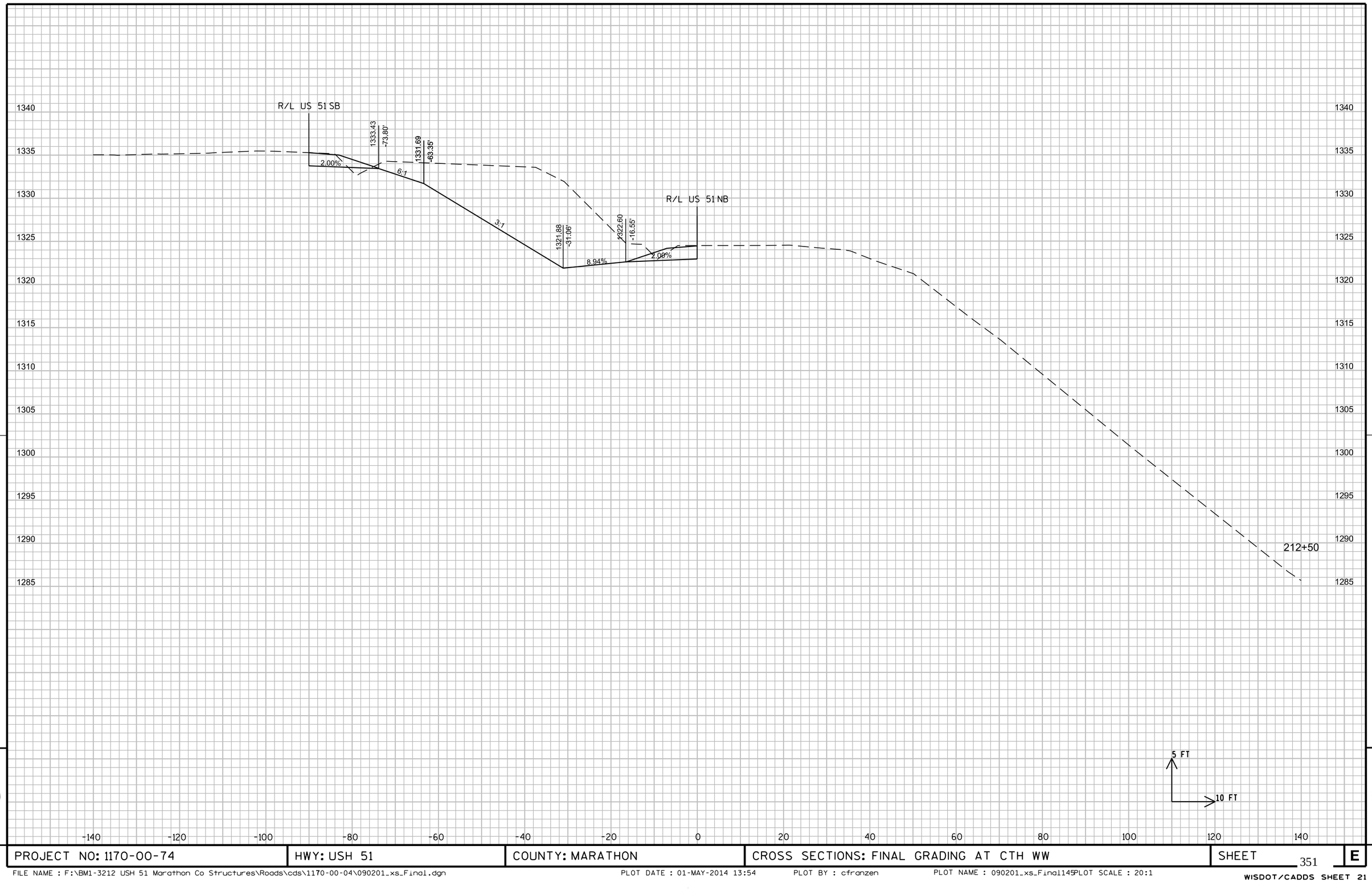
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 350	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final144PLOT SCALE : 20:1

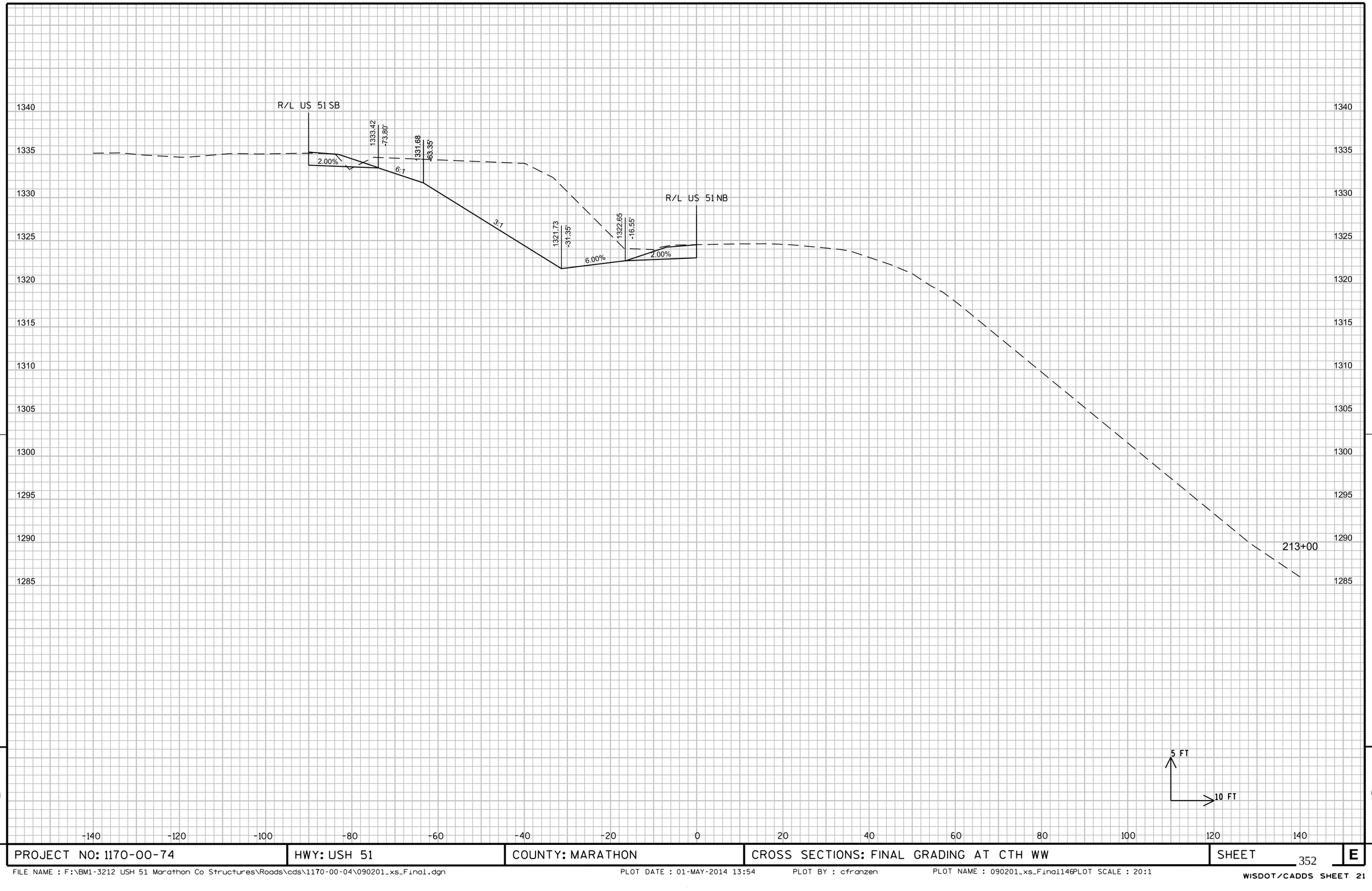
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 351	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final145PLOT SCALE : 20:1

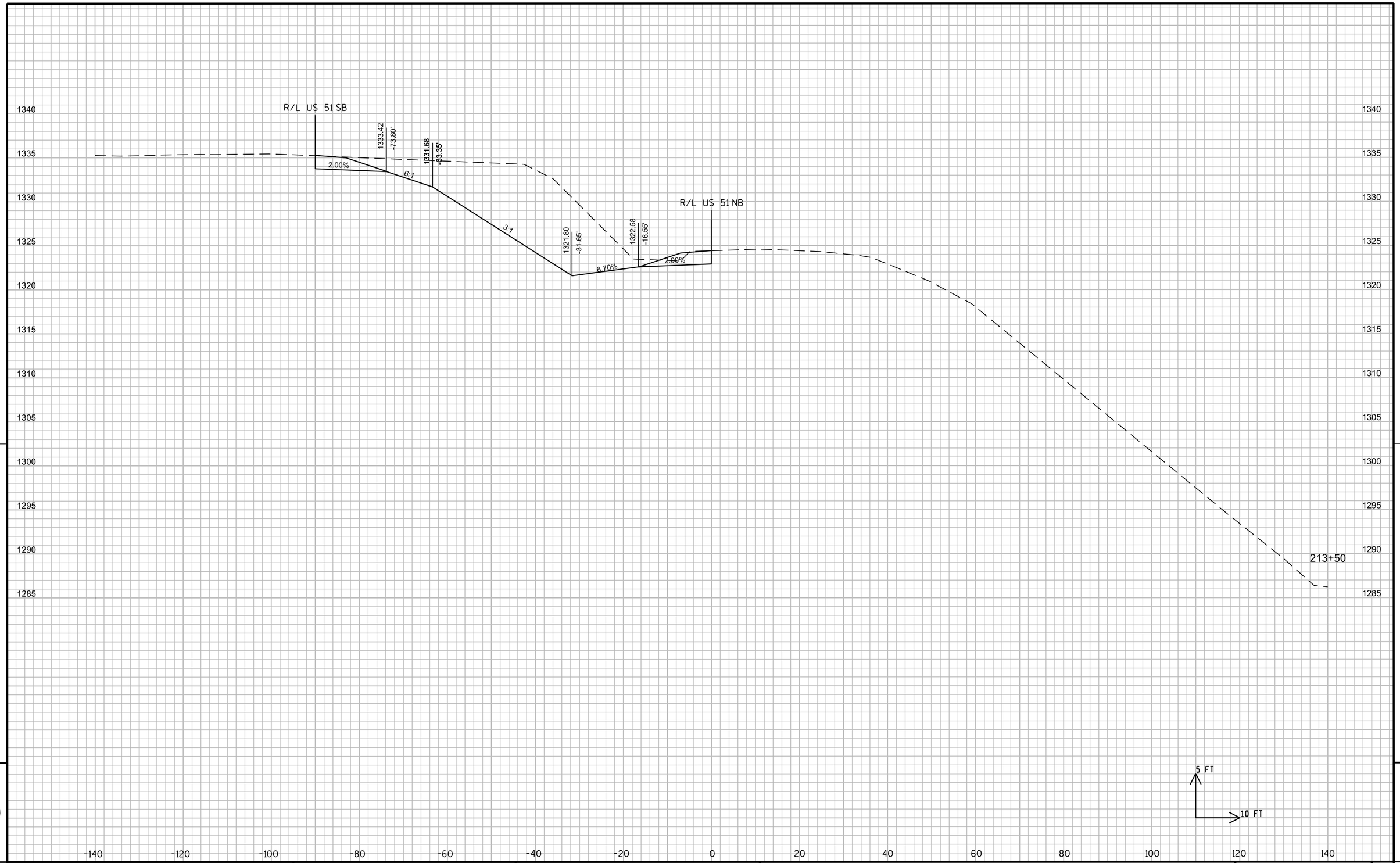
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 352	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final146PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

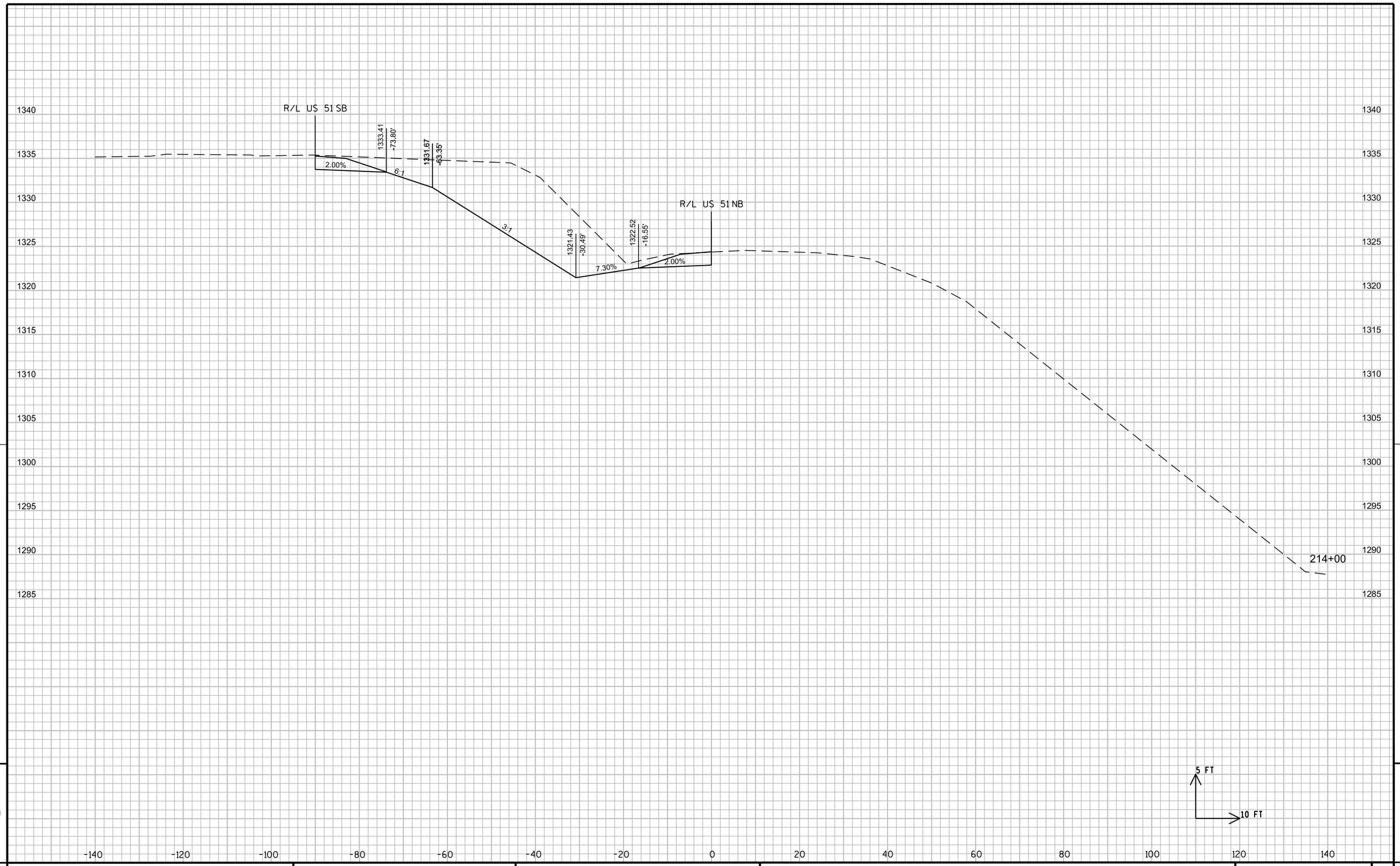


9

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 353	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final147PLOT SCALE : 20:1

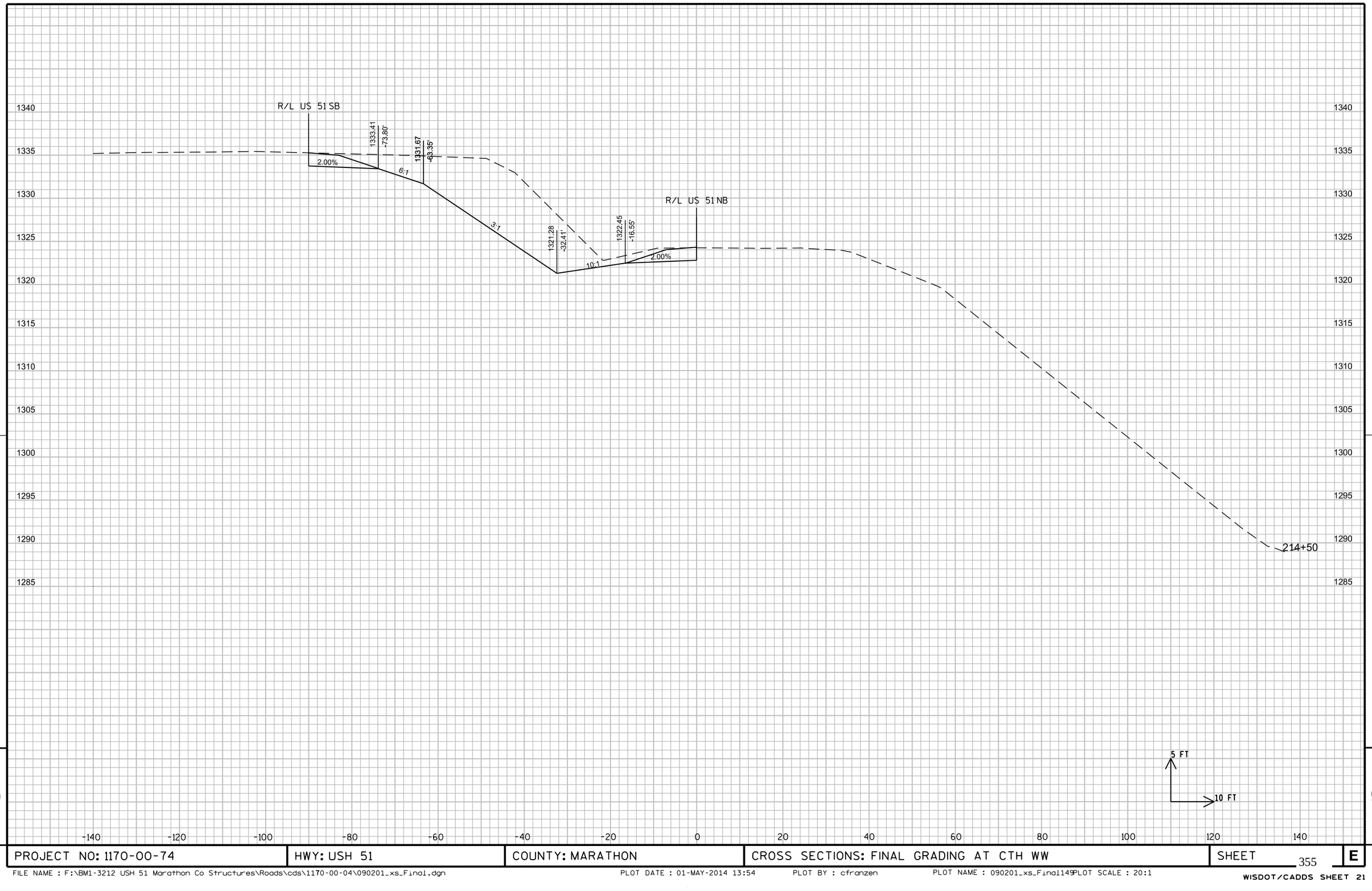
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 354	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final148 PLOT SCALE : 20:1

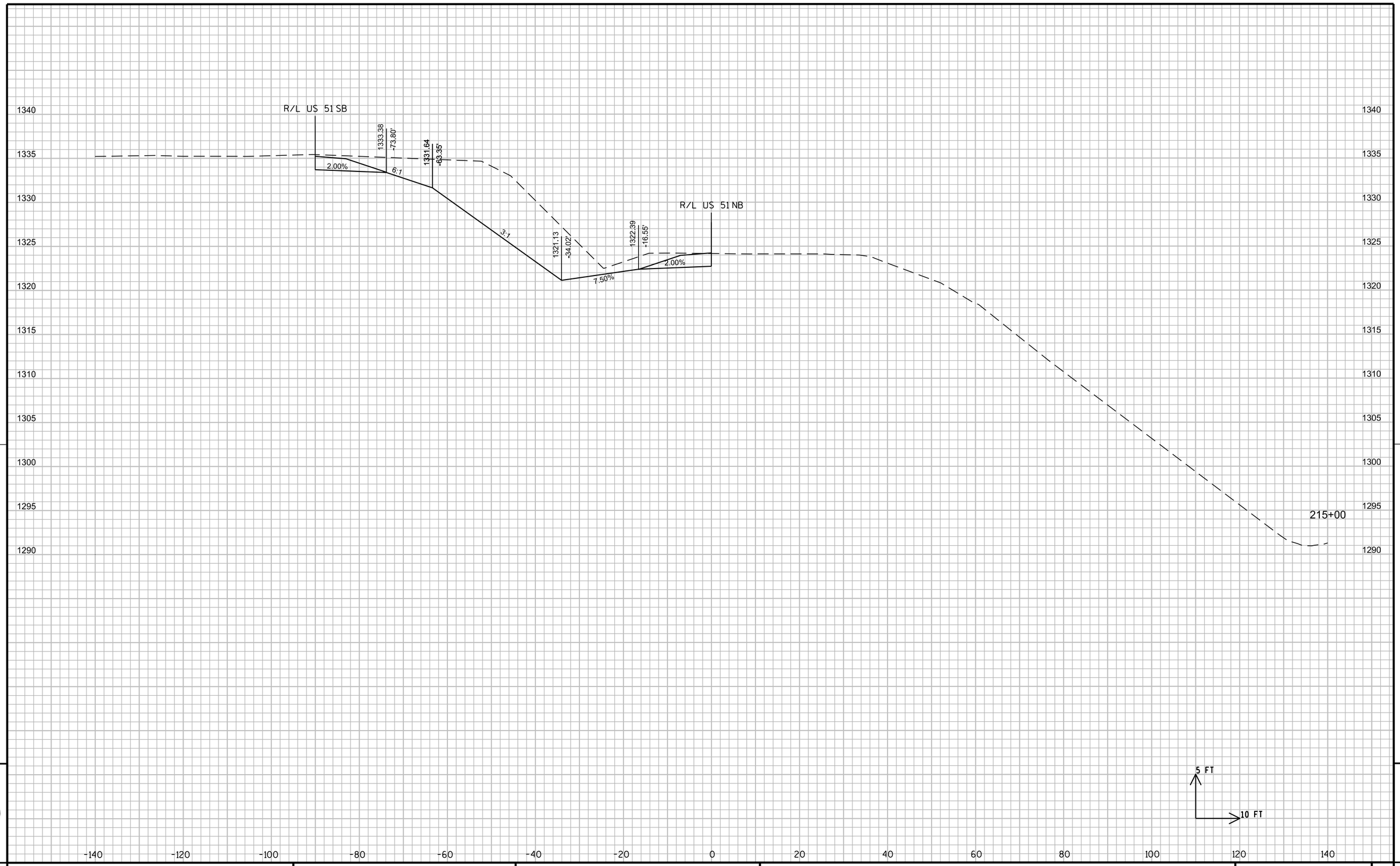
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 355	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final149 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

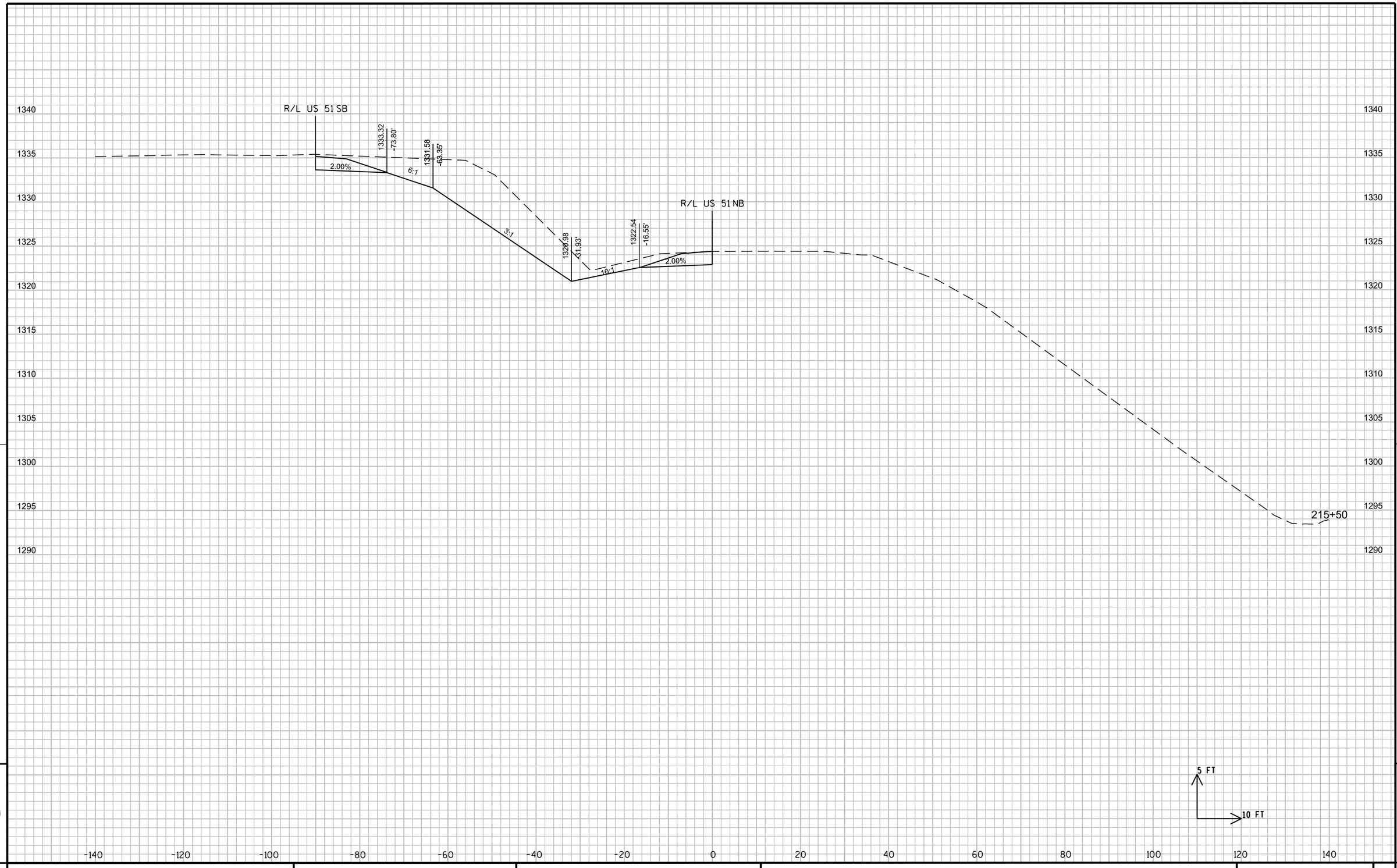


9

PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final150PLOT SCALE : 20:1

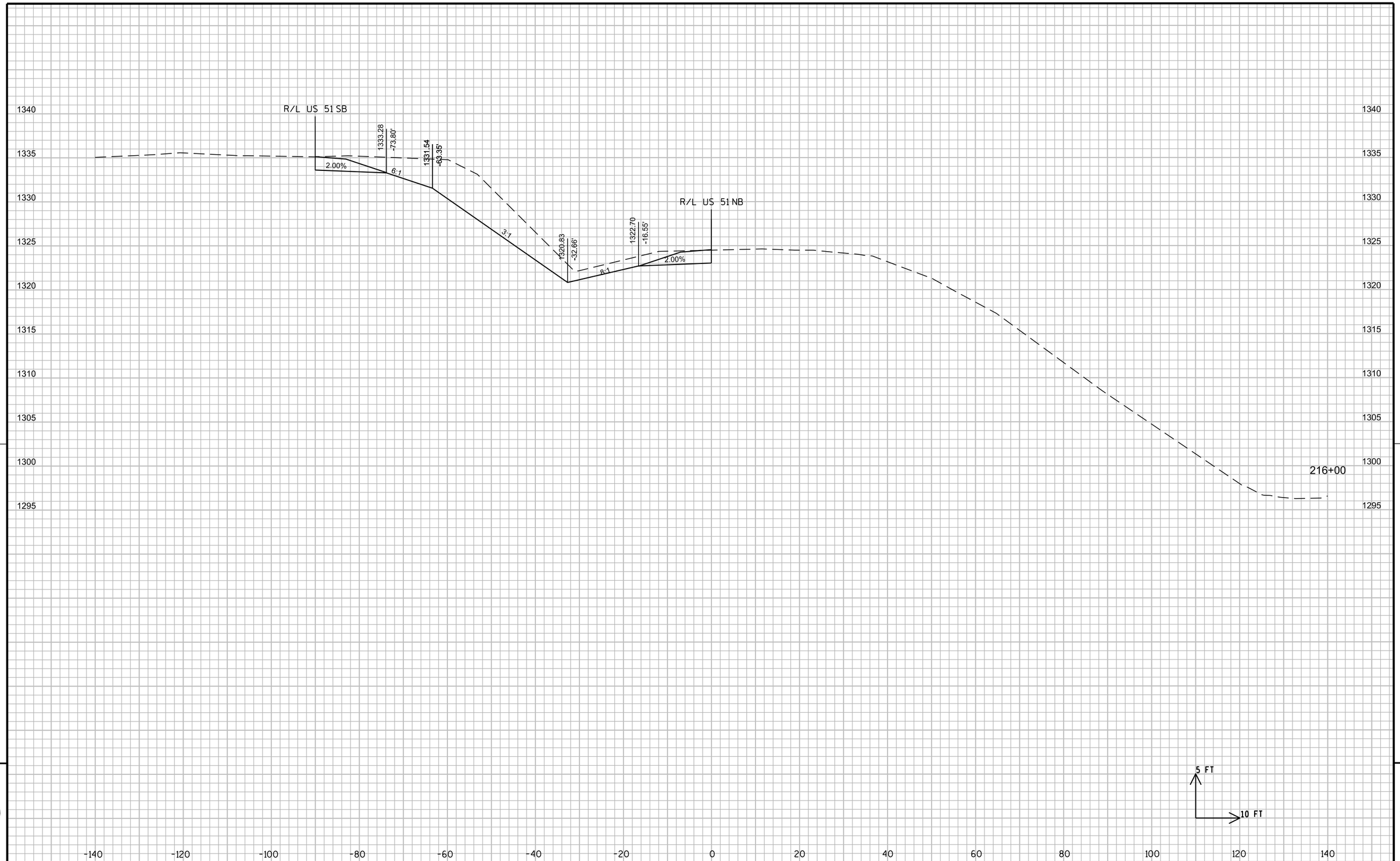
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 357	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final151PLOT SCALE : 20:1

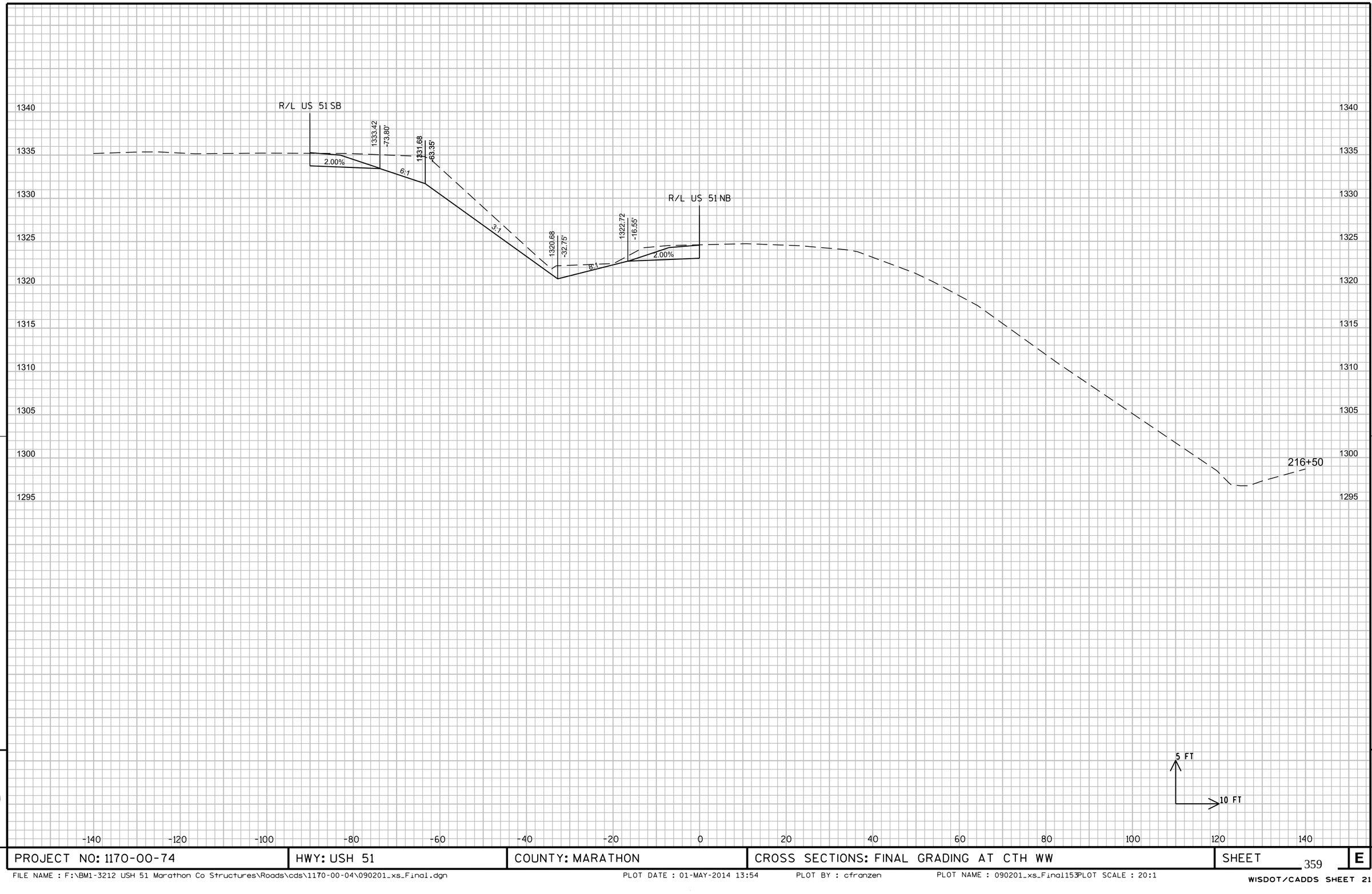
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 358	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final152PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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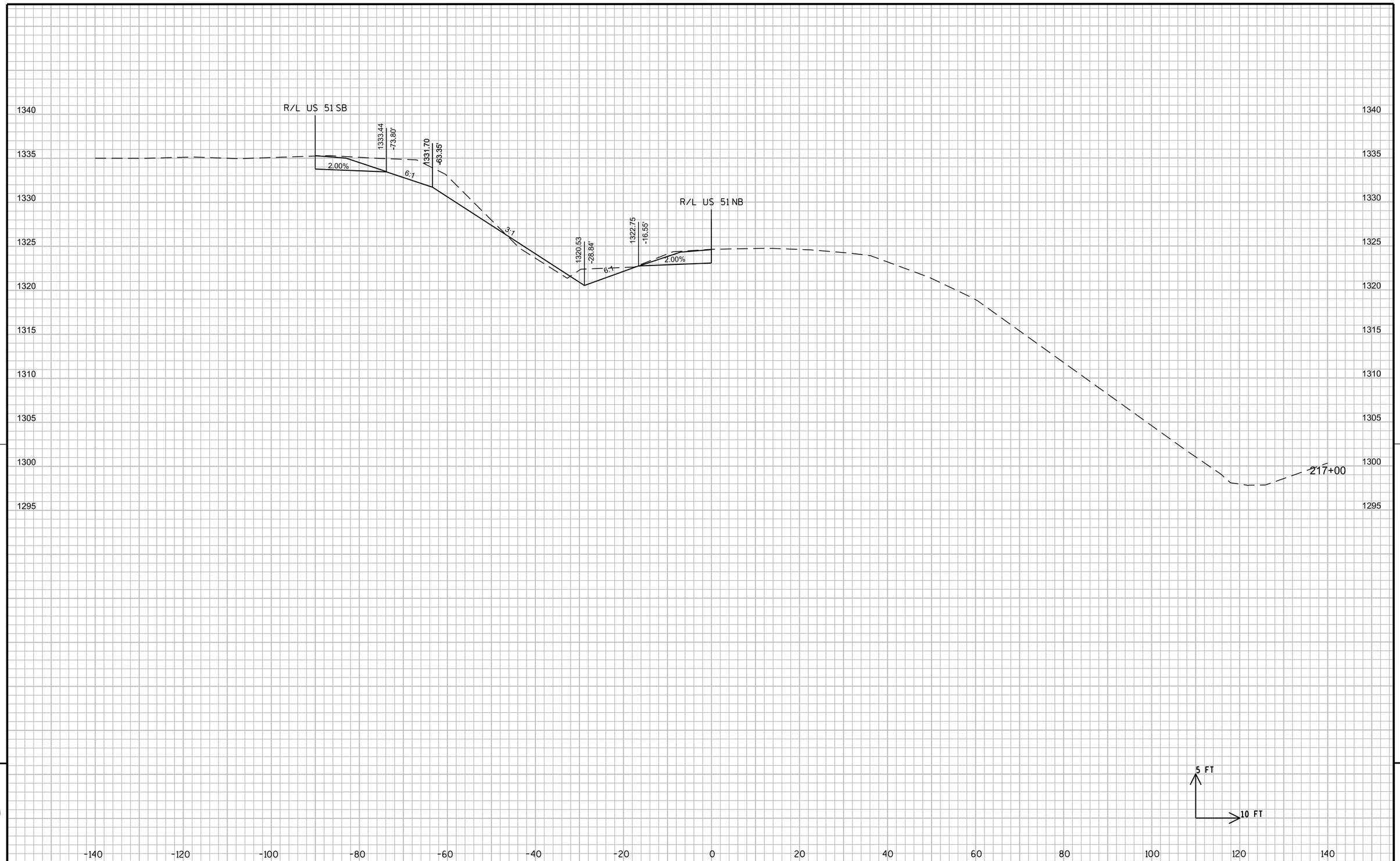
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 359	E

9

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final153 PLOT SCALE : 20:1

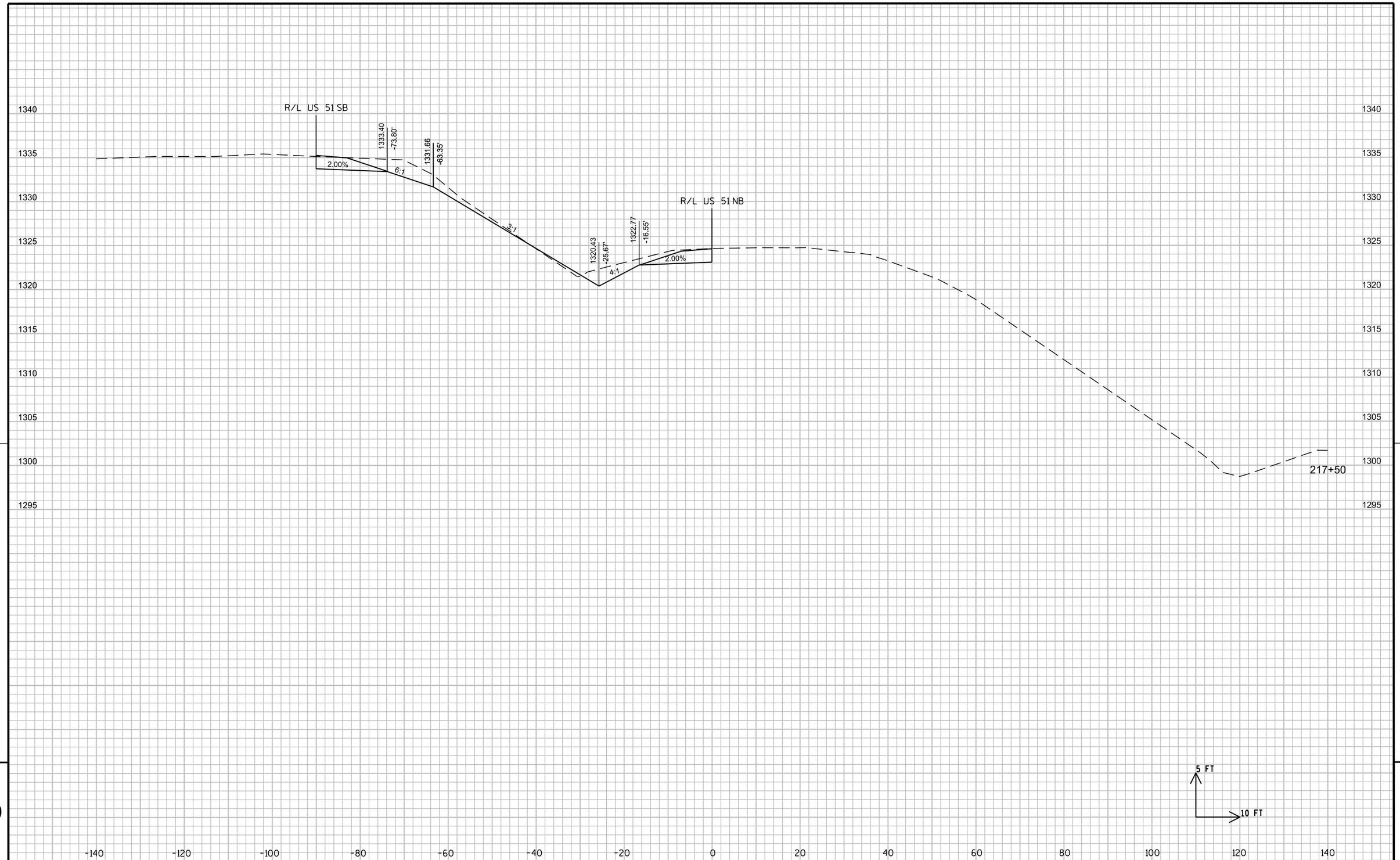
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 360	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final154 PLOT SCALE : 20:1

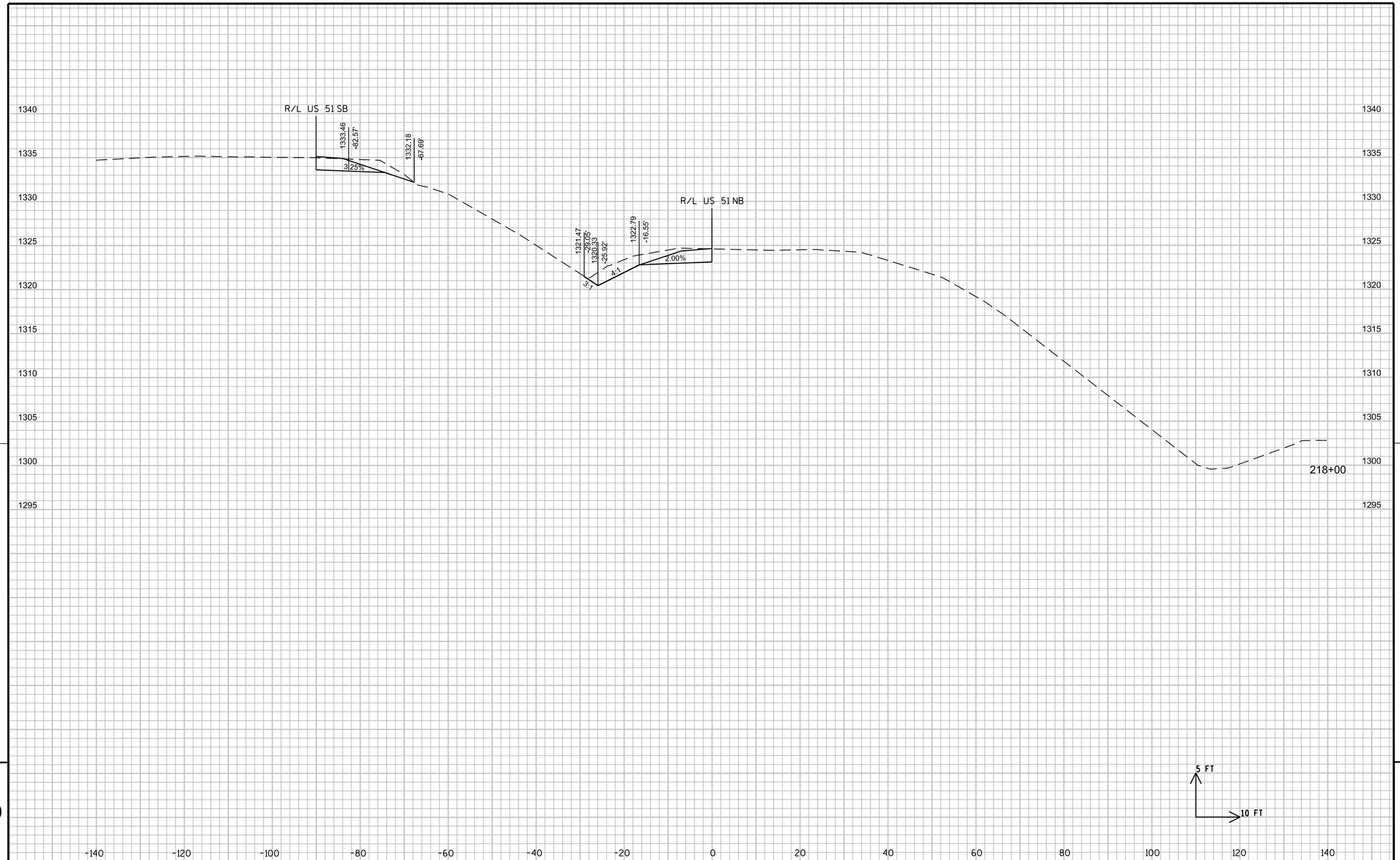
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 361	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final155PLOT SCALE : 20:1

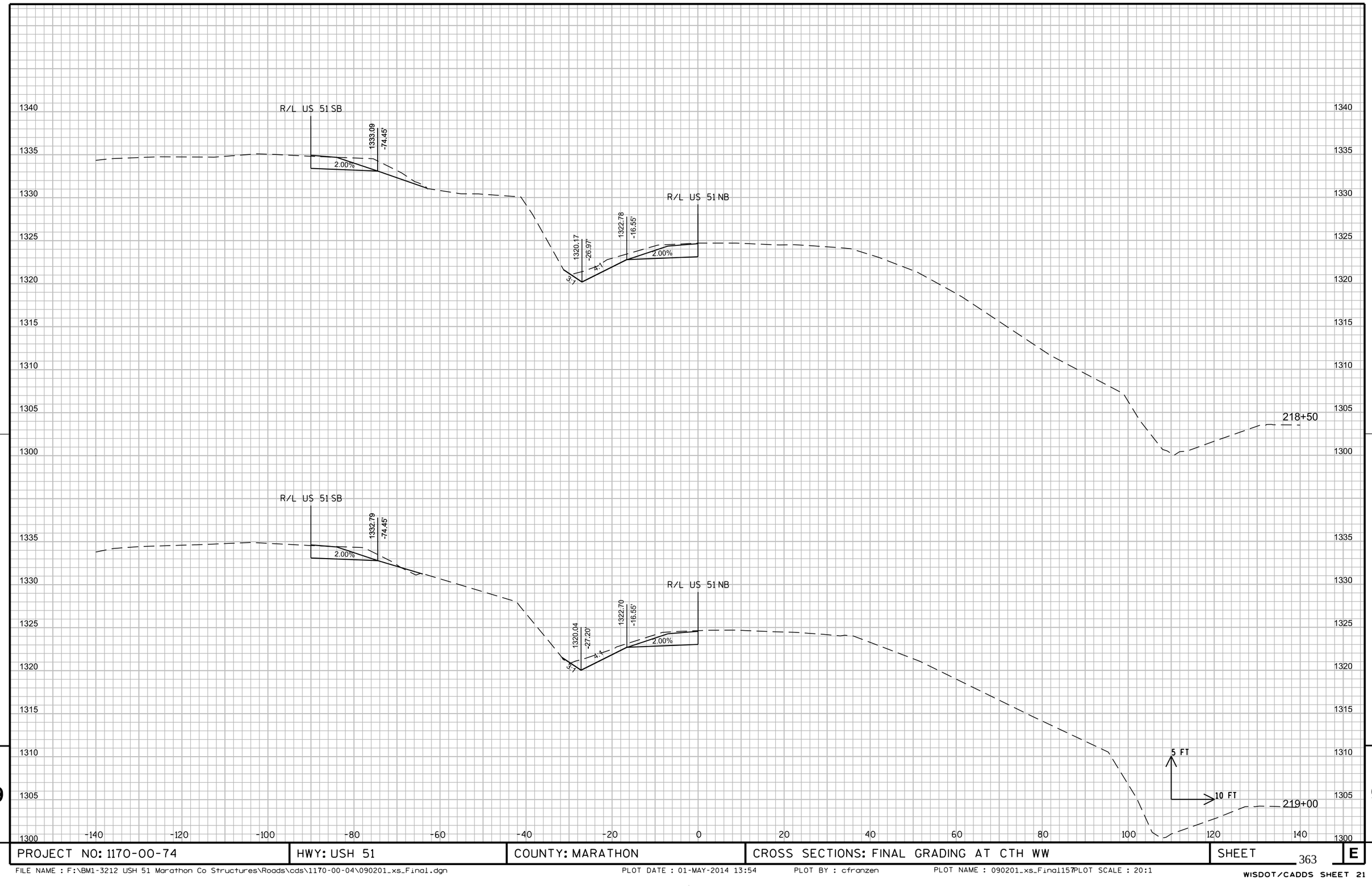
WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 362	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final156PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

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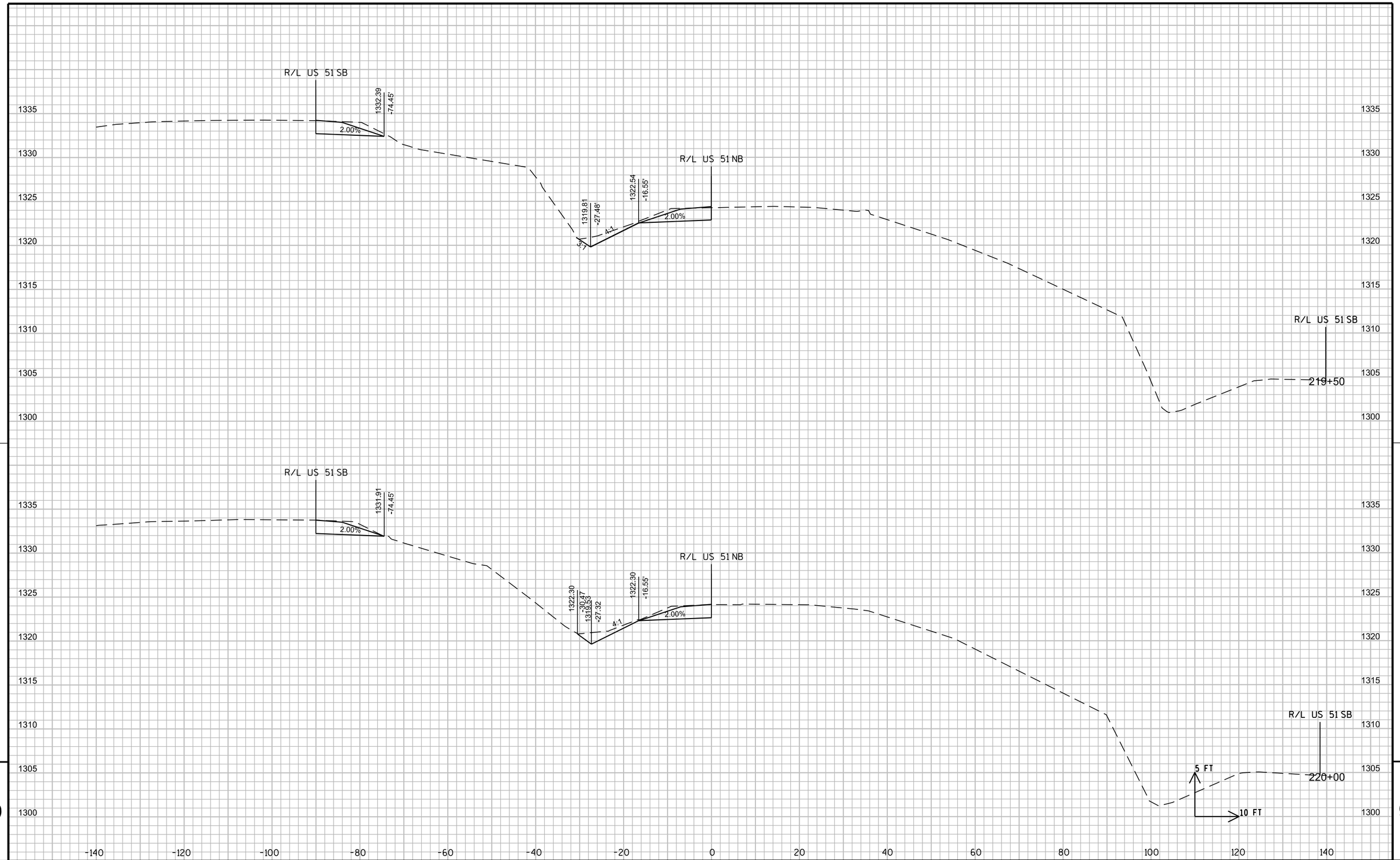
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 363	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final157PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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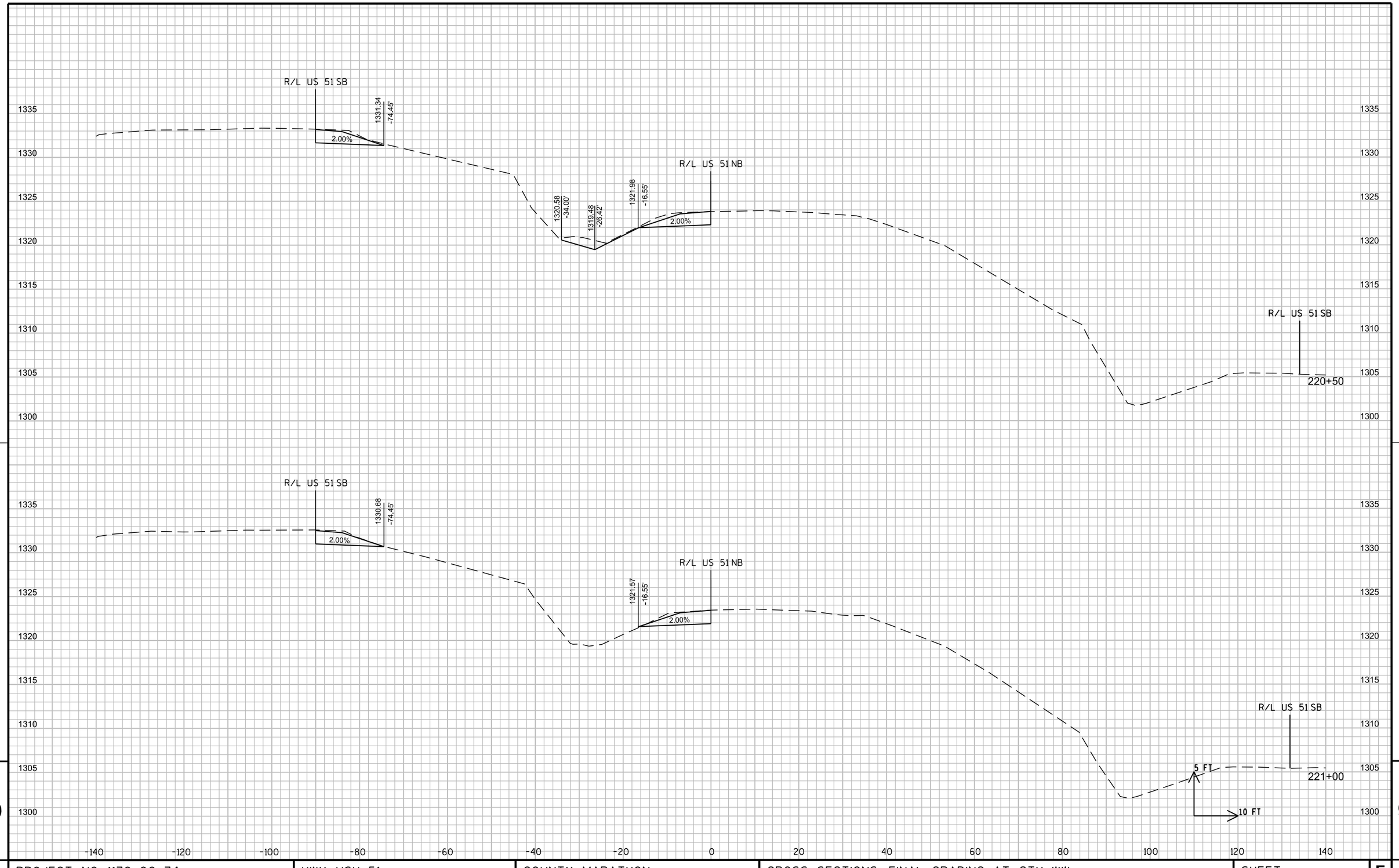
PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 364	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final158 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1170-00-74	HWY: USH 51	COUNTY: MARATHON	CROSS SECTIONS: FINAL GRADING AT CTH WW	SHEET 365	E

FILE NAME : F:\BM1-3212 USH 51 Marathon Co Structures\Roads\cds\1170-00-04\090201_xs_Final.dgn PLOT DATE : 01-MAY-2014 13:54 PLOT BY : cfranzen PLOT NAME : 090201_xs_Final159 PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

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